

BID DOCUMENTS AND TECHNICAL SPECIFICATIONS

MISCELLANEOUS LINE TAPS AND STOPS

PREPARED FOR
OKALOOSA COUNTY WATER & SEWER



BID #: ITB WS 72-19

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TABLE OF CONTENTS

PART 1 - BIDDING REQUIREMENTS

Okaloosa	Advertisement for Bids
Okaloosa	Notice to Respondents
Okaloosa	Bid Requirements
Okaloosa GSIR	General Services Insurance Requirements
Okaloosa GSC	General Services Bid Conditions
Okaloosa Exhibit B	Title IV Clauses
Okaloosa Exhibit C	Compliance with Nondiscrimination Requirements
Okaloosa Exhibit D	FEMA Federal Grant Funding Provisions
Okaloosa Form	Drug-Free Workplace Certification
Okaloosa Form	Conflict of Interest Disclosure Form
Okaloosa Form	Federal E-Verify Compliance Certification
Okaloosa Form	Indemnification and Hold Harmless
Okaloosa Form	Lobbying
Okaloosa Form	Cone of Silence
Okaloosa Form	Company Data
Okaloosa Form	System for Award Management
Okaloosa Form	Addendum Acknowledgement
Okaloosa Form	Bid Form
Okaloosa Form	Anti-Collusion Form
Okaloosa Form	Government Debarment & Suspension
Okaloosa Form	Vendors on Scrutinized Companies List
Okaloosa Form	References
EJCDC C-451	Qualifications Statement

PART 2 - CONTRACT FORMS

EJCDC C-610	Performance Bond
EJCDC C-615	Payment Bond

PART 3 - CONDITIONS OF THE CONTRACT

PART 4 - SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

01100	Summary of Work
01270	Measurement & Payment
01300	Submittals
01400	Quality Requirements
01500	Temporary Facilities and Controls
01600	Product Requirements
01640	Manufacturer's Services
01700	Execution Requirements

DIVISION 2 – SITEWORK

02200	Earthwork
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DIVISION 3 – CONCRETE (NOT USED)

03300 Cast-In-Place Concrete

DIVISION 4 – MASONRY (NOT USED)

DIVISION 5 – METALS (NOT USED)

DIVISION 6 – CARPENTRY (NOT USED)

DIVISION 7 – THERMAL AND MOISTURE PROTECTION (NOT USED)

DIVISION 8 – DOORS AND WINDOWS (NOT USED)

DIVISION 9 – FINISHES (NOT USED)

DIVISION 10 – SPECIALTIES (NOT USED)

DIVISION 11 – EQUIPMENT (NOT USED)

DIVISION 12 – FURNISHINGS (NOT USED)

DIVISION 13 – SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 – CONVEYING SYSTEMS (NOT USED)

DIVISION 15 – MECHANICAL (NOT USED)

15001 Sanitary Sewer Piping, Valves and Accessories
15010 Under Pressure Line Taps and Stops

DIVISION 16 – ELECTRICAL (NOT USED)



INVITATION TO BID (ITB) & RESPONDENT'S ACKNOWLEDGEMENT

ITB TITLE:
MISCELLANEOUS LINE TAPS AND STOPS

ITB NUMBER:
ITB WS 72-19

<u>ISSUE DATE:</u>	August 5, 2019	8:00 A.M. CST
<u>LAST DAY FOR QUESTIONS:</u>	August 14, 2019	3:00 P.M. CST
<u>ITB OPENING DATE & TIME:</u>	August 28, 2019	3:15 P.M. CST

NOTE: BIDS RECEIVED AFTER THE BID OPENING DATE & TIME WILL NOT BE CONSIDERED.

Okaloosa County, Florida solicits your company to submit a bid on the above referenced goods or services. All terms, specifications and conditions set forth in this ITB are incorporated into your response. A bid will not be accepted unless all conditions have been met. All bids must have an authorized signature in the space provided below. All bids must be sealed and received by the Okaloosa County Courthouse by the "ITB Opening Date & Time" referenced above. The official clock for the purpose of receiving bids is located in the Okaloosa County Courthouse, #282 located at 101 E. James Lee Blvd., Crestview, FL 32536. All envelopes containing sealed bids must reference the "ITB Title", "ITB Number" and the "ITB Opening Date & Time". Okaloosa County is not responsible for lost or late delivery of bids by the U.S. Postal Service or other delivery services used by the respondent. Neither faxed nor electronically submitted bids will be accepted. Bids may not be withdrawn for a period of ninety (90) days after the bid opening unless otherwise specified.

RESPONDENT ACKNOWLEDGEMENT FORM BELOW MUST BE COMPLETED, SIGNED, AND RETURNED AS PART OF YOUR BID. BIDS WILL NOT BE ACCEPTED WITHOUT THIS FORM, SIGNED BY AN AUTHORIZED AGENT OF THE RESPONDENT.

COMPANY NAME _____
MAILING ADDRESS _____
CITY, STATE, ZIP _____
FEDERAL EMPLOYER'S IDENTIFICATION NUMBER (FEIN): _____
TELEPHONE NUMBER: _____ EXT: _____ FAX: _____
EMAIL: _____

I CERTIFY THAT THIS BID IS MADE WITHOUT PRIOR UNDERSTANDING, AGREEMENT, OR CONNECTION WITH ANY OTHER RESPONDENT SUBMITTING A BID FOR THE SAME MATERIALS, SUPPLIES, EQUIPMENT OR SERVICES, AND IS IN ALL RESPECTS FAIR AND WITHOUT COLLUSION OR FRAUD. I AGREE TO ABIDE BY ALL TERMS AND CONDITIONS OF THIS BID AND CERTIFY THAT I AM AUTHORIZED TO SIGN THIS BID FOR THE RESPONDENT. AUTHORIZED SIGNATURE: _____ PRINTED NAME: _____

TITLE: _____ DATE: _____

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NOTICE TO RESPONDENTS

ITB WS 72-19

Notice is hereby given that the Board of County Commissioners of Okaloosa County, FL, will accept sealed bids until **3:15 p.m. (CST) August 28, 2019**, for **MISCELLANEOUS LINE TAPS AND STOPS**.

Interested respondents desiring consideration shall provide an original and two (2) copies (total three (3)) of their Invitation to Bids (ITB) response with the respondent's areas of expertise identified. Submissions shall be portrait orientation, unbound, and 8 ½" x 11" where practical. **All originals must have original signatures in blue ink.**

The Notice to Respondents can be viewed at <https://www.bidnetdirect.com/florida> or at <http://www.co.okaloosa.fl.us/purchasing/home> then accessing the link "View Current Solicitations"

At **3:15 p.m. (CST)**, August 28, 2019, all bids will be opened and read aloud. All bids must be in sealed envelopes reflecting on the outside thereof the Respondent's name and "Miscellaneous **Line Taps and Stops**". The Board of County Commissioners will consider all bids properly submitted at its scheduled bid opening in the Okaloosa County Courthouse located at 101 E. James Lee Boulevard #282, Crestview, FL 32536. Bids may be submitted in the prior to bid opening or delivered to the Clerk of Circuit Court, 101 E. James Lee Boulevard, #282, Crestview, FL 32536. **NOTE: MUST RING DOORBELL TO GAIN ENTRANCE INTO ROOM 282. THE CLERK WILL COME ACCEPT YOUR PACKAGE OR SHOW YOU TO THE CONFERENCE ROOM FOR THE SCHEDULED BID OPENING.**

NOTE: THE NEW CRESTVIEW COURTHOUSE HAS SECURITY AT ENTRY POINT-PLEASE ALLOW FOR TIME TO GET THROUGH SECURITY WHEN ARRIVING FOR THE BID OPENING. *NOTE: Crestview, FL is not a next day guaranteed delivery location by most delivery services.** Respondents using mail or delivery services assume all risks of late or non-delivery.

The County reserves the right to award the bid to the lowest responsive respondent and to waive any irregularity or technicality in bids received. Okaloosa County shall be the sole judge of the bid and the resulting negotiated agreement that is in its best interest and its decision shall be final.

Any Respondent failing to mark outside of the envelope as set forth herein may not be entitled to have their bid considered.

All bids should be addressed as follows:

Miscellaneous Line Taps and Stops

Crestview Courthouse
Attn: BCC Records
101 E. James Lee Blvd, Room 282
Crestview FL 32536

Jeff Hyde
Purchasing Manager

Date

OKALOOSA COUNTY
BOARD OF COUNTY COMMISSIONERS

Charles K. Windes, Jr.,
Chairman

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BID REQUIREMENTS

BID #: ITB WS 72-19

BID ITEM: MISCELLANEOUS LINE TAPS AND STOPS

SCOPE

This bid includes the material, equipment, and labor services for Miscellaneous Line Taps and Stops specified herein. All materials shall be manufactured within the continental United States. No substitutions will be accepted unless approved by the Purchasing and the Water & Sewer Department. **Note: Evaluation of bid will be based on “TOTAL UNIT PRICE BASE BID AMOUNT”. All bids and shall include itemized unit cost for each identified items.**

Price shall be guaranteed for 90 days after the bids are read and received.

For any construction water utilized via a hydrant meter, the contractor shall setup an account with OCWS' Customer Service office and provide contract information. The account shall be setup in the contractor's name with a deposit and service fee paid by the contractor. The deposit will be refunded when the account terminates if the meter has not been damaged or lost. OCWS will be responsible for setting the hydrant, along with the monthly reading. If the hydrant meter needs to be relocated, contractor to coordinate this with OCWS Maintenance. Water usage will not be charged to the contractor, provided that the above conditions are met.

QUALIFICATION OF CONTRACTORS

Minimum Qualifications: Bidders must be fully licensed as a Certified General Contractor (CGC) or a Certified Underground Utility Contractor in the State of Florida, and must have been in business as such for a minimum of ten (10) consecutive years performing the services requested in this bid.

CONTRACT DURATION & EXTENSION

The initial contract term shall be for a period of three (3) calendar year from the date of acceptance by the Owner, providing satisfactory performance has been maintained by the Contractor. The contract may be extended for two (2) additional one (1) year terms. The Contract Extension shall be contingent upon the availability of funds, satisfactory performance by the Contractor, and approval by the appropriate County representatives. The Owner is under no obligation to exercise any of the available extensions. All Extensions available under this contract are optional to the Owner.

PRICING PROPOSALS

Upon request from the County, the Contractor shall submit a pricing proposal for the scope of work to be allocated on case by case basis as needed by the Owner and work shall be authorized by individual Notices to Proceed from the Department requesting said Work. The pricing proposal shall include the location where the work will be performed, including a physical address if one is available, a full description of the work to be performed, a listing of all unit price list items to be utilized for the work, the quantities of each item

to be used, the total proposed dollar value of the project, a listing of any sub-contractors to be used for any portion of the work, and the number of days for completion of all work stated in consecutive calendar days.

UNIT PRICES

The Unit Prices submitted under this Bid shall include any and all costs, fees, and charges associated with providing labor, materials, equipment, mark-up, insurance, bond(s), utilities, and any other costs associated with performance of the work. The Unit Prices multiplied by the quantities estimated for the scope of work shall be the final cost to the County. The County shall not be charged for any costs other than the unit price items unless approved via Contract Amendment prior to execution of a Purchase Order.

AUTHORIZATION

The County shall be responsible for determining estimated quantities of items for each project/scope of work. The County may elect to do a cost comparison between Contractors (if multiple contractors are under contract, and shall issue a purchase order to the Contractor with the lowest total price, based on the unit prices submitted under this bid.

Services to be furnished under this contract shall be ordered by the authorized County Official. The authorized County Official shall be the Director of Water and Sewer or his/her designee. The Contractor is required to respond to all emergency work ordered, within 48 hours of being notified (phone or written). The Contractor shall be required to have an authorized representative sign all copies of the Purchase Orders and send them back to Purchasing.

.Any and all changes to a project shall be authorized through a Contract Change Order or Amendment as applicable to the change being authorized. Changes must be requested and/or approved by the Director of Water and Sewer or his/her designee. The Contractor shall then submit a proposal for the change to the Purchasing representative. No additional or alternate work shall be performed by the Contractor until receipt of a fully executed Change Order or Amendment.

Change Orders

The County shall advise the Contractor of minor changes in the work not involving an adjustment to the Purchase Order dollar value or completion time. The Contractor shall be required to perform these changes at no additional cost to the County.

The Contractor may request a change by submitting a written request to the County, or Engineer describing the proposed change and its full effect on the work, including a statement describing the reason for the change, and the effect on the Purchase Order dollar value and completion time with full documentation. The Contractor must provide backup documentation for any requested substitutions or alterations from the scope of work provided by the County.

Change Orders shall be issued to increase or decrease the dollar value of a Purchase Order based on estimated quantity overages and shortages, or on a change in the project determined by the County or Engineer.

All Change Orders shall be accompanied by a revised scope of work, as applicable, added or subtracted quantities of unit price items, explanation for the change (whether County driven or Contractor driven), and

shall be signed by the Contractor, the Department Head, and the County Representative. Change Orders shall not be considered fully executed until all three (3) parties have signed. In the event an Engineer is utilized by the County for a project, the Engineer's authorized representative shall also be required to sign any issued Change Orders.

PUBLIC CONSTRUCTION BONDS

The Contractor shall be required to obtain and submit recorded Public Construction Bonds on any Contract Purchase Orders issued greater than one hundred thousand dollars (\$100,000.00) in value per Florida Statute 255.05. The Contractor shall furnish the required bond, after full execution of the authorizing Purchase Order, covering the faithful performance of the Contract and the payment of all obligations arising there under in full amount of the Contract Purchase Order, with such acceptable sureties, secured through the Contractor's usual sources as may be agreeable to the parties. The Bond shall be released upon satisfactory completion of the project.

SURETY BOND

Acceptable Surety Companies: To be responsible to the Owner as Surety on Bonds, Surety shall comply with the following provisions:

1. Surety must be licensed to do business in the State of Florida;
2. Surety must have been in business and have a record of successful continuous operations for at least three (3) years;
3. Surety shall not have exposed itself to any loss on any one risk in an amount exceeding twenty percent (20%) of its surplus to policyholders;
4. Surety must have fulfilled all of its obligations on all other bonds given to the Owner;
5. Surety must have good underwriting, economic management, adequate reserves for undisclosed liabilities, net resources for unusual stock and sound investment.

Time of Delivery and Form of Bonds

The Public Construction Bond form will be forwarded to the Contractor with his copy of the fully executed Contract Purchase Order. The Public Construction Bond must be recorded after the Purchase Order is signed by all parties. The Contractor shall have three (3) days from receipt of fully executed Purchase Order to have the Public Construction Bond recorded in the County Clerk's Recording Office,

CONTRACT TIME – LIQUIDATED DAMAGES

The Contract Time shall be determined at the time of issuance of each Purchase Order. Contract time shall be stipulated in consecutive calendar days for completion of all authorized work.

Any changes to the contract time shall be issued through a Change Order by the County. Changes to the contract time must be requested, justified, and/or approved by the Project Manager.

Conditions under which liquidated damages shall be imposed:

Should the Contractor, or in case of his default, the Surety fail to complete the work within the time stipulated in the Purchase Order, or within such extra time as may have been granted by the Owner, the Contractor, or in case of his default, the Surety shall pay to the Owner, not as a penalty but as liquidated damages, the amount so due as determined by the following schedule:

Original Contract Amount	Daily Charge Per Calendar Day
\$50,000 and under	\$ 313.00
\$50,000 or more but less than \$250,000	\$ 580.00
\$250,000 or more but less than \$500,000	\$ 715.00
\$500,000 or more but less than \$2,500,000	\$1,423.00

PAYMENTS/INVOICES

Payment shall be made upon final completion and acceptance by the County of all work completed under each Purchase Order. The Contractor shall submit an invoice, along with County’ Contract Approval Form, to the County Engineering Department upon completion of all authorized work.

Payment shall be based on the dollar value of the authorizing Purchase Order. The date of the invoices shall not exceed thirty (30) calendar days from the date of completion of all work performed. Under no circumstances shall the invoice be submitted to the Owner in advance of the performance of services. Each invoice shall be accompanied by a schedule of services performed signed by an authorized representative of the firm. Failure to submit invoices in the prescribed manner may delay payment.

TAXES – Project is subject to Federal Excise and Florida Sales Taxes, which must be included in Bidder’s proposal.

PRICING

The pricing under this Bid shall remain firm for duration of initial term of this Contract Agreement. No pricing increases will be permitted during the initial contract period. Price increases shall only be considered at the time Contract Extensions are issued. The Contractor shall submit any requests for increases in pricing no later than sixty (60) days prior to the effective date of the Contract Extension. Requested price increases must be justified by the Contractor by providing proof of a cost increase to the Contractor in such major areas as cost of supplies, material, fuel, or changes in governmental regulations. The cost of an increase must not be offset by a corresponding decrease in another area. Negotiated increases shall not exceed prior twelve (12) months CPI and are approved by the appropriate St. Johns County representative. Should the requested price increase be considered excessive or determined not to be competitive for the services, the Owner reserves the right to deny the requested price increase or terminate the Contract Agreement. All pricing shall remain firm for the period of each Contract Extension term.

GENERAL SERVICES INSURANCE REQUIREMENTS

REVISED: 08/01/2018

BONDING REQUIREMENTS

A performance and payment in the amount of 100% of the contract price will be required for any work over \$100,000.

CONTRACTORS INSURANCE

1. The Contractor shall not commence any work in connection with this Agreement until he has obtained all required insurance and such insurance has been approved by the Okaloosa County Risk Manager or designee.
2. All insurance policies shall be with insurers authorized to do business in the State of Florida.
3. All insurance shall include the interest of all entities named and their respective officials, employees & volunteers of each and all other interests as may be reasonably required by Okaloosa County. The coverage afforded the Additional Insured under this policy shall be primary insurance. If the Additional Insured have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the company's liability under this policy shall not be reduced by the existence of such other insurance.
4. Where applicable, the County shall be shown as an Additional Insured with a Waiver of Subrogation on the Certificate of Insurance.
5. The County shall retain the right to reject all insurance policies that do not meet the requirement of this Agreement. Further, the County reserves the right to change these insurance requirements with 60-day notice to the Contractor.
6. The County reserves the right at any time to require the Contractor to provide copies (redacted if necessary) of any insurance policies to document the insurance coverage specified in this Agreement.
7. The designation of Contractor shall include any associated or subsidiary company which is involved and is a part of the contract and such, if any associated or subsidiary company involved in the project must be named in the Workers' Compensation coverage.
8. Any exclusions or provisions in the insurance maintained by the Contractor that excludes coverage for work contemplated in this agreement shall be deemed unacceptable and shall be considered breach of contract.

WORKERS' COMPENSATION INSURANCE

1. The Contractor shall secure and maintain during the life of this Agreement Workers' Compensation insurance for all of his employees employed for the project or any site connected with the work, including supervision, administration or management, of this project and in case any work is sublet, with the approval of the County, the Contractor shall require the Subcontractor similarly to provide Workers' Compensation insurance for all employees employed at the site of the project, and such evidence of insurance shall be furnished to the County not less than ten (10) days prior to the commencement of any and all sub-contractual Agreements which have been approved by the County.
2. Contractor must be in compliance with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act or Jones Act, if applicable.
3. No class of employee, including the Contractor himself, shall be excluded from the Workers' Compensation insurance coverage. The Workers' Compensation insurance shall also include Employer's Liability coverage.

BUSINESS AUTOMOBILE LIABILITY

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident. If the contractor does not own vehicles, the contractor shall maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Policy. Contractor must maintain this insurance coverage throughout the life of this Agreement.

COMMERCIAL GENERAL LIABILITY INSURANCE

1. The Contractor shall carry other Commercial General Liability insurance against all other Bodily Injury, Property Damage and Personal and Advertising Injury exposures.
2. All liability insurance (other than Professional Liability) shall be written on an occurrence basis and shall not be written on a claims-made basis. If the insurance is issued with an aggregate limit of liability, the aggregate limit of liability shall apply only to the locations included in this Agreement. If, as the result of any claims or other reasons, the available limits of insurance reduce to less than those stated in the Limits of Liability, the Contractor shall notify the County representative in writing. The Contractor shall purchase additional liability insurance to maintain the requirements established in this Agreement. Umbrella or Excess Liability insurance can be purchased to meet the Limits of Liability specified in this Agreement.
3. Commercial General Liability coverage shall include the following:
 - 1.) Premises & Operations Liability

- 2.) Bodily Injury and Property Damage Liability
- 3.) Independent Contractors Liability
- 4.) Contractual Liability
- 5.) Products and Completed Operations Liability

4. Contractor shall agree to keep in continuous force Commercial General Liability coverage for the length of the contract.

LIMITS OF LIABILITY

The insurance required shall be written for not less than the following, or greater if required by law and shall include Employer’s liability with limits as prescribed in this contract:

	<u>LIMIT</u>
1. Worker’s Compensation	
1.) State	Statutory
2.) Employer’s Liability	\$500,000 each accident
2. Business Automobile	\$1,000,000 each accident (A combined single limit)
3. Commercial General Liability	\$1,000,000 each occurrence for Bodily Injury & Property Damage \$1,000,000 each occurrence Products and completed operations
4. Personal and Advertising Injury	\$1,000,000 each occurrence

NOTICE OF CLAIMS OR LITIGATION

The Contractor agrees to report any incident or claim that results from performance of this Agreement. The County representative shall receive written notice in the form of a detailed written report describing the incident or claim within ten (10) days of the Contractor’s knowledge. In the event such incident or claim involves injury and/or property damage to a third party, verbal notification shall be given the same day the Contractor becomes aware of the incident or claim followed by a written detailed report within ten (10) days of verbal notification.

INDEMNIFICATION & HOLD HARMLESS

Contractor shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused

by the negligence, recklessness, or wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of this contract.

Note: For Contractor's convenience, this certification form is enclosed and is made a part of the bid package.

CERTIFICATE OF INSURANCE

1. Certificates of insurance indicating the job site and evidencing all required coverage must be submitted not less than 10 days prior to the commencement of any of the work. The certificate holder(s) shall be as follows: Okaloosa County, 5479A Old Bethel Road, Crestview, Florida, 32536.
2. The contractor shall provide a Certificate of Insurance to the County with a thirty (30) day notice of cancellation; ten (10 days' notice if cancellation is for nonpayment of premium).
3. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the contractor to provide the proper notice. Such notification shall be in writing by registered mail, return receipt requested, and addressed to the Okaloosa County Purchasing Department at 5479-A Old Bethel Road, Crestview, FL 32536.
4. In the event the contract term goes beyond the expiration date of the insurance policy, the contractor shall provide the County with an updated Certificate of insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The County reserves the right to suspend the contract until this requirement is met.
5. The certificate shall indicate if coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the certificate will show a retroactive date, which should be the same date of the initial contract or prior.
6. All certificates shall be subject to Okaloosa County's approval of adequacy of protection and the satisfactory character of the Insurer.
7. All deductibles or SIRs, whether approved by Okaloosa County or not, shall be the Contractor's full responsibility. In particular, the Contractor shall afford full coverage as specified herein to entities listed as Additional Insured.
8. In no way will the entities listed as Additional Insured be responsible for, pay for, be damaged by, or limited to coverage required by this schedule due to the existence of a deductible or SIR.

GENERAL TERMS

Any type of insurance or increase of limits of liability not described above which, the Contractor required for its own protection or on account of statute shall be its own responsibility and at its own expense.

Any exclusions or provisions in the insurance maintained by the contractor that excludes coverage for work contemplated in this contract shall be deemed unacceptable and shall be considered breach of contract.

The carrying of the insurance described shall in no way be interpreted as relieving the Contractor of any responsibility under this contract.

Should the Contractor engage a subcontractor or sub-subcontractor, the same conditions will apply under this Agreement to each subcontractor and sub-subcontractor.

The Contractor hereby waives all rights of subrogation against Okaloosa County and its consultants and other indemnities of the Contractor under all the foregoing policies of insurance.

UMBRELLA INSURANCE

The Contractor shall have the right to meet the liability insurance requirements with the purchase of an umbrella insurance policy. In all instances, the combination of primary and umbrella liability coverage must equal or exceed the minimum liability insurance limits stated in this Agreement.

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GENERAL BID CONDITIONS

PRE-BID ACTIVITY -

Except as provided in this section, respondents are prohibited from contacting or lobbying the County, County Administrator, Commissioners, County staff, and Review Committee members, or any other person authorized on behalf of the County related or involved with the solicitation. All inquiries on the scope of work, specifications, additional requirements, attachments, terms and general conditions or instructions, or any issue must be directed in writing, by US mail or email to:

DeRita Mason
Contracts and Lease Coordinator
Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536
Email: dmason@myokaloosa.com
(850) 689-5960

All questions or inquiries must be received no later than the last day for questions (reference ITB & Respondent's Acknowledgement form). Any addenda or other modification to the bid documents will be issued by the County five (5) days prior to the date and time of bid closing, as written addenda, and will be posted to and the Okaloosa County website at <https://www.bidnetdirect.com> and the Bidnet website at <https://www.bidnetdirect.com/florida>.

Such written addenda or modification shall be part of the bid documents and shall be binding upon each respondent. Each respondent is required to acknowledge receipt of any and all addenda in writing and submit with their bid. No respondent may rely upon any verbal modification or interpretation.

PREPARATION OF BID – The bid form is included with the bid documents. Additional copies may be obtained from the County. The respondent shall submit bids in accordance with the public notice.

All blanks in the bid documents shall be completed by printing in ink or by typewriter in both words and numbers with the amounts extended, totaled and the bid signed. A bid price shall be indicated for each section, bid item, alternative, adjustment unit price item, and unit price item listed therein, or the words "No Bid", "No Change", or "Not Applicable" entered. No changes shall be made to the phraseology of the form or in the items mentioned therein. In case of any discrepancy between the written amount and the numerical figures, the written amount shall govern. Any bid which contains any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for which shall in any manner fail to conform to the conditions of public notice inviting bids may be rejected.

A bid submitted by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature). The official address of the partnership shall be shown below the signature.

A bid submitted by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

A bid submitted by an individual shall show the respondent's name and official address.

A bid submitted by a joint venture shall be executed by each joint venture in the manner indicated on the bid form. The official address of the joint venture must be shown below the signature. It is preferred that all signatures be in blue ink with the names type or printed below the signature. Okaloosa County does not accept electronic signatures.

The bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the form. The address and telephone # for communications regarding the bid shall be shown.

If the respondent is an out-of-state corporation, the bid shall contain evidence of respondent's authority and qualification to do business as an out-of-state corporation in the State of Florida. A state contractor license # for the State of Florida shall also be included on the bid form. Respondent shall be licensed in accordance with the requirements of Chapter 489, Florida Statutes.

INTEGRITY OF BID DOCUMENTS - Respondents shall use the original Bid documents provided by the Purchasing Department and enter information only in the spaces where a response is requested. Respondents may use an attachment as an addendum to the Bid documents if sufficient space is not available. Any modifications or alterations to the original bid documents by the respondent, whether intentional or otherwise, will constitute grounds for rejection of a bid. Any such modification or alteration that a respondent wishes to propose must be clearly stated in the respondent's response in the form of an addendum to the original bid documents.

SUBMITTAL OF BID – A bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in an opaque sealed envelope plainly marked with the project title (and, if applicable, the designated portion of the project for which the bid is submitted), the name and address of the respondent, and shall be accompanied by the bid security and other required documents. It is the respondent's responsibility to assure that its bid is delivered at the proper time and place. Offers by telegram, facsimile, or telephone will **NOT** be accepted.

Note: Crestview is not a next day delivery site for overnight carriers.

MODIFICATION & WITHDRAWAL OF BID - A bid may be modified or withdrawn by an appropriate document duly executed in the manner that a bid must be executed and delivered to the place where bids are to be submitted prior to the date and time for the opening of bids.

If within 24 hours after bids are opened any respondent files a duly signed written notice with the County and promptly thereafter demonstrates to the reasonable satisfaction of the County that there was a material substantial mistake in the preparation of its bid, that respondent may withdraw its bid, and the bid security

may be returned. Thereafter, if the work is rebid, that respondent will be disqualified from 1) further bidding on the work, and 2) doing any work on the contract, either as a subcontractor or in any other capacity.

BIDS TO REMAIN SUBJECT TO ACCEPTANCE – All bids will remain subject to acceptance or rejection for ninety (90) calendar days after the day of the bid opening, but the County may, in its sole discretion, release any bid and return the bid security prior to the end of this period.

CONDITIONAL & INCOMPLETE BIDS - Okaloosa County specifically reserves the right to reject any conditional bid and bids which make it impossible to determine the true amount of the bid.

PRICING – The bid price shall include all equipment, labor, materials, freight, taxes etc. Okaloosa County reserves the right to select that bid most responsive to our needs.

ADDITION/DELETION OF ITEM – The County reserves the right to add or delete any item from this bid or resulting contract when deemed to be in the County’s best interest.

SPECIFICATION EXCEPTIONS – Specifications are based on the most current literature available. Respondent shall clearly list any change in the manufacturer’s specifications which conflict with the bid specifications. Respondent must also explain any deviation from the bid specification in writing, as a foot note on the applicable bid page and enclose a copy of the manufacturer’s specifications data detailing the changed item(s) with their bid. Failure of the respondent to comply with these provisions will result in respondents being held responsible for all costs required to bring the equipment in compliance with bid specifications.

APPLICABLE LAWS & REGULATIONS – All applicable Federal and State laws, County and municipal ordinances, orders, rules and regulations of all authorities having jurisdiction over the project shall apply to the bid throughout, and they will be deemed to be included in the contract the same as though they were written in full therein.

DISQUALIFICATION OF RESPONDENTS - Any of the following reasons may be considered as sufficient for the disqualification of a respondent and the rejection of its bid:

Submission of more than one proposal for the same work from an individual, firm or corporation under the same or different name.

Evidence that the respondent has a financial interest in the firm of another respondent for the same work.

Evidence of collusion among respondents. Participants in such collusion will receive no recognition as respondents for any future work of the County until such participant has been reinstated as a qualified respondent.

Uncompleted work which in the judgment of the County might hinder or prevent the prompt completion of additional work if awarded.

Failure to pay or satisfactorily settle all bills due for labor and material on former contracts in force at the time of advertisement of proposals.

Default under previous contract.

Listing of the respondent by any Local, State or Federal Government on its barred/suspended vendor list.

AWARD OF BID

Okaloosa County Review - Okaloosa County designated Staff will review all bids and will participate in the Recommendation to Award.

The County will award the bid to the responsive and responsible vendor(s) with the lowest responsive bid(s), and the County reserves the right to award the bid to multiple respondent(s) submitting a responsive bid with a resulting negotiated agreement which is most advantageous and in the best interest of the County, and to reject any and all bids or to waive any irregularity or technicality in bids received. Okaloosa County shall be the sole judge of the bid and the resulting negotiated agreement that is in its best interest and its decision shall be final.

Okaloosa County reserves the right to waive any informalities or reject any and all bids, in whole or part, to utilize any applicable state contracts in lieu of or in addition to this bid and to accept the bid that in its judgment will best serve the interest of the County.

Okaloosa County specifically reserves the right to reject any conditional bids and will normally reject those which made it impossible to determine the true amount of the bid. Each item must be bid separately, and no attempt is to be made to tie any item or items to any other item or items.

DISCRIMINATION - An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor, or consultant under contract with any public entity, and may not transact business with any public entity.

PUBLIC ENTITY CRIME INFORMATION - Pursuant to Florida Statute 287.133, a respondent may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. [287.017](#) for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

CONE OF SILENCE CLAUSE - The Okaloosa County Board of County Commissioners has established a solicitation silence policy (**Cone of Silence Clause**) that prohibits oral and written communication regarding all formal solicitations for goods and services (formal bids, Request for Proposals, Requests for Qualifications) issued by the Board through the County Purchasing Department. The period commences from the date of advertisement until award of contract.

All communications shall be directed to the Purchasing Department.

Note: For respondent's convenience, this certification form is enclosed and is made a part of the bid package.

REORGANIZATION OR BANKRUPTCY PROCEEDINGS – Bids will not be considered from respondents who are currently involved in official financial reorganization or bankruptcy proceedings.

INVESTIGATION OF RESPONDENT – The County may make such investigations, as it deems necessary to determine the stability of the respondent to perform the work and that there is no conflict of interest as it relates to the project. The respondent shall furnish to the Owner any additional information and financial data for this purpose as the County may request.

Note: For respondent's convenience, this certification form is enclosed and is made a part of the bid package.

REVIEW OF PROCUREMENT DOCUMENTS - Per Florida Statute 119.071 (2) 2 sealed bids, proposals, or replies received by the County pursuant to a competitive solicitation are exempt from public disclosure until such time as the County provides notice of an intended decision or until 30 days after opening the bids, proposals, or final replies, whichever is earlier.

COMPLIANCE WITH FLORIDA STATUTE 119.0701 - The Respondent shall comply with all the provisions of section 119.0701, Florida Statutes relating to the public records which requires, among other things, that the Respondent: (a) Keep and maintain public records; (b) Provide the public with access to public records on the same terms and conditions that the public agency would provide the records; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the respondent upon termination of the contract.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT OKALOOSA COUNTY RISK

MANAGEMENT DEPARTMENT 5479 OLD BETHEL ROAD CRESTVIEW, FL 32536 PHONE: (850) 689-5977 riskinfo@co.okaloosa.fl.us.

PROTECTION OF RESIDENT WORKERS – The Okaloosa County Board of County Commissioners actively supports the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verifications, and nondiscrimination. Under the INA, employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verifications. The respondent shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment. Okaloosa County reserves the right to request documentation showing compliance with the requirements.

Respondents doing construction business with Okaloosa County are required to use the Federal Government Department of Homeland Security's website and use the E-Verify Employment Eligibility Verifications System to confirm eligibility of all employees to work in the United States.

SUSPENSION OR TERMINATION FOR CONVENIENCE - The County may, at any time, without cause, order Respondent in writing to suspend, delay or interrupt the work in whole or in part for such period of time as the County may determine, or to terminate all or a portion of the Contract for the County's convenience. Upon such termination, the Contract Price earned to the date of termination shall be paid to Respondent, but Respondent waives any claim for damages, including loss of profits arising out of or related to the early termination. Those Contract provisions which by their nature survive final acceptance shall remain in full force and effect. If the County orders a suspension, the Contract price and Contract time may be adjusted for increases in the cost and time caused by suspension, delay or interruption. No adjustment shall be made to the extent that performance is, was or would have been so suspended, delayed or interrupted by reason for which Respondent is responsible; or that an equitable adjustment is made or denied under another provision of this Contract.

FAILURE OF PERFORMANCE/DELIVERY - In case of default by the respondent, the County after due notice (oral or written) may procure the necessary supplies or services from other sources and hold the respondent responsible for difference in cost incurred. Continuous instances of default shall result in cancellation of the award and removal of the respondent from the bid list for duration of one (1) year, at the option of the County.

AUDIT - If requested, respondent shall permit the County or an authorized, independent audit agency to inspect all data and records of respondent relating to its performance and its subcontracts under this bid from the date of the award through three (3) years after the expiration of contract.

EQUAL EMPLOYMENT OPPORTUNITY; NON-DISCRIMINATION – Respondent will not discriminate against any employee or an applicant for employment because of race, color, religion, gender, sexual orientation, national origin, age, familial status or handicap.

NON-COLLUSION – Respondent certifies that it has entered into no agreement to commit a fraudulent, deceitful, unlawful or wrongful act, or any act which may result in an unfair advantage over other respondents. See Florida Statute 838.22.

UNAUTHORIZED ALIENS/PATRIOT’S ACT – The knowing employment by respondent or its subcontractors of any alien not authorized to work by the immigration laws is prohibited and shall be a default of the contract. In the event that the respondent is notified or becomes aware of such default, the respondent shall take steps as are necessary to terminate said employment with 24 hours of notification or actual knowledge that an alien is being employed. Respondent’s failure to take such steps as are necessary to terminate the employment of any said alien within 24 hours of notification or actual knowledge that an alien is being employed shall be grounds for immediate termination of the contract. Respondent shall take all commercially reasonable precautions to ensure that it and its subcontractors do not employ persons who are not authorized to work by the immigration laws.

The following documents are to be submitted with the proposal packet:

- A. Exhibit “A” Draft Contract
- B. Exhibit “B” Title IV Clauses
- C. Exhibit “C” Compliance with Nondiscrimination Requirements
- D. Exhibit “D” FEMA Federal Grant Funding Provisions
- E. Drug-Free Workplace Certification Form
- F. Conflict of Interest
- G. Federal E-Verify
- H. Indemnification and Hold Harmless
- I. Certification Regarding Lobbying
- J. Cone of Salience
- K. Company Data/Sam Form
- L. Addendum Acknowledgement
- M. Bid Sheet
- N. Governmental Debarment & Suspension
- O. Vendors on Scrutinized Companies List
- P. References
- Q. Qualifications Statement
- R. Schedule A, B and C

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DRAFT CONTRACT

Please note: this contract is a draft for bidder to view and understand the County’s standard terms and conditions, it is subject to revisions. By submitting a bid/proposal bidder/respondent understands and acknowledges that the draft contract is not an offer. Bidders/respondents are not to sign this draft contract.

EXHIBIT “A”

To be inserted later once submittals have been made- Initiation to Bid and Respondents Acknowledgement solicited for **Miscellaneous Line Taps and Stops** date of opening **August 28, 2019 at 3:15 P.M.** and any addendums thereto.

**CONTRACT
For ITB 72-19
Miscellaneous Line Taps and Stops**

This Contract executed and entered into this ____ day of _____, 2019, between Okaloosa County, Florida, (hereinafter the “County”), whose principal address is 1250 N. Eglin Parkway, Shalimar, Florida 32579, and _____ (hereinafter the “Contractor”), _____, whose principal address is _____, states as follows:

WITNESSETH:

WHEREAS, the County through an Invitation to Bids has solicited for **Miscellaneous Line Taps and Stops**; and

WHEREAS, after due review of all bids, _____ has been selected for the **Miscellaneous Line Taps and Stops**; and

WHEREAS, the County, as a recipient of federal assistance, is required to incorporate specific provisions in all contracts, regardless of funding source, with additional provisions being required for federally funded projects. These provisions are being incorporated per this amendment as stated in Exhibit “B “attached hereto; and

WHEREAS, the County desires the services of the Contractor and the Contractor is willing and able to perform all services in accordance with this Contract.

NOW, THEREFORE, the parties hereto agree as follows:

I. Incorporation of Documents

The following documents are incorporated herein by reference into this Contract and are attached as:

1. Exhibit “A”, Invitation to Bid & Respondent’s Acknowledgment/Contractor’s Submittal, **ITB 72-19, Miscellaneous Line Taps and Stops** date of opening August XX, 2019 at 3:15 P.M. and any addendums thereto.

2. Exhibit "B", Federal Regulations, attached hereto and made a part of the contract.

All terms within the above referenced documents are in full force and effect and shall be binding upon both parties.

II. Scope of Work

The Contractor will provide services in accordance with the terms and conditions of this contract and attached Exhibit "A"

III. Invoice Requirements

The Contractor will be paid in accordance with Exhibit "A" attached hereto.

IV. Duration of Contract and Termination of the Contract

The Contract will be effective on October 1, 2019 and will continue through for three (3) years. The contract may be renewed for an additional two (2) one (1) year terms upon mutual agreement of all parties.

The County may terminate the Contract with or without cause by providing thirty (30) days written notice to the Contractor. If terminated, Contractor shall be owed for services rendered and equipment provided up until the point of termination.

The County may terminate this Agreement in whole or part for cause, if the County determines that the performance of the Contractor is not satisfactory, the County shall notify the Contractor of the deficiency in writing with a requirement that the deficiency be corrected within ten (10) days of such notice. Such notice shall provide reasonable specificity to the Contractor of the deficiency that requires correction. If the deficiency is not corrected within such time period, the County may either (1) immediately terminate the Agreement, or (2) take whatever action is deemed appropriate to correct the deficiency. In the event the County chooses to take action and not terminate the Agreement, the Contractor shall, upon demand, promptly reimburse the County for any and all costs and expenses incurred by the County in correcting the deficiency.

If the County terminates the Agreement, the County shall notify the Contractor of such termination in writing, with instruction to the effective date of termination or specify the stage of work at which the Agreement is to be terminated.

The County reserves the right to unilaterally cancel this Agreement for refusal by the Contractor or any contractor, sub-contractor or materials vendor to allow public access to all documents, papers, letters or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received in conjunction with this Agreement unless the records are exempt.

Upon receipt of a final termination or suspension notice under this Article, the Contractor shall proceed promptly to carry out the actions required in such notice, which may include any or all of the following:

1. Necessary action to terminate or suspend, as the case may be, Project activities and contracts and such other action as may be required or desirable to keep to a minimum the costs upon the basis of which the financing is to compute; and
2. Furnish a statement of the activities and other undertakings the cost of which are otherwise includable as costs under this Agreement. The termination or suspension shall be carried out in conformity with the latest schedule of costs as approved by the County. The closing out of federal financial participation in the services provided shall not constitute a waiver of any claim which the County may otherwise have arising out of this Agreement.

V. Remedies

This Contract shall be governed by the laws of the State of Florida. Any and all legal action necessary to enforce the Contract shall be held in Okaloosa County. No remedy herein conferred upon any party is intended to be exclusive of any other remedy, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or in equity or by statute or otherwise. No single or partial exercise by any party of any right, power, or remedy hereunder shall preclude any other or further exercise thereof.

VI. Intent of Contract Documents

It is the intent of the Contract Documents to describe a functionally complete project to be performed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words that have a well-known technical or trade meaning are used to describe work, materials or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association or to the laws or regulations of any governmental authority having jurisdiction over the Project, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, law or regulation in effect at the time the Work is performed, except as may be otherwise specifically stated herein.

VII. Investigation

Contractor shall have the sole responsibility of satisfying itself concerning the nature and location of the Work and the general and local conditions, and particularly, but without limitation, with respect to the following: those affecting transportation, access, disposal, handling and storage of materials; availability and quality of labor; water and electric power; availability and condition of roads; work area; living facilities; climatic conditions and seasons; physical conditions at the work site and the project area as a whole; topography and ground surface conditions; nature and quantity of the surface materials to be encountered; subsurface conditions; equipment and facilities needed preliminary to and during performance of the Work; and all other costs associated with such performance. The failure of Contractor to acquaint itself with any applicable conditions shall not relieve Contractor from any of its responsibilities to perform under the Contract Documents, nor shall it be considered the basis for any claim for additional time or compensation.

VIII. Notice

All notices required by this Contract shall be in writing to the representatives listed below:

The authorized representatives of the County shall be:

Jeff Littrell, Water and Sewer Director
1804 Lewis Turner Blvd. Suite 300
Fort Walton Beach, FL 32547
Phone: 850-651-7172
Email: jlittrell@myokaloosa.com

The authorized representative for _____ shall be:

Courtesy copy to:

Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536
Phone: 850-689-5960
Fax: 850-689-5998
Email: dmason@myokaloosa.com

Any party shall have the right, from time to time, to change the address to which notices shall be sent by giving the other party at least five (5) business days' prior notice of the address change.

IX. Governing Law & Venue

This Contract shall be governed by and construed in accordance with the laws of the State of Florida, and the parties stipulate that venue shall be in Okaloosa County, Florida.

X. Public Records

Any record created by either party in accordance with this Contract shall be retained and maintained in accordance with the public records law, Florida Statutes, Chapter 119.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT OKALOOSA COUNTY RISK MANAGEMENT DEPARTMENT 5479 OLD BETHEL ROAD CRESTVIEW, FL 32536 PHONE: (850) 689-5977 riskinfo@myokaloosa.com.

Contractor must comply with the public records laws, Florida Statute chapter 119, specifically Contractor must:

1. Keep and maintain public records required by the County to perform the service.
2. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in chapter 119 Florida Statutes or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the County.
4. Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the contractor or keep and maintain public records required by the County to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining the public records. All records stored electronically must be provided to the public agency, upon the request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

XI. Audit

The County and/or its designee shall have the right from time to time at its sole expense to audit the compliance by the Contractor with the terms, conditions, obligations, limitations, restrictions, and requirements of this Contract and such right shall extend for a period of three (3) years after termination of this Contract.

XII. Assignment

Contractor shall not assign this Contract or any part thereof, without the prior consent in writing of the County. If Contractor does, with approval, assign this Contract or any part thereof, it shall require that its assignee be bound to it and to assume toward Contractor all of the obligations and responsibilities that Contractor has assumed toward the County.

XIII. Entire Contract & Waivers

This Contract and all exhibits as incorporated herein, contain the entire contract between the parties and supersedes all prior oral or written contracts. Contractor acknowledges that it has not relied upon any statement, representation, prior or contemporaneous written or oral promises, agreements or warranties, except such as are expressed herein. The terms and conditions of this Contract can only be amended in writing upon mutual agreement of the parties and signed by both parties.

The waiver by a party of any breach or default in performance shall not be deemed to constitute a waiver of any other or succeeding breach or default. The failure of the County to enforce any of the provisions hereof shall not be construed to be a waiver of the right of the County thereafter to enforce such provisions.

XIV. Severability

If any term or condition of this Contract shall be deemed, by a court having appropriate jurisdiction, invalid or unenforceable, the remainder of the terms and conditions of this Contract shall remain in full force and effect. This Contract shall not be more strictly construed against either party hereto by reason of the fact that one party may have drafted or prepared any or all the terms and provisions hereof.

XV. Independent Contractor

Contractor enters into this Contract as, and shall continue to be, an independent contractor. All services shall be performed only by Contractor and Contractor's employees. Under no circumstances shall Contractor or any of Contractor's employees look to the County as his/her employer, or as partner, agent or principal. Neither Contractor, nor any of Contractor's employees, shall be entitled to any benefits accorded to the County's employees, including without limitation worker's compensation, disability insurance, vacation or sick pay. Contractor shall be responsible for providing, at Contractor's expense, and in Contractor's name, unemployment, disability, worker's compensation and other insurance as well as licenses and permits usual and necessary for conducting the services to be provided under this Contract.

XVI. Third Party Beneficiaries

It is specifically agreed between the parties executing this Contract that it is not intended by any of the provisions of any part of the Contract to create in the public or any member thereof, a third party beneficiary under this Contract, or to authorize anyone not a party to this Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Contract.

XVII. Indemnification and Hold Harmless

Contractor agrees to hold harmless, indemnify, and defend or, at the option of the County, pay the cost of defense, the County and its representative from any and all claims, losses, penalties, demands, judgments, and costs of suit, including attorneys' fees and paralegals' fees, for any expense, damage or liability incurred by any of them, whether for personal injury, property damage, direct or consequential damages, or economic loss, arising directly or indirectly on account of or in connection with the Work done by Contractor under this Contract or by any person, firm or corporation to whom any portion of the Work is subcontracted by Contractor or resulting from the use by Contractor, or by any one for whom Contractor is legally liable, of any materials, tools, machinery or other property of the County.

The Contractor's obligation under this provision shall not be limited in any way by the agreed upon contract price as shown in this contract or the Contractor's limit of, or lack of, sufficient insurance protection.

XVIII. Representation of Authority to Contractor/Signatory

The individual signing this Contract on behalf of _____ represents and warrants that he or she is duly authorized and has legal capacity to execute and deliver this Contract. The signatory

represents and warrants to the County that the execution and delivery of this Contract and the performance of _____ obligations hereunder have been duly authorized and that the Contract is a valid and legal agreement binding on the Contractor and enforceable in accordance with its terms.

XVI. Subcontracting

Contractor shall not subcontract any services or work to be provided to County without the prior written approval of the County's Representative. The County reserves the right to accept the use of a subcontractor or to reject the selection of a particular subcontractor and to inspect all facilities of any subcontractors in order to make a determination as to the capability of the subcontractor to perform properly under this Contract. The County's acceptance of a subcontractor shall not be unreasonably withheld. The Contractor is encouraged to seek minority and women business enterprises for participation in subcontracting opportunities. Additionally, any subcontract entered into between the Contractor and subcontractor will need to be approved by the County prior to it being entered into and said agreement shall incorporate in all required terms in accordance with local, state and Federal regulations.

XX. Insurance

CONTRACTORS INSURANCE

1. The Contractor shall not commence any work in connection with this Agreement until he has obtained all required insurance and such insurance has been approved by the Okaloosa County Risk Manager or designee.
2. All insurance policies shall be with insurers authorized to do business in the State of Florida.
3. All insurance shall include the interest of all entities named and their respective officials, employees & volunteers of each and all other interests as may be reasonably required by Okaloosa County. The coverage afforded the Additional Insured under this policy shall be primary insurance. If the Additional Insured have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the company's liability under this policy shall not be reduced by the existence of such other insurance.
4. Where applicable, the County shall be shown as an Additional Insured with a Waiver of Subrogation on the Certificate of Insurance.
5. The County shall retain the right to reject all insurance policies that do not meet the requirement of this Agreement. Further, the County reserves the right to change these insurance requirements with 60-day notice to the Contractor.
6. The County reserves the right at any time to require the Contractor to provide copies (redacted if necessary) of any insurance policies to document the insurance coverage specified in this Agreement.

7. The designation of Contractor shall include any associated or subsidiary company which is involved and is a part of the contract and such, if any associated or subsidiary company involved in the project must be named in the Workers' Compensation coverage.
8. Any exclusions or provisions in the insurance maintained by the Contractor that excludes coverage for work contemplated in this agreement shall be deemed unacceptable and shall be considered breach of contract.

WORKERS' COMPENSATION INSURANCE

1. The Contractor shall secure and maintain during the life of this Agreement Workers' Compensation insurance for all of his employees employed for the project or any site connected with the work, including supervision, administration or management, of this project and in case any work is sublet, with the approval of the County, the Contractor shall require the Subcontractor similarly to provide Workers' Compensation insurance for all employees employed at the site of the project, and such evidence of insurance shall be furnished to the County not less than ten (10) days prior to the commencement of any and all sub-contractual Agreements which have been approved by the County.
2. Contractor must be in compliance with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act or Jones Act, if applicable.
3. No class of employee, including the Contractor himself, shall be excluded from the Workers' Compensation insurance coverage. The Workers' Compensation insurance shall also include Employer's Liability coverage.

BUSINESS AUTOMOBILE LIABILITY

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident. If the contractor does not own vehicles, the contractor shall maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Policy. Contractor must maintain this insurance coverage throughout the life of this Agreement.

COMMERCIAL GENERAL LIABILITY INSURANCE

1. The Contractor shall carry other Commercial General Liability insurance against all other Bodily Injury, Property Damage and Personal and Advertising Injury exposures.
2. All liability insurance (other than Professional Liability) shall be written on an occurrence basis and shall not be written on a claims-made basis. If the insurance is issued with an aggregate limit of liability, the aggregate limit of liability shall apply only to the locations included in this Agreement. If, as the result of any claims or other reasons,

the available limits of insurance reduce to less than those stated in the Limits of Liability, the Contractor shall notify the County representative in writing. The Contractor shall purchase additional liability insurance to maintain the requirements established in this Agreement. Umbrella or Excess Liability insurance can be purchased to meet the Limits of Liability specified in this Agreement.

3. Commercial General Liability coverage shall include the following:
 - 1.) Premises & Operations Liability
 - 2.) Bodily Injury and Property Damage Liability
 - 3.) Independent Contractors Liability
 - 4.) Contractual Liability
 - 5.) Products and Completed Operations Liability
4. Contractor shall agree to keep in continuous force Commercial General Liability coverage for the length of the contract.

LIMITS OF LIABILITY

The insurance required shall be written for not less than the following, or greater if required by law and shall include Employer’s liability with limits as prescribed in this contract:

	<u>LIMIT</u>
1. Worker’s Compensation	
1.) State	Statutory
2.) Employer’s Liability	\$500,000 each accident
2. Business Automobile	\$1,000,000 each accident (A combined single limit)
3. Commercial General Liability	\$1,000,000 each occurrence for Bodily Injury & Property Damage \$1,000,000 each occurrence Products and completed operations
4. Personal and Advertising Injury	\$1,000,000 each occurrence

NOTICE OF CLAIMS OR LITIGATION

The Contractor agrees to report any incident or claim that results from performance of this Agreement. The County representative shall receive written notice in the form of a detailed written report describing the incident or claim within ten (10) days of the Contractor's knowledge. In the event such incident or claim involves injury and/or property damage to a third party, verbal notification shall be given the same day the Contractor becomes aware of the incident or claim followed by a written detailed report within ten (10) days of verbal notification.

INDEMNIFICATION & HOLD HARMLESS

Contractor shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of this contract.

Note: For Contractor's convenience, this certification form is enclosed and is made a part of the bid package.

CERTIFICATE OF INSURANCE

1. Certificates of insurance indicating the job site and evidencing all required coverage must be submitted not less than 10 days prior to the commencement of any of the work. The certificate holder(s) shall be as follows: Okaloosa County, 5479A Old Bethel Road, Crestview, Florida, 32536.
2. The contractor shall provide a Certificate of Insurance to the County with a thirty (30) day notice of cancellation; ten (10 days' notice if cancellation is for nonpayment of premium).
3. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the contractor to provide the proper notice. Such notification shall be in writing by registered mail, return receipt requested, and addressed to the Okaloosa County Purchasing Department at 5479-A Old Bethel Road, Crestview, FL 32536.
4. In the event the contract term goes beyond the expiration date of the insurance policy, the contractor shall provide the County with an updated Certificate of insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The County reserves the right to suspend the contract until this requirement is met.
5. The certificate shall indicate if coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the certificate will show a retroactive date, which should be the same date of the initial contract or prior.

6. All certificates shall be subject to Okaloosa County's approval of adequacy of protection and the satisfactory character of the Insurer.
7. All deductibles or SIRs, whether approved by Okaloosa County or not, shall be the Contractor's full responsibility. In particular, the Contractor shall afford full coverage as specified herein to entities listed as Additional Insured.
8. In no way will the entities listed as Additional Insured be responsible for, pay for, be damaged by, or limited to coverage required by this schedule due to the existence of a deductible or SIR.

GENERAL TERMS

Any type of insurance or increase of limits of liability not described above which, the Contractor required for its own protection or on account of statute shall be its own responsibility and at its own expense.

Any exclusions or provisions in the insurance maintained by the contractor that excludes coverage for work contemplated in this contract shall be deemed unacceptable and shall be considered breach of contract.

The carrying of the insurance described shall in no way be interpreted as relieving the Contractor of any responsibility under this contract.

Should the Contractor engage a subcontractor or sub-subcontractor, the same conditions will apply under this Agreement to each subcontractor and sub-subcontractor.

The Contractor hereby waives all rights of subrogation against Okaloosa County and its consultants and other indemnities of the Contractor under all the foregoing policies of insurance.

UMBRELLA INSURANCE

The Contractor shall have the right to meet the liability insurance requirements with the purchase of an umbrella insurance policy. In all instances, the combination of primary and umbrella liability coverage must equal or exceed the minimum liability insurance limits stated in this Agreement.

XXI. Taxes and Assessments

Contractor agrees to pay all sales, use, or other taxes, assessments and other similar charges when due now or in the future, required by any local, state or federal law, including but not limited to such taxes and assessments as may from time to time be imposed by the County in accordance with this Agreement. Contractor further agrees that it shall protect, reimburse and indemnify County from and assume all liability for its tax and assessment obligations under the terms of the Agreement.

The County is exempt from payment of Florida state sales and use taxes. The Contractor shall not be exempted from paying sales tax to its suppliers for materials used to fulfill contractual obligations with the

County, nor is the Contractor authorized to use the County's tax exemption number in securing such materials.

The Contractor shall be responsible for payment of its own and its share of its employees' payroll, payroll taxes, and benefits with respect to this Agreement.

XXII. Compliance with Laws

Contractor shall secure any and all permits, licenses and approvals that may be required in order to perform the Work, shall exercise full and complete authority over Contractor's personnel, shall comply with all workers' compensation, employer's liability and all other federal, state, county, and municipal laws, ordinances, rules and regulations required of an employer performing services such as the Work, and shall make all reports and remit all withholdings or other deductions from the compensation paid to Contractor's personnel as may be required by any federal, state, county, or municipal law, ordinance, rule, or regulation.

XXIII. Federal Regulations

The contractor agrees to comply with all federal, state and local laws, rules and regulations, including but not limited to, those set forth in Exhibit "B", which is expressly incorporated herein as a part of this contract.

IN WITNESS WHEREOF, the parties hereto have made and executed this Contract on the respective dates under each signature.

OKALOOSA COUNTY, FLORIDA

Printed Name/Title

Charles K. Windes, Jr., Chairman

Signature

Date: ____/____/____

Date:

ATTEST:

J.D. Peacock II, Clerk

Exhibit "B"

Standard Contract Clauses

Title VI Clauses for Compliance with Nondiscrimination Requirements

Compliance with Nondiscrimination Requirements

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, regarding the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

- a. Withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination based on race, color, national origin);

49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination based on disability); and 49 CFR part 27;

The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination based on age);

Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs

or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;

The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination based on race, color, national origin, and sex);

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The [*contractor / consultant*] has full responsibility to monitor compliance to the referenced statute or regulation. The [*contractor / consultant*] must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor’s compliance with the applicable requirements of the Occupational Safety and Health Act

of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

E-VERIFY

Enrollment and verification requirements.

- (1) If the Contractor is not enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall-
 - a. Enroll. Enroll as a Federal Contractor in the E-Verify Program within thirty (30) calendar days of contract award;
 - b. Verify all new employees. Within ninety (90) calendar days of enrollment in the E-Verify program, begin to use E-Verify to initiate verification of employment eligibility of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); and,
 - c. Verify employees assigned to the contract. For each employee assigned to the contract, initiate verification within ninety (90) calendar days after date of enrollment or within thirty (30) calendar days of the employee’s assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)
- (2) If the Contractor is enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall use E-Verify to initiate verification of employment eligibility of
 - a. All new employees.
 - i. Enrolled ninety (90) calendar days or more. The Contractor shall initiate verification of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or
 - ii. Enrolled less than ninety (90) calendar days. Within ninety (90) calendar days after enrollment as a Federal Contractor in E-Verify, the Contractor shall initiate verification of all new hires of the contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or
 - iii. Employees assigned to the contract. For each employee assigned to the contract, the Contractor shall initiate verification within ninety (90) calendar days after date of contract award or within thirty (30) days after assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)

- (3) If the Contractor is an institution of higher education (as defined at 20 U.S.C. 1001(a)); a State of local government or the government of a Federally recognized Indian tribe, or a surety performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond, the Contractor may choose to verify only employees assigned to the contract, whether existing employees or new hires. The Contractor shall follow the applicable verification requirements of (b)(1) or (b)(2), respectively, except that any requirement for verification of new employees applies only to new employees assigned to the contract.
- (4) Option to verify employment eligibility of all employees. The Contractor may elect to verify all existing employees hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), rather than just those employees assigned to the contract. The Contractor shall initiate verification for each existing employee working in the United States who was hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), within one hundred eighty (180) calendar days of-
- i. Enrollment in the E-Verify program; or
 - ii. Notification to E-Verify Operations of the Contractor's decision to exercise this option, using the contract information provided in the E-Verify program Memorandum of Understanding (MOU)
- (5) The Contractor shall comply, for the period of performance of this contract, with the requirements of the E-Verify program MOU.
- i. The Department of Homeland Security (DHS) or the Social Security Administration (SSA) may terminate the Contractor's MOU and deny access to the E-Verify system in accordance with the terms of the MOU. In such case, the Contractor, will be referred to a suspension or debarment official.
 - ii. During the period between termination of the MOU and a decision by the suspension or debarment official whether to suspend or debar, the contractor is excused from its obligations under paragraph (b) of this clause. If the suspension or debarment official determines not to suspend or debar the Contractor, then the Contractor must reenroll in E-Verify.
 - iii. Web site. Information on registration for and use of the E-Verify program can be obtained via the Internet at the Department of Homeland Security Web site: <http://www.dhs.gov/E-Verify>.
- Individuals previously verified. The Contractor is not required by this clause to perform additional employment verification using E-Verify for any employee-

- (a) Whose employment eligibility was previously verified by the Contractor through the E-Verify program;
- (b) Who has been granted and holds an active U.S. Government security clearance for access to confidential, secret, or top secret information in accordance with the National Industrial Security Program Operating Manual; or
- (c) Who has undergone a completed background investigation and been issued credentials pursuant to Homeland Security Presidential Directive (HSPD)-12. Policy for a Common Identification Standard for Federal Employees and Contractors.

Subcontracts. The Contractor shall include the requirements of this clause, including this paragraph € (appropriately modified for identification of the parties in each subcontract that-

- (1) Is for-(i) Commercial and noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or
 - (ii) Construction;
- (2) Has a value of more than \$3,500; and
- (3) Includes work performed in the United States.

EXHIBIT D-FEMA

FEDERAL GRANT FUNDING CONTRACT PROVISIONS

Whether this solicitation is fully or partially Grant funded, Respondents shall comply with the clauses as enumerated below in addition to 2 CFR 200.326 contract provisions included.

1. Drug Free Workplace Requirements: Drug-free workplace requirements in accordance with Drug Free Workplace Act of 1988 (Pub L 100-690, Title V, Subtitle D) All contractors entering into Federal funded contracts over \$100,000 must comply with Federal Drug Free workplace requirements as Drug Free Workplace Act of 1988.
2. Contractor Compliance: The contractor shall comply with all uniform administrative requirements, cost principles, and audit requirements for federal awards.
3. Conflict of Interest: The contractor must disclose in writing any potential conflict of interest to the County or pass-through entity in accordance with applicable Federal policy.
4. Mandatory Disclosures: The contractor must disclose in writing all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award.
5. Utilization of Minority and Women Firms (M/WBE): The contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible, in accordance with 2CFR 200.321. If subcontracts are to be let, prime contractor will require compliance by all sub-contractors. Prior to contract award, the contractor shall document efforts to utilize M/WBE firms including what firms were solicited as suppliers and/or subcontractors as applicable and submit this information with their bid submittal. Information regarding certified M/WBE firms can be obtained from:

Florida Department of Management Services (Office of Supplier Diversity)

Florida Department of Transportation

Minority Business Development Center in most large cities and

Local Government M/DBE programs in many large counties and cities
6. Equal Employment Opportunity: (As per Executive Order 11246) The contractor may not discriminate against any employee or applicant for employment because of age, race, color, creed, sex, disability or national origin. The contractor agrees to take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their age, race, color, creed, sex, disability or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship.
7. Davis-Bacon Act: If applicable to this contract, the contractor agrees to comply with all provisions of the Davis Bacon Act as amended (40 U.S.C. 3141-3148). Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. If the grant award contains Davis Bacon provisions, the County will place a copy of the current prevailing wage determination issued by the Department of Labor in the solicitation document. The decision to award a contract shall be conditioned upon the acceptance of the wage determination.

8. Copeland Anti Kick Back Act: If applicable to this contract, contractors shall comply with all the requirements of 18 U.S.C. § 874, 40 U.S.C. § 3145, 29 CFR Part 3 which are incorporated by reference to this contract. Contractors are prohibited from inducing by any means any person employed in the construction, completion or repair of public work to give up any part of the compensation to which he or she is otherwise entitled.
9. Contract Work Hours and Safety Standards Act: (40 U.S.C. 3701–3708): Where applicable, all contracts awarded in excess of \$100,000 that involve the employment of mechanics or laborers must be in compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor is required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
10. Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387): as amended—The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
11. Debarment and Suspension: (Executive Orders 12549 and 12689): A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension. SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. The contractor shall certify compliance. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions and subcontracts.
12. Byrd Anti-Lobbying Amendment: (31 U.S.C. 1352): Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award.

Such disclosures are forwarded from tier to tier up to the non-Federal award. The contractor shall certify compliance.

13. Rights to Inventions Made Under a Contract or Agreement: If the Federal award meets the definition of “funding agreement” under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.
14. Procurement of Recovered Materials: Contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.
15. Access to Records and Reports: Contractor will make available to the County’s granting agency, the granting agency’s Office of Inspector General, the Government Accountability Office, the Comptroller General of the United States, Okaloosa County, Okaloosa County Clerk of Court’s Inspector General, or any of their duly authorized representatives any books, documents, papers or other records, including electronic records, of the contractor that are pertinent to the County’s grant award, in order to make audits, investigations, examinations, excerpts, transcripts, and copies of such documents. The right also includes timely and reasonable access to the contractor’s personnel during normal business hours for the purpose of interview and discussion related to such documents. This right of access shall continue as long as records are retained.
16. Record Retention: Contractor will retain of all required records pertinent to this contract for a period of three years, beginning on a date as described in 2 C.F.R. §200.333 and retained in compliance with 2 C.F.R. §200.333.
17. Federal Changes: Contractor shall comply with all applicable Federal agency regulations, policies, procedures and directives, including without limitation those listed directly or by reference, as they may be amended or promulgated from time to time during the term of the contract.
18. Termination for Default (Breach or Cause): Contracts in excess of \$10,000 – If Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the County may terminate the contract for default.

Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

19. Safeguarding Personal Identifiable Information: Contractor will take reasonable measures to safeguard protected personally identifiable information and other information designated as sensitive by the awarding agency or is considered sensitive consistent with applicable Federal, state and/or local laws regarding privacy and obligations of confidentiality.
20. Prohibition on utilization of cost plus a percentage of cost contracts: The County will not award contracts containing Federal funding on a cost plus percentage of cost basis.
21. Prohibition on utilization of time and material type contracts: The County will not award contracts based on a time and material basis if the contract contains Federal funding.
22. Disputes: Any dispute arising under this Contract which is not settled by contract of the parties may be settled by mediation, arbitration, or other appropriate legal proceedings. Pending any decision, appeal or judgment in such proceedings or the settlement of any dispute arising under this Contract, shall proceed diligently with the performance of this Contract in accordance with the decision of the County. This Contract shall be construed under the laws of the State of Florida, and venue for any actions arising out of this Contract shall be in the Circuit Court of Okaloosa County.
23. Energy Policy and Conservation Act (43 U.S.C. §6201): All contracts except micro-purchases (\$3000 or less, except for construction contracts over \$2000). Contracts shall comply with mandatory standards and policies relating to energy efficiency, stating in the state energy conservation plan issued in compliance with the Energy Policy and Conservation act. (Pub. L. 94-163, 89 Stat. 871) [53 FR 8078, 8087, Mar. 11, 1988, as amended at 60 FR 19639, 19645, Apr. 19, 1995].
24. DHS Seal, Logo, and Flags. The contractor shall not use the Department of Homeland Security (DHS) seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre- approval.
25. Compliance with Federal Law, Regulations, and Executive Orders: This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply will all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.
26. No Obligation by Federal Government: The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.
27. Program Fraud and False or Fraudulent Statements or Related Acts: The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

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DRUG-FREE WORKPLACE CERTIFICATION

THE BELOW SIGNED RESPONDENT CERTIFIES that it has implemented a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under quote a copy of the statement specified in subsection 1.
4. In the statement specified in subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under quote, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in, drug abuse assistance or rehabilitation program if such is available in employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____

(Typed or Printed)

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

CONFLICT OF INTEREST DISCLOSURE FORM

For purposes of determining any possible conflict of interest, all respondents, must disclose if any Okaloosa Board of County Commissioner, employee(s), elected officials(s), or if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their business.

Indicate either "yes" (a county employee, elected official, or agency is also associated with your business), or "no". If yes, give person(s) name(s) and position(s) with your business.

YES _____

NO _____

NAME(S)

POSITION(S)

FIRM NAME: _____

BY (PRINTED): _____

BY (SIGNATURE): _____

TITLE: _____

ADDRESS: _____

PHONE NO. _____

E-MAIL _____

DATE

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FEDERAL E-VERIFY COMPLIANCE CERTIFICATION

In accordance with Okaloosa County Policy and Executive Order Number 11-116 from the office of the Governor of the State of Florida, Respondent hereby certifies that the U.S. Department of Homeland Security's E-Verify system will be used to verify the employment eligibility of all new employees hired by the respondent during the contract term, and shall expressly require any subcontractors performing work or providing services pursuant to the contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and shall provide documentation such verification to the COUNTY upon request.

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: _____
SIGNATURE: _____

COMPANY: _____
NAME: _____

ADDRESS: _____
TITLE: _____

E-MAIL: _____

PHONE NO.: _____

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INDEMNIFICATION AND HOLD HARMLESS

Respondent shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Respondent and other persons employed or utilized by the Respondent in the performance of this Agreement.

Respondent's Company Name

Authorized Signature – Manual

Physical Address

Authorized Signature – Typed

Mailing Address

Title

Phone Number

FAX Number

Cellular Number

After-Hours Number(s)

Date

Email

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LOBBYING - 31 U.S.C. 1352, 49 CFR Part 19, 49 CFR Part 20

APPENDIX A, 49 CFR PART 20--CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding \$100,000)

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

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.*)]
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

_____ Signature of Contractor's Authorized Official

_____ Name and Title of Contractor's Authorized Official

_____ Date

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CONE OF SILENCE CLAUSE

The Board of County Commissioners have established a solicitation silence policy (**Cone of Silence Clause**) that prohibits oral and written communication regarding all formal solicitations for goods and services (formal bids, Request for Proposals, Requests for Qualifications, Invitation to Quote, Invitation to Negotiate) issued by the Board through the County Purchasing Department.

The period commences upon receipt of the procurement proposal, by the County, and terminates upon Board approval to award a contract or reject all bids/responses.

When the solicitation silence period is in effect, no oral or written communication is allowed regarding the solicitation between prospective respondents and members of the Board of County Commissioners, the County Administrator, county employees or members of the Board Approved Review Committee. All questions or requests for information regarding the solicitation **MUST** be directed to the designated Purchasing Representative listed in the solicitation.

Any information thought to affect the committee or staff recommendation submitted after bids are due, should be directed to the Purchasing Director or an appointed representative. It shall be the Purchasing Director decision whether to consider this information in the decision process.

Any violation of this policy shall be grounds to disqualify the respondent from consideration during the selection process.

All respondents must agree to comply with this policy by signing the following statement and including it with their submittal.

I _____ representing _____
Signature Company Name

On this _____ day of _____ 2018 hereby agree to abide by the County's "**Cone of Silence Clause**" and understand violation of this policy shall result in disqualification of my proposal/submittal.

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COMPANY DATA

Respondent's Company Name:

Physical Address & Phone #:

Contact Person (Typed-Printed):

Phone #:

Cell #:

Federal ID or SS #:

DUNNS/SAM #:

Respondent's License #:

Fax #:

Emergency #'s After Hours,
Weekends & Holidays:

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System for Award Management (Oct 2016)

(a) Definitions. As used in this provision.

“Electronic Funds Transfer (EFT) indicator” means a four-character suffix to the unique entity identifier. The suffix is assigned at the discretion of the commercial, nonprofit, or Government entity to establish additional System for Award Management records for identifying alternative EFT accounts (see [subpart 32.11](#)) for the same entity.

“Registered in the System for Award Management (SAM) database” means that:

(1) The Offeror has entered all mandatory information, including the unique entity identifier and the EFT indicator, if applicable, the Commercial and Government Entity (CAGE) code, as well as data required by the Federal Funding Accountability and Transparency Act of 2006 (see [subpart 4.14](#)) into the SAM database;

(2) The offeror has completed the Core, Assertions, and Representations and Certifications, and Points of Contact sections of the registration in the SAM database;

(3) The Government has validated all mandatory data fields, to include validation of the Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS). The offeror will be required to provide consent for TIN validation to the Government as a part of the SAM registration process; and

(4) The Government has marked the record “Active”.

“Unique entity identifier” means a number or other identifier used to identify a specific commercial, nonprofit, or Government entity. See www.sam.gov for the designated entity for establishing unique entity identifiers.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the SAM database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The Offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “Unique Entity Identifier” followed by the unique entity identifier that identifies the Offeror’s name and address exactly as stated in the offer. The Offeror also shall enter its EFT indicator, if applicable. The unique entity identifier will be used by the Contracting Officer to verify that the Offeror is registered in the SAM database.

(c) If the Offeror does not have a unique entity identifier, it should contact the entity designated at www.sam.gov for establishment of the unique entity identifier directly to obtain one. The Offeror should be prepared to provide the following information:

(1) Company legal business name.

(2) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(3) Company Physical Street Address, City, State, and Zip Code.

(4) Company Mailing Address, City, State and Zip Code (if separate from physical).

(5) Company telephone number.

(6) Date the company was started.

(7) Number of employees at your location.

(8) Chief executive officer/key manager.

(9) Line of business (industry).

(10) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the SAM database in timely manner, the Contracting Officer may proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) Offerors may obtain information on registration at <https://www.acquisition.gov> .

Offerors SAM information:

Entity Name: _____

Entity Address: _____

Duns Number: _____

CAGE Code: _____

ADDENDUM ACKNOWLEDGEMENT
ITB WS 72-19

Acknowledgment is hereby made of the following addenda (identified by number) received since issuance of solicitation:

<u>ADDENDUM NO.</u>	<u>DATE</u>

NOTE: Prior to submitting the response to this solicitation, it is the responsibility of the respondent to confirm if any addenda have been issued. If such addenda have been issued, acknowledge receipt by noting number(s) and date(s) above.

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BID FORM

ARTICLE 1 – BID RECIPIENT

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

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

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

ARTICLE 3 – BIDDER’S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents.
 - B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs.
 - F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the

price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BASIS OF BID

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

BID #: ITB WS 72-19

UNIT PRICE BID (Item 1-41) – MISCELLANEOUS LINE TAPS AND STOPS

ITEM	UNIT	DESCRIPTION	UNIT PRICE
		TAPPING SERVICES	\$
1	EA	14" Install Test & Tap	\$
2	EA	16" Install Test & Tap	\$
3	EA	18" Install Test & Tap	\$
4	EA	20" Install Test & Tap	\$
5	EA	24" Install Test & Tap	\$
6	EA	30" Install Test & Tap	\$
7	EA	36" Install Test & Tap	\$
8	EA	42" Install Test & Tap	\$
		Line Stop Services	\$
9	EA	4" Line Stop Services & Fitting	\$
10	EA	6" Line Stop Services & Fitting	\$
11	EA	8" Line Stop Services & Fitting	\$
12	EA	10" Line Stop Services & Fitting	\$
13	EA	12" Line Stop Services & Fitting	\$
14	EA	14" Line Stop Services & Fitting	\$
15	EA	16" Line Stop Services & Fitting	\$

16	EA	18" Line Stop Services & Fitting	\$
17	EA	20" Line Stop Services & Fitting	\$
18	EA	24" Line Stop Services & Fitting	\$
19	EA	30" Line Stop Services & Fitting	\$
20	EA	36" Line Stop Services & Fitting	\$
21	EA	42" Line Stop Services & Fitting	\$
ITEM	UNIT	DESCRIPTION	UNIT PRICE
		Double Line Stop Services	\$
22	EA	4" Double Line Stop Services & Fitting	\$
23	EA	6" Double Line Stop Services & Fitting	\$
24	EA	8" Double Line Stop Services & Fitting	\$
25	EA	10" Double Line Stop Services & Fitting	\$
26	EA	12" Double Line Stop Services & Fitting	\$
27	EA	14" Double Line Stop Services & Fitting	\$
28	EA	16" Double Line Stop Services & Fitting	\$
29	EA	18" Double Line Stop Services & Fitting	\$
30	EA	20" Double Line Stop Services & Fitting	\$
31	EA	24" Double Line Stop Services & Fitting	\$
32	EA	30" Double Line Stop Services & Fitting	\$
33	EA	36" Double Line Stop Services & Fitting	\$
34	EA	42" Double Line Stop Services & Fitting	\$
		Valve Insert Services	\$
35	EA	4" Valve Insert Services & Fitting	\$
36	EA	6" Valve Insert Services & Fitting	\$
37	EA	8" Valve Insert Services & Fitting	\$
38	EA	10" Valve Insert Services & Fitting	\$
39	EA	12" Valve Insert Services & Fitting	\$
40	EA	16" Valve Insert Services & Fitting	\$
41	EA	24" Valve Insert Services & Fitting	\$

	TOTAL UNIT COST BASE BID (ITEM 1-41)	\$
As Needed	Daily Labor Rate for Each Additional Day <i>(not included in Base Bid Amount)</i>	\$

TOTAL UNIT COST BASE BID AMOUNT (ITEMS 1-41) IS WRITTEN AS:

_____ Dollars and _____ Cents,

ARTICLE 5 – TIME OF COMPLETION

- 5.01 Substantial completion and final completion dates for each Notice to Proceed (NTP) issued under this Contract shall be established in said NTP. The Work will be substantially completed within the number of days set up in each NTP.
- 5.02 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment on or before the dates or within the number of calendar days indicated in the NTP.
- 5.03 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 6 – ATTACHMENTS TO THIS BID

- 6.01 The following documents are submitted with and made a condition of this Bid:
 - Required Bid security;
 - Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
 - Contractor’s License No.: _____ Evidence of Bidder’s ability to obtain a State Contractor’s License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;

ARTICLE 7 – DEFINED TERMS

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

ARTICLE 8 – BID SUBMITTAL

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

By:
[Signature] _____

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

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail
address: _____

Bidder's License
No.: _____

(where applicable)

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

Bidder's Company Name

Authorized Signature – Manual

Authorized Signature – Typed

Address

Title

Phone #

Fax #

Federal ID # or SS #

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ANTI-COLLUSION STATEMENT: The below signed bidder has not divulged to, discussed or compared his bid with other bidders and has not **colluded with any other bidder or parties to bid whatever.** **Note: No premiums, rebates, or gratuities permitted either with, prior to, or after any** delivery of materials. Any such violation will result in the cancellation and/or return of material (as applicable) and the removal from bid list(s).

Bidder's Company Name

Authorized Signature – Manual

Address

Authorized Signature – Typed

Address

Title

Phone #

Fax #

Federal ID # or SS #

Date Submitted: _____

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Government Debarment & Suspension

Instructions

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Orders 12549, at Subpart C of OMB 2 C.F.R. Part 180 and 3000.332. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the System for Award Management (SAM) database.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction

originated may pursue available remedies, including suspension and/or debarment.

**Certification Regarding Debarment, Suspension,
Ineligibility and Voluntary Exclusion
Lower Tier Covered Transactions**

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552(a), as amended). This certification is required by the regulations implementing Executive Orders 12549, Debarment and Suspension, and OMB 2 C.F.R. Part 180, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880.

[READ INSTRUCTIONS ON PREVIOUS PAGE BEFORE COMPLETING CERTIFICATION]

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal

Printed Name and Title of Authorized Representative

9. Signature

Date

LIST OF REFERENCES

1. Owner's Name & Address:

Contact Person:

Telephone: ()

Email:

2. Owner's Name & Address:

Contact Person:

Telephone: ()

Email:

3. Owner's Name & Address:

Contact Person: _____

Telephone: () _____ Email: _____

VENDORS ON SCRUTINIZED COMPANIES LISTS

By executing this Certificate _____, the bid proposer, certifies that it is not: (1) listed on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, (2) engaged in a boycott of Israel, (3) listed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473, Florida Statutes, or (4) engaged in business operations in Cuba or Syria. Pursuant to section 287.135(5), Florida Statutes, the County may disqualify the bid proper immediately or immediately terminate any agreement entered into for cause if the bid proposer is found to have submitted a false certification as to the above or if the Contractor is placed on the Scrutinized Companies that Boycott Israel List, is engaged in a boycott of Israel, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria, during the term of the Agreement. If the County determines that the bid proposer has submitted a false certification, the County will provide written notice to the bid proposer. Unless the bid proposer demonstrates in writing, within 90 calendar days of receipt of the notice, that the County’s determination of false certification was made in error, the County shall bring a civil action against the bid proposer. If the County’s determination is upheld, a civil penalty shall apply, and the bid proposer will be ineligible to bid on any Agreement with a Florida agency or local governmental entity for three years after the date of County’s determination of false certification by bid proposer.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____
(Typed or Printed)

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

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SECTION C-451

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 _____

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. 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. 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:				

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:				

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SECTION C-610

PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

Okaloosa County Board County of Commissioners
1804 Lewis Turner Boulevard
Fort Walton Beach, FL 32547

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Miscellaneous Line Taps and Stops

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

Title

Attest: _____

Signature

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 C-615

PAYMENT BOND

CONTRACTOR (*name and address*):

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

OWNER: Okaloosa County Board County of Commissioners
1804 Lewis Turner Boulevard
Fort Walton Beach, FL 32547

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount:
Description: – Miscellaneous Line Taps and Stops.

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 18

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

_____ (*seal*)
Contractor's Name and Corporate Seal

_____ (*seal*)
Surety's Name and Corporate 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.

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General Description of Work
- B. Other Construction Contracts
- C. Work by Others
- D. Work by OWNER
- E. OWNER - Furnished Equipment and Materials
- F. Assigned Procurement Contracts
- G. Sequence of Work
- H. CONTRACTOR's Use of Site
- I. Easements and Rights-of-Way
- J. Notices to Owners and Authorities of Property Adjacent to the Work.
- K. Salvage of Materials and Equipment
- L. Partial Utilization by OWNER

1.2 GENERAL DESCRIPTION OF WORK

- A. Installation of various line taps and line stops on existing water, sanitary sewer and effluent force mains as requested by the Owner on an as need basis.
- B. Contracting Method: The Work will be constructed under one prime contract.

1.3 WORKS BY OWNER

- A. OWNER will perform certain activities in connection with the Work as follows:
 - 1. Identify the areas to perform line stops and install tapping sleeves and valves.
 - 2. Excavate, expose the piping and shore those areas for the Contractor to perform the line stops and installation of the tapping sleeves and valves.
 - 3. After the work is completed by the Contractor, the Owner shall backfill those areas that were disturbed.Assist Owner with any emergency bypass facilities and temporary connections required to maintain OWNER's operation.
- B. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of OWNER'S operations.

1.5 CONTRACTOR'S USE OF SITE

- A. CONTRACTOR'S use of the Site shall be confined to the areas shown.

- B. CONTRACTOR shall:
 - 1. Assume full responsibility for protection and safekeeping of products stored on or off the Site.
 - 2. Move stored products that interfere with the operations of OWNER, or local traffic.
 - 3. Obtain and pay for all additional storage or work areas required for its operations.

1.6 EASEMENTS AND RIGHTS-OF-WAY

- A. Easements and rights-of-way will be provided by OWNER. Confine construction operations within the limits indicated on the Drawings. Use due care in placing construction tools, equipment, excavated materials, and pipeline materials and supplies in order to avoid damage to property and interference with traffic. Do not enter any private property outside the designated construction easement boundaries without written permission from the owner of the property.

1.7 NOTICES TO OWNERS AND AUTHORITIES OF PROPERTIES ADJACENT TO THE WORK

- A. Notify owners of adjacent property and utilities when prosecution of the Work may affect them.
- B. When it is necessary to temporarily obstruct access to property, or when any utility service connection must be interrupted, give notices sufficiently in advance to enable the affected persons to provide for their needs. Conform notices to any applicable local ordinance and, whether delivered orally or in writing, include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.
- C. Utilities and other concerned agencies shall be notified at least 48 hours prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines.

END OF SECTION 01010

SECTION 01270 - MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 DESCRIPTION

A. The items listed below beginning with Article 1.5, refer to and are the same pay items listed in the Bid Form. They constitute all of the pay items for the completion of the Work. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant, services, CONTRACTOR's field offices, layout surveys, job signs, sanitary requirements, testing, safety devices, approval of submittals and record drawings, water supplies, power, maintaining traffic, removal of waste, watchmen, bonds, insurance, and all other requirements of the General Conditions, Supplementary Conditions, and the General Requirements. Compensation for all such services, things and materials shall be included in the prices stipulated for the lump sum and unit price pay items listed herein.

B. Each unit bid 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.

1.2 ENGINEER'S ESTIMATE OF QUANTITIES

A. ENGINEER's estimated quantities for unit price pay items, as listed in the Bid Form, are approximate only and are included solely for the purpose of comparison of Bids. OWNER does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground or the actual quantities of material encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity, as OWNER may deem necessary. Except as provided in Article 1.3, below, CONTRACTOR or OWNER will not be entitled to any adjustment in a unit bid price as a result of any change in an estimated quantity and agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions caused by changes or alterations in the Work directed by OWNER.

1.3 ADJUSTMENT OF UNIT PRICES FOR INCREASE OR DECREASE OF ESTIMATED QUANTITIES

A. For bid items paid for on a unit price basis, increases or decreases in the quantity of an item of Work will be determined by comparing the total payable quantity of Work with ENGINEER's estimated quantity as shown in the Bid Form.

B. Notwithstanding any other provision of the Contract Documents, if the total payable quantity of any unit price item of Work, which has an as-bid computed total value of five percent or more of the sum of the as-bid computed total values of all items bid, varies from ENGINEER's estimate of quantity therefore by more than 25 percent above or below the estimated quantity, the unit price of that item will be a subject of review by ENGINEER. If

warranted, an equitable adjustment will be made by means of a Change Order to credit OWNER with any reduction in cost or to compensate CONTRACTOR for any increase in cost resulting from the change in quantity. Said equitable adjustment will be based on any increase or decrease in costs due solely to the variation above 125 percent or below 75 percent of the ENGINEER's estimated quantity.

- C. ENGINEER's review for possible adjustment will be made at a time ENGINEER deems reasonable and proper.
- D. Payment for any unit price item of Work, which has an as-bid computed total value of less than five percent of the sum of the as-bid computed total values of all items bid, will be made at the unit price bid regardless of an increase or decrease in quantity.

1.4 RELATED PROVISIONS

- A. Payments to CONTRACTOR: Refer to General Conditions and Agreement.
- B. Changes in Contract Price: General Conditions.

1.5 BID ITEM DESCRIPTION

- **ITEM 1 - 41** Line Taps and Stops shall be measured as a lump sum cost and shall include all costs for line taps, line stops, valve extensions, tap supports, all necessary appurtenances and associated fittings, installation, leak testing and completion plug as indicated in Section 00300, within the number of specified days indicated on each NTP. No additional payment shall be made for these items.
- **ITEM 42 -** Lump Sum Per Diem Cost shall be measured individually (day) and shall include all labor and equipment burden costs to provide continued services for a 24 hour period. This item will be at the discretion of the Owner, and will only be implemented through an Owner initiated Change Order, if additional time is required of the Contractor, due to a change in scope or site/material change. No additional payment shall be made for this item.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01270

SECTION 01330 - SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Submittals are required prior to, during, and at the end of the installation period. The submittals shall conform to the requirements described in this Section and all referenced Sections or Articles.

1.02 PROCEDURE

A. Submit the following items within five days after the Contract is executed.

1. Shop Drawings, Product Data and Samples: Submit Shop Drawings, product data and samples in accordance with applicable Sections of the Contract Documents.
2. Request for Information: Submit a Request for Information (RFI), when any of the following are required: an interpretation of the Specifications; additional details; information not shown on the Drawings or in the Specifications; or clarification of discrepancies is required. Manufacturer shall retain one copy and submit one copy to the ENGINEER for response.

B. Submittal At Final Completion: Submit the following items in the proper form as a condition of Final Acceptance of the Work:

1. Guarantees, Warranties, and Bonds: Submit as listed in various Sections of the Specifications.
2. Operations and Maintenance Data: Submit all remaining product data and manuals as specified in various Sections of the Specifications.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01330

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SECTION 01400 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This 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.

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. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- E. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- F. Installer/Applicator/Erector: CONTRACTOR or another entity engaged by CONTRACTOR as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- G. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

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

1.4 SUBMITTALS

- A. Qualification Data: 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.
- B. Reports: Prepare and submit certified written reports that include the following:
 1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Complete test or inspection data.
 8. Test and inspection results and an interpretation of test results.
 9. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 10. Recommendations on retesting and reinspection.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. 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.
- C. 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.
- D. 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.
- E. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.6 QUALITY CONTROL

- A. Tests and inspections not explicitly assigned to OWNER are CONTRACTOR's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of CONTRACTOR by authorities having jurisdiction, 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.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation,

including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

- C. 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.
- D. 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.
- E. Associated 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. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. 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.

PRODUCTS (Not Used)

1.7 REPAIR AND PROTECTION

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

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- 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.

PART 2 - END OF SECTION 01400

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SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 3 - GENERAL

3.1 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. See Division 1 Section "Execution Requirements" for progress cleaning requirements.
- C. See Divisions 2 through 16 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
- D. See Division 2 Section "Dewatering" for disposal of ground water at Project site.

3.2 DEFINITIONS

- A. Permanent Enclosure: As determined by ENGINEER, permanent or temporary roofing is complete, insulated, and weather tight; exterior walls are insulated and weather tight; and all openings are closed with permanent construction or substantial temporary closures.

3.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, OWNER's construction forces, ENGINEER, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water Service: Water from OWNER's existing water system is available for use with metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service: Electric power from OWNER's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

3.4 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

- B. Administrative Submittals: Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.
- C. Shop Drawings:
 - 1. Temporary Utility Submittals: Dewatering well locations, if required.

3.5 MOBILIZATION

- A. Mobilization shall include, but not be limited to, these principal items:
 - 1. Obtaining required permits.
 - 2. Moving CONTRACTOR's field office and equipment required for first month operations onto site, if applicable.
 - 3. .
 - 4. Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
 - 5. Arranging for the erection of CONTRACTOR's work and storage yard.
 - 6. Posting OSHA required notices and establishing safety programs and procedures.
 - 7. Having the CONTRACTOR's superintendent at site.
- B. Use area designated for CONTRACTOR's temporary facilities as shown on Drawings.

3.6 CONTRACTOR'S USE OF PREMISES

- A. Lands furnished by OWNER upon which CONTRACTOR shall perform the Work are as shown in the Contract Documents.

3.7 PERMITS

- A. Permits, Licenses, or Approvals: Obtain in accordance with the General Conditions and as otherwise may be provided in the Supplementary Conditions and retain onsite.

3.8 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

3.9 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent

service during its use as a construction facility before OWNER's acceptance, regardless of previously assigned responsibilities.

PART 4 - PRODUCTS

4.1 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

4.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. Heating Equipment: Unless OWNER authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 5 - EXECUTION

5.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

5.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with OWNER for time when service can be interrupted, if necessary, to make connections for temporary services.

- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by ENGINEER.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Water Service: Use of OWNER's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to OWNER. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Toilets: Use of OWNER's existing toilet facilities will be permitted.
- F. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- H. Electric Power Service: Use of OWNER's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to OWNER. Cost of electrical power used in performance and acceptance testing will be borne by the OWNER.
- I. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Connect temporary service to OWNER's existing power source, as directed by OWNER.
- J. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

- K. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water. Dewatering of existing utilities required to perform prescribed work shall be installed and maintained by the OWNER.
- L. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

5.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains and erosion.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- F. Protection of Work and Property – General:
 - 1. Maintain in continuous service all existing oil and gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along the line of work, unless other arrangements satisfactory to owners of said utilities have been made.
 - 2. Where completion of Work requires temporary or permanent removal and/or relocation of an existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
 - 3. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.

4. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
5. In areas where the CONTRACTOR's operations are adjacent to or near a utility such as gas, telephone, television, electric power, water, sewer, or irrigation system and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection thereof have been made by the OWNER.
6. Notify property owners and utility offices which may be affected by the construction operation at least 2 days in advance.
 - a. Before exposing a utility, obtain utility owner's permission. Should service of utility be interrupted due to the CONTRACTOR's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear costs incurred.
7. Do not impair operation of existing sewer systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures. Maintain original site drainage wherever possible.

5.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of CONTRACTOR.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

5.5 TEMPORARY CONTROLS

A. Air Pollution Control:

1. Minimize air pollution from construction operations.
2. Burning of waste materials, rubbish, or other debris will not be permitted on or adjacent to the site.
3. Conduct operations of dumping rock and of carrying rock away in trucks to cause a minimum of dust. Give unpaved streets, roads, detours, or haul roads used in the construction area a dust-preventive treatment or periodically water to prevent dust. Strictly adhere to applicable environmental regulations for dust prevention.
4. Provide and maintain temporary dust-tight partitions, bulkheads, or other protective devices during construction to permit normal operation of existing facilities. Construct partitions of plywood, insulating board, plastic sheets, or similar material. Construct partitions in such a manner that dust and dirt from demolition and cutting will not enter other parts of existing building or facilities. Remove temporary partitions as soon as the need no longer exists.

B. Water Pollution Control:

1. Coordinate with the OWNER on diverting sanitary sewage and non-storm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to an existing waterway.
2. Prior to commencing excavation and construction, obtain ENGINEER's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and stormwater flow, including dewatering pump discharges.
3. Comply with procedures outlined in U.S. Environmental Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning" and "Implementation, Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity," and "Erosion and Sediment Control-Surface Mining I Eastern United States."
4. Do not dispose of volatile wastes such as mineral spirits, oil chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

C. Erosion, Sediment, and Flood Control:

1. Provide, maintain, and operate temporary facilities to control erosion and sediment releases, and to protect Work and existing facilities from flooding during construction period.

END OF SECTION 01500

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SECTION 01600 - PRODUCT REQUIREMENTS

PART 6 - GENERAL

6.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. See Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
- C. See Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.

6.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by CONTRACTOR.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other

characteristics for purposes of evaluating comparable products of other named manufacturers.

6.3 SUBMITTALS

- A. Substitution Requests: Submit 8 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use form provided by ENGINEER.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by OWNER and separate CONTRACTORS that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of engineers and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of CONTRACTOR's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. CONTRACTOR's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. CONTRACTOR's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. ENGINEER's Action: If necessary, ENGINEER will request additional information or documentation for evaluation within 20 days of receipt of a request for substitution. ENGINEER will notify CONTRACTOR of acceptance or rejection of proposed substitution within 20 days of receipt of request, or 20 days of receipt of additional information or documentation whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if ENGINEER cannot make a decision on use of a proposed substitution within time allocated.

- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 1. ENGINEER's Action: If necessary, ENGINEER will request additional information or documentation for evaluation within one week of receipt of a comparable product request. ENGINEER will notify CONTRACTOR of approval or rejection of proposed comparable product request within 20 days of receipt of request, or 20 days of receipt of additional information or documentation whichever is later.
 - a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
 - b. Use product specified if ENGINEER cannot make a decision on use of a comparable product request within time allocated.

- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

6.4 QUALITY ASSURANCE

- A. Compatibility of Options: If CONTRACTOR is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

6.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

- B. Delivery and Handling:
 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

6.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve CONTRACTOR of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to OWNER.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for OWNER.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 7 - PRODUCTS

7.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. OWNER reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," ENGINEER will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is OWNER's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.

8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches OWNER's sample. ENGINEER's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, ENGINEER will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, ENGINEER will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

7.2 PRODUCT SUBSTITUTIONS

- A. Timing: ENGINEER will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of ENGINEER.
- B. Conditions: ENGINEER will consider CONTRACTOR's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, ENGINEER will return requests without action, except to record noncompliance with these requirements:
 1. Requested substitution offers OWNER a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities OWNER must assume. OWNER's additional responsibilities may include compensation to ENGINEER for redesign and evaluation services, increased cost of other construction by OWNER, and similar considerations.
 2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect CONTRACTOR's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.

7.3 COMPARABLE PRODUCTS

- A. Conditions: ENGINEER will consider CONTRACTOR's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, ENGINEER will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of engineers and owners, if requested.
 5. Samples, if requested.

PART 8 - EXECUTION (Not Used)

END OF SECTION 01600

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SECTION 01640 – MANUFACTURER’S SERVICES

PART 9 - GENERAL

9.1 DEFINITIONS

- A. Reference Section 01650, FACILITY STARTUP
- B. Person-Day: One person for 8 hours within regular CONTRACTOR working hours.

9.2 SCOPE

- A. Work under this section defines the minimum scope of services to be provided by the Contractor using factory representatives of the manufacturers of the equipment to be installed during installation, start-up, and operator training.
- B. Equipment manufacturers assigned unit responsibility for systems comprised of several components shall provide the service of factory representative from each component manufacturer to perform the duties required under these Specifications. The equipment manufacturer assigned unit responsibility shall be responsible for coordinating the activities of the system component manufacturers.

9.3 SUBMITTALS

- A. Training Schedule: Submit not less than 21 days prior to equipment installation and revise as necessary for acceptance.
- B. Preliminary Training Plan: Submit within 90 days after Notice-to-Proceed.
- C. Final Training Plan: Submit not less than 60 days prior to equipment start up.
- D. Training Materials:
 - 1. Final training materials must be approved by ENGINEER prior to equipment startup and training.
 - 2. Furnish complete outlines of proposed training session, operation and maintenance data for each trainee in attendance.
- E. Quality Control Submittals: As required in the individual Specification, submit:
 - 1. Qualifications of Manufacturer’s Representative performing specified services.
 - 2. Manufacturer’s Certificate of Proper Installation using form provided by ENGINEER.

9.4 QUALIFICATION

- A. Qualification of the representatives for installation, startup, and operator training purposes shall be an authorized representative of the manufacturer, factory trained, and experienced in the technical applications, installation, operation and maintenance of the equipment being installed and shall be subject to the approval of the ENGINEER. No substitutions of approved representatives will be allowed without the prior written approval of the ENGINEER.
- B. References in various equipment sections of the terms “factory representative” or “field representative” shall mean an employee or contractor of the equipment manufacturer who is trained, articulate, capable of coordinating and expediting training, and familiar with operation and maintenance manual information specified in Section 01782, OPERATION AND MAINTENANCE DATA.

9.5 COORDINATION

- A. Contractor shall notify ENGINEER 72 hours prior to any impending visit by factory representatives so that the ENGINEER may be present.
- B. ENGINEER may approve the services of a manufacturer’s representative for more than one system during the same site visit.
- C. CONTRACTOR shall perform the necessary inspections to ensure that all conditions necessary for successful training and/or startup services have been met prior to scheduling manufacturer’s onsite services.

9.6 MINIMUM MANUFACTURER’S SERVICES REQUIREMENTS

- A. Qualified factory representatives shall furnish manufacturer’s services as specified in the Contract Documents.
- B. Where time is specified in the Contract Documents for manufacturer’s services, the specified time shall be considered a minimum time and any time in excess of the specified time stated in the specifications to perform the required manufacturer’s services shall be considered incidental work. ENGINEER approved days of service will be credited to fulfill the specified minimum manufacturer’s services.
- C. CONTRACTOR’s training and startup schedule shall coordinate manufacturer’s services to avoid conflicting with other onsite testing or other manufacturer’s services.
- D. Manufacturer’s services will include the following, as applicable to the specific system or equipment items:
 - 1. Installation assistance including observation, guidance, instruction of CONTRACTOR’s assembly, erection, installation or applications.

2. Inspection, checking, and adjustment as required for product (system, subsystem, or component) to function as warranted by manufacturer and necessary to furnish written approval of installation.
3. Additional site visits as necessary to address problems and until installation and operation are acceptable to ENGINEER.
4. Perform, coordinate, and assist during functional and performance testing and startup demonstration, and until product acceptance by the ENGINEER.
5. Training of OWNER'S personnel in the operation and maintenance of respective product as required.
6. Completion of Manufacturer's Certificate of Proper Installation with applicable certificates for proper installation and initial, interim, and final test or service.

9.7 SCHEDULE

- A. List specified equipment and systems with respective manufacturers that require training services of manufacturers' representatives and show:
 1. Estimated dates for installation completion.
 2. Estimated training dates to allow for multiple sessions when several shifts are involved.
- B. Adjust training schedule to ensure training of appropriate personnel as deemed necessary by OWNER, and to allow full participation by manufacturers' representatives. Adjust schedule for interruptions in operability of equipment.
- C. Coordinate with Section 01320, CONSTRUCTION PROGRESS DOCUMENTATION and Section 01650, FACILITY STARTUP.

9.8 TRAINING PLAN

- A. Training Plan: Submit for each proposed course:
 1. Title and objectives.
 2. Schedule of training courses including dates, durations, and locations of each class.
 3. Recommended types of attendees (e.g., managers, engineers, operators, maintenance).
 4. Course description and outline of course content.
 5. Duration.
 6. Instruction materials and equipment requirements.
 7. Detailed course schedule for each day showing time allocated to each topic.
 8. Resumes of instructors providing the training.

9.9 TRAINING OWNER'S PERSONNEL

- A. Contractor shall furnish the services of a factory representative to train the operations staff in the operation and maintenance of each item installed under these Specifications.

The time required to perform these services shall be shown in the equipment section, but shall be no less than one (1), eight (8) hour day.

- B. Prestartup Training:
 - 1. Coordinate training sessions with operating personnel and manufacturers' representatives, and with submission of operation and maintenance manuals in accordance with Section 01782, OPERATION AND MAINTENANCE DATA.
 - 2. Complete at least 14 days prior to actual startup.
- C. Post-Startup Training: If required in Specifications, furnish and coordinate training of OWNER'S operating personnel by respective manufacturer's representatives.
- D. Taping of Training Sessions: Furnish audio and color video taping of prestartup and post-startup instruction sessions (classroom and field), including manufacturers' representatives' hands-on equipment instruction and classroom sessions.
 - 1. Use digital VHS format, suitable for playback on standard equipment available commercially in the United States.
 - 2. Include only one manufacturer's training session on each tape, or on a single track of a tape.
 - 3. Video Training Tapes: Produced by a qualified, professional video production company, unless CONTRACTOR demonstrates satisfactory skill of other personnel as acceptable to OWNER.
 - 4. Furnish OWNER with two complete sets of tapes fully indexed and cataloged with printed labels stating sessions and dates taped.
 - 5. OWNER will furnish tape playback equipment.
 - 6. The representative may review and edit the tape prior to final submittal to the ENGINEER.

PART 10 - PRODUCTS (Not Used)

PART 11 - EXECUTION (Not Used)

END OF SECTION 01640

SECTION 01700 - EXECUTION REQUIREMENTS

PART 12 - GENERAL

12.1 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.
- B. See Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of OWNER-accepted deviations from indicated lines and levels, and final cleaning.

PART 13 - PRODUCTS (Not Used)

PART 14 - EXECUTION

14.1 EXAMINATION

- A. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.

14.2 PREPARATION

- A. Existing Utility Information: Furnish information to OWNER that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to ENGINEER. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on form provided by ENGINEER.

14.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify ENGINEER promptly.
- B. General: Lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify ENGINEER when deviations from required lines and levels exceed allowable tolerances.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

14.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

14.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by ENGINEER.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

14.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

14.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1.

14.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

14.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01700

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SECTION 02200 - EARTHWORK**PART 1 GENERAL****1.01 WORK INCLUDED**

- A. Clear, excavate, dewater, sheet, backfill, and do related Work necessary to complete Work shown or specified.
- B. Codes, Specifications, and standards referred to by number or title shall form a part of this Specification to the extent required by the references thereto. Latest revisions as of the date of bid opening shall apply, unless otherwise specified.

1.02 DEFINITIONS

- A. Excavation
 - 1. Removal of earth and rock to form cavities for the construction of foundations and structures and to form trenches for the installation of piping.
 - 2. Cavity formed by the removal of earth and rock.
- B. Earth

Unconsolidated material in the crust of the earth derived by weathering and erosion. Includes:

 - 1. Materials of both inorganic and organic origin.
 - 2. Boulders less than 1/3 cubic yard in volume, gravel, sand, silt, and clay.
 - 3. Materials which can be excavated with backhoe, trenching machine, dragline, clam shell, bulldozer, highlift, or similar excavating equipment without the use of explosives, rock rippers, rock hammers, or jack hammers.
- C. Rock

A natural aggregate of mineral particles connected by strong and permanent cohesive forces. Rock includes any combination of the following:

 - 1. Limestone, sandstone, dolomite, granite, marble, and lava.
 - 2. Boulders 1/3 cubic yard or more in volume.
 - 3. Materials which cannot be excavated by equipment, which is used to remove earth overburden without the use of explosives, rock rippers, rock hammers, or jack hammers.
 - 4. Materials which cannot be excavated with a trackhoe, trenching machine, dragline, clam shell, bulldozer, highlift, or similar excavating equipment without the use of explosives, rock rippers, rock hammers, or jack hammers.

5. Maximum rock size for pipe zone material and one (1) foot above pipe zone shall not be larger than six (6) inches in diameter. Maximum rock size for trench backfill starting one (1) foot above the pipe shall not be larger than 1/4 cubic yard in volume or greater than two (2) feet in any direction.

D. Undercutting

1. Excavation of rock and unsuitable earth below the bottom of a foundation, structure, or pipe to be constructed or installed.

E. Subgrade

1. Undisturbed bottom of excavation.

F. Pipe Bedding

1. Material required from invert of pipe to bottom of trench.

G. Pipe Zone Backfill

1. Material required from invert of pipe to top of pipe.

H. Pipe Cover

1. Material required from top of pipe to top of trench.

I. Topsoil

1. Earth containing sufficient organic materials to support the growth of grass, free from rocks, roots and debris.

1.03 QUALITY ASSURANCE

- A. Owner reserves the right to hire an independent testing laboratory to perform specified services and necessary field density tests to ensure that proper compaction is obtained.

1.04 JOB CONDITIONS

- A. Maintain bench marks, monuments, and other reference points. Replace any disturbed or destroyed bench marks, monuments, or other reference points.
- B. Selected information from subsurface investigations performed by other consultants may be shown on the Drawings. Should the Contractor encounter subsurface or latent conditions at the site materially differing from those shown on the Drawings he shall immediately give notice to the Engineer of such conditions before they are disturbed. The Engineer will thereupon investigate the conditions; and if he finds that they materially differ from those shown on the Drawings or indicated in the Specifications, he will make such changes in the Drawings, the Specifications, or the Drawings and Specifications as he may find necessary. Any increase or

decrease of cost resulting from such changes will be adjusted in the manner provided in the GENERAL CONDITIONS.

1.05 BURNING OF MATERIALS

- A. The Contractor shall obtain approval from the State or local authorities having jurisdiction over the Air Pollution Control.
- B. Burning shall be strictly controlled. Fires shall be attended at all times.

1.06 DISPOSAL OF CLEARING DEBRIS

- A. The Contractor shall dispose of construction debris resulting from clearing, grubbing, excavation, rock removal, dewatering and pavement replacement removal, in a landfill approved by the Engineers.
- B. Materials used for silt barriers shall be removed and disposed of upon acceptance of restoration of grounds.

1.07 EXCAVATED MATERIALS IN PAVED ROADS

- A. Materials excavated in areas of pavement shall be removed by the Contractor from the job site during the excavation process.
- B. Materials excavated shall be disposed of in a landfill approved by the Engineers.

1.08 EROSION CONTROL AND PREVENTION OF STREAM POLLUTION

- A. The Contractor shall control soil erosion and prevent pollution of streams, storm drains, and watercourses by means of installing silt fences, silt barriers and sediment pools or other means which can be required by the Engineers, state, local or federal agencies involved. The Contractor shall comply with the Stormwater Permit and requirements of Part 62-25 F.A.C.
- B. The Contractor shall comply with all applicable local, State, and Federal codes and Agencies in controlling erosion and preventing stream pollution. Contractor is responsible for obtaining all necessary stormwater permits.

1.09 OWNERSHIP - ANYTHING OF VALUE EXCAVATED

- A. Excavated materials having value will become the property of the Owner as determined by the Engineers and Owner.

PART 2 PRODUCTS

2.01 PIPE BEDDING, BACKFILL AND FOUNDATION BACKFILL

- A. Pipe trench backfill for ductile iron pipe and shall adhere to Type 2 laying condition, as per AWWA C150, with four (4) inches loose bedding material.
- B. Pipe Bedding

1. Native soil excavated from the trench, free of rocks, foreign materials, and frozen earth.
- C. Pipe Zone Backfill
1. Native soil material free from rocks, foreign material, and frozen earth, lightly consolidated to top of pipe.
 2. Topsoil is not acceptable as pipe zone backfill.
 3. Imported material will only be required where native material is inadequate.
- D. Pipe Cover
1. Native soil material free from rocks, foreign material, and frozen earth, compacted as necessary to prevent settlement and erosion.

2.02 STRUCTURE FOUNDATION

- A. Structure Bedding
1. Crushed limestone or crushed dolomite meeting or exceeding minimum standards for gradation of the AHD #57.
 2. Crushed limestone or crushed dolomite shall meet or exceed the minimum standards for deleterious substances as follows:

	<u>Maximum Allowable</u>
	<u>Percentage by Weight</u>
a. Coal and lignite	0.25%
b. Clay lumps	0.25%
c. Material passing #200 sieve	1.00%
d. Thin or elongated pieces	1.00%
e. Other deleterious material	2.00%
f. Maximum total of a, b, c, and e	6.00%
 3. Crushed limestone or crushed dolomite shall be free of foreign material when placed in pipe trench.

- B. Structure Foundation Backfill
1. Crushed limestone or crushed dolomite meeting or exceeding minimum standards for gradation of the AHD #1 for conditions of excessive undercutting rock or soil.

2. Spoil rock or blasted rock from quarry in sized (4) four inches to four (4) feet for conditions of sinkholes or voids filled with soupy saturated materials.
3. Type of materials and mixtures of various sized materials shall be as directed by the Engineers.

2.03 EARTH BACKFILL

- A. Backfill shall be earth of such gradation and moisture content that the soil will compact to the specified density and remain stable.
- B. Pipe cover material shall consist of durable particles ranging in size from fine to coarse (No. 200 to one (1) inch) in a substantially uniform combination. Bedding material may be used for cover material in locations other than under paving, sidewalks, driveways or as directed by the Engineers.
- C. Suitable backfill shall be the following soils, classified by the Unified Soil Classification System, ASTM D-2487:

<u>Group Symbols</u>	<u>Typical Names</u>
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GW.....	Well-graded gravel and gravel-sand mixtures, little or no fines
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GP.....	Poorly graded gravel and gravel-sand mixtures, little or no fines
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<u>Group Symbols</u>	<u>Typical Names</u>
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GM.....	Silty gravel, gravel-sand-clay mixtures
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GC.....	Clayey gravel, gravel-sand-clay mixtures
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SW.....	Well-graded sand and gravelly sands, little or no fines
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SP.....	Poorly graded sands and gravelly sands, little or no fines
---------	--

SM.....	Silty sands, sand-silt mixtures
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SC.....	Clayey sands, sand-clay mixtures
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ML.....	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
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CL.....	Inorganic clays of low to medium plasticity gravelly clays, sandy clays, silty clays, Lean clays
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- D. Materials which are unsuitable for backfill include rocks greater than eight (8) inches in their largest dimension, and pavement spoil, rubbish, construction debris, wood, metal, plastics, and the following soils, classified by the Unified Soil Classification System, ASTM D-2487:

<u>Group Symbols</u>	<u>Typical Names</u>
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OL..... Organic silts and organic silty clays of low plasticity

MH..... Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts

CH.....Inorganic clays of high plasticity, fat clays

OH.....Organic clays of medium to high plasticity

PT.....Peat, muck, and other highly organic soils

PART 3 EXECUTION

3.01 EXISTING STRUCTURES, PIPING, AND WIRING

- A. All poles, fences, sewer, gas, water, or other pipes, cables, wires, conduits, and manholes, buildings, and structures shall be supported and protected from injury by the Contractor.
- B. The Contractor shall proceed with caution during excavation so the exact location of underground utilities and structures, both known and unknown, may be determined. The Contractor shall be responsible for the repair of utilities and structures when broken or otherwise damaged.
- C. Whenever, in the opinion of the Engineer, it is necessary to explore and excavate to determine the location of underground structures, the Contractor shall make exploration and excavations for such purpose.
- D. Wherever sewer, gas, water, or other pipes or conduits cross the excavation, the Contractor shall support said pipes and conduits without damage to them and without interrupting this Contract. The manner of supporting such pipes and conduits shall be subject to the approval of the Engineer.
- E. When utility lines that have to be removed or relocated are encountered within the areas of operations, the Contractor shall notify the Utility Company in ample time for the necessary measure to be taken to prevent interruption of the service.
- F. The Contractor shall conduct the Work in such a way that no equipment, material, or debris will be placed or allowed to fall upon private property in the vicinity of the Work, unless he shall have first obtained the property owner's written consent thereto and shall have shown said written consent to the Engineer.
- G. All excavated material shall be piled in a manner that will avoid obstructing walkways and driveways. Hydrants under pressure, valve pit covers, valve boxes, curb stop boxes, or other utility drainage ways shall be kept clear or other satisfactory provisions made for drainage.

3.02 CLEARING

- A. Clear and remove logs, stumps, brush, vegetation, rubbish, and other perishable matter from the project site.

- B. Do not remove or damage trees that do not interfere with the finished Work. Completely remove trees required to be removed, including stumps and roots. Properly treat damaged trees which can be saved.

3.03 STRIPPING AND STOCKPILING OF TOPSOIL

- A. Strip topsoil and vegetation from the excavated areas. Stockpile clean topsoil in location designated by the Engineer.
- B. Do not intermix grass, weeds, roots, root mat, brush, and stones larger than three (3) inches with stockpiled topsoil.

3.04 DEWATERING

- A. Provide sufficient dewatering equipment and make proper arrangements for the disposal of water from dewatering operation. Dewatering shall not damage property, create nuisances, or interfere with other Work. Do not use sanitary sewers for the disposal of water from dewatering operations.

3.05 EXCAVATING

- A. Make excavations to elevations and dimensions necessary to permit erection of forms and inspection of foundation and to install piping. Completely remove unsuitable material.
- B. Trees, boulders, and other surface encumbrances, located so as to create a hazard to employees in excavation Work or in the vicinity thereof at any time during operations, shall be removed or made safe before excavating is begun.
- C. Contractor shall be responsible for the determination of the angle of repose of the soil in which the excavating is to be done. Excavate all slopes to at least the angle of repose except for areas where solid rock allows for line drilling or pre-splitting.
- D. It is the Contractor's responsibility to control the Work such that sides, slopes, and faces of all excavations shall meet accepted OSHA requirements by scaling, benching, barricading, rock bolting, wire meshing, or other equally effective means. Give special attention to slopes, which may be adversely affected by weather or moisture content.
- E. The Contractor should flatten the excavation sides when an excavation has water conditions, silty materials, loose boulders, and areas where erosion, deep frost action, and slide planes appear.
- F. The Contractor should shore or otherwise support sides of excavations in hard or compact soil in compliance with all OSHA, State, and local safety codes.
- G. Use diversion ditches, dikes, or other suitable means to prevent surface water from entering an excavation and to provide adequate drainage of the area adjacent to

the excavation. Do not allow water to accumulate in an excavation. If possible, the grade should be away from excavation.

- H. The Contractor shall provide protection against slides and cave-ins, as required by OSHA, State and local codes.
- I. Store and retain materials as to prevent materials from falling or sliding back into the excavation. Install substantial stop log or barricades when mobile equipment is utilized adjacent to excavations.
- J. The limits of excavation for structures shall be the external dimensions of the structure plus the space necessary for the construction and removal of the forms and construction of masonry Work.
- K. The width of trenches for pipe shall provide a clearance as required by OSHA, State and local codes.
- L. The Contractor is reminded to test the air in excavations in locations where oxygen deficiency or gaseous conditions are possible.
- M. The Contractor is reminded to provide ladders where employees are required to be in excavations as required by OSHA, State and local codes.
- N. The Contractor is reminded to provide adequate barriers and physically protect excavations. Barricade or cover all wells, pits, shafts, and similar excavations. Backfill temporary wells, shafts, and similar excavations upon completion of exploration and similar operations.

3.06 SHEETING

- A. The Contractor has the option of sheeting excavations.
- B. Supporting system, such as piling, cribbing, shoring, and bracing, shall be designed by a qualified Contractor's representative and meet accepted OSHA requirements.
- C. Materials used for sheeting, sheet piling, cribbing, bracing, shoring, and underpinning should be in good, serviceable conditions. Timbers should be sound, free from large or loose knots, and of proper dimensions.
- D. Brace the side of the excavation as necessary to resist the extra pressure due to superimposed loads.
- E. Provide shoring, bracing, or underpinning as necessary to ensure the safety of adjoining buildings or walls. Such shoring, bracing or underpinning shall be inspected daily or more often, as conditions warrant, by a competent contractor's representative and the protection effectively maintained.
- F. The Contractor shall be held responsible for the sufficiency of all sheeting and bracing used, and for all damage to persons or property resulting from the improper quality, strength, placing, maintaining, or removing of the same. This includes

damage to trees, sidewalks, and to other property on the project site, as well as on private grounds.

- G. Drive sheeting ahead of excavation. Do not remove sheeting until the excavation backfill has reached within two (2) feet of the top of the excavation, except that the lower course of sheeting may be removed from a double sheeted excavation. When sheeting is drawn, completely fill all cavities remaining in or adjoining the excavation. When sheeting is left in place, completely fill all cavities behind such sheeting.

3.07 STORAGE AND REMOVAL OF EXCAVATED MATERIAL

- A. Suitable excavated material required for filling and backfilling operations may be stockpiled on the job site.
- B. Remove unsuitable materials from the job site as unsuitable materials are excavated. Remove surplus suitable materials from the job site as excavations are back-filled. Dispose of excess excavated material in a suitable, approved location.

3.08 SUBGRADE

- A. Compact the existing disturbed earth below subgrades which will support structures. Compact existing earth with a vibratory compactor, and maintain moisture content within + or - two (2%) percent of optimum moisture content during compaction. Compact existing earth to not less than ninety-five (95%) percent of the Modified Proctor Density, as determined by ASTM D1557.
- B. Do not construct foundations, footings, slabs, or piping on loose soil, mud, or other unsuitable soil.
- C. Fill excess cuts under foundations, footings, and slabs with structure foundation backfill.
- D. Fill excess cuts under piping with compacted pipe foundation bedding.

3.09 TEMPORARY PLUGS

- A. Prevent foreign matter from entering pipe while it is being installed.
- B. Do not place debris tools, clothing, or other material in this pipe.
- C. Close the open ends of pipe by watertight plugs when pipe laying is not in progress.
- D. Remove any earth or other material that enters pipe, lateral pipe, or appurtenances through any open end.
- E. Remove earth and other materials at no additional cost to the Owner.

3.10 BACKFILLING EXCAVATIONS UNDER PAVEMENTS, FOUNDATIONS, AND STRUCTURES

- A. Owner reserves the right to employ an independent testing laboratory to perform field density tests to ensure proper compaction.
- B. Remove debris and other unsuitable materials from excavations before backfilling is started.
- C. Backfill excavations in areas to be paved with pipe bedding material. Place pipe bedding material in layers six (6) inches loose thickness. Compact each lift of backfill to not less than ninety-five (95%) percent of the maximum dry density as determined in accordance with AASHTO T99, Method A (Std. Proctor). Compaction shall be by hand tamping or approved mechanical tamping devices, or in larger excavation by approved rollers.
- D. Backfill excavations and fill beneath footings or structures with pipe bedding material. Backfill directly over and around structures with pipe bedding material. Place backfill in lifts no greater than six (6) inches in loose depth. Backfill and fill shall be within + or - two (2%) percent optimum moisture content. Compact backfill and fill to not less than ninety-five (95%) percent of the Modified Proctor Density, as determined by ASTM D1557.
- E. Provide additional material, if required, to complete backfill and fill. Additional backfill and fill material shall be provided at no additional cost to the Owner.
- F. Do not use the following materials for backfill:
 - 1. Unsuitable materials
 - 2. Materials which are too wet or too dry to be compacted to the densities specified in this Article.
- G. Do not place fill over wet or muddy subgrade.
- H. Place backfill and fill in a manner which will not overload foundations or structures. Place backfill and fill evenly on all sides of foundations and structures. Do not use equipment that will overload foundations or structures during filling or backfilling.
- I. Do all cutting, filling, and grading necessary to bring the entire area around foundations and outside of structures to the following subgrade levels:
 - 1. To finished grade for areas not to be paved with drives or walks.

3.11 BACKFILLING PIPING TRENCHES

- A. Do not backfill trenches and excavations until all utilities have been inspected by the Engineer and until all underground utilities and piping systems are installed in accordance with the requirements of the Specifications and the Drawings.
- B. Place and tamp bedding and backfill in a manner which will not damage pipe coating, wrapping, or encasement.

- C. Bedding procedures shall be as specified in the Section for the applicable pipe material.
- D. Place pipe backfill material in eight (8) inch layers from the top of bedding to depths as required for particular application. Compact pipe backfill material to the density required to allow backfill material over the pipe to be compacted to the density specified in this Article.
- E. Do not use the following materials for backfill:
 - 1. Unsuitable materials
 - 2. Materials which are too wet or dry to be compacted to the densities specified in this Article.
- F. Do not place fill over wet or muddy subgrade.
- G. Backfill trenches across paved roadways with pipe bedding material, compacting each lift to ninety-five (95%) percent of the Modified Proctor Density. Backfill trenches across gravel roadways, driveways, utility crossings, along driveways, and in areas to be paved, or subjected to traffic with pipe bedding material. Compact each lift of backfill to equivalent of not less than eighty-five (85%) percent of the Modified Proctor Density. Place backfill in six (6) inch loose lifts. Compaction shall be by hand tamping or approved mechanical tamping devices, or in larger excavations by approved rollers. Do not compact backfill by puddling.
- H. Backfill trenches not requiring pipe bedding material with suitable pipe cover material as required by the Engineers. Place and compact backfill to produce an adequate foundation for seeding. The top twelve (12) inches of backfill shall not contain stones or other objects larger than one (1) inch in maximum dimension. Mound backfill above finish grade to allow for settlement. Fill and restore any settlement of the backfill. Grade area to be restored to finish grade after settlement of backfill.

3.13 CLEANUP AND MAINTENANCE

- A. Cleanup the job site as backfilling is completed. Remove excess earth, rock, bedding, materials, and backfill materials. Remove unused piping materials, structure, components and appurtenances. Restore items moved, damaged, or destroyed during construction.
- B. Maintain the job site until the Work has been completed and accepted. Fill excavations, which settle when settlement is visible. Restore items damaged by construction or improper restoration.
- C. Control soil erosion, stream and drain pollution resulting from silt or soil runoff or any material from construction operations. Use silt fences, silt barriers and

sedimentation pools as required. Submit plan to control soil erosion, stream and drain pollution before clearing site.

END OF SECTION 02200

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 15 - GENERAL

15.1 RELATED DOCUMENTS

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

15.2 SUMMARY

- A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Footings.
 - 2. Foundation walls.
 - 3. Slabs-on-grade.
 - 4. Suspended slabs.
 - 5. Concrete toppings.
 - 6. Frame members.
 - 7. Walls.
- B. Related Sections include the following:
 - 1. Division 2 Section "Earthwork" for drainage fill under slabs-on-grade.

15.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: fly ash and other pozzolans, and silica fume; subject to compliance with requirements.

15.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup

spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

- D. Samples: For waterstops.
- E. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- F. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Waterstops.
 - 4. Curing compounds.
 - 5. Bonding agents.
 - 6. Adhesives.

15.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician Grade I. Testing Agency laboratory supervisor shall be an ACI certified Concrete Laboratory Testing Technician - Grade II.
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
 - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.
 - 2. Review inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold and hot weather concreting procedures, curing procedures, construction, contraction and isolation joints, and joint-filler strips, forms and form removal limitations, shoring and re-shoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, concrete repair procedures, and concrete protection.

15.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 16 - PRODUCTS

16.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1,B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, $\frac{3}{4}$ by $\frac{3}{4}$ inch, minimum.
- D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

16.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/, Grade 60, deformed.

16.3 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars in place. Manufacture bar supports from plastic or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete.

16.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 1. Portland Cement: ASTM C 150, I/II
 - a. Fly Ash: ASTM C 618, Class C or F.
- B. Silica Fume: ASTM C 1240, amorphous silica.

- C. Normal-Weight Aggregates: ASTM C 33, Class 4M coarse aggregate or better, graded. Provide aggregates from a single source.
 - 1. Maximum Coarse-Aggregate Size: $\frac{3}{4}$ inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Water: ASTM C 94 and potable.

16.5 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494, Type A.
 - 2. Retarding Admixture: ASTM C 494, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.
- C. Crystalline Waterproofing Admixture: Xypex admixture manufactured by Xypex Chemical Corporation, 13731 Mayfield Place, Richmond, B.C., Canada V6V 2G9.

16.6 WATERSTOPS

- A. Flexible PVC Waterstops: CE CRD-C 572, with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
 - 1. Profile: Ribbed with center bulb.
 - 2. Dimensions: 6 inches, unless noted as 4 inches by $\frac{3}{8}$ inch thick; non-tapered.

16.7 VAPOR RETARDERS

- A. Plastic Vapor Retarder: ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397, not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

- B. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

16.8 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 18 to 25 percent solids, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

16.9 RELATED MATERIALS

- A. Expansion and Isolation Joint Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
 - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

16.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash: 25 percent.
 - 2. Combined Fly Ash and Pozzolan: 25 percent.
 - 3. Silica Fume: 10 percent.
 - 4. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use plasticizing admixture in all concrete for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
 - 4. Use crystalline waterproofing admixture in concrete mixtures for the Headworks, Chlorine Contact Basin and Effluent Pump Station.

16.11 CONCRETE MIXTURES

- A. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 4500 psi at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.42.
 - 3. Slump Limit: 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
 - 4. Air Content: 5 percent, plus or minus 1 percent at point of delivery site.

16.12 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

16.13 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 17 - EXECUTION

17.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 1. Class A, 1/8 inch for smooth-formed finished surfaces.
 2. Class B, 1/4 inch for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 1. Install keyways, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

17.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

17.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form removal operations and curing and protection operations are maintained.
 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved its 28-day design compressive strength.
 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

17.4 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
 1. Lap joints 6 inches and seal with manufacturer's recommended tape.

17.5 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

17.6 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
 - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Wet cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as columns, foundation walls, equipment pads, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
2. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

17.7 WATERSTOPS

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

17.8 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.

Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- F. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

17.9 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

17.10 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
 1. Apply float finish to surfaces to receive trowel finish.
- C. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 1. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring.
 2. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10 foot long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed $\frac{1}{4}$ inch.
- D. Broom Finish: Apply a broom finish to sidewalks and elsewhere as indicated.
 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

17.11 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

- B. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

17.12 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. per hour before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12 inch lap over adjacent absorptive covers.
 - 2. Moisture Retaining Cover Curing: Cover concrete surfaces with moisture retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy

rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

- a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

17.13 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than ½ inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of $\frac{1}{4}$ inch to match adjacent floor elevations. Prepare, mix, and apply repair
 6. topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a $\frac{3}{4}$ -inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

17.14 WATER LEAKAGE TESTS:

- A. Purpose: Determine integrity and watertightness of finished concrete surfaces.
- B. All Water-Holding Structures:
1. Perform leakage tests after concrete structure is complete and capable of resisting the hydrostatic pressure of the water test. The concrete shall have achieved its full design strength
 2. Perform leakage test before backfill or other work that will cover concrete wall surfaces is begun.
 3. Install all temporary bulkheads, cofferdams, and pipe blind flanges, and close all valves. Inspect each to see that it provides a complete seal.

4. Fill with water to maximum liquid level. Maintain this level for 72 hours prior to the start of the test to allow water absorption, structural deflection and temperature to stabilize.
5. Measure evaporation and precipitation by floating a partially filled, transparent, calibrated, open top container.
6. Measure the water surface at two points 180 degrees apart, at 24 hour intervals using a sharp pointed hook gauge and fixed metal measure capable of reading to 1/100 of an inch. Continue the test for a period of time sufficient to product at least ½ inch drop in the water surface based on the assumption that leakage would occur at the maximum allowable rate specified or for 72 hours whichever is the lesser time.

C. Acceptance Criteria:

1. Volume loss shall not exceed 0.075 percent of contained liquid volume in a 24 hour period, correcting for evaporation, precipitation, and settlement.
2. No damp spots or seepage shall be visible on exterior surfaces. A damp spot is defined as sufficient moisture to be transferred to a dry hand upon touching.

- D. Repairs When Test Fails: Dewater the structure; fill leaking or damp cracks with crack repair epoxy, patch areas of damp spots previously recorded, and repeat water leakage test in its entirety until the structure successfully passes the test. Crack repair epoxy shall be 100% solids, moisture insensitive epoxy resin meeting the requirements of ASTM C 881 Type IV, Grade 1. Install in strict accordance with manufacturer's instructions.

17.15 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

B. Inspections:

1. Steel reinforcement placement.
2. Headed bolts and studs.
3. Verification of use of required design mixture.
4. Concrete placement, including conveying and depositing.
5. Curing procedures and maintenance of curing temperature.
6. Verification of concrete strength before removal of shores and forms from beams and slabs.

- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture plus one set for each additional 25 cu. yd. or fraction thereof.

- a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143; one test at point of placement from each truck.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure five standard cylinder specimens for each composite sample.
 - b. Cast and field cure a minimum of three standard cylinder specimens for each composite sample of each elevated structure.
6. Compressive-Strength Tests: ASTM C 39 test one laboratory-cured specimen at 7 days and one set of two specimens at 28 days and retain one specimen for testing at 56 days if required.
 - a. Test one field cured specimen at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength.
9. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, air and concrete temperatures, air content, slump, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7 and 28 day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer, but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive

strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Engineer.

12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

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SECTION 15001 – SANITARY SEWER PIPING, VALVES, AND ACCESSORIES**PART 1 GENERAL****1.01 WORK INCLUDED**

- A. This Section covers the Work necessary to install or modify new and existing potable water and sanitary sewer mains. Including all valves, sleeves, fittings, fasteners and accessories specified herein in order to complete the work identified.
- B. Like items of material provided hereunder shall be the end products of one (1) manufacturer. All materials shall be manufactured in the United States of America unless otherwise noted by the Engineer.
- C. See General Conditions and Section 15002 which contain information and requirements that apply to the Work specified herein and are mandatory for this project.

1.02 REFERENCES

- A. The following is a list of standards that may be referenced in this Division:
 - 1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. *T99, Standard Specification for the Moisture-Density Relations of Soils Using a 2.5 kg (5.5LB) Hammer and a 305mm (12 in.) Drop.*
 - 2. American Water Works Association (AWWA):
 - a. *C104, Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water.*
 - b. *C105, Polyethylene Encasement for Ductile Iron Pipe Systems.*
 - c. *C110, Ductile Iron and Grey Iron-Fittings, 3-inch through 48-inch.*
 - d. *C111, Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.*
 - e. *C115, Flanged Ductile Iron Pipe with Ductile Iron and Grey Iron Fittings.*
 - f. *C150, Thickness Design of Ductile-Iron Pipe.*
 - g. *C151, Ductile-Iron Pipe. Centrifugally Cast, for Water.*
 - h. *C153, Ductile Iron Compact Fittings, 3-inch through 24-inch and 54-inch through 64-inch for Water Service.*

- i. *C 207, Steel Pipe Flanges for Waterworks Service, Sizes 4-inch Through 144-inch (100mm through 3600mm).*
 - j. *C 600, Installation of Ductile-Iron Water Mains and Their Appurtenances.*
 - k. *C 606, Grooved End, Shouldered Joints.*
3. ASTM International (ASTM)
- a. *A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.*
 - b. *A563, Standard Specification for Carbon and Alloy Steel Nuts.*
 - c. *A240, Standard Specification for Stainless Steel Bolts, Nuts and Studs, 60,000 psi Tensile Strength.*
 - d. *B16.21, Standard Specification for Nonmetallic Flat Gaskets for Pipe Flanges.*
 - e. *D882, Standard Test Method for Tensile Properties of Thin Plastic Sheeting.*
 - f. *D1330, Standard Specification for Rubber Sheet Gaskets.*
 - g. *D1922, Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method.*
 - h. *D2000, Standard Classification System for Rubber Products in Automotive Applications.*
 - i. *D4976, Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.*
4. Ductile Iron Pipe Research Institute (DIPRA).
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- a. *C104, Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water.*
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- h. C153, Ductile Iron Compact Fittings, 3-inch through 24-inch and 54-inch t through 64-inch for Water Service.*
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4. Ductile Iron Pipe Research Institute (DIPRA).

1.03 SUBMITTALS

- A.** Submittals shall be made in accordance with Section 01330 and the requirements of this section.
- B.** Submit pipe manufacturer's pipe lay shop drawings in accordance with section 01330 of the Contract Documents.
- C.** Submit product data and certified statements for all other materials specified in this section.

D. Submit Field Hydrostatic Testing Plan: Submit at least 15 days before testing and at a minimum, include the following:

1. Testing dates.
2. Piping systems and section(s) to be tested.
3. Method of isolation.
4. Method of conveying water from source to system being tested.
5. Calculations of maximum allowable leakage for piping section(s) to be tested.
6. Calibration certificates for recordable pressure recorders. Only chart recorders or electronic pressure recorders are acceptable.
7. Test documentation form and results.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Pipe:

1. General:

- a. Centrifugally cast, grade 60-42-10 iron.
- b. Meet requirements of AWWA C150, C153 and C111.
- c. Lined and coated as specified.

2. Pressure rating of pipe as shown on drawings.

3. Pipe wall thickness of threaded pipe for a flanged pipe end shall be minimum special thickness Class 53 from 12-inch to 54-inch diameter pipe in accordance with AWWA C115.

4. Grooved end pipe, for all pipe diameters, shall be minimum Special Class 53.

5. Pipe shall be new and recently manufactured. Refurbished pipe shall not be provided.

B. Joints:

1. Push-On Joint: Rated at minimum working pressure equal to pipe material design.

2. Restrained Joint:

a. Manufactured proprietary joint that mechanically restrains pipe to adjoining pipe.

b. Manufacturers and Products:

- 1) American Cast Iron Pipe; Flex-Ring and Lok-Ring.
- 2) U.S. Pipe; TR Flex.
- 3) Or approved equal.

3. Mechanical Wedge Action Type Joint:

- a. *Use only in areas where adjoining to fixed points where laying length is determined in field.*
 - b. *Prior to purchase and installation, type and application of this joint shall be approved by Engineer.*
 - c. *Manufacturers and Products:*
 - 1) *EBA Iron; Mega-Lug*
4. *Flanged Joint: Threaded 250 psi working pressure ductile iron flanges conforming to AWWA C115.*
- C. *Fittings:*
1. *Ductile Iron, Push-On, Flanged or Restrained Joint: In accordance with AWWA C110, at 250 psi minimum working pressure for 3- to 24-inch fittings and 150 psi minimum working pressure for 30- to 48-inch fittings.*
 2. *Mechanical Joint Fittings: In accordance with AWWA C111.*
 3. *Fittings shall be new and recently manufactured. Refurbished fittings will not be accepted.*
- D. *Welded Outlet: Only weld to pipe in manufacturer's shop.*
- E. *Lining:*
1. *Pipe and fittings for clean water applications shall be cement-lined and asphaltic seal coated in accordance with AWWA C104.*
 2. *Pipe and fittings for wastewater applications shall be lined with 40-mil ceramic epoxy, as manufactured by Induron.*
- F. *Coating: Asphaltic type, 1 mil thick, in accordance with AWWA C151, C115, C110 and C153.*
- G. *Polyethylene Encasement:*
1. *Virgin polyethylene raw material conforming to requirements of ASTM D4976.*

2. *Elongation: 800 percent, minimum, in machine and transverse direction (ASTM D882).*
3. *Tensile Strength: 3,600 psi, minimum.*
4. *Dielectric Strength: 800V per mil-thickness, minimum.*
5. *Propagation Tear Resistance: 2,550-grams force (gf), minimum, in machine and transverse direction (ASTM D1922).*
6. *Tube form, conforming to AWWA C105.*
7. *Film shall have minimum thickness of 0.008 inch (8 ml).*

H. Bolting:

1. *Bolts for flanged connections shall be stainless steel, ASTM A240, Grade A hex bolts and A hex head nuts.*
2. *Bolts for grooved end connections shall be manufacturer's standard.*

I. Gaskets:

1. *Gaskets for flat faced 150 and 250 psi working pressure flanges shall be 1/8 inch thick, red rubber (SBR), hardness 80 (Shore A), rated to 200 degrees F, conforming to ASME B16.21, AWWA C207, and ASTM D1330, Grades 1 and 2.*
2. *Gaskets for grooved end joints shall be Halogenated butyl, conforming to ASTM D2000 and AWWA C606.*

2.02 SOURCE QUALITY CONTROL

- A. Factory Tests: In accordance with AWWA C104, C105, C110, C111, C115, C150, C151, C153 and C606.*

PART 3 - EXECUTION

3.01 GENERAL

A. COVER

1. Standard depth of cover is 3 feet below existing and proposed road surface (and areas designed for normal traffic loading) unless otherwise approved by the OCWS Water and Sewer Department.
2. Minimum cover to finished grade over sewer lines shall be 36 inches. Minimum cover under ditch bottoms shall be 36 inches. These must be approved by the OCWS Water and Sewer Department on a case-by-case basis.

B. HORIZONTAL SEPARATION

1. Ten (10) feet to any existing or proposed water main or storm sewer.
2. Fifteen (15) feet to buildings, top of bank of lakes/streams/creeks, other structures.
3. Ten (10) feet minimum separation to gas mains.
4. Ten (10) feet minimum to underground electric cable.
5. Current Florida DEP separation requirements.
6. All separation distances above are edge to edge.

C. VERTICAL SEPARATION

1. Sanitary Sewer shall cross over other pipes.
2. Eighteen (18) inch minimum separation (edge to edge) between all pipes and cables shall be maintained (6 inch absolute minimum separation with DIP) when conforming to Florida DEP separation requirements.
3. When water mains cross under sewers, additional measures shall be taken. At least 18 inches of separation between the bottom of the sewer and the top of the water main shall be provided. Adequate structural support for the sewer to prevent deflection or settling on the water main. The joint of water pipe shall be centered at the crossing. Encasement of the water pipe in concrete shall also be considered.

3.02 CONNECTION TO EXISTING SYSTEM

- A. All connections to existing mains shall be made under the direct supervision of the Owner Representative. Valves on existing mains shall be operated by or under direct supervision of the Owner's personnel. Tapping sleeves and valves shall be pressure tested prior to tapping. If for any reason service or flow must be cut off for an extended period of time, beyond the scheduled time for the defined scope of work, the Owner shall be notified at least three (3) days in advance to make necessary notifications.
- B. If cut-off of service or flow exceeds the scheduled installation time or creates an endangerment to life and health, the Contractor shall be ready to proceed with as much material, equipment and labor as possible at the site to minimize the length of service interruption. The Owner reserves the right to postpone work if, in the opinion of the Director, the Contractor is not ready to proceed on schedule or if piping system or equipment failure occurs. No additional payment will be made to the Contractor for loss of time, due to the failure of the Contractors equipment or actions that create an unscheduled service outage or threat to the community.

3.03 TRENCH EXCAVATION AND BACKFILL

A. General:

- 1. Trenches for mains shall be excavated in the locations shown on the Plans or as directed by the Engineer.
- 2. All trees, telephone and power poles along the line of Work shall be protected. Where clearing or partial clearing of the right-of-way is necessary, complete before the start of trenching. Cut trees and brush as near to the ground surface as practical, remove all stumps, and remove for disposal. Do not remove trees over two (2) inches in diameter unless they are within four (4) feet of the pipe centerline, without permission from the Engineer. Protect from damage all privately owned shrubs or plants unless approved by the Engineer. If necessary for protection, remove and replace trees, shrubs, or plants by balling the root system and placing in stockpiled topsoil, watering as required. Should any tree, shrub, or plant that has been disturbed as a result of its removal, or otherwise damaged by the Contractor, die within six (6) months from the time it was disturbed or damaged, it shall be replaced in kind and size by the Contractor.
- 3. Unless boring and jacking is required or as shown on the Drawings, cut all bituminous and concrete pavements, curbs and sidewalks before excavation of the trenches with an approved pavement saw, hydrohammer, or approved pavement cutter. Pavement and concrete materials removed shall be hauled from the site and not used for trench backfill. No driveway or road shall be inaccessible at the end of the day's Work and all street crossings shall be backfilled and opened to traffic each day.

B. Trench Excavation:

1. Trench widths shall be as required to properly install the mains, but not less than twelve (12) inches clear on each side of the pipe. The trench depths shall be as required to provide a minimum pipe cover of three (3) feet, unless otherwise approved by the Engineer.
2. At all times provide and maintain ample means and devices to promptly remove and dispose of all water entering the trench excavation during the time the trench is being prepared for the pipe laying, during the laying of the pipe, and until the backfill at the pipe zone has been completed.
- C. Trench Backfill:
 1. The Contractor may backfill the trenches before hydrostatic testing, but is responsible for locating and repairing all leaks until a satisfactory hydrostatic test is completed.
 2. When backfill is placed mechanically, push the backfill material onto the slope of the backfill previously placed and allow to slide down into the trench. Do not push backfill into the trench in such a way as to permit free fall of the material until at least two (2) feet of cover is provided over the top of the pipe. Under no circumstances allow sharp, heavy pieces of material to drop directly onto the pipe or the tamped material around the pipe. Do not use backfill material of consolidated masses larger than 3".
 3. Backfill trenches beneath roads, paving and sidewalks by placing material in six (6) inch lifts and compacting each lift with mechanical tampers or vibratory compactors to at least ninety-five (95%) percent of the relative maximum compaction as determined by AASHTO T99. (ASTMD 698).
 4. Backfill trenches in other areas by placing materials in loose lifts as described hereinbefore and leave the backfill material neatly mounded so that after normal settlement the finished surface will meet with existing grade.
 5. Any excess or deficiency of backfill material which becomes apparent after settlement and within the warranty period shall be corrected by disposing of excess material, or adding additional material where required.
 6. Any settlement noted in backfill, fill, or in structures built over the backfill or fill within one (1) year warranty period in accordance with the General Conditions will be considered to be caused by improper compaction methods and shall be corrected at no cost to the Owner. Structures damaged by settlement shall be restored to their original condition by the Contractor at no cost to the Owner.

3.04 PIPE INSTALLATION

- A. Handling Material: Provide and use proper implements, tools, and facilities for the safe and proper prosecution of the Work. Lower all pipe, fittings, and appurtenances into the trench, piece by piece, by means of a crane, slings, or other suitable means and in such a manner

as to prevent damage to the pipeline materials and protective coatings and linings. Do not drop or dump pipeline materials into the trench.

- B. Cleaning Pipe and Fittings: Remove all dirt, blisters, lumps, and excess coating from the bell and spigot ends of each pipe. Wipe the outside of the spigot and the inside of the bell until joints are clean, dry, and free from oil and grease before the pipe is laid.
- C. Cutting Pipe: Cut pipe for inserting valves, fittings, or closure pieces in a neat and workmanlike manner without damaging the pipe or lining and so as to leave a smooth end at right angles to the axis of the pipe or leaving a beveled end as recommended by the manufacturer. Dress cut ends to remove sharp edges or projections which may damage the rubber gasket.
- D. Laying Pipe: Unless otherwise directed, lay pipe with bell end facing in the direction of the laying. For lines on an appreciable slope, face bells upgrade at the discretion of the Engineer. Pipelines intended to be straight shall not deviate from the straight line at any joint in excess of one (1) inch. Wherever it is necessary to deflect from a straight line, the maximum deflection per joint shall be as recommended by the pipe manufacturer.
- E. Joining Push-On Joint Pipe: Lay and join pipe in strict accordance with the manufacturer's recommendations. Provide all special tools and devices, such as special jacks, chokers, and similar items required for the installation. Lubricant for the pipe shall be furnished by the pipe manufacturer.
- .F. Joining Mechanical Joint Pipe and Fittings: Install in accordance with manufacturer's recommendations. After cleaning ends and gasket, slip the gland and gasket on the plain end, lubricating if necessary to facilitate sliding the gasket into place. Guide the end of the pipe into the bell of the pipe previously laid, locating the spigot centrally in the bell. Place the gasket into position and insert the bolts in the holes. When tightening bolts, bring the gland up toward the flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. Tighten all nuts progressively at a time. Do not overstress bolts to compensate for poor alignment. If effective sealing is not attained at the maximum torque, disassemble the joint and reassemble after cleaning.

3.05 VALVE INSTALLATION

- A. Valves:
 - 1. Before installation, the valves shall be thoroughly cleaned of all foreign material, and shall be inspected for proper operation, both opening and closing, and to verify that the valves seat properly. Valves shall be installed so that the stems are set vertical. Jointing shall conform to AWWA C600 or AWWA C603 as applicable. Joints shall be tested with the adjacent pipeline.

2. Flange faces and mechanical joint sockets shall be thoroughly cleaned before the joint is assembled.
- B. Valve Boxes:
1. Center the valve boxes and set plumb over the wrench nuts of the valve. Set valve boxes so that they do not transmit shock or stress to the valves. Set the valve box covers flush with the finished surface as shown. Cut extensions to the proper length so that the valve box does not ride on the extension when set at grade.
 2. Backfill shall be the same as specified for the adjacent pipe. Place backfill around the valve boxes and thoroughly compact to a density equal to that specified for the adjacent trench and in such a manner that will not damage or displace the valve box from proper alignment or grade. Misaligned valve boxes shall be excavated, plumbed, and backfilled at the Contractor's sole expense.
- C. Line Stops:
1. Temporary line stops shall only be installed by vendor personnel or contractor personnel trained and certified for stop by the vendor.

3.06 CONNECTIONS TO EXISTING MAINS

- A. Points of connection to existing mains shall be exposed prior to trenching of the new line not less than forty-eight (48) hours prior to the anticipated connection time. The Contractor shall immediately notify the Engineer if the connection cannot be made in accordance with the Drawings.
- B. All connections to the existing system and all testing of the new line must be with the authorization of, and in the presence of, the authorized representative of the Owner and Engineer.
- C. Connections to an existing system using a tapping machine shall be completed in accordance with the manufacturer's recommendations. Where cut-ins are permitted to be made in existing pipes, the Work shall be conducted at such a time and in such a manner as to minimize the interruption of service. Necessary pipe, fittings, and valves shall be assembled at the site ready for installation before tapping existing main. All Work shall be prosecuted vigorously and shall not be halted until the line is restored to service.

3.07 HYDROSTATIC TESTING

- A. General: Make pressure and leakage tests on all newly placed pipe. The Contractor shall provide all necessary equipment and material, make all taps in the pipe as required, and conduct the tests. The Engineer will monitor and witness the tests before the installed pipe is approved. Pressure tests must be completed before payment is made for that section of pipe.
- B. Test Pressure: Each section of pipe shall be slowly filled with water to the required test pressure. Pressure shall be applied by a motor-driven pump. The test duration shall be six (6) hours for covered pipe and three (3) hours for uncovered pipe and one (1) hour on

connection fittings. The Contractor shall provide a pressure chart recorder for the duration of each test.

- C. Procedure: Before applying the specified test pressure, all air shall be expelled from the pipe and fittings. If necessary, taps shall be made at points of highest elevation and plugged afterward. Throughout the test period, the Contractor will inject a sufficient quantity of water into the pipe section to maintain the specified pressure within 5 psi. The Contractor shall provide suitable means to determine the quantity of water lost by leakage during the test. The Engineer must witness the quantity of water leakage and pressure recording and sign both before approving the test.
- D. Allowable Leakage: Exposed piping or fittings shall not have any visible leakage. For buried pipelines less than 500 LF or fittings the allowable leakage shall be zero (0) gallons. For lengths more than more than 500 LF the allowable leakage shall be less than the amount determined by the following formula:

$$L = \frac{SD * P^{1/2}}{133,200}$$

Where L = Allowable leakage, gallons per hour

S = The length of pipe section tested

D = Nominal diameter of pipe, inches

P = Average test pressure during test, pounds per square inch

- E. The leakage test shall be conducted in accordance with AWWA Standard C-600, except where stricter requirements have been added herein.
- F. Correction of Excessive Leakage: Should any test of pipe disclose leakage greater than that allowed, locate and repair the defective joints or pipe until the leakage of a subsequent test is within the specified allowance.

PART 4 PAYMENT

4.01 GENERAL

- A. Payment for all work in this Section will be included as part of the lump sum bid amount or unit prices stated in the Proposal.

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SECTION 15010 - UNDER PRESSURE LINE TAPS AND STOPS

PART 1 - GENERAL

1.01 PROJECT OVERVIEW

- A. Line tapping and stopping are mechanical methods to allow access to an existing operating pipe system under pressure without having to interrupt service.
- B. It's the intention of this section of the specifications to clear outline the use of materials, methods and procedures to be employed by a "Specialty Contractor" for the safe and successful branch connection to the existing primary pipe system while it remains in service and under pressure. At no time is the primary system permitted to be shut down.
- C. The location of the existing primary pipe system and tap locations are shown on the contract drawings.
- D. The Contractor shall be directly responsible and perform a minimum ninety percent of the tapping and line stop work to be performed and shall have a minimum of 10 years demonstrated history of performing these types of operations without service interruption.

1.02 SUBMITTALS

- E. Submittals shall be made in accordance with Section 01330 and the requirements of this section.
- F. Submit product data and certified statements for all other materials specified in this section.
- G. Submit Field Hydrostatic Testing Plan: Submit at least 15 days before testing and at a minimum, include the following:
 - 1. Testing dates.
 - 2. Piping systems and section(s) to be tested.
 - 3. Method of isolation.
 - 4. Method of conveying water from source to system being tested.
 - 5. Calculations of maximum allowable leakage for piping section(s) to be tested.
 - 6. Calibration certificates for recordable pressure recorders. Only chart recorders or electronic pressure recorders are acceptable.

7. Test documentation form and results.

1.03 CONTRACTOR QUALIFICATIONS

- A. The Contractor must have ten plus (10+) years of continuous operation as a business performing the scope of services identified in this solicitation, including performing line taps and line stops on water and sewer mains in excess of 20-inch diameter.
- B. As a minimum, each Contractor's field technician performing the work for this Project shall have as a minimum five (5) year continuous employment history with the Contracting Company. The technician(s) shall have recent experience performing the same size and system conditions as identified in the Bid Proposal. The Contractor will be required to furnish employment history for each technician along with all safety and other operation training information, if requested by the Owner. In no case will a technician without proper supporting documentation and qualifications be permitted work on the jobsite.

1.04 APPROVED LINE STOP INSTALLATION CONTRACTORS (Main Sizes 3/4-inch to 42-inch)

- A. EA Tapping Services, Apoka Florida

1.05 PRELIMINARY INVESTIGATIONS

- A. The following information is provided to the Contractor for the purpose of this proposal.
- B. Prior to the placement of material orders for this portion of the project, the Contractor will need to verify pipe data needed to complete the scope of work.
- C. Any additional data required by the Contractor, must be submitted to the project management engineering firm a minimum of 10 days prior to the Contractor needing such information. The Owner/ Engineer shall attempt to delivery such information as expeditiously as possible. The Contractor shall assume full responsibility for obtaining all pertinent information necessary to supply the required specialty fittings, equipment, and technicians to the work site.
- D. The Owner will excavate and expose proposed tap locations for the Contractor to circumferentially tape measure and caliper the pipe for the purpose of determining the outside diameter and ovality of the host pipes.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Tapping Sleeves

1. General
 - a. All permanent fittings and fasteners that are to be attached to the existing pipe system shall be 304 stainless steel, unless indicated otherwise in these specifications.
 - b. All fittings, machinery, supports and methods used under this section will require (6) sets of shop drawings be submitted and approved prior to the start of fabrication.
 - c. If requested, tapping Contractor will provide pressure retention design calculations for the type of fitting specified and based upon the operating conditions as provided by the Owner.
2. Description:
 - a. The fitting to be used for this type work shall be manufactured in two sections. The use of three section fittings will require pre-approval by the Engineer. The back (bottom) section will be of the full encirclement type and conform to the measured pipe outside diameter. The front (top) section will also be full encirclement type with a factory installed nozzle and flange outlet. Tapping saddles will be fabricated from 304 stainless steel materials. The body run section (top and bottom) shall be made of ASTM A-240 18-8 grade steel as a minimum. Steel run sections will conform to and re-enforce the existing pipe. Fittings will have a recess for installation of a Buna-N rubber gasket around the tapping outlet. Bolts and nuts shall be $\frac{3}{4}$ " corrosion resistant stainless steel. A $\frac{3}{4}$ " test outlet will be placed into the nozzle branch outlet, at the factory, for the purposes of site pressure testing after the fitting has been installed around the pipe.
 - b. Tapping sleeves shall be designed for a working pressure of 200 psig without leakage. The outlet branch connection shall have a recessed flanged face for connection of tapping valve with standard dimensions in accordance with Manufacturer's Standardization Society (MSS) SP-60. A complete set of neoprene or other elastomeric gaskets shall be furnished. Sleeves shall be furnished to fit ductile iron, pipe with side connection as shown on plans or specifications in standard pipe sizes of 4-inch X 4-inch through 24-inch X 24-inch. Sleeves shall be furnished with all necessary installation parts such as mechanical joint loose flange ends, bolts, fasteners, seals and gaskets.
3. Sleeve Body:
 - a. ASTM A420 Stainless Steel with a minimum wall thickness for of 0.375". All welding of materials shall be in accordance with applicable code standards. Sleeve plates shall be design to permit longitudinal bolting of the top and bottom halves around the pipe.

4. Tapping Nozzle
 - a. Nozzles attached to the sleeve plates shall be constructed of ASTM A-240 stainless steel. All weld will be suitably stressed relieved when required by code or by common practice. Nozzle thickness will be a minimum standard steel pipe wall thickness (0.250" minimum in sizes 6" and above) and in compliance with the maximum working pressure of the system as provided by the owner/operator of the system.
 - b. Each fitting will be furnished with a factory supplied 3/4" threaded test outlet and plug attached to the tap nozzle.
5. Connection Sealing Gasket:
 - a. Shall be ASTM D-2000 Buna-N rubber molded from elastomeric compounds that resist compression set. The material shall be suitable for temperature ranges of 32 to 140 degrees f, and for applications exposed to domestic wastewater, salt solutions, mild acids and bases.
6. Flange Connection:
 - a. All flanges used for line stops will be manufactured from ASTM A-240 18-8 grade stainless steel. Flanges will comply with ASME B16.5 in sizes up to 12".
7. Completion Plugs for Line Stop Fitting:
 - a. Shall be manufactured from corrosion resistant steel plate, ASTM A-36 grade material as a minimum, capable of withstanding constant exposure to raw wastewater liquids and gases. Completion plugs shall be constructed in such a manner that an "O" ring pressure activated device will permit sealing the completion plug to the flange bore thus permitting the safe recovery of the temporary valve utilized for the line stop operation. Locking groves or locking leaves will be designed to meet the maximum working pressure of the system.
 - b. All non-stainless steel material coming in contact with wastewater shall be coated or lined with 40-mil ceramic epoxy, as manufactured by Induron.
 - c. Completion plug locking mechanisms shall consist of non-pointed corrosion resistant set screws and ring segments or leaves that lock from or into the flange bore.
8. Blind Flanges:
 - a. Shall be epoxy coated ASTM A-181 or ASTM A-105 grade steel and will mate with the line stop flanges listed above. Minimum blind flange thickness shall comply with AWWA C-207.

- b. Shall include a sealing gasket manufactured from non-asbestos composition suitable for wastewater applications and will be designed to mate to the inner bore and inner bolt circle of the sleeve flange. All gaskets will be at least .125" minimum thickness.

9. Fastners:

- a. All external bolting, studs and nuts that shall become a permanent part of the fitting installation shall be Corrosion resistant, high strength, ASTM A-240 stainless steel .All fastners shall be coated with anti-seize or anti-galling compound prior to completion of fittings.

10. Finish:

- a. Any approved non-stainless steel fittings shall be coated both internally and externally with a fusion bonded epoxy coating per AWWA Specification C-213. Exterior coating shall have manufacturer's standard red or black water base epoxy coating. Interior coating shall be Induron 40-mil ceramic epoxy coating.

11. Approved Manufactures:

Tapping Sleeves

Manufacturer	Model
Ford Meter Box Company	FTSA-XXXX-XX
JCM Industries	452
Others as approved by Owner in writing	

Line Stop Sleeves

Manufacturer	Contact
JCM	jcmindustires.us
Ford Meter Box Company	fordmeterbox.com
Others as approved by Owner in writing	

B. Valves

1. General:

- a. Valves shall be suitable for the intended service. Renewable parts including disc, packing, and seats shall be of types recommended by valve manufacturer for intended service, but not of a lower quality than specified herein. Valves shall be suitable for the exposure they are subject to, buried, interior or exterior, as applicable.
- b. Unless otherwise shown, valves shall be the same size as the adjoining pipe. For the purpose of designating the type and grade of valve desired, a manufacturer's name and list or figure number is given in the following Specifications.
- c. Valve ends shall be mechanical joint or flanged as indicated to suit the adjacent piping or fitting. Valves shall OPEN LEFT. Valves shall be provided with valve stem extensions to within 6 inches of ground surface, where centerline of pipe to grade is greater than 4 feet.
- d. Buried service operators shall have a two (2) inch AWWA operating nut. All moving parts of the valve and operators shall be enclosed in the housing to prevent contact with the soil. Exposed operators shall have manual hand wheel or lever operator as specified for the valve type.
- e. Brass and bronze components of valves and appurtenances shall be low zinc alloys.

2. Valve Types:

- a. Resilient seated gate valves shall be designed and fabricated in accordance with the current AWWA Standard C509 or C515. The basic design of the gate valves shall have a cast iron body, elastomeric encapsulated cast iron disc, bronze stem and operating nuts with non-rising stem design. The valve working pressure shall be a minimum of 200 psig with a test pressure of 400 psig.

3. Approved Manufacturers:

Manufacturer	MODEL
American Flow Control	Series 2500
Others as approved by Owner in writing	

C. Valve Boxes:

- 1. Valve boxes shall be M&H E-2702, Mueller H10364 or approved equal. Each valve box shall be slip-type to adjust for a minimum cover of 48" bury. The

flanged base of the valve box shall be at least six (6) inches above the pipe so not to stress water lines 4" and smaller. Extension pieces will be required for additional depth over valves. Extensions shall be M&H E-3120 or Mueller H-10375. Covers shall have "SEWER" cast on top.

2.02 EQUIPMENT

A. General:

All equipment utilized for the tapping and line stop operations will be designed and manufactured to meet the maximum working pressures of the system onto which they are to be used. All equipment that will come into contact with potable water will be suitably chlorinated at the jobsite, under the supervision of the site engineer, prior to mounting to the valve used for tapping or line stop. All equipment will be pressure rated for a minimum 100 psig working pressure through 60" size and 50 psig in sizes above 66". The pressure ratings will include a suitable safety factor above the operating pressures in the equipment design calculations.

B. Tapping Machinery:

1. Shall be designed and constructed in such a manner that they will withstand the pressure and mechanical forces to be encountered during the tapping process.
2. Equipment will be power operated, with a pressure tight changer attached to the power rotation portion of the mechanism. The shell cutter utilized for the trepanning process shall have carbide or high strength carbons steel tips to insure a smooth cut.
 - a. Equipment shall have a carbide / high strength carbon pilot drill tip with "coupon catching" device. Each tap coupon shall be completed removed and inspected by the Contractor and Engineer, prior to continuance of work. Contractor shall demonstrate either by experience or by calculation that the catching mechanism is of sufficient strength to retain the weight of the coupon.

C. Line Stop Equipment:

1. Shall include a temporary valve provided by the Contractor for removal of the cutting machine and installation of the line stop mechanism. The valve shall be certified by the manufacture to operate and withstand the maximum pressures to be encountered while working on the pipe. All valves will have a minimum bore that permits placement and removal of the factory supplied completion plug.
2. The line stop mechanism will consist of an actuator to a pressure tight housing. Contained within the pressure tight housing shall be a pivoting plugging head with an elastomeric seal captured between steel plates. The design and operation of the plugging head and sealing element shall meet the maximum

pressures to be encountered in the water system. The sealing element shall be manufactured of elastomeric material suitable for wastewater applications.

3. The line stop equipment will be provided by the Contractor with a flanged outlet on the line stop head housing. This line stop machine flanged outlet will permit the Owner to provide and install a temporary by-pass pipe system if required for facilitating the maintenance of constant service while the primary pipe system under-going alterations. The Owner will be responsible for determining head loss in the temporary by-pass piping system, provide and install all temporary pipe, provide and install all thrust restraints needed to maintain the integrity of the temporary by-pass pipe system.

D. Pipeline Purging / Equalization:

1. When existing fittings or connections are not available, then the tapping Contractor will provide a completion type fitting for this purpose. An ancillary fitting for de-pressurization of the pipe system is required after the line stop head has been placed into the system to safely and in a controlled manner de-pressurize and remove any excess line pressure prior to the main line modification. This fitting is needed to re-introduce pressure into the pipe system after alterations are completed, to expel in excess gases and equalize both sides of the line stop head to permit removal from the system.
2. De-pressurization / purging fitting will be in accordance with the below table:

Main Line Diameter (inches)	Fitting Size (inches)
4" thru 20"	2"
22" thru 48"	4"
54" and larger	6" minimum

PART 4 - EXECUTION

4.01 INSTALLATION:

A. Fittings

1. General
 - a. Fitting will be installed in accordance with the manufacturer's recommendation. In no case will the fitting be retro-fitted while it is on the pipe. Any mis-match in fitting installation will require the Contractor to remove the fitting from the pipe and make engineer/owner approved alterations.
2. Host Pipe Preparations:

- a. The host pipe will be excavated at the locations indicated on the plans and specifications by the Owner. This excavation will include necessary sheeting and shoring, supports, restraints, gravel base and site de-watering. Prior to installation of the tap, the Contractor shall thoroughly clean and inspect the host pipe. The Contractor shall carefully inspect the area where the fitting "O" ring must seal to the pipe surface. Any surface pitting will be filled in with an engineer approved epoxy or the site moved to an acceptable location.

B. Tapping / Line Stop Sleeve Installation

1. The bottom half of the fitting will be placed around the pipe first and properly supported from the bottom of the pipe with wood cribbing. The top half of the fitting will have the "O" ring seal lightly lubricated and placed upon top of the pipe. Side seam draw bolts will be installed and the fitting halves will be UNIFORMLY drawn together, in a loose fashion, starting from the center and working out to each end. The flange shall be measured to assure the top is completely level. Once the outlet flange is level, the sides of the fitting should be drawn together until the "O" ring is compressed against the pipe surface. The use of a feeler gauge may be used to determine "O" ring compression.
 - a. Contractor will properly install the fitting in accordance with the manufacturer's recommendations. After installation, the fitting will be suitably pressure tested.
 - b. After fitting installation the Owner will provide sufficient concrete support under and around each fitting based upon existing soil conditions, the size and weight of the equipment to be mounted to the fitting, and anticipated lateral thrust that will be placed on the fittings and pipe sections at the time of the line stop operations and main line alterations. Owner will be responsible for the lateral thrust that will be placed on the existing pipe downstream of the line stops. Contractor will provide thrust restraint on the fitting and equipment based upon operation pressures of the system.
 1. Concrete shall reach minimum cure strength as specified by the Engineer prior to the mounting of any tapping-line stop machinery.
 2. Upon acceptance of concrete support and thrust cure process, the Contractor will provide and install the control valve on to the line stop fitting.

C. Tapping Process

1. General
 - a. The tapping machine will be mounted to the temporary control valve (Line Stop Process) or permanent valve (Line Tap Process). The tap will be performed and the cut out pipe section (coupon) will be retracted into the

tapping machine's pressure housing. The control valve will be closed, the tapping machine de-pressurized and removed from the temporary control valve.

2. Process:

- a. The Contractor will be required to furnish, to the Engineer, **written calculations for the tap and pipe line stop operations. The written calculations must include pilot drill travel, location of the pilot drill keeper wires in relation to the severed coupon and tap shell cutter travel.** The tapping machine will be provided with a positive travel measurement device and all calculations will be verified by the Engineer prior to the start of the tap. Line stop head sealing element sizing and head travel calculations will be provided in a written format. Completion plug setting calculations will also be required.
- b. Once the tap machine has been attached to the valve, the tap pilot drill will be advanced to the pipe face by hand (not by power operation). Travel calculations will be checked in relation to the previous recorded data. Once the pilot drill has penetrated the pipe wall, the tap machine will be shut down and all joints inspected for leaks. The tap process will be continued to the pre-determined cut completion calculation. The machine will be shut down and the cutting head retracted by hand back to the start measurement.
- c. The coupon will be removed from the tapping machine and the coupon will be measured for the required opening and for the purpose of verification of the line stop sealing element.
- d. The permanent control valve will be closed and the line tap machine de-pressurized, removed and a pressure test performed by the Contractor.

3. Line Stop Insertion (ONLY):

- a. The line stop sealing element(s) will be lubricated in accordance with the manufactures recommendations prior to retraction into the pressure housing.
- b. The temporary control valve(s) will be opened and the line stop head(s) will be inserted to the measured and calculated distance into the main line.
- c. Once the plugging head(s) is (are) seated in the main, the system will be de-pressurized downstream of the line stop head using the purge fitting provided for that purpose, or through existing system connections.
 1. Once de-pressurization is confirmed then the Owner may perform alterations to the pipe system as specified.

- d. Upon termination of the pipe alterations, the pipe system will be re-sealed and pressure will be introduced into the section of the pipe that has been modified.
 - e. Once the system pressure is equalized on both sides of the line stop head(s), the line stop head(s) will be removed from the pipe system and retracted back into the pressure housing on the line stop machine(s). The temporary control valve will be closed and the line stop machine de-pressurized and removed from the temporary control valve.
 - 1. A completion machine will have the completion plug mounted to the tool holder and the completion plug "O" ring will be lubricated with a vegetable based grease. The completion machine will be installed on the temporary control valve and the valve opened.
 - 2. The completion plug will be lowered the pre-measured distance into the special flange on the line stop fitting. The completion plug will be securely locked into position and verified locked by the Contractor.
 - 3. The completion machine will be disconnected from the completion plug tool holder, the machine de-pressurized to confirm the plug is secure and holding. The completion machine will then be removed from the temporary control valve.
 - 4. The temporary control valve will be removed from the line stop fitting and a gasket and blind flange will be installed on the line stop fitting.
4. Pressure Testing:

After installation of the blind flange (Line Stop Process) or permanent valve (Line Tap Process) a suitable pressure test shall applied to check the contoured elastomeric "O" ring seal. After successful pressure test, the blind flange is to be removed. The field pressure test shall be at the maximum working pressure of the line section, and shall be tested for minimum one (1) hour duration.

5. Thrust Restraint:

After acceptance of the pressure test, concrete support and thrust restraint should be placed around the fitting and pipe joints to properly support the pipe, including equipment weights, and to prevent lateral movement of the pipe joints when the system is placed back into service. The size and length of the concrete support will be based upon the Engineers calculation and existing site, pressure and soil conditions.

PART 5 - PAYMENT

5.01 GENERAL

- A. Payment for all work in this Section will be included as part of the lump sum bid amount or unit prices stated in the Proposal.

END OF SECTION