

CONTRACT DOCUMENTS, BID PROPOSAL AND SPECIFICATIONS

**CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS**

Burnet County, Texas

CITY OFFICIALS

Gary Widerman	Mayor
Ricky Langley	Council Member
Joyce Laudenslager	Council Member
Danny Lester	Council Member
Philip Thurman	Council Member
Dennis Langley	Council Member
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Phillip Thurman	Member
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Cuatro Consultants, Ltd.
Firm No. 3524
120 Riverwalk Drive, Suite 208
P.O. Box 2579
Kyle, Texas 78640

May 2023



CONTRACT DOCUMENTS

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INVITATION FOR BIDS



City of Burnet

P.O. Box 1369
Burnet, TX 78611
(512) 756-6093
FAX (512) 756-8560

ORDER FOR PUBLICATION

To: The Burnet Bulletin
830.693.3650 - Fax
830.693.4367 - Phone
Attn: Rachel

Date: 7/19/23
From: Kelly Dix Intl: _____
City Secretary
insidesales@highlandernews.com

SENT VIA: Hand Delivery U.S. Mail Courier Fax E-Mail Other

RUN DATES: Burnet Bulletin – Wednesday July 26th and August 2nd, 2023

PLEASE PROVIDE TEAR SHEET PLEASE PROVIDE AFFIDAVIT OF PUBLICATION

COPY:

PUBLIC NOTICE

City of Burnet, Texas
REQUEST FOR PROPOSALS
RFP 2023-006

ADVERTISEMENT FOR SEALED COMPETITIVE PROPOSALS

Sealed competitive proposals addressed to City of Burnet, TX will be received at City Offices, 1001 Buchanan Dr, Suite 4, Burnet TX until 11:00 A.M., August 24, 2023, for the Oak Vista Drive Street and Drainage Improvements Project. Sealed proposals will be opened publicly and read aloud shortly thereafter on the same date in the place and address of bid opening and available via web live. A non-mandatory pre-submittal conference will be held via web, on August 10th, 2023, at 11:00 AM. Copies of the bidding documents, meeting instructions, and web links will be available on City's webpage and CivCAST under ID: CIPTR-2022D. For more information please e-mail Design Engineer at hugo@cuatroconsultants.com.

For Office Use Only:

Issued By: Kelly Dix

Date Issued: 5/30/14

Requested By: Finance

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDER

1. Use of Separate Bid Forms

These Contract Documents include a complete set of Bid and Contract forms which are for the convenience of the Bidders and are not to be detached from the Contract document, completed or executed. Separate Bid forms are provided for your use.

2. Interpretations or Addenda

No oral interpretation will be made to any Bidder. Each request for an interpretation shall be made in writing to the Owner or Engineer no less than seven (7) days prior to the Bid opening. Each interpretation made will be in the form of an Addendum to the Contract Documents and will be distributed to all parties holding Contract Documents no less than five (5) days prior to the Bid opening. It is, however, the Bidder's responsibility to make inquiry as to any addenda issued. All such addenda shall become part of the Contract Documents and all Bidders shall be bound by such addenda, whether or not received by the Bidders.

3. Inspection of Site

Each Bidder should visit the site of the proposed work and fully acquaint himself with the existing conditions there and should fully inform himself as to the facilities involved, the difficulties and restrictions attending the performance of the Contract. The Bidder should thoroughly examine and familiarize himself with the drawings, technical specifications and all other Contract Documents. The Contractor, by the execution of the Contract, shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal document or to visit the site or acquaint himself with the conditions there existing. The Owner will be justified in rejecting any claim based on lack of inspection of the site prior to the Bid.

4. Alternate Bid Items

No alternate Bids or Bid items will be considered unless they are specifically requested by the technical specifications and approved by the Engineer prior to the Bid Opening.

5. Bids

- a. All Bids must be submitted on the forms provided and are subject to all requirements of the Contract Documents, including the Drawings.

- b. All Bids must be regular in every respect and no interlineations, excisions or special conditions may be made or included by the Bidder.
- c. Bid documents, including the Bid, the Bid Bond, and the statement of Bidders' qualifications shall be sealed in an envelope and clearly labeled with the words "Bid Proposal", the project number, name of Bidder and the date and time of Bid opening.
- d. The Owner may consider as irregular any Bid on which there is an alteration of or departure from the Bid form and, at its option, may reject any irregular Bid.
- e. If a Contract is awarded, it will be awarded to a responsible Bidder on the basis of the lowest/best Bid and the selected alternate Bid items, if any. The Contract will require the completion of the work in accordance with the Contract Documents.

6. Bid Bonds

- a. A Bid bond in the amount of 5% of the Bid issued by an acceptable surety shall be submitted with each Bid. A certified check or bank draft payable to the Owner may be submitted in lieu of the Bid Bond.
- b. The Bid bond, or its comparable, will be returned to the Bidder as soon as practical after the opening of Bids.

7. Statement of Bidders Qualifications

Each Bidder shall submit a statement of the Bidder's qualifications. The Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract, and the Bidder shall furnish the Owner all such information and data for this purpose as it may request. The right is reserved to reject any Bid where an investigation of the available data does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the Contract.

8. Unit Price

The unit price for each of the several items in the Bid shall include its pro rata share of overhead so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price Bid represents the total Bid. Any Bid not conforming to this requirement may be rejected as informal. Special attention is drawn to this condition, as the unit price will be used to determine the amount of any change orders resulting from an increase or decrease in quantities.

9. Corrections

Erasures or other corrections in the Bid must be noted over the signature of the Bidder.

10. Opening of Bids

The Locality shall, at the time and place fixed for the opening of Bids, open each Bid and publicly read it aloud, irrespective of any irregularities therein. Bidders and other interested individuals may be present.

11. Withdraw of Bids

Bids may be withdrawn by written request dispatched for delivery in the normal course of business prior to the Bid opening. The Bid guaranty of any Bidder withdrawing his Bid will be returned promptly.

12. Award of Contract/Rejection of Bids

- a. The Contract will be awarded to the responsive, responsible Bidder submitting the lowest/best Bid. The Bidder selected will be notified at the earliest possible date. The Owner reserves the right to reject any or all Bids and to waive any informality in Bids received where such rejection or waiver is in its interest.
- b. The Owner reserves the right to consider as unqualified to do the work any Bidder who does not habitually perform with his own forces the major portions of the work involved in construction of the improvements embraced in this Contract.

13. Execution of Agreement/Performance and Payment Bonds

- a. Performance and Payment Bonds, shall be required on this Project. Bonds shall be executed by Companies authorized to conduct business in the State of Texas.
- b. The failure of the successful Bidder to execute the agreement and supply the required bonds within ten (10) days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant, shall constitute a default and the Owner may, at its opinion, either award the Contract to the next lowest responsible Bidder, or re-advertise for Bids. In either case, the Owner may charge against the Bidder the difference between the amount of the Bid, and the amount for which a Contract is subsequently executed irrespective of whether this difference exceeds the amount of the Bid bond. If a

more favorable Bid is received through re-advertisement, the defaulting Bidder shall have no claim against the Owner for a refund.

14. Wages and Salaries

Attention is particularly called to the requirement of paying not less than the area prevailing wage rates. These rates are minimums to be paid during the life of the Contract. It is therefore the responsibility of the Bidder to inform themselves as to local labor conditions.

15. Equal Employment Opportunity

Attention is called to the requirements for ensuring that employees and applicants for employment are not discriminated against because of their race, color, creed, sex or national origin.

BID PROPOSAL

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS

Proposal of _____ (hereinafter called "Bidder"),
doing business as a corporation/a partnership/an individual (strike out inapplicable terms), to the City
of Burnet (hereinafter called "Locality").

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of Oak Vista Reconstruction Improvements, having examined the Plans and Specifications and related Documents, the Site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed Project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Plans, Specifications and Contract Documents, within the time set forth therein, and at the unit prices stated below. These unit prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this Proposal is part.

Bidder hereby agrees to commence work under this Contract on or before a date to be written "Notice to Proceed" by the Owner and to fully complete the project within _____ consecutive calendar days thereafter. Bidder further agrees to pay as liquidated damages the sum set forth in the Special Conditions for each consecutive calendar day thereafter.

Bidder acknowledges receipt of the following ADDENDA:

Addendum No. 1 dated _____ Received _____

Addendum No. 2 dated _____ Received _____

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

BID SCHEDULE:

PROPOSAL "A": EROSION / SEDIMENTATION CONTROL

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Description and Price (in words)</u>	<u>Unit Price</u>	<u>Total Price</u>
1	1,506	LF	Furnish, install, and remove SILT FENCE, complete, per linear foot for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
2	2	EA	Furnish, install, and remove INLET PROTECTION, complete, per each for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
3	1	LS	Furnish, install, and remove CONCRETE WASHOUT STATION, per detail shown on Plans, complete, per lump sum for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
4	9,842	SY	Furnish all labor, material, and equipment to REVEGETATE DISTURBED AREAS (hydroseed, including watering), complete, per square yard for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

TOTAL AMOUNT OF PROPOSAL "A"
(Sum of Items 1 through 4):

_____ Dollars

and _____ Cents \$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

PROPOSAL "B": STREET AND DRAINAGE IMPROVEMENTS

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Description and Price (in words)</u>	<u>Unit Price</u>	<u>Total Price</u>
5	1	LS	Furnish all labor and equipment to complete MOBILIZATION for the project start, for the lump sum of, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
6	1	LS	Furnish all labor and equipment to complete DEMOLITION OF EXISTING STREET, as shown on Sheet 6 of 25, including removing material offsite, complete, per lump sum for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
7	1	LS	Furnish PERFORMANCE, PAYMENT, AND MAINTENANCE BONDS, per requirements in specifications, for the lump sum of, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
8	1.00	AC	Furnish all labor and equipment to SCARIFY AND ROUGH CUT EXISTING STREET, complete, per acre for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -
9	4,607	SY	Furnish all labor, material, and equipment for SUBGRADE PREPARATION (1' BEHIND CURB) including 6" moisture-conditioned subgrade, complete, per square yard for, _____ _____ Dollars and _____ Cents	_____	\$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
10	4,607	SY	Furnish all labor, material, and equipment to install TENSAR TX-5 GEOGRID, complete, per square yard for, _____ Dollars and _____ Cents	_____	\$ _____ -
11	4,607	SY	Furnish all labor, material, and equipment to install 10" CRUSHED STONE FLEXIBLE BASE (1' BEHIND CURB), per TxDOT Item 247, complete, per square yard for, _____ Dollars and _____ Cents	_____	\$ _____ -
12	3,897	SY	Furnish all labor, material, and equipment to install 2.5" HMAC, Type D, TxDOT Item 340, complete, per square yard for, _____ Dollars and _____ Cents	_____	\$ _____ -
13	2,130	LF	Furnish all labor, material, and equipment to pour REINFORCED CONCRETE RIBBON CURB, complete, per linear foot for, _____ Dollars and _____ Cents	_____	\$ _____ -
14	1	EA	Furnish all labor, material, and equipment to install SPEED LIMIT SIGNS, complete, per each for, _____ Dollars and _____ Cents	_____	\$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
15	2	EA	Furnish all labor, material, and equipment to install 4' x 4' GRATE INLETS, complete, per linear foot for, _____ Dollars and _____ Cents	_____	\$ _____ -
16	102	LF	Furnish all labor, material, and equipment to install 18" RCP, CLASS IV (ALL DEPTHS), complete, per linear foot for, _____ Dollars and _____ Cents	_____	\$ _____ -
17	1	LS	Furnish all labor, material, and equipment to DEMOLISH AND REPLACE EXISTING CART PATH AND PROVIDE TEMPORARY ALTERNATE PATH, as shown on Sheet 14 of 25, complete, per lump sum for, _____ Dollars and _____ Cents	_____	\$ _____ -
18	1	LS	Furnish all labor, material, and equipment to provide PAVEMENT MARKINGS, including striping, stop bars, and reflective pavement markers, complete, per lump sum for, _____ Dollars and _____ Cents	_____	\$ _____ -
19	1	LS	Furnish all labor, material, and equipment to provide GRADING FOR DRAINAGE PURPOSES on south side of Oak Vista, complete, per lump sum for, _____ Dollars and _____ Cents	_____	\$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
20	94	LF	Furnish all labor, material, and equipment to SAW CUT EXISTING PAVEMENT, complete, per linear foot for, _____ Dollars and _____ Cents	_____	\$ _____ -
21	110	LF	Furnish all labor, material, and equipment to construct 2' HIGH LIMESTONE BLOCK WALL, complete, per linear foot for, _____ Dollars and _____ Cents	_____	\$ _____ -
22	154	SY	Furnish all labor, material, and equipment to install BULL ROCK RIPRAP, complete, per square yard for, _____ Dollars and _____ Cents	\$ _____ -	\$ _____ -
23	102	LF	Furnish all labor, material, and equipment to install TRENCH SAFETY, complete, per linear foot for, _____ Dollars and _____ Cents	\$ _____ -	\$ _____ -
24	1	EA	Furnish all labor, material, and equipment to construct FLARED CONCRETE WINGWALL FOR 18" RCP, including scour protection, complete, per each for, _____ Dollars and _____ Cents	\$ _____ -	\$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
25	95	LF	Furnish all labor and equipment to complete CHANNEL GRADING downstream of proposed 18" RCP, including excavation, embankment, and revegetation, complete, per linear foot for, _____ Dollars and _____ Cents	\$ -	\$ -
26	1	LS	Furnish and install TRAFFIC CONTROL - ONE LANE OPEN, per TMUTCD, complete, per lump sum, _____ Dollars and _____ Cents	\$ -	\$ -
27	1	LS	Furnish all labor, material, and equipment to RECONNECT AND REINSTALL EXISTING LIGHTS AND UNDERGROUND CABLES, complete, per lump sum for, _____ Dollars and _____ Cents	\$ -	\$ -
28	1	LS	Furnish all labor, material, and equipment to RECONNECT EXISTING IRRIGATION LINES, complete, per lump sum for, _____ Dollars and _____ Cents	\$ -	\$ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS

TOTAL AMOUNT OF PROPOSAL "B"
(Sum of Items 5 through 28)

_____ Dollars

and _____ Cents

\$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

PROPOSAL "C": TxDOT DECELERATION LANE/DRIVEWAY APRON

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
29	519	SY	Furnish all labor and equipment, scarify and subgrade area, complete, per square yard for, _____ Dollars _____ Cents	\$ -	\$ -
30	506	SY	Furnish all labor, material, and equipment for SUBGRADE PREPARATION (3' BEYOND E.O.P.), including 6" moisture-conditioned subgrade, complete, per square yard for, _____ Dollars and _____ Cents	\$ -	\$ -
31	506	SY	Furnish all labor, material, and equipment to place 10" CRUSHED STONE FLEXIBLE BASE (3' BEHIND E.O.P.), per TxDOT Item 247, complete, per square yard for, _____ Dollars and _____ Cents	\$ -	\$ -
32	435	SY	Furnish all labor, material, and equipment to lay 2" HMAC, Type D, TxDOT Item 340, complete, per square yard for, _____ Dollars and _____ Cents	\$ -	\$ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
33	215	LF	Furnish all labor, material, and equipment to SAW CUT EXISTING PAVEMENT AT U.S HIGHWAY 281 S, complete, per linear foot for, _____ Dollars and _____ Cents	\$ -	\$ -
34	108	LF	Furnish all labor, material, and equipment to install DESIGN 3, CORRUGATED METAL PIPE ARCH, complete, per linear foot for, _____ Dollars and _____ Cents	\$ -	\$ -
35	2	EA	Furnish and install SLOPED HEADWALL FOR 18" CMAP, including scour protection, complete, per each for, _____ Dollars and _____ Cents	\$ -	\$ -
36	1	LS	Furnish all labor, material, and equipment for TRAFFIC CONTROL, per TxDOT and TMUTCD requirements, complete, per lump sum for, _____ Dollars and _____ Cents	\$ -	\$ -
37	1	LS	Furnish all labor, material, and equipment to complete any and all DITCH GRADING, complete for lump sum for, _____ Dollars and _____ Cents	\$ -	\$ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS

BASE BID

Item No.	Estimated Quantity	Unit	Description and Price (in words)	Unit Price	Total Price
38	1	LS	Furnish all labor, material, and equipment for EXISTING TRAFFIC SIGNAL BOX RELOCATION, complete, per lump sum for, _____ Dollars and _____ Cents	\$ -	\$ -
39	1	LS	Furnish and install, TxDOT PAVEMENT MARKINGS AND SIGNS, complete, per lump sum for, _____ Dollars and _____ Cents	\$ -	\$ -
40	108	LF	Furnish all labor, material, and equipment to install TRENCH SAFETY, complete, per linear foot for, _____ Dollars and _____ Cents	\$ -	\$ -

TOTAL AMOUNT OF PROPOSAL "C"
(Sum of Items 29 through 40)

_____ Dollars		\$		-
and _____ Cents		\$		-

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
BASE BID

TOTAL AMOUNT OF BASE BID
(Sum of Proposals A, B, and C)

_____ Dollars

and _____ Cents \$ _____ -

CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS
SUPPLEMENTAL BID

PROPOSAL "D": SUPPLEMENTAL BID ITEMS (IN LIEU OF ITEMS "C" 31 AND 32)

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Unit</u>	<u>Description and Price (in words)</u>	<u>Unit Price</u>	<u>Total Price</u>
31S	506	SY	Furnish all labor, material, and equipment to place 6" CRUSHED STONE FLEXIBLE BASE (3' BEHIND E.O.P.), per TxDOT Item 247, complete, per square yard for, _____ Dollars and _____ Cents	\$ -	\$ -
32S	435	SY	Furnish all labor, material, and equipment to pour 6" CONCRETE PAVEMENT, per TxDOT Item 421, complete, per square yard for, _____ Dollars and _____ Cents	\$ -	\$ -

**CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS**

It is understood that the description of work to be done at prices is intended principally to serve as a guide in evaluating bids and is not intended to fully describe all work required. It is further agreed that the work to be done and material to be furnished at unit prices may be increased or diminished as may be considered necessary in the opinion of the Engineer and approved by the Owner to complete the work fully as planned and contemplated, and that estimated quantities may be increased to cover additional work ordered by the Engineer and approved by the Owner, but not shown on the plans or required by the Specifications, in accordance with the provision of the General Conditions. Similarly, they may be decreased to cover deletion of the work so ordered.

The foregoing prices shall include all labor, materials, removal, overhead, profit, insurance, etc., to cover the finished work called for. Changes shall be proposed in accordance with applicable provisions of the General Conditions.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that his bid shall be good and may not be withdrawn for a period of ten (10) calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within ten (10) days and deliver Surety Bonds as required by the Special Conditions.

The bid security attached in the sum of five percent (5%) of the bid amount is to become the property of the Owner in the event the contract and bond are not executed within the time above setforth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

Respectfully submitted: _____

Bidder: _____

Title: _____

(SEAL- if bid by
a corporation)

Address: _____

Phone No.: _____

Date: _____

**STATEMENT OF MATERIALS
INCORPORATED INTO PROJECT**

**STATEMENT OF MATERIALS INCORPORATED INTO REALTY
IMPROVEMENTS**

As per House Bill 11 and Chapter 151 of the Texas Tax Code, the Contractor separates material and other charges comprising his total bid as follows:

MATERIALS INCORPORATED INTO THE PROJECT	\$ _____
ALL OTHER CHARGES`	\$ _____
TOTAL (Shall equal total of Base Bid Schedule)	\$ _____

CONTRACTOR: _____

PROJECT: _____

SIGNATURE: _____

DATE: _____

BID BOND

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, _____
as PRINCIPAL, and _____, as SURETY are held and firmly
bound unto the City of Burnet Economic Development Corporation hereinafter called the "Local
Public Agency", in the penal sum _____ Dollars
(\$ _____), lawful money of the United States, for the payment of which sum well and truly to
be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that Whereas the Principal has submitted
the Accompanying Bid, dated _____, 2023, for _____

NOW, THEREFORE, if the Principal shall not withdraw said Bid within the period specified therein
after the opening of the same, or, if no period be specified, within thirty (30) days after the said
opening, and shall within the period specified therefore, or if no period be specified, within ten (10)
days after the prescribed forms are presented to him for signature, enter into a written Contract with the
Local Public Agency in accordance with the Bid as accepted, and give bond with good and sufficient
surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract;
or in the event of the withdrawal of said Bid within the period specified, or the failure to enter into such
Contract and give such bond within the time specified, if the Principal shall pay the Local Public Agency
the difference between the amount specified in said Bid and the amount for which the Local Public
Agency may procure the required work or supplies or both, if the latter be in excess of the former,
then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS THEREOF, the above-bounded parties have executed this instrument under their several
seals this day of _____, 2023, the name and corporate seal of each corporate party being
hereto affixed and these present signed by its undersigned representative, pursuant to
authority of its governing body.

_____ (SEAL)

_____ (SEAL)

ATTEST: By: _____

By: _____ (SEAL)

ATTEST: By: _____

By: _____ (SEAL)

Countersigned

By _____
Attorney-in-fact
State of _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____ certify that I am
the _____ Secretary of the Corporation named as Principal in the within bond;
that _____ who signed the said bond on behalf of the Principal
was then _____ of said corporation; that I know his signature,
and his signature thereto is genuine; and that said bond was duly signed, sealed, and
attested to, for and in behalf of said corporation by authority of this governing body.

_____ (SEAL)

Title _____

*" Power -of-attorney for person signing for surety company must be attached to bond.

PERFORMANCE BOND

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address Of Contractor)

a _____, hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

hereinafter called OWNER, in the penal sum of

_____ Dollars, \$(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

The CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____ 2023, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulated and agrees that no change extension of time, alteration or addition to the terms of the contract or to WORK to performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDE, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each
(Numbers)
one of which shall be deemed an original, this the ____ day of _____, 2023.

ATTEST:

_____	Principal
(SEAL) Principal Secretary	BY _____(s)
_____	_____
Witness as to Principal	Address
_____	_____
Address	_____
_____	_____
_____	Surety

ATTEST:

_____	_____
(SEAL)	_____
_____	_____
Witness as to Surety	Attorney-in-Fact
_____	_____
Address	Address
_____	_____

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Texas.

PAYMENT BOND

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address Of Contractor)

a _____, hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, in the penal sum of _____ Dollars, \$(_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

The CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____ 2023, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulated and agrees that no change extension of time, alteration or addition to the terms of the contract or to WORK to performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect

its obligations on this BOND, and it does hereby waive notice of any such change extension of time, alteration or addition to the terms of the WORK or to the SPECIFICATIONS.

PROVIDE, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each
(Numbers)

one of which shall be deemed an original, this the ____ day of _____, 2023.

ATTEST:

Principal

Principal Secretary
(SEAL) BY _____(s)

Witness as to Principal

Address

Address

ATTEST: _____
Surety

Witness as to Surety

Attorney-in-Fact

Address

Address

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Texas.

NOTICE OF AWARD

NOTICE OF AWARD

To: _____

PROJECT DESCRIPTION:

**CITY OF BURNET
OAK VISTA DRIVE
STREET AND DRAINAGE IMPROVEMENTS**

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated _____, 2023 and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$ _____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2023

City of Burnet _____
OWNER

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

By _____,

this the _____ day of _____, 2023

By _____

Title _____

NOTICE TO PROCEED

NOTICE TO PROCEED

To: _____

Date: _____

Project: Oak Vista Drive

Street and Drainage Improvements

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2023 on or before _____ 2023 and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 2023

City of Burnet

Owner

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

This the _____ day of _____, 2023

By _____

Title _____

CONTRACT

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

THIS AGREEMENT is by and between CITY OF BURNET (“Owner”) and _____ (“Contractor”).

Owner and Contractor hereby 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:

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: OAK VISTA DRIVE STREET AND DRAINAGE IMPROVEMENTS.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by Cuatro Consultants, Ltd. c/o Hugo Elizondo, Jr., P.E., 210 Riverwalk Drive, Suite 208, San Marcos, TX 78666.

3.02 The Owner has retained Cuatro Consultants, Ltd. (“Engineer”) 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, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within _____ days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 30 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 as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions

thereof allowed in accordance with the Contract. 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):

1. Substantial Completion: Contractor shall pay Owner \$500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$500.00 for each day that expires after such time 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 the amounts that follow, subject to adjustment under the Contract:

- A. For all Work other than Unit Price Work, a lump sum of: \$_____.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

- B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):
- C. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 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 15th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in 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 elsewhere in the Contract.

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 Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 10 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, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. 10 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 Interest on any undisputed amounts not paid when due shall accrue interest at a rate as provided by the Texas Prompt Payment Act.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, 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 Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and

observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. 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.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 11, inclusive).
 - 2. Performance bond (pages 1 to 2, inclusive).
 - 3. Payment bond (pages 1 to 2, inclusive).
 - 4. Other bonds.
 - a. Maintenance Bond (No form provided (pages 1 to 2, inclusive)).
 - 5. General Conditions (pages 1 to 70, inclusive).
 - 6. Supplementary Conditions (pages 1 to 13, inclusive).
 - 7. Specifications as listed in the table of contents of the Project Manual.
 - 8. Drawings (not attached but incorporated by reference) consisting of 25 sheets with each sheet bearing the following general title: OAK VISTA DRIVE: STREET AND DRAINAGE IMPROVEMENTS the Drawings listed on the attached sheet index.
 - 9. Addenda.
 - 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages 1 to 14, inclusive).

11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in 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. Unless expressly agreed to elsewhere in the Contract, 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, money that may become due and money that is 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 successors, assigns, and legal representatives to the other party hereto, its 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.

10.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

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

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

By: _____ By: _____

Title: _____ Title: _____

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

Attest: _____ Attest: _____

Title: _____ Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(where applicable)

(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 this Agreement.)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

GENERAL CONDITIONS

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. 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, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
- c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
- d. A demand for money or services by a third party is not a Claim.

- 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
- 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
- 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
- 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
- 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
- 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
- 17. *Cost of the Work*—See Paragraph 13.01 for definition.
- 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
- 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
- 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
- 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice 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.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *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.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *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, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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 a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *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; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* 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 information in the Contract Documents and with the design concept of the 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 Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 3. 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 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that 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

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), 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;
 - 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.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- 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 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *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 the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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 the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will 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.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract 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, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer 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 part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then 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 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
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 had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); 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 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers 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 its consultants, including electronic media versions, or reuse any 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 adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract 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 Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

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

4.03 *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.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, 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 Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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.

- 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 permanent improvements are to be made 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.

5.02 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will 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 and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;
 - 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 Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a 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 otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then 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 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. 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 Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) 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. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. 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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, 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.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 1. include at least the specific coverages required;
 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 4. apply with respect to the performance of the Work, whether such performance is 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; and
 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, 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 fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *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 maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. 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 will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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 must 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.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) 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) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether 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
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable 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.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *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.

7.11 *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. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

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

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer 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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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.

7.15 *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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must 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 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall 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 7.16.C.
 3. 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. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.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 will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

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.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 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 is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, or improper modification, 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.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 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;
 6. The issuance of a notice of acceptability by Engineer;
 7. The end of the correction period established in Paragraph 15.08;
 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage 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 officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 7.18.A will 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.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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 such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all 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 damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 Communications to Contractor

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

9.02 Replacement of Engineer

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 Furnish Data

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

9.04 Pay When Due

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
 - B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
 - C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *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.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
 - B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *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.

10.02 *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 10.07. 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.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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, will 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 Contractor under Paragraph 15.06.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 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 1. Changes in 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;
 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-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. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will 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 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

- B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
- 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety 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), 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.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and believe the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
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 in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of 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, 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.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:
1. Payroll costs and other compensation of Contractor's officers, executives, principals, general 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 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 6. Expenses incurred in preparing and advancing Claims.
 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee*
1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 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*: Contractor agrees that:
 - 1. 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
 - 2. 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 for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's 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 for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 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. Payments to Contractor for Unit Price Work will be based on actual quantities.
- 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. 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- 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, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.
 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 2. 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, 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *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, then 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 will 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.

14.07 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 defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, 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, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. 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 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *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.
 - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and 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; or
 - b. 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;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; 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 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. 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; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- 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 preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- 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. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work 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 15.03 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 6.04 regarding builder's risk or other property insurance.

15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *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, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* 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 have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *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 Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, 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. Contractor shall pay all 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.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 the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 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; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 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 16.03.
- 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, 7 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 are not intended to preclude Contractor from submitting a Change Proposal 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 17—FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

17.02 Arbitration

The Parties hereto expressly agree, that all matters subject to final resolution under this Article may be settled in the appropriate court of competent jurisdiction. In the event of litigation, the prevailing Party shall be entitled to payment of reasonable attorneys' fees and costs as may be recoverable, pursuant to the Texas Civil Practice and Remedies Code Chapter 38, Texas Local Government Code §271.153, the Prompt Payment Act, common law or any other provision of applicable federal, state or local law for payment of attorney's fees.

ARTICLE 18—MISCELLANEOUS

18.01 Giving Notice

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 Computation of Times

- A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is 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.

18.09 *Successors and Assigns*

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

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTARY CONDITIONS

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

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.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

No suggested Supplementary Conditions in this Article.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Evidence of Contractor's Insurance:* When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- B. *Evidence of Owner's Insurance:* After receipt from Contractor of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner in this Contract (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor two (2) printed copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement), and one (1) copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

2.06 *Electronic Transmittals*

- A. *System Infrastructure for Electronic Document Exchange*
 - 1. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions ("System Infrastructure") at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this

EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

- a. The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **[number]** MB. Attachments larger than that may be exchanged using large file transfer functions or physical media.
- b. Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.
- c. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology ("IT") for maintaining operations of its System Infrastructure during the Project, including coordination with the party's individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
- d. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
- e. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.
- f. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
- g. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.

- h. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.
 - i. The Owner will operate a Project information management system (also referred to in this EDP as "Project Website") for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:
 - I. Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;
 - II. Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;
 - III. Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication, and document archives, etc.); and
 - IV. Include any other Project Website attributes that may be pertinent to Contractor's use of the facility and pricing of such use.
- B. *Software Requirements for Electronic Document Exchange; Limitations*
- 1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
 - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
 - 2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
 - 3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 NO SUPPLEMENTARY CONDITIONS

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.05 *NO SUPPLEMENTARY CONDITIONS*

- A. Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by **[name of the entity operating the weather station]** weather monitoring station at **[location of the weather monitoring station]**.
- B. Contractor shall anticipate the number of foreseeable bad weather days per month indicated in the table in Exhibit **[exhibit number]**—Foreseeable Bad Weather Days.
- C. In each month, every bad weather day exceeding the number of foreseeable bad weather days established in the table in Exhibit **[exhibit number]**—Foreseeable Bad Weather Days will be considered as “abnormal weather conditions.” The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor’s then-current Progress Schedule’s critical path for the Project.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 *Subsurface and Physical Conditions*

- A. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely: **[If there are no such reports, so indicate in the table.]**

Report Title	Date of Report	Technical Data
Subsurface Exploration and Pavement Recommendations	October 28, 2022	Borings 1 through 3

- B. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely: **[If there are no such drawings, so indicate in the table.]**

Drawings Title	Date of Drawings	Technical Data
Oak Vista Drive Street and Drainage Improvements	May 12, 2023	All information in drawings.

- C. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at **[location]** during regular business hours, or may request copies from Engineer.

5.06 *Hazardous Environmental Conditions*

- A. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely: **[If there are no such reports, so indicate in the table]**

Report Title	Date of Report	Technical Data
None Available		[Identify Technical Data]

- B. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely: **[If there are no such drawings, so indicate in the table]**

Drawings Title	Date of Drawings	Technical Data
None Available		[Identify Technical Data]

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be 2 years after Substantial Completion.
- B. After Substantial Completion, Contractor shall furnish a warranty bond issued in the form of EJCDC® C-612, Warranty Bond (2018). The warranty bond must be in a bond amount of 10 percent of the final Contract Price. The warranty bond period will extend to a date 2 years after Substantial Completion of the Work. Contractor shall deliver the fully executed warranty bond to Owner prior to or with the final application for payment, and in any event no later than 11 months after Substantial Completion.
- C. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 6.01.A of the General Conditions.

6.02 *Insurance—General Provisions*

- A. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor’s Insurance*

- A. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: **CITY OF BURNET, TXDOT**

- B. *Workers' Compensation and Employer's Liability*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	Policy limits of not less than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	\$ N/A
Bodily injury by disease—aggregate	\$ N/A
Employer's Liability	
Each accident	\$1,000,000.00
Each employee	\$1,000,000.00
Policy limit	\$1,000,000.00
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	\$ N/A

- C. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
 2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- D. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.
 6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- E. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 4. Any exclusion of coverage relating to earth subsidence or movement.
 5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
 6. Any limitation or exclusion based on the nature of Contractor’s work.
 7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- F. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$2,000,000.00
Products—Completed Operations Aggregate	\$2,000,000.00
Personal and Advertising Injury	\$1,000,000.00
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000.00

- G. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance 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. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$ N/A
Each Accident	\$ N/A
Property Damage	
Each Accident	\$ N/A
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000.00

- H. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$1,000,000.00
General Aggregate	\$

- I. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of \$1,000,000.00 after accounting for partial attribution of its limits to underlying policies, as allowed above.
- J. *Contractor’s Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor’s Pollution Liability	Policy limits of not less than:
Each Occurrence/Claim	\$
General Aggregate	\$

6.04 *Builder’s Risk and Other Property Insurance*

- A. *Builder’s Risk Requirements:* The builder’s risk insurance must:

1. be written on a builder’s risk “all risk” policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke;

theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

- a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
 - b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.
2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
 4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier). If this coverage is subject to a sublimit, such sublimit will be a minimum of \$[amount].
 5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of \$[amount].
 6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
 7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
 8. include performance/hot testing and start-up, if applicable.
 9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
 10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds." In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:

a. **CITY OF BURNET ECONOMIC DEVELOPMENT CORPORATION**

11. include, in addition to the Contract Price amount, the value of the following equipment and materials to be installed by the Contractor but furnished by the Owner or third parties:

a. **N/A**

12. If debris removal in connection with repair or replacement of insured property is subject to a coverage sublimit, such sublimit will be a minimum of \$100,000.00

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provision:

- A. *Coverage for Completion Delays:* The builder's risk policy will include, for the benefit of Owner, loss of revenue and soft cost coverage for losses arising from delays in completion that result from covered physical losses or damage. Such coverage will include, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, compensation for loss of net revenues, rental costs, and attorneys' fees and engineering or other consultants' fees, if not otherwise covered.
- B. *Builder's Risk and Other Property Insurance Deductibles:* The purchaser of any required builder's risk, installation floater, or other property insurance will be responsible for costs not covered because of the application of a policy deductible.
1. The builder's risk policy (or if applicable the installation floater) will be subject to a deductible amount of no more than \$5,000.00 for direct physical loss in any one occurrence.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.03 *Labor; Working Hours*

SC-7.03 Amend the first and second sentences of Paragraph 7.03.C to state "...All Work at the Site must be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday, without Owner's prior written approval."

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

- A. **[Contractor]** shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

- A. Owner is exempt from payment of sales and compensating use taxes of the State of Texas and of cities and counties thereof on all materials to be incorporated into the Work.
1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

7.13 *Safety and Protection*

The following Owner safety programs are applicable to the Work: **[Here expressly identify by title and/or date, any such Owner safety programs. If Owner's safety programs are included in or addressed in the Specifications, SC-7.13 may be used to provide a cross-reference to the Specification section].**

ARTICLE 8—OTHER WORK AT THE SITE

8.02 *Coordination*

- A. Owner intends to contract with others for the performance of other work at or adjacent to the Site.
 1. **The City of Burnet** shall have authority and responsibility for coordination of the various contractors and work forces at the Site;
 2. The following specific matters are to be covered by such authority and responsibility: **Maintenance and coordination as needed.**

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.13 *Owner's Site Representative*

- A. Owner will furnish an "Owner's Site Representative" to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner's Site Representative is not Engineer's consultant, agent, or employee. Owner's Site Representative will be Gene Courtney. The authority and responsibilities of Owner's Site Representative follow: observe and inspect the work. Coordinate with Contractor, Owner, and Engineer.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

- A. On this Project, by agreement with the Owner, the Engineer will not furnish a Resident Project Representative to represent Engineer at the Site or assist Engineer in observing the progress and quality of the Work.

ARTICLE 11—`CHANGES TO THE CONTRACT

No suggested Supplementary Conditions in this Article.

ARTICLE 12—CLAIMS

No suggested Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.03 *Unit Price Work*

A. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 *Progress Payments*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

- A. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

15.08 *Correction Period*

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

The Parties hereto expressly agree, that all matters subject to final resolution under this Article may be settled in the appropriate court of competent jurisdiction. In the event of litigation, the prevailing Party shall be entitled to payment of reasonable attorneys' fees and costs as may be recoverable, pursuant to

the Texas Civil Practice and Remedies Code Chapter 38, Texas Local Government Code §271.153, the Prompt Payment Act, common law or any other provision of applicable federal, state or local law for payment of attorney's fees.

ARTICLE 18—MISCELLANEOUS

18.08 *Assignment of Contract*

EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports, and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format readable by Adobe® Acrobat Reader Version [number] or later			
DWG	Autodesk® AutoCAD .dwg format Version [number]			
DOC	Microsoft® Word .docx format Version [number]			
EXC	Microsoft® Excel .xls or .xml format Version [number]			
DB	Microsoft® Access .mdb format Version [number]			

FEDERAL LABOR STANDARDS PROVISIONS

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration . . . makes, utters or publishes any statement knowing the same to be false . . . shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

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

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

WAGE RATES

"General Decision Number: TX20230087 01/06/2023

Superseded General Decision Number: TX20220087

State: Texas

Construction Type: Heavy

Counties: Blanco, Brown, Burnet, Coke, Coleman, Comanche, Concho, Eastland, Fisher, Gillespie, Kerr, Kimble, Llano, Mason, Mills, Mitchell, Nolan, Real, Runnels, San Saba, Schleicher, Shackelford and Stephens Counties in Texas.

HEAVY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date

0

01/06/2023

SUTX2009-126 04/21/2009

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 13.00 **	0.00
LABORER: Common or General.....	\$ 10.67 **	1.20
LABORER: Pipelayer.....	\$ 10.07 **	0.00
OPERATOR: Backhoe/Trackhoe.....	\$ 12.16 **	0.96
OPERATOR: Bulldozer.....	\$ 14.25 **	0.00
OPERATOR: Loader (Front End)....	\$ 11.13 **	0.00
TRUCK DRIVER.....	\$ 8.91 **	0.24

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local),

a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

SPECIAL CONDITIONS

Special Conditions of Construction Contract

Special Conditions to the Construction Contract are contained herein. Sections 5.06 I., 7.08 B. 6.02, 6.03, 6.04, 6.05, 6.06, 9.06 and 17.01 B., of the Standard General Conditions of the Construction Contract are amended as referenced below:

Section 5.06 (entitled "Hazardous Conditions at Site") Subsection I., is deleted as Owner is a Texas Home Rule Municipality prohibited by the Texas Constitution from creating an unfunded debt. The Sub-section is amended to read as follows:

Section 5.06 Hazardous Conditions at Site
Subsection I. Intentionally deleted

Section 7.08 (entitled "Patent Fees and Royalties") Subsection B., is deleted as Owner is a Texas Home Rule Municipality prohibited by the Texas Constitution from creating an unfunded debt. The Sub-section is amended to read as follows:

Section 7.08 Hazardous Conditions at Site
Subsection B. Intentionally deleted

Sections 6.02 (entitled "Insurance General Provisions") Section 6.03 (entitled "Contractor's Insurance"), Section 6.04 (entitled "Builder's Risk and Other Property Insurance"), Section 6.05 (entitled "Property Loss; Subrogation"), Section 6.06 (entitled "Receipt and Application of Property Insurance Proceeds"), and Section 9.06 (entitled "Insurance") is amended by replacing the existing language with the language below:

6.02. Insurance. It is agreed and understood the following provisions and insurance table are binding and are a part of the contract.

- A) Prior to the commencement of any work under this Agreement, Contractor shall furnish copies of all required endorsements and completed Certificate(s) of Insurance to Owner's City Manager, which shall be clearly labeled with the Project Name in the Description of Operations block of the Certificate. The Certificate(s) shall be completed by an agent and signed by a person authorized by that insurer to bind coverage on its behalf. Owner will not accept a Memorandum of Insurance or Binder as proof of insurance. The certificate(s) must be signed by the Authorized Representative of the carrier and list the agent's signature and phone number. The certificate shall be mailed, with copies of all applicable endorsements, directly from the insurer's authorized representative to Owner. Owner shall have no duty to pay or perform under this Agreement until such certificate and endorsements have been received and approved by Owner's City Manager. No officer or employee, other than Owner's City Manager, shall have authority to waive this requirement.

- B) Owner reserves the right to review the insurance requirements of this Article during the effective period of this Agreement and any extension or renewal hereof and to modify insurance coverages and their limits when deemed necessary and prudent by Owner's City Manager based upon changes in statutory law, court decisions, or circumstances surrounding this Agreement. In no instance will Owner allow modification whereby Owner may incur increased risk.
- C) A Contractor's financial integrity is of interest to Owner; therefore, subject to Contractor's right to maintain reasonable deductibles in such amounts as are approved by Owner, Contractor shall obtain and maintain in full force and effect for the duration of this Agreement, and any extension hereof, at Contractor's sole expense, insurance coverage written on an occurrence basis, unless otherwise indicated, by companies authorized to do business in the State of Texas and with an A.M Best's rating of no less than A- (VII), in the types and for an amount not less than the amount listed in the **Insurance Table** below.
- D) Contractor agrees to require, by written contract, that all subcontractors providing goods or services hereunder obtain the same categories of insurance coverage required of Contractor herein, and provide a certificate of insurance and endorsement that names the Contractor and Owner as additional insureds. Policy limits of the coverages carried by subcontractors will be determined as a business decision of Contractor. Contractor shall provide Owner with said certificate and endorsement prior to the commencement of any work by the subcontractor. This provision may be modified by Owner's City Manager, without subsequent City Council approval, when deemed necessary and prudent, based upon changes in statutory law, court decisions, or circumstances surrounding this agreement. Such modification may be enacted by letter signed by Owner's City Manager, which shall become a part of the contract for all purposes.
- E) Owner shall be entitled, upon request and without expense, to receive copies of the policies, declaration page, and all required endorsements. Contractor shall be required to comply with any such requests and shall submit requested documents to Owner at the address provided below within 10 days. Contractor shall pay any costs incurred resulting from provision of said documents.

City of Burnet
City Manager
1001 Buchanan Drive
Suite 4
Burnet, Texas 78023

- F) Contractor agrees that with respect to the above required insurance, all insurance policies are to contain or be endorsed to contain the following provisions:
- Name the City of Burnet ("Owner"), its officers, officials, employees, volunteers, and elected representatives as additional insureds by endorsement, as respects operations and activities of, or on behalf of, the named insured performed under contract with Owner, with the exception of the workers' compensation and professional liability policies;
 - Provide for an endorsement that the "other insurance" clause shall not apply to the City of Burnet ("Owner"), where Owner is an additional insured shown on the policy;
 - Workers' compensation, employers' liability, general liability and automobile liability policies will provide a waiver of subrogation in favor of Owner;
 - Provide advance written notice directly to Owner of any suspension or non-renewal in coverage, and not less than ten (10) calendar days advance notice for nonpayment of premium.
- G) Within five (5) calendar days of a suspension, cancellation or non-renewal of coverage, Contractor shall provide a replacement Certificate of Insurance and applicable endorsements to Owner. Owner shall have the option to suspend Contractor's performance should there be a lapse in coverage at any time during this contract. Failure to provide and to maintain the required insurance shall constitute a material breach of this Agreement.
- H) In addition to any other remedies Owner may have upon Contractor's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, Owner shall have the right to order Contractor to stop work hereunder, and/or withhold any payment(s) which become due to Contractor hereunder until Contractor demonstrates compliance with the requirements hereof.
- I) Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payments of damages to persons or property resulting from Contractor's or its subcontractors' performance of the work covered under this Agreement.
- J) It is agreed that Contractor's insurance shall be deemed primary and non-contributory with respect to any insurance or self-insurance carried by Owner for liability arising out of operations under this Agreement.

- K) It is understood and agreed that the insurance required is in addition to and separate from any other obligation contained in this Agreement and that no claim or action by or on behalf of Owner shall be limited to insurance coverage provided.
- L) Contractor and any Subcontractors are responsible for all damage to their own equipment and/or property.

INSURANCE TABLE

<p>1. Workers' Compensation Employers Liability</p>	<p>\$1,000,000 E.L. each accident \$1,000,000 E.L. disease each employee \$1,000,000 E. L. disease - policy limit</p>
<p>2. Commercial General (Public) Liability Insurance to include coverage for the following: a. Premises/operations b. Products/completed operations c. Contractual liability d. Explosion, collapse, underground e. Personal/Advertising Liability</p>	<p>For Bodily Injury and Property Damage of \$1,000,000 per occurrence; \$2,000,000 General Aggregate, or its equivalent in Umbrella or Excess Liability Coverage</p>
<p>3. Business Automobile Liability a. Owned/leased vehicles b. Non-owned vehicles c. Hired vehicles</p>	<p>Combined Single Limit for Bodily Injury and Property Damage of \$1,000,000 per occurrence</p>
<p>4. Umbrella or Excess Liability Coverage</p>	<p>\$1,000,000 per occurrence combined limit Bodily Injury (including death) and Property Damage</p>
<p>5. Builder's Risk</p>	<p>All Risk Policy written on an occurrence basis for 100% replacement cost during construction phase of any new or existing structure.</p>
<p>6. Environmental Insurance Contractor's Liability (claims made coverage)</p>	<p>\$1,000,000 per occurrence \$2,000,000 General Aggregate, for claims associated with hazardous materials, to include spills and mitigation.</p>

Additional Requirements: INSERT HERE ANY ADDITIONAL INSURANCE REQUIREMENTS

Section 17.01 (entitled "Methods and Procedures") Subsection B (entitled "Final Resolution of Disputes") is amended by replacing the existing language with the language below:

17.01 B. Dispute Resolution. Any provision of the Agreement requiring the parties to resolve any dispute by binding arbitration is void. In accordance with the provisions of Subchapter I, Chapter 271, TEX. LOCAL GOV'T CODE, the parties agree that, prior to instituting any lawsuit or other proceeding arising from a dispute under this agreement, the parties will first attempt to resolve the dispute by taking the following steps: (1) A written notice substantially describing the nature of the dispute shall be delivered by the dissatisfied party to the other party, which notice shall request a written response to be delivered to the dissatisfied party not less than 5 days after receipt of the notice of dispute. (2) If the response does not reasonably resolve the dispute, in the opinion of the dissatisfied party, the dissatisfied party shall give notice to that effect to the other party whereupon each party shall appoint a person having authority over the activities of the respective parties who shall promptly meet, in person, in an effort to resolve the dispute. (3) If those persons cannot or do not resolve the dispute, then the parties shall each appoint a person from the highest tier of managerial responsibility within each respective party, who shall then promptly meet, in person, in an effort to resolve the dispute.



City of Burnet Public Work Contract Special Conditions

Texas Government Code Chapter 2258

This is a public works contract and Chapter 2258 of the Texas Government Code requires not less than the prevailing wage rate for work of a similar character in this locality shall be paid to all laborers, workmen and mechanics employed in the construction of this Project. This includes overtime regulations. Respondent shall refer to the wage decision posted with this solicitation to determine the prevailing wage rates that shall be utilized for work on this Project.

City Charter

Respondent is advised that all City contracts are subject to all legal requirements provided for in the City Charter and or applicable City Ordinances, state and federal statutes. No officer or employee of the City shall use his or her public office for private gain; nor shall any officer or employ act in his or her official capacity on matters in which the official has a private financial interest clearly separate from that of the general public; nor shall any official or employee accept gifts or other things of financial value that was offered or given with intent to influence the judgment or discretion of such official acting in a private capacity on matters dealt with as a public official.

Texas Government Code Chapter 552

Any bid/proposal, after being opened, becomes subject to the Public Information Act. Therefore, in the event of City receiving an Public Information Request, Respondent clearly must indicate any portion of the submitted bid/proposal which Respondent claims is not subject to public inspection under the Public Information Act.

In the event Respondent is or subsequently becomes delinquent in the payment of its City taxes, including state and local sales taxes, such fact shall constitute grounds for City determining Respondent is not responsible to perform on a project or, if awarded the bid/proposal, for City canceling Respondent's awarded contract. City reserves the right to deduct any delinquent taxes owed by a delinquent Respondent from any payments City may owe a delinquent Respondent as a result of Work under a City contract.

Texas Local Government Code Chapter 176

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that persons, entities or their agents, which seek to contract for the sale or purchase of property, goods or services with City, shall file a completed Conflict of Interest Questionnaire (hereafter referred to as "CIQ") with City Secretary not later than the seventh (7th) business day after the date that the person, entity or agent: (i) begins contract discussions or negotiations with City; or (ii) submits to City an application, a response to a request for bid, a proposal, correspondence related to a bid/proposal or another writing related to a potential agreement with City.

The CIQ form is available from the Texas Ethics Commission on line at the following web address:

Texas Government Code §2270.002

Texas Government Code §2270.002 provides that a governmental entity may not enter into a contract with a company for goods or services, unless the contract contains a written verification from the company that it: (i) does not boycott Israel; and (2) will not boycott Israel during the term of the contract. "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes.

By submitting an offer to or executing contract documents with the City of Burnet, Company hereby verifies that it does not boycott Israel, and will not boycott Israel during the term of the contract. City hereby relies on Company's verification. If affirmation is found to be false, City may terminate the contract for material breach.

Texas Government Code § 2252.152

Texas Government Code §2252.152 provides that a governmental entity may not enter into a governmental contract with a company that is identified on a list prepared and maintained under Texas Government Code §2270.0201 or §2252.153 "Listed Companies". Consultant/Contractor hereby certifies that it is not identified on such a list and that it will notify City should it be placed on such a list while under contract with City. City hereby relies on Consultant's/Contractor's certification. If found to be false, or if Consultant/Contractor is identified on such list during the course of its contract with City, City may terminate this Agreement for material breach.

Texas Government Code §2252.908

The Texas Government Code §2252.908, and the rules issued by the Texas Ethics Commission found in Title 1, Sections 46.1, 46.3 and 46.5 of the Texas Administrative Code, require a business entity to submit a completed Form 1295 to the City before the City may enter into a contract with that business entity. See instructions included with this solicitation.

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)

County of _____) ss.

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

- (1) He is _____ of _____, the Bidder that has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with another Bidder, firm or person to submit a collusive or sham bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has any manner, directly or indirectly, sought by "agreement" or collusion or communication or conference with any other Bidder, firm or person to fix the price or pries in the attached Bid or of any other Bidder, or to fix an overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder of any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

Title

Subscribed and sworn to me this _____ day of _____, 2023.

By: _____
Notary Public

My commission expires: _____

**STATEMENT OF BIDDER'S
QUALIFICATIONS**

Statement of Bidder's Qualifications
(BIDDER MAY USE COMPANY FORM WITH INFORMATION LISTED HERE)

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

Name Bidder: _____ Date Organized: _____
Address: _____ Date Incorporated: _____
Number of Years in contracting business under present name: _____

CONTRACTS ON HAND:

Contract	Amount \$	Completion Date
----------	-----------	-----------------

_____	_____	_____
_____	_____	_____
_____	_____	_____

Type of work performed by your company: _____

Have you ever failed to complete any work awarded to you? _____

Have you ever defaulted on a contract? _____

List the projects most recently completed by your firm (include project of similar importance):

Project	Amount \$	Mo/Yr Completed
---------	-----------	-----------------

_____	_____	_____
_____	_____	_____
_____	_____	_____

Major equipment available for this contract: _____

Attach resume(s) for the principal member(s) of your organization, including the officers as well as the proposed superintendent for the project.

Credit available: \$ _____ Bank reference: _____

The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the _____ in verification of the recitals comprising this Statement of Executed this _____ day of _____

By: (signature) _____ Title: _____

(print name) _____

CERTIFICATE OF INTERESTED PARTIES

Certificate of Interested Parties (Form 1295) Instructions

The Texas Government Code §2252.908, and the rules issued by the Texas Ethics Commission found in Title 1, Sections 46.1, 46.3 and 46.5 of the Texas Administrative Code, require a business entity to submit a completed Form 1295 to the City before the City may enter into a contract with that business entity.

Form 1295 must be completed online. It is available from the Texas Ethics Commission by accessing the following web address:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

Print your completed Form 1295 and the certification of filing. Sign Form 1295 and submit it along with the certification of filing, with your response to this solicitation. The name listed in Box 1 of the 1295 form should match exactly with the active name on file with the Texas Secretary of State, which can be found at:

<https://www.sos.state.tx.us/>

In Box 3 of Form 1295, provide the solicitation number shown on the cover page of this solicitation

The following definitions found in the statute and Texas Ethics Commission rules may be helpful in completing Form 1295.

"Business entity" includes an entity through which business is conducted with a governmental entity or state agency, regardless of whether the entity is a for-profit or nonprofit entity. The term does not include a governmental entity or state agency.

"Controlling interest" means: (1) an ownership interest or participating interest in a business entity by virtue of units, percentage, shares, stock, or otherwise that exceeds 10 percent; (2) membership on the board of directors or other governing body of a business entity of which the board or other governing body is composed of not more than 10 members; or (3) service as an officer of a business entity that has four or fewer officers, or service as one of the four officers most highly compensated by a business entity that has more than four officers. Subsection (3) of this section does not apply to an officer of a publicly held business entity or its wholly owned subsidiaries.

"Interested party" means: (1) a person who has a controlling interest in a business entity with whom a governmental entity or state agency contracts; or (2) an intermediary.

"Intermediary," for purposes of this rule, means a person who actively participates in the facilitation of the contract or negotiating the contract, including a broker, adviser, attorney, or representative of or agent for the business entity who:

- 1) receives compensation from the business entity for the person's participation;
- 2) communicates directly with the governmental entity or state agency on behalf of the business entity regarding the contract; and,
- 3) Is not an employee of the business entity or of an entity with a controlling interest in the business entity.

ATTORNEY'S CERTIFICATION

ATTORNEY'S REVIEW CERTIFICATION

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

I have examined the attached contract(s) and surety bonds and am of the opinion that each of the agreements may be duly executed by the proper parties, acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties; and that the agreements shall constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

Attorney's signature: _____ Date: _____

Print Attorney's name _____

CONSTRUCTION SPECIFICATIONS

SECTION 1

PROJECT SUMMARY

0110 SUMMARY OF THE WORK

This project consists of street, drainage, water, and water improvements for the City of Burnet. The work includes erosion/sedimentation control, street excavation and embankment, flexible base improvements, HMAC, and miscellaneous improvements to complete this rural subdivision.

The proposed improvements will serve approximately 78 lots and generally consist of the following:

- Demolition of Oak Vista Drive
- 3,897 square yards of street
- TxDOT urban taper and street apron
- Various culvert crossings including:
 - 1-102' 18" RCP
 - 1-108' Design 3 CMAP
 - All incidental construction to complete the work.

The road improvements are subject to approval by Burnet County and the erosion/sedimentation control is subject to inspection and acceptance by the TCEQ.

The prospective Contractor shall inspect the existing roadway and take whatever precautions are required to mitigate damage to the existing roadway. Any damage to existing roadway or other existing improvements shall be the responsibility of the Contractor.

0120 PROGRESS OF THE WORK

The work shall be started within 10 days following the effective date of the Agreement, and the work shall be executed with such progress as may be required to prevent any delay to the general completion of the project. The work shall be executed at such times and in or such parts of the project, and with such personnel, material, and equipment to assure completion of the work in the time established by the Agreement.

If applicable and if the Contractor for his convenience and at his own expense, should desire to conduct his work at night or outside regular hours, he shall submit written notice to the Owner and he shall allow ample time for satisfactory arrangements to be made for inspecting the work in progress. The Contractor shall pay the expenses for extra inspection required for work outside regular hours. Normal working hours, for this purpose, are Monday through Friday, 7:00am to 6:00 p.m.

0130 CONSTRUCTION SCHEDULE

The Contractor shall, within fifteen (15) days after the effective date of the Agreement, provide and submit to the Engineer for approval, the Schedule for the first 30 days of activities. Within 30 days after the effective date of the Agreement the Contractor shall provide and submit to the Engineer the schedule he plans to maintain in order to successfully construct the work within the time allotted. The completion schedule shall be approved before additional monthly payments are made. The Schedule shall account for all the work of the Contractor and his Subcontractors and suppliers. In addition to all reasonably important construction activities, the Schedule shall provide for the proper sequence of construction considering the various crafts, purchasing time, submittal approval, material delivery, equipment fabrication, and similar time consuming factors.

The Schedule shall include, as a minimum, the earliest starting and finish dates and latest starting and finish dates, and the total float for each task or item. The Contractor shall update (monitor) the schedule as necessary and shall submit to the Engineer a copy of the updated schedule at the same time the pay estimate is prepared. The schedule shall contain all of the items of the Periodic Estimate and Pay Schedule.

While the Contractor bears full responsibility for scheduling all phases and stages of the work to ensure its successful prosecution and completion within the time specified in accordance with all provisions of these Specifications, the Contractor is specifically required to complete fully or complete such stages of work to enable his Subcontractors and suppliers to complete their work within the respective times specified.

If the Engineer determines that operations are falling behind schedule at any time during the construction period, the Owner may require the Contractor to add to his plant, equipment and/or construction forces, including increases in working hours, in such quantities as are required to bring operations back on schedule. Upon receipt of written communications from the Owner requiring such addition, the Contractor shall furnish it at no additional cost to the Owner.

0140 PRECONSTRUCTION CONFERENCE

A preconstruction conference shall be held as soon as possible after Award of Contract and before work is started. The conference will be held at a location selected by the Owner. The conference will be attended by:

1. Contractor's Office Representative.
2. Contractor's General Superintendent.
3. Any subcontractors' or suppliers' representatives whom the Contractor may desire to invite or the Engineer may request.
4. Engineer's Representatives.
5. Owner's Representatives.
6. Such other individuals that the Engineer may invite.

A suggested format would include, but not be limited to, the following subjects:

1. Check on required bonds and insurance certifications.
2. Project schedule, start date, completion date, and liquidated damages.
3. Shop drawing submittal and approval procedure.
4. Chain of command, direction of correspondence, and coordination responsibility between Contractors.
5. Request for periodic job meetings for all involved.
6. Introduction of the key project personnel.
7. Equal opportunity requirements.
8. Laboratory testing of material requirements.
9. Inventory of material stored on site provisions.
10. Progress estimate and payment procedure.
11. Discussion of Contractor's Safety program.

The Engineer will preside at the conference, prepare the minutes of the meeting and distribute copies of same to all participants who so request by fully completing the attendance form to be circulated at the beginning of the conference.

0150 COORDINATION WITH OWNER'S OPERATIONS AND EXISTING FACILITIES

Several parts of the proposed work under this Contract will connect with or into existing facilities. Many of such contact locations are particularly sensitive because of the attendant necessary downtime of existing wastewater service, or because of the possibility of contamination of potable water, or because of the extraordinary inconvenience to the utility providers personnel and to the routine which is required in the continuous operation. Because of this sensitivity, the Contractor shall carefully plan the schedule of that portion of the work which will affect the existing facilities. Such plans and schedules shall be subject to the approval of the utility provider.

Work which requires shutdown or in any way impeded the operations of existing facilities shall be closely coordinated with the utility provider. A minimum of 48 hours written notice shall be given to the City/County or utility provider before any approval will be granted.

Immediately after the award of a contract for this project, the Contractor shall outline and submit a scheduled plan for installation of the work, which requires interruption of operations.

0160 CONTRACTOR'S USE OF PREMISES

Contractor shall have complete and exclusive use of the premises for the performance of the Work.

Contractor shall limit the use of the premises for his Work and for storage to allow for:

1. Work by other contractors.
2. Owner occupancy.
3. Public use.

Coordinate use of premises with Owner.

Contractor shall assume full responsibility for security of all his and his subcontractors materials and equipment stored on the site.

If directed by the Owner, move any stored items, which interfere with operations of Owner or other contractors.

Obtain and pay for use of additional storage or work area if needed to perform the Work.

Contractor shall submit to the Owner for approval a plan of operations, designating proposed areas of the property to be used for his operations, material storage, equipment storage, employee's parking, offices, and shops. The area shall effect minimal interference with the present operations.

Any damage to existing facilities, including contamination, which may be caused by Contractor's personnel, callers, visitors, materials, or equipment, shall be repaired, or corrected at the sole expense of the Contractor.

Any fence that is damaged or removed by the Contractor shall be replaced at the Contractor's expense in like kind, and to the satisfaction of the Engineer.

0170 OWNER OCCUPANCY

Owner may occupy premises during performance of the work for the conduct of his normal operations. Coordinated all construction operations with Owner to minimize conflict and to facilitate Owner usage.

SECTION 2

CONCRETE

0210 DESCRIPTION

This section shall govern for the construction of all types of structures involving the use of structural concrete and thrust block concrete. Sections 0220 through 02140 shall govern for structural concrete. Thrust block concrete caps shall comply with Section 02150 of this Specification.

All concrete structures shall be constructed in accordance with the design requirements and details shown on the Plans, in conformity with the pertinent provisions of the items contracted for, and the incidental items referred to, and in conformity with the special requirements herein set forth.

Concrete shall be of fine and course aggregate, so graded and proportioned, and thoroughly mixed with Portland Cement and water as will produce a homogenous mixture. Concrete for the pressure regulator vault shall have a minimum compressive strength of 3000 psi at 28 days (Class A).

0220 MATERIALS

0221 Cement: The cement shall be Type I of a standard brand of Portland cement conforming to the latest revision of ASTM Designation C-150. Only one brand of cement will be permitted in any structure.

0222 Mixing Water: The water used with the cement shall be clean and suitable for drinking or for ordinary household use.

0223 Aggregate: The coarse aggregate shall consist of gravel, crushed stone, or combinations of these two. Coarse aggregate shall conform to the latest revision of ASTM C-33. Gravel shall consist of durable particles of crushed or uncrushed gravel of uniform quality throughout. It shall have wear of not more than 40 percent when tested according to AASHTO Method T-96.

Crushed stone shall consist of durable particles of stone of uniform quality and having the same wear as that required of gravel. The coarse aggregate shall be free from excess salt, alkali, roots and other objectionable matter. The maximum size aggregate shall be 1-inch diameter.

Fine aggregate shall consist of natural sand and be free of broken material, foreign material, excess salt, alkali, or vegetable matter. It shall contain not more than 0.5 percent by weight of clay lumps. Fine aggregate shall conform to ASTM 33.

0224 Admixtures: Water reducing admixtures shall conform to type A or Type D as set forth in ASTM Designation C-494. Air entraining admixtures shall conform to requirements to ASTM Designation C-260.

Calcium chloride will not be permitted as an admixture.

0230 MIX DESIGN

It shall be the responsibility of the Contractor to furnish the mix design. The mix design must prove to meet the requirements for concrete strength, durability, and slump. Testing of all mix design

specimens will be made in a laboratory designated by the Engineer and all costs for testing shall be paid by the Contractor.

Trial batches, when required, will be made and tested prior to placing the concrete on the job. When transit mix concrete is used, the batch size shall not be less than 50% of the rated capacity of a representative truck.

Mix design from previous or concurrent jobs may be used without trial batches if it can be shown that no substantial change in any of the proposed ingredients has been made and approval of the Engineer is given.

The coarse aggregate factor shall not be more than 0.82 except that when the voids in the coarse aggregate exceed 48% of the total dry loose volume, the coarse aggregate factor shall not exceed 0.85. The coarse aggregate factor shall not be less than 0.70 for Grades 1, 2 and 3 aggregate.

Water reducing or retarding agents may be used with all classes of concrete at the option of the Contractor. Water reducing or retarding agents are required for hot weather placement and continuous slab placement.

Entrained air will be required for Class A and Class C concrete. The concrete shall be designed to entrain 5% air when Grade 2 coarse aggregate is used and 6% air when Grade 3 coarse aggregate is used. Concrete, as placed in the structure, shall contain the amount as stated above with a tolerance of plus or minus 1-1/2 percent. Occasional variation beyond this tolerance will not be cause for rejection. When the quantity of entrained air is found to be above 7% with Grade 2 coarse aggregate or above 8% with Grade 3 coarse aggregate, additional test beams or cylinders will be required. If these beams or cylinders pass the minimum flexural or compressive requirements, the concrete will not be rejected because of the variation in air control.

0240 CONSISTENCY

Concrete shall be of such consistency as to insure the required workability and result in compact masses having dense, uniform surfaces. The quantities of the mix design shall not be varied unless authorized by the Engineer. In cases where the characteristics of the aggregates are such that, with the maximum allowable amount of water, the consistency requirements cannot be satisfied, the Contractor may furnish additional aggregates, mineral filler or aggregate of a different character which will produce the desired results. If the Contractor does not provide these materials, the Engineer will modify the mix design with additional cement in order to produce proper workability. The addition of water to the approved batch design to provide workability is not permitted.

In general, the consistency of concrete mixture shall be such that:

1. The aggregates will not segregate and mortar will cling to the coarse aggregate.
2. The concrete when dropped from the discharge chute will flatten out at the center of the pile, and the edges will not flow.
3. The concrete will not show free water.
4. The concrete will slide and not flow into place when discharged from metal chutes at an angle of 30 degrees with the horizontal.

5. The surface of the finished concrete will not be free of laitance.

Any concrete mix failing to meet the above consistency requirements will be considered unsatisfactory although the concrete meets the required slump test. In cases where the characteristics of the aggregate furnished are such that with the maximum allowable amount of water, the specified slump and consistency requirements are not met, the Contractor may provide aggregated of an improved grading, or the Engineer will modify the mix design to meet the slump and consistency requirements by adding cement. Unless otherwise permitted or specified, the concrete shall have a slump of 4 inches or less if consolidation is to be by vibration.

0250 CLASSIFICATION

Concrete shall be classified as setforth in the following table. The Plans shall indicate the type of concrete to be used in each structure. If the Plans do not designate the classifications to be used in a particular structure, then Class A concrete is required to be used.

TABLE 4- CLASSES OF CONCRETE

<u>CLASS</u>	<u>Sk.Cement per CY</u>	<u>Minimum Comp. Strength (28 days)</u>	<u>Minimum Beam Strength (7 days)</u>	<u>Maximum W/C Ratio</u>	<u>Coarse Aggregate Grade No.</u>
A	5	3000	500	6.5	2-3-4*
B	4	2000	330	8.0	2-3-4*
C	6	3600	600	6.0	1**2-3
D	3	1500	250	11.0	2-3-4*
E	6	3000	500	7.0	2-3

* Must have prior approval from Engineer before Grade 4 aggregate may be used.

** Grade 1 may be used in foundations only, except in foundations poured in drilled shafts.

0260 TESTING OF CONCRETE

During the progress of the work, the Engineer or designated laboratory shall cast cylinders or test beams for testing of compressive or flexural strength. For small placements, such as manholes, culverts, inlets or small riprap placements, the Engineer may waive the testing procedures. For placements of twenty-five cubic yards or more the testing will not be waived. A set of test cylinders will be made for each 20 cubic yards of a pour, at the discretion of the Engineer’s representative. If testing is required for removal of forms or falsework, the cylinders or beams shall be cured at the jobsite and in the same method as that concrete which the test represents. Tests made for design strength concrete shall be cured in accordance with THD Bulletin C-11. Job control shall be made on seven-day compressive strengths which are compatible with the seven-day tests made at the mix design. If these seven-day tests do not meet the requirements, then a new batch design shall be made.

0270 GENERAL PLACEMENT REQUIREMENTS

Unless otherwise provided, the following requirements shall govern for the time sequences in which construction operations may be carried on. Forms and falsework for superstructures shall not be erected on concrete footings until the concrete in the footing has cured at least two curing days. Concrete may be place in the wall or column as soon as the forms and reinforcing steel placement are approved. A joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set shall

be deemed a construction joint. When concrete in a structure or a portion of a structure is specified to be placed monolithic, the term monolithic shall be interpreted to mean that the manner and sequence of concrete placing shall be such that construction joints will not be created. Construction joints will be of the type and at the locations shown on the plans. Additional joints will not be permitted without written authorization from the Engineer. Any additional construction joints shall have details equivalent to those shown on the plans for joints in similar locations. The top surface of a concrete placements which terminates at a horizontal construction joint shall have the surface cement film removed and shall be roughened thoroughly as soon as practicable after the concrete has attained initial set. Before joining plastic concrete to concrete that has already set, the surface of the concrete in place shall be free from all loose material, laitance, dirt or foreign matter, shall be washed and scrubbed clean with stiff brooms and drenched thoroughly with water until saturated, and shall be kept wet until the plastic concrete has been placed. Immediately prior to the placing of additional concrete, all forms shall be drawn tight against the concrete in place, and the surface of the concrete in place, and the surface of the concrete in place shall be flushed with a coating of grout mixed in the proportions of one part cement to two parts sand.

If shown on the plans, construction joints shall be provided with concrete keyways, reinforcing steel dowels, and/or metal flashing strips or plastic watershed. The method of forming keys in keyed joints shall be such as to permit the easy removal of forms with chipping, breaking, or damaging the concrete in any manner.

All falsework shall be designed and constructed so that no settlement or deformation will occur, so that the necessary rigidity will be provided.

For calculating the loads on falsework, a weight of 150 pounds per cubic foot shall be assumed for concrete, and a live load allowance of 50 pounds per square foot of horizontal surface of the formwork shall be included.

All timber used in falsework centering shall be sound, in good conditions, and free from defects which will impair its strength. All timber for wedges shall be hardwood. Upon completion of the structure, all falsework shall be removed to the ground level.

Falsework piling shall be pulled or cut off a minimum of 6 inches below ground level. Falsework in a stream shall be removed completely to a point specified by the Engineer to prevent any obstruction to the waterway.

0280 FORMS

0281 General Requirements: Except where otherwise specified, forms may be constructed of either timber or metal elected by the Contractor.

Forms for round columns exposed to view shall be of steel except that other material will be allowed with written permission of the Engineer. Forms shall be built and maintained mortar-tight and of material sufficient in strength to prevent bulging between supports and shall be set and maintained to the lines designated until the concrete is sufficiently hardened to permit form removal. During the elapsed time between the building of the forms and placing of concrete, the forms shall be maintained in a manner to eliminate warping and shrinkage.

Permission to place concrete will not be given until all such work is complete to the satisfaction of the Engineer.

If, at any stage of the work, the forms show signs of bulging or sagging, that portion of the concrete causing such conditions shall be removed immediately, if necessary, and the forms shall be reset and braced securely against further movement.

0282 Timber Forms: Lumber for forms shall be seasoned properly and of good quality. It shall be free from loose or unsound knots, knot holes, twists, shakes, decay, and other imperfections which would affect its strength or impair the finished surface of the concrete. If desired by the Contractor, forms may be constructed of plywood not less than on-half inch thickness, with no form lining required. The grain of the face plies on such plywood forms shall be laid parallel to the span between the supporting studs of joists.

Plywood used for forms for surfaces which remain exposed shall be equal to that specified as "Exterior Type," of the grade, "Concrete-Form Exterior," of the U.S. Department of Commerce, National Bureau of Standards, Commercial Standard, latest edition.

Forms or form lumber to be re-used shall be maintained clean and in good condition as to accuracy, shape, strength, rigidity, tightness, and smoothness of surface. Forms shall be reworked between each use. Any lumber which is split, warped, bulged, marred or has defects that will produce work inferior to that resulting from using new material shall not be used.

Forms shall be braced rigidly to prevent movement while placing the concrete. Forms on surfaces not to be finished but exposed to view, shall be placed so that the form panels are symmetrical, i.e. long dimensions set in the same direction. Horizontal joints shall be level and continuous. Molding specified for chamfer strips or other uses shall be made of redwood, cypress, or pine materials, of such grade that will not split when nailed, and which can be maintained to a true line without warping. The molding shall be mill cut and dressed on all faces. Unless otherwise provided, forms shall be filleted at all sharp corners and edges with triangular chamfer strips. The strips shall be three-fourths inch measured on the sides.

All forms shall be so constructed as to permit removal without damage to the concrete.

Metal form ties of an approved type or a satisfactory substitute shall be used to hold forms in place. Such ties shall be of a type as to permit eased of removal of the metal as hereinafter specified. All metal appliances used inside of forms to hold them in correct alignments shall be removed to a depth of at least one-half from the surface of the concrete and shall be removed without undue injury to the surface by shipping or spalling. Such devices, when removed, shall leave a smooth opening in the concrete surface. Burning off of rods, bolts, or ties will not be permitted.

Whenever practicable, forms shall be erected complete before the reinforcement is placed.

For concrete structures which are to contain water, ties shall be removed to 1 ½" of the surface and the hole grouted to leave a smooth surface. For narrow walls and other locations where access to the bottom of the forms is not readily attainable otherwise, adequate cleanout openings shall be provided.

At the time of placing concrete, the forms shall be clean and free entirely from all chips, dirt, sawdust, and other extraneous matter.

The facing of all forms shall be treated with oil before concrete is placed. In hot weather, both sides of face forms may be required to be treated with oil to prevent warping and to secure tight joints. The oils used for this purpose shall be light clear oil which will not discolor or otherwise injuriously affect the concrete surface.

All forms shall be wetted thoroughly before the concrete is placed therein.

0283 Metal Forms: The foregoing Specifications for timber forms as regards mortar-tightness, filleted corners, alignment, removal, reuse, oiling, and wetting shall apply equally to metal forms.

The metal used for forms shall be of such thickness that the forms will remain true to shape. Forms may be made in sections of such lengths as will facilitate the placing of concrete and the removal of forms. The fit of joints of sections shall not produce offsets. All bolt and rivet heads on the facing sides shall be countersunk. Clamps, pins, or other connection devices shall be designated to hold the forms rigidly together and to allow removal without injury to the concrete. Metal forms which do not present a smooth surface or line up properly shall not be used. Metal shall be kept free from rust, grease, or other foreign material that will tend to discolor the concrete.

0290 REINFORCING STEEL

0291 Materials: Except where otherwise designated on the Plans, all bar reinforcement shall be deformed, and shall conform to ASTM Designation: A615, Grade 60 and shall be open hearth, basic oxygen, or electric furnace new billet steel.

The reinforcement shall be bent cold and be true to the shapes indicated on the Plans. Bending shall preferably be done in the shop. Irregularities in bending shall be cause for rejection.

0292 Storing: Steel reinforcement shall be stored above the surface of the ground upon platforms, skids or other supports and shall be protected as far as practicable from surface deterioration caused by exposure to conditions producing rust. When placed in the work, reinforcement shall be free from dirt, paint, grease, oil, or other foreign material. Rust, surface seams, surface irregularities or mill scale will not be cause for rejection, provided the minimum dimensions, cross-sectional area and tensile properties of a hand wire brushed specimen meet the physical requirements for the size and grade of steel specified.

0293 Splices: No splicing of bars, except when provided on the Plans, of specified herein, will be permitted. Splices not provided for on the Plans will be permitted, size No.8 and smaller, subject to the following:

- a. Splices will not be permitted in bars less than 20 feet plan length. Splices which are not shown in the Plans but permitted hereby, shall be made in accordance with the following table. The specified concrete cover shall be maintained at such splices and the bars placed in contact and securely tied together.
- b. Splices will not be permitted in main reinforcement at points of maximum stress. When permitted in main bars, splices in adjacent bars will be staggered a minimum of two splice lengths.

BAR SPLICING

Horizontal Bars w/12" of concrete or less below	20 Bar Diameters*
Horizontal Bars w/more than 12" of concrete below the bar	35 Bar Diameters*
Vertical Bars	30 Bar Diameters*

* 12 inch minimum

Welding of reinforcing bars will not be permitted.

0294 Placing: Reinforcement shall be placed as near as possible in the position shown on the Plans. Unless otherwise shown on the Plans, dimensions shown for reinforcement are to the centers of the bars. In the plane of the steel parallel to the nearest surface of concrete, bars shall not vary from plan placement by more than one-twelfth of the spacing between bars. In the plane of the steel perpendicular to the nearest surface of concrete, bars shall not vary from plan placement by more than one-quarter inch. Cover of concrete to the nearest surface of steel shall never be less than one inch.

Vertical stirrups shall always pass around the main tension members and be attached securely thereto. The reinforcing steel shall be spaced its required distance from the form surface by means of approved galvanized metal spacers with plastic coated tips of plastic spacers if sufficient numbers are used to maintain the required clearance.

All reinforcing steel shall be tied at all intersections, except that where spacing is less than one foot in each direction, alternate intersections only need to be tied. Mats of wire fabric shall overlap each other sufficiently to maintain a uniform strength and shall be fastened securely at the ends and edges. No concrete shall be deposited until the Engineer has inspected the placement of the reinforcing steel and given permission to proceed.

02100 CONCRETE PLACEMENT

The Contractor shall give the Engineer sufficient advance notice before starting to place concrete to permit the inspection of forms and the reinforcing steel placement. No concrete shall be placed prior to the completion of the formwork and the placement of the reinforcement. Concrete mixing, placing, and finishing shall be done in daylight hours. Placement shall not commence when it is evident that the work cannot be completed before dark, unless adequate provisions are made to light the entire site operations.

Concrete placement will not be permitted when impending weather conditions may result in rainfall or low temperature which will impair the quality of the finished work. In case rainfall should occur after placing operations are started, the Contractor shall provide ample covering to protect the work. The sequence of placing concrete shall be as provided on the Plans or in the Specifications. The operations of depositing and compacting the concrete shall be conducted to produce a compact, dense, impervious mass of uniform texture which shall show smooth faces on all surfaces.

All forms shall be wetted thoroughly before the concrete is placed therein. The method and manner of placing shall be such as to avoid segregation or separation of the aggregate or the displacement of the reinforcement. Concrete shall not have a free fall of more than 3 feet except in the case of thin walls. The splattering of forms or reinforcement bars shall be prevented if the concrete so splattered will dry or harden before being incorporated in the mass.

Each part of the forms shall be filled by depositing concrete directly as near its final position as possible. The coarse aggregate shall be worked back from the face and the concrete forced under and around the reinforcement bars without displacing them. Depositing large quantities at one point in the forms and running or working it along the forms will not be allowed.

After the concrete has taken initial set, the forms shall not be jarred or any strain placed on projection reinforcement. Concrete shall be placed in continuous horizontal layers approximately 12 inches in thickness. Not more than one hour shall elapse between the placing of successive layers of concrete in

any portion of the structure included in a continuous placement. The Contractor shall avoid unauthorized construction joints.

Laitance or foreign matter of any kind shall not be permitted to accumulate inside the forms.

All concrete shall be well compacted and the mortar flushed to the surface of the forms by continuous working with mechanical vibrators of an approved type. Vibrators of the type which operated by attachment to forms or reinforcement will not be permitted except that external vibration will be allowed when the forms are of steel. At least one standby vibrator shall be provided for emergency use in additions to the ones required for placement. The vibrators shall be applied to the concrete immediately after deposit and shall be moved throughout the mass, into the corners and angles of the forms until it has been reduced to a plastic mass. The mechanical vibrator shall not be operated so that it will penetrate or disturb previously place layers which have become partially set or hardened. The vibration shall be of sufficient duration to accomplish thorough compaction and complete embedment of reinforcement and fixtures but shall not be done to extent that will cause segregation.

Anchor bolts shall be set to exact locations in concrete when it is placed.

02101 Placement Conditions: The concrete shall be mixed in quantities required for immediate use and concrete not in place within the following time limits shall not be used. Concrete which has a temperature of less than 50 degrees F shall not be placed. Retempering of the mix will not be permitted.

Air Temperature (Degrees F.)	Maximum Time in Mixer (Minutes)
40 to 74	90
75 to 89	60
90 or above	45

In threatening weather, which may result in conditions that will affect the quality of the concrete, the Engineer may order the postponement of the work. Where work has been started and changes in weather conditions require protective measures, the Contractor shall furnish adequate shelter to protect the concrete against damage from rainfall or freezing temperatures. Concrete pours will not be permitted when the temperature is 40 degrees and falling. All concrete which has not attained an age of 24 hours before the atmospheric temperature falls below 40 degrees F shall be covered with framework and satisfactory covering material, so that the air surrounding the concrete and forms may be heated and maintained at a temperature of not less than 50 degrees F, nor more than 90 degrees F for a total of 5 days.

Concrete shall be placed in the forms without the addition of more water to the concrete than required by the design (slump and consistency), and adequately finished without adding excess water on the surface. Control of the initial set of the concrete and lengthening the time for finishing operations under adverse wind, humidity, and hot weather conditions may be accomplished with the use of an approved cement dispersing agent.

The maximum time interval between the addition of mixing water and/or cement to the batch, and the placing of concrete in the forms shall not exceed that set forth in Section 4, Concrete for Structures.

Where the top slab and walls are place monolithically in culverts or similar structures more than 4 feet in clear height, an interval of not less than one nor more than 2 hours shall elapse before placing the top slab to allow for shrinkage in the wall concrete. The base slab shall be finished accurately at the proper time to provide a smooth, uniform surface.

02110 CONCRETE CURING

The Contractor shall inform the Engineer fully of the methods and procedures proposed for curing. The Contractor shall provide the proper equipment and material in adequate amounts, and shall have the proposed method, equipment and material approved by the Engineer prior to placing the concrete.

Inadequate curing, procedures, methods, or application thereof shall be cause for the Engineer to stop all construction on the project until remedial action is taken. When the air temperature is expected to drop below 35 degrees F, the water curing mats shall be covered with polyethylene sheeting, burlap, polyethylene blankets, or other protection to prevent any possibility of freezing.

A curing day is defined as a calendar day when the temperature, taken in the shade away from artificial heat is above 50 degrees F for at least 19 hours. The curing period shall begin when all concrete has attained its initial set.

The following methods are permitted or required for each concrete placement:

- a. Form Curing- When forms are left in contact with concrete, other curing methods will not be required, except for cold weather protection.
- b. Wet Mat Curing- The cotton mats shall be weighed down adequately to provide continuous contact with the concrete surface. The surfaces of the concrete shall be kept wet for the required curing time. Surfaces which cannot be cured by contact shall be enclosed with mats, and anchored positively so that air cannot enter the enclosure.
- c. A method consisting of overlapping sprays or sprinklers so as to keep all unformed surfaces continuously wet but without adversely affecting the surface may be used with the authorization of the Engineer.
- d. Membrane Curing- Membrane curing shall be applied immediately after the free moisture has left the concrete. Formed surfaces which have been give a first rub shall be dampened and shall be moist at the time of application of the membrane. When membrane film has been damaged, the Contractor shall repair the damaged portion by immediately applying new film.

02120 REMOVAL OF FORMS AND FINISHING EXPOSED SURFACES

Except as hereinafter provided, forms for surfaces which are required to be surface finished shall, for normal concrete, be removed when the concrete has aged not less than four nor more than seven days.

Forms under slabs, caps or beams shall be left in place seven days plus one day for each ten feet of span.

Any defective work discovered after the forms have been removed shall be repaired immediately. In repairing honeycombed areas, all loose material shall be removed before the repair work is started. Thorite or equal patching mortar shall be used in the patching defective areas in accordance with the manufacturer's instructions. After stripping forms, cut all tie-wires to a depth of ¾ inch. Dampen these and all honeycomb areas with clean water and patch flush with Thorite or Tamm's equal product. After patching, final exposed concrete from 6" below grade with one coat of Thoroseal cement based coating mixed with one part of Acryl 60 and three parts of water at two pounds per square yard.

Apply second brush coat at same rate after first coat has set. When finish coat has set, float it to a uniform texture with a sponge float. Do not apply in temperatures below 40 degrees F or when temperature is expected to fall below 40 degrees F within 24 hours.

02130 TESTING OF HYDRAULIC CONCRETE STRUCTURES

Concrete structures which are intended to contain liquid shall be tested for water tightness.

Exfiltration testing shall be conducted for large concrete structures. To conduct the test, clean water shall be introduced to the interior of the structure to a level at least one foot above the hydraulic joint to be tested, however, at the discretion of the Engineer, the structure may need to be filled to the operating level. The level of the water shall be measured using a staff gauge, plumb bob, or similar device, by the Engineer or his representative.

After the 24-hour test period the water level shall be remeasured. A calculation of volume change shall be made. The allowable leakage is NONE. If the test does not meet the criteria, repairs shall be made and the structure re-tested.

02140 MISCELLANEOUS

02141 Expansion Joint Material: Preformed fiber expansion joint material shall be of the dimensions shown on the Plans. "Preformed Bituminous Fiber Material" shall be formed from cane or other suitable fibers of a cellular nature securely bound together and uniformly impregnated with a suitable asphaltic binder and shall meet the requirements of the Standard Specifications for Preformed Expansion Joint Filer for Concrete Paving and Structural Construction, ASTM Designation: D1751-65.

02142 Waterstop: Waterstops shall be a self sealing extruding plastic strip approximately one square inch in cross-section which does not require the addition of any compound or plasticizer to function. It shall have protective strips which are easily removed for installation. Waterstop shall be Synko-flex or equal.

02143 Grout: Where non-shrink grout is indicated on the Plans for plugging holes in concrete and filling concrete pipe sleeves and blockouts, the Contractor shall provide high strength, non-shrink, non-metallic, grout with compressive strength not less than 5000 psi at 3 days and 8000 psi at 28 days.

Where grouting is required for anchor bolts, imbedded items, equipment and machinery bases, the Contractor shall provide high strength, high impact resistant, non-shrink, epoxy grout with compressive strength not less than 12,000 psi and tensile strength not less than 2000 psi.

02150 THRUST BLOCK CONCRETE

02151 General: The concrete work covered by these specifications will consist of thrust blocks and concrete encasement. No formwork will be required. The concrete used shall conform to the requirements of ASTM C-94-62, "Standard Specifications for Ready-Mixed Concrete", and shall have the following characteristics:

Minimum allowable compressive strength (28 days)	2000 psi
Maximum size of coarse aggregate	1 inch
Slump	4 to 6 inches
No admixtures are to be used. The concrete temperature shall not exceed 90 degrees F.	

02152 Preparation for Placing: Thrust blocking shall be shaped as shown on the Detail sheet provided with these Specifications.

The sides of trenches which will be in contact with the concrete are to be firm and free of organic debris.

The embedded items such as valves, fittings, etc. are to be securely positioned to prevent movement during the placing of the concrete and protected by polyethylene wrap.

Mechanical joints bolts and flanges shall not be covered with concrete during placement of thrust blocking.

02153 Placing: Concrete may be placed when the ambient temperature, taken in the shade, is at least 35 degrees F and rising, and shall not be placed when the temperature is as low as 40 degrees F and falling. Concrete which has been placed shall be protected from freezing for at least five (5) days. Protection may be provided by burying after two (2) days.

No concrete shall be placed which has been in the mixer for longer than 90 minutes. Such concrete shall be disposed of by the Contractor at his own expense.

No curing of the thrust block concrete is required.

SECTION 3

WATER LINE CONSTRUCTION

0310 MATERIAL SPECIFICATIONS

0311 Iron Pipe: Pipe may be either, flanged, mechanical or slip-joint as designated on drawings. The pipe shall have an exterior coating of coal tar enamel and the inside shall have a cement-mortar lining. Pipe and fittings shall meet the following specifications:

- a. Ductile Iron shall have 60,000-psi tensile strength, 42,000-psi yield strength, 10 percent minimum elongation, and meet the requirements of the latest revision of AWWA specification C151. Unless otherwise noted, pipe shall be Thickness Class 50, Class 200. Pipe shall be furnished in 18 or 20-foot nominal laying lengths.
- b. Ductile Iron Fittings shall be compact mechanical joint conforming to AWWA C153 or full size fittings conforming with AWWA C110 as set forth on the plant sheet fitting schedule. Fittings shall be cement lined and outside coated as specified in the AWWA Specifications. Thrust blocks consisting of poured in place concrete shall be provided at all tees, crosses, or bends greater than 22-1/2 degrees.
- c. Joint Materials. All gaskets shall be of natural or synthetic rubber conforming to AWWA C111.

Jointing of slip-joint cast iron pipe shall, without exception, be accomplished with the natural or synthetic rubber gaskets of the manufacturer of that particular pipe being used. A joint lubricant shall be used, and applicable recommendations of the manufacturer shall be followed. All flanged and mechanical joints shall be jointed with T-head bolts and nuts of a high-strength, corrosion-resistant, ductile DURABOLT as manufactured by Texas Foundries, Inc.

Angular spacing of all joints shall meet the manufacturer's recommendations for the gasket and/or pipe being used.

0312 PVC Pipe: PVC water pipe shall bear the seal of approval (or "NSF" mark) of the National Sanitation Foundation Testing Laboratory for potable water pipe. PVC water pipe shall be made from Class 15454-A or Class 12454-B PVC compounds as defined in ASTM D1784, with an established hydrostatic design-basis (HDB) rating of 4,000 psi for water at 73.4 F (23C). The standard code designation for compounds meeting both requirements, i.e. class and HDB, is PVC 1120.

Gaskets and lubricants intended for use with PVC pipe and couplings shall be made from material that are compatible with the plastic material and with each other when used together, will not support the growth of bacteria, and will not adversely affect the potable quality of the water to be transported. Lubricants for gaskets, couplings and spigots shall comply with requirements set forth by the pipe manufacturer.

Provisions shall be made for contraction and expansion at each joint with a rubber ring, and an integral thickened bell as part of each joint. Laying lengths shall be 20 feet plus or minus one (1) inch. Pipe shall meet the dimension ratios (DR's) set forth in the Bid Proposal. Fittings shall be as specified in Section 0311 above.

0313 Roadway Pipe Casing: Roadway pipe casing shall be standard weight steel pipe unless shown otherwise on the drawings. Used casing material will be allowed, providing it is in good condition, free from holes or weakened areas due to rusting or damage. No welded patches or holes shall be permitted for used casing. The pipe used shall be capable of providing a usable casing under normal traffic loading. Steel pipe sizes 2" through 5" shall have a minimum 0.156" wall thickness, 6" through 10" a minimum wall thickness of 0.188; and 12" through 20" a minimum 0.250" wall thickness.

0314 Gate Valves: Gate valves shall conform to AWWA Standard for Gate Valves for Water Works Service (AWWA C509). Valves 8 inch and smaller shall be designed for a minimum water working pressure of 200 psi.

All gate valves, 2 inch through 12 inch in size, shall be of the resilient seat or resilient wedge type and shall conform to AWWA Standard C509. Two-inch valves shall have threaded ends.

Gate valves shall be either Mueller Company or approved equal. Valves shall be blocked and installed as shown on the plans and according to the manufacturer's recommendations.

0315 Valve Boxes: Valve boxes in areas within 4-feet of travelway shall be the two piece screw type adjusted by screwing the upper section into or from the lower section. Flanges on both sections shall serve to locate the upper section and hold it in place. The boxes shall be cast iron.

Each valve box shall have a cover designated for easy removal for access to the valve-operating nut. Each cover shall be marked WATER for ready identification. The size of the valve box shall depend on the size valve it is used with. It shall be the Contractor's responsibility to use the proper size box with the respective valve. The valve box shall be set as per the standard details of the plans and as per the manufacturer's recommendations. The base of the valve box should rest two or three inches above the flanged body joint of the valve. The valve box shall not touch the valve in any manner. Valve boxes shall be as manufactured by Tyler Pipe or approved equivalent.

All other valve boxes (i.e., greater than four feet from travel way) shall consist of cutting a section of 6-inch SDR 21 pipe to place over operating nut and extending to an elevation 10 to 12 inches above existing ground contour. Each end of pipe shall be cut square and smooth so as to have sharp edges.

A cast iron cover marked WATER for ready identification shall be placed to insert within stubout 6- inch SDR 21 "valve box". The "valve box" or buried end of 6" inch SDR 21 pipe shall not rest on the valve but shall end up at the bottom of the exposed valve stem.

The Owner reserves the right to identify the type box used at each valve location.

0316 Air/Vacuum Relief Valves: at the high points in the lines where shown on the plans, the Contractor shall furnish and install combination air valves.

Combination air valves shall be of the single housing style that combines the operating features of an air/vacuum and air release valve.

The air vacuum feature shall automatically release small pockets of air from the pipeline while the pipeline is in operation and under pressure.

The air release feature shall automatically release small pockets of air from the pipeline while the pipeline is in operation and under pressure.

The combination air valve shall have 1”NPT inlet and outlet connections and 1”diameter orifice for a maximum working pressure of 300 PSI.

Constructing materials shall be cast-iron body, cover and baffle, float and all other trim shall be of stainless steel with the exception of the Buna-A-Seat and adjustable Viton Orifice Button.

Valves shall be Series #200. 1- inch size, as manufactured by Val-Matic Valve and Mfg. Corp., Elmhurst, Illinois.

The air/vacuum relief valves shall be placed as shown on the drawings. Material incidental to the installation of the air/vacuum relief valves shall include the Bass and Hays meter box and cover, all steel pipe, gate valves, and necessary tapped line tee as per the detail shown on the Plans.

The Contractor shall furnish 4 keys for opening the Bass and Hays meter box.

0317 Flush Valves: At the location show on the plans or as designated by the Engineer, the Contractor shall furnish and install a flush valve assembly, the furnishing and installing of a plug or cap on the main tapped when flush is at end of the water main. Valves shall be placed so as to be protected from vehicular traffic.

The flush valve assembly shall consist of a main line tapped tee with 2-inch tap, 2 threaded AWWA gate valve, 2-inch galvanized steel pipe (length as required), galvanized steel 2 ½ inch x 2-inch reducer ell, and a 2-inch ell. The valve riser shall be furnished with 2 ½ inch ell fitted with 2 ½ inch double male hexagon home nipple and 2 ½ inch female cap.

All flush valves shall be located 1-foot inside public right-of-way as shown on the Plan Detail. Each valve shall be located near right-of-way fence, corner, or other physical protection. The top of the riser pipe with flush valve marker post shall be set in a concrete pad not less than 4-inches in depth and reinforced with 4 #3 bors.

0318 Fire Hydrants: Fire hydrants shall strictly conform to the AWWA Standard Specifications for Fire Hydrant for Ordinary Water Works Service, AWWA C502, except for changes specifically outlined as follows:

The operating nut shall be designated to prevent the seepage of rain or sleet and the accumulation of dust around the revolving nut.

The bonnet or hydrant top shall be free-drainage, easily replaceable without shutting off the hydrant for the water main, and shall contain means of automatically lubricating all operating threads of the opening mechanism located in the bonnet.

The hydrant body shall have two 2-½ inch hose openings and one pumper nozzle, and be attached to the lower barrel by a breakaway flange just above the grade line.

The complete hydrant shall be of such design that the entire top barrel may be broken away as by a traffic collision without causing leakage, and the broken hydrant shall be repairable without any excavation.

The main valve shall be compression closed with a 5 ¼ inch inlet. The inlet shall be mechanical joint for 6-inch pipe.

Hydrants shall be equipped with two hose nozzles and one pumper nozzle and shall be the Mueller Centurion Hydrant, Clow Medallion, or approved equal by the Engineer prior to the opening of bids. Fire hydrants shall be approved by Factory Mutual and Underwriters Laboratories for use in fire protection systems. The operating nut shall be tapered pentagon 1 ¼ inch point to face at base, and 1 1/8-inch point to face at top of nut. The hydrant valve shall open by turning to the left.

All fire hydrants shall be located a maximum of 2 feet inside public right-of-way as shown on the Plan Detail. Each location shall be set so as to be protected, accessible, and not cause inconvenience to the public. Contractor shall include main line anchor tee, complete fire hydrant assembly including shoe and barrel extension, 6-inch gate valves and the 6-inch PVC anchoring pipe with 2 PVC megalug-retaining glands in the bid price for fire hydrant assembly.

0319 Storing and Handling: The pipe and fittings shall be stored and handled in such a manner as to prevent damage to the material and to keep the interior surfaces of the pipe and fittings clean. When the material is distributed at the jobsite, each piece shall be unloaded as near as possible to the place where it is to be laid in the trench. The Contractor shall be responsible for the material from the time it is received by him until it has been incorporated into the project and the project has been accepted as complete by the Engineer.

03110 Inspection of Pipe and Fitting:

- a. By the Contractor: The Contractor shall be responsible for inspection of the pipe and fittings as to compliance with these specifications when the material is delivered on the site. Any losses or defects noted should be recorded on the receipt received by the carrier. The Contractor shall reject damaged or defective pipe found during this inspection.
- b. By the Engineer: The Engineer or his representative may inspect the material at any time, and may reject or require the repair of any damaged or defective materials. Any rejected material shall be removed from the jobsite and replaced by the Contractor. The Engineer or his representative may require the cleaning or flushing of pipe. All repair, cleaning or replacement of pipe or fittings shall be at the expense of the Contractor.

Each load of pipe delivered to the job site will be checked by the Engineer to assure that it meets Specifications. When a load of pipe is found to have inadequate wall thickness or tolerances greater than specified, randomly selected samples of the pipe shall be immediately forwarded to an approved testing laboratory with instructions to check the pipe for compliance with the specific contract. When the testing laboratory reports concur that the pipe does not meet Specifications, it is to be understood that all of the pipe delivered to the site will be immediately removed and replaced by the Contractor at no additional cost to the Owner.

0320 LINE EXCAVATION

0321 General: The basic installation methods and procedures recommended by the pipe and fitting manufacturers shall be followed. The pipelines shall be laid so that a minimum 36-inch cover over the crown of the pipe is maintained everywhere.

It is the intent and purpose of these specifications to obtain only first class workmanship and finish of the best grade and quality. The fact that the following specifications may fail to completely cover all details will not relieve the Contractor of full responsibility for high quality completed project.

0322 Classification: Excavation of trenches for water line construction shall be unclassified. The cost of this work for all materials encountered, regardless of their nature or method of removal shall be included in the unit price bid for the various sizes of pipes except where a separate contract pay time is provided and specifically called for. Contractor shall satisfy himself as to the materials and conditions to be encountered.

0323 Trench Excavation: Trenches will be excavated on the alignment shown on the drawings and as located on the drawings. Minor deviations from drawings not materially affecting the amount or nature of the work shall not change the original intent of the documents and the Contractor shall proceed with changed alignment at the unit prices bid. When major relocations occur involving greater construction difficulties than the original alignment, the Owner, Engineer and Contractor will agree upon extra compensation, before construction begins.

Trenches shall be excavated by a trenching machine, except where hand trenching is required. The banks of trenches shall be vertical above the top of the pipe. Trench width shall extend 6 to 8 inches beyond each side of the pipe bell. Depth of trench shall provide for furnishing and installation the required thickness of granular material under the pipe.

Trench excavation shall be limited to a distance of 500 feet ahead of the completed backfill line. Pipe shall be laid in all opened trenches and covered at the end of each day's work.

Unstable foundation conditions for the pipe in the trench bottom, resulting from the neglect of the Contractor to adequately shore or dewater, shall be corrected at the Contractor's expense. The Contractor will be required to remove the unstable material and backfill the trench to the proper grade with approved compacted backfill.

The Contractor shall excavate all trenches, including work necessary in working around the existing water, wastewater and gas pipelines or other obstructions. The Contractor shall give notice to the Owner of any such lines or obstructions in order that they may have time to take the necessary precautions to protect their property. The Contractor shall be responsible for protecting the Owner from any damage for his operations in such work.

Where rock is encountered, excavations shall be carried 4 to 6 inches below the bottom of the pipe. Granular material evenly spread, shall be used for bedding to the grade of the bottom of the pipeline and provide not less than 6 or 12 inches of cover over the pipe as provided in paragraph 0330.

After inspection of pipelines has been finished on any completed portion of the work, the trench may be backfilled. Backfilling shall be accomplished in compliance with the applicable portions of these specifications.

0324 Disposal of Excavated Material: Excavated material, so far as needed and of a suitable character, shall be stockpiled not less than 2 feet from the edge of the trench excavation and shall be used for backfilling above the required embedment.

Fire hydrants, water valves and storm sewer inlets shall be left unobstructed and accessible until the work is completed. Ditches shall be kept open for drainage, and natural watercourses shall not be obstructed, especially immediately prior to imminent storm events.

Since revegetation of disturbed areas is desired, the Contractor shall separately stockpile desirable topsoil, sod, etc. and replaced in its original position throughout the water line construction where trench crosses grassed areas. Excavated material shall be handled at all times in such a manner as to cause a

minimum of inconvenience to public travel and to permit safe and convenient access to private and public property adjacent to or along the line of the work.

0325 Protection of Trees, Plants, Shrubbery: Surveyors tape or fluorescent flagging shall be used to mark the limits of construction activity and disturbances of trees. All trees larger than 8 inch in diameter, except those directed to be removed by the Engineer, shall be preserved. Flagging of construction disturbance limits and trees to be protected shall be performed at least 1 day in advance of pipe laying operation.

Where trees, plants, shrubbery, etc. are adjacent to the line of the work and are not to be removed and replaced, the Contractor shall protect such trees, plants, shrubbery, etc., and shall not permit machinery or employees to scrape, tear the limbs from, or damage or attach guy cables to them and if, in the opinion of the Engineer, such trees, plants, shrubbery, etc., would be damaged by machinery, etc., hand excavation may be required. The Contractor shall be responsible for all damages to adjacent trees, plants, shrubbery, etc.

0326 Use of Explosives: Should the Contractor elect to use explosives in the prosecution of the work they shall be used with the utmost precaution, and no blasting shall be done within fifty feet of the completed work or exposed pipes, conduits, etc. He shall assume all liability for any injury or damage to persons or property resulting from such usage. All necessary precautions shall be taken by the Contractor, and provisions shall be made for the protection of the new work; all blasting shall be so conducted as not to endanger persons or property. Only a sufficient quantity of explosives for the immediate days work shall be kept at the site of the work by the Contractor. Caps, detonators and explosives shall be stored separately. The Contractor shall be responsible for, and shall make good, any damages caused blasting or accidental explosions.

0327 Protection of Structures: The Contractor shall protect at his expense any building or structure that would be endangered by the work and he shall restore all buildings, culverts, fences, walls and other properties disturbed by his construction operations to a condition equal or better than the condition which existed prior to his operations.

0328 Fence Repair: The Contractor shall do the necessary removing of fencing on the right-of-way, and shall replace all fencing removed after the pipe line work is completed. The fences shall be rebuilt of the same character and materials shall match that which was removed. All posts, wires and other materials shall be sound, straight, equal or better than the materials removed. Fences shall be built to line, posts well set, wires fastened with new staples and well stretched. Where cedar posts are removed or destroyed, new posts used in the fencing shall be new cedar posts, buried at least 30 inches in the ground, and shall have a top diameter of not less than 6 inches, set 3 ½ inches. New corner posts shall have minimum top diameter of not less than 6 inches, set 3 feet in the ground. Gates shall be replaced in a substantial manner, and all corners, gate, and end posts well braced.

Where fences are removed, the Contractor shall be responsible for the protection of all livestock, especially horses.

Care shall be taken by the Contractor not to cut wires when entering property near corner or brace posts. When possible, the wire shall be unstapled and dropped from the corner and brace post for entry. The wire shall then be restretched taut and fastened with new staples after completion of construction in the area.

0329 Protection of Drainways: The Contractor shall take into consideration, existing surface drainage including swales along streets and existing culverts under streets, in carrying out the pipeline

construction. Material removed from the ditch line shall be placed so that surface drainage shall not be blocked or redirected. After completion of the construction, drainways shall be shaped generally the same or better than the condition found and any culverts damaged or destroyed shall be repaired or replaced.

Such corrective work shall be considered incidental to the pipeline construction and shall be included in the unit price for furnishing and installing pipe.

All natural drainageways which are crossed by water line shall be completed in one day. Contractor shall not begin or end work activity for the day within 100 feet of the center of natural drainageway.

0330 PIPE BEDDING BACKFILL

Pipe installation shall not require the placement of bedding beneath the pipe for all installation. Where pipe can be placed on a smooth trench bottom, bedding beneath the pipe shall not be required. Only in earth trench bottom, shall the pipe be placed on the natural, undisturbed earth foundation with trench bottom flat or nearly so. Pipe trenching shall be done just previously to the time pipe is to be installed. Granular material placement and backfill material placement shall then be followed as set forth below.

Within the Community of Maxwell along Second Street to Railroad Bore, and in rocky soils, where excavation encounters rock, the trench for water line construction shall be cut 4 to 6 inches below the bottom of the grade of the pipe and the pipe laid on a bed of granular material. The pipe shall bear uniformly on this granular material and after positioning, granular material shall be placed in the ditch alongside the pipe and over the pipe until the pipe has a minimum of 6 inches of cover. Granular material is defined as free flowing field sand, pit run sand or sandy loam provided that it is free from lumps, stones larger than ½ inch in the largest dimension, clay, and organic material. When wet the material shall not form mud or muck.

Only that granular material previously approved by the Engineer shall be used. Where rocky conditions are not encountered outside the Community of Maxwell, granular material may be ditch field cuttings placed to provide level, stable bottom as per these specifications.

Rocky soil is defined as any soil having rock with any dimensions greater than 1 ¼ inches or where trench bottom exhibits angular sharp edges which could damage pipe and is not suitable for embedment.

Backfill over the granular material may be excavated material from the ditch line is no stones larger than 4 inches in their largest dimension are included, and if the backfill material contains less than 25 percent stones. Rocks, or other lumpy material shall not be used in the backfill. The top 4 inches of backfill shall be the same as the topsoil removed, and shall be mounded slightly above the original ground level to allow for any subsequent settlement.

Large loose rocks removed by the ditching operation shall not be left on the ground surface along the ditch line right-of-way, but shall be removed from the project site by the Contractor. The top surfaces or slopes of all backfill shall be neatly graded off in a workmanlike manner.

Granular material will not be measured for payment as a separate item, but the cost involved shall be included in the cost of the pipe laying work. It shall be the full responsibility of the Contractor to follow as closely as possible this specification to insure a good, sound pipeline when completed.

0340 PROTECTION OF WORK IN PROGRESS

Open ends of uncompleted pipelines shall be protected from entry of foreign objects at night and when project is unattended. Earth or other objects that enter the pipe through open or unplugged ends must be removed at the Contractor's expense.

0350 MEASUREMENT

Trench excavation for water line will not be paid for directly but will be included in the price bid per linear foot for the various sizes of pipe.

Granular material for bedding of water lines as outlined in Section 0330 will not be paid for directly, unless a bid item is provided in the proposed forms, but will be included in the price bid per linear foot for the various sizes of pipe.

Pipe will be measured by the linear foot in place without reducing the length of intermediate fittings and valves.

Fire hydrants and valves, complete with boxes, will be measured by unit of one in place.

Wet connection will be measured by unit of one connection each. Fittings will be not measured separately but shall be incidental to pipe measurements.

0360 PAYMENT

The price bid per linear foot for the various sizes of pipe, complete in place, shall be full compensation for furnishing all labor, material, equipment, trenching, fittings, bedding material, select material and backfill material. This includes any dewatering which may be required due to natural occurrences or as a result of damage to other utilities by the Contractor.

The price bid for the various size gate valves shall include the box and all material, labor, equipment, excavation and backfill and incidentals necessary to set the valves with the service box in place ready for use.

The price bid for each fire hydrant shall be full compensation for the fire hydrant, concrete for blocking, gravel, all labor, materials, equipment, excavation and backfill necessary to set the hydrants in place and ready for use.

SECTION 4

PIPELINE TESTING

0410 HYDROSTATIC PRESSURE TEST

After the pipeline section has been laid and valved off, and fully backfilled, the pipe shall be slowly filled with water in a manner that will expel all air from the pipeline. With the line full, the test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The pump, pipe connection, and necessary apparatus shall be furnished by the Contractor. The duration of the hydrostatic test shall be a minimum of four (4) hours. The pipeline shall be tested so that the pressure at the lowest point in the test section is at least 100%, but not greater than 120% of the pipe pressure class of the pipe, and minimum pressure at the highest point in the test section is not less than 85% of the pipe pressure class of the pipe. One gauge shall be located at the pump and the other shall be located at a remote or high point on the line.

During the test, the pipeline, fittings, valve, and hydrants shall be examined for leakage. The maximum allowable leakage for push-on joints is the number of gallons per hour as determined by the following formula:

$$L = \frac{ND(P)^{1/2}}{7400}$$

where: L= Allowable leakage in gallons per hour

N= Number of joints in the length of pipe tested

D= Nominal diameter of the pipe in inches

P= Average of the max. and min. pressures within the test section in psi.

If there are visible leaks or the leakage in any section exceeds these specified rates, the Contractor shall locate and repair or replace the defective joints or pipe lengths at his own expense. The testing and repairing shall continue until the leakage is less than the maximum allowable.

0420 DISINFECTION

After each pipeline section has been satisfactorily tested, it shall be disinfected using the procedure set forth in AWWA Standard C651.

0421 Flushing: The pipeline section shall be flushed prior to disinfection unless the tablet method of disinfection is used. Flushing shall be done through a 2-1/2 inch fire hydrant opening if there is a hydrant on the end of the section, or through a tap on the end of the line which provides a 2-inch orifice. The line shall be flushed for a period of time equal to one minute for each 100 feet of line, or until the water being discharged is no longer transporting visible particles, whichever is longer.

The flushing velocity in the main shall not be less than 2.5 feet per second as tabulated below.

**Required Flow and Openings to Flush Pipelines
(40 psi Residual Pressure in Water Main)**

<u>Pipe Diameter (inches)</u>	<u>Flow Required (gpm)</u>	<u>Number of 2-inch Taps on Pipe</u>	<u>Number of 2 ½ inch Hydrant Outlets</u>
3	60	--	1
4	100	--	1
6	200	--	1
8	400	1	1
10	600	2	1
12	900	2	2
16	1600	4	2

0422 Chlorination:

- a. Continuous Feed: The Contractor shall use either the continuous feed or tablet method of chlorination. The chlorine may be added to the water in the new lines by a chlorine gas-water mixture or a chlorine compound-water mixture may be injected as setforth in Section 512 of AWWA Standard C651.

The chlorinating agent selected shall be applied through a tap on the pressure side of the gate valve controlling the flow of water in to the new line. The flow of water in to the new line shall be limited to approximately 1 foot per second. The chlorinating agent shall be added at a rate such that the application shall be at least 50 ppm.

The application shall be made until the water being discharged at the other end of the new section shows that the chlorine has reached the length of the new section, then the valves shall be closed and the new section isolated for at least 24 hours. All valves and hydrants shall be operated during the chlorination process.

At the end of the detention period of 24 hours, the water shall indicate at least 25-ppm residual. If this residual is not obtained, a second dosage of 25 ppm shall be applied as before and retained for at least 12 hours, with at least a 10-ppm residual at the end of the 12-hour period.

- b. Tablet Method: The tablet method consists of placing calcium hypochlorite granules in the water main as it is being installed and filling the main with potable water when installation is completed.

This method may be used only if the pipes and appurtenances are kept clean and dry during construction. The procedures to follow shall be as setforth in Section 5.1 of AWWA Standard C651.

Calcium hypochlorite granules shall be placed at the upstream end of the first section of pipe, at the upstream end of each branch main, and at 500-foot intervals. The quantity of granules shall be as shown below:

**Ounces of Calcium Hypochlorite Granules to be Placed
at Beginning of Main and at Each 500 Foot Interval**

Pipe Diameter Calcium Hypochlorite Granules

3 inches	0.3 ounces
4 inches	0.5 ounces
6 inches	1.0 ounces
8 inches	2.0 ounces
12 inches	4.0 ounces

When installation has been completed, the main shall be filled with water at a rate such that water within the main will flow at a velocity no greater than 1 foot per second. Precautions shall be taken to assure that air pockets are eliminated. This water shall remain in the pipe for at least 24 hours.

During all chlorination work, care shall be taken to prevent the highly chlorinated water from flowing back into the line supplying the water to the new line.

0423 Final Flushing and Testing: Following the chlorination of each section, the section shall be thoroughly flushed until the water being discharged has the same chlorine residual as the water being used to feed the system. Water samples shall be taken at the extremity of the section(s) and submitted to the Texas State Department of Health for bacteriological examination, and shall be of the same purity and quality as the water in the existing water lines. Samples shall be taken by the Contractor from taps located and installed in such a way as to prevent outside contamination. Results of the laboratory analysis shall be made available to the Owner and the Engineer.

0424 Water for Flushing and Testing: The Contractor shall make the necessary arrangements for all water required in the construction of the lines. The Owner will provide a reasonable allowance for flushing and testing equivalent to three (3) times the gallonage of water contained within the new construction. All water required over this amount by the Contractor for additional flushing and testing shall be paid by the Contractor to the Owner. Payment shall be as described in Special Conditions, Section 4.

SECTION 5

CROSSINGS

0510 OPEN CUT PAVEMENT CROSSINGS

0511 Repair: Pipeline shall be laid so that the minimum pipe cover setforth in Paragraph 0321 is provided.

All crossings of roads, whether subdivision or county, in Hays and Caldwell Counties will be reconstructed as per the details shown in the plans for trench crossing road. The Contractor shall sawcut pavement prior to cutting trench for water line installation. Payment for pavement repair shall only include the trench width plus 12 inches up to a 4-foot wide maximum.

After pipe or casing has been installed, the Contract shall backfill with granular material as described in Section 0330 to a level 12 inches above top of pipe. The remainder of the trench, above the granular material shall be filled with flexible base consisting of crushed or broken material meeting Texas Department of Transportation Specifications, Item 248, Type A, Grade 2 requirements. Flexible base shall be placed and compacted in 8-inch lifts (maximum) to achieve 95 percent Proctor density. Crossing of county roads will be subject to density testing to assure proper compaction.

All open cut county road crossings shall be encased in PVC conduit, SDR 26 pipe to extend a minimum of 6-feet beyond the edge of travelway and have no less than 36-inch cover at road ditch.

Where the water line trench crosses a private paved driveway, the Contractor shall follow a similar backfill pattern as described above, but “ordinary compaction” shall be used. “Ordinary compaction” will consist of wetting and rolling material until uniform compaction is secured as indicated by no creeping ahead of the rolling equipment.

For either county road or driveway crossing, the complete flexible base surface shall be smooth, uniform, and clean, ready for tack-coating. The tack coat shall be cut-back or emulsified asphalt, applied at a rate not to exceed 0.05 gallons per square yard.

0512 Measurement and Payment: Road and driveway crossing repairs will be measured by the linear foot of pavement cut along the length of trench across pavement. Work performed and materials furnished will be paid for at the unit price bid which shall be full compensation for all backfill and compaction, base material, tack coating and 2-inch hot mix asphaltic concrete.

Maximum pavement repair width for payment shall be four (4) feet, no exceptions, unless approved prior to trenching by the Engineer.

0520 GRAVEL OR BASE DRIVEWAY CROSSINGS

0521 Repair: Where water line trench crosses a base or gravel private driveway, the Contractor shall backfill similarly to crossing of a paved private driveway. Contractor shall place flexible crushed base material above the granular material, using ordinary compaction and 8 inch lifts. Flexible base shall be brought to a grade matching undisturbed portion of driveway. Some driveway crossings may require PVC, SDR 26 casing as shown on the plans.

0522 Measurement and Payment: Repair of base or gravel driveways shall not be measured or paid separately. The Contract shall include cost of repair as described above in this unit bid price for each

type of pipe installed. Thus, the unit price bid for installed water main shall be full compensation for all special backfill and compaction and base material.

0530 CONCRETE DRIVEWAY CROSSING

0531 Repair: Where water line trench crosses a concrete driveway, the Contractor shall backfill similarly to crossing of paved driveway. Contractor shall place a minimum 4-inch reinforced slab dived into existing slab. Reinforcement shall consist of #3 bars at 12 inch on center each way. Dowel bars shall be spaced at 18 inch on center and embedded a minimum of 4 inches into existing slab.

If existing slab is thicker than 4 inches, the Contractor shall match thickness in repair. Concrete shall be as described under Section 02150 for thrust blocking. The Contractor shall brush surface to match undisturbed slab and present a neat workmanlike appearance.

0532 Measurement and Payment: Repair of concrete driveways shall be measured by the linear foot of concrete drive cut along the length of trench across concrete. Work performed and materials furnished will be paid for at the unit price bid which shall be full compensation for all backfill, compaction, reinforcing steel and concrete.

The maximum concrete repair width for pavement shall be four (4) feet, no exceptions, unless approved prior to trenching by the Engineer.

0540 BORE CROSSINGS

0541 Casing Pipe: Used steel casing material will be allowed, providing it is in good condition, free from holes or weakened areas due to rusting or damage. Casing shall be of size specified on plans and of minimum wall thickness set forth in Section 0313. Steel casing shall be used on all state highway and railroad bores.

Casing spacers, polyethylene, shall be used to install carrier pipe within casing. Three (3) spacers shall be used per each length of pipe and be thick enough to allow 1" minimum clearance between couplings/joints and casing bottom. Two skids shall lie 20 degrees off center at bottom of pipe to allow PVC carrier pipe to slide freely on skids without being in contact with steel casing. Neoprene rubber shall be attached between casing and conduit with stainless steel bands at each end of casing.

0542 Highway Bore: Highway bores shall comply with the permit issued by the State Department of Transportation. Complete permit requirements for boring or tunneling or working within the state right-of-way are included in the APPENDIX.

0543 Measurement and Payment: All material, labor and equipment used in the installation of steel encasement shall be paid under the unit price bid item for steel casing in highway bore to accommodate various sizes of carrier pipes.

0550 PVC DETECTOR WIRE

0551 General: A single detector wire shall be placed concurrently with the pipe along the entire length of pipe. A riser terminal shall be placed at each point trench enters or leaves public right-of-way.

0552 Material: Detector wires shall be 14 gauge or larger copper wire insulated with polyvinyl chloride and shall be placed along the top of the PVC pipe. The detector wire shall terminate through a riser pipe. The riser shall consist of a 3-inch PVC, SDR-21 conduit placed at the State Highway right-of-

way with the detector wire coming through the conduit and leaving a minimum of 12” slack wire in the covered junction box. The riser pipe shall have the proper length required to have the top of the pipe clearing the ground by 36 inches and the bottom of the pipe reaching the top of the buried PVC water pipe. An identification marker shall be placed on the fence above the riser pipe or in the absence of a fenced, the marker shall be attached to the conduit. The Owner’s identification and telephone number shall be affixed to the inside of the termination box cover. Exposed portions of the termination shall be painted with high visibility colors. Detector wires shall be subject to test for continuity and installation resistance. Riser terminal shall be placed at intervals where pipe enters and leaves the State Highway right-of-way.

0553 Measurement and Payment: Measurement shall be by length of pipe, but payment will be included in the unit price bid per linear foot for the detector wire.

SECTION 6

SERVICE INSTALLATION

0610 SERVICE CONNECTION INSTALLATION

0611 General: All trenches for long side service connections shall be excavated to depth of 36 inches below existing street road ditch flowline. For each long side service, 4 inches of granular material bedding shall be placed in the bottom of the trench with 3-inch PVC casing placed uniformly on bedding. Granular material bedding shall be placed to 12 inches above the pipe casing.

Where service tubing is laid directly in trench (short side service only), a minimum of 6 inches of granular material bedding shall be placed under the tubing and 12 inches of similar material placed over the tubing.

Granular material is defined in Section 0330 of these specifications.

0612 Meter Boxes: Meter boxes shall be set on 6 inch minimum granular material. A minimum 4 inches of granular material must be placed between the box and undisturbed soil.

The box shall be positioned so that the top is level and 1-inch minimum and 2 inch maximum above the ground elevation. The meter valve (angle stop) shall be set a minimum of 10 inches below the ground elevation. The angle stop fittings shall line up with the hole cut on the house side of the box. Granular material shall be placed within box up to 1 inch below top of meter to provide support and prevent freezing. Meter box shall be plastic.

0613 Service Connections: Water service shall be provided to each member as shown on the plans. The service connections shall include the following items for the following service categories:

a. Single 5/8" x 3/4" Service (long side)

- 1" bronze saddle, Ford S70 or S90, single strap, or equal
- 1" corporation stop, Ford S600, taper thread
- 1" polyethylene tubing, SDR 7, 200 psi
- 3" SDR 26 PVC casing, length as required by pavement width
- 1" angle stop (Lock-wing type) Ford KV 43-342 W
- Meter box, plastic, DFW Model D-1200, w/cast iron meter lid
- 1" x 12" PVC nipple, Schedule 80, threaded
- 5/8" x 3/4" water meter, Sensus Technologies, Model SR11 (Not applicable in this Contract)
- Meter couplings/tailpiece, Ford C31-24
- 1" brass gate valve, Stockham or approved equal
- Valve box- use 6" PVC, SDR-26 pipe w/6" cast iron lid marked WATER

The previous items shall be described as follows:

Service Line- All service from the water main corporation stop to the meter angle stop shall be polyethylene service tubing, SDR 7,200 psi, conforming with ASTM 2239.

Meter Valve (angle stop)- Meter valves shall be single swivel type with pack joint fitting on one end (single service) and meter couplings not on other end to connect to meter, Ford KV 43-342W, or equivalent. Meter valve shall have wings for locking valve in closed position.

3-Inch PVC Casing- 3-inch SDR 26 PVC rubber gasketed pipe shall be used under all streets for long side single service. Pipe casing shall extend behind each pavement edge at least 6 feet, 1" or 1 ½" copper service tubing shall be placed into casing. PVC casing shall be laid on a 6-inch bed of granular material and backfilled to 4 inches above casing with same.

Meter- Meters shall be Sensus Technologies SR11. Meter shall provide flow-measuring accuracy with 1.5 percent of rated capacity through meter. Not applicable in this Contract.

- b. Single 5/8" x 3/4" Service (short side)- All items shall be the same as for items (a) above except shorter length of copper tubing and 3 inch casing is not required.
- c. Single 1" Service (short side)- All items shall be the same as for item (a) above except Contractor shall install 1-inch angle stop, Ford KV43-444 W, or equivalent and 1-inch water meter, Sensus Technologies SR11, or equivalent.

0620 INDIVIDUAL PRESSURE REGULATORS

Where the Plans show individual pressure regulators at a customer service connection, the Contractor shall install the following items between the meter and the owner's cut-off valve.

- 1"x 18" nipple, Schedule 80
- 1" pressure regulator, WATTS U5V-Z3, or approved equal
- 1" x 4" PVC nipple, Schedule 80 (between union and pressure regulator)
- 1" PVC union, Schedule 4, FIPT
- 1 meter box, plastic, DFW D1200

The Contractor shall install the pressure regulator at the end of the 18" nipple within the meter box which is set downstream of the box housing the meter. The 4" nipple and union shall be set downstream of the regulator to allow removal. The 1" x 12" PVC nipple, shown in the typical meter installation Detail shall be placed downstream of the union followed by the stop and drainage valve owner's cut-off, as shown on the typical connection Detail.

The pressure regulator shall be of bronze body construction, with stainless steel integral strainer, and shall have a corrosion resistant cage and adjusting screws for water works and pit installations. The pressure regulator shall be a WATTS Model U5-Z3, or approved equal.

0630 LOCATION OF METERS

Unless directed otherwise by the Engineer, the Contractor shall set new meter boxes at location shown on Plan Detail.

SECTION 7

TRENCH SAFETY

0710 TRENCH EXCAVATION AND SAFETY SYSTEM

0711 General: The width of trenches as determined by the minimum working room for a man to place haunching material shall provide clearance on each side of the pipe as shown on the plans. In narrow trenches the pipe embedment shall be compacted all the way to the trench walls.

The Contractor shall use a trench shield or box or slop trench walls to provide trench safety for all workers during pipe laying operations.

The trench shall be placed and moved so the pipe joints and bedding are not disturbed. The trench box may be placed up to two feet above the initial embedment material to avoid disturbing the bedding. Any voids left in the embedment material by trench box movement removal shall be carefully filled with granular material which is adequately compacted. Removal of the trench shall only be done where backfilling proceeds and removal shall be done in a manner that does not relax trench support.

0712 Trench Safety: This section covers the design and use of devices required to be placed in open trenches over five feet deep to protect the safety of workers. For purposes of this section, any trench shall include any excavation of material that a pedestrian worker or inspector is required to be inside. An excavated hole for a bore pit is classified as a trench for the purposes of this section. The Contractor shall include in his bid the trench safety method specified below and called for in the bid schedule. The Contractor is also responsible for meeting all trench safety requirements of the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations as contained in Subpart P part 1926 of the Code of Federal Regulations (CFR).

0713 Trench Safety System: Systems for insuring safe working conditions in trenches shall be one of the following types, dependant on depth. Trench depth is the depth from natural ground to the bottom of the excavation, i.e. below the initial embedment material.

For any trench over five feet in depth a trench safety system shall be used which may be any of the following alternatives; sloping excavation, trench box, wood or aluminum bracing or sheet pile. The preferred system is a trench box which shall be capable of withstanding the maximum earth pressure at the depths expected to be encountered in the excavation, allowing for variations in moisture content. The Contractor shall provide information based on representative location in the area to be excavated, which will determine the expected soil pressure. Such information shall be prepared by a professional engineer or registered geologist or soil scientist with experience in this field.

For all trench depths over 5 feet but not less than 10 feet deep, either a trench box for the entire height of the trench may be used or a vertical walled sub-trench no more than four feet high may be excavated and the trench above four feet shall be sloped at 1 horizontal to 1 vertical to natural ground level or benched at the equivalent slope, provided that no vertical face shall be over four feet.

The trench box bottom shall be positioned two feet above the bottom of the pipe on a ledge of natural material so that bedding may be placed under the haunches of the pipe and compacted against the natural undisturbed trench wall. This will decrease the likelihood that movement of the trench box will disturb pipe joints or bedding material.

For all trench depths over 10 feet deep designed trench safety system, shall be submitted to the Engineer.

The Contractor may submit alternative plans for trench safety for approval by the Engineer. Proposed trench safety systems may include: wood sheeting, and shoring, aluminum hydraulic shoring, etc. The system submitted shall show details of size, type, and strength of materials to be used, be specified to the on site conditions, and be sealed by a Professional Engineer.

0714 Trench Box: Prior to installation of the pipe in any trench that is 5'-0" deep for which a trench box is required, the Contractor shall submit to the Engineer information demonstrating the adequacy of the trench box proposed to be used. The Contractor shall allow ten days for the acceptance of this submittal by the Engineer.

The submittal shall include a general description of the trench box or boxes with dimensions and capacities and in what manner that they will be used. The information shall include their rating of the trench box in pound per square foot of lateral earth pressure which the box can resist and the depth at which the box can be used. The rating information shall have been prepared by a Registered Professional Engineer.

Submittal on alternatives to trench boxes, if used, shall be required 10 days prior to the need for their use. Complete information on the system strength, installation, correct usage, etc. shall be provided.

0720 MEASUREMENT AND PAYMENT

Measurement and payment of the materials, placement and quantity of trench safety system shall per linear foot of trench where the system is used and per each bore pit excavation as designated in the Bid Schedule, including design, installation, supervision, soil testing, if required, and removal of their trench safety system.

SECTION 8
SITE WORK

0810 DESCRIPTION

This section shall govern the site grading at the new elevated tank site in accordance with these specifications and in conformity with the dimensions as shown on the Plans. Clearing, grubbing, and blading of site should be conducted prior to installation of perimeter fencing.

0820 CONSTRUCTION METHODS

0821 General: Site areas shall be cleaned and grubbed. Clearing and grubbing shall consist of clearing the surface of the ground of all trees, stumps, snags, brush, undergrowth, heavy growth of grass or weeds, fences, debris and rubbish of any nature, natural obstructions, or such material which, in the opinion of the Engineer, is unsuitable, including the grubbing of stumps, roots, matted roots and the disposal from the project of all spoil materials resulting from clearing and grubbing by burning or otherwise.

All depressions or holes below the ground surface, whether caused by grubbing or otherwise, will be backfilled with suitable material and compacted to the ground surface.

After clearing and grubbing, the entire area upon which the embankment is to be placed will be sacrificed and broken by means of a disc harrow or plow or other approved equipment to a depth of 6 inches. Scarifying will be done parallel to the ground contour. All roots, debris or objectionable material that would cause interference with the compaction of the embankment foundation will be removed from the area and disposed of.

0830 MEASUREMENT AND PAYMENT

All site grading shall not be measured separately, but shall be paid for as per the Proposal lump sum bid item.

Compensation for said lump sum shall be complete for all work related to site grading.

SECTION 9

**SEAL COAT
(NOT APPLICABLE THIS CONTRACT)**

0910 DESCRIPTION

This item shall consist of a surface treatment composed of a single application of asphalt or latex-asphalt covered with aggregate for the sealing of existing pavements in accordance with these specifications.

0920 MATERIALS

0921 Asphaltic Materials: Asphaltic material shall conform to the following materials:

1. Level-up- State Department of Highways and Public Transportation HMAC Class D.
2. Sealing- Warm weather (over 81 degrees) rapid setting emulsion RS-2.

0922 Aggregate: Un-coated aggregate material shall be Type B, Grade 4. The aggregate shall be applied at the rate and meet the grade requirements shown below:

Application Rate	35 lbs/SY
Aggregate Type B	Grade 4
Sieve Analysis	% by weight
Retained on 1/2" sieve	0-2%
Retained on 3/8" sieve	20-35%
Retained on No. 4 sieve	95-100%
Retained on No. 10 sieve	99-100%
Retained on No. 20 sieve	100%

The crushed aggregate used shall be composed of sound and durable particles of gravel or stone, shall be free from organic matter, clay, loam, or pebbles and shall not contain more than five (5) percent of the material of slate, shale, schist, or soft particles of sandstone. No local caliche or other material of a dust-coated character shall be used. The material shall be of a source proven satisfactory for this use. The aggregate shall have a percent of wear of not more than thirty-five (35) (Los Angeles Abrasion Test of Coarse Aggregate AASHO Designation T-96). If the material is produced from gravel it shall be crushed such that at least eighty (80) percent of the particles have one crushed face. Aggregate used shall be Type B, as set forth under Item 304 of the TDHPT Standard Specifications. Aggregate shall be un-coated.

0930 EQUIPMENT

Equipment to be used will consist of the following: asphalt distributor, aggregate spreaders, drag broom, pneumatic rollers, and rotary broom.

All piping, retorts, booster tank and distributor used in storing or handling asphaltic material shall be kept clean and in good operation condition at all times and they shall be operated in such manner that

there will be no contamination of the asphalt with foreign material. The distributor shall have pneumatic tires of such width and number of the load produced on the street surface shall not exceed 650 pounds per inch of tire width and shall be so designed, equipped, maintained and operated that asphaltic material at even heat may be applied uniformly on variable widths of surface at readily determined and controlled rates of from 0.05 to 0.2 gallons per square yard, with a pressure range of from 25 to 75 pounds per square inch and with an allowable variation for many specified rate not to exceed 5 percent. Distributor equipment shall include tachometer, pressure gauges, volume measuring devices and a thermometer for reading temperatures of tank contents.

The aggregate spreading equipment shall be adjusted and capable of spreading aggregate at controlled amounts per square yard in a continuous manner.

The drag broom shall be light weight street type, mounted on frame, designed to spread aggregate uniformly over the surface of a bituminous pavement and equipped with pull plates for towing. Towing equipment shall be pneumatic tired.

Rollers shall be pneumatic tire rollers.

Rotary brooms shall be suitable for cleaning the surfaces of bituminous pavements.

0940 CONSTRUCTION METHODS

Seal coat shall not be applied when air temperature is below 65 degrees F and falling or when the surface on which the seal coat is to be placed is below 65 degrees F. Seal coat may be applied when air temperature is above 65 degrees F and rising, the temperature being taken in the shade and away from artificial heat. Asphaltic material shall not be placed when general weather conditions are not suitable for a satisfactory seal coat or when the environment could be damaged.

Before any work begins, manhole ring castings shall be raised as called for on the plans, areas of the street which have had the surface removed for utility repair shall be repaired, and all cracks, holes or depressions shall be filled to give a smooth and uniform surface prior to seal coat operations. Exposed weathered base material shall be removed from the area to be patched so that at least 1 ½" inches of HMAC patch is placed in the repair area to level up with existing asphalt surface. Material used to do the patchwork will be hot mix, hot lay asphaltic concrete, Type D. Bottom and side of the holes shall be painted with cutback asphalt tack coat (MC-70 or RC-250) prior to placing HMAC. Material used to seal cracks over 1/8" wide will follow with sand with 2%-3% cutback asphalt.

Prior to placing the seal coat, loose dirt and other objectable materials shall be removed from the existing surface. The surface will be cleaned with a rotary broom. Hand brooms will be used in areas not accessible to rotary brooms. The Engineer must approve all streets before application of any asphalt.

When the air temperature is 80 degrees F or higher, latex shall be added to the asphalt at the rate of 1 ½ to 2 percent by weight (solid bases). The actual rate shall be approved by the Engineer. The asphalt shall be heated to 150° F before adding the latex. The mixture shall be thoroughly mixed before application.

The finished latex-asphalt shall meet the following requirements:

Viscosity at 140 F, stokes	1500 maximum
Ductility at 39.2 F, 1 cm per min, cm	100 minimum

0941 Application of Asphaltic Material: Immediately following the preparation of the existing surface by cleaning, the asphaltic material shall be applied at the approximated rate of 0.25 gallon per square yard, so that uniform distribution is obtained at all points. Skop streaks on the pavement, due to defective distributor nozzles, will be reshot with a distributor at the expense of the Contractor.

The Contractor shall calibrate the spray bar nozzles by spreading building paper as required on the surface for a sufficient distance back from the end of each application so that flow trough sprays may be started and stopped on the paper and so that all sprays will operate properly over the entire length being treated. Building paper so used shall be immediately removed and loaded on a truck. At the end of each day, the paper shall be disposed of at a permitted site approved by the Engineer.

Application temperatures shall be between 150-160 degrees F. When a street to be sealed is continuous through several intersections, sealed area will include all spandrels and stub-outs, unless otherwise directed by the Engineer. Spandrels will be hand sprayed. Contractor shall not apply excessive amounts of asphaltic materials when hand spraying. Excessive materials applied shall be removed by the Contractor before spreading the aggregate.

During all applications, the surface of adjacent structures shall be protected in such a manner as to prevent their being splattered or marred. Building paper shall be spread on all manholes, valve boxes, etc. to protect the surface from asphaltic materials. The asphaltic material shall not be applied until the cover aggregate is available and ready with assurance of continuous operation.

No asphaltic materials shall be placed which cannot be covered and rolled during daylight hours.

0942 Spreading the Aggregate: The covering material in the quantity specified shall be spread uniformly over the asphaltic material as soon after application as possible. The aggregate shall be spread in the same width of application as for the asphaltic material and spread uniformly with the aggregate spreading equipment.

Trucks spreading aggregate shall be operated backward so that bituminous material will be covered before truck wheels pass over it. The aggregate shall not be applied in such thickness to cause blanketing or stacking. Any blanketing or stacking shall be removed prior to rolling. Backspotting or sprinkling cover aggregate shall be done by hand spreading, which will be continued during the operations whenever necessary, as directed by the Engineer.

The Contractor shall apply a mechanical aggregate spreader which applies the aggregate uniformly over the surface at the rate of 15 to 20 pounds per square yard.

0943 Brooming and Rolling: Rolling shall be started as soon as sufficient aggregate is spread to prevent pick-up and continued until no more aggregate can be worked into the surface. The surface shall be blanket rolled. The Contractor shall arrange his work so that all rolling of all cover aggregate applied that day is accomplished with a minimum of four complete coverage with pneumatic rollers prior to sundown.

Rollers shall be maintained in good repair and operating condition.

The drag brooming should start as soon as possible after the rolling has started and the surface has set sufficiently to prevent excessive marking of the seal surface. Further drag brooming should be done as often as necessary to keep cover aggregate uniformly disturbed over the street surface.

0944 Asphaltic Material Contractor's Responsibility: The Contractor shall furnish vendor's certified test report for asphaltic material shipped for the project. The report shall be delivered to the Engineer before permission is granted for use of the material. Any changes of source shall be reported prior to delivery.

0950 TRAFFIC CONTROL

The Contractor shall arrange the seal coat operation in such a manner as to avoid excessive inconvenience to the public in the seal coat area.

The Contractor shall have on the project site sufficient barricades, flag-persons and traffic control devices to assure a minimum of inconvenience of traffic around the construction area.

0960 MEASUREMENT AND PAYMENT

Seal coat will be measured by the square yards of completed and accepted seal coat work. Payment for seal coat will be included in the bid item for seal coat and overlay as described in Bid Schedule.

The work performed and material furnished as prescribed by this item and measured as provided under seal coat will be paid for at the unit prices bid which prices shall be full compensation for cleaning the existing street; for furnishing, preparing, hauling, and placing all materials, for rolling, for all freight involved; and for all manipulations, labor tools, equipment cleanup and incidentals necessary to complete the work.

SECTION 10

FLEXIBLE BASE COURSE

1010 DESCRIPTION

This section shall govern the preparation of the underlying subgrade and the construction of the 4 inch base course in accordance with these Specifications to conform to the dimensions and grades shown on the approved Plans. This base course is a supplemental bid item and will only be place if authorized by the Engineer.

1020 MATERIALS

Flexible base material shall be composed of crusher run broken stone. The materials shall be obtained from approved sources and shall be crushed, and shall consist of durable particles of stone mixed with approved binding materials. A stockpile may be required, made up of layers of processed material and the material shall be loaded for delivery by making successive vertical cuts through the entire depth of the stockpile. Approval of material shall be made upon delivery to the job site. The processed material, when properly slaked and tested by standard laboratory methods, shall meet the following requirements:

Retained on 1-3/4" sieve	00%
Retained on 7/8" sieve	10% to 35 %
Retained on 3/8" sieve	30% to 50%
Retained on No. 4 sieve	45% to 65%
Retained on No. 40 sieve	70% to 85%

Material passing the No. 4 sieve shall be known as "binder"; that portion of the binder material passing the No.4 sieve shall be known as the "soil binder"and shall meet the following requirements:

The liquid limit shall not exceed	35%
The plasticity index shall not exceed	10%
The linear shrinkage shall not exceed	7%

Note: The linear shrinkage shall be calculated from the volumetric shrinkage at the liquid limit.

1030 SUBGRADE PREPARATION

The subgrade shall be excavated and shaped in conformity with the typical sections shown on the approved Plans.

Before base material is placed, the subgrade shall be thoroughly wetted, bladed and rolled until a minimum of 95 percent nor more than 100 percent maximum density has been attained for a 4 inch depth, as determined by the State Department of Highways and Pubic Transportation Test Method TEX-114E. When the required density cannot be obtained, the material shall be undercut and replaced with suitable material, as directed. The material placed to refill the undercut portion shall be handled and compacted as specified for embankments.

During compacting operations, water shall be added to the subgrade material as required to bring the material to the optimum moisture condition. Such watering shall be done by standard construction methods and standard equipment shall be used.

Any areas inaccessible to a roller shall be consolidated and compacted with approved mechanical tampers. Stones or rock fragments larger than 4 inches in their greatest dimensions will not be permitted.

1040 CONSTRUCTION

1041 Preparation: Where no base exists, rough excavation shall be carried to such depth that sufficient material will be left above the designated grade to allow for compaction.

When there is existing base material, the surface shall be cut to the proposed indicated grades or cleaned off with a maintainer blade prior to placement of new base material.

1042 Placement: Flexible base material shall be deposited only upon previously prepared subgrade and shall be spread, shaped and rolled the same day, if possible. If it is not possible to do this within the first 24 hours, the material shall be sacrificed prior to spreading and shaping. This base course shall be wetted, bladed and rolled until a minimum of 96- percent of moisture density has been attained as determined by the current Standard Test for Density, as used by the State Department of Highways and Public Transportation, TEX-113-E, or AASHO designation T-99-57, Method A.

Water required to bring the material to the optimum moisture content shall be applied evenly by pressure distributors and a uniform moisture content throughout the layer of base material shall be obtained.

Throughout the manipulations of the base material, care shall be taken to avoid mixing earth or foreign matter with the base material, and any base material which becomes contaminated shall be subject to rejection. Any “nests” of segregated coarse or fine material shall be corrected or removed and replaced with well-graded material.

When the depth of flexible base, as specified, is greater than 6 inches, it shall be constructed in equal compacted courses not to exceed 6 inches each.

1050 COMPACTING FLEXIBLE BASE MATERIAL

The base material shall be spread, sprinkled, and rolled with a pneumatic roller, stretching longitudinally at the sides and proceeding toward the center, overlapping on successive trips by at least one-half (1/2) the width of the roller. The rolling shall continue until the stone is thoroughly set and bonded, and until there is no creeping ahead of the roller. Rolling shall continue until the base material has been compacted not less than 100 % density, as determined by procedures as currently prescribed by the State Department of Highways and Public Transportation Test, TEX-113-E.

Rolling shall be provided by a pneumatic-tire roller of not less than nine (9) pneumatic tired wheels running on two (2) axles in such manner that the rear group of views will not follow in the tracks of the forward group and shall be mounted on a rigid frame provided with platform or body suitable for ballast loading. The front axle shall rotate around a kingpin so located that the roller may be turned within a minimum circle. The pneumatic tire roller, under working conditions, shall have an effective rolling width of approximately 60 inches and shall give a minimum compression of 325 pounds per inch of width of tire tread. The roller shall be drawn by either a suitable tractor or a truck of adequate tractive capacity.

The use of three-wheel roller for final compaction and finishing of the base course may be required. The final surface of the base course shall be in conformity with the sections shown on the drawings and with the established lines and grades. If any parts of the finished surface do not come within the tolerances allowed in the paragraph below, they shall be brought within these limits by loosening, adding or removing material, reshaping and recompacting by sprinkling and rolling.

1060 MEASUREMENT AND PAYMENT

“Base Material” will be measured by the square yard for material compacted in place in accordance with the plans and specifications. The final thickness shall be 4 inches compacted.

This item will be paid for at the contract unit price bid for “Base Material” which price shall be full compensation for all work herein specified, including the furnishing, hauling, and placing of all materials for all water required and for all equipment, tools, labor, and incidentals necessary to complete the work.

SECTION 11

ASPHALTIC PRIME COAT

1110 DESCRIPTION

This section shall govern the materials and construction method to be used in applying asphaltic prime coat to the completed course.

1120 MATERIAL

The asphaltic coat material shall be cut-back asphalt, MC-30, and shall meet the TDH standards:

GRADE MC-30

	<u>Minimum</u>	<u>Maximum</u>
Water		0.2
Viscosity	30	60
Flash point T.O.C., degrees F	100	

When distilled by ASTM Method D 402, the distillate off volume shall be as follows:

Off at 437° F		25%
Off at 500° F	40%	70%
Off at 600° F	75%	93%

The residue, when poured from the flask without cooling, immediately upon reaching the maximum temperature specified, shall have the following characteristics:

Penetration at 77° F		
100 gms., 5 sec.	120	250
Ductility at 77° F		
5 cm/min., cms	100	
Solubility	99.0%	

The material shall be free from water.

1130 APPLICATION

The prime coat shall not be applied when the air temperature is below 60° F and is falling, but may be applied when the air temperature is above 50° F and is rising, the temperature being taken in the shade and away from artificial heat. The prime coat shall be placed when general weather conditions are foggy or rainy.

All storage tanks, piping, retorts, booster tanks and distributors used in handling asphalt shall be kept clean and in good operating condition at all times, and they shall be operated in such a manner that there will be no contamination of the asphalt with foreign material. Asphalt shall not be heated above 175° F at any time, and when applied it shall be at a temperature of not less than 70° F and not more than 150° F. All asphalt heated above 400° F will be rejected.

Before the application of prime coat, the surface to receive the coat shall be cleaned of dirt, dust or other deleterious matter by sweeping or other approved method. The surface shall be lightly sprinkled with clean water just prior to application of the prime coat unless waived by Engineer.

The prime coat shall be applied on the clean surface by a self-propelled pressure distributor so operated as to distribute the asphalt in the specified quantities evenly and smoothly under the pressure range of 25 to 75 pounds per square inch to obtain proper distribution. All necessary facilities shall be provided for determining the temperatures of the asphalt in all the heating equipment and in the distributor, for determining the rate at which it is applied, and for insuring uniformity at the junction of two (2) distributor loads. Asphalt shall be applied for the full width of the surface treatment.

Following application, the primed surface shall be allowed to dry for not less than 48 hours without being disturbed, or for such additional time as may be necessary to permit drying out of the prime until it will not be picked up by traffic or equipment.

During the application of prime coat, care shall be taken to prevent splattering of adjacent pavement, curb and gutter, or structures. The Contractor shall be responsible for cleaning splattered areas.

1140 QUANTITIES OF BITUMINOUS MATERIAL

The amount of bituminous material per square yard for the prime coat shall be 0.20 to 0.25 gallons per square yard cut with ten-(10) percent kerosene.

1150 MEASUREMENT AND PAYMENT

The asphaltic material for prime coat will be considered subsidiary to "Hot Mix Asphaltic Concrete Pavement" (HMAC) and shall not be directly measured. Payment for prime coat shall be included in the unit price for HMAC per square yards which shall include the cost of all materials, labor and equipment associated with applying prime coat.

SECTION 12

HOT MIX, HOT LAID ASPHALTIC CONCRETE

1210 DESCRIPTION

These sections govern the materials. Equipment and construction methods to be used in applying a wearing course or a leveling-up course of a compacted mixture of mineral aggregate and asphaltic material.

1220 GENERAL

The mixture, when designed and tested in accordance with these standards, shall have a minimum laboratory density of 94% and maximum of 98% and a stability of not less than 40% or more than 55%.

All materials and methods of preparation and construction shall conform to the requirements of these Specifications. The finished pavement shall conform in all respects with dimensions and cross sections on the plans.

The asphaltic mixture shall not be placed when the air temperature is below 65° F and is falling, but may be placed when the air temperature is above 65° F and is rising.

The Contractor shall be solely responsible for the control of his materials.

1230 MATERIALS

Aggregates used in hot laid asphaltic concrete and pavements shall meet the following grading requirements.

TYPE D: FINE GUARD SURFACE COURSE

Percent Aggregate by Weight

Passing ½" sieve	100
Passing 3/8" sieve	85 to 100
Passing 3/8" sieve, retained in #4 sieve	20 to 50
Passing #4 sieve, retained on #10 sieve	10 to 30
Total retained on #10 sieve	50 to 70
Passing #10 sieve, retained on #40 sieve	5 to 30
Passing #40 sieve, retained on #80 sieve	5 to 25
Passing #80 sieve, retained on #200 sieve	5 to 20
Passing #200 sieve	2 to 8

The coarse aggregates shall be that part of the aggregate retained on the No. 10 sieve and be crushed rock, uniform in quality throughout and shall be free from dirt, organic or other injurious matter occurring either free or as coating on the aggregate. The rock shall have an abrasion of not more than 40 percent by weight when subject to the Los Angeles Abrasion Test State Department of Highways and Public Transportation (SDHPT) Test Method TEX-410-A.

The fine aggregate shall be that part of the aggregate passing the No. 10 sieve and shall consist of sand, rock screening and a combination of both. Sand shall be composed of some, durable stone particles

free from loams or other injurious foreign matter. Screenings shall be of the same or similar material specified for coarse aggregate. The plasticity index of that part of the fine aggregate passing the #40 sieve shall be not more than 6 when tested SDHPT Test Method Tex-106-E.

The asphaltic material shall form 4-1/2 % to 7% to the mixture weight, and shall be homogenous, free from water, and not foam when heated to 350° F. It shall meet the following specific requirements.

<u>AC-20</u>		
<u>Grade Limits</u>	<u>Minimum</u>	<u>Maximum</u>
Penetration at 77° F, 100 g, 5 sec.	55	---
Ductility at 77° F, 5 cm/min., cms.	50	--
Flash Point, degrees F	450	
Viscosity, 140° F Posises	200 +/-400	

The material shall not be cracked. The source of the asphaltic material shall be submitted to the Engineer.

Laboratory test results shall be submitted to the City certifying that the material proposed to be used meets the requirements of these Specifications.

1240 EQUIPMENT

1241 General Equipment Requirements: All equipment furnished shall be of standard design and shall be maintained in good mechanical condition. Equipment shall be serviced and lubricated away from the paving site, units that drip fuel, oil and grease shall be removed from the Project until such leakage is corrected.

1242 Pavers and Laydown Machines: Unless otherwise provided, the mix shall be spread by a mechanical, self-powered paver capable of spreading the mix true to the line, grade and crown indicated on the approved Plans.

Pavers shall be equipped with hoppers and distributing screws to place them evenly in front of adjustable screeds. They shall be equipped with a quickly responsive and efficient steering device and shall be capable of traveling both forward and in reverse.

Pavers shall be capable of spreading mixes without segregation and/or tearing. Pavers shall also be capable of placing courses in thickness of from 1/2 inch to 3 inches and in either (i) varying widths from 8 to 13 feet in increments of 12 inches or less, or (ii) a fixed normal width of 10 feet.

The term “screed” includes any strike-off device operated by cutting, crowding or other action which is effective on mixes, at workable temperatures, without tearing, shoving, or gouging them, and which produces a finished surface of an even and uniform texture. The screed shall be adjustable as to level and section.

1243 Rollers: Rolling equipment shall consist of steel-wheel and pneumatic-tire rollers, or a combination of both, described as follows:

- a. Steel-wheel roller may be either of two types: (i) three-wheel rollers of 10 tons in weight and (ii) two-axle tandem rollers of 8 to 10 tons in weight. These rollers shall be equipped with power units of not less than four (4) cylinders and under working conditions shall develop a compression in the rear wheels of 250 to 350 pounds per inch of roller width. Rollers shall be in good working condition and be free from backlash, faulty steering mechanism or worn parts. Rollers shall be equipped with adjustable scrapers to keep the rolls clean and with efficient means of keeping the wheels wet to prevent mix from sticking to the rolls. Rollers shall also be free of flat areas, openings or projections which will mar the surface of the pavement.
- b. Pneumatic tire rollers shall be self propelled, having an effective rolling width of not less than 4 feet. The rollers shall be equipped with smooth tread, pneumatic tires of equal size and diameter. The wheels of the roller shall be so spaced that one (1) pass of a two axle roller will accomplish one (1) complete coverage equal to the rolling width of the machine. There shall be a minimum of ¼ inch overlap of the tracing wheels of a double-axle roller. The wheels shall not wobble. The roller shall be so constructed that the contact pressure shall be uniform for all wheels, and the tire pressure of the several tires shall not vary more than 5 pounds per square inch. Pneumatic-tire rollers shall be constructed with ample ballast space to provide an operating weight per tire of between 300 and 450 pounds per inch of tire track width.

1244 Hand Tools: Only lutes or rakes with covered teeth shall be used during the spreading operation and when finished by hand.

Tamping irons used to consolidate the edges of the binder and wearing course shall be of sufficient weight to compact the edges to the same degree as the body of the pavement. Irons shall be designed to form an edge as nearly vertical as possible. Irons which seal the material by heat alone shall not be used. Tamping irons used to consolidate the material along curbs, gutters, and other structures inaccessible to the roller shall weigh not less than 25 pounds and shall have a bearing area not exceeding 48 square inches. Mechanical compaction equipment may be used instead of tamping irons.

1050 CONSTRUCTION METHODS

1251 Weather Limitations: The mixing and placing of hot-mix asphalt shall be performed only when weather conditions are suitable. Placing of hot-mix asphalt shall not be permitted when the moisture of the aggregate interferes with the uniformity of temperatures, or with continuous plant operations, or when pools of water are observed on the base. The temperature of the surface on which the hot-mix asphalt is placed shall be not less than 50° F and rising.

The asphaltic concrete mixture, heated and prepared as specified shall be hauled to the Project in tight vehicles previously cleaned of all foreign material. The mixture shall be at a temperature of 240° F to 350° F when laid.

1252 Spreading and Finishing: Spreading and finishing shall be conducted in the manner set out in this sub-section.

The asphaltic concrete shall be spread and struck-off with an approved self-powered and self-propelled mechanical spreading machine, capable of spreading and finishing the mixture to line, grade and cross-section without the use of forms or side supports. Finishing machines shall be operated so that material does not accumulate and remain along the side of the receiving hopper.

The finishing machine shall have a capacity of at least 500 tons per eight-hour day. It shall be equipped with a positive, controlled mechanical screed. The screed shall be equipped with a suitable,

controlled heating device to be used when required. The screed shall strike off the mix to the elevation and cross-section specified without the aid of manual adjustment during operation. The term "screed" includes any cutting, crowding or other practical device which will produce a satisfactory surface shall not be used.

Longitudinal joints and edges shall be constructed to true line markings. Lines shall be established parallel to the centerline of the proposed street in order that the paver can follow the established line. In backing trucks against the finisher, care shall be taken not to jar the finisher out of its proper alignment. Delivery of material to the paver shall be at a uniform rate and in an amount well within the capacity of the paving and compacting equipment.

As soon as the first load of material has been spread, the texture of the unrolled surface shall be checked to determine its uniformity. The adjustment of the screed, tamping bars, feed screws, hopper feed, etc., shall be checked frequently to assure uniform spreading of the mix to proper line and grade and adequate initial compaction. Segregation of materials shall not be permitted. If segregation occurs, the spreading operation shall be immediately suspended until the cause is determined and corrected.

Construction joints shall not be placed in the same vertical plane. Longitudinal joints shall be offset at least 3 inches and transverse joints in succeeding courses shall be offset at least 2 feet.

Any irregularities in alignment left by the paver shall be corrected by trimming directly behind the machine. Immediately after trimming, the edges of the course shall be thoroughly compacted by tamping. Distortion of the pavement during this operation shall be avoided.

Edges against which additional pavement is to be placed shall be vertically formed to true line. A lute or covered rake shall be used immediately behind the finisher, when required, to obtain a true line and vertical edge. Any irregularities in the surface of the pavement course shall be corrected directly behind the paver. Excess material forming high spots shall be removed by a shovel or lute. Indented areas shall be filled with hot mix and smoothed with the back of a shovel being pulled over the surface. Fanning of material over such areas shall not be permitted.

1253 Compaction:

- a. General- All compaction rolling shall be completed before the mat cools below 175° F. Minor polishing rolling may be undertaken on the mat below this temperature.

Rolling equipment for use in compacting mixes shall consist of power rollers of the three wheel finishing type, two-wheel finishing type, two-wheel tandem type and pneumatic-tire type, and shall meet the requirements for each type roller as given in Subsection 0340 of these Specifications.

During rolling, the roller wheels shall be kept moist with only sufficient water to avoid picking up the material.

After the longitudinal joints and edges have been compacted, rolling shall start longitudinally at the sides and gradually progress toward the center of the pavement, overlapping on successive trips by at least one half (1/2) the width of tandem rollers, and uniformly lapping each preceding track or covering the entire surface with the rear wheels when three-wheel rollers are used. The rollers shall move at a slow but in form speed (not to exceed 3 miles per hour) with the drive roll or wheel nearest the paver. They shall be in good conditions, capable of being reversed without backlash, and the line of rolling shall not be suddenly changed or the direction

of rolling suddenly reverse, thereby displacing the mix. If rolling causes displacement of the material, the affected area shall be loosened at once with lutes or shovels and restored to the original grade of the loose material before being rolled. Until the finished surface has thoroughly cooled, heavy equipment or rollers shall not be permitted to stand on it.

Rolling of the mix shall consist of six (6) separate operations in the following order: (i) transverse joints, (ii) longitudinal joints, (iii) edges, (iv) initial or breakdown rolling, (v) second rolling, and (vi) finish rolling. When paving in single width, this procedure shall be followed except that compaction shall take place of full width of the course being placed. Edges shall not be exposed more than 15 minutes without being rolled. Particular attention shall be given to the construction of transverse and longitudinal joints. Sawed joints shall not be permitted.

- b. Transverse Joints- Transverse joints shall be carefully constructed and thoroughly compacted to provide a smooth riding surface over these points in the pavement. Joints shall be straightened and stringlined to assure smoothness and true alignment. If the joint is formed with a bulkhead, such as a board, to provide a straight-line and vertical face, the joint face need not be trimmed before fresh material is placed against it to complete the joint. If a bulkhead is not used to form the joint and the roller is permitted to roll over the end of the new material, the line of joint shall be located back to the rounded edge of a sufficient distance to provide a true surface and cross-section.

If the joint has been distorted by traffic or by other means, it shall be trimmed to line. In either case, the joint face shall be painted with a thin coating of asphalt before the fresh material is placed against it. To obtain thorough compaction of these joints, the material placed against the joint shall be tightly crowded against the vertical face of the joint. To accomplish this, the finishing material shall overlap the edge of the joint 1-inch to 2 inches and shall be left sufficiently high to allow for compaction. The depth of the overlapped materials shall be kept uniform. Before rolling, the coarse aggregate shall be carefully moved with a broom or lute onto the surface of the unrolled material transversely so that only 1 inch to 2 inches of the rear rolling wheel rides on the edge of the joint. The roller shall be operated to pinch and press the mix into place at the transverse joint. The roller shall be operated to pinch and press the mix into place at the transverse joint. The roller shall continue to roll along this line, shifting its position gradually across the zone in 2-inch or 3-inch increments, until the joint has been rolled with the entire width of the roller wheel. Rolling shall be continued until thoroughly compacted, neat joint is obtained. If only tank rollers are available, they shall be similarly operated to complete the joint.

- c. Longitudinal Joints- Longitudinal joints shall be rolled directly behind the paving operation. The first lane placed shall be true to line and grade and have a vertical face. The material being placed in the abutting lane shall then be tightly crowded against the vertical face of the previously placed lane. The finishing machine shall be positioned so that in spreading, the material overlaps the edge of the lane previously placed by 1 inch to 2 inches and shall be left sufficiently high to allow for compaction. The machine shall closely follow the line or markings placed along the joint for alignment proposed. The width and depth of the overlapping material shall be kept uniform at all times. Before rolling, the material overlapping the joint shall be carefully moved with a broom or lute onto the surface of the unrolled lane.
- d. Edges- The edges of the pavement shall be rolled concurrently with the longitudinal joint using at least two (2) rollers. Care shall be exercised in consolidating the binder of surface course along the entire length of the edges. Before it is compacted, the material along the unsupported

edges shall be slightly elevated with a tamping tool or lute. This will permit the full weight of the roller wheel to bear on the material to the extreme edges of the mat. In rolling pavement edges roller wheels shall extend 2 inches to 4 inches beyond the pavement edge.

- e. Breakdown Rolling-Breakdown rolling shall immediately follow the rolling of the longitudinal joint and edges. Rollers shall be operated as close to the paver as necessary to obtain adequate density without causing undue displacement. The breakdown roller shall be operated with the drive roll or wheel nearest the finishing machine. When both three-wheeler rollers and tandem rollers are used, the three-wheel rollers shall work directly behind the paver followed by the tandem rollers. Only experienced roller operators shall be used for this work.
- f. Second Rolling- The second rolling shall be done with a pneumatic-tire roller or tandem roller. The second rolling shall follow the breakdown rolling as closely as possible and while the paving mix is still of a temperature that will result in maximum density from this operation. Pneumatic-tire rolling shall be continuous after the initial rolling until all of the mix placed has been thoroughly compacted. Turning of pneumatic-tire rollers on the hot paving mix which causes undue displacement shall not be permitted.
- g. Finish rolling- The finish rolling shall be accomplished with two-wheel tandems or three axle tandems while the material is still warm enough for the removal of roller marks. Pneumatic tire rollers will be required to give the desired surface finish.

1254 Density and Surface Requirements: The completed pavement shall have a density equal to or greater than 92.5 % maximum theoretical density as determined by SDHPT TEX-227-F. Testing shall be done at the request of the Owner of Engineer.

The initial sampling and testing of in place asphalt concrete will be at no cost to the Contractor, except for the cost of material and restoration of damage by testing. Any retesting expense will be by Contractor.

The Engineer will secure 6-inch core samples or sections of completed asphaltic pavement lifts for approximately every 2,000 square yards or part thereof, of asphaltic concrete pavement placed. The in place density at the sampled locations shall be determined by the following equation:

$$\text{Percent in place Density} = \frac{GA}{GT} \times 100$$

Where GA= Bulk specific gravity of core when tested in accordance with SDHPT TEX-207-F.

GT= Maximum theoretical specific gravity of combined cores when tested in accordance with SDHPT TEX -227-F.

The Contractor shall patch the surface where specimens are taken with no extra payment being made for this work. The Engineer will remove the asphaltic concrete pavement specimen on the day following placement of as soon as practicable thereafter. Other methods of determining in place density which correlate satisfactorily with those results obtained by cores or sections may be used.

The final surface shall be of a uniform texture conforming to line and grade shown on the approved plans. Before final acceptance of the Project, or during the progress of the work, the thickness of the surface courses shall be determined by the Contractor, and any unsatisfactory work shall be repaired, replaced or corrected.

Both density and thickness shall be carefully controlled during construction. During compaction, preliminary tests as an aid for controlling the thickness shall be made by inserting a flat blade, correctly graduated, through the material to the top of the previously placed base.

The checking of depth, cutting of test holes, refilling with acceptable materials and proper compaction shall be done by the Contractor.

For the purposes of testing the finished surface on both binder and surface course, a 16-foot straightedge shall be used, except that a 10-foot straightedge shall be used on vertical curves. The straightedge shall be held in successive positions parallel to the road centerline in contact with the surface, and the entire area checked from one side to the other. Advance along the pavement shall be in successive stages of no more than half the length of the straightedge. Any irregularities which vary more than 3/16 inches in 10 feet or 1/4 inch in 16 feet shall be corrected. Irregularities which may develop before the completion of rolling shall be remedied by loosening the surface mix and removing or adding material as may be required. Should any irregularities or defects remain after the final compaction, the surface course shall be removed promptly and sufficient new material laid to form a true and even surface. All minor surface projections, joints, and minor honeycombed surfaces shall be ironed smooth to grade.

1260 MEASUREMENT AND PAYMENT

Hot mix, asphaltic concrete overlay shall be measured by the square yard applied along the street, overlaid at the thickness called for including taper at edges and end of the work, all material, labor, tools, equipment, cleanup and all incidentals necessary to complete the work in accordance with the Specifications.

Hot mix, asphaltic concrete shall be paid as described on the Bid Schedule, either included with the same measured area of seal coats or as applied over base material inclusive or prime coat.

SECTION 13

SURFACE TREATMENT PAVING

1310 DESCRIPTION

This item shall consist of a wearing surface composed of a one or two application of asphaltic material covered with aggregate, constructed on the prepared base course or surface in accordance with these Specifications. This material specification generally follow the Texas Department of Transportation Standard Specifications.

One course surface treatment shall not be applied when the air temperature is below 60° F and is falling, but it may be applied when the air temperature is above 50° F and is rising, the air temperature being taken in the shade and away from artificial heat. One course surface treatment shall not be applied when the temperature of the roadway surface is below 60° F. Asphaltic material shall not be placed when general weather conditions, in the opinion of the Engineer, are not suitable.

1320 MATERIALS

1321 Asphalt Material: The asphaltic material used shall be anionic emulsion as setforth under Item 300.2 of the TDOT Standard Specifications. The application rate and type of the asphalt material shall be as follows:

	<u>Prime Coat</u>	<u>First Course</u>	<u>Second Course</u>
Material	EA-11M (15% solution)	EA-HVRS	EA-HVRS
Rate	0.2 Gal./SY	0.3 gal./SY	0.25 gal./SY

1322 Aggregate: The Precoated aggregate used shall be composed of sound and durable particles of gravel or stone, shall be free from organic matter, clay, loam or pebbled and shall not contain more than five percent of slate, shale, schist, or soft particles of sandstone. No local caliche or other material and dust coated character shall be used. The material shall be of a source proven satisfactory for this use. The aggregate shall have a percent of wear not more than 35 percent (Los Angeles Abrasion Test of Course Aggregate AASHO Designation T-96.). If the material is produced from gravel, it shall be crushed such that at least 80 percent of the particles have one crushed face. Aggregate used shall be Type PB, as setforth under It m 304 of the TDOT Standard Specifications. Aggregate shall be precoated with asphaltic material in accordance with TDOT Standard Specifications 304.5

When called for in the Bid Documents, the aggregate shall be applied at the rate and meet the grade requirements shown below:

	<u>FIRST COURSE</u>	<u>SECOND COURSE</u>
Application Rate	24 lbs/SY	18 lbs./ SY
Aggregate Type PB	Grade 4	Grade 5

Sieve Analysis	% by weight	% by weight
Retained on 1/2" sieve	0-2%	0%
Retained on 3/8" sieve	20-35%	0-5%
Retained on No. 4 sieve	95-100%	40-85%
Retained on No. 10 sieve	99-100%	98-100%
Retained on No. 20 sieve	100%	99-100%

1330 CONSTRUCTION METHODS

The areas to be treated shall be cleaned of dirt, dust, or other deleterious matter by sweeping or other approved methods. If it is found necessary by the Engineer, the surface shall be lightly sprinkled just prior to the application of the asphaltic material.

Asphaltic material shall be applied on the clean surface by an approved type of self propelled pressure distributor operated as to distribute the material in the quantity specified, evenly and smoothly, under a pressure necessary for proper distribution. The Contractor shall provide all necessary facilities for determining the rate at which it is applied, and for securing uniformly at the junction of two distributor loads.

After beginning the work, should the yield on the asphaltic material appear to be in error, the distributor shall be calibrated in a manner satisfactory to the Engineer before proceeding with the work.

Asphaltic material may be applied for the full width of the surface treatment on one application, unless the width exceeds 26 feet. No traffic or hauling will be permitted over the freshly applied asphaltic material. Asphaltic material shall not be applied until immediate covering is assured.

Aggregate shall be immediately and uniformly applied and spread by an approved self-propelled continuous feed aggregate spreader, unless otherwise shown on the plans or authorized by the Engineer in writing. The aggregate shall be applied at the approximate rates indicated on the plans and as directed by the Engineer.

SECTION 14

CORRUGATED STEEL PIPE

1410 SCOPE

This section covers the requirements for corrugated steel pipe used for the conveyance of storm water.

This is a manufacturing and purchase specifications only and does not include requirements for installation.

1420 GENERAL

The Corrugated Steel Pipe shall meet the requirements of Type I AASHO designation M-218 for zinc coated (galvanized) corrugated steel covers.

Where reference is made herein to gage of steel, the reference is to U.S. Standard Gauge for sheets after galvanizing. Sampling and testing of steel sheets and coils used for corrugated steel pipe shall be in accordance with SDT Method TEX-708-I.

Damages to spelter coating shall be repaired by thoroughly wire brushing the damaged area and removing all loose, cracked or weld-burned Spelter coating. The cleaned area shall be painted with a Zinc-dust zinc oxide paint conforming to Federal Specifications TT-P 64 lb. Damaged pipe shall be rejected and removed from the project.

The following information shall be clearly marked on each section of pipe:

- Thickness and corrugations
- Trademark of the manufacturer
- Specification compliance

1430 MATERIALS

1431 Pipe: Pipe furnished under this section shall be full circle corrugated, metal pipe fabricated with either circumferential or helically corrugation with continuous helical lock seam extending from end to end of each length of pipe. Lock seams shall be so constructed as not to form an element of weakness.

The pipe diameter, permissible corrugations and required shell and linear gauges shall be as follows:

<u>Pipe Diameter</u>	<u>Wall Thickness Corrugated Steel Pipe Shell, (Ga.)</u>
72	12
60	12
54	12
48	14
36	14
30	14
24	14

21	14
18	14

Corrugated Steel is 2-2/3 inches by 1/2 inch corrugations. Thickness refers to the coated steel after galvanizing.

1432 Joint Material: Coupling bands and other hardware for galvanized steel pipe shall conform to AASHTO M36. Field joints for corrugated metal pipe shall maintain pipe alignment during construction and prevent infiltration of soil material during the life of the installation.

Coupling bands shall be no more than 3 nominal sheet thickness lighter than the thickness of the pipe to be connected and in no case lighter than 0.052 inch.

Coupling bands shall be made of the same base metal and coating as the pipe.

Pipes furnished with circumferential corrugations shall be field jointed with corrugated locking bands. This includes pipe with helical corrugations which has reformed circumferential corrugations of the ends. The locking bands shall securely fit into a least one full circumferential corrugation on each of the pipe ends being coupled. The minimum width of the corrugated locking bands shall be as shown below.

10-1/2 inches wide for 2-2/3 inches x 1/2 inches corrugations.

All bolts for coupling bands shall be 1/2 inch diameter. Bands 12 inches wide or less will have a minimum of 2 bolts and bands greater than 12 inches wide shall have a minimum of 3 bolts.

Galvanized bolts may be hot dip galvanized conforming to AASHTO M232, mechanically galvanized to provide the same requirements as AASHTO M232, or electrogalvanized per ASTM A164, Type RS.

1440 CAUSES FOR REJECTION

Pipe shall be subject to rejection on account of failure to conform to any of the Specifications. Individual sections of pipe may be rejected because of any of the following:

Damaged ends, where such damaged would prevent making satisfactory joint.

Defects that indicate poor workmanship and could not be easily repaired in the field.

Severe dents or bends in the metal itself.

Corrugated metal pipe shall be measured or paid for separately. Compensation for furnishing and installing the pipe shall be subsidiary to the lump sum bid item for each crossing.

GEOTECHNICAL REPORT



**Subsurface Exploration and
Pavement Recommendations
Oak Vista Drive
Burnet, Texas**

Terradyne Project No.: A221128

**Mr. Eric Belaj
City of Burnet
1001 Buchanan Drive, #4
Burnet, Texas 78611**

October 28, 2022



October 28, 2022

City of Burnet
1001 Buchanan Drive, #4
Burnet, Texas 78611

Attn: Mr. Eric Belaj
Phone: 512-715-3217
Email: ebelaj@cityofburnet.com

Re: **Subsurface Exploration and Pavement Recommendations**
Oak Vista Drive
Burnet, Texas
Terradyne Project No.: A221128


Dear Mr. Belaj:

Terradyne Engineering, Inc. (Terradyne) has completed a soil and foundation engineering report at the above referenced project site. The results of the exploration are presented in this report.

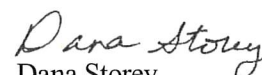
We appreciate and wish to thank you for the opportunity to service you on this project. Please do not hesitate to contact us if we can be of additional assistance during the Construction Materials Testing and Quality Control phases of construction.

Respectfully Submitted,

Terradyne Engineering, Inc.
Texas Firm Registration No. F-6799


Derek Stout, P.E.
Regional Vice President




Dana Storey
Geotechnical Engineering Assistant

10/28/2022

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EXECUTIVE SUMMARY

The soil conditions at the site of the proposed roadways for Patriot Oaks in Burnett, Texas were explored by drilling three (3) borings to a maximum depth of approximately 8.5 feet below the existing ground surface elevation at the time of drilling operations. Laboratory tests were performed on selected soil samples to evaluate the engineering characteristics of the soil strata encountered in the borings.

It is understood that the project will consist of new pavements following the City of Burnett guidelines for Local Collector streets. In general, the subsurface consisted of fat clay (CH) or clayey gravel (GC) underlain by limestone. Groundwater was not encountered during drilling operations or after the operations had completed.

Detailed descriptions of subsurface conditions, engineering analysis and design recommendations are included in this report.

This summary does not contain all the information that is included in the full report. The report should be read in its entirety to obtain a more complete understanding of the information provided. Any amendment and/or revisions per request **must** be issued in writing by Terradyne.

1.0 INTRODUCTION

This report presents the results of the exploration and pavement design for the proposed roadways for Oak Vista Drive in Burnet, Texas. The services of Terradyne were authorized on September 8, 2022 by Mr. Eric Belaj, City Engineer for the City of Burnet, by signing Terradyne Proposal No. AP221166 dated July 29, 2022.

2.0 PURPOSE AND SCOPE OF SERVICES

The purpose of the preliminary geotechnical investigation was to evaluate the subsurface materials and groundwater conditions of the site and provide geotechnical-engineering recommendations for the design and construction of new roadways. The scope of services includes the following:

- 1) Drilling and sampling of three (3) borings to a maximum depth of approximately 15 feet below the existing ground surface elevation;
- 2) Observation of the groundwater conditions during drilling operations;
- 3) Performing laboratory tests such as Atterberg limits and moisture content tests;
- 4) Review and evaluation of the field and laboratory test programs during their execution with modifications of these programs, when necessary, to adjust to subsurface conditions revealed by them;
- 5) Compilation, generalization and analysis of the field and laboratory data in relation to the project requirements;
- 6) Estimation of potential vertical movement;
- 7) Development of recommendations for the design, construction, and earthwork phases of project; and
- 8) Consultations with the Prime Professional and members of the design team on findings and recommendations; and preparation of a written geotechnical engineering report for use by the members of the design team in their preparation of design, contract documents, and specifications.

The Scope of Services did not include any environmental assessment for the presence or absence of wetlands and/or hazardous or toxic materials in the soil, surface water, groundwater, or air, in the proximity of this site. Any statements in this report or on the bore hole logs regarding odors, colors or unusual or suspicious items or conditions are strictly for the information of the client.

2.1 Site Description

The subject site is located at the intersection of Oak Vista Drive and U.S. Highway 281 in Burnet, Texas. The site consists of the existing roadway for approximately 1,100 west of the intersection with U.S. Highway 281. Borings B-1 through B-3 were drilled at/near the following GPS location (Lat. 30.78256, Long. -98.24056). An aerial map of the GPS location is included in Figure 6.

3.0 GEOTECHNICAL INVESTIGATION

The field exploration to determine the engineering characteristics of the subsurface materials included a reconnaissance of the project site, drilling the borings, and recovering samples. A total of three (3) borings were drilled to a maximum depth of 8.5 feet each at the project site. The borings were terminated early due to limestone encountered.

The soil borings were performed with a drilling rig equipped with a rotary head. Conventional solid stem continuous augers were used to advance the hole and samples of the subsurface materials were sampled using a two-inch O.D. split barrel sampler (ASTM D 1586), and Auger. The samples were identified according to depth, encased in polyethylene plastic wrapping to protect against moisture loss, and transported to the laboratory in special containers.

3.1 Field Tests and Measurements

Penetration Tests: During the sampling procedures, standard penetration tests were performed in the borings in conjunction with the split-barrel sampling. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split-spoon sampler one-foot into the soil. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of the three successive increments of six inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

Water Level Measurements: Groundwater was not encountered in the borings during drilling operations. Water level observations were made during the excavation operations and the results are noted on the boring logs. In relatively pervious soils, such as sandy soils, the indicated elevations are considered reliable groundwater levels. In relatively impervious soils, an accurate determination of the groundwater elevation may not be possible even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the level of the groundwater table and the volume of water encountered will depend on the permeability of the soils.

3.2 Boring Logs

A field log was prepared for each boring. The logs include information concerning the samples attempted and recovered, indications of the presence of material (such as calcareous clays, sandy clay, etc.) and groundwater observations. It also includes an interpretation of the subsurface conditions between samples. Therefore, these logs include both factual and interpretive information.

The final logs represent the interpretation of the contents of the field logs for the purpose delineated by the client. The final logs are included on Figures 2 through 4 in the Illustration Section. A key to classification terms and symbols used on the logs is presented on Figure 5.

3.3 Laboratory Testing Program

In addition to field exploration, a supplemental laboratory-testing program was conducted to determine additional pertinent engineering characteristics of the subsurface materials necessary in evaluating the design parameters of the soil. All phases of the laboratory testing program were conducted in general accordance with the indicated applicable ASTM Specifications as presented in Table No. 1.

Table No. 1 – Laboratory Testing Summary

Laboratory Test	Applicable Test Standard
Liquid Limit, Plastic Limit, & Plasticity Index of Soil	ASTM D-4318
Moisture Content	ASTM D-2216
Material Finer than No. 200	ASTM D-1140

In the laboratory, each sample was examined and classified by a geotechnical engineer. As a part of this classification procedure, the natural water content of the soil samples was determined. Atterberg limit tests were performed on representative soil samples to determine the plasticity characteristics of the soil strata encountered. The results of these tests are presented on the appropriate boring logs and in the Illustrations.

3.4 General Subsurface Conditions

The site is located within the upper Glen Rose Limestone (Kgru). This formation, as shown on the Llano Sheet of the Geology of Texas, generally consists of limestone, dolomite and marl. The formation is of Cretaceous Geologic Age and is up to 220 feet in thickness.¹

The soils underlying this site may be grouped into two (2) generalized strata within clay or clayey gravel underlain by limestone. The soil stratigraphy information and the engineering properties of the underlying soils based on Terradyne's professional engineering experience are presented on the Boring Logs, Figures 2 through 7.

During the field investigation, subsurface water was not encountered in the borings during drilling. In addition, the soil samples were considered dry to moist. Based upon this information and past projects in the surrounding areas of the site, groundwater is not anticipated to be a major concern during construction activities. However, groundwater condition can fluctuate due to

¹ Source: <http://txpub.usgs.gov/DSS/texasgeology/>.

seasonal and climatic variations and may be encountered at shallow depths during high precipitation seasons.

4.0 PAVEMENT GUIDELINES

4.1 General

Pavement construction at the proposed site includes collectors streets. Therefore, for the design purposes, we have assumed traffic loads as presented in the following page to provide pavement thickness.

The following recommendations are presented as a guideline for pavement design and construction. These recommendations are based on a) Terradyne’s previous experience with subgrade soils like those encountered at this site, b) pavement section which have proved to be successful under similar conditions, c) final pavement grades will provide adequate drainage for the pavement area and that water will not be allowed to enter the pavement system by either edge penetration adjacent to landscape areas or penetration from the surface due to surfacing ponding, or inadequate maintenance of pavement joints, or surface cracks that may develop. In order to provide proper perimeter drainage so that infiltration of surface water from compacted areas surrounding the pavement is minimized, curbs must extend through the base and a minimum three (3) inches into the subgrade.

The pertinent variables presented in the Table No. 2 were used in the analysis:

Table No. 2 – Pavement Design Parameters

Pertinent Variables	Street Classification
	Residential Collector
Number of Lanes	2
Initial Average Daily Traffic	1,000 vpd
Annual Growth	3.5 %
Percent Truck	3.2 %
Design Life	20 Years

4.2 Subgrade Sections

Pavement sections for residential local, residential collector and Neighborhood Collector streets are presented in the following Table No. 3.

Table No. 3
Local Collector Streets (80,000 ESALs)

Flexible Pavement Section	Thickness in Inches	
	Alt 1	Alt 2
Hot Mix Asphaltic Concrete	2.5	2.5
Aggregate Base	10.0	10.0
Lime Stabilized Subgrade	8.0	--
Geogrid*	--	Yes

* A layer of geogrid equivalent to Tensar TX-130 or TX-5 should be placed between the subgrade and base course.

In any areas where pavements are to be constructed, vegetation and all loose or organic material should be stripped and removed from the site. After stripping operations, the subgrade should be proof-rolled with heavy sheep's-foot roller compactor a minimum of **three (3)-passes** to identify soft zones. Any soft zone detected should be removed to a firm subgrade soils and replaced with compacted suitable soils to reach subgrade level. Upon the acceptance of proof-rolling operations the subgrade should be scarified to a depth of six (6) inches, moisture conditioned and compacted to a 95 percent of maximum dry density as determined by ASTM D 698, between optimum and three (3) percentage points above of optimum moisture content. The exposed subgrade should not be allowed to dry out prior to placing structural fill.

4.3 Base Course

Based on the survey of available materials in the area, a base course of crushed limestone aggregate or gravel appears to be the most practical material for asphalt pavement project. The base course should conform to Texas State Department of Highways and Public Transportation Standard Specification, Item 247, Type A, Grade 1 – 2.

The base course should be moisture conditioned within ± 2 percentage points of optimum moisture content placed in lifts not exceeding 8-inches loose measure and compacted to at least 98 percent of maximum dry density as determined by test method TXDOT-113-E.

4.4 Asphaltic Concrete

The asphaltic concrete surface course should conform to Texas Department of Transportation (TxDOT) Standard Specifications, Item 340, Type D the secondary asphalt course should consist of TxDOT Item 340, Type C. The asphaltic concrete should be compacted to between 92 and 97 percent of the theoretical density as determined by ASTM D 2041.

4.5 Lime Stabilized Subgrade

The lime stabilization of the subgrade should meet the performance standards found in TxDOT Item 260. In addition, graduation requirements outlined in Item 260, the lime stabilized clay should also

have a minimum of 60 percent, on a weight basis, of the stabilized soil passing the No. 4 sieve at moisture content at or above optimum. The lime stabilized clay soil should have a plasticity index equal to or less than 20 based on a dry method of sample preparation, ASTM D 421. The lime stabilized subgrade should be compacted to at least 98 percent of the standard Proctor maximum dry density ASTM D 698 between optimum and two (2) percentage points of optimum moisture content. Lime content of six (6) percent of the dry unit weight of the clays to be stabilized may be used for planning purposes (it should be verified by performing a lime series test at the time of construction). Using a value of 98 pcf for dry unit weight of clays, 35 lbs per square yard for eight (8) inches depth stabilization is required. Prior to the use of lime, the exposed subgrade should be tested for sulfate contents to determine the levels of sulfates are low enough for the use of lime.

4.6 Perimeter Drainage

In order to provide proper perimeter drainage so that infiltration of surface water from compacted areas surrounding the pavement is minimized, curbs **must** extend through the base and a minimum three (3) inches into the subgrade. As an alternative, a polyurethane plastic may be placed between the base and subgrade and extend three (3) feet beyond the curb. A crack sealant compatible to both asphalt and concrete should be installed at the concrete-asphalt interfaces.

5.0 CONSTRUCTION CONSIDERATIONS

5.1 Site Drainage

Terradyne recommend that an effective site drainage plan be devised by others prior to commencement of construction to provide positive drainage away from the foundation perimeters and off the site, both during and after construction.

5.2 Site Preparation

In any areas where soil-supported floor slabs are to be constructed, vegetation and all loose or organic material should be stripped and removed from the site. After stripping operations, the subgrade should be proof rolled to identify soft zones. Any soft zone detected should be removed to expose firm soil or rock and replaced with compacted suitable soils to reach subgrade level.

Select fill material used at this site should be clayey sand (SC), lean clay with gravel (CL) or clayey gravel (GC) with maximum liquid limit of 35 percent and plasticity index (PI) between five (5) and 20. The fill should be compacted to at least 95 percent of the maximum dry density as determined by TxDOT-113-E, within ± 2 percentage points of optimum moisture content.

5.3 Groundwater

In any areas where significant cuts (one foot or more) are made to establish final grades for building pads, attention should be given to possible seasonal water seepage that could occur through natural cracks and fissures in the newly exposed stratigraphy. Subsurface drains may be required to intercept seasonal groundwater seepage. The need for these, or other dewatering devices, on

building pads should be carefully addressed during construction. Terradyne's office could be contacted to visually inspect final pads to evaluate the need for such drains.

Groundwater seepage may occur several years after construction if the rainfall rate or drainage changes in the vicinity of the project site. If seepage runoff occurs towards the residence, an engineer should be notified to evaluate its' effect and determine whether French Drains are required at the location.

6.0 SHORING

Shoring of excavations and design of shoring systems are governed by federal, state, and local regulations. The design of shoring systems on this project is beyond the scope of Terradyne's services. The owner or the contractor should retain a shoring design professional to design shoring systems for excavations on this site.

7.0 LIMITATIONS

The analysis and recommendations submitted in this report are based upon the data obtained from the three (3) borings drilled at the site. This report is preliminary, and the values presented are for planning purposes only and should not be used for design. This report may not reflect the exact variations of the soil conditions across the site. The nature and extent of variations across the site may not become evident until construction commences. If variations appear evident, it will be necessary to re-evaluate Terradyne's recommendations after performing on-site observations and tests to establish the engineering significance of any variations. The project geotechnical engineer should review the final plan for the proposed building so that he may determine if changes in the foundation recommendations are required. The project geotechnical engineer declares that the findings, recommendations, or professional advice contained herein have been made and this report prepared in accordance with generally accepted professional engineering practice in the fields of geotechnical engineering and engineering geology. No other warranties are implied or expressed.

This report is valid until site conditions change due to disturbance (cut and fill grading) or changes to nearby drainage conditions or for three (3) years from the date of this report, whichever occurs first. Beyond this expiration date, Terradyne shall not accept any liability associated with the engineering recommendations in the report, particularly if the site conditions have changed. If this report is desired for use for design purposes beyond this expiration date, Terradyne highly recommend drilling additional borings so that Terradyne can verify the subsurface conditions and validate the recommendations in this report.

This report has been prepared for the exclusive use of the City of Burnet for the proposed Oak Vista Drive roadway in Burnet, Texas.

APPENDIX



Approximate Location of Exploratory Borings

Proposed Pavements

Oak Vista Drive
Burnet, Texas



TERRADYNE
AUSTIN, TEXAS


Prepared By: DDS	Scale: Not to Scale	Project # A221128
Base Plan By: Others	Date: October 28, 2022	Figure # 1

Project: **Proposed Pavement Reconstruction**

Log of Boring B-1

Project Location: **Oak Vista Drive**

Terradyne Project Number: **A221128**

Date(s) Drilled	September 28, 2022		Total Depth of Borehole	8.5 feet bgs
Drilling Method	Solid Stem Auger		Approximate Surface Elevation	Existing Ground Level
Drill Rig Type	CME 45	Sampling Method(s)	SPT, TCP	
Groundwater Level and Date Measured	Not Encountered	Location		
Borehole Backfill	Natural Soil	See Boring Location Plan		

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

Depth (feet)	Sample Type N=blows/ft (SPT) T=inches/100 blows (THD)	PP (tsf)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Passing #200 Sieve, %	LL, %	PL, %	PI, %	UC, ksf	REMARKS AND OTHER TESTS
0	43			Clayey GRAVEL with Sand (GC) - light brown, dense, with limestone fragments	5		43	95	25	70		
	50/5"			LIMESTONE - tan to light tan	4							
5	T = 2..125"				1							
	T = .5"				0							
	T = 0"				0							
10				Auger Refusal @ 8.5 FT, End of Borehole								
15												
20												

Figure 2

Project: **Proposed Pavement Reconstruction**
 Project Location: **Oak Vista Drive**
 Terradyne Project Number: **A221128**

Log of Boring B-2

Date(s) Drilled	September 28, 2022		Total Depth of Borehole	8.5 feet bgs
Drilling Method	Solid Stem Auger		Approximate Surface Elevation	Existing Ground Level
Drill Rig Type	CME 45			
Groundwater Level and Date Measured	Not Encountered	Sampling Method(s)	SPT, TCP	
Borehole Backfill	Natural Soil	Location See Boring Location Plan		

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Depth (feet)	Sample Type N=blows/ft (SPT) T=inches/100 blows (THD)	PP (tsf)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Passing #200 Sieve, %	LL, %	PL, %	PI, %	UC, ksf	REMARKS AND OTHER TESTS
0	11			Fat CLAY (CH) - dark reddish-brown, stiff to hard	27			75	27	47		
4.9	49			LIMESTONE - light tan	12 24							
5.0	50/4"				3							
	T = .25"				1							
	T = 2.125"			Auger Refusal @ 8.5 FT, End of Borehole	1							
10												
15												
20												

Figure 3

Project: **Proposed Pavement Reconstruction**
 Project Location: **Oak Vista Drive**
 Terradyne Project Number: **A221128**

Log of Boring B-3

Date(s) Drilled	September 28, 2022		Total Depth of Borehole	7 feet bgs	
Drilling Method	Solid Stem Auger		Approximate Surface Elevation	Existing Ground Level	
Drill Rig Type	CME 45	Groundwater Level and Date Measured	Not Encountered	Sampling Method(s)	SPT, TCP
Borehole Backfill	Natural Soil	Location See Boring Location Plan			

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

Depth (feet)	Sample Type N=blows/ft (SPT) T=inches/100 blows (THD)	PP (tsf)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Passing #200 Sieve, %	LL, %	PL, %	PI, %	UC, ksf	REMARKS AND OTHER TESTS
0	8, 50/5"			Fat CLAY with Gravel (CH) - dark reddish-brown, hard, with limestone fragments	20							
	T = .063"			LIMESTONE - light tan	1							
5	T = .25"				1							
	T = 1.5"				1							
				Auger Refusal @ 7 FT, End of Borehole								
10												
15												
20												

Figure 4



Depth (feet)	Sample Type	N=blows/ft (SPT) T=inches/100 blows (THD)	PP (tsf)	Graphic Log	MATERIAL DESCRIPTION	Water Conte	Dry Unit We	Passing #20	LL, %	PL, %	PI, %	UC, ksf	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8	9	10	11	12	13	14




COLUMN DESCRIPTIONS

- 1** Depth (feet): Depth in feet below the ground surface.
- 2** Sample Type: Type of soil sample collected at the depth interval shown.
- 3** N=blows/ft (SPT) T=inches/100 blows (THD) : N: Number of blows to advance SPT sampler 12 inches or distance shown, OR T: Penetration in inches of THD Cone for 100 blows
- 4** PP (tsf): The Relative Consistency of the soil, measured by Pocket Penetrometer in tons/square foot
- 5** Graphic Log: Graphic depiction of the subsurface material encountered.
- 6** MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
- 7** Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
- 8** Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.
- 9** Passing #200 Sieve, %: The percent fines (soil passing the No. 200 Sieve) in the sample.
- 10** LL, %: Liquid Limit, expressed as a water content
- 11** PL, %: Plastic Limit, expressed as a water content.
- 12** PI, %: Plasticity Index, expressed as a water content.
- 13** UC, ksf: Unconfined compressive strength.
- 14** REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.






FIELD AND LABORATORY TEST ABBREVIATIONS

- SPT: Standard Penetration Test
- THD: Texas Dept. of Transportation Cone Penetrometer Test
- LL: Liquid Limit, percent
- PL: Plastic Limit, percent
- PI: Plasticity Index, percent
- PP: Pocket Penetrometer
- UC: Unconfined compressive strength test, Qu, in ksf






TYPICAL MATERIAL GRAPHIC SYMBOLS

 Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)	 Clayey GRAVEL (GC)
	 Limestone

TYPICAL SAMPLER GRAPHIC SYMBOLS

 Grab Sample	 2-inch-OD unlined split spoon (SPT)	 Shelby Tube (Thin-walled, fixed head)
 Rock Core	 TxDOT Cone Penetrometer	

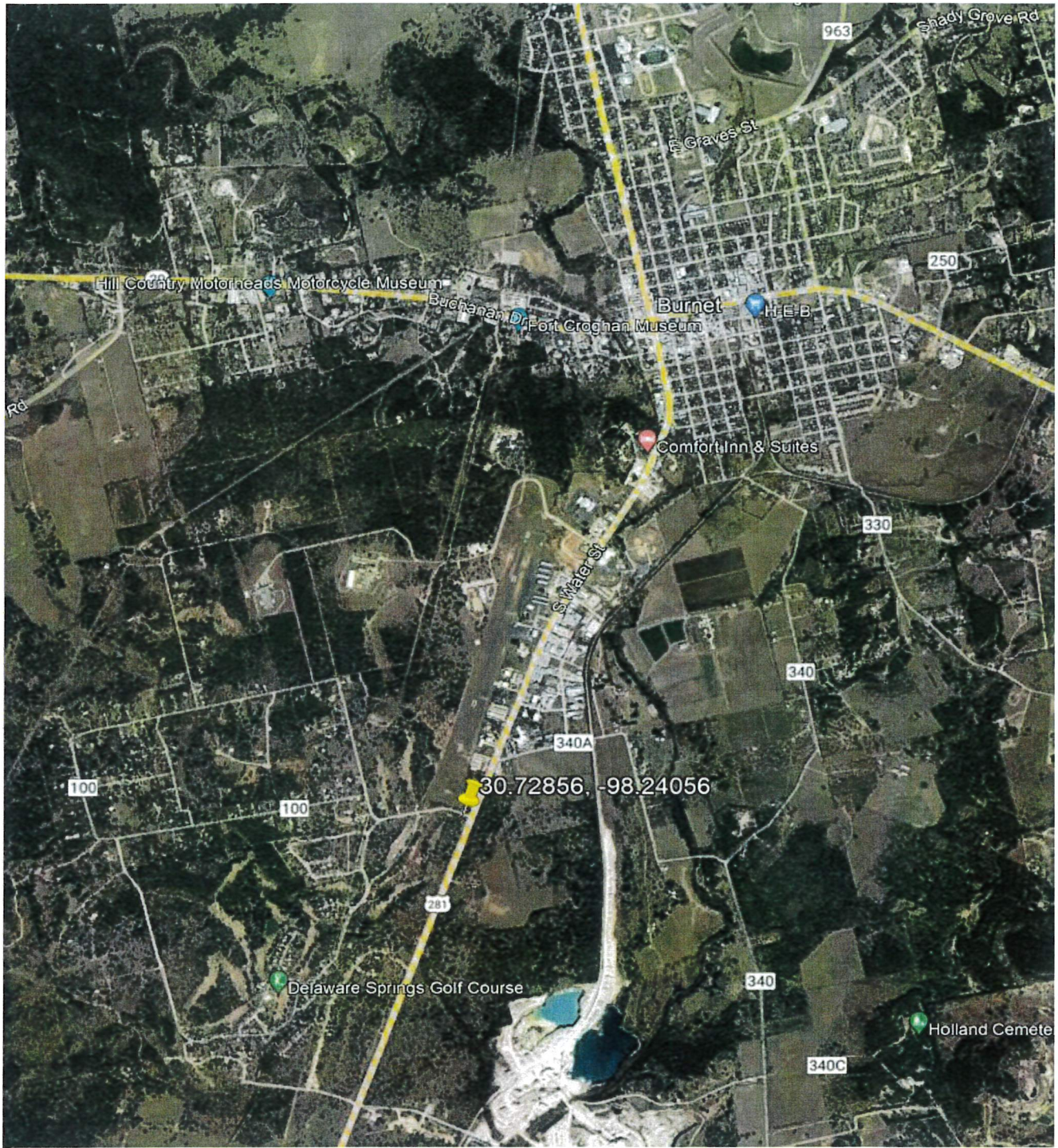
OTHER GRAPHIC SYMBOLS

-  Water level (at time of drilling, ATD)
-  Water level (after waiting, AW)
-  Minor change in material properties within a stratum
-  Inferred/gradational contact between strata
-  Queried contact between strata

GENERAL NOTES

- 1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- 2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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Site Latitude and Longitude

Proposed Pavements

Oak Vista Drive
Burnet, Texas



TERRADYNE
JUSTIN, TEXAS

Prepared By: AR	Scale: Not to Scale	Project # A221128
Base Plan By: Others	Date: October 28, 2022	Figure # 6

APPENDIX