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Direct Dial: 615.726.5698  
Direct Fax: 615.744.5698  
E-Mail Address: kalexander@bakerdonelson.com

ORIGINAL

May 8, 2014

**VIA EMAIL & OVERNIGHT MAIL**

Linda Faulkner  
Kentucky Public Service Commission  
P.O. Box 615  
211 Sower Boulevard  
Frankfort, KY 40602-0615

RECEIVED

MAY 9 - 2014

PUBLIC SERVICE  
COMMISSION

CASE NO. 2014-00027

**Re: Application of Navitas KY NG, LLC/Certificate of Public Convenience and Necessity for Its Pipeline Construction Work Plan in Clinton County, Kentucky**

Dear Linda:

The purpose of this letter is to follow up with supplemental information requested by the PSC Staff in the above-styled matter. Enclosed please find the following documentation to supplement our initial filing of the Application of Navitas KY NG, LLC for a Certificate of Public Convenience and Necessity for its Pipeline Construction Work Plan in Clinton County, Kentucky:

**KRS 322.340**

Engineering plans, specifications, plats and report for the proposed construction  
The engineering documents prepared by a registered engineer, must be signed, sealed and dated by an engineer in Kentucky.

**807 KAR 5:001**

- (D) Two (2) copies (one (1) electronic and one (1) paper format) of maps to suitable scale showing the Location or route of the proposed new construction or extension, as well as the location to scale of like facilities owned by others located anywhere within the map area with adequate identification as the ownership of the other facilities.

N KWA 1325757 v1  
0-0 05/08/2014

Also enclosed in an unsigned copy of the bid contract that was requested. Navitas and Bell Engineering have been informed that a signed copy of the bid contract is forthcoming and an encroachment permit from the Kentucky Department of Transportation (KYDOT) is being issued at this time. Navitas is not aware of any other permits required for this project.

It is urgent that Phase 1 construction of the pipeline within Albany begin on or about June 1, 2014 as part of this construction is being performed on or near public school grounds. The school year ends the last week of May and resumes again in late-August. It is anticipated that Phase 1 construction will take approximately 60 days, and it is, therefore, important to the public interest to achieve this construction phase prior to the commencement of the new school year in the Fall. Further, Phase I arguably falls within the scope of the already-existing CPCN for Albany under the "normal course of business" language of KRS 278.020 (to relieve pressure on existing pipe). With this in mind, Navitas is aware that this Application for a CPCN has not yet been approved by the PSC, and is hopeful that its Application will be granted in an expedited manner.

Thank you very much for your consideration, and please let me know if you need any additional information from Navitas at this time.

Sincerely yours,



Klint W. Alexander, Esq.

cc: Thomas Hartline

RECEIVED

MAY 9 - 2014

PUBLIC SERVICE  
COMMISSION

# BID FORM FOR CONSTRUCTION CONTRACTS

*Prepared by*

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

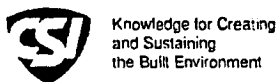
This document has been approved and endorsed by

The Associated General Contractors of America



and the

Construction Specification Institute



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1420 King Street, Alexandria, VA 22314-2794  
(703) 684-2882

American Consulting Engineers Council  
1015 15th Street N.W., Washington, DC 20005  
(202) 347-7474

American Society of Civil Engineers  
1801 Alexander Bell Drive, Reston, VA 20191-4400  
(800) 548-2723

**BID FORM**

**CONTRACT 594-14-01  
NATURAL GAS LINE EXTENSION  
KEYSTONE FOODS  
NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA**

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

*Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626*

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, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

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

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local 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 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.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times 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 correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

#### **ARTICLE 4 – FURTHER REPRESENTATIONS**

4.01 Bidder further represents 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 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 sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

#### **ARTICLE 5 – BASIS OF BID**

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the price(s) as shown on the Form of Proposal following Article 9.01 of this Section C-410 of these Specifications.
- 5.02 Unit prices have been computed in accordance with Paragraph 11.03.B of the General Conditions.
- 5.03 Bidder acknowledges that 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 150 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 14.07.B of the General Conditions within 180 calendar days after the date when the Contract Times commence to run.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

#### **ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are attached to and made a condition of this Bid.
  - A. Required Bid security per Specification Section 00200, Instructions to Bidders, Bid Security.
  - B. List of Proposed Subcontractors.

C. List of Proposed Suppliers.

D. Required Bidder Qualification Statement with Supporting Data.

**ARTICLE 8 – DEFINED TERMS**

8.01 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**

9.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of general partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
*(Signature – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_  
**(CORPORATE SEAL)**

Attest: \_\_\_\_\_  
*(Signature of Corporate Secretary)*

Date of Qualification to do business in \_\_\_\_\_ [State Where Project is Located] is \_\_\_\_ \ \_\_\_\_ \ \_\_\_\_.



A Joint Venture

Name of Joint Venturer: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of first joint venture partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of second joint venture partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business address: \_\_\_\_\_

Phone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Submitted on \_\_\_\_\_, 20\_\_\_\_.

State Contractor License No. \_\_\_\_\_. (If applicable)

**FORM OF PROPOSAL  
CONTRACT 594-14-01  
NATURAL GAS LINE EXTENSION  
KEYSTONE FOODS  
NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA**

Note: The following Form of Proposal shall be followed exactly in submitting a proposal for this work. This copy, properly filled in, shall be used in submitting a proposal.

This proposal is submitted by \_\_\_\_\_

\_\_\_\_\_  
(Name and Address of Bidding Contractor) Zip Code

Date: \_\_\_\_\_ Phone No.: \_\_\_\_\_  
Area Code

To: Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626

Having carefully examined the complete contract documents, including all general and technical specifications and drawings, special requirements, as well as the project site, the undersigned, hereinafter known as the CONTRACTOR, proposes to furnish all labor, materials, tools, machinery, appliances, supplies, equipment, and services as called for by the applicable contract documents, as well as by all Addenda heretofore issued. We agree to enter into a contract and to complete all work required by and under the terms and conditions of the contract documents for the amounts shown in this proposal form.

We acknowledge receipt of the following Addenda:

No. _____, dated _____.	No. _____, dated _____.
No. _____, dated _____.	No. _____, dated _____.
No. _____, dated _____.	No. _____, dated _____.
No. _____, dated _____.	No. _____, dated _____.

If none received, write "none" here: \_\_\_\_\_.

CONTRACT 594-14-01 NATURAL GAS LINE EXTENSIONS  
 KEYSTONE FOODS  
 NAVITAS UTILITY CORPORATION  
 ALBANY, KENTUCKY

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
<b>PHASE 1: Albany Gate (existing Gas Line) to McWhorter Road/US 127 Bypass</b>					
1	6-Inch Polyethylene Gas Pipe and Fittings, Furnishing Trenching Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation Complete	15,000	L.F.	\$_____	\$_____
2	2-Inch Polyethylene Gas Pipe and Fitting, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation Complete	5,800	L.F.	\$_____	\$_____
3	3/4 -Inch Polyethylene Gas Pipe and Fitting, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation Complete	100	L.F.	\$_____	\$_____
4	12-Inch x 0.250-Inch Steel cover Pipe, Loading Gas Pipe, Spacers, End Seals, Furnishing and Installing, Complete	210	L.F.	\$_____	\$_____
5	Extra for Boring for 12-Inch Steel Cover Pipe, Furnishing and Installation, Including 2-Inch Vents, End Seals, and Casing Spacers Complete	210	L.F.	\$_____	\$_____
6	6-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	3	Each	\$_____	\$_____
7	2-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	2	Each	\$_____	\$_____
8	Cut-In to Existing Albany Gate 6-Inch PE Main, Squeeze-Off with Bypass, Complete, STA 0+00	1	Each	\$_____	\$_____
9	Field Service Regulator, and Meter Service Riser , Furnish and Install Complete	1	Each	\$_____	\$_____
10	Pipeline Locator Boxes, Furnish and Install, Complete	17	Each	\$_____	\$_____
11	Purging of Gas Mains to be Abandoned, All Sizes, Complete	1	L.S.	\$_____	\$_____
12	Reconnect Existing Service Connection	2	Each	\$_____	\$_____
13	Crushed Rock on Trench Surface, Temporary Surface Replacement, Complete	100	Tons	\$_____	\$_____
14	Concrete Surface Replacement, Up to 6-Inch Thickness Trench Width, On Streets, Drives, Roads and Sidewalks, Complete	100	L.F.	\$_____	\$_____
15	Asphalt Surface Replacement, 2-Inch Thickness, Trench Width, Furnish and Place, Complete	300	L.F.	\$_____	\$_____
16	Field Gas Regulator Station (McWhorter Road) including Filter, Meter, Pressure Regulator, Bypass, Volume Controller, Pressure Relief Valve, Fencing, Furnish and install, Complete	1	Each	\$_____	\$_____
SUBTOTAL PHASE 1					\$_____

CONTRACT 594-14-01 NATURAL GAS LINE EXTENSIONS  
 KEYSTONE FOODS  
 NAVITAS UTILITY CORPORATION  
 ALBANY, KENTUCKY

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
<b>PHASE 2: McWhorter Road/US 127 Bypass to Equity Group/Keystone Foods</b>					
1	6-Inch Polyethylene Gas Pipe and Fittings, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation, Complete	24,600	L.F.	\$_____	\$_____
2	4-Inch Polyethylene Gas Pipe and Fittings, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation, Complete	100	L.F.	\$_____	\$_____
3	12-Inch x 0.250-Inch Steel cover Pipe, Loading Gas Pipe, Spacers, End Seals, Furnishing and Installing, Complete	1,090	L.F.	\$_____	\$_____
4	Extra for Boring for 12-Inch Steel Cover Pipe, Furnishing and Installation, Including 2-Inch Vents, End Seals, and Casing Spacers, Complete	1,090	L.F.	\$_____	\$_____
5	6-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	8	Each	\$_____	\$_____
6	4-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	2	Each	\$_____	\$_____
7	Domestic Service Regulator and Meter Service Riser, Furnish and Install, Complete	1	Each	\$_____	\$_____
8	Pipeline Locator Boxes, Furnish and Install, Complete	21	Each	\$_____	\$_____
9	Crushed Rock on Trench Surface, Temporary Surface Replacement, Complete	50	Tons	\$_____	\$_____
10	Concrete Surface Replacement, Up to 6-Inch Thickness Trench Width, On Streets, Drives, Roads and Sidewalks, Complete	60	L.F.	\$_____	\$_____
11	Asphalt Surface Replacement, 2-Inch Thickness, Trench Width, Furnish and Place, Complete	50	Tons	\$_____	\$_____
12	Field Gas Regulator Station (Keystone), Including Filter, Meter, Pressure Regulator, Bypass, Volume Controlier, Pressure Relief, Furnish and Install, Complete	1	L.S.	\$_____	\$_____
SUBTOTAL PHASE 2					\$_____
PHASE 1: Albany Gate (existing Gas Line) to McWhorter Road/US 127 Bypass					\$_____
PHASE 2: McWhorter Road/US 127 Bypass to Equity Group/Keystone Foods					\$_____
<b>TOTAL BID-KEYSTONE GAS LINE EXTENSTIONS, PHASE 1 AND 2</b>					<b>\$_____</b>

SECTION 00420

**BIDDER'S QUALIFICATION STATEMENT**  
**(TO BE ATTACHED TO THE BID)**

1. On Schedule A, attached, list major engineered construction projects completed by this organization in the past five (5) years. (If joint venture list each participant's project separately.)
  2. On Schedule B, attached, list current projects under construction by this organization. (If joint venture, list each participant's projects separately.)
  3. Name of surety company and name, address, and telephone number of agent.
- 
- 
- 

4. Is your organization a member of a controlled group of corporations as defined in I.R.C. Sect. 1563?  Yes  No
5. Furnish on Schedule C, attached, details of the construction experience of the principal individuals of your organization directly involved in construction operations.
6. Has your organization ever failed to complete any construction contract awarded to it?  Yes  No

If yes, describe circumstances on attachment.

7. Has a Corporate officer, partner, joint venture participant, or proprietor ever failed to complete a construction contract awarded to him or her in their own name or when acting as a principal of another organization?  Yes  No
8. In the last five years, has your organization ever failed to substantially complete a project in a timely manner?  Yes  No

If yes, describe circumstances on attachment.

9. Indicate general types of work performed with your own work force.
- 
- 

10. Furnish the following information with respect to an accredited institution familiar with your organization

Name of Bank \_\_\_\_\_

Address \_\_\_\_\_

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

Account Manager \_\_\_\_\_

Telephone \_\_\_\_\_

I hereby certify that the information submitted herewith, including any attachment is true to the best of my knowledge and belief.

\_\_\_\_\_  
By: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

# SCHEDULE A - PREVIOUS 5 YEARS PROJECTS

Name, Location and Description of Project    Owner    Design Engineer    Date Complete    Contract Price    Reference/Contact  
Include Address and Phone

HKB GO-30 (7-92)

00420-3

# SCHEDULE B - CURRENT PROJECTS

HKB GO-30 (7-92)

<u>Name, Location and Description of Project</u>	<u>Owner</u>	<u>Design Engineer</u>	<u>Date Complete</u>	<u>Contract Price</u>	<u>Reference/Contact Include Address and Phone</u>
--------------------------------------------------	--------------	------------------------	----------------------	-----------------------	----------------------------------------------------

00420-4



# SCHEDULE C - PERSONNEL

<u>Position</u>	<u>Date started with this organization</u>	<u>Date started in construction</u>	<u>Prior positions and experience in construction</u>
-----------------	------------------------------------------------	-----------------------------------------	-----------------------------------------------------------

# 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):

Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626

**BID**

Bid Due Date:  
Project (Brief Description Including Location):  
Contract ( 594-14-01)  
Natural Gas Line Extension  
Keystone Foods  
Navitas Utility  
Albany, Kentucky  
Costa Mesa, California

**BOND**

Bond Number:  
Date (Not later than Bid due date):  
Penal sum

\_\_\_\_\_ (Words)

\_\_\_\_\_ (Figures)

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

**BIDDER**

**SURETY**

\_\_\_\_\_  
Bidder's Name and Corporate Seal (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title

Attest: \_\_\_\_\_  
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, 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 this Bond. Payment of the penal sum is the extent of Surety's liability.
2. Default of Bidder shall occur upon the failure of Bidder to deliver 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 any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1. 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 any performance and payment bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by Owner, or
  - 3.3. 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 and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of 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, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. 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.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

SPECIFICATIONS FOR  
CONTRACT 594-14-01

**NATURAL GAS LINE EXTENSION  
KEYSTONE FOODS**

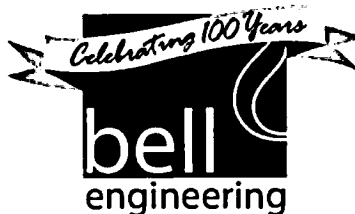
*NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA*



*February 2014*

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**107 Forbes Drive  
Hopkinsville, KY 42240  
270/886-5466**

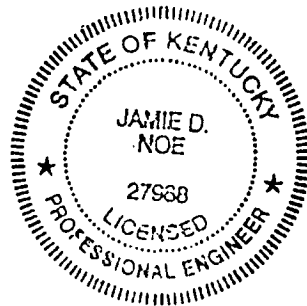


**2480 Fortune Drive  
Suite 350  
Lexington, KY 40509  
859/278-5412**

SPECIFICATIONS FOR  
CONTRACT 594-14-01

# NATURAL GAS LINE EXTENSION KEYSTONE FOODS

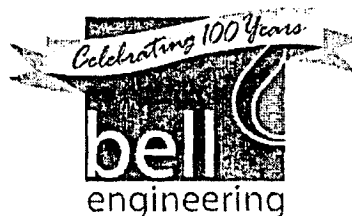
*NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA*



*February 2014*

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107 Forbes Drive  
Hopkinsville, KY 42240  
270/886-5466



2480 Fortune Drive  
Suite 350  
Lexington, KY 40509  
859/278-5412

## INDEX

**CONTRACT 594-14-01**  
**NATURAL GAS LINE EXTENSION**  
**KEYSTONE FOODS**  
**NAVITAS UTILITY CORPORATION**  
**ALBANY, KENTUCKY**  
**COSTA MESA, CALIFORNIA**

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END

Tc-2

594-14-01 (02/14)

**SECTION 00010**

**ADVERTISEMENT FOR BIDS  
CONTRACT 594-14-01  
NATURAL GAS LINE EXTENSION  
KEYSTONE FOODS  
NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA**

Sealed proposals for the following work will be received by Navitas Utility, Costa Mesa, California, and Albany, Kentucky, at the office of Bell Engineering, 2480 Fortune Drive, Suite 350, Lexington, Kentucky 40509, until 2:00 p.m., local time, May 1, 2014, for furnishing labor and materials and performing all work as set forth by the Advertisement, General Conditions, Specifications and/or Drawings prepared by Bell Engineering. Immediately following the scheduled closing time for the reception of bids, all proposals which have been submitted in accordance with the above conditions will be publicly opened and read aloud.

The work to be bid is described as follows:

Contract 594-14-01

Phase 1

Furnishing and installation of approximately 15,000 L.F. of 6-inch polyethylene (PE) gas main, and accessories, and 1 pressure reducing station, including meter assembly.

Phase 2

Furnishing and installation of approximately 24,600 L.F. of 6-inch polyethylene (PE) gas main and accessories, and 1 pressure reducing station, including meter assembly.

Drawings, Specifications and Contract Documents may be examined at the following places:

Bell Engineering  
2480 Fortune Drive, Suite 350  
Lexington, Kentucky 40509

or may be obtained from **Bell Engineering, 2480 Fortune Drive, Suite 350, Lexington, Kentucky 40509**, upon receipt of non-refundable deposit as follows:

CONTRACT 594-14-01 - \$100.00

Sealed proposals for this Contract shall be clearly marked on the outside of the envelope as follows:



594-14-01 (02/14)

“Sealed Proposal for Contract 594-14-01. Not to be opened until 2:00 p.m., local time, May 1, 2014.”

If forwarded by mail, the sealed envelope containing the proposal must be enclosed in another envelope and mailed to Bell Engineering, 2480 Fortune Drive, Suite 350, Lexington, Kentucky 40509, allowing sufficient time for such mailing to reach this address prior to the scheduled closing time for receipt of proposals.

Bids shall be accompanied by a certified check or bid bond made payable to the Navitas Utility, in an amount not less than the percent of the base bid indicated in Specification Section 00200, Instructions to Bidders, Bid Security. No bidder may withdraw his bid for a period of 90 days after the date bids are opened. He may, however, withdraw his bid at any time prior to the time and date scheduled for opening of same or any authorized postponement thereof. Any bid received after the time and date specified shall not be considered and will be returned unopened to the bidder.

Navitas Utility may consider informal any bid not prepared and submitted in accordance with the provisions of this advertisement and/or the Specifications and may waive any informalities or reject any and all bids.

NAVITAS UTILITY

By \_\_\_\_\_  
Thomas Hartline, President

Bell Engineering  
2480 Fortune Drive  
Suite 350  
Lexington, Kentucky 40509  
Phone: 859/278-5412

END OF SECTION

\*\*\*

00010-2

# INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACTS

*Prepared by*

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
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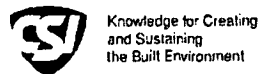
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**INSTRUCTIONS TO BIDDERS**

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## ARTICLE 1 - DEFINED TERMS

---

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office*—The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered. The issuing office for this Project is Bell Engineering, 2480 Fortune Drive, Suite 350, Lexington, Kentucky 40509.

B. *Administrative Office*—The office from which the bidding procedures are to be administered. The administrative office for this Project is Bell Engineering, 2480 Fortune Drive, Suite 350, Lexington, Kentucky 40509.

## ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

---

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office. The deposit is non-refundable.

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

2.03 Owner and Engineer, in making copies of 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 To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

A. Refer to Section 00420.

## ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

---

### 4.01 *Underground Facilities*

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.02 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

4.03 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.04 Reference is made to the Special Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.05 It is the responsibility of each Bidder before submitting a Bid to:

A. examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;

B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;

D. carefully study all: (1) 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 (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions;

E. obtain and carefully study (or accept consequences of not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and

J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.06 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

## **ARTICLE 5 - PRE-BID CONFERENCE**

---

5.01 A pre-Bid conference is not required for this Project.

## **ARTICLE 6 - SITE AND OTHER AREAS**

---

6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided 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 7 - INTERPRETATIONS AND ADDENDA**

---

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

## **ARTICLE 8 - BID SECURITY**

---

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price and in the form of a certified check or bank money order or a Bid bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.

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

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

## **ARTICLE 9 - CONTRACT TIMES**

---

9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

## **ARTICLE 10 - LIQUIDATED DAMAGES**

---

10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

## ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

---

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. No item of material or equipment will be considered by Engineer as a substitute or "or-equal" unless written request for approval has been submitted by Bidder and has been received by Engineer at least 7 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

## ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

---

12.01 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 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 Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

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

## ARTICLE 13 - PREPARATION OF BID

---

13.01 The Bid Form is included with the Bidding Documents. Additional copies may be obtained from Engineer.

13.02 All blanks on the Bid Form shall be completed by printing in ink or by typewriter and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternative, adjustment unit price item, and unit price item listed therein.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.05 A Bid by a limited liability company 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 shall be shown below the signature.



13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown below the signature.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

#### **ARTICLE 14 - BASIS OF BID; COMPARISON OF BIDS**

---

##### **14.01 Unit Price**

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.

C. Discrepancies between 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. Discrepancies between words and figures will be resolved in favor of the words.

14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in Paragraph 11.02 of the General Conditions.

#### **ARTICLE 15 - SUBMITTAL OF BID**

---

15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form.

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Ms. Jamie Noe, Project Manager, Bell Engineering, 2480 Fortune Drive, Suite 350, Lexington, Kentucky 40509.

#### **ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID**

---

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

16.02 If within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

## ARTICLE 17 - OPENING OF BIDS

---

17.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and read aloud publicly.

17.02 An abstract of the amounts of the base Bids and major alternates, if any, will be made available to all Bidders after the opening of Bids and review of same by ENGINEER.

## ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

---

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

## ARTICLE 19 - EVALUATION OF BIDS AND AWARD OF CONTRACT

---

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also 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. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

19.02 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.

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

19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

19.06 If the Contract is to be awarded, Owner will award the Contract to the Bidder whose Bid is in the best interests of the Project.

## ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

---

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

## **ARTICLE 21 - SIGNING OF AGREEMENT**

---

21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

## **ARTICLE 22 - SALES AND USE TAXES**

---

22.01 See Specification Section 00700 (00710), Article 6.10, for instructions. The Contractor is responsible for the payment for sales tax on materials and equipment incorporated in the work.

## **ARTICLE 23 - RETAINAGE**

---

23.01 Provisions concerning retainage are set forth in the Agreement.

## **ARTICLE 24 - ISSUANCE OF WORK ORDER**

---

24.01 Upon completion of the review of bids received, the issuance of the Notice of Award and execution of the Contract Documents, the Owner will issue a Notice to Proceed (Work Order) for Phase 1 of this Contract. The Phase 1 work will be substantially completed within 60 days.

24.02 The Owner may delay issuance of the Notice to Proceed (Work Order) for Phase 2 of the Project until such time as economic considerations will allow.

24.03 Should the issuance of the Notice to Proceed for Phase 2 be delayed beyond 60 days, the Owner will adjust the time of completion for the work such that the Contractor's contract completion will not be jeopardized.

## **ARTICLE 25 - SAFETY REQUIREMENTS**

---

25.01 The Contractor is responsible to adhere all requirements of Navitas Safety requirements and Operation and Maintenance Manual.

25.02 The Contractor is responsible to adhere all requirements of the Keystone Foods Contractor Legal Documents Standard and Operating Procedure.

25.03 The Contractor is to provide a copy of their Safety and Operation Manual, including Drug Program, Pipe Jointers Certificates and current Operator Qualification Plan.

# BID FORM FOR CONSTRUCTION CONTRACTS

*Prepared by*

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



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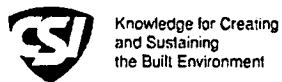
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**BID FORM**

**CONTRACT 594-14-01  
NATURAL GAS LINE EXTENSION  
KEYSTONE FOODS  
NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA**

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

*Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626*

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, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

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

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local 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 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.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times 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 correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

#### **ARTICLE 4 – FURTHER REPRESENTATIONS**

4.01 Bidder further represents 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 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 sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

#### **ARTICLE 5 – BASIS OF BID**

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the price(s) as shown on the Form of Proposal following Article 9.01 of this Section C-410 of these Specifications.
- 5.02 Unit prices have been computed in accordance with Paragraph 11.03.B of the General Conditions.
- 5.03 Bidder acknowledges that 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 150 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 14.07.B of the General Conditions within 180 calendar days after the date when the Contract Times commence to run.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

#### **ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are attached to and made a condition of this Bid.
  - A. Required Bid security per Specification Section 00200, Instructions to Bidders, Bid Security.
  - B. List of Proposed Subcontractors.



C. List of Proposed Suppliers.

D. Required Bidder Qualification Statement with Supporting Data.

**ARTICLE 8 – DEFINED TERMS**

8.01 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**

9.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of general partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
*(Signature – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_  
(CORPORATE SEAL)

Attest: \_\_\_\_\_  
*(Signature of Corporate Secretary)*

Date of Qualification to do business in \_\_\_\_\_ [State Where Project is Located] is \_\_\_\_ \ \_\_\_\_ \ \_\_\_\_.

A Joint Venture

Name of Joint Venturer: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of first joint venture partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of second joint venture partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business address: \_\_\_\_\_

Phone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Submitted on \_\_\_\_\_, 20\_\_\_\_.

State Contractor License No. \_\_\_\_\_. (If applicable)

**FORM OF PROPOSAL  
CONTRACT 594-14-01  
NATURAL GAS LINE EXTENSION  
KEYSTONE FOODS  
NAVITAS UTILITY  
ALBANY, KENTUCKY  
COSTA MESA, CALIFORNIA**

Note: The following Form of Proposal shall be followed exactly in submitting a proposal for this work. This copy, properly filled in, shall be used in submitting a proposal.

This proposal is submitted by \_\_\_\_\_

\_\_\_\_\_  
(Name and Address of Bidding Contractor) Zip Code

Date: \_\_\_\_\_ Phone No.: \_\_\_\_\_  
Area Code

To: Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626

Having carefully examined the complete contract documents, including all general and technical specifications and drawings, special requirements, as well as the project site, the undersigned, hereinafter known as the CONTRACTOR, proposes to furnish all labor, materials, tools, machinery, appliances, supplies, equipment, and services as called for by the applicable contract documents, as well as by all Addenda heretofore issued. We agree to enter into a contract and to complete all work required by and under the terms and conditions of the contract documents for the amounts shown in this proposal form.

We acknowledge receipt of the following Addenda:

No. _____, dated _____.	No. _____, dated _____.
No. _____, dated _____.	No. _____, dated _____.
No. _____, dated _____.	No. _____, dated _____.
No. _____, dated _____.	No. _____, dated _____.

If none received, write "none" here: \_\_\_\_\_.

CONTRACT 594-14-01 NATURAL GAS LINE EXTENSIONS  
 KEYSTONE FOODS  
 NAVITAS UTILITY CORPORATION  
 ALBANY, KENTUCKY

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
<b>PHASE 1: Albany Gate (existing Gas Line) to McWhorter Road/US 127 Bypass</b>					
1	6-Inch Polyethylene Gas Pipe and Fittings, Furnishing Trenching Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation Complete	15,000	L.F.	\$_____	\$_____
2	2-Inch Polyethylene Gas Pipe and Fitting, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation Complete	5,800	L.F.	\$_____	\$_____
3	3/4 -Inch Polyethylene Gas Pipe and Fitting, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation Complete	100	L.F.	\$_____	\$_____
4	12-Inch x 0.250-inch Steel cover Pipe, Loading Gas Pipe, Spacers, End Seals, Furnishing and Installing, Complete	210	L.F.	\$_____	\$_____
5	Extra for Boring for 12-Inch Steel Cover Pipe, Furnishing and Installation, Including 2-Inch Vents, End Seals, and Casing Spacers Complete	210	L.F.	\$_____	\$_____
6	6-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	3	Each	\$_____	\$_____
7	2-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	2	Each	\$_____	\$_____
8	Cut-In to Existing Albany Gate 6-Inch PE Main, Squeeze-Off with Bypass, Complete, STA 0+00	1	Each	\$_____	\$_____
9	Field Service Regulator, and Meter Service Riser , Furnish and Install Complete	1	Each	\$_____	\$_____
10	Pipeline Locator Boxes, Furnish and Install, Complete	17	Each	\$_____	\$_____
11	Purging of Gas Mains to be Abandoned, All Sizes, Complete	1	L.S.	\$_____	\$_____
12	Reconnect Existing Service Connection	2	Each	\$_____	\$_____
13	Crushed Rock on Trench Surface, Temporary Surface Replacement, Complete	100	Tons	\$_____	\$_____
14	Concrete Surface Replacement, Up to 6-Inch Thickness Trench Width, On Streets, Drives, Roads and Sidewalks, Complete	100	L.F.	\$_____	\$_____
15	Asphalt Surface Replacement, 2-Inch Thickness, Trench Width, Furnish and Place, Complete	300	L.F.	\$_____	\$_____
16	Field Gas Regulator Station (McWhorter Road) including Filter, Meter, Pressure Regulator, Bypass, Volume Controller, Pressure Relief Valve, Fencing, Furnish and Install, Complete	1	Each	\$_____	\$_____
SUBTOTAL PHASE 1					\$_____

CONTRACT 594-14-01 NATURAL GAS LINE EXTENSIONS  
 KEYSTONE FOODS  
 NAVITAS UTILITY CORPORATION  
 ALBANY, KENTUCKY

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
<b>PHASE 2: McWhorter Road/US 127 Bypass to Equity Group/Keystone Foods</b>					
1	6-Inch Polyethylene Gas Pipe and Fittings, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation, Complete	24,600	L.F.	\$_____	\$_____
2	4-Inch Polyethylene Gas Pipe and Fittings, Furnishing, Trenching, Bedding, Laying, Installation, Locator Wire, Backfilling, Testing and Purging, Unclassified Excavation, Complete	100	L.F.	\$_____	\$_____
3	12-Inch x 0.250-Inch Steel cover Pipe, Loading Gas Pipe, Spacers, End Seals, Furnishing and Installing, Complete	1,090	L.F.	\$_____	\$_____
4	Extra for Boring for 12-Inch Steel Cover Pipe, Furnishing and Installation, Including 2-Inch Vents, End Seals, and Casing Spacers, Complete	1,090	L.F.	\$_____	\$_____
5	6-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	B	Each	\$_____	\$_____
6	4-Inch Polyvalve and Box, Furnish and Install, Including Concrete Valve Box Collar, Complete	2	Each	\$_____	\$_____
7	Domestic Service Regulator and Meter Service Riser, Furnish and Install, Complete	1	Each	\$_____	\$_____
B	Pipeline Locator Boxes, Furnish and Install, Complete	21	Each	\$_____	\$_____
9	Crushed Rock on Trench Surface, Temporary Surface Replacement, Complete	50	Tons	\$_____	\$_____
10	Concrete Surface Replacement, Up to 6-Inch Thickness Trench Width, On Streets, Drives, Roads and Sidewalks, Complete	60	L.F.	\$_____	\$_____
11	Asphalt Surface Replacement, 2-Inch Thickness, Trench Width, Furnish and Place, Complete	50	Tons	\$_____	\$_____
12	Field Gas Regulator Station (Keystone), Including Filter, Meter, Pressure Regulator, Bypass, Volume Controller, Pressure Relief, Furnish and Install, Complete	1	L.S.	\$_____	\$_____
SUBTOTAL PHASE 2					\$_____
PHASE 1: Albany Gate (existing Gas Line) to McWhorter Road/US 127 Bypass					\$_____
PHASE 2: McWhorter Road/US 127 Bypass to Equity Group/Keystone Foods					\$_____
<b>TOTAL BID-KEYSTONE GAS LINE EXTENSTIONS, PHASE 1 AND 2</b>					<b>\$_____</b>

# 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):

Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626

BID

Bid Due Date:

Project (Brief Description Including Location):

Contract ( 594-14-01)

Natural Gas Line Extension

Keystone Foods

Navitas Utility

Albany, Kentucky

Costa Mesa, California

BOND

Bond Number:

Date (Not later than Bid due date):

Penal sum

\_\_\_\_\_ (Words)

\_\_\_\_\_ (Figures)

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

BIDDER

SURETY

\_\_\_\_\_  
Bidder's Name and Corporate Seal (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title

Attest: \_\_\_\_\_  
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, 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 this Bond. Payment of the penal sum is the extent of Surety's liability.
2. Default of Bidder shall occur upon the failure of Bidder to deliver 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 any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1. 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 any performance and payment bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by Owner, or
  - 3.3. 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 and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of 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, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. 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.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

FORM OF AGREEMENT  
BETWEEN OWNER AND CONTRACTOR FOR  
CONSTRUCTION CONTRACT (STIPULATED PRICE)

*Prepared by*

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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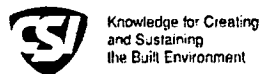
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This document has been approved and endorsed by

The Associated General Contractors of America



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1801 Alexander Bell Drive, Reston, VA 20191-4400

**EJCDC  
FORM OF AGREEMENT  
BETWEEN OWNER AND CONTRACTOR FOR  
CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between Navitas Utility, 3186-D Airway Avenue, Costa Mesa, California 92626

(Owner) and \_\_\_\_\_

(Contractor).

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

**ARTICLE 1 - WORK**

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Contract 594-14-01

Phase 1

Furnishing and installation of approximately 15,000 L.F. of 6-inch polyethylene (PE) gas pipe and accessories, and 1 pressure reducing station, including meter assembly.

Phase 2

Furnishing and installation of approximately 24,600 L.F. of 6-inch polyethylene (PE) gas pipe and accessories, and 1 pressure reducing station, including meter assembly.

**ARTICLE 2 - THE PROJECT**

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Contract 594-14-01

Natural Gas Line Extension

Keystone Foods

Navitas Utility

Albany, Kentucky

Costa Mesa, California

**ARTICLE 3 - ENGINEER**

3.01 The Project has been designed by

Bell Engineering

2480 Fortune Drive, Suite 350

Lexington, Kentucky 40509

(Engineer), who is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

## ARTICLE 4 - CONTRACT TIMES

### 4.01 Time of the Essence

A. All time limits for Milestones, as stated in Section 00200, Article 24, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

### 4.02 Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within 150 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 180 days after the date when the Contract Times commence to run.

### 4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$500.00 for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$500.00 for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

## ARTICLE 5 - CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraph 5.01.A:

A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in this paragraph 5.01.A:

As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of the General Conditions. Unit prices have been computed as provided in Paragraph 11.03 of the General Conditions. See attached Exhibit.

## ARTICLE 6 - PAYMENT PROCEDURES

### 6.01 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

### 6.02 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the last day of each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:

a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage; and

b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 10 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

### 6.03 Final Payment

A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

## ARTICLE 7 - INTEREST

7.01 Not used.

## ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

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

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

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

D. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

E. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

F. 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.

G. 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.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

## ARTICLE 10 - MISCELLANEOUS

### 10.01 Terms

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

### 10.02 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract 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.

### 10.03 Successors and Assigns

A. 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.

### 10.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in duplicate. One counterpart each has been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

This Agreement will be effective on \_\_\_\_\_, \_\_\_\_\_ (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

NAVITAS UTILITY

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: President

Title: \_\_\_\_\_

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

3186-D Airway Avenue

Costa Mesa, California 92626

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Owner-Contractor Agreement.)

License No.: \_\_\_\_\_ (Where applicable)

Agent for service or process: \_\_\_\_\_

(If Contractor is a corporation or a partnership, attach evidence of authority to sign.)

# 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 (Name and Address):

Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626

## CONTRACT

Date:

Amount:

Description (Name and Location):

Contract 594-14-01  
Natural Gas Line Extension  
Keystone Foods  
Navitas Utility  
Albany, Kentucky  
Costa Mesa, California

## BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

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

SURETY

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: \_\_\_\_\_  
Signature and Title

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title:

EJCDC No. C-610 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.
2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
  - 3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
  - 3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and
  - 3.3. Owner has agreed to pay the Balance of the Contract Price to:
    1. Surety in accordance with the terms of the Contract;
    2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
  - 4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
  - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
  - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
  - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
    1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
    2. Deny liability in whole or in part and notify Owner citing reasons therefor.
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
  - 6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;
  - 6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and
  - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.
7. Surety shall not be liable to Owner or others for obligations of 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 Owner or its heirs, executors, administrators, or successors.
8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
  - 12.1. Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
  - 12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
  - 12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone

Surety Agency or Broker

Owner's Representative (engineer or other party): Bell Engineering, 2480 Fortune Dr., Suite 350, Lexington KY 40509, 859/278-5412



# 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):

Navitas Utility  
3186-D Airway Avenue  
Costa Mesa, California 92626

## CONTRACT

Date:

Amount:

Description (Name and Location):

Contract 594-14-01  
Natural Gas Line Extension  
Keystone Foods  
Navitas Utility  
Albany, Kentucky  
Costa Mesa, California

## BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

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

SURETY

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: \_\_\_\_\_  
Signature and Title

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title:

EJCDC No. C-615 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to 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 Owner, this obligation shall be null and void if Contractor:
  - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
  - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
  - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
  - 4.2. Claimants who do not have a direct contract with Contractor:
    1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
    2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
    3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
  - 6.1. Send an answer to that Claimant, with a copy to Owner, within 90 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
  - 6.2. Pay or arrange for payment of any undisputed amounts.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

#### 15. DEFINITIONS

- 15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to 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, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

**FOR INFORMATION ONLY – Name, Address and Telephone**

**Surety Agency or Broker:**

**Owner's Representative (engineer or other party): Bell Engineering, 2480 Fortune Dr., Suite 350, Lexington KY 40509, 859/278-5412**

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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AMERICAN COUNCIL OF ENGINEERING COMPANIES

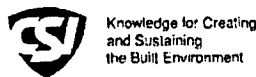
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The Associated General Contractors of America



Construction Specifications Institute

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## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

---

#### 1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

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

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *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.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes 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.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *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.

19. *Engineer*--The individual or entity named as such in the Agreement.



20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *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.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *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 the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *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, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

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 to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *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.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain

administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

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

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times

but is evidence that the parties expect that the change ordered 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.

## 1.02 *Terminology*

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

### B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

### C. *Day*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

### D. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents, or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

*E. Furnish, Install, Perform, Provide*

1. 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 (or some other specified location) ready for use or installation and in usable or operable condition.

2. 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.

3. 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.

4. 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.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

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2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement

or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

### ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

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#### 3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required 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 labor, documentation, services, 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 provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

#### 3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or

responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

#### 3.03 *Reporting and Resolving Discrepancies*

##### A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

##### B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, 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:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any 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).

### 3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

I. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

### 3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### 3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's

sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

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### 4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. 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. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

#### C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

*A. Shown or Indicated:* 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 Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

- a. reviewing and checking all such information and data,
- b. locating all Underground Facilities shown or indicated in the Contract Documents,
- c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

#### *B. Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will

promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 4.05 *Reference Points*

*A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.*

#### 4.06 *Hazardous Environmental Condition at Site*

*A. Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

*B. Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition 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. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such 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, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to

entitlement to or on the amount or extent, if any, of an adjustment 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 Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 - BONDS AND INSURANCE

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### 5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified



in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

#### 5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

#### 5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

#### 5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection

from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

#### 5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

#### 5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any

Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

### ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

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#### 6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, 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 not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer 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 or

received from the superintendent shall be binding on Contractor.

#### 6.02 *Labor; Working Hours*

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.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

#### 6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, 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 performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

#### 6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

#### 2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

**B. Substitute Construction Methods or Procedures:** If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

**C. Engineer's Evaluation:** Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

**D. Special Guarantee:** Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

**E. Engineer's Cost Reimbursement:** Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

**F. Contractor's Expense:** Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

#### 6.06 Concerning Subcontractors, Suppliers, and Others

**A.** Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity 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 individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner'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 individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

**C.** Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual

or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

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

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *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 Engineer its use is subject to patent rights 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.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. 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. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

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

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

## 6.10 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.

## 6.11 Use of Site and Other Areas

### A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

*B. Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

*C. Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

*D. Loading Structures:* 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.

## 6.12 Record Documents

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

## 6.13 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 shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

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.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property 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 other 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.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Draw-

ings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 *Hazard Communication Programs*

A. 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 at the Site in accordance with Laws or Regulations.

#### 6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

##### 1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:* Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

##### C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents



with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

#### D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for 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.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

#### E. Resubmittal Procedures

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

#### 6.18 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 permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

#### 6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

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

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

#### 6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal

shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

## ARTICLE 7 - OTHER WORK AT THE SITE

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### 7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and

properly 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 Engineer 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 to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

#### 7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

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### 8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### 8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

### 8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### 8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

### 8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

### 8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

### 8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

### 8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

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

#### 8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

#### 8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

### ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

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#### 9.01 *Owner's Representative*

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

#### 9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep

Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or 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 the performance of the Work.

#### 9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

#### 9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by 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. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

#### 9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show

partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or 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 the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

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10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. 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. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

#### 10.02 *Unauthorized Changes in the 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, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

#### 10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

#### 10.04 *Notification 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 provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

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### 11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, 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 itemized in Paragraph 11.01.B.

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. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. 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' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of 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 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 Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and

Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any 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 and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

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

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. 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.

c. 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 Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the 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.

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

e. Deposits lost for causes other than 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, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have

resulted from causes other than 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. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

**B. Costs Excluded:** The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, 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 branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.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. 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.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

**C. Contractor's Fee:** When all the Work is performed on the basis of cost-plus, Contractor's fee shall

be determined as set forth in the Agreement. 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, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

**D. Documentation:** Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

### B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

### C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

## 11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.



B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

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### 12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an

allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

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 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. 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 Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. 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 12.01.C.2.a through 12.01.C.2.e, inclusive.

### 12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted

by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

### 12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

## ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

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### 13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

### 13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

### 13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer'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. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

#### 13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered 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, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 13.05 *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 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, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

#### 13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

#### 13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer'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, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs

after such recommendation, an appropriate amount will be paid by Contractor to Owner.

#### 13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, 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 or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or 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, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and 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 parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

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14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an

experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

#### C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

#### D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

#### 14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

#### 14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral

satisfactory to Owner to indemnify Owner against any Lien.

*B. Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the 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 for Payment.

*C. Payment Becomes Due*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and, will be paid by Owner to Contractor.

*14.08 Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

*14.09 Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

**ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION**

---

*15.01 Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

*15.02 Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure 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 Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety ) seven days written notice of its intent to terminate the services of Contractor:



1. 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, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. 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

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

#### 15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## ARTICLE 16 - DISPUTE RESOLUTION

---

### 16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim to another dispute resolution process, or
3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

## ARTICLE 17 - MISCELLANEOUS

---

### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### 17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### 17.04 *Survival of Obligations*

A. 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 or termination or completion of the Contract or termination of the services of Contractor.

### 17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

### 17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

# SUPPLEMENTARY CONDITIONS

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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a practice division of the  
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Construction Specifications Institute



Knowledge for Creating  
and Sustaining  
the Built Environment

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A. These Supplementary Conditions amend or supplement the Standard General Conditions (or Standard General Conditions-Funding Agency) of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemental remain in full force and effect.

B. The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

## ARTICLE I – DEFINITIONS AND TERMINOLOGY

---

1. Section 00700 (00710), following Article 1.01.A.52 (1.01.A.53), add the following paragraph:

53.(54.) Bonds - Bid, performance and Payment Bonds and/or other instruments of security.

2. Section 00700 (00710) – Article 1.01.A.28 (1.01.A.29), change the first sentence to read: “A written notice given by Owner to Contractor (with copy to Engineer) . . .”

3. Section 00700 (00710), following Article 1.01.A.53 (1.01.A.54), add the following paragraph:

54.(55.) Partial Utilization – Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching completion for all the Work.

4. Section 00700 (00710), following Article 1.01.A.54 (1.01.A.55), add the following paragraph:

55.(56.) Special Conditions – Additional instructions to the Bidder/Contractor denoting special construction or other requirements applicable to this Contract.

5. Section 00700 (00710), Article 1.01.A.34 (1.01.A.43), delete this paragraph in its entirety.

6. Section 00700 (00710), Article 1.01.A.42 (1.01.A.43), revise the paragraph to read “Lands or areas indicated in the Contract Documents as being furnished by the Owner upon which the work is to be performed, including fee simple property, rights-of-way, permanent and temporary construction easements, encroachment permits from governmental and private entities, and such other lands furnished by the Owner which are designated for the use of the Contractor in the completion of the Work.”

7. Section 00700 (00710), following Article 1.01.A.55 (1.01.A.56), add the following paragraph:

56.(57.) Written Notice – Any notice to any party of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the Work.

## ARTICLE 2 – PRELIMINARY MATTERS

---

1. Section 00700 (00710), Article 2.01.B, revise to read as follows:

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor shall deliver to the Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which the Owner or any additional insured may reasonably request) which Contractor is required to purchase and maintain in accordance with Article 5.

2. Section 00700 (00710), Article 2.02, revise the paragraph to read as follows:

A. Owner shall furnish to Contractor up to 5 printed or hard copies of the Drawings and Specifications. Additional copies will be furnished upon request at the cost of reproduction.

3. Section 00700 (00710), Article 2.03, replace paragraph A to read as follows:

“The Contract Times will commence to run on the tenth day after the Notice to Proceed is given and executed by the Contractor. The Notice to Proceed may be given at anytime within 90 days after the date of the Bid Opening. In no event will the Contract Times commence to run later than the one-hundredth day after the day of Bid Opening.”

4. Section 00700 (00710), Article 2.03, add paragraph B to read as follows:

B. Should the Notice to Proceed not be issued within 90 days of Bid Opening, the Contractor may withdraw his bid from consideration or negotiate with the Owner for extension of the bid, as may be applicable and agreeable.

5. Section 00700 (00710), Article 2.05, delete paragraph A and replace with the following paragraph A:

A. Preliminary Schedules

The Contractor shall, within 5 days after the Work commences on the Contract or another period of time determined by the Owner/Engineer, prepare and submit to the Owner/Engineer:

1. Three copies of a practicable schedule showing the order in which the Contractor proposes to perform the Work, and the dates on which the Contractor contemplates starting and completing the several salient features of the Work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of Work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Owner/Engineer may withhold approval of progress payments until the Contractor submits the required schedule.

2. The Contractor shall enter the actual progress on the chart at the end of each month during the construction period and upon doing so shall immediately deliver 3 copies of the annotated schedule to the Owner/Engineer.

3. If the Contractor falls behind the progress schedule, the Contractor shall take such steps as may be necessary to improve the progress. Such steps may include increasing the number of shifts, overtime operations, days of work, amount of construction plant, or all of them, and to submit for review any supplementary schedule or schedules in chart form necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the Owner.

4. Failure of the Contractor to prosecute the Work with sufficient diligence to ensure completion within the time specified in the Contract, or failure of the Contractor to take necessary steps to improve the Contractor's progress should it fall behind the Contractor's schedule shall be grounds for the Owner to terminate the Contractor's right to proceed with the Work, or any separate part of it, in accordance with the terms of the Contract.

5. A schedule of Shop Drawing submissions acceptable to the Engineer as providing a workable arrangement for processing the submissions.

6. A schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. The schedule of values must be acceptable to the Engineer as to form and substance.

7. The Contractor shall also submit a schedule of payments that the Contractor anticipates the Contractor will earn during the course of the Work.

#### ARTICLE 3 – CONTRACT DOCUMENTS, INTENT, AMENDING, REUSE

---

1. Section 00700 (00710), Article 3.01, delete paragraph A and insert the following paragraph:

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

2. Section 00700 (00710), Article 3.01.B, at the end of the paragraph, add the following wording:

“When words which have a well-known technical or trade meaning are used to describe the Work, materials or equipment, such words shall be interpreted in accordance with that meaning.”

3. Section 00700 (00710), Article 3.01, add the following paragraph D:

D. In case of conflict between the Drawings and Specifications, the specifications shall govern unless specifically noted to the contrary in the Drawings. Figure dimensions on Drawings shall govern over scale dimensions, and detailed drawings shall govern over General Drawings.”

#### ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

---

1. Section 00700 (00710), Article 4.01, delete the first sentence of paragraph A and replace it with the following sentence:

A. All land required for this Project is presently owned by the Owner or is under condemnation. The limits of ownership are shown on the Drawings. Easements for pipelines have been obtained by the Owner or are under condemnation. Easement widths are shown on the Drawings.

The remaining wording in the paragraph remains unchanged.

2. Section 00700 (00710), Article 4.01, delete paragraph C and replace with the following paragraph:

C. The Contractor shall provide at his own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

3. Section 00700 (00710), Article 4.02, paragraph A – Reports and Drawings, delete the words “The Supplementary Conditions” and replace with the words “The Special Conditions and/or Bid Proposal Addendums identify . . .”

4. Section 00700 (00710), Article 4.04, add the following paragraphs:

C. Damages

1. Repair to existing utilities and facilities damaged by the CONTRACTOR'S construction forces shall be considered as a part of the Contract covered only by the prices bid for the new construction. The only exceptions to this provision, wherein extra compensation will be authorized, are:

a. Relocation of an existing facility due to direct conflict with the new pipeline.

b. Relocation (outside of limits of maximum allowable trench widths) of an existing facility presently located within the bounds of maximum allowable trench width, where necessitated for assurance against future damage due to settlement or to permit reasonable access to the new work.

2. Repair to damaged underground utilities, whether reimbursable or otherwise, must meet the requirements of the agency in charge of that particular utility.

3. The intent of this article is to assure compensation to the CONTRACTOR for changes in existing utilities reasonably necessary, and at the same time, to protect the OWNER against excessive damages due to carelessness of the CONTRACTOR'S construction forces.

4. Compensation for extra work covered herein shall be in accordance with other provisions of the General Conditions.

5. Section 00700 (00710), Article 4.05, following paragraph A, add the following paragraph B:

B. The layout of the work shall be the responsibility of the Contractor and shall be subject to checking by the Engineer. The Engineer shall establish base lines and a system of bench levels for the Contractor's use as required. All instruments, stakes, barricades, traffic signs, flags, and other materials necessary, and personnel needed for establishing and marking lines, grades, and structure location during construction, shall be the responsibility of the Contractor.

The Contractor's personnel engaged in the layout work described herein and the aides furnished to the Engineer shall be fully capable of performing the duties set out herein and shall be fully qualified for the work required.

1. Sewer Lines

The Engineer will provide geometric base data for the Contractor's use in locating sewers and facilities in the design location. The locations for vertical control (bench marks) are shown on the Drawings with elevation and description duly noted. Each manhole, pumping station, wetwell or other notable sewage system component shall have the coordinates shown at the individual locations or listed with the General Notes of the Drawings. It shall be the Contractor's responsibility to locate the new facilities in their intended position using survey grade GPS survey equipment. It shall also be the Contractor's responsibility to provide offset hubs at each manhole or such reference points as may be required to maintain the location of each new installation.

Where the Contractor elects to use grade (batter) boards for sewer construction, offset line and grade stakes shall be set and cut sheets prepared before trenching work is started. All stake-out work and cut sheet preparation shall be accomplished by the Contractor, the Engineer being responsible review and checking the finished cut sheets. The Contractor shall provide all material, equipment and labor for all stake-out work. Cut sheets, where required, shall be prepared on forms supplied by the Engineer 9HKB Form 404-4).

The cut sheets shall contain the following minimum information:

- a. Manhole stations
- b. Grade between manholes
- c. Centerline and offset stations
- d. Amount and direction of offset
- e. Centerline elevation
- f. Centerline cut
- g. Offset elevation
- h. Offset cut
- i. Utilities information and depths and/or any other pertinent information

Where the Contractor elects to use grade (batter) boards for sewer construction, offset line shall be set perpendicular to each 25 foot centerline station. Where laser beam equipment is to be used, the offset line shall be as required for the specific type of laser equipment used. In either case, the Contractor shall be required to maintain at least the offsets at manholes until the sewer main has been constructed.

Where paving or curbs and gutters are existing or where line and grade stakes have been established for same, the Contractor shall determine the elevation of and construct the manholes to the height of the adjacent facilities either existing or proposed. Where paving curbs and gutters or stakes are not existing, the Contractor shall construct the manholes to the height determined by the Engineer.



The Contractor shall furnish all materials required for layout by the Contractor's forces. The Contractor shall furnish all labor and equipment for clearing underbrush, weeds, etc., prior to staking of the sewers.

2. Water, Gas and Sewage Force Mains

Trench line stations will be set by the Contractor ahead of trenching. These will be set at least every 100 feet of pipeline and at the locations of all pipeline accessories.

6. Section 00700 (00710), Article 4.06, paragraph A – Remove the words “Supplementary Conditions” and Replace with the words “Special Conditions and/or Bid Proposal Addendums . . .”

ARTICLE 5 – BONDS AND INSURANCE

1. Section 00700 (00710), Article 5.01, paragraph C – Change the notification time from 20 days to 5 days.

2. Section 00700 (00710), Article 5.03 – Delete paragraph B.

3. Section 00700 (00710), Article 5.03 - Add the following new paragraphs immediately after Paragraph 5.03.A:

B. Failure of Owner to demand such certificates or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

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

4. Section 00700 (00710), Article 5.04 - Add the following new paragraph immediately after Paragraph 5.04.B:

C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:

- a. State: Statutory
- b. Applicable Federal (e.g., Longshoreman's): Statutory
- c. Employer's Liability: \$500,000 min

2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:

- a. General Aggregate \$2,000,000 min
- b. Products - Completed Operations Aggregate \$2,000,000 min)
- c. Personal and Advertising Injury \$1,000,000 min
- d. Each Occurrence (Bodily Injury and Property Damage) \$1,000,000 min

e. Property Damage liability insurance will provide Explosion, Collapse, and Under-ground coverages where applicable.

- f. Excess or Umbrella Liability
  - 1) General Aggregate \$5,000,000 RD
  - 2) Each Occurrence \$5,000,000 RD

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

- a. Bodily Injury:
  - Each Person \$1,000,000 min
  - Each Accident \$1,000,000 min
- b. Property Damage:
  - Each Accident \$1,000,000 min
  - Annual Aggregate \$1,000,000 min
- c. Combined Single Limit of \$1,000,000 min

4. The Contractual Liability coverage required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

- a. Bodily Injury:
  - Each Person \$2,000,000 min
  - Each Accident \$2,000,000 min
- b. Property Damage:
  - Each Accident \$2,000,000 min
  - Annual Aggregate \$2,000,000 min

5. [Here list additional types and amounts of insurance that may be required by Owner.]

6. Other persons or entities to be included on policy as additional insureds:

- a. Owner: Navitas Utility  
3186-D Airway Avenue  
Costa Mesa CA 92626
- b. Engineer: Bell Engineering  
2480 Fortune Drive, Suite 350  
Lexington KY 40509
- c. Keystone Foods  
2294 Kentucky Highway 90 West  
Albany KY 42602

7. Acceptable additional insureds form is CG20 37 07 04—Completed Operations.

5. Section 00700 (00710), Article 5.06, following paragraph A.6 – Add the following paragraphs 4 and 5:

4. Where work involves railroad rights-of-way, the Contractor shall purchase and maintain at the Contractor's expense for the full Contract Period or as required, Railroad Protective Insurance in an amount acceptable to the railroad company.

5. On Federally funded projects, the Contractor shall purchase and maintain at the Contractor's expense for the full Contract Period or as required, flood insurance where the project is in a designated flood hazard area in which Federal flood insurance is available.

6. 5.06.A. Delete Paragraph 5.06.A in its entirety and insert the following in its place:

A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof.

1. This insurance shall:

a. include the interests of Owner, Contractor, Subcontractors, Engineer and any other individuals or entities identified herein, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

b. in addition to the individuals and entities specified, include as additional insureds, the following:

1) Other persons or entities to be included on policy as additional insureds:

- (a) Owner:  
Navitas Utility  
3186-D Airway Avenue  
Costa Mesa CA 92626
- (b) Engineer:  
Bell Engineering  
2480 Fortune Drive  
Suite 350  
Lexington KY 40509
- (c) Keystone Foods  
2294 KY Hwy 90 W  
Albany KY 42602

c. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

d. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

e. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

f. allow for partial utilization of the Work by Owner;

g. include testing and startup; and

h. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

2. Contractor shall be responsible for any deductible or self-insured retention.

3. The policies of insurance required to be purchased and maintained by Contractor in accordance with this Paragraph SC-5.06.A shall comply with the requirements of paragraph 5.06.C of the General Conditions.

7. Section 00700, Article 5.06.B, first word of first sentence, change "Owner" to "Contractor."

8. Section 00700, Article 5.06.E, delete this paragraph.

9. Section 00700, Article 5.08, delete this paragraph.

## ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

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1. Section 00700 (00710), Article 6.01, following paragraph B, add a new paragraph C as follows:

C. The Contractor shall at all times be responsible for the conduct and discipline of his employees and/or any Subcontractor or persons employed by the Subcontractor. All workmen must have sufficient knowledge and skill and experience to perform properly the work assigned to them. Any superintendent, foreman or workman employed by the Contractor or Subcontractor who does not perform his work in a skillful manner or acts in an incompetent, disorderly or intemperate manner shall, at the written request of the Owner, be discharged immediately.

2. Section 00700 (00710), Article 6.03, following paragraph C, add the following paragraphs D, E, F and G:

D. Any equipment damaged or which has been subjected to possible damage by reason of inundation, improper storage and/or protection during the construction period of a project, shall be handled only as follows:

Be replaced with new equipment.

With approval of the Engineer, be returned to the manufacturer of the equipment, or his authorized repair agency, for inspection and repair provided; however, that such repair after inspection will place the equipment in new condition, and restore the manufacturer’s guarantee the same as for new equipment.

This is particularly applicable to, but not limited to, electric motors, motor controls, meter and gauges, and equipment with bearings.

E. Materials, supplies and equipment shall be in accordance with samples submitted by the Contractor and accepted by the Engineer.

F. Materials, supplies or equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

G. The use of second hand and/or salvaged materials will not be permitted unless specifically provided for in the detailed Specifications. Materials and equipment shall be new when turned over to the Owner.

All materials and/or equipment to be removed from existing structures and not specifically specified to be re-used shall remain the property of the Owner. Such materials and/or equipment shall be stored by the Contractor on sites as directed by the Owner.

3. Section 00700 (00710), Article 6.17.A.1.a, revise the paragraph to read:

a. Submit six (6) copies of each shop drawing required. Upon review and acceptance of shop drawing of material or equipment submitted, two (2) copies will be returned to Contractor noting approval or approval with notations.

4. Section 00700 (00710), Article 6.17.A.2.a, revise paragraph to read:

a. Submit six (6) units of each sample required.

5. Section 00700 (00710), Article 6.17.B, add the following to the existing paragraph:

No portion of the work requiring a shop drawing, working drawing, sample, or catalog data shall be started nor shall any materials be fabricated or installed prior to the review or qualified review of such item. The Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

6. Section 00700 (00710), Article 6.17.C, add the following to paragraph 2:

The certification statement shall include the following information: contract name, contract number, submittal number, contractor’s name, contractor’s signature (original, not initialed), date, and reference to meeting the obligations required under 00700 (00710), Article 6.17.C.

7. Section 00700 (00710), Article 6.17.C, add the following paragraphs:

4. Shop drawing submittals shall contain:

a. The date of submission and the dates of any previous submissions.

b. The project title, contract number, and submittal number.

c. CONTRACTOR identification.

d. The names of:

- (1) CONTRACTOR
- (2) Supplier
- (3) Manufacturer

e. Identification of the product, with the Specification section number.

f. Field dimensions, clearly identified as such.

g. Relation to adjacent or critical features of the work or material.

h. Applicable standards, such as ASTM or Federal Specification numbers.

i. Identification of deviations from Contract Documents.

j. Identification of revisions on resubmittals.

k. An 8-inch x 3-inch blank space for CONTRACTOR'S and ENGINEER'S stamps.

l. Critical path notation as required.

#### 5. Coordination of Submittal Times

a. The CONTRACTOR shall prepare and transmit each submittal sufficiently in advance of performing the related Work or other applicable activities, or within the time specified in the individual Work section of the Specifications, so that the installation will not be delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities.

8. Section 00700 (00710), Article 6.17.E, add the following paragraph:

2. The Contractor shall bear the cost for review and processing of shop drawings after the second resubmittal.

#### ARTICLE 7 – OTHER WORK AT THE SITE

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Revisions not required.

#### ARTICLE 8 – OWNER'S RESPONSIBILITIES

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Revisions not required.

#### ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

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1. Section 00700 (00710), following Article 9.01.A, add a new paragraph B as follows:

B. Limit of Liability of Public Officials and Owner's Agents.

In carrying out any of the provisions of the Contract or in exercising any power or authority to him thereby, there shall be no personal liability upon the engineer or the Owner's other authorized assistants or employees, it being understood that in such matters they act as the agents and representatives of the Owner.

2. Section 00700 (00710), following Article 9.03.A, add a new paragraph B:

B. Resident Project Representative

The Resident Project Representative assigned to the construction project is a representative of the Engineer whose function is to assist the Engineer in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of materials and equipment by the Resident Project Representative, the Engineer shall endeavor to provide further protection for the Owner against defects and deficiencies in the Work; but, the furnishing of such services will not make the Engineer responsible for or give the Engineer control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs, or responsibility for the Contractor's failure to perform the Work in accordance with the Contract Documents.

The Resident Project Representative is the Engineer's agent at the site, will act as directed by and under the supervision of the Engineer, and will confer with the Engineer regarding the Resident Project Representative's actions. The Resident Project Representative's dealings in matters pertaining to the on-site work shall in general be with the Engineer and the Contractor keeping the Owner advised as necessary. The Resident Project Representative's dealings with Subcontractors shall only be through or with the full knowledge and approval of the Contractor. The Resident Project Representative shall generally communicate with the Owner with the knowledge of and under the direction of the Engineer.

The duties and responsibilities of the Resident Project Representative are limited to those of the Engineer as described in the Engineer's agreement with the Owner and in the construction Contract Documents, and are further limited and described as follows:

Conduct on-site observations of the Work in progress to assist the Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

Report to the Engineer whenever the Resident Project Representative believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise the Engineer of Work that the Resident Project Representative believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by the Engineer.

Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.

Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.

The Resident Project Representative shall receive a copy of all correspondence from the Contractor, and shall be kept fully informed of all the Contractor's transactions with the Engineer, including status of submittal and review of Shop Drawings.

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#### ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

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Revisions not required.

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#### ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

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1. Section 00700 (00710), Article 11.01, at the end of paragraph 11.01.A.5.c, add the following wording:

Equipment rental charges by the Contractor for rented equipment units used on "Extra Work" or "Changes in Work" as may be ordered and authorized by the Owner shall not exceed those charges listed in the latest edition of the "Green Book," compiled and distributed by Associated Equipment Distributors, 615 West 22nd Street, Oak Brook, Illinois 60523.

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#### ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

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Revisions not required.

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#### ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

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Revisions not required.

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#### ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

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Revisions not required.

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#### ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

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Revisions not required.

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#### ARTICLE 16 – DISPUTE RESOLUTION

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Revisions not required.

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#### ARTICLE 17 – MISCELLANEOUS

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1. Section 00700 (00710), following Article 17.06, add a new Article 17.07, titled "Assignments":

##### 17.07 Assignments

Neither the Contractor nor the Owner shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest herein, or his obligations thereunder, without written consent of the other party.

2. Section 00700 (00710), following Article 17.07, add a new Article 17.08, titled "Ownership of Plans and Models":

**17.08 Ownership of Plans and Models**

All Drawings, Specifications and copies thereof furnished by the Engineer are the property of the Engineer. They are not to be used on other work and, with the exception of the signed contract set, are to be returned to the Engineer upon request at the completion of the work. All models are the property of the Owner.

**SECTION 00815**

**LABOR REGULATIONS ON PUBLIC WORKS  
KENTUCKY PROJECTS**

- A. All Public Works Projects submitted for bids and constructed by a Public Authority in the State of Kentucky are subject to the provisions of the Kentucky Revised Statutes, Chapter 337, entitled Wages and Hours as may be amended from time to time. Contractors submitting Bids for the specified project must consider the fact that in the event of an award it shall be his responsibility to comply with all aspects of the statutory requirements contained therein while engaged upon the project covered by these Specifications.
  
- B. A Department of Labor Regulation for Contractors on Public Works prescribes that the prime CONTRACTOR on a project shall, by the tenth day of each month, forward to the Kentucky Department of Labor, Division of Labor Standards, Frankfort, Kentucky all weekly payroll data of all his employees employed on such Public Works, for the preceding month, on forms furnished or approved by the Kentucky Department of Labor. The same requirements apply to all Subcontractors on the Project and under the regulation the prime CONTRACTOR is responsible for compliance of all his Subcontractors.

**END OF SECTION**

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**SECTION 00820**

**SPECIAL CONDITIONS**

1. DESCRIPTION OF THE WORK; DESIGNATION OF OWNER AND ENGINEER

1.1 These Specifications and the accompanying Drawings describe the work to be done and the materials to be furnished for the construction of Contract 594-14-01, Navitas Utility, Costa Mesa, California.

1.2 All references to the OWNER in these Specifications, Contract Documents and Drawings shall mean the Navitas Utility.

1.3 All references to the ENGINEER in these Specifications, Contract Documents and Drawings shall mean Bell Engineering.

2. AVAILABLE FUNDS

2.1 The attention of all Bidders is directed to the fact that funds will be made available for the award of this Contract from Navitas Utility.

3. TIME OF COMPLETION

3.1 The time allowed for completion of this Contract and/or portions as stated in Section 00200, Article 24, thereof is as follows:

Substantial Completion:	150 calendar days
Final Completion:	180 calendar days

3.2 The time allowed for completion shall begin at midnight, local time, 10 calendar days from the date on which the OWNER, or his authorized representative, the ENGINEER, shall instruct the CONTRACTOR in writing to start work. In case of awarding more than one Contract to a CONTRACTOR, periods of construction are not additive, but will run concurrently. The same applies to divisions within a Contract.

4. LIQUIDATED DAMAGES

4.1 It is understood that time is of the essence of this Contract, and that the OWNER will sustain damages, monetary and otherwise, in the event of delay in completion of the work hereby contracted.

4.2 Therefore, if the said CONTRACTOR shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the OWNER, then the CONTRACTOR does hereby agree, as a part consideration for the awarding of this Contract, to pay to the OWNER the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of Contract as hereinafter set forth, for each and every calendar day that the CONTRACTOR shall be in default after the time stipulated in the Contract for completing the work.



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4.3 The said amount is fixed and agreed upon by and between the CONTRACTOR and the OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would in such event sustain, and said amount is agreed to be the amount of damages which the OWNER would sustain and said amount shall be retained from time to time by the OWNER from current periodical estimates.

4.4 Liquidated damages are fixed at the following amounts per calendar day of overrun beyond the date set for completion or authorized extension thereof for each of the Contracts, divisions, sections, or combinations thereof:

Contract 594-14-01 - \$500.00 per calendar day

## 5. METHOD OF BIDDING

5.1 The Form of Proposal and the Project are in 1 Contract and shall be bid by unit price, the sum of extension of unit prices determining the amount of the bid. The sum of the unit price extensions shall cover the complete construction of the work as estimated, planned and specified.

5.2 The CONTRACTOR must bid all divisions and all listed unit price items and/or lump sums to complete a Contract. The OWNER will not award the work on divisions or sections within a Contract separately. Each Contract shall be bid separately and in full on the Form of Proposal provided.

5.3 In the case of major equipment item bidding, the CONTRACTOR must bid the base bid item.

5.4 The OWNER reserves the right to delete divisions, sections, and/or unit price items, or any combination thereof, in making award of Contract, without invalidating the CONTRACTOR's bid on other divisions.

5.5 The OWNER reserves the right, should financing considerations require or allow, to delete or add physical units to the unit price items bid. However, the monetary value of such deletions or additions shall not exceed 25 percent of the total amount bid for the Contract without specific approval of the CONTRACTOR.

5.6 If deletions or additions are made, comparison of bids will be made on the basis of portions of the Contract to be awarded and not on the total of the base bid made by the CONTRACTOR.

## 6. VIDEO TAPING

6.1 Continuous video recording of preconstruction surface conditions is required for this Contract. All recording and reproduction must be completed before any construction activity will be allowed. Recording must be performed by persons experienced with this type equipment and must be acceptable to the ENGINEER. Recording equipment used shall utilize standard DVD format discs.

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6.2 The video recording shall be supplemented with continuous audio description of the area traversed. Verbal description of problem areas and items of special interest shall be elaborated upon.

6.3 All locations, streets and/or easements on or in which construction activity will occur shall be recorded for the complete length or boundary of the construction area.

6.4 An index shall be furnished for each DVD coordinating the location of the recorded area with the location of the proposed facilities as shown on the Drawings.

6.5 The CONTRACTOR shall be responsible for providing access to all areas to be recorded. All DVD's shall be viewed by the ENGINEER before any construction is started. The CONTRACTOR shall provide DVD viewing equipment for the duration of the project.

6.6 The cost of preconstruction audio/video recording shall be at no additional cost to the OWNER, the cost being incorporated into the CONTRACTOR's unit price or lump sum bid for the items of work as listed on the Form of Proposal.

6.7 The CONTRACTOR is also urged to document on video any structure within a reasonable distance of his blasting or other work operations for reference and file.

6.8 Digital color print still photographs shall be used to supplement the continuous video recording of preconstruction conditions and/or pertinent construction items.

6.8.1 All photographs shall be compiled and saved onto a standard CD-R or DVD-R format disc.

6.9 Any photographs or audio/video recordings required by governing agencies will be the responsibility of the OWNER.

6.10 The CONTRACTOR shall submit to the ENGINEER a number of copies of these documentation media in accordance with the Contract Documents.

6.10.1 Video recordings on DVD-R format discs shall be submitted in a quantity greater than or equal to 3 copies.

6.10.2 Digital still photographs on DVD-R or CD-R format discs shall be submitted in a quantity greater than or equal to 3 copies.

## 7. MINIMUM WAGE RATES

7.1 Not applicable to this Project.

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8. EXCAVATION

8.1 It is to be specifically noted that no separate payment for solid rock excavation will be made under this Contract. All excavation shall be considered unclassified, and payment for same included in the appropriate furnishing and laying or other items containing excavation.

9. PERMISSION TO USE PROPERTY OTHER THAN THAT PROVIDED BY OWNER

9.1 Should the CONTRACTOR desire or elect to use, pass over and/or encroach on private property other than that provided by the OWNER, either by fee simple title or right-of-way for a specific purpose, he shall obtain such rights and permission from the individual property owner at his own expense and risk.

10. TIE-IN TO EXISTING GAS MAINS

10.1 As far as possible, the locations and sizes of existing mains are indicated on the Drawings; however, exact locations, pipe materials and sizes cannot be guaranteed. It shall be the responsibility of the CONTRACTOR to locate and uncover existing lines, to which new mains are to be connected, and provide all connecting fittings of the correct size and type for each connection. Payment for the above shall be included in the unit price bid for each item used for the connection as indicated on the Drawings or as specified.

11. EXTRA FILL MATERIAL

11.1 Extra fill material required to complete the finished grading to the line and grade shown on the Drawings shall be obtained by the CONTRACTOR at no extra cost to the OWNER above that included in his lump sum bid.

12. SURFACE RESTORATION RETAINAGE

12.1 From each monthly payment estimate, there will be retained from the unit prices for "Furnishing, Laying, Trenching, and Backfilling" an amount of \$3.00 per foot for cleanup operations. Upon completion of clean-up work satisfactory to the ENGINEER, this retainage will be paid on the following periodic payment estimate.

13. ACCESS TO THE WORK

13.1 The representatives of the OWNER, ENGINEER, the Kentucky Transportation Cabinet, and other agencies having jurisdiction, shall have access to the work wherever it is in preparation or progress, and the CONTRACTOR shall provide proper facilities for such access and inspection..

14. BLASTING AND PREBLAST SURVEYS

14.1 The CONTRACTOR will be held liable for all damages caused by blasting operations required for the construction of this project. All blasting operations shall be performed in accordance with local municipal ordinances and state laws governing such operations, including the storage of explosives.

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14.2 Special precautions are required when blasting near natural gas pipelines. The CONTRACTOR shall notify the OWNER of the gas line at or near the area of blasting prior to beginning the blasting operation. The CONTRACTOR shall, with or without assistance from the gas company, develop emergency procedures, planned in advance of each blast.

14.3 Preblast surveys are required on this project for the protection of all parties concerned. These surveys shall be conducted by independent firms specializing in blasting damage control safety.

14.4 Preblast surveys shall be detailed studies of all commercial, industrial, residential or other structures within the areas subject to damage as a result of the blasting operations. The surveys shall include the exterior and/or interior of the building and other improvements on the property such as concrete, brick or bituminous paved drives, parking areas, sidewalks, retaining walls or pillars subject to damage as a result of blasting operations. In rural areas, the surveys shall also include water sources such as wells, springs and dams for farm ponds.

14.5 Individual reports shall be prepared for each parcel of property surveyed within the given radius of the blasting area. Each report shall indicate the type and location of existing structural damage, or the fact that none exists, shown in detail by sketch supplemented by color photo, audio cassette tape supplemented by color photo or video tape, as the CONTRACTOR may elect. Should the video tape method be provided, a video projector shall be furnished for the project duration.

14.6 Preblast survey reports shall also include recommended blasting methods and techniques to preclude damage.

14.7 One copy of each individual report shall be filed with the OWNER for his file and reference prior to the start of blasting operations.

14.8 The cost for preblast surveys shall be considered incidental to the work and shall be included in the bid price for the work.

## 15. CONTRACT WARRANTY

15.1 CONTRACTOR shall provide a 1-year warranty for work completed and materials installed. The 1-year time period shall begin upon the ENGINEER'S certification that the project is substantially complete. Substantially complete shall be defined as all operational items in the Contract are installed, tested, and functioning properly.

**END OF SECTION**

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**SECTION 01010**  
**SUMMARY OF WORK**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK COVERED BY THE CONTRACT**

- A. These Specifications and the accompanying Drawings describe the work to be done and materials to be furnished for the construction of Contract 594-14-01, Natural Gas Line Extension, Keystone Foods, Navitas Utility, Albany, Kentucky, Costa Mesa, California.
- B. The Work is located in Clinton County, Kentucky, north of Albany, and along and parallel to U.S. 127, U.S. 127 Bypass, KY 3156, and KY 90.
- C. Major work items in this Contract include:

Phase 1

Furnishing and installation of 15,000 L.F. of 6-inch polyethylene (PE) gas pipe and accessories, and 1 pressure reducing station, including meter assembly.

Phase 2

Furnishing and installation of 24,600 L.F. of 6-inch polyethylene (PE) gas pipe and accessories, and 1 pressure reducing station, including meter assembly.

**1.02 WORK SEQUENCE**

- A. As stated in Section 00200, Article 24, Phase 1 shall be accomplished first. Work adjacent to Clinton County High School and Clinton County Middle School property shall be performed between May 28, 2014 and August 11, 2014.

**PART 2 MATERIALS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

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SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SANITARY FACILITIES

- A. The CONTRACTOR shall construct and maintain, in a sanitary condition, sanitary facilities for the CONTRACTOR'S employees and also employees of the Subcontractors. The CONTRACTOR shall, at completion of the Contract Work, properly dispose of these sanitary facilities.

1.02 UTILITIES

- A. The obtaining of all utilities for construction, including power and water, shall be the responsibility of the CONTRACTOR, and he shall bear the cost of all utilities used for construction. Cost of all connections and facilities for use of utilities shall be borne by the CONTRACTOR.

1.03 MAINTENANCE OF SERVICE IN EXISTING UTILITIES

- A. Where the existing utilities must be disturbed during construction under this Contract, their operation and function shall be maintained by the CONTRACTOR to such a degree that service to customers will be interrupted for minimum time periods only. Such disturbances and any maintenance use of these lines shall constitute no cost to the OWNER. **The OWNER shall be notified of interruptions in sufficient time to prepare for them and shall agree to the hour, date, and duration of them before they are undertaken.**
- B. Should shutdowns in service be in excess of the time of duration agreed upon, and such excessive shutdown time be due to the CONTRACTOR's negligence, faulty Work and/or inability to perform, then and in that event, the CONTRACTOR shall be held liable to the OWNER for any and all damages that may accrue to the OWNER, by reason of such excessive shutdown periods.
- C. Digging through services with trenching machines will not be permitted. Upon damage to utility services, such services shall be repaired immediately and tested to the satisfaction of the ENGINEER. The CONTRACTOR shall notify all utility users of impending interruption of service and shall be responsible for all damage resulting from same. Payment for necessary disconnection and reconnection of utility services shall be included as a part of the CONTRACTOR's bid and no extra compensation will be made for same.
- D. The CONTRACTOR shall at all times maintain on hand an adequate supply of repair materials and tools with which to make repair to damaged water, gas and sewer lines. Should the CONTRACTOR inadvertently damage existing utilities, he shall make immediate repair thereto and in no event shall he leave the site before such repair has been made and proven to be successful.

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- E. As far as possible, the locations and sizes of existing mains are indicated on the Drawings; however, exact locations, pipe materials and sizes cannot be guaranteed. It shall be the responsibility of the CONTRACTOR to locate and uncover existing lines, to which new mains are to be connected, and provide all connecting fittings of the correct size and type for each connection. Payment for the above shall be included in the unit price bid for each item used for the connection as indicated on the Drawings or as specified.

#### 1.04 PROPERTY PROTECTION

- A. Care is to be exercised by the CONTRACTOR in all phases of construction, to prevent damage and/or injury to the OWNER's and/or other property.
- B. The CONTRACTOR shall avoid unnecessary injury to trees and shall remove only those **authorized** to be removed by written consent of the OWNER. Fences, gates, and terrain damaged or disarranged by the CONTRACTOR's forces shall be immediately restored in their original condition or better.

#### 1.05 CONSTRUCTION WARNING SIGNS

- A. The CONTRACTOR shall provide construction warning signs for each location where he is working in the State highway right-of-way or in City streets. He will further provide flagmen as required and shall abide by all Kentucky Transportation Cabinet, Department of Highways safety rules, including size, type and placement of construction signs. All signs shall be of professional quality.

#### 1.06 RESIDENT PROJECT REPRESENTATIVE OFFICE

- A. Not required this Contract.

#### 1.07 ACCESS ROADWAYS

- A. The CONTRACTOR shall construct all access roadways needed during construction, and the planned access roadways for the completed project. The CONTRACTOR shall maintain access roadways continuously during the construction period.
- B. The CONTRACTOR shall maintain all existing roadways within the project site which are used for any purpose by his construction operations. The degree and frequency of maintenance shall be adequate to keep existing roadways in a condition at least equal to their condition prior to construction. Road maintenance shall include dust control and grading as necessary.

#### 1.08 RESPONSIBILITY FOR TRENCH SETTLEMENT

- A. The CONTRACTOR shall be responsible for any settlement caused by the construction, that occurs within 1 year after the final acceptance of this Contract by the OWNER. Repair of any damage caused by settlement shall meet the approval of the OWNER.

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**1.09 DAMAGE TO CROPS, LIVESTOCK AND VEGETATION**

- A. The CONTRACTOR shall protect crops, livestock and vegetation against damage or injury from construction operations at all times. Crops damaged or equipment access obtained outside of the easements provided shall be the responsibility of the CONTRACTOR. Temporary fences shall be provided at no extra cost to the OWNER wherever necessary to keep livestock away from the construction area. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Damaged limbs shall be trimmed and damaged tree trunks shall be treated with wound dressing.

**1.10 WASTE DISPOSAL**

- A. The CONTRACTOR shall dispose of waste, including any hazardous waste, off-site in accordance with all applicable laws and regulations.

**1.11 CONTRACTOR'S TRAILERS AND MATERIAL STORAGE**

- A. The location of the CONTRACTOR'S and Subcontractors' office and work trailers and parking areas on the project site shall be subject to the OWNER's approval.
- B. The location of the CONTRACTOR's and Subcontractors' material storage yards on the project site shall be subject to the OWNER's approval.

**1.12 CONSTRUCTION IDENTIFICATION SIGNS**

- A. The CONTRACTOR shall furnish and erect project identification signs if such are required by the funding agency.
- B. The CONTRACTOR shall obtain the OWNER'S permission before erecting any construction signs not specifically required by the Contract.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**END OF SECTION**

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## SECTION 01561

### EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials and equipment required for erecting, maintaining and removing temporary erosion and sedimentation controls as shown on the Drawings and as specified herein.
- B. Temporary erosion controls include, but are not limited to, grassing, mulching, seeding, watering, and reseeding on all disturbed surfaces, including waste area surfaces and stock-pile and borrow area surfaces; scheduling work to minimize erosion; and providing interceptor ditches at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.
- C. Temporary sedimentation controls include, but are not limited to, check dams, silt fences, and diversion channels, which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.
- D. The CONTRACTOR is responsible for providing and maintaining effective temporary erosion and sediment control measures during construction or until final controls become effective. CONTRACTOR shall certify that all necessary measures will be taken to protect water quality in and adjacent to the project by signing the sediment control plan, as included herein, as the responsible party. These include measures to:
  1. Reduce by the greatest extent practicable the area and duration of exposure of readily erodible soils.
  2. Protect the soils by use of straw protection or temporary vegetation as rapidly as is consistent with construction schedules.
  3. Provide dust control as specified.
  4. Use temporary bridges or culverts for construction crossings.
  5. Provide temporary measures for the control of erosion in the event construction operations are suspended for any appreciable length of time.
  6. Provide protection against discharge of pollutants such as chemicals, fuel, lubricants, sewage, etc., into any stream.
  7. Locate sanitary facilities away from streams, wells or springs.

## 1.02 STORM WATER POLLUTION CONTROL

- A. The CONTRACTOR shall exercise every reasonable precaution at all times to prevent water pollution by the erosion and disposition of sediment in streams, lakes, and reservoirs. He shall conduct and schedule his operations so as to avoid or minimize the muddying or siltation of areas adjacent to the construction site including streets, storm sewers, vacant lots, etc. No partially completed area of work shall be left in a manner that will contribute to erosion during the period in which work is suspended. The CONTRACTOR shall comply with all applicable state and local statutes relating to the prevention or abatement of water pollution.
- B. All sediment and erosion control facilities shall be maintained until construction is completed and final controls are effective.

## 1.03 SUBMITTALS

### A. Sediment and Erosion Control Plan

- 1. The CONTRACTOR shall develop and implement a Storm Water Pollution Prevention (BMP) Plan, providing and maintaining erosion and sediment control for work under this Contract. The CONTRACTOR shall specify the construction sequence before beginning construction, and shall follow the plan for the duration of the Contract, and shall remove all temporary erosion and sediment control devices once final controls become effective.
- 2. The CONTRACTOR shall comply with all necessary measures that need to be taken to protect water quality in and adjacent to project. This will be done through the submission of a Kentucky Pollutant Discharge Elimination System (KPDES) Form NOISW (Notice of Intent for Storm Water Discharge), which is provided in these Specifications. The CONTRACTOR will sign the completed form as the responsible party. The CONTRACTOR'S plan and revisions, if applicable, shall be on the construction site at all times.
- 3. The CONTRACTOR shall certify the plan completion of the Project and shall submit a Kentucky Pollutant Discharge System (KPDES) Form NOT-SW (Notice of Termination of Coverage Under the KPDES). The CONTRACTOR will be required to sign the completed plan as the responsible party. This form is to be completed and submitted to the Kentucky Division of Water upon completion of construction.
- 4. All features of the BMP plan and methods of erosion and pollution control shall meet the requirements as shown in the Kentucky Erosion Prevention and Sediment Control, Field Guide. Copies of this publication can be obtained at the Kentucky Division of Conservation, 663 Teton Trail, Frankfort, Kentucky 40601, and/or the Kentucky Division of Water, 200 Fair Oaks Drive, Frankfort, Kentucky 40601.

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**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

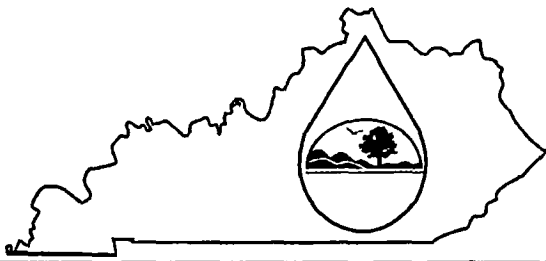
Not used.

**END OF SECTION**

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01561-3

# FORM NOI-SWCA



## KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

Notice of Intent (NOI) for coverage of Storm Water Discharges Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000

This is an application for:

- New construction activity.
- Modification of coverage for additional area in same watershed.
- Modification of coverage for additional area in different watershed.

If Modification is checked, state reason for Modification:

For Agency Use	Permit No. (Leave Blank)	K	Y	R	1	0				
For Agency Use	AI ID (Leave Blank)									

### SECTION I – FACILITY OPERATOR INFORMATION

Operator Name(s)*:		Phone*:	
Mailing Address*:		Status of Owner/Operator: <input type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> Public (other than state or federal)	
City*:	State*:	Zip Code*:	

### SECTION II – FACILITY/SITE LOCATION INFORMATION

Name of Project*:	Physical Address*:	City*:
State*:	Zip Code*:	County*:
Latitude (decimal degrees)*:	Longitude (decimal degrees)*:	SIC Code*:

### SECTION III – SITE ACTIVITY INFORMATION

For single projects provide the following information

Total Number of acres in project*:	Total Number of acres to be disturbed*:	Start date:	Completion date:
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For common plans of development projects provide the following information

Total Number of acres in project*:	Number of individual lots in development:	Number of lots to be developed:
Total acreage intended to be disturbed*:	Number of acres intended to be disturbed at any one time:	
Start date:	Completion date:	List Contractors:

### SECTION IV – DISCHARGE TO A WATER BODY

Name of Receiving Water*:	Anticipated number of discharge points:
Location of anticipated discharge points: Latitude (decimal degrees)*	Longitude (decimal degrees)*
Receiving Water Body Stream Use Designation	<input type="checkbox"/> Cold Water Aquatic Habitat <input type="checkbox"/> Domestic Water Supply <input type="checkbox"/> Outstanding State Resource Water <input type="checkbox"/> Secondary Contact Recreation <input type="checkbox"/> Primary Contact Recreation <input type="checkbox"/> Warm Water Aquatic Habitat
Antidegradation Categorization	<input type="checkbox"/> Outstanding National Resource Water <input type="checkbox"/> Exceptional Water <input type="checkbox"/> High Quality Water <input type="checkbox"/> Impaired Water
Name of Receiving Water*:	Anticipated number of discharge points:
Location of anticipated discharge points: Latitude (decimal degrees)*	Longitude (decimal degrees)*
Receiving Water Body Stream Use Designation	<input type="checkbox"/> Cold Water Aquatic Habitat <input type="checkbox"/> Domestic Water Supply <input type="checkbox"/> Outstanding State Resource Water <input type="checkbox"/> Secondary Contact Recreation <input type="checkbox"/> Primary Contact Recreation <input type="checkbox"/> Warm Water Aquatic Habitat
Antidegradation Categorization	<input type="checkbox"/> Outstanding National Resource Water <input type="checkbox"/> Exceptional Water <input type="checkbox"/> High Quality Water <input type="checkbox"/> Impaired Water

# FORM NOI-SWCA

<b>SECTION V – DISCHARGE TO AN MS4</b>			
Name of MS4:		Date of application /notification to the MS4 for construction site coverage:	
Number of discharge points:	Location of each discharge point: Latitude (decimal degrees):*		Longitude (decimal degrees):*
<b>SECTION VI – CONSTRUCTION ACTIVITIES IN OR ALONG A WATER BODY</b>			
Will the project require construction activities in a water body or the riparian zone: <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, describe scope of activity:			
Is a Clean Water Act 404 permit required: <input type="checkbox"/> Yes <input type="checkbox"/> No		Is a Clean Water Act 401 Water Quality Certification required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>SECTION VII – NOI PREPARER INFORMATION</b>			
First Name:*	Last Name:*	Phone:*	eMail Address:*
Mailing Address:*		City:*	State:*
Zip Code:*			
<b>SECTION VIII – ATTACHMENTS</b>			
Attach a full size color USGS 7½-minute quadrangle map with the facility site clearly marked. USGS maps may be obtained from the University of Kentucky, Mines and Minerals Bldg. Room 106, Lexington, Kentucky 40506. Phone number (859) 257-3896.			
<b>SECTION IX – CERTIFICATION</b>			
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
Signature:*		First Name:*	Last Name:*
Phone:*	eMail Address:		Date:*

This completed application form and attachments should be sent to: SWP Branch, Division of Water, 200 Fair Oaks, Frankfort, Kentucky 40601. Questions should be directed to: SWP Branch, Operational Permits Section at (502) 564-3410.

# KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM FORM NOI-SWCA – INSTRUCTIONS

## WHO MUST FILE A NOTICE OF INTENT (NOI) FORM

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the Storm Water Contact, Operational Permits Section, Kentucky Division of Water at (502) 564-3410.

## WHERE TO FILE NOI FORM

NOIs must be sent to the following address or submitted in on-line at <https://dep.gateway.ky.gov/eForms/Default.aspx?FormID=3>:

Operational Permits Section  
SWP Branch, Division of Water  
200 Fair Oaks Lane  
Frankfort, KY 40601

Electronic NOI-SWCAs are to be submitted a minimum of seven (7) working days prior to commencement of construction related activities. Paper NOI-SWCAs are to be submitted a minimum of thirty (30) working days prior to commencement of construction related activities.

## COMPLETING THE FORM

Enter information in the appropriate areas only. (\*) denotes a required field. Enter N/A (Not Applicable) for fields that are required but do not apply to your submission. If you have any questions regarding the completion of this form call the Storm Water Contact, Operational Permits Section, at (502) 564-3410.

### SECTION I – FACILITY OPERATOR INFORMATION

**Operator Name(s):** Enter the name or names of all operators applying for coverage under KYR10 using this NOI.

**Mailing Address, City, State, and Zip Code:** Provide the mailing address of the primary operator

**Phone No.:** Provide the telephone numbers of the person who is responsible for the operation.

**Status of Owner/Operator:** Select the appropriate legal status of the operator of the facility from the dropdown list.

Federal  
Public (other than federal or state)  
State  
Private

### SECTION II – FACILITY/SITE LOCATION INFORMATION

**Name of Project:** Provide the name of the project.

**Physical Address, City, State, Zip Code and County:** Provide the physical address of the project.

**Latitude/Longitude:** Provide the general site latitude and longitude of the operation.

**SIC Code:** Enter the Standard Industrial Code for the project

### SECTION III – SITE ACTIVITY INFORMATION

**For single projects provide the following information:**

**Total number of acres in project:** Indicate the total acreage of the project including both disturbed and undisturbed areas.

**Total number of acres to be disturbed:** Indicate the total number of acres of the project to be disturbed.

**Anticipated start date:** Indicate the approximate date of when construction activities will begin.

**Anticipated completion date:** Indicated the approximate date of when final stabilization will be achieved.

**For common plans of development provide the following information:**

**Total number of acres in project:** Indicate the total acreage of the project including both disturbed and undisturbed areas.

**Number of individual lots in development, if applicable:** Indicate the number of individual lots or unit in the common plan of development

**Number of lots to be developed:** Indicate the number of lots that you intend to develop.

**Total acreage of lots intended to develop:** Indicate the total acreage of the lots you intend to develop

**Total acreage intended to disturb:** Indicate the total acreage of the lots you intend to disturb

**Number of acres intended to disturb at any one time:** Indicate the maximum number of acres to be disturbed at any one time.

**Anticipated start date:** Indicate the approximate date of when construction activities will begin.

**Anticipated completion date:** Indicated the approximate date of when final stabilization will be achieved.

**List of contractors:** Provide the names of all known contractors that will be working on site.

**KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM  
FORM NOI-SWCA – INSTRUCTIONS**

**SECTION IV – IF THE PERMITTED SITE DISCHARGES TO A WATER BODY THE FOLLOWING INFORMATION IS REQUIRED**

**Name of Receiving Water:** Provide the names of the each water body receiving discharges from the site. Provide only official USGS names do not provide local names

**Anticipated number of discharge points:** Indicate the number of discharge points to each receiving water body.

**Location of anticipated discharge points:** Provide the latitude and longitude of each discharge point. Add points as necessary.

**Receiving Water Body Stream Use Designation:** Check all appropriate boxes

**Antidegradation Categorization:** Select from the drop down box one of the following:

Outstanding National Resource Water

Exceptional Water

High Quality Water

Impaired Water

**SECTION V – IF THE PERMITTED SITE DISCHARGES TO A MS4 THE FOLLOWING INFORMATION IS REQUIRED**

**Name of MS4:** Provide the name of the MS4 to which the activity will discharge

**Number of discharge points to the MS4:** Indicate the number of discharge points

**Location of each discharge point:** Provide the latitude and longitude of each discharge point. Add points as necessary

**Date of application/notification to the MS4 for construction site permit coverage:** Indicate the date the MS4 has or will be notified.

**SECTION VI – CONSTRUCTION ACTIVITIES IN OR ALONG A WATER BODY**

**Will the project require construction activities in a water body or the riparian zone:** Select Yes or No from the drop down box.

**If Yes, describe scope of activity:** Provide a brief description of the activity (ies) that will take place in the water body or the riparian zone.

**Is a Clean Water Act 404 permit required:** Select Yes or No from the drop down box.

**Is a Clean Water Act 401 Water Quality Certification required:** Select Yes or No from the drop down box.

**SECTION VII – NOI PREPARER INFORMATION**

Provide the name, mailing address, telephone number and eMail address of the person preparing the NOI.

**SECTION VIII –Attachments**

Attach a USGS topographic map indicating the location of the activity and the proposed discharge points.

**SECTION IX – CERTIFICATION**

Provide the name, mailing address, telephone number and eMail address of the person who is responsible for the activity

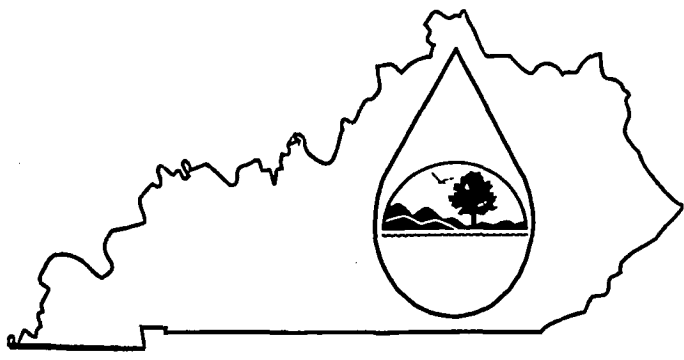
**Signature:** Provide full name of the responsibility party. This will constitute a signature.

The NOI must be signed as follows:

**Corporation:** by a principal executive officer of at least the level of vice president

**Partnership or sole proprietorship:** by a general partner or the proprietor respectively

# KPDES FORM NOT-SW

	<p>Kentucky Pollutant Discharge Elimination System (KPDES)</p> <p><b>NOTICE OF TERMINATION (NOT)</b> of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Industrial Activity</p>
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Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the KPDES program.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.  
(Please see instructions on back before completing this form.)

<b>I. PERMIT INFORMATION</b>
KPDES Storm Water General Permit Number:
Check here if you are no longer the Operator of the Facility: <input type="checkbox"/>
Check here if the Storm Water Discharge is Being Terminated: <input type="checkbox"/>
<b>II. FACILITY OPERATOR INFORMATION</b>
Name:
Address:
City/State/Zip Code:
Telephone Number:
<b>III. FACILITY/SITE LOCATION INFORMATION</b>
Name:
Address:
City/State/Zip Code:

**Certification:** I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a KPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity of waters of the Commonwealth is unlawful under the Clean Water Act and Kentucky Regulations where the discharge is not authorized by a KPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Kentucky Revised Statutes.

NAME (Print or Type)	TITLE
SIGNATURE	DATE



**INSTRUCTIONS**  
**NOTICE OF TERMINATION (NOT) OF COVERAGE UNDER THE KPDES GENERAL PERMIT**  
**FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY**

**Who May File a Notice of Termination (NOT) Form**

Permittees who are presently covered under the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26 (b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a KPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

**Where to File NOT Form**

Send this form to the following address:

**Section Supervisor**  
**Inventory & Data Management Section**  
**KPDES Branch, Division of Water**  
**14 Reilly Road, Frankfort Office Park**  
**Frankfort, KY 40601**

**Completing the Form**

Type or print legibly in the appropriate areas and according to the instructions given for each section. If you have questions about this form, call the Storm Water Contact, Industrial Section, at (502) 564-3410.

**Section I - Permit Information**

Enter the existing KPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, call the Storm Water Contact, Industrial Section at (502) 564-3410.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

**Section II - Facility Operator Information**

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

**Section III - Facility/Site Location Information**

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

**Section IV - Certification**

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

*For a corporation:* by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

*For a partnership or sole proprietorship:* by a general partner or the proprietor; or

*For a municipality, State, Federal, or other public facility:* by either a principal executive

**SECTION 01600**

**SPECIAL PROVISIONS FOR MATERIAL AND EQUIPMENT**

**PART 1 GENERAL**

**1.01 SERVICES OF MANUFACTURERS' REPRESENTATIVE AND OPERATING MANUALS**

- A. Bid prices for equipment furnished under this Contract, shall include the cost of written operation and maintenance instructions and the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment, and testing of the equipment and to instruct the OWNER'S operating personnel and the ENGINEER'S representative on operation and maintenance. This supervision and instruction may be divided into two or more time periods as required by the installation program, and shall be scheduled at the convenience of the OWNER.
- B. Unless otherwise specified with the equipment, equipment manufacturers shall provide a minimum of 2 separate repeated training sessions for the OWNER'S staff. Each session shall be at least 2 hours in length, but not more than 4 hours. Manufacturer's agenda and schedule for the training shall be submitted to and approved by the OWNER prior to conducting the training. No training will be scheduled until the equipment has been installed, satisfactorily tested, and is ready for operation.
- C. The manufacturer's representative shall have complete knowledge of the proper installation, lubrication, operation and maintenance of the equipment provided and shall be capable of instructing the representatives of the OWNER and ENGINEER on proper start-up, shut-down, on-line operations, lubrication and preventive maintenance of the equipment. Outlines of lesson plans and proposed training schedule shall be submitted to the ENGINEER for review 30 days prior to the desired instructional period. Specific requirements for furnishing the services of manufacturer's representatives are indicated under detailed Specifications. This work may be conducted in conjunction with Inspection and Testing, whenever possible, as provided under Part 3 of EXECUTION of detailed specification. Should difficulties in operation of the equipment arise due to the manufacturer's design or fabrication, additional services shall be provided at no cost to the OWNER.
- D. A certificate from the manufacturer stating that the installation of the equipment is satisfactory, that the unit has been satisfactorily tested, is ready for operation, and that the operating personnel have been suitably instructed in the operation, lubrication, and care of the unit shall be submitted to the ENGINEER.
- E. For equipment furnished under other Divisions, the CONTRACTOR, unless otherwise specified, shall furnish the services of accredited representatives of the manufacturer only when some evident malfunction or over-heating makes such services necessary.

F. Three complete sets of operation and maintenance instructions covering all equipment furnished under this Contract, shall be delivered directly to the ENGINEER.

1. The manual for each piece of equipment shall be a separate document with the following specific requirements:

a. Contents:

Table of contents and index

Brief description of each system and components

Starting and stopping procedures

Special operating instructions

Routine maintenance procedures

Manufacturer's printed operating and maintenance instructions, parts list, illustrations, and diagrams. These shall be specific to the material supplied under the Contract, and not a manufacturer general brochure.

One copy of each wiring diagram

One final accepted copy of each shop drawing and each CONTRACTOR'S coordination and layout drawing

List of spare parts, manufacturer's price, and recommended quantity

Manufacturer's name, address, web site, and telephone number

Name, address, and telephone number of manufacturer's local representative

b. Material:

Loose leaf on 60 pound, punched paper

Holes reinforced with plastic, cloth or metal

Page size, 8-1/2 inch by 11-inch

Diagrams and illustrations, attached foldouts as required

Of original quality, reproducible by dry copy method

Covers: oil, moisture, and wear resistant 9 x 12 size

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c. Submittals to the ENGINEER:

- (1) Two preliminary copies of manuals, no later than 15 days following final review and approval of the shop drawings, for each piece of equipment.

1.02 INSTALLATION OF EQUIPMENT

- A. Special care shall be taken to ensure proper alignment of all equipment with particular reference to the pumps, blowers and electric drives. The units shall be carefully aligned on their foundations by qualified millwrights after their sole plates have been shimmed to true alignment at the anchor bolts. The anchor bolts shall be set in place and the nuts tightened against the shims. After the foundation alignments have been reviewed by the ENGINEER, the bedplates or wing feet of the equipment shall be securely bolted in place. The alignment of equipment shall be further checked after securing to the foundations, and after conformation of all alignments, the sole plates shall be finally grouted in place. The CONTRACTOR shall be responsible for the exact alignment of equipment with associated piping, and under no circumstances, will "pipe springing" be allowed.
- B. All wedges, shims, filling pieces, keys, packing, red or white lead grout, or other materials necessary to properly align, level, and secure apparatus in place shall be furnished by the CONTRACTOR. All parts intended to be plumb or level must be proven exactly so. Any grinding necessary to bring parts to proper bearing after erection shall be done at the expense of the CONTRACTOR.

1.03 GREASE, OIL AND FUEL

- A. All grease, oil, and fuel required for testing of equipment shall be furnished with the respective equipment. The OWNER shall be furnished with a 1 year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied under this Contract.
- B. All lubricants and fuels shall be properly labeled, using an indelible marker and writing on the lubricant container or drum, specifying the type and brand name of the lubricant supplied. A Master Lubrication list must be submitted to the ENGINEER for approval clearly stating which lubricants are to be used in the various pieces of plant equipment and the quantity supplied for one years' use by each unit.

1.04 TOOLS AND SPARE PARTS

- A. Any special tools (including grease guns or other lubricating devices) which may be necessary for the adjustment, operation, and maintenance of any equipment shall be furnished with the respective equipment.
- B. All spare parts shall be properly protected for long periods of storage (contained in plastic bags or cardboard containers) and labeled for easy identification without opening.

#### 1.05 MAINTENANCE AND LUBRICATION SCHEDULES

- A. The CONTRACTOR'S attention is directed to the General Conditions for all requirements relative to the submission of shop drawings for the mechanical equipment. For all mechanical and electrical equipment furnished, the CONTRACTOR shall provide a list including the equipment name, and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted along with shop drawings. Submission shall be in 3 copies. This schedule shall be in the form indicated below.

#### 1.06 STORAGE AND HANDLING OF EQUIPMENT

- A. Special attention shall be given to the storage and handling of equipment. As a minimum, the procedure outlined below shall be followed:
1. Equipment shall not be shipped until all pertinent shop drawings are reviewed by the ENGINEER.
  2. All equipment having moving parts such as gears, electric motors, etc., and/or instruments shall be properly stored until such time as the equipment is to be installed.
  3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
  4. Manufacturer's storage instructions shall be carefully studied by the CONTRACTOR and reviewed with the ENGINEER. These instructions shall be followed and a written record of this kept by the CONTRACTOR.
  5. Moving parts shall be rotated a minimum of once weekly to ensure proper lubrication and to avoid metal-to-metal "welding." Upon installation of the equipment, the CONTRACTOR shall start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
  6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment at the time of acceptance.
  7. Prior to acceptance of the equipment, the CONTRACTOR shall have the manufacturer inspect the equipment and certify in writing that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the

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equipment equally in both instances. If such a written certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the CONTRACTOR'S expense.

- B. The OWNER reserves the right to withhold payment for any materials improperly stored and maintained.

#### 1.07 PARTIAL UTILIZATION

- A. During the course of construction partial occupation and utilization of completed portions of the work may be required.
- B. When deemed necessary, the OWNER or the CONTRACTOR may request use of completed work.
- C. Partial utilization shall be practiced in accordance with the General Conditions.

#### 1.08 EQUIPMENT WARRANTY

- A. The CONTRACTOR shall provide the OWNER a minimum 1 year warranty on all equipment, or a warranty of the length as is specified in the specific equipment section of the Specifications, in accordance with the General Conditions, Section 00700 (00710), Articles 13.06 through 13.09. The warranty period for each item of equipment shall be a minimum of 1 year, or as specified otherwise, from the date of the OWNER'S acceptance of the equipment item.

#### 1.09 ADJUSTMENTS AND CORRECTIONS OF EQUIPMENT AND APPURTENANCES DURING OPERATION

- A. Some items of functional nature included in this Contract cannot be tested as to performance and quality at the time of completion of their installation. They must wait for necessary testing and proper performance until such functions are possible during later portions of this Contract. Such testing, specified performance and proper instructions to the OWNER's operators (as to their maintenance and operation) is deemed a portion of this Contract, and payment shall be retained by the OWNER for equipment delivered to the site and for Work completed to cover such service. Such service replacements and performance shall take precedence over expiration of the 1 year guarantee period.
- B. The CONTRACTOR shall expedite the completion of such service by all Suppliers and Subcontractors and shall render competent supervision of such service. The CONTRACTOR shall also expedite the replacement of defective and unaccepted parts and equipment. Unnecessary delay in delivery and installation of corrective parts and equipment may constitute damage to the OWNER for which the CONTRACTOR can be held liable.

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1.10 INSTALLING NEW EQUIPMENT IN EXISTING STRUCTURES

- A. Where new equipment is planned and/or specified as being installed in existing structures, the CONTRACTOR shall verify all dimensions and locations of existing facilities prior to ordering the new equipment. Existing anchor bolts shall be used when possible, and new equipment shall be fabricated to conform to the existing dimensions, shapes, and locations as required.

**END OF SECTION**

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SECTION 02235

CRUSHED STONE AND DENSE GRADED AGGREGATE (DGA)

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish and install crushed stone aggregates and DGA as indicated on the Drawings and/or required in the Specifications for such uses as surfaces and/or bases of roads, parking areas and walkways; temporary and permanent traffic bound surfacing over trenches; permanent traffic bound roadway surface maintenance; replacement of unsuitable material; and other miscellaneous applications required in the work.
- B. Various sizes, types and quality of crushed stone aggregates are specified in this Section depending on applicability which may be specified in detail in other sections of these Specifications.
- C. The ENGINEER may require the use of crushed stone aggregates for purposes other than those specified in this or other Specification sections if such use is advisable in his opinion. Payment for crushed stone aggregate shall be by negotiation unless agreed pricing has been previously established.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Crushed stone aggregate shall meet the applicable requirements for the intended use in accordance with Section 805 of the Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction.
- B. Unless otherwise referred to on the Drawings or in these Specifications, crushed stone aggregate shall be graded size No. 57 according to the table below.
- C. When referred to on the Drawings or in these Specifications, dense graded aggregate (DGA) shall have a sand equivalent value of not less than 25 and shall be graded according to the table below.
- D. Coarse aggregate gradations referred to by number size on the Drawings or in these Specifications shall conform to the following table (as copied from the above Kentucky Transportation Cabinet Specifications, Table 805.07, 1994 Edition):



TABLE I - SIZES OF COARSE AGGREGATES - KENTUCKY

Size	Max. Size Square Openings (1)	AMOUNTS FINER THAN EACH LABORATORY SIEVE (SQUARE OPENINGS) PERCENTAGE BY WEIGHT																	
		100 (4)	90 (3 1/2)	75 (3)	63 (2 1/2)	50 (2)	37.5 (1-1/2)	25 (1)	19 (3/4)	12.5 (1/2)	9.5 (3/8)	4.75 (No. 4)	2.36 (No. 8)	2 (No. 10)	1.18 (No. 16)	600 (3) (No. 30)	425 (3) (No. 40)	150(3) (No. 100)	75 (3) (No. 200)
1	90 (3 1/2)	100	90-100		25-60		0-15		0-5										
2	63 (2 1/2)			100	90-100	35-70	0-15		0-5										
23	63 (2 1/2)			100		40-90		0-15		0-5									
3	50 (2)				100	90-100	35-70	0-15		0-5									
357	50 (2)				100	95-100		35-70		10-30		0-5							
4	37.5 (1-1/2)					100	90-100	20-55	0-15		0-5								
467	37.5 (1-1/2)					100	95-100		35-70		10-30	0-5							
5	25 (1)						100	90-100	20-55	0-10	0-5								
57	25 (1)						100	95-100		25-60		0-10	0-5						
610	25 (1)						100	85-100		40-75		15-40							
67	19 (3/4)							100	90-100		20-55	0-10	0-5						
68	19 (3/4)							100	90-100		30-65	5-25	0-10		0-5				
710	19 (3/4)							100	80-100		30-75	0-30							
78	12.5 (1/2)								100	90-100	40-75	5-25	0-10		0-5				
8	9.5 (3/8)									100	85-100	10-30	0-10		0-5				
9-M	9.5 (3/8)									100	75-100	0-25	0-5						
10	4.75 (No. 4)										100	85-100							10-30
11	4.75 (No. 4)											100	40-90	10-40					0-5
DGA(2)	19 (3/4)							100	70-100		50-80	30-65			10-40				2-10
GRAVEL BASE(2)	37.5 (1-1/2)					100						25-65					6-30	5-20	
CSB(2)	50 (2)				100		90-100		60-95		30-70	15-55				5-20			0-8

(1) Nominal size in mm (inches), unless otherwise shown

(2) Gradation performed by wet sieve KM 64-420

(3) micrometers

E. Testing

1. Unless otherwise required in this Section, the ENGINEER shall determine the tests required for crushed stone aggregates according to Section 805. The CONTRACTOR shall be responsible, initially and periodically at no cost to the OWNER, to deliver materials proposed for use or being used in the work to a testing laboratory selected by the OWNER. This provision shall apply to any other aggregate tests required in this Section.
2. The OWNER shall be responsible to pay the laboratory testing costs. However, once a material has been tested and accepted for use, the CONTRACTOR shall be responsible throughout the job to use materials which are equal in all respects and from the same source as that accepted material delivered to the testing laboratory.
3. The CONTRACTOR shall pay for additional tests ordered by the ENGINEER after acceptance of tested materials when such tests show the quality of materials has become deficient or when the CONTRACTOR requests a change of material supplier and/or source.
4. The ENGINEER shall request tests on Form HKB DE-16 "Requisition for Material and Design Mix Tests."

**PART 3 EXECUTION**

**3.01 INSTALLATION**

**A. Compacted Crushed Stone Aggregate**

1. Crushed stone shall be placed in uniform layers not greater than 6 inches deep and shaped by power equipment to required lines, grades, cross connections, and depths. No minimum compacted density, method of compaction, or compaction equipment is required since a nominal amount of compaction effort with vibration can establish the desired intergranular locking of the aggregate under controlled placement depth. Acceptable compaction can be achieved with pneumatic-tired and tracked equipment and rollers.
2. All compaction operations shall be performed to the satisfaction of the ENGINEER.
3. Crushed stone shall be placed in those areas as shown on the Drawings and as may be directed by the ENGINEER.

**B. Compacted Dense Graded Aggregate (DGA)**

1. Dense graded aggregate shall be plant mixed with water, transported in such a manner as to deliver the mix to the project without loss or segregation, spread, and compacted to produce a density throughout not less than 84 percent of solid volume. Minimum dry density for compacted limestone DGA shall be 139 pounds per cubic foot when S.G. of limestone is 2.65.
2. Density tests shall be required in such number as determined by the ENGINEER. Density tests shall be made by the sand cone method or by nuclear gauges. The CONTRACTOR shall furnish all necessary labor, equipment and materials for making the density tests under observations of the ENGINEER.
3. In the event compacted material does not meet the required density of an area, the CONTRACTOR shall either continue compaction efforts or rework the entire area until the required density is obtained. If material has to be removed and reworked, the ENGINEER shall determine if removed material can be remixed and used again for fill.
4. All compacted DGA fill shall be included in the CONTRACTOR'S lump sum bid unless otherwise indicated on the Drawings.

**END OF SECTION**

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SECTION 02326

STEEL COVER PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Steel cover pipe shall be furnished and installed as shown on the Drawings and specified herein.

1.02 RELATED WORK

- A. Sewer and Drain Pipe is specified in Section 02700.
- B. Gas pipe is specified in Section 02612.

PART 2 PRODUCTS

2.01 STEEL COVER PIPE

- A. Steel cover or jack pipe shall be plain end steel pipe with minimum yield strength of 35,000 psi and tensile strength of 60,000 psi per API-5L Grade B material. The steel pipe supplied shall be manufactured by the seamless, electric-weld, submerged arc weld or gas metal-arc weld process as specified in API-5L. Certification of 35,000 psi minimum yield strength shall be furnished by the supplier through the CONTRACTOR to the ENGINEER in sufficient copies before pipe is shipped to job to permit the ENGINEER to retain 3 copies.
- B. Used pipe shall be acceptable if it meets the minimum requirements for size, thickness and strength for new pipe. Supplier shall furnish through the CONTRACTOR to the ENGINEER 3 copies of certification of test results of strength tests conducted on the used pipe prior to shipment to job site. Used pipe with excessive corrosion and pitting present shall not be supplied.
- C. The inside diameter of steel cover pipe shall be at least 2 inches greater than the largest outside diameter of the carrier pipe, joints or couplings, except for carrier pipe 6 inches or greater in diameter under railroads, the difference shall be 4 inches instead of 2 inches.
- D. Cover pipe shall have a **minimum** wall thickness as shown in the following table:

Nominal Diameter Inches	Nominal Thickness Inches	Nominal Diameter Inches	Nominal Thickness Inches
Under 10	0.188	24	0.438
10 & 12	0.250	26	0.438
14 & 16	0.281	28 & 30	0.500
18	0.312	32	0.500
20	0.344	34 & 36	0.562
22	0.375	38 & 42	0.562

### PART 3 EXECUTION

#### 3.01 TUNNELING, BORING OR JACKING

- A. Boring or jacking as specified herein will be allowed at locations other than those noted on the Drawings, where advantageous to lay pipe under streets, driveways, and sidewalks, without their monolithic structure being destroyed.
- B. Tunneling under paving, railroads, buildings and underground structures is included as an alternate to boring or repaving required by open cut trenching at no extra cost to the OWNER. Bore and cover pipe is also included as an alternate to tunneling. Backfilling of tunnels shall be mechanically tamped in not more than 3 inch layers and with materials rendered suitable for tamping before being placed in tunnel unless otherwise shown on the Drawings. No payment will be made for tunnels less than 3-feet long.
- C. In tunneling under buildings, the CONTRACTOR will be held responsible for all damage by his operations and methods of excavating and backfilling. No payment will be made for tunnels less than 3-feet in length.
- D. Should the CONTRACTOR elect and receive permission to tunnel or bore, other than at locations designated on the Drawings or required by the ENGINEER to be tunneled or bored, the entire compensation therefor shall be the same as the unit prices bid for installation in open trench, including paving replacement, but not including bore or tunnel unit prices.
- E. At locations where tunneling and boring or jacking is called for on the Drawings, in addition to the unit prices for permanent tunnel, tunnel liner, temporary tunnel, boring or jacking and/or cover pipe unit prices are paid.
- F. Boring or jacking under highways, railroads, sidewalks, pipelines, etc., shall be done at the locations shown on the Drawings. It shall be performed by mechanical means and accurate vertical and horizontal alignment must be maintained. When shown on the Drawings, cover pipe shall be used and shall be installed inside bored holes concurrently with boring, or jacking.

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### 3.02 STEEL COVER PIPE INSTALLATION

- A. Steel cover pipe shall be of the size and wall thickness as shown on the Drawings.
- B. When cover pipe is jacked, concurrent with boring, all joints shall be solidly welded. The weld shall be such that the joint shall be of such strength to withstand the forces exerted from the boring and jacking operation as well as the vertical loading imposed on the pipe after installation. The weld shall also be such that it provides a smooth, nonobstructing joint in the interior of the pipe which will allow easy installation of the carrier pipe without hanging or abrasion to the carrier pipe upon installation.
- C. When cover pipe is installed in open trench, it shall be bedded and backfilled per Specifications applying to gas pipe in such locations.
- D. Cover pipe in open trench shall be joined in such manner that they will not be moved out of alignment or grade and that will prevent backfill material from entering joint. Where cover pipes are shown on the Drawings to be equipped with vent pipes, vents shall be installed as shown on the Drawings with cost of same included in the price bid for the cover pipe unless otherwise specified.

### 3.03 CARRIER PIPE IN COVER PIPE INSTALLATION

#### A. Pipeline Spacers

1. Pipes installed inside cover pipes shall be centered throughout the length of cover pipe. Centering shall be accomplished by the installation of bolt on style spacers with a 2-piece solid shell made from T-304 stainless steel of a minimum 14 gauge thickness. The shell shall be lined with a ribbed PVC sheet of a 0.090 inch thickness that overlaps the edges. Runners, made from UHMW polymer, shall be attached to the pipe in such a manner as to prevent the dislodgement of the spacers as the carrier pipe is pulled or pushed through the cover pipe. Risers shall be made from T-304 stainless steel of a minimum 14 gauge thickness and shall be attached to the shell by MIG welding. All welds shall be fully passivated. All fasteners shall be made from T-304 stainless steel.
2. Spacers shall be of such dimensions to provide 1) full supportive load capacity of the pipe and contents; 2) of such thickness to allow installation and/or removal of the pipe; and 3) to allow no greater than 1/2-inch movement of the carrier pipe within the cover pipe after the carrier pipe is installed.
3. Spacers shall be located immediately behind each bell and at a maximum spacing distance as shown below unless a lesser maximum spacing distance is recommended by the pipe manufacturer:

<u>Pipeline Diameter (in.)</u>	<u>Maximum Spacing (ft.)</u>
2 - 2-1/2	4
3 - 8	7
10 - 26	10
28	9
30	8
32	7
34	6
36 - 38	5.5
40 - 44	5
46 - 48	4

The materials and spacing to be used shall be accepted by the ENGINEER prior to installation. The pipeline spacers shall be manufactured by Cascade Waterworks Manufacturing Co., of Yorkville, Illinois, Pipeline Seal and Insulator, Inc., of Houston, Texas, or equal. Installation shall be in accordance with manufacturer's recommendations.

#### B. End Seals for Carrier Pipe

1. Upon completion of installation of the carrier pipe, the annular space at the ends of the cover pipe shall be sealed to prevent the entrance of groundwater, silt, etc., into the cover pipe. The seal shall be a manufactured product specially made for this purpose. The seal shall be Link Seal, PL, as manufactured by the Thunderline Corporation, Wayne, Michigan, or equal.
2. The device (Model "C" or "L") shall have composite pressure plates and modular seals to be corrosion resistant EPDM suitable for use in water, direct ground burial, and atmospheric conditions. In areas where hydrocarbon resistant is specified, the seals shall be of nitrile and rated for the application (Model OS-316). All nuts and bolts for all models shall be 316 stainless steel (ANSI Type 316 per ASTM F695-95, 85,000 psi average tensile strength).
3. Seal sizes shall be per manufacturer's recommendations for each size of cover pipe and installed per manufacturer's recommendations to provide a watertight seal.

**END OF SECTION**

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**SECTION 02500**

**ASPHALT PAVING**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. The CONTRACTOR shall be required to supply all materials and equipment and perform all work for the placement of the base, binder, and surface course(s) for restoring to the preconstruction condition the surface of the existing streets, roads, drives and parking areas to the depths as shown in the detailed Drawings and as specified herein.

**1.02 REFERENCES**

- A. Unless noted, all Specifications designations denoted KTCSSRBC refer to the Kentucky Transportation Cabinet Department of Highways Standard Specification for Road and Bridge Construction. Appropriate technical portions of the referenced sections of the Specifications shall apply, but all work and method of payment shall be as described herein unless otherwise specified or shown on the Drawings.

**1.03 RELATED WORK**

- A. Special sequence or schedule requirements (if any) are specified in Section 01010 - Summary of Work.
- B. Special requirements for materials and equipment are given in Section 01600.
- C. Crushed stone surfacing requirements, temporary and permanent replacement, are specified in Section 02235 of these Specifications.
- D. New streets, roads and parking area material and construction are specified in this Section.

**1.04 WORK DESCRIPTION**

- A. Asphalt shall be used for surfacing new roads and parking areas, for replacement of city streets, drives, parking areas and state highways of asphalt construction and for resurfacing existing roads and state highways at locations shown on the Drawings or specified.

**1.05 QUALIFICATIONS**

- A. The pavement design mixture shall be used as determined by local plant mix availability. The design mixture shall have been approved recently by the Kentucky Transportation Cabinet Department of Highways and used recently on a state paving project.

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- B. The design mix shall be submitted to the ENGINEER for review and acceptance. The submittal shall include the following:
  - 1. The last date the mixture was approved by the Kentucky Transportation Cabinet Department of Highways for use on a state road project.
  - 2. The location where the mixture was recently used, and the name and address of the paving contractor.

#### 1.06 SUBMITTALS

- A. Prebid submittals, when required, are specified in Section 00820 - Special Conditions of these specifications.
- B. Shop Drawings, manufacturers data and other items needed to establish compliance with the Drawings and Specifications shall be submitted to the ENGINEER in accordance with Section 00700.

#### 1.07 WARRANTY

- A. Refer to Section 00700 for warranty requirements.

### **PART 2 PRODUCTS**

#### 2.01 ASPHALT PAVING

- A. Mixture
  - 1. The asphaltic paving provided for use on this Contract shall conform to the applicable requirements of KTCSSRBC Section 401, Asphalt Plant Requirements; Section 402, Control and Acceptance of Asphalt Mixtures; and Section 403, Production and Placement of Asphalt Mixtures. The pavement mixture shall meet the requirements of Section 403.03.03.
- B. Fine aggregates shall meet the requirements of KTCSSRBC Section 804.
- C. Coarse aggregates shall meet the requirements of KTCSSRBC Section 805.
- D. Asphaltic materials shall meet the requirements of KTCSSRBC Section 806.
- E. Asphaltic materials for tack coat shall be one of the following: SS-1, SS-1h, CSS-1, CSS-1h, AE-60, RS-1, or CRS-1, conforming to Section 406.

#### 2.02 FACILITIES ADJUSTMENT MATERIALS

- A. Manhole adjusting rings shall be cast iron, Neenah R-1979, J.R. Hoe, or equal. Maximum adjustment shall be 3 inches.
- B. Valve box adjusting rings shall be cast iron, Tyler Type MWW riser with 3 inches maximum adjustment.



2.03 PAVEMENT STRIPING MATERIALS

- A. Pavement striping for all areas to receive asphalt paving, whether full width pavement overlay, trench width pavement replacement, or newly constructed access roads or parking areas, shall meet the requirements of Section 748 of the KTCSSRBC for placement and Section 842 for striping material.

2.04 TRAFFIC CONTROL SIGNAL LOOPS

- A. Where possible, traffic control signal loops shall be avoided in the location of new or replacement pipelines. Should the traffic control loops be damaged or destroyed by pipeline construction, they shall be replaced to the specification of the requirements of the entity who is the owner and operator of the traffic control facilities.

**PART 3 EXECUTION**

3.01 GENERAL

- A. Construction requirements shall conform to applicable requirements of Section 403 of KTCSSRBC.
- B. A tack coat shall be required to bond new paving to the surface of concrete or brick pavements and bases or existing asphalt surfaces. It shall be applied at the rate of 0.8 pound (0.1 gallon) per square yard at the following range of application temperatures:

SS-1, SS-1h, CSS-1, CSS-1h, AE-60	70-160°F
RS-1	70-140°F
CRS-1	120-185°F

- C. When SS1, SS1h, CSS1, CSS1h, or AE60 is furnished for tack material, it shall be diluted with an equal quantity of water conforming to Section 803, shall be thoroughly mixed prior to application, and shall be applied a sufficient time in advance of the paver to ensure that all water has evaporated before the asphalt mixture is placed. The application rate shall be 0.8 pound (0.1 gallon) per square yard of the diluted SS1, SS1h, CSS1, CSS1h, or AE60.
- D. Where asphalt paving is placed against vertical surfaces such as curbs, gutters, manhole frames, valve boxes, etc., the vertical face shall be tack coated in order to seal the surface. Where these surfaces are inaccessible to pressure distributor, the tack coat may be brushed or broomed into place. The tack coat shall not be allowed to spill over onto any horizontal surface outside the area to be paved.
- E. Unless otherwise indicated on the Drawings or in these Specifications, the compacted thickness of the asphalt paving shall be a minimum of 1 inch and the minimum ambient temperature for mixing and laying temperatures shall be as follows:

Open Graded Friction Course	60°F
Asphalt Mixture (1-Inch Thick)	45°F
Asphalt Mixture (thicker than 1-inch)	40°F
Asphalt Mixture (Base and Binder)	35°F
Leveling and Wedging	45°F

- F. Trucks for hauling asphaltic mixtures shall have tight, clean, and smooth metal beds that have been sprayed with a minimum amount of soap emulsion, paraffin oil, or other approved material which is not detrimental to the mixture to prevent the mixture from adhering to the beds. All trucks shall be equipped with covers of sufficient size to completely cover the loaded material, and all covers shall be securely fastened in place before the truck leaves the plant. Truck beds shall be insulated, when necessary, to maintain the specified temperature to the point of delivery. Any truck causing excessive segregation of material by its spring suspension or other contributing factors, shall be discharged from the work, until such conditions are corrected.
- G. The CONTRACTOR shall have an accurate thermometer on the job at all times for verifying all temperature requirements and for taking temperature measurements whenever requested by the ENGINEER or OWNER. The CONTRACTOR shall closely control temperature and compaction requirements in order to achieve quality asphalt paving and related work.
- H. Asphalt paving which fails as the result of not meeting the requirements of these Specifications shall be removed and replaced as directed by the ENGINEER at the CONTRACTOR'S expense.
- I. Where manhole frames, valve boxes, drainage grates, etc., are located within the area to receive asphalt paving replacement, those facilities shall be adjusted to final pavement grade prior to the placement of the asphalt surface. Where the facilities to be adjusted are the property of the OWNER, the CONTRACTOR shall adjust the facilities with the cost included in the CONTRACTOR'S bid for asphalt replacement. Where the facilities to be adjusted are the property of other utility companies, i.e., gas, water, electric, telephone, the CONTRACTOR shall notify each utility company of the schedule for repaving of the particular area to allow those companies sufficient time to adjust their facilities prior to beginning the repaving process.
- J. Where pavement striping is destroyed or damaged, it shall be replaced per the requirements stated herein. The cost of all striping, unless stated otherwise in these specifications, shall be included in the price bid for pavement replacement.
- K. Damaged or destroyed traffic control loops shall be replaced per the requirements of the traffic control operator with the cost incorporated into the CONTRACTOR'S bid for pavement replacement.

3.02 TRENCH WIDTH REPAVING - CITY AND COUNTY STREETS, ROADS AND PARKING AREAS

- A. The cut edges of the existing paving surface shall be trimmed a depth of at least 2 inches to straight lines for uniform appearance and clean surface at joints. The area between the cut edges of the paving shall be removed to a depth of 2 inches (minimum) or to the bottom of the existing paving. All unstable material in the trench shall be removed and replaced with compacted dense graded aggregate and dense graded aggregate added as needed to bring the base surface to the bottom of existing paving or 2 inches below the existing surface, whichever is the lower. Dense graded aggregate required for stabilizing the subgrade will be paid for as an extra, but no extra payment will be allowed for removal of unstable back-fill.
- B. The paving subgrade shall be compacted under the wheel of a roller, until there is no observed settlement of the subgrade.
- C. The sides of existing pavement shall be covered with a tack coat and asphalt paving shall be hot applied as previously described. Final surface shall be finished to 1/4-inch above existing paving surface at edges and crowned to ½ inch above existing surface at the center.
- D. Payment for asphalt repaving shall be per linear foot of pipeline covered to any width the CONTRACTOR shall find necessary to remove plus width of cut back to secure clean straight edges, and shall include excavation to subgrade, preparation of subgrade, cleaning edges of existing paving, tack coat, and all operations and materials planned and specified for this type of repaving. The CONTRACTOR shall maintain such repaving up to grade of existing street surface until final completion and acceptance of work under his Contract. During the guarantee period of one year, the CONTRACTOR will be responsible for defective materials or workmanship, and natural settlement.
- E. In case additional asphalt paving is to be added due to settlement, the surface which has experienced settlement shall be cut out, additional dense graded aggregate added if necessary, tack coat applied to the existing sides of existing pavement, and the paving in the settled area(s) replaced. Additional payment will not be allowed for the repair work required.

3.03 TRENCH WIDTH REPAVING - STATE MAINTAINED STREETS AND HIGHWAYS

- A. Streets, roads and highways maintained by the Kentucky Transportation Cabinet Department of Highways shall be repaved in accordance with details shown on the attached Department of Highways Drawing No. TD 99-13, latest revision.
- B. Concrete base slab shall be cleaned and tack coated, and asphalt paving shall be hot applied as previously described.
- C. Payment for replacement of asphalt paving on state maintained streets and roads, where concrete base slab and asphalt surface are required, shall be per foot of pipeline covered, and shall include excavation, crushed rock or flowable fill backfill, base courses, concrete base slab, tack coat, and asphalt surfacing.

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Widths, depths, and other details and methods of application shall be as shown on attached drawing and as required by the Kentucky Transportation Cabinet Department of Highways.

- D. The CONTRACTOR shall maintain the surface of all state highways and state maintained streets to grade during the entire guarantee period of the Contract.

### 3.04 CROSSWALK MARKINGS

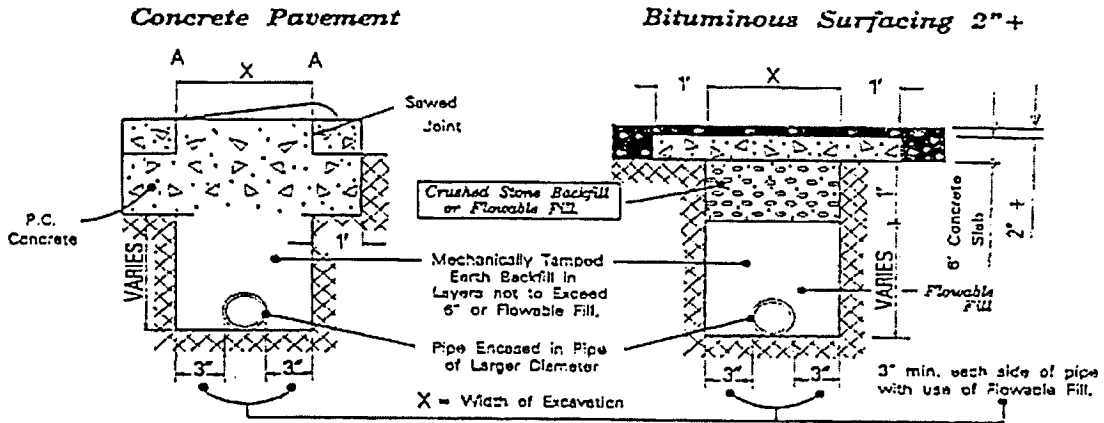
- A. Crosswalk marking shall meet the requirements Section 3B.18 of the Manual of Uniform Traffic Control Devices (MUTCD).

**END OF SECTION**

Attachment: Kentucky Department of Highways drawing No. TC 99-13.

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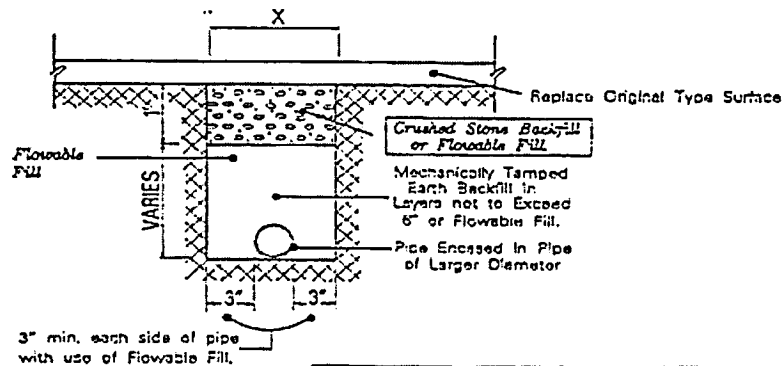
**SURFACE RESTORATION METHODS**



*Replace Concrete Pavement with new pavement same thickness of existing pavement.*

*Replace Bituminous Pavement with same type and depth as existing pavement.*

**Bituminous Surface Less Than 2" & Traffic Bound Macadam**



**NOTE:**

1. Distance From points "A" (Concrete Pavement) to nearest joint or break in pavement must be six (6) feet or more. If less than six (6) feet, remove pavement to joint or break and replace entire slab.
2. Concrete slab under Bituminous Surface to extend twelve (12) inches on each side of trench.
3. An approved joint sealer to be applied between new and existing pavement.

**KENTUCKY TRANSPORTATION CABINET**

**Department of Highways**

Methods of Surface Restoration Due to Open trench Pipe Installation

**SECTION 02510**  
**CONCRETE PAVING**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required to construct concrete street pavement, concrete sidewalks, and concrete curbs and gutters as shown on the Contract Drawings and as specified herein.

**1.02 RELATED WORK**

- A. Special sequence or schedule requirements (if any) are specified in Section 01010 - Summary of Work.
- B. Special requirements for materials and equipment are given in Sections 00700 and 01600.
- C. Grading and drainage of streets, roads and parking areas are as specified in Section 02400.
- D. Crushed stone bases, if required, are as specified in Section 02235.
- E. Concrete drainage structures are specified in Sections 03300 and 03400.
- F. Castings are specified in Section 05540.

**1.03 SUBMITTALS**

- A. Prebid submittals, if required, are specified in Section 00820 - Special Conditions.
- B. Shop drawings and other items needed to establish compliance with the Drawings and these Specifications shall be submitted to the ENGINEER in accordance with Section 00700.

**1.04 WARRANTY**

- A. Refer to Section 00700 for warranty requirements.

**PART 2 PRODUCTS**

**2.01 CONCRETE MATERIALS**

- A. Concrete and related materials are specified in Section 03300.

### **PART 3 EXECUTION**

#### **3.01 CONCRETE ROADWAY PAVING**

- A. Concrete surface paving shall meet the requirements of Section 501 of the Kentucky Transportation Cabinet, Department of Highways Standard Specifications for Road and Bridge Construction.
- B. Concrete base paving shall meet the requirements of Section 502 of the Kentucky Transportation Cabinet, Department of Highways Standard Specifications for Road and Bridge Construction.

#### **3.02 CONCRETE CURBS AND GUTTERS**

- A. Cast in place curbs and gutters and pre-cast curbs and gutters shall be as specified in Section 713 of the Kentucky Transportation Cabinet, Department of Highways Standard Specifications for Road and Bridge Construction.
- B. Concrete lip curbs and integral curbs shall be as specified in Section 714 of the Kentucky Transportation Cabinet, Department of Highways Standard Specifications for Road and Bridge Construction.

#### **3.03 CONCRETE SIDEWALKS AND STEPS**

##### **A. Replacement Construction**

- 1. Sidewalks shall be replaced to the same width, grade and thickness (3-1/2 inches minimum) as the original sidewalk, unless otherwise directed by the ENGINEER. In replacing concrete walks against edge of existing walks, the existing edges shall be sawed to straight edges and thoroughly cleaned. The new and existing walks shall be separated by 1/2 inch premolded expansion joint material cemented to the existing walk.
- 2. Concrete curb and gutter shall be protected by the CONTRACTOR and shall not be removed except in the event of solid rock excavation and/or conflict with existing utilities. Grass strips between sidewalks and curbs shall be reseeded in accordance with Section 02930 of these Specifications.
- 3. For unit price contracts, sidewalk replacement, including reinforcing and forms, will be paid for by the linear foot measured along the centerline of pipe so covered. The unit price bid shall include excavation to subgrade; preparation of subgrade; required base course, if any, as shown on the Drawings; expansion joints; marking and reseeding of grass strips when required; and replacing concrete to any width which the CONTRACTOR should find necessary to remove.
- 4. At the unit price bid for sidewalk replacement for unit price contracts, the CONTRACTOR will not be required to replace greater than 4 foot width, 4 inches thick. However, where a 4 foot or less width walk is cut

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longitudinally, the whole walk shall be replaced. If replacement over 4 foot width is required, the unit price per linear foot shall be increased, the increased width's proportion to 4 feet.

### 3.04 CROSSWALK MARKINGS

- A. Crosswalk marking shall meet the requirements Section 3B.18 of the Manual of Uniform Traffic Control Devices (MUTCD) and match existing.

**END OF SECTION**

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02510-3



**SECTION 02612**  
**NATURAL GAS PIPE**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. All piping and appurtenances furnished and installed on this Project and all workmanship utilized for the installation of materials and equipment on this Project shall meet the requirements of the Federal Department of Transportation under Title 49, Pipeline Safety Act, and the requirements of the Kentucky Public Service Commission.
- B. Prior to the beginning of construction, the CONTRACTOR shall present for the OWNER'S review the "jointing" certificates for each employee who will be actively joining polyethylene piping on this Project. The certificate must show that the employee has passed all of the required jointing tests and must also indicate that the certificate is current.
- C. Prior to the beginning of construction, the CONTRACTOR shall present for the OWNER'S review, a copy of the CONTRACTOR'S operation and safety plan. The plan must be current and must include provisions for employee drug testing.
- D. Prior to completing any tie-ins to the existing system, the CONTRACTOR shall provide for the OWNER'S and ENGINEER'S review, a written description for each tie-in indicating the procedure for the tie-in, the safety precautions involved and to verify that gas flow to customers will not be interrupted.

**1.02 SUBMITTALS**

- A. Prior to the shipment of any pressure pipe to the project site, the CONTRACTOR shall submit to the ENGINEER a bill of materials and shop drawings for all, in the number of copies listed in Special Conditions.
- B. Supplemental Submittal Requirements
  - 1. All testing and certification requirements and descriptive literature remain as described.

**PART 2 PRODUCTS**

**2.01 MATERIALS - GAS PIPE**

**A. Welded Steel Pipe for Gas**

**1. Pipe**

**a. General**

- (1) Steel gas piping shall be beveled for welding. Pipe 3 inches and over shall be electric weld type. All gas pipe installed shall comply with American Petroleum Institute Standards 5L, Grade X-42, latest revision, for welded steel pipe.
- (2) Flanged steel pipe shall be of the weld-rock type and shall be provided with 1/8-inch full face gaskets of a composition inert to natural gas. Flanges shall be of standard dimensions and shall be furnished with bolts and hexagon nuts.

**b. Manufacturer's Stamp and API Monogram**

- (1) Each length of pipe installed under this Contract shall be stamped or marked with manufacturer's name, type of pipe, pipe length and API monogram.

**c. Dimensions and Test Pressures**

- (1) All piping installed under this Contract shall conform to the following minimum specifications:

WELDED PIPE (GAS)		
Nominal Size, In.	Wall Thick- ness, In.	Test Pres. psi, Min.
1	0.133	700
1 1/4	0.140	1300
1 1/2	0.145	1300
2	0.154	2500
3	0.188	2260
4	0.188	1200
6	0.188	1200
8	0.188	1200

2. Fittings

a. Welded Fittings

(1) In general, pipe fittings shall be welded, unless otherwise shown to be flange, equal to those manufactured by Tube Turns, Inc., Louisville, Kentucky, or Armco Steel Corporation, Middletown, Ohio or equal. All bends shall be 3R bends. Flanged fittings shall be of the weld-neck type.

b. Insulating Couplings

(1) Insulating couplings shall be installed on each steel service line installed and on distribution mains as shown on the Drawings. Couplings shall be Dresser or equal.

3. Joints

a. Welded Joints

(1) All gas pipe installed shall be jointed by fusion welding by electric weld process. Welding rods shall be of similar composition to the pipe on which used and shall be as recommended by the American Welding Society. All welded joints shall be of the single "V" type tapered to 1/16-inch of inside pipe wall. Pipe 1 inch and under shall be welded by the submerged air process.

4. Coating (Buried Pipe Only)

a. General

(1) Steel pipe installed shall be coated as outlined in the paragraphs below.

b. Pipe Coating

(1) Pipe coating shall be ScotchKote 6233 Fusion-Bonded Epoxy Coating as manufactured by 3M, or equal, having the properties outlined below.

**Coating Properties**

Property	Value
Specific Gravity	
Film	1.36
Powder	1.44
Coverage based on film	141 ft <sup>2</sup> /lb/mil (0.735 m <sup>2</sup> /kg/mm)

Property	Value
Color	Govt. Color 14272/Green
6233 Gel Time at 400 °F/204 °C Cure Time at 450 °F/232 °C	17 seconds ± 20% 90 seconds
6233-04 Gel Time at 400 °F/204 °C Cure Time at 450 °F/232 °C	9.5 seconds ± 20% 30 seconds

**Coating Test Data**

Property	Test Description	Typical Value
Impact	ASTM G14 (modified) 1/8 in. (3.2 mm) thick plate 3/8 in. (9.5 mm) thick plate	60 in lbs (18.1 joules) 59 in lbs (6.7 joules)
Cathodic Disbondment	CAN/CSA-Z245.20-12.8 48 hours, 1.5 volt, 3% NaCL 149°F/65°C 28 day, 1.5 volt, 3% NaCL 73°F/23°C 28 day, 1.5 volt, 3% NaCL 149°F/65°C	2.3 mm radius 2.5 mm radius 4.9 mm radius
Hot Water Resistance	48 hours, CAN/CSA Z245.20-12.14, 203°F/95°C 48 hours, CAN/CSA Z245.20-12.14, 167°F/75°C	1 rating 1 rating
Bendability (Mandrel Bend)	<u>Temperature</u>   <u>Pipe Diameters</u> 73°F/23°C   10.5 -22°F/-30°C   <19.1	<u>°/PD</u>   <u>% Elongation</u> 5.5   4.8 <3.0   >2.6
Compressive Strength	ASTM D 695	>10,000 psi (705 kg/cm²)
Penetration	ASTM G 17 -40° to 200°F/-40° to 93°C	0
Thermal Shock	-100° to 310°F/-73° to 154°C	No visible effects 10 cycles

## Coating Coverage Properties

Properties	Value
Color	Blue-Green
Mix Ratio	2A:1B by volume
Viscosity in cps      323 Brush Grade	Part A: 280,000 Part B: 13,000
Spray Grade	Part A: 120,000 Part B: 20,000
Viscosity in cps      323i Brush Grade	Part A: 150,000 Part B: 6,500
Spray Grade	Part A: 87,000 Part B: 10,000
Shelf life (unopened container)	18 months
Specific gravity	1.35 mixed
Coverage	142 sq ft/lb/mil (0.74 m <sup>2</sup> /kg/mm)
Max Operating Temperature	
Wet	203°F
Dry	250°F

## c. Coating and Wrapping of Joints and Fittings

- (1) Bare field sections, damaged sections of coatings and wrappings, and fittings shall be cleaned and wrapped with special joint tape. Joint tape shall be "Tapecoat" as manufactured by Tapecoat Company, Evanston, Illinois, "Scotchkote" as manufactured by the 3-M Company or equal.
- (2) Odd shaped fittings, such as service taps, line stopper fittings, etc., shall be painted with special corrosion resistant coating material. Coating material shall be "Roskote" mastic 612 x M or A-938 as manufactured by Royston Laboratories, Inc., Pittsburgh, Pennsylvania, or equal.

## 5. Insulating Couplings

- a. Insulating couplings shall be installed at the location shown on the Drawings and shall be Dresser, or equal. Insulating flanges will not be considered as an equal to compression type insulating couplings.

B. Polyethylene Pipe for Gas Service

1. Pipe

a. General

- (1) All polyethylene pipe and tubing furnished under this Specification shall meet or exceed all applicable requirements of ASTM D 2513, "Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings." In addition to complying with the above standard, the pipe, tubing and fittings shall meet, be equivalent to or exceed the additional requirements herein specified.

b. Material Qualification

- (1) The polyethylene plastic compound to be extruded shall conform to the requirements as listed in ASTM D 1248 for Grade P34 (Type III), Class C, material, and ASTM D 3350 as listed for cell classification of 345434-C. The plastic compound shall be of virgin quality and have been listed by the Plastic Pipe Institute as a PE 3408 or PE designated compound.

c. Pipe Size, Dimensions and Tolerances

- (1) The polyethylene pipe 3 inches in diameter and higher shall meet all applicable dimensional requirements of ASTM D 2513 for SDR 11 rated pipe. Polyethylene service tubing 2 inches in diameter and less shall be rated as SDR 11.0.

d. Marking

- (1) Marking of the tubing shall conform to the requirements listed in ASTM D 2513.

e. Packaging

- (1) Tubing shall be delivered in cardboard disposable reels or coils standard to the supplier.
- (2) Reels to be sequentially marked numerically as extruded with reference to quality control.

2. Fittings

- a. Fittings furnished under this Specification shall meet all applicable requirements of ASTM D 2683 "Socket-Type or Butt-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe" for use with SDR 11 or 11-5 polyethylene pipe.
- b. Fittings furnished for this project shall be manufactured by the same manufacturer as the pipe.

2.02 SOURCE QUALITY CONTROL

A. Polyethylene Pipe for Gas Service

1. General

- a. A nominal physical properties list for the base compound shall be submitted and accepted as part of this Specification. Manufacturer shall certify that production materials used are in conformance with the published properties.

2. Quality Tests

- a. The P.E. tubing shall be subjected to the applicable quality control tests outlined in Appendix X4, ASTM D 2513, "Recommended In-plant Quality Control Program for Plastic Pipe and Fittings Intended for Use in Natural Gas Distribution Systems."
- b. The polyethylene pipe and fittings shall also be tested for "Time-to-Failure of Plastic Pipe Under Constant Internal Pressure," ASTM D 1598, "Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing and Fittings," ASTM D 1599 and the long-term pressure test as noted in Appendix X2.2 of ASTM D 2513 using test method per ASTM D 2837.

3. Inspection

- a. The OWNER reserves the right to inspect the product at the place of manufacture, or at the point of delivery and to reject any shipment which does not conform to these Specifications. Defective tubing shall be replaced by the CONTRACTOR, at no cost to the OWNER. Upon request, the manufacturer shall allow access to the OWNER and/or the ENGINEER during the extrusion of the specific lot purchased.

4. Qualification of Manufacturer

- a. The manufacturer shall have adequate equipment and quality control facilities to continually produce finished tubing that will have the properties indicated herein.

## **PART 3 EXECUTION**

### **3.01 TRENCH EXCAVATION - PRESSURE PIPE**

#### **A. General**

1. Trenching shall include all clearing and grubbing, including all weeds, briars, trees and stumps encountered in the trenching, regardless of size. The CONTRACTOR shall dispose of any such material by burning, burial or hauling away or as noted on the Drawings.
2. Trenching also includes such items as railroad, street, road, sidewalk, pipe and small creek crossings; cutting, moving or repairing damage to fences, poles or gates and other surface structures, regardless of whether shown on the Drawings. The CONTRACTOR shall protect existing facilities against danger or damage while pipeline is being constructed and backfilled or from damage due to settlement of the backfill.
3. All excavation shall be open trenches, except where the Drawings call for tunneling, boring or jacking under structures, railroads, sidewalks, roads or highways.

#### **B. Trees and Shrubs**

1. Where pipelines run through wooded terrain, cutting of trees within limits of maximum permissible trench widths, as set forth in this article, will be permitted. However, cutting of additional trees on sides of trench to accommodate operating of trenching machine will not be permitted.

#### **C. Highways, Streets and Railroads**

1. Construction equipment injurious to paving encountered shall not be used. Curbs, sidewalks, and other structures shall be protected by the CONTRACTOR from damage by his construction equipment.
2. Where trenching is cut through paving which does not crumble on edges, trench edge shall be cut to at least 2 inches deep to straight and neat edges, before excavation is started, and care taken to preserve the edge to facilitate neat repaving.
3. The CONTRACTOR shall so coordinate his work as to produce a minimum of interference with normal traffic on highways and streets. He may, with the approval of the governing agency, close a street to traffic for such length of time considered necessary, provided persons occupying property abutting the street have an alternate route of access to the property which is suitable for their needs during the time of closure. It shall be the responsibility of the CONTRACTOR to give 24 hours advance notice to fire and police departments and to occupants of a street which will be closed, in a manner approved by the governing body.



4. The CONTRACTOR shall maintain road crossings in a passable condition for traffic until the final acceptance of the work.
5. Railroad and Highway Department requirements in regard to trenching, tunneling, boring and jacking shall take precedence over the foregoing general specifications and the following tunneling and boring or jacking specifications, where they are involved.
6. Uneven surfaces or humps in the ground encountered and high driveways and road crossings shall be dug through to such depth that pipe may be laid to a reasonably even grade and have minimum cover at the low places.

D. Existing Utilities

1. The CONTRACTOR shall determine, as far as possible in advance, the location of all existing sewer, culvert, drain, water, electric, telephone conduits, and gas pipes, and other subsurface structures and avoid disturbing same in opening his trenches. In case of sewer, water and gas services and other facilities easily damaged by machine trenching, same shall be uncovered without damage ahead of trenching machine and left intact or removed without permanent damage ahead of trenching and restored immediately after trenching machine has passed. The CONTRACTOR shall protect such existing facilities, including power and telephone poles and guy wires, against danger or damage while pipeline is being constructed and backfilled, or from damage due to settlement of his backfill. It shall be the responsibility of the CONTRACTOR to inform the customers of utilities of disruption of any utility service as soon as it is known that it has been or will be cut off.

E. Pipelines in Same Trench

1. Pipelines, force mains, and sewers laid in same trench shall, in all cases, be bedded on original earth, or other specified bedding materials, regardless of divergence in their elevations, unless otherwise specified. They shall never be laid in unsupported backfill or one above the other.

F. Location of Proposed Pipelines

1. The location of pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before construction on any line is started that would indicate desirable changes in location. Also, development of property traversed may require location changes. In such cases, the OWNER reserves the right to make reasonable changes in line and structure locations. The OWNER is under no obligation to locate pipelines so that they may be excavated by machine.

G. Trench Requirements

1. All trenches must be dug neatly to lines and grades.
2. The opening of more than 500 feet of trench ahead of pipe laying and more than 500 feet of open ditch left behind pipe laying, before backfilling, will not be permitted, except upon written consent of the OWNER. No trench shall be left open or work stopped on same for a considerable length of time. In case of objectionable delay trench shall be refilled according to backfill specifications.
3. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the ENGINEER may order stabilization by various means. Exclusive of dewatering normally required for construction and instability caused by neglect of the CONTRACTOR, such items as extra excavation, crushed rock for pipe bedding, concrete cradle or piling may be required.
4. Excavation for pipe laying must be made of sufficient width to allow for proper jointing and alignment of the pipe, but not greater than the maximums permitted in the following table:

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

<u>Nominal Pipe Size (Ins.)</u>	<u>Trench Width (Ins.)</u>	<u>Nominal Pipe Size (Ins.)</u>	<u>Trench Width (Ins.)</u>
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

5. Trenches in earth or rock shall be dug as shown on the Drawings and be sufficiently deep to insure a 42-inch minimum cover over gas lines, or as noted on the Drawings. Depths of trenching shall also be adequate for at least 1 foot minimum cover over valve nuts. In order to insure an earth cushion under the pipe for uniform bearing, trench depth shall be the cover requirement plus outside diameter of barrel of pipe plus the required bedding cushion. The cushion construction requirement shall also apply to tunnels.
6. Trench line stations and locations of accessories will be set ahead of the trenching. These will be set at least each 100 feet of pipeline. Trenches must be dug true to alignment of stakes. Alignment of trenches or pipes in trench must not be changed to pass around obstacles such as poles,

fences and other evident obstructions without the permission of the ENGINEER. Lines will be laid out to avoid obstacles as far as possible, contingent with maintenance of alignment necessary to finding pipeline in the future and avoiding obstruction to future utilities.

#### H. Damage to Existing Structures

1. Hand trenching is required, at no extra payment, where undue damage would be caused to existing structures and facilities by machine trenching.
2. In case of damage to any existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structure will be in as good condition and serve its purpose as completely as before. Where there is the possibility of damage to existing utility lines by trenching machine, the CONTRACTOR shall make hand search excavation ahead of machine trenching to uncover same.

#### I. Dewatering of Trenches

1. Dewatering of trenches shall be considered a part of trenching. Dewatering of trenches shall include groundwater and storm or sanitary sewage. Suitable pumping and other dewatering equipment is to be provided by the CONTRACTOR, to insure the installation of the pipeline structure in a dewatered trench and under the proper conditions. Dewatering shall include all practical means available for prevention of surface runoff into trenches and scouring against newly laid pipe.
2. Piles of excavated materials shall be trenched or temporarily piped to prevent, as far as practical, blockage of drainage ditches and gutters, and water carriage of excavated materials over street and highway surfaces.

### 3.02 LAYING PRESSURE PIPE

#### A. General

1. Inspection of Materials
  - a. All pipe, fittings and accessories shall be subject to an inspection by the ENGINEER at the job site. Any damaged materials shall be repaired or replaced to the satisfaction of the ENGINEER. Should repairs to the piping materials be necessary, then same shall be made in the presence of the ENGINEER using proven methods prescribed by the pipe manufacturer.
  - b. The ENGINEER'S inspection of materials shall in no way relieve the CONTRACTOR of his responsibility.

2. Laying Requirements

- a. Pressure pipe shall be laid to lines, cover or grades shown on the Drawings.
- b. The points insisted upon in the laying of pipe will be: Proper alignment, evenness of width and depth of joints, perfection in jointing, and care of the pipe in handling. For gas lines, proper coating and wrapping, electrical inspection and blow-down (purging of air in case of gas lines) of pipes are also essential and will be required.
- c. Precautions must be taken to prevent flotation of the pipe should water enter the trench prior to putting the pipeline into operation.
- d. In wet, yielding and mucky locations where pipe is in danger of sinking below grade or floating out of grade or alignment, or where the backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective.
- e. Whenever pipe laying is stopped, the end of the pipe shall be securely plugged with the manufacturer's standard expandable pipe plug, or similar conical plug, held in place by proper bracing or backing is required.
- f. No pipe shall be laid resting on solid rock, blocking or other unyielding objects. Jointing before placing in the trench and subsequent lowering of more than one section jointed together may be allowed, subject to the ENGINEER'S permission.

3. Installing Gas Pipe in Cover Pipe

- a. Installation of gas pipe in cover pipe is covered in Section 02326 of these specifications.

B. Laying Welded or Threaded Steel Gas Pipe

1. Bedding and Backfill

- a. The pipe shall be bedded in 4 inches minimum depth of loose soil and the hand placed loose soil lightly consolidated to the top of the pipe. Loose soil or select material is defined as native soil excavated from the trench, free of rocks, foreign materials and frozen earth.
- b. The select material shall be hand placed to a point 6 inches above the top of the pipe. After the specified backfill is hand placed, machine placed backfill may contain rock in pieces no larger than

8 inches in any dimension and to an extent not greater than 2 the volume of the backfill material used. The top 12 inches of the backfill shall contain no rock over 1-1/2 inches in diameter nor pockets of crushed rock.

- c. Larger rock fill will be allowed in wide trenches where side slopes are low enough to prevent rock from dropping over pipeline. If additional earth is required, it must be obtained and placed by the CONTRACTOR. Filling with rock and earth shall proceed simultaneously, in order that all voids may be filled with earth.
- d. In trenches in rock, natural or crushed sand shall be used for bedding and backfilling to the top of the pipe. Where flowing water is present, crushed stone bedding and backfill to the top of the pipe shall be substituted for the select material. Kentucky Department of Highways No. 9 stone shall be used for pipe up to 16 inches diameter.

2. Installation - General

- a. Coated and wrapped pipe shall not be handled at temperatures low enough to cause cracking of enamel. Pipe shall be placed on sandbags along or over the ditch prior to installation and shall not be lowered into the trench while enamel is soft.
- b. The minimum cover for gas lines shall be 30 inches.
- c. Where the pipeline must pass under other pipelines or other underground obstacles, joining of the next section shall be accomplished by welding "in the trench." "Pushing" or "scooting" the pipe under below ground surface obstacles is not recommended and will be allowed only with the permission of the ENGINEER as the field condition may dictate. Should "pushing" or "scooting" be allowed, the trench shall be cut to a sufficient depth under the below surface obstacle to allow the following:
  - (1) The pipeline to be raised for the purpose of "jeeping" the pushed or scooted portion. Should the "pushing" operation damage the coating and wrapping, same shall be thoroughly cleaned, dried and patched per the requirements hereinafter stated.
  - (2) The pipeline to be raised to permit the placement of additional bedding should the previously placed bedding have been damaged during the "pushing" operation.

3. Installation of Welded Joint Pipe

- a. The pipe to be installed under this Contract shall be fusion weld jointed prior to lowering into the trench, except where unusual conditions dictate that pipe be welded after placement.
- b. In case of welding, the adjoining ends of the pipe to be welded shall be beveled and clean, with the standard "V" bevel for butt joint welds and shall be supported in true alignment with proper separation throughout the welding process. The finished weld shall completely fill the "V" bevel, and not overlap the parent material by more than 1/16-inch. Welds shall be approximately 1/16-inch greater depth than the thickness of the pipe. The finished weld shall be made with a minimum of 2 passes.
- c. No pipe shall be welded below 35 degrees Fahrenheit unless an approved preheat process is used. All welds shall be neat and shall be burred prior to applying the wrap to the joint. All welds which are rough or sweat or leak shall be cut out and pipe ends cleaned and beveled and new welds made before lowering the pipe into trench.
- d. Only competent welders who have recently passed welding tests as prescribed by the Heating and Piping Contractors National Association or A.P.I. shall be employed. The CONTRACTOR shall submit to the ENGINEER for review 2 copies of the qualifications of all welders to be employed on this project.

4. Installation of Threaded Joint Pipe

- a. All threads shall be full, complete and made with sharp dies. The ends of the pipe shall be reamed to remove all burrs and all threads must be free of rusts and other foreign matter at the time the thread compound is applied. All thread compounds must be approved by the ENGINEER before use.
- b. Pipe threads shall be tapered and in accordance with API Standard 5B. Not more than 3 threads at each joint may be exposed after the connection is made.
- c. Couplings shall be screwed hand tight to one end of the pipe for shipping but must be removed and the threads coated with thread compound before making up the joint. The other end of the pipe must be protected until time of installation with the manufacturer's standard thread protection.

5. Shop Coated Pipe

- a. The cut-back ends of shop coated pipe shall be cleaned and coated. Joint wrapping shall extend a minimum of 2 inches over the shop coating.
- b. Fittings shall be cleaned and primed, and shall be wrapped with 50 mil coal tar impregnated pipe tape, by either spiral or cigarette wrap method. A 50 percent overlap of tape shall be applied to insure a minimum of 2 tape thicknesses. After the fitting is completely wrapped, the outer surface shall be flashed with a torch in order to seal the joints and to form a holiday-free coating. The use of other types of tape shall be with the ENGINEER'S permission and then in strict conformance with the tape manufacturer's instructions.
- c. Repairing of damaged areas of special shop applied coatings and coating of cut-back ends will be made according to the coating manufacturer's instructions.

6. Construction Observation

- a. Only pipe marked as outlined in Section 10 of API Specification for Line Pipe shall be installed under this Project. The ENGINEER shall be permitted to observe pipe to be delivered to the project at the mill, railhead or coating mill at his convenience.
- b. All pipe shall be field inspected and electrically tested, or "jeeped," prior to installation, with a tester developing between 7,500 and 10,000 volts. Tester shall be equal to Model 3 holiday detector as manufactured by D.E. Stearnes Company, Shreveport, Louisiana. Holiday detector shall be provided and maintained by the CONTRACTOR.
- c. All coating and wrapping shall be inspected for mechanical damage and pipe coating separation. When, in the judgment of the ENGINEER, sufficient damage or poor bond exists, all pipe delivered shall be returned to the coating mill and shall be cleaned and recoated. All costs of transportation and repair to damaged or improperly coated pipe shall be borne by the CONTRACTOR.

7. Field Bending of Pipe

- a. Minor changes in direction of the pipeline, both horizontally and vertically, may be made by field bending the pipe as permitted by the ENGINEER. Major changes in direction of the pipeline shall be made with fabricated bends. Field bending, when authorized, shall be made by the cold bending method utilizing bending shoes and proper holding equipment. When changes in direction exceed the limits as hereinafter specified, the bend shall be a fabricated bend.

- b. Bends shall be made to conform to the profile and alignment of the completed trench. The OWNER may require that the pipe containing the completed bend be set in the trench to test the bend radius and trench grade, if in the ENGINEER'S opinion, such testing is necessary.
- c. The completed bend must result in a smooth, uniform bend free from buckling, cracks, thinning of pipe wall or other evidence of structural damage. Any bend which, in the opinion of the ENGINEER, is determined to be unsatisfactory due to distortion, buckling or other such defect, shall be removed from the line and replaced.
- d. Field bends shall meet the following requirements:
  - (1) The maximum deflection permitted in field bends for pipe sizes 10 inches in diameter and less shall be 5 degrees in any length along the pipe centerline equal to the diameter of the pipe.
  - (2) The maximum deflection permitted in field bends for pipe sizes 12 inches in diameter and larger shall be 1-1/2 (1.5) degrees in any length along the pipe centerline equal to the diameter of the pipe.
  - (3) No bend shall create a difference between the maximum and minimum diameters in excess of 2-1/2 (2.5) percent of the nominal diameter and not more than 2 of this total deviation (1.25 percent) shall occur on either the maximum or minimum diameter.
  - (4) The minimum distance between the bend and the nearest end of a pipe joint, measured along the centerline of the pipe, shall be 1-1/2 pipe diameters. In these situations, precautions shall be used to prevent the occurrence of "out-of-roundness" at the end of the pipe as a result of the bending action.
  - (5) Bends will not be permitted at welds nor shall a weld come in contact with the bending shoe or any part of the clamping apparatus of the bending equipment.
  - (6) When welded seam pipe is used, the longitudinal seam shall be placed upward for horizontal bends and/or the side of the pipe for vertical bends, upward or downward.
  - (7) Wrinkle bends will not be permitted on this project.



- (8) Where shop coated and wrapped pipe is used, should the bending procedure damage the coating and wrapping, same shall be repaired as previously specified.

8. Cleaning Pipeline

- a. Each completed section of pipeline shall be cleaned through its entire length by means of pipeline cleaning pigs.
- b. The proper device and method for moving the cleaning device through the pipeline shall be determined jointly by the ENGINEER and CONTRACTOR together with the manufacturer's recommendation. The CONTRACTOR shall be responsible for furnishing air and motive force for running the cleaning device through the pipeline. After cleaning, all gas lines shall be blown with air until the line is free of water and other foreign matter.

9. Cathodic Protection Systems

a. Impressed Current Systems

- (1) Where new steel gas mains are connected to existing steel gas mains which are cathodically protected by an existing impressed current system, the CONTRACTOR will be required to modify the existing cathodic protection system to include the new pipe. The revised, impressed current system shall be as shown on the Drawings.

b. Magnesium Anode Installation

- (1) Magnesium anodes shall be installed to the spacing schedule as shown on the Drawings. Anodes lead cable and the gas pipe shall be installed in such a manner as not to be in direct contact with other piping or any type of underground current conductors. Anodes shall be installed a minimum of 5 feet from gas pipe and the top of the anode shall be below the bottom of the pipe. Where the lead is connected to pipe, the entire connection shall be coated and/or wrapped as herein specified for field wrapping of welded pipe joints. Connection to the new pipe shall be by the Cadweld method.

c. Cathodic Test Stations

- (1) At each 500 ft length along the new pipeline installed, or at locations as directed by the ENGINEER, cathodic test stations shall be installed per the standard details. The test box shall be a 4 pole box with lead wires attached to the steel pipe by the Cadweld process.

- (2) The cathodic test stations shall be installed as directed for systems with impressed current or sacrificial anode protection systems.

### C. Installing Flanged or Threaded Pipe and Fittings

#### 1. Installation - General

- a. The CONTRACTOR shall thoroughly clean the pipe and fittings before starting erection. All scale, rust and dirt shall be removed by power brushing and/or solvent cleaning.
- b. The erection of piping requires that it progress from the equipment it is connected to, after the equipment has been accurately leveled and aligned, without putting a strain on same. The pipe shall be erected in a workmanlike manner with runs in the true horizontal or vertical plane or as shown on the Drawings.
- c. The piping shall be supported by standard pipe hangers or piers rather than by the equipment. The pipe shall be free of all openings in walls and slabs when the final position of the piping is attained and before sealing the annular space about the pipe.

#### 2. Flanged Joint Connection

- a. All flanged type connections shall be made using an acceptable gasket and bolts. The bolts shall be tightened evenly to compress the gasket. Care is to be taken not to distort the flanges and/or piping by overtightening the bolts.

#### 3. Threaded Joint Connection

- a. All threads shall be full, complete and made with sharp dies. The ends of the pipe shall be reamed to remove all burrs and all threads must be free of rust and other foreign matter at the time the thread compound is applied. All thread compounds must be acceptable to the ENGINEER before use.
- b. Pipe threads shall be tapered and in accordance with API Standard 5B. Not more than 3 threads at each joint may be exposed after the connection is made.
- c. Unions shall be included to allow for proper assembly and disassembly of each run of pipe. Provide a union on each run of pipe connecting to threaded valves, devices and equipment.

D. Laying Plastic Pipe

1. Installing Polyethylene Pipe for Gas Service

- a. The pipe shall be bedded in 4 inches minimum of loose soil and the hand placed backfill lightly consolidated to a depth of 12 inches above the top of the pipe. "Loose soil" or "select material" is defined as native soil excavated from the trench, free of rocks, foreign materials and frozen earth. The machined placed backfill may contain rock no larger than 12 inches in any dimension and to an extent no greater than 2 the volume of backfill materials used. The top 12 inches of backfill shall contain no rocks over 1-1/2 inches in diameter or pockets of crushed rock.
- b. When located in solid rock trench, the bedding and initial backfill shall be Class I sand.
- c. Polyethylene pipe shall be joined by the heat fusion welding process. Welding equipment may be either gas fired or electric as the CONTRACTOR may select. The welding equipment must be capable of attaining the temperature recommended by the manufacturer for the particular polyethylene extrusion used on the project. Pouring of water on completed joints to speed cooling will not be allowed.
- d. Care shall be taken in lowering the pipe onto the earth bedding. The pipe shall be snaked into the trench, employing the natural snaking tendency of the pipe. Sharper bends shall be made with fittings rather than bending the pipe alone. The pipe will be rejected if it contains kinks and gouges.
- e. After the pipe is placed in the trench on the required bedding, stone free earth shall be placed to a minimum depth of 12 inches over the pipe. The remainder of the trench may then be machine backfilled with material excavated from the trench, except in no case shall rock spalls over 8 inches be permitted.
- f. All polyethylene pipe installed shall have installed in the trench with the pipe #16 THW copper tracing wire. The wire shall be buried directly over the pipe in the 12 inch covering of earth.
- g. At each 500 feet of new pipeline installed, or at locations as directed by the ENGINEER, cathodic test boxes as specified under steel pipe installation shall be installed. These boxes will be installed with the pipe locator wire attached to the poles in the box and used for pipe location only.

- h. Where tie-in to existing steel main is made, the connection shall be made with special factory molded transition fittings. The polyethylene end of the polyethylene to steel transition shall be of the same material as that of the polyethylene pipe supplied. Compression type transition fittings for polyethylene gas mains will be allowed only for unusual conditions encountered during construction.
- i. Compression type fittings will be allowed for use on polyethylene service lines at locations such as curb valves and meter risers. It is the intent of this requirement that all other joining of polyethylene service line be accomplished by heat fusion.

E. Supplemental Backfilling Information

1. General

- a. Excavated materials from trenches and tunnels, in excess of quantity required for trench backfill, shall be disposed of by the CONTRACTOR. It shall be the responsibility of the CONTRACTOR to obtain location or permits for its disposal.
- b. Where sod is destroyed in areas maintained equivalent to residence yards, it shall be replaced on slightly ridged backfill on trench, and where destroyed in areas adjacent to the trench, it shall be replaced by the CONTRACTOR with seed and mulch. The timing of seeding shall be controlled by the ENGINEER. Ground shall be prepared and fertilized as herewith specified. In small patches, supplying of 3 inches of topsoil and raking may be substituted for disking.
- c. Where pastures, thin grass or cover crops are destroyed by trenching, laying, backfilling, or tunneling operations, surface shall be prepared by disking, fertilizing, and seeding, as specified in Section 02930. The timing of this operation shall be controlled by the ENGINEER. Requirements of the Department of Highways for reseeding shall take precedence over these Specifications where they are involved.
- d. Before completion of the Contract, all backfills shall be reshaped, holes filled, and surplus materials hauled away and all permanent walks, street, driveways, and highway paving and sod replacement and reseeding performed.
- e. Backfill material must be uniformly ridged over trench, and excess hauled away. Ridged backfill shall be confined to the width of the trench and not allowed to overlap onto firm original earth, and its height shall not be in excess of needs for replacement of settlement of backfill.

- f. All rock, including crushed rock or gravel from construction, must be removed from yards and fields. Streets and walks shall be broomed to remove all earth and loose rock immediately following backfilling.

2. Special Requirements

- a. In case of street, highway, railroad, sidewalk and driveway crossings or within any roadway paving, or about manholes, valve and meter boxes located in such paving, the following backfill material and procedure is required.
  - (1) The pipe shall be bedded in 4 inches minimum depth (for pipe sizes through 16 inches) of crushed rock meeting the requirements of the Kentucky Department of Highways standard size No. 9.
  - (2) Similar material shall be used for haunching up to the spring line of the pipe, and it shall be worked under the haunch of the pipe to provide adequate side support. The crushed rock shall then be hand placed to a point 12 inches above the top of the pipe.
- b. After the above bedding and selected backfill have been placed, fill trench to within 6 inches of the surface with Kentucky Department of Highways No. 57 crushed stone, uniformly distributed, or other gradation acceptable to the ENGINEER. In order to accommodate compacted temporary surfacing it may be necessary to bulkhead or otherwise confine the stone fill at the open end of the trench.
- c. Temporary surfacing of street, highway, railroad, sidewalk and driveway crossings, or within any roadway paving, or about manholes, valve and meter boxes located in such paving, shall consist of 6 inches compacted depth of crushed stone as specified under Section 02235 for temporary walkway or road surfacing, placed and compacted in the trench. Compaction shall be accomplished by methods which shall be sufficient to confine stone to the trench under normal traffic. Backfills shall be maintained easily passable to traffic at original paving level until acceptance of project or replacement of paving or sidewalks.
- d. Department of Highways requirements in regard to backfilling will take precedence over the above general specifications where they are involved.

F. Cut-Ins, Tie-Ins, and Cutting and Plugging or Capping

- 1. The OWNER shall not be responsible for extra costs of cut-ins, tie-ins, cutting and plugging, due to gas flow not being entirely cut off by the existing valves.

2. A cut-in is defined as the removal of one section of existing pipeline (2 cuts of pipe) and insertion of one or more new pipeline connections therein.
3. A tie-in is defined as the removal of an existing plug or cap and the connecting of the new pipeline into the existing pipeline or fitting or valve at the joint opened by such removal.
4. A cutting and plugging is defined as the cutting and installation of a plug in an existing line or a cap on an existing line.

### 3.03 FIELD QUALITY CONTROL

#### A. Testing Steel Gas Pipe

##### 1. Joint Testing

- a. All welded joints on steel gas pipe installed shall be subject to X-ray tests conducted by an independent testing laboratory for conformance with the applicable requirements of the Pipeline Safety Act. The ENGINEER shall determine the number of welds, and the location of same, to be tested based on the applicable guidelines of the Pipeline Safety Act. Costs for these tests shall be paid by the OWNER.
- b. If, in the opinion of the ENGINEER, proper pipeline welds are not being obtained, the CONTRACTOR will be required to test the pipe prior to backfilling. Each joint shall be tested by applying 50 psi air pressure to the pipe and then applying a solution of soapy water to the joint. All joints observed to be leaking shall be cut out, rewelded and retested prior to wrapping and backfilling. Excessive weld failure, either from X-ray examination or air testing, shall be just cause for removal of the welder performing the welds.

##### 2. Hydraulic Test

- a. After construction is complete on each line installed, a hydraulic test shall be applied to the pipeline. The test medium to be used is potable water. The test pressure shall be the stated test pressures listed in the table as shown in Article 2.01.A.1.c of these Specifications.
- b. The test pressure shall be maintained for a period of 24 hours, and recorded with charted pressure recorder, without loss of water and no appreciable pressure drop. Should a line pressure drop occur, it shall be the responsibility of the CONTRACTOR to locate the leak(s) and repair same and retest the line. The CONTRACTOR shall provide the necessary pump, equipped with isolation valves and pressure recorder, as well as all operational personnel to conduct

the test(s). Only lines which have been tested as outlined above, in the presence of the OWNER and/or ENGINEER, shall be approved for incorporation into the system.

- c. Should the pipeline being tested be inaccessible to a source of potable water for the test medium, nitrogen gas shall be used. In this instance, the CONTRACTOR shall be responsible for providing access to the injection site for the injection equipment.

#### B. Testing Polyethylene Gas Pipe

1. Prior to the beginning of construction, the ENGINEER may require a sample joint to be performed by each jointer the CONTRACTOR plans to use on the project. The ENGINEER may require a "bend" test on each joint performed or a visual inspection by sampling a portion of the completed joint, or both.
2. Upon completion of each line installed, an air test shall be applied. The test pressure shall be 150 psi with the test pressure being maintained for a period of 24 hours, recorded with chart recorder, without loss of air or appreciable drop in pressure. Should a line pressure drop occur, it shall be the responsibility of the CONTRACTOR to locate and repair the leaks and retest the line. The CONTRACTOR shall provide the compressor with valves and pressure gauges for the tests as well as all operational personnel to perform the tests.
3. Only lines which have been tested as outlined above in the presence of the OWNER and/or the ENGINEER, will be approved for incorporation into the distribution system.

### 3.04 PURGING OF GAS LINES

#### A. Scope

1. These procedures cover the purging of air or natural gas from distribution facilities. They describe the manner in which the facilities are to be purged, how to determine when the purge is complete, and items to be considered prior to and during purging.
2. Purging procedures and examples are included.

#### B. General

1. Purging is required when:
  - a. New or existing facilities are temporarily taken out of service and the removal of natural gas is necessary.
  - b. Lines are abandoned. Gas department policy requires that all sections of abandoned mains be purged.

- c. Service restoration due to emergency depressurization for any cause.
2. Except for simple line piping systems, a written plan for purging should be prepared prior to the work and reviewed with the OWNER'S personnel involved. The following items should be discussed:
  - a. The extent of the facility to be purged and points of isolation.
  - b. The purging medium to be used.
  - c. The sequence of operation and assignment of personnel.
  - d. Safe working practices (especially around plastic pipe).
  - e. Means of communication during purging.
  - f. Means of determining end of purge at vent points.
  - g. Procedure for handling emergencies, such as gas ignition.
  - h. Notification for governmental authorities (police, fire, medical).
  - i. Back-up provisions, in case of unanticipated occurrences (i.e. compressor failure, purging medium, etc.).
3. When purging, the air or gas to be removed must be removed from all sections of the piping system. Branches and services must be individually purged. The straight through section should be purged first, then each lateral.
4. Injection Rate
  - a. Injection of purging medium into pipeline should be done at high enough velocity to create a minimum lineal flow of 100 feet per minute. This flow rate will maintain a turbulent interface, thereby minimizing mixing of gases and the possibility of the gases stratifying.
  - b. When purging air from pipelines, the minimum inlet control pressure specified in Table 1 should be maintained whenever possible. This pressure will create a flow velocity which greatly exceeds the 100 feet per minute requirement, maximizes turbulence and shortens purge duration.
  - c. For purging air in other than low pressure systems, a cracked main line valve will create a minimum lineal velocity of 100 feet per minute within the pipeline.



5. It is essential that vented natural gas and air/gas mixtures be diffused into the air without hazard to the OWNER'S personnel, the general public, or property. Valved vertical vent stacks should be used to keep the natural gas out of the work area and to blow it in a safe direction. Buildings, overhead lines and other obstructions or sources of ignition should be considered when determining the location for venting the gas.
6. Considerations must be given to public relations with regard to noise and odor as well as to any applicable state and local noise and air pollution regulation. Such considerations may include the notification of residents in close proximity to the blow down operation, reduction of line pressure, reduced rate of venting, etc.
7. Purging once started, must be continued until complete.

#### C. Purging Air from Facilities to Be Placed in Service

##### 1. Purging Services

- a. Service installations may be purged by opening the riser valve after the service tee has been tapped. Care must be given to blow gas away from structures by connecting a meter bend or street ell to the riser valve and pointing the stream of gas in a safe direction. The valve should be opened slowly to the full open position; no person or object should be in the exhaust stream area. The operator shall hold the wrench and keep it in contact with the valve at all times. Care must also be taken that no source of ignition is present in the area. A sufficient amount of gas should be blown to atmosphere to insure that all air is removed from the line. Service lines should be purged immediately after the service tee has been tapped and gas is in the service line.

##### 2. Purging of Pipelines

- a. Small diameter mains should be purged of air by injecting gas at high enough velocities to create a minimum lineal flow of 100 feet per minute within the pipeline. If this velocity cannot be met, a slug of nitrogen between the air and gas is required (see Procedure 4).

##### 3. The following methods can be used to determine the absence of air:

- a. A portable combustible gas indicator set on percent gas scale. The reading must indicate 100 percent gas.

#### D. Purging Natural Gas from Existing Facilities

1. When natural gas is purged by injecting air into lines less than 10 inches in diameter, it is not necessary to separate the air and natural gas with a nitrogen slug.

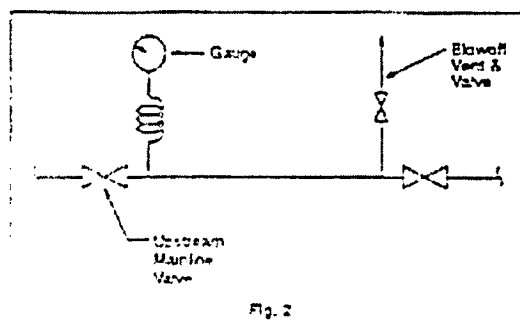
2. The disposal of large volumes of natural gas into the atmosphere should be minimized as far as practical by transferring as much as possible to adjacent systems.
3. Determine the absence of natural gas with a combustible gas indicator set on 100 percent gas.
4. Working on Existing Pipelines Which Have Been Purged
  - a. When it is necessary to perform work on an existing pipeline which has been purged, precautions shall be taken to verify that a combustible mixture has not developed inside the pipeline due to leakage from a segment of pipeline remaining in service, or from the release of gas from residual liquids in the pipeline. Special care must be taken when performing cutting or welding operations on such a line. The degree of isolation should be determined by observing any pressure increases within the purged space with all vents closed and by monitoring for the presence of natural gas using the method of Section C.3.

#### E. Purging Procedures

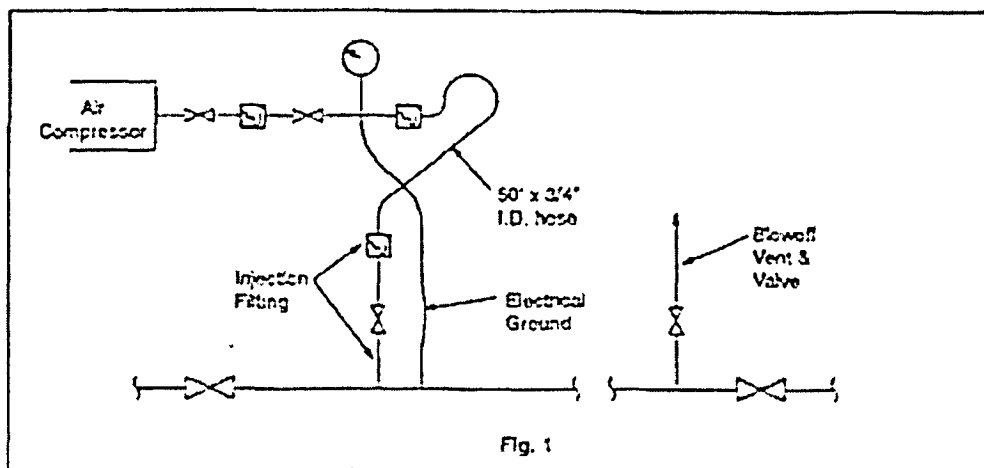
1. Purging Air with Natural Gas in Newly Installed Piping
  - a. Close off lines at C and D, isolating by pinching, fitting, valve or other means.
  - b. Open vent at 1.
  - c. Open valve A. Leave valve B closed.
  - d. Close vent at 1 when 100 percent natural gas is detected.
  - e. Open vent at 2. Close when 100 percent natural gas is detected.
  - f. Open vent at 3. Close when 100 percent natural gas is detected.
  - g. Open vent at 4. Close when 100 percent natural gas is detected.
  - h. Open vent at 5. Close when 100 percent natural gas is detected.
  - i. Open isolation point C and D.
  - j. Open valve B.
  - k. Purge all service lines installed. Stub services do not have to be purged.

2. Purging Air from Pipelines Using Natural Gas Without a Nitrogen Slug

- a. Determine blow-off size from table 1, using pipeline size and length of section to be purged (2-inch blow-off, 6-inch pipeline, 6000-foot section).
- b. Determine minimum inlet control pressure from Table 1 (22.4 psig). Verify that upstream pressure is equal to or greater than the inlet control pressure. If it is not, determine if adequate pressure exists to ensure a flow of 100 feet per minute. If this velocity cannot be met, a slug of nitrogen is required between the air and gas.
- c. Install on the section to be purged and near the upstream mainline valve, a pressure gauge which is accurate and readable within 1 psi, so that the inlet pressure can be observed. (The gauge should be connected through several feet of flexible tubing to eliminate excessive vibration.)
- d. Open the blow-off valve at the downstream end of the section to be purged. Downstream blow-off valves should always be in the fully open position.
- e. Begin purging by cracking upstream mainline valve to quickly bring the inlet pressure to the minimum inlet control pressure (12 psig) or greater. When minimum inlet control pressure cannot be obtained, purge at the highest feasible inlet pressure.
- f. Monitor blow-off gas until combustible gas indicator reads essentially 100 percent natural gas. Close mainline valve to stop injection. The use of a combustible gas indicator provides a means of analyzing the gas/air mixture throughout the purging operation. If the pressure at the gauge is maintained at the minimum inlet control pressure, the time it takes for natural gas to reach the blow-off location should be approximately 2 minutes for every mile of pipeline being purged.
- g. Close blow-off valve and return pipe to service.



3. Purging of Natural Gas from Pipelines Using Air Without a Nitrogen Slug
  - a. Determine blowdown valve size and vent pipe diameter from Table 1.
  - b. Determine injection rate required for a minimum slug velocity of 100 feet per minute for a 6-inch pipe. Table 2 shows an injection rate of 20 cfm is required.
  - c. Determine air injection pressure. Table 3 shows that air injection pressure of 20 cfm through a 3/4-inch I.D. hose 50 feet long is 3 psig.
  - d. Install connection to inject air.
  - e. Open blow-off valve near downstream mainline valve.
  - f. Blow down line to atmospheric pressure and leave vent open.
  - g. Inject air; maintain at least 3 psig on the gauge at the inlet to the air hose.
  - h. Stop injection of air when no natural gas can be detected. Refer to Section C.3 for method to determine presence of natural gas.
  - i. Positive steps should be taken before working on a section of pipeline which has been purged to isolate the purge section from any source of leakage. Isolation of the section may be accomplished by insertion of blanks, approved stoppers or actual detachment. Actual detachment is preferred.



**TABLE 1  
MINIMUM INLET CONTROL PRESSURE (psig)**

Blow-off valve (inches)	Line size (inches)	Length of pipeline (miles)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	4	14	20	25	29	33	37	40	43	46	49	52	55	57	60
	6	22	25	28	30	32	35	37	39	41	43	44	46	48	50
4	6	8	12	16	19	22	24	27	29	32	34	36	38	40	41
	8	8	11	13	16	18	20	22	24	26	28	29	31	32	34

Information from Table 8-1 "Purging Principles and Practices," AGA #XK0775

**TABLE 2  
NITROGEN PURGING DATA FOR 4" TO 8"**

Volume of nitrogen required for inert slug and injection rates								
Pipe Size	Pipe Content Cu. Ft./Ft.	Slug Veloc	Inject Rate Cu. Ft./Min.	Cu. Ft. Nitrogen per length				
				500'	1000'	2000'	5000'	10000'
4"	.09	100	10	10	10	20	20	20
6"	.22	100	20	30	30	30	40	50
8"	.37	100	40	70	70	80	90	120

**TABLE 3  
MEASURING INJECTION PRESSURE THROUGH HOSES AND ORIFICES**

Determination of pressure required to inject flow rates of nitrogen or air through various size hoses and orifices				
Desired Inject Rate CFM	Minimum required pressure upstream of hose or orifice, psi			
	Each 3/4" I.D. 50' Hose	Each 1-1/4" 50'	Each 2" I.D. 50' Hose	Orifices
				3/8" 1/2" 5/8"
10	3			
20	5			
40	11			
60	18			25

3.04 BASIS OF PAYMENT

A. Excavation and Backfilling

1. Trenching, Laying, and Backfilling Pipelines

a. Unit Price Contracts

- (1) Payment for trenching for gas lines shall be included in the unit price bid for furnishing, trenching, bedding, laying, and backfilling the pipe.

2. Solid Rock Excavation

a. Unclassified Excavation

- (1) Excavation shall be unclassified and the cost of all excavation of whatever nature and state, including solid rock, shall be included in the CONTRACTOR'S unit price bid for each item of construction requiring excavation.

3. Search and Extra Depth Trench Excavation

- a. "Search" trench excavation shall be the actual measured excavation within limits as acceptable to the ENGINEER.

- b. "Extra Depth" trench excavation shall be the calculated yardage below the lowest point of excavation which would normally have been required for construction.

- c. Trench width limitations for either condition shall be as listed in the following table:

For 6" Pipe 2'-6"	For 16" Pipe 2'-11"	For 36" Pipe 5'-6"
For 8" Pipe 2'-9"	For 18" Pipe 3'-2"	For 42" Pipe 6'-0"
For 10" Pipe 2'-9"	For 20" Pipe 3'-5"	For 48" Pipe 6'-6"
For 12" Pipe 2'-9"	For 24" Pipe 3'-8"	For 54" Pipe 7'-0"
For 14" Pipe 2'-9"	For 30" Pipe 4'-4"	

- d. The work of uncovering and backfilling required for locating existing sewers, water lines and other existing facilities where such uncovering and backfilling is not within trench for improvements, shall be paid for at a price per cubic yard for such excavation actually removed and backfilled under item for "Search or Extra Depth Trench Excavation." Such payment does not include uncovering existing utility lines for their protection during or after trenching operations for the proposed pipeline.

- e. Where pipelines are laid in the same trench, the CONTRACTOR shall receive full trenching and backfill unit prices for each pipeline so laid, the same as if laid in widely separated trenches.

4. Mechanical Tamping

- a. Mechanical tamping is defined as backfill placed and compacted by power driven mechanical equipment to a greater density than can be achieved by natural settlement or hand tamping methods. Mechanical tamping will be required when ordered by the ENGINEER with payment by the cubic yard so compacted. Measurement, but not actual extent of the mechanical tamping, shall be limited by the numerical maximum allowable trench width (for each size pipe) as shown in the table listed under "Search and Extra Depth Trench." Payment for mechanical tamping shall not include the specified haunching or initial backfill required above and below the top of pipe.

B. Tunneling, Boring or Jacking

1. Boring or Jacking

- a. In unit price Contracts, usable holes either bored or jacked shall be paid for per linear foot of hole actually bored or jacked, according to the diameter of the hole required, measured along the centerline from the point of entrance on one side to the point of exit on the other side. When cover pipe is installed inside the bore, boring or jacking and cover pipe shall be paid per linear foot based on the length of the cover pipe installed, according to the diameter of the cover pipe required.

C. Trench and Pipe Stabilization

1. Extra Excavation

- a. Extra excavation required for trench or pipe stabilization shall be paid by the cubic yard so excavated under the item "Search and/or Extra Depth Trench Excavation" based on the limitations for that item.

2. Crushed Stone for Trench Stabilization

- a. Crushed stone ordered by the ENGINEER for trench stabilization shall be as specified in Section 02235 of these Specifications and paid by the ton so placed.

3. Crushed Stone for Pipe Bedding

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- a. Additional crushed stone bedding ordered by the ENGINEER for pipe stabilization shall be as specified in Section 02235 of these Specifications and paid by the ton so placed.
4. Plain or Reinforced Concrete Arch
  - a. Plain or reinforced concrete arch called for on the Drawings and/or ordered by the ENGINEER shall be paid for by the linear foot of pipeline upon which it is placed. The Form of Proposal will indicate which method is to be used.
5. Plain or Reinforced Concrete Cradle
  - a. Plain or reinforced concrete cradle called for on the Drawings and/or ordered by the ENGINEER shall be paid for by the linear foot so placed.

D. Gas Lines

1. Unit Price Contracts
  - a. Gas Lines
    - (1) Payment for laying, trenching, and backfilling gas lines shall be included in the unit price per linear foot of pipe laid, including length of fittings and valves. However, payments will not be made for branch lengths of fittings within 2.5 feet of edge of main trench. The extra cost of trenching in difficult locations, such as stream, railroad, and highway crossings, if not covered in other contract unit prices, shall be included in unit price for trenching, laying, and backfilling.

E. Excess Materials

1. The unit prices for trench excavation, tunneling and backfill shall include the cost of disposition of excess excavated materials.

F. Valves

1. The unit price bid for the installation of valves shall include valve boxes, the cost of the concrete collar required around the valve boxes and extension stems if required.

G. Testing and Purging

1. The unit price bid for installing gas lines shall include cleaning, purging, and testing the line.



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H. Anode Installation

1. The unit price bid for installing magnesium anodes shall include the lead cable, installation, and coating the connection.

I. Impressed Current Cathodic Protection System

1. The cost for furnishing and installation of the impressed current apparatus or the updating of the existing apparatus to accommodate the additional new piping shall be included in the CONTRACTOR'S lump sum bid for the item.

J. Tracing Wire or Tape

1. The cost of tracing wire installed with nonmetallic pipe shall be included in the price bid for furnishing and installing the pipe.

K. Line Markers

1. The furnishing and installation of line markers shall be paid for each line marker installed.

L. Cathodic Test Stations

1. The furnishing and installation of cathodic test stations shall be paid for each station installed at the bid price as shown on the Form of Proposal.

M. Pressure Reducing Stations

1. Pressure reducing stations shall be paid by lump sum and shall include all materials and labor for the complete unit.

**END OF SECTION**

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**SECTION 02830**

**FENCING**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required to install fencing as shown on the Contract Drawings and as specified herein.

**1.02 RELATED WORK**

- A. Special sequence or schedule requirements (if any) are specified in Section 01010 - Summary of Work.
- B. Concrete is specified in Division 3.

**1.03 QUALIFICATIONS**

- A. The fencing shall be furnished and installed by a manufacturer and supplier who are reputable and qualified in the design, fabrication, and installation of fencing in accordance with best practices and methods.

**1.04 SUBMITTALS**

- A. Shop drawings and other items needed to establish compliance with the Drawings and these Specifications shall be submitted to the ENGINEER in accordance with Section 00700 (00710).

**1.05 SYSTEM WARRANTY**

- A. Refer to Division 0 and 1 for warranty requirements.

**PART 2 PRODUCTS**

**2.01 SECURITY FENCING**

**A. General**

- 1. Fencing shall be woven wire, chain link type, and shall be 8 feet high overall. Fabric shall be 7 feet high with 1 foot of height of three-strand barbed wire overhanging outside at a 45 degree angle.

**B. Fittings**

- 1. All fittings necessary to make a complete installation shall be malleable iron, pressed steel, aluminum or forgings. All ferrous materials shall be thoroughly galvanized by the hot dip method as specified in ASTM A 525-81.

**TABLE 1**  
**CHAIN LINK FRAMEWORK TABLE**  
**(Schedule 40)**

Size Pipe	Weights Lbs. Per Ft.	Depth	Concrete Diameter
1 5/8" O.D.	2.27 lbs.		
2" O.D.	2.72 lbs.		
2 1/2" O.D.	3.65 lbs.	30"	10 Inches
3" O.D.	5.79 lbs.	3 Ft.	12 Inches
4" O.D.	9.11 lbs.	3 Ft.	12 Inches
6 5/8" O.D.	8.97 lbs.	4 Ft.	14 Inches
8 5/8" O.D.	5.00 lbs.	4 Ft.	16 Inches

**C. Corner, Terminal and Pull Posts**

1. Corner, terminal and pull posts shall be hot galvanized inside and outside at a rate of 2.0 oz per square foot of actual surface area. The 3-inch outside diameter seamless steel pipe shall weigh 5.79 pounds per foot and extend 3 feet below ground level. The posts shall extend high enough to allow attachment of barbed wire by 3 tension bands equally spaced to give a uniform appearance. All posts shall be capped with a heavy malleable iron top, of bullet type construction, to exclude moisture.
2. SS-40 pipe, as manufactured by Allied Tube and Conduit Corp. or equal, may be substituted for Schedule 40 pipe. The SS-40 pipe sizes may be less than the Schedule 40 sizes but shall have greater strength.

**D. Line Posts**

1. Line posts shall be 2-1/2 inch diameter high carbon seamless steel pipe, hot galvanized inside and outside at a rate of 2.0 oz per square foot of actual surface area. The 2-1/2 inch pipe shall weigh 3.65 lbs per foot and extend 30 inches below ground level. Line posts shall be capped with a barbed wire extension arm as specified herein.
2. SS-40 pipe, as manufactured by Allied Tube and Conduit Corp. or equal, may be substituted for Schedule 40 pipe. The SS-40 pipe sizes may be less than the Schedule 40 sizes but shall have greater strength.

**E. Gate Posts**

1. The posts shall be in conformance with the "Gate Post Schedule" and shall be capped with a heavy malleable iron top, of bullet type construction to exclude moisture. Gate posts shall be coated inside and outside with hot galvanized at a rate of 2.0 oz per square foot of surface area. Posts will extend high enough to allow attachment of barbed wire by 3 tension bands equally spaced to give a uniform appearance.

2. Gate Post Schedule

<u>Single Gates</u>	<u>Double Gates</u>	<u>Schedule 40</u>
Up thru 5'	Up thru 10'	3" O.D.
Over 5' thru 8'	Over 10' thru 16'	4" O.D.
Over 8' thru 12'	Over 16' thru 24'	6 5/8" O.D.
Over 12' thru 18'	Over 24' thru 36'	8 5/8" O.D.

3. SS-40 pipe, as manufactured by Allied Tube and Conduit Corp. or equal, may be substituted for Schedule 40 pipe. The SS-40 pipe sizes may be less than the Schedule 40 sizes but shall have greater strength.

F. Rails

1. Top rails and brace rails shall be 1-5/8 inch outside diameter seamless steel tubing, weighing 2.27 pounds per foot, hot galvanized at a rate of 2.0 oz. per square foot of actual surface area. Rails shall be not less than 20 feet in length jointed with extra long pressed steel sleeves as specified herein.
2. SS-40 pipe, as manufactured by Allied Tube and Conduit Corp. or equal, may be substituted for Schedule 40 pipe. The SS-40 pipe sizes may be less than the Schedule 40 sizes but shall have greater strength.

G. Fabric

1. The fabric shall be aluminum coated steel to meet ASTM A 491-80 composed of individual wire pickets, helically wound and interwoven from No. 9 gauge steel wire to form a continuous chain link fabric having a 2-inch mesh. Both the top and bottom edges shall be twist construction. Basic steel wire shall conform to the following:

Carbon	.18 - .31
Manganese	.60 - .90
Phosphorous	.040 Max.
Sulphur	.050 Max.

2. The aluminum coating weight shall be a minimum of 0.40 ozs per square foot of wire surface. The breaking strength of the aluminum coated wire shall be a minimum of 1,290 ft-lbs

H. Gates

1. Swing frames shall be 2 inches outside diameter galvanized seamless steel pipe weighing 2.72 lbs per foot, corners fitted with rigid watertight heavy malleable iron castings or electrically welded joints. Internal bracing shall be of 1-5/8 inch outside diameter galvanized seamless steel pipe weighing 2.27 lbs per foot.

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2. SS-40 pipe, as manufactured by Allied Tube and Conduit Corp. or equal, may be substituted for Schedule 40 pipe. The SS-40 pipe sizes may be less than the Schedule 40 sizes but shall have greater strength.
  3. Fabric - See 2.01.G this Section.
  4. Gate hinges shall be double clamping offset type allowing gates to swing back parallel with line of fence. They shall be of malleable iron and forged steel heavily galvanized.
  5. Gate latches shall be of the eccentric double locking type which engage the strikes securely bolted to either gate frame or gate post at both the top and bottom. In the case of double gates, latches shall also engage a heavy malleable iron non-freezing gate stop anchored in concrete footing. Latches shall be equipped for locking with padlock.
  6. Gate keepers shall be furnished with each gate frame to automatically engage gate frame when swung to open position.
  7. Barbed wire shall be 3 strands each of two No. 12-1/2 gauge twisted copper bearing steel line wires, hot dipped aluminum per ASTM A 585-81 for Class II coating. The weight of the coating shall be 0.30 oz per square foot of surface area. The barbs shall be No. 14 gauge aluminum 4-point barbs, spaced not more than 4 inches apart.
  8. Gate Posts - See 2.01.E this Section.
- I. Chain Link Special Appurtenances (Per ASTM F 626-79)
1. Each line post shall be capped with a hot dipped galvanized barbed wire extension arm capable of passing top rail. The arm shall be of pressed steel riveted to a malleable iron base at a 45 degree angle for carrying three strands of barbed wire.
  2. Brace and tension bands shall be beveled edge type fabricated from pressed steel or aluminum. Steel bands shall be hot dipped galvanized with a minimum of 1.2 oz of zinc coating per square foot of surface area. Brace bands shall be a minimum of 12 gauge in thickness and a minimum width of 3/4-inch or 19.05 mm. Tension bands shall be a minimum of 14 gauge with a minimum of 3/4-inch or 19.05 mm in width.
  3. All post caps and rail ends shall be designed to fit snugly over post and prevent moisture from entering the inside of the tube. Post caps shall be fabricated from malleable iron, pressed steel or aluminum. Line post caps shall be designed to allow top rail to pass through. All ferrous materials shall be thoroughly galvanized by the hot dip method with a minimum of 1.2 oz of zinc coating per square foot of surface area.

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4. Top rail sleeve shall be fabricated from pressed steel or round steel tubing. Sleeve shall be hot dip galvanized with a minimum of 1.2 oz. of zinc coating per square foot of surface area. The design of the sleeve shall be such that no movement along the rail can take place upon installation.
5. Tension bars for attaching fabric to terminal post shall be a minimum of 3/16-inch thickness by 3/4-inch in width. The length shall be a minimum of 2 inches less than the full height of the chain link fabric.
6. Truss rods shall be a minimum of 5/16 inch in diameter fabricated from merchant quality steel rod and hot dip galvanized with a minimum of 1.2 oz of zinc coating per square foot of surface area. All rods shall be designed and equipped with a truss tightener.
7. Aluminum ties shall be used for attaching fabric to top rail, brace rails and line post. The aluminum ties shall be 9 gauge round wire of Alloy 1100-H 14 or equal.
8. Carriage bolts shall be hot dip galvanized or aluminum, 5/16-inch x 1-1/4 inch, with nut and shall be used in conjunction with brace and tension bands. Galvanized bolts and nuts shall be coated in accordance with ASTM A 153-80. Larger bolts as required at gates or latches shall be galvanized coated in accordance with ASTM A 153-80.

## 2.02 FARM WIRE FENCING

### A. General

1. Fencing shall be farm type fabric with 2 strands of galvanized barbed wire stretched between 9 inch diameter treated pine corner and/or pull posts set in concrete. Intermediate or line posts shall be 5-1/2 inch diameter treated pine post or standard painted steel tee section post spaced on 8-foot centers. Every third post shall be a 5-1/2 inch diameter treated pine post. The corner posts shall be braced from the center of corner posts to the center of a 6-inch diameter treated pine brace post located 8 feet from the corner post. Bracing shall be provided with a 4-inch diameter treated pine post keyed and doweled in place. Cross bracing shall be accomplished with 3 strands of No. 9 gauge galvanized brace wire wrapped from top of brace post to bottom of corner post. The tensioning adjustment shall be made with an extra heavy galvanized turnbuckle attached to a 3/4-inch eye bolt through the 9-inch corner post. The brace wire shall be tightened to a taut position and locked in place by a method acceptable to the ENGINEER.
2. Layouts of fencing and gate are as shown on the Drawings. Copies of shop drawings and descriptive literature of fencing materials shall be submitted to the ENGINEER for review and acceptance prior to the use of materials.

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B. Material

1. Fence fabric shall be farm type 1047-6-9, 10 wires horizontal, 47 inches high, 6-inch stays with No. 9 gauge wire throughout with Class 2 (0.60 oz/ft) galvanized coating per ASTM A 116-81.
2. Barbed wire shall be 2 strands each of two No. 12-1/2 gauge twisted copper bearing steel wires, hot galvanized after weaving, with No. 14 gauge aluminum 4 point barbs spaced not more than 4 inches apart. The zinc coated (galvanized) steel barbed wire shall be produced and tested in accordance with ASTM A 121-81 for Class 2 coating (0.50 oz per ft).
3. Wood line posts shall be 5-1/2 inches diameter x 7 feet-6 inches long pressure treated pine in accordance with the American Wood Preserver's Association Standard C5-81.
4. Steel line post shall be the standard painted steel tee section, 7 feet-6 inches long, with hooks to clasp wire.
5. Corner posts shall be 9 inch diameter x 9 feet long pressure treated pine in accordance with the American Wood Preserver's Association Standard C5-81.
6. Farm gate shall be made of tubular construction from 1-1/2 inch O.D. pre-galvanized pipe, 50 inches in height with 7 bars horizontally with spacing being closer toward the bottom.

2.03 FARM PLANK FENCING

A. General

1. Fencing shall be farm type, 4 board treated rough oak planks, treated wood posts (40 penetration) set on 7.81-foot (7-foot-10-inch) centers with a treated wood batten at each post. The fence shall be 54 inches in height with a 7-inch gap between each board. The layout of the fence line and gates shall be as shown on the Drawings.

B. Material

1. All posts shall be 5-1/2 inch diameter, 7 feet-6 inches long pressure treated to 0.40 penetration (min.) in accordance with the American Wood Preserver's Association Standard C5-81. All posts shall be uniform without bows or crooks. The ENGINEER reserves the right to reject any post not meeting the above stated requirements.
2. Planks shall be rough cut oak with the minimum dimensions of 6 inches wide, 1 inch thick and running 16 feet in length, pressure treated to 0.40 penetration per requirements established by the American Wood Preserver's Association C5-81.

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3. Post bats shall be used at each post to cover joints. The bat shall be flush with the top of top plank and extend 2 inches below bottom plank of fence. Bats shall meet the same quality requirements for wood and preservatives as specified for planks.

### **PART 3 EXECUTION**

#### **3.01 DELIVERY, STORAGE AND HANDLING**

- A. Special provisions for material and equipment are given in Section 01600.

#### **3.02 SITE PREPARATION**

- A. The location of fence lines, gates and terminal posts shall be as shown on the Drawings. Prior to construction the CONTRACTOR shall locate and flag all underground utilities in or about the fence construction. Adequate clearing and grading shall be done prior to fence construction.

#### **3.03 SECURITY FENCE INSTALLATION**

##### **A. Posts**

1. All posts shall be set 10 feet or less on centers equally spaced between pull posts in a hole filled with concrete as required per Table 1. All concrete shall be left 2 inches below grade to allow for cover with sod, blacktop or other cover material. Posts shall be accurately lined and plumbed. Intermediate pull posts with bracing shall be equally spaced when a straight run becomes greater than 300 feet in length. If solid rock is encountered, excavation shall be at no extra cost to the OWNER.

##### **B. Terminal, Gate, Pull and Corner Post Bracing**

1. A center rail is required with horizontal braces and truss rod to adjacent line post, securely fastened with adequate adjustment.

##### **C. Top Rail**

1. The top rail shall run through the openings in the line post tops on a continuous grade uniformly parallel with the ground surface. Connection to the corner, gate, terminal and pull posts shall be with brace bands and rail ends. Offsets at corners will not be permitted.

##### **D. Fabric Stretching**

1. Two stretcher bars shall be threaded through the fabric from top to bottom at a location in the center of the fence section to be stretched. The bars shall be adequately spaced such that when stretched the installer has room to thread a loose picket link down through the meshing links of the 2 ends to make a perfect jointing. The stretching shall be done with 2 blocks and when released the fabric shall be taut along any



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point of the fence line. The top selvage shall be dressed above the top rail and the fabric secured with tie wires spaced not more than 24 inches apart and uniformly tied. The fabric shall be fastened to the line posts with specified tie wires spaced not more than 14 inches on center uniformly tied.

#### E. Barb Wire Stretching

1. Block and tackles and come along shall be used to string barbed wire. Wire shall be placed in the openings provided in the barb arms, and locked in place by sliding the locking wire down inside the V-channel and over the barbed wire.

#### F. Repair of Galvanized Surfaces

1. Galvanized surfaces damaged by welding or other reasons shall be repaired according to Federal Specification MIL-P-21035 (Galvanizing Repair Spec.) as follows:
  - (a) Remove foreign matter from both damaged and contiguous undamaged area by wire brushing and cleaning with metal conditioner recommended by cold galvanizing coating manufacturer.
  - (b) Apply 2 coats of cold galvanizing coating to damaged area, ensuring an overlap of the surrounding undamaged galvanizing for continuity of galvanic protection. Cold galvanizing coating shall be Z.R.C. Chemical Products Co., "Z.R.C. Cold Galvanizing" or Galvicon Corp., "Cold Galvanizing," or equal.

### 3.04 FARM WIRE FENCING INSTALLATION

#### A. Corner Posts

1. Corner posts shall be placed, true to line and plumb at least 36 inches in the ground in concrete according to the concrete requirements shown in Table 2 in this group of the Specifications. All corner posts shall be braced to the first line post or brace post. This post shall be a standard specified 6-inch diameter wood post set in concrete in accordance with Table 2 of this group of the Specifications. Bracing shall be with a 4-inch diameter post keyed and doweled from center of corner post to the center of brace post. Wire cross bracing shall be with 3 strands of No. 9 gauge galvanized brace wire wrapped from bottom of corner post to top of brace post. Adjustment on the brace wire shall be with an extra heavy galvanized turnbuckle attached to a 3/4-inch eye bolt through the 9-inch corner post. The brace wire shall be tightened to a taut position and locked in place.

B. Line Posts

1. All line posts shall be placed on 8 foot centers at least 30 inches in the ground true to line and plumb. Wood line posts shall be either driven into place or set in an augered hole. If augered, the hole shall be backfilled with dense graded aggregate (DGA), and hand tamped until post is tight. Mechanically tamped earth backfill will also be acceptable. Steel line posts shall be driven into place by an acceptable method which prevents damage to post.

C. Gate Posts

1. Gate posts shall be placed true to line and plumb at least 36 inches in the ground and set in concrete in accordance with concrete requirements per Table 2 of this group of the Specifications. All gate posts shall be braced back to first line post or brace post. This post shall be a 6-inch diameter treated wood post set in concrete. Bracing shall be with a 4-inch diameter post keyed and doweled from bottom of gate post to top of brace post. Wire bracing shall be with 3 strands of No. 9 gauge galvanized wire wrapped from bottom of corner post to top of brace post. Adjustment on the brace wire shall be with an extra heavy galvanized turnbuckle attached to a 3/4-inch eye bolt which shall be bolted through the 9-inch corner post. The brace wire shall be tightened to a taut position and locked in place.

D. TABLE 2: Concrete Requirements for Corner, Brace and Gate Posts

Description	Depth	Concrete Dia.
9" Corner Post	3 Ft.	16 Inches
6" Brace Post	3 Ft.	12 Inches
9" Gate Post	3 Ft.	16 Inches
9" Pull Post	3 Ft.	16 Inches

E. Fabric

1. Fence fabric shall be stretched taut between corner posts, intermediate pull posts and/or gate posts. No splicing will be permitted. Fabric shall connect to corner posts, pull posts or gate posts by wrapping the horizontal wire strands twice around post before connecting to line fabric. Fabric shall be fastened to wood line post with 1-1/4 inch staples at a rate of 1 per horizontal strand. Wire hooks or ties shall be used to secure fabric to steel line posts.

F. Hanging Gates

1. Gates shall be swung plumb and level and high enough to prevent dragging. Latches shall be properly fitted and firmly secured to posts. Means shall be provided for latching as well as retaining gate in the open position.

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G. Barbed Wire Stretching

1. The 2 strands of barbed wire shall be stretched to accepted tension with stretchers specifically manufactured for that purpose. All strands shall be double stapled to each wood line post and tied at each steel line post. OWNER may require at no extra cost, for strands of barbed wire to be alternated on each side of posts.

3.05 FARM PLANK FENCING INSTALLATION

A. Posts

1. All posts shall be placed at least 30 inches in the ground true to line and plumb on 7.81-foot (7-foot-10-inch) centers. Posts shall be either driven in place or set in augered hole. If augered, each hole shall be backfilled with dense graded aggregate (DGA) hand tamped until post is tight. Mechanically tamped earth backfill will also be acceptable.

B. Planks

1. Plank ends shall be trimmed where cracking exists. Top plank or top rail shall be installed first by temporarily tacking in order to check alignment. Adjustment shall be made if a smooth flowing fence is not attained. Once the top rail has been installed to the ENGINEER'S satisfaction the CONTRACTOR shall install the remaining 3 planks. Each board shall be nailed with three #10 screw type nails per post.
2. The battens shall be placed at each post to cover post and plank joints. They shall be flush with top rail and be nailed with #10 screw type nails, 2 at the top, 2 at the bottom and 2 in the middle.

3.06 CLEAN-UP

- A. CONTRACTOR is responsible for removal of all excess material, earth, etc. due to fence construction.
- B. Earth shall be slightly mounded around each post to enhance drainage.

3.07 METHOD OF PAYMENT

- A. Payment for all fencing work under this Contract shall be included in the CONTRACTOR's lump sum price, unless otherwise specified on the bid form and in the Contract Agreement.

**END OF SECTION**

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**SECTION 02930**

**SEEDING**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required to perform seeding as shown on the Contract Drawings and as specified herein.
- B. All areas disturbed by construction operations shall receive a protective cover of vegetation. The work shall consist of preparing the area for treatment, furnishing and placing soil amendments, fertilizer, seed, inoculants, mulch and plantings as specified in the designated areas.

**1.02 RELATED WORK**

- A. Special requirements for materials and equipment are given in Sections 00700 and 01600.
- B. Special sequence or schedule requirements (if any) are specified in Section 01010 - Summary of Work.

**1.03 QUALIFICATIONS**

- A. The work shall be done by a provider who is experienced, reputable, and qualified in the tasks required.

**1.04 SUBMITTALS**

- A. Shop Drawings and other items needed to establish compliance with the Drawings and these Specifications shall be submitted to the ENGINEER in accordance with Section 00700.
- B. Where fertilizer is furnished from bulk storage, the CONTRACTOR shall furnish a supplier's certification of analysis and weight. When required by the Contract, a representative sample of the fertilizer shall be furnished the OWNER for chemical analysis.

**1.05 WARRANTY**

- A. Refer to Division 0 and 1 for warranty requirements.

**PART 2 PRODUCTS**

**2.01 SEED**

- A. All seed shall conform to the current rules and regulations of the state where it is being used and from the latest crop available. It shall meet or exceed the standards for purity and germination listed herein.
- B. Seed shall be labeled in accordance with the state laws and the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of invitations for bids. Bag tag figures will be evidence of purity and germination. No seed will be accepted with a date of test of more than 9 months prior to the date of delivery to the site.
- C. The seed for use on this project shall be of the type as listed below with the listed germination and purity qualifications.

<u>Species</u>	<u>% Purity</u>	<u>% Germination</u>
Tall fescue (KY-31) ( <u>Festuca arundinacea</u> )	98.5	80
Ryegrass ( <u>Lolium multiflorum</u> )	98.0	90
Oats ( <u>Avena sativa</u> )	98.0	90
Rye, grain ( <u>Secale cereale</u> )	97.0	85
Redtop ( <u>Agrostis alba</u> )	90.0	80
Ky. Bluegrass ( <u>Poa pratensis</u> )	81.0	70

**2.02 FERTILIZER**

- A. Unless otherwise specified the fertilizer shall be a commercial grade fertilizer or as specified herein. The fertilizer shall meet the standard for grade and quality specified by state law.

**2.03 INOCULANTS**

- A. The inoculant for treating legume seeds shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species and shall not be used later than the date indicated on the container or as otherwise specified. A mixing medium, as recommended by the manufacturer, shall be used to bond the inoculant to the seed. Two times the amount of the inoculant recommended by the manufacturer shall be used, except when seed is applied by use of hydraulic seeder, in which case 4 times the amount of inoculant recommended by the manufacturer shall be used. Seed shall be sown within 24 hours of treatment and shall not remain in the hydraulic seeder longer than 4 hours.

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## 2.04 SOIL AMENDMENTS

- A. Lime shall consist of standard ground agricultural limestone, or equal. Standard ground agricultural limestone is defined as ground limestone meeting current requirements of the State Department of Agriculture. Agricultural lime or other needed soil amendments will be uniformly applied at the rate specified herein.

## 2.05 ASPHALT EMULSION

- A. Asphalt emulsion shall conform to the requirements of ASTM D 977-80, "Emulsified Asphalt." The emulsified asphalt may be rapid, medium, or slow cure materials.

## 2.06 STRAW MULCH MATERIALS

- A. Straw mulch materials shall consist of wheat, oat, or rye straw, hay, grass clippings cut from any native grasses or other plants acceptable to the ENGINEER. The mulch material shall be air dry, reasonably light in color, and shall not be musty, moldy, caked, or otherwise of low quality. The use of mulch that contains noxious weeds will not be permitted. The CONTRACTOR shall provide a method satisfactory to the ENGINEER for determining weight of mulch furnished.

## 2.07 OTHER MULCH MATERIALS

- A. Mulching materials, such as wood cellulose fiber mulch, emulsion type, synthetic fiber mulch, netting, mesh, and other mulching materials that may be required for specialized locations and conditions, when specified, must be accompanied by the manufacturer's recommendations for methods of application.

# PART 3 EXECUTION

## 3.01 EXTENT

### A. Unit Price Contracts

#### 1. Seeding

- a. Where lawns, pastures, thin grass or cover crops are destroyed by trenching, laying, backfilling, or tunneling operations, surface shall be prepared by disking, fertilizing and seeding. Seeding, fertilizing, and mulching shall be included in the price for trenching and backfilling. The timing of this operation shall be controlled by the ENGINEER. Requirements of the Department of Highways for reseeding shall take precedence over these Specifications where they are involved.
- b. When the construction project is located on privately owned property on easements acquired by the OWNER and the individual landowner requires the cover grass to be the same as present at

the beginning of construction, the CONTRACTOR shall supply the seed required by the landowner. Seeding and fertilizing in such instances, shall be at the rate as recommended by the seed producer with soil preparation and mulching as stated herein.

- c. When the construction project encroaches within the rights-of-way of the Department of Highways, the seed mixture, application rate and method of mulching shall be as required by the Department of Highways.

## 2. CONTRACTOR'S Options

- a. Where surface grasses and cover are similar in nature throughout the length of the project, the CONTRACTOR may provide seed of one type or mixture for the entire project provided there are no objections by individual landowners involved and with permission of the OWNER and ENGINEER. In such cases, the seed type and/or mixture shall be that specified for lawn areas. Pasture and/or cover crop mixtures shall not be used for lawn application for any reason.
- b. When construction facilities or construction operations are located on or encroach on privately owned properties, the CONTRACTOR may, at his election, negotiate with the individual landowners for restoration of the surface. This negotiation and settlement may be for materials or labor or both as agreeable to the individual property owner. In such cases, the CONTRACTOR shall obtain from the individual landowner a "Release of Claims" releasing the OWNER from any further liability for surface restoration, a copy of which shall be provided for the OWNER and ENGINEER. This option shall apply to surface restoration only. The CONTRACTOR shall be responsible for cleanup and regrading work and for any settlement of the trench or graded area within the one year guarantee period.

## 3.02 SOIL PREPARATION

- A. All areas to be seeded shall be thoroughly cleaned, removing all debris of whatever nature. After the area has been cleaned, the soil for seeding shall be prepared as follows:
  - 1. Loosen the soil to a depth of not less than 4 inches.
  - 2. Work the soil until it is in good condition, raking with hand rake to complete the soil preparation and make final finished grade.
  - 3. Broadcast 10 pounds of 10-10-10 or better fertilizer on each 1,000 square feet of area.
  - 4. On areas to be seeded, the raking in of fertilizer may be done concurrently with raking in of seed as hereinafter specified.

### 3.03 SEEDING

#### A. Temporary Cover (All Areas)

1. This item shall consist of seeding a temporary cover of grass, or grass and small grain, on areas disturbed on the construction site which will not be redisturbed within a 60 day period. The determination of the area to be temporarily seeded and the time of seeding shall be controlled by the ENGINEER.
2. The seed mixtures to be used for temporary cover will be governed by the time of year the seeding is accomplished. The mixtures and time of seeding shall be as follows:
  - a. Time of Seeding - 2/15 to 6/1
    - (1) Rye 1-1/2 bushels and ryegrass 25 pounds per acre; or tall fescue 30 pounds and ryegrass 20 pounds per acre.
  - b. Time of Seeding - 6/2 to 8/15
    - (1) Tall fescue 30 pounds and ryegrass 20 pounds per acre; or, spring oats 2 bushels and ryegrass 30 pounds per acre.
  - c. Time of Seeding - 8/16 to 2/14
    - (1) Rye 2 bushels and ryegrass 20 pounds per acre; or, tall fescue 30 pounds and ryegrass 20 pounds per acre.
  - d. Lime will not be required for temporary seeding.
  - e. Fertilize at the rate of 400 pounds per acre of 10-10-10 fertilizer, or equivalent, broadcast uniformly on the area to be seeded.
  - f. All seed shall be broadcast evenly over the area to be seeded and cultipacked or otherwise pressed into the soil. Seed and fertilizer may be mixed together and applied after the seed bed has been prepared.
  - g. Mulch for temporary seeding will not be required except on those areas, in the ENGINEER'S opinion, too steep to hold the seed without protective cover.

#### B. Seeding (Permanent Cover)

1. This item consists of seeding all areas disturbed during construction. All grading and/or filling of rills and gullies to a cross section acceptable to the ENGINEER shall be included in the seed bed preparation.



a. Pastures and Cover Crops

- (1) All areas to be seeded shall be seeded with 50 pounds of tall fescue (KY-31) per acre, subject to the provisions hereinbefore stated in this Specification group.
- (2) Prepare seed bed as specified in Article 3.02 of this Specification Section unless instructed otherwise by the ENGINEER. Apply 2 tons of lime per acre.
- (3) No mulch will be required except when seeding is done during the period October 16 through January 31, or May 2 through July 31, tall fescue straw shall be used at the rate of 2 tons per acre.

b. Lawns and Yards

- (1) This item consists of seeding all areas equivalent to residence lawns or yards disturbed during construction. All grading and filling shall be accomplished in a manner acceptable to the ENGINEER prior to the placement of seed and materials. Seed shall consist of a mixture of one part Red Top and 3 parts high grade Kentucky Bluegrass seed mixed together and broadcast at the rate of 2 lbs to each 1,000 square feet of surface, to be seeded. Apply 2 tons of lime per acre. Apply 1500 pounds of 10-20-20 fertilizer per acre. Apply mulch at the rate of 2 tons per acre. Mulch shall be applied to all lawn areas regardless of the time seeded.

### 3.04 MULCHING

- A. Mulch materials, meeting the requirements of Part 2 of this Specification Section, shall be applied at the rate of 2 tons per acre.
- B. The mulch shall be stabilized by running a "weighted" disk harrow with disks set straight, over the area on the contour, after the mulch has been applied, so as to imbed or press a part of the straw into the soil sufficiently to hold it in place. On earth embankments or areas too steep for use of mechanized equipment, the mulch shall be held in place by using small stakes and twine or other method acceptable to the ENGINEER. The blown-on bituminous-treated straw mulch method of placing the mulch will be an acceptable placing method.
- C. Mesh, netting or other special protective cover shall be at locations as shown on the Drawings and shall be installed according to the manufacturer's recommendations.

**END OF SECTION**

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**SECTION 03301**

**CAST-IN PLACE CONCRETE  
(MINOR STRUCTURES)**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This specification delineates the requirements for cast-in place concrete for minor structures including concrete kickers for pipe blocking, sidewalks, collars, manholes, manhole bottoms, pipe cradles, piers and other areas where small quantities of concrete are required. It shall not be used for major structures such as floor slabs, structure or basin walls, roof slabs, or other structural components.

**1.02 SCOPE OF WORK**

- A. Provide all labor, material, equipment and services to complete all cast-in-place concrete work required by the Project as shown on the Drawings or specified herein.

**1.03 REFERENCES**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

**AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)**

ASTM A 185	Specification for Steel, Welded Wire, Fabric, Plain, for Concrete Reinforcement
ASTM A 497	Specification for Welded Deformed Steel Wire Fabric for Concrete Reinforcement
ASTM A 615/A615M	Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 616/A616M	Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A 617/A617M	Specification for Axle-Steel Deformed and Plain End Bars for Concrete Reinforcement
ASTM A 706/A706M	Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement
ASTM C 33	Specification for Concrete Aggregates

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ASTM C 150 Specification for Portland Cement

ASTM C 260 Specification for Air-Entraining Admixtures for Concrete

ASTM C 494 Specification for Chemical Admixtures for Concrete

#### 1.04 SUBMITTALS

- A. Copies of all materials required to establish compliance with these Specifications shall be submitted in accordance with the provisions of the General Conditions.

#### 1.05 QUALITY ASSURANCE

- A. All work shall be performed to secure for the entire job homogeneous concrete having required strength, durability and weathering resistance, without planes of weakness and other structural defects and free of pronounced honeycombs, air pockets, voids, projections, offsets of plane and other defacements on exposed surfaces.

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Do not deliver ready-mixed concrete to job site until ready for placement.
- B. All materials used for on-site mixed concrete shall be kept clean and free from all foreign matter during transportation and handling and kept separate until measured and placed in the mixer.
- C. Store concrete aggregates to prevent contamination or segregation. Store reinforcement of different sizes and shapes in separate piles or racks raised above the ground to avoid excessive rusting.
- D. Protect from contaminants such as grease, oil and dirt. Provide for accurate identification after bundles have been broken and tags removed.

#### 1.07 PROJECT/SITE CONDITIONS

##### A. Cold Weather

Provide and maintain 50 degrees Fahrenheit minimum concrete temperature. Do not place concrete when ambient temperature is below 40 degrees Fahrenheit. Cover concrete and provide with a source of heat sufficient to maintain 50 degrees Fahrenheit minimum while curing.

##### B. Hot Weather

- 1. Concrete temperature from initial mixing through final cure shall not exceed 90 degrees Fahrenheit. Cool ingredients before mixing, or substitute chip ice for part of required mixing water or use other suitable means to control concrete temperature to prevent rapid drying of newly

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placed concrete. Shade the fresh concrete and start curing as soon as the surface is sufficiently hard to permit curing without damage.

## PART 2 PRODUCTS

### 2.01 CONCRETE

#### A. Mix Design

The concrete mix shall conform to the requirements of the following table according to the class of concrete required. The number in the "Class" column refers to the 28-day compressive strength of the concrete in pounds per square inch (psi).

Class	Minimum Cement Content (Lbs./Cu. Yd.)	*Maximum Slump (Inches)
3000	470	3 to 4
3500	520	3 to 4
4000	550	3 to 4

\* Maximum slump unless high range water reducing admixture is used.

#### B. Area of Application

1. Unless otherwise noted on the Drawings, concrete mixes shall be used as follows:

Class 3000 - kickers for pipe, fittings

Class 3500 - non-reinforced portions of manholes, pipe cradles

Class 4000 - reinforced portions of manholes, sidewalks, piers

### 2.02 MATERIALS

#### A. Cement

1. Portland cement for concrete and mortar shall conform to ASTM C 150, Type I or II.

#### B. Water

1. Water shall be potable.

#### C. Aggregates

1. Aggregates shall conform to ASTM C 33. Obtain aggregates from one source. Aggregates shall not contain any substance which may be deleteriously reactive with the alkalis in the cement.

D. Admixtures

1. Admixtures for air-entrained concrete shall conform to ASTM C 260, for water reducing (Type A, D or E) accelerating (Type C) and retarding (Type B or D) ASTM C 494. Calcium chloride shall not be used as an admixture. Admixtures shall not be used without prior written approval of the ENGINEER.

E. Reinforcement

1. Reinforcing Bars

- a. Reinforcing bars shall conform to ASTM A 615/A615M Grade 60, ASTM A 616/A616M Grade 60, ASTM A 617/A617M Grade 60 or ASTM A 706/A706M Grade 60 as applicable.

2. Welded Wire Fabric

- a. Welded wire fabric shall conform to ASTM A 497 or ASTM A 185.

**PART 3 EXECUTION**

3.01 FORMS

- A. Forms shall be used to confine concrete and shape it to the required dimensions. Set forms true to line and grade and make mortar tight. Chamfer above grade exposed joints, edges and external corners 3/4-inch, unless otherwise indicated. Earth cuts may be used as forms for footing vertical surfaces, if sides are sharp and true, and not exposed in finished structure.

3.02 PLACING REINFORCEMENT AND MISCELLANEOUS MATERIALS

- A. Provide bars, wire fabric and other reinforcing materials, including wire ties, supports and other devices necessary to install and secure the reinforcement.

3.03 CONTROL AND CONSTRUCTION JOINTS

- A. For sidewalks, provide control joints spaced at an interval equal to the width of the sidewalk, the minimum spacing of 5 feet. Cut joints 1 inch deep with a jointing tool after the surface has been finished. Provide 0.5-inch thick transverse expansion joints at changes in direction, where sidewalk abuts curb, steps, rigid pavement or other similar structures; space joints not more than 40 feet apart. Limit variation in cross section to 1/4-inch in 5 feet.

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**3.04 CURING AND PROTECTION**

- A. Protect concrete from injurious action by sun, wind, rain, flowing water or mechanical injury. Do not allow concrete to dry out from time of placement until the expiration of the curing period. Forms may be removed 48 hours after concrete placement.

**END OF SECTION**

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**SECTION 05520**  
**METAL FABRICATIONS**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, and equipment required to construct and install metal fabrications as shown on the Drawings and specified herein. Included in this section are handrails, grating, nuts, bolts, anchors, hatches, ladders, and stairs.

**1.02 RELATED WORK NOT INCLUDED**

- A. Concrete work is included in Division 3.
- B. Castings are included in Division 5, Section 05540.

**1.03 QUALITY ASSURANCE**

- A. All fabricated materials shall be of the highest quality, free of structural, handling, and workmanship defects.
- B. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

**1.04 SUBMITTALS**

**A. Shop Drawings**

1. The CONTRACTOR shall submit to the ENGINEER in accordance with Division 1, Section 00700 detailed shop drawings of all materials to be fabricated, and shall receive the ENGINEER's certification of review before fabrication. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor bolt installation by others. Include any requirements for surface preparation, paint products, or grout.
2. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties and other information needed for structural analysis. This shall not relieve the CONTRACTOR of responsibility for all errors, omissions, and deviations of his shop drawings from the Drawings and Specifications and from requirements of final results called for in the Drawings and Specifications.

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B. Samples

1. The CONTRACTOR shall submit 2 sets of representative samples of materials and finished products as may be requested by the ENGINEER, or as specified herein.

**PART 2 PRODUCTS**

2.01 MATERIALS

A. Steel

1. Steel fabrication shall be done in conformity with the American Petroleum Institute, Standard 1104, 20th Edition dated October 2005, latest revision, titled "Welding of Pipelines and Related Facilities."
2. Prime and paint shall be as shown on the Drawings.

2.02 NUTS AND BOLTS

- A. Unless otherwise shown on the Drawings or required in other parts of these Specifications, all nuts and bolts shall be in accordance with ASTM A 307-93a, Grade A and shall be electrogalvanized according to ASTM B 633-85 (1994).
- B. All nuts, bolts, washers and accessories in contact with water, in any moist atmosphere or damp area such as occurs above water, or embedded in concrete exposed to the weather, shall be Type 302 or 304 stainless steel. Stainless steel nuts, bolts, and washers shall be used to fasten aluminum to all materials including aluminum.

2.03 CONCRETE ANCHORS

- A. Sizes and spacings or numbers of anchors shall be shown on the Drawings and materials shall comply with exposure requirements listed under Nuts and Bolts above. All anchors used for securing moving or vibrating equipment (pumps, motors, gears, sluice gates, conveyors, etc.), shall be of the cast-in-place type.
- B. The size and number of anchors shall be approved by the equipment manufacturer.
- C. Unless specifically noted otherwise on the Drawings or Specifications, concrete anchors for other applications shall be chemical grout-type anchors equal to Hilti "HVA Adhesive Anchor," or Ramset "Chemset Chemical Anchors." Installation shall be in strict accordance with the manufacturer's recommendations which shall be available on the job site.



## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. The CONTRACTOR shall be responsible for all errors, omissions, and deviations of the shop drawings from the Drawings and Specifications. Any errors or omissions shall be brought to the attention of the ENGINEER whose interpretation and instructions shall be received before proceeding with the fabrication of that portion of the work.
- B. Manufacturers' printed installation instructions shall be strictly followed and any conflicts with the shop drawings and/or Contract Drawings shall be directed to the ENGINEER for resolution before proceeding with installation.
- C. All base plates, inserts and anchorages shown embedded in concrete shall be accurately located and secured before placing concrete as per a manufacturer supplied template. All structural members and components shall be accurately leveled, plumbed and secured at locations shown on the Drawings.
- D. Painting
  - 1. Cleaning and painting shall be as shown on the Drawings.
- E. Steel
  - 1. All fabrication and erection shall be done in conformity with the API Standard 1104, 20th Edition dated October 2005, latest revision, titled "Welding of Pipelines and Related Facilities."

### **3.02 NUTS AND BOLTS**

- A. Bolts embedded in concrete shall be secured with templates at the time of pouring concrete. Bolts shall be suitably protected from damage throughout the construction period.

### **3.03 CONCRETE ANCHORS**

- A. Concrete anchors shall be installed strictly in accordance with manufacturer's printed instructions which shall be available on the job site.
- B. Refer to Division 15 for supporting small pipe.

**END OF SECTION**

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## SECTION 05540

### CASTINGS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Provide all labor, materials, and equipment required to install castings as shown on the Drawings and specified herein. Included in this section are manhole covers, steps, valve boxes, and hatch covers.

##### 1.02 RELATED WORK NOT INCLUDED

- A. Concrete work is included in Division 3.
- B. Masonry work is included in Division 4.
- C. Surface preparation and finishing of castings is included in Division 9, Section 09900.
- D. Floor drains and roof drains are included in Division 15, Section 15400.
- E. Special cast valves are included in Division 15, Section 15101.

##### 1.03 SUBMITTALS

- A. The CONTRACTOR shall submit to the ENGINEER, in accordance with Division 1, Section 00700 (00710), copies of construction details of castings proposed for use.

#### PART 2 MATERIALS

##### 2.01 GENERAL

- A. All castings shall be gray iron, conforming to the requirements of the ASTM Standards, Designation A 48-83, Class 35-B for manhole casting and class 20 for valve boxes.

##### 2.02 VALVE BOXES

###### A. Slide Type for Valves

- 1. Valve boxes for sizes thru 12-inch valves shall be the cast iron slide type, without screw, of sufficient length to allow for 42 inches of cover over the top of the pipe. The inner section shall have a minimum inside diameter of 5-1/4 inches with a hood type base that will cover the packing gland on valves through 12 inches in size (minimum of 8 inches inside diameter). The base of the top section shall be flanged at least 1-1/4 inches. The caps shall be circular with a corrugated surface and have pick

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holes in the periphery and be marked "Water," "Gas," "Sewer," or "Air" according to use. The valve boxes shall be Tyler Pipe/Utilities Division, 6855 Series, or equal.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION OF CASTINGS**

##### **A. Installation on Buried Valves**

1. Valve box construction shall consist of the approved manufactured box and accessories. Line pipe shall not be accepted for use as valve boxes.
2. Mechanically tamp backfill, or backfill with crushed rock (per requirements of location - see Section 02610 of these Specifications) to the bottom of the packing gland of the operating nut. Install valve box base centered over operating nut.
3. Install valve box shafts, of the required height, and top section to proposed top elevation. Mechanically tamp backfill around box or backfill with crushed rock.
4. Place reinforced concrete collar around top section when shown on the Drawings.
5. Furnishing and installation of the valve box and accessories, including the concrete valve box collar, shall be included in the price bid for furnishing and installation of the valve.

**END OF SECTION**

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6. Filters – American Meter (KleanLine)
7. Pressure Gauges - Wika
8. Field Regulators – Sensus
9. Gas Volume Corrector – Mini-Max-AT-PT
10. Meter – Dresser/Roots Series B3 Rotary Meter

### 1.03 SUBMITTALS

- A. Complete shop drawing of all equipment and appurtenances shall be submitted to the ENGINEER in accordance with the requirements of Sections 00820 and 01300.
- B. The ENGINEER shall be furnished 2 certified copies of reports covering proof-of-design tests on the valves.

## PART 2 PRODUCTS

### 2.01 MATERIALS AND EQUIPMENT

#### A. General

1. All equipment and appurtenances shall be of the size and type shown on the Drawings.
2. All equipment and appurtenances shall have the name of the maker, flow-directional arrows, and the working pressure for which they are designed cast in raised letter on some appropriate part of the body.
3. All buried valves shall open left (counter clockwise). Insofar as possible, all valves shall open counter clockwise.
4. All valves and equipment shall be provided with suitable operating devices and adapted for the operation in the position in which they are shown on the Drawings.
5. Bolts and Studs
  - a. All bolts and studs shall be in accordance with ASTM A-307 Grade B and nuts shall be in accordance with ASTM A-563. bolts, studs and nuts shall be electrogalvanized according to ASTM B-633.
  - b. All bolts, studs and nuts in contact with water, in any moist atmosphere or damp area such as occurs above water, or exposed to weather shall be stainless steel.
  - c. All bolts delivered to the job shall be free of rust and dirt and shall be stored in a manner to protect them from rust and dirt. All bolts shall be tightened to the proper torque. They shall be of the size recommended for the pipe and fittings they are to be used on and shall be in the recommended quantity. Tightening of bolts shall be

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alternated, so as to not produce undue stress on the valves and fittings.

## 2.02 BALL VALVES

### A. Welded Body Ball Valves

1. Valves shall be ANSI CLASS 300 flange for above ground and welded below ground, 720 psi, standard seat and shall be of the size shown on the Drawings.
2. Valves shall be manufactured from forged carbon steel.
3. Valves shall have the operator type as shown on the Drawings.
4. Trim material for standard valves shall be as follows:
  - a. Temperature Range: -20°F to +250°F (-29°C to +121°C)
  - b. Body: ASTM A350 Gr. LF-2(M)
  - c. End Connection: ASTM A350 Gr. LF-2(M)
  - d. Ball: ASTM A694 Gr. F50(M) Cr. Pl.
  - e. Seat Ring: AISI 1040
  - f. Seat Load Spring: AISI 1040
  - g. Stem Seals: PTFE
  - h. Lip Seals: PTFE
  - i. Seat Ring Insert: Nylon

### B. Polyethylene Gas Valves

1. Valve body shall be high density polyethylene with BUNA N capable of withstanding 150 psi service pressures butt or socket fused.
2. Valve shall be of the size shown on the drawings or the size of the adjacent pipe.
3. Valve shall be Poly-Gas as manufactured by Flow Serve.

## 2.03 PRESSURE REGULATORS

### A. Pressure Regulator - Keystone Foods Property Regulator Site

1. Materials of Construction
  - a. Top Cast Steel
  - b. Cage Cast 17-4 PH Stainless Steel
  - c. Body Cast Steel
  - d. O-Rings Buna
  - e. Spring Stainless Steel
  - f. Manifold Block Cadmium Plated Steel

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2. General Design

- a. Body type shall be 2-Inch flanged, cast steel.
- b. Inlet pressure shall range 10 psi – 100 psi.
- c. Outlet pressure shall be 8 psi.
- d. Two valves shall be utilized to provide pilot controlled passive upstream monitoring.
- e. Valve setup to be coordinated with the OWNER.

3. Manufacturer and Model Number

- a. Shall be 4-Inch Model 441-57S as manufactured by Sensus, no like equivalent.
- b. Valve port size shall be 1-3/4-Inch size.

B. Pressure Regulator – McWhorter Road Regulator Site

1. Materials of Construction

- |    |                |                              |
|----|----------------|------------------------------|
| a. | Top            | Cast Steel                   |
| b. | Cage           | Cast 17-4 PH Stainless Steel |
| c. | Body           | Cast Steel                   |
| d. | O-Rings        | Buna                         |
| e. | Spring         | Stainless Steel              |
| f. | Manifold Block | Cadmium Plated Steel         |

2. General Design

- a. Body type shall be 2-Inch flanged with 1-Inch orifice.
- b. Maximum Inlet pressure shall be 60 psi.
- c. Outlet pressure shall be 30 psi.
- d. Two valves shall be utilized to provide pilot controlled passive upstream monitoring.
- e. Valve setup to be coordinated with the OWNER.

3. Manufacturer and Model Number

- a. Valve shall be 2-Inch Model 461-57S as manufactured by Sensus, no like equivalent.
- b. Valve port shall be a single seat 1-Inch size.

C. Domestic Service Regulator

1. Materials of Construction
  - a. Valve Body Cast Iron - 125 psig
  - b. Spring and Lower Case Die-Cast Aluminum
  - c. Orifice Aluminum
  - d. Fulcrum Pin Stainless Steel
  - e. Valve Seat One Piece molded Buna-N
  - f. Valve Stem Fiberglass reinforced nylon
  - g. Diaphragm Nylon fabric-reinforced Buna-N
  
2. General Design
  - a. Valve shall include an internal relief valve
  - b. Valve shall have a 3/16" orifice.
  - c. Regulator Spring shall operate in a normal range of 6.0"-14.0" w.c.
  - d. Valve shall have 1/4" seat with 20LT.
  - e. Maximum inlet pressure shall be 60 psi.
  
3. Manufacturer and Model Number
  - a. Valve shall be Model 143-80-2 as manufactured by Sensus, no like equivalent.

2.04 NEEDLE VALVES

A. Stainless Steel Needle Valve

1. Features
  - a. Metal-to-metal hard seat design for a bubble-tight seal.
  - b. 10,000 psi pressure rating (@200 degrees Fahrenheit maximum).
  - c. Blowout-proof stem that provides a secondary stem seal in the full-open position.
  - d. Stern packing below the threads to prevent thread galling and corrosion.
  - e. Viton O-Ring and Teflon back-up ring stern seals.
  - f. 316 stainless steel stems.
  - g. Stem and bonnet threat shall be rolled for greater strength and smoother operation.
  - h. Stem and bonnet sealing surfaces shall be burnished to a 16 RMS mirror finish.

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- l. Angled stem for precise flow metering.
- j. One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads.
- k. Bonnet lock pin to prevent accidental loosening.
- l. Vinyl bonnet and stem dust cap.
- m. Electro-polish finish on stainless-steel valves.

**B. Materials of Construction**

1.	Valve Body	316SS
2.	Bonnet	316SS
3.	Valve Stem	316SS
4.	Handle	316SS
5.	Handel Setscrew	18-8SS
6.	Bonnet Lock	18-8SS
7.	Stems Seals	Viton O-Ring and Teflon Back-Up Ring

**2.05 RELIEF VALVES (4-INCH OUTLET LINE)**

**A. General**

- 1. Relief valve shall be a pilot-operated throttling pressure control device that opens to ensure the upstream pressure does not rise above a predetermined pressure. The valve shall be of the size shown on the Drawings for relief pressure maximum operating inlet pressure of 60 psig and ANSI Class 300 flanged inlet and outlet connections. A stainless steel inlet strainer shall be provided. Relief Valves shall be Model 289-H Series Relief Valve as manufactured by Fisher.

**2.06 FILTERS**

**A. General**

- 1. Filters shall be all steel construction and capable of removing particles to 10 microns in size. Filters shall be of the size shown on the drawings with a maximum working pressure of 720 psi and a 300# ANSI flange. Filter shall be KLEANLINE Model KL-2 as manufactured by American Meter Company.



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## 2.07 PRESSURE GAUGES

### A. General

1. Pressure gauges shall be WIKA 213.53, 2.5-inch dial with a ¼" NPT male lower brass connection, glycerine filled with a range as required (submit qty and associated ranges for review).
2. Pressure gauges shall be provided with a needle valve for isolation.

## 2.08 GAS VOLUME CORRECTOR

- A. Corrector shall be a stand-alone, rotary mount, electronic gas volume corrector. The corrector shall have pressure and temperature correction with audit trail memory. Volume corrector shall be a Mini-Max-AT-PT as manufactured by Honeywell.

## 2.09 METERS

### A. Keystone Foods Property Regulator Site

1. Meter shall be a rotary-type, positive displacement meter. Meter shall provide accurate measurement over a range of flow, pressure, and temperature conditions. Meter shall be a Model 23M175 as manufactured by Dresser/Roots Series B3 Rotary Meter, no like equivalent.

### B. McWhorter Road Regulator Station

1. Meter shall be a rotary-type, positive displacement meter. Meter shall provide accurate measurement over a range of flow, pressure, and temperature conditions. Meter shall be a Model 16M175 as manufactured by Dresser/Roots Series B3 Rotary Meter, no like equivalent.

### C. Domestic Service Meter Riser

1. Domestic service meter riser shall be Elster Gas Depot, Elster 1-Inch NPT x 20LT, with Arodeless Riser, no like equivalent.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. All equipment and appurtenances shall be installed at the location shown on the Drawings. All necessary material, parts, operator and gaskets shall be provided.
- B. All flanged valves shall be bolted to the adjacent pipe with 304 stainless steel bolts and nuts.
- C. Valves in ground shall be installed with operating stem vertical. Tips of operating nuts shall be not more than 30 inches below ground surface. Where valve

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operating nuts are more than 30 inches below tops of valve boxes, stem shall be provided to bring the operating nut to within 12 inches of box tops.

- D. Valve boxes shall be accurately centered over valve operating nuts and the backfill shall be mechanically tamped about them, to prevent subsequent movement. Tops of boxes shall be flush with the surface, paving, walk, or road surface and shall have the appropriate grade cover to withstand loading.
- E. All equipment and appurtenances shall be installed in strict accordance with the manufacturers' recommendations/instructions.

### 3.02 TOOLS AND SPARE PARTS

- A. All special tools required for normal operation and maintenance shall be furnished by the valve manufacturer.

### 3.03 SHOP COATING

- A. The exterior surface of various parts of the equipment shall be thoroughly cleaned of all scale, dirt, grease, or other foreign matter and thereafter shop coated with an approved rust-inhibitive primer of the manufacturers' recommendations and compatible with the final field coating as shown on the Drawings.

### 3.04 FIELD COATING

- A. All buried equipment shall be field coated with the same material used to field coat the adjacent piping as specified in Section 02612.
- B. All exposed equipment shall be field coated with the same material used to field coat the adjacent piping as specified on the Drawings.
- C. The CONTRACTOR and the equipment manufacturer shall coordinate shop and field coating to assure compatibility as specified in Section 02612.

### 3.05 INSPECTION AND TESTING

- A. The various pipelines in which the equipment and appurtenances are to be installed are specified to be field tested. During these tests and defective equipment or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.
- B. Various regulating valves, strainers, or other appurtenances shall be tested to demonstrate their conformance with the specified operation capabilities any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

**END OF SECTION**

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