



STATE OF UTAH - DEPARTMENT OF ADMINISTRATIVE SERVICES

Division of Facilities Construction and Management

DFCM

STANDARD LOW BID PROJECT

January 7, 2008

WATER MAIN REPLACEMENT OGDEN/WEBER ATC CAMPUS

**UTAH COLLEGE OF APPLIED
TECHNOLOGY
OGDEN, UTAH**

DFCM Project Number 07207240

Intermountain Consumer Professional Engineers, Inc.
1145 East South Union Avenue
Midvale Utah 84047

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Current copies of the following documents are hereby made part of these contract documents by reference. These documents are available on the DFCM web site at <http://dfcm.utah.gov> or are available upon request from DFCM.

DFCM General Conditions dated May 25, 2005.

DFCM Application and Certification for Payment dated May 25, 2005.

Technical Specifications :

Drawings:

The Agreement and General Conditions dated May 25, 2005 have been updated from versions that were formally adopted and in use prior to this date. The changes made to the General Conditions are identified in a document entitled Revisions to General Conditions that is available on DFCM's web site at <http://dfcm.utah.gov>

NOTICE TO CONTRACTORS

Sealed bids will be received by the Division of Facilities Construction and Management (DFCM) for:

WATER MAIN REPLACEMENT – OGDEN/WEBER ATC CAMPUS
UTAH COLLEGE OF APPLIED TECHNOLOGY – OGDEN, UTAH
DFCM PROJECT NO: 07207240

Bids will be in accordance with the Contract Documents that will be available at 2:00 PM on Monday, January 7, 2008, and distributed in electronic format only on CDs from DFCM, 4110 State Office Building, Salt Lake City, Utah and on the DFCM web page at <http://dfcm.utah.gov>. For questions regarding this project, please contact Tim Parkinson, DFCM, at (801) 450-2478. No others are to be contacted regarding this bidding process. The construction budget for this project is \$300,000.00.

A **mandatory** pre-bid meeting will be held at 1:00 PM on Thursday, January 10, 2008 at the Ogden/Weber ATC Center, 200 North Washington Blvd., Ogden, Utah. All bidders wishing to bid on this project are required to attend this meeting.

Bids will be received until the hour of 3:00 PM on Thursday, January 24, 2008 at DFCM, 4110 State Office Building, Salt Lake City, Utah 84114. Bids will be opened and read aloud in the DFCM Conference Room, 4110 State Office Building, Salt Lake City, Utah. NOTE: Bids must be received at 4110 State Office Building by the specified time.

A bid bond in the amount of five percent (5%) of the bid amount, made payable to the Division of Facilities Construction and Management on DFCM's bid bond form, shall accompany the bid.

The Division of Facilities Construction and Management reserves the right to reject any or all bids or to waive any formality or technicality in any bid in the interest of DFCM.

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
Marla Workman Contract Coordinator
4110 State Office Building, Salt Lake City, Utah 84114

PROJECT DESCRIPTION

Project includes installation of a new 10” High Density Poly (HDPE) water main and replacement of the existing 6” DIP water main. The new water line will be installed using a horizontal direct drilling (HDD) methodology as outlined in the Specifications. The existing 6” water main will be left in place. The new HDPE pipe will connect to the existing water vault and extend to the shut off valve near the Administration Building.

**PROJECT SCHEDULE**

PROJECT NAME:	WATER MAIN REPLACEMENT – OGDEN/WEBER ATC CAMPUS UTAH COLLEGE OF APPLIED TECHNOLOGY – OGDEN, UTAH			
DFCM PROJECT NO.	07207240			
Event	Day	Date	Time	Place
Bidding Documents Available	Monday	January 7, 2008	2:00 PM	DFCM 4110 State Office Bldg SLC, UT and the DFCM web site *
Mandatory Pre-bid Site Meeting	Thursday	January 10, 2008	1:00 PM	Ogden/Weber ATC Center 200 North Washington Blvd Ogden UT
Last Day to Submit Questions	Tuesday	January 15, 2008	2:00 PM	Tim Parkinson– DFCM E-mail:tparkins@utah.gov Fax (801) 538-3267
Addendum Deadline (exception for bid delays)	Friday	January 18, 2008	2:00 PM	DFCM web site *
Prime Contractors Turn In Bid and Bid Bond	Thursday	January 24, 2008	3:00 PM	DFCM 4110 State Office Bldg SLC, UT
Sub-contractor List Due	Friday	January 25, 2008	3:00 PM	DFCM 4110 State Office Bldg SLC, UT Fax 801-538-3677
Substantial Completion Date	Friday	May 16, 2008	5:00 PM	Ogden/Weber ATC Campus 200 North Washington Blvd Ogden, UT

* **NOTE:** DFCM's web site address is <http://dfcm.utah.gov>



BID FORM

NAME OF BIDDER _____ DATE _____

To the Division of Facilities Construction and Management
4110 State Office Building
Salt Lake City, Utah 84114

The undersigned, responsive to the "Notice to Contractors" and in accordance with the "Instructions to Bidders", in compliance with your invitation for bids for the **WATER MAIN REPLACEMENT – OGDEN/WEBER ATC CAMPUS – UTAH COLLEGE OF APPLIED TECHNOLOGY – OGDEN, UTAH – DFCM PROJECT NO. 07207240** and having examined the Contract Documents and the site of the proposed Work and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of labor, hereby proposes to furnish all labor, materials and supplies as required for the Work in accordance with the Contract Documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the Work required under the Contract Documents of which this bid is a part:

I/We acknowledge receipt of the following Addenda: _____

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

I/We guarantee that the Work will be Substantially Complete by **May 16, 2008**, should I/we be the successful bidder, and agree to pay liquidated damages in the amount of **\$500.00** per day for each day after expiration of the Contract Time as stated in Article 3 of the Contractor's Agreement.

This bid shall be good for 45 days after bid opening.

Enclosed is a 5% bid bond, as required, in the sum of _____

The undersigned Contractor's License Number for Utah is _____

Upon receipt of notice of award of this bid, the undersigned agrees to execute the contract within ten (10) days, unless a shorter time is specified in the Contract Documents, and deliver acceptable Performance and Payment bonds in the prescribed form in the amount of 100% of the Contract Sum for faithful performance of the contract.

The Bid Bond attached, in the amount not less than five percent (5%) of the above bid sum, shall become the property of the Division of Facilities Construction and Management as liquidated damages for delay and additional expense caused thereby in the event that the contract is not executed and/or acceptable 100% Performance and Payment bonds are not delivered within the time set forth.

Type of Organization:

(Corporation, Partnership, Individual, etc.)

Any request and information related to Utah Preference Laws:

Respectfully submitted,

Name of Bidder

ADDRESS:

Authorized Signature

INSTRUCTIONS TO BIDDERS

1. Drawings and Specifications, Other Contract Documents

Drawings and Specifications, as well as other available Contract Documents, may be obtained as stated in the Invitation to Bid.

2. Bids

Before submitting a bid, each contractor shall carefully examine the Contract Documents, shall visit the site of the Work; shall fully inform themselves as to all existing conditions and limitations; and shall include in the bid the cost of all items required by the Contract Documents. If the bidder observes that portions of the Contract Documents are at variance with applicable laws, building codes, rules, regulations or contain obvious erroneous or uncoordinated information, the bidder shall promptly notify the DFCM Representative and the necessary changes shall be accomplished by Addendum.

The bid, bearing original signatures, must be typed or handwritten in ink on the Bid Form provided in the procurement documents and submitted in a sealed envelope at the location specified by the Invitation to Bid prior to the deadline for submission of bids.

Bid bond security, in the amount of five percent (5%) of the bid, made payable to the Division of Facilities Construction and Management, shall accompany bid. **THE BID BOND MUST BE ON THE BID BOND FORM PROVIDED IN THE PROCUREMENT DOCUMENTS IN ORDER TO BE CONSIDERED AN ACCEPTABLE BID.**

If the bid bond security is submitted on a bid bond form other than DFCM's required bid bond form, and the bid security meets all other legal requirements, the bidder will be allowed to provide an acceptable bid bond by the close of business on the next business day following notification by DFCM of submission of a defective bid bond security. **NOTE: A cashier's check cannot be used as a substitute for a bid bond.**

3. Contract and Bond

The Contractor's Agreement will be in the form found in the specifications. The Contract Time will be as indicated in the bid. The successful bidder, simultaneously with the execution of the Contract Agreement, will be required to furnish a performance bond and a payment bond, both bearing original signatures, upon the forms provided in the procurement documents. The performance and payment bonds shall be for an amount equal to one hundred percent (100%) of the contract sum and secured from a company that meets the requirements specified in the requisite forms. Any bonding requirements for subcontractors will be specified in the Supplementary General Conditions.

4. Listing of Subcontractors

Listing of Subcontractors shall be as summarized in the “Instructions and Subcontractor’s List Form”, which are included as part of these Contract Documents. The Subcontractors List shall be delivered to DFCM or faxed to DFCM at (801)538-3677 within 24 hours of the bid opening. Requirements for listing additional subcontractors will be listed in the Contract Documents.

DFCM retains the right to audit or take other steps necessary to confirm compliance with requirements for the listing and changing of subcontractors. Any contractor who is found to not be in compliance with these requirements is subject to a debarment hearing and may be debarred from consideration for award of contracts for a period of up to three years.

5. Interpretation of Drawings and Specifications

If any person or entity contemplating submitting a bid is in doubt as to the meaning of any part of the drawings, specifications or other Contract Documents, such person shall submit to the DFCM Project Manager a request for an interpretation thereof. The person or entity submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by addenda posted on DFCM’s web site at <http://dfcm.utah.gov>. Neither the DFCM nor A/E will be responsible for any other explanations or interpretations of the proposed documents. A/E shall be deemed to refer to the architect or engineer hired by DFCM as the A/E or Consultant for the Project.

6. Addenda

Addenda will be posted on DFCM’s web site at <http://dfcm.utah.gov>. Contractors are responsible for obtaining information contained in each addendum from the web site. Addenda issued prior to the submittal deadline shall become part of the bidding process and must be acknowledged on the bid form. Failure to acknowledge addenda may result in disqualification from bidding.

7. Award of Contract

The Contract will be awarded as soon as possible to the lowest, responsive and responsible bidder, based on the lowest combination of base bid and acceptable prioritized alternates, provided the bid is reasonable, is in the interests of the State of Utah to accept and after applying the Utah Preference Laws in U.C.A. Title 63, Chapter 56. DFCM reserves the right to waive any technicalities or formalities in any bid or in the bidding. Alternates will be accepted on a prioritized basis with Alternate 1 being highest priority, Alternate 2 having second priority, etc.

8. DFCM Contractor Performance Rating

As a contractor completes each DFCM project, DFCM, the architect/engineer and the using agency will evaluate project performance based on the enclosed “DFCM Contractor Performance Rating” form. The ratings issued on this project will not affect this project but may affect the award on future projects.

9. Licensure

The Contractor shall comply with and require all of its subcontractors to comply with the license laws as required by the State of Utah.

10. Permits

In concurrence with the requirements for permitting in the General Conditions, it is the responsibility of the Contractor to obtain the fugitive dust plan requirements from the Utah Division of Air Quality and the SWPPP requirements from the Utah Department of Environmental Quality and submit the completed forms and pay any permit fee that may be required for this specific project. Failure to obtain the required permit may result in work stoppage and/or fines from the regulating authority that will be the sole responsibility of the Contractor. Any delay to the project as a result of any such failure to obtain the permit or noncompliance with the permit shall not be eligible for any extension in the Contract Time.

11. Right to Reject Bids

DFCM reserves the right to reject any or all Bids.

12. Time is of the Essence

Time is of the essence in regard to all the requirements of the Contract Documents.

13. Withdrawal of Bids

Bids may be withdrawn on written request received from bidder prior to the time fixed for opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

14. Product Approvals

Where reference is made to one or more proprietary products in the Contract Documents, but restrictive descriptive materials of one or more manufacturer(s) is referred to in the Contract Documents, the products of other manufacturers will be accepted, provided they equal or exceed the standards set forth in the drawings and specifications and are compatible with the intent and purpose of

the design, subject to the written approval of the A/E. Such written approval must occur prior to the deadline established for the last scheduled addenda to be issued. The A/E's written approval will be in an issued addendum. If the descriptive material is not restrictive, the products of other manufacturers specified will be accepted without prior approval provided they are compatible with the intent and purpose of the design as determined by the A/E.

15. Financial Responsibility of Contractors, Subcontractors and Sub-subcontractors

Contractors shall respond promptly to any inquiry in writing by DFCM to any concern of financial responsibility of the contractor, subcontractor or sub-subcontractor.

16. Debarment

By submitting a bid, the Contractor certifies that neither it nor its principals, including project and site managers, have been, or are under consideration for, debarment or suspension, or any action that would exclude such from participation in a construction contract by any governmental department or agency. If the Contractor cannot certify this statement, attach to the bid a detailed written explanation which must be reviewed and approved by DFCM as part of the requirements for award of the Project.

**Division of Facilities Construction and****INSTRUCTIONS AND SUBCONTRACTORS LIST FORM**

The three low bidders, as well as all other bidders that desire to be considered, are required by law to submit to DFCM within 24 hours of bid opening a list of **ALL** first-tier subcontractors, including the subcontractor's name, bid amount and other information required by Building Board Rule and as stated in these Contract Documents, based on the following:

DOLLAR AMOUNTS FOR LISTING

PROJECTS UNDER \$500,000: ALL FIRST-TIER SUBS \$20,000 OR OVER MUST BE LISTED
PROJECTS \$500,000 OR MORE: ALL FIRST-TIER SUBS \$35,000 OR OVER MUST BE LISTED

- Any additional subcontractors identified in the bid documents shall also be listed.
- The DFCM Director may not consider any bid submitted by a bidder if the bidder fails to submit a subcontractor list meeting the requirements of State law.
- List subcontractors for base bid as well as the impact on the list that the selection of any alternate may have.
- Bidder may not list more than one subcontractor to perform the same work.
- If there are no subcontractors for the job that are required to be reported by State law (either because there are no subcontractors that will be used on the project or because there are no first-tier subcontractors over the dollar amounts referred to above), then you do not need to submit a sublist. If you do not submit a sublist, it will be deemed to be a representation by you that there are no subcontractors on the job that are required to be reported under State law. At any time, DFCM reserves the right to inquire, for security purposes, as to the identification of the subcontractors at any tier that will be on the worksite.

LICENSURE:

The subcontractor's name, the type of work, the subcontractor's bid amount, and the subcontractor's license number as issued by DOPL, if such license is required under Utah Law, shall be listed. Bidder shall certify that all subcontractors, required to be licensed, are licensed as required by State law. A subcontractor includes a trade contractor or specialty contractor and does not include suppliers who provide only materials, equipment, or supplies to a contractor or subcontractor.

'SPECIAL EXCEPTION':

A bidder may list 'Special Exception' in place of a subcontractor when the bidder intends to obtain a subcontractor to perform the work at a later date because the bidder was unable to obtain a qualified or reasonable bid under the provisions of U.C.A. Section 63A-5-208(4). The bidder shall insert the term 'Special Exception' for that category of work, and shall provide documentation with the subcontractor list describing the bidder's efforts to obtain a bid of a qualified subcontractor at a reasonable cost and why the bidder was unable to obtain a qualified subcontractor bid. The Director must find that the bidder complied in good faith with State law requirements for any 'Special Exception' designation, in order for the bid to be considered. If awarded the contract, the Director shall supervise the bidder's efforts to obtain a qualified subcontractor bid. The amount of the awarded contract may not be adjusted to reflect the actual amount of the subcontractor's bid. Any listing of 'Special Exception' on the sublist form shall also include amount allocated for that work.

GROUNDS FOR DISQUALIFICATION:

The Director may not consider any bid submitted by a bidder if the bidder fails to submit a subcontractor list meeting the requirements of State law. Director may withhold awarding the contract to a particular bidder if one or more of the proposed subcontractors are considered by the Director to be unqualified to do the Work or for

INSTRUCTIONS AND SUBCONTRACTORS LIST FORM
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such other reason in the best interest of the State of Utah. Notwithstanding any other provision in these instructions, if there is a good faith error on the sublist form, at the sole discretion of the Director, the Director may provide notice to the contractor and the contractor shall have 24 hours to submit the correction to the Director. If such correction is submitted timely, then the sublist requirements shall be considered met.

CHANGES OF SUBCONTRACTORS SPECIFICALLY IDENTIFIED ON SUBLIST FORM:

Subsequent to twenty-four hours after the bid opening, the contractor may change its listed subcontractors only after receiving written permission from the Director based on complying with all of the following criteria.

- (1) The contractor has established in writing that the change is in the best interest of the State and that the contractor establishes an appropriate reason for the change, which may include, but not is not limited to, the following reasons: the original subcontractor has failed to perform, or is not qualified or capable of performing, and/or the subcontractor has requested in writing to be released.
- (2) The circumstances related to the request for the change do not indicate any bad faith in the original listing of the subcontractors.
- (3) Any requirement set forth by the Director to ensure that the process used to select a new subcontractor does not give rise to bid shopping.
- (4) Any increase in the cost of the subject subcontractor work is borne by the contractor.
- (5) Any decrease in the cost of the subject subcontractor work shall result in a deductive change order being issued for the contract for such decreased amount.
- (6) The Director will give substantial weight to whether the subcontractor has consented in writing to being removed unless the Contractor establishes that the subcontractor is not qualified for the work.

EXAMPLE:

Example of a list where there are only four subcontractors:

TYPE OF WORK	SUBCONTRACTOR, "SELF" OR "SPECIAL EXCEPTION"	SUBCONTRACTOR BID AMOUNT	CONTRACTOR LICENSE #
ELECTRICAL	ABCD Electric Inc.	\$350,000.00	123456789000
LANDSCAPING	"Self" *	\$300,000.00	123456789000
CONCRETE (ALTERNATE #1)	XYZ Concrete Inc	\$298,000.00	987654321000
MECHANICAL	"Special Exception" (attach documentation)	Fixed at: \$350,000.00	(TO BE PROVIDED AFTER OBTAINING SUBCONTRACTOR)

* Bidders may list "self", but it is not required.

PURSUANT TO STATE LAW - SUBCONTRACTOR BID AMOUNTS CONTAINED IN THIS SUBCONTRACTOR LIST SHALL NOT BE DISCLOSED UNTIL THE CONTRACT HAS BEEN AWARDED.



SUBCONTRACTORS LIST
FAX TO 801-538-3677

PROJECT TITLE: _____

Caution: You must read and comply fully with instructions.

Table with 4 columns: TYPE OF WORK, SUBCONTRACTOR, 'SELF' OR 'SPECIAL EXCEPTION', SUBCONTRACTOR BID AMOUNT, CONT. LICENSE #

We certify that:

- 1. This list includes all subcontractors as required by the instructions, including those related to the base bid as well as any alternates.
2. We have listed 'Self' or 'Special Exception' in accordance with the instructions.
3. All subcontractors are appropriately licensed as required by State law.

FIRM: _____

DATE: _____

SIGNED BY: _____

NOTICE: FAILURE TO SUBMIT THIS FORM, PROPERLY COMPLETED AND SIGNED, AS REQUIRED IN THESE CONTRACT DOCUMENTS, SHALL BE GROUNDS FOR OWNER'S REFUSAL TO ENTER INTO A WRITTEN CONTRACT WITH BIDDER. ACTION MAY BE TAKEN AGAINST BIDDERS BID BOND AS DEEMED APPROPRIATE BY OWNER. ATTACH A SECOND PAGE IF NECESSARY.

CONTRACTOR'S AGREEMENT

FOR:

THIS CONTRACTOR'S AGREEMENT, made and entered into this ____ day of _____, 20__, by and between the DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT, hereinafter referred to as "DFCM", and _____, incorporated in the State of _____ and authorized to do business in the State of Utah, hereinafter referred to as "Contractor", whose address is _____.

WITNESSETH: WHEREAS, DFCM intends to have Work performed at _____.

WHEREAS, Contractor agrees to perform the Work for the sum stated herein.

NOW, THEREFORE, DFCM and Contractor for the consideration provided in this Contractor's Agreement, agree as follows:

ARTICLE 1. SCOPE OF WORK. The Work to be performed shall be in accordance with the Contract Documents prepared by _____ and entitled "_____."

The DFCM General Conditions ("General Conditions") dated May 25, 2005 on file at the office of DFCM and available on the DFCM website, are hereby incorporated by reference as part of this Agreement and are included in the specifications for this Project. All terms used in this Contractor's Agreement shall be as defined in the Contract Documents, and in particular, the General Conditions.

The Contractor Agrees to furnish labor, materials and equipment to complete the Work as required in the Contract Documents which are hereby incorporated by reference. It is understood and agreed by the parties hereto that all Work shall be performed as required in the Contract Documents and shall be subject to inspection and approval of DFCM or its authorized representative. The relationship of the Contractor to the DFCM hereunder is that of an independent Contractor.

ARTICLE 2. CONTRACT SUM. The DFCM agrees to pay and the Contractor agrees to accept in full performance of this Contractor's Agreement, the sum of _____ DOLLARS AND NO CENTS (\$_____.00), which is the base bid, and which sum also includes the cost of a 100% Performance Bond and a 100%

CONTRACTOR'S AGREEMENT
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Payment Bond as well as all insurance requirements of the Contractor. Said bonds have already been posted by the Contractor pursuant to State law. The required proof of insurance certificates have been delivered to DFCM in accordance with the General Conditions before the execution of this Contractor's Agreement.

ARTICLE 3. TIME OF COMPLETION AND DELAY REMEDY. The Work shall be Substantially Complete by _____. Contractor agrees to pay liquidated damages in the amount of \$_____ per day for each day after expiration of the Contract Time until the Contractor achieves Substantial Completion in accordance with the Contract Documents, if Contractor's delay makes the damages applicable. The provision for liquidated damages is: (a) to compensate the DFCM for delay only; (b) is provided for herein because actual damages can not be readily ascertained at the time of execution of this Contractor's Agreement; (c) is not a penalty; and (d) shall not prevent the DFCM from maintaining Claims for other non-delay damages, such as costs to complete or remedy defective Work.

No action shall be maintained by the Contractor, including its or Subcontractor or suppliers at any tier, against the DFCM or State of Utah for damages or other claims due to losses attributable to hindrances or delays from any cause whatsoever, including acts and omissions of the DFCM or its officers, employees or agents, except as expressly provided in the General Conditions. The Contractor may receive a written extension of time, signed by the DFCM, in which to complete the Work under this Contractor's Agreement in accordance with the General Conditions.

ARTICLE 4. CONTRACT DOCUMENTS. The Contract Documents consist of this Contractor's Agreement, the Conditions of the Contract (DFCM General Conditions, Supplementary and other Conditions), the Drawings, Specifications, Addenda and Modifications. The Contract Documents shall also include the bidding documents, including the Invitation to Bid, Instructions to Bidders/ Proposers and the Bid/Proposal, to the extent not in conflict therewith and other documents and oral presentations that are documented as an attachment to the contract.

All such documents are hereby incorporated by reference herein. Any reference in this Contractor's Agreement to certain provisions of the Contract Documents shall in no way be construed as to lessen the importance or applicability of any other provisions of the Contract Documents.

ARTICLE 5. PAYMENT. The DFCM agrees to pay the Contractor from time to time as the Work progresses, but not more than once each month after the date of Notice to Proceed, and only upon Certificate of the A/E for Work performed during the preceding calendar month, ninety-five percent (95%) of the value of the labor performed and ninety-five percent (95%) of the value of materials furnished in place or on the site. The Contractor agrees to furnish to the DFCM invoices for materials purchased and on the site but not installed, for which the Contractor requests payment and agrees to

safeguard and protect such equipment or materials and is responsible for safekeeping thereof and if such be stolen, lost or destroyed, to replace same.

Such evidence of labor performed and materials furnished as the DFCM may reasonably require shall be supplied by the Contractor at the time of request for Certificate of Payment on account. Materials for which payment has been made cannot be removed from the job site without DFCM's written approval. Five percent (5%) of the earned amount shall be retained from each monthly payment. The retainage, including any additional retainage imposed and the release of any retainage, shall be in accordance with UCA 13-8-5 as amended. Contractor shall also comply with the requirements of UCA 13-8-5, including restrictions of retainage regarding subcontractors and the distribution of interest earned on the retention proceeds. The DFCM shall not be responsible for enforcing the Contractor's obligations under State law in fulfilling the retention law requirements with subcontractors at any tier.

ARTICLE 6. INDEBTEDNESS. Before final payment is made, the Contractor must submit evidence satisfactory to the DFCM that all payrolls, materials bills, subcontracts at any tier and outstanding indebtedness in connection with the Work have been properly paid. Final Payment will be made after receipt of said evidence, final acceptance of the Work by the DFCM as well as compliance with the applicable provisions of the General Conditions.

Contractor shall respond immediately to any inquiry in writing by DFCM as to any concern of financial responsibility and DFCM reserves the right to request any waivers, releases or bonds from Contractor in regard to any rights of Subcontractors (including suppliers) at any tier or any third parties prior to any payment by DFCM to Contractor.

ARTICLE 7. ADDITIONAL WORK. It is understood and agreed by the parties hereto that no money will be paid to the Contractor for additional labor or materials furnished unless a new contract in writing or a Modification hereof in accordance with the General Conditions and the Contract Documents for such additional labor or materials has been executed. The DFCM specifically reserves the right to modify or amend this Contractor's Agreement and the total sum due hereunder either by enlarging or restricting the scope of the Work.

ARTICLE 8. INSPECTIONS. The Work shall be inspected for acceptance in accordance with the General Conditions.

ARTICLE 9. DISPUTES. Any dispute, PRE or Claim between the parties shall be subject to the provisions of Article 7 of the General Conditions. DFCM reserves all rights to pursue its rights and remedies as provided in the General Conditions.

ARTICLE 10. TERMINATION, SUSPENSION OR ABANDONMENT. This Contractor's Agreement may be terminated, suspended or abandoned in accordance with the General Conditions.

ARTICLE 11. DFCM'S RIGHT TO WITHHOLD CERTAIN AMOUNT AND MAKE USE THEREOF. The DFCM may withhold from payment to the Contractor such amount as, in DFCM's judgment, may be necessary to pay just claims against the Contractor or Subcontractor at any tier for labor and services rendered and materials furnished in and about the Work. The DFCM may apply such withheld amounts for the payment of such claims in DFCM's discretion. In so doing, the DFCM shall be deemed the agent of Contractor and payment so made by the DFCM shall be considered as payment made under this Contractor's Agreement by the DFCM to the Contractor. DFCM shall not be liable to the Contractor for any such payment made in good faith. Such withholdings and payments may be made without prior approval of the Contractor and may be also be prior to any determination as a result of any dispute, PRE, Claim or litigation.

ARTICLE 12. INDEMNIFICATION. The Contractor shall comply with the indemnification provisions of the General Conditions.

ARTICLE 13. SUCCESSORS AND ASSIGNMENT OF CONTRACT. The DFCM and Contractor, respectively bind themselves, their partners, successors, assigns and legal representatives to the other party to this Agreement, and to partners, successors, assigns and legal representatives of such other party with respect to all covenants, provisions, rights and responsibilities of this Contractor's Agreement. The Contractor shall not assign this Contractor's Agreement without the prior written consent of the DFCM, nor shall the Contractor assign any moneys due or to become due as well as any rights under this Contractor's Agreement, without prior written consent of the DFCM.

ARTICLE 14. RELATIONSHIP OF THE PARTIES. The Contractor accepts the relationship of trust and confidence established by this Contractor's Agreement and covenants with the DFCM to cooperate with the DFCM and A/E and use the Contractor's best skill, efforts and judgment in furthering the interest of the DFCM; to furnish efficient business administration and supervision; to make best efforts to furnish at all times an adequate supply of workers and materials; and to perform the Work in the best and most expeditious and economic manner consistent with the interests of the DFCM.

ARTICLE 15. AUTHORITY TO EXECUTE AND PERFORM AGREEMENT. Contractor and DFCM each represent that the execution of this Contractor's Agreement and the performance thereunder is within their respective duly authorized powers.

ARTICLE 16. ATTORNEY FEES AND COSTS. Except as otherwise provided in the dispute resolution provisions of the General Conditions, the prevailing party shall be entitled to reasonable attorney fees and costs incurred in any action in the District Court and/or appellate body to enforce this Contractor's Agreement or recover damages or any other action as a result of a breach thereof.

PERFORMANCE BOND

(Title 63, Chapter 56, U. C. A. 1953, as Amended)

That _____ hereinafter referred to as the "Principal" and _____, a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ and authorized to transact business in this State and U. S. Department of the Treasury Listed (Circular 570, Companies Holding Certificates of Authority as Acceptable Securities on Federal Bonds and as Acceptable Reinsuring Companies); hereinafter referred to as the "Surety," are held and firmly bound unto the State of Utah, hereinafter referred to as the "Obligee," in the amount of _____ DOLLARS (\$) _____ for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the _____ day of _____, 20____, to construct _____ in the County of _____, State of Utah, Project No. _____, for the approximate sum of _____ Dollars (\$ _____), which Contract is hereby incorporated by reference herein.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal shall faithfully perform the Contract in accordance with the Contract Documents including, but not limited to, the Plans, Specifications and conditions thereof, the one year performance warranty, and the terms of the Contract as said Contract may be subject to Modifications or changes, then this obligation shall be void; otherwise it shall remain in full force and effect.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the state named herein or the heirs, executors, administrators or successors of the Owner.

The parties agree that the dispute provisions provided in the Contract Documents apply and shall constitute the sole dispute procedures of the parties.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the Provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as amended, and all liabilities on this Bond shall be determined in accordance with said provisions to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20____.

WITNESS OR ATTESTATION:

PRINCIPAL:

By: _____ (Seal)

Title: _____

WITNESS OR ATTESTATION:

SURETY:

By: _____ (Seal)

Attorney-in-Fact

STATE OF _____)
) ss.
COUNTY OF _____)

On this _____ day of _____, 20____, personally appeared before me _____, whose identity is personally known to me or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he/she is the Attorney in-fact of the above-named Surety Company and that he/she is duly authorized to execute the same and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations, and that he/she acknowledged to me that as Attorney-in-fact executed the same.

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

My commission expires: _____

Resides at: _____

NOTARY PUBLIC

Agency: _____
Agent: _____
Address: _____
Phone: _____

Approved As To Form: May 25, 2005
By Alan S. Bachman, Asst Attorney General

PAYMENT BOND

(Title 63, Chapter 56, U. C. A. 1953, as Amended)

KNOW ALL PERSONS BY THESE PRESENTS:

That _____ hereinafter referred to as the "Principal," and _____, a corporation organized and existing under the laws of the State of _____ authorized to do business in this State and U. S. Department of the Treasury Listed (Circular 570, Companies Holding Certificates of Authority as Acceptable Securities on Federal Bonds and as Acceptable Reinsuring Companies); with its principal office in the City of _____, hereinafter referred to as the "Surety," are held and firmly bound unto the State of Utah hereinafter referred to as the "Obligee," in the amount of _____ Dollars (\$ _____) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the _____ day of _____, 20____, to construct _____ in the County of _____, State of Utah, Project No. _____ for the approximate sum of _____ Dollars (\$ _____), which contract is hereby incorporated by reference herein.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal shall pay all claimants supplying labor or materials to Principal or Principal's Subcontractors in compliance with the provisions of Title 63, Chapter 56, of Utah Code Annotated, 1953, as amended, and in the prosecution of the Work provided for in said Contract, then, this obligation shall be void; otherwise it shall remain in full force and effect.

That said Surety to this Bond, for value received, hereby stipulates and agrees that no changes, extensions of time, alterations or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any way affect its obligation on this Bond, and does hereby waive notice of any such changes, extensions of time, alterations or additions to the terms of the Contract or to the Work or to the specifications or drawings and agrees that they shall become part of the Contract Documents.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as amended, and all liabilities on this Bond shall be determined in accordance with said provisions to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20____.

WITNESS OR ATTESTATION:

PRINCIPAL:

By: _____ (Seal)

Title: _____

WITNESS OR ATTESTATION:

SURETY:

By: _____ (Seal)
Attorney-in-Fact

STATE OF _____)
) ss.
COUNTY OF _____)

On this _____ day of _____, 20____, personally appeared before me _____, whose identity is personally known to me or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he/she is the Attorney-in-fact of the above-named Surety Company, and that he/she is duly authorized to execute the same and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations, and that he/she acknowledged to me that as Attorney-in-fact executed the same.

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

My commission expires: _____
Resides at: _____

NOTARY PUBLIC

Agency: _____
Agent: _____
Address: _____
Phone: _____

Approved As To Form: May 25, 2005
By Alan S. Bachman, Asst Attorney General



CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT _____ PROJECT NO: _____

AGENCY/INSTITUTION _____

AREA ACCEPTED _____

The Work performed under the subject Contract has been reviewed on this date and found to be Substantially Completed as defined in the General Conditions; including that the construction is sufficiently completed in accordance with the Contract Documents, as modified by any change orders agreed to by the parties, so that the State of Utah can occupy the Project or specified area of the Project for the use for which it is intended.

The DFCM - (Owner) accepts the Project or specified area of the Project as Substantially Complete and will assume full possession of the Project or specified area of the Project at _____ (time) on _____ (date).

The DFCM accepts the Project for occupancy and agrees to assume full responsibility for maintenance and operation, including utilities and insurance, of the Project subject to the itemized responsibilities and/or exceptions noted below:

The Owner acknowledges receipt of the following closeout and transition materials:

- As-built Drawings O & M Manuals Warranty Documents Completion of Training Requirements

A list of items to be completed or corrected (Punch List) is attached hereto. The failure to include an item on it does not alter the responsibility of the Contractor to complete all the Work in accordance with the Contract Documents, including authorized changes thereof. The amount of _____(Twice the value of the punch list work) shall be retained to assure the completion of the punch list work.

The Contractor shall complete or correct the Work on the list of (Punch List) items appended hereto within _____ calendar days from the above date of issuance of this Certificate. The amount withheld pending completion of the list of items noted and agreed to shall be: \$_____. If the list of items is not completed within the time allotted the Owner has the right to be compensated for the delays and/or complete the work with the help of independent contractor at the expense of the retained project funds. If the retained project funds are insufficient to cover the delay/completion damages, the Owner shall be promptly reimbursed for the balance of the funds needed to compensate the Owner.

_____ by: _____ (Signature) DATE

**General Contractor Performance Rating Form**

Project Name:		DFCM Project#	
Contractor: (ABC Construction, John Doe, 111-111-1111)	A/E: (ABC Architects, Jane Doe, 222-222-2222)	Original Contract Amount:	Final Contract Amount:
DFCM Project Manager:		Contract Date:	
Completion Date:		Date of Rating:	

Rating Guideline	QUALITY OF PRODUCT OR SERVICES	COST CONTROL	TIMELINESS OF PERFORMANCE	BUSINESS RELATIONS
5-Exceptional	Contractor has demonstrated an exceptional performance level in any of the above four categories that justifies adding a point to the score. Contractor performance clearly exceeds the performance levels described as "Very Good"			
4-Very Good	Contractor is in compliance with contract requirements and/or delivers quality product/service.	Contractor is effective in managing costs and submits current, accurate, and complete billings	Contractor is effective in meeting milestones and delivery schedule	Response to inquiries, technical/service/administrative issues is effective
3-Satisfactory	Minor inefficiencies/errors have been identified	Contractor is usually effective in managing cost	Contractor is usually effective in meeting milestones and delivery schedules	Response to inquires technical/service/administrative issues is somewhat effective
2-Marginal	Major problems have been encountered	Contractor is having major difficulty managing cost effectively	Contractor is having major difficulty meeting milestones and delivery schedule	Response to inquiries, technical/service/administrative issues is marginally effective
1-Unsatisfactory	Contractor is not in compliance and is jeopardizing achievement of contract objectives	Contractor is unable to manage costs effectively	Contractor delays are jeopardizing performance of contract objectives	Response to inquiries, technical/service/administrative issues is not effective

1. Rate Contractors quality of workmanship, management of sub contractor performance, project cleanliness, organization and safety requirement.	Score
<u>Agency Comments:</u>	
<u>A & E Comments:</u>	
<u>DFCM Project Manager Comments:</u>	

2. Rate Contractor administration of project costs, change orders and financial management of the project budget.	Score
<u>Agency Comments:</u>	
<u>A & E Comments:</u>	
<u>DFCM Project Manager Comments:</u>	

3. Rate Contractor's performance and adherence to Project Schedule, delay procedures and requirements of substantial completion, inspection and punch-list performance.	Score
<u>Agency Comments:</u>	
<u>A & E Comments:</u>	
<u>DFCM Project Manager Comments:</u>	

4. Evaluate performance of contractor management team including project manager, engineer and superintendent also include in the rating team's ability to work well with owner, user agency and consultants.	Score
<u>Agency Comments:</u>	
<u>A & E Comments:</u>	
<u>DFCM Project Manager Comments:</u>	

5. Rate success of Contractor's management plan, completion of the plans mitigation of project risks and performance of value engineering concepts.	Score
<u>Agency Comments:</u>	
<u>A & E Comments:</u>	
<u>DFCM Project Manager Comments:</u>	

Signed by:	Date:	Mean Score
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Additional Comments:

OGDEN-WEBER ATC WATER MAIN REPLACEMENT

SECTION 02670 INSTALLATION OF WATER LINES BY HORIZONTAL DIRECTIONAL DRILLING (HDD) METHODOLOGY

PART 1 - GENERAL

1.1. DESCRIPTION

- A. Work included: Furnish all labor, materials, tools and equipment necessary to provide for installation of HDPE water pipe line using current horizontal directional drilling technology in accordance with the Drawings and as specified herein.
- B. General: This specification defines the approved method and material for the installation of water lines utilizing horizontal directional drilling technology.
- C. Definition: Horizontal directional drilling (HDD) involves utilization of an electronically tracked bore-head to guide the borehole to a pre-designed configuration. The HDD process begins with boring a small, horizontal pilot hole with a continuous string of steel drill rod. When the bore-head and rod emerge on the opposite end of the crossing, a back reamer is attached to the drill rod string and pulled back through the pilot hole. The reamer serves to enlarge the pilot hole to allow the HDPE pipe to be pulled through from the opposite end of the borehole. The size of the drilling equipment and required support equipment shall be determined by the CONTRACTOR based on the diameter and length of pipe to be installed.

1.2. QUALITY ASSURANCE

- A. Qualifications of manufacturers: Products used in this Work shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of quality production acceptable to the ENGINEER.
- B. Contractor Certification: CONTRACTOR shall be certified by the particular horizontal directional drilling manufacturer that CONTRACTOR is a fully trained user of the drilling equipment.
- C. Qualifications of Personnel: HDPE pipe jointing shall be performed by personnel trained in the use of butt-fusion equipment and recommended methods for new pipe connections. Personnel directly involved with installing the new pipe shall receive training in the proper methods for handling and installing the HDPE pipe. Training shall be performed by a qualified representative.

1.3. SUBMITTALS

- A. General: All submittals shall be made in accordance with these Specifications. CONTRACTOR shall furnish engineering data covering design and installation. Submittal shall be made in a timely manner so that the project schedule can be met.
- B. Shop drawings: As a minimum, the following data and shop drawing information shall be submitted to the ENGINEER for review and approval:
 - 1. Before beginning work, CONTRACTOR shall submit to the ENGINEER for approval, the Vendor's shop drawings, catalog data and specific manufacturer's technical data showing complete information on material composition, physical properties, and dimensions of new pipe and fittings. Include manufacturer's recommendations for handling, storage, and repair of pipe and fittings, which are damaged.
 - 2. A certificate of "Compliance with Specification" shall be furnished for all materials supplied.

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3. CONTRACTOR shall submit certification of workmen training for all personnel involved in installation of pipe.
4. CONTRACTOR shall submit a work plan to the ENGINEER for acceptance. Work plan shall address preparation steps required for pre-installation.
5. CONTRACTOR shall submit information to the ENGINEER for approval of the procedure and the steps to be followed for installation of the HDPE pipe utilizing horizontal directional drilling technology, even if the process is named in the specification. Any proposed changes in installation procedures shall require submittal of revised procedures for acceptance by the ENGINEER.
6. CONTRACTOR shall submit to the ENGINEER for approval, full details about component materials and their properties, except those protected by trade secrets which may harm their claim to the product.
7. CONTRACTOR shall submit a full safety plan relating to protection of any open excavation, on site equipment, any hazards to pedestrians caused by this project, rerouting of transportation services, or any other safety issue resulting from this project.

1.4 RESPONSIBILITY FOR MATERIALS

- A. Material furnished by CONTRACTOR: CONTRACTOR shall be responsible for all material furnished by him and shall replace at his own expense all such material found defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include furnishing of all materials and labor required for the replacement of installed material discovered defective prior to the final acceptance of the work.
- B. Material furnished by OWNER: CONTRACTOR is responsible for all material for this project. There is no material furnished by the OWNER.

1.5 PRODUCT HANDLING

- A. Handling of materials:
 1. All materials furnished by the CONTRACTOR shall be delivered and distributed by the CONTRACTOR.
 2. Pipe, fittings, etc., shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against pipe already on the ground.
 3. In distributing the material at the site of work, each piece shall be unloaded opposite or near the place where it is to be laid.
 4. Pipe shall be so handled that no damage shall occur. If any part of the pipe is damaged, CONTRACTOR shall replace damaged material at his expense in a manner satisfactory to ENGINEER.
- B. Storage of Materials: CONTRACTOR shall be responsible for safe storage of material furnished by or to him, and accepted by him, and intended for the Work, until it has been incorporated in completed Project. Interiors of all pipe, fittings and other accessories shall be kept free from dirt and foreign matter at all times.

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- C. Damaged Material: Any material that becomes damaged shall be replaced by CONTRACTOR at his expense.

1.6 AVOIDANCE OF UNDERGROUND UTILITY DAMAGE

CONTRACTOR shall be responsible for notifying Blue Stakes a minimum of 48 hours prior to any excavating operations. CONTRACTOR shall be aware of and comply with all provisions of any of the Utility's having jurisdiction with utility installations near this project. Should an unforeseen circumstance arise relating to conflicts not identified in the contract drawings or by the local utilities, the CONTRACTOR shall immediately contact the ENGINEER, the OWNER, and any utility involved in order to remedy the conflict. Any continuation of work that may cause any damage will be suspended until the conflict has been resolved. Failure of the CONTRACTOR to suspend such work will result in the CONTRACTOR being liable for necessary repairs and outages.

1.7 WARRANTY

All equipment and materials supplied under this Section shall be warranted to be free from defects in materials and workmanship for a minimum of one (1) year following acceptance by the OWNER. If deficiencies are discovered during the warranty period, the Contractor shall be required to correct these deficiencies without additional charge to the Owner or his agent. The Project Engineer shall determine the need for warranty repair work to be performed by the Contractor. The Project Engineers determination of deficiency will bind the Contractor to make a repair in accordance with this Contract.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. HDPE Pipe: Polyethylene plastic pipe shall be AWWA PE 3408 High Density polyethylene pipe and fittings for drinking water lines underground which meets the applicable requirements of ASTM F714 Polyethylene (PE) Plastic Pipe (SDR-PR) based on Outside Diameter, ASTM D1248, ASTM D3550. All standards and specifications referenced shall be the latest edition and version thereof. This includes AWWA, ASTM, ANSI, NSF and Federal specifications and standards.
1. Sizes of the pipe to be used for installation of water lines shall be as directed by the ENGINEER.
 2. All pipe shall be made of virgin material. No rework except that obtained from manufacturer's own production of the same formulation shall be used. The facility shall have the necessary testing equipment to verify that the pipe meets the requirements of AWWA C901 or C906, NSF Standard #61 and ASTM Standards.
 3. The pipe shall be homogenous throughout and shall be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.
 4. Dimension Ratios: The minimum wall thickness of the polyethylene pipe shall be as follows:

Potable water line: DR-11 (160 psi WPR).
 5. Potable water line to be NSF Stamped for use as potable water and be black with blue stripes identifying it as HDPE for use in potable water systems.
 6. Installation Method: HDPE pipe shall be continuously joined with a minimum length, which shall be that deemed necessary by the CONTRACTOR to effectively span the required distance from the inlet to the outlet of the respective pipe, unless otherwise specified. CONTRACTOR shall verify the lengths in the field before manufacturing.

OGDEN-WEBER ATC WATER MAIN REPLACEMENT

7. Pipe Locator Wire: To facilitate future locating of HDPE water pipe, a 12 gauge copper wire shall be laid with pipe and in contact with all fittings and valves.

2.2 EQUIPMENT

A. Directional Drilling Machine:

1. Directional drilling equipment shall be self-powered and self-contained. Equipment shall be designed and manufactured with an electronically tracked bore-head so as to guide the borehole to a desired configuration, both horizontally and vertically.
2. Directional drilling equipment shall generate sufficient torque and thrust/pullback force to drill a pilot hole, enlarge the pilot hole by back reaming and pull the pipeline back through the enlarged hole.
3. CONTRACTOR shall comply with manufacturers specifications as to the machine size requirement for a given diameter and length of pipe, as well as parameters of the required size machine for percentage of upsize allowed.

B. Vacuum Excavation Unit:

1. Directional drilling operations shall be assisted by use of an adequately sized vacuum excavation system mounted on either a trailer or truck body.
2. Vacuum excavation system shall provide sufficient storage tank capacity and power pack to efficiently remove drilling fluid from the insertion pit during horizontal directional drilling operations.
3. Vacuum excavation system shall be equipped with a high-pressure water system designed to assist with "pothole" excavation operations.

C. Drilling Fluid Management System:

1. Directional drilling operations shall be assisted by use of a truck mounted drilling fluid mixing system.
2. Fluid management system shall include two mixing tanks to allow for flexibility in mixing, transferring and delivering drilling fluid.
3. Fluid management system shall have the capability to transfer between tanks while providing drilling fluid to the directional drilling machine.

2.3 SHIPPING & HANDLING

HDPE pipe materials and fittings shall be protected from kinking and gouging during shipping, handling, and storage.

2.4 MATERIAL TESTING

Tests for compliance with this specification shall be made as specific herein and in accordance with the applicable ASTM Specification. A certificate with this specification shall be furnished, upon request, by the manufacturer for all material furnished under this specification. Polyethylene plastic pipe and fittings may be rejected to meet any requirements of this specification.

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PART 3 - EXECUTION

3.1 HORIZONTAL DIRECTIONAL DRILLING OPERATION AND PIPE INSTALLATION

A. Access to the project site:

1. Access to the site of the project under construction shall be primarily limited to the scope area of the project.
2. The project site and equipment will be protected through the use of barricades, chains, fences or gates, all to be installed to prevent unauthorized and accidental entry to the project site.

B. Pre-Installation Preparations: CONTRACTOR's work plan shall address the following minimum preparations/steps, unless approved otherwise by the ENGINEER.

1. SAFETY: The CONTRACTOR shall carry out operations under this section

in strict accordance with all applicable OSHA Standards. Particular attention is drawn to those safety requirements involving work on an elevated platform, entry into a confined space, and safety dealing with excavation and shoring. It shall be the CONTRACTOR's responsibility to comply with OSHA Standards and Regulations pertaining to all aspects of the work.

C. Installation Procedures - General: All approved installation instructions and procedures submitted shall be carefully followed during installation. CONTRACTOR field verify all grade profiles and field stakeout required for pipe centerline grade and offsets. Any proposed changes in installation procedures shall require submittal of revised procedures and acceptance by the ENGINEER.

1. Equipment used to perform the work shall be located as far away from buildings as possible. Provide security enclosure as necessary to prevent unauthorized and accidental entry or access to the equipment or the project site.
2. CONTRACTOR shall install all pulleys, rollers, bumpers, alignment control devices and other equipment required to protect existing structures, and to protect the pipe from damage during installation. Lubrication shall be used as recommended by the manufacturer. Under no circumstances will the pipe be stressed beyond its elastic limit.

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D. Pipe Joining of HDPE Pipe:

1. HDPE pipe shall be assembled and joined at the site using either the butt-fusion or electro-fusion method to provide a leak proof joint. Threaded or solvent-cement joints and connections shall not be permitted. All equipment and procedures used shall be used in strict compliance with the manufacturer's recommendations. Fusing shall be accomplished by personnel certified, as fusion technicians, by a manufacturer of polyethylene pipe and/or fusing equipment.
2. Butt-fused joint shall be true alignment and shall have uniform roll-back beads resulting from the use of proper temperature and pressure. Joint shall be allowed adequate cooling time before removal of pressure. Fused joint shall be watertight and shall have tensile strength equal to that of the pipe. All joints shall be subject to acceptance by the ENGINEER or OWNER and/or his representative prior to insertion. All defective joints shall be cut out and replaced at no cost to the OWNER. Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness, shall not be used and must be removed from the site. However, a defective area of the pipe may be cut out and the joint fused in accordance with the procedures stated above. In addition, any section of pipe having other defects such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness or any other defect of manufacturing or handling as determined by the ENGINEER or OWNER and/or his representative shall be discarded and not used.

E. Connection of HDPE Pipe to Fittings: HDPE Pipe shall be joined to ductile iron fittings, valves and fire hydrants in strict compliance with manufacturer's recommendations.

1. HDPE Mechanical Joint adapters shall be either butt-fused or electro-fused to the HDPE pipe to provide a leak proof joint in compliance with Specification Section 02670-3.1-D. Ductile iron fitting, gate valve or fire hydrant shall be bolted to the M.J. adapter in compliance with the manufacturer's recommendations.
2. HDPE pipe may be joined directly to ductile iron fittings, valves and fire hydrants by the use of Mega-Lug joint restraints, or approved equal, in strict compliance with the manufacturer's recommendations. Stainless steel insert pipe stiffeners shall be used with all such connections.
3. Ductile iron fittings, valves and hydrants with integral HDPE stub-outs shall be either butt-fused or electro-fused directly to the HDPE pipe in compliance with Specification Section 02670-3.1 -D. All gate valves with integral HDPE stub-outs of 4" or smaller size shall incorporate an HDPE valve foundation to prevent operating torque being transferred from the valve to the pipe connections.

F. Restoration of Project Area: Upon completion of the installation, work, and testing, CONTRACTOR shall restore/clear the project area affected by his operations. No trash, rubbish, etc., shall be stored at any site whether the work is in progress or not. All affected landscaping will be repaired/replaced as necessary to match pre-construction conditions. Any damaged area, sidewalk, street, sprinkler pipe, curb, or any other existing element shall be repaired or replaced and restored to pre-construction condition at no additional cost to OWNER.

OGDEN-WEBER ATC WATER MAIN REPLACEMENT

3.2 HYDROSTATIC TESTS FOR LEAKAGE.

- A. **General:** All new water mains shall be tested after installation to a hydrostatic pressure of not less than 100 psi above design water pressure for the system or 150 psi, whichever is greater. Allowable leakage shall be calculated by the following formula and is shown in columnar form in Table 6:

$$L = \frac{SDP}{133,200} \text{ Hour}$$

Where: L= allowable leakage in gallons per
 S= length of pipe tested in feet
 D= nominal diameter of pipe in inches
 P= average test pressure during leakage test in psi

TABLE 6
Allowable Leakage per 1,000 ft. (305 m) of Pipeline*--gph[^]

Average Test Pressure PSI (Bars)	NOMINAL PIPE DIAMETER INCHES							
	3"	4"	6"	8"	10"	12"	14"	16"
200 (14)	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70
175 (12)	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59
150 (10)	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47
125 (9)	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34
100(7)	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20

*If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size.

- B. No water line shall be placed in service until the leakage is less than the allowable leakage as indicated above. Testing of water mains shall only be done after installation of all valves, taps and service laterals are complete. All portions of the water system, including hydrants and service lines, shall be subject to hydrostatic pressure during the leakage test. Testing of water mains shall be observed and documented by the Inspector/Engineer.
- C. All high points and service lines in portion of system under test shall be vented and all air expelled from system prior to beginning test. All fittings and hydrants shall be properly braced or blocked before applying pressure. Where concrete thrust blocks are used, they shall have attained their final set prior to testing.
- D. After section of system under test has reached required pressure as stated above, said pressure shall be maintained for two (2) hours. At conclusion of pressure test, volume of makeup water required to refill pipeline shall be determined by measurement with displacement meter or by pumping from a vessel of known volume.
- E. All joints or fittings at which leakage occurs shall be reworked to insure tightness. All visible leaks shall be repaired regardless of amount of leakage. If measured amount of leakage exceeds values for the appropriate size as found in AWWA Specification C600, Hydrostatic Testing (Table 6), pipeline shall be repaired and retested until leakage is within limit set by the referenced specification. Methods of repair prior to retesting will be done with ENGINEER'S approval and inspection. Repairs of new construction will be by adjustment or replacement of material only. The use of repair clamps or bell clamps will not be acceptable.

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3.4 DISINFECTION OF WATER MAINS

A. General: After testing and before final inspection of the completed systems, water mains and service laterals shall be flushed and disinfected in accordance with AWWA Specification C651 latest revision. Flushing shall be accomplished at a flow velocity of not less than 2.5 feet per second.

B. Disinfection Procedures:

1. Disinfection as described in AWWA C65 1 - "Placing of calcium hypochlorite tablets" shall be used. Five gram (5g) calcium hypochlorite tablets with 3.25 gram available chlorine per tablet shall be attached at the inside top of the pipe by an adhesive such as Permatex No. 2 or equal. The following number of tablets for the given pipe size shall be used for an initial dose of twenty-five (25 mg/l (ppm) chlorine:

<u>Pipe Diameter</u>	<u>Number Tablets Per 18-20 Ft. Pipe Section</u>
6"	1
8"	2
10"	3
12"	4

or the number of tablets equal to $0.0012d^2L$ rounded to the next higher integer, where d is the inside diameter, in inches, and L is the length of the pipe section, in feet. Use of the continuous feed or slug method of disinfecting may only be used to re-chlorinate a water pipe after the initial disinfection or in other specific cases approved by the ENGINEER.

2. Disinfection solution shall remain in pipe line for not less than twenty-four (24) hours, after which time a chlorine residual of 10 ppm at all parts of line shall be required.
3. Following chlorination, piping shall be thoroughly flushed. Water in the new main shall be proven comparable in quality, by testing, to the existing public water supply. The OWNER will require at least two consecutive satisfactory bacteriological samples from distribution system before system can be placed in service. CONTRACTOR shall pay all costs associated with disinfection and testing of installed facilities and any additional bacteriological samples required after first set.

3.5 CARE AND RESTORATION OF PROPERTY

- A. All heavy equipment shall be operated with care to prevent damage to existing structures and/or wires.
- B. On paved surfaces, the CONTRACTOR shall not use or operate tractors, bulldozers, or other power-operated equipment the treads or wheels of which are so shaped as to cut or otherwise damage such surfaces.
- C. All surfaces which have been damaged by the CONTRACTOR'S operations shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations. Suitable materials and methods shall be used for such restoration.
- D. Restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period.

OGDEN-WEBER ATC WATER MAIN REPLACEMENT

3.6 PROTECTION OF EXISTING STRUCTURES, PRIVATE PROPERTY, AND RIGHTS-OF-WAY

- A. All existing pipes, poles, wires, fences, curbing, property-line markers, and other structures which, in the opinion of OWNER must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from injury by CONTRACTOR, and in case of injury, CONTRACTOR shall notify the appropriate party so that proper steps may be taken to repair any and all damage done. When the owners do not wish to make the repairs themselves, all damage shall be repaired by CONTRACTOR, or, if not promptly done by him, OWNER may have the repairs made at expense of CONTRACTOR.
- B. The CONTRACTOR shall consult the OWNER or his representatives prior to removing or disturbing any tree, shrub, bush, fence, sidewalk, building structure, or improvement that may be encountered in the line of the water line or in the path of the easement, or right-of-way secured by the OWNER. Immediately upon completion of the water line, the CONTRACTOR shall replace the sod, lawns, bushes, shrubs, or whatever else may have been removed, disturbed or altered during the progress of the work.

END OF SECTION 02670

OGDEN-WEBER ATC WATER MAIN REPLACEMENT

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Work covered by the Contract Documents.
 2. Use of premises.
 3. Owner's occupancy requirements.
 4. Specification formats and conventions.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Ogden – Weber ATC Water Main Replacement
1. Project Location: Ogden – Weber ATC, 200 North Washington Blvd., Ogden, Utah 84404.
- B. Owner: State of Utah, DFCM
1. Owner's Representative: Mr. Patrick Dean, Facilities Director, OWATC.
- C. Engineer: Mr. Craig Young, ICPE, 1145 East South Union Ave., Midvale, Utah, 84047
- D. The Work consists of the following:
1. The Work includes: Installation of a new 10 inch, high density polyester (HDPE) water main to replace the existing 6” DIP water main. The new water line will be installed using a horizontal direct drilling (HDD) methodology as outlined in the specifications. The existing 6” DIP water main can be left in place or removed at the contractors option. The new HDPE pipe will connect at the existing water vault and extend east to the shut-off valve located in the curb near the Administrations Building. The existing shut-off valve will remain. Two new fire hydrants will be installed along the new piping route. The new water line will also be connected to three branch water lines serving the Conference Center, the Greenhouse, and the Job Services buildings.
 2. A new pressure reducing station (PRV) will be installed in the existing water vault as outlined in the drawings. The new PRV station will include all new piping, valves, two (2) new PRV's and a bypass line. The smaller PRV will be set at a pressure 5 psig higher than the large PRV. The exact pressures will be as required by the owner.
 3. See all specifications and the associated drawings for complete details of the project.
- E. Project will be constructed under a single prime contract.

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1.3 USE OF PREMISES

- A. General: Contractor shall have use of premises for construction operations, including use of Project site, during construction period. Contractor's use of premises is limited by Owner's right to continue in operation during the performance of the contractors work on this project.
- B. Use of Site: Limit use of premises to the working areas as indicated on the drawings. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine constructions operations to the area of the existing water main and water vault.
 - a. Limit site disturbance, including earthwork and clearing of vegetation, to 5 feet either side of existing water main location except as required at interconnections to buildings, fire hydrant installations and connections to the existing water line
 - 2. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public as necessary to continue operation of the facilities.
 - 3. Driveways and Entrances: Keep driveways, roads, bus pick-up and drop off's, loading areas, parking areas and entrances serving premises clear and available to Owner, Owner's employees, students and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site. Any on-site storage will be as directed by the Owner and in the location designated by the Owner.
 - c. This project is located near the Washington Blvd. Main entrance of the facility. This entrance is to be kept open at all times through the project unless otherwise allowed by the Owner. The upper east connection of the new HDPE water line will impact the bus turnaround. All work in this area, including any excavation will be scheduled with the Owner to insure alternate bus routs and arrangements have been made.
- C. Use of Existing Building: Maintain access to existing buildings throughout this construction period. Repair any and all damage caused by the construction operations. Protect building and its occupants during construction period.

1.4 OWNER'S OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy site and all existing buildings during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing entrances and exits, unless otherwise indicated.
 - 1. Maintain access to existing walkways, roads, parking, and other adjacent occupied or used facilities. Do not close or obstruct walkways, roads, parking areas, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

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1.5 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
 - 1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100

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SECTION 02510 - WATER DISTRIBUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes water-distribution piping and related components outside the building for combined water service and fire-service mains.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements:

1. Comply with requirements of utility company supplying water. Include tapping of water mains and backflow prevention.
2. Comply with standards of authorities having jurisdiction for potable-water-service piping, including materials, installation, testing, and disinfection.
3. Comply with standards of authorities having jurisdiction for fire-suppression water-service piping, including materials, hose threads, installation, and testing.

- B. Piping materials shall bear label, stamp, or other markings of specified testing agency.

- C. Comply with ASTM F 645 for selection, design, and installation of thermoplastic water piping.

- D. Comply with FMG's "Approval Guide" or UL's "Fire Protection Equipment Directory" for fire-service-main products.

- E. NFPA Compliance: Comply with NFPA 24 for materials, installations, tests, flushing, and valve and hydrant supervision for fire-service-main piping for fire suppression.

- F. NSF Compliance:

1. Comply with NSF 14 for plastic potable-water-service piping. Include marking "NSF-pw" on piping.
2. Comply with NSF 61 for materials for water-service piping and specialties for domestic water.

1.4 PROJECT CONDITIONS

- A. Interruption of Existing Water-Distribution Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only

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after arranging to provide temporary water-distribution service according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of service.
2. Do not proceed with interruption of water-distribution service without Owner's written permission.

1.5 COORDINATION

- A. Coordinate connection to water main with utility company.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS

- A. See Specification Section 02670 – “Installation of Water Lines by Horizontal Directional Drilling (HDD) Methodology” for HDPE piping requirements.

2.2 GATE VALVES

- A. UL/FMG, Cast-Iron Gate Valves:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
2.
 - a. Crane Co.; Crane Valve Group; Stockham Div.
 - b. McWane, Inc.; Clow Valve Co. Div. (Oskaloosa).
 - c. Mueller Co.; Water Products Div.
3. UL/FMG, Nonrising-Stem Gate Valves:
 - a. Description: Iron body and bonnet with flange for indicator post, bronze seating material, and inside screw, iron body with epoxy coated interior and exterior surfaces, triple O-ring seal stuffing box.
 - 1) Standards: UL 262 and FM 1120/1130 approved, complies with NSF-61.
 - 2) Minimum Pressure Rating: 200 psig.
 - 3) End Connections: Flanged or FL X MJ based on hydrant connection.
 - 4) End Connections: Threaded.

2.3 GATE VALVE ACCESSORIES AND SPECIALTIES

- A. Valve Boxes: Comply with AWWA M44 for cast-iron valve boxes. Include top section, adjustable extension of length required for depth of burial of valve, plug with lettering "WATER," and bottom section with base that fits over valve and with a barrel approximately 8 inches in diameter. Manufacturer : D&L Foundry, M-8040 or approved equal.

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1. Operating Wrenches: Steel, tee-handle with one pointed end, stem of length to operate deepest buried valve, and socket matching valve operating nut.

2.4 PRESSURE REDUCING VALVES

A. Manufacturers:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Watts Regulator Company - 2'- Series 223-HP, 6"- 115 series globe or equal by
 - b. GA Industries
 - c. Cal-Val

2 inch Pressure Reducing Valves

2. Standard: ASSE 1003, ANSI A112.26, CSA B356.
3. Operation: Reduces incoming water pressure to an adjustable leaving water pressure.
4. Pressure Range: 300 psig maximum, reduced pressure range 50-90 psig.
5. Size: 2 inch
6. Design Flow Rate: 0 to 120 gpm.
7. Selected Unit Flow Range Limits: 0 to 160 gpm
8. Pressure Loss at Design Flow Rate: 12 psig.
9. Body: Bronze body with sealed spring cage for outdoor pit
10. End Connections: Threaded for NPS 2 and smaller
11. Configuration: Designed for horizontal, straight through flow.
12. Accessories:
 - a. Valves: Butterfly type with threaded ends on inlet and outlet of NPS 2 and smaller; install on both inlet and outlet of PRV to allow for servicing PRV.

6 inch Pressure Reducing Valves

13. Standard: meets AWWA standards, NSF 61, FDA.
14. Operation: Reduces incoming water pressure to an adjustable leaving water pressure.
15. Pressure Range: 250 psig maximum, reduced pressure range 20-175 psig.
16. Size: 6 inch
17. Design Flow Rate: 1800 gpm.
18. Selected Unit Flow Range Limits: 115 to 1800 gpm
19. Pressure Loss at Design Flow Rate: 10 psig.
20. Body: Ductile iron body with fused epoxy coating inside and out, stainless steel seat, stem and spring, reinforced nylon diaphragm, unit designed for outdoor use.
21. End Connections: flanged
22. Configuration: Globe arrangement designed for horizontal, straight through flow.
23. Accessories:
 - a. Valves: Butterfly type with flanged ends on inlet and outlet; install on both inlet and outlet of PRV to allow for servicing PRV.

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2.5 FIRE HYDRANTS

A. Dry-Barrel Fire Hydrants:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Mueller Co.; Water Products Div. – Super Centurion 250 A-423 or equal by
 - b. Clow Valve Co. Div. (Oskaloosa).
2. Description: Freestanding, with one NPS 4-1/2 and two NPS 2-1/2 outlets, 5-1/4-inch main valve, drain valve, and flanged inlet. Hydrant shall have cast-iron body, compression-type valve opening against pressure and closing with pressure.
 - a. Standards: UL 246, FM1510, ANSI/AWWA C502 approved.
 - b. Pressure Rating: 250 psig.
 - c. Outlet Threads: Interchangeable, threaded in place and retained by stainless steel locks. Include caps with steel chains.
 - d. Operating and Cap Nuts: Pentagon, 1-1/2 inches point to flat.
 - e. Direction of Opening: Open hydrant valve by turning operating nut to left or counterclockwise.
 - f. Exterior Finish: Red alkyd-gloss enamel paint, unless otherwise indicated.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Refer to Division 2 Section 02670 "Installation of Water Lines by Horizontal Directional Drilling (HDD) Methodology"

3.2 PIPING APPLICATIONS

- A. General: Use pipe, fittings, and joining methods for piping systems according to the following applications.
- B. Transition couplings and special fittings with pressure ratings at least equal to piping pressure rating may be used, unless otherwise indicated.
- C. Do not use flanges or unions for underground piping.
- D. Underground Combined Water-Service and Fire-Service-Main Piping to be HDPE as called out in Section 02670

3.3 VALVE APPLICATIONS

- A. General Application: Use mechanical-joint-end valves for NPS 3 and larger underground installation. Use threaded- or flanged-end valves for installation in vaults. Use UL/FMG, nonrising-stem gate valves for installation with indicator posts.

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- B. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
 - 1. Underground Valves, NPS 3 and Larger: AWWA, cast-iron, nonrising-stem, resilient-seated gate valves with valve box.
 - 2. Use the following for valves in vaults and aboveground:
 - a. Butterfly Valves, lugged style, resilient seat, 10 position lever handle operator with locking device, Watts DBF series or equal.

3.4 PIPING INSTALLATION

- A. Refer to Division 2 Section 02670 "Installation of Water Lines by Horizontal Directional Drilling (HDD) Methodology":
- B. Comply with NFPA 24 for fire-service-main piping materials and installation.
- C. Install PE pipe according to ASTM D 2774 and ASTM F 645.

3.5 ANCHORAGE INSTALLATION

- A. Anchorage, General: Install water-distribution piping with restrained joints. Anchorages and restrained-joint types that may be used include the following:
 - 1. Concrete thrust blocks.
- B. Install anchorages for tees, plugs and caps, bends, crosses, valves, and hydrant branches.

3.6 VALVE INSTALLATION

- A. AWWA Gate Valves: Comply with AWWA C600 and AWWA M44. Install each underground valve with stem pointing up and with valve box.

3.7 PRESSURE REDUCING VALVE INSTALLATION

- A. Install pressure reducing valves of type, size, and capacity indicated. Include valves, test cocks and pressure gauges. Install according to requirements of plumbing and health department and authorities having jurisdiction.
- B. Install bypass piping with isolation valves around PRV.
- C. Support all piping on existing thrust blocks and securely anchor all pipe

3.8 FIRE HYDRANT INSTALLATION

- A. General: Install each fire hydrant with separate gate valve in supply pipe, anchor with thrust blocks, and support in upright position.

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- B. Install with pumper nozzle facing street.
- C. AWWA Fire Hydrants: Comply with AWWA M17.
- D. UL/FMG Fire Hydrants: Comply with NFPA 24.

3.9 FIELD QUALITY CONTROL

- A. Piping Tests: Conduct piping tests before joints are covered and after concrete thrust blocks have hardened sufficiently. Fill pipeline 24 hours before testing and apply test pressure to stabilize system. Use only potable water.
- B. Hydrostatic Tests: Refer to Division 2 Section 02670 "Installation of Water Lines by Horizontal Directional Drilling (HDD) Methodology":

3.10 IDENTIFICATION

- A. Install continuous underground detectable warning wire. Refer to Division 2 Section 02670 "Installation of Water Lines by Horizontal Directional Drilling (HDD)

3.11 CLEANING

- A. Clean and disinfect water-distribution piping as follows:
 - 1. Refer to Division 2 Section 02670 "Installation of Water Lines by Horizontal Directional Drilling (HDD) Methodology
- B. Prepare reports of purging and disinfecting activities.

END OF SECTION 02510