INCORPORATED COUNTY OF LOS ALAMOS

101 Camino Entrada, Building 3
Los Alamos, New Mexico 87544 (505) 663-3507
Procurement Division

September 9, 2024

TO ALL HOLDERS OF SOLICITATION DOCUMENTS FOR:

Invitation for Bids No. IFB25-19
IFB Name:
NM State Rd 4 - 16" Water Transmission Line Replacement - Fiber Conduit Installation

Addendum No. 5

This Addendum No. 5 forms a part of the Solicitation Documents and modifies, as noted below, the original Solicitation Documents identified above.

This Addendum provides a revised submission deadline, updated bid form, questions received and the County's answers to all potential Bidders:

1. **NOTICE TO ALL POTENTIAL BIDDERS: The IFB submission deadline has been extended to September 17, 2024, 2:00 p.m., Mountain Time.**
2. **NOTE THIS ADDENDUM INCLUDES A REVISED BID FORM, UTILIZE THIS BID FORM WHEN SUBMITTING YOUR BID.**
3. **See attached Revised Section 601 Water Systems Specifications, with the following revisions:**
    a. Under 2.2 VALVES AND VALVE BOXES Item D. See Section 33 1200 Miscellaneous Valves for specify valves specifically pertaining to this project. – This Item has been removed from Specifications.
    b. Under 2.5 AIR RELIEF AND VACUUM VALVES. A. Combination "Anti-Shock" & "Anti-Surge"air release and vacuum and valves shall meet the requirements of AWWA C-512 and NSF/ANSI Standard 61 and shall have a minimum operation pressure of 250 (psi), all stainless-steel trim, cast iron single housing type body. Manufactured by VENT-O-MAT or approved equal. – Specifications revised.
4. What is the expectation and requirement regarding restoration of the existing roadside native vegetation?

    RESPONSE: Please refer to table in Los Alamos County Specifications Section 103 Compliance Requirements 3.2 Site Stabilization for seed mix requirements.
5. Will a dump site be provided for the vegetation cleared over the work area?
    RESPONSE: No that is the contractor's responsibility.
6. Is a plan available that lists or indicates the trees and bushes required to be replanted at the SWX of Hwy 4 and Rover Blvd?

RESPONSE: The intent is that the Contractor shall remove existing trees and bushes and replace as it currently exists.

7. Is an irrigation plan available for SWX of Hwy 4 and Rover Blvd that provide the contractor with an idea of the extent of irrigation repair and restoration?
   RESPONSE: No maps exist, contractor will work with Los Alamos County Parks Department to locate.
8. Can spoils be placed over the work area and graded to drain or must they be exported? If they are to be exported, will the Owner provide a dump site?
   RESPONSE: Yes, spoils can be placed over the work area and graded to drain.
9. What is the spacing requirement between handholes for the conduit? How many handholes should be included in our pricing?
   RESPONSE: Varies from 1750' to 2000' per plans. Please see quantities listed in San Ildefonso Plan Set Sheet 3.
10. Is native earth suitable for bedding and backfill or is imported material required?
    RESPONSE: Native earth is suitable if processed to meet Los Alamos County specification for bedding.
11. How was the 50 Cubic Yards of rock indicated on the bid form estimated to be representative of actual field quantities?
    RESPONSE: No rock was encountered on the Geotechnical Report, Item was established in the event rock is encountered, actual quantities will be verified in the field if needed.
12. Will the Owner provide a dump site for the excavated rock?
    RESPONSE: No that is the contractor's responsibility.
13. Since no Geotechnical Report was furnished, how is the contractor to be compensated for encountered rock excavation and hard dig areas?
    RESPONSE: A Geotechnical Report has been provided through the link provided list on the IFB: please refer to the IFB document. Item #'s 19, 1.9, & 2.12 for Rock Excavation was established to cover this cost in the event rock is found along the alignment.
14. What is the required pavement patch section?
    RESPONSE: Please see Sheet D-2 in the plan set for Los Alamos County NM State Rd 4 Transmission Line for pavement patch requirements.
15. Will construction water be provided? If so, at what locations?
    RESPONSE: Water is available through water hydrant at Rover Blvd/NM State Rd 4. Water will be available for purchase; meter will be provided to monitor usage. $1,500 refundable deposit is required to provided meter; water is billed at a rate of $6.83 per 1,000 gal.
16. Addendum-2, item 10 notes access over Department of Energy property and perhaps over tribal land was mentioned in the pre-bid meeting. No related exhibits are provided nor are any of these areas identified on the plans. Could an exhibit be provided so the contractor can plan work in these areas?
    RESPONSE: Addendum 2 notes Bid Alternate's 1 & 2 are all in DOE property; a map was provided showing each Bid segment with a provided Key showing Land Ownership. Please see map as part of Addendum 2.

17. Article 8 - Indemnity, of the agreement only references County related agents requiring indemnity. However, reference is made to crossing over lands of other agencies. Is there not a requirement to indemnify any agents of these other agencies?
    RESPONSE: The Contract is with Los Alamos County and specifically identifies Indemnity required by the County, the other agencies may also require that the Contractor indemnify them to access the areas required to complete the Project.

18. How will liquidated damages be assessed if the alternates are engaged? Will the LD's be considered cumulative or will they be applied to the base bid and alternates separately? Table 108.8:1 does not make that clear.

    RESPONSE: Liquidated damages will be calculated based on the cumulative dollar amount. The Substantial Completion Date specified applies to the entire project.

19. In numerous locations, such as on plan sheet C-4 near 27+60, the water main is dimensioned as 4'-Min cover—yet the actual cover via the profile is approximately 10'. Does the main have to be installed at the elevations shown in the profile or can the contractor install at 4' depth as clearly noted?
    RESPONSE: Profile in plan set holds precedence.

20. Are any permissions required from landowners to remove fences? If so, did the County receive such permissions or is it the contractor's responsibility to obtain them? If it is the contractor's responsibility, has this been considered into the required schedule? What help will the County provide the contractor to obtain such permissions if necessary?
    RESPONSE: There should be no need for fencing removal; County will assist if fencing needs to be removed.

21. Bid item 14 notes 1026-Square Yards of Rip Rap. The rip rap pad detail shown on plan sheet D-6 indicates the rip rap pads to be roughly 19' x 19' for roughly 40-SY's each—there are 3. Where is the other 900+ SY's of rip rap to be placed?
    RESPONSE: There has been a change to this bid item, please see updated Bid item 14. We over quantified in the event additional riprap is needed.

22. Thrust block details are not indicated on the plans. Please confirm thrust blocks are not required at bends.
    RESPONSE: Thrust Blocks are required; please see attached detail for thrust blocks.

All other provisions of the Solicitation Documents shall remain unchanged. This Addendum No. 5 is hereby made a part of the Solicitation Documents to the same extent as those provisions contained in the original documents and all itemized listings thereof.

Each Respondent is requested to acknowledge receipt of this Addendum No. 5 with the Bid Forms.

I hereby acknowledge receipt of this Addendum No.5.

Signed	Print Name	Date
Title	Company	

REVISED VIA ADDENDUM 5

1.5.1 Bid Form

Bidder agrees to perform the work for the following prices:
The TOTAL amounts of the below bid (excluding NMGRT) shall be shown in both words and figures. In case of discrepancies, the amount shown in words will govern.

Base Bid:

The Bidder agrees to perform all of the work described as the Base Bid in the Solicitation Documents for an amount determined as follows:

Bid Item	Description	Unit	Quantity	Unit Cost	Total Cost
1	Pre-construction and Post-construction Video Documentation	LS	1		
2	Mobilization (75%) and Demobilization (25% with the submittal of as builts)	LS	1		
3	Material Testing Allowance	ALLOW	1	$15,500.00	
4	SWPPP	ALLOW	1	$8,600.00	
5	Traffic Control	LS	1		
6	Exploration of Existing Utilities, (Incl. all materials, labor, potholing, excavation, coordination with Owner, backfill and site restoration), CIP	ALLOW	1	$15,000.00	
7	Furnish and Install 16-inch D.I.P Class 250 Waterline, (Incl. labor, staking material, potholing, trenching, bedding, removal of waste excavation, joint restraints, fittings, warning tape, tracer wire, above ground pipe markers, backfilling, compaction, disinfection, site restoration, dewatering, hydrostatic pressure testing and all other appurtenances needed for a complete installation), CIP	LF	14,228		
8	Furnish and Install 2-inch Combination Air Valve Assembly, (Incl. labor, materials, valve, traffic rated vault, lid, saddle, valves, and all other appurtenances needed for a complete installation), CIP	EA	3		
9	Furnish and Install 16-inch Gate Valve, (Incl. labor, materials, valve, valve box, and all other appurtenances needed for a complete installation), CIP	EA	7		

10	Tie Into Existing 16-inch Waterline, (Incl. labor, materials, gate valve, caps, trenching, bedding, backfill, compaction, pressure testing, disinfection, furnish and install waterline, fittings, reducer, tracer wire, warning tape and all other appurtenances needed for a complete installation), CIP	EA	2		
11	Furnish and Install New Fire Hydrant Assembly, (Incl. labor, materials, tee, pipe from main line to fire hydrant, valve, restrained joints, drain rock, excavation, backfill, collar, site restoration, and all other appurtenances needed for a complete installation), CIP	EA	1		
12	Furnish and Install New 8-inch D.I.P. Drain Line, (Incl. labor, materials, trenching, bedding, backfill, compaction, pressure testing, disinfection, waterline, gate valves, flapper valve, steel marker post, tee, and all other appurtenances needed for a complete installation), CIP	EA	3		
13	Remove and Replace Existing Asphalt Pavement, (Incl. all materials, labor, subgrade and base course preparation and compaction), CIP	SY	34		
14	Los Alamos County to furnish Rip Rap for 8" Drain Lines, Contractor to provide hauling from White Rock WWTP – 4-mile haul . (Incl. Labor, material, weed barrier, compaction, and appurtenances needed for a complete installation). CIP	SY	1,026		
15	Remove Concrete Sidewalk and Landscaping as Needed for Waterline Trenching and Installation; Re-establishment of Landscaping Area and Replace Concrete Sidewalks.	LS	1		
16	Non-Pressurized Connection to Concrete Cylinder Pipe via Butt-Weld, (Incl. test stations, fitting, and welds), CIP	EA	1		

17	Remove and Dispose of Existing Abandoned Waterline at Crossing, (Incl. labor, materials, caps, trenching, bedding, backfill and compaction), CIP	LF	235		
18	Remove and Replace Concrete Storm Structures to Existing Conditions, (Incl. labor, materials, backfill, and compaction), CIP	EA	6		
19	Rock Excavation	CY	50		
20	Install 2 - 1.25-inch HDPE Conduit in the Same Trench as the Waterline w/ One Foot Separation, (Incl. labor for installing conduit, potholing, trenching, bedding, removal of waste excavation, handholes, gravel for handholes, pull boxes, pull string, warning tape, tracer wire, above ground pipe markers, backfilling, compaction, site restoration, all other appurtenances needed for a complete installation). Furnish bedding, backfill, and handhole gravel (all other materials will be provided by Owner: Pueblo de San Ildefonso).	LF	14,228		

BASE BID –	**$**

Total Bid Amount written in words:

_____ Dollars

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

1.5.2 Alternates and Allowances

Bid Alternate #1:

The Bidder agrees to perform all of the work described as the Base Bid in the Solicitation Documents for an amount determined as follows:

Bid Item	Description	Unit	Quantity	Unit Cost	Total Cost

1.1	Mobilization (75%) and Demobilization (25% with the submittal of as-builts)	LS	1		
1.2	Material Testing Allowance	ALLOW	1	$5,100.00	
1.3	SWPPP	ALLOW	1	$2,100.00	
1.4	Traffic Control	LS	1		
1.5	Furnish and Install 16-inch D.I.P Class 250 Waterline, (Incl. labor, staking, material, potholing, trenching, bedding, removal of waste excavation, joint restraints, fittings, warning tape, tracer wire, above ground pipe markers, backfilling, compaction, disinfection, site restoration, dewatering, hydrostatic pressure testing and all other appurtenances needed for a complete installation), CIP	LF	1,791		
1.6	Furnish and Install 12-inch D.I.P Class 250 Waterline, (Incl. labor, staking, material, potholing, trenching, bedding, removal of waste excavation, joint restraints, fittings, warning tape, tracer wire, above ground pipe markers, backfilling, compaction, disinfection, site restoration, dewatering, hydrostatic pressure testing and all other appurtenances needed for a complete installation), CIP	LF	1,567		
1.7	Tie Into Existing 16-inch Waterline, (Incl. labor, materials, caps, trenching, bedding, backfill, compaction, pressure testing, disinfection, furnish and install waterline, fittings, reducer, tracer wire, warning tape and all other appurtenances needed for a complete installation), CIP	EA	3		
1.8	Remove and Dispose of Existing Abandoned Waterline at Crossing, (Incl. labor, materials, caps, trenching, bedding, backfill and compaction), CIP	LF	50		
1.9	Rock Excavation	CY	35		
1.10	Install 2 - 1.25-inch HDPE Conduit in the Same Trench as the	LF	3,358		

	Waterline w/ One Foot Separation, (Incl. labor for installing conduit, potholing, trenching, bedding, removal of waste excavation, handholes, gravel for handholes, pull boxes, pull string, warning tape, tracer wire, above ground pipe markers, backfilling, compaction, site restoration, all other appurtenances needed for a complete installation). Furnish bedding, backfill, and handhole gravel (all other materials will be provided by Owner: Pueblo de San Ildefonso).				

BID ALTERNATE #1 –	**$**

Total Bid Alternate #1 Amount written in words:

_____ Dollars

Note: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

Bid Alternate #2:

The Bidder agrees to perform all of the work described as the Base Bid in the Solicitation Documents for an amount determined as follows:

Bid Item	Description	Unit	Quantity	Unit Cost	Total Cost
2.1	Mobilization (75%) and Demobilization (25% with the submittal of as-builts)	LS	1		
2.2	Material Testing Allowance	ALLOW	1	$3,500.00	
2.3	SWPPP	ALLOW	1	$700.00	
2.4	Traffic Control	LS	1		
2.5	Furnish and Install 12-inch D.I.P Class 250 Waterline, (Incl. labor, staking, material, potholing, trenching, bedding, removal of waste excavation, joint restraints, fittings, warning	LF	1,032		

	tape, tracer wire, above ground pipe markers, backfilling, compaction, disinfection, site restoration, dewatering, hydrostatic pressure testing and all other appurtenances needed for a complete installation), CIP				
2.6	Tie Into Existing 12-inch CCP Waterline with Three 12-inch Gate Valves, (Incl. labor, materials, gate valves, MJ bends, tee, cap, trenching, bedding, backfill, compaction, pressure testing, disinfection, furnish and install waterline, fittings, reducer, tracer wire, warning tape and all other appurtenances needed for a complete installation), CIP	EA	1		
2.7	Furnish and install 18-inch Casing via Trenchless Method, (Incl. labor, materials, casing pipe, fittings, spacers, end seals, trenching, bedding, backfill and site restoration), CIP	LF	100		
2.8	Furnish and Install New 8-inch D.I.P. Drain Line, (Incl. labor, materials, trenching, bedding, backfill, compaction, pressure testing, disinfection, waterline, gate valves flapper valve, steel marker post, tee, and all other appurtenances needed for a complete installation), CIP	EA	1		
2.9	Furnish and Install 12-inch Gate Valve, (Incl. labor, materials, valve, valve box, and all other appurtenances needed for a complete installation), CIP	EA	3		
2.10	Los Alamos County to furnish Rip Rap for 8" Drain Lines, Contractor to provide hauling from White Rock WWTP – 4-mile haul . (Incl. Labor, material, weed barrier, compaction, and appurtenances needed for a complete installation). CIP	SY	342		

2.11	Furnish and Install 2-inch Combination Air Valve Assembly, (Incl. labor, materials, valve, traffic rated vault, lid, saddle, valves, and all other appurtenances needed for a complete installation), CIP	EA	1		
2.12	Rock Excavation	CY	15		
2.13	Install 2 - 1.25-inch HDPE Conduit in the Same Trench as the Waterline w/ One Foot Separation, (Incl. labor for installing conduit, potholing, trenching, bedding, removal of waste excavation, handholes, gravel for handholes, pull boxes, pull string, warning tape, tracer wire, above ground pipe markers, backfilling, compaction, site restoration, all other appurtenances needed for a complete installation). Furnish bedding, backfill, and handhole gravel (all other materials will be provided by Owner: Pueblo de San Ildefonso).	LF	1,032		

BID ALTERNATE #2 –	**$**

Total Bid Alternate #2 Amount written in words:

_____ Dollars

Note: The Bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

This bid is hereby submitted by the undersigned, in full conformity with the solicitation documents, and warrant that the undersigned. Has the authority to bind the General Contractor for the work.

I the undersigned have reviewed the Summary of Work and certify that the following licenses are required to fully perform the Summary of Work and that I as the General Contractor and/or Sub-contractors to be employed under this contract possess such New Mexico Contractor's License Number(s) and Classification(s):

Contractor	License Number(s)	Classification(s)

Signature of Agent authorized to sign on behalf of Bidder

Printed Name & Title of Agent

Organization's Legal Name

Mailing Address | Physical Address

City, State, Zip Code

Telephone Number | Fax Number

Federal Tax I.D Number | NM CRS # (if located in-state)

N.M. Preference Certification (attach copy)

Los Alamos County Business License Number: (Required to perform work in the County)

NOTE: The bid amount shall exclude state gross receipts tax or local option tax, but shall include all other costs of doing business, including but not limited to bonds, insurance, and profit. The Incorporated County of Los Alamos is required to pay the applicable tax including any increase in the applicable gross receipts tax or local option tax shall be shown as a separate amount on each billing or request for payment under the contract. The Incorporated County of Los Alamos reserves the right to reduce or add quantities.

NON-DISCRIMINATION POLICY: This Company does not discriminate on the basis of color, national origin, sex, religion, age, and disabled status in employment or the provision of services.

SECTION 601
WATER SYSTEMS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Supplying all labor, materials, equipment and incidentals required, install, flush, disinfect, and test new water mains, fittings, and apparatus as shown on the Drawings and specified herein.

1.2 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification. The publications are referenced in the text by their general designation only.

B. American Water Works Association (AWWA) Standards, latest publications.

1.3 QUALITY ASSURANCE

A. Water mains and appurtenances shall be subject to hydrostatic tests.

B. Water mains and appurtenances shall be properly disinfected prior to connection to existing system.

C. Submit manufacturers' data on the pipe material, fittings, valves, and service material in accordance with Section 102 Submittals.

D. As-built drawings with details including burial depth, pipe and fitting configuration, materials, and lengths. The original design drawings are not to be submitted in the place of As-built drawings.

E. The Project Manager may require manufacturer's certificates showing conformance with this specification for any of the pipe materials, fittings, valves and appurtenances delivered to the job site.

PART 2 PRODUCTS

2.1 PIPE AND FITTING MATERIALS

A. Water mains pipe shall be as specified in plans:

1. PVC, AWWA C900, DR-18, standard working pressure of 235-psi, push on the bell end pipe. All gaskets of neoprene or other synthetic rubber per ASTM D412 and D395.

2. PVC, AWWA C900, DR-14, standard working pressure of 305-psi, push on bell end pipe. All gasket of neoprene or other synthetic rubber per ASTM D412 and D395.

3. Ductile iron pipe, AWWA C151, Class 350 pipe, cement mortar lined per ANSI/AWWA C104 /A21.4-03. All gaskets of neoprene or other synthetic rubber per ASTM D412 and D395. All pipes shall be installed with polyethylene encasement per AWWA C105, minimum 8 mil thickness.

4. Fittings shall be mechanical joint ductile iron per AWWA C110 full body or C153 Short body.

5. All fitting components are to comply with NSF 61. This includes components such as pipe, pipe fittings, tank interior coatings, and valves. In addition, gaskets, solvents, cement products, and other materials or components that come into contact with drinking water or water treatment chemicals. NMAC 20.7.10.400.L distribution systems. NMAC 20.7.10.10.400.K

6. In vaults where indicated in drawings ductile iron pipe and fittings shall meet the requirements above, and shall be flanged end pipe per AWWA C115.

2.2 VALVES AND VALVE BOXES

A. Gate valves 4” to 12” shall conform to the requirements of AWWA C509 for resilient-seated valves. Stems shall be, fitted with a 2” x 2” square wrench nut and shall be manufactured to open counter-clockwise. Rated operating pressure of 250 (psi). Stem extensions shall be installed to bring the operating nut to within one (1) foot of finish grade where the depth from finished grade to operating nut exceeds four (4) feet. Gate valves shall be used for all valves and shall be fusion-epoxy lined and coated in conformance with the requirements AWWA Standard C-550. Manufactured by Mueller, AVK or approved equal.

B. Valve boxes shall be 5 ¼" to 6” plastic body adjustable slip type with heavy-duty cast-iron lid and cover with “water” cast thereon. Cast iron lid set in a concrete collar as shown in drawings. Manufactured by ARMOUR Access boxes, Handley Industries, Inc., Bingham & Taylor Corp., or approved equal.

C. Inside vaults and where indicated in drawings, valves shall meet the requirements of A above and shall be flanged end pipe per AWWA C115 with hand wheel operator.

2.3 LOCATE WIRE & WARNING TAPE

A. Locate wire shall be installed on all water mains and service lines. Locate wire must be electrically continuous along mains and service lines. Locate wire in service cans shall be accessible at each fire hydrant, in each valve box and in each meter box. Locate wire in service cans shall extend to and be fastened to the meter box. Locate wire must be raised in a test box every 500 feet and at all locations where water mains end. Locate wire must be raised in all valve boxes and at each fire hydrant. Text boxes manufactured by Handley Industries, Inc. Bingham & Taylor Corp., or approved equal.

B. Locating wire shall be solid copper, ten (10) gauge type electrical wire with solid blue jacket. All locate wire splices shall be connected with copper wire split nut, or approved other connection type, and wrapped in electric tape.

C. Warning tape shall be installed 12” below grade above all water mains and water service lines. Warning tape shall be a minimum of 6” wide, locatable, blue in color for potable or purple in color for non-potable, with lettering reading “CAUTION BURIED WATERLINE BELOW”.

2.4 JOINT RESTRAINT

A. All joints will be mechanically restrained per schedule in drawings. Mechanical joint retainer glands and bell joint harnesses by EBBA Iron or The Ford Meter Box Company.

B. Concrete blocking will only be used where indicated in the drawings and when approved by the Project Manager.

2.5 AIR RELIEF AND VACUUM VALVES

A. Combination “Anti-Shock” & “Anti-Surge“air release and vacuum and valves shall meet the requirements of AWWA C-512 and NSF/ANSI Standard 61 and shall have a minimum operation pressure of 250 (psi), all stainless steel trim, cast iron single housing type body. Manufactured by VENT-O-MAT or approved equal.

PART 3 – EXECUTION

3.1 EXCAVATION, TRENCHING AND BACKFILL

A. Shall conform to Section 202 Excavation, Trenching and Backfill of these Specifications.

3.2 PIPE INSTALLATION

A. Installation: Water mains shall have 4 feet minimum of cover to the top of pipe and water service lines shall have 3 feet minimum of cover to top of pipe. Pipe, valves, fittings and appurtenances shall be installed in accordance with the best practice, and in conformance with the applicable requirements of the AWWA Standards.

B. Handling: Pipe, valves, and fittings shall be carefully handled during hauling, unloading, and placing operations, so as to avoid breakage or damage. Straptype slings shall be used for lifting and placing; no chains or hooks will be permitted. Broken or damaged pipe or appurtenances will be rejected by the the Project Manager and shall thereupon be removed from the work and replaced.

C. Alignment: All pipe shall be accurately laid in conformity with the prescribed lines and grades as established by the Project Manager. Each length shall be jointed to the preceding section as specified, and after said jointing has been completed, there shall be no movement of the pipe in subsequent operations.

D. Pipe Deflections: The laying of pipe on curved alignment will be permitted up to one-half the deflection as recommended by the respective pipe manufacturer.

E. Cleaning: Before each new length of pipe is placed, the interior of the preceding pipe shall be carefully cleaned of all dirt and debris. When pipe laying is not in progress, all open pipe ends shall be closed with watertight plugs in a satisfactory manner.

F. Bearing: Pipe in the trench shall have continuous uniform bearing along its bottom, except at bell holes. Blocking used to support the pipe during laying shall be placed at the end of the section and shall be removed before laying the next section. Before lowering pipe into the trench, the Contractor shall remove all stakes, debris, loose rock and other hard material from the bottom of the trench.

G. Positioning: After the final positioning, the pipe shall be held in place in the trench with backfill material placed equally on both sides of the pipe at as many locations as are required to hold the pipe section in place. After joints are completed, the backfill material shall be redistributed and compacted as herein required.

H. Closure: At the end of each day and when work is not in progress, the open ends of pipe installed in the line shall be closed with watertight plugs or caps.

I. Thrust Blocking: Where indicated on Drawings as approved by the Project Manager, concrete thrust blocks of the form and dimensions shown or noted on the plans shall be provided at all changes in horizontal or vertical alignment and at such other points as may be called for on the plans. Thrust blocks shall be installed in strict conformance with the details shown or noted on the plans.

3.3 CONNECTIONS TO EXISTING SYSTEMS

A. Connections to existing systems shall not be made until the new mains have been satisfactorily disinfected and have passed all tests herein specified.

B. A penetration permit, per Section 101 General Requirements of these specifications, shall be obtained from the DPU's Project Manager, no less than 48 hours in advance of planned connection.

C. New or rehabilitated segments of line that will be subject to hydrostatic testing and disinfection tasks shall be totally insulated from the existing(live) system. In other words, the connection of a new or rehabilitated line shall only be allowed after all compliance testing, disinfection (and bac-T testing) have been completed and verified by Owner as satisfactory.

D. Locate wire shall be verified electrically continuous per Section 101 General Requirements of these specifications.

E. All water valves on existing systems shall be operated by DPU staff only.

3.4 HYDROSTATIC TEST OF PVC AND DUCTILE IRON PIPE

A. Preparation:

1. The Contractor shall provide all necessary materials and equipment, and shall perform all work required in connection with the testing of the water system, as specified herein.

2. Hydrostatic and leakage tests shall be made only after the trenches have been backfilled sufficiently to hold the pipe firmly in position.

3. The Contractor shall provide all water necessary for filling, flushing, disinfection, and any required tests including all labor and equipment required.

B. Procedure:

1. Hydrostatic test of all new PVC waterlines shall be completed by the contractor in conformance with AWWA C 605-5.

2. Hydrostatic test of all new Ductile Iron waterlines shall be completed by the contractor in conformance with AWWA C 600-5.

C. Test Pressure and Duration:

1. Test pressure shall be the greater of 150 (psi) or 1.5 times the operating pressure at the lowest elevation of the section being tested.

2. Hydrostatic test duration shall be 2 hours minimum.

D. Allowable Leakage:

a. When test results indicate leakage beyond what is allowed in AWWA C605-5 (PVC pipe) Contractor shall conduct a survey of the line and repair any leaks found. Hydrostatic tests shall be repeated until satisfactory compliance with this specification is demonstrated. Contractor is responsible for any costs associated with the repair and re-test of pipelines.

b. When test results indicate leakage beyond that allowed in AWWA C600-5 (Ductile iron pipe), Contractor shall conduct a survey of the line and any leaks found shall be repaired, after which the hydrostatic test shall be repeated until satisfactory compliance with this specification is demonstrated. Contractor is responsible for any costs associated with the repair and re-test of pipelines.

c. Hydrostatic test shall be documented on form provided in this section.

3.5 DISINFECTION AND BACTERIOLOGICAL TEST

A. Disinfection:

1. Following the Hydrostatic Test and before being placed in service, all new water lines shall be chlorinated in accordance with the requirements of AWWA Standard C651-05. During disinfection, water shall have a minimum 25 mg/L free chlorine concentration demonstrated by testing method approved by the Project Manager. The chlorinated water shall be retained in the main for 24 hours.

2. If any materials are to be added directly to the water supply, they shall conform with NSF 60. This requirement applies to all chemicals used in water treatment; chemicals used to clean equipment; and chemicals associated with treatment in storage and distribution systems. NMAC 20.7.10.400.K

3. After chlorination has been satisfactorily completed, the lines shall be thoroughly flushed until the chlorine content in all parts of the system has been proven by test to have a chlorine concentration less than or equal to 1.0 mg/L.

4. It shall be the responsibility of the Contractor to de-chlorinate and lawfully dispose of the chlorinated water and flushing water, and avoid flooding or damage to adjacent properties or facilities.

B. Bacteriological Test:

1. After flushing the chlorine from the water system and prior to placing line in service, the Contractor shall engage the services of an approved commercial testing laboratory, to gather an approved number of representative water samples, the location and number of which shall be determined by the Project Manager. Bacteriological testing shall be completed in accordance with AWWA Standard C651-05.

2. No section of water systems will be allowed to be connected to the Department of Public Utilities existing water system when any sample of water tests indicates presence of coliform bacteria. Should the laboratory report show that any sample taken was not acceptable, Contractor shall re-chlorinate and test the water again as described herein. This process shall be repeated until satisfactory disinfection has been accomplished.

3. Contractor shall direct the laboratory to send the original report of Bacteriological Examination to the Project Manager.

END OF SECTION

DEPARTMENT OF PUBLIC UTILITIES
PVC AND DUCTILE IRON PIPE HYDROSTATIC TEST REPORT

PROJECT NAME: _____

CONTRACTOR: _____

LOCATION: _____

DATE: _____

OBSERVER: _____

PIPE DESCRIPTION

	MATERIAL	DIAMETER (INCHES)	LENGTH (FEET)
SEGMENT NO. 1			
SEGMENT NO. 2*			
SEGMENT NO. 3*			

* Only applies when there are segments of different size pipes being tested.

TEST PRESSURE

PRESSURE: _____

LEAKAGE

ALLOWABLE LEAKAGE FORMULA**: _____

ALLOWABLE LEAKAGE**: _____

ACTUAL LEAKAGE: _____

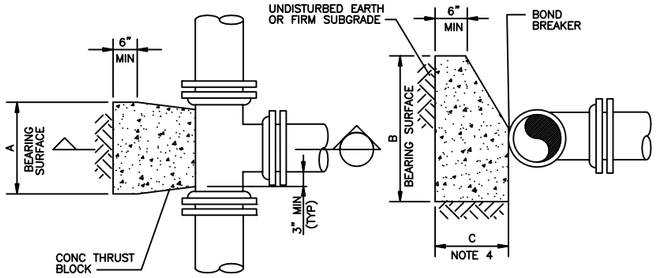
** PVC pipe from AWWA C605-05 / Ductile iron pipe from AWWA C600-05.

TIME (2 HOUR TEST)

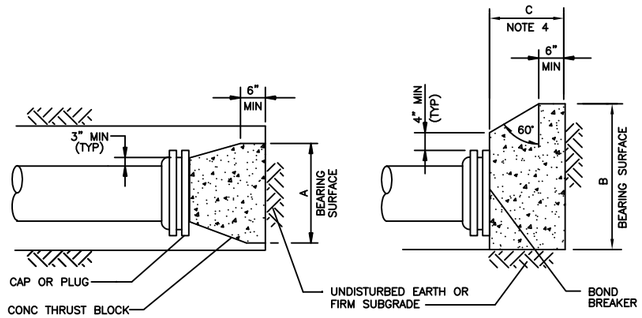
BEGIN TEST: _____ PASSED: _____

END TEST: _____ FAILED: _____

NOTES:



PLAN SECTION



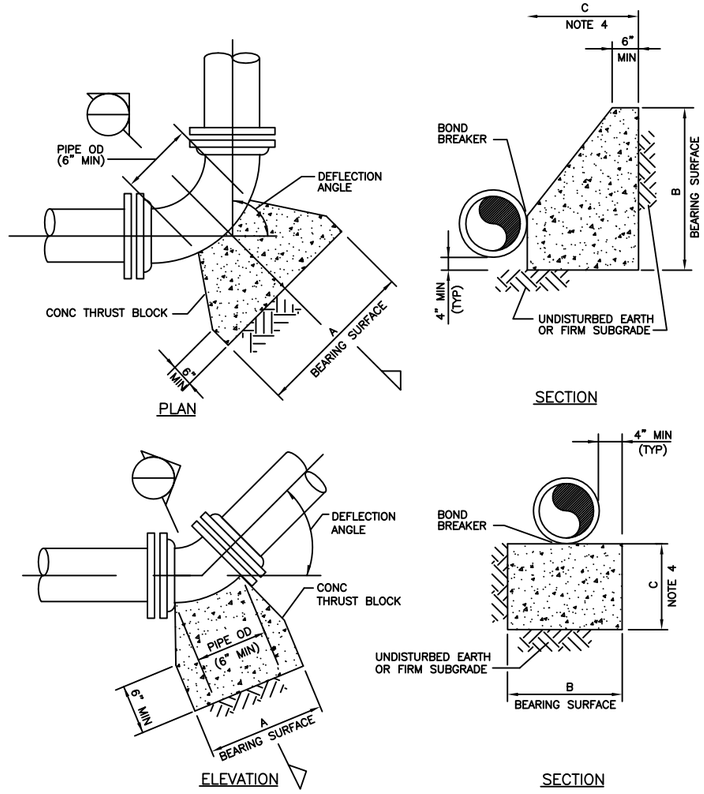
PLAN ELEVATION

NOMINAL PIPE SIZE (IN)	MAXIMUM PIPE OD (IN)	REQUIRED BEARING AREA (SQ FT)
3	3.96	1.4
4	4.80	2.0
6	6.90	4
8	9.05	7
10	11.10	11
12	13.20	15
14	15.30	21
16	17.40	27
18	19.50	34
20	21.60	41
24	25.80	59

NOTES:

1. MAXIMUM TEST PRESURE = 1.50x150 PSI
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
3. BEARING AREA = A x B
4. C SHALL BE GREATER THAN A/2 AND B/2.
5. THIS DETAIL TO BE USED IN SITUATIONS WHERE EXISTING PIPE IS NOT RESTRAINED.
6. CONTRACTOR TO USE AFTER APPROVAL BY THE PROJECT MANAGER.

THRUST BLOCK FOR TEES, CAPS AND PLUGS



PLAN SECTION

ELEVATION SECTION

NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	REQUIRED BEARING AREA (SQ FT)			
		90 DEG	45 DEG	22.50 DEG	11.25 DEG
3	3.96	2.0	1.1	0.5	0.3
4	4.80	2.9	1.6	0.8	0.4
6	6.90	6	3	1.6	0.8
8	9.05	10	6	3	1.4
10	11.10	15	8	4	2.1
12	13.20	22	12	6	3
14	15.30	29	16	8	4
16	17.40	38	20	10	5
18	19.50	48	26	13	7
20	21.60	58	32	16	8
24	25.80	83	45	23	12

NOTES:

1. MAXIMUM TEST PRESURE = 1.5 x 150 PSI
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
3. BEARING AREA = A x B
4. C SHALL BE GREATER THAN A/2 AND B/2.
5. THIS DETAIL TO BE USED IN SITUATIONS WHERE EXISTING PIPE IS NOT RESTRAINED.
6. CONTRACTOR TO USE AFTER APPROVAL BY THE PROJECT MANAGER.

THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS

UTILITY CONSTRUCTION STANDARDS - WATER

SECTION 6000 6015

CONCRETE BLOCKING

LOS ALAMOS Department of Public Utilities
Electric, Gas, Water, and Wastewater Services

DATE: APRIL 2018 | APPROVED BY: | REVISION: | DATE: | No.