

**BID DOCUMENTS**  
**FOR**  
**PALMER 3 AND JUNIPER 1**  
**MUNICIPAL WATER SUPPLY WELL DRILLING**  
**OHM Project No. 0020-19-0020**



**CITY OF OWOSSO**  
**301 W. MAIN STREET**  
**OWOSSO, MICHIGAN 48867**

**October 4, 2021**



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## NOTICE TO BIDDERS

### PALMER 3 AND JUNIPER 1 MUNICIPAL WATER SUPPLY WELL DRILLING FOR THE CITY OF OWOSSO, MICHIGAN

Sealed proposals will be received by the City of Owosso for the **Palmer 3 and Juniper 1 Municipal Water Supply Well Drilling Bid** and should be addressed to: **Bid Coordinator, City of Owosso, 301 W. Main Street, Owosso, Michigan 48867.**

The Project consists of construction of one 5-inch observation well and one 12-inch test-production well at each of the two well sites Palmer No. 3 and Juniper No. 1 with miscellaneous items of appurtenant work. The test-production wells shall be 150 foot deep and 100 foot deep at the Palmer No. 3 and Juniper No. 1 well sites respectively.

Bids will be accepted until **3:00 p.m., October 19, 2021** for the **Palmer 3 and Juniper 1 Municipal Water Supply Well Drilling**, at which time bids will be publicly opened and read aloud.

A **non-mandatory pre-bid conference will be held at 11:00 A.M. local time on October 12, 2021** at Palmer Avenue, Owosso Michigan 48867 next to Hopkins Lake. If inclement weather, the alternative location will be Owosso City Hall, 301 W. Main, Owosso, MI.

All bids must be in writing and must contain an original signature by an authorized officer of the firm. Electronic bids (i.e., telephonic, fax, email, etc.) are **NOT** acceptable.

**Bid must be accompanied by bid security made payable to Owner in an amount of 5% of Bidder's maximum bid price (determined by adding the base bid and all alternates) in the form of a certified check, bank money order, or a Bid Bond.**

The bidder agrees that if the City accepts their proposal, the bidder will, within 10 consecutive calendar days after receiving notice of this acceptance, enter into a contract to furnish all labor, equipment and tools necessary to execute the work at the lump sum named in the bid proposal and will furnish the surety for performance and payment, for one hundred percent (100%) of this bid, which shall be accepted and approved by the City.

All bids shall clearly contain on the outside of the **sealed** envelope in which they are submitted:

### PALMER 3 AND JUNIPER 1 MUNICIPAL WATER SUPPLY WELL DRILLING

Copies of the proposal, contract forms and specifications will be available after 11 am on October 5, 2021. Hard copies may be obtained for a fee in accordance with the City's FOIA Policy at the office of the Bid Coordinator, City Hall, 301 West Main Street, Owosso, Michigan 48867. Bid documents will be available at no charge on our website at [www.ci.owosso.mi.us](http://www.ci.owosso.mi.us) or on the MITN website at [www.mitn.info](http://www.mitn.info).

The City reserves the right to accept any proposal; or to reject any proposal; to waive irregularities in a proposal; or to negotiate if it appears to be in the best interest of the City of Owosso.

All work is to be completed within 45 days of the Notice to Proceed.

### INQUIRIES/ADDENDUMS

Addendums will be available on the City's website at [www.ci.owosso.mi.us](http://www.ci.owosso.mi.us) and on the MITN website at [www.mitn.info](http://www.mitn.info).

All inquiries regarding this bid request must be received at least five (5) calendar days prior to the submission and shall be received in, and responded to, in writing, or by e-mail to [jennifer.drinan@ohm-advisors.com](mailto:jennifer.drinan@ohm-advisors.com) and [matt.kennedy@ohm-advisors.com](mailto:matt.kennedy@ohm-advisors.com).

## INSTRUCTIONS TO BIDDERS

1. Each proposal must be signed by the bidder with his usual signature. Bids by partnerships should be signed with the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and title of the person signing. Proposals by corporations must be signed with the name of the corporation, followed by the signature and designation of the president, vice-president or person authorized to bind it in the matter. **Any paperwork not filled out properly or signed will cause the bid to be considered non-responsive and shall be rejected by the City.**
2. Proposals, to receive consideration, must be received prior to the specified time of opening and reading as designated in the Notice to Bidders.
3. Bidders are requested to use the proposal form furnished by the City when submitting their proposals. Envelopes must be **sealed** when submitted and clearly marked on the outside indicating the name of the bid.
4. Proposals having erasures or corrections thereon may be rejected unless explained or noted over the signature of the bidder.
5. References in the specifications or description of materials, supplies, equipment, or services to a particular trade name, manufacturer's catalog, or model number are made for descriptive purposes to guide the bidder in interpreting the type of materials or supplies, equipment, or nature of the work desired. They should not be construed as excluding proposals on equivalent types of materials, supplies, and equipment or for performing the work in a manner other than specified. However, the bidders' attention is called to General Condition seven (7).
6. Proposals should be mailed or delivered to: Bid Coordinator's Office, City Hall, 301 W. Main Street, Owosso, MI 48867.
7. Special conditions included in this inquiry shall take precedence over any conditions listed under General Conditions or Instructions to Bidders.
8. Insurance coverage – The winning bidder, prior to execution of the contract, shall file with the City copies of completed certificates of insurance naming the City of Owosso as an additional insured party, as evidence that the contractor carries adequate insurance satisfactory to the City.
9. The City of Owosso has a local preference policy for the purchase of goods and services. The policy in part states: *A business located within the City limits and paying real or personal property taxes to the City of Owosso will be granted a six percent (6%) bid advantage or \$2,500, whichever is less, over a business located outside Shiawassee County. A business located outside the City limits but within Shiawassee County and paying property taxes to the county will be granted a three percent (3%) bid advantage or \$2,500, whichever is less, over a business located outside Shiawassee County. The preference also applies to subcontractors performing twenty-five percent (25%) or more of the work of a general contract.*
10. A Bid must be accompanied by Bid security made payable to the City of Owosso in an amount of five (5%) percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid Bond (on the form included in the Bidding Documents) issued by a surety meeting in the requirements of the General Conditions.

11. To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five days of Owner's request, Bidder shall submit (a) written evidence establishing its qualification such as financial data, previous experience, and present commitments. A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
  
12. The following items must be included with the bid response:
  - a. Bid Proposal
  - b. Local Preference Affidavit for each eligible (sub)contractor
  - c. W-9 Request for Taxpayer ID No. and Certification
  - d. Signature Page & Legal Status/ Acknowledgement of Addendum(s)
  - e. Insurance Endorsement
  - f. Section 00 43 13 Bid Bond
  - g. Section 00 45 10 Qualifications Statement

**BID Proposal**

**PALMER 3 AND JUNIPER 1 MUNICIPAL WATER SUPPLY WELL DRILLING**

TO: THE CITY OF OWOSSO (HEREINAFTER CALLED THE "CITY")

Bidder must provide pricing for each item listed. If additional pricing elements are being offered by the bidder, they are to be listed under "other services/items offered."

The undersigned, having examined the Bidding Documents and any data and reference items identified in the Bidding Documents and hereby acknowledges receipt of the following Addenda:

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

does hereby offer to the City the following prices to wit:

**Palmer No. 3 Well Site:**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Bid Unit Price</b>	<b>Bid Price</b>
1	Mobilization, 2.5%	1	LS		
2	Soil Erosion and Sedimentation Control	1	LS		
	Construction of Observation Well, 5-Inch Diameter, 150-Foot Depth				
3	Bore Hole	150	LF		
4	Well Casing, 5-Inch	130	LF		
5	Well Screen, 5-Inch	20	LF		
6	Pressure Grouting	130	LF		
	Construction of Production Well, 12-Inch Diameter, 150-Foot Depth				
7	Pilot and Sampling Boring	1	LS		
8	Bore Hole	150	LF		
9	Well Casing, 12-Inch	130	LF		
10	Well Screen, 12-Inch	20	LF		
11	Pressure Grouting	130	LF		
12	Well Development	40	HR		
13	Pumping Testing	76	HR		
14	Digital Video Recording	1	LS		
15	Plumbness and Alignment Survey	1	LS		
16	Chlorination	1	LS		
17	Site Restoration and Cleanup	1	LS		
18	Miscellaneous Approved Labor and Equipment Allowance	1	LS	\$10,000	\$10,000
<b>Total of All Unit Price Bid Items at Palmer No. 3 Well Site</b>					



**Juniper No. 1 Well Site:**

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
19	Mobilization, 2.5%	1	LS		
20	Soil Erosion and Sedimentation Control	1	LS		
	Construction of Observation Well, 5-Inch Diameter, 100-Foot Depth				
21	Bore Hole	100	LF		
22	Well Casing, 5-Inch	90	LF		
23	Well Screen, 5-Inch	10	LF		
24	Pressure Grouting	90	LF		
	Construction of Production Well, 12-Inch Diameter, 100-Foot Depth				
25	Pilot and Sampling Boring	1	LS		
26	Bore Hole	100	LF		
27	Well Casing, 12-Inch	80	LF		
28	Well Screen, 12-Inch	20	LF		
29	Pressure Grouting	80	LF		
30	Well Development	40	HR		
31	Pumping Testing	76	HR		
32	Digital Video Recording	1	LS		
33	Plumbness and Alignment Survey	1	LS		
34	Chlorination	1	LS		
35	Site Restoration and Cleanup	1	LS		
36	Miscellaneous Approved Labor and Equipment Allowance	1	LS	\$10,000	\$10,000
<b>Total of All Unit Price Bid Items at Juniper No. 1 Well Site</b>					

<b>Contract Total of All Unit Price Bid Items</b>	
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Bidder's Initial \_\_\_\_\_

VARIANCE FROM SPECIFICATIONS: If the bidder is unable to comply with the specifications as outlined, the bidder shall clearly note these variations from the specifications. The bidder may also propose additions to these specifications for the City to consider, but the costs associated with these additions shall be stated separately.

If the work is not complete on or before the date set for completion or any extension, the Contractor shall pay the City liquidated damages of \$1,000.00 a calendar day until the work is satisfactorily completed.

Liquidated damages for delay may be deducted from payments due the contractor or may be collected from the Contractor or the Contractor's surety.

The undersigned agrees that if the City accepts this proposal, Contractor will, within 10 consecutive calendar days after receiving notice of this acceptance, enter into a contract to furnish all labor, equipment and tools necessary to execute the work at the unit prices named in the bid proposal. Contractor will furnish the surety for performance and payment, for 100% of this bid, which shall be accepted and approved by the City.

The undersigned agrees that if the City accepts this proposal, Contractor will start this project and will complete the entire work under this contract within 45 days of the Notice to Proceed.

On behalf of \_\_\_\_\_, I hereby submit this proposal **PALMER 3 AND JUNIPER 1 MUNICIPAL WATER SUPPLY WELL DRILLING** for your consideration. The undersigned acknowledges that this proposal is subject to the General Conditions and the General Specifications included in the contract documents. In submitting this proposal, it is understood that the right is reserved by the CITY to reject any and all proposals, and waive any irregularities in the bidding process. The CITY may award this contract based on any combination of the total bid and/or alternates.

Dated and signed at \_\_\_\_\_ State of \_\_\_\_\_

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Bidder

Witness:

\_\_\_\_\_ By/s/

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
E-Mail Address

## CITY OF OWOSSO CONTRACT CONDITIONS

### 1. LOCAL PREFERENCE POLICY

The City of Owosso has a local preference policy for the purchase of goods and services. The policy in part states: *A business located within the City limits and paying real or personal property taxes to the City of Owosso will be granted a 6% bid advantage or \$2,500, whichever is less, over a business located outside Shiawassee County. A business located outside the City limits but within Shiawassee County and paying property taxes to the county will be granted a 3% bid advantage or \$2,500, whichever is less, over a business located outside Shiawassee County. The preference also applies to subcontractors performing 25% or more of the work of a general contract.*

### 2. BID ACCEPTANCE

The City reserves the right to reject any or all proposals. Unless otherwise specified, the City reserves the right to accept any item in the proposal. In case of error in extending the total amount of the bid, the unit prices shall govern. The City objects to any additional terms stated in any documents submitted by the contractor. Performance pursuant to our Purchase Order/Equipment Agreement constitutes a course of conduct consisting of Contractor's Agreement to the terms of our Purchase Order/Equipment Agreement.

### 3. PAYMENT

Unless otherwise stated by the bidder, time, concerning discount offered, will be computed from date of delivery and acceptance at destination or from date correct bill or claim voucher properly certified by the contractor is received. When so stated herein, partial payments, based on a certified approved estimate by the City of materials, supplies or equipment delivered or work done, may be made upon presentation of a properly-executed claim voucher. The final payment will be made by the City when materials, supplies, equipment or the work done have been fully delivered or completed to the full satisfaction of the City.

### 4. BID DEFAULT

In case of default by the bidder or contractor, the City of Owosso may procure the articles or services from other sources and hold the bidder or contractor responsible for any excess cost occasioned thereby.

### 5. UNIT PRICES

Prices should be stated in units of quantity specified.

### 6. QUOTED PRICES

Unless otherwise stated by the bidder, prices quoted will be considered as being based on delivery to a designated destination and to include all charges for packing, crating, containers, shipping, etc., and being in strict accordance with specifications and standards as shown.

### 7. SUBSTITUTIONS

Wherever a reference is made in the specifications or description of the materials, supplies, equipment, or services required, to a particular trade name, manufacturer's catalog, or model number, the bidder, if awarded a contract or order, will be required to furnish the particular item referred to in strict accordance with the specifications or description unless a departure or substitution is clearly noted and described in the proposal.

### 8. HOLD CITY HARMLESS

The bidder, if awarded an order or contract, agrees to protect, defend, and save the City harmless against any demand for payment for the use of any patented material, process, article, or device that may enter into the manufacture, construction, or form a part of the work covered by either order or contract. Bidder further agrees to indemnify and save the City harmless from suits or action of every nature and description brought against it, for or on account of any injuries or damages received or sustained by any party or parties, by or from any of the acts of the contractor, his employees, subcontractors, or agents.

## 9. COMPETITIVE BIDDING STATUTES

The laws of the state of Michigan, the charter and ordinances of the City of Owosso, as far as they apply to the laws of competitive bidding, contracts and purchases, are made a part hereof.

## 10. SAMPLES

Samples, when requested, must be furnished free of expense to the City and, if not destroyed, will upon request be returned at the bidder's expense.

## 11. BONDS

A certified check or bid bond may be required, payable to the City of Owosso. If so required in the bid documents, a performance bond and labor and material bond in the amounts stated in the bid documents, shall be on file with the City before work commences. The City will determine the amount and sufficiency of the sureties.

## 12. PROPOSAL GUARANTEE

All checks or bid bonds, except those of the three lowest bidders, will be returned when the bids have been opened and tabulated. The certified checks or bid bonds of the three lowest bidders will be held until the contract documents have been signed, after which remaining certified checks or bid bonds will be returned to the respective bidders.

## 13. BIDDERS

The City may demand that the contractor file a sworn experience and financial statement setting forth the financial resources, adequacy of plant and equipment, organization, experience and other pertinent and material facts as may be desirable.

## 14. INSURANCE AND HOLD HARMLESS

To the fullest extent permitted by law the Contractor agrees to defend, pay on behalf of, indemnify, and hold harmless the City of Owosso, its elected and appointed officials, employees, agents and volunteers, and others working on behalf of the City of Owosso against any and all claims, demands, suits, or loss, including all costs connected therewith, and for any damages which may be asserted, claimed, or recovered against or from the City of Owosso, by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, for all actions of the Contractor.

Contractor shall not commence work under this contract until they have obtained the insurance required under this paragraph, and shall keep such insurance in force during the entire life of this contract. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and acceptable to the City of Owosso. The requirements below should not be interpreted to limit the liability of Contractor. All deductibles and SIR's are the responsibility of Contractor. Contractor shall procure and maintain the following insurance coverage:

- a. Worker's Compensation Insurance including Employers' Liability Coverage, in accordance with all applicable statutes of the State of Michigan.
- b. Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$3,000,000 per occurrence and aggregate. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent, if not already included. (E) Explosion, Collapse, and Underground (XCU) coverage, if applicable. Limits may be obtained by the use of primary and excess/umbrella liability policies.
- c. Automobile Liability including Michigan No-Fault Coverages, with limits of liability not less than \$3,000,000 per occurrence, combined single limit for Bodily Injury, and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.
- d. Owners' and Contractor Protective Liability: The Contractor shall procure and maintain during the life of this contract, a separate Owners' and Contractor's Protective Liability Policy with limits of

liability not less than \$3,000,000 per occurrence and aggregate for Personal Injury, Bodily Injury, and Property Damage. The City of Owosso shall be the "Named Insured" on said coverage.

- e. Additional Insured: Commercial General Liability and Automobile Liability as described above shall include an endorsement stating the City of Owosso, OHM Advisors and Williams and Works shall be listed as additional insured. It is understood and agreed by naming the City of Owosso, OHM Advisors and Williams and Works as additional insured, coverage afforded is considered to be primary and any other insurance the City of Owosso, OHM Advisors and Williams and Works may have in effect shall be considered secondary and/or excess.
- f. Cancellation Notice: All policies, as described above, shall include an endorsement stating that it is understood and agreed Thirty (30) days, Ten (10) days for non-payment of premium, Advance Written Notice of Cancellation, shall be sent to: The City of Owosso, Brad Barrett, Finance Director, 301 W Main Owosso MI 48867.
- g. Proof of Insurance Coverage: Contractor shall provide the City of Owosso at the time that the contracts are returned by him/her for execution, a Certificate of Insurance as well as the required endorsements. In lieu of required endorsements, if applicable, a copy of the policy sections where coverage is provided for additional insured and cancellation notice would be acceptable.
- h. Builder's Risk Insurance Coverage equal to amount of this contract.

If any of the above coverages expire during the term of this contract, the Contractor shall deliver renewal certificates and endorsements to the City of Owosso at least ten (10) days prior to the expiration date

#### 15. PROTECTION OF LAND MONUMENTS AND PROPERTY STAKES

Land monuments or stakes marking property corners shall not be moved or otherwise disturbed except as directed by the City. If any land monuments or lot stakes are moved or disturbed by the contractor, the cost of replacing each land monument or lot stake so moved or disturbed shall be deducted from any money due the contractor, as payment to the City for the cost of replacing said land monument or lot stakes.

#### 16. CONTRACTOR'S RESPONSIBILITY FOR WORK

The contractor shall be responsible for any damages that the work may sustain before its acceptance, and shall rebuild, repair, restore and make good, at its own expense, all injuries and damages to any portion of the work by the action of the elements or from any cause whatsoever before its acceptance. Neither the final payment nor any provision in the contract documents shall relieve the contractor of the responsibility for negligence or faulty materials or workmanship within the extent and period provided by law, and, upon written notice, the contractor shall remove any defects due therefrom and pay for any damaged due to other work resulting therefrom, which shall appear within one year after the date of completion and acceptance.

#### 17. PAYMENT

At monthly intervals commencing after construction has been started, the City will make partial payment to the contractor based on a duly-certified estimate prepared by the City of the work done by the contractor during the preceding four-week period. Each estimate will be submitted to the City council for approval on either the first or third Monday of each month. The City will retain ten percent (10%) of the amount of each such estimate until final completion and acceptance of all work covered by this contract. Before the contractor shall demand final estimates or payment, contractor will furnish to the City, supported by sworn statements, satisfactory evidence that all persons that have supplied labor, materials, or equipment for the work embraced under this contract have been fully paid for the same; and that, in case such evidence be not furnished as aforesaid, such sums as the City may deem necessary to meet the lawful claims of such persons may be retained by the City from any monies that may be due or become due to the contractor under this contract until such liabilities shall be fully discharged and the evidence thereof be furnished to the City.

#### 18. CITY'S RIGHT TO WITHHOLD CERTAIN AMOUNTS AND MAKE APPLICATION THEREOF

Besides the payment to be retained by the City under the preceding provisions of these general conditions, the City may withhold a sufficient amount of any payment otherwise due to the contractor to cover a) payments earned or due for just claims for furnish labor or materials on the project under this contract, b) for defective work not remedied and c) for failure of the contractor to make proper payments to subcontractors. The City shall disburse and shall have the right to act as agent for the contractor in disbursing such funds as have been previously withheld pursuant to this paragraph to the party or parties who are entitled to payment from it. The City will pay to the contractor a proper accounting of all such funds disbursed for the contractor.

#### 19. OWNER'S RIGHT TO DO WORK

If the contractor should neglect to prosecute the work properly or fail to perform any provisions of this contract, the City, after three (3) days' written notice to the contractor and contractor's surety, may without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost of it from the payment due the contractor.

#### 20. DEFINITION OF NOTICE

Where in any of the contract documents there is any provision in respect to the giving of notice, such notice shall be deemed given to the owner, when written notice is delivered to the City manager, or placed in the United States mail addressed to the City Clerk; as to the contractor, when a written notice shall be delivered to contractor's representative at the project site or by mailing such written notice in the United States mail addressed to the contractor at the place stated in the bid proposal as the business address; as to the surety on the performance bond, when a written notice is placed in the United States mail addressed to the surety at the surety's home office or to its agent or agents who executed such performance bond on behalf of the surety.

#### 21. SUBCONTRACTS

The contractor shall not subcontract any work in the execution of this contract without the written consent of the City. The contractor shall be responsible for the acts or omissions of any subcontractor and of anyone employed directly or indirectly by such subcontractor.

#### 22. ASSIGNMENT OF CONTRACT

The contractor shall not assign this contract or any part hereof without the written consent of the City. No assignment shall be valid unless it shall contain a provision that any funds to be paid to the assignee under this agreement are subject to a prior lien for services rendered or materials or supplies for the performance of the work specified in the contract in favor of all persons, firms, or corporations rendering such services or supplying such materials.

#### 23. MAINTAINING TRAFFIC

The contractor shall provide flares, signs, barricades, traffic regulators, etc., to conform to the current *Michigan Manual of Uniform Traffic Control Devices* or as directed by the City. The contractor shall not close any road or street without the permission of the City. If any street or road is to be closed by the contractor, it shall be the responsibility of the contractor to notify the Owosso fire department when the street will be closed and again when the street is open to traffic. Traffic control devices for any detours deemed necessary by the City shall be provided by the contractor. Cost of maintaining shall be incidental to the cost of the project unless otherwise provided.

#### 24. ORDER OF COMPLETION

The contractor shall submit, whenever requested by the City, a schedule of the work showing completion dates. The City may request that certain portions of the work be done before other portions. If so requested, the contractor shall arrange to schedule to meet the request by the owner.

#### 25. USE OF COMPLETED PORTIONS

The City shall have the right to take possession and use any completed or partially completed portions of the work; but such taking possession and use shall not be deemed acceptance. Pending final completion and acceptance of the work, all necessary repairs and adjustments on any section of the work due to

defective material, workmanship, natural causes, or other operations of the contractor, other than normal wear and tear, shall be done by and at the expense of the contractor.

#### 26. WATER SUPPLY

The contractor shall secure an adequate water supply for use in construction and for drinking water for his employees. If the City's water is used on the work, the contractor shall make the necessary application and shall pay all costs involved. Connections, piping and fittings for conveying water shall be furnished and maintained by the contractor. Contractor shall pay for water according to the City's established rates.

#### 27. CLEANUP

The contractor shall keep the project free from waste materials or rubbish caused by its employees or work. This includes as a minimum excess excavation or backfill material, broken or rejected materials, empty containers or general debris. The owner may require complete cleanup of certain areas as construction is completed.

#### 28. SUPERVISION

The contractor shall have a superintendent on the job site to coordinate and expedite the various construction activities for the duration of this contract.

#### 29. EQUAL EMPLOYMENT OPPORTUNITY AND OTHER CLAUSES

The contractor shall agree not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined by Michigan Compiled Statutes, or national origin. This provision shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training including apprenticeship. The contractor further agrees to take affirmative action to ensure equal employment opportunities for persons with disabilities. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provision of the non-discrimination clause.

## LOCAL PREFERENCE POLICY

The following affidavit should be completed if a bidder is located within Shiawassee County or intends to sub-contract more than twenty-five percent (25%) to a Shiawassee County based business: The City of Owosso has a local preference policy for the purchase of goods and services as recorded in the City ordinance in section 2-348. "Lowest qualified bidder" defined.

1. The term "lowest qualified bidder," as used in this division, shall mean the lowest bidder having qualifications to perform the work which are satisfactory to the council. The lowest bidder shall be determined based on an adjusted bid tabulation which shall be prepared in the following manner: To the bid of any bidder which is neither a City-based business nor a county-based business shall be added an amount equal to six (6) percent of the bid or two thousand five hundred dollars (\$2,500.00), whichever is less.
2. To the bid of any bidder which is a county-based business shall be added an amount equal to three (3) percent of the bid or two thousand five hundred dollars (\$2,500.00), whichever is less; provided, however, that if no bid is received from a City-based business, no additional amount shall be added to the bid of a county-based business.
3. "Owosso-based business" shall be interpreted to mean a business registered with the county clerk or a corporation registered with the state having a business address within the City limits which pays real and/or personal property taxes levied by the City.

The term "county-based business" shall be interpreted to mean a business other than a City-based business registered with the county clerk or a corporation registered with the state having a business address within the county which pays real and/or personal property taxes levied by the county.

4. If twenty-five (25) percent or more of a contract for construction or other services is to be subcontracted by a City-based business bidder to a non-City-based business or businesses, or by a county-based business bidder to a non-county-based business or businesses, the adjusted bid shall be calculated by applying the provisions of this section separately to each portion of the contract based on the status of the contractor or subcontractor performing that portion of the contract as a City-based or county-based business.



**AFFIDAVIT**

In accordance with Section 2-348 of the Owosso City Code, the bid from a business located in Shiawassee County shall be adjusted to reflect a preference. In order for the City to calculate the adjustment, the bidder hereby deposes and states that their business address is registered, and is currently paying real and/or personal property taxes in Shiawassee County at the following address:

\_\_\_\_\_

Registered business address

The affiant further deposes and states that a sub-contract with a business registered, and paying real and/or personal property taxes in Shiawassee County will be executed for a percentage equal to or greater than twenty-five percent (25%) as stated below:

\_\_\_\_\_

Business name and address of sub-contractor

\_\_\_\_\_

Percentage of contract

\_\_\_\_\_

Authorized signature

\_\_\_\_\_

Date

\_\_\_\_\_

Title

\_\_\_\_\_

Company name

**SIGNATURE PAGE AND LEGAL STATUS**

The undersigned certifies that he is an official legally authorized to bind his firm and to enter into a contract should the City accept this proposal.

Bid proposal by \_\_\_\_\_  
(Name of Firm)

Legal status of bidder. Please check the appropriate box and **USE CORRECT LEGAL NAME.**

A. Corporation \_\_\_\_ ; State of Incorporation \_\_\_\_\_

B. Partnership \_\_\_\_ ; List of names \_\_\_\_\_

C. DBA \_\_\_\_ ; State full name \_\_\_\_\_ DBA

D. Other \_\_\_\_ ; Explain \_\_\_\_\_

Signature of Bidder \_\_\_\_\_ Title \_\_\_\_\_  
(Authorized Signature)

Printed name \_\_\_\_\_

Signature of Bidder \_\_\_\_\_ Title \_\_\_\_\_  
(Authorized Signature)

Printed name \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_

Telephone ( ) \_\_\_\_\_

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

Bidder acknowledges receipt of the following Addenda:

ADDENDUM NO.	BIDDER'S INITIALS
_____	_____
_____	_____
_____	_____

**W-9 INFORMATION FOR LEGAL STATUS**

**Sole proprietor.** Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

**Partnership, C Corporation, or S Corporation.** Enter the entity's name on the "Name" line and any business, trade, or "doing business as (DBA) name" on the "Business name/disregarded entity name" line.

**Disregarded entity.** Enter the owner's name on the "Name" line. The name of the entity entered on the "Name" line should never be a disregarded entity. The name on the "Name" line must be the name shown on the income tax return on which the income will be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a domestic owner, the domestic owner's name is required to be provided on the "Name" line. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on the "Business name/disregarded entity name" line. If the owner of the disregarded entity is a foreign person, you must complete an appropriate Form W-8.

**Note.** Check the appropriate box for the federal tax classification of the person whose name is entered on the "Name" line (Individual/sole proprietor, Partnership, C Corporation, S Corporation, Trust/estate).

**Limited Liability Company (LLC).** If the person identified on the "Name" line is an LLC, check the "Limited liability company" box only and enter the appropriate code for the tax classification in the space provided. If you are an LLC that is treated as a partnership for federal tax purposes, enter "P" for partnership. If you are an LLC that has filed a Form 8832 or a Form 2553 to be taxed as a corporation, enter "C" for C corporation or "S" for S corporation. If you are an LLC that is disregarded as an entity separate from its owner under Regulation section 301.7701-3 (except for employment and excise tax), do not check the LLC box unless the owner of the LLC (required to be identified on the "Name" line) is another LLC that is not disregarded for federal tax purposes. If the LLC is disregarded as an entity separate from its owner, enter the appropriate tax classification of the owner identified on the "Name" line.

**Other entities.** Enter your business name as shown on required federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name/disregarded entity name" line.

Please see attached W-9 Request for Taxpayer Identification Number and Certification form for a detailed explanation on filling out the W-9 form.

**PROOF OF INSURANCE**

This is to certify that the following endorsement is part of the policy(ies) described below:

<b>NAMED INSURED (CONTRACTOR)</b>	<b><u>COMPANIES AFFORDING COVERAGE</u></b>
ADDRESS	A. B. C.

It is hereby understood and agreed that the City of Owosso, its City council and each member thereof and every officer and employee of the City shall be named as joint and several assureds with respect to claims arising out of the following project:

**PALMER 3 AND JUNIPER 1 MUNICIPAL WATER SUPPLY WELL DRILLING**

It is further agreed that the following indemnity agreement between the City of Owosso and the named insured is covered under this policy: Contractor agrees to indemnify, hold harmless and defend City, its City council and each member thereof and every officer and employee of City from any and all liability or financial loss resulting from any suits, claims, losses or actions brought against and from all costs and expenses of litigation brought against City, its City Council and each member thereof and any officer or employee of City which results directly or indirectly from the wrongful or negligent actions of contractor's officers, employees, agents or others employed by Contractor while engaged by contractor in the (performance of this agreement) construction of this project.

It is further agreed that the inclusion of more than one assured shall not operate to increase the limit of the company's liability and that insurer waives any right on contribution with insurance which may be available to the City of Owosso.

The contractor, or any of their subcontractors, shall not commence work under this contract until they have attained the insurance required below, and shall keep such insurance in force during the entire life of this contract. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and acceptable to the City of Owosso. The requirements below should not be interpreted to limit the liability of the Contractor. All deductibles and SIR's are the responsibility of the Contractor.

The Contractor shall procure and maintain the following insurance coverage:

1. **Worker's Compensation Insurance** including Employers' Liability Coverage, in accordance with all applicable statutes of the State of Michigan.
2. **Commercial General Liability Insurance** on an "Occurrence Basis" with limits of liability not less than \$3,000,000 per occurrence and aggregate. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent, if not already included; (E) Explosion, Collapse and Underground (XCU) coverage, if applicable. Limits may be obtained by the use of primary and excess/umbrella liability policies.
3. **Automobile Liability** including Michigan No-Fault Coverages, with limits of liability not less than \$3,000,000 per occurrence, combined single limit for Bodily Injury, and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.
4. **Owners' and Contractor Protective Liability:** The Contractor shall procure and maintain during the life of this contract, a separate Owners' and Contractor's Protective Liability Policy with limits of

liability not less than \$3,000,000 per occurrence and aggregate for Personal Injury, Bodily Injury, and Property Damage. The City of Owosso shall be the "Named Insured" on said coverage

**5. Builder's Risk Insurance Coverage:** The Contractor shall procure and maintain during the life of this contract, a separate Builder's Risk Insurance Policy with coverage equal to amount of this contract. The City of Owosso shall be the "Named Insured" on said coverage.

**6. Additional Insured:** Commercial General Liability and Automobile Liability, as described above, shall include an endorsement stating the following shall be **Additional Insureds:** City of Owosso, all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof. OHM Advisors and employees. Willams and Works and employees. It is understood and agreed by naming City of Owosso, OHM Advisors and Willams and Works as additional insured, coverage afforded is considered to be primary and any other insurance the City of Owosso, OHM Advisors and Willams and Works may have in effect shall be considered secondary and/or excess.

**7. Cancellation Notice:** All policies, as described above, shall include an endorsement stating that it is understood and agreed that a Ten (10) days notice for non-payment of premium is required and a Thirty (30) days notice is required for Non-Renewal, Reduction, and/or Material Change, shall be sent to: City of Owosso, Bid Coordinator, 301 W. Main Street, Owosso, Michigan 48867.

**8. Proof of Insurance Coverage:** The Contractor shall provide the City of Owosso, at the time that the contracts are returned by him/her for execution, a Certificate of Insurance as well as the required endorsements. In lieu of required endorsements, if applicable, a copy of the policy sections where coverage is provided for additional insured and cancellation notice would be acceptable. Copies or certified copies of all policies mentioned above shall be furnished, if so requested.

If any of the above coverages expire during the term of this contract, the Contractor shall deliver renewal certificates and endorsements to the City of Owosso at least ten (10) days prior to the expiration date.

Please include a copy of insurance declaration verifying amounts of coverage. The verification of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate or verification of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

DATE \_\_\_\_\_

BY \_\_\_\_\_

Authorized Insurance Agent

AGENCY \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

\_\_\_\_\_

## SECTION 00 31 19 - EXISTING CONDITION INFORMATION

### 1.1 EXISTING CONDITION INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. Existing Water Well and Pump Records as recorded with the State of Michigan that include information on existing conditions including previous well construction at Project site are available for viewing as appended to this Document. The documents made available for information are as follows:
1. WELLOGIC WELL ID: 7800 0000 796 – PALMER STREET #2
  2. WELLOGIC WELL ID: 7800 0000 797 – PALMER STREET #3
  3. WELLOGIC WELL ID: 7800 0006 882 – JUNIPER ST TW

END OF DOCUMENT 00 31 19



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID: 78077225301

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Shiawassee			<b>Township:</b> Owosso	
<b>Well ID: 78000000796</b>		<b>Town/Range:</b> 07N 02E	<b>Section:</b> 25	<b>Well Status:</b> Active	<b>WSSN:</b> 5120	<b>Source ID/Well No:</b> 2
		<b>Distance and Direction from Road Intersection:</b> WSSN# 05120; PALMER STREET #2				
<b>Elevation:</b> 771 ft.		<b>Well Owner:</b> CITY OF OWOSSO				
<b>Latitude:</b> 42.9794806		<b>Well Address:</b> OWOSSO WELL #2 PALMER ST OWOSSO, MI 48867			<b>Owner Address:</b> OWOSSO, MI	
<b>Longitude:</b> -84.17490121						
<b>Method of Collection:</b> GPS Differential (DGPS)						

<b>Drilling Method:</b> Unknown	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 152.00 ft.	<b>Date Completed:</b>	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Replacement	<b>Height:</b> 0.00 ft. below grade	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Unknown
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 757 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 0.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 16.00 in. to 130.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 62.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 66.00 ft. after 1.00 hrs. at 532 GPM	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Muck	25.00	25.00
			Muck W/Sand	8.00	33.00
			Clay	41.00	74.00
			Hardpan	13.00	87.00
			Sand	3.00	90.00
			Gravel	24.00	114.00
			Sand & Gravel	3.00	117.00
			Gravel Coarse	30.00	147.00
			Clay	5.00	152.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>			
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above				
<b>Screen Material Type:</b>					
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>			
0.00	25.00 ft.	0.00 ft. and 0.00 ft.			
<b>Fittings:</b> None					
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown				
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>		
Unknown	0.00	None	0.00 ft. to 0.00 ft.		
<b>Wellhead Completion:</b> Unknown					

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b>
<b>Type</b>	<b>Employment:</b> Unknown
Unknown	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
0 ft.	<b>Reg No:</b>
<b>Direction</b>	<b>Business Name:</b>
	<b>Business Address:</b>

<b>Abandoned Well Plugged:</b> No	<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
<b>Reason Not Plugged:</b>	
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:** ORIGINAL WELLID# WAS 25001; VERTICAL TURBINE PUMP;  
**Other Remarks:** Pump Manufacturer:BYRON JACKSON







# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Shiawassee	<b>Township:</b> Caledonia		
<b>Well ID: 78000006882</b>		<b>Town/Range:</b> 07N 03E	<b>Section:</b> 18	<b>Well Status:</b> Active	<b>WSSN:</b> 5120
		<b>Source ID/Well No:</b> Juniper St TW			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> 774 ft SE of Juniper St / 1245 ft E of Gould St			
<b>Latitude:</b> 43.007857		<b>Well Owner:</b> City of Owosso			
<b>Longitude:</b> -84.153103		<b>Well Address:</b> Juniper Street Owosso, MI 48867		<b>Owner Address:</b> 301 W Main Street Owosso, MI 48867	
<b>Method of Collection:</b> Interpolation-Map					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Other	<b>Pump Installed:</b> No
<b>Well Depth:</b> 105.00 ft.	<b>Well Type:</b> New	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> New	<b>Date Completed:</b> 9/22/2020	<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> PVC plastic	<b>Height:</b> 2.50 ft. above grade	
<b>Casing Joint:</b> Solvent welded/glued		
<b>Casing Fitting:</b> None		
<b>Diameter:</b> 5.00 in. to 90.00 ft. depth SDR: 21.00		
<b>Borehole:</b> 7.88 in. to 105.00 ft. depth		

<b>Static Water Level:</b> 11.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 34.67 ft. after 4.00 hrs. at 110 GPM			
<b>Yield Test Method:</b> Test pump	Topsoil	0.50	0.50
	Gray Clay	19.50	20.00
	Sand W/Gravel Fine	5.00	25.00
	Gravel Medium	55.00	80.00
	Gravel Coarse	20.00	100.00
	Gray Clay	5.00	105.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> Yes	<b>Geology Remarks:</b>
<b>Screen Diameter:</b> 5.00 in.	<b>Blank:</b>	
<b>Screen Material Type:</b> Stainless steel-wire wrapped		
<b>Screen Installation Type:</b> Attached		
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>
15.00	10.00 ft.	90.00 ft. and 100.00 ft.
<b>Fittings:</b> None		
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing	
<b>Grouting Material:</b> Neat cement	<b>Bags:</b> 16.00	<b>Additives:</b> None
		<b>Depth:</b> 0.00 ft. to 80.00 ft.

**Wellhead Completion:** 12 inches above grade

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> P Scharnwbr/D Stewart/M Moyses
<b>Type:</b> None	<b>Employment:</b> Subcontractor
<b>Distance:</b>	
<b>Direction:</b>	

<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 19-2285
<b>Business Name:</b> Northern Pump and Well	
<b>Business Address:</b> 6837 W Grand River, Lansing, MI, 48906-9145	
<b>Water Well Contractor's Certification</b>	
This well and/or pump installation was performed under my registration.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

**General Remarks:**

**Other Remarks:** Well Use: Exploratory well

**SECTION 00 43 13 - BID BOND**

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

BIDDER (Name and Address):

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

OWNER (Name and Address):

City of Owosso  
301 W. Main Street  
Owosso, Michigan 48867

BID

Bid Due Date: October 19, 2021 @ 3:00 pm

Description: The Project consists of construction of one 5-inch observation well and one 12-inch test-production well at each of the two well sites Palmer No. 3 and Juniper No. 1 with miscellaneous items of appurtenant work. The test-production wells shall be 150 foot deep and 100 foot deep at the Palmer No. 3 and Juniper No. 1 well sites respectively.

BOND

Bond Number:

Date:

Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER \_\_\_\_\_ (Seal) SURETY \_\_\_\_\_ (Seal)  
Bidder's Name and Corporate Seal Surety's Name and Corporate Seal

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

\_\_\_\_\_ Print Name \_\_\_\_\_  
Print Name

\_\_\_\_\_ Title \_\_\_\_\_  
Title

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

\_\_\_\_\_ Title \_\_\_\_\_  
Title

Note: Addresses are to be used for giving any required notice.  
Provide execution by any additional parties, such as joint venturers, if necessary.

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

SECTION 00 45 10 - QUALIFICATIONS STATEMENT

**THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS**

**1. SUBMITTED BY:**

Official Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. SUBMITTED TO:**

\_\_\_\_\_

**3. SUBMITTED FOR:**

\_\_\_\_\_

Owner: \_\_\_\_\_

Project Name: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TYPE OF WORK:**

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

**4. CONTRACTOR'S CONTACT INFORMATION**

Contact Person: \_\_\_\_\_

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

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

Email: \_\_\_\_\_

**5. AFFILIATED COMPANIES:**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**6. TYPE OF ORGANIZATION:**

SOLE PROPRIETORSHIP

Name of Owner: \_\_\_\_\_

Doing Business As: \_\_\_\_\_

Date of Organization: \_\_\_\_\_

PARTNERSHIP

Date of Organization: \_\_\_\_\_

Type of Partnership: \_\_\_\_\_

Name of General Partner(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CORPORATION

State of Organization: \_\_\_\_\_

Date of Organization: \_\_\_\_\_

Executive Officers:

- President: \_\_\_\_\_

- Vice President(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- Treasurer: \_\_\_\_\_

- Secretary:

\_\_\_\_\_

LIMITED LIABILITY COMPANY

State of Organization:

\_\_\_\_\_

Date of Organization:

\_\_\_\_\_

Members:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

JOINT VENTURE

Sate of Organization:

\_\_\_\_\_

Date of Organization:

\_\_\_\_\_

Form of Organization:

\_\_\_\_\_

Joint Venture Managing Partner

- Name:

\_\_\_\_\_

- Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Joint Venture Managing Partner

- Name:

\_\_\_\_\_

- Address:

\_\_\_\_\_

\_\_\_\_\_

Joint Venture Managing Partner

- Name:

\_\_\_\_\_

- Address:

\_\_\_\_\_

**7. LICENSING**

Jurisdiction: \_\_\_\_\_

Type of License: \_\_\_\_\_

License Number: \_\_\_\_\_

Jurisdiction: \_\_\_\_\_

Type of License: \_\_\_\_\_

License Number: \_\_\_\_\_

**8. CERTIFICATIONS**

CERTIFIED BY:

Disadvantage Business Enterprise: \_\_\_\_\_

Minority Business Enterprise: \_\_\_\_\_

Woman Owned Enterprise: \_\_\_\_\_

Small Business Enterprise: \_\_\_\_\_

Other (\_\_\_\_\_): \_\_\_\_\_

**9. BONDING INFORMATION**

Bonding Company: \_\_\_\_\_

Address: \_\_\_\_\_

Bonding Agent: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Name: \_\_\_\_\_

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

Aggregate Bonding Capacity: \_\_\_\_\_

Available Bonding Capacity as of date of this submittal: \_\_\_\_\_

**10. FINANCIAL INFORMATION**

Financial Institution: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

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

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

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS

**11. CONSTRUCTION EXPERIENCE:**

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.



Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

**12. SAFETY PROGRAM:**

Name of Contractor's Safety Officer: \_\_\_\_\_

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

**13. EQUIPMENT:**

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATED: \_\_\_\_\_

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

NOTARY PUBLIC - STATE OF \_\_\_\_\_

MY COMMISSION EXPIRES: \_\_\_\_\_

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Equipment Data Sheets as required.
9. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

## SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

## SCHEDULE B

### PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				



**NOTICE OF ACCEPTANCE**

---

Date of Issuance:

Owner: City of Owosso

Owner's Contract No.:

Engineer: OHM Advisors

Engineer's Project No.: 0020-19-0020

Project: Palmer 3 and Juniper 1 Municipal  
Water Supply Well Drilling

Contract Name: Palmer 3 and Juniper 1  
Municipal Water Supply  
Well Drilling

Bidder:

Bidder's Address:

**TO BIDDER:**

You are notified that Owner has accepted your Bid dated \_\_\_\_\_ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

---

*[describe Work, alternates, or sections of Work awarded]*

The Contract Price of the awarded Contract is: \$ \_\_\_\_\_, subject to unit pricing.

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

a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 10 days of the date of receipt of this Notice of Acceptance:

1. Deliver to Owner four (4) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

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

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

---

Owner:

Authorized Signature

By:

Title:

Copy: Engineer



## AGREEMENT

THIS AGREEMENT is by and between \_\_\_\_\_ City of Owosso \_\_\_\_\_ (“Owner”) and  
\_\_\_\_\_  
\_\_\_\_\_ (“Contractor”).

Owner and Contractor hereby agree as follows:

### ARTICLE 1 – WORK

- 1.1 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Project consists of construction of one 5-inch observation well and one 12-inch test-production well at each of the two well sites Palmer No. 3 and Juniper No. 1 with miscellaneous items of appurtenant work. The test-production wells shall be 150 foot deep and 100 foot deep at the Palmer No. 3 and Juniper No. 1 well sites respectively.

### ARTICLE 2 – THE PROJECT

- 2.1 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Palmer 3 and Juniper 1 Municipal Water Supply Well Drilling

### ARTICLE 3 – ENGINEER

- 3.1 The Project was designed by OHM Advisors.
- 3.2 The Owner has retained OHM Advisors, 34000 Plymouth Rd, Livonia, MI 48150 (“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

#### 4.1 *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.

#### 4.2 *Contract Times: Days*

- A. Milestone 1 Work will consist of the production and observation wells and all ancillary work including pump testing and site improvements at the Palmer No. 3 Well Site. This work will be completed within 25 days after the Notice to Proceed is issued.
- B. All Work will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 45 days after the Notice to Proceed.

#### 4.3 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.1 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 4.2 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 \$1,000.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.2.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 Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$1,000.00 for each day that expires after such time until the Work is completed and ready for final payment.
  3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

#### ARTICLE 5 – CONTRACT PRICE

- 5.1 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 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):

**Palmer No. 3 Well Site:**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Bid Unit Price</b>	<b>Bid Price</b>
1	Mobilization, 2.5%	1	LS		
2	Soil Erosion and Sedimentation Control	1	LS		
	Construction of Observation Well, 5-Inch Diameter, 150-Foot Depth				
3	Bore Hole	150	LF		
4	Well Casing, 5-Inch	130	LF		
5	Well Screen, 5-Inch	20	LF		
6	Pressure Grouting	130	LF		
	Construction of Production Well, 12-Inch Diameter, 150-Foot Depth				
7	Pilot and Sampling Boring	1	LS		
8	Bore Hole	150	LF		
9	Well Casing, 12-Inch	130	LF		
10	Well Screen, 12-Inch	20	LF		
11	Pressure Grouting	130	LF		
12	Well Development	40	HR		
13	Pumping Testing	76	HR		
14	Digital Video Recording	1	LS		
15	Plumbness and Alignment Survey	1	LS		
16	Chlorination	1	LS		
17	Site Restoration and Cleanup	1	LS		
18	Miscellaneous Approved Labor and Equipment Allowance	1	LS	\$10,000	\$10,000
<b>Total of All Unit Price Bid Items at Palmer No. 3 Well Site</b>					

**Juniper No. 1 Well Site:**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Bid Unit Price</b>	<b>Bid Price</b>
19	Mobilization, 2.5%	1	LS		
20	Soil Erosion and Sedimentation Control	1	LS		
	Construction of Observation Well, 5-Inch Diameter, 100-Foot Depth				
21	Bore Hole	100	LF		
22	Well Casing, 5-Inch	90	LF		
23	Well Screen, 5-Inch	10	LF		
24	Pressure Grouting	90	LF		
	Construction of Production Well, 12-Inch Diameter, 100-Foot Depth				
25	Pilot and Sampling Boring	1	LS		
26	Bore Hole	100	LF		
27	Well Casing, 12-Inch	80	LF		
28	Well Screen, 12-Inch	20	LF		
29	Pressure Grouting	80	LF		
30	Well Development	40	HR		
31	Pumping Testing	76	HR		
32	Digital Video Recording	1	LS		
33	Plumbness and Alignment Survey	1	LS		
34	Chlorination	1	LS		
35	Site Restoration and Cleanup	1	LS		
36	Miscellaneous Approved Labor and Equipment Allowance	1	LS	\$10,000	\$10,000
<b>Total of All Unit Price Bid Items at Juniper No. 1 Well Site</b>					

<b>Contract Total of All Unit Price Bid Items</b>	
---	--

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

B. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

## ARTICLE 6 – PAYMENT PROCEDURES

### 6.1 *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

### 6.2 *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 a monthly schedule during performance of the Work, 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.

### 6.3 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 – CONTRACTOR'S REPRESENTATIONS

### 7.1 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 Site, conducted a thorough, alert visual examination of the Site and adjacent area, 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 the existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. 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 8 – CONTRACT DOCUMENTS

### 8.1 *Contents*

- A. The Contract Documents consist of the following:
  - 1. City of Owosso Contract Conditions (pages 1 to 5, inclusive).
  - 2. Local Preference Policy (pages 1 to 6, inclusive).
  - 3. This Agreement (pages 1 to 7, inclusive).
  - 4. Performance bond (pages 1 to 3, inclusive).
  - 5. Payment bond (pages 1 to 3, inclusive).
  - 6. Other bonds, N/A.
  - 7. Contractor's Affidavit (pages 1 to 1, inclusive)
  - 8. General Conditions (pages 1 to 72, inclusive).
  - 9. Supplementary Conditions (pages 1 to 10, inclusive).
  - 10. Specifications as listed in the table of contents of the Project Manual.
  - 11. The Drawings listed on the attached sheet index.
  - 12. Addenda (numbers 1 to \_, inclusive).

13. Exhibits to this Agreement (enumerated as follows):

a. Contractor's Bid (pages \_ to \_, inclusive).

14. 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. Work Change Directives.

c. Change Orders.

d. Field Orders.

B. The documents listed in Paragraph 8.1.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 8.

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

## ARTICLE 9 – MISCELLANEOUS

### 9.1 *Terms*

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

### 9.2 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interest 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.

### 9.3 *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.

### 9.4 *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.

#### 9.5 *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 9.5:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing 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.)*

**NOTICE TO PROCEED**

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Owner:	City of Owosso	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	OHM Advisors	Engineer's Project No.:	0020-19-0020
Project:	Palmer 3 and Juniper 1 Municipal Water Supply Well Drilling	Contract Name:	
		Effective Date of Contract:	

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**TO CONTRACTOR:**

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [\_\_\_\_\_], 2. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, final completion of all work shall be 45 days after the Notice to Proceed.

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

---

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

SECTION 00 61 13 - PERFORMANCE BOND

CONTRACTOR (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address):

City of Owosso  
301 W. Main Street  
Owosso, Michigan 48867

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Project consists of construction of one 5-inch observation well and one 12-inch test-production well at each of the two well sites Palmer No. 3 and Juniper No. 1 with miscellaneous items of appurtenant work. The test-production wells shall be 150 foot deep and 100 foot deep at the Palmer No. 3 and Juniper No. 1 well sites respectively.

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

**SURETY**

\_\_\_\_\_  
Contractor's Name and Corporate Seal (seal)

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

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

By: \_\_\_\_\_  
Signature (attach power of attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

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

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom

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

#### 14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

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SECTION 00 61 13.16 - PAYMENT BOND

CONTRACTOR (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address):

City of Owosso  
301 W. Main Street  
Owosso, Mi. 48867

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Project consists of construction of one 5-inch observation well and one 12-inch test-production well at each of the two well sites Palmer No. 3 and Juniper No. 1 with miscellaneous items of appurtenant work. The test-production wells shall be 150 foot deep and 100 foot deep at the Palmer No. 3 and Juniper No. 1 well sites respectively.

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal (seal)

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

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

By: \_\_\_\_\_  
Signature (attach power of attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint ventures. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
  - 5.1 Claimants who do not have a direct contract with the Contractor,
    - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2 Pay or arrange for payment of any undisputed amounts.
  - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent

jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

#### 16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:



**CONTRACTOR'S AFFIDAVIT**

STATE OF MICHIGAN

COUNTY OF SHIAWASSEE

The undersigned, \_\_\_\_\_(contractor name) hereby represents that on \_\_\_\_\_, 2021 he (it) was awarded a Contract by City of Owosso hereinafter called the OWNER, to construct two (2) wells, piping and monitoring devices in accordance with the terms and conditions of Contract No. 0020-19-0020 and the undersigned further represents that the subject work has now been accomplished and the said Contract has now been completed.

The undersigned hereby warrants and certifies that all of his (its) indebtedness arising by reason of said Contract has been fully or satisfactorily secured, and that all claims from subcontractors and others for labor and material used in accomplishing the said project, as well as all other claims arising from performance of said Contract, have been fully paid or satisfactorily secured. The undersigned further agrees that if any such claim should hereafter arise, he (it) shall assume responsibility for same immediately upon request to do so by the OWNER.

The undersigned, for a valuable consideration, receipt of which is hereby acknowledged, does further hereby waive, release and relinquish any and all claims or right of lien which the undersigned now has or may hereafter acquire upon the subject premises for labor and material used in accomplishing said project owned by the OWNER.

This affidavit is freely and voluntarily given with full knowledge of the facts on this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

\_\_\_\_\_  
Contractor

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

Title \_\_\_\_\_

Subscribed and sworn to before me, a Notary Public in and for Shiawassee County, Michigan, on this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

Notary Public:

My Commission expires: \_\_\_\_\_

**CONTRACTOR'S DECLARATION**

I HEREBY DECLARE THAT I HAVE NOT, during the period

\_\_\_\_\_ to

\_\_\_\_\_ A.D., 20 \_\_\_\_\_ performed any work, furnished any material, sustained any loss, damage or delay for any reason, including soil conditions encountered or created, or otherwise done anything for which I shall ask, demand, sue for or claim compensation from the by City of Owosso or his agents, in addition to the regular items set forth in the Contract numbered 0020-19-0020 and dated \_\_\_\_\_ A.D., 20 \_\_\_\_ for the Agreement executed between myself and the OWNER, and in the Change Orders for work issued by the OWNER in writing as provided thereunder, except as I hereby make claim for additional compensation and/or extension of time, as set forth on the itemized statement attached hereto.

There (is) (is not) an itemized statement attached.

Date: \_\_\_\_\_

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

**SECTION 00 70 00 - STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT**

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## 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 form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *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, or both; 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, or both; 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; or (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. 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), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree 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 the 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. *Engineer*—The individual or entity named as such in the Agreement.
21. *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.
22. *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. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *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.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *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.
28. *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.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *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.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *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.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *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.
36. *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.
37. *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 furnished by Owner which are designated for the use of Contractor.
38. *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.
39. *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.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *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.

48. *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 the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the 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:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. 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. 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 Bonds and Evidence of Insurance***

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), 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 executed 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 specifically 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 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other

submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items 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 items, or from those established in applicable transmittal protocols.

### **ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall 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.

#### **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, shall mean 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, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 Documents 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 Documents 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 shall 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 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 thereunder.
- 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 give written notice to Owner and Contractor 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 editions, 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 shall preclude 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 thirtieth 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 sixtieth day after the day of Bid opening or the thirtieth 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 shall 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 shall 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 shall 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 the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- 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. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall 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 utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  - 4. acts of war or terrorism.

- D. 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.
- E. Paragraph 8.03 governs 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.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times 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.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

## **ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### *5.01 Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- 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; 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 7.12, 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 at law; 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 shall conform to applicable Laws and Regulations.
  - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site 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 known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); 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 upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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 either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 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 the necessity of Owner's obtaining 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 above; 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. *Possible Price and Times Adjustments:*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, 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 conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
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; or
  - 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 as 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, or both, then any such adjustment shall 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, or both, 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.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
  - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
  - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
  - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  - d. 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 in the Contract Documents, or was not shown or indicated 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), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; 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 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. *Possible Price and Times Adjustments:*
  1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, 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. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

- 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;
  - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
  - d. 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, or both, then any such adjustment shall 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, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. 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 Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for 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, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, 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.
- 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 or 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.H shall obligate 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 shall obligate 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 all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, 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 shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. 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.

- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

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. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. 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, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of 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.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect 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 shall be adjusted accordingly.

- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

#### 6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
  - 4. Foreign voluntary worker compensation (if applicable).
- B. *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:
  - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  - 2. claims for damages insured by reasonably available personal injury liability coverage.
  - 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
  - 1. Products and completed operations coverage:
    - a. Such insurance shall 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, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  - 3. Broad form property damage coverage.
  - 4. Severability of interest.
  - 5. Underground, explosion, and collapse coverage.
  - 6. Personal injury coverage.

7. 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); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. 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.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
  - E. *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. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
  - F. *Contractor’s pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
  - G. *Additional insureds*: The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
  - H. *Contractor’s professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
  - I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
    1. include at least the specific coverages provided in this Article.
    2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) 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 Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. 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.

#### 6.05 *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 full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal;

demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. 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 may be provided through other insurance policies acceptable to Owner and Contractor.

3. 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.
  4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
  5. 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).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed 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.

- C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- 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 notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance*: 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 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

#### 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers 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. 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 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 Subcontractors, all individuals or entities identified in the Supplementary Conditions as 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. None of the above waivers shall extend 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. 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:
  - 1. loss 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 perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property



insurance maintained on the completed Project or part thereof by Owner 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.

- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work 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 any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

#### 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 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 6.05 shall 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, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

### **ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

#### 7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

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

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, 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.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the 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 material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
  - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
  - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
  - 3) it has a proven record of performance and availability of responsive service; and
  - 4) it is not objectionable to Owner.
- b. Contractor certifies that, if approved and incorporated into the Work:
  - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- 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 shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment 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 material or equipment under the circumstances described below. To the extent possible such requests shall 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 material or equipment from anyone other than Contractor.
2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.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 material or equipment that Contractor seeks to furnish or use. The application:
    - a. shall 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 that specified, and
      - 3) be suited to the same use as that 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 that specified, and
      - 2) available engineering, sales, maintenance, repair, and replacement services.
    - d. shall 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 shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities 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, Supplier, or other individual or entity 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 five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. 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, Suppliers, or other individuals or entities 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, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, 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, Supplier, or other individual or entity, whether initially or as a replacement, shall 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 fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
  - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  - 2. shall create 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.

#### 7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

- B. To the fullest extent permitted by Laws and Regulations, 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.

#### 7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of 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

#### 7.09 *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.

#### 7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work 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 shall not be Contractor's responsibility to make certain that

the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

- C. Owner or Contractor may give 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 notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 *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.

#### 7.12 *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. 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.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when 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.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.



- D. 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.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor 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).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall 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.

#### 7.13 *Safety Representative*

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

#### 7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 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 threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 7.16 *Shop Drawings, Samples, and Other Submittals*

- A. *Shop Drawing and Sample Submittal Requirements:*
  - 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
    - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

- b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
    - c. determined and verified 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
    - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
  2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
  3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
  1. *Shop Drawings:*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
  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.D.
  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. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction 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 shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 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.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 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, shall 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, Sample, or other submittal shall 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.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

#### 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 and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.
- D. 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 shall 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 and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other

than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

- B. In any and all claims against Owner or Engineer or any of their 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 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

## **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 utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. 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.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

### **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 at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner 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, or both. 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 shall 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. When applicable, any such equitable adjustment in Contract Price shall 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 is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- 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. 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 to 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.
- C. 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 to Contractor.
- D. 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 shall 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 Documents (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 10.08. 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 *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 Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *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.

10.07 *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.

10.08 *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, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 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 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *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 (if any) of which Engineer has been informed.

### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

#### 11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not 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, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  - 2. *Work Change Directives:* 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 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
  - 3. *Field Orders:* 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. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *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. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes 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 shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate 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.

11.03 *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.

11.04 *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 shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall 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); or
  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 11.04.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 11.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
  - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
  - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
  - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.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 five 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 shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
  - d. no fee shall 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 will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
  - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *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 shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
  1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after

such initial decision. 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. The supporting data shall 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. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall 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.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *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 that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  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 11.02, (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 in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

#### 11.08 *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 shall be submitted 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; and
  - 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.
- 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 shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, 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 belief 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall be incorporated in a Change Order 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. 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 shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall 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. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.



2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, 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 property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable.

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

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as 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 shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 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. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

### 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 on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

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, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  2. there is no corresponding adjustment with respect to any other item of Work; and
  3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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**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 will 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 therewith 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 shall 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 shall 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 shall 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 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 shall 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 special 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, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, 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 shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 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 rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 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 on account of 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. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

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, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 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 on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of 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 that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
    - j. liquidated 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;

- I. there are other items entitling 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 shall 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 shall be treated as an amount due as determined by Paragraph 15.01.C.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 seven 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 shall 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 seven 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 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 6.05 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 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall 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 disputes that Contractor believes are unsettled; 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 Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall 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. At the same time Engineer will also give written notice

to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. 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. *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.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- 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 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 terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then 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 other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not

limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not 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, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall 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) ten 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) 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 seven 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 shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; 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 on account of loss of anticipated overhead, profits, or revenue, 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 seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 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, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph 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; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising 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; or
  - 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.

**ARTICLE 18 – MISCELLANEOUS**

**18.01 Giving Notice**

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:



1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

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 shall not constitute a waiver of that provision, nor shall 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 or completion of the Contract or termination 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 *Headings*

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

END OF SECTION 00 70 00

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## SECTION 00 73 00 – SUPPLEMENTARY GENERAL CONDITIONS

These Supplementary General Conditions amend or supplement the Standard General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect. Further, the provisions of the City of Owosso General Conditions shall take precedence in resolving any conflict or discrepancy between such provisions of the City of Owosso General Conditions, General Conditions and the Supplementary General Conditions described herein.

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 General Conditions is the same as the address system in the General Conditions; with the prefix “SC” added thereto.

### ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

#### SC-1.01.A. Defined Terms

Delete the period at the end of paragraph 1.01.A and add the following language:

; except where the terms “Architect,” “Engineer,” and “Contractor” are preceded by an adjective, the term shall then be understood to refer to the entity described by the combination of the two words.

#### SC-1.01.A.8. Change Order

Add the following language at the end of the last sentence of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is EJCDC C-941. Agency approval is required before Change Orders are effective.

#### SC-1.01.A.48. Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

The term “Work Change Directive” shall be understood to refer to a “Work Order”. A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

#### SC-1.01.A.49. Add the following new Paragraph after Paragraph 1.01.A.48:

49. Abnormal Weather Conditions – Conditions of extreme or unusual weather for a given region, elevation or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation or season should not be considered Abnormal Weather Conditions.

50. Architect – The individual or entity named as Architect or Engineer in the Agreement

51. General Contractor – The Contractor as defined in Paragraph 1.01.A.16.

52. Manufacturer – An individual or entity that manufactures, assembles or fabricates products.

53. Products – Systems, materials, manufactured units, equipment, components and accessories used in the Work.

## ARTICLE 2 – PRELIMINARY MATTERS

### SC-2.01 Delivery of Bonds and Evidence of Insurance

Add the following language at the end of the last sentence of Paragraph 2.01.A:

Contractor shall not start any work at the Site prior to Contractor delivering the required certificates and other evidence of insurance.

### SC-2.01 Evidence of Contractor's Insurance

Add the following language at the end of the last sentence of Paragraph 2.01.B:

Facsimile, telegraphic, oral or other electronically transmitted Bond will not be considered. Attorneys-in-fact who execute the Bonds on behalf of the Surety shall affix to each Bond a certified and current copy of the power of attorney.

### SC-2.01 Evidence of Owner's Insurance

Add the following language at the end of the last sentence of Paragraph 2.01.C:

Contractor shall not start any work at the Site prior to Owner delivering the required certificates and other evidence of insurance.

### SC-2.02 Copies of Documents

Delete Paragraph 2.02.A in its entirety and insert the following in its place:

Engineer (Acting as Owner's agent) shall furnish to Contractor one set of Drawings and Project Manual in electronic portable document format. Hard copies will be furnished upon request at the cost of preparation, reproduction and shipping.

### SC-2.03 Preliminary Schedules

Add the following language at the end of the last sentence of Paragraph 2.03.A.1.;; identifying the critical path for completing the Work, and identifying when all Subcontractors will be utilized, and taking into consideration any limitations on Working Hours;

### SC-2.03 Delete Paragraph 2.03.A.3 in its entirety and insert the following in its place:

a preliminary schedule of values for all of the Work, subdivided into component parts in sufficient detail to serve as the basis for progress payments during construction. The schedule of values shall be broken out by trade and split between materials and labor. Prices shall include an appropriate amount of overhead and profit applicable to each item of Work.

### ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.04 Add the following new paragraph immediately after paragraph 3.04.B:

Owner shall be entitled to deduct from the Contract Price amounts paid to Engineer for Engineer to evaluate and respond to Contractor's requests for information, where such information was available to Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

### ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01 Modify the third sentence to read: "In no event will the Contract Times commence to run later than the ninetieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier."

SC-4.03 Add the following paragraph immediately after paragraph 4.03.A:

During the progress of the work, the Contractor may encounter section line, fractional section line, and property controlling corner monuments. Insofar as is known, such public land survey corners and property monuments have been indicated on the plans. The Contractor shall be responsible for complying with the requirements of Michigan Public Act 34. Specifically, he shall be responsible for notifying the county surveyor before removing a public land survey corner monument for construction activities. In addition, if construction time constraints will result in the public land survey corner monument being removed for more than one year, then the Contractor shall arrange to have a temporary corner monument set until the permanent one can be re-established. The costs of removing and replacing public land survey corner monuments, as well as setting temporary corner monuments shall be the responsibility of the Contractor unless pay items are provided in the bid form for these tasks. The Contractor shall not remove any such monument until the Engineer has witness points as reference for resetting of such monuments. After referencing has been done and suitable permanent sketches prepared, the Engineer will give permission to the Contractor for removal of the monument. Monuments and monument boxes shall be reset only after all backfilling has fully settled.

The Contractor shall protect and preserve all monument points, property corners, grade stakes, line and reference points. Where stakes and markers are disturbed or removed due to operations under this Contract, the Contractor shall be charged at invoice cost by the Engineer for replacing the points. Care shall be exercised by the Contractor when operating near the markers, as any carelessness in operations will also cause a time delay to the schedule due to additional stakeout time required to replace reference points, lines, etc.

The Contractor shall accurately locate the work from reference points established by the Engineer along the surface of the ground and line of work.

### ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.01 Add the following new paragraph immediately after paragraph 5.01A:

Prior to the start of construction, the Contractor shall verify with the Owner that any required easements have been obtained. The Contractor shall keep his work operations

within these easements and shall be responsible for complying with any easement conditions that are shown on the plans or stated in the Contract documents.

SC-5.02 Add the following paragraph immediately after paragraph 5.02.A:

The Contractor's operations in public streets or alleys shall be confined to as small a space as practicable, so as not to cause undue inconvenience to the public or abutting properties, and shall be subject to the approval of the Engineer.

Where the Contractor wishes to work on or stockpile materials on nearby properties, it will be his responsibility to contact the property owner for permission. Upon request, the Contractor shall provide a copy of written permission from any affected property owner. The Owner will not become involved with any such agreements and will not be held responsible for any damages that the Contractor may cause to private property. The Contractor shall not be compensated for restoration of private properties and stockpile areas unless said areas were within the original project limits.

SC-5.03 Add the following new paragraph immediately after paragraph 5.03.B:

C Any geotechnical information that was prepared for this project is included in Document 00 31 32 – Geotechnical Data. This information, if provided, is given to bidders as an aid in determining the character of the soil and groundwater conditions. The Owner does not guarantee that the ground encountered during construction will conform to the borings. Bidders should secure such other information as they consider necessary to check and supplement the above data.

SC-5.05 Add the following paragraph to 5.05.A:

3. If a public line and/or customer service line is damaged by Contractor, Contractor shall give verbal notice within one (1) hour and written notice within 24 hours to the Owner and Engineer.

## ARTICLE 6 – BONDS AND INSURANCE

SC-6.02 Insurance –General Provisions:

Add the following new paragraphs immediately after paragraph 6.02.B:

C. All Bonds and insurance required by the Contract Documents to be purchased and maintained by Contractor shall be obtained from surety or insurance companies that are authorized to transact business in Michigan and are classified at not lower than the following:

1. Best's Key Rating Guide, current edition:

a. Rating Classification: B+

b. Financial Size Category: Class IX

D. OWNER may require the surety to obtain reinsurance for any portion of the risk that exceeds 10% of the surety's capital and surplus. For bonds exceeding \$100,000, the surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Michigan and holds a certificate of authority from the U.S. Secretary of the Treasury.

SC-6.03

Contractor's Liability Insurance

Add the following to the end of paragraph 6.03 G:

Additional insureds under this paragraph shall include the following:

- a. City of Owosso and all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof;
- b. Orchard, Hiltz & McCliment, Inc. and its owners, agents, and employees;
- c. Willams and Works and its owners, agents, and employees.

Delete paragraph 6.03.I.4 in its entirety and insert the following in its place:

- 6. remain in effect at least until the end of the correction period and at all times thereafter when Contractor may be correcting removing or replacing defective Work in accordance with paragraph 15.08; and

Add the following new paragraphs immediately after paragraph 6.03.I.5:

- 8. not be written on a claims-made basis
- 9. be issued by insurers who endorse the policies to reflect that, in the event of payment of any loss or damages, subrogation rights under these Contract Documents will be waived by the insurer with respect to claims against Owner or Engineer.

Add the following new paragraphs immediately after paragraph 6.03:

The limits of liability for the insurance required by paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater required by Laws or Regulations:

- 1. Workers' Compensation, and related coverage under paragraphs 6.03 of the General Conditions:
  - a. State: Statutory
  - b. Employer's Liability: \$100,000 Each accident  
\$500,000 Disease – Policy Limit  
\$100,000 Disease – Each Employee
- 2. Contractor's General Liability under paragraph 6.03 of the General Conditions, which shall include completed operations and product liability coverage and eliminate any exclusion with respect to property under the care, custody and control of Contractor:
  - a. General Aggregate \$3,000,000
  - b. Products/completed operations aggregate \$3,000,000
  - c. Personal and advertising injury limit \$3,000,000
  - d. Each Occurrence limit \$3,000,000
  - e. Fire damage limit – Any one fire \$ 500,000
  - f. Medical expense limit – Any one person \$ 10,000
  - g. Property Damage liability insurance shall provide Explosion, Collapse and Underground (XCU) coverage where applicable.
  - h. Contractual liability coverage shall be included in accordance with paragraph 6.03 of the General Conditions.
- 3. Automobile Liability under paragraph 6.03 of the General Conditions (including hired and non-owned vehicles):

- a. Bodily Injury:
    - Each Person \$3,000,000
    - Each Accident \$3,000,000
  - b. Property Damage:
    - Each Accident \$3,000,000
  - c. Combined Single Limit:
    - Each Accident \$3,000,000
  - d. MCS 90 Endorsement on Vehicle Insurance: Statutory
4. Provide Umbrella Liability coverage under the following conditions, providing coverage for not less than the indicated amounts:
- a. The carrier shall agree to the underlying policies
  - b. Coverage shall be at least as broad as that in the covered policies
  - c. Shall cover Contractor's Liability Insurance and Automobile Liability Insurance
  - d. Coverage Limit:
    - Each Occurrence: \$3,000,000
    - Products Completed Operations Aggregate \$3,000,000
    - Other Aggregate \$3,000,000

Limits are for the term of the program. Products Completed Operations Aggregate limits apply as a single limit for the full term.

5. Provide Contractor's Pollution Liability coverage under the following conditions, providing coverage for not less than the indicated amounts:
- a. Coverage shall include contractual liability.
  - b. Coverage will commence prior to the beginning of the Work and will be maintained as required per the General Conditions.
  - c. The policy will be written on a primary and non-contributory basis and will name the Owner, Engineer, and Engineer's consultants as additional insureds for both on-going and completed operations.
  - d. Coverage will apply to all construction operations, transit and disposal of material at non-owned disposal sites performed by or on behalf of the Contractor.
  - e. The Policy shall not contain coverage exclusions related to asbestos, lead, silica or mold/microbial matter.
  - f. The policy will contain a Waiver of Subrogation endorsement in favor of the Owner.
  - g. Coverage Limit:
    - Each Occurrence: \$3,000,000
    - Annual Aggregate \$3,000,000
6. Provide Owner's and Contractor's Protective (OCP) Liability Insurance in the principal name of Owner to protect against claims for damages because of bodily injury or death, and for property damage caused by the Contractor, Subcontractors, and anyone engaged, employed, or contracted with on their behalf, including coverage for costs of defense from all such claims, with limits of liability for bodily injury including death not less than \$3,000,000 per occurrence and \$3,000,000 aggregate limit. Limits of liability for property damage shall not be less than \$3,000,000 per occurrence and \$3,000,000 aggregate limit. The named insured shall be Owner, its board members, individual



employees and agents, the Engineer and its owners, agents, and employees. The Township must be provided copies of the actual policies of insurance described in the certificate and the OCP binder.

SC-6.05 Property Insurance  
Add the following language at the end of paragraph 6.05.A.1:

Additional insureds under this paragraph shall include the following:  
a. Orchard, Hiltz & McCliment, Inc.

Add the following language immediately after paragraph 6.05.A.2

and shall also include flood, start-up and testing, offsite storage, and boiler and machinery insurance;

Add the following new paragraph immediately after paragraph 6.05.A.13:

8. be issued by an insurer who endorses the policy to reflect that, in the event of payment of any loss or damages, subrogation rights under these Contract Documents will be waived by the insurer with respect to claims against the Owner or Engineer.

SC-6.06 Waiver of Rights  
Delete paragraph 6.06.B in its entirety.  
Delete paragraph 6.06.C in its entirety

#### ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.06 Add the following subsection P:

P. Contractor shall pay each Subcontractor under this Contract for satisfactory performance of its contract no later than ten (10) Calendar Days from the Contractor's receipt of payment from Owner. Contractor shall return retainage payments to each Subcontractor within 10 Calendar Days after the Subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval from Owner.

SC-7.08 Add the following language at the end of paragraph 7.08.A:

Additional provisions regarding permits and licenses are included in the General Requirements.

SC-7.08 Add the following paragraph immediately following paragraph 7.08.A:

- B. The Contractor is responsible for obtaining all permits, including making all arrangements for inspection and payment of all governmental charges and inspection fees necessary for the commencement of Work as indicated by the following. Owner will assist with permit coordination when necessary; however, will not be responsible for any charges unless indicated below.
  1. Shiawassee County Health Department permit
    - a. For Soil Erosion and Sediment Control permit
    - b. Contractor to pay permit and inspection fees, and provide surety and insurance as required by Shiawassee County Health Department

SC-7.10 Delete the last sentence of paragraph 7.10

SC-7.13 Add the following language to the end of paragraph 7.13.A:

At a minimum, the safety representative will be certified in personal protective equipment, hazard communication, demolition and blasting, excavation, hand and power tools, welding and cutting, cranes, derricks, hoists, conveyors, scaffolding, confined space, CPR and first aid.

Add the following subsection B:

In the event there is an accident involving injury to any individual or damage to any property on or near the Work, Contractor shall provide to Owner and Engineer verbal notification within one hour and written notification within twenty-four hours of the event and shall be responsible for recording the location of the event and the circumstances surrounding the event through photographs, interviewing witnesses, obtaining medical reports, police accident reports and other documentation that describes the event. Copies of such documentation shall be provided to Owner and Engineer, within forty-eight hours of the event.

SC-7.17 Add the following new paragraph immediately after Paragraph 7.17.A:

The Contractor, as a condition precedent to final payment, shall execute a guarantee to the Owner warranting for a period of two (2) years from date of final payment to keep in good order and repair any defect in all the work done under the Agreement, either by the Contractor, his subcontractors, or material suppliers, that may develop during said period due to improper materials, defective equipment, improper materials workmanship, or arrangements, and any other work affected in making good such imperfections shall also be made good, all without expense to the Owner, and Contractor shall execute, in favor of the Owner the attached Maintenance and Guarantee Bond. When specifications call for a guarantee period greater than one (1) year, Contractor shall provide such longer guarantee period.

#### ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

SC-11.01 Add the following new paragraph 4 after 11.01 A.3:

4. upon receipt of a change order, Contractor shall promptly proceed with the change in the Work involved.

#### ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-13.03 Add the following paragraph immediately after paragraph 13.03.E.1:

2. Contractor's overhead, profit, and related costs for products and equipment order by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum.

SC-13.03 Delete paragraph 13.03.E.1 in its entirety and insert the following in its place:

1. the total cost of a particular item of Unit Price Work amounts to 10% or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement;

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

- SC-15.01. Add the following paragraph immediately after paragraph 15.01.B.3:
4. Contractor shall indicate on the Application for Payment the amounts which are due to Owner from Contractor in accordance with the Contract Documents and which amounts Owner may deduct from the progress payment
- SC-15.01.C Add the following new paragraphs immediately after 15.01.C.6.e:
- f. Contractor has incurred liability for other costs in accordance with Contract Documents
  - g. Contractor's failure to maintain record documents in accordance with paragraph 7.11
- SC-15.01.D Delete paragraph 15.01.D.1 and replace with the following:
1. Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 15.01.C) become due, and when due will be paid by Owner to Contractor.

## ARTICLE 16– SUSPENSION OF WORK AND TERMINATION

- SC-16.04 Modify paragraph 16.04.B by deleting the phrase "Owner has failed for 30 days to pay Contractor any sum finally determined to be due." and replace with "Owner fails for 60 days to pay Contractor any sum finally determined to be due."

## ARTICLE 18 – MISCELLANEOUS

- SC-18.09 Add paragraph 18.09:

*SC-18.09 – Owner's Right to Audit:*

- A. Records means all records generated by or on behalf of Contractor and each Subcontractor and Supplier of Contractor, whether paper, electronic, or other media, which are in any way related to performance of or compliance with this Contract, including, without limitation: accounting records; written policies and procedures; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, etc.); original estimates and estimating work sheets; correspondence; change order files (including documentation covering negotiated settlements); back charge logs and supporting documentation; general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends; lump sum agreements between Contractor and any Subcontractor or Supplier; records necessary to evaluate: Contract compliance, Change Order pricing, and any Claim submitted by Contractor or any of its payees; and any other Contractor record that may substantiate any charge related to this Contract.
- B. Contractor shall allow Owner's agent or its authorized representative to inspect, audit, or reproduce, or all three, all Records generated by or on behalf of Contractor and each Subcontractor and Supplier, upon Owner's written request. Further, Contractor shall allow Owner's agent or authorized representative to interview any of Contractor's employees, all Subcontractors and all Suppliers, and all their respective employees.
- C. Contractor shall retain all its Records, and require all its Subcontractors and Suppliers to retain their respective Records, during this Contract and for three years after final payment, until all audit and litigation matters that Owner has brought to the attention of Contractor are resolved, or longer if required by law, whichever is longer. Owner's right to inspect, audit, or reproduce Records, or interview employees of

Contractor or its respective Subcontractors or Suppliers exists during this Contract, and for three years after final payment, until all audit and litigation matters that Owner has brought to Contractor's attention are resolved, or longer if required by law, whichever is longer, and at no cost to Owner, either from Contractor or any of its Subcontractors or Suppliers that may furnish Records or make employees available for interviewing.

- D. Contractor must provide sufficient and accessible facilities during its normal business hours for Owner to inspect, audit, or reproduce Records, or all three, and to interview any person about the Records.
- E. Contractor shall insert these requirements in each written contract between Contractor and any Subcontractor or Supplier and require each Subcontractor and Supplier to comply with these provisions.

SC-18.10 Add paragraph 18.10:

*SC-18.10 – Liquidated Damages*

- A. If the Contractor fails to Substantially Complete the Work within the Contract Time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages as specified in the Agreement for each calendar day that the Contractor is in default after the time stipulated in the Contract Documents. The liquidated damages charged shall be deducted from the Contractor's progress payments and/or retained amount.
- B. The Contractor will not be charged with liquidated damages or any excess cost when the delay in Substantial Completion of the Work is due to the following and the Contractor has given written notice of such delay within seven (7) calendar days to the Owner or Engineer.
  - 1. To any preference, priority or allocation order duly issued by the Owner;
  - 2. To unforeseeable causes beyond the control and without fault or negligence of the Contractor, including but not limited to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather and;
  - 3. To any delays of Subcontractors occasioned by any of the causes specified in Items A and B of this Article.

END OF SECTION 00 73 00

## SECTION 01 10 00 - SUMMARY

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Access to site.
  - 4. Coordination with occupants.
  - 5. Work restrictions.
  - 6. Suggested work sequence.
  - 7. Specification and drawing conventions.
  - 8. EGLE approval letters.

#### 1.2 PROJECT INFORMATION

- A. Project Identification: Palmer No. 3 and Juniper No. 1 Municipal Water Supply Well Drilling
  - 1. Project Location (Palmer No. 3): Palmer Avenue, Owosso Michigan 48867.
  - 2. Project Location (Juniper No. 1): 774 feet southeast of Juniper Street and 1,245 feet east of Gould Street, Owosso Michigan 48867
- B. Owner: City of Owosso, 301 W. Main Street, Owosso Michigan 48867
  - 1. Owner's Representative: Ryan Suchanek, Utility Director
- C. Engineer: OHM Advisors, 34000 Plymouth Road, Livonia Michigan 48150. Phone Number: 734-522-6711.
  - 1. Engineer's Representative: Ms. Jennifer Drinan, Project Manager, Phone Number: 734-466-4568.

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
  - 1. The Project at the Palmer No. 3 Well site consists of the construction of one new (1) 12-inch production well, one new (1) observation well and site improvements related to the well construction. Test pumping will be done upon completion of the new production well.
  - 2. The Project at the Juniper No. 1 Well site consists of the construction of one new (1) 12-inch production well, one new (1) observation well and site improvements related to the well construction. Test pumping will be done upon completion of the new production well.
- B. Type of Contract.
  - 1. Project will be constructed under a single prime contract.

#### 1.4 ACCESS TO SITE

- A. General: Contractor shall have use of Project site for construction operations during construction period.
- B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations to areas where work is identified.

2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Contractor shall not operate heavy equipment on any side street within the project area without permission from the Engineer, Owner, and authority having jurisdiction.

#### 1.5 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
  1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
  2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

#### 1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8:00 a.m. to 6:00 p.m., Monday through Friday, unless otherwise indicated.
  1. Work shall be prohibited on recognized national holidays.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  1. Notify Engineer and Owner not less than two days in advance of proposed utility interruptions.
  2. Obtain Engineer's and Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
  1. Notify Engineer and Owner not less than two days in advance of proposed disruptive operations.
  2. Obtain Engineer's and Owner's written permission before proceeding with disruptive operations.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.
- F. Hazardous materials, chemicals, and sanitary sewage facilities have to be outside a 200-foot radius of a well.

## 1.7 SUGGESTED SEQUENCE OF WORK

- A. In general, it is the intention and understanding that the Contractor shall have control over the sequence and order of execution of the Work to be done under the Contract and over the method(s) accomplishing the results. Engineer may make such reasonable requirements as necessary for the proper and effective protection of work partially or wholly completed, and to these requirements, Contractor shall conform. Well, screen design and supporting data to be submitted and approved by Engineer prior to fabrication.
- B. A suggested sequence of Work is as follows for the Palmer Well No. 3:
1. Drill a single 5-inch diameter observation well.
  2. Drill a single boring at the replacement well location to a depth of approximately 150 feet.
  3. Drill a single test-production well based upon the conditions encountered in Task No. 2.
  4. Develop well following the method specified in Section 33 21 00 A.
  5. After development of the test-production well, equip the well with a test pump and pump for a minimum duration of 24 hours, or up to 72 hours in duration as directed by Engineer.
  6. During pumping, Engineer will provide necessary equipment to monitor the water levels within the pumping well and observation wells throughout the pumping and recovery phases of the test.
  7. At the conclusion of the pumping phase of the test, Engineer will collect groundwater samples.
  8. Plumbness and alignment testing.
  9. Digital video recording of the inside of the completed well.
  10. After completion of the work, the Contractor is to clean up and restore the site, including mud pits and any rutting caused by heavy equipment.
  11. Contractor to obtain SESC permit as necessary to discharge test pump water. Contractor to make recommendation for proposed discharge location of test pump water subject to approval by Owner and Engineer.
- C. A suggested sequence of Work is as follows for the Juniper Well No. 1:
1. Drill a single 5-inch diameter observation well.
  2. Drill a single boring at the test-production well location to a depth of approximately 100 feet.
  3. Drill a single test-production well based upon the conditions encountered in Task No. 2.
  4. Develop well following the method specified in Section 33 21 00 B.
  5. After development of the test-production well, equip the well with a test pump and pump for a minimum duration of 24 hours, or up to 72 hours in duration as directed by Engineer.
  6. During pumping, Engineer will provide necessary equipment to monitor the water levels within the pumping well and observation wells throughout the pumping and recovery phases of the test.
  7. At the conclusion of the pumping phase of the test, Engineer will collect groundwater samples.
  8. Plumbness and alignment testing.
  9. Digital video recording of the inside of the completed well.
  10. After completion of the work, the Contractor is to clean up and restore the site, including mud pits and any rutting caused by heavy equipment.
  11. Contractor to obtain SESC permit as necessary to discharge test pump water. Contractor to make recommendation for proposed discharge location of test pump water subject to approval by Owner and Engineer.

## 1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

#### 1.9 EGLE APPROVAL LETTERS

A. Appended to this document are approval letters from EGLE for each of the well sites.

B. Contractor shall comply with requirements as outlined in these letters.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00





GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
LANSING DISTRICT OFFICE



LIESL EICHLER CLARK  
DIRECTOR

June 16, 2021

Mr. Ryan Suchanek, Utilities Supervisor  
City of Owosso  
301 West Main Street  
Owosso, Michigan 48867

WSSN: 05120  
County: Shiawassee

Dear Mr. Suchanek:

SUBJECT: City of Owosso (City) – Test Well #23 Approval (Palmer 3 Replacement)

The Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), has reviewed the documentation submitted and completed a site inspection of the proposed test well #23 (TW-23) location on April 1, 2021. Attending the TW-23 site inspection were yourself, Mr. Dan Whalen of Williams and Works, and the EGLE district engineer. The documentation submitted included the original request for test well approval in January 2021, and a recently submitted May 3, 2021, letter from Mr. Whalen, which captured and explained all of the steps leading up to a final test well approval request.

The purpose of TW-23 is to replace the existing production well, Palmer Well #3 (PW3). The proposed well capacity is between 750 and 800 gallons per minute (gpm). The original PW3 permit capacity was 792 gpm at 120 total dynamic head and a well depth of 146 feet (ft).

After a thorough review, this letter grants test well drilling approval only at this time, to conduct well site investigation work for the City. TW-23 site investigative work will be completed approximately 20 to 50 ft north of the existing PW3, at geographic coordinates 42.978137, -84.174926. TW-23 will be a 12-inch diameter well, constructed to a total depth of 150 ft. The well will be equipped with a 12-inch diameter steel casing to a depth of approximately 130 ft and grouted with neat cement. If the proposed test well is planned to be converted into a production well later, all work shall be done in accordance with the well construction code specifications.

TW-23 is located in the same watershed boundary with PW3 and the proposed capacity is an equivalent replacement of PW3. A Site Specific Review pre-screening, to determine if the withdrawal would cause an Adverse Resource Impact, will not be required.

TW-23 may be converted into a production well if constructed in accordance with Type 1 public water supply (PWS) well construction requirements. The following information must be submitted to the Lansing District Office (LDO) prior to submitting the permit application to convert TW-23 to a production well:

1. The proposed well capacity does not exceed the City's baseline capacity, however there is no previous aquifer test data from the well. Therefore, an aquifer analysis in accordance with EGLE's Aquifer Test Requirements for Public Water Supply Wells, policy ODWMA-399-003, will be required. A pump test in accordance with EGLE's Suggested Practices for Waterworks will be required and must be at a minimum of 72 hours. This would be a good opportunity to see if an update to the wellhead protection area (WHPA) is called for. If so, a grant could also be pursued to update your WHPA.
2. In accordance with R325.10810 of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), a Type I PWS shall own the entirety of the approved isolation to prevent use that could contaminate the PWS. If ownership is demonstrated to not be possible then adequate control is required, such as with long-term leases or easements.
3. A final site plan showing the location with GPS coordinates of TW-23 relative to property lines and any potential standard source of contamination within 200 ft. All major sources of contamination will need to be identified within 2,000 ft of TW-23, and within the existing WHPA. Isolation areas measured out from the wellhead and the existing WHPA will need to be provided on the site plan. Any other wells installed on the property will need to be identified along with GPS coordinates on the site plan.
4. Final well logs for the aquifer test and any other wells installed on the property will need to be included in the Aquifer and Pump Test Report (Report).
5. A new source water will require the water to be sampled and analyzed for compliance with Act 399. Water analysis must include partial chemistry, cyanide, volatile organic compounds, carbamates, herbicides, pesticides, metals, radiological (Gross Alpha, Radium 226 and Radium 228), and Per- and Polyfluoroalkyl Substances. The enclosed chemical monitoring requirements for new source water provides a list of chemicals required to be analyzed. Water samples must be collected at the end of the pump test for analysis. Copies of the analytical results will need to be included in the Report. Information on EGLE's Drinking Water Laboratory, and a list of other certified laboratories, can be viewed at [www.michigan.gov/drinkingwater](http://www.michigan.gov/drinkingwater).
6. The corrosivity of the new source water will need to be determined for compliance with Act 399. Water quality parameter (WQP) analysis will include pH (taken in the field), alkalinity, calcium, conductivity, orthophosphate, water temperature

(taken in the field), chloride, and sulfate. Copies of the WQP analytical results must be submitted along with conclusions on the corrosivity of the source water.

This test well approval letter does not approve TW-23 for use as a production well or connection to a PWS system. Installation of pump equipment and related appurtenances and connection to the PWS is prohibited until a permit has been issued by EGLE. A Permit Application for Water Supply Systems can be downloaded from [www.michigan.gov/drinkingwater](http://www.michigan.gov/drinkingwater); open Community Water Supply, then under Manuals, Forms, and Brochures open Water Supply Permit Application. The permit application, construction specifications, and plans will need to be completed by an engineer registered in the State of Michigan and submitted to the LDO for review.

*This test well approval letter expires in two years of the date of this letter.* This letter does not remove the need for other applicable local, state, or federal permits. If you should have any questions in regard to this correspondence, please contact me at 517-525-1487; via e-mail at [SwendsenK@Michigan.gov](mailto:SwendsenK@Michigan.gov); or EGLE, DWEHD, P.O. Box 30242, Lansing, Michigan 48909-8311.

Sincerely,



Kurt Swendsen  
Drinking Water and  
Environmental Health Division  
Field Operations Section  
Lansing District Office  
517-525-1487

cc: Mr. Dave Haut, Owosso Water Treatment Plant  
Mr. Dave Stinson, Northern Pump and Well  
Mr. Dan Whalen, Williams and Works  
Mr. Matt Kennedy, OHM  
Mr. Casey Elliot, Shiawassee County Health Department



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
LANSING DISTRICT OFFICE



LIESL EICHLER CLARK  
DIRECTOR

June 24, 2021

Mr. Ryan Suchanek, Utility Director  
City of Owosso  
301 West Main Street  
Owosso, Michigan, 48867

WSSN: 05120  
County: Shiawassee

Dear Mr. Suchanek:

SUBJECT: City of Owosso (City) – Test Well WL024 (Juniper No. 1) Approval

The Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), has reviewed the documentation submitted, and completed a site inspection of the proposed test well 24 (TW-24) location on April 1, 2021. Present at the TW-24 site inspection besides myself and you, were Mr. Dan Whalen of Williams and Works, and a City operator. The purpose of TW-24 is to provide additional well capacity. This well would use the same transmission main as the Hintz and Osburn wells, which means all three wells could not be run at the same time due to a capacity bottleneck in the raw water transmission main. However, if a new transmission main is constructed, then the Juniper well could potentially provide additional capacity. The proposed well capacity is 800 gallons per minute (gpm).

After a thorough review, this letter grants test well drilling approval only, to conduct well site investigation work for the City public water supply (PWS). TW-24 site investigative work will be completed at latitude 43.008200 and longitude -84.153502. TW-24 will be a 12-inch diameter well, constructed to a total depth of 100 feet (ft). The well will be equipped with a 12-inch diameter steel casing to a depth of 80 ft and grouted with neat cement. If TW-24 is planned to be converted into a Type I production well, all work shall be done in accordance with Type I well construction specifications and requirements.

The location of TW-24 was subject to a Site Specific Review (SSR) pre-screening to determine if the withdrawal would cause an Adverse Resource Impact (ARI). The proposed pumping capacity is equal to or greater than 70 gpm and exceeds the City baseline capacity. The pre-screening results determined that the proposed withdrawal lies within a Zone A. Please refer to EGLE’s ARI pre-screening letter dated June 7, 2021, for additional information. A deviation from the GPS coordinates identified in EGLE’s SSR pre-screening results will require the zone determination to be updated and invalidates this test well approval letter.

TW-24 may be converted into a production well if constructed in accordance with Type 1 PWS well construction requirements. The following information must be submitted to the Lansing District Office (LDO) prior to submitting the permit application to convert TW-24 to a production well:

1. An aquifer test must be completed in accordance with EGLE's Aquifer Test Requirements for Public Water Supply Wells, policy ODWMA-399-003 (enclosed). One hard copy and an electronic copy of the Aquifer Test Report (Report) shall be provided to EGLE for review. EGLE staff will provide comment to you after a review of the hydrogeological report has been completed.
2. In accordance with R325.10810 of the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), type I PWS shall own the entirety of the approved isolation area to prevent use that could contaminate the PWS. If ownership is demonstrated to not be possible then adequate control is required, such as long-term leases or easements.
3. Final well logs for the aquifer test and any other wells installed on the property will need to be included in the Report.
4. A new source water will require the water to be sampled and analyzed for compliance with Act 399. Water analysis must include partial chemistry, cyanide, volatile organic compounds, carbamates, herbicides, pesticides, metals, radiological, corrosivity, and Per- and Polyfluoroalkyl Substances. The enclosed Chemical Monitoring Requirements for New Community Water Supply Wells provides a list of analytes that are required to be analyzed. Water samples must be collected at the end of the pump test for analysis. Copies of the analytical results along with conclusions and recommendations on the water quality will need to be included in the Report. Information on EGLE's Drinking Water Laboratory and list of other certified laboratories can be viewed at [www.michigan.gov/drinkingwater](http://www.michigan.gov/drinkingwater).
5. Water quality parameters along with chloride and sulfate analysis will need to be used to determine the corrosivity of the new source water. Conclusions and recommendations on the corrosivity of the new source will need to be included in the Report. A comparison of the new source water with the existing source water will need to be provided with the conclusions.

This test well approval letter does not approve TW-24 for use as a production well or connection to a PWS system. Installation of pump equipment and related appurtenances and connection to the water system is prohibited until a permit has been issued by EGLE. A Permit Application for Water Supply Systems can be downloaded from [www.michigan.gov/drinkingwater](http://www.michigan.gov/drinkingwater) open Community Water Supply then under Manuals, Forms, and Brochures open Water Supply Permit Application. The permit application, construction specifications, and plans will need to be completed by an engineer registered in the State of Michigan and submitted to the LDO for review.

This test well approval letter expires in two years of the date of this letter. This letter does not remove the need for other applicable local, state, or federal approvals or permits. If you should have any questions regarding this correspondence, please contact me at 517-525-1487; via e-mail at SwendsenK@Michigan.gov; or EGLE, DWEHD, P.O. Box 30242, Lansing, Michigan, 48909-8311.

Sincerely,



Kurt Swendsen, District Engineer  
Drinking Water and  
Environmental Health Division  
Field Operations Section  
Lansing District Office  
517-525-1487

Enclosure

cc: Mr. Dave Haut, City Water Treatment Plant  
Mr. Matt Kennedy, OHM  
Mr. Dan Whalen, Williams and Works, Inc.  
Mr. Larry Johnson, Shiawassee County Health Department  
Mr. Dale Stewart, Northern Pump and Well, Inc.

## SECTION 01 22 00 - UNIT PRICES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
  - 1. Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

#### 1.2 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

#### 1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: As described in the list below.
- C. Work on the Pump Station Site will be paid for on a lump sum price. The Pump Station work area is noted on the drawings.
- D. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- E. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- F. Incidental Items: Any items of work indicated as incidental or included shall be considered as part of the project work and shall be completed at no additional expense to the Owner. Incidental or included items shall include labor, materials, and equipment that may not be specifically listed in the Bid Form or in the drawings or specifications, but which are necessary to complete the work.
- G. Permits: Permits have been applied for by the Owner of this project, excluding soil erosion and sedimentation control, which will need to be procured by Contractor. The permits need to be acquired from the appropriate agency by the Contractor when they are approved. Any permit fees, bonds, and /or permit agency inspection costs will be the responsibility of the Contractor and shall not result in additional cost to the Owner.

### PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

3.1.1 MOBILIZATION (Bid Item 1 and 19)

The completed work as measured for MOBILIZATION will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Mobilization, Max. 2.5%	lump sum

The lump sum price shall be payment in full for all preparatory work and operations which may include, but is not limited to, the following items:

1. The movement of personnel, equipment, supplies, and incidentals to the project site.
2. The establishment of the Contractor's offices, buildings, and other facilities to work on the project.
3. Other work and operations that must be performed.
4. Expenses incurred, prior to beginning work on the various contract items on the project site.
5. Pre-construction costs, exclusive of bidding costs, which are necessary direct costs to the project rather than directly attributable to other pay items under the contract.
6. Permits, bonds, etc.

The pay item will state the maximum amount that can be bid. When the percentage of the original contract amount earned is less than 5 percent, the costs of project specific bonding, insurances, and permits will be reimbursed when a paid invoice is received by the Engineer. The costs of these will then be made in accordance with the Partial Payment Schedule shown below. The original contract amount is the total value of all contract items including the mobilization item. The percentage earned is exclusive of the mobilization item. The total sum of all payments for this item shall not exceed the original contract amount bid for mobilization, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project, moved equipment away from the project and then back again, or for additional quantities or items of work added to the contract.

Partial Payment Schedule

Percentage of Original Contract Amount Earned	Percentage of Bid Price for Mobilization Allowed
5	50
10	75
25	100

When a pay item for mobilization is not included in the proposal, payment for any such work is considered to have been included in payments made for other items of work.

3.1.2 SOIL EROSION AND SEDIMENTATION CONTROL (Bid Item 2 and 20)

The completed work as measured for SOIL EROSION CONTROL will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Soil Erosion and Sedimentation Control	lump sum

The contract lump sum price shall be payment in full for all labor, materials, and equipment necessary to furnish, install, and maintain soil erosion and control measures in compliance with applicable laws and permit requirements. Contractor is responsible for providing SESC plans for this project to the corresponding permitting agency for review and approval as necessary to



prevent drilling fluid and debris from reaching local wetlands and waterways. It is anticipated at a minimum the SESC measures that the Contractor will be required to provide for this project at each well site include silt fence, sedimentation bags, and a splash pan to direct water away from the site. The Contractor is responsible for proper on-site disposal of drill mud via a mud pit or a mud pan. Maintenance work will include removal and replacement of soil erosion control items as directed by the Engineer. Removal of erosion control measures, accumulated sediment, and debris upon completion of the project shall be considered as included as part of the work. Restoration of disrupted areas shall be paid for separately under the appropriate surface restoration pay items.

3.1.3 BORE HOLE (Bid Item 3, 8, 21 and 26)

The completed work as measured for BORE HOLE will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
BORE HOLE	linear foot

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the observation and production well boreholes in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.4 WELL CASING, 5-INCH (Bid Item 4 and 22)

The completed work as measured for WELL CASING, 5-INCH will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
WELL CASING, 5-INCH	linear foot

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the 5-inch observation well casings in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.5 WELL SCREEN, 5-INCH (Bid Item 5 and 23)

The completed work as measured for WELL SCREEN, 5-INCH will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
WELL SCREEN, 5-INCH	linear foot

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the 5-inch observation well screens and filter packing in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.6 PRESSURE GROUTING (Bid Item 6, 11, 24 and 29)

The completed work as measured for PRESSURE GROUTING will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
PRESSURE GROUTING	linear foot

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the observation and production well pressure grouting in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.7 PILOT AND SAMPLING BORING (Bid Item 7 and 25)

The completed work as measured for PILOT AND SAMPLING BORNG will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
PILOT AND SAMPLING BORING	lump sum

The lump sum price shall be payment in full for all labor, materials, and equipment necessary to provide the production well pilot and sampling borings in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.8 WELL CASING, 12-INCH (Bid Item 9 and 27)

The completed work as measured for WELL CASING, 12-INCH will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
WELL CASING, 12-INCH	linear foot

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the 12-inch production well casings in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.9 WELL SCREEN, 12-INCH (Bid Item 10 and 28)

The completed work as measured for WELL SCREEN, 12-INCH will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
WELL SCREEN, 12-INCH	linear foot

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the 12-inch production well screens and filter pack in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.10 WELL DEVELOPMENT (Bid Item 12 and 30)

The completed work as measured for WELL DEVELOPMENT will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
WELL DEVELOPMENT	hour

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the production well development in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site. The Contractor is responsible for providing the necessary equipment and operating the system throughout the duration of the well development.

3.1.11 PUMPING TESTING (Bid Item 13 and 31)

The completed work as measured for PUMPING TESTING will be paid for at the contract unit price for the following contract item (pay item):

Pay Item	Pay Unit
PUMPING TESTING	hour

The unit price shall be payment in full for all labor, materials, and equipment necessary to provide the production well testing in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site. The Contractor is responsible for providing necessary test pumping equipment, operating the pumping system throughout the duration of the step-drawdown and aquifer test and removal of the test pumping equipment. The equipment shall include a pump; suitable gate valve to control discharge; an orifice or calibrated flow meter; a discharge pressure gauge; a water sample tap; discharge piping; and ancillary items for a complete operating system. The Contractor is responsible for providing necessary equipment to connect to the existing power supply available at the Palmer Well Site; the Contractor is also responsible for providing a generator to power the pumping equipment at the Juniper Well Site where no existing power is available. Engineer shall provide level transducer equipment and perform water level readings during testing. The Engineer shall provide bottles and collect water samples including bacteriological analyses at the end of the aquifer test which will be submitted to EGLE for review. The Contractor shall pay for all additional bacteriological testing if required by EGLE. The Owner shall pay for the water quality analysis.

3.1.12 DIGITAL VIDEO RECORDING (Bid Item 14 and 32)

The completed work as measured for DIGITAL VIDEO RECORDING will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Digital Video Recording	lump sum

The lump sum price shall be payment in full for all labor, materials, and equipment necessary to provide the digital video recording for each of the observation and production well in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.13 PLUMBNESS AND ALIGNMENT SURVEY (Bid Item 15 and 33)

The completed work as measured for PLUMBNESS AND ALIGNMENT SURVEY will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Plumbness and Alignment Survey	lump sum

The lump sum price shall be payment in full for all labor, materials, and equipment necessary to provide a plumbness and alignment survey for each of the observation and production well in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site.

3.1.14 CHLORINATION (Bid Item 16 and 34)

The completed work as measured for CHLORINATION will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Chlorination	lump sum

The lump sum price shall be payment in full for all labor, materials, and equipment necessary to provide production well chlorination following completion of all work at the site in accordance with the Technical Specification for Water Wells and Testing at Palmer No. 3 and Juniper No. 1 Well Site. Contractor is responsible for chlorinating the well following completion of all work at the site by preparing the necessary chlorine solution.

3.1.15 SITE RESTORATION AND CLEANUP (Bid Item 17 and 35)

The completed work as measured for SITE RESTORATION AND CLEANUP will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Site Restoration and Cleanup	lump sum

The lump sum price shall be payment in full for all labor, materials, and equipment necessary to provide site restoration and cleanup following completion of all work. This pay item includes new topsoil and grass seed mix in accordance with the Technical Specification for Turf and Grasses for any affected areas during construction at each of the project well sites.

3.1.16 MISCELLANEOUS APPROVED LABOR AND EQUIPMENT ALLOWANCE (Bid Item 18 and 36)

MISCELLANEOUS APPROVED LABOR AND EQUIPMENT ALLOWANCE will be for Owner's use in unforeseen work at the site. Work will be paid for at the contract lump sum price for the following contract item (pay item):

Pay Item	Pay Unit
Miscellaneous Approved Labor and Equipment Allowance	lump sum

The lump sum price shall be payment in full for all labor, materials, and equipment necessary to provide the work which will be reimbursed based on either a unit price provided in the Agreement and/or Bid Form or a not to exceed time and material basis agreed upon by proposal work prior to work being completed.

Use the contingency allowance only as directed by Engineer for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins, unless a unit price from the Agreement/Bid Form is used as the basis for payment

At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

END OF SECTION 01 22 00

## SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

#### 1.2 MINOR CHANGES IN THE WORK

- A. Engineer will issue Field Orders, authorizing changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

#### 1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Work Change Proposal Requests issued by Engineer are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within 20 days, when not otherwise specified after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Quotation Form: Use CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail." or forms acceptable to Engineer.
- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Engineer.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  - 4. Include costs of labor and supervision directly attributable to the change.
  - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Section 01 25 00 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail." or a form acceptable to Engineer.

#### 1.4 ADMINISTRATIVE CHANGE ORDERS

- A. Unit-Price Adjustment: See Section 01 22 00 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

#### 1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor on a Change Order form provided by the Engineer.

#### 1.6 WORK CHANGE DIRECTIVE

- A. Work Change Directive: Engineer may issue a Work Change Directive on EJCDC Document C-940. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
  1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

## SECTION 01 29 00 - PAYMENT PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
  - 1. Section 01 26 00 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
  - 2. Section 01 32 00 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

#### 1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
    - c. Items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Engineer at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
  - 3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Engineer.
    - c. Engineer's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  - 2. Arrange schedule of values consistent with format of EJCDC Document C-620.
  - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
    - a. Include separate line items under principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
  - 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  - 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
    - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
  - 6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

### 1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
  1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Submit Application for Payment to Engineer by the day of the month agreed upon with the Owner. The period covered by each Application for Payment is one month, ending on the agreed upon day of month.
- C. Contractor's Declaration Form: Each application shall be accompanied by a Contractor's Declaration on the form provided in the project manual.
- D. Application for Payment Forms: Use EJCDC Document C-620 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
  1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  2. Include amounts of Change Orders, Work Change Directives and Construction Change Directives issued before last day of construction period covered by application.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
  1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
  1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
  5. Submit final application for payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:



1. List of subcontractors.
  2. Schedule of values.
  3. Contractor's construction schedule (preliminary if not final).
  4. Schedule of unit prices.
  5. Submittal schedule (preliminary if not final).
  6. List of Contractor's staff assignments.
  7. List of Contractor's principal consultants.
  8. Copies of building permits.
  9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  10. Initial progress report.
  11. Report of preconstruction conference.
  12. Certificates of insurance and insurance policies.
- I. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
  5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
  6. AIA Document G707-1994, "Consent of Surety to Final Payment."
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final liquidated damages settlement statement.
  10. Releases from the public agencies from which permits have been obtained for Work under this agreement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

## SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination drawings.
  - 2. Requests for Information (RFIs).
  - 3. Project Web site.
  - 4. Project meetings.
- B. Related Requirements:
  - 1. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

#### 1.2 DEFINITIONS

- A. RFI: Request from Contractor seeking information required by or clarifications of the Contract Documents.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design with 24 hours of receipt of bids. Use CSI Form 1.5A or similar. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.

#### 1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts

and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

- D. Coordination with Owner and other contractors: The Owner, utility companies, and commercial or private owners may have construction projects occurring within or adjacent to the project limits during the life of this contract. Coordinate construction with all such projects that may be ongoing in the vicinity. Where the Contractor's work affects the operation of the Owner's utilities, coordinate work with the Owner. Contact Owner's representative. Give at least 48 hours of notice to the Owner in order to schedule activities such as valve operation, hydrant operation, sewer and structure cleanout, and similar items of work. No claim for extra compensation or adjustments in the contract prices will be allowed on account of delay or failure of others to complete the work scheduled.

## 1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of Architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Engineer indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show Architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid.
  2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings.
  3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
  4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
  5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
  6. Review: Engineer will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

## 1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Engineer
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
  14. Space for Engineer's response.
- C. RFI Forms: AIA Document G716 or software generated form with substantially the same content as indicated above, acceptable to Engineer.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Engineer's actions on submittals.
    - f. Incomplete RFIs or inaccurately prepared RFIs.
  2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
  3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 01 26 00 "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at each construction progress meeting. Use CSI Log Form 13.2B or similar form. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Engineer.

4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Engineer's response was received.

F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer's within seven days if Contractor disagrees with response.

1. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

## 1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
  - a. Tentative construction schedule.
  - b. Phasing.
  - c. Critical work sequencing and long-lead items.
  - d. Designation of key personnel and their duties.
  - e. Procedures for processing field decisions and Change Orders.
  - f. Procedures for RFIs.
  - g. Procedures for testing and inspecting.
  - h. Procedures for processing Applications for Payment.
  - i. Distribution of the Contract Documents.
  - j. Submittal procedures.
  - k. Preparation of record documents.
  - l. Use of the premises
  - m. Use of existing building if Contractor will need access to a building.
  - n. Work restrictions.
  - o. Working hours.
  - p. Owner's occupancy requirements.
  - q. Responsibility for temporary facilities and controls.
  - r. Procedures for moisture and mold control.
  - s. Procedures for disruptions and shutdowns.
  - t. Construction waste management and recycling.
  - u. Parking availability.
  - v. Office, work, and storage areas.
  - w. Equipment deliveries and priorities.
  - x. First aid.
  - y. Security.

- z. Progress cleaning.
  - 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Engineer of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. Review of mockups.
    - i. Possible conflicts.
    - j. Compatibility problems.
    - k. Time schedules.
    - l. Weather limitations.
    - m. Manufacturer's written instructions.
    - n. Warranty requirements.
    - o. Compatibility of materials.
    - p. Acceptability of substrates.
    - q. Temporary facilities and controls.
    - r. Space and access limitations.
    - s. Regulations of authorities having jurisdiction.
    - t. Testing and inspecting requirements.
    - u. Installation procedures.
    - v. Coordination with other work.
    - w. Required performance results.
    - x. Protection of adjacent work.
    - y. Protection of construction and personnel.
  - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals.
- 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to

Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
  - 1) Interface requirements.
  - 2) Sequence of operations.
  - 3) Status of submittals.
  - 4) Deliveries.
  - 5) Off-site fabrication.
  - 6) Access.
  - 7) Site utilization.
  - 8) Temporary facilities and controls.
  - 9) Progress cleaning.
  - 10) Quality and work standards.
  - 11) Status of correction of deficient items.
  - 12) Field observations.
  - 13) Status of RFIs.
  - 14) Status of proposal requests.
  - 15) Pending changes.
  - 16) Status of Change Orders.
  - 17) Pending claims and disputes.
  - 18) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
  - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

## SECTION 01 33 00 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
  - 1. Section 01 32 00 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
  - 2. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

#### 1.3 SUBMITTALS SCHEDULE

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

#### 1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Engineer's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  - 1. Initial Review: Allow 21 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.



2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 21 days for review of each resubmittal.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use Specification Section number followed by a decimal point and then a sequential number (e.g., Submittal 06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., Submittal 06 10 00.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
  4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
    - a. Project name.
    - b. Date.
    - c. Name and address of Engineer.
    - d. Name of Construction Manager.
    - e. Name of Contractor.
    - f. Name of firm or entity that prepared submittal.
    - g. Names of subcontractor, manufacturer, and supplier.
    - h. Category and type of submittal.
    - i. Submittal purpose and description.
    - j. Specification Section number and title.
    - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
    - l. Drawing number and detail references, as appropriate.
    - m. Location(s) where product is to be installed, as appropriate.
    - n. Related physical samples submitted directly.
    - o. Indication of full or partial submittal.
    - p. Transmittal number, numbered consecutively.
    - q. Submittal and transmittal distribution record.
    - r. Other necessary identification.
    - s. Remarks.
  5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
    - a. Project name.
    - b. Number and title of appropriate Specification Section.
    - c. Manufacturer name.
    - d. Product name.
- E. Options: Identify options requiring selection by Engineer.
- F. Deviations: Clearly identify any deviations from the Contract Documents on submittals both in writing and by highlighting in the submittal text or product data, on the submittal drawings or both.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.

- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
  - 1. Submit electronic submittals via email as PDF electronic files.
    - a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  - 2. Action Submittals: Submit electronic copies of each submittal unless otherwise indicated. Engineer will return one copy.
  - 3. Informational Submittals: Submit electronic copies of each submittal unless otherwise indicated. Engineer will not return copies.
  - 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
    - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  - 5. Submit Product Data before or concurrent with Samples.
  - 6. Submit Product Data in the following format:
    - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

- a. Identification of products.
  - b. Schedules.
  - c. Compliance with specified standards.
  - d. Notation of coordination requirements.
  - e. Notation of dimensions established by field measurement.
  - f. Relationship and attachment to adjoining construction clearly indicated.
  - g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches. Text shall be readable on the size of the drawing provided.
  3. Submit Shop Drawings in the following format:
    - a. PDF electronic file.
- D. Coordination Drawings Submittals: Comply with requirements specified in Section 01 31 00 "Project Management and Coordination."
- E. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 00 "Construction Progress Documentation."
- F. Application for Payment and Schedule of Values: Comply with requirements specified in Section 01 29 00 "Payment Procedures."
- G. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 40 00 "Quality Requirements."
- H. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 77 00 "Closeout Procedures."
- I. Maintenance Data: Comply with requirements specified in Section 01 78 23 "Operation and Maintenance Data."
- J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- K. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- L. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

- P. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- Q. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- R. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- S. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

## 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by an Engineer are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible Engineer, for each product and system specifically assigned to Contractor to be designed or certified by an Engineer.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer. Do not use red for stamps, markings or annotations. Engineer's comments and annotations will be in red.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 77 00 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2 DESIGN PROFESSIONAL'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
  - 1. Approved.
  - 2. Rejected.
  - 3. Approved as Noted
  - 4. Revise and Resubmit.
  - 5. Submit Specified Item.
  - 6. Acknowledge Receipt.
- C. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded or returned to Contractor marked "Not Required For Review."

END OF SECTION 01 33 00

## SECTION 01 40 00 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 2. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
  - 3. Specific test and inspection requirements are not specified in this Section.

#### 1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

- I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### 1.3 REGULATORY

- A. Public Agency Requirements: It is the intention of these specifications to construct all work in accordance with the applicable requirements of the Owner, the Michigan Department of Environment, Great Lakes, and Energy, and City of Owosso, the contract specifications, and the contract drawings. Where there is a conflict between any of the aforementioned specifications, and the permit requirements for the agency having jurisdiction, the more restrictive shall govern.

### 1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

### 1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  5. Other required items indicated in individual Specification Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

## 1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.



- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - d. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
  2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

## 1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
  1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Contractor Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

## 1.9 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections and as follows:

1. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
2. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Retesting and re-inspecting corrected work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Engineer.

4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer reference during normal working hours.
  1. Submit log at project closeout as part of the project record documents.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

## SECTION 01 42 00 - REFERENCES

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### 1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

### 1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.
1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
  2. AAMA - American Engineerural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
  3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
  4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
  5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
  6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
  7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
  8. ACI - American Concrete Institute; (Formerly: ACI International); [www.abma.com](http://www.abma.com).
  9. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
  10. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
  11. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
  12. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
  13. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
  14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
  15. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
  16. AIA - American Institute of Engineers (The); [www.aia.org](http://www.aia.org).
  17. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
  18. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
  19. AITC - American Institute of Timber Construction; [www.aitc-qlulam.org](http://www.aitc-qlulam.org).
  20. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
  21. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
  22. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).
  23. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
  24. APA - Engineerural Precast Association; [www.archprecast.org](http://www.archprecast.org).
  25. API - American Petroleum Institute; [www.api.org](http://www.api.org).
  26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
  27. ARI - American Refrigeration Institute; (See AHRI).
  28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
  29. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
  30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
  31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
  32. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
  33. ASSE - American Society of Safety Engineers (The); [www.asse.org](http://www.asse.org).
  34. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
  35. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
  36. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
  37. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
  38. AWI - Engineerural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
  39. AWMAC - Engineerural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
  40. AWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
  41. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
  42. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
  43. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).

44. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
45. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.org](http://www.bifma.org).
47. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bissc.org](http://www.bissc.org).
49. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
50. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
51. CEA - Consumer Electronics Association; [www.ce.org](http://www.ce.org).
52. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
53. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
54. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
55. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
56. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
57. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
58. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
59. CPA - Composite Panel Association; [www.pbmdf.com](http://www.pbmdf.com).
60. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
61. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
62. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
63. CSA - Canadian Standards Association; [www.csa.ca](http://www.csa.ca).
64. CSA - CSA International; (Formerly: IAS - International Approval Services); [www.csa-international.org](http://www.csa-international.org).
65. CSI - Construction Specifications Institute (The); [www.csinet.org](http://www.csinet.org).
66. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
67. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.cti.org](http://www.cti.org).
68. CWC - Composite Wood Council; (See CPA).
69. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
70. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
71. ECA - Electronic Components Association; (See ECIA).
72. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
73. ECIA - Electronic Components Industry Association; [www.eciaonline.org](http://www.eciaonline.org).
74. EIA - Electronic Industries Alliance; (See TIA).
75. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
76. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
77. ESD - ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
78. ESTA - Entertainment Services and Technology Association; (See PLASA).
79. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
80. FCI - Fluid Controls Institute; [www.fluidcontrolsinstitute.org](http://www.fluidcontrolsinstitute.org).
81. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
82. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
83. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
84. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
85. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; [www.floridarroof.com](http://www.floridarroof.com).
86. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
87. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
88. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
89. GANA - Glass Association of North America; [www.glasswebsite.com](http://www.glasswebsite.com).
90. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
91. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
92. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
93. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).

94. HPVA - Hardwood Plywood & Veneer Association; [www.hpva.org](http://www.hpva.org).
95. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
96. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
97. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
98. IAS - International Approval Services; (See CSA).
99. ICBO - International Conference of Building Officials; (See ICC).
100. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
101. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
102. ICPA - International Cast Polymer Alliance; [www.icpa-hq.org](http://www.icpa-hq.org).
103. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
104. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
105. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
106. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
107. IESNA - Illuminating Engineering Society of North America; (See IES).
108. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
109. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
110. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.okstate.edu](http://www.igshpa.okstate.edu).
111. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
112. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); [www.intertek.com](http://www.intertek.com).
113. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); [www.isa.org](http://www.isa.org).
114. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
115. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
116. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
117. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
118. ITU - International Telecommunication Union; [www.itu.int/home](http://www.itu.int/home).
119. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
120. LMA - Laminating Materials Association; (See CPA).
121. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
122. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
123. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
124. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
125. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
126. MHIA - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
127. MIA - Marble Institute of America; [www.marble-institute.com](http://www.marble-institute.com).
128. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
129. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
130. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
131. NAAMM - National Association of Engineerural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
132. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
133. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
134. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
135. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
136. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
137. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
138. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
139. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
140. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
141. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
142. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
143. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).



144. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
145. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
146. NFPA - NFPA International; (See NFPA).
147. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
148. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
149. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
150. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
151. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
152. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
153. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
154. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
155. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
156. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
157. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
158. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
159. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
160. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).
161. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); [www.plasa.org](http://www.plasa.org).
162. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
163. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
164. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
165. SAE - SAE International; [www.sae.org](http://www.sae.org).
166. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
167. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
168. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
169. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).
170. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
171. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
172. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
173. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
174. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
175. SMPTE - Society of Motion Picture and Television Engineers; [www.smpte.org](http://www.smpte.org).
176. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
177. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
178. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
179. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
180. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
181. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
182. STI - Steel Tank Institute; [www.steelstank.com](http://www.steelstank.com).
183. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
184. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
185. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
186. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
187. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
188. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
189. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
190. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
191. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
192. TPI - Turfgrass Producers International; [www.turfgrassod.org](http://www.turfgrassod.org).
193. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
194. UL - Underwriters Laboratories Inc.; [www.ul.com](http://www.ul.com).



195. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
196. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
197. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
198. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
199. WASTEC - Waste Equipment Technology Association; [www.wastec.org](http://www.wastec.org).
200. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
201. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
202. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).
203. WI - Woodwork Institute; [www.wicnet.org](http://www.wicnet.org).
204. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
205. WWPA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

1. DIN - Deutsches Institut für Normung e.V.; [www.din.de](http://www.din.de).
2. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
3. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
4. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
4. DOD - Department of Defense; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
8. FG - Federal Government Publications; [www.gpo.gov](http://www.gpo.gov).
9. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
10. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; [www.eetd.lbl.gov](http://www.eetd.lbl.gov).
12. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
13. SD - Department of State; [www.state.gov](http://www.state.gov).
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
16. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
17. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
18. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
19. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).

5. FS - Federal Specification; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
    - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
    - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
    - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org/ccb](http://www.wbdg.org/ccb).
  6. MILSPEC - Military Specification and Standards; (See DOD).
  7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
  8. USATBCB - U.S. Engineerural & Transportation Barriers Compliance Board; (See USAB).
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; [www.bearhfti.ca.gov](http://www.bearhfti.ca.gov).
  2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; [www.calregs.com](http://www.calregs.com).
  3. CDHS; California Department of Health Services; (See CDPH).
  4. CDPH; California Department of Public Health; Indoor Air Quality Program; [www.cal-iaq.org](http://www.cal-iaq.org).
  5. CPUC; California Public Utilities Commission; [www.cpuc.ca.gov](http://www.cpuc.ca.gov).
  6. EGLE; Michigan Department of Environment, Great Lakes, and Energy Quality; [www.michigan.gov/deq](http://www.michigan.gov/deq)
  7. MDOT; Michigan Department of Transportation; [www.michigan.gov/mdot](http://www.michigan.gov/mdot)
  8. ODOT; Ohio Department of Transportation; [www.dot.state.oh.us](http://www.dot.state.oh.us)
  9. Ohio EPA; Ohio Environmental Protection Agency; [www.epa.state.oh.us](http://www.epa.state.oh.us)
  10. SCAQMD; South Coast Air Quality Management District; [www.aqmd.gov](http://www.aqmd.gov).
  11. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; [www.txforestservation.tamu.edu](http://www.txforestservation.tamu.edu).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

## SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
- B. Related Requirements:
  - 1. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

#### 1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit two sets of marked-up record prints.
    - 1) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
    - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy and one annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy and one annotated PDF electronic files and directories of each submittal.

### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Record data as soon as possible after obtaining it.
    - c. Record and check the markup before enclosing concealed installations.
  - 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  - 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  - 4. Note Addenda, Construction or Work Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
  - 1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
  - 2. Format: per Owner requirements.
  - 3. Format: Annotated PDF electronic file with comment function enabled.
  - 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
  - 5. Refer instances of uncertainty to Engineer for resolution.
  - 6. Engineer will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
  
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  - 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Format: Annotated PDF electronic file with comment function enabled.
  - 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  - 4. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Engineer.
    - e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
  
- B. Format: Submit record Specifications as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Specifications.

## 2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders and record Drawings where applicable.
  
- B. Format: Submit record Product Data as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Product Data.

## 2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

## PART 3 - EXECUTION

### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.

END OF SECTION 01 78 39

## SECTION 31 25 00 - EROSION AND SEDIMENTATION CONTROLS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. The general scope of the Erosion and Sedimentation Controls will be as follows:
1. The Contractor is responsible for providing SESC plans for this project to the corresponding permitting agency for review and approval as necessary to prevent drilling fluid and debris from reaching local wetlands and waterways.
  2. The Contractor is responsible for proper on-site disposal of drill mud via a mud pit or a mud pan.
- B. Section Includes:
1. Diversion Channels.
  2. Rock Energy Dissipator.
  3. Rock Basin.
  4. Rock Barrier.
  5. Sediment Ponds.
  6. Sediment Traps.
- C. Related Sections:
1. Section 00 72 00 – General Conditions. Article 7.08 Permits
  2. Section 00 73 00 Supplementary Conditions. Amendments to Article 7.08 of General Conditions.

#### 1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials:
1. AASHTO T88 - Standard Specification for Particle Size Analysis of Soils.
  2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
1. ASTM C127 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate.
  2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort 12,400 ft-lbf/ft<sup>3</sup>.
  3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort 56,000 ft-lbf/ft<sup>3</sup>.
  4. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
  5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

#### 1.3 SUBMITTALS

- A. Contractor-developed SESC per local agency requirements.
- B. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- C. Product Data: Product Data: Submit data on geotextile.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures: Requirements for submittals.
- B. Documents identified within specification divisions 02 – 46.

#### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with requirements of the local authorized agency which has jurisdiction over soil erosion and sediment control.
- B. In Michigan, perform Work in accordance with part 91, Soil Erosion and Sedimentation Control (SESC), of the Natural resources and Environmental Protection Act, 1994 PA 451, of the State of Michigan, as amended.

#### 1.6 PRE-INSTALLATION MEETINGS

- A. Section 01 31 00 – Project Management and Coordination: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not place grout when air temperature is below freezing.

### PART 2 - PRODUCTS

#### 2.1 ROCK AND GEOTEXTILE MATERIALS

- A. Rock: Furnish materials according to State of Michigan Department of Transportation standards.
  - 1. Plain Riprap: MDOT Section 916.
  - 2. Heavy Riprap: MDOT Section 916.
  - 3. Cobblestone: MDOT Section 916.
- B. Geotextile Fabric: Furnish materials according to State of Michigan Department of Transportation standards.
  - 1. Silt Fence Geotextile: MDOT Section 916 and MDOT 910
  - 2. Geotextile Blanket: MDOT 910
  - 3. Geotextile Liner: MDOT 910
  - 4. Geotextile Separator: MDOT 910
  - 5. Stabilization Geotextile: MDOT 910

#### 2.2 STONE, AGGREGATE, AND SOIL MATERIALS

- A. Furnish materials according to State of Michigan Department of Transportation standards.
  - 1. Stone: MDOT 6A, Section 902.
  - 2. Coarse Aggregate, 3 x 1: MDOT 916
  - 3. Soil Backfill: Soil Type, as specified in Section 31 20 00. Subsoil with no rocks over 6 inches in diameter, frozen earth or foreign matter.

#### 2.3 PLANTING MATERIALS

- A. Seeding and Soil Supplements: as specified in Section 32 92 00.

B. Mulch: as specified in Section 32 92 00.

1. Mulch, Mulch Blankets and High Velocity Blankets: MDOT 917.11 and installed per MDOT 816.03.

## 2.4 PIPE MATERIALS

A. Pipe: Furnish according to Municipality of City of Owosso Public Works standards.

## 2.5 SOURCE QUALITY CONTROL (AND TESTS)

A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.

B. Perform tests on cement, aggregates, and mixes to ensure conformance with specified requirements.

C. Make rock available for inspection at producer's quarry prior to shipment. Notify Architect/Engineer Owner at least seven days before inspection is allowed.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Section 01 31 00 – Project Management and Coordination: Verification of existing conditions before starting work.

B. Verify compacted subgrade is acceptable and ready to support devices and imposed loads.

C. Verify gradients and elevations of base or foundation for other work are correct.

### 3.2 DIVERSION CHANNELS

A. Windrow excavated material on low side of channel.

B. Compact to 95 percent maximum density.

C. Install Work according to standards of the local agency having jurisdiction.

### 3.3 ROCK ENERGY DISSIPATOR

A. Excavate to indicated depth of rock lining or nominal placement thickness as follows. Remove loose, unsuitable material below bottom of rock lining, then replace with suitable material. Thoroughly compact and finish entire foundation area to firm, even surface.

1. Minimum thickness: 1.5 times the maximum diameter of stone in mixture, or 12 inches, whichever is greater.

B. Lay and overlay geotextile fabric over substrate. Lay fabric parallel to flow from upstream to downstream. Overlap edges upstream over downstream and upslope over downslope. Provide a minimum overlap of 3 feet. Offset adjacent roll ends a minimum of 5 feet when lapped. Cover fabric as soon as possible and in no case leave fabric exposed more than 4 weeks.

C. Carefully place rock on geotextile fabric to produce an even distribution of pieces, with minimum of voids and without tearing geotextile.



- D. Unless indicated otherwise, place full course thickness in one operation to prevent segregation and to avoid displacement of underlying material. Arrange individual rocks for uniform distribution.
  - 1. Saturate rock with water. Fill voids between pieces with grout, for at least top 6 inches (150 mm). Sweep surface with stiff broom to remove excess grout.
  - 2. Moist cure grouted rock for at least 3 days after grouting, using water saturated burlap.

#### 3.4 ROCK BASIN

- A. Construct generally in accordance with rock energy dissipator requirements to indicated shape and depth. Rock courses may be placed in several operations but minimum depth of initial course must be 3 feet or greater.

#### 3.5 ROCK BARRIER

- A. Install Work according to local standards.

#### 3.6 SEDIMENTATION POND

- A. Install Work according to standards of local agency having jurisdiction.

#### 3.7 SEDIMENT TRAPS

- A. Install Work according to standards of local agency having jurisdiction.

#### 3.8 SITE STABILIZATION

- A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.
- B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.
- C. Stockpile and waste pile heights shall not exceed 20 feet. Slope stockpile sides at 2: 1 or flatter.
- D. Stabilize diversion channels, sediment traps, and stockpiles immediately.

#### 3.9 FIELD QUALITY CONTROL

- A. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.
- C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

#### 3.10 CLEANING

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.
- B. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

- C. Do not damage structure or device during cleaning operations.
- D. Do not permit sediment to erode into construction or site areas or natural waterways.
- E. Clean channels when depth of sediment reaches approximately one half channel depth.

### 3.11 PROTECTION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect paving from elements, flowing water, or other disturbance until curing is completed.

### 3.12 MAINTENANCE

- A. Maintenance of the SESC measures and systems is the Contractor's responsibility.
- B. Contractor is responsible for correcting any violations and paying any fines levied by agencies having jurisdiction over the soil erosion control.

END OF SECTION 31 25 00

## SECTION 32 92 00 - TURF AND GRASSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions (if included), and Division 1 Specifications Sections, apply to this Section.

#### 1.2 SECTION INCLUDES

- A. Preparation of topsoil.
- B. Fertilizing, seeding, mulching, and watering.
- C. Maintenance.

#### 1.3 PROJECT CONDITIONS

- A. Seeding is required for all earth areas disturbed by CONTRACTOR's operations.
- B. Provide erosion control blanket on slopes 3:1 or greater unless otherwise directed by ENGINEER.

#### 1.4 SUBMITTALS

- A. Product Data: Submit data on seed mix.

#### 1.5 QUALITY ASSURANCE

- A. Furnish materials in accordance with MDOT Section 917. Topsoil, fertilizer class, seed mixes and mulching to be approved by OWNER and ENGINEER.
- B. Perform Work in accordance with MDOT Section 816.

### PART 2 - PRODUCTS

#### 2.1 TOPSOIL

- A. Comply with MDOT 917.07.

#### 2.2 FERTILIZERS

- A. Comply with MDOT Section 91 7. 10.

#### 2.3 SEED

- A. Comply with MDOT Section 91 7. 12.
- B. If certain disturbed lawns are of better quality than the specified seed will produce, as determined by ENGINEER, furnish seed for such specific lawns that will produce a lawn of equal quality. Extra cost for the better quality seed will be the actual invoice price differential between the seeds.

## 2.4 MULCHING FOR SEED

- A. Comply with MDOT Section 91 7. 15.
- B. Erosion Control Blanket: A wood-machined mat of curled wood excelsior of 80 percent 6 inch or longer fiber length, with consistent thickness fibers evenly distributed over entire blanket array and top covered with a photodegradable, extruded plastic mat; American Excelsior Company, Curlex I, or as approved.

## 2.5 WATER

- A. Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that prepared soil base is ready to receive the Work of this Section.

### 3.2 TOPSOILING

- A. Comply with MDOT Section 81 6. 03.A; provide additional if required.
- B. Prepare topsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials, weeds and undesirable plants and their roots, clods, lumps, boulders, stones, and excess topsoil, if any, and dispose of off the Site.

### 3.3 FERTILIZING

- A. Comply with MDOT Section 81 6. 03.B.

### 3.4 SEEDING

- A. Comply with MDOT Section 81 6. 03.C.

### 3.5 MULCHING

- A. Comply with MDOT Section 81 6. 03.E., F., G., and H.
- B. Erosion Control Blanket: Comply with manufacturer's instructions for soil type, slope and, where applicable, channel flow.

### 3.6 WATERING

- A. Comply with MDOT Section 81 6. 03.I.

### 3.7 MAINTENANCE

- A. Control growth of weeds.
- B. Protect and care for seeded areas until grass is a well established, uniform growth at least 4 inches high.

- C. Once established, remove excess mulch and mow grass to a height of between 1-1/2 and 2-1/2 inches. Do not cut more than 1/3 of grass blade at each mowing. Perform first mowing when seedlings are 40 percent higher than desired height.
- D. Neatly trim edges and hand clip where necessary.
- E. Immediately remove clippings after mowing and trimming. Do not let clippings lay in clumps.
- F. Reseed areas that do not show a prompt catch at intervals of 21 days until a uniform growth is established.
- G. Water to prevent grass and soil from drying out.
- H. Promptly inspect for and repair washouts or gullies after each rain.
- I. Continue maintenance as described in this Article 3.7 for 2 weeks after initial mowing.
- J. Reseed areas damaged due to acts of neglect by residents or vandalism only at the request and expense of OWNER.

END OF SECTION 32 92 00

## SECTION 33 21 00 A - WATER WELLS AND TESTING AT PALMER NO. 3 WELL SITE

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES:

- A. This section encompasses all the work required for water wells including well performance testing. The general scope of the drilling and testing will be as follows:
1. At the production well location, drilling of an initial pilot borehole to a depth of about 150 feet for the purpose of soil sample collection and grain size analysis. Grain size analyses will be required for a minimum of two (2) sample sets within the target aquifer located between 110 feet and 150 feet.
  2. Construction of one (1) 5-inch diameter observation well in glacial drift at an assumed depth of 150 feet. The construction will consist of approximately 130 feet of 5-inch PVC casing with 20 feet of 5-inch PVC filter packed well screen.
  3. Construction of one (1) 12-inch diameter production well in glacial drift at an assumed depth of 150 feet. The construction will consist of approximately 130 feet of 12-inch steel casing with 20 feet of 12-inch stainless steel wire wound filter packed well screen.
  4. Development of the test production well shall be performed by the Contractor under the observation of the Engineer.
  5. Performance testing consisting of a four-hour stepped rate drawdown test
  6. Performance testing consisting of a constant rate well performance test for a minimum of 72 hours in duration. Contractor shall supply necessary test pumping equipment. Existing power (480 V) for the test pump will be available at the Palmer site. Contractor shall supply necessary equipment to connect to the existing power supply.
  7. Plumbness and Alignment Testing.
  8. At the conclusion of the pumping phase of the test, Engineer will collect groundwater samples with assistance from Contractor. Engineer will coordinate and pay for lab testing.
  9. Digital video recording of the inside of the completed well.
  10. Restoration of site.
  11. Contractor shall supply SESC plans and controls and obtain permitting as necessary to prevent unfiltered pump discharge water, drilling fluid, and debris from reaching local wetlands and waterways.

#### 1.2 METHOD OF MEASUREMENT AND BASIS OF PAYMENT:

- A. Bore Hole: Measured from the bottom to the existing ground surface and paid for by the linear foot.
- B. Pilot and Sampling Boring: Paid for by the lump sum.
- C. Well Casing: Paid for by the linear foot.
- D. Well Screen: Paid for by the linear foot including filter packing.
- E. Pressure Grouting: Measured from the bottom to the top and paid for by the linear foot.
- F. Well Development: Measured by the time required and paid for by the hour.
- G. Pumping Testing: Measured by the time required and paid for by the hour.
- H. Digital Video Recording: Paid for by the lump sum.
- I. Plumbness and Alignment Survey: Paid for by the lump sum.

- J. Chlorination: Paid for by the lump sum.
- K. Site Restoration and Cleanup: Paid for by the lump sum in accordance with Section 32 92 00 "Turf and Grasses."
- L. Miscellaneous Approved Labor and Equipment Allowance: An allowance has been provided for Owner's use in the amount shown in the Bid Form. Payment shall be made based on either unit prices provided in the Bid Form or on a not to exceed time and material basis agreed upon by proposal request prior to work being completed.

1.3 QUALITY ASSURANCE:

- A. The CONTRACTOR shall have been engaged in the business of high-capacity test pumping, drilling exploration boreholes, using the method of mud rotary and reverse circulation drilling of wells of the diameter, depth, and anticipated production equivalent to the proposed production wells for a period of at least ten (10) years.
- B. The CONTRACTOR shall submit a list of the last three (3) municipal well owners for whom the CONTRACTOR has drilled equivalent municipal wells. The list shall include the owner's name and address, phone number, casing diameter, type and depth and the date of installation.
- C. The CONTRACTOR shall employ only competent workers for the execution of the work and all such work shall be performed under the direct supervision of an experienced field superintendent with a minimum of five (5) years' experience in this type of drilling satisfactory to the ENGINEER/OWNER.

1.4 REFERENCES:

- A. Groundwater Quality Control - Act 368 of the Public Acts of 1978, Part 127. Water Supply and Sewer Systems
- B. Michigan Safe Drinking Water Act 399 of the Public Acts of 1976 and associated administrative rules and regulations, as amended.
- C. Michigan's Water Well Manual, March 2019 (or most recent version), prepared by Michigan Department of Environmental Quality (now EGLE).
- D. American Water Works Association (AWWA) Section A100 Deep Wells (the most current version).
- E. American Water Works Association (AWWA) Section C654-13 Disinfection of Wells (the most current version)
- F. AWS D1.1 Structural Welding Code
- G. ASTM specification A589-89a, Standard Specification for Seamless and Welded Carbon Steel water well pipe
- H. The MDEQ (now EGLE) Water Well Disinfection Manual
- I. American Petroleum Institute (API) Specification 5L

- J. Part 127 of the Public Health Code Act 368 of 1978, Water Supply and Sewer Systems, and Administrative Rules, which are collectively known as the "Michigan Water Well Construction and Pump Installation Code."
- K. Grouting of Community Water Supply Wells, ODWMA- Public Water Supply Program, ODWMA-399-016
- L. ASTM specification F 480-90, "Standard Specification for Thermoplastic Water Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR)."
- M. ASTM specification D 1785-91, "Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe Schedules 40, 80, and 120."
- N. ASTM specification C 150-89, "Standard Specification for Portland Cement."

#### 1.5 SUBMITTALS:

- A. Well Casing: Mill certificates required, or mill markings shall be clearly visible on all casing sections.
- B. Well screen: provide sieve analysis and well screen selection basis. Provide filter pack data as recommended by screen manufacturer.
- C. Soil Erosion and Control plan and permit
- D. Restoration plan
- E. Drilling Logs: 1 set to ENGINEER. Submit records to the EGLE Wellogis water well database.
- F. Well Performance Tests: Report raw data only if applicable.
- G. Downhole video of test production well in a digital format.

#### 1.6 JOB CONDITIONS:

- A. Contamination: Cap well using threaded, flanged or compression seal when unattended. Prevent contamination of existing water system.
- B. Cleanup: Promptly following well installation. Fill pits and return jobsite to original grade. Ground immediately surrounding casing shall be sloped away from well to prevent surface runoff from ponding around completed well.

#### 1.7 SCHEDULES

- A. Details:
  - 1. Site location map/site map
  - 2. Existing well log of Palmer Well No. 3



## PART 2 - PRODUCTS

### 2.1 PRODUCTION WELL CASING

- A. Provide 12-inch diameter. Conform to AWWA A100, Section 4.3 Table 3, and ASTM Specification A-589 - heaviest new black steel pipe. Mill stencils shall be clearly visible on all pipe sections.
- B. Joints: Standard AWS butt welding. Conform to AWWA C206.
- C. Length-132 feet nominal: The casing shall extend from two feet above finished grade to an approximate depth of 130 feet below grade. Provide a minimum of four casing centralizers evenly along the length of the casing which are securely attached to the casing to provide unobstructed, uniform placement of grout.

### 2.2 OBSERVATION WELL CASING (5-inch PVC observation well)

- A. Provide 5-inches nominal inside diameter. PVC material. Conform to ASTM specification F 480-90 and be SDR 21 or heavier over its entire length.
- B. Joints: Standard solvent weld couplings and fittings.
- C. Length-132 feet nominal: The casing shall extend from two feet above finished grade to an approximate depth of 130 feet depending on local geologic conditions. Casing shall be placed to provide unobstructed, uniform placement of grout.

### 2.3 GROUT:

- A. Neat Cement Grout. Proportioning: Conform to AWWA A100, Section 7, and Grouting of Community Water Supply Wells, ODWMA - Public Water Supply Program, ODWMA-399-016

### 2.4 CENTRALIZERS:

- A. Material: PVC or stainless steel placed at the bottom of the screened section, and at every 20 feet to the surface to ensure unobstructed, uniform placement and thickness of grout and filter pack. Assume four (4) centralizers will be needed.

### 2.5 SCREEN

- A. 12-inch Production Well:
  - 1. Continuous slot, wire wound design. Johnson Screen Company (Aqseptence Group, Inc.) or Engineer-approved equal. The wire wrapping shall be triangular shape with sharp edges, thinning inwardly to minimize clogging.
  - 2. Material: AISI Type, 304 Stainless Steel with threaded, recessed couplings or welded connections.
  - 3. End fittings: Provided with screen, shall be type 304 stainless steel, threaded or welded.
  - 4. Screen Fittings: Same material as the screen. Shall be welded or threaded, watertight, and straight.
  - 5. Screen slot size: Screen shall be designed based upon the results of the grain size analyses. The slot opening shall accommodate the expected well capacity without exceeding 0.1 feet per second entrance velocity.
  - 6. Length: 20 feet but may be field adjusted according to encountered conditions.
  - 7. Depth Interval: The approximate screen setting will be from 130 to 150 feet below existing grade.
  - 8. Diameter: Twelve (12)-inch diameter pipe size
  - 9. CONTRACTOR shall ensure that the screen has adequate collapse and tensile strengths.

10. Centralizers shall be securely attached to the top and bottom of the screen section.
11. Submit sieve analyses results and final selection of slot opening to ENGINEER. ENGINEER shall approve the screen slot size prior to CONTRACTOR ordering the screen.

B. 5-inch Observation Well:

1. Continuous PVC slot, or slotted-type PVC design.
2. Material: PVC.
3. End fittings: Provided with screen, shall be threaded or solvent welded.
4. Screen Fittings: Same material as the screen. Shall be threaded or solvent welded.
5. Screen slot size: Screen shall be sized based upon the encountered geologic materials.
6. Length: 20 feet but may be field adjusted according to encountered conditions.
7. Depth Interval: The approximate screen setting will be from 130 to 150 feet below existing grade.
8. Diameter: five (5)-inch diameter pipe size
9. CONTRACTOR shall ensure that the screen has adequate collapse and tensile strengths.
10. Centralizers shall be securely attached to the top and bottom of the screen section.

2.6 FILTER PACK:

A. Selection: In accordance with screen manufacturer's recommendations based on sieve analyses of the formation, and AWWA A100, Section 6.

B. Material:

1. Consist of clean, well-rounded grains.
2. Siliceous with not more than 5 percent calcareous material by weight.
3. Gravel pack thickness shall conform to AWWA A100 Section 4.6, Gravel Pack.
4. ENGINEER shall approve the filter pack material, including sieve analysis in advance of delivery and placement.
5. All material shall be protected from contamination prior to use.
6. Ratio of grain size of filter pack material to formation shall range from 6:1 to 4:1.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Install permanent casing plumb enabling discharge column, bowl assembly, and fittings to hang free of contact with permanent casing. Seat and seal permanent casing to prevent infiltration of sand, silt and water.
- B. Pressure Grouting Method: Force grout using the tremie method from the bottom of the casing toward the surface continuously in one operation while keeping tremie pipe submerged in grout at all times during the operation.
- C. Well Development Method: Yield maximum water per foot of available draw down and extract maximum practical quantity of sand from water bearing formation such that water produced under normal operating conditions is free of sand.
- D. After completion, cap well with screwed, flanged, or compression seal cap.
- E. Plugging or abandonment requires review by the ENGINEER.

3.2 TESTING AND INSPECTION:

A. General:

1. Complete, develop, clean and arrange with ENGINEER for required inspections and tests.
  2. Provide all equipment, generator power and assistance necessary to conduct the pumping performance tests. The equipment shall include a pump; suitable gate valve to control discharge; an orifice or calibrated flow meter, a discharge pressure gauge, a water sample tap, and at least 200 feet of discharge piping, sedimentation bag, and splash pan to direct water away from the site and ancillary items for a complete operating system.
  3. CONTRACTOR shall provide minimum 48-hour notice to ENGINEER in advance of all tests.
- B. Drillers Log: Provide all information as applicable and in accordance with EGLE Wellogic Water Well and Pump Record Submittals
- C. Alignment Surveys:
1. General: The completed well shall be constructed round, plumb, and true to line as defined in this section of the standard. Test for plumbness and alignment on the production well will be required after completed construction of the well. The well must meet AWWA Standards for plumbness and alignment. Testing shall be performed in accordance with AWWA A100-Appendix D.
  2. Tolerances: The following tolerances shall be maintained by the CONTRACTOR:
    - a. Plumbness: The maximum allowable horizontal deviation (drift) of the well from the vertical shall not exceed two thirds of the smallest inside diameter of that part of the well being tested per 100 ft of depth.
    - b. Alignment: The alignment must be satisfactory for the successful installation and operation of the permanent pumping equipment such that pump and column hangs freely without contact with permanent casing.
    - c. Alignment shall be tested by lowering a section of pipe or a dummy 40 ft in length into the well. This section of pipe or dummy shall move freely throughout the tested interval. The outside diameter of the pipe or dummy shall not be more than 0.5 in. smaller than the diameter of that part of the casing or hole being tested
  3. Departures from the above tolerances shall be corrected by CONTRACTOR at CONTRACTOR'S expense.
- D. Step-Drawdown Test:
1. Stepped Rate Drawdown testing will be performed for two reasons; 1) to determine the overall success of production well development while visually inspecting for sand or sediment production, and, 2) to aid in the determination of the pumping rate for the 72-hour pumping test.
  2. Testing Procedure:
    - a. Pretest: Record water levels at 15-minute intervals for 1 hour immediately prior to testing. Water level readings will be measured by ENGINEER.
    - b. Stepped Rate Pumping Test:
      - 1) Provide all equipment and assistance to conduct stepped pumping test. The equipment shall include a pump, a suitable gate valve to control discharge, an orifice or calibrated flow meter, a discharge pressure gauge, a water sample tap, and at least 200 feet of discharge piping, sedimentation bag, and splash pan to direct water away from the site. Provide soil erosion and sedimentation control measures consistent with local standards at the discharge. CONTRACTOR shall be responsible for providing a constant discharge rate for the duration of the test.
      - 2) The stepped rate test will be run for an overall time period of 4 hours and will consist of five or more separate pumping rates.
      - 3) Each pumping rate will be pumped for a period of 30-45 minutes (depending on the hydraulic behavior of the formation). CONTRACTOR and ENGINEER will discuss the pumping rate schedule prior to the start of the test. Water levels will be recorded by ENGINEER.
      - 4) The assumed pumping rates will be based on a maximum pumping capacity of 1000 gpm.

E. Aquifer Testing:

1. Test Procedure:
  - a. Water levels readings will be measured by ENGINEER.
  - b. Provide all equipment and assistance necessary to conduct the pumping performance tests. The equipment shall include a suitable gate valve to control discharge, an orifice or calibrated flow meter, a discharge pressure gauge, a water sample tap, and at least 200 feet of discharge piping, sedimentation bag, and splash pan to direct water away from the site. Provide soil erosion and sedimentation control measures consistent with City standards at the discharge. CONTRACTOR shall be responsible for providing a constant discharge rate for the duration of the test.
  - c. Pumping rate will be established between ENGINEER and CONTRACTOR, however, the expected pumping rate is 1000 gpm.
  - d. The pumping duration will be up to 72 hours with a 72-hour recovery period. The pump shall remain in the production well throughout the recovery period.
  - e. The power supply for the test pump will be available at the Palmer Well No. 3 wellhouse.

F. Water Quality Testing

1. ENGINEER shall provide bottles and collect water samples including bacteriological analyses at the end the Aquifer Test.
2. CONTRACTOR shall pay for all additional bacteriological testing if required by EGLE.
3. Owner will pay for water quality analysis.

G. Downhole Video of Test Production Well

1. Upon completion of the plumbness and alignment testing, a video of the test production well shall be completed.
2. Provide DVD of video in MPEG format.

3.3 WELL RECORDS

- A. Provide records documents in accordance with State of Michigan requirements for a Type I public well.

3.4 ADJUST AND CLEAN:

A. Chlorination:

1. Chlorinate the well following completion of all work at the site by preparing a chlorine solution with a chlorine concentration of 100 ppm free chlorine. Apply solution to all parts of the well using a swab and/or wash-down procedure.

3.5 RESTORATION

- A. Fill, stabilize and grade all pits and well spoils per Section 32 92 00 – Turf and Grasses.

END OF SECTION 33 21 00 A

SECTION 33 21 00 B - WATER WELLS AND TESTING AT JUNIPER NO. 1 WELL SITE

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. This section encompasses all the work required for water wells including well performance testing. The general scope of the drilling and testing will be as follows:
1. At the production well location, drilling of an initial pilot borehole to a depth of about 100 feet for the purpose of soil sample collection and grain size analysis. Grain size analyses will be required for a minimum of two (2) sample sets within the target aquifer located between 70 feet and 100 feet.
  2. Construction of one (1) 5-inch diameter observation well in glacial drift at an assumed depth of 100 feet. The construction will consist of approximately 90 feet of 5-inch PVC casing with 10 feet of 5-inch PVC filter packed well screen.
  3. Construction of one (1) 12-inch diameter production well in glacial drift at an assumed depth of 100 feet. The construction will consist of approximately 80 feet of 12-inch steel casing with 20 feet of 12-inch stainless steel wire wound filter packed well screen.
  4. Development of the test production well shall be performed by the Contractor under the observation of the Engineer.
  5. Performance testing consisting of a four-hour stepped rate drawdown test
  6. Performance testing consisting of a constant rate well performance test for a minimum of 72 hours in duration. Contractor shall supply necessary test pumping equipment. Existing power is not available at the Juniper site. Contractor shall supply necessary equipment to supply necessary power to the test pumping equipment.
  7. Plumbness and Alignment Testing.
  8. At the conclusion of the pumping phase of the test, Engineer will collect groundwater samples with assistance from Contractor. Engineer will coordinate and pay for lab testing.
  9. Digital video recording of the inside of the completed well.
  10. Restoration of site.
  11. Contractor shall supply SESC plans and controls and obtain permitting as necessary to prevent unfiltered pump discharge water, drilling fluid, and debris from reaching local wetlands and waterways.

1.2 METHOD OF MEASUREMENT AND BASIS OF PAYMENT:

- A. Bore Hole: Measured from the bottom to the existing ground surface and paid for by the linear foot.
- B. Pilot and Sampling Boring: Paid for by the lump sum.
- C. Well Casing: Paid for by the linear foot.
- D. Well Screen: Paid for by the linear foot including filter packing.
- E. Pressure Grouting: Measured from the bottom to the top and paid for by the linear foot.
- F. Well Development: Measured by the time required and paid for by the hour.
- G. Pumping Testing: Measured by the time required and paid for by the hour.
- H. Digital Video Recording: Paid for by the lump sum.
- I. Plumbness and Alignment Survey: Paid for by the lump sum.

- J. Chlorination: Paid for by the lump sum.
- K. Site Restoration and Cleanup: Paid for by the lump sum in accordance with Section 32 92 00 "Turf and Grasses."
- L. Miscellaneous Approved Labor and Equipment Allowance: An allowance has been provided for Owner's use in the amount shown in the Bid Form. Payment shall be made based on either unit prices provided in the Bid Form or on a not to exceed time and material basis agreed upon by proposal request prior to work being completed.

1.3 QUALITY ASSURANCE:

- A. The CONTRACTOR shall have been engaged in the business of high-capacity test pumping, drilling exploration boreholes, using the method of mud rotary and reverse circulation drilling of wells of the diameter, depth, and anticipated production equivalent to the proposed production wells for a period of at least ten (10) years.
- B. The CONTRACTOR shall submit a list of the last three (3) municipal well owners for whom the CONTRACTOR has drilled equivalent municipal wells. The list shall include the owner's name and address, phone number, casing diameter, type and depth and the date of installation.
- C. The CONTRACTOR shall employ only competent workers for the execution of the work and all such work shall be performed under the direct supervision of an experienced field superintendent with a minimum of five (5) years' experience in this type of drilling satisfactory to the ENGINEER/OWNER.

1.4 REFERENCES:

- A. Groundwater Quality Control - Act 368 of the Public Acts of 1978, Part 127. Water Supply and Sewer Systems
- B. Michigan Safe Drinking Water Act 399 of the Public Acts of 1976 and associated administrative rules and regulations, as amended.
- C. Michigan's Water Well Manual, March 2019 (or most recent version), prepared by Michigan Department of Environmental Quality (now EGLE).
- D. American Water Works Association (AWWA) Section A100 Deep Wells (the most current version).
- E. American Water Works Association (AWWA) Section C654-13 Disinfection of Wells (the most current version)
- F. AWS D1.1 Structural Welding Code
- G. ASTM specification A589-89a, Standard Specification for Seamless and Welded Carbon Steel water well pipe
- H. The MDEQ (now EGLE) Water Well Disinfection Manual
- I. American Petroleum Institute (API) Specification 5L

- J. Part 127 of the Public Health Code Act 368 of 1978, Water Supply and Sewer Systems, and Administrative Rules, which are collectively known as the "Michigan Water Well Construction and Pump Installation Code."
- K. Grouting of Community Water Supply Wells, ODWMA- Public Water Supply Program, ODWMA-399-016
- L. ASTM specification F 480-90, "Standard Specification for Thermoplastic Water Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR)."
- M. ASTM specification D 1785-91, "Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe Schedules 40, 80, and 120."
- N. ASTM specification C 150-89, "Standard Specification for Portland Cement."

1.5 SUBMITTALS:

- A. Well Casing: Mill certificates required, or mill markings shall be clearly visible on all casing sections.
- B. Well screen: provide sieve analysis and well screen selection basis. Provide filter pack data as recommended by screen manufacturer.
- C. Soil Erosion and Control plan and permit
- D. Restoration plan
- E. Drilling Logs: 1 set to ENGINEER. Submit records to the EGLE Wellogis water well database.
- F. Well Performance Tests: Report raw data only if applicable.
- G. Downhole video of test production well in a digital format.

1.6 JOB CONDITIONS:

- A. Contamination: Cap well using threaded, flanged or compression seal when unattended. Prevent contamination of existing water system.
- B. Cleanup: Promptly following well installation. Fill pits and return jobsite to original grade. Ground immediately surrounding casing shall be sloped away from well to prevent surface runoff from ponding around completed well.

1.7 SCHEDULES

- A. Details:
  1. Site location map/site map
  2. Existing well log of Juniper Well No. 3

## PART 2 - PRODUCTS

### 2.1 PRODUCTION WELL CASING

- A. Provide 12-inch diameter. Conform to AWWA A100, Section 4.3 Table 3, and ASTM Specification A-589 - heaviest new black steel pipe. Mill stencils shall be clearly visible on all pipe sections.
- B. Joints: Standard AWS butt welding. Conform to AWWA C206.
- C. Length-82 feet nominal: The casing shall extend from two feet above finished grade to an approximate depth of 80 feet below grade. Provide a minimum of four casing centralizers evenly along the length of the casing which are securely attached to the casing to provide unobstructed, uniform placement of grout.

### 2.2 OBSERVATION WELL CASING (5-inch PVC observation well)

- A. Provide 5-inches nominal inside diameter. PVC material. Conform to ASTM specification F 480-90 and be SDR 21 or heavier over its entire length.
- B. Joints: Standard solvent weld couplings and fittings.
- C. Length-90 feet nominal: The casing shall extend from two feet above finished grade to an approximate depth of 90 feet depending on local geologic conditions. Casing shall be placed to provide unobstructed, uniform placement of grout.

### 2.3 GROUT:

- A. Neat Cement Grout. Proportioning: Conform to AWWA A100, Section 7, and Grouting of Community Water Supply Wells, ODWMA - Public Water Supply Program, ODWMA-399-016

### 2.4 CENTRALIZERS:

- A. Material: PVC or stainless steel placed at the bottom of the screened section, and at every 50 feet to the surface to ensure unobstructed, uniform placement and thickness of grout and filter pack. Assume three (3) centralizers will be needed.

### 2.5 SCREEN

- A. 12-inch Production Well:
  - 1. Continuous slot, wire wound design. Johnson Screen Company (Aqseptence Group, Inc.) or Engineer-approved equal. The wire wrapping shall be triangular shape with sharp edges, thinning inwardly to minimize clogging.
  - 2. Material: AISI Type, 304 Stainless Steel with threaded, recessed couplings or welded connections.
  - 3. End fittings: Provided with screen, shall be type 304 stainless steel, threaded or welded.
  - 4. Screen Fittings: Same material as the screen. Shall be welded or threaded, watertight, and straight.
  - 5. Screen slot size: Screen shall be designed based upon the results of the grain size analyses. The slot opening shall accommodate the expected well capacity without exceeding 0.1 feet per second entrance velocity.
  - 6. Length: 20 feet but may be field adjusted according to encountered conditions.
  - 7. Depth Interval: The approximate screen setting will be from 80 to 100 feet below existing grade.
  - 8. Diameter: Twelve (12)-inch diameter pipe size
  - 9. CONTRACTOR shall ensure that the screen has adequate collapse and tensile strengths.



10. Centralizers shall be securely attached to the top and bottom of the screen section.
11. Submit sieve analyses results and final selection of slot opening to ENGINEER. ENGINEER shall approve the screen slot size prior to CONTRACTOR ordering the screen.

B. 5-inch Observation Well:

1. Continuous PVC slot, or slotted-type PVC design.
2. Material: PVC.
3. End fittings: Provided with screen, shall be threaded or solvent welded.
4. Screen Fittings: Same material as the screen. Shall be threaded or solvent welded.
5. Screen slot size: Screen shall be sized based upon the encountered geologic materials.
6. Length: 10 feet but may be field adjusted according to encountered conditions.
7. Depth Interval: The approximate screen setting will be from 90 to 100 feet below existing grade.
8. Diameter: five (5)-inch diameter pipe size
9. CONTRACTOR shall ensure that the screen has adequate collapse and tensile strengths.
10. Centralizers shall be securely attached to the top and bottom of the screen section.

2.6 FILTER PACK:

A. Selection: In accordance with screen manufacturer's recommendations based on sieve analyses of the formation, and AWWA A100, Section 6.

B. Material:

1. Consist of clean, well-rounded grains.
2. Siliceous with not more than 5 percent calcareous material by weight.
3. Gravel pack thickness shall conform to AWWA A100 Section 4.6, Gravel Pack.
4. ENGINEER shall approve the filter pack material, including sieve analysis in advance of delivery and placement.
5. All material shall be protected from contamination prior to use.
6. Ratio of grain size of filter pack material to formation shall range from 6:1 to 4:1.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Install permanent casing plumb enabling discharge column, bowl assembly, and fittings to hang free of contact with permanent casing. Seat and seal permanent casing to prevent infiltration of sand, silt and water.
- B. Pressure Grouting Method: Force grout using the tremie method from the bottom of the casing toward the surface continuously in one operation while keeping tremie pipe submerged in grout at all times during the operation.
- C. Well Development Method: Yield maximum water per foot of available draw down and extract maximum practical quantity of sand from water bearing formation such that water produced under normal operating conditions is free of sand.
- D. After completion, cap well with screwed, flanged, or compression seal cap.
- E. Plugging or abandonment requires review by the ENGINEER.

3.2 TESTING AND INSPECTION:

A. General:

1. Complete, develop, clean and arrange with ENGINEER for required inspections and tests.
  2. Provide all equipment, generator power and assistance necessary to conduct the pumping performance tests. The equipment shall include a pump; suitable gate valve to control discharge; an orifice or calibrated flow meter, a discharge pressure gauge, a water sample tap, and at least 200 feet of discharge piping, sedimentation bag, and splash pan to direct water away from the site and ancillary items for a complete operating system.
  3. CONTRACTOR shall provide minimum 48-hour notice to ENGINEER in advance of all tests.
- B. Drillers Log: Provide all information as applicable and in accordance with EGLE Wellogic Water Well and Pump Record Submittals
- C. Alignment Surveys:
1. General: The completed well shall be constructed round, plumb, and true to line as defined in this section of the standard. Test for plumbness and alignment on the production well will be required after completed construction of the well. The well must meet AWWA Standards for plumbness and alignment. Testing shall be performed in accordance with AWWA A100-Appendix D.
  2. Tolerances: The following tolerances shall be maintained by the CONTRACTOR:
    - a. Plumbness: The maximum allowable horizontal deviation (drift) of the well from the vertical shall not exceed two thirds of the smallest inside diameter of that part of the well being tested per 100 ft of depth.
    - b. Alignment: The alignment must be satisfactory for the successful installation and operation of the permanent pumping equipment such that pump and column hangs freely without contact with permanent casing.
    - c. Alignment shall be tested by lowering a section of pipe or a dummy 40 ft in length into the well. This section of pipe or dummy shall move freely throughout the tested interval. The outside diameter of the pipe or dummy shall not be more than 0.5 in. smaller than the diameter of that part of the casing or hole being tested
  3. Departures from the above tolerances shall be corrected by CONTRACTOR at CONTRACTOR'S expense.
- D. Step-Drawdown Test:
1. Stepped Rate Drawdown testing will be performed for two reasons; 1) to determine the overall success of production well development while visually inspecting for sand or sediment production, and, 2) to aid in the determination of the pumping rate for the 72-hour pumping test.
  2. Testing Procedure:
    - a. Pretest: Record water levels at 15-minute intervals for 1 hour immediately prior to testing. Water level readings will be measured by ENGINEER.
    - b. Stepped Rate Pumping Test:
      - 1) Provide all equipment and assistance to conduct stepped pumping test. The equipment shall include a pump, a suitable gate valve to control discharge, an orifice or calibrated flow meter, a discharge pressure gauge, a water sample tap, and at least 200 feet of discharge piping, sedimentation bag, and splash pan to direct water away from the site. Provide soil erosion and sedimentation control measures consistent with local standards at the discharge. CONTRACTOR shall be responsible for providing a constant discharge rate for the duration of the test.
      - 2) The stepped rate test will be run for an overall time period of 4 hours and will consist of five or more separate pumping rates.
      - 3) Each pumping rate will be pumped for a period of 30-45 minutes (depending on the hydraulic behavior of the formation). CONTRACTOR and ENGINEER will discuss the pumping rate schedule prior to the start of the test. Water levels will be recorded by ENGINEER.
      - 4) The assumed pumping rates will be based on a maximum pumping capacity of 1000 gpm.

E. Aquifer Testing:

1. Test Procedure:
  - a. Water levels readings will be measured by ENGINEER.
  - b. Provide all equipment and assistance necessary to conduct the pumping performance tests. The equipment shall include a suitable gate valve to control discharge, an orifice or calibrated flow meter, a discharge pressure gauge, a water sample tap, and at least 200 feet of discharge piping, sedimentation bag, and splash pan to direct water away from the site. Provide soil erosion and sedimentation control measures consistent with City standards at the discharge. CONTRACTOR shall be responsible for providing a constant discharge rate for the duration of the test.
  - c. Pumping rate will be established between ENGINEER and CONTRACTOR, however, the expected pumping rate is 1000 gpm.
  - d. The pumping duration will be up to 72 hours with a 72-hour recovery period. The pump shall remain in the production well throughout the recovery period.
  - e. Contractor shall supply power for the test pump at the Juniper Well No. 1 wellhouse.

F. Water Quality Testing

1. ENGINEER shall provide bottles and collect water samples including bacteriological analyses at the end the Aquifer Test.
2. CONTRACTOR shall pay for all additional bacteriological testing if required by EGLE.
3. Owner will pay for water quality analysis.

G. Downhole Video of Test Production Well

1. Upon completion of the plumbness and alignment testing, a video of the test production well shall be completed.
2. Provide DVD of video in MPEG format.

3.3 WELL RECORDS

- A. Provide records documents in accordance with State of Michigan requirements for a Type I public well.

3.4 ADJUST AND CLEAN:

A. Chlorination:

1. Chlorinate the well following completion of all work at the site by preparing a chlorine solution with a chlorine concentration of 100 ppm free chlorine. Apply solution to all parts of the well using a swab and/or wash-down procedure.

3.5 RESTORATION

- A. Fill, stabilize and grade all pits and well spoils per Section 32 92 00 – Turf and Grasses.

END OF SECTION 33 21 00 B