

Transcript Exhib



Docket #(s): W-01445A-12-0348

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

Exhibit #: A-11 part 6 of 10 on barcode 0000145182 for part 1

0000145183 part 2, 0000145184 part 3, 0000145185 part 4

0000145186 part 5, 0000145188 part 7, 0000145189 part 8

0000145190 part 9, 0000145191 part 10

Arizona Corporation Commission  
**DOCKETED**

MAY 22 2013

DOCKETED BY ASM

2013 MAY 22 PM 2:32

RECEIVED  
AZ CORP COMMISSION  
DOCKET CONTROL

**ENGINEER'S CERTIFICATE OF COMPLETION AND FINAL INSPECTION "ECC"**  
 YAVAPAI COUNTY DEVELOPMENT SERVICES - FLOOD CONTROL DISTRICT

YAVAPAI COUNTY FILE NO.: <b>A52011001132 X DRINKING WATER DESIGN</b> <i>(New separate form now used for WASTEWATER DESIGN)</i> <small>If separate Drinking Water &amp; Wastewater Approvals to Construct were issued, separate ECCs required</small>	COUNTY: YAVAPAI OWNER: ARIZONA WATER COMPANY
Project Name: <b>Cliffside Trail - Montezuma Fairway Villas</b> <span style="float:right;"><small>(as shown on Approval to Construct)</small></span>	
W.A. No.1-4930 SYSTEM No.13-046	
Project Description: <b>Replace 1,230 LF of two existing 2-inch GS water distribution systems with 736 LF (AB) of 6-inch DIP w/Polywrap and replace 24 (AB) service connections along Cliffside Trail to serve the Montezuma Fairway Villas.</b> <b>Changed running line to reduce asphalt replacement, increasing length from 700 LF to 736 LF. Relocated 3 double services to avoid conflict with parking lot driveway. Added 1 single service, increasing number of service replacements from 23 to 24.</b>	
<small>(as shown on Approval to Construct, unless completed project differed, in which case describe in detail)</small>	

I, James T. Wilson, a Professional Engineer registered in the State of Arizona, have inspected the construction of the above described project, and certify that (check all applicable boxes, complete applicable blanks):

ITEMS 1) THRU 4) MUST BE COMPLETED

- 1) The work on this project was completed on 3/2/2012 (date).
- 2) On 3/2/2012 a final construction inspection was conducted by  MYSELF [←check one→]  under MY DIRECT SUPERVISION by William Aldredge (print name).
- 3) The materials utilized and the installation and construction of those materials and equipment are in conformance with the approved plans and specifications.
- 4) All provisions listed in the ADEQ Approval to Construct for this project, a copy of which I have attached to this certificate, have been fully satisfied or exceptions are listed on the reverse side of this certificate.
- 5) All construction and preoperational tests (infiltration, exfiltration, pressure deflection, chlorination, bacti, etc.) [circle types performed] were properly conducted, met ADEQ requirements, and are represented in attachments to this Certificate. The total number of pages of test results attached is 2.

EITHER 6A) or 6B) MUST BE CHECKED

- 6A) Any deviation from the approved plans and the ADEQ Certificate of Approval to Construct have been noted on the attached "As-Built" plans (as stipulated in the Approval to Construct provisions) prepared and sealed pursuant to A.R.S. § 32-125 on 3/20/2012 (date). Of the total 4 sheets of "As-Built" plans attached, deviations from the approved plans are shown on sheets numbered 1 & 2. All deviations from the approved plans comply with the ADEQ minimum design and construction standards contained in statute, rule, bulletin or referenced codes, and with the key elements of the approved plans.
- 6B) The completed project did not deviate from the plans which received the Approval to Construct.

EITHER 7A) or 7B) MUST BE CHECKED

- 7A) This project did not require the preparation of an Operation and Maintenance Manual.  
(the only projects which do NOT require an O&M manual are gravity-only sewage collection systems, single-family residence septic systems, and drinking water distribution projects that include no source, storage, or pressurization facilities).
- 7B) A FINAL Operation and Maintenance Manual has been prepared for this project and a copy is attached. This manual meets all ADEQ minimum design and construction standards contained in statute, rule, bulletin, referenced codes, the key elements of the approved plans, and, if applicable, with Attachment B of the September 10, 1994 Engineering Advisory for Individual Alternate Systems.

EITHER 8A) or 8B) MUST BE CHECKED

- 8A) Review of this project for Approval of Construction issuance does not require a fee because this project involves only drinking water, not wastewater.
- 8B) In accordance with A.A.C. R18-9-103 Schedule B, a check in the amount of \$ \_\_\_\_\_ is attached as initial fee for review of the submitted and other information for issuance of an Approval of Construction.

ADDITIONAL INFORMATION

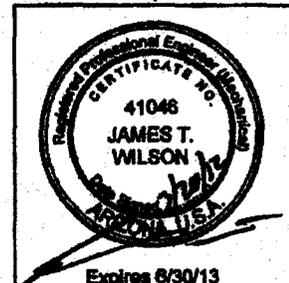
- 9) Other, see additional information on reverse side.

Engineer Address PO Box 28006, Phoenix, AZ 85038-9006

Phone 602-240-8860

YAVAPAI COUNTY DEVELOPMENT SERVICES ACCEPTANCE

EMPLOYEE SIGNATURE \_\_\_\_\_ (PRINTED NAME) \_\_\_\_\_ DATE \_\_\_\_\_



111- Verde Valley  
 WMA 1-4930  
 MONTAZUMA Fairway WMA.



**ENGINEERING REVIEW SECTION**  
**DATA REQUIRED WITH ECC**

Please complete the test data and submit this form with the **Engineers Certificate of Completion**. An Approval of Construction cannot be issued without the data identified below in accordance with Arizona Administrative Code (A.A.C.) R18-5-508(C). Please attach all supplemental information and calculations to this form.

**DATA**

1.

PRESSURE TEST DATA		Indicate Segment Tested	6" DIP main From valley To Montazuma
Pressure and Leakage Test Results (Pass/Fail)		Pass	
Date Tested		2-21-12	
Time Started		14:30	
Time Finished		16:30	
Pipe Diameter		6" D.I.P.	
Footage Tested		736 LF	
Allowable Leakage		102 oz	
Leakage Observed		32 oz	
Pressure at Test Point		208	
Employee Observing the Test (Please Print Legibly)	William Alldedge		
Signature of Employee Observing the Test	<i>William Alldedge</i>		

2.

DISINFECTION SAMPLING		Date	2-22-12			
Initial Sampling (Minimum 50 ppm available chlorine)	Time		8:15			
	ppm Cl <sub>2</sub>		80			
	Date		2-23-12			
After 24 Hours Detention Time (Minimum 10 ppm free chlorine)	Time		8:15			
	ppm Cl <sub>2</sub>		70			
	Date		2-28-12			
After Sufficient Flushing (Water is clear and system Cl <sub>2</sub> residual is measured)	Time		12:00			
	ppm Cl <sub>2</sub>		7			
	Date		2-28-12			
Bacteriological Sampling(s):	Time		12:30			
	Attached (Y/N)		Yes	No	Yes	No
			Yes	No	Yes	No

3.

<p><b>Certification</b></p> <p>I, <u>William Alldedge</u>, certify that I have inspected the work performed and have found it to be satisfactory and in accordance with Arizona Administrative Code, Arizona Engineering Bulletins, and the approved specifications.</p> <p><u>William Alldedge</u>      <u>3/2/12</u>          Authorized Persons Signature      Date</p>	<p><b>Professional Seal</b>          As per A.A.C. R18-5-507(B)(1)</p>
--	--



Regina Lynde Arizona Water Company 3805 N. Black Canyon Hwy Phoenix, AZ85015	Project: Specials Project Number: 111-34301-4930 A-Q Cliffside Tr. 2/28/12	Reported: 03/02/12 09:21
---	---	-----------------------------

Analyte

111-34301-4930 (Initial Client # 8 (Initial Job # 2027050-01) Drain - Valley (G: N) Sampled 02/28/12 17:00  
Received: 03/02/12 09:21

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----	-------	----------	-------	----------	----------	--------	-------

Legend Technical Services of Arizona, Inc.

Microbiology

E. coli	Absent		P/A	1	B2C0016	02/29/12 17:00	02/29/12 17:00	SM 9223B	
Total Coliforms	Absent		P/A	1	B2C0016	02/29/12 17:00	02/29/12 17:00	SM 9223B	

Sample Condition Upon Receipt:

Reg: Temperature: 3.60 C  
 All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

**Holding Times:** All holding times were met unless otherwise qualified.  
**QA/QC Criteria:** All analyses met method requirements unless otherwise qualified.  
**Accreditations:** AZ(PHX)0004, AZ(TUC)0004, AHA#102982, CDC ELITE Member.  
 Accreditation is applicable only to the test methods specified on each scope of accreditation held by LEGEND.  
**Comments:** There were no problems encountered during the processing of the samples, unless otherwise noted. All samples were analyzed on a "wet" basis unless designated as "dry weight".

Notified John of the absent results on 03/02/12- BF

Notes and Definitions

Sample

Case

Legend Technical Services of Arizona, Inc.

*Barbara Frank*

Client Services Representative

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Phone Number: (602) 324-6100



# Yavapai County Development Services

## Prescott Office

500 S. Marina Street, Prescott, AZ 86303  
(928) 771-3214 Fax: (928) 771-3432



## Cottonwood Office

10 S. 6<sup>th</sup> Street, Cottonwood, AZ 86326  
(928) 639-8151 Fax: (928) 639-8153

Addressing - Building Safety - Customer Service & Permitting - Environmental - Land Use - Planning

## CERTIFICATE OF APPROVAL TO CONSTRUCT WATER FACILITIES

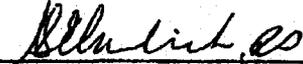
<b>Y. C. D. S. E.U. File No: A52011001132</b>	<b>APN: 800-17-053J</b>
<b>System Name: Arizona Water Company-Rimrock</b>	<b>13-046</b>
<b>System Owner/Address: AZ Water Co. P.O. Box 29006 Phoenix, AZ 85038</b>	
<b>Project Name: Montezuma Fairway Villas Water Line Extension</b>	
<b>Project Applicant/Address: AZ Water Co. P.O. Box 29006 Phoenix, AZ 85038</b>	
<b>Project Location: Rimrock, Arizona</b>	
<b>Project Description: Replace 1230LF of two existing 2" GS water distribution systems with 700LF of 6" DIP w/Polywrap and replace 23 service connections along Cliffside Trail to serve the Montezuma Fairway Villas.</b>	

Approval to construct the above-described facilities, as represented in the approved plan documents on file at Yavapai County Development Services- Environmental Unit, is hereby subject to the following Provisions:

- Construction shall be in accordance with plans and specifications stamped "YCDS-EU Construction Authorization (Approval to Construct)", which are dated and signed by the authorized Environmental Unit staff.
- Issuance of this "Approval to Construct" does not authorize construction in any County, Town, City or State road rights-of-way for this project. A separate permit may be required. Please contact the appropriate jurisdiction for this permit.

Provisions are continued on following pages.

The state law, A. R. S. §49-104.B.10, requires that construction of the project must be in accordance with rules and regulations of Arizona Department of Environmental Quality and Yavapai County Development Services- Environmental Unit. If construction has not started within one year of the date of this approval, this certificate will be void and a written extension of time shall be required.

 11/1/2011 for  
Date Approved

Geoff Meek, RS, Manager  
Environmental Unit

CC: Project Applicant  
System Owner  
Engineer  
Public Works: Joe Huot  
Planning

**RECEIVED**  
NOV 8 2011

ARIZONA WATER COMPANY  
PHOENIX - ENGINEERING

- **The Project Owner shall retain the services of a professional engineer before starting project construction to provide detailed construction inspection of this project. Upon completion of construction, the engineer shall fill out the Engineer's Certificate of Completion and forward it to the Environmental Unit staff with sealed "As-Built" plans, construction and test data. "clouding" or other effective identification method shall conspicuously identify the changes shown in the "as-built" plans. Upon receipt of these materials, the Environmental Unit staff will review the file and if in order, issue an APPROVAL TO OPERATE.**
- **The Project Owner shall not begin operation of the newly constructed facility until an APPROVAL TO OPERATE is issued by the Department.**
- **Approval to Construct is based on plans submitted by Arizona Water Company, signed by James T. Wilson, PE, and dated 24 October 2011.**
- **Microbiological testing must be completed in accordance with AWWA requirements.**
- **System must have an agreement with an appropriate Certified Operator for system operation.**
- **This approval does not supersede or eliminate the necessity of obtaining permits or approvals from other county, state or federal agencies or departments.**

# Yavapai County Development Services

Prescott Office  
500 S. Marina Street, Prescott, AZ 86303  
(928) 771-3214 Fax (928) 771-3432



Cottonwood Office  
10 S. 6<sup>th</sup> Street, Cottonwood, AZ 86326  
(928) 639-8151 Fax (928) 639-8153

Addressing - Building Safety - Customer Service & Permitting - Environmental - Land Use - Planning

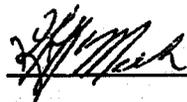
## CERTIFICATE OF APPROVAL TO OPERATE WATER FACILITIES

Y. C. D. S. E.U. File No: A52011001132	APN: 800-17-053J
System Name: Arizona Water Company - Rimrock	13-046
System Owner/Address: AZ Water Co. P.O. Box 29006 Phoenix, AZ 85038	
Project Name: Montezuma Fairway Villas Water Line Extension	
Project Applicant/Address: AZ Water Co. P.O. Box 29006 Phoenix, AZ 85038	
Project Location: Rimrock, Arizona	
Project Description: Replace 1230LF of two existing 2" GS water distribution systems with 700LF of 6" DIP w/Polywrap and replace 23 service connections along Cliffside Trail to serve the Montezuma Fairway Villas.	

Approval to operate the above-described facilities (as represented in the approved plan documents on file with the Yavapai County Development Services-Environmental Unit) is hereby given, subject to the following provisions:

- Approval is based on the "As -Built" drawings and Engineer's Certificate of Completion signed and dated 20 March 2012 by James T. Wilson, PE.
- System must have an agreement with an appropriate Certified Operator for system operation.
- This approval does not supersede or eliminate the necessity of obtaining permits or approvals from other county, state or federal agencies or departments.
- Issuance of this "Approval to Operate" does not authorize construction in any County, Town, City or State road rights-of-way for this project. A separate permit may be required. Please contact the regulatory highway department for this permit.

State law, A.R.S. 49-104, B.10, requires that the operation of the project must be in accordance with the rules and regulations of the Arizona Department of Environmental Quality.

  
\_\_\_\_\_  
Geoff Meek, RS Manager  
Environmental Unit

4-26-12  
Dated

cc:

Y.C.D.S.-E.U. FILE  
Design Engineer  
Project Applicant  
System Owner  
Public Works: Joe Huot  
Planning

**RECEIVED**

MAY 1 2012

ARIZONA WATER COMPANY  
PHOENIX - ENGINEERING

1-4930



# ARIZONA WATER COMPANY

## CONSTRUCTION PLACED IN SERVICE NOTICE

WORK AUTHORIZATION NO.: 1-4930

DIVISION: Verde Valley

DATE PLACED IN SERVICE: 5 | 23 | 12

CONTRACT NO:

FOR PURPOSES OF MODIFIED ACCELERATED COST RECOVERY SYSTEM, AN ASSET IS "PLACED IN SERVICE" WHEN IT IS IN A CONDITION OR STATE OF READINESS AND AVAILABILITY FOR A SPECIFICALLY ASSIGNED FUNCTION, WHETHER IT BE FOR USE IN A TRADE OR BUSINESS, OR FOR THE PRODUCTION OF INCOME.

I CERTIFY THAT THE ASSET(S) CONSTRUCTED PURSUANT TO THE PROVISIONS OF THE ABOVE-REFERENCED WORK AUTHORIZATION ARE READY FOR SERVICE AS OF THE DATE SHOWN ABOVE.

J. L. Kes.  
Division Manager of Operations Superintendent  
(signature)

5/23/12.  
Date

**SUBMIT ORIGINAL TO ACCOUNTING DEPARTMENT**

A-13-1  
FKS 11/24/11

**WA 1-4931**

# ARIZONA WATER COMPANY WORK AUTHORIZATION

W.A. NUMBER: 1-4931  
 P.E. NUMBER:  
 BUDGET ITEM NO.: B-1  
 SHEET NO.: 1 of 2

SYSTEM: RIMROCK DIVISION: VERDE VALLEY TAX CODE: 21690	WORK TO START BY: UPON AUTHORIZATION WORK TO BE FINISHED BY: WITHIN 60 DAYS
--	--

DESCRIPTION OF WORK:  
 Replace approximately 850 LF of failing 4-inch galvanized steel water main with 6-inch ductile iron water main, replace two double services and two single services on Antigua Way. Construct in accordance with attached drawings and/or Arizona Water Company specifications.

FACTORS JUSTIFYING WORK:  
 2012 Approved Budget Item (\$50,000)  
 Water loss in the Rimrock water system has historically and currently exceeds 15%. This section of water main has had a sharp increase in the number of leaks in the last year. Since 2002, over 19 repairs on this water main have been recorded; 11 of those have been since the beginning of 2011 (see attached leak map).

COST ESTIMATE		AUTHORIZATION	DATE
COST OF WORK:		PREPARED BY: <i>Andy Haas</i> Andy Haas	1-5-12
MATERIAL	0	REVIEWED FOR DESIGN VERIFICATION: <i>Charles Briggs</i> Charles Briggs	01-05-2012
LABOR	2,350	REVIEWED BY: <i>Mike Loggins</i> Mike Loggins	1-8-12
CONTRACT PORTION	56,182	APPROVED BY ENGINEERING: <i>Fred Schneider</i> Fredrick Schneider	1-5-12
OVERHEAD	6,430	APPROVED BY PRESIDENT: <i>William Gerfield</i> William Gerfield	1/5/12
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 64,971	AUTHORIZED BY PRESIDENT: <i>William Gerfield</i> William Gerfield	1-10-2012
FUNDS RECEIVED:		CONSTRUCTION RELEASE:	
CONTRIBUTIONS RECEIVED	0		
REFUNDABLE ADVANCES RECEIVED	0		
TOTAL CONTRIBUTIONS/ADVANCES	0		
NET CASH REQUIRED	\$ 64,971		

COMMENTS:  
 The \$15,000 overage is being transferred from WA 1-4874 (Montezuma Haven ARF) since that project has a projected underage of \$50,000.

**RELEASED TO CONSTRUCTION**  
 Authorized by FRED SCHNEIDER  
 Date 1/10/2012  
**2012 BUDGET**

AFH

**ARIZONA WATER COMPANY**  
**WORK AUTHORIZATION - DETAIL SHEET**

W.A. NUMBER: 1-4931  
 P.E. NUMBER:  
 BUDGET ITEM NO.: B-1  
 SHEET NO.: 2 of 2

REQUIREMENT PROPERTY UNITS	FOR REFUNDABLE	UNIT DESCRIPTION	QUANTITY	FOR NON-REFUNDABLE AND COST ESTIMATE

PROJECT DESCRIPTION:  
 Replace approximately 850 LF of failing 4-inch galvanized steel water main with 8-inch ductile iron water main, replace two double services and two single services on Antigua Way.

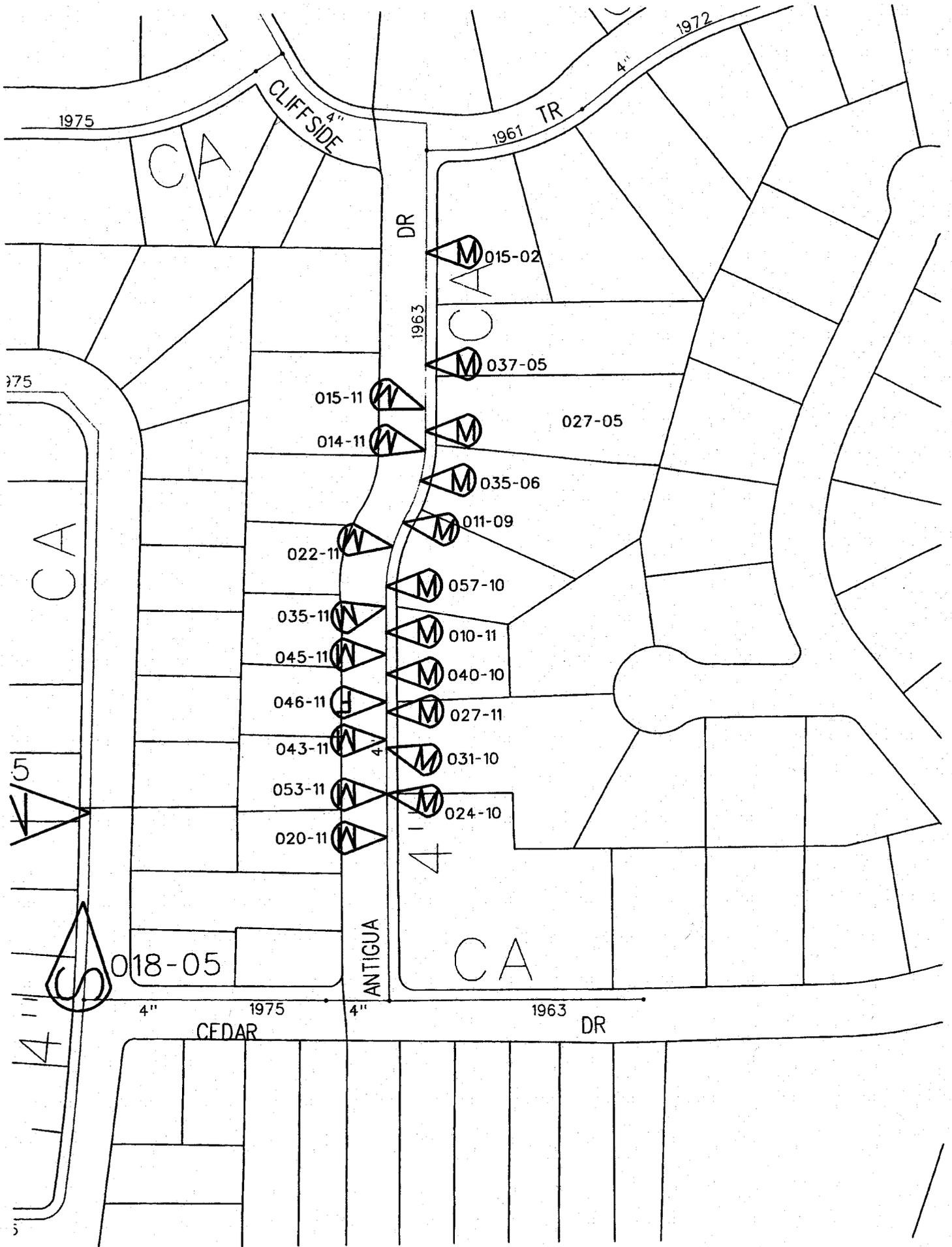
C O N T R A C T  W O R K	DESCRIPTION	PLANT PROP ADOT	QUANTITY	UNIT COST	TOTAL
	Install 6" DIP w/polywrap	343	850	\$ 46.80	\$ 38,930
	Install 4" Tapping Sleeve and Valve	343	1	2,905.00	2,905
	Install 6" x 4" Reducer	343	1	93.00	93
	Install 6" Gate Valve and Misc. Fittings	343	1	1,321.80	1,322
	Tie in existing 4" RT Tee	343	1	472.00	472
	Install air release valve	343	1	2,286.00	2,286
	Contracting Tax	343	1	1,873.46	1,873
	100% Performance and Payment Bond	343	1	1,546.35	1,546
SERVICE CONNECTIONS COMPLETE: DOUBLE-LONG	345	2	1,705.00	3,410	
SERVICE CONNECTIONS COMPLETE: DOUBLE-SHORT	345				
SERVICE CONNECTIONS COMPLETE: SINGLE-LONG	345	3	1,115.00	3,345	
SERVICE CONNECTIONS COMPLETE: SINGLE-SHORT	345				
<b>TOTAL CONTRACT WORK</b>				<b>\$ 58,182</b>	

M A T E R I A L S	DESCRIPTION	PLANT PROP ADOT	QUANTITY	UNIT COST	TOTAL
	SERVICE CONNECTIONS: DOUBLE-LONG	345			
	SERVICE CONNECTIONS: DOUBLE-SHORT	345			
	SERVICE CONNECTIONS: SINGLE-LONG	345			
	SERVICE CONNECTIONS: SINGLE-SHORT	345			
	METERS	345			
<b>TOTAL MATERIALS</b>				<b>\$ -</b>	

L A B O R	DESCRIPTION	PLANT PROP ADOT	QUANTITY	UNIT COST	TOTAL
	TESTING FEE	343	1	\$ 350.00	350
	PERMIT FEE				
	SURVEY FEE				
	FIELD INSPECTION	343	40	50.00	2,000
	INSTALL SERVICE CONNECTIONS: DOUBLE-LONG	345			
	INSTALL SERVICE CONNECTIONS: DOUBLE-SHORT	345			
	INSTALL SERVICE CONNECTIONS: SINGLE-LONG	345			
	INSTALL SERVICE CONNECTIONS: SINGLE-SHORT	345			
<b>TOTAL LABOR</b>				<b>\$ 2,350</b>	

<b>SUBTOTAL - CONTRACT WORK, MATERIALS, AND LABOR</b>				<b>\$ 58,532</b>
<b>OVERHEAD</b>				<b>8,438</b>
<b>TOTAL</b>				<b>\$ 64,971</b>

AFH



1975

CLIFFSIDE  
4"

1961 TR  
4"

1972

DR

M 015-02

1963

M 037-05

1975

015-11

027-05

014-11

M

M 035-06

022-11

M 011-09

M 057-10

035-11

M 010-11

045-11

M 040-10

046-11

M 027-11

043-11

M 031-10

053-11

M 024-10

020-11

018-05

ANTIGUA

CA

4"

CEDAR

1975

4"

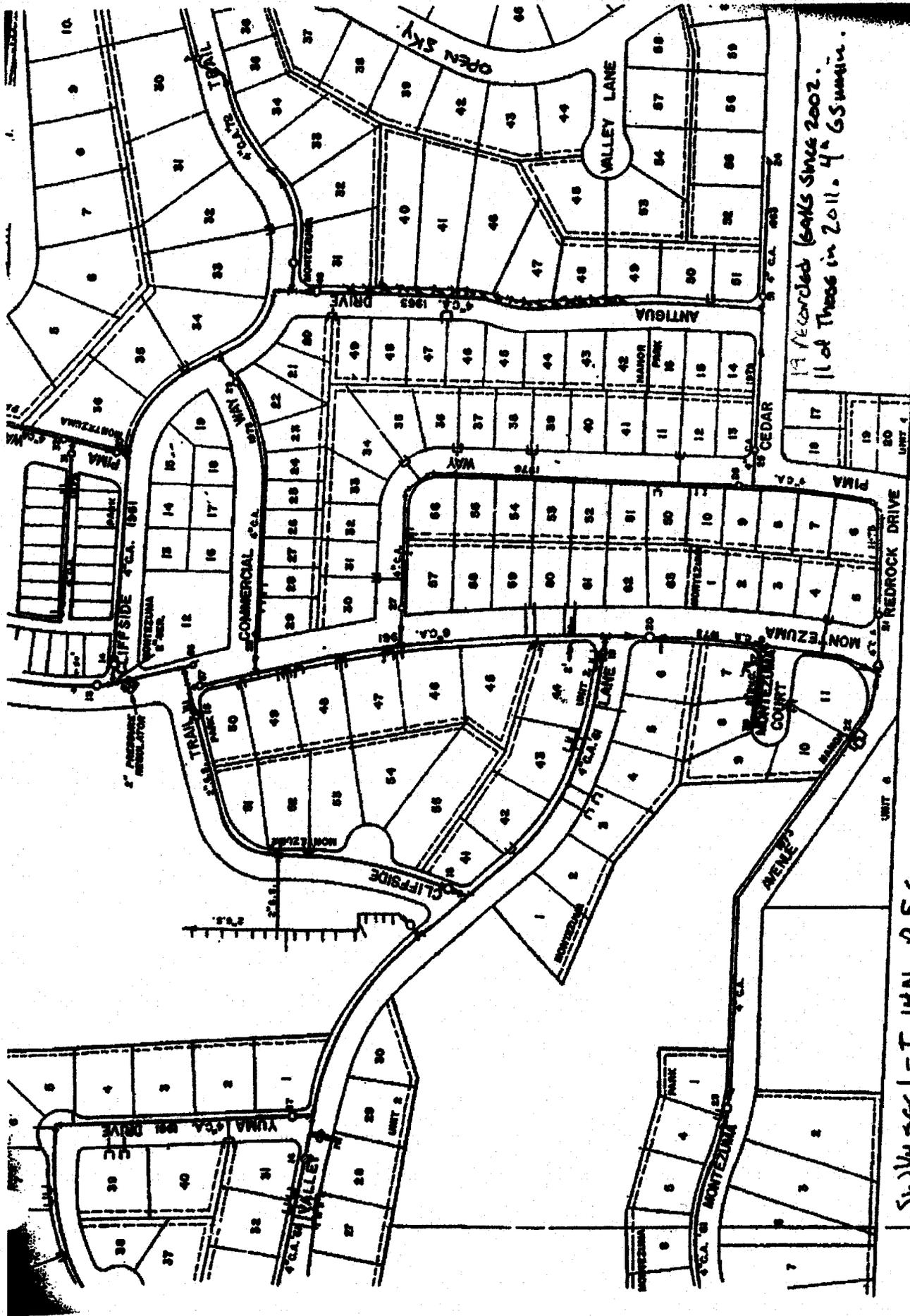
1963

DR

5

4"

5



19 Recorded (lots since 2002.  
 11 of these in 2011. 4<sup>th</sup> GS summary.

SW 1/4 sec 1 - T. 14N, R. 25E.

Marthe Dare  
PO Box 5674  
Lake Montezuma, AZ 86342  
(928) 284-2302

Monday, June 13, 2011

To: John Snickers  
Arizona Water

Fax: (928) 282-6131

RE: Pipe Mainline Replacement on Antigua

Dear Mr. Snickers:

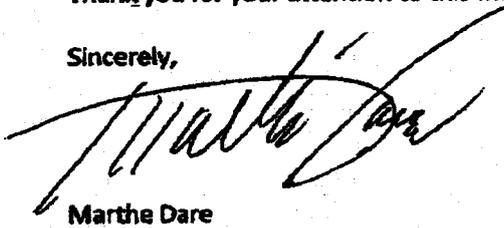
As mentioned in our phone conversation, I live at 4310 Coyote Canyon, Lake Montezuma, Arizona. On Antigua, the mainline pipe has needed replacement for more than a few years. Large leaks of water occur at least twice a month now and it is always in the same place.

It seems a great waste of water to let it run without fixing it and I do not understand why a new pipe has not been used by now to fix the problem. More money was spent in an attempt to patch it than if there had been a pipe mainline replacement the very first time it had leaked.

Please see that this letter gets to the main office in Phoenix because management needs to realize that stopgap measures are not working, and if neglected, the leaks will occur again. Water—which is a scarce resource in Arizona—will be wasted.

Thank you for your attention to this matter.

Sincerely,



Marthe Dare



ARIZONA WATER COMPANY

COPY

BIDDING SUMMARY

DIVISION: Verde Valley SYSTEM: Rimrock W.A. NUMBER:

PROJECT: Replace 810 LF of 4" galvanized steel with 850 LF of 6" ductile iron pipe with poly wrap and replace services along Antigua Way in Rimrock.

BID DRAWINGS RECEIVED? [X] Yes [ ] No IF YES, DATE RECEIVED: 21-Oct-11

PROJECT BID BY: John Snickers DATE BID PACKAGE SENT: October 27, 2011

BIDS DUE BY: November 14, 2011 BID BOND REQUIRED? [X] Yes [ ] No

BID PACKAGE SENT TO: Arizona Northern Equipment Bid Proposal Received? [ ] Yes [X] No Bid Bond Received? [ ] Yes [X] No Bid Amount: \$0

BID PACKAGE SENT TO: J. Wise Corp Bid Proposal Received? [ ] Yes [X] No Bid Bond Received? [ ] Yes [X] No Bid Amount: \$0

BID PACKAGE SENT TO: Reay Brothers Excavation Bid Proposal Received? [ ] Yes [X] No Bid Bond Received? [ ] Yes [X] No Bid Amount: \$0

BID PACKAGE SENT TO: Rocky Construction, Inc. Bid Proposal Received? [X] Yes [ ] No Bid Bond Received? [ ] Yes [X] No Bid Amount: \$56,182

BID PACKAGE SENT TO: Tiffany Construction Company, Inc. Bid Proposal Received? [X] Yes [ ] No Bid Bond Received? [X] Yes [ ] No Bid Amount: \$62,650

Low Bidder? Rocky Construction, Inc.

Successful Bidder? Rocky Construction, Inc.

If the successful bidder was not the low bid, explain why they were chosen:

Return this summary sheet along with ALL bids submitted and return the entire package to the Engineering Department. Incomplete packages will NOT be released to construction.

**MASTER AGREEMENT  
FOR ONGOING CONSULTING AND ENGINEERING SERVICES  
BETWEEN ARIZONA WATER COMPANY  
AND INTI, LLC**

THIS AGREEMENT is made and entered into on this 25<sup>th</sup> day of January, 2011, by and between Arizona Water Company, an Arizona corporation, hereinafter referred to as "Client," and Inti, LLC, a limited liability company hereinafter referred to as "Consultant."

**RECITALS:**

WHEREAS, Client desires that from time to time Consultant furnish Client certain consulting services;

WHEREAS, Consultant has available and offers to provide personnel and facilities necessary to perform the services desired under this Agreement;

NOW, THEREFORE, Client and Consultant agree as follows:

**I. DESCRIPTION OF PROJECT**

Services to be provided shall be as described in written task orders made pursuant to and referencing this Agreement; the form of such task order is attached hereto as Exhibit A.

**II. SCOPE OF CONSULTANT SERVICES**

Consultant agrees to perform those basic services described in separate written task order(s) signed by Client and Consultant (the "Services"). This Agreement provides the terms, obligations and conditions which shall control all work under such task order(s). The printed terms and conditions, if any, contained on the reverse side(s) of an accepted task order shall not apply to services provided under this Agreement. Unless modified in writing by both parties, duties of Consultant shall not exceed those service specifically described in each task order. Any work authorized by Client prior to the issuance of a written task order must be authorized in writing and any services then performed by Consultant will be presumed to have been completed under the terms of this Agreement.

**III. RESPONSIBILITIES OF CLIENT**

In addition to payment for the Services performed under this Agreement, Client shall:

1. Assist and cooperate with Consultant in any manner necessary and within its ability to facilitate Consultant's performance under this Agreement.

2. Designate in writing a person to act as Client's representative with respect to this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define Client's policies, make decisions and execute documents on Client's behalf.

3. Furnish Consultant with all technical data in Client's possession including, but not limited to, maps, surveys, drawings, soils or geotechnical reports, and any other information required by or useful to, Consultant in performance of the Services under this Agreement. Consultant shall be entitled to rely upon the information supplied by Client.

4. Notify Consultant of any known or potential health or safety hazards existing at or near the project site.

5. Provide access to and/or obtain permission for Consultant to enter upon all projects whether or not owned by Client, as required to perform and complete the Services.

#### IV. AMERICANS WITH DISABILITIES ACT

Any other provision of this Agreement to the contrary notwithstanding, unless otherwise specified in the Scope of Services, Client's contractors shall have sole responsibility as between Client and Consultant for compliance with the Americans With Disabilities Act ("ADA") 42 U.S.C. 12101 et. Seq. and the related regulations. Consultant shall provide client with applicable ADA criteria which maybe required.

#### V. AUTHORIZATION AND COMPLETION

In signing this Agreement, Client grants Consultant specific authorization to proceed with work as described in Scope of Work and under the terms of this Agreement.

#### VI. COMPENSATION

For the Services described in each task order, Client agrees to pay, and Consultant agrees to accept the total compensation in accordance with compensation terms included in the task order. Where Consultant has provided Client with a breakdown of the total compensation into subtasks, such breakdowns are estimates only. Consultant may re-allocate compensation between tasks, provided total compensation is not exceeded without the written approval of Client. Time charges shall be in accordance with the Hourly Rate Schedule contained in Exhibit B. The rate schedule may be revised annually by mutual written Agreement. Annual revisions to the Hourly Rate Schedule shall be submitted prior to the date that they take effect. Compensation shall be billed monthly in summary form. Payment to Consultant is due upon presentation of invoice to Client.

As long as Consultant has not defaulted under this Agreement, Client shall pay Consultant within 30 days of the date of Consultant's invoices for services performed and reimbursable expenses incurred under this Agreement. Client may contest any portion of any such invoice, amounts questioned or contested shall be identified and notice given to Consultant within 15 days of the date of the invoice. Any portion of any invoice not contested shall be deemed to be accepted and approved for payment and shall be paid to Consultant within 30 days of the date of the invoice. The Consultant agrees to cooperate with Client in a mutual effort to resolve promptly any contested portions of the Consultant's invoices.

In the event any uncontested portions of any invoice are not paid within 30 days of the date of Consultant's invoice, interest on the unpaid balance shall accrue beginning with the 31st day at the maximum interest rate permitted by law, and Consultant shall have the right to suspend work per Article XV, Suspension of Work.

## VII. RESPONSIBILITY OF CONSULTANT

### A. Standard of Care Professional Services

Subject to the limitations inherent in the agreed scope of work as to the degree of care, amount of time and expenses to be incurred, and subject to any other limitations contained in this Agreement, Consultant shall perform its Services in accordance with generally accepted standards and practices customarily utilized by competent engineering firms in effect at the time Consultant's Services are rendered. Consultant does not expressly or impliedly warrant or guarantee its Services.

### B. Reliance upon Information Provided by Others

If Consultant's performance of services hereunder requires Consultant to rely on information provided by other parties (excepting Consultant's subcontractors), Consultant shall not independently verify the validity, completeness, or accuracy of such information unless otherwise expressly engaged to do so in writing by Client.

### C. Consultant's Opinion of Costs

Client acknowledges that construction cost estimates, financial analyses and feasibility projections are subject to many influences including, but not limited to, price of labor and materials, unknown or latent conditions of existing equipment or structures, and time or quality of performance by third parties. Client acknowledges that such influences may not be precisely forecasted and are beyond the control of Consultant and that actual costs incurred may vary substantially from the estimates prepared by Consultant. Consultant does not warrant or guarantee the accuracy of construction or development cost estimates.

### D. Construction Phase Services

1. Consultant's Activities at Construction Site. The presence of Consultant's personnel at a construction site, whether as on-site representative, resident engineer, construction manager, or otherwise, does not make Consultant responsible for those duties that belong to Client and/or construction contractors or others, and does not relieve construction contractors or others of their obligations, duties, and responsibilities, including, but not limited to, construction methods, means, techniques, sequences, and procedures necessary for completing all portions of the construction work in accordance with the contract documents, any health or safety programs and precautions required by such construction work, and any compliance with applicable laws and regulations. Any inspection or observation of the contractor's work is solely for the purpose of determining that the work is generally proceeding in conformance with the intent of the project specifications and contract documents. Except for its own Contractors, Consultant makes no warranty or guarantee with respect to the performance of a contractor. Consultant has no authority to exercise control over any construction contractor in connection with their work or health or safety programs and

precautions. Except to protect Consultant's own personnel and except as may be expressly required elsewhere in the scope of services, Consultant has no duty to inspect, observe, correct, or report on health or safety deficiencies of the construction contractor.

2. Shop Drawing and Submittal Review. If required by Consultant's Scope of Services, Consultant shall review shop drawings or other contractor submittals for general conformance with the intent of the contract documents. Except for its own Contractors, Consultant shall not be required to verify dimensions, to engineer contractor's shop drawings or submittals, nor to coordinate shop drawings or other submittals with other shop drawings or submittals provided by contractor.

3. Record Drawings. Record drawings, if required, will be prepared, in part, on the basis of information compiled and furnished by others, and may not always represent the exact location, type of various components, or exact manner in which the Project was finally constructed. Except for its own Contractors, Consultant is not responsible for any errors or omissions in the information from others that are incorporated into the record drawings.

#### VIII. ASSIGNMENT OF TASKS TO AFFILIATES

If the authorized scope of work requires professional services to be performed in a jurisdiction in which Consultant renders professional services solely through a locally registered engineering affiliate for purposed of compliance with professional licensing requirements in that jurisdiction, Consultant may, in its discretion, upon notice to Client, assign its contractual rights and obligations with respect to such services to such locally registered engineering affiliate.

#### IX. ASBESTOS / HAZARDOUS MATERIALS

Consultant and Consultant's subcontractors shall have no responsibility for the discovery, handling, removal, or disposal of or exposure of persons to asbestos or hazardous or toxic materials that are present in any form at the Project site. Professional services related to or in any way connected with the investigation, detection, abatement, replacement, use, specification, or removal of products, materials, or processes containing asbestos or hazardous or toxic materials are beyond the scope of this Agreement. Client shall be solely responsible for notifying all appropriate governmental agencies, including the potentially effected public, of the existence of any hazardous or toxic materials located on or at the project site any any time.

In the event Consultant encounters asbestos or hazardous materials at the jobsite, Consultant may, at its option and without liability for damages, suspend the performance of services on the Project until such time as Client and Consultant mutually agree on an amendment to this Agreement to address the issue, or Client retains another specialist consultant or contractor to identify, classify, abate and/or remove the asbestos and/or hazardous materials.

#### X. CONSULTANT'S WORK PRODUCT

##### A. Scope

Consultant's work product which is prepared solely for the purposes of this Agreement, including, but not limited to, drawings, test results, recommendations and technical specifications, whether in hard copy or electronic form, shall become the property of Client when Consultant has been fully compensated as set forth herein. Consultant may keep copies of all work product(s) for its records.

Consultant and Client recognize that Consultant's work product submitted in performance of this Agreement is intended only for the project described in this Agreement. Client's alteration of Consultant's work product or its use by Client for any other purpose shall be at Client's sole risk, and Client shall hold harmless and indemnify Consultant against all losses, damages, costs and expense, including attorneys' fees, arising out of or related to any such alteration or unauthorized use.

**B. Electronic Copies**

If requested, solely as an aid and accommodation to Client, Consultant may provide copies of its work product documents in computer-readable media ("electronic copies," "CADD"). These documents will duplicate the documents provided as work product, but will not bear the signature and professional seals of the registered professionals responsible for the work. Client is cautioned that the accuracy of electronic copies and CADD documents may be compromised by electronic media degradation, errors in format translation, file corruption, printing errors and incompatibilities, operator inexperience and file modification. Consultant will maintain the original copy, which shall serve as the official, archived record of the electronic and CADD documents. Client agrees to hold harmless, indemnify and defend Consultant from any claims arising out of or relating to any change or alteration of electronic copies and CADD documents authorized by the Client, Client's personnel, or Client's Contractor's.

**XI. INDEMNIFICATION**

**A. Indemnification of Client**

Consultant agrees to indemnify and hold Client harmless from and against any liability to the extent arising out of the negligent errors or negligent omissions of Consultant, its agents, employees, or representatives, in the performance of Consultant's duties under this Agreement.

**B. Consequential Damages**

Regardless of any other term of this Agreement, in no event shall either party be responsible or liable to the other for any incidental, consequential, or other indirect damages.

**XII. CONSULTANT'S INSURANCE**

Consultant shall procure and maintain the following minimum insurance:

1. Commercial general liability insurance, including personal injury liability, blanket contractual liability and broad-form property damage liability coverage. The combined single limit for bodily injury and property damage shall be not less than \$1,000,000.

2. Automobile bodily injury and property damage liability insurance covering owned, non-owned, rented, and hired cars. The combined single limit for bodily injury and property damage shall be not less than \$1,000,000.

3. Statutory workers' compensation and employer's liability insurance as required by state law.

4. Professional liability insurance. The policy limit shall be not less than \$1,000,000.

Client shall be named as additional insured on policies 1 and 2 above. Upon execution of this Agreement, Consultant will provide a certificate of insurance to Client. Consultant will keep the certificate current at all times while this Agreement is in effect. The Consultant will provide a 30-day written notice in the event the above policies are cancelled.

### XIII. CONFIDENTIALITY

Consultant agrees it will maintain the confidentiality of all material it receives from Client which Client has clearly identified as "Confidential" and will not disclose, distribute, or publish to any third party such confidential information without the prior permission of Client. Notwithstanding the foregoing, Consultant shall have no confidentiality obligation with respect to information that:

1) becomes generally available to the public other than as a result of disclosure by Consultant or its agents or employees;

2) was available to Consultant prior to its disclosure by Client;

3) becomes available to Consultant from a third party who is not, to the knowledge of Consultant, bound to retain such information in confidence.

In the event Consultant is compelled by subpoena, court order, or administrative order to disclose any confidential information, Consultant shall promptly notify Client and shall cooperate with Client prior to disclosure so that Client may take necessary actions to protect such confidential information from disclosure.

### XIV. SUBCONTRACTS

Consultant shall be entitled, to the extent determined appropriate by Consultant, to subcontract any portion of the services to be performed under this Agreement.

## XV. SUSPENSION OF WORK

Work under this Agreement may be suspended as follows:

1. By Client. By written notice to Consultant, Client may suspend all or a portion of the Work under this Agreement if unforeseen circumstances beyond Client's control make normal progress of the Work impracticable. Consultant shall be compensated for its reasonable expenses resulting from such suspension including mobilization and demobilization. If suspension is greater than 90 days, then Consultant shall have the right to terminate this Agreement in accordance with Article IVI, Termination of Work.

2. By Consultant. By written notice to Client, Consultant may suspend the Work if Consultant reasonably determines that working conditions at the Site (outside Consultant's control) are unsafe, or in violation of applicable laws, or in the event Client has not made timely payment in accordance with Article VI, Compensation, or for other circumstances not caused by Consultant that are interfering with the normal progress of the Work. Consultant's suspension of Work hereunder shall be without prejudice to any other remedy of Consultant at law or equity.

## XVI. TERMINATION OF WORK

A. This Agreement may be terminated by Client as follows: (1) for its convenience on 15 days' notice to Consultant, or (2) for cause, if Consultant materially breaches this Agreement through no fault of Client and Consultant neither cures such material breach nor makes reasonable progress toward cure within 15 days after Client has given written notice of the alleged breach to Consultant.

B. This Agreement may be terminated by Consultant as follows: (1) for cause, if Client materially breaches this Agreement through no fault of Consultant and Client neither cures such material breach nor makes reasonable progress toward cure within 15 days after Consultant has given written notice of the alleged breach to Client, or (2) upon five days' notice if work under this Agreement has been suspended by either Client or Consultant for more than 90 days in the aggregate.

### C. Payment upon Termination

In the event of termination, Consultant shall perform such additional work as is reasonably necessary for the orderly closing of the Work. Consultant shall be compensated for all work performed prior to the effective date of termination, plus work required for the orderly closing of the Work, including: (1) authorized work performed up to the termination date plus termination expenses, including all labor and expenses, at Consultant's standard billing rates, directly attributable to termination; (2) all efforts necessary to document the work completed or in progress; and (3) any termination reports requested by Client.

## **XVII. ASSIGNMENT**

This Agreement is binding on the heirs, successors, and assigns of the parties hereto. Except as otherwise set forth under Article VIII, Assignment of Tasks to Affiliates, this Agreement may not be assigned by Client or Consultant without prior, written consent of the other.

## **XVIII. NO BENEFIT FOR THIRD PARTIES**

The services to be performed by Consultant are intended solely for the benefit of Client, and no benefit is conferred on, nor contractual relationship established with any person or entity not a party to this Agreement. No such person or entity shall be entitled to rely on Consultant's services, opinions, recommendations, plans, or specifications without the express written consent of Consultant. No right to assert a claim against the Consultant, its officers, employees, agents, or consultants shall accrue to the construction Contractor or to any subcontractor, supplier, manufacturer, lender, insurer, surety, or any other third party as a result of this Agreement or the performance or nonperformance of the Consultant's services hereunder.

## **XIX. FORCE MAJEURE**

Consultant shall not be responsible for delays caused by circumstances beyond their reasonable control, including, but not limited to (1) strikes, lockouts, work slowdowns or stoppages, or accidents, (2) acts of God, (3) failure of Client to furnish timely information or to approve or disapprove Consultant's instruments of service promptly, and (4) faulty performance or nonperformance by Client, Client's independent consultants or contractors, or governmental agencies. Consultant shall not be liable for damages arising out of any such delay, nor shall the Consultant or Client be deemed to be in breach of this Agreement as a result thereof.

## **XX. INTEGRATION**

This Agreement represents the entire understanding of Client and Consultant as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered herein. This Agreement may not be modified or altered except in writing signed by both parties. Any purchase order issued by Client, whether or not signed by Consultant, and any terms and conditions contained in such purchase order which are inconsistent with this Agreement shall be of no force and effect.

## **XXI. SEVERABILITY**

If any part of this Agreement is found unenforceable under applicable laws, such part shall be inoperative, null, and void insofar as it conflicts with said laws, but the remainder of this Agreement shall be in full force and effect.

## **XXI. CHOICE OF LAW/JURISDICTION**

This Agreement shall be administered and interpreted under the laws of the State of Arizona. Jurisdiction of litigation arising from the Agreement shall be in the State of Arizona.

**XXIII. ATTORNEYS' FEES**

In the event either party commences legal proceedings against the other, then the prevailing party shall, in addition to any other recovery, be entitled to recover its reasonable attorneys' fees and all other costs of such proceeding.

**XXIV. NOTICES**

All notices required under this Agreement shall be delivered by personal delivery or first class mail and shall be addressed to the following persons:

Mr. Rama Inti  
President  
INTI, LLC  
4090 S. Melody Drive  
Chandler, Arizona 85249

Mr. Fred Schneider  
Vice President - Engineering  
Arizona Water Company  
P.O. Box 29006  
Phoenix, Arizona 85038

Notice shall be effective upon delivery to the above addresses. Project related instructions may be delivered by electronic mail. Either party may notify the other that a new person has been designated by it to receive notices, or that the address for the delivery of such notices has been changed, provided that, until such time as the other party receives such notice in the manner provided for herein, any notice addressed to the previously-designated person and/or delivered to the previously-designated address shall be effective.

**XXV. AUTHORIZATION**

The persons executing this Agreement on behalf of the parties hereto represent and warrant that the parties have all legal authority and authorization necessary to enter into this Agreement, and that such persons have been duly authorized to execute this Agreement on their behalf.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

INTI, LLC

Signature Rama Inti

Printed Name Rama Inti

Title President

Federal Tax ID number: 75-3065310

ARIZONA WATER COMPANY

Signature Fred Schneider

Printed Name Mr. Fred Schneider

Title Vice-President - Engineering

**"EXHIBIT B"**

**2011 RATE SCHEDULE**

**EFFECTIVE JANUARY 1, 2011 - DECEMBER 31, 2011**

	<b>HOURLY RATE</b>
<b>PRINCIPLE</b>	<b>\$80.00</b>
<b>REGISTERED LAND SURVEYOR</b>	<b>\$75.00</b>
<b>1 MAN GPS FIELD CREW</b>	<b>\$65.00</b>
<b>2 MAN CONVENTIONAL SURVEY FIELD CREW</b>	<b>\$75.00</b>
<b>DRAFT TECHNICIAN</b>	<b>\$50.00</b>

**AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND INTL LLC**

**TASK ORDER AUTHORIZATION**

INTL Project Number 22-2011

AWC Project Number Antigua Way Survey

Arizona Water Company  
P.O. Box 29006  
Phoenix, Arizona 85038-9006

Effective Date of Authorization 8-15-2011

Upon execution of this Task Order, and effective as of the date shown above, the parties agree that INTL LLC shall perform the following services:

**SCOPE OF SERVICES**

See attached INTI's Exhibits "A" and "B"

**COMPENSATION**

See attached INTI's Exhibits "A" and "B"

**GENERAL TERMS AND CONDITIONS**

INTI's services shall be governed by the Master Agreement dated January 25, 2011 together with this Task Order and any Exhibits attached hereto.

The services performed within this Task Order shall commence on or about August 10, 2011, and shall be complete on or before August 31, 2011.

INTI's Representative in charge of the services is Gerard Gomez, who may be contacted at 480-287-6168 and germog@cox.net. Client's Representative in charge of the services is Andy Haas, who may be contacted at 602-240-6860 and ahaas@azwater.com.

Arizona Water Company

INTL LLC

By Andrew J. Haas

By Rama Suti

Title Engineer

Title PRESIDENT

Date 8-15-2011

Date 8-12-2011

**INTI, LLC**  
**CIVIL ENGINEERS &  
LAND SURVEYORS**  
4080 South Melody Drive  
Chandler, AZ 85249  
480-287-6188 office  
480-323-2181 FAX

Rama Inti P.E., R.L.S. - Principal

*An SBE, DBE, MBE certified company*

August 1, 2011

Mr. Andrew Haas, E.I.T.  
ARIZONA WATER COMPANY  
PO Box 29006 - Phoenix AZ 85038-9006  
3805 N. Black Canyon Hwy - Phoenix AZ 85015-5351

Re: Land Survey Proposal for:

Montezuma Park Unit 7 – Antigua Way Survey – Rimrock, Arizona

Dear Valued Client:

We are pleased to present this Land Survey proposal on the above referenced project. Our scopes of services and costs are as follows:

**SCOPE OF SERVICES**

Project Corridor Survey..... (See "Exhibit A")

Mr. Andrew Haas  
AZ Water Company  
August 1, 2011

**INTI, LLC**

**CIVIL ENGINEERS &  
LAND SURVEYORS**

4090 South Melody Drive  
Chandler, AZ 85249  
480-287-8188 office  
480-323-2181 FAX

Rama Inti P.E., R.L.S. - Principal

*An SBE, DBE, MBE certified company*

**EXHIBIT "A"**

**Project Corridor Survey**

**a. Scope of Services**

**Antigua Way – Starting at Coyote Canyon shoot cross-sections every 50' with coordinates and elevation (X,Y,Z) continue northerly to Cliffside Trail. Locate all visible above ground structures and improvements within the R/O/W and any blue-stake markings. \***

**\*Note – Scope of Services "Exhibit A" provided by AZ Water Company is the prevailing document containing all required tasks to complete survey services.**

**YOUR RESPONSIBILITIES**

**Provide land surveyor with pertinent site information prior to initiating field survey. Any request for work outside the original "Scope of Services" will be billed at the following hourly rates (See "Exhibit B")**

Mr. Andrew Haas  
AZ Water Company  
August 1, 2011

**INTI, LLC**

**CIVIL ENGINEERS &  
LAND SURVEYORS**

4090 South Mealey Drive  
Chandler, AZ 85249  
480-287-6168 office  
480-323-2181 FAX

Rama Inti P.E., R.L.S. - Principal

*An SBE, DBE, MBE certified company*

**EXHIBIT "B"**

**Total Cost for Scope of Services from Exhibit "A"**

Project Corridor Survey.....\$1,000.00

**Total amount.....\$1,000.00**

**PROFESSIONAL SERVICES FEE SCHEDULE**

Any additional requests for services out of scope are billed at the following hourly rates.

Principal Engineer (PE)..... \$75.00

Principal Surveyor (RLS)..... \$75.00

Designer..... \$60.00

Drafter..... \$45.00

Survey Crew..... \$65.00 (rate for Arizona Water Company)

Project Management..... \$40.00

Office Administration..... \$30.00

Mr. Andrew Haas  
AZ Water Company  
August 1, 2011

**INTI, LLC**

**CIVIL ENGINEERS &  
LAND SURVEYORS**  
4090 South Melody Drive  
Chandler, AZ 85249  
480-287-6168 office  
480-323-2181 FAX

Rama Inti P.E., R.L.S. - Principal  
*An SBE, DBE, MBE certified company*

**EXHIBIT "B" (continued)**

**ITEMS NOT COVERED IN CONTRACT**

1. Mylars are \$15.00 per sheet
2. All Design and Permit fees for City and/or County Agencies.
3. Legal Descriptions or Exhibits required for easements or additional Right-Of-Way (R.O.W.)
4. Re-staking due to negligence from construction traffic and/or vandalism.

**CLOSING**

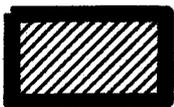
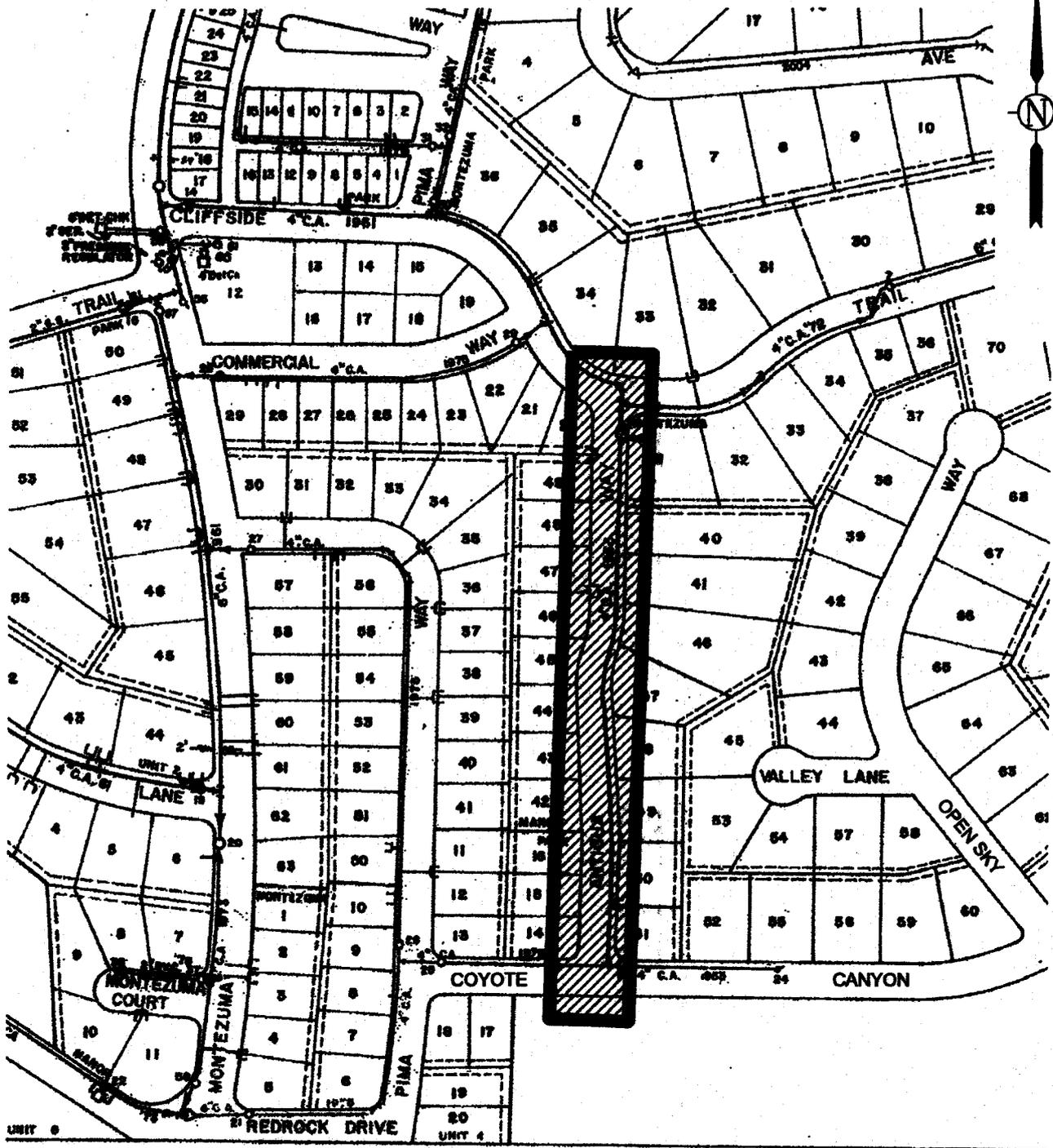
We at INTI, LLC are pleased to have provided you with this proposal for professional services. Thank you for the opportunity to serve you!

Sincerely,

Gerard Gomez  
Vice President – Land Survey

Cc - Rama Inti PE, RLS  
Principal

EXHIBIT B



Survey Area

**ARIZONA WATER COMPANY**

DESCRIPTION:

EXHIBIT B  
Map to Exhibit A  
Scope of Services

LOCATION:

Southwest quarter Section 1, T.14N.,R.5E.

DATE:

07.22.2011

SCALE:

1" = 200'

DRAWN BY:

CB

# TOPOGRAPHIC SURVEY ANTIGUA WAY CORRIDOR ARIZONA WATER COMPANY

LOCATED IN A PORTION OF THE SOUTHWEST QUARTER OF  
SECTION 1, TOWNSHIP 14 NORTH, RANGE 5 WEST  
GILA AND SALT RIVER BASE AND MERIDIAN, YAVAPAI COUNTY, ARIZONA



ANTIGUA WAY AERIAL  
(SEE SHEET 5 FOR EXPANDED VIEW)

NOTE: THIS SURVEY IS FOR THE PURPOSES OF THE PROJECT AND ALL AERIAL PHOTO LOCATIONS ARE APPROXIMATE.

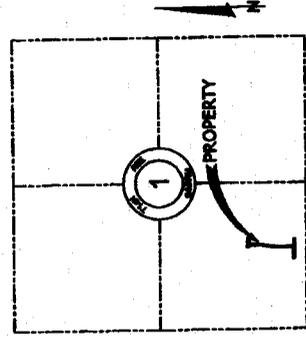
- NOTES:**
- 1) THE PURPOSE OF THIS SURVEY IS TO LOCATE ALL VISIBLE CORNER/POINTS/VERTICAL CONTROL, AND TO PROVIDE A COMPLETE AND EXHAUSTIVE SURVEY.
  - 2) CLIENT IS AWARE OF HIS RESPONSIBILITY TO PROVIDE NECESSARY INFORMATION SUCH AS TITLE RECORDS, RECORDS, AND LEGAL INSTRUMENTS (RECORDS OR NON-RECORDS) THAT MAY AFFECT THIS SURVEY. ALL SUCH INFORMATION IS TO BE PROVIDED TO THE SURVEYOR AT HIS OWNERS RISK.
  - 3) SURVEY PROPERTY IS LOCATED WITHIN A ZONED, UNZONED, OR UNCLASSIFIED AREA. ANY FUTURE DEVELOPMENT OF THE SURVEY PROPERTY SHALL BE SUBJECT TO ALL APPLICABLE ZONING AND REGULATIONS OF THE JURISDICTION APPLICABLE.
  - 4) THIS TOPOGRAPHIC SURVEY DOES NOT APPLY A BOUNDARY SURVEY WAS PERFORMED BY WIL, LLC

## CODE AND SYMBOL LEGEND

SYMBOL	DESCRIPTION
1	PROPERTY CORNER
2	ADJACENT PROPERTY CORNER
3	ADJACENT PROPERTY CORNER (NON-RECORDS)
4	ADJACENT PROPERTY CORNER (NON-RECORDS)
5	ADJACENT PROPERTY CORNER (NON-RECORDS)
6	ADJACENT PROPERTY CORNER (NON-RECORDS)
7	ADJACENT PROPERTY CORNER (NON-RECORDS)
8	ADJACENT PROPERTY CORNER (NON-RECORDS)
9	ADJACENT PROPERTY CORNER (NON-RECORDS)
10	ADJACENT PROPERTY CORNER (NON-RECORDS)
11	ADJACENT PROPERTY CORNER (NON-RECORDS)
12	ADJACENT PROPERTY CORNER (NON-RECORDS)
13	ADJACENT PROPERTY CORNER (NON-RECORDS)
14	ADJACENT PROPERTY CORNER (NON-RECORDS)
15	ADJACENT PROPERTY CORNER (NON-RECORDS)
16	ADJACENT PROPERTY CORNER (NON-RECORDS)
17	ADJACENT PROPERTY CORNER (NON-RECORDS)
18	ADJACENT PROPERTY CORNER (NON-RECORDS)
19	ADJACENT PROPERTY CORNER (NON-RECORDS)
20	ADJACENT PROPERTY CORNER (NON-RECORDS)
21	ADJACENT PROPERTY CORNER (NON-RECORDS)
22	ADJACENT PROPERTY CORNER (NON-RECORDS)
23	ADJACENT PROPERTY CORNER (NON-RECORDS)
24	ADJACENT PROPERTY CORNER (NON-RECORDS)
25	ADJACENT PROPERTY CORNER (NON-RECORDS)
26	ADJACENT PROPERTY CORNER (NON-RECORDS)
27	ADJACENT PROPERTY CORNER (NON-RECORDS)
28	ADJACENT PROPERTY CORNER (NON-RECORDS)
29	ADJACENT PROPERTY CORNER (NON-RECORDS)
30	ADJACENT PROPERTY CORNER (NON-RECORDS)
31	ADJACENT PROPERTY CORNER (NON-RECORDS)
32	ADJACENT PROPERTY CORNER (NON-RECORDS)
33	ADJACENT PROPERTY CORNER (NON-RECORDS)
34	ADJACENT PROPERTY CORNER (NON-RECORDS)
35	ADJACENT PROPERTY CORNER (NON-RECORDS)
36	ADJACENT PROPERTY CORNER (NON-RECORDS)
37	ADJACENT PROPERTY CORNER (NON-RECORDS)
38	ADJACENT PROPERTY CORNER (NON-RECORDS)
39	ADJACENT PROPERTY CORNER (NON-RECORDS)
40	ADJACENT PROPERTY CORNER (NON-RECORDS)
41	ADJACENT PROPERTY CORNER (NON-RECORDS)
42	ADJACENT PROPERTY CORNER (NON-RECORDS)
43	ADJACENT PROPERTY CORNER (NON-RECORDS)
44	ADJACENT PROPERTY CORNER (NON-RECORDS)
45	ADJACENT PROPERTY CORNER (NON-RECORDS)
46	ADJACENT PROPERTY CORNER (NON-RECORDS)
47	ADJACENT PROPERTY CORNER (NON-RECORDS)
48	ADJACENT PROPERTY CORNER (NON-RECORDS)
49	ADJACENT PROPERTY CORNER (NON-RECORDS)
50	ADJACENT PROPERTY CORNER (NON-RECORDS)
51	ADJACENT PROPERTY CORNER (NON-RECORDS)
52	ADJACENT PROPERTY CORNER (NON-RECORDS)
53	ADJACENT PROPERTY CORNER (NON-RECORDS)
54	ADJACENT PROPERTY CORNER (NON-RECORDS)
55	ADJACENT PROPERTY CORNER (NON-RECORDS)
56	ADJACENT PROPERTY CORNER (NON-RECORDS)
57	ADJACENT PROPERTY CORNER (NON-RECORDS)
58	ADJACENT PROPERTY CORNER (NON-RECORDS)
59	ADJACENT PROPERTY CORNER (NON-RECORDS)
60	ADJACENT PROPERTY CORNER (NON-RECORDS)
61	ADJACENT PROPERTY CORNER (NON-RECORDS)
62	ADJACENT PROPERTY CORNER (NON-RECORDS)
63	ADJACENT PROPERTY CORNER (NON-RECORDS)
64	ADJACENT PROPERTY CORNER (NON-RECORDS)
65	ADJACENT PROPERTY CORNER (NON-RECORDS)
66	ADJACENT PROPERTY CORNER (NON-RECORDS)
67	ADJACENT PROPERTY CORNER (NON-RECORDS)
68	ADJACENT PROPERTY CORNER (NON-RECORDS)
69	ADJACENT PROPERTY CORNER (NON-RECORDS)
70	ADJACENT PROPERTY CORNER (NON-RECORDS)
71	ADJACENT PROPERTY CORNER (NON-RECORDS)
72	ADJACENT PROPERTY CORNER (NON-RECORDS)
73	ADJACENT PROPERTY CORNER (NON-RECORDS)
74	ADJACENT PROPERTY CORNER (NON-RECORDS)
75	ADJACENT PROPERTY CORNER (NON-RECORDS)
76	ADJACENT PROPERTY CORNER (NON-RECORDS)
77	ADJACENT PROPERTY CORNER (NON-RECORDS)
78	ADJACENT PROPERTY CORNER (NON-RECORDS)
79	ADJACENT PROPERTY CORNER (NON-RECORDS)
80	ADJACENT PROPERTY CORNER (NON-RECORDS)
81	ADJACENT PROPERTY CORNER (NON-RECORDS)
82	ADJACENT PROPERTY CORNER (NON-RECORDS)
83	ADJACENT PROPERTY CORNER (NON-RECORDS)
84	ADJACENT PROPERTY CORNER (NON-RECORDS)
85	ADJACENT PROPERTY CORNER (NON-RECORDS)
86	ADJACENT PROPERTY CORNER (NON-RECORDS)
87	ADJACENT PROPERTY CORNER (NON-RECORDS)
88	ADJACENT PROPERTY CORNER (NON-RECORDS)
89	ADJACENT PROPERTY CORNER (NON-RECORDS)
90	ADJACENT PROPERTY CORNER (NON-RECORDS)
91	ADJACENT PROPERTY CORNER (NON-RECORDS)
92	ADJACENT PROPERTY CORNER (NON-RECORDS)
93	ADJACENT PROPERTY CORNER (NON-RECORDS)
94	ADJACENT PROPERTY CORNER (NON-RECORDS)
95	ADJACENT PROPERTY CORNER (NON-RECORDS)
96	ADJACENT PROPERTY CORNER (NON-RECORDS)
97	ADJACENT PROPERTY CORNER (NON-RECORDS)
98	ADJACENT PROPERTY CORNER (NON-RECORDS)
99	ADJACENT PROPERTY CORNER (NON-RECORDS)
100	ADJACENT PROPERTY CORNER (NON-RECORDS)

N.T.S.

THESE PLANS ARE FOR OFFICIAL USE ONLY AND ARE NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR. THESE PLANS ARE THE PROPERTY OF THE SURVEYOR AND ARE NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR.



VICINITY MAP: SEC. 1, T14N, R5E  
NOT TO SCALE

**CLIENT:**  
ARIZONA WATER COMPANY  
1000 W. WASHINGTON AVENUE  
SUITE 100  
PHOENIX, ARIZONA 85001-0000  
CONTACT: MR. ANDREW HARRIS  
PHONE: 602.955.1100

**LAND SURVEYOR:**  
WIL, LLC  
1000 W. WASHINGTON AVENUE  
SUITE 100  
PHOENIX, ARIZONA 85001-0000  
CONTACT: MR. ANDREW HARRIS  
PHONE: 602.955.1100

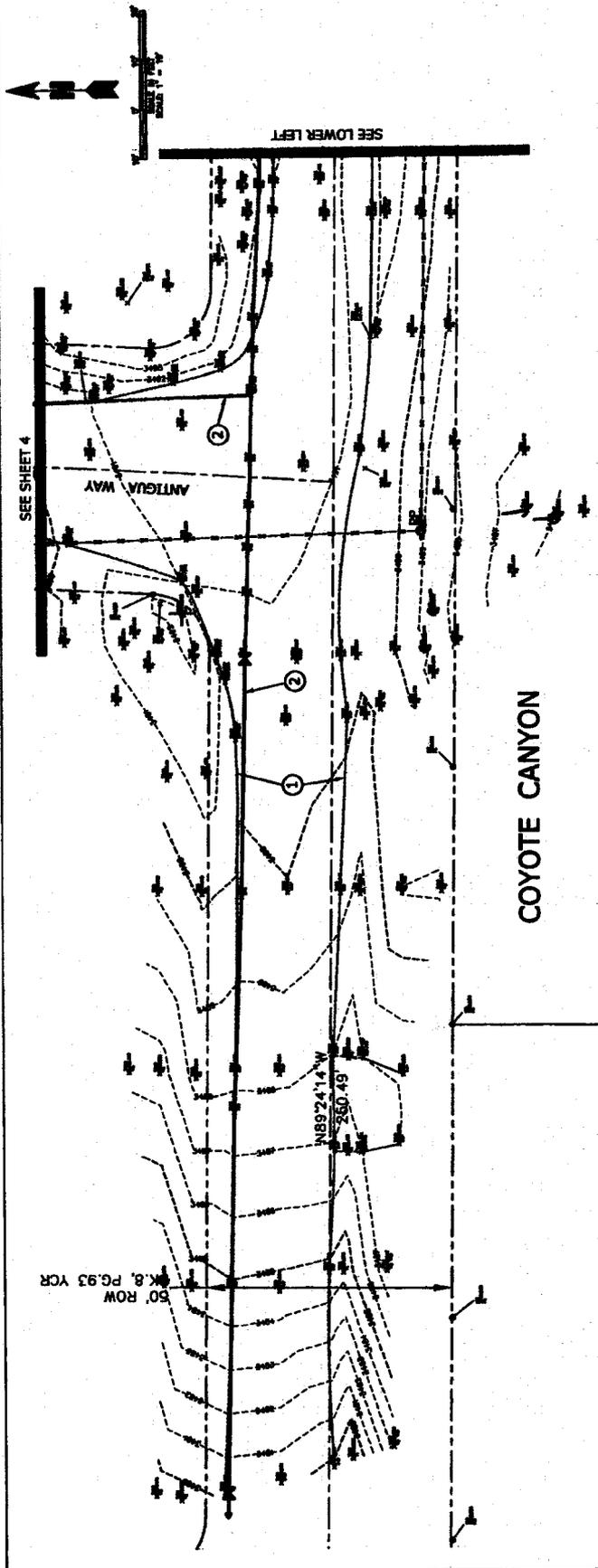
**BASIS OF BEARINGS:**  
US STATE PLUMB LINE  
MAGNETIC NORTH  
POINT OF CORRECTION: 138860.6449  
BY GRS ADJUSTMENT | DATUM: NAD83  
GPS ELEVATION = 3443.31 FEET

### SURVEYORS CERTIFICATION:

I HEREBY CERTIFY THAT THIS SURVEY WAS PERFORMED BY ME OR UNDER MY CLOSE SUPERVISION, AND THE WORK WAS DONE IN ACCORDANCE WITH THE PROFESSIONAL STANDARDS OF THE SURVEYING AND MAPPING BOARD OF ARIZONA. I HAVE REVIEWED THE RESULTS OF THIS SURVEY AND THEY ARE CORRECT AND ACCURATE.

DATE: \_\_\_\_\_  
SURVEYOR: \_\_\_\_\_  
TITLE: \_\_\_\_\_

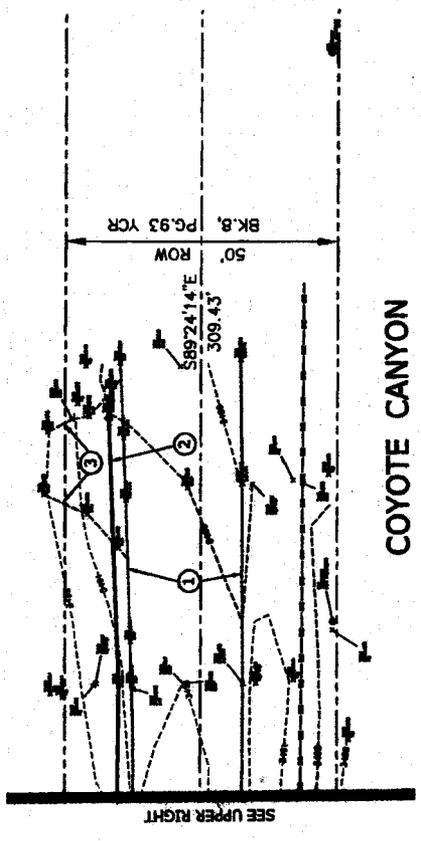




- NOTES:**
- ① DIRT HIGHWAY
  - ② WATER LAKE BOUNDARY
  - ③ DIRT DRIVEWAY

**CODE AND SYMBOL LEGEND**

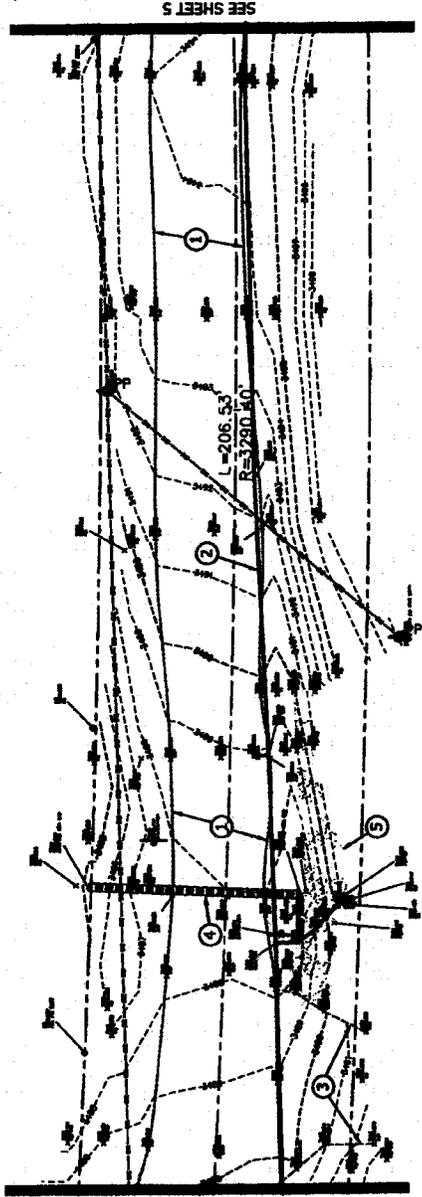
SYMBOL	DESCRIPTION
1	ROAD
2	RAILROAD
3	POWER LINE
4	WATER LAKE
5	WATER LAKE BOUNDARY
6	DIRT DRIVEWAY
7	DIRT HIGHWAY
8	CONTOUR
9	BOUNDARY
10	PROPERTY CORNER
11	PROPERTY CORNER
12	PROPERTY CORNER
13	PROPERTY CORNER
14	PROPERTY CORNER
15	PROPERTY CORNER
16	PROPERTY CORNER
17	PROPERTY CORNER
18	PROPERTY CORNER
19	PROPERTY CORNER
20	PROPERTY CORNER
21	PROPERTY CORNER
22	PROPERTY CORNER
23	PROPERTY CORNER
24	PROPERTY CORNER
25	PROPERTY CORNER
26	PROPERTY CORNER
27	PROPERTY CORNER
28	PROPERTY CORNER
29	PROPERTY CORNER
30	PROPERTY CORNER
31	PROPERTY CORNER
32	PROPERTY CORNER
33	PROPERTY CORNER
34	PROPERTY CORNER
35	PROPERTY CORNER
36	PROPERTY CORNER
37	PROPERTY CORNER
38	PROPERTY CORNER
39	PROPERTY CORNER
40	PROPERTY CORNER
41	PROPERTY CORNER
42	PROPERTY CORNER
43	PROPERTY CORNER
44	PROPERTY CORNER
45	PROPERTY CORNER
46	PROPERTY CORNER
47	PROPERTY CORNER
48	PROPERTY CORNER
49	PROPERTY CORNER
50	PROPERTY CORNER



**SURVEYORS CERTIFICATION:**

I HEREBY CERTIFY THAT THIS SURVEY WAS PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE INFORMATION IS A TRUE AND CORRECT REPRESENTATION OF THE SURVEY, AND THAT ALL REQUIREMENTS OF THE WISCONSIN SURVEYING ACT ARE FULLY COMPLIED WITH.

SURVEYOR'S NAME: \_\_\_\_\_  
 REGISTRATION NUMBER: \_\_\_\_\_  
 DATE: \_\_\_\_\_



ANTIGUA WAY

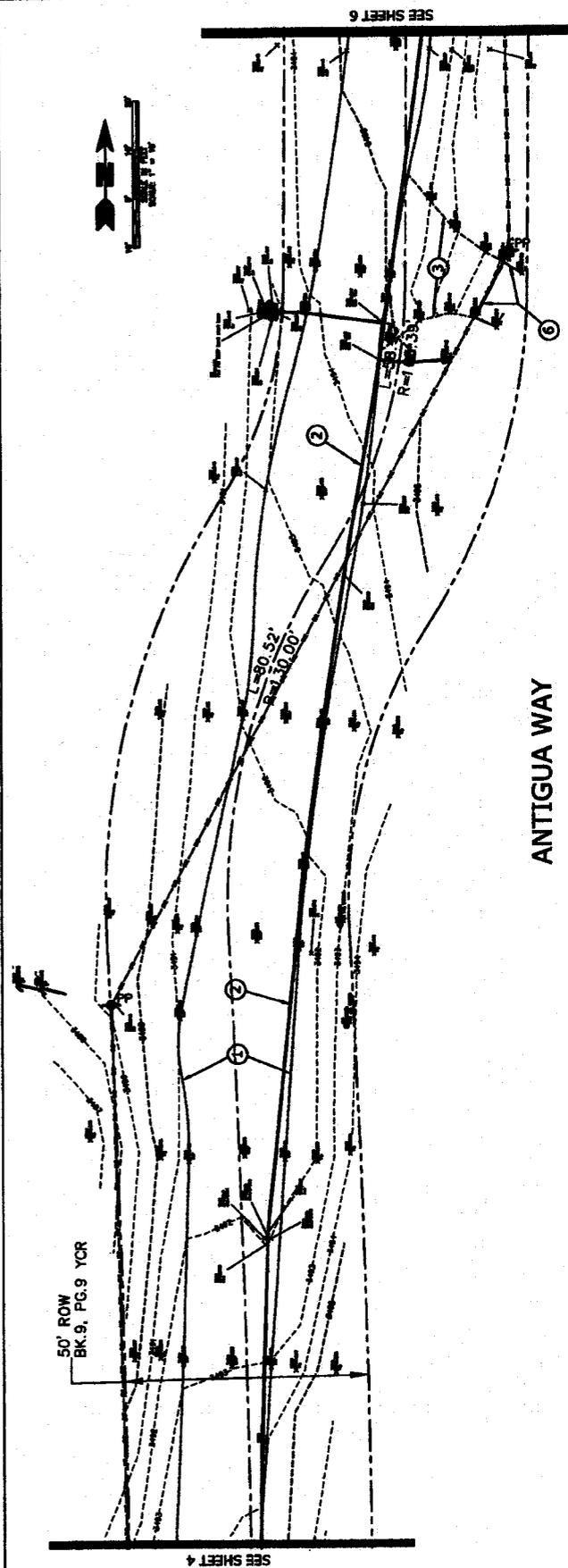
CODE AND SYMBOL LEGEND

1	PROPOSED RIGHT-OF-WAY
2	EXISTING RIGHT-OF-WAY
3	PROPERTY BOUNDARY LINE
4	EXISTING ROAD CENTERLINE
5	EXISTING ROAD RIGHT-OF-WAY
6	EXISTING ROAD LEFT-OF-WAY
7	EXISTING ROAD CENTERLINE
8	EXISTING ROAD RIGHT-OF-WAY
9	EXISTING ROAD LEFT-OF-WAY
10	EXISTING ROAD CENTERLINE
11	EXISTING ROAD RIGHT-OF-WAY
12	EXISTING ROAD LEFT-OF-WAY
13	EXISTING ROAD CENTERLINE
14	EXISTING ROAD RIGHT-OF-WAY
15	EXISTING ROAD LEFT-OF-WAY
16	EXISTING ROAD CENTERLINE
17	EXISTING ROAD RIGHT-OF-WAY
18	EXISTING ROAD LEFT-OF-WAY
19	EXISTING ROAD CENTERLINE
20	EXISTING ROAD RIGHT-OF-WAY
21	EXISTING ROAD LEFT-OF-WAY
22	EXISTING ROAD CENTERLINE
23	EXISTING ROAD RIGHT-OF-WAY
24	EXISTING ROAD LEFT-OF-WAY
25	EXISTING ROAD CENTERLINE
26	EXISTING ROAD RIGHT-OF-WAY
27	EXISTING ROAD LEFT-OF-WAY
28	EXISTING ROAD CENTERLINE
29	EXISTING ROAD RIGHT-OF-WAY
30	EXISTING ROAD LEFT-OF-WAY
31	EXISTING ROAD CENTERLINE
32	EXISTING ROAD RIGHT-OF-WAY
33	EXISTING ROAD LEFT-OF-WAY
34	EXISTING ROAD CENTERLINE
35	EXISTING ROAD RIGHT-OF-WAY
36	EXISTING ROAD LEFT-OF-WAY
37	EXISTING ROAD CENTERLINE
38	EXISTING ROAD RIGHT-OF-WAY
39	EXISTING ROAD LEFT-OF-WAY
40	EXISTING ROAD CENTERLINE
41	EXISTING ROAD RIGHT-OF-WAY
42	EXISTING ROAD LEFT-OF-WAY
43	EXISTING ROAD CENTERLINE
44	EXISTING ROAD RIGHT-OF-WAY
45	EXISTING ROAD LEFT-OF-WAY
46	EXISTING ROAD CENTERLINE
47	EXISTING ROAD RIGHT-OF-WAY
48	EXISTING ROAD LEFT-OF-WAY
49	EXISTING ROAD CENTERLINE
50	EXISTING ROAD RIGHT-OF-WAY
51	EXISTING ROAD LEFT-OF-WAY
52	EXISTING ROAD CENTERLINE
53	EXISTING ROAD RIGHT-OF-WAY
54	EXISTING ROAD LEFT-OF-WAY
55	EXISTING ROAD CENTERLINE
56	EXISTING ROAD RIGHT-OF-WAY
57	EXISTING ROAD LEFT-OF-WAY
58	EXISTING ROAD CENTERLINE
59	EXISTING ROAD RIGHT-OF-WAY
60	EXISTING ROAD LEFT-OF-WAY
61	EXISTING ROAD CENTERLINE
62	EXISTING ROAD RIGHT-OF-WAY
63	EXISTING ROAD LEFT-OF-WAY
64	EXISTING ROAD CENTERLINE
65	EXISTING ROAD RIGHT-OF-WAY
66	EXISTING ROAD LEFT-OF-WAY
67	EXISTING ROAD CENTERLINE
68	EXISTING ROAD RIGHT-OF-WAY
69	EXISTING ROAD LEFT-OF-WAY
70	EXISTING ROAD CENTERLINE
71	EXISTING ROAD RIGHT-OF-WAY
72	EXISTING ROAD LEFT-OF-WAY
73	EXISTING ROAD CENTERLINE
74	EXISTING ROAD RIGHT-OF-WAY
75	EXISTING ROAD LEFT-OF-WAY
76	EXISTING ROAD CENTERLINE
77	EXISTING ROAD RIGHT-OF-WAY
78	EXISTING ROAD LEFT-OF-WAY
79	EXISTING ROAD CENTERLINE
80	EXISTING ROAD RIGHT-OF-WAY
81	EXISTING ROAD LEFT-OF-WAY
82	EXISTING ROAD CENTERLINE
83	EXISTING ROAD RIGHT-OF-WAY
84	EXISTING ROAD LEFT-OF-WAY
85	EXISTING ROAD CENTERLINE
86	EXISTING ROAD RIGHT-OF-WAY
87	EXISTING ROAD LEFT-OF-WAY
88	EXISTING ROAD CENTERLINE
89	EXISTING ROAD RIGHT-OF-WAY
90	EXISTING ROAD LEFT-OF-WAY
91	EXISTING ROAD CENTERLINE
92	EXISTING ROAD RIGHT-OF-WAY
93	EXISTING ROAD LEFT-OF-WAY
94	EXISTING ROAD CENTERLINE
95	EXISTING ROAD RIGHT-OF-WAY
96	EXISTING ROAD LEFT-OF-WAY
97	EXISTING ROAD CENTERLINE
98	EXISTING ROAD RIGHT-OF-WAY
99	EXISTING ROAD LEFT-OF-WAY
100	EXISTING ROAD CENTERLINE

- NOTES:
- 1 DIRT ROADWAY
  - 2 WATER LINE ELUSTRATION
  - 3 DIRT ROADWAY
  - 4 18 INCH CONCRETE METAL PIPE
  - 5 18" INP CROSS PROTECTION

**SURVEYORS CERTIFICATION:**  
 I HEREBY CERTIFY THAT THE SURVEY WAS PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE EXHIBIT IS A TRUE AND CORRECT REPRESENTATION OF THE SURVEY, AND THAT ALL NECESSARY STATION POINTS WERE FOUND, OR SET AS INDICATED.

DATE: \_\_\_\_\_  
 SURVEYOR: \_\_\_\_\_  
 TITLE: \_\_\_\_\_



ANTIGUA WAY

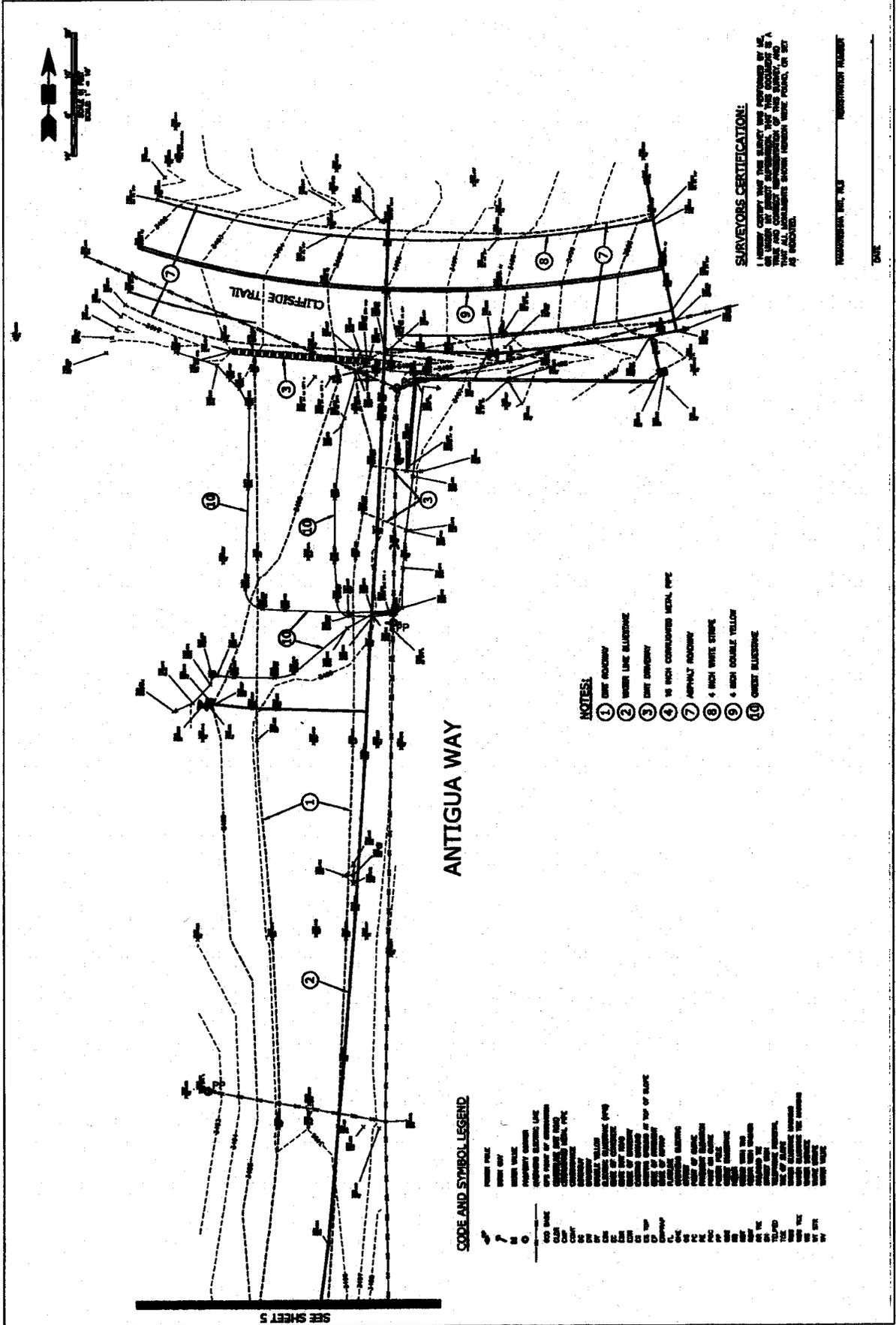
- NOTES:
- ① DIRT ROADWAY
  - ② WATER LINE BLASTINGS
  - ③ DIRT HIGHWAY
  - ④ CONCRETE HIGHWAY

CODE AND SYMBOL LEGEND

1	ROAD CENTERLINE
2	ROAD RIGHT-OF-WAY
3	ROAD LEFT-OF-WAY
4	ROAD RIGHT-OF-WAY
5	ROAD LEFT-OF-WAY
6	ROAD CENTERLINE
7	ROAD RIGHT-OF-WAY
8	ROAD LEFT-OF-WAY
9	ROAD CENTERLINE
10	ROAD RIGHT-OF-WAY
11	ROAD LEFT-OF-WAY
12	ROAD CENTERLINE
13	ROAD RIGHT-OF-WAY
14	ROAD LEFT-OF-WAY
15	ROAD CENTERLINE
16	ROAD RIGHT-OF-WAY
17	ROAD LEFT-OF-WAY
18	ROAD CENTERLINE
19	ROAD RIGHT-OF-WAY
20	ROAD LEFT-OF-WAY
21	ROAD CENTERLINE
22	ROAD RIGHT-OF-WAY
23	ROAD LEFT-OF-WAY
24	ROAD CENTERLINE
25	ROAD RIGHT-OF-WAY
26	ROAD LEFT-OF-WAY
27	ROAD CENTERLINE
28	ROAD RIGHT-OF-WAY
29	ROAD LEFT-OF-WAY
30	ROAD CENTERLINE
31	ROAD RIGHT-OF-WAY
32	ROAD LEFT-OF-WAY
33	ROAD CENTERLINE
34	ROAD RIGHT-OF-WAY
35	ROAD LEFT-OF-WAY
36	ROAD CENTERLINE
37	ROAD RIGHT-OF-WAY
38	ROAD LEFT-OF-WAY
39	ROAD CENTERLINE
40	ROAD RIGHT-OF-WAY
41	ROAD LEFT-OF-WAY
42	ROAD CENTERLINE
43	ROAD RIGHT-OF-WAY
44	ROAD LEFT-OF-WAY
45	ROAD CENTERLINE
46	ROAD RIGHT-OF-WAY
47	ROAD LEFT-OF-WAY
48	ROAD CENTERLINE
49	ROAD RIGHT-OF-WAY
50	ROAD LEFT-OF-WAY

**SURVEYORS CERTIFICATION:**  
 I HEREBY CERTIFY THAT THIS SURVEY WAS PERFORMED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A LICENSED SURVEYOR IN THE STATE OF HAWAII. I HAVE READ AND CONSENT TO THE PUBLICATION OF THIS SURVEY AND THAT ALL INSTRUMENTS WHICH WERE USED WERE FOUND TO BE IN ACCORDANCE WITH THE HAWAIIAN SURVEYING ACT.

REGISTRATION NO. \_\_\_\_\_ SURVEYOR'S NAME \_\_\_\_\_  
 DATE \_\_\_\_\_



ANTIGUA WAY

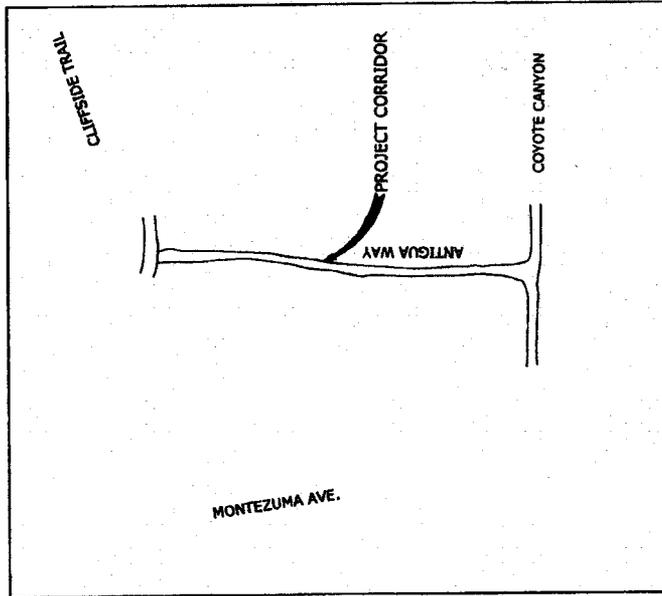
CLIFFSIDE TRAIL

CODE AND SYMBOL LEGEND

1	1/4" ROADWAY
2	1/2" ROADWAY
3	3/4" ROADWAY
4	1" ROADWAY
5	1 1/2" ROADWAY
6	2" ROADWAY
7	3" ROADWAY
8	4" ROADWAY
9	6" ROADWAY
10	8" ROADWAY
11	12" ROADWAY
12	18" ROADWAY
13	24" ROADWAY
14	30" ROADWAY
15	36" ROADWAY
16	42" ROADWAY
17	48" ROADWAY
18	54" ROADWAY
19	60" ROADWAY
20	66" ROADWAY
21	72" ROADWAY
22	78" ROADWAY
23	84" ROADWAY
24	90" ROADWAY
25	96" ROADWAY
26	102" ROADWAY
27	108" ROADWAY
28	114" ROADWAY
29	120" ROADWAY
30	126" ROADWAY
31	132" ROADWAY
32	138" ROADWAY
33	144" ROADWAY
34	150" ROADWAY
35	156" ROADWAY
36	162" ROADWAY
37	168" ROADWAY
38	174" ROADWAY
39	180" ROADWAY
40	186" ROADWAY
41	192" ROADWAY
42	198" ROADWAY
43	204" ROADWAY
44	210" ROADWAY
45	216" ROADWAY
46	222" ROADWAY
47	228" ROADWAY
48	234" ROADWAY
49	240" ROADWAY
50	246" ROADWAY
51	252" ROADWAY
52	258" ROADWAY
53	264" ROADWAY
54	270" ROADWAY
55	276" ROADWAY
56	282" ROADWAY
57	288" ROADWAY
58	294" ROADWAY
59	300" ROADWAY
60	306" ROADWAY
61	312" ROADWAY
62	318" ROADWAY
63	324" ROADWAY
64	330" ROADWAY
65	336" ROADWAY
66	342" ROADWAY
67	348" ROADWAY
68	354" ROADWAY
69	360" ROADWAY
70	366" ROADWAY
71	372" ROADWAY
72	378" ROADWAY
73	384" ROADWAY
74	390" ROADWAY
75	396" ROADWAY
76	402" ROADWAY
77	408" ROADWAY
78	414" ROADWAY
79	420" ROADWAY
80	426" ROADWAY
81	432" ROADWAY
82	438" ROADWAY
83	444" ROADWAY
84	450" ROADWAY
85	456" ROADWAY
86	462" ROADWAY
87	468" ROADWAY
88	474" ROADWAY
89	480" ROADWAY
90	486" ROADWAY
91	492" ROADWAY
92	498" ROADWAY
93	504" ROADWAY
94	510" ROADWAY
95	516" ROADWAY
96	522" ROADWAY
97	528" ROADWAY
98	534" ROADWAY
99	540" ROADWAY
100	546" ROADWAY
101	552" ROADWAY
102	558" ROADWAY
103	564" ROADWAY
104	570" ROADWAY
105	576" ROADWAY
106	582" ROADWAY
107	588" ROADWAY
108	594" ROADWAY
109	600" ROADWAY
110	606" ROADWAY
111	612" ROADWAY
112	618" ROADWAY
113	624" ROADWAY
114	630" ROADWAY
115	636" ROADWAY
116	642" ROADWAY
117	648" ROADWAY
118	654" ROADWAY
119	660" ROADWAY
120	666" ROADWAY
121	672" ROADWAY
122	678" ROADWAY
123	684" ROADWAY
124	690" ROADWAY
125	696" ROADWAY
126	702" ROADWAY
127	708" ROADWAY
128	714" ROADWAY
129	720" ROADWAY
130	726" ROADWAY
131	732" ROADWAY
132	738" ROADWAY
133	744" ROADWAY
134	750" ROADWAY
135	756" ROADWAY
136	762" ROADWAY
137	768" ROADWAY
138	774" ROADWAY
139	780" ROADWAY
140	786" ROADWAY
141	792" ROADWAY
142	798" ROADWAY
143	804" ROADWAY
144	810" ROADWAY
145	816" ROADWAY
146	822" ROADWAY
147	828" ROADWAY
148	834" ROADWAY
149	840" ROADWAY
150	846" ROADWAY
151	852" ROADWAY
152	858" ROADWAY
153	864" ROADWAY
154	870" ROADWAY
155	876" ROADWAY
156	882" ROADWAY
157	888" ROADWAY
158	894" ROADWAY
159	900" ROADWAY
160	906" ROADWAY
161	912" ROADWAY
162	918" ROADWAY
163	924" ROADWAY
164	930" ROADWAY
165	936" ROADWAY
166	942" ROADWAY
167	948" ROADWAY
168	954" ROADWAY
169	960" ROADWAY
170	966" ROADWAY
171	972" ROADWAY
172	978" ROADWAY
173	984" ROADWAY
174	990" ROADWAY
175	996" ROADWAY
176	1002" ROADWAY
177	1008" ROADWAY
178	1014" ROADWAY
179	1020" ROADWAY
180	1026" ROADWAY
181	1032" ROADWAY
182	1038" ROADWAY
183	1044" ROADWAY
184	1050" ROADWAY
185	1056" ROADWAY
186	1062" ROADWAY
187	1068" ROADWAY
188	1074" ROADWAY
189	1080" ROADWAY
190	1086" ROADWAY
191	1092" ROADWAY
192	1098" ROADWAY
193	1104" ROADWAY
194	1110" ROADWAY
195	1116" ROADWAY
196	1122" ROADWAY
197	1128" ROADWAY
198	1134" ROADWAY
199	1140" ROADWAY
200	1146" ROADWAY
201	1152" ROADWAY
202	1158" ROADWAY
203	1164" ROADWAY
204	1170" ROADWAY
205	1176" ROADWAY
206	1182" ROADWAY
207	1188" ROADWAY
208	1194" ROADWAY
209	1200" ROADWAY
210	1206" ROADWAY
211	1212" ROADWAY
212	1218" ROADWAY
213	1224" ROADWAY
214	1230" ROADWAY
215	1236" ROADWAY
216	1242" ROADWAY
217	1248" ROADWAY
218	1254" ROADWAY
219	1260" ROADWAY
220	1266" ROADWAY
221	1272" ROADWAY
222	1278" ROADWAY
223	1284" ROADWAY
224	1290" ROADWAY
225	1296" ROADWAY
226	1302" ROADWAY
227	1308" ROADWAY
228	1314" ROADWAY
229	1320" ROADWAY
230	1326" ROADWAY
231	1332" ROADWAY
232	1338" ROADWAY
233	1344" ROADWAY
234	1350" ROADWAY
235	1356" ROADWAY
236	1362" ROADWAY
237	1368" ROADWAY
238	1374" ROADWAY
239	1380" ROADWAY
240	1386" ROADWAY
241	1392" ROADWAY
242	1398" ROADWAY
243	1404" ROADWAY
244	1410" ROADWAY
245	1416" ROADWAY
246	1422" ROADWAY
247	1428" ROADWAY
248	1434" ROADWAY
249	1440" ROADWAY
250	1446" ROADWAY
251	1452" ROADWAY
252	1458" ROADWAY
253	1464" ROADWAY
254	1470" ROADWAY
255	1476" ROADWAY
256	1482" ROADWAY
257	1488" ROADWAY
258	1494" ROADWAY
259	1500" ROADWAY
260	1506" ROADWAY
261	1512" ROADWAY
262	1518" ROADWAY
263	1524" ROADWAY
264	1530" ROADWAY
265	1536" ROADWAY
266	1542" ROADWAY
267	1548" ROADWAY
268	1554" ROADWAY
269	1560" ROADWAY
270	1566" ROADWAY
271	1572" ROADWAY
272	1578" ROADWAY
273	1584" ROADWAY
274	1590" ROADWAY
275	1596" ROADWAY
276	1602" ROADWAY
277	1608" ROADWAY
278	1614" ROADWAY
279	1620" ROADWAY
280	1626" ROADWAY
281	1632" ROADWAY
282	1638" ROADWAY
283	1644" ROADWAY
284	1650" ROADWAY
285	1656" ROADWAY
286	1662" ROADWAY
287	1668" ROADWAY
288	1674" ROADWAY
289	1680" ROADWAY
290	1686" ROADWAY
291	1692" ROADWAY
292	1698" ROADWAY
293	1704" ROADWAY
294	1710" ROADWAY
295	1716" ROADWAY
296	1722" ROADWAY
297	1728" ROADWAY
298	1734" ROADWAY
299	1740" ROADWAY
300	1746" ROADWAY
301	1752" ROADWAY
302	1758" ROADWAY
303	1764" ROADWAY
304	1770" ROADWAY
305	1776" ROADWAY
306	1782" ROADWAY
307	1788" ROADWAY
308	1794" ROADWAY
309	1800" ROADWAY
310	1806" ROADWAY
311	1812" ROADWAY
312	1818" ROADWAY
313	1824" ROADWAY
314	1830" ROADWAY
315	1836" ROADWAY
316	1842" ROADWAY
317	1848" ROADWAY
318	1854" ROADWAY
319	1860" ROADWAY
320	1866" ROADWAY
321	1872" ROADWAY
322	1878" ROADWAY
323	1884" ROADWAY
324	1890" ROADWAY
325	1896" ROADWAY
326	1902" ROADWAY
327	1908" ROADWAY
328	1914" ROADWAY
329	1920" ROADWAY
330	1926" ROADWAY
331	1932" ROADWAY
332	1938" ROADWAY
333	1944" ROADWAY
334	1950" ROADWAY
335	1956" ROADWAY
336	1962" ROADWAY
337	1968" ROADWAY
338	1974" ROADWAY
339	1980" ROADWAY
340	1986" ROADWAY
341	1992" ROADWAY
342	1998" ROADWAY
343	2004" ROADWAY
344	2010" ROADWAY
345	2016" ROADWAY
346	2022" ROADWAY
347	2028" ROADWAY
348	2034" ROADWAY
349	2040" ROADWAY
350	2046" ROADWAY
351	2052" ROADWAY
352	2058" ROADWAY
353	2064" ROADWAY
354	2070" ROADWAY
355	2076" ROADWAY
356	2082" ROADWAY
357	2088" ROADWAY
358	2094" ROADWAY
359	2100" ROADWAY
360	2106" ROADWAY
361	2112" ROADWAY
362	2118" ROADWAY
363	2124" ROADWAY
364	2130" ROADWAY
365	2136" ROADWAY
366	2142" ROADWAY
367	2148" ROADWAY
368	2154" ROADWAY
369	2160" ROADWAY
370	2166" ROADWAY
371	2172" ROADWAY
372	2178" ROADWAY
373	2184" ROADWAY
374	2190" ROADWAY
375	2196" ROADWAY
376	2202" ROADWAY
377	2208" ROADWAY
378	2214" ROADWAY
379	2220" ROADWAY
380	2226" ROADWAY
381	2232" ROADWAY
382	2238" ROADWAY
383	2244" ROADWAY
384	2250" ROADWAY
385	2256" ROADWAY
386	2262" ROADWAY
387	2268" ROADWAY
388	2274" ROADWAY
389	2280" ROADWAY
390	2286" ROADWAY
391	2292" ROADWAY
392	2298" ROADWAY
393	2304" ROADWAY
394	2310" ROADWAY
395	2316" ROADWAY
396	2322" ROADWAY
397	2328" ROADWAY
398	2334" ROADWAY
399	2340" ROADWAY
400	2346" ROADWAY
401	2352" ROADWAY
402	2358" ROADWAY
403	2364" ROADWAY
404	2370" ROADWAY
405	2376" ROADWAY
406	2382" ROADWAY
407	2388" ROADWAY
408	2394" ROADWAY
409	2400" ROADWAY
410	2406" ROADWAY
411	2412" ROADWAY
412	2418" ROADWAY
413	2424" ROADWAY
414	2430" ROADWAY
415	2436" ROADWAY
416	2442" ROADWAY
417	2448" ROADWAY
418	2454" ROADWAY
419	2460" ROADWAY
420	2466" ROADWAY
421	2472" ROADWAY
422	2478" ROADWAY
423	2484" ROADWAY
424	2490" ROADWAY
425	2496" ROADWAY
426	2502" ROADWAY
427	2508" ROADWAY
428	2514" ROADWAY
429	2520" ROADWAY
430	2526" ROADWAY
431	2532" ROADWAY
432	2538" ROADWAY
433	2544" ROADWAY
434	2550" ROADWAY
435	2556" ROADWAY
436	2562" ROADWAY
437	2568" ROADWAY
438	2574" ROADWAY
439	2580" ROADWAY
440	2586" ROADWAY
441	2592" ROADWAY
442	2598" ROADWAY
443	2604" ROADWAY
444	2610" ROADWAY
445	2616" ROADWAY
446	2622" ROADWAY
447	2628" ROADWAY
448	2634" ROADWAY
449	2640" ROADWAY
450	2646" ROADWAY
451	2652" ROADWAY
452	2658" ROADWAY
453	2664" ROADWAY
454	2670" ROADWAY
455	2676" ROADWAY
456	2682" ROADWAY
457	2688" ROADWAY
458	2694" ROADWAY
459	2700" ROADWAY
460	2706" ROADWAY
461	2712" ROADWAY
462	2718" ROADWAY
463	2724" ROADWAY
464	2730" ROADWAY
465	2736" ROADWAY
466	2742" ROADWAY
467	2748" ROADWAY
468	2754" ROADWAY
469	2760" ROADWAY
470	2766" ROADWAY
471	2772" ROADWAY
472	2778" ROADWAY
473	2784" ROADWAY
474	2790" ROADWAY
475	2796" ROADWAY
476	2802" ROADWAY
477	2808" ROADWAY
478	2814" ROADWAY
479	2820" ROADWAY
480	2826" ROADWAY
481	2832" ROADWAY
482	2838" ROADWAY
483	2844" ROADWAY
484	2850" ROADWAY
485	2856" ROADWAY
486	2862" ROADWAY
487	2868" ROADWAY
488	2874" ROADWAY

# ANTIGUA WAY WATERLINE REPLACEMENT ARIZONA WATER COMPANY

LOCATED IN A PORTION OF THE SOUTHWEST QUARTER OF  
SECTION 1, TOWNSHIP 14 NORTH, RANGE 5 EAST  
GILA AND SALT RIVER BASE AND MERIDIAN, YAVAPAI COUNTY, ARIZONA



### CODE AND SYMBOL LEGEND

1	PROPERTY CORRIDOR
2	EXISTING WATERLINE
3	PROPOSED WATERLINE
4	EXISTING WATERLINE
5	PROPOSED WATERLINE
6	EXISTING WATERLINE
7	PROPOSED WATERLINE
8	EXISTING WATERLINE
9	PROPOSED WATERLINE
10	EXISTING WATERLINE
11	PROPOSED WATERLINE
12	EXISTING WATERLINE
13	PROPOSED WATERLINE
14	EXISTING WATERLINE
15	PROPOSED WATERLINE
16	EXISTING WATERLINE
17	PROPOSED WATERLINE
18	EXISTING WATERLINE
19	PROPOSED WATERLINE
20	EXISTING WATERLINE
21	PROPOSED WATERLINE
22	EXISTING WATERLINE
23	PROPOSED WATERLINE
24	EXISTING WATERLINE
25	PROPOSED WATERLINE
26	EXISTING WATERLINE
27	PROPOSED WATERLINE
28	EXISTING WATERLINE
29	PROPOSED WATERLINE
30	EXISTING WATERLINE
31	PROPOSED WATERLINE
32	EXISTING WATERLINE
33	PROPOSED WATERLINE
34	EXISTING WATERLINE
35	PROPOSED WATERLINE
36	EXISTING WATERLINE
37	PROPOSED WATERLINE
38	EXISTING WATERLINE
39	PROPOSED WATERLINE
40	EXISTING WATERLINE
41	PROPOSED WATERLINE
42	EXISTING WATERLINE
43	PROPOSED WATERLINE
44	EXISTING WATERLINE
45	PROPOSED WATERLINE
46	EXISTING WATERLINE
47	PROPOSED WATERLINE
48	EXISTING WATERLINE
49	PROPOSED WATERLINE
50	EXISTING WATERLINE
51	PROPOSED WATERLINE
52	EXISTING WATERLINE
53	PROPOSED WATERLINE
54	EXISTING WATERLINE
55	PROPOSED WATERLINE
56	EXISTING WATERLINE
57	PROPOSED WATERLINE
58	EXISTING WATERLINE
59	PROPOSED WATERLINE
60	EXISTING WATERLINE
61	PROPOSED WATERLINE
62	EXISTING WATERLINE
63	PROPOSED WATERLINE
64	EXISTING WATERLINE
65	PROPOSED WATERLINE
66	EXISTING WATERLINE
67	PROPOSED WATERLINE
68	EXISTING WATERLINE
69	PROPOSED WATERLINE
70	EXISTING WATERLINE
71	PROPOSED WATERLINE
72	EXISTING WATERLINE
73	PROPOSED WATERLINE
74	EXISTING WATERLINE
75	PROPOSED WATERLINE
76	EXISTING WATERLINE
77	PROPOSED WATERLINE
78	EXISTING WATERLINE
79	PROPOSED WATERLINE
80	EXISTING WATERLINE
81	PROPOSED WATERLINE
82	EXISTING WATERLINE
83	PROPOSED WATERLINE
84	EXISTING WATERLINE
85	PROPOSED WATERLINE
86	EXISTING WATERLINE
87	PROPOSED WATERLINE
88	EXISTING WATERLINE
89	PROPOSED WATERLINE
90	EXISTING WATERLINE
91	PROPOSED WATERLINE
92	EXISTING WATERLINE
93	PROPOSED WATERLINE
94	EXISTING WATERLINE
95	PROPOSED WATERLINE
96	EXISTING WATERLINE
97	PROPOSED WATERLINE
98	EXISTING WATERLINE
99	PROPOSED WATERLINE
100	EXISTING WATERLINE

N.T.S.



VICINITY MAP - SEC. 1, T.14N, R.5E  
NOT TO SCALE

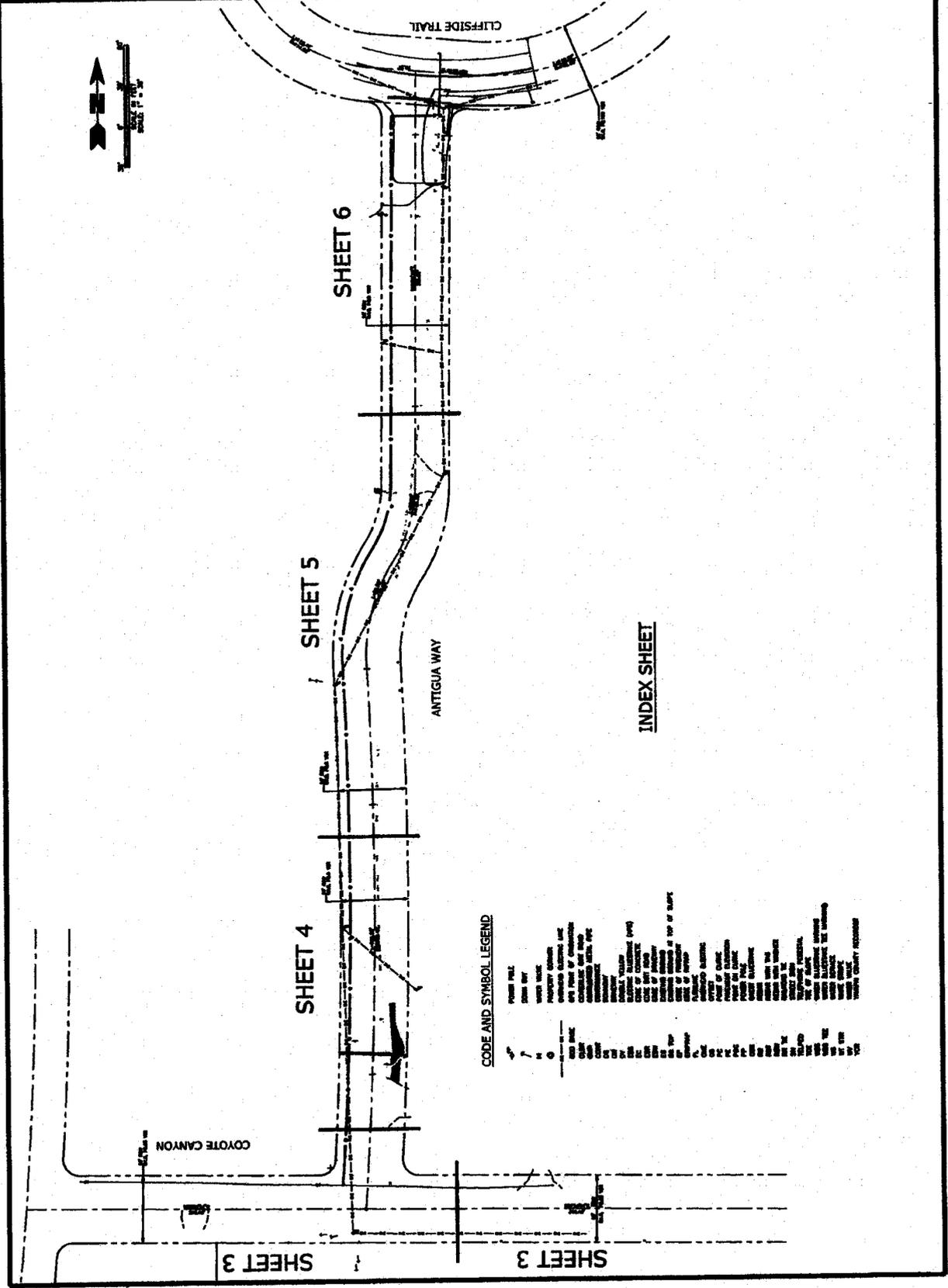
**BASIS OF BEARING:**  
US STATE PLAT 148 1985  
ARIZONA COUNTY ZONE  
POINT OF OBSERVATION 1320047-4440  
BY ONE OBSERVATION 1320047-4440  
ONE ELEVATION = 3446.31 FEET

<b>ARIZONA WATER COMPANY</b> 2000 N. RIVER CANYON HWY., POST OFFICE BOX 3000 PHOENIX, ARIZONA 85004-0300 PHONE: 602-955-1000 FAX: 602-955-1001 WWW.AWATER.COM	COVER SHEET 1-000-0000
	1-000-0000 1-000-0000 1-000-0000

ARIZONA WATER COMPANY 1000 N. BLACK CANYON AVENUE, PHOENIX, ARIZONA 85004 PHONE 261-1111, TELETYPE 261-1111, FACSIMILE 261-1111	PROJECT NO. 11-11-11-11	SHEET NO. 3 OF 3
	SHEET TITLE: WASTE WATER TREATMENT PLANT	DATE: 11-11-11
CHECKED BY: [Name]	APPROVED BY: [Name]	SCALE: 1" = 100'



ARIZONA WATER COMPANY  
 WASTE WATER TREATMENT PLANT  
 SHEET 3 OF 3



**CODE AND SYMBOL LEGEND**

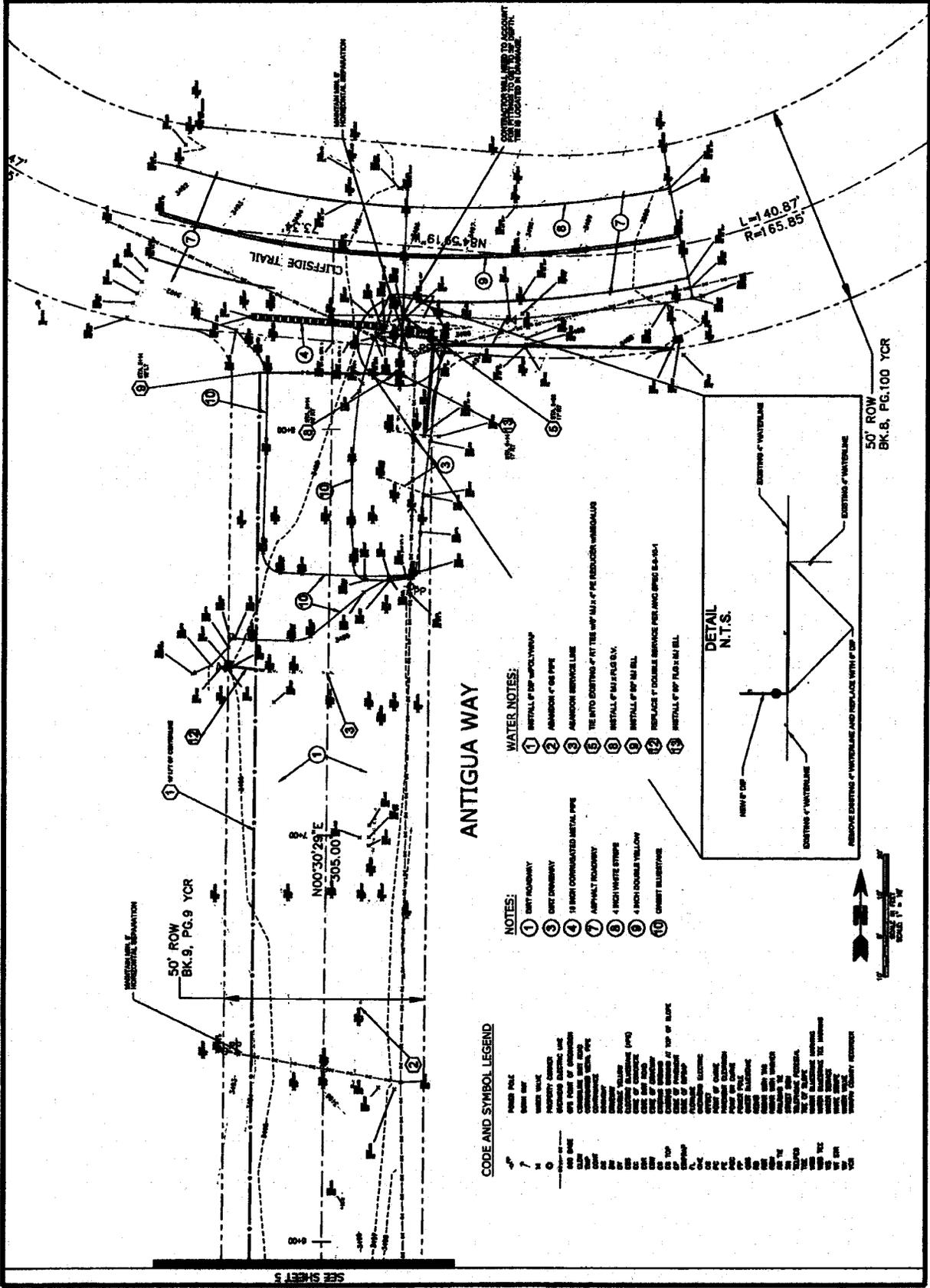
- 1. 1" = 100'
- 2. 1" = 100'
- 3. 1" = 100'
- 4. 1" = 100'
- 5. 1" = 100'
- 6. 1" = 100'
- 7. 1" = 100'
- 8. 1" = 100'
- 9. 1" = 100'
- 10. 1" = 100'
- 11. 1" = 100'
- 12. 1" = 100'
- 13. 1" = 100'
- 14. 1" = 100'
- 15. 1" = 100'
- 16. 1" = 100'
- 17. 1" = 100'
- 18. 1" = 100'
- 19. 1" = 100'
- 20. 1" = 100'
- 21. 1" = 100'
- 22. 1" = 100'
- 23. 1" = 100'
- 24. 1" = 100'
- 25. 1" = 100'
- 26. 1" = 100'
- 27. 1" = 100'
- 28. 1" = 100'
- 29. 1" = 100'
- 30. 1" = 100'
- 31. 1" = 100'
- 32. 1" = 100'
- 33. 1" = 100'
- 34. 1" = 100'
- 35. 1" = 100'
- 36. 1" = 100'
- 37. 1" = 100'
- 38. 1" = 100'
- 39. 1" = 100'
- 40. 1" = 100'
- 41. 1" = 100'
- 42. 1" = 100'
- 43. 1" = 100'
- 44. 1" = 100'
- 45. 1" = 100'
- 46. 1" = 100'
- 47. 1" = 100'
- 48. 1" = 100'
- 49. 1" = 100'
- 50. 1" = 100'
- 51. 1" = 100'
- 52. 1" = 100'
- 53. 1" = 100'
- 54. 1" = 100'
- 55. 1" = 100'
- 56. 1" = 100'
- 57. 1" = 100'
- 58. 1" = 100'
- 59. 1" = 100'
- 60. 1" = 100'
- 61. 1" = 100'
- 62. 1" = 100'
- 63. 1" = 100'
- 64. 1" = 100'
- 65. 1" = 100'
- 66. 1" = 100'
- 67. 1" = 100'
- 68. 1" = 100'
- 69. 1" = 100'
- 70. 1" = 100'
- 71. 1" = 100'
- 72. 1" = 100'
- 73. 1" = 100'
- 74. 1" = 100'
- 75. 1" = 100'
- 76. 1" = 100'
- 77. 1" = 100'
- 78. 1" = 100'
- 79. 1" = 100'
- 80. 1" = 100'
- 81. 1" = 100'
- 82. 1" = 100'
- 83. 1" = 100'
- 84. 1" = 100'
- 85. 1" = 100'
- 86. 1" = 100'
- 87. 1" = 100'
- 88. 1" = 100'
- 89. 1" = 100'
- 90. 1" = 100'
- 91. 1" = 100'
- 92. 1" = 100'
- 93. 1" = 100'
- 94. 1" = 100'
- 95. 1" = 100'
- 96. 1" = 100'
- 97. 1" = 100'
- 98. 1" = 100'
- 99. 1" = 100'
- 100. 1" = 100'

**INDEX SHEET**



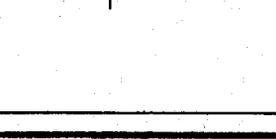






- NOTES:**
1. 8" DUCT FURNACE
  2. 6" DUCT FURNACE
  3. 4" DUCT FURNACE
  4. 2" DUCT FURNACE
  5. 1" DUCT FURNACE
  6. 1/2" DUCT FURNACE
  7. 1/4" DUCT FURNACE
  8. 1/8" DUCT FURNACE
  9. 1/16" DUCT FURNACE
  10. 1/32" DUCT FURNACE
  11. 1/64" DUCT FURNACE
  12. 1/128" DUCT FURNACE
  13. 1/256" DUCT FURNACE
  14. 1/512" DUCT FURNACE
  15. 1/1024" DUCT FURNACE

- WATER NOTES:**
1. INSTALL 4" CPVC WATER MAIN
  2. AMERICAN 4" CPVC PIPE
  3. AMERICAN SERVICE LINE
  4. TIE INTO EXISTING 4" AT THE 4" W/ 1/2" 4" PE REDUCER UNBELL
  5. INSTALL 4" M.I. 4" S.W.
  6. INSTALL 4" M.I. 4" S.W.
  7. REPLACE 4" DOUBLE SERVICE PER AND DRIP 84-94-1
  8. INSTALL 4" M.I. 4" S.W. S.W.



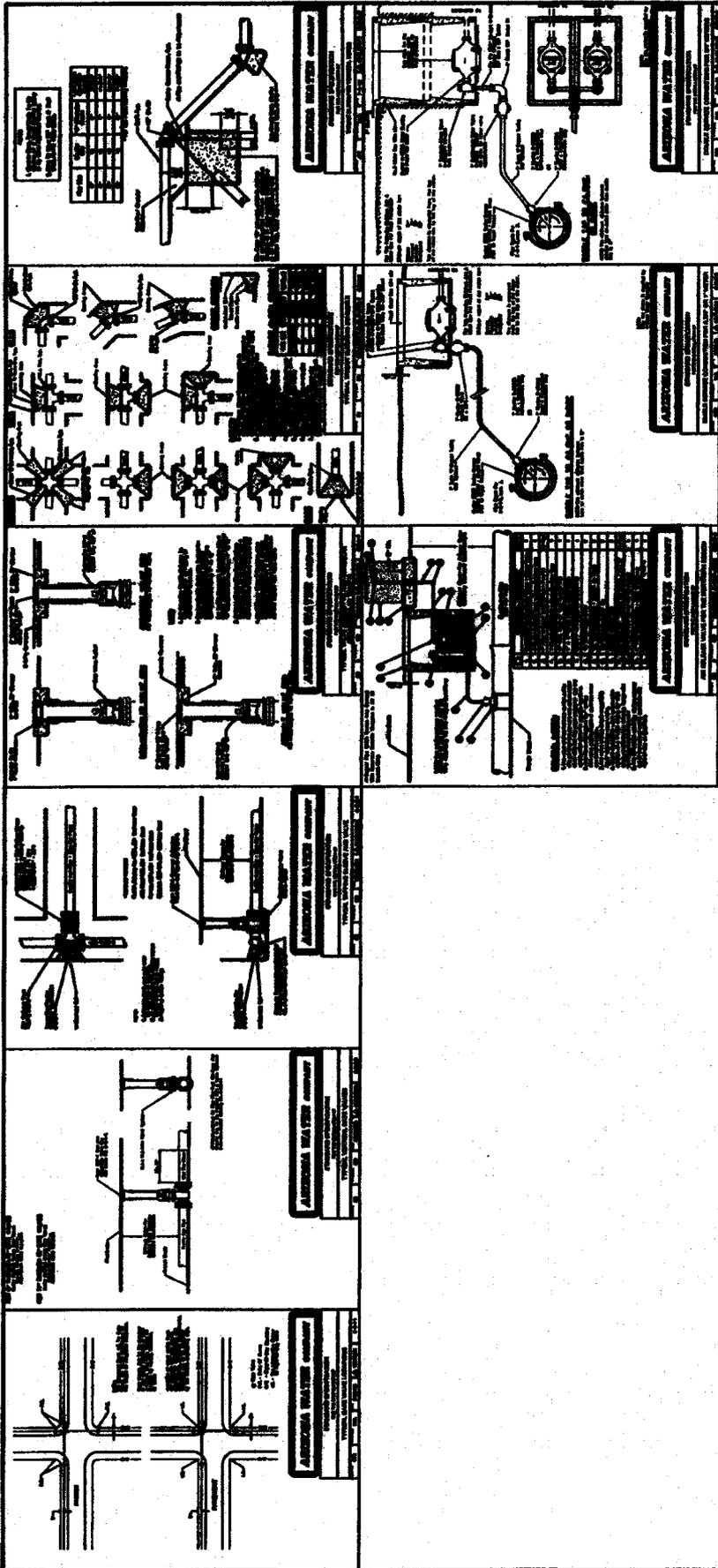
**CODE AND SYMBOL LEGEND**  
 1. 8" DUCT FURNACE  
 2. 6" DUCT FURNACE  
 3. 4" DUCT FURNACE  
 4. 2" DUCT FURNACE  
 5. 1" DUCT FURNACE  
 6. 1/2" DUCT FURNACE  
 7. 1/4" DUCT FURNACE  
 8. 1/8" DUCT FURNACE  
 9. 1/16" DUCT FURNACE  
 10. 1/32" DUCT FURNACE  
 11. 1/64" DUCT FURNACE  
 12. 1/128" DUCT FURNACE  
 13. 1/256" DUCT FURNACE  
 14. 1/512" DUCT FURNACE  
 15. 1/1024" DUCT FURNACE

**ANTIGUA WAY**  
**CLIFFSIDE TRAIL**  
 50' ROW BK.9, PG.9 YCR  
 50' ROW BK.8, PG.100 YCR  
 N00°30'28"E  
 305.00'  
 73.34'  
 N44°53'19"W  
 L=140.87  
 R=165.85



SEE SHEETS 5  
 11-00011






  
**VV-0007**
  
 SHEET 8 OF 8

# Yavapai County Development Services

**Prescott Office**  
500 S. Marina Street, Prescott, AZ 86303  
(928) 771-3214 Fax (928) 771-3432



**Cottonwood Office**  
10 S. 6<sup>th</sup> Street, Cottonwood, AZ 86328  
(928) 639-8151 Fax (928) 639-8153

Addressing - Building Safety - Customer Service & Permitting - Environmental - Land Use - Planning

## CERTIFICATE OF APPROVAL TO CONSTRUCT WATER FACILITIES

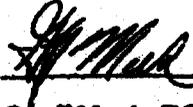
<b>Y. C. D. S. E.U. File No: A52011001372</b>	<b>APN: 800-17-052C</b>
<b>System Name: Arizona Water Company - Rimrock</b>	<b>13-046</b>
<b>System Owner/Address: AZ Water Co. P.O. Box 29006, Phoenix, AZ 85038</b>	
<b>Project Name: Antigua Way Water Line Replacement</b>	
<b>Project Applicant/Address: AZ Water Co. P.O. Box 29006, Phoenix, AZ 85038</b>	
<b>Project Location: Rimrock, Arizona</b>	
<b>Project Description: Replace 810LF of existing 4-inch GS with 850LF of 6-inch DIP w/polywrap and tie over services along Antigua Way in Rimrock.</b>	

Approval to construct the above-described facilities, as represented in the approved plan documents on file at Yavapai County Development Services- Environmental Unit, is hereby subject to the following Provisions:

- Construction shall be in accordance with plans and specifications stamped "YCDS-EU Construction Authorization (Approval to Construct)", which are dated and signed by the authorized Environmental Unit staff.
- Issuance of this "Approval to Construct" does not authorize construction in any County, Town, City or State road rights-of-way for this project. A separate permit may be required. Please contact the appropriate jurisdiction for this permit.

Provisions are continued on following pages.

The state law, A. R. S. §49-104.B.10, requires that construction of the project must be in accordance with rules and regulations of Arizona Department of Environmental Quality and Yavapai County Development Services-Environmental Unit. If construction has not started within one year of the date of this approval, this certificate will be void and a written extension of time shall be required.

  
\_\_\_\_\_  
Date Approved 1-23-12  
**Geoff Meek, RS, Manager**  
**Environmental Unit**

CC: Project Applicant  
System Owner  
Engineer  
Public Works: Joe Hux  
Planning



# ARIZONA WATER COMPANY

Verde Valley Division  
66 Coffee Pot Drive, Ste 7 Sedona, AZ 86336  
928-282-8888 | FAX 928-282-8131

## PROPOSAL/CONTRACT

CONTRACTOR: Rocky Construction, Inc.	SYSTEM: Verde Valley/Rimrock
ADDRESS: PO Box 1365	W.A. Note:
CITY ST ZIP: Camp Verde, AZ 86322	NO DUE DATE: November 11, 2011

CONTRACTOR SUBMITS this PROPOSAL/CONTRACT to ARIZONA WATER COMPANY, an Arizona corporation (the "Company"), to perform the work and complete the project described on Page 2 (the "Project"), as an independent prime contractor.

- Contractor certifies that it has a complete copy of, and has read, understands and accepts, the Company's General Conditions of Contract, and the Company's Construction Specifications and Standard Specification Drawings, (the "Specifications"), all of which are attached hereto. Contractor has examined the specific plans and related construction drawings for the Project (the "Drawings"), copies of which are also attached hereto. The General Conditions of Contract, Specifications and Drawings are incorporated into this Proposal/Contract. Contractor agrees that all work and materials to be furnished or purchased for the Project will be in strict conformance with the General Conditions of Contract, Specifications and Drawings.
- Contractor represents and warrants that it has satisfied and complied with the provisions of Section 6, Contractor Understands Work and Working Conditions, of the General Conditions of Contract prior to submitting this Proposal/Contract.
- Contractor represents that this Proposal/Contract is fair and honest in all respects. It is submitted in good faith and is not submitted in collusion with any other company, entity or person.
- Contractor acknowledges that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work.
- Prior to the commencement of work, Contractor will submit to the Company a list of all materials to be used in the Project. The materials list will include the manufacturer, part number, price and quantity included in this Proposal/Contract.
- Contractor will furnish all labor, tools, equipment and materials required to complete the Project according to the General Conditions of Contract, Specifications and Drawings. No materials purchased by Contractor to be incorporated into the Project are subject to tax at the time of purchase and Contractor will not charge the Company for any such tax. Contractor will pay the applicable transaction privilege tax (the "Contracting Tax") on the Project after Contractor receives payment of the final Project Invoice from the Company. The cost of materials incorporated into the Project which are exempt by Arizona Revised State Statutes ("A.R.S.") from the Contracting Tax, for example, pipes or valves having a diameter of four (4) inches or larger, including equipment, fittings and any other related part that is used in opening the pipes or valves (A.R.S. §92-5081 B.S.), will not be included in the total cost of the labor and materials upon which the Contracting Tax is computed. Contractor retains full liability and obligation to pay the Contracting Tax and will defend and indemnify the Company against any demand or obligation to pay the Contracting Tax.
- Contractor will maintain detailed accounting records of all materials purchased and incorporated into the Project. Such records will include all supporting original vendor invoices for all materials purchased. Following completion of the Project, Contractor will submit an itemized accounting to the Company which will include all supporting original vendor invoices and satisfactory evidence of payment thereof. The Company will not pay Contractor for materials not actually incorporated into the Project, and the disposition of such materials will remain Contractor's responsibility.
- The Estimated Total Cost of the Project, shown on Page 2, is based on estimated labor and material quantities to be furnished. It includes an estimate of the Contracting Tax and the cost of the required Performance and Payment Bonds. Contractor will not cancel, modify or withdraw this Proposal/Contract during a ninety-day (90) period commencing on the Bid Due Date. The Company may accept this Proposal/Contract by signing and mailing, or otherwise delivering, a copy hereof to Contractor during such ninety-day (90) period. If the Company does not accept this Proposal/Contract during such ninety-day (90) period, Contractor may cancel this Proposal/Contract by giving written notice of cancellation to the Company.
- Prior to the commencement of work, Contractor will provide the Company with a detailed construction schedule, in either Gantt or CPM form, identifying all tasks to be performed from the date of the written Commencement Notice through completion of the Project, including testing, training of Company Personnel and final Project Invoicing. Contractor will provide the Company with a copy of such construction schedule documenting the progress of work on the Project at least monthly.
- Contractor will not commence work on the Project until the Company gives Contractor a written Commencement Notice. Contractor will complete the Project within 10 calendar days after the Commencement Notice is issued.
- Following the Company's written notice of satisfactory completion of the Project, and upon receipt of the final Project Invoice from Contractor, the Company shall pay Contractor the actual total cost of the Project, which will be calculated as shown on Page 2, except that actual labor and material quantities installed/construted will be substituted for the estimated labor and materials quantities and the Contracting Tax will be recalculated based on such actual labor and materials quantities.
- The amount of applicable liquidated damages for Contractor's failure to deliver or perform within the time limit shown in Paragraph 10 may be deducted from the Company's payment of the final Project Invoice. This provision shall not limit the Company's ability to terminate this Proposal/Contract for Contractor's unsatisfactory performance or failure to perform as provided in the General Conditions of Contract, Specifications or Drawings, or in this Proposal/Contract.

### SPECIAL CONDITIONS:

- Contractor is responsible for Hot Taps
- Services under roadway to be installed in 2" schedule 40 PVC conduit

CONTRACTOR	PROPOSAL/CONTRACT ACCEPTED:
Rocky Construction, Inc.	ARIZONA WATER COMPANY
By: <i>Linda E. Hawkins</i>	By: <i>Fredrick K. Schneider</i>
Print Name: Linda E. Hawkins	Print Name: Fredrick K. Schneider, PE
Title: Estimator, PM	Title: Vice President - Engineering
Date: 11-14-11	Date: 2-5-2012



# ARIZONA WATER COMPANY

Verde Valley Division  
65 Coffee Pot Drive, Ste 7 Sedona, AZ 86330  
928-282-5555 | FAX 928-282-6231

## PROPOSAL/CONTRACT

CONTRACTOR: <b>Rocky Construction, Inc.</b>		SYSTEM: <b>Verde Valley/Rimrock</b>
AZ CONTRACTOR LICENSE NO: <b>150728</b>	CLASSIFICATION: <b>KA Dual</b>	W.A. No(s):
ADDRESS: <b>PO Box 1365</b>		BID DUE DATE: <b>November 11, 2011</b>
CITY ST ZIP: <b>Camp Verde, AZ 86322</b>		BID BOND REQUIRED: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

DESCRIPTION OF PROJECT: **Replace 810 LF of 4" galvanized steel with 850 LF of 6" ductile iron pipe with poly wrap and replace services along Antigua Way in Rimrock.**

	QUANTITY	UNIT PRICE		TOTAL COST	
		LABOR	MATERIALS	LABOR	MATERIALS
<b>1-2. MATERIALS EXEMPT FROM CONTRACTING TAX (per Paragraph 6)</b>					
Install 6" ductile iron pipe with poly wrap	850 LF	32.52	15.28	27643.20	11286.00
Install 4" tapping sleeve, valve, box and cover, as per AWC spec E-9-3-1	1	1481.99	915.61	1481.99	915.61
Install 6" x 4" FLG x MJ reducer	1	20.29	72.71	20.29	72.71
Install 6" MJ x MJ 90 degree EL	1	33.72	121.78	33.72	121.78
Install 6" FLG x MJ gate valve	1	221.31	800.64	221.31	800.64
Install 6" FLG x MJ 90 degree EL	1	316.2	112.38	316.2	112.38
Tie into existing 4" RT Tee with 6" MJ x 4" PE reducer with mess hup	1	224.51	231.49	224.51	231.49
3. Total Labor to Install Exempt Materials (add the amounts in column 1)				30,174.00	
4. Total Exempt Materials (add the amounts in column 2)					13547.91
<b>5-6. NON-EXEMPT MATERIALS</b>					
Install air release valve, as per AWC spec E-9-8-3	1	1474.78	806.52	1474.78	806.52
Replace 1" single service, as per AWC spec E-9-8-1	3	679.00	436.00	2037.00	1308.00
Replace 1" double service, as per AWC spec E-9-10-1	2	100.51	724.40	1560.02	1449.36
7. Total Labor to Install Non-Exempt Materials (add the amounts in column 3)				5076.00	
8. Total Non-Exempt Materials (add the amounts in column 4)					3964.88
9. Subtotal A (add lines 3, 7 and 8)					34,148.79
10. Contracting Tax Base (multiply the amount on line 9 by 0.88)				25,140.94	
11. Applicable Contracting Tax Rate				7.35%	
12. Contracting Tax (multiply the amount on line 10 by line 11)					1873.44
13. Subtotal B (add lines 4, 9 and 12)					36,022.23
14. 100% Performance and Payment Bonds Cost					1,546.05
15. Estimate Total Cost (add lines 13 and 14)					37,568.28

NOTE: The Estimated Total Cost includes all labor and materials for backfill, pavement replacement, chip seal, and traffic control necessary for the Project.

TT



CONTRACTOR:

Ms. Linda Harkness
Rocky Construction, Inc.
P. O. Box 1365
Camp Verde, Arizona 86322

DATE: February 3, 2012
DIVISION: VERDE VALLEY
SYSTEM: VERDE VALLEY
W.A.: 1-4931

THIS IS YOUR NOTICE TO PROCEED WITH THE FOLLOWING PROJECT(S):

DESCRIPTION OF WORK:

Replace 810 LF of 4-inch GS with 850 LF of 6-inch DIP with polywrap and replace services along Antigua Way in Rimrock, Arizona.

PERFORMANCE AND PAYMENT BONDS REQUIRED: [X] Yes [ ] No

TOTAL DAYS ALLOWED: 70

COMPLETION DATE: April 16, 2012

Prior to the start of construction, please call Keith Self, Division Manager at 928-282-7092 to schedule a pre-construction meeting.

ARIZONA WATER COMPANY
Company

ROCKY CONSTRUCTION, INC.
Contractor (type name)

By [Signature]
Title [Title]

By [Signature]
Title Project Manager

ID	Task Name	Duration	Start	Finish	Predecessors	Mar 4, '12	S	M	T	W	T	F	S	S	M	T	W	T	
1	Mobilize	0.5 days	Mon 3/5/12	Mon 3/5/12															
2	Material delivery	0.5 days	Mon 3/5/12	Mon 3/5/12															
3	Potholes for tap and CMP location	1 day	Mon 3/5/12	Tue 3/6/12	2														
4	Mainline installation	12 days	Tue 3/6/12	Tue 3/27/12	3														
5	Dry servocline installation	2 days	Tue 3/27/12	Thu 3/29/12	4														
6	Install 1" Air Release	1 day	Wed 3/14/12	Thu 3/15/12	5														
7	Test	2 days	Thu 3/29/12	Tue 4/3/12	5														
8	Tapping sleeve installation	1 day	Tue 4/3/12	Wed 4/4/12	7														
9	Tie in at 4" Tee	1 day	Wed 4/4/12	Thu 4/5/12	8														
10	tie in residential services	2 days	Thu 4/5/12	Tue 4/10/12	9														
11	Final grade and clean up	2 days	Tue 4/10/12	Thu 4/12/12	10														

External Tasks

External Milestone

Deadline

Milestone

Summary

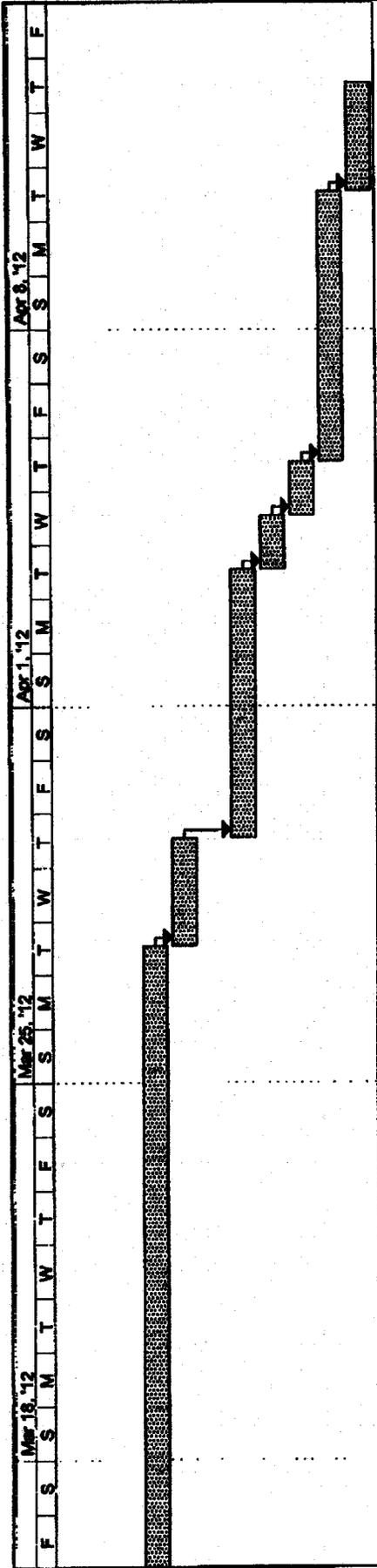
Project Summary

Task

Split

Progress

Project: Antigua Way  
Date: Mon 2/27/12



Project: Antigua Way  
 Date: Mon 2/27/12

- Task
- Milestone
- Summary
- Project Summary
- External Tasks
- External Milestone
- Deadline

**Performance  
Bond**

**North American Specialty Insurance Company**  
Manchester, New Hampshire 03101

**Bond No. 2144886**

**KNOW ALL MEN BY THESE PRESENTS:**

That Rocky Construction, Inc.,

(insert name and address, or legal title, of contractor)

as Principal, hereinafter called Contractor, and North American Specialty Insurance Company, a New Hampshire Corporation, as Surety, hereinafter called Surety, are held and firmly bound unto Arizona Water Company,

(insert name and address, or legal title, of owner)

as Oblige, hereinafter called Owner in the amount of Fifty Six Thousand One Hundred Eighty-One and 52/100's Dollars (\$56,181.52), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated February 5, 2012, entered into a Contract with Owner for Replace 810 LF of 4" galvanized steel with 850 LF of 6" ductile iron pipe with poly wrap and replace services along Antigua Way in Rimrock

in accordance with drawings and specifications prepared by Arizona Water Company

(insert full name and title)

which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligation thereunder, the Surety may promptly remedy the default, or shall promptly

1) Complete the Contract in accordance with its terms and conditions, or

2) Obtain a bid for submission to Owner for completing the Contract in accordance with its terms and conditions, and upon determination by Owner and Surety of the lowest responsible bidder, arrange for a contract between such bidder and Owner and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which Contractor ceases work on the Contract.

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

Signed this 17th day of February, 2012.

Rocky Construction, Inc. (Principal)

By: Martin P. [Signature] President

(Title)

North American Specialty Insurance Company

By: [Signature]

Bonnie Riddle, Attorney-in-Fact

NAS SURETY GROUP

NORTH AMERICAN SPECIALTY INSURANCE COMPANY  
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Manchester, New Hampshire, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Schaumburg, Illinois, each does hereby make, constitute and appoint:

ROBERT LAGLER and BONNIE RIDDLE

JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION (\$50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 24<sup>th</sup> of March, 2000:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By [Signature]  
Steven P. Anderson, President & Chief Executive Officer of Washington International Insurance Company  
& Senior Vice President of North American Specialty Insurance Company



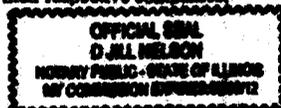
By [Signature]  
David M. Layman, Senior Vice President of Washington International Insurance Company  
& Vice President of North American Specialty Insurance Company

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 15th day of September, 20 11.

North American Specialty Insurance Company  
Washington International Insurance Company

State of Illinois  
County of Cook

On this 15th day of September, 20 11, before me, a Notary Public personally appeared Steven P. Anderson, President and CEO of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and David M. Layman, Senior Vice President of Washington International Insurance Company and Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.



[Signature]  
D. Jill Nelson, Notary Public

I, James A. Carpenter, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 17th day of February, 20 12.

[Signature]

James A. Carpenter, Vice President & Assistant Secretary of Washington International Insurance Company & North American Specialty Insurance Company

**Labor and  
Material  
Payment  
Bond**

**North American Specialty Insurance Company**  
Manchester, New Hampshire 03101

**NOTE: THIS BOND IS ISSUED SIMULTANEOUSLY WITH ANOTHER BOND IN FAVOR OF THE OWNER CONDITIONED FOR THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.**

**KNOW ALL MEN BY THESE PRESENTS:**

That Rocky Construction, Inc.

(Here insert the name and address, or legal title, of the contractor)

as Principal, hereinafter called Principal, and North American Specialty Insurance Company, a New Hampshire Corporation, as Surety, hereinafter called Surety, are held and firmly bound unto Arizona Water Company,

(Here insert the name and address, or legal title, of the owner)

as Obligee, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the amount of Fifty Six Thousand One Hundred Eighty One and 52/100's Dollars (\$56,181.52), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated February 5, 2012 entered into a Contract with Owner for Replace 810 LF of 4" galvanized steel with 850 LF of 6" ductile iron pipe with poly wrap and replace services along Antique Way in Rimrock, in accordance with drawings and specifications prepared by Arizona Water Company.

(Here insert full name and title)

which Contract is by reference made a part hereof, and is hereafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is that if the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with the sub-contractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above named Principal, and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant in the name of the Owner, prosecute the suit to final judgment for such sums as may be justly due claimant, and have execution thereon, provided, however, that the Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant.
  - a) Unless claimant shall have given written notice to any two of the following: The Principal, the Owner, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
  - b) After the expiration of one (1) year following the date on which Claimant ceased work on said Contract.
  - c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics liens which may be filed or record against said improvements, whether or not claim for the amount of such lien be presented under and against this bond.

Signed this 17th day of February, A.D. 2012.

Rocky Construction, Inc. (Principal)

By: [Signature] \_\_\_\_\_  
(Title)

North American Specialty Insurance Company

By: [Signature] \_\_\_\_\_  
Bonnie Riddle, Attorney-in-Fact

NAS SURETY GROUP

NORTH AMERICAN SPECIALTY INSURANCE COMPANY  
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Manchester, New Hampshire, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Schaumburg, Illinois, each does hereby make, constitute and appoint:

ROBERT LAGLER and BONNIE RIDDLE

JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION (\$50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 24<sup>th</sup> of March, 2000:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By [Signature]  
Steven P. Anderson, President & Chief Executive Officer of Washington International Insurance Company  
& Senior Vice President of North American Specialty Insurance Company



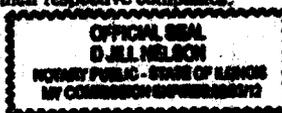
By [Signature]  
David M. Layman, Senior Vice President of Washington International Insurance Company  
& Vice President of North American Specialty Insurance Company

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 15<sup>th</sup> day of September, 20 11.

North American Specialty Insurance Company  
Washington International Insurance Company

State of Illinois  
County of Cook

On this 15<sup>th</sup> day of September, 20 11, before me, a Notary Public personally appeared Steven P. Anderson, President and CEO of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and David M. Layman, Senior Vice President of Washington International Insurance Company and Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.



[Signature]  
D. Jill Nelson, Notary Public

I, James A. Carpenter, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 17<sup>th</sup> day of February, 20 12.

[Signature]

James A. Carpenter, Vice President & Assistant Secretary of Washington International Insurance Company & North American Specialty Insurance Company



***ARIZONA WATER COMPANY***

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

CONSTRUCTION SPECIFICATIONS: E-8-1

STANDARD SPECIFICATION DRAWINGS: E-9-1

2007 EDITION WITH 2010 REVISIONS

**ARIZONA WATER COMPANY**

**GENERAL CONDITIONS OF CONTRACT: E-4-1**

# ARIZONA WATER COMPANY

E-4-1

## GENERAL CONDITIONS OF CONTRACT

### DEFINITIONS

- A. Company. The words "Company" or "Arizona Water Company" mean Arizona Water Company, and where applicable, any division of Arizona Water Company, whose principal place of business is located at 3805 North Black Canyon Highway, Phoenix, Arizona 85015-5351 (Post Office Box 29006, Phoenix, Arizona 85038-9006).
- B. Company's Authorized Representative. The words "Company's Authorized Representative" mean any officer of the Company, and any of the Company's Engineers, any Division Manager or Superintendent of the Company and/or such other person(s) designated in writing as the "Company's Authorized Representative" by the President or any Vice President of the Company.
- C. Contractor. The word "Contractor" means either an individual or other entity employed to do the work as shown on the Construction Drawings and as specified herein.
- D. Construction Drawings. The words "Construction Drawings" mean plans prepared by or on behalf of Arizona Water Company.
- E. Invitation to Bid. The term "Invitation to Bid" means the current copy of Arizona Water Company's Form E-3-11-4 Request for Proposal/Contract or Form E-3-12-2 Invitation to Bid.
- F. Contract. The word "Contract" means the written document titled "Contract" or "Proposal/Contract" when such document has been signed by an officer or other authorized representative of both the Contractor and the Company.
- G. Inspector. The word "Inspector" means the Company's Authorized Representative or a person designated in writing by the Company's Authorized Representative.

## GENERAL CONDITIONS OF CONTRACT

### 1. GENERAL

These General Conditions of Contract govern all works of installation and construction unless deviations are provided for on the Construction Drawings or in the Contract.

### 2. BONDS

The Contractor shall, upon request by the Company, furnish a performance bond and a material payment bond in the amount of 100% of the Contract price, in a form and from a surety acceptable to the Company.

### 3. LABOR AND/OR MATERIAL RELEASES

The Contractor shall supply labor and/or material releases satisfactory to the Company when requested to do so. Forms will be provided by the Company.

### 4. LICENSE

The Contractor shall have, as may be required by law, a valid license applicable to the work to be performed.

### 5. INSURANCE

The Contractor shall maintain in full force and effect insurance at no less than the following minimum amounts:

<b>WORKER'S COMPENSATION</b>	In accordance with requirements of the laws of the State of Arizona.
<b>COMPREHENSIVE GENERAL LIABILITY</b> (Including contractual liability covering death, bodily injury and property damage)	Combined single limit of not less than \$1,000,000 for each occurrence.
<b>AUTOMOTIVE LIABILITY</b> (Including owned, non-owned and hired vehicles)	Combined single limit of not less than \$1,000,000 for each occurrence.
<b>SUBCONTRACTOR'S PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE AND VEHICLE LIABILITY INSURANCE</b>	Contractor shall either require each of its subcontractors to procure and to maintain Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in this Section 5 or insure the activities of its subcontractors in Contractor's own policy, in like amounts.

Such insurance shall name the Company, its officers, agents, and employees as additional insured and be primary for all purposes.

The Company will at all times have the right to require that all of such insurance be placed with insurance companies that are satisfactory to it. The Contractor shall file with the Company a certificate evidencing that each policy of insurance for the above coverages in the minimum amounts specified has been purchased and is in good standing.

Such certificate shall provide that notice be given to the Company at least thirty (30) days prior to cancellation or material change in the form of such policies or any of them. Such certificates shall be kept on file by the Company and the Company must have current certificates on file, or a certificate must accompany any bid proposal, before that proposal will be accepted by the Company.

**6. CONTRACTOR UNDERSTANDS WORK AND WORKING CONDITIONS**

By executing a Contract with the Company, the Contractor warrants that it has, by careful examination, satisfied itself as to the nature and location of the work, including soil conditions, the character, quality and quantity of the materials to be encountered, the character of the equipment and facilities needed preliminary to and during prosecution of the work, the general and local conditions, and all other matters which can in any way be expected to affect its work under the Contract. Verbal agreements or conversations with any officer, agent or employee of the Company, either before or after the execution of the Contract, are not binding upon the Company and shall not affect or modify any of the terms or obligations herein contained.

**7. SPECIFICATIONS AND DRAWINGS**

The Contractor shall keep on the job a complete copy of all drawings and specifications furnished by the Company which are applicable to the Contract with the Company. Anything mentioned in the specifications and not shown on the drawings or shown on the drawings and not mentioned in the specifications shall be of like effect as if shown or mentioned in both. In case of a discrepancy between the figures, drawings or specifications and physical conditions of the job, the matter shall be immediately submitted to the Company's Authorized Representative for decision as to adjustments, if any, because of the discrepancy; without a decision from the Company's Authorized Representative no discrepancy shall be adjusted by the Contractor, save only at its own risk and expense. Any deviation from the specifications must be approved in writing by the Company's Authorized Representative.

**8. PROPERTY PROTECTION**

Trees, fences, poles, underground structures and all other property shall be protected unless their removal is authorized on the Construction Drawings. Any property damaged shall be restored by the Contractor, at its expense, to the owner's satisfaction.

**9. SPECIAL PERMITS, LICENSES AND INSURANCE**

The Company shall obtain all permits for railroad, county, state, city and irrigation district rights-of-way as well as Forest Service, State Land Department and Bureau of Land Management permits. (Pipeline Contractors)

Whenever blasting is required, the Contractor shall obtain all permits, licenses and insurance required at its expense. (All Contractors)

The Contractor will be required to obtain, and shall certify in writing to the Company that it has obtained, all additional permits required to perform the work including, but not limited to, a National Pollution Discharge Elimination System Permit and/or an Aquifer Protection Permit as those permits relate to disposal of drilling, development and test waters and/or any other discharge or similar activity. (Well Drilling Contractors)

**10. SURVEYS**

The Company shall be responsible, or arrange, for all surveys required for the work covered in the Contract, unless otherwise specified.

**11. BENCH MARKS, PROPERTY STAKES AND SURVEY STAKES**

Bench marks, property stakes and survey stakes shall be preserved by the Contractor; in case they are destroyed or removed by Contractor or its employees, the Company will replace them at the Contractor's expense, and the Contractor and its sureties shall be liable therefore.

**12. TOOLS, EQUIPMENT AND MATERIALS**

The Contractor shall furnish all of the necessary tools, equipment, and pipeline materials required for the work. All material furnished by the Contractor shall be of the quality specified by the Company in its Construction Specifications (E-8-1).

**13. SUPERINTENDENCE BY CONTRACTOR**

The Contractor shall assure adequate superintendence of the work by a competent foreman or superintendent (with full authority to act on behalf of Contractor) satisfactory to the Company, who will be on the job at all times when work is in progress.

**14. ORDER AND DISCIPLINE**

The Contractor shall at all times enforce strict discipline and good order among its employees.

**15. INDEPENDENT CONTRACTOR**

The Contractor is an independent contractor and any provisions in the Contract, the specifications, or these General Conditions of Contract and Arizona Water Company's Construction Specifications which may appear to give the Company the right to direct the Contractor as to the details of the doing of any work to be performed by the Contractor, or to exercise a measure of control over said work, shall be deemed to mean and shall

mean, that the Contractor shall follow the desires of the Company in the results of the work only and not in the means whereby said work is to be accomplished, and the Contractor shall use its own discretion and shall have complete and authoritative control over the work and as to the details of the doing of the work.

**16. PUBLIC SAFETY AND CONVENIENCE**

Contractor shall at all times conduct its work so as to ensure the least possible obstruction to traffic and other inconvenience to the general public and the residents and businesses in the vicinity of the work, and to ensure the protection of persons and property.

To protect persons from injury and to avoid property damage, Contractor shall provide and maintain adequate barricades as required during the progress of the work and until it is safe to use the property for its intended purpose. The rules and regulations of the local governmental agencies and specific permit requirements respecting safety provisions shall be observed at all times.

In the case of blasting, the Contractor shall exercise extreme caution to protect the general public and personal and public property from harm or damage.

**17. PROPERTY PROTECTION**

Trees, fences, poles, and all other property shall be protected unless their removal is authorized by the Company. Any property damaged shall be restored by Contractor, at his expense, to Company's satisfaction.

**18. RESPONSIBILITY OF CONTRACTOR**

The work shall be under Contractor's responsible care and charge. Contractor shall bear all loss and damage whatsoever and from whatsoever cause, except that caused solely by the act of Company, which may occur on or to the work during the fulfillment of the Contract. If any loss or damage occurs, Contractor shall immediately make good any such loss or damage, and in the event of Contractor refusing or neglecting to do so, Company may, or by the employment of some other person, make good any such loss or damage, and the cost and expense of so doing shall be charged to Contractor.

The mention of any specific responsibility or liability imposed upon Contractor shall not be construed as a limitation or restriction of any general liability or duty imposed upon Contractor by the Contract. The reference to any specific duty or liability being made herein is merely for the purpose of explanation.

Contractor alone shall at all times be responsible for the safety of Contractor, Contractor's employees, and its subcontractors' employees, and for Contractor and its subcontractors' plant and equipment and the method of performing the work.

**19. ERRORS AND OMISSIONS**

If Contractor, in the course of the work, becomes aware of any errors or omissions in the Contract Documents or in the instructions, or if Contractor becomes aware of any discrepancy between the Contract Documents and the physical conditions of the site of

the work, Contractor shall immediately inform Company in writing. Any work done by Contractor after such discovery, until authorized by Company, will be done at Contractor's risk.

20. **LAWS, REGULATIONS**

Contractor shall give all notices required by law and comply with all laws, ordinances, rules and regulations, including, but not limited to, all applicable federal, state, local and other legally required health and safety standards, orders, rules, regulations or other laws, pertaining to the conduct of the work. Contractor shall be liable for, and shall defend and indemnify Company against and hold it harmless from, all violations of any law, ordinance, rule, regulation, standard, or order in connection with work furnished by or on behalf of Contractor. If Contractor observes that the Contract Documents are at variance with any law, ordinance, rule, regulation, standard, or order it shall promptly notify Company in writing and any necessary changes shall be adjusted as provided in the Contract for changes in the work. Contractor shall not perform any work contrary to such laws ordinances, rules, regulations, standards, or orders.

21. **PERMITS, FEES AND INSPECTIONS**

Permits and licenses necessary for the prosecution of the work, including, but not limited to, any National Pollution Discharge Elimination Systems (NPDES) Permits required by U.S. Environmental Protection Agency or the Arizona Department of Environmental Quality shall be secured, paid for, and complied with by Contractor.

Contractor shall be responsible for its actions and shall abide by all conditions and/or restrictions set forth in the NPDES Permit and any other permit or license required for this project.

Company shall at all times have access to the work whenever it is in preparation or in progress and Contractor shall provide proper facilities for such access and for all inspections. If the Contract Documents, the General Superintendent's instructions, laws, ordinances or any public authority require any work to be inspected or approved, Contractor shall give timely notice of its readiness for inspection.

Inspection of the work shall not relieve Contractor of any of its obligations even if defective work or unsuitable materials may have been previously overlooked by Company and accepted or estimated for payment. If any work is found not in accordance with the Contract Documents, Contractor, at its sole cost and expense, shall promptly make good such defective work.

22. **CONSTRUCTION MARKING (PIPELINE ONLY)**

Each job shall be marked and/or barricaded by the Contractor in such a manner that the construction is clearly visible at all times.

23. **EXTRA WORK AND/OR MATERIALS**

Except as otherwise herein provided, no charge for any extra work and/or material will be allowed unless the same has been ordered in writing by the Company's Authorized Representative, and the price stated in such order.

**24. CHANGES**

The Company shall have the right to make any changes in the work that it may determine to be necessary. If such changes affect the cost of the work, an equitable adjustment shall be negotiated. Changes shall in no way affect or void the obligations of both parties under the original Contract.

**25. INSPECTION**

All work and material shall be open at all times to inspection and acceptance or rejection by the Company's Inspector. Any work covered up by the Contractor prior to inspection and acceptance by the Company shall be subject to being uncovered at the expense of the Contractor for inspection by the Company. The Contractor shall give the Company reasonable notice of starting new work and shall provide, without extra charge, reasonable and necessary facilities for inspection, even to the extent of taking out portions of finished work. In case any such finished work removed is found satisfactory, however, the actual direct cost of such removal and replacement, plus 15% of such cost, will be paid by the Company; in addition, if completion of the work has been delayed thereby, the Contractor shall be granted a suitable extension of time on account of the additional work involved.

**26. DEFECTIVE WORK OR MATERIAL**

The Contractor shall remove, at its own expense, any work or material found defective by the Company's Inspector and shall rebuild and replace the same without extra charge; in default thereof, the same may be done by the Company at the Contractor's expense.

**27. ASSIGNMENT**

Neither party to the Contract may assign the Contract or sublet it in whole or in part without the written consent of the other, nor shall the Contractor assign any monies due or which may become due hereunder without the previous written consent of the Company, nor shall such consent release the Contractor from any of its obligations and liabilities under the Contract.

**28. RIGHTS OF VARIOUS INTERESTS**

Whenever work that is being done for the Company other than by the Contractor is contiguous to work being done by the Contractor, the respective rights of the various interests involved shall be established by the Company to secure the completion of the various portions of the work in general harmony.

**29. SUSPENSION OF WORK**

The Company's Authorized Representative may at any time and for any reason suspend all or any portion of the work under the Contract. This right to suspend work shall not be construed as denying the Contractor compensation for actual, reasonable and necessary expenses due to suspension to which it may be entitled.

The Company's Authorized Representative may order the Contractor to suspend any work because of certain conditions, such as inclement weather, or because the

Contractor is in violation of these General Conditions of Contract or the Construction Specifications. It is understood that compensation for expenses will not be allowed for such suspension when ordered by the Company's Authorized Representative on account of such conditions.

30. PROCEDURE OF WORK (PIPELINE ONLY)

All work under the Contract shall be planned and performed so as to cause a minimum of interference with normal vehicular and pedestrian traffic. At no time shall the Contractor completely obstruct the traffic to any business establishment during normal work hours of that business. It shall be the Contractor's responsibility to maintain facilities for ingress and egress to any business establishment. When crossing any street, not more than one-half of the street may be blocked at one time. All federal, state, county and city laws, rules and regulations relating to this subject are to be obeyed.

The Contractor shall complete any portion or portions of the work in such order of time as the Company may require. The Company shall have the right to take possession of and use any completed or partially completed portions of the work. If such prior possession or use increases the cost of or delays the work, the Contractor will be entitled to extra compensation or extension of time or both, as the Company may determine.

31. DISPUTES

All questions or controversies which arise between the Contractor and the Company, under, or in reference to, the Contract, shall be decided by the Company's Authorized Representative and a representative of the Contractor, and their decision shall be final and conclusive upon both parties.

32. CONNECTION TO EXISTING SYSTEM (PIPELINE ONLY)

Unless approved in writing by the Company's Authorized Representative, no tie-in or hot tap on the existing system shall be made unless the Company's Inspector is present. When the tie-in requires the operation of an existing valve or other control equipment, the conditions of Paragraph(s) 30 and 33 shall be complied with. The Contractor shall notify the Company twenty-four (24) hours prior to tie-in as to the exact time the Contractor plans to make tie-in so that the Company's Inspector will have sufficient time to locate valves and make necessary preliminary arrangements for shut down.

33. PLANNED INTERRUPTION OF WATER SERVICE (PIPELINE ONLY)

No valve or other control on an existing Company water system shall be operated for any purpose by the Contractor without approval of the Company's Inspector. All of the Company's water customers whose service is interrupted by a planned interruption, other than in cases of emergency, shall be notified by the Contractor at least twenty-four (24) hours before the planned interruption and advised of the probable time when the service will be restored.

34. EXISTING UTILITY FACILITIES (PIPELINE ONLY)

The Contractor shall notify all known utilities in the area of the work to be performed under the Contract and shall make arrangements to have their facilities marked in

accordance with A.R.S. 40-380.022 ("Blue Stake Law"). The Contractor shall be responsible for locating and preserving all marked facilities. Any damages to these marked facilities shall be repaired at the expense of the Contractor.

The Company will pay the cost to relocate its or other structures when such structures are found occupying the physical space of the proposed installation. It is understood that the Contractor will be reimbursed for such work only when written authorization from the Company has been obtained in advance of such work.

**35. CLEANING UP**

The Contractor shall remove from the Company's property and from all public and private property, at its own expense, all temporary structures, rubbish and waste materials resulting from its operations. In the event Contractor fails to do so, the Company may remove same at the expense of the Contractor.

**36. WORKING HOURS (PIPELINE ONLY)**

Unless stated to the contrary in the Invitation to Bid and/or so stated on the Construction Drawings, or agreed to by the Company during a Pre-Construction Conference, the Contractor shall not be permitted to perform work on Saturdays, Sundays, or Company holidays, or commence work such as tie-ins that cannot be completed during normal working hours.

**37. INDEMNITY**

A. The Contractor shall indemnify the Company against, and save and hold it harmless from, any and all liability, claims, demands, loss, actions, causes of action, expense, penalties, fines, assessments, damages and costs of every kind and nature for injury to or death of any and all persons, including, without limitation, employees or representatives of the Company or of the Contractor or of any subcontractor, or any other person or persons, and for damage, destruction or loss, consequential or otherwise, to or of any and all property, real or personal, including, without limitation, property of the Company or of the Contractor or of any subcontractor, or of any other person or persons, and the violation of any law, ordinance, rule, regulation, standard, or order resulting from or in any manner arising out of or in connection with the performance of the work under the Contract, howsoever same may be caused, including, without limitation, the Company's active or passive negligence. The Contractor shall also, upon request by the Company, and at no expense to the Company, defend the Company in any and all suits, concerning such injury to or death of any and all persons, and concerning such damage, destruction or loss, consequential or otherwise, to or of any and all property, real or personal, including, without limitation, suits by employees or representatives of the Company or of the Contractor or of any subcontractor, or any other person or persons, or concerning any court or administrative proceeding concerning the violation of any law, ordinance, rule, regulation, standard, or order. Excluded from this paragraph are only those injuries to or deaths of persons and damage, destruction or loss, to or of property arising from the sole negligence or willful misconduct of the Company.

B. Contractor shall indemnify the Company against, and save and hold it harmless from, any and all liability, claims, demands, damages, costs, expenses and attorney's fees, suffered or incurred on account of any breach of any obligation, covenant or other

provision of this contract, including without limitation, breach of the indemnity provisions of subsection A of this Section 37.

- C. Contractor further agrees to defend, indemnify and hold harmless the Company, its directors, officers, employees, and agents, from and against any and all costs, damages, claims, expenses, violations, notices of violations, penalties, liens, assessments, and liabilities of every kind and nature, foreseeable or unforeseeable, directly or indirectly, arising from any release, removal, generation, use, storage or disposal on, under, around, or from the well site of any material, substance, or waste, hazardous or non-hazardous, including, without limitation, drilling fluids, mud, cuttings and development and test water howsoever same may be caused, including, without limitation, the Company's active or passive negligence.

38. LIENS

If at any time there shall be evidence of any lien or claim for which the Company might become liable and which is chargeable to the Contractor, the Company shall have the right to retain out of any payment then due or thereafter to become due, an amount sufficient to completely indemnify the Company against such lien or claim. If the Company determines that such lien or claim is valid, the Company may pay and discharge the same, and deduct the amount so paid from any monies which may be or become due and payable to the Contractor.

39. PAYMENT

Upon completion of the installation or construction, the Company will, within thirty (30) days after receipt of proper invoice and labor and material releases, pay the amount due the Contractor. If the Company believes that additional work, such as clean up, is required, it may deduct the total cost of such additional work from the amount to be paid to Contractor.

40. COMPANY'S RIGHT TO TERMINATE CONTRACT: DAMAGES DUE TO DELAY

If the Company finds the Contractor to be in material violation of any section of these General Conditions of Contract, Construction Specifications or Standard Specification Drawings or if the Contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will insure its completion within the time specified or any extension thereof, or fails to complete said work within such time, or when any other cause exists to justify such action, the Company may, without prejudice to any other right or remedy, by written notice to the Contractor, terminate its right to proceed with the work or such part of the work as to which there has been such violation, delay or other cause.

In the event the Contractor's right to proceed is terminated, the Company may take over the work and take possession of, and utilize in completing the work, such materials as may be on the site of the work and necessary therefore and prosecute said work to completion by whatever method it may deem expedient. The Contractor and its sureties shall be liable to the Company for any excess cost caused thereby.

In the event the Contractor's right to proceed with the work is terminated, the Contractor shall not be entitled to receive any further payment until the work is completed or the job is canceled. If the unpaid balance of the Contract price exceeds the expense of finishing

the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expenses exceed such unpaid balance, the Contractor shall pay the difference to the Company.

**41. GUARANTEE**

The Contractor shall guarantee all labor and workmanship and any materials it installs for a period of one year following the date of completion and acceptance by the Company. If any portion of the work or any of the materials become defective within the guarantee period, the Company will notify the Contractor of such defect. The Contractor must repair any defect within fifteen (15) days of such notification. If repairs are not completed within this time period, the Company may repair the defect, or cause such defect to be repaired, and the cost of such repairs shall be paid by the Contractor. The Company reserves the right to determine which defects are the result of poor labor and workmanship and which are caused by defective materials.

**42. LIQUIDATED DAMAGES FOR NON PERFORMANCE: REQUEST FOR EXTENSION(S) OF TIME**

Time is of the essence in the Contract. The time period required for completion of the work will be specified in the Contract. The Contractor agrees that the Company will suffer substantial damages in the event the Contractor fails to complete the work within the agreed upon time period. The Contractor and the Company agree that since it would be impracticable or extremely difficult to precisely fix such damages, a reasonable approximation of such actual damages suffered by the Company shall be a sum equal to 0.5% of the Contract price for each working day beyond the time period for completion of the work specified in the Contract.

Request by the Contractor for extensions of the time period shall be in writing and shall not become effective until approved in writing by the Company's Authorized Representative.

**43. PAYMENT FOR REQUIRED TESTING**

Whenever testing is required by any governmental agency or by the Company to assure conformance of the Contractor's work with the appropriate standard, it will be paid for as follows:

- a. For testing required under permits obtained by the Company or testing specifically requested by the Company, the cost of the first test will be paid for by the Company. In the event of failure of the first test, the cost of all further testing associated with the failure will be paid by the Contractor.
- b. For testing required under permits obtained by the Contractor, all costs will be paid by the Contractor. Testing of the pipeline for pressure and leakage will be included in the Contract price.

#### **44. CONTRACT DEADLINES AND BONDS REQUIREMENTS**

The time limits to be allowed for the completion of any work covered in the Contract shall be established as follows: In the proposal submitted to the Company, in response to the Invitation to Bid, the Contractor shall state the number of calendar days required for completion of the work. The time required will become a part of the Contract. When the Company is ready to proceed with the work, a Commencement Notice will be issued by the Company to the Contractor by mail. The Commencement Notice will allow the time required in the Contract plus ten (10) calendar days and will indicate the final day of the time allowed. The work cannot begin until the Company has received a performance bond and materials payment bond for the Contract price unless the bonds have been waived under the special conditions section of the Contract. The additional ten (10) days is the allowance for time to deliver the Commencement Notice to the Contractor and for the Contractor to return the performance bond and materials payment bond to the Company. Time extensions will be granted if warranted, and only at the time of the delay, thus extending the final day of the time allowed.

If the Company elects not to require a performance bond and a material payment bond for the work, the cost of the bonds will be deducted from the proposed total cost and the Contract will reflect this reduced cost and the bonds requirements will be waived under special conditions of the Contract.

***ARIZONA WATER COMPANY***

**CONSTRUCTION SPECIFICATIONS: E-8-1**

**ERRATA 2010**

**ARIZONA WATER COMPANY**

E-8-1

**CONSTRUCTION SPECIFICATIONS  
FOR THE INSTALLATION OF WATER DISTRIBUTION SYSTEMS  
DUCTILE IRON**

**DEFINITIONS**

- A. **Company**. The words "Company" or "Arizona Water Company" mean Arizona Water Company, and where applicable, any division of Arizona Water Company, whose principal place of business is located at 3805 North Black Canyon Highway, Phoenix, Arizona 85015-5351 (Post Office Box 29006, Phoenix, Arizona 85038-9006).
- B. **Company's Authorized Representative**. The words "Company's Authorized Representative" mean any officer of the Company, and any of the Company's Engineers, any Division Manager or Superintendent of the Company and/or such other person(s) designated in writing as the "Company's Authorized Representative" by the President or any Vice President of the Company.
- C. **Contractor**. The word "Contractor" means either an individual or other entity employed to do the work as shown on the Construction Drawings and as specified herein.
- D. **Construction Drawings**. The words "Construction Drawings" mean plans prepared by or on behalf of Arizona Water Company.
- E. **Contract**. The word "Contract" means the written document titled "Proposal/Contract" when such document has been signed by an officer or other authorized representative of both the Contractor and the Company.

**CONSTRUCTION SPECIFICATIONS  
FOR THE INSTALLATION OF WATER DISTRIBUTION SYSTEMS  
DUCTILE IRON**

**1. GENERAL**

All work is to be completed in a safe, workmanlike manner and in accordance with these Construction Specifications; any deviation therefrom must be approved in writing by the Company.

Installations must conform with the requirements of all governmental regulating agencies and the cost of conforming to such regulations must be included in the unit bid prices. Examples of such regulations, without attempting to be inclusive, are:

- a. Special compaction and paving for street crossing.
- b. Shoring when required because of the trench depth.
- c. Closing a trench in those areas where no open trench is allowed overnight.
- d. Barricading and traffic control as required.

**2. LOCATION MARKING**

Alignment stakes as required in the opinion of the Company shall be furnished by the Company to the Contractor and shall be set by the Company at agreed upon intervals and offsets. Under normal circumstances these will reference the pipeline location five feet (5') into the right-of-way measured from property pins. Grade stakes will be provided only when the Construction Drawings show a pipeline depth other than covered in these Specifications. It is the responsibility of the Contractor to preserve all survey work.

**3. TRENCH EXCAVATION**

The trench location is to be determined by the Construction Drawings.

**FOR 8-INCH OR SMALLER PIPE:** The depth of the trench prior to pipe laying shall be such that the finished pipeline shall have between thirty-six inches (36") and forty-two inches (42") of cover unless otherwise specified on the Construction Drawings.

**FOR 12-INCH AND LARGER PIPE:** The depth of the trench prior to pipe laying shall be such that the finished pipeline shall have between forty-eight inches (48") and sixty inches (60") of cover unless otherwise specified on the Construction Drawings.

The width of the trench at and below the level at the top of the pipe shall be a minimum of twelve inches (12") plus the outside diameter of the pipe barrel and a maximum of twenty-four inches (24") plus the outside diameter of the pipe barrel.

The bottom of the trench shall be accurately graded to provide a uniform bearing for each length of pipe for the full length of the pipe. If the native material on the trench bottom can be reasonably dug by hand, bell holes shall be dug for the joints so that the joints in no way support the pipe. When native materials such as rock are encountered during trenching that will not provide a uniform support for the pipe, the trench will be over-excavated an additional six inches (6") and suitable bedding material will be placed in the trench.

Bedding material will be placed by hand in four-inch (4") lifts and compacted to ensure uniform compaction and to eliminate any voids under the pipe. When the space between the pipe and trench bottom varies, this must be backfilled and compacted in four-inch (4") lifts to the mid-section of the pipe.

Whenever the trench is over-excavated for whatever reason, the trench bottom will be brought up to the correct depth at the Contractor's expense using either method (a) or (b) as follows:

- a. A.B.C. material shall be used and compacted to a uniform density of not less than 80% of the maximum density as determined by AASHTO T-99 method A and T-191.
- b. Native material 100% of which will pass through a one and one-half inch (1½") screen and at least 20% of which will pass through a number-8 screen shall be used and compacted to a uniform density of not less than 85% of the maximum density as determined by AASHTO T-99 method A and T-191.

#### 4. MATERIALS TO BE PROVIDED BY CONTRACTOR

Unless otherwise specified on the Construction Drawings or in the Contract, the Contractor will supply all of the necessary materials which will become a permanent and integral part of the water distribution system, including concrete blocking, anchors, backfill material, paving material and supplies used during the prosecution of the work. All materials provided by the Contractor to construct the water distribution system must be NSF Standard 61 approved. All potable water pipes and fittings shall have NSF-PW seal. Construction materials used in the water system shall be lead free as defined at AAC R28-4-504 and R18-1-101. The Contractor will provide the following materials:

- a. FIRE HYDRANTS: Mueller Super Centurion 250 Fire Hydrant, meets ANSI/AWWA C502 Standard, Model No. A-423, 5¼" main valve opening, three way, 6" Mechanical Joint Shoe, 1½" pentagon operating nut, color - yellow, drain open, open direction - left, 4' or 4'6" bury depending on application. For pumper and hose nozzle information see below.
  - (1) 1 - 4" Pumper Nozzle, NST and 2 - 2½" Hose Nozzles, NST. (These locations only: Ajo, Casa Grande, Coolidge and San Manuel.)
  - (2) 1 - 4½" Pumper Nozzle, NST and 2 - 2½" Hose Nozzles, NST. (These locations only: Apache Junction, Arizona City, Lakeside, Oracle, Overgaard, Pinewood, Rimrock, Sedona, Sierra Vista, White Tank and Winkelman.)
  - (3) 1 - 4½" Pumper Nozzle, NST and 2 - 2½" Hose Nozzles, NPT (Bisbee only.)
  - (4) 1 - 3" Pumper Nozzle GA 6-350 (6 threads per inch, 3.50 pitch diameter) and 2 - 2½" Hose Nozzles, NPT (Miami only.)

- (5) 1 – 3½" Pumper Nozzle GA 6-411 (6 threads per inch, 4.11 pitch diameter) and 2 – 2½" Hose Nozzle, NST (Superior only.)
- b. **FITTINGS:** Manufactured by Tyler or Union. Crosses, Elbows, Tees, Cap, Reducer, Adapter, Plug, Blind Flange and Tapped Flange; Ductile Iron, Class 350, SSB, Cast Iron Cement Lined.
- (1) Foster Adaptors for MJ, made by Infact Corporation: Available in size 4" to 16". Part No. 4" = 4FA-BC, 6" = 6FA-BC, 8" = 8FA-BC, 10" = 10FA-BC, 12" = 12FA-BC, 16" = 16FA-BC.
- c. **DETECTOR CHECK VALVE:** Mueller/ Hersey EDC III, iron body, including 5/8" x ¾" Trim Kit. Trim Kit Part No.: 4" = 282080, 6" = 282082, 8" = 282085, 10" = 282496.
- d. **GATE VALVES:** Mueller Resilient Wedge Gate Valves, meets AWWA C509 specification, 250 psig, Non-rising stem, Part No. A-2360 sizes 4" through 12"; Part No. A-2361 sizes 14" through 36", low zinc stems, epoxy coated inside and outside to meet the NSF 61 rating. The bonnet and stuffing box shall have 304 stainless steel bolts/nuts.
- e. **TRACER WIRE and WARNING TAPE:**
1. **TRACER WIRE:** Shall be direct bury AWG #14 solid copper wire, Color: Blue.
  2. **WARNING TAPE:** Reef Industries, Standard Terra Tape in 3" widths. Color: Blue and imprinted 'Arizona Water Company'.
- f. **AIR RELEASE VALVE:** Crispin Model AR10 with 1" NPT inlet and ½" NPT outlet, cast iron body and top flange; with a 5/64" orifice with stainless steel valve sealing faces and BUNA-N rubber.
- g. **PRESSURE RELIEF VALVE:** Watts 174A, Model M, 2" inlet, 2" outlet, Bronze Body, 30lb. to 150lb. pressure range.
- h. **MEGA LUG:** Mechanical Joint restraint made of ductile iron conforming to ASTM 536-80, 250 psi made by EBAA Iron, Inc., series 1100 or equal.
- i. **METER BOXES:**
- (1) Concrete Box with a steel regular lid, Number 1: Tucson specification.
  - (2) Concrete Box with a steel regular lid, Number 2, 3, and 4: Phoenix specification.
- j. **PIPE, COPPER:** Type K soft copper in 60 or 100-foot coils, per ASTM B88.
- k. **PIPE, DUCTILE IRON:** Ductile Iron Pipe, Cement Lined, Push-on, conform to current ANSI/AWWA Specification A21.51/C151, Pressure Class 350 (sizes 4" through 12"), Pressure Class 250 (sizes 14" through 20"), or Pressure Class 200 for 24" through 36" pipe. Vendors:

- (1) Pacific States Cast Iron Pipe Company
- (2) Griffin Pipe
- (3) United States Pipe and Foundry Company
- (4) American Ductile Iron Pipe
- (5) Clow Pipe (McWane, Inc.)

- I. **PIPE, PLASTIC:** Plastic pipe, C-900 PVC per ANSI/AWWA C900, Class 150, sizes 6" through 12". NSF61 approved. Furnished in laying lengths of 20'. The barrel shall conform to the outside dimensions of steel pipe (IPS) or cast iron (CI) pipe equivalent and the wall thickness of dimension-ratio (DR) 18.
- m. **POLYETHYLENE ENCASUREMENT (Polywrap):** For all pipeline and related fittings installed, EXCEPT for the Coolidge Division. Minimum 8 Mil. and installed per AWWA C105/A21.5-93 and ASTM A-674-89. Manufactured by the Pacific States Cast Iron Pipe Company. The wrapping tape shall be minimum 10 mil. vinyl tape. No duct tape shall be used.
- n. **COUPLING:** Mueller, straight three part union, tested to meet ANSI/AWWA C800, H15403, conductive compression.
- Mueller, H15428, straight coupling, conductive compression by male iron pipe, tested to meet ANSI/AWWA C800 specification. Size: 2".
- Mueller, H15451, straight coupling, conductive compression by female iron pipe, tested to meet ANSI/AWWA C800 specification. Size: 2".
- Viking Johnson brand, sold by Mueller: MaxiFit Straight (2"-24"), MaxiFitXtra Straight (4"-8") or MaxiStep Transition, tested to meet AWWA/ANSI C.219-91 specifications – certified to ISO 9001:1994 / Smith – Blair Quantum.
- o. **STOP, ANGLE METER, BALL:** Mueller, valve, B24258, conductive compression by meter swivel nut, tested to meet ANSI/AWWA C800, size 5/8" x 3/4" x 3/4" for a 3/4" service or size 1" for a 1" service.
- Mueller, valve, B24265, female pipe thread by meter swivel nut, tested to meet ANSI/AWWA C800, size 5/8" x 3/4" x 3/4" for a 3/4" service or size 1" for a 1" service.
- p. **STOP, CORP:** Mueller, ball valve, B25008, taper thread by conductive compression, tested to meet ANSI/AWWA C800 specification, sizes: 3/4", 1" and 2".
- Mueller, ball valve, B25028, iron pipe thread by conductive compression, tested to meet ANSI/AWWA C800 specification. Sizes 3/4", 1", and 2".
- Mueller, 300 Ball Curb Valve, B-25122, taper thread by conductive compression, tested to meet ANSI/AWWA C800 specifications, size: 2". (2" service)

- q. **STOP, CURB:** Oriseal valve, H10291, iron pipe thread by iron pipe thread, quarter turn check, brass, tested to 300 psi working pressure, tested to meet ANSI/AWWA C800 specification, size: 2".
- Mueller, B20283, Mueller 300 ball curb valve, female iron pipe by female iron pipe, quarter turn check, tested to meet ANSI/AWWA C800 specification. Size: 2". (Blow-off E-9-8-1).
- r. **TAPPING SADDLE:** Smith Blair, Cast Bronze ASTM-B584 85-5-5-5, double strap, iron pipe threads, Models 321 and 323. Washers are silicon bronze, ASTM-B36. Gaskets are grade 60 Buna N, or Mueller bronze double strap service saddle, BR 2 B series, cast bronze, ASTM-B585, 85-5-5-5, or H16084, 200 psig, meets ANSI/AWWA C800.
- s. **TAPPING SLEEVE:** Mueller H304 Stainless Steel Tapping Sleeve, JCM 432 18-8 Type 304 Stainless Steel Tapping Sleeve, Romac "SST" Type 304 Stainless Steel Tapping Sleeve or CASCADE-style CST-EX stainless steel pressure-rated tapping sleeve.
- t. **TAPPING VALVE:** Mueller Resilient Wedge tapping valve, Catalog Number T-2360-16, Class 125, sizes 4" through 12"; T-2361-16, Class 125, sizes 14" to 36" all with Type 304 stainless steel fasteners; bypass valves are required on 18" – 36" valves flange by mechanical joint per ANSI/AWWA C111, iron wedge, non-rising stem. Epoxy coated interior/exterior per ANSI/AWWA C550 for NSF 61 compliance. 250 PSI range for valves 4" to 12". 150 PSI range for valves 14" to 36".
- u. **U-BRANCH:** Mueller, H15364, 1" male iron pipe by ¾" male iron pipe, tested to meet ANSI/AWWA C800 specification. Size: 1" x ¾" x 13½", straight line.
- v. **VALVE BOXES:** Valve Box with Cover, adjustable, Tyler 562-A or equal, made of cast iron.
- w. **VAULTS:** Utility Vault Company, Chandler, AZ.
- (1) 4484-WA concrete vault with a 3660 aluminum double torsion door with a recessed padlock hasp, two - 18" x 24" center knockouts.
  - (2) 575-WA concrete vault with a 4874 aluminum double torsion door with a recessed padlock hasp, two - 18" x 24" center knock outs and adjustable frame.
  - (3) 612-5X-WA concrete vault with a 4874 aluminum double torsion door with a recessed padlock hasp, two - 18" x 24" center knockouts.
- x. **VALVE, METER:** Mueller, B24265-1, Mueller 300 ball angle meter valve, female iron pipe by meter nut, quarter turn check, lock wing, tested to meet ANSI/AWWA C800 specification. Size: 1".

Mueller, B25170, Mueller 300 ball straight valve, conductive compression by female iron pipe, quarter turn check, lock wing, tested to meet ANSI/AWWA C800 specification. Size: 1".

- y. YOKES, METER: Relocator type copper meter yoke with horizontal inlet and outlet and meter thread ends, B24118, with lock wing Mueller 300 angle ball valve, full port, sizes: 1" x 12", 5/8" x 7", 5/8 x 7/8" x 9".

Mueller, 2" copper meter yoke with horizontal inlet and outlet and female iron pipe threads, B2423-99000, with lock wing Mueller 300 ball angle meter valves on inlet and outlet risers. Raised 1" by-pass with lock wing Mueller 300 ball valve.

The Contractor also will be required to provide the following materials, the cost of which will be included in its unit bid price:

All material and concrete for thrust blocks, other anchors, reinforcing steel; all gravel, crushed stone, A.B.C., earth, sand, or screened material which may be required; all material for bracing and shoring trenches and for construction of forms; all barricades and traffic control equipment; all material for paving replacement and any water used for compaction of backfill.

## **5. INSTALLATION OF MATERIALS**

All materials are to be installed in accordance with manufacturer's recommendations unless otherwise directed by these Specifications.

All pipe, fittings and valves shall be laid true to the lines, grades and locations established by the Specifications and the Construction Drawings.

The ends and inside of the pipe shall be thoroughly cleaned and inspected for damage. No damaged materials shall be installed in the water distribution system.

Whenever the work ceases for any reason, all open pipeline ends shall be tightly plugged by the Contractor. Plugs shall be watertight and approved by the company.

Concrete thrust blocks of the sizes required by the plans and specifications are to be provided at all valves, changes in direction or size, or at any other point where an unbalanced thrust due to water pressure would exist. Thrust blocks are to be formed to prevent any concrete from spilling over or into a joint.

Trench curves as shown on the Construction Drawings may be made without fittings when using push on joint pipe up to twelve inches (12") in diameter, if the deflection of the pipe does not exceed five degrees (5°) or nineteen inches (19") per eighteen-foot (18') length of pipe. The minimum radius of such curves will be two hundred five feet (205').

Prior to construction, the appropriate agency(ies) will be notified as required by the permit(s).

It shall be the Contractor's responsibility to uncover all existing water lines being connected to, and to verify the location, depth and size of pipe before any construction begins.

Any construction performed without the knowledge of the duly authorized representative is liable for removal and replacement at the Contractor's expense.

All fire hydrants, frames, covers and valve boxes, etc. shall be adjusted to finished grade prior to the placing of the asphalt concrete surface course by the Contractor (where applicable).

Air release valves shall be installed at water system high points per Standard Detail E-9-8-2.

All water services shall be set a minimum of two feet (2') on the customer's property, preferably within the P.U.E. and not within right-of-way.

Unless otherwise specified on the construction drawings, all water mains shall be installed five feet (5') from the property line inside the right-of-way or easement.

Water valves shall be spaced not more than five hundred feet (500') in commercial districts and not more than eight hundred feet (800') in other districts. Variations may be required for transmission mains or special applications.

Installation of water line casing shall be per Standard Specification E-9-24-1.

Tracer Wire and Warning Tape are to be installed on all mains, tees, crosses, ells and fire hydrant laterals. They will not be installed on service lines. The tracer wire will be installed on the water main 45 degrees from the vertical centerline of the pipe and shall be taped to the fittings directly and on the main every 10 feet using a minimum 10 mil vinyl tape. The tracer wire shall be placed between the valve riser and box with a minimum of 12" of wire inside. The warning tape shall be installed a minimum of two feet below the surface, being measured from final grade, directly over the center of the pipe. Any splices in the tracer wire shall be joined using waterproof connectors. Any splices in the warning tape shall be joined using minimum 10 mil vinyl tape. The tracer wire shall be tested for continuity after backfill and compaction, but before paving. Any detected damages to the wire shall be repaired before paving will be allowed.

## **6. BACKFILL OF WATER MAIN TRENCHES**

Backfill of any excavation shall conform to the requirements of any of the governmental agencies having jurisdiction over the location. If no governmental agency having such jurisdiction specifies backfill or compaction requirements, and no special requirements are shown on the Construction Drawings, the procedure set forth in this section will apply for water line trenches.

The bedding material above the pipe and backfill material shall be compacted to a minimum of 70% compaction within a utility easement and 80% compaction within a right-of-way as determined by AASHTO T-99 method A and T-191. If water settling is used for compaction, it is the responsibility of the Contractor to prevent the pipe from floating.

The bedding material shall be either native material, 100% of which will pass through a one and one-half inch (1½") screen and at least 20% of which will pass through a number-8 screen, or imported material which conforms to M.A.G. specifications for A.B.C. or type-B

select materials. Bedding material shall be used below and around the pipe and a minimum of twelve inches (12") above the pipe. Shade and bedding material to be mechanically compacted prior to remainder of trench back-fill.

The remainder of the trench shall be backfilled with native or imported material which shall be of sound earthen material free from broken concrete, wood, broken pavement, or other unsuitable substances. Except as otherwise specified, backfill may be material containing no pieces larger than six inches (6") in greatest dimension.

Where settlement occurs, additional backfill material shall be placed and compacted and the trench shall be brought to final grade.

#### **7. HYDROSTATIC TESTING OF COMPLETED PIPELINES**

Hydrostatic testing of water pipelines will be completed before the new system is connected into the existing water system so that all testing can be done against all new materials.

The completed section of water pipeline to be tested shall be slowly filled with water with care being taken to expel all air from the pipe. If necessary, the pipe will be tapped at high points to vent air.

The Contractor shall provide all equipment and labor necessary to accomplish this testing and the price shall be included in the unit prices. The Contractor shall notify the Company in advance of the testing so that the Company can schedule a duly authorized representative to be at the site during testing. The Contractor, at its own expense, shall make any necessary repairs to the system being tested in order to cause the section being tested to meet the test limits set below. The Contractor may request authorization of the Company to connect the new pipelines to the existing system prior to completion of pressure testing when, in the Company's sole opinion and judgment, conditions warrant such connection.

The Contractor shall assume all responsibility to complete pressure testing to Company's specifications after such connection, including, but not limited to, isolation of the new pipelines from the existing system, if necessary.

Connections prior to completion of pressure testing shall not be made unless prior Company authorization has been obtained, and any extra expenses resulting from such connections shall be the sole responsibility of the Contractor.

Leakage tests will be for a period of two hours at  $200 \pm 5$  psi at the point of lowest elevation; leakage may not exceed 0.1 gallons per hour per one thousand feet (1,000') of pipe per inch of diameter. If dry utilities are not installed, a second pressure test is required.

#### **8. STERILIZATION AND FLUSHING OF COMPLETED WATER PIPELINES**

Sterilization and flushing will conform to recommendations of Arizona State Department of Health Services Engineering Bulletin Number 8, latest edition, or any future Arizona Department of Environmental Quality bulletins. Contractor to follow all conditions of any discharge permit.

#### **9. NO OTHER UTILITIES ALLOWED IN OR NEAR WATER PIPELINE TRENCHES**

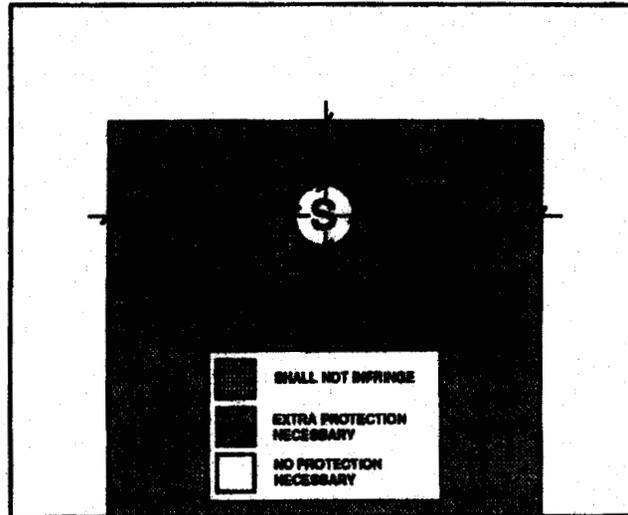
No other utility installations will be permitted in the water pipeline trench or within five feet (5') of the Company's water pipeline when running parallel to the water pipelines.

**10. PROTECTION OF WATER MAINS NEAR SEWERS**

In order to protect water mains from contamination by sewers, the installation of the water mains must conform to the following requirements:

- a. **Horizontal -** When water lines and sewers are laid parallel with each other, the horizontal distance between them shall not be less than six feet (6'). Each line shall be laid on undisturbed or bedded material in a separate trench. Where conditions prevent the minimum horizontal separation set forth above, extra protection will be required. Extra protection shall consist of constructing the sewer main with mechanical joint ductile iron pipe or with slip-joint ductile iron pipe if joint restraint is provided, or encasing both the water main and sewer main in concrete. See Detail E-9-30-1 and E-9-30-2

The Construction Drawings shall indicate the installation requirements. The drawings showing these exceptions shall have been approved by the appropriate state and/or county health department. Refer to the diagram below for clarification.



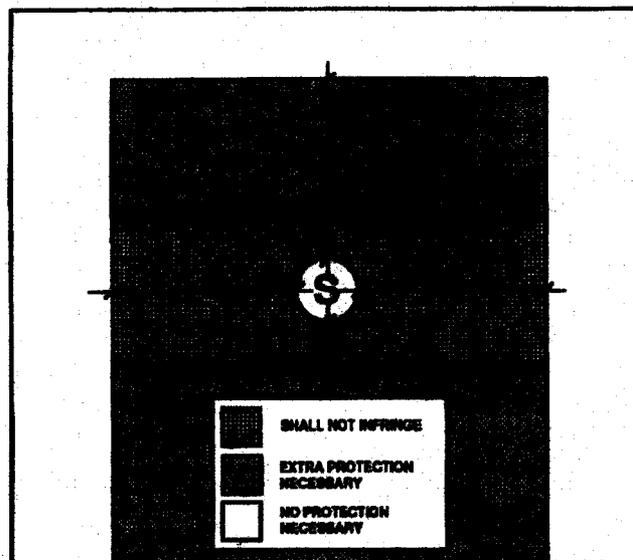
Under no circumstances will the horizontal separation between sewer mains and water mains be less than two feet (2'). All distances are to be measured from the outside of the sewer main to the outside of the water main.

- b. **Vertical** - When a water main is parallel with or crosses a sewer main within two feet (2') above the sewer or greater than two feet (2') below the sewer, extra protection will be required. Extra protection shall consist of constructing the sewer main with mechanical joint ductile iron pipe or with slip-joint ductile iron pipe if joint restraint is provided, or encasing both the water main and sewer main in concrete. See Detail E-9-30-1 and E-9-30-2.

The Construction Drawings shall indicate the installation requirements. The drawings showing these exceptions shall have been approved by the appropriate state and/or county health department.

Under no circumstances will the vertical separation of a sewer main installed above a water main be less than two feet (2'). All distances are to be measured from the outside of the sewer main to the outside of the water main. Refer to the diagram above for clarification.

- c. When unusual conditions such as, but not limited to, highway or bridge crossings prevent the water and sewer main separations required from being met, the appropriate state and/or county health department will review and may approve requests for authorization to use alternate construction techniques, materials and joints on a case-by-case basis.
- d. No water pipe shall pass through or come into contact with any part of a sewer manhole. The minimum horizontal separation between water mains and manholes shall be six feet (6'), measured from the center of the manhole.
- e. The minimum separation between force mains or pressure sewers and water mains shall be two feet (2') vertically and six feet (6') horizontally under all conditions. Where a sewer force main crosses above, or less than six feet (6') below, a water line, the sewer main shall be encased in at least six inches (6") of concrete for ten feet (10') on either side of the water main. Refer to the diagram below for clarification.



- f. Sewer mains (gravity, pressure, force) shall be kept a minimum of fifty feet (50') from drinking water wells, unless the following conditions are met:
  - 1. Water main pipe, pressure tested in place to 50 psi without excessive leakage, may be used for gravity sewers at distances greater than twenty feet (20') from drinking water wells.
  - 2. Water main pipe, pressure tested in place to 150 psi without excessive leakage, may be used for pressure sewers and force mains at distances greater than twenty feet (20') from drinking water wells.
- g. No septic tank/disposal field system shall be constructed within one hundred feet (100') of a drinking water well.
- h. All distances are measured perpendicularly from the outside of the sewer main to the outside of the water main. These separation requirements do not apply to building, plumbing or individual house service connections.
- i. Use Mechanical Joint ductile iron pipe with Megalug thrust restraints a minimum of ten (10') feet on each side of a sewer or storm drain crossing.

## 11. COMPACTION

When crossing existing water mains a minimum of 95% compaction is required to the bottom of existing mains.

Arizona Water Company requires that no slurry be permitted to contact existing cement/asbestos or ductile iron pipes, unless authorized by the company. Slurry may be poured in the bottom of the sewer trench stopping three inches (3") below the existing water main. The backfill used around the main should be AB in sufficient depth to prevent slurry from contacting existing main.

## 12. WATER MAIN MATERIAL SPECIFICATIONS

Ductile iron pipe (Push-on type) minimum class 350, cement lined and conform to AWWA C151.

All main line valves shall conform to AWWA C500 with a minimum working pressure of 200 psi.

All cast iron fittings to be cement lined in accordance with AWWA C104 and shall conform to AWWA C110 with a minimum working pressure of 250 psi. Except for the Coolidge System – See Note 4L.

Maximum joint deflection for 6" mechanical joint ductile iron pipe is seven degrees, seven minutes (7° 7') or twenty-seven inches (27") per eighteen-foot (18') length pipe, for a maximum curve of one hundred forty-five feet (145').

Maximum joint deflection for 8" and 12" mechanical joint ductile iron pipe is five degrees, twenty-one minutes (5° 21') or twenty inches (20") per eighteen-foot (18') length pipe, for a maximum curve of one hundred ninety-five feet (195').

Maximum joint deflection for 6", 8" and 12" push-on joint ductile iron pipe is five degrees (5°) or nineteen inches (19") per eighteen-foot (18') length pipe for a maximum curve of two hundred five feet (205').

# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5331 • P.O. BOX 29006, PHOENIX, ARIZONA 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6878 • WWW.AZWATER.COM

November 24, 2010

Mr. Tony Geiger  
US Pipe – Waterworks Marketing Consultants  
34522 N. Scottsdale Road  
Scottsdale, Arizona 85226

Re: US Pipe Sentinel Fire Hydrants and Resilient Wedge Gate Valves

Dear Mr. Geiger:

Thank you for your interest in working with Arizona Water Company (the "Company") to add US Pipe Sentinel Fire Hydrants and Resilient Wedge Gate Valves to the Company's material and equipment specifications. Based on the US Pipe product information you provided and your field presentations to our operations and engineering staff, the Company is pleased to inform you that the following items are approved for use in the Company's water systems in Arizona.

## Sentinel Fire Hydrant:

- Model Sentinel 250
  - 5¼" MVO
  - 4½" pumper
  - 2¼" hose
  - Meets AWWA C-502 standard and approval by ULFM

## Resilient Wedge Gate Valves:

- Model US Pipe A-USP0
  - Meets AWWA C-509 Full Body Cast Iron includes 304 SS Nuts, Bolts & Low Zinc Bronze Stem
  - Size range 2" thru 12"
- Model US Pipe A-USP1
  - Meets AWWA C-515 Reduced Wall Ductile Iron includes 304 SS Nuts, Bolts & Low Zinc Bronze Stem
  - Size range 14" thru 48"

---

E-MAIL: [media@azwater.com](mailto:media@azwater.com)

**ARIZONA WATER COMPANY**

**To: Tony Geiger – US Pipe**

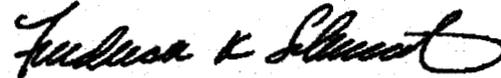
**November 24, 2010**

**Subject: US Pipe Sentinel Fire Hydrants and Resilient Wedge Gate Valves**

**Page 2**

We look forward to developing a long-term relationship with you and the US Pipe products. If I can be of any assistance, please call me.

Very truly yours,



Fredrick K. Schneider  
Vice President – Engineering

afh

VIA EMAIL: [TGEIGER4@COX.NET](mailto:TGEIGER4@COX.NET)

# **ARIZONA WATER COMPANY**

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, ARIZONA 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6878 • WWW.AZWATER.COM

October 19, 2010

Mr. Jim Ryan  
Clow Valve Company  
8121 N. 10<sup>th</sup> Avenue  
Phoenix, Arizona 85021

Re: Clow Medallion Fire Hydrants and Resilient Wedge Gate Valves

Dear Mr. Ryan:

Thank you for your interest in working with Arizona Water Company (the "Company") to add Clow Medallion Fire Hydrants and Resilient Wedge Gate Valves to the Company's material and equipment specifications. Based on the Clow product information you provided and your field presentations to our operations and engineering staff, the Company is pleased to inform you that the following items are approved for use in the Company's water systems in Arizona.

#### **Medallion Fire Hydrant:**

- Model F-2545
  - 5½" MVO
  - 4½" pumper
  - 2½" hose
  - Meets AWWA C-502 standard and approval by ULFM

#### **Resilient Wedge Gate Valves:**

- Model 2639 & 2640
  - Meets AWWA C-509 Full Body Cast Iron includes 304 SS Nuts, Bolts & Low Zinc Bronze Stem
  - Size range 2½" thru 12"
- Model 2638
  - Meets AWWA C-515 Reduced Wall Ductile Iron includes 304 SS Nuts, Bolts & Low Zinc Bronze Stem
  - Size range 14" thru 48"

---

E-MAIL: [mail@azwater.com](mailto:mail@azwater.com)

**ARIZONA WATER COMPANY**

**To: Jim Ryan – Clow Valve Company**

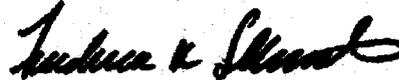
**October 19, 2010**

**Subject: Clow Medallion Fire Hydrants and Resilient Wedge Gate Valves**

**Page 2**

**We look forward to developing a long-term relationship with you and the Clow products.  
If I can be of any assistance, please call me.**

**Very truly yours,**



**Fredrick K. Schneider  
Vice President – Engineering**

**lar**

**VIA EMAIL: JIM.RYAN@CLOWVALVE.COM**

February 21, 2012

Contractor

Re: Fitting Specifications

Dear Contractor:

Effective March 1, 2012, Arizona Water Company (the "Company") has changed its fitting specifications for Ductile Iron Fittings and Ductile Iron Flanged Fittings ("Fittings"). All Fittings purchased by the Company, on the Company's behalf or installed with the intent of being conveyed to the Company, must comply with the requirements noted below.

**Previous Fitting Specifications:**

**Fittings**

Manufactured by Tyler or Union, Crosses, Elbows, Tees, Cap Reducer, Adapter, Plug, Blind Flange and Tapped Flange: Ductile Iron, Class 350, SSB, and Cast Iron Cement Lined.

**New Fitting Specification:**

**Ductile Iron Fittings (Push-On and Mechanical Joint)**

Ductile Iron Push-On and Mechanical Joint ("MJ") fittings for water lines shall be made of ductile iron per ASTM A536 and be cast in the United States of America. Fittings shall have USA cast on the fitting to designate they are made in the United States. All fittings will be manufactured and tested in accordance with ANSI/AWWA C153/A21.53 for compact design and ANSI/AWWA C110/A21.10 for full body design. In accordance with ANSI/AWWA C104/A21.4 fittings 2" – 3" will be single thickness cement mortar lined and 4" – 64" will be cement mortar lined. Fittings will be Asphaltic seal coated on the exterior in accordance with ANSI/AWWA C104/A21.4. MJ fittings with flanged end(s) will match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges. All fittings shall be NSF-61 listed for use with potable water.

**Ductile Iron Flanged Fittings**

---

E-MAIL: [mail@azwater.com](mailto:mail@azwater.com)

Ductile Iron flanged fittings for water lines shall be made of ductile iron per ASTM A536 and be cast in the United States of America. Fittings shall have USA cast on the fitting to designate they are made in the United States. All fittings will be manufactured and tested in accordance with ANSI/AWWA C110/A21.10 design. Flange ends will match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges. In accordance with ANSI/AWWA C104/A21.4 fittings 2" - 3" will be single thickness lined and 4" - 64" will be cement mortar lined. Fittings will be Asphaltic seal coated on the exterior in accordance with ANSI/AWWA C104/A21.4. All fittings shall be NSF-61 listed for use with potable water.

If you have any questions or require further information, please contact me at 602-240-6860.

Very truly yours,



Fredrick K. Schneider, PE  
Vice President - Engineering  
engineering@azwater.com

afh  
Enclosure

**ARIZONA WATER COMPANY**

**STANDARD SPECIFICATION DRAWINGS: E-9-1**

**ERRATA 2010**

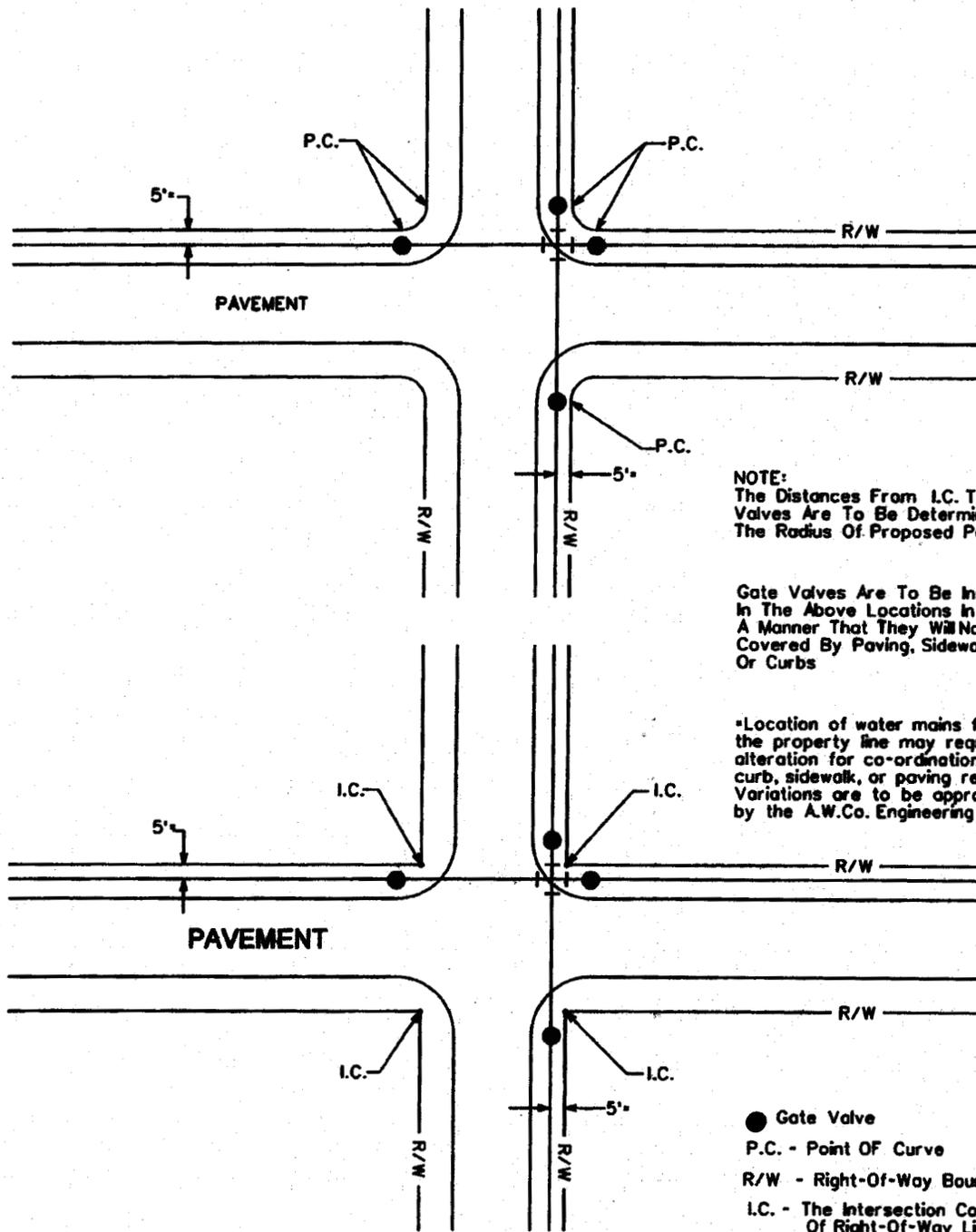
**ARIZONA WATER COMPANY**

**STANDARD SPECIFICATION DRAWINGS - DUCTILE IRON**

**INDEX (E-9)**

- E-9-1 TYPICAL GATE VALVE LOCATIONS
- E-9-2 INSTALLATION OF TYPICAL VERTICAL AND HORIZONTAL GATE VALVES
- E-9-3 INSTALLATION OF TYPICAL TAPPING SLEEVE AND VALVE
- E-9-4 INSTALLATION OF TYPICAL VALVE SUBJECT TO NON-VEHICULAR AND VEHICULAR TRAFFIC
- E-9-5 INSTALLATION OF TYPICAL THRUST BLOCKING SCHEDULE THRUST BLOCK FOR VERTICAL BENDS, AND MEGALUG THRUST RESTRAINTS
- E-9-6 INSTALLATION OF TYPICAL PERPENDICULAR FIRE HYDRANT
- E-9-7 INSTALLATION OF TYPICAL PARALLEL FIRE HYDRANT
- E-9-8 INSTALLATION OF TYPICAL 2" BLOWOFF DEVICE, AND AIR RELEASE VALVE
- E-9-9 INSTALLATION OF TYPICAL SINGLE SERVICE CONNECTION FOR A 3/4" OR 1" METER
- E-9-10 INSTALLATION OF TYPICAL DOUBLE SERVICE CONNECTION FOR A 3/4" AND 1" METER
- E-9-11 INSTALLATION OF TYPICAL 2" SERVICE CONNECTION
- E-9-12 INSTALLATION OF 3" COMPOUND METER, 4" COMPOUND METER, 6" COMPOUND METER, 6" COMPOUND SERVICE, CONCRETE VAULT, AND NON-POTABLE PROPELLER METER
- E-9-13 INSTALLATION OF TYPICAL 4" THRU 8" DETECTOR CHECK VALVES AND 3" THRU 10" REDUCED PRESSURE PRINCIPLE DETECTOR WITH BYPASS METER ASSEMBLY (RPDA) FOR FIRE LINE SERVICES
- E-9-14 INSTALLATION OF TYPICAL PRESSURE RELIEF VALVE ASSEMBLY
- E-9-15 INSTALLATION OF TYPICAL PRESSURE REDUCING STATION
- E-9-16 PAINT COLOR SELECTION
- E-9-17 STEEL WATER STORAGE TANK
- E-9-18 HYDROPNEUMATIC TANK
- E-9-19 INSTALLATION OF WELL SHELTER

- E-9-20**      **INSTALLATION OF TYPICAL WELL WITH LINE SHAFT TURBINE PUMP**
- E-9-21**      **INSTALLATION OF TYPICAL WELL WITH SUBMERSIBLE TURBINE PUMP**
- E-9-22**      **INSTALLATION OF COLUMN PIPE, OIL TUBE AND LINE SHAFT**
- E-9-23**      **HOT TAP AND JUMPER METER CONNECTION**
- E-9-24**      **INSTALLATION OF TYPICAL WATER LINE ENCASEMENT**
- E-9-25**      **INSTALLATION OF CALCIUM HYPOCHLORITE TABLET CHLORINATOR**
- E-9-26**      **INSTALLATION OF CHAIN LINK FENCE**
- E-9-27**      **INSTALLATION OF SIDE HUNG WATER LINE SUSPENSION**
- E-9-28**      **PIPE WARNING TAPE, LOCATOR WIRE, AND LOCATOR WIRE TERMINATION**
- E-9-29**      **INSTALLATION OF A TYPICAL SAMPLING STATION**
- E-9-30-1**    **WATER AND SANITARY SEWER SEPARATION/PROTECTION  
PERPENDICULAR**
- E-9-30-2**    **WATER AND SANITARY SEWER SEPARATION/PROTECTION – PARALLEL**



**NOTE:**  
The Distances From I.C. To Gate Valves Are To Be Determined By The Radius Of Proposed Pavement.

Gate Valves Are To Be Installed In The Above Locations In Such A Manner That They Will Not Be Covered By Paving, Sidewalks, Or Curbs

\*Location of water mains from the property line may require alteration for co-ordination with curb, sidewalk, or paving requirements. Variations are to be approved by the A.W.Co. Engineering dept.

- Gate Valve
- P.C. - Point Of Curve
- R/W - Right-Of-Way Boundary
- I.C. - The Intersection Corner Of Right-Of-Way Lines

# ARIZONA WATER COMPANY

**STANDARD SPECIFICATION  
FOR THE INSTALLATION OF**

## TYPICAL GATE VALVE LOCATIONS

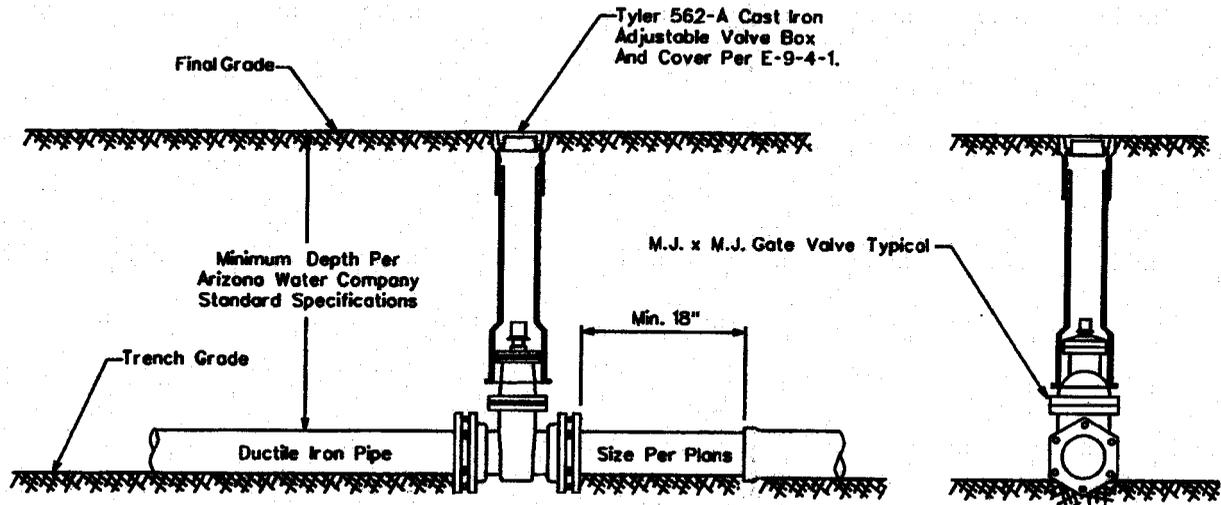
DRAWN BY: CCO	APPROVED BY: M.W.	DATE: 3/20/86	△ 1/31/2001
			E-9-1-1

**FOR 6" THROUGH 12" GATE VALVES**

Mueller Resilient Wedge Gate Valves  
Catalog Number A-2360-...  
ANSI/AWWA C509 Compliant

**FOR 14" THROUGH 16" GATE VALVES**

Mueller Resilient Wedge Gate Valves  
Catalog Number A-2361-...  
ANSI/AWWA C509 Compliant



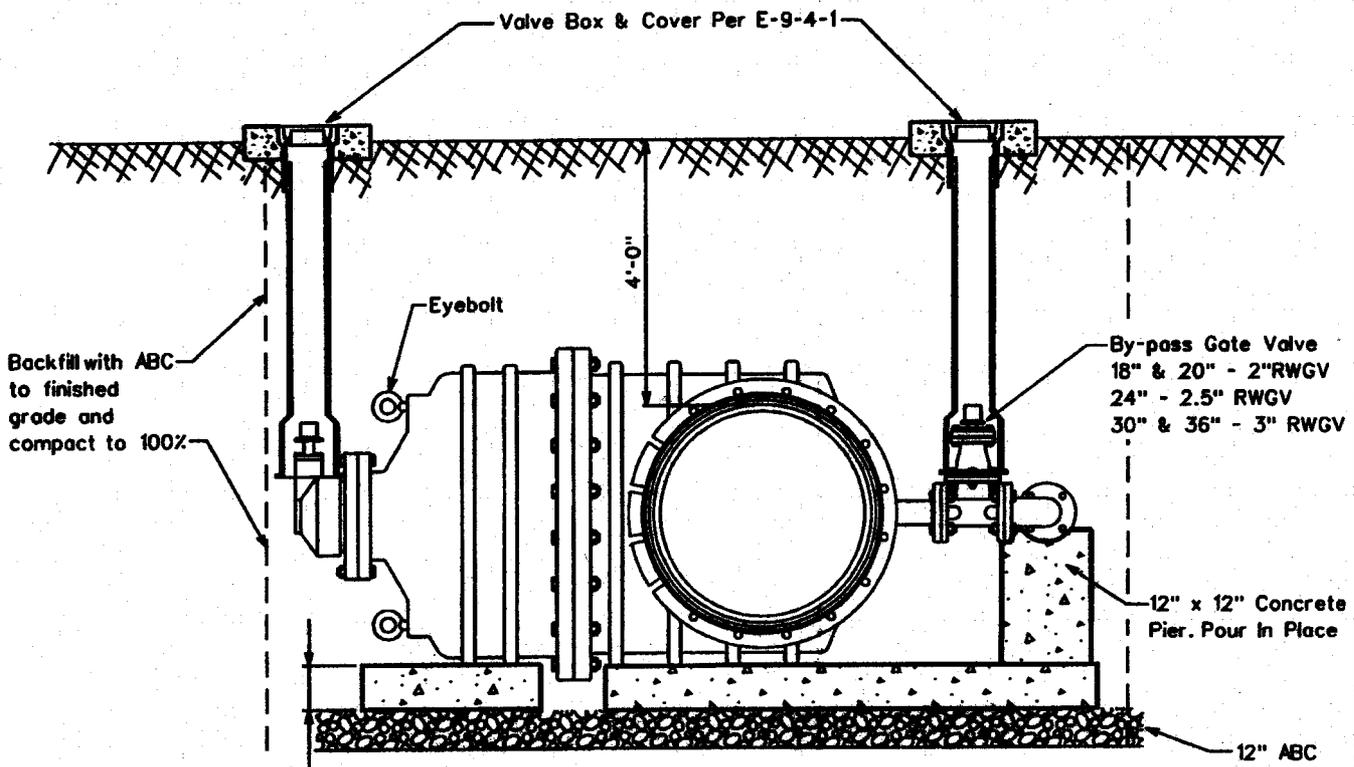
All Valves Installed On Pipe Five Feet (5') Deep And Greater Are To Be Installed With A Valve Operator Extension, Mueller Catalog No. A-26441.

**ARIZONA WATER COMPANY**

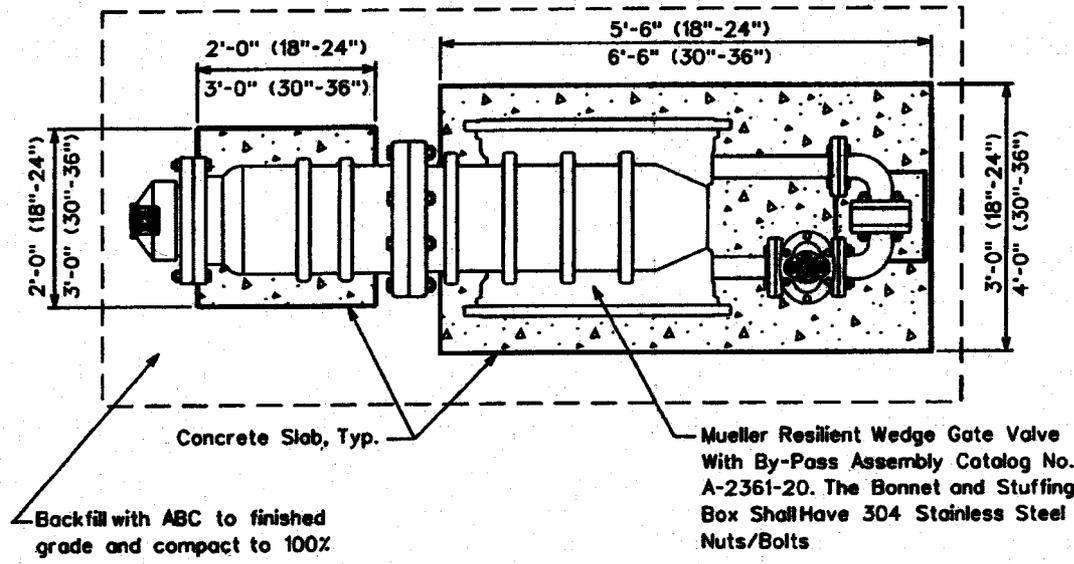
STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

TYPICAL VERTICAL GATE VALVES

DESIGN BY: CB	APPROVED BY: MW	DATE: 03.20.1986	△ 08.23.2005	E-9-2-1
---------------	-----------------	------------------	--------------	---------



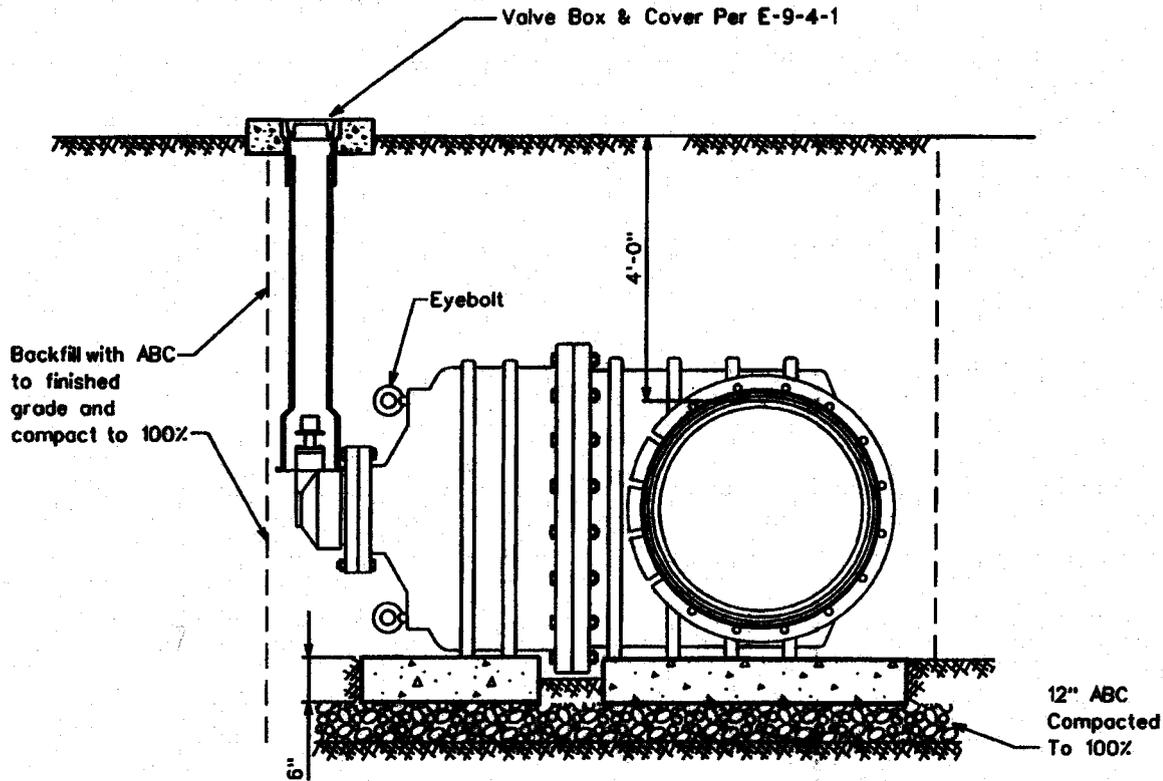
All concrete slabs to be class "C", which is defined as concrete whose minimum compressive strength at 14 days reaches 1600psi and at 28 days reaches 2000psi, per MAG Section 725, Table 725-1. Slabs to be formed and poured prior to valve installation.



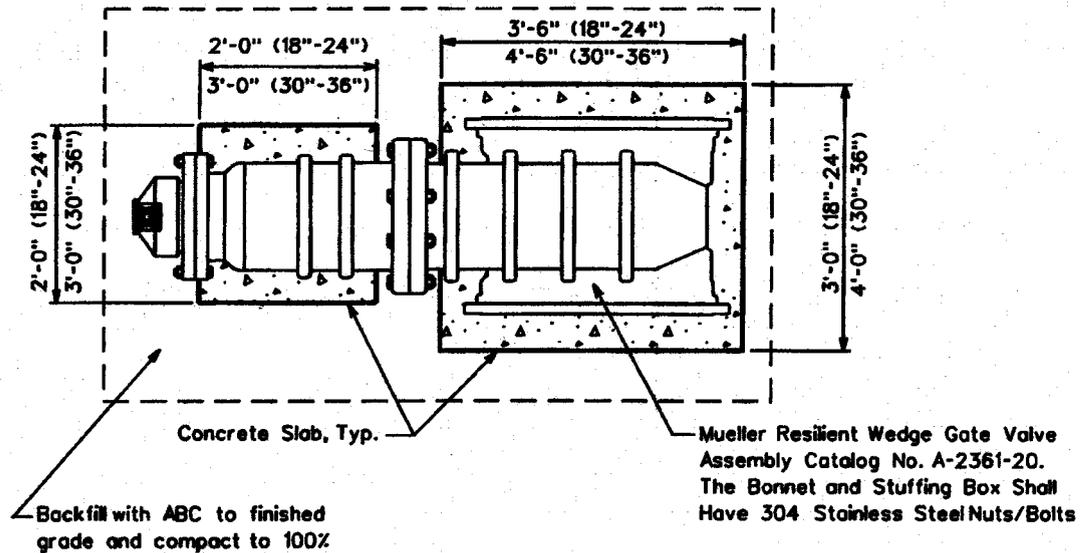
# ARIZONA WATER COMPANY

All valves installed on pipe five feet and greater are to be installed with a valve operator extension Mueller catalog No. A-26441. The distance is measured from the top of the operating nut to final grade.

<b>STANDARD SPECIFICATION</b>			
<b>FOR THE INSTALLATION OF</b>			
<b>INSTALLATION OF BEVEL GEARED HORIZONTAL GATE VALVES</b>			
<b>WITH BY-PASS FOR 18" AND LARGER VALVES</b>			
<small>DRAWN BY:</small> CB	<small>APPROVED BY:</small>	<small>DATE:</small> 12.07.2004	<small>SCALE:</small> △
			<b>E-9-2-2</b>



All concrete slabs to be class "C", which is defined as concrete whose minimum compressive strength at 14 days reaches 1600psi and at 28 days reaches 2000psi, per MAG Section 725, Table 725-1. Slabs to be formed and poured prior to valve installation.

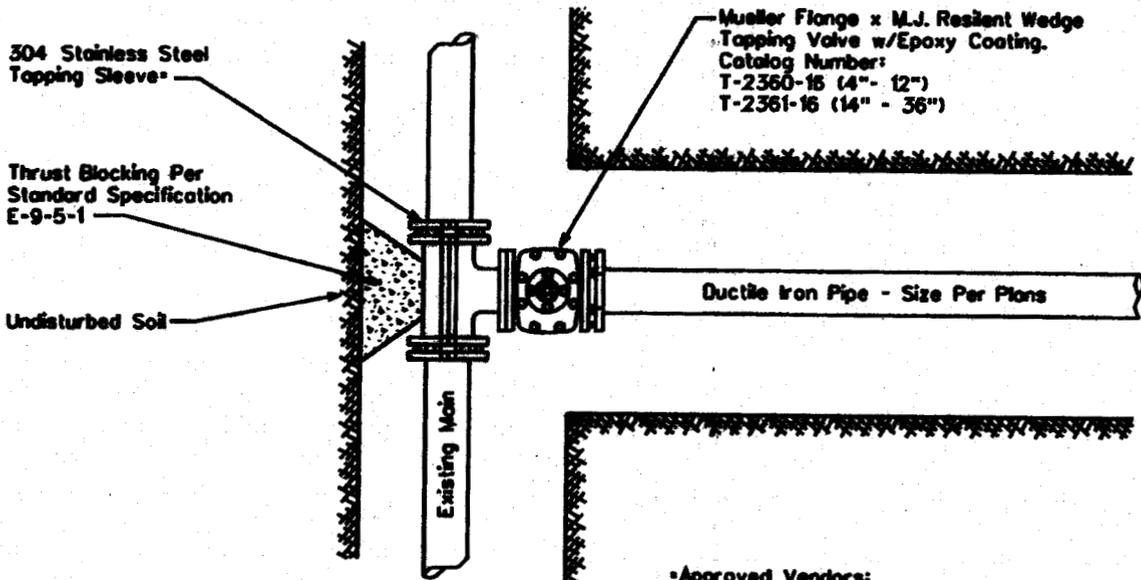


Mueller Resilient Wedge Gate Valve Assembly Catalog No. A-2361-20. The Bonnet and Stuffing Box Shall Have 304 Stainless Steel Nuts/Bolts

All valves installed on pipe five feet and greater are to be installed with a valve operator extension Mueller catalog No. A-26441. The distance is measured from the top of the operating nut to final grade.

# ARIZONA WATER COMPANY

<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>INSTALLATION OF BEVEL GEARED HORIZONTAL GATE VALVES WITHOUT A BY-PASS FOR 18" AND LARGER VALVES</b>			
<small>DRAWN BY:</small>	<small>APPROVED BY:</small>	<small>DATE:</small>	
CB		12.07.2004	△ 5.13.2005
			E-9-2-3



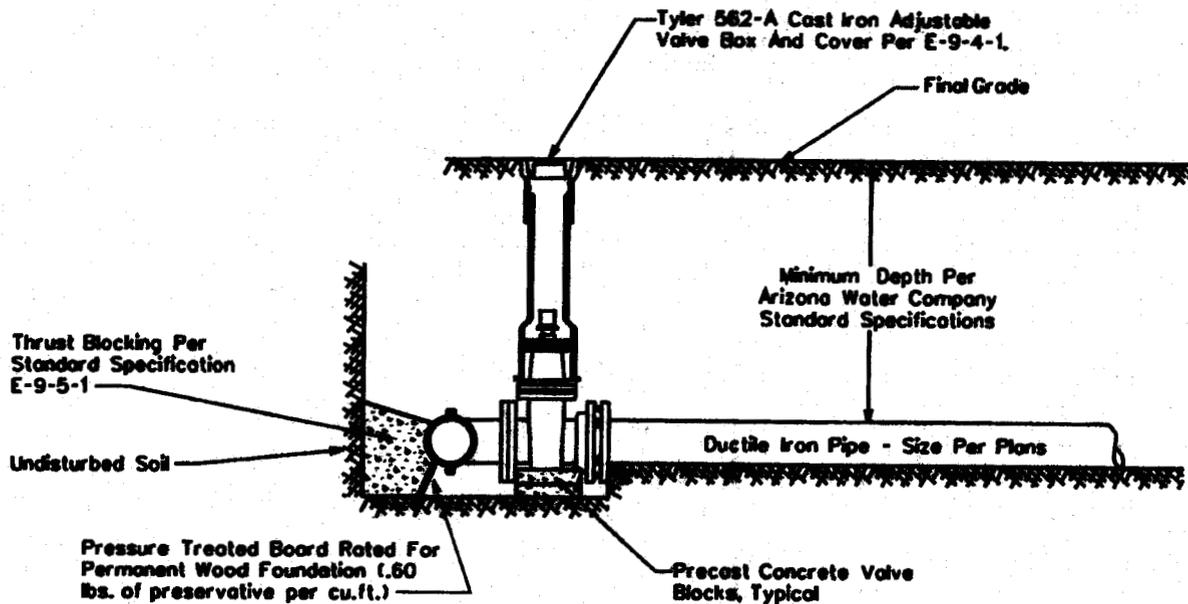
Mueller Flange x M.J. Resilient Wedge  
Tapping Valve w/Epoxy Coating.  
Catalog Number:  
T-2360-16 (4" - 12")  
T-2361-16 (14" - 36")

**NOTE:**

1. All flanges, bolts, and nuts shall be kept free of concrete.
2. Air pressure test the tapping sleeve before the live tap is made.
3. Polywrap all new fittings

**Approved Vendors:**

- Mueller, Catalog No. H304, 304 Stainless Steel
- JCM, Model 432, 304 Stainless Steel
- Romec, 'SST', 304 Stainless Steel
- Cascade, 'CST-EX', 304 Stainless Steel



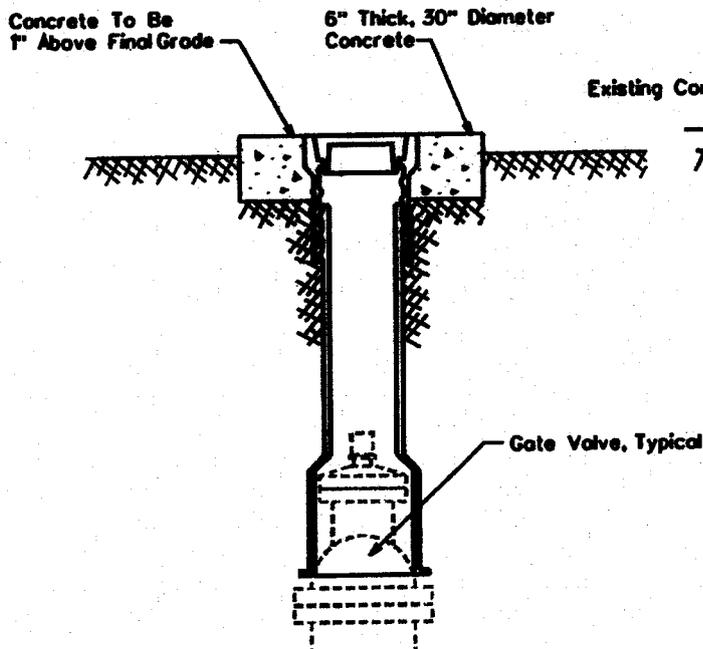
# ARIZONA WATER COMPANY

## STANDARD SPECIFICATION FOR THE INSTALLATION OF

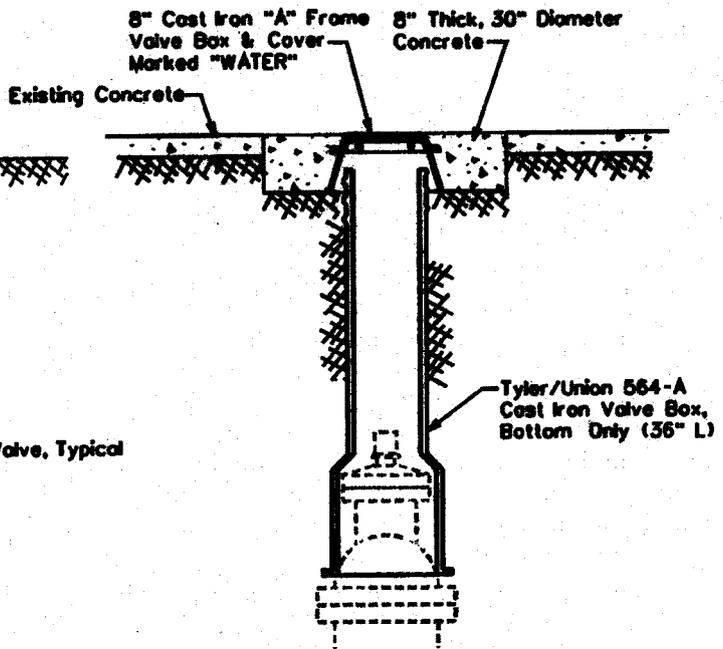
### TYPICAL TAPPING SLEEVE AND VALVE

<small>DRAWN BY:</small> CB	<small>APPROVED BY:</small> MW	<small>DATE:</small> 03.20.1986	<small>REVISED:</small> 08.23.2006
-----------------------------	--------------------------------	---------------------------------	------------------------------------

**E-9-5-1**

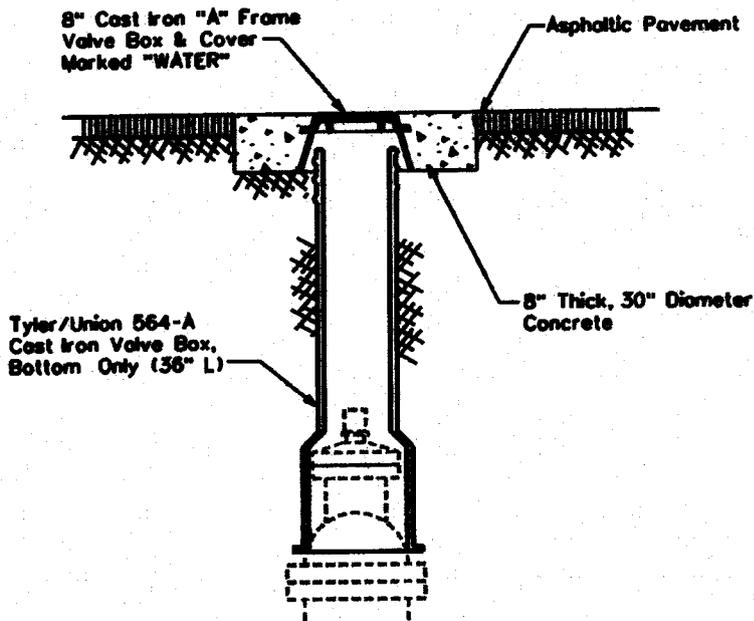


**NON-VEHICULAR VALVE BOX**



**CONCRETE VALVE BOX**

For Areas Subject To Vehicular Traffic



**ASPHALT VALVE BOX**

For Areas Subject To Vehicular Traffic

**NOTE:**

1. The Valve Box Shall Be Adjusted To Finished Grade Prior To Placing Of Asphalt And/Or Concrete.
2. For Non-Traffic Areas Use Tyler/Union 562-A, Two-Piece, 6855 Series Or Equivalent Adjustable Cast Iron Valve Box And Cover. Valves 4" To 12"  
For Traffic Areas, Use Tyler/Union 564-A Bottom Section Only With An 8" Cast Iron "A" Frame With Cover. Valves 4" To 12"
3. All Valves Installed Five Feet (5') Deep And Greater Are To Be Installed With A Valve Operator Extension, Mueller Catalog No. A-26441 And Shall Have A Debris Cap
4. Use Minimum Class 'C' Concrete which is defined as concrete whose minimum compressive strength at 14 days reaches 1600psi and at 28 days reaches 2000psi. per MAG Section 725, Table 725-1.

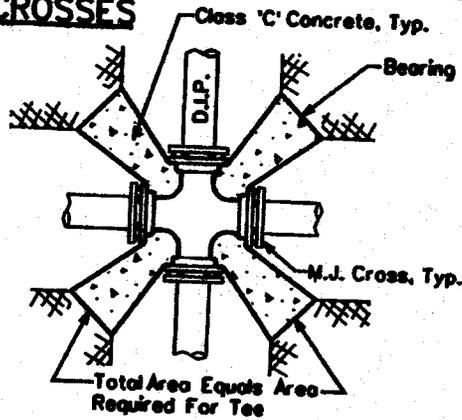
**ARIZONA WATER COMPANY**

**STANDARD SPECIFICATION  
FOR THE INSTALLATION OF**

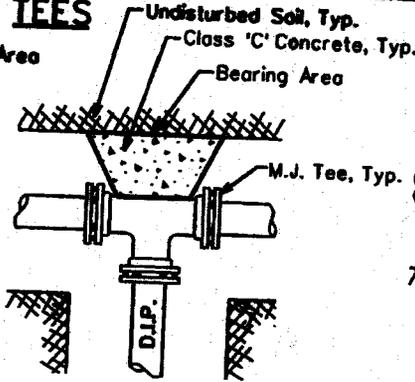
**TYPICAL VALVE SUBJECT TO NON-VEHICULAR  
AND VEHICULAR TRAFFIC**

DRAWN BY: CB	APPROVED BY: MW	DATE: 03.20.1986	△ 8.24.2006	E-9-4-1
-----------------	--------------------	---------------------	-------------	---------

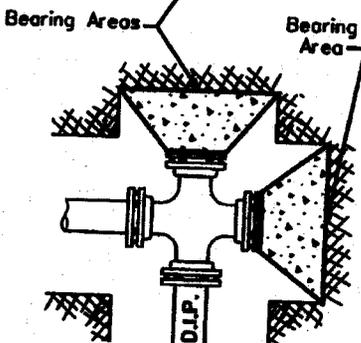
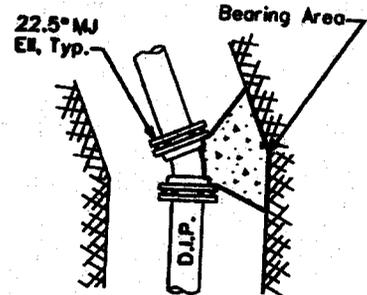
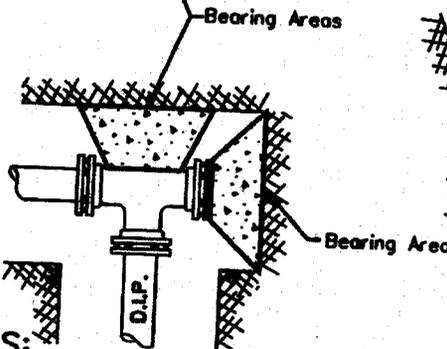
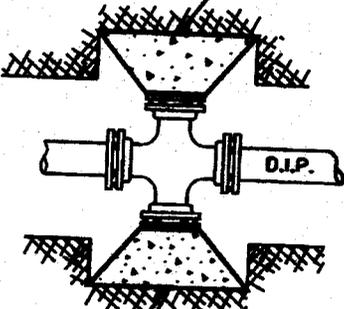
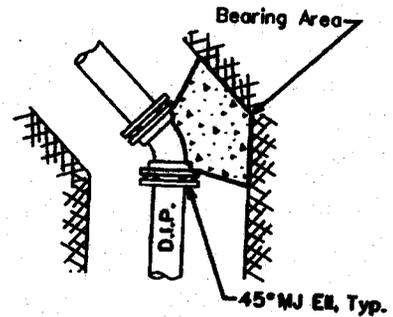
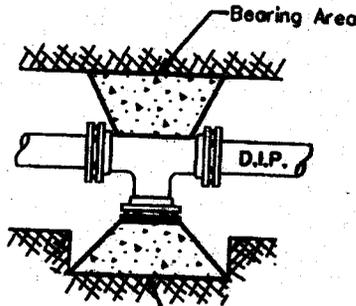
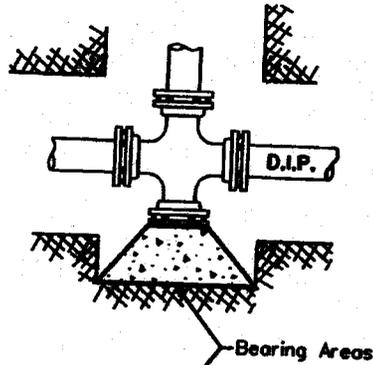
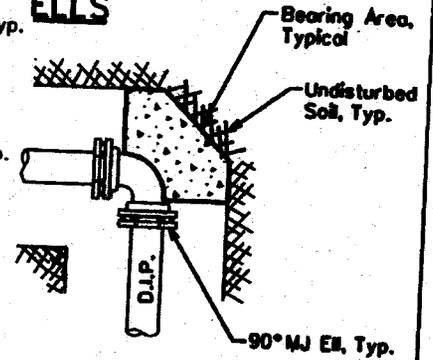
**CROSSES**



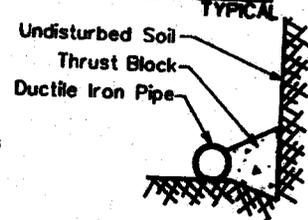
**TEES**



**ELLS**



**CROSS SECTION**



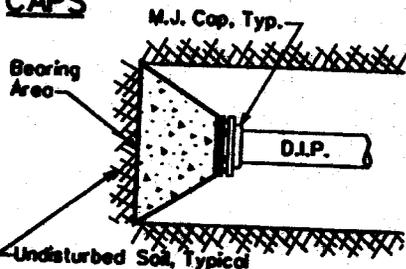
**NOTES:**

1. Use minimum Class 'C' concrete, which is defined as concrete whose minimum compressive strength at 14 days reaches 1600psi and at 28 days reaches 2000psi, per MAG Section 725, Table 725-1.
2. Thrust blocks are to bear on undisturbed earth with minimum bearing area as shown. If not undisturbed, areas will be increased as required.
3. Place the pressure treated form board in front of all plugs before pouring thrust blocks.
4. Form all non-bearing areas to prevent any concrete from entering any joint.
5. All flanges, bolts and nuts shall be kept free of concrete.
6. Center the bearing area on the pipe centerline and force line.
7. All pipe fittings to be wrapped with polyethylene pipe wrap prior to thrust block installation. (where applicable)

**THRUST BLOCK SCHEDULE**

PIPE SIZE	TEE, 45°, AND 22.5° ELLS, & PLUGS	90° ELLS
6" And Under	4 Sq.Ft.	6 Sq.Ft.
8"	6 Sq.Ft.	9 Sq.Ft.
12"	13 Sq.Ft.	20 Sq.Ft.
16"	23 Sq.Ft.	32 Sq.Ft.
18" And Larger	Calculated Per Project	

**CAPS**



**STANDARD SPECIFICATION FOR THE INSTALLATION OF**

**TYPICAL THRUST BLOCKING SCHEDULE**

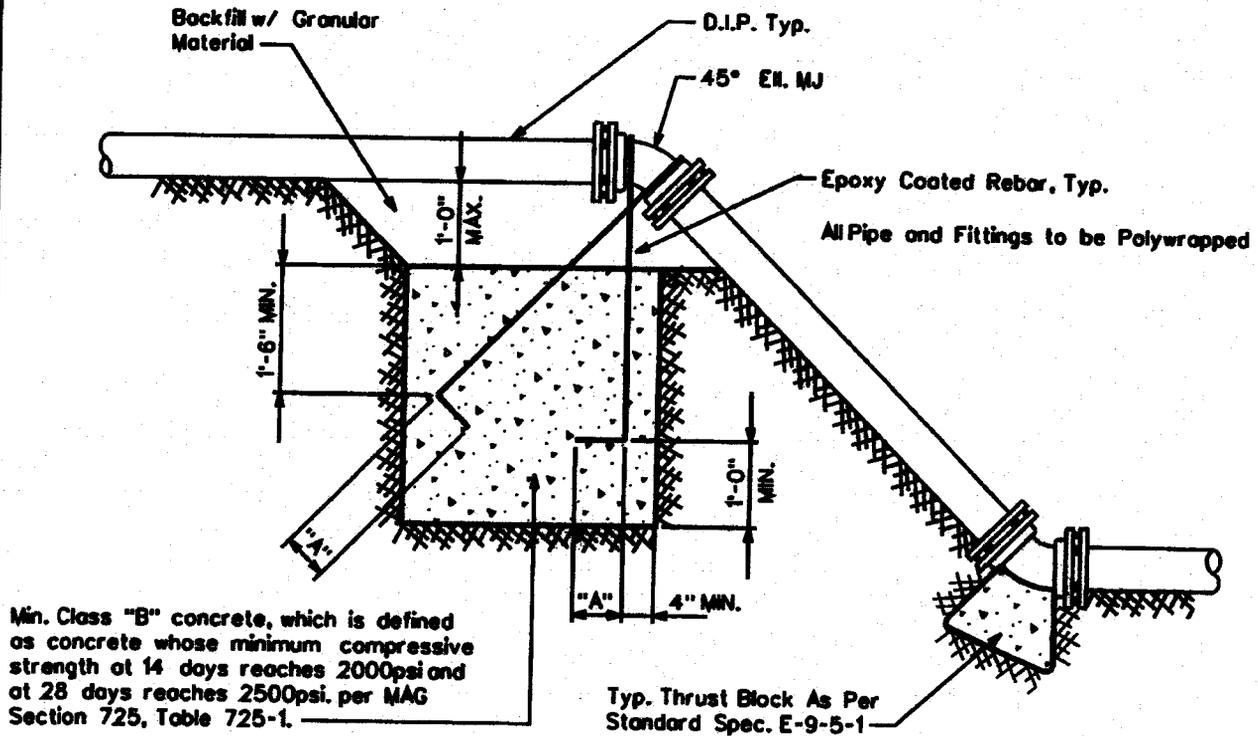
DRAWN BY: CB	APPROVED BY: MW	DATE: 03.20.1986	△ 05.27.2005	E-9-B-1
--------------	-----------------	------------------	--------------	---------

**NOTES**

1. Bars in Conc. Thrust Block To Be Coated w/ 2 Coats Coal Tar Epoxy or by Other Approved Method.
2. Bars To Have 90° Hook @ Their Ends, As Per Table Below.

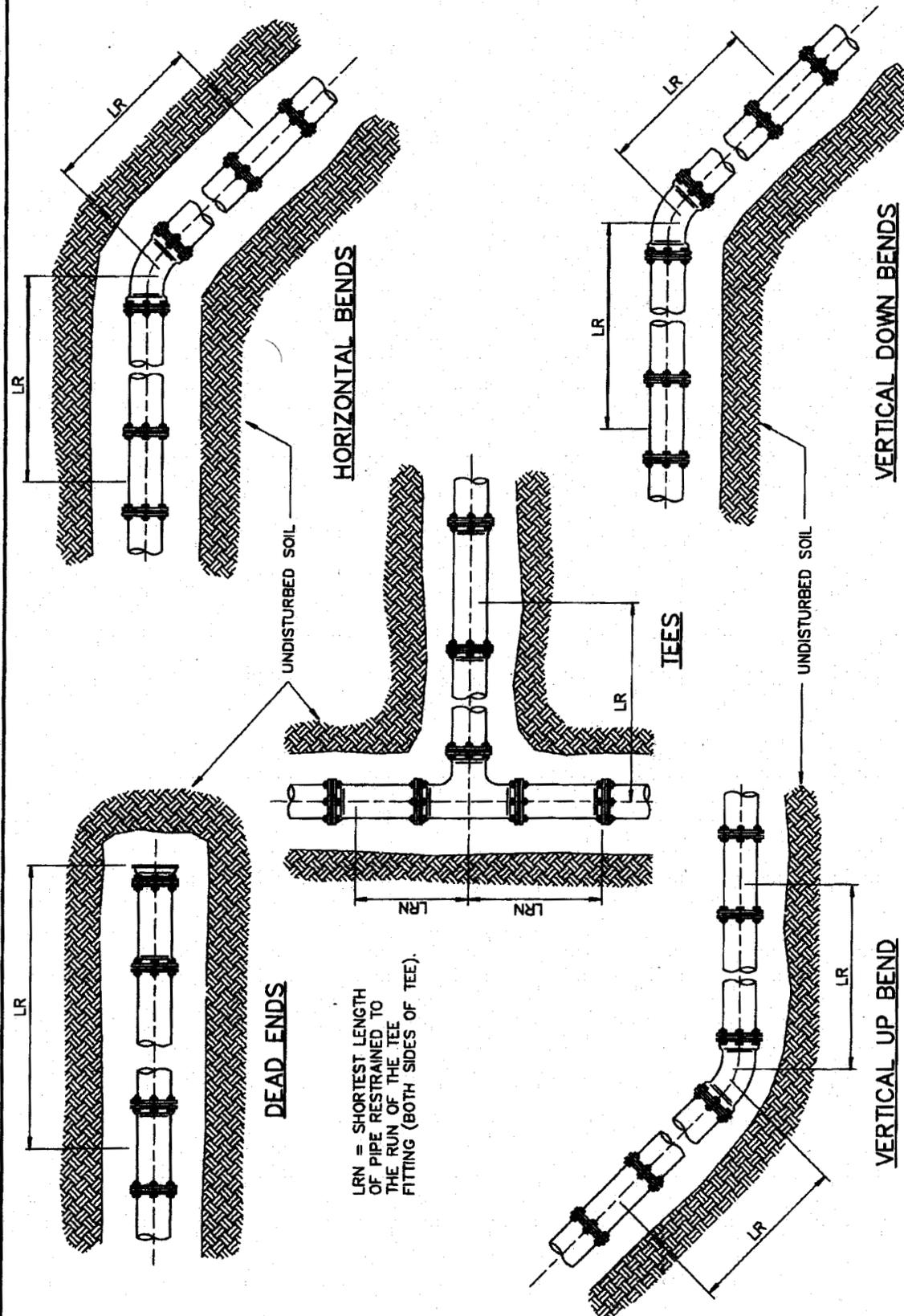
Pipe Size	Min. Bar Size	"A" Dimension (Hook)	Min. Block Dimension (WxHxL)
6"	#6	6"	3'x3'x3'
8"	#6	9"	4'x3'x4'
12"	#8	9"	5'x4'x5'
16"	#9	12"	7'x6'x7'

\* For 125 P.S.I. Working Pressure



**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>THRUST BLOCK FOR VERTICAL BENDS</b>			
DRAWN BY: JPK	APPROVED BY: MJW	DATE: 7-5-96	△ 01.16.2007
			<b>E-9-5-2</b>



**DEAD ENDS**

**HORIZONTAL BENDS**

**TEES**

**VERTICAL UP BEND**

**VERTICAL DOWN BENDS**

UNDISTURBED SOIL

LRN = SHORTEST LENGTH OF PIPE RESTRAINED TO THE RUN OF THE TEE FITTING (BOTH SIDES OF TEE).

**STANDARD SPECIFICATION**  
FOR THE INSTALLATION OF

**JOINT RESTRAINT FOR NEW DUCTILE IRON AND C-900 PVC MAINS**

DESIGNED BY: CB	APPROVED BY: MW	DATE: 01.16.2007	REVISION: Δ
-----------------	-----------------	------------------	-------------

**ARIZONA WATER COMPANY**

E-9-5-3-1

**RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE**

NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS		TEES		VERTICAL OFFSETS								DEAD ENDS	
	90°	45°	22-1/2'	LRN=0'	LRN=10'	90° BEND FITTINGS		45° BEND FITTINGS		22-1/2' BEND FITTINGS		UP BEND		DOWN BEND
						DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND			
4	18	7	4	30	8	31	18	13	7	6	3	3	31	
6	25	10	5	43	20	44	25	18	10	9	5	5	44	
8	32	13	6	56	34	58	32	24	13	11	6	6	58	
10	38	16	8	68	45	69	38	29	16	14	8	8	69	
12	45	19	9	80	57	81	45	34	19	16	9	9	81	
14	51	21	10	91	68	92	51	38	21	18	10	10	92	
16	57	24	11	103	79	104	57	43	24	21	11	11	104	
18	62	26	12	113	90	115	62	48	26	23	12	12	115	
20	68	28	14	125	100	126	68	52	28	25	14	14	126	
24	79	33	16	145	121	147	79	61	33	29	16	16	147	

**RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE WITH POLYETHYLENE WRAP**

NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS		TEES		VERTICAL OFFSETS								DEAD ENDS	
	90°	45°	22-1/2'	LRN=0'	LRN=10'	90° BEND FITTINGS		45° BEND FITTINGS		22-1/2' BEND FITTINGS		UP BEND		DOWN BEND
						DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND			
4	26	11	5	69	18	72	26	30	11	14	5	5	72	
6	36	15	7	99	47	102	36	42	15	20	7	7	102	
8	47	19	9	130	78	133	47	55	19	26	9	9	133	
10	56	23	11	157	103	159	56	66	23	32	11	11	159	
12	65	27	13	185	131	187	65	77	27	37	13	13	187	
14	74	31	15	211	158	214	74	89	31	42	15	15	214	
16	82	34	16	238	183	241	82	100	34	48	16	16	241	
18	90	37	18	263	207	266	90	110	38	53	18	18	266	
20	98	41	20	289	233	292	98	121	41	58	20	20	292	
24	113	47	22	337	280	340	113	141	47	68	22	22	340	

**NOTES:**

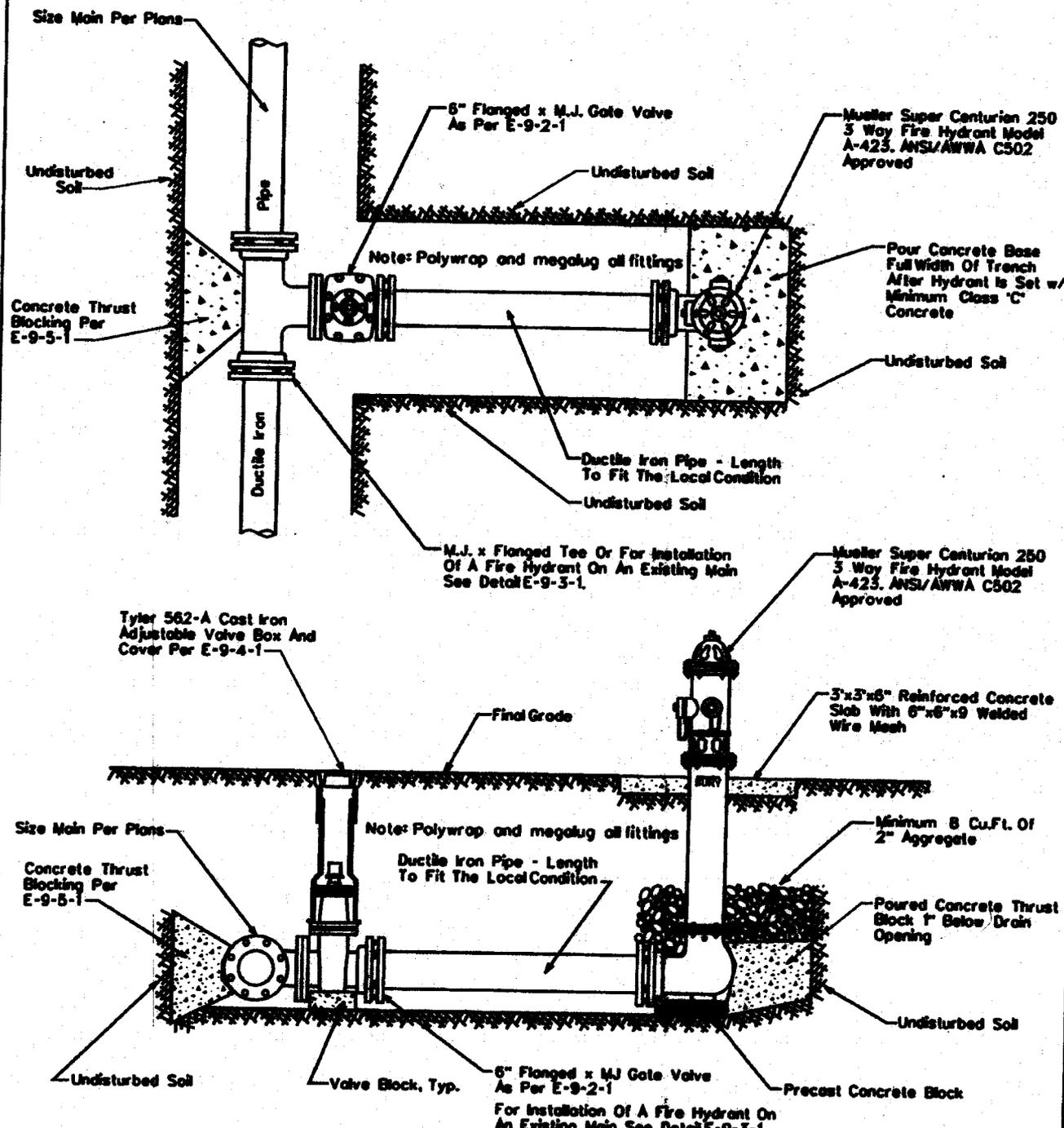
1. ALL JOINTS WITHIN THE SPECIFIED LENGTH LR MUST BE RESTRAINED. ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI
3. THE MINIMUM DEPTH OF BURY SHALL BE 3' TO TOP OF PIPE.
4. RESTRAINED LENGTHS MAY BE REDUCED WHEN SUPPORTED BY ENGINEERING CALCULATIONS.



**STANDARD SPECIFICATION  
FOR THE INSTALLATION OF**

**JOINT RESTRAINT FOR NEW DUCTILE IRON AND C-900 PVC MAINS**

DESIGNED BY: CB	APPROVED BY: MW	DATE: 01.16.2007	△
			E-9-5-3-2

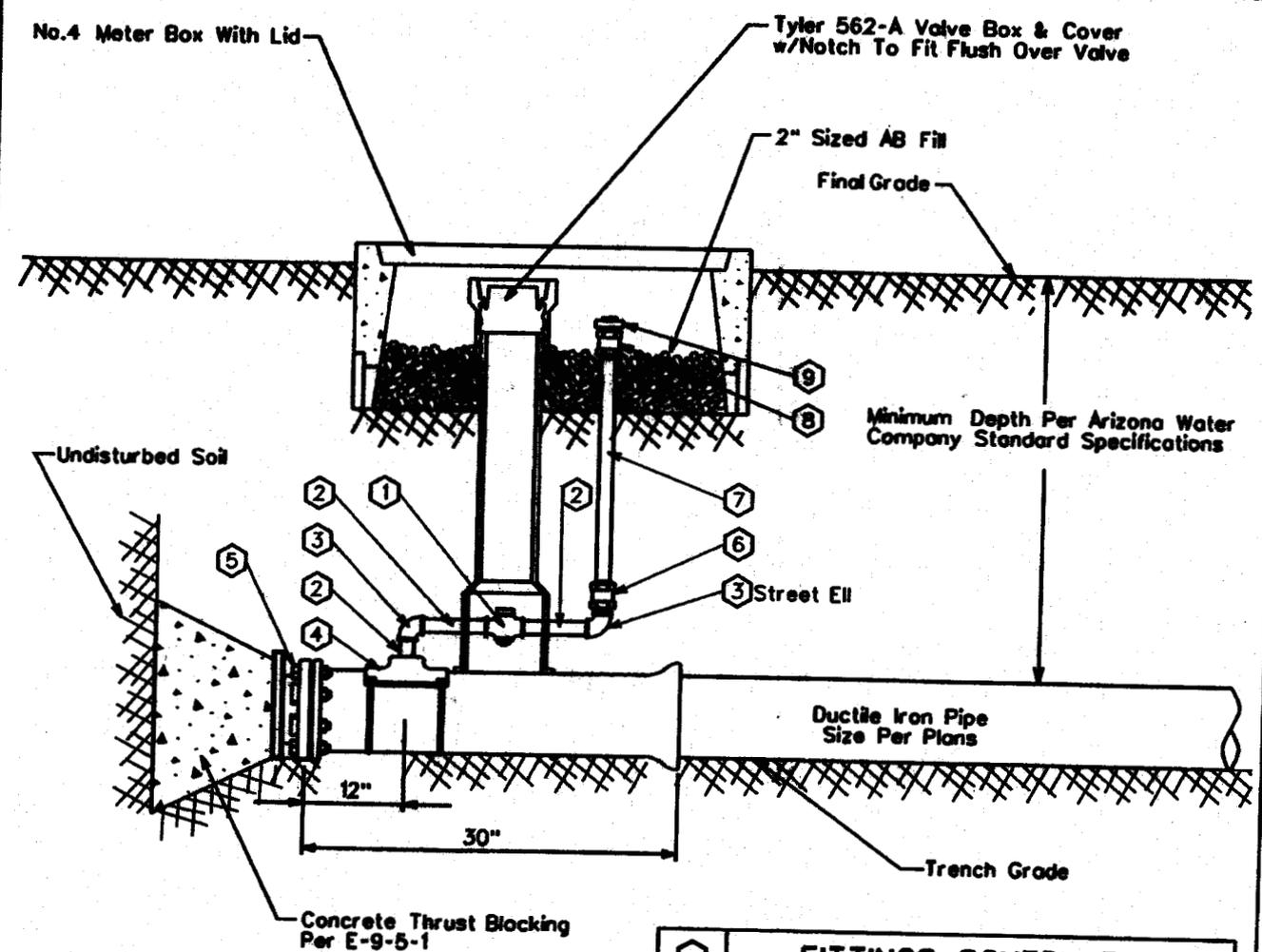


NOTE: All Flanges, Bolts, Nuts and Drain Holes Shall Be Kept Free Of Concrete

# ARIZONA WATER COMPANY

<b>STANDARD SPECIFICATION</b>				
FOR THE INSTALLATION OF				
<b>TYPICAL PERPENDICULAR FIRE HYDRANT</b>				
DRAWN BY:	APPROVED BY:	DATE:	REVISION:	
CB	MW	1-28-91	△ 08.24.2006	E-9-6-1

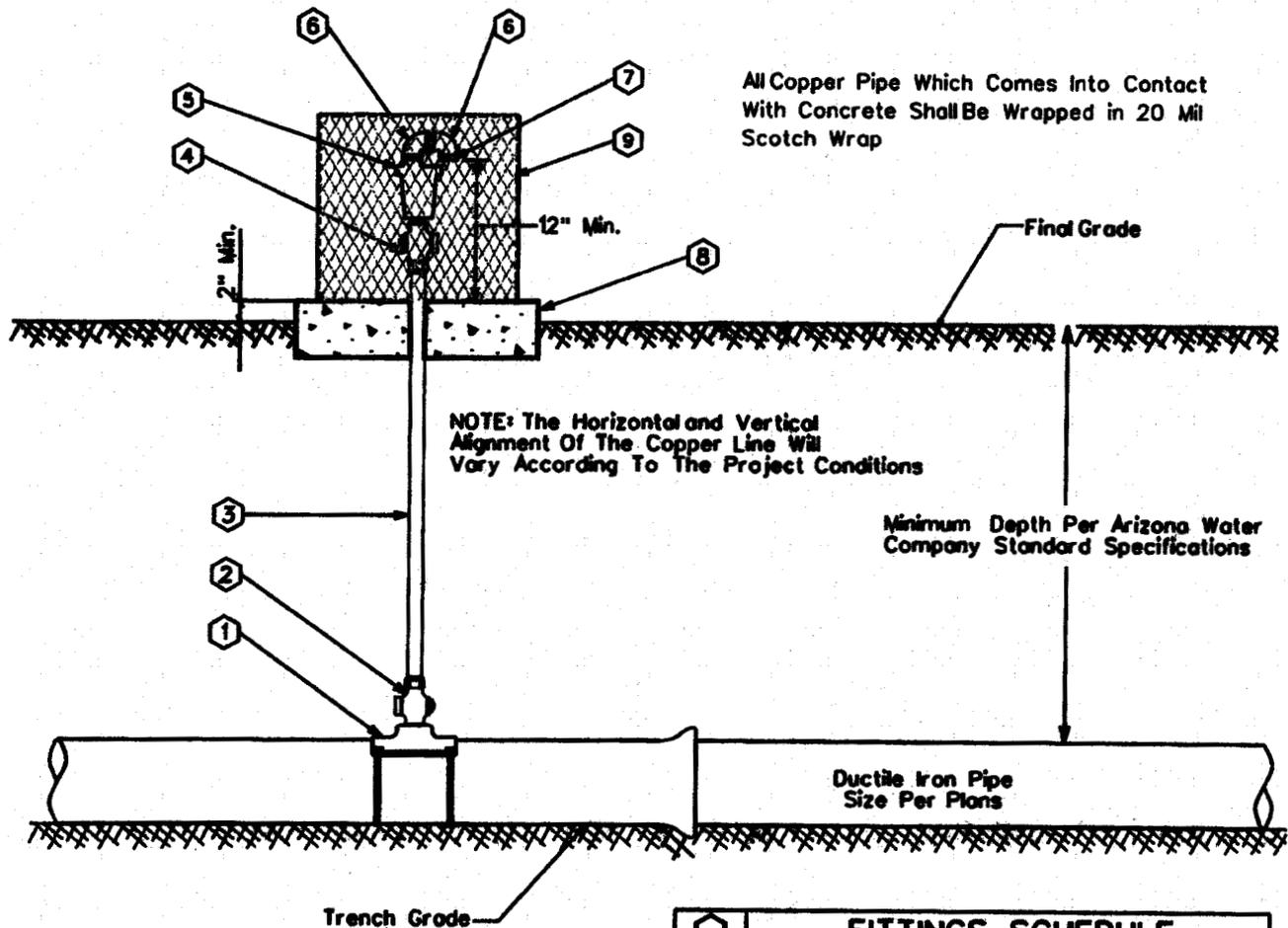




FITTINGS SCHEDULE	
1.	2" Mueller 300 Ball Curb Valve B-20283 FIP x FIP w/ 2" Mueller Brass Square Wrench Nut Adapter B-20289
2.	2" Brass Nipple - Length To Fit Field Conditions
3.	2" Brass 90° Elbow, IPST
4.	Mueller Double Strap Bronze Service Saddle - BR2B
5.	M.J. Plug - Megalug Restraints May Be Required
6.	2" Straight Coupling CC x FIP H-15451
7.	2" Copper Pipe
8.	2" Straight Coupling CC x MP H-15428
9.	2" Square Head Plug, MP

# ARIZONA WATER COMPANY

STANDARD SPECIFICATION FOR THE INSTALLATION OF			
2" BLOWOFF ASSEMBLY			
DRAWN BY: CB	APPROVED BY: MW	DATE: 03.20.1986	△ 03.21.2006
			E-9-8-1



**GENERAL NOTES:**

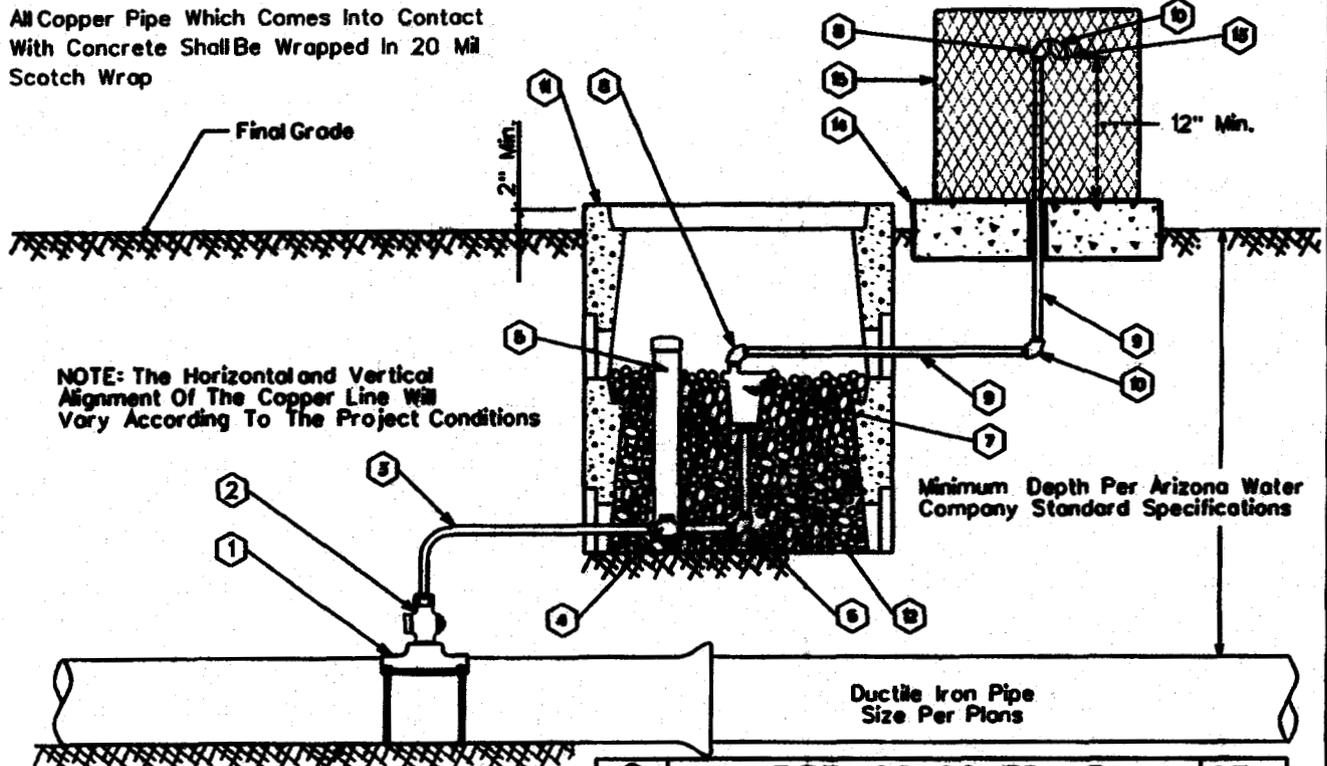
1. The valve shall be installed at high points and on long runs to vent the accumulation of air with the line under pressure- see the construction plans for specific locations.
2. The valve shall have a 5/16" orifice with valve sealing faces of stainless steel and BUNA-N rubber.
3. The valve shall be Crispin model AR10 for 6" and larger water mains.
4. Crispin model AR10 valve construction consists of a 1" IPST inlet & 1/2" IPST outlet, cast iron body and top flange with stainless steel foot and trim.
5. The air release assembly shall be located out of the path of traffic but within right-of-way or easement.

<b>FITTINGS SCHEDULE</b>	
1.	Mueller BR28 Bronze Service Saddle - Double Strap
2.	1" Mueller B-25008 Taper x Comp. Ball Corp Stop
3.	1" Type 'K' Copper w/NO Splices - Field Fit
4.	1" Mueller B-25028 IP x Comp. Ball Corp Stop
5.	Crispin 1" Air Release Valve, Model AR10
6.	1/2" Brass Street Elbow
7.	No. 15 Wire Mesh Screen (Non-Corrosible)
8.	4" Thick Concrete Pad - Class 'C' Concrete
9.	Guardshack, Model GS-1, Available From SPDI, Inc. Available in Leaf Green Or Desert Tan

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>TYPICAL AIR RELEASE VALVE</b>			
DRAWN BY: CB	APPROVED BY: MW	DATE: 03.20.1997	△ 08.24.2006 E-9-8-2

All Copper Pipe Which Comes Into Contact With Concrete Shall Be Wrapped In 20 Mil Scotch Wrap



NOTE: The Horizontal and Vertical Alignment Of The Copper Line Will Vary According To The Project Conditions

Minimum Depth Per Arizona Water Company Standard Specifications

Trench Grade

Ductile Iron Pipe Size Per Plans

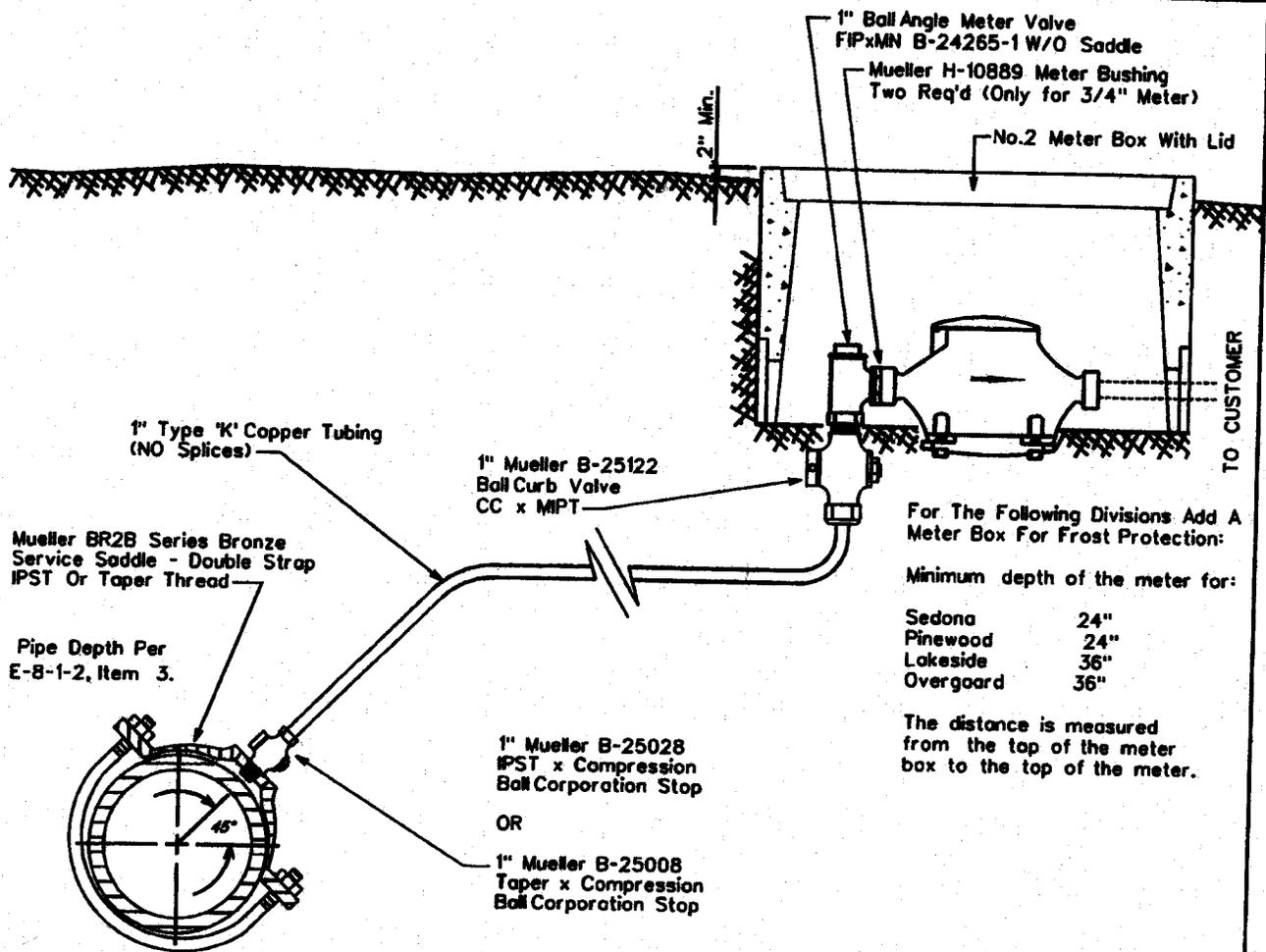
**GENERAL NOTES:**

1. The valve shall be installed at high points and on long runs to vent the accumulation of air with the line under pressure- see the construction plans for specific locations.
2. The valve shall have a 1/4" orifice with valve seating faces of stainless steel and BUNA-N rubber.
3. The valve shall be Crispin model AR10 for 6" and larger water mains.
4. Crispin model AR10 valve construction consists of a 1" IPST inlet & 1/2" IPST outlet, cast iron body and top flange with stainless steel float and trim.
5. The air release assembly shall be located out of the path of traffic but within the right-of-way or easement.

QTY.	FITTINGS SCHEDULE	
1	Mueller BR2B Bronze Service Saddle - Double Strap	1
2	1" Mueller B-28008 Taper x Comp. Ball Corp Stop	1
3	1" Type 'K' Copper w/NO Splices - Field Fit	As Req'd
4	1" Mueller B-25828 IP x Comp. Ball Corp Stop	1
5	3" PVC Pipe w/ Cap (Loose Fit)	1
6	1" x 4" Brass Nipple w/90° Elbow	1
7	Crispin 1" Air Release Valve, Model AR10	1
8	1/2" Brass Street Elbow	2
9	1/2" Galvanized Pipe - Length as req'd	2
10	1/2" Galvanized 90° El	2
11	Number 1 Meter Box	2
12	2" Sized AS (Fill Meter Box To The Top Of The Air Release Valve)	As Req'd
13	No. 16 Wire Mesh Screen (Non-Corrosible)	1
14	4" Thick Concrete Pad - Class 'C' Concrete	1
15	Guardshack, Model GS-1, Available From BFDI, Inc. Available In Leaf Green Or Desert Tan	1

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION FOR THE INSTALLATION OF				
AIR RELEASE VALVE FOR THE NORTHERN REGION				
DRAWN BY:	APPROVED BY:	DATE:		
CB	MW	03.20.1997	△ 08.24.2006	E-9-8-3



**SADDLE TAP TO CA, PVC, OR DI PIPE**

NOTE: The minimum distance between tops on mains other than ductile iron is 12"

NOTE:  
Only the meter is supplied by  
Arizona Water Company



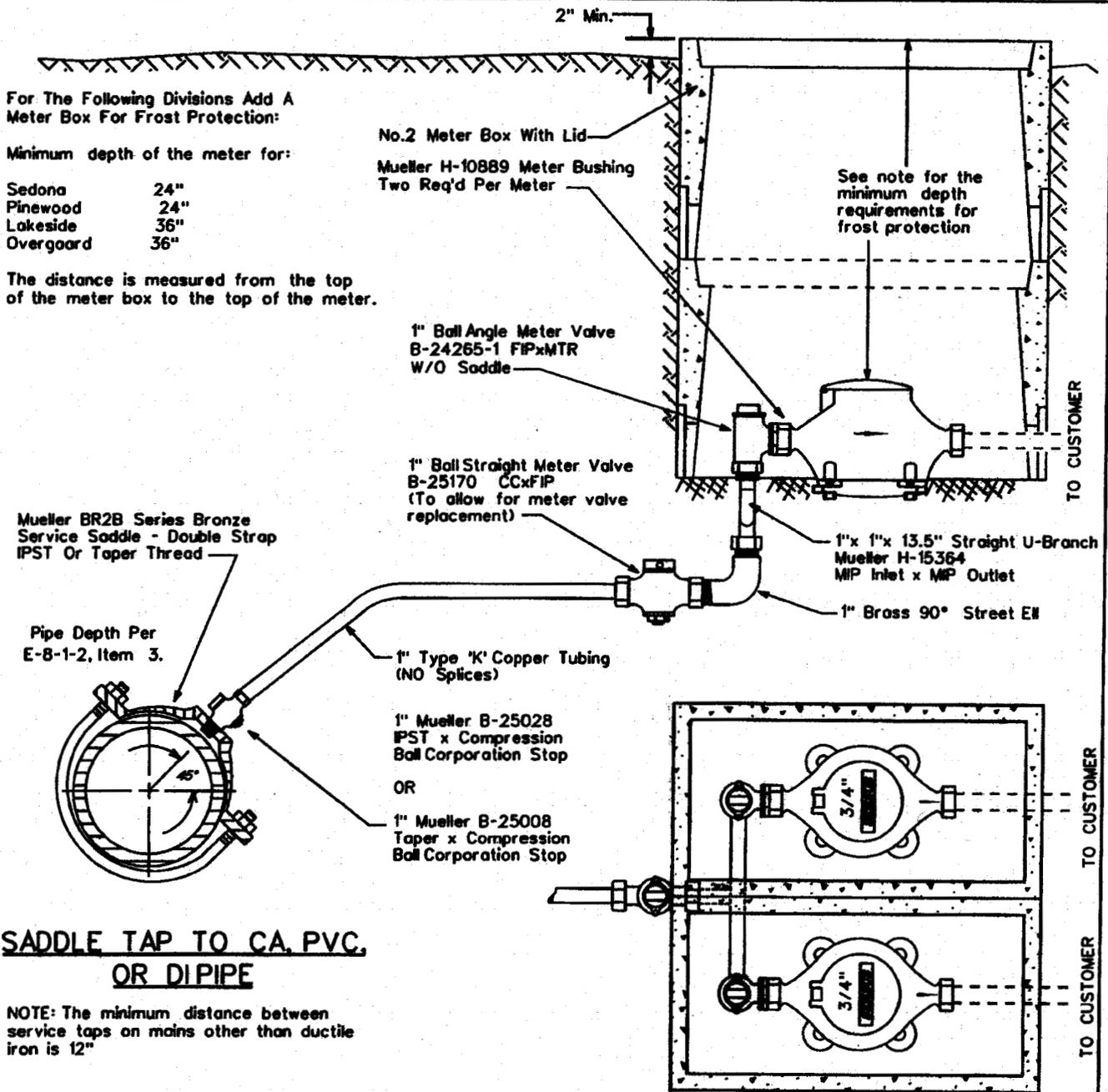
<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>SINGLE SERVICE CONNECTION FOR A 3/4" OR 1" METER</b>			
DRAWN BY:	APPROVED BY:	DATE:	REV:
CCO	M.W.	3/20/86	△ 03.17.2006
			<b>E-9-9-1</b>

For The Following Divisions Add A Meter Box For Frost Protection:

Minimum depth of the meter for:

Sedona	24"
Pinewood	24"
Lakeside	36"
Overgaard	36"

The distance is measured from the top of the meter box to the top of the meter.



**SADDLE TAP TO CA. PVC.  
OR DI PIPE**

NOTE: The minimum distance between service taps on mains other than ductile iron is 12"

NOTE:  
Only the meter is supplied by  
Arizona Water Company

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION FOR THE INSTALLATION OF</b>				
<b>DOUBLE SERVICE CONNECTION FOR 3/4" METERS</b>				
DRAWN BY: CCO	APPROVED BY: M.W.	DATE: 3-20-86	REV: 08.25.2006	PROJECT: E-9-10-1

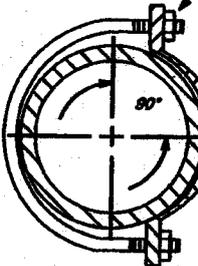
For The Following Divisions Add A Meter Box For Frost Protection:

Minimum depth of the meter for:

Sedona	24"
Pinewood	24"
Lakeside	36"
Overgaard	36"

The distance is measured from the top of the meter box to the top of the meter.

Mueller BR2B Series Bronze Service Saddle - Double Strap IPST Or Taper Thread



Pipe Depth Per E-8-1-2, Item 3.

2" Type 'K' Copper Tubing (NO Splices)

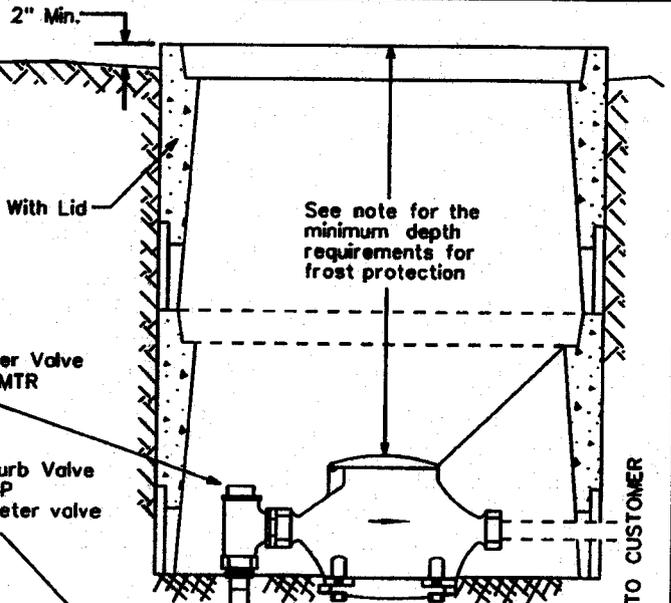
2" Mueller B-25028 IPST x Compression Ball Corporation Stop

OR

2" Mueller B-25008 Taper x Compression Ball Corporation Stop

**SADDLE TAP TO CA, PVC, OR DIPIPE**

NOTE: The minimum distance between service taps on mains other than ductile iron is 12"



See note for the minimum depth requirements for frost protection

No.2 Meter Box With Lid  
1" Ball Angle Meter Valve B-24265-1 FIPxMTR W/O Saddle

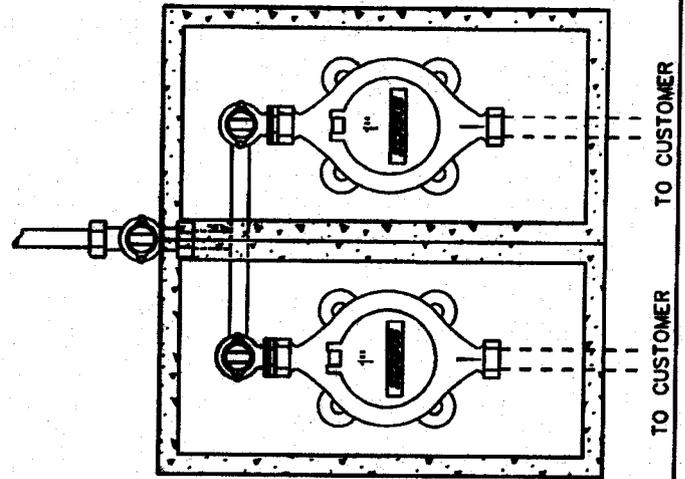
2" Mueller Ball Curb Valve B-25172 CCxFIP (To allow for meter valve replacement)

1"x 1"x 13.5" Straight U-Branch Mueller H-15364 MIP Inlet x MIP Outlet

1" Brass 90° Street El

Mueller 47164 Brass Bushing 2" MIP x 1" FIP

TO CUSTOMER



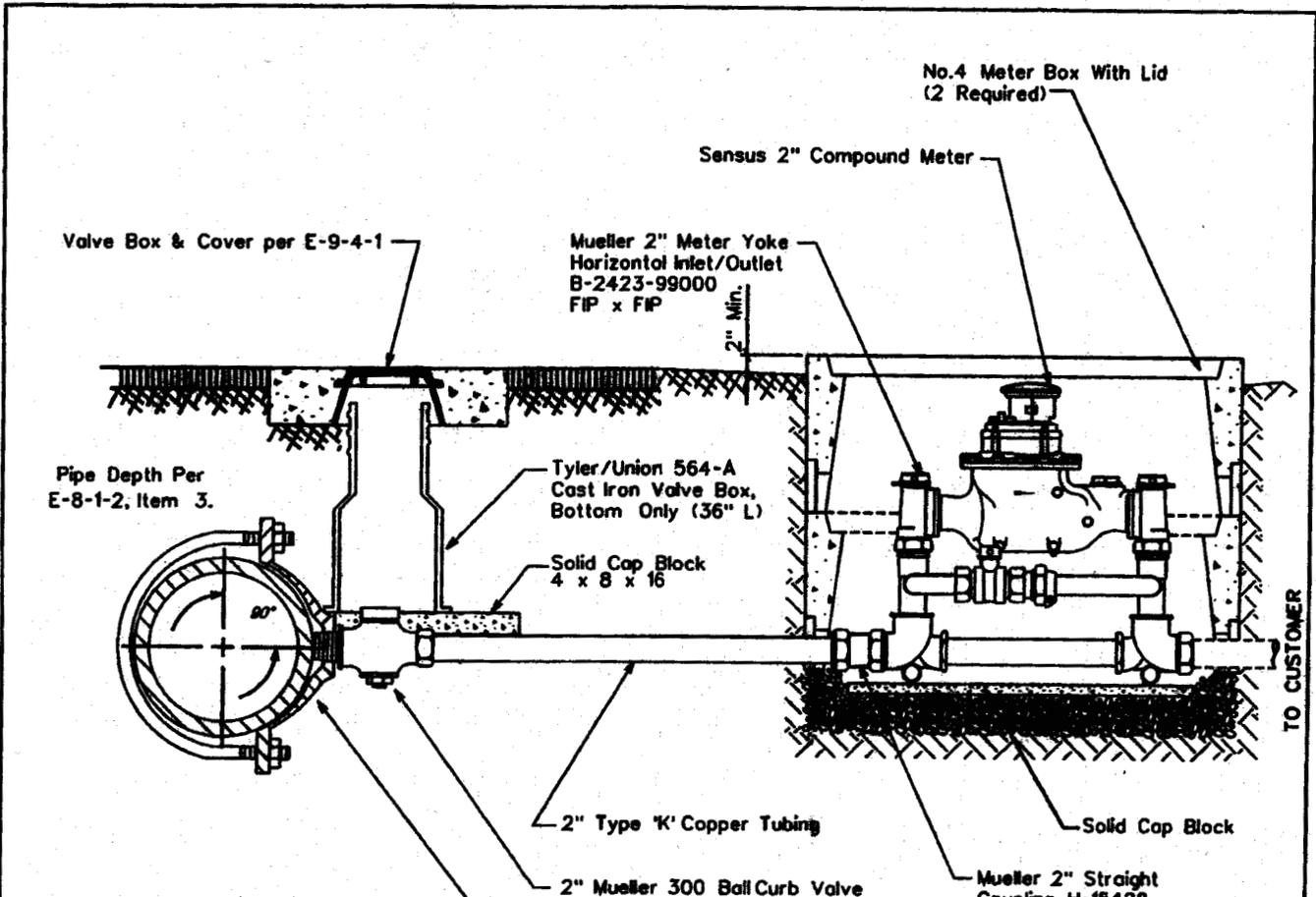
TO CUSTOMER  
TO CUSTOMER

NOTE: THE LENGTH OF SERVICE IS LIMITED TO COMMERCIALY AVAILABLE ROLLS, TYPICALLY 60 FEET

NOTE: Only the meter is supplied by Arizona Water Company



<b>STANDARD SPECIFICATION</b>				
<b>FOR THE INSTALLATION OF</b>				
<b>DOUBLE SERVICE CONNECTION FOR 1" METERS</b>				
DRAWN BY:	APPROVED BY:	DATE:	DATE:	DATE:
CB	M.W.	03.17.2006	△ 08.29.2006	E-9-10-2



**SADDLE TAP CONNECTION  
TO DUCTILE IRON PIPE**

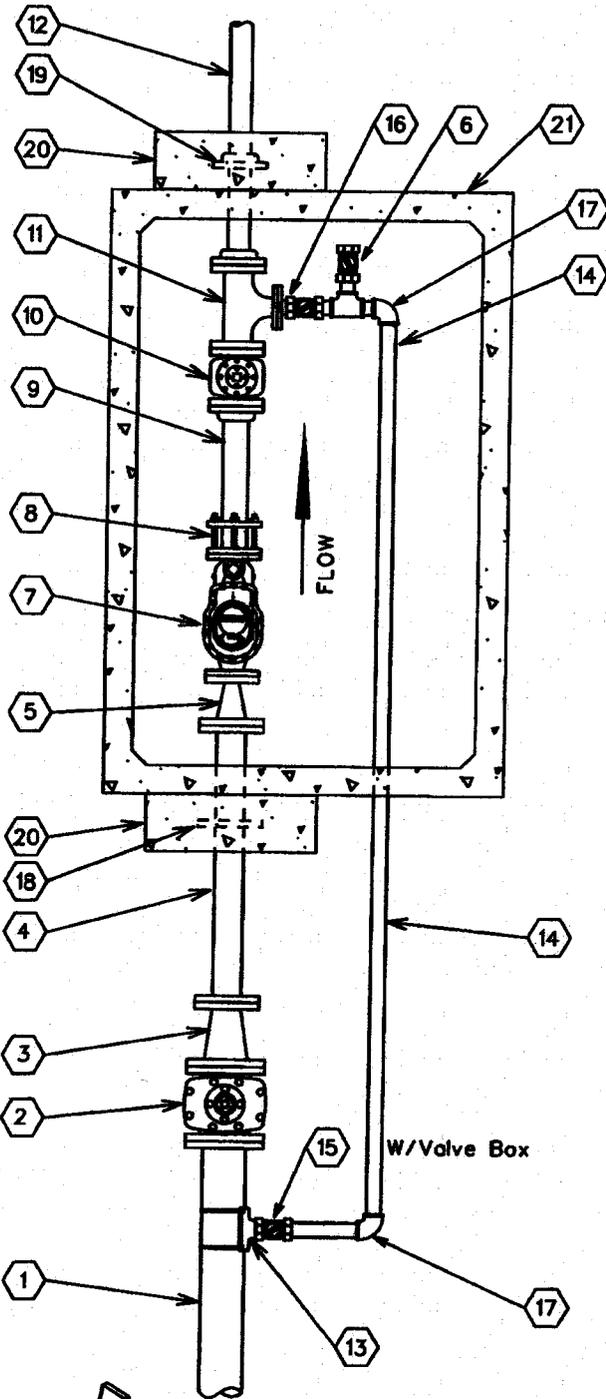
NOTE: The minimum distance between service taps on mains other than ductile iron is 12"

NOTE: THE LENGTH OF SERVICE IS LIMITED TO  
COMMERCIALY AVAILABLE ROLLS, TYPICALLY  
60 FEET

NOTE:  
Only the meter is supplied by  
Arizona Water Company



<b>STANDARD SPECIFICATION FOR THE INSTALLATION OF</b>				
<b>TYPICAL 2" SERVICE CONNECTIONS</b>				
DRAWN BY: JW	APPROVED BY: M.W.	DATE: 3/20/86	△ 08.29.2006	E-9-11-1



No.	FITTINGS SCHEDULE
1.	6" D.I.P.
2.	6" G.V.B.&C. mj x flng
3.	6"x4" Reducer flng x mj
4.	4"x3'-0" D.I.P. Spool flng x pe
5.	4" x 3" Reducer flng
6.	2" Test Port
7.	3" Compound Meter
8.	3" F.C.A.
9.	3"x2'-0" D.I. Spool flng x pe
10.	3" Gate Valve flng
11.	3"x2" Flg Tee w/ 2" Companion Flange
12.	3"x4'-0" D.I. Spool flng x pe
13.	6"x2" Tapping Saddle
14.	2" Copper Pipe
15.	2" Mueller B25122 Ball Valve w/B20299 Nut
16.	2" Locking Ball Valve (normally closed)
17.	2" Mueller H-15526 90° Ell CC x CC
18.	4" Megalug
19.	3" Slip-On Welding Flange
20.	24"x24"x8" Conc. Thrust Block P.I.P.
21.	575-LA Conc. Vault

**NOTE:**

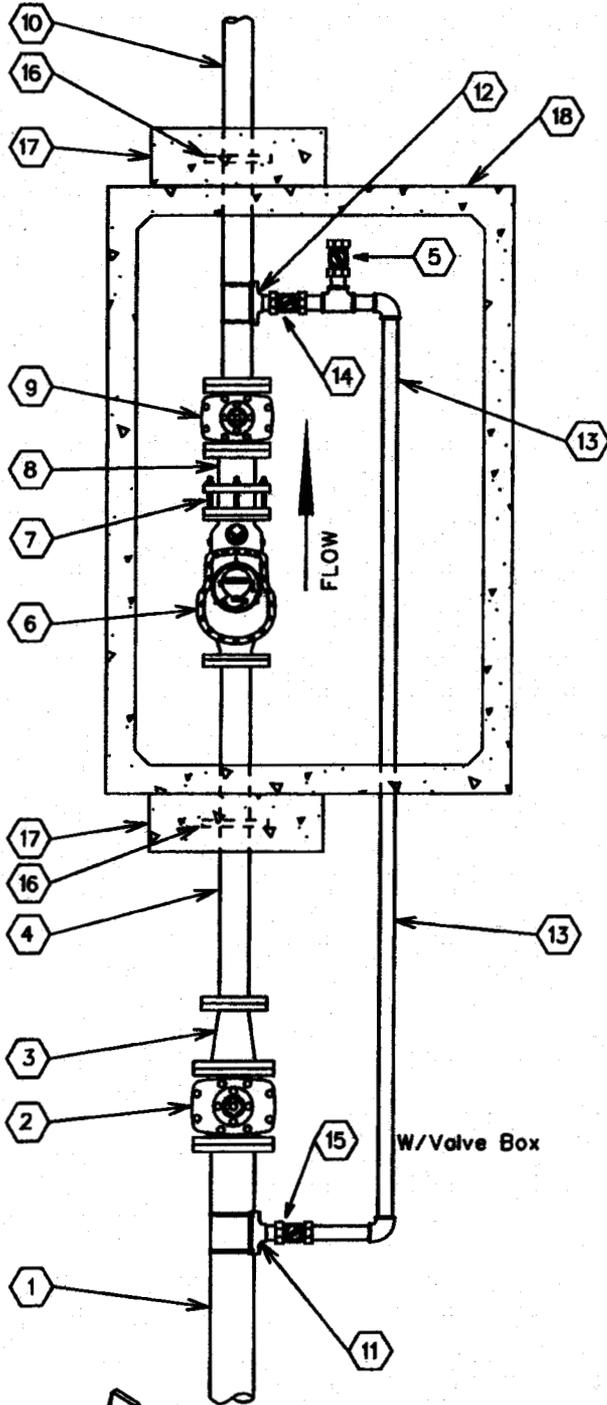
1. Use Rowley pipe supports or equivalent as needed (See detail below).
2. Pipe support locations to be determined by field personnel.
3. All copper pipe that comes in contact with concrete to be wrapped w/10-20 Mil. Scotchwrap corrosion protection tape.
4. All mechanical joint fittings are to be megalugged.
5. Use deflection fittings (45° Ells.) to achieve necessary depths & cover as shown on the standard specification for the installation of a concrete vault (E-9-12-5).

## ARIZONA WATER COMPANY

### STANDARD SPECIFICATION FOR THE INSTALLATION OF

### 3" COMPOUND METER

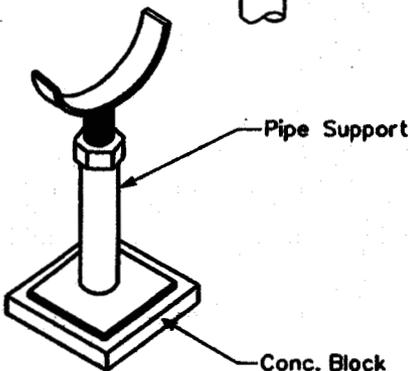
DRAWN BY: CCO	APPROVED BY: MW	DATE: 10/5/1993	△08.29.2006	E-9-12-1
---------------	-----------------	-----------------	-------------	----------



No.	FITTINGS SCHEDULE
1.	6" D.I.P.
2.	6" G.V.B.&C. mj x flng
3.	6"x4" Reducer flng x mj
4.	4"x3'-0" D.I.P. Spool flng x pe
5.	2" Test Port
6.	4" Compound Meter
7.	4" F.C.A.
8.	4"x1'-0" D.I.P. Spool flng x pe
9.	4" Gate Valve flng
10.	4"x4'-0" D.I.P. Spool flng x pe
11.	6"x2" Tapping Saddle
12.	4"x2" Tapping Saddle
13.	2" Copper Pipe
14.	2" Ball Valve / Locking (Normally Closed)
15.	2" Mueller B25122 Ball Valve w/B20299 Nut
16.	4" Megalug
17.	24"x24"x8" Conc. Thrust Block P.I.P.
18.	575-LA Conc. Vault

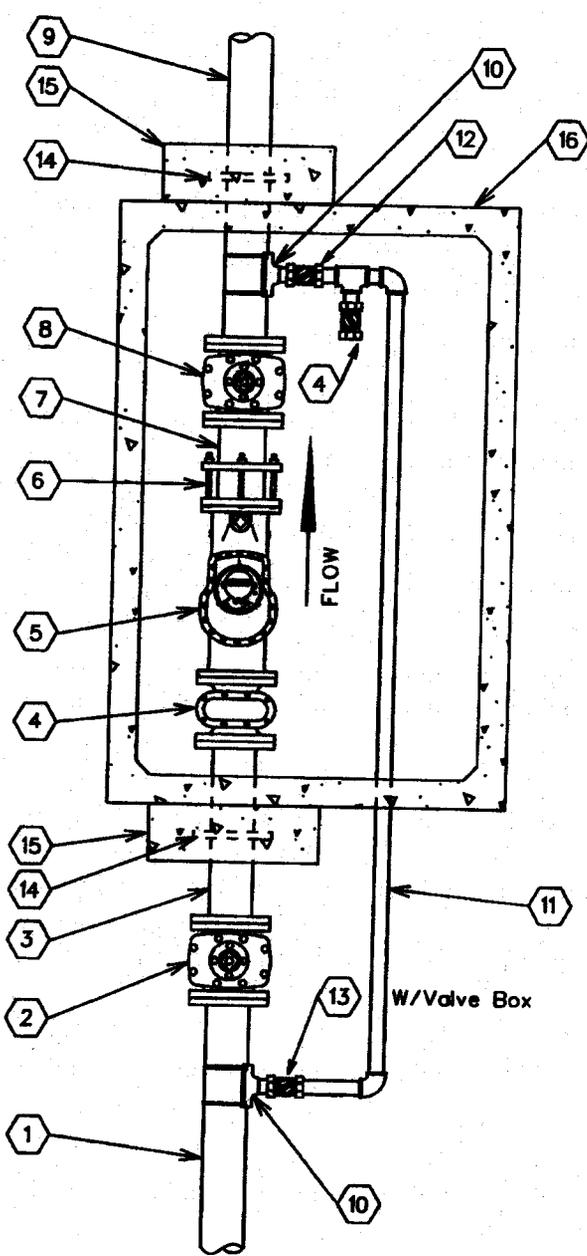
**NOTE:**

1. Use Rowley pipe supports or equivalent as needed (See detail below).
2. Pipe support locations to be determined by field personnel.
3. All copper pipe that comes in contact with concrete to be wrapped w/10-20 Mil. Scotchwrap corrosion protection tape.
4. All mechanical joint fittings are to be megalugged.
5. Use deflection fittings (45° Ells.) to achieve necessary depths & cover as shown on the standard specification for the installation of a concrete vault (E-9-12-5).



**ARIZONA WATER COMPANY**

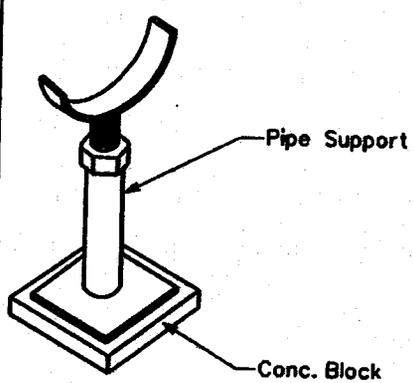
<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>4" COMPOUND METER</b>			
DRAWN BY:	APPROVED BY:	DATE:	
CCO	MW	10/5/1993	△08.29.2006
			E-9-12-2



No.	FITTINGS SCHEDULE
1.	6" D.I.P.
2.	6" G.V.B.&C. mj
3.	6"x 3'-0" D.I.P. Spool flng x pe
4.	2" Test Port
5.	6" Compound Meter
6.	6" F.C.A.
7.	6"x 1'-0" D.I.P. Spool flng x pe
8.	6" Gate Valve flng
9.	6"x 4'-0" D.I.P. Spool flng x pe
10.	6"x2" Tapping Saddle
11.	2" Copper Pipe
12.	2" Ball Valve / Locking (Normally Closed)
13.	2" Mueller B25122 Ball Valve w/B20299 Nut
14.	6" Megalug
15.	24"x24"x8" Conc. Thrust Block P.I.P.
16.	575-LA Conc. Vault

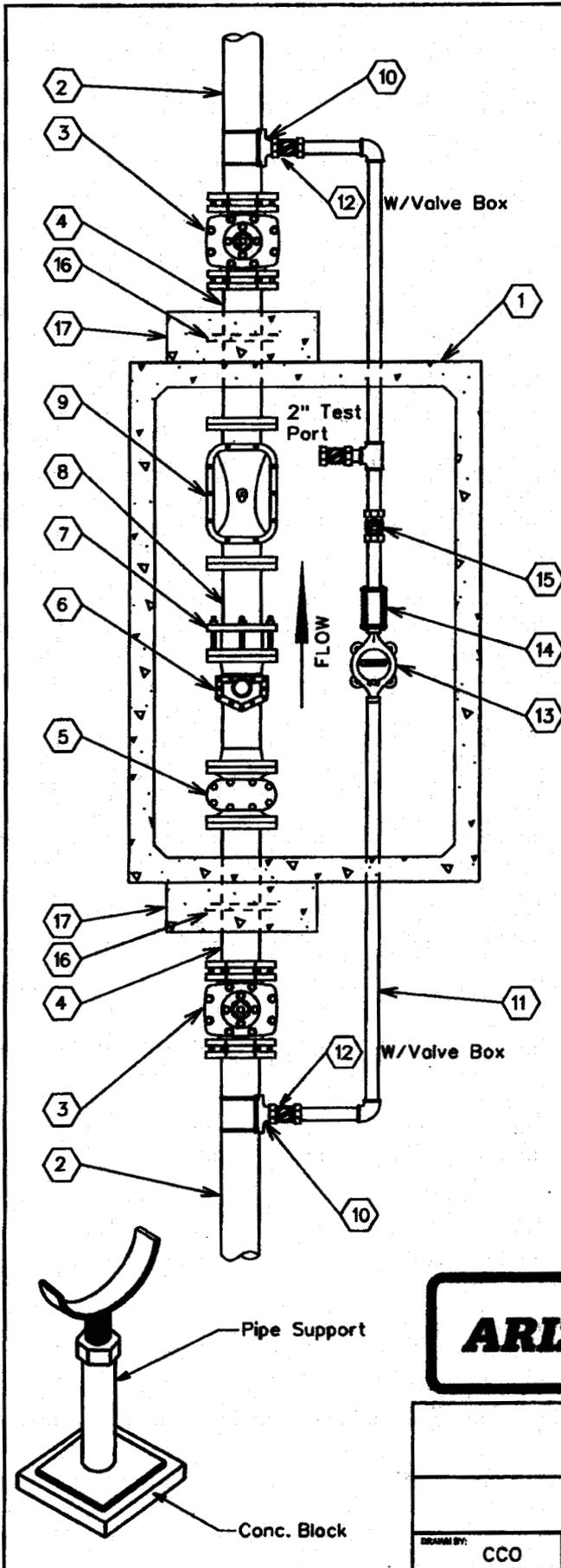
**NOTE:**

1. Use Rowley pipe supports or equivalent as needed (See detail below).
2. Pipe support locations to be determined by field personnel.
3. All copper pipe that comes in contact with concrete to be wrapped w/10-20 Mil. Scotchwrap corrosion protection tape.
4. All mechanical joint fittings are to be megalugged.
5. Use deflection fittings (45° Ells.) to achieve necessary depths & cover as shown on the standard specification for the installation of a concrete vault (E-9-12-5).



# ARIZONA WATER COMPANY

STANDARD SPECIFICATION FOR THE INSTALLATION OF			
<b>6" COMPOUND METER</b>			
DRAWN BY: CCO	APPROVED BY: MW	DATE: 10/5/1993	△08.29.2006
			E-9-12-3



No.	FITTINGS SCHEDULE
1.	575-LA Conc. Vault
2.	6" D.I.P.
3.	6" G.V.B.&C. m.j.
4.	6" x 3'-0" D.I.P. Spool Piece flng x pe
5.	6" Strainer
6.	6" Turbo Meter
7.	6" F.C.A.
8.	6" x 2'-0" D.I.P. Spool Piece flng x pe (TRIM SPOOL PIECE TO 3x THE PIPE DIA.)
9.	6" Detector Check
10.	6"x=N" Tapping Saddle
11.	=N" Copper Pipe
12.	=N" Ball Valve (Locking)
13.	=N" Meter
14.	=N" Coup. Adapt.
15.	=N" Flapper Check Valve
16.	6" Megalug
17.	24"x24"x8" Conc. Thrust Block P.I.P.

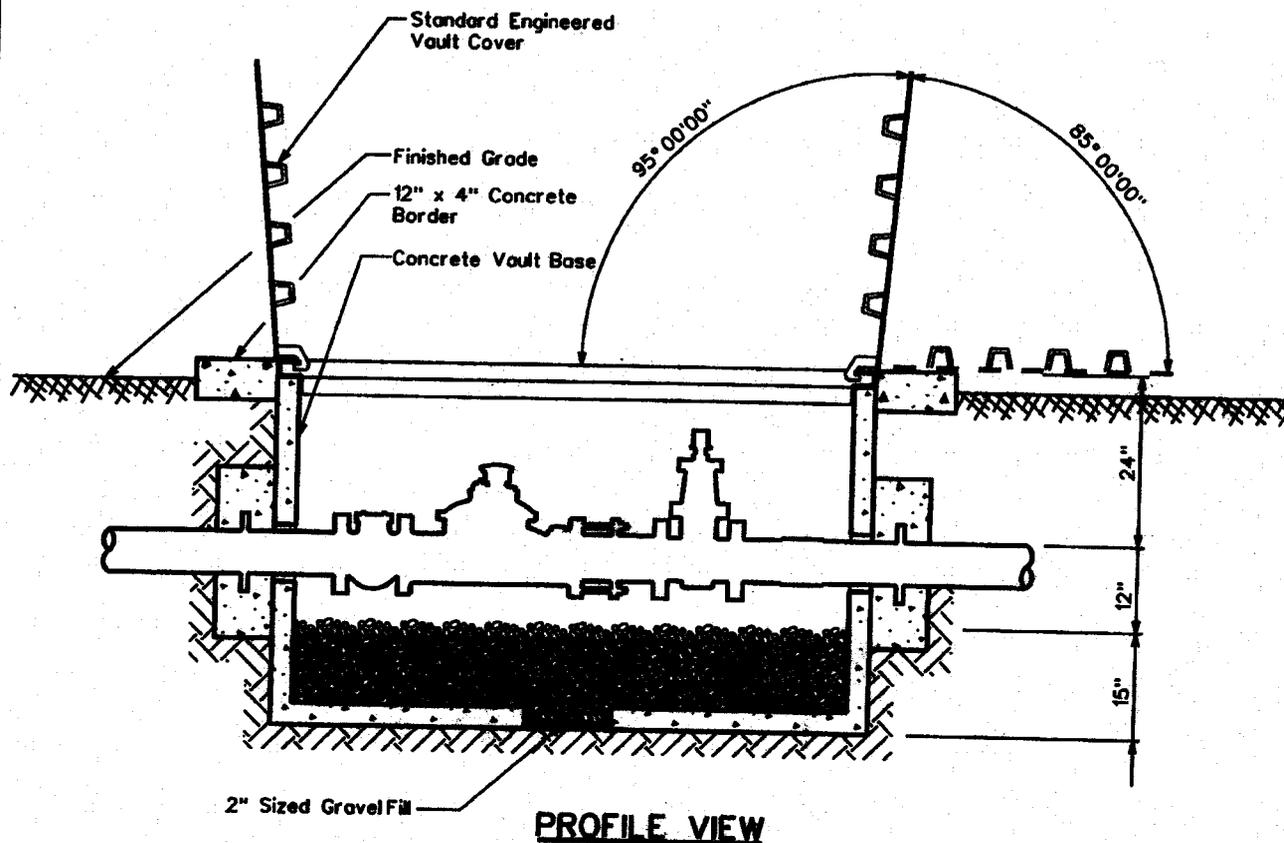
=N - Size To Be determined By A.W.Co.

**NOTE:**

1. Use Rowley pipe supports or equivalent as needed (See detail below).
2. Pipe support locations to be determined by field personnel.
3. All copper pipe that comes in contact with concrete to be wrapped w/10-20 Mil. Scotchwrap corrosion protection tape.
4. All mechanical joint fittings are to be megalugged.
5. Use deflection fittings (45° Ells.) to achieve necessary depths & cover as shown on the standard specification for the installation of a concrete vault (E-9-12-5).
6. To change from a 6" service to a 4" service, change all listed 6" materials to 4" materials.

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION FOR THE INSTALLATION OF</b>			
<b>6" COMPOUND SERVICE</b>			
DRAWN BY:	APPROVED BY:	DATE:	
CCO	MW	10/05/1993	△08.29.2006 E-9-12-4



**CONCRETE VAULT & COVER SPECIFICATIONS**

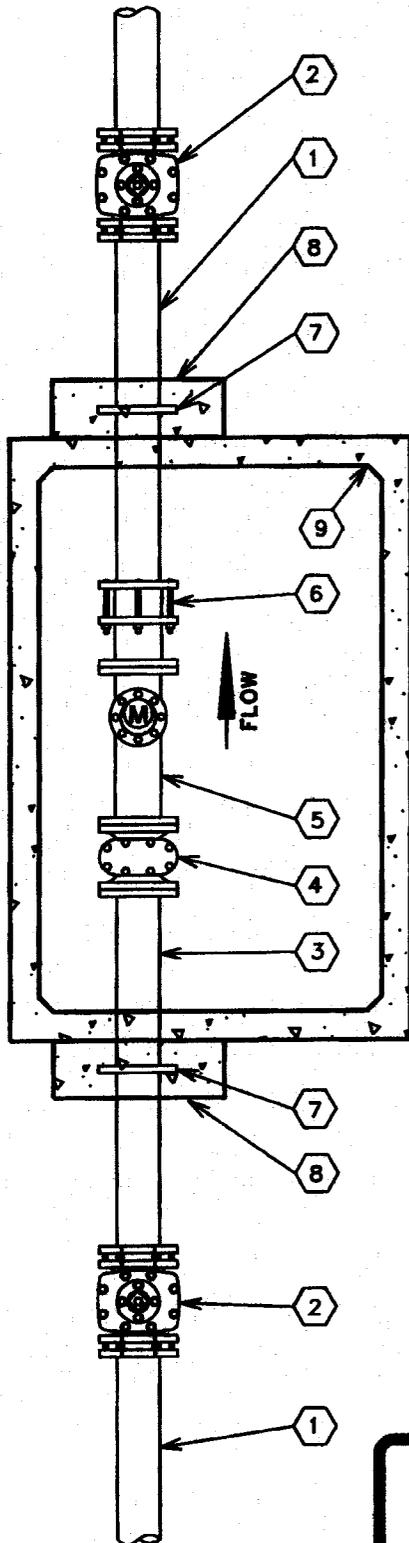
- Vault - Base No. 575-BL
- Cover - Standard Engineered Vault Cover
  - . 4874 Aluminum Diamond Plate Cover For Non-Traffic Loading Areas
  - Or
  - . 4874 Galvanized Steel Diamond Plate Cover W/ H-20 Traffic Loading
  - . Double Torsion Spring Assisted Doors W/ Recessed Hasp & Safety Latches

**NOTES**

1. Total Depth Of Concrete Vault To Be A Maximum Of 3'-0" From Top Of Vault Cover To Top Of Gravel Fill.
2. Service Connections Larger Than 6" In Diameter Will Conform To The Same Vault & Cover Specifications. Size Of Vault & Cover To Be Determined By A.W.Co. Engineers.

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION</b>				
FOR THE INSTALLATION OF				
<b>CONCRETE VAULT</b>				
<small>DRAWN BY:</small>	CCO	<small>APPROVED BY:</small>	MW	<small>DATE:</small> 10/5/1993
			△ 05.17.2001	E-9-12-5



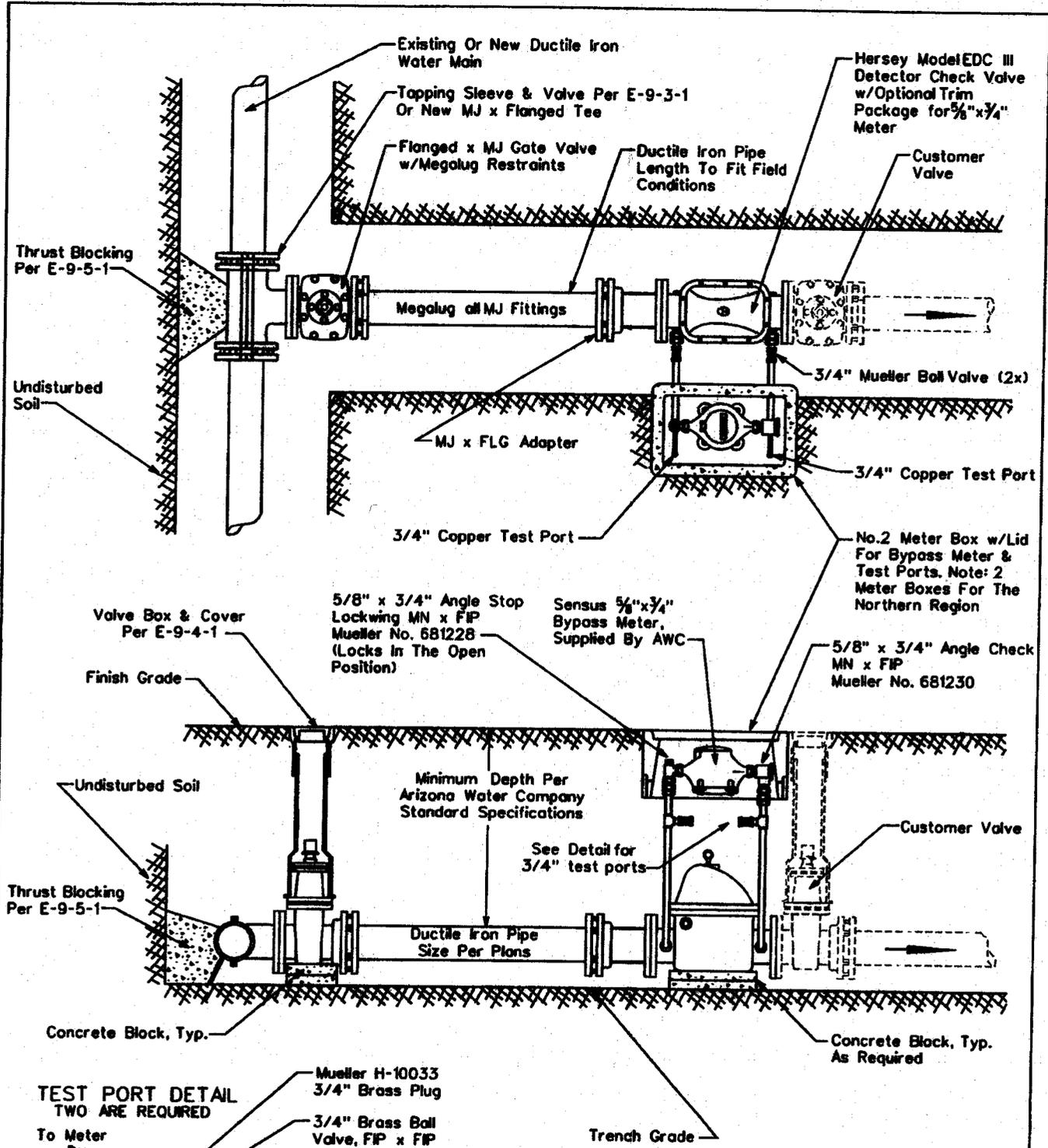
No.	FITTINGS SCHEDULE
1.	Ductile Iron Pipe
2.	Gate Valve M.J.
3.	D.I.P. Spool Piece Flg x Pe (10xDia.)
4.	Meter Strainer
5.	Propeller Meter
6.	Flanged Coupling Adapter
7.	Megalug Gland (Thrust Anchor)
8.	Concrete Thrust Block P.I.P.
9.	Concrete Vault

**NOTE:**

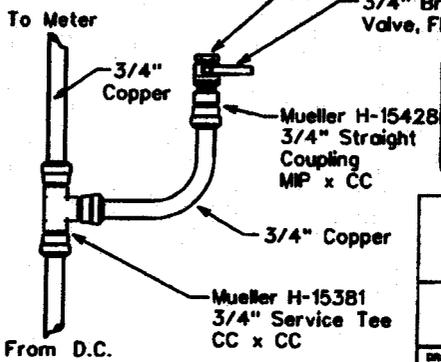
1. Use Rowley pipe supports or equivalent as needed (See E-9-12-4).
2. Pipe support locations to be determined by field personnel.
3. All Sched. 40 Std. pipe outside of vault to be wrapped w/10-20 Mil. Scotchwrap corrosion protection tape.
4. All mechanical joint fittings to are to be megalugged.
5. Use deflection fittings (45° Ells.) to achieve necessary depths & cover as shown on the standard specification for the installation of a concrete vault (E-9-12-5).

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION</b>			
<b>FOR THE INSTALLATION OF</b>			
<b>NON-POTABLE PROPELLER METER</b>			
DRAWN BY: JPK	APPROVED BY: MW	DATE: 7-20-95	△
			<b>E-9-12-6</b>



**TEST PORT DETAIL  
TWO ARE REQUIRED**

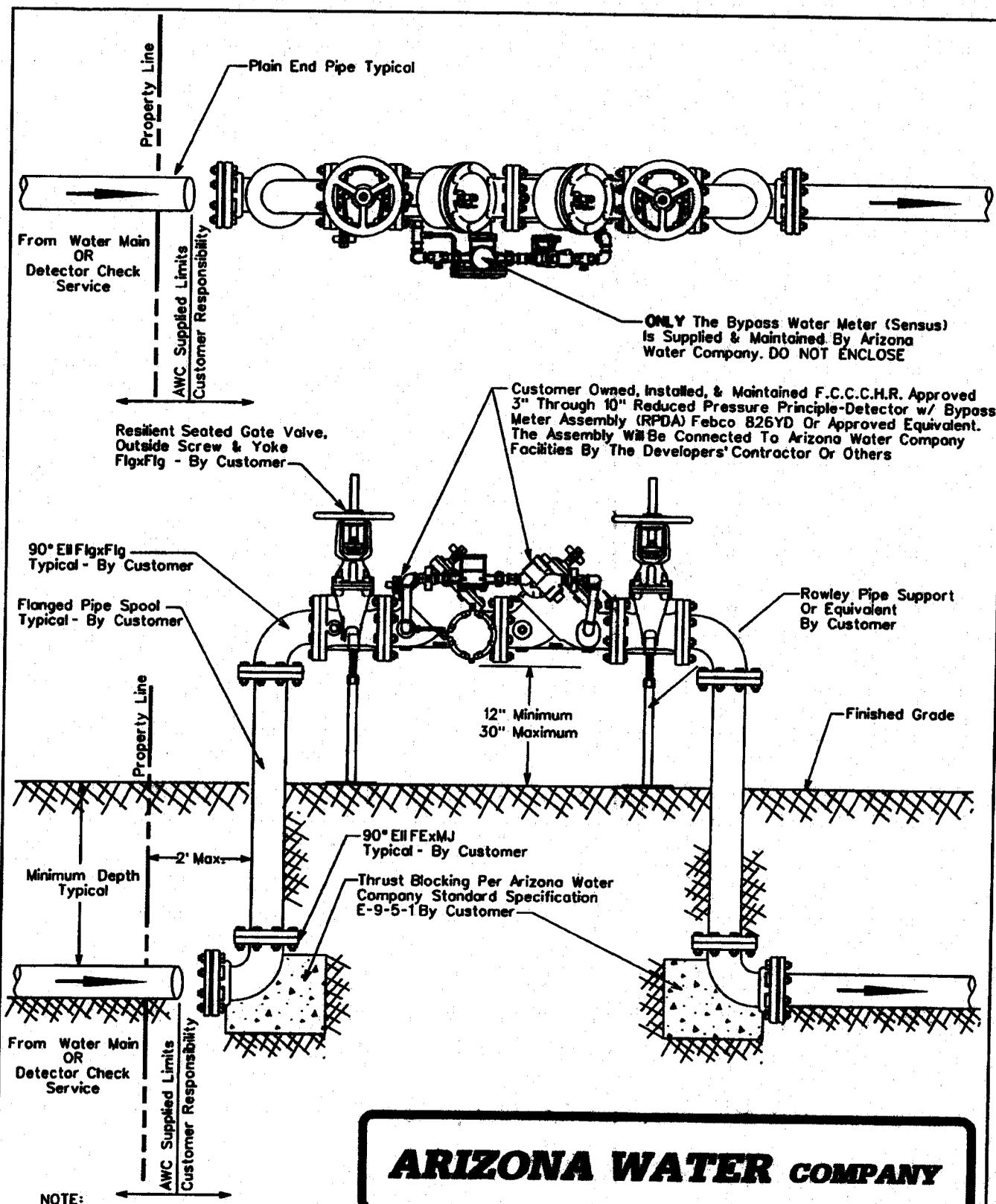


**ARIZONA WATER COMPANY**

**STANDARD SPECIFICATION  
FOR THE INSTALLATION OF**

**TYPICAL 4\"/>**

DRAWN BY: CB	APPROVED BY: MW	DATE: 10.16.1990	△ 03.09.2007
E-9-13-1			



ONLY The Bypass Water Meter (Sensus) Is Supplied & Maintained By Arizona Water Company. DO NOT ENCLOSE

Customer Owned, Installed, & Maintained F.C.C.H.R. Approved 3" Through 10" Reduced Pressure Principle-Detector w/ Bypass Meter Assembly (RPDA) Febco 826YD Or Approved Equivalent. The Assembly Will Be Connected To Arizona Water Company Facilities By The Developers' Contractor Or Others

Property Line

12" Minimum  
30" Maximum

Finished Grade

Minimum Depth Typical

2' Max.

90° Ell FlgxFlg Typical - By Customer

Thrust Blocking Per Arizona Water Company Standard Specification E-9-5-1 By Customer

From Water Main OR Detector Check Service

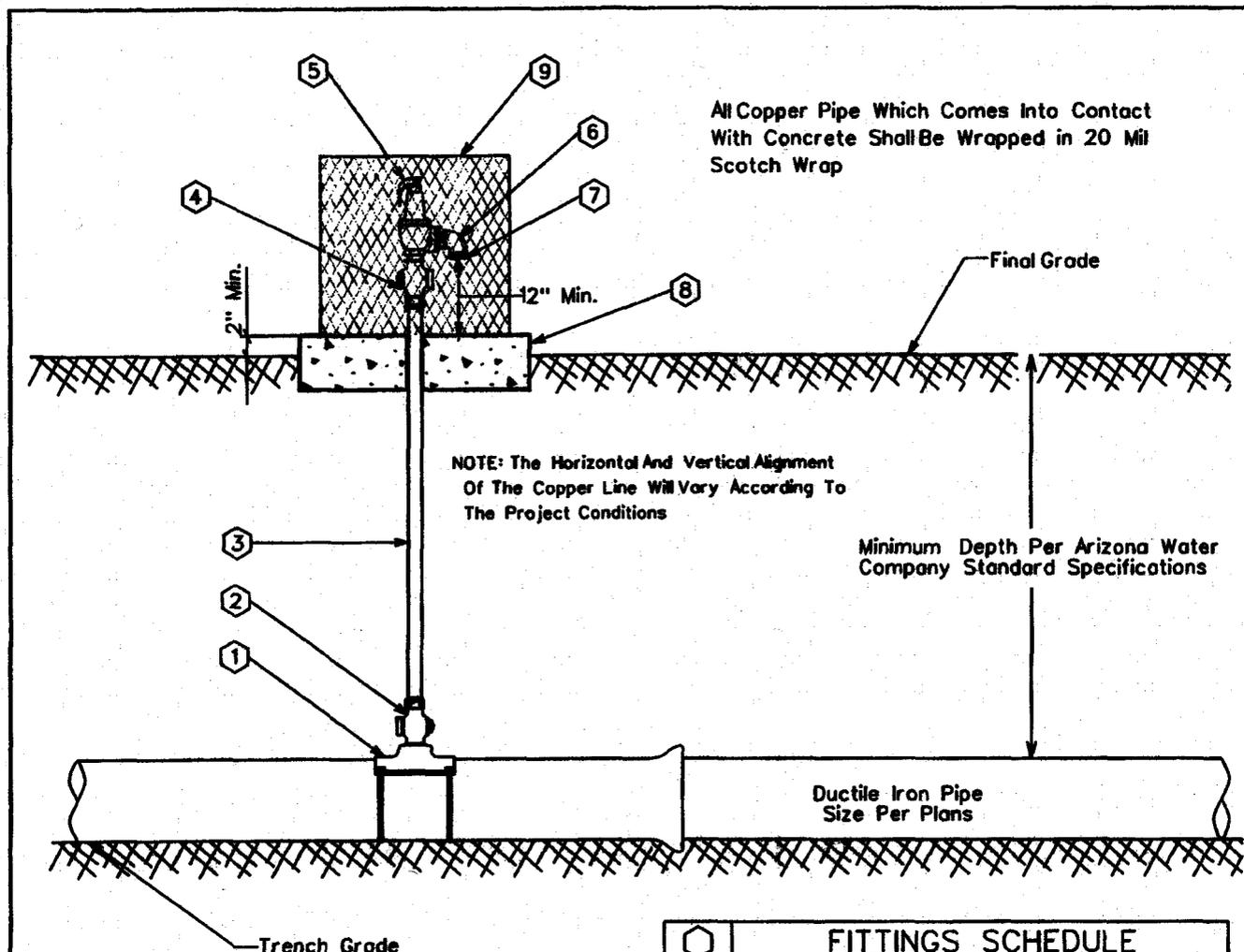
AWC Supplied Limits Customer Responsibility

NOTE:

Minimum Depth Of Cover Over 6" & 8" Mains is 36 inches, 12" & Greater is 48 inches Unless Otherwise Specified

# ARIZONA WATER COMPANY

<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>3" THRU 10" REDUCED PRESSURE PRINCIPLE-DETECTOR WITH BYPASS METER ASSEMBLY (RPDA) FOR FIRELINE SERVICES</b>			
DRAWN BY: CB	APPROVED BY: MW	DATE: 10-13-98	△ 1-19-2000 E-9-13-2



All Copper Pipe Which Comes Into Contact With Concrete Shall Be Wrapped in 20 Mil Scotch Wrap

NOTE: The Horizontal And Vertical Alignment Of The Copper Line Will Vary According To The Project Conditions

Minimum Depth Per Arizona Water Company Standard Specifications

Ductile Iron Pipe Size Per Plans

Trench Grade

NOTE:

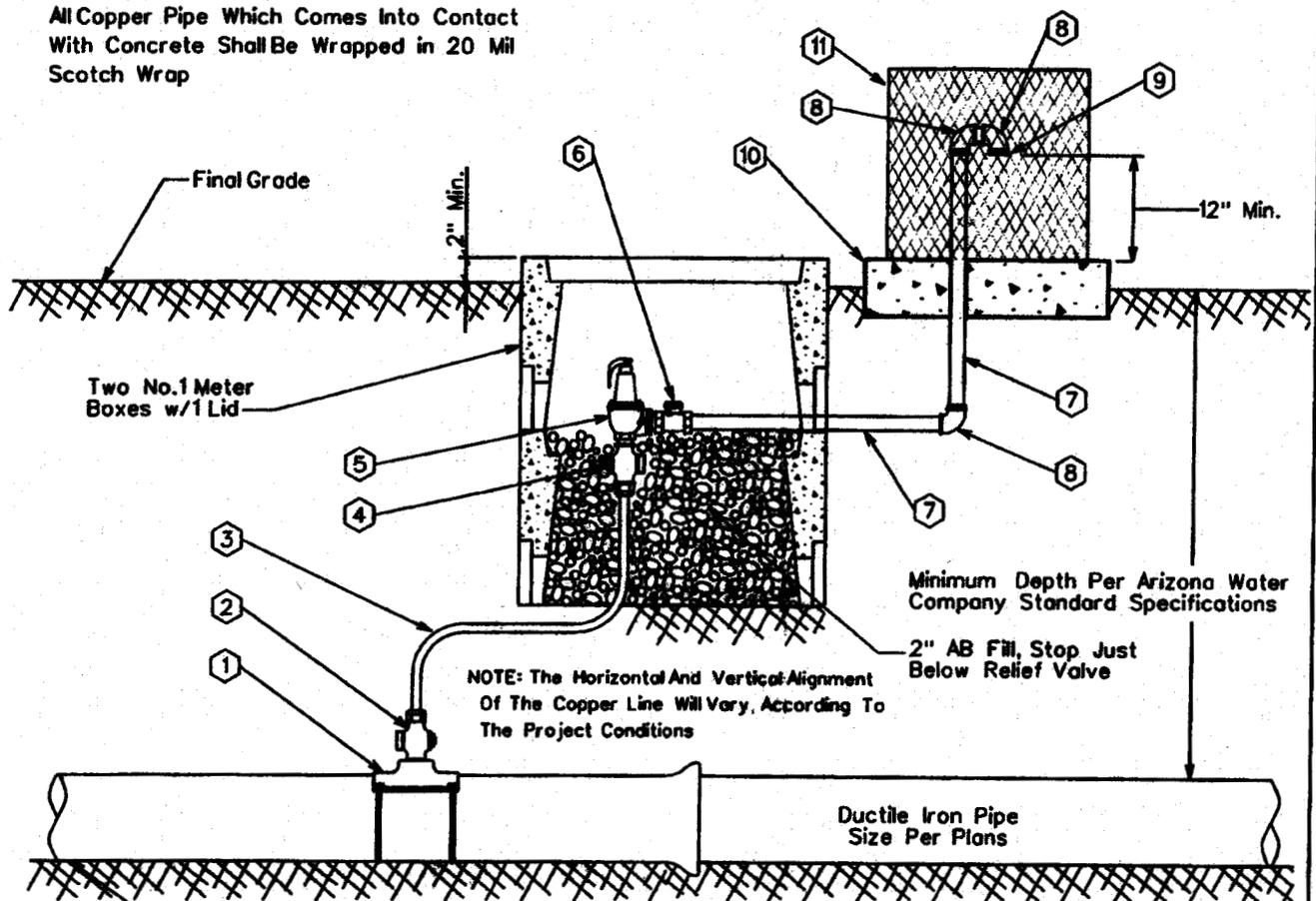
1. Pressure relief valves are typically located just down stream of a pressure reducing station or where system conditions might be subject to greater than allowable pressures.
2. The relief valve assembly and vandal enclosure shall be located out of the roadway, but within the right-of-way or easement.

FITTINGS SCHEDULE	
1.	Mueller BR2B Bronze Service Saddle - Double Stop
2.	2" Mueller B-25008 Toper x Comp. Ball Corp Stop
3.	2" Type 'K' Copper w/NO Splices - Field Fit
4.	2" Mueller B-25028 IP x Comp. Ball Corp Stop
5.	2" Pressure Relief Valve Watts 174A With A 2" Inlet / 2" Outlet 30-150 psi W/ Bronze Body
6.	2" Brass Street Elbow
7.	No.16 Wire Mesh Screen (Non-Corroddible)
8.	4" Thick Concrete Pad - Class 'C' Concrete
9.	Vandal enclosure to be centered on the concrete pad

# ARIZONA WATER COMPANY

STANDARD SPECIFICATION				
FOR THE INSTALLATION OF				
TYPICAL PRESSURE RELIEF VALVE ASSEMBLY				
DRAWN BY:	CCO	APPROVED BY:	MW	DATE:
				3/20/1986
				△ 08.29.2006
				E-9-14-1

All Copper Pipe Which Comes Into Contact With Concrete Shall Be Wrapped in 20 Mil Scotch Wrap



NOTE: The Horizontal And Vertical Alignment Of The Copper Line Will Vary, According To The Project Conditions

Minimum Depth Per Arizona Water Company Standard Specifications

2" AB Fill, Stop Just Below Relief Valve

Ductile Iron Pipe Size Per Plans

NOTE:

Trench Grade

1. Pressure relief valves are typically located just down stream of a pressure reducing station or where system conditions might be subject to greater than allowable pressures.
2. The relief valve assembly and vandat enclosure shall be located out of the roadway, but within the right-of-way or easement.

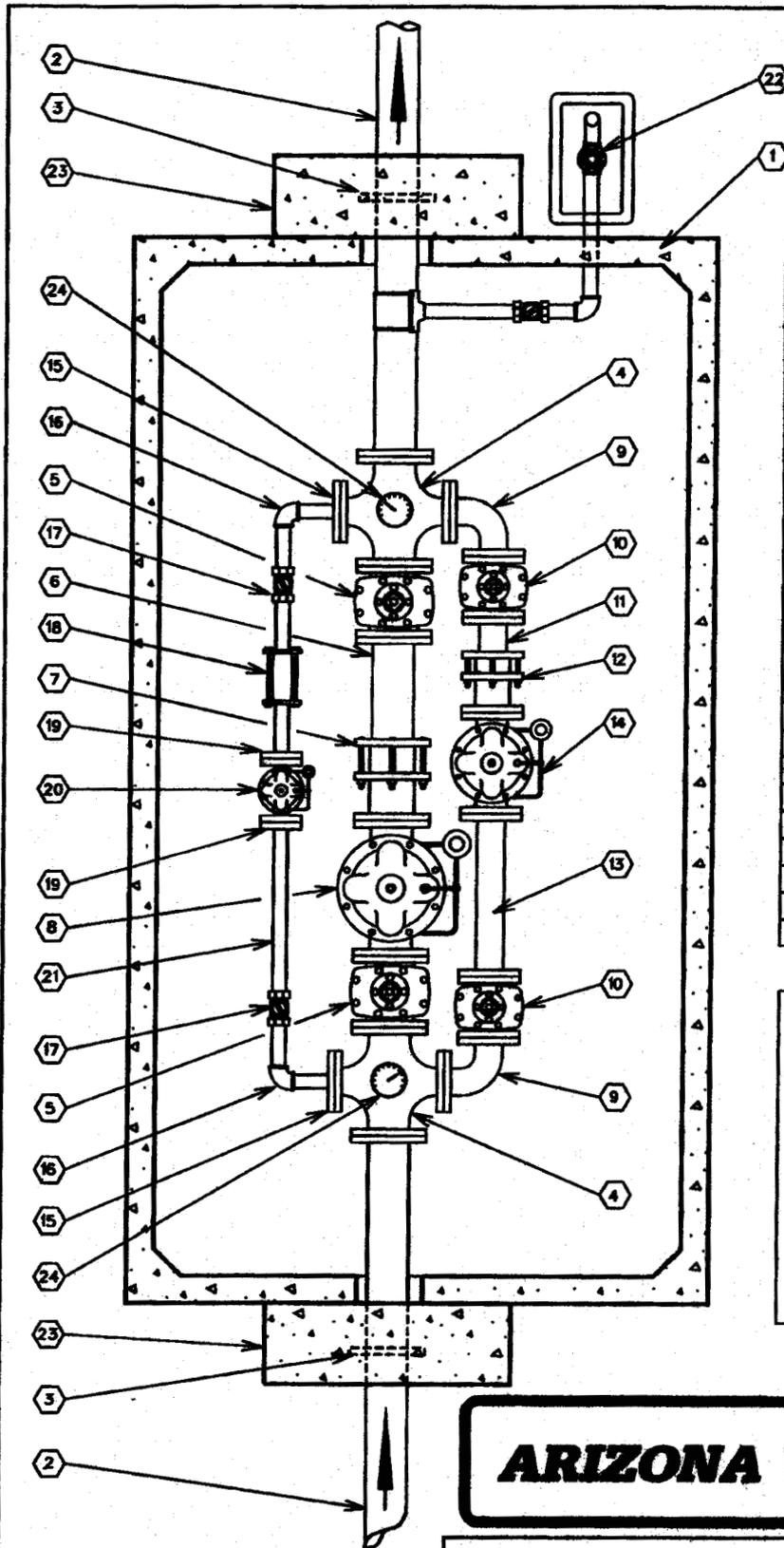
FITTINGS SCHEDULE	
1.	Mueller BR2B Bronze Service Saddle - Double Strap
2.	2" Mueller B-2500B Taper x Comp. Ball Corp Stop
3.	2" Type 'M' Rigid Copper w/NO Splices - Field Fit
4.	2" Mueller B-2502B IP x Comp. Ball Corp Stop
5.	2" Pressure Relief Valve Watts 174A With A 2" Inlet / 2" Outlet 30-150 psi W/ Bronze Body
6.	2" Bronze Check Valve Watts Series CV
7.	2" Schedule 40 Cut Pipe - Field Fit
8.	2" Brass Street Elbow
9.	No.36 Wire Mesh Screen (Non-Corroding)
10.	4" Thick Concrete Pad - Class 'C' Concrete
11.	Guardshack, Model GS-1, Available From BPD, Inc. Available In Leaf Green Or Desert Tan

# ARIZONA WATER COMPANY

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

PRESSURE RELIEF VALVE - NORTHERN REGION

DRAWN BY: CCO      APPROVED BY: MW      DATE: 3/20/1986      Δ08.29.2006      E-9-14-2



No.	FITTINGS SCHEDULE
1.	612 LA Conc. Vault (See Note 3)
2.	6"x6'-0" D.I.P. Spool Fig.xP.E.
3.	6" Megalug (Thrust Anchor)
4.	6"x4" Cross Fig.
5.	6" Gate Valve Fig.
6.	6"x2'-0" D.I.P. Spool Fig.xP.E.
7.	6" Fig. Coup. Adapt. (Rockwell 913)
8.	6" High Flow Pressure Reducing Valve Fig.
9.	4" 90° El. Fig.
10.	4" Gate Valve Fig.
11.	4"x1'-0" D.I.P. Spool Fig.xP.E.
12.	4" Flg. Coup. Adapt. (Rockwell 913)
13.	4"x2'-0" D.I.P. Spool Fig.
14.	4" Medium Flow Pressure Reducing Valve Fig.
15.	2"x9" O.D. Reducing Fig. (I.P.T.)
16.	2" 90° El. F.I.P.
17.	2" Ball Valve F.I.P.
18.	2" Comp. Coup. (Rockwell 411)
19.	2" Companion Fig. (L.P.T.)
20.	2" Low Flow Pressure Reducing Valve Fig.
21.	2" Sched. 40 Stl. Pipe
22.	2" Pressure Relief Valve (See E-9-14-1)
23.	12"x36"x36" Conc. Thrust Block P.I.P.
24.	Pressure Gauge w/shut off valve

**NOTE:**

1. Use Rowley pipe supports or equivalent as needed. (See E-9-12-4)
2. Pipe support locations to be determined by field personnel.
3. Vault-612 LA top section w/12" Dia. sump hole. Cover-concrete slab top w/(4) 4'-0" x2'-6" aluminum spring loaded hinged style covers for non-traffic loading areas. For areas w/low density traffic, cover is to be designed for H-20 traffic loading.
4. All Sched. 40 Stl. pipe outside of vault to be wrapped w/10-20 MIL Scotchwrap corrosion protection tape.
5. Use deflection fittings (45° Elts.) to achieve necessary depths & cover as shown on the standard specification for the installation of a concrete vault (E-9-12-5).

# ARIZONA WATER COMPANY

<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>PRESSURE REDUCING STATION</b>			
DRAWN BY: JPK	APPROVED BY: MW	DATE: 11-16-88	△ 9-27-95
<b>E-9-15-1</b>			

1. Specific Items To Be Painted Deer-O Pure White Enamel:

- A. All Booster Pumps.
- B. All Electrical Motors And Gas Engines.
- C. Well Pump Discharge Heads.
- D. Electrical Panel.

2. Specific Items To Be Painted Frost Cap White Or Deer-O Pure White Enamel:

- A. Well Shelter.

3. Specific Items To Be Painted OSHA Orange:

- A. Electrical Conduit.

4. All Other Items To Be Painted With Either:  
(At Manager's Discretion)

- A. Cholla Green
- B. Forest Green
- C. Sonora Beige
- D. Red Rock
- E. Rock Brown
- F. Deer-O Pure White
- G. Elkhorn Cactus



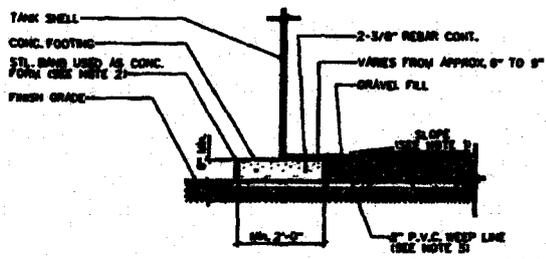
<b>STANDARD SPECIFICATION FOR THE INSTALLATION OF</b>			
<b>PAINT COLOR SELECTION</b>			
<small>DRAWN BY:</small> CCO	<small>APPROVED BY:</small>	<small>DATE:</small> 3/20/1986	<small>REV:</small> △ 2/13/2001
			<b>E-9-15-1</b>

1. Tank shall conform to AWSA Specification D100-84 with exceptions noted below.
2. 1/4" minimum shell plate.
3. Minimum of 12" diameter roof vent, screened with No. 16 non-corrosible wire mesh, to be located on a 24" diameter round hinged manhole opening at the center of the tank to provide access to the drier plate.
4. Overflow pipe shall be the same diameter as the inlet pipe and shall terminate 12 to 24 inches above splash pad or a minimum of 2 overflow pipe diameters above wet low high water level.
5. Storage tank shall be placed upon adequately compacted base material.
6. 6" minimum floor mounted tank drain outlet to be located close to the outer shell.
7. Tank and related fittings shall be enclosed with a 8 foot chain link fence with lockable gates and anti-parrasolite on top of fence.
8. Liquid level shall be indicated by a target and target board on the outside surface of the tank.
9. 24 inch diameter manholes shall be provided on the roof and on the shell near the bottom of the tank. The roof manhole cover shall overlap the manhole by at least 2 inches to provide a rain tight closure. Roof manhole shall be hinged and equipped with a lock. Shell manhole cover to be hinged and bolted in place. Tanks larger than a 80 foot diameter require 2 shell manholes.
10. Inside and outside ladders shall be located at the roof manhole. Outside ladder shall be caged with locking trap door. Bottom 8 feet of cage shall be enclosed to allow 1/2" of shell with 10 gauge sheet steel.
11. Finished tank shall be inspected in accordance with Arizona Department of Health Services Engineering Bulletin No. 8 before being placed into service.
12. The following information shall be included with application for approval to construct:
  1. Tank location \_\_\_\_\_
  2. Tank height \_\_\_\_\_
  3. Tank diameter \_\_\_\_\_
  4. Tank capacity \_\_\_\_\_
  5. Method of water level control \_\_\_\_\_
13. The storage tank shall not be constructed within the 100 year flood plain and the tank site shall be graded to slope away from the tank.
14. The welded steel storage tank shall be coated as per AWSA Specification D102, and A.S.T.M. Standard B1.

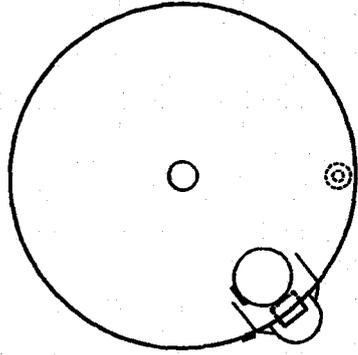
-Exception to AWSA Specification D100-84

**FOUNDATION NOTES**

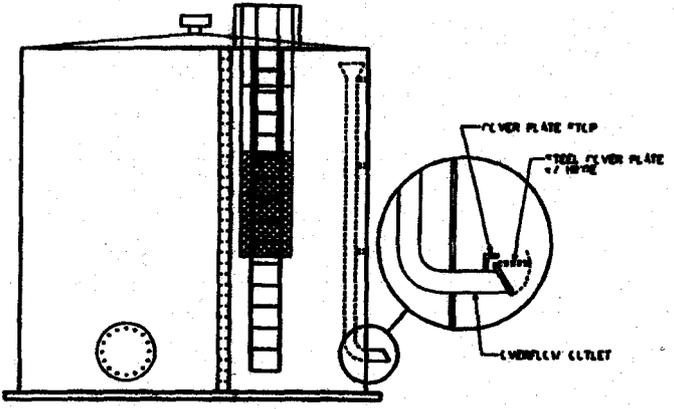
1. FINISH CONCRETE SURFACE MUST SLOPE UPWARDS FROM THE STEEL BAND APPROX. 1" IN 10'-0".
2. TOP OF STEEL BAND MUST BE MAINTAINED LEVEL TO WITHIN 1/8".
3. INSTALL 8-2" DIA. 1/2"-0" P.V.C. WEEP LINES, EQUALLY SPACED EVERY 48", PERFORATE 8'-0" OF LINE WITH 1/2" DIA. HOLES @ 6" O.C. PLUG INTERIOR END OF LINE w/2" CAP.



**FOUNDATION DETAIL**



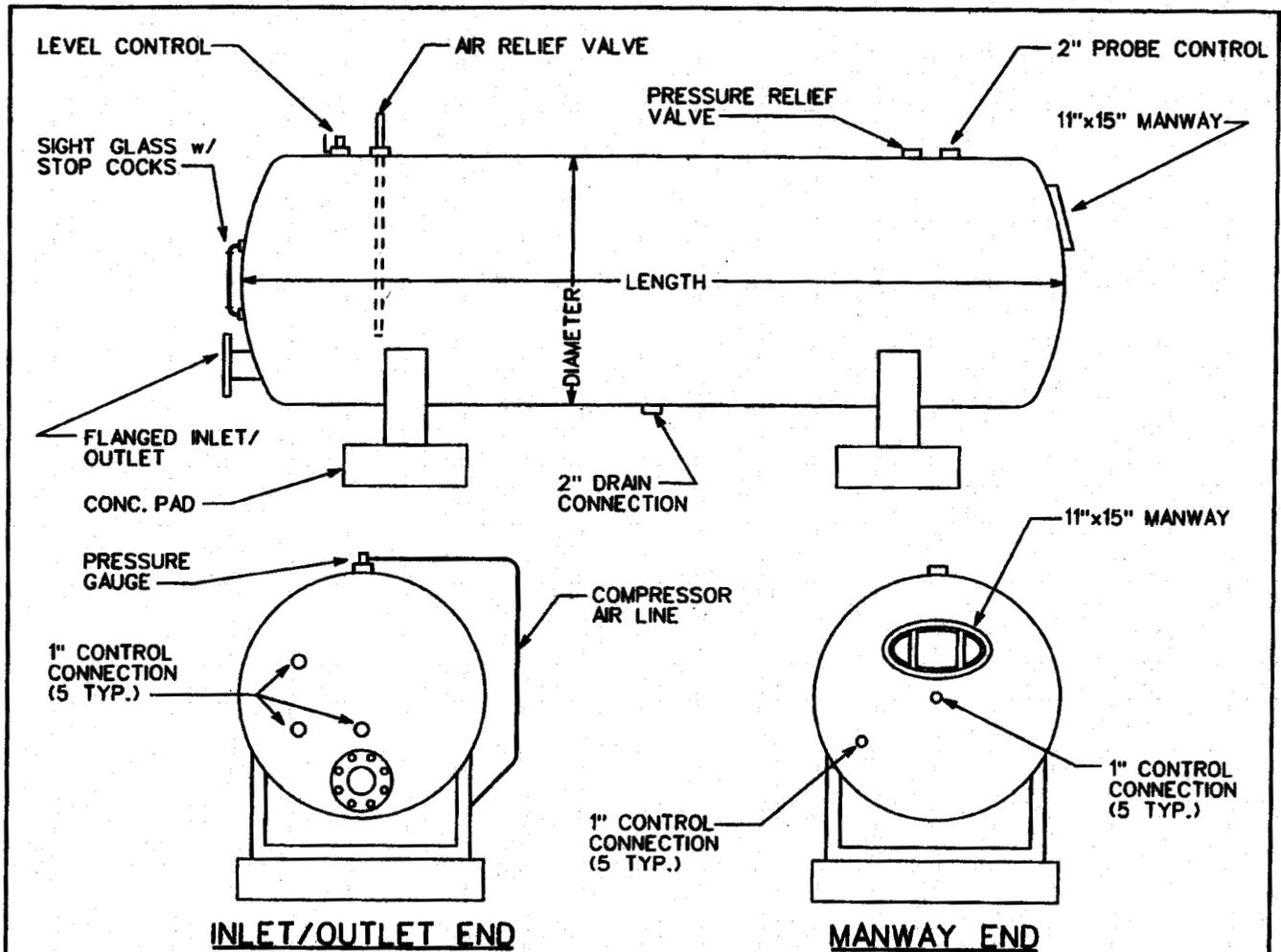
**PLAN VIEW**



**PROFILE VIEW**

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION FOR THE INSTALLATION OF</b>			
<b>STEEL WATER STORAGE TANK</b>			
DRAWN BY: JPK	APPROVED BY: MJW	DATE: 10-17-88	△ 2-12-96
			E-9-17-1



1. ALL HYDROPNEUMATIC TANKS SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE ASME CODE FOR UNFIRED PRESSURE VESSELS, SECTION VIII, DIVISION 1.
2. FINISHED TANK SHALL BE DISINFECTED IN ACCORDANCE WITH ADEQ BULLETIN No. 8 BEFORE BEING PLACED INTO SERVICE.
3. THE WELDED STEEL HYDROPNEUMATIC TANK WILL BE COATED AS PER AWWA SPECIFICATION D102 & NSF STANDARD 61.
4. THE FOLLOWING INFORMATION WILL BE INCLUDED WITH THE APPLICATION FOR APPROVAL TO CONSTRUCT.

1. Tank Location \_\_\_\_\_
2. Tank Length \_\_\_\_\_
3. Tank Diameter \_\_\_\_\_
4. Tank Capacity \_\_\_\_\_
5. Maximum Working Pressure \_\_\_\_\_

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

HYDROPNEUMATIC TANK

DRAWN BY: JPK	APPROVED BY: MW	DATE: 3-20-1986	REV: 01.16.2007
			E-9-18-1

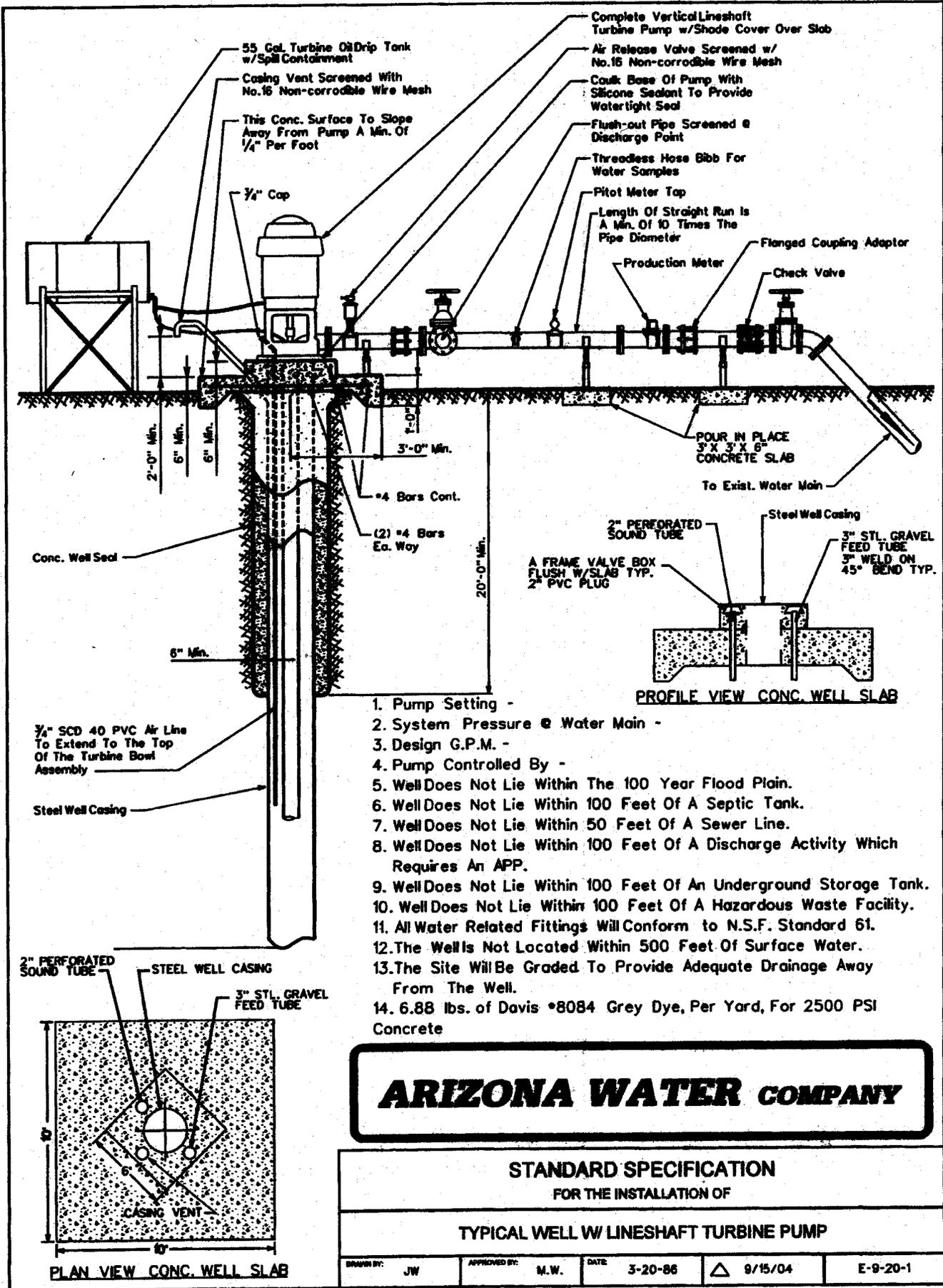
NOT  
CONVERTED  
TO  
CAD

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

WELL SHELTER

DRAWN BY: CB	APPROVED BY:	DATE 03.20.1986	△04.03.2001	E-9-19-1
-----------------	--------------	--------------------	-------------	----------



55 Gal. Turbine Oil Drip Tank w/Spill Containment  
 Casing Vent Screened With No.16 Non-corrodible Wire Mesh  
 This Conc. Surface To Slope Away From Pump A Min. Of 1/4" Per Foot

Complete Vertical Lineshaft Turbine Pump w/Shade Cover Over Slab  
 Air Release Valve Screened w/ No.16 Non-corrodible Wire Mesh  
 Coulk Base Of Pump With Silicone Sealant To Provide Watertight Seal  
 Flush-out Pipe Screened @ Discharge Point  
 Threadless Hose Bibb For Water Samples  
 Pitot Meter Tap  
 Length Of Straight Run Is A Min. Of 10 Times The Pipe Diameter  
 Flanged Coupling Adaptor  
 Production Meter  
 Check Valve

3/4" Cap  
 2'-0" Min.  
 6" Min.  
 6" Min.  
 3'-0" Min.  
 #4 Bars Cont.  
 (2) #4 Bars Ea. Way  
 20'-0" Min.  
 6" Min.  
 Conc. Well Seal  
 3/4" SCD 40 PVC Air Line To Extend To The Top Of The Turbine Bowl Assembly  
 Steel Well Casing

POUR IN PLACE 3" X 3" X 6" CONCRETE SLAB  
 To Exist. Water Main

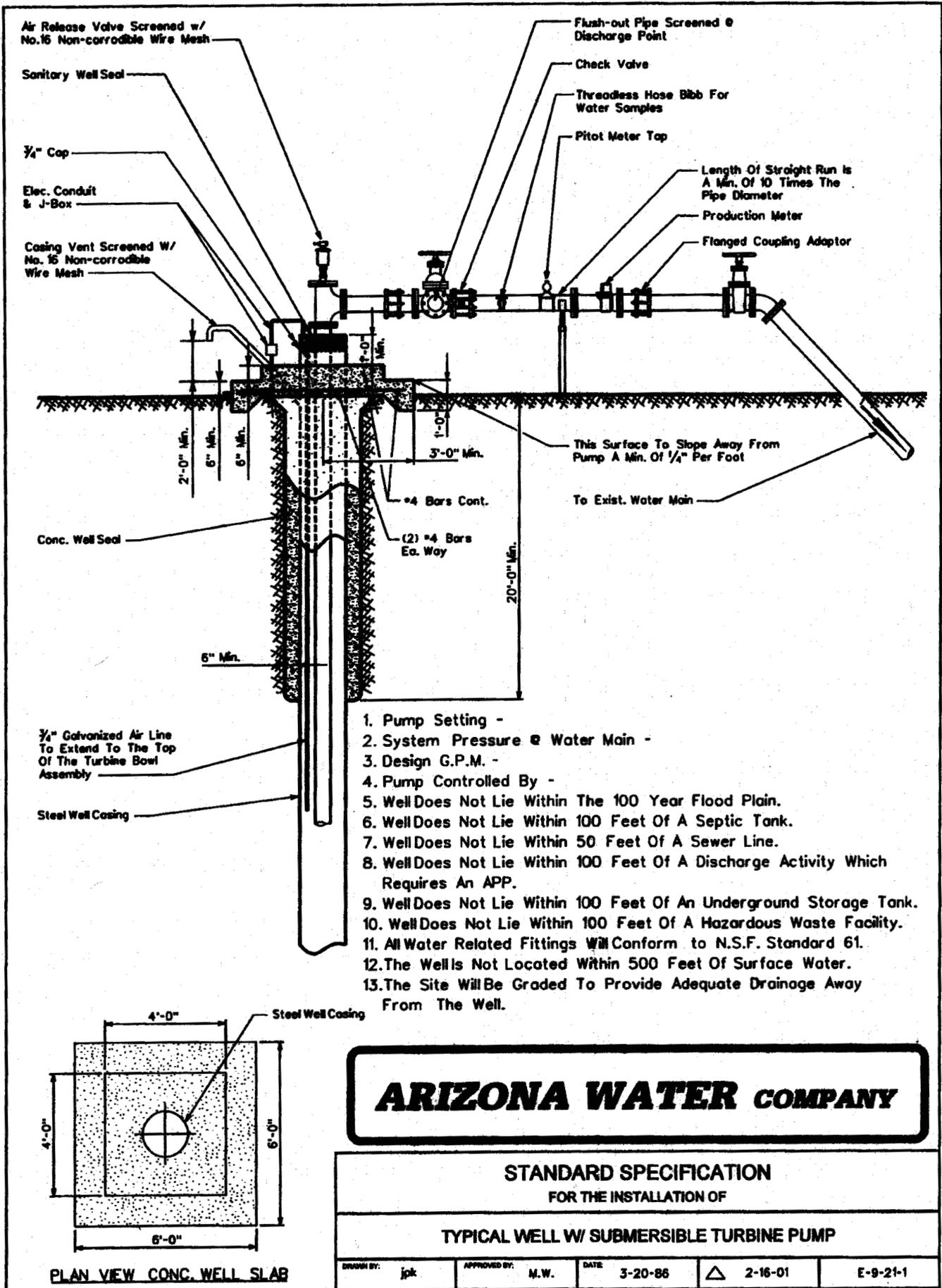
2" PERFORATED SOUND TUBE  
 Steel Well Casing  
 3" STL. GRAVEL FEED TUBE  
 3" WELD ON 45° BEND TYP.  
 A FRAME VALVE BOX FLUSH W/SLAB TYP. 2" PVC PLUG  
**PROFILE VIEW CONC. WELL SLAB**

2" PERFORATED SOUND TUBE  
 STEEL WELL CASING  
 3" STL. GRAVEL FEED TUBE  
 6'  
 6'  
 CASING VENT  
**PLAN VIEW CONC. WELL SLAB**

1. Pump Setting -
2. System Pressure @ Water Main -
3. Design G.P.M. -
4. Pump Controlled By -
5. Well Does Not Lie Within The 100 Year Flood Plain.
6. Well Does Not Lie Within 100 Feet Of A Septic Tank.
7. Well Does Not Lie Within 50 Feet Of A Sewer Line.
8. Well Does Not Lie Within 100 Feet Of A Discharge Activity Which Requires An APP.
9. Well Does Not Lie Within 100 Feet Of An Underground Storage Tank.
10. Well Does Not Lie Within 100 Feet Of A Hazardous Waste Facility.
11. All Water Related Fittings Will Conform to N.S.F. Standard 61.
12. The Wells Not Located Within 500 Feet Of Surface Water.
13. The Site Will Be Graded To Provide Adequate Drainage Away From The Well.
14. 6.88 lbs. of Davis #8084 Grey Dye, Per Yard, For 2500 PSI Concrete

**ARIZONA WATER COMPANY**

<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>TYPICAL WELL W/ LINESHAFT TURBINE PUMP</b>			
DRAWN BY: JW	APPROVED BY: M.W.	DATE: 3-20-86	△ 9/15/04
			E-9-20-1



# ARIZONA WATER COMPANY

## STANDARD SPECIFICATION FOR THE INSTALLATION OF

### TYPICAL WELL W/ SUBMERSIBLE TURBINE PUMP

DRAWN BY: jpk	APPROVED BY: M.W.	DATE: 3-20-86	△ 2-16-01	E-9-21-1
---------------	-------------------	---------------	-----------	----------

All New Purchases To Conform To The Following:

Column Pipe

4" I.D. - 8	Threads	Per	Inch	Tapered	$\frac{3}{4}$ "	Per	Foot	Right	Hand
6" I.D. - 8	"	"	"	"	"	"	"	"	"
8" I.D. - 8	"	"	"	"	"	"	"	"	"
10" I.D. - 8	"	"	"	"	"	"	"	"	"
12" I.D. - 8	"	"	"	"	"	"	"	"	"
14" I.D. - 8	"	"	"	"	"	"	"	"	"

Oil Tube - Peerless Type

$\frac{1}{2}$ "	O.D. - 14	Threads	Per	Inch	Right	Hand
2"	O.D. - 12	"	"	"	"	"
$2\frac{1}{2}$ "	O.D. - 10	"	"	"	"	"
3"	O.D. - 10	"	"	"	"	"
$3\frac{1}{2}$ "	O.D. - 10	"	"	"	"	"
4"	O.D. - 10	"	"	"	"	"

Line Shaft

$\frac{3}{4}$ "	O.D. - 10	Threads	Per	Inch	Left	Hand
1"	O.D. - 14	"	"	"	"	"
1- $\frac{3}{16}$ "	O.D. - 10	"	"	"	"	"
1- $\frac{1}{2}$ "	O.D. - 10	"	"	"	"	"
1- $\frac{11}{16}$ "	O.D. - 10	"	"	"	"	"
1- $\frac{15}{16}$ "	O.D. - 10	"	"	"	"	"
2- $\frac{3}{16}$ "	O.D. - 10	"	"	"	"	"
2- $\frac{7}{16}$ "	O.D. - 8	"	"	"	"	"

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

COLUMN PIPE, OIL TUBE AND LINE SHAFT

DRAWN BY:

CCO

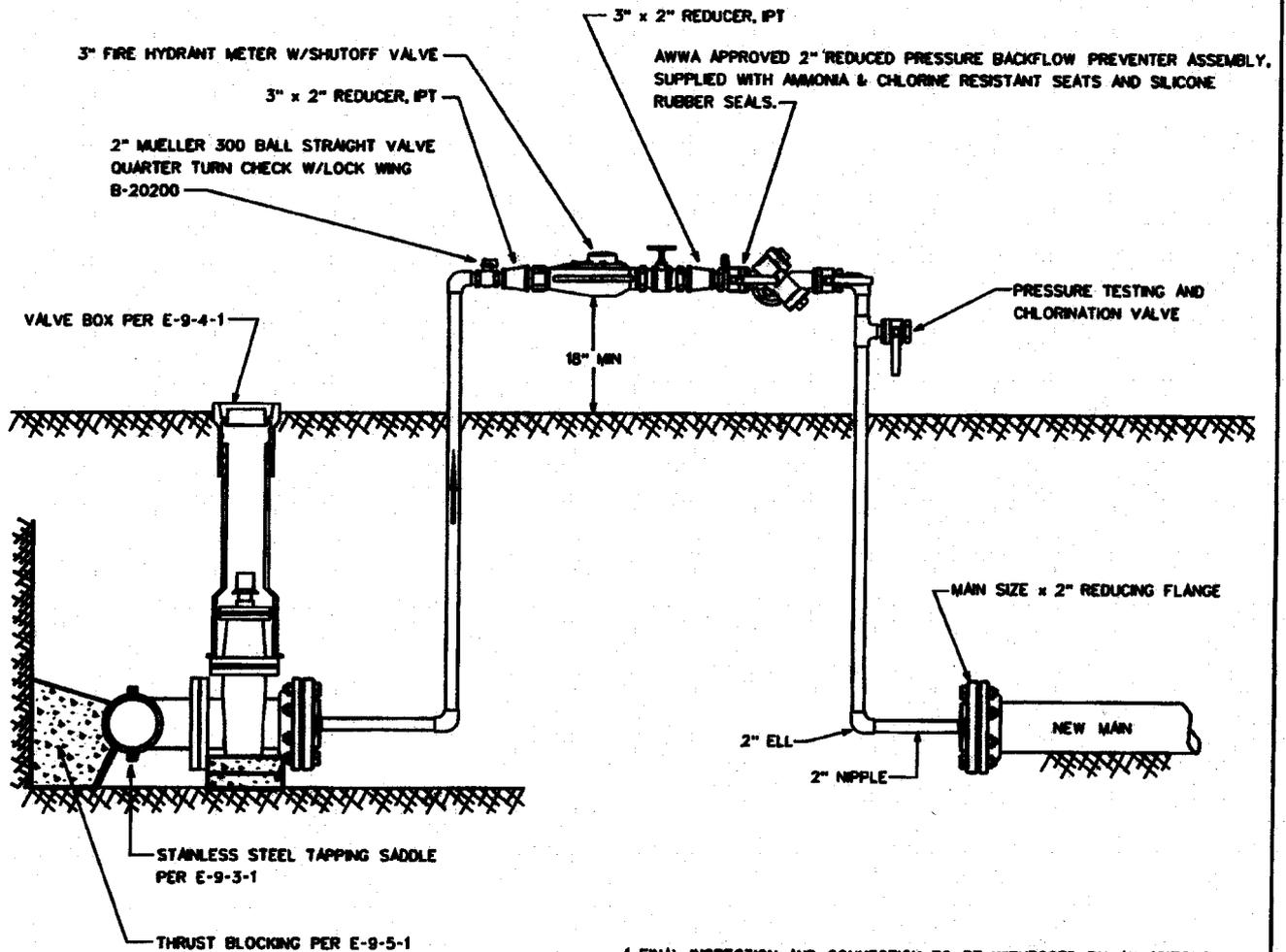
APPROVED BY:

DATE

3/20/1996

△ 2/13/2001

E-9-22-1



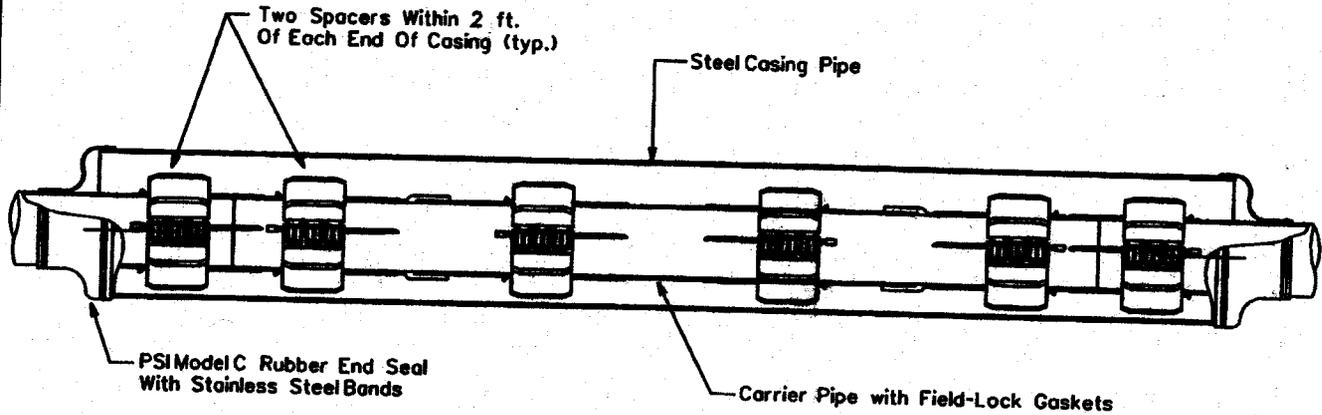
1. FINAL INSPECTION AND CONNECTION TO BE WITNESSED BY AN ARIZONA WATER COMPANY REPRESENTATIVE.
2. REDUCING FLANGES TO BE PROPERLY RESTRAINED.
3. INSTALL JUMPER TAP FOR TEMPORARY METER DOWNSTREAM OF THE REDUCING FLANGE FOR PRESSURE AND BACTEE TESTING.
4. JUMPER ASSEMBLY MUST BE A MINIMUM OF 16" ABOVE FINISHED GRADE.
5. BACKFLOW ASSEMBLY REQUIRES CERTIFICATION.
6. ASSEMBLY NOT TO BE REMOVED AND SPOOL PIECE INSTALLED FOR FINAL CONNECTION UNTIL ALL TESTING, BACTERIAL CLEARANCE AND FINAL INSPECTIONS HAVE BEEN OBTAINED.
7. ALL NEW PIPING SHALL BE PROPERLY RESTRAINED.

## **ARIZONA WATER COMPANY**

### STANDARD SPECIFICATION FOR THE INSTALLATION OF

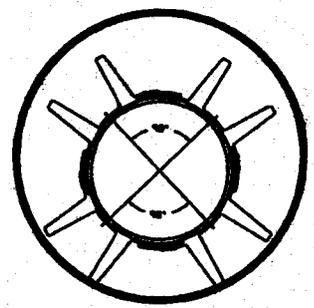
### HOT TAP & JUMPER METER CONNECTION

DRAWN BY: CB	APPROVED BY: MJW	DATE: 05.14.2004	△
			E-9-23-1



### CROSS SECTION

The casing spacers shall be the PSIRanger II Casing Spacers as manufactured by Pipeline Seal and Insulator, Inc., Houston, Texas.



### SECTION CUT

#### End Seals

After insertion of the carrier pipe into the casing, the ends of the casing shall be closed by installing 1/8" thick synthetic rubber end seals equal to the PSI Model "C" end seals manufactured by Pipeline Seal and Insulator, Inc., Houston, Texas.

NOTE: The Carrier Pipe Shall Be Polywrapped Prior To The Skid Installation & Insertion Into The Carrier Casing For Divisions Requiring Polywrapped Pipe.

\*Thickness Of Skid To Extend A Minimum of 1/2" Above The O.D. Of The Pipe Bell or Gland.

OD Push On Joint Bell	OD M.J. BELL
6" - 8.66"	6" - 11.12"
8" - 10.82"	8" - 13.37"
12" - 15.05"	12" - 17.94"
16" - 19.74"	16" - 22.56"
20" - 23.98"	20" - 27.08"
24" - 28.16"	24" - 31.58"
30" - 35.40"	30" - 39.12"
36" - 41.84"	36" - 46.00"
48" - 55.94"	48" - 60.00"

PIPE SIZE	CASING SIZE	CASING SIZE ID	CASING SCHEDULE	WALL THICKNESS	SKID SIZE
6"	16"	15.25"	STD.	.375	*x4x12
8"	18"	18.25"	STD.	.375	*x4x12
12"	22"	21.25"	STD.	.375	*x4x12
16"	28"	27.25"	STD.	.375	*x4x12
20"	32"	31.25"	STD.	.375	*x4x12
24"	36"	35.25"	STD.	.375	*x4x12
30"	48"	47.25"	STD.	.375	*x4x12
36"	54"	53.25"	STD.	.375	*x4x12
48"	66"	65.25"	STD.	.375	*x4x12

## ARIZONA WATER COMPANY

### STANDARD SPECIFICATION FOR THE INSTALLATION OF

### TYPICAL WATER LINE ENCASEMENT

DRAWN BY: CB	APPROVED BY:	DATE: 3/20/1996	△ 09.27.2006	E-9-24-1
-----------------	--------------	--------------------	--------------	----------

# CALCIUM HYPOCHLORITE TABLET CHLORINATOR FEEDER SPECIFICATIONS

**SCOPE** - This specification describes an ARCH Chemicals Calcium Hypochlorite Tablet Chlorination System as manufactured by ARCH Chemicals, 501 Merrill Street, J.O. Box 8224, Newark, CT, 06865-0224.

**DESCRIPTION** - The chlorination system shall be completely assembled, ready to install. The chlorination system shall be for a 100 GPM flow rate Calcium Hypochlorite Tablet Feeder, or its equivalent, and shall be subjected with all its components factory inspected.

**COMPONENTS** - The Chlorination system shall have the following components:

- A. 1-3" ARCH Chemicals Calcium Hypochlorite Tablet Feeder
- B. Hydrochloric acid solution tank
- C. Inlet and outlet valves
- D. Inlet and outlet valves (42 inch)
- E. Control panel with 120V AC
- F. Control panel with 240V AC
- G. Control panel with 480V AC
- H. Waterproof electrical junction box
- I. Corrosion resistant stainless steel piping
- J. Feed solution outlet contact valve

**ELECTRICAL PARTURES** - The following electrical ratings shall be provided:  
 A. Safety switch, 2 pole, rated for 30 Amps, for 120 Volts, 60 cycle, single phase power.

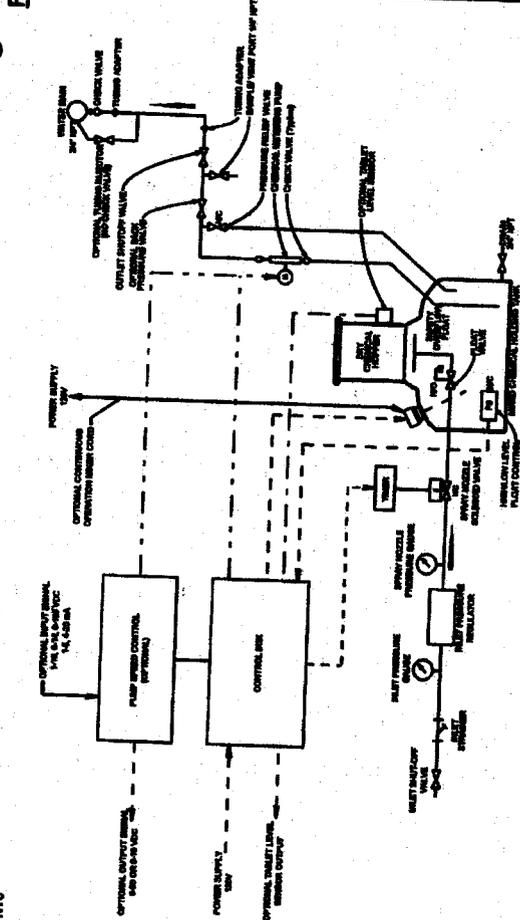
**CHLORINATOR DESIGN** - The chlorination feeder shall be designed and constructed in accordance with Arizona State Department of Health Engineering Subunit Number 5 - "Distribution of Water Systems". Latest Revision.

**CHLORINATION EQUIPMENT** - The chlorination equipment shall be ARCH Chemicals Calcium Hypochlorite Tablet Chlorinator, approved by NSF Standard 61.

**CHLORINATOR OPERATION** - The chlorination facility shall be operated in accordance with Arizona State Department of Health Engineering Subunit Number 4, "Distribution of Water Systems", Table 1, latest revision.

**CHLORINATOR SYSTEM DESCRIPTION** - ARCH Chemicals tablet chlorinator incorporates a patented chlorinator which is designed to dissolve a controlled amount of calcium hypochlorite tablets (ARCH 1000) into a 1.5% solution. The solution is then pumped into a water stream through a controlled dosing pump. The resulting pump is then subjected to obtain the correct CL residual.

## Chlorinator Fluid Schematic

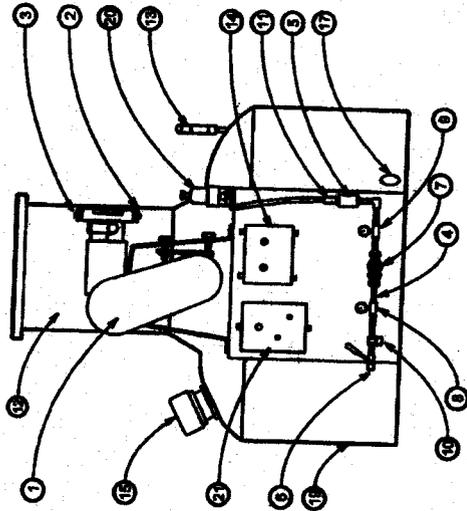


## ARCH Chemicals Calcium Hypochlorite Tablet Chlorinator NTS

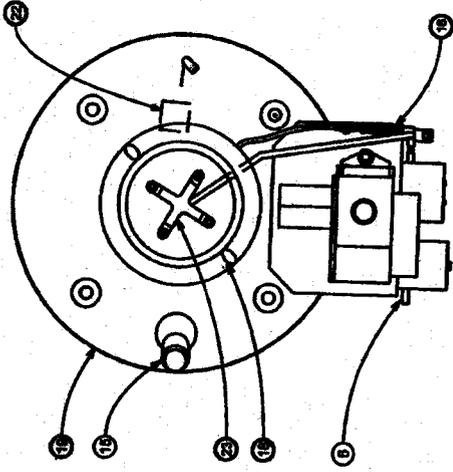
### HYPOCHLORINATOR COMPONENTS:

1. Chemical Metering Pump
2. Pump Station Connection
3. Inlet Water Pressure Gauge
4. Inlet Water Solenoid Valve
5. Inlet Water Solenoid Valve
6. Inlet Water Solenoid Valve
7. Inlet Pressure Regulator
8. Inlet Water Pressure Gauge
9. Spray Nozzle Water Pressure Gauge
10. Inlet Valve
11. Inlet Valve Connection
12. Dry Chemical Hopper
13. Station Line
14. Station Line Control Box With Power ON/OFF
15. Station Discharge Connection
16. Station Discharge Connection
17. Test Drain Valve

18. Chlorination Port
19. Mixed Chemical Loading Tank
20. Pressure Relief Valve
21. Pump Speed Control
22. High Level Shut-Off Float Switch
23. Water Spray Nozzle



FRONT VIEW



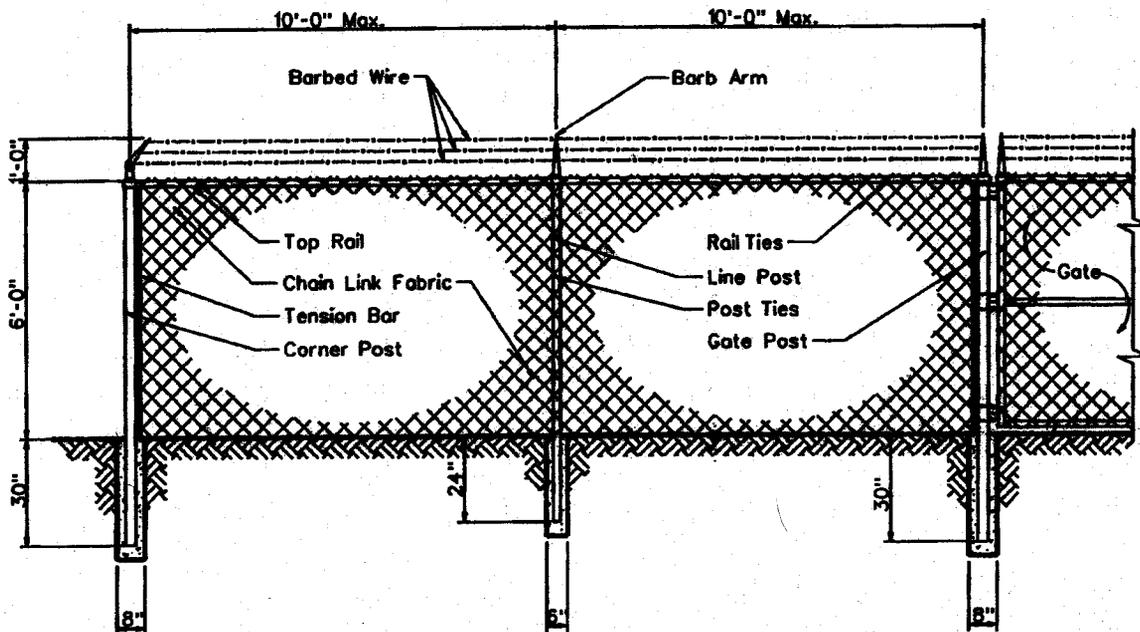
TOP VIEW  
HOPPER REMOVED FOR CLARITY

# ARIZONA WATER COMPANY

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

CALCIUM HYPOCHLORITE TABLET CHLORINATOR

DESIGNED BY: CB	APPROVED BY: MW	DATE: 02-09-2000	REV: Δ
			E-9-25-1



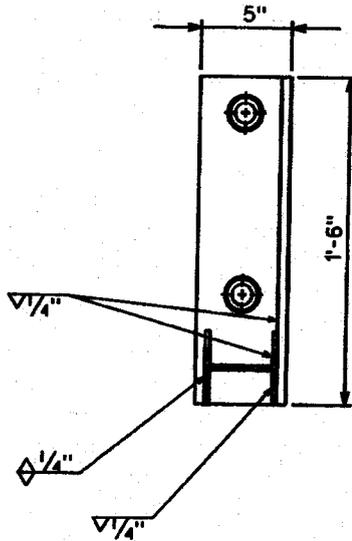
<b>Line Post:</b>	1-7/8" O.D.	1.74 lbs. P/L.F.	ASTM A-256
<b>End Post:</b>	2-7/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
<b>Corner Post:</b>	2-7/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
<b>Gate Post:</b>	2-7/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
<b>Top Rail:</b>	1-5/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
<b>Chain Link Fabric:</b>	9 Ga. 2" Mesh Galv. Before Weave		
<b>Salvage:</b>	Barb/Knuckle		
<b>Fittings:</b>	Pressed Steel		
<b>Barb Wire:</b>	2-1/2 Ga./2 Point		
<b>Barb Arms:</b>	1 Piece/45° Arm		
<b>Tension Wire:</b>	9 Ga./Galv.		
<b>Line Post Set:</b>	6"x24" In Concrete		
<b>Terminal Post Set:</b>	8"x30" In Concrete		

## ARIZONA WATER COMPANY

### STANDARD SPECIFICATION FOR THE INSTALLATION OF

### CHAIN LINK FENCE

<small>DRAWN BY:</small> CCO	<small>APPROVED BY:</small> MW	<small>DATE:</small> 7/7/1992	<small>REVISED BY:</small> △ 2/9/2001	<b>E-9-26-1</b>
------------------------------	--------------------------------	-------------------------------	---------------------------------------	-----------------



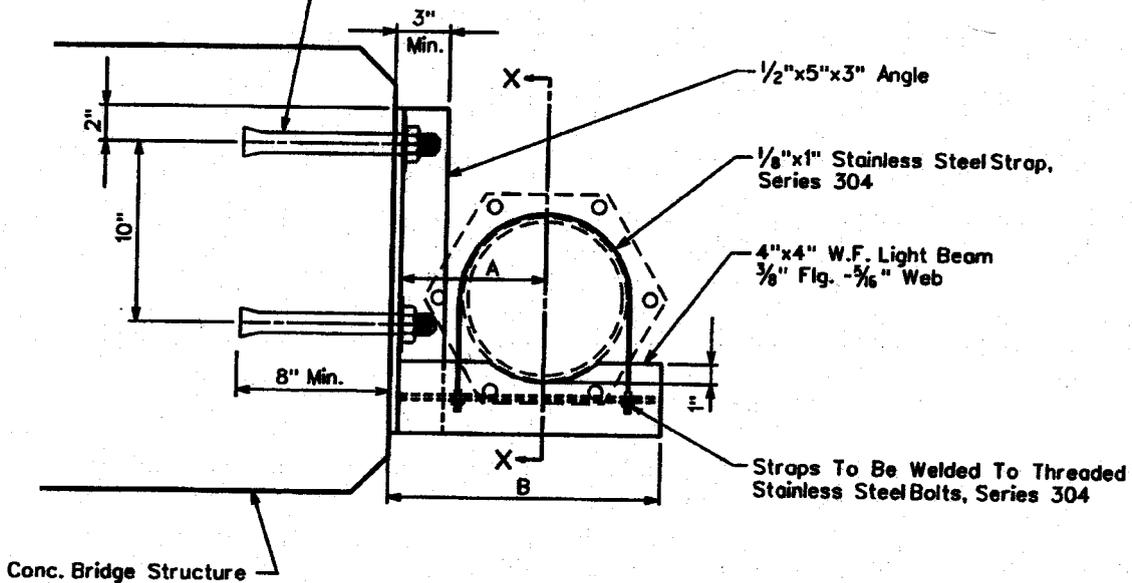
**SECTION X-X**

**NOTES**

1. Minimum 2 Supports Per Joint Of Pipe.
2. All Bolts Shall Have A Lock Washer Under The Nut.
3. All Nuts Shall Be Stainless Steel Series 304.

PIPE SIZE	A	B
8"	8"	15"
10"	9"	17"
12"	10"	19"

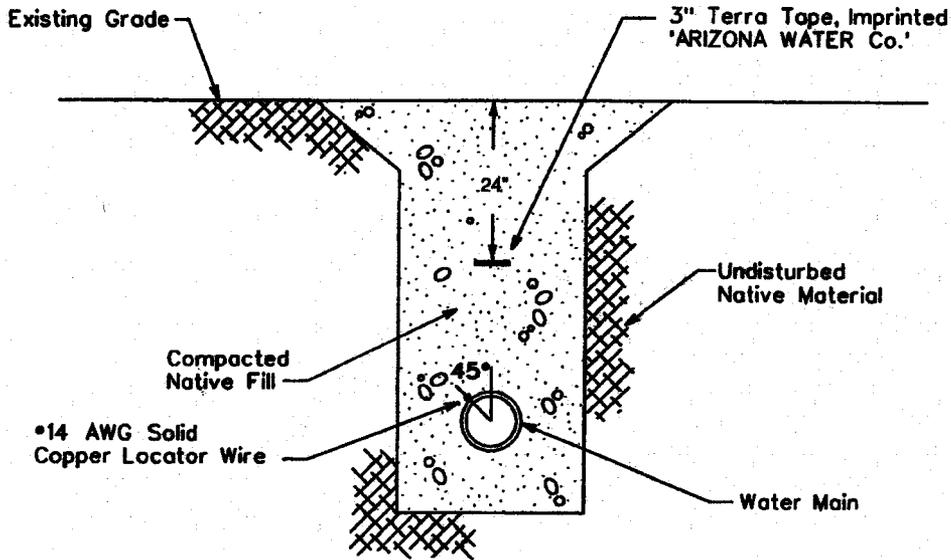
1/8"x12" Stainless Steel Wedge Bolts, Series 304



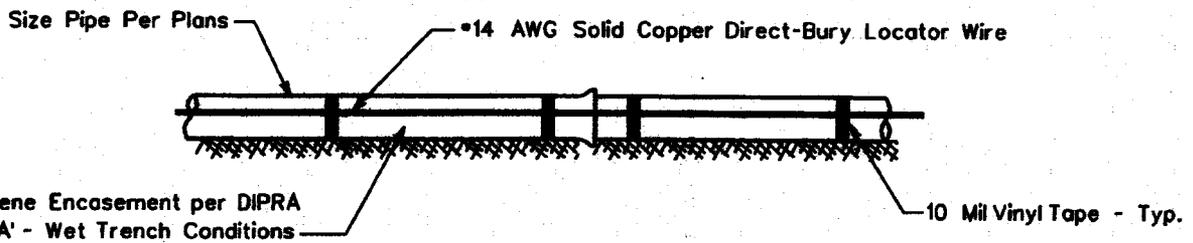
**SUSPENSION DETAIL**

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION FOR THE INSTALLATION OF			
SIDE HUNG WATER LINE SUSPENSION			
DRAWN BY: JPK	APPROVED BY: MJW	DATE: 7-12-96	△
			E-9-27-1



**TYPICAL WATER TRENCH DETAIL**



**TYPICAL PROFILE VIEW**

**WIRE GENERAL NOTES:**

1. All pipe shall have #14 AWG Solid Copper Direct-Bury Locator Wire installed directly to the Polywrap at 45° from the vertical center of the pipe and shall be attached using 10 Mil Vinyl Tape.
2. The Locating Wire shall terminate at the top of each valve box and be capable of extending 12" above the top of the box in such a manner so as not to interfere with valve operation.

**TAPE GENERAL NOTES:**

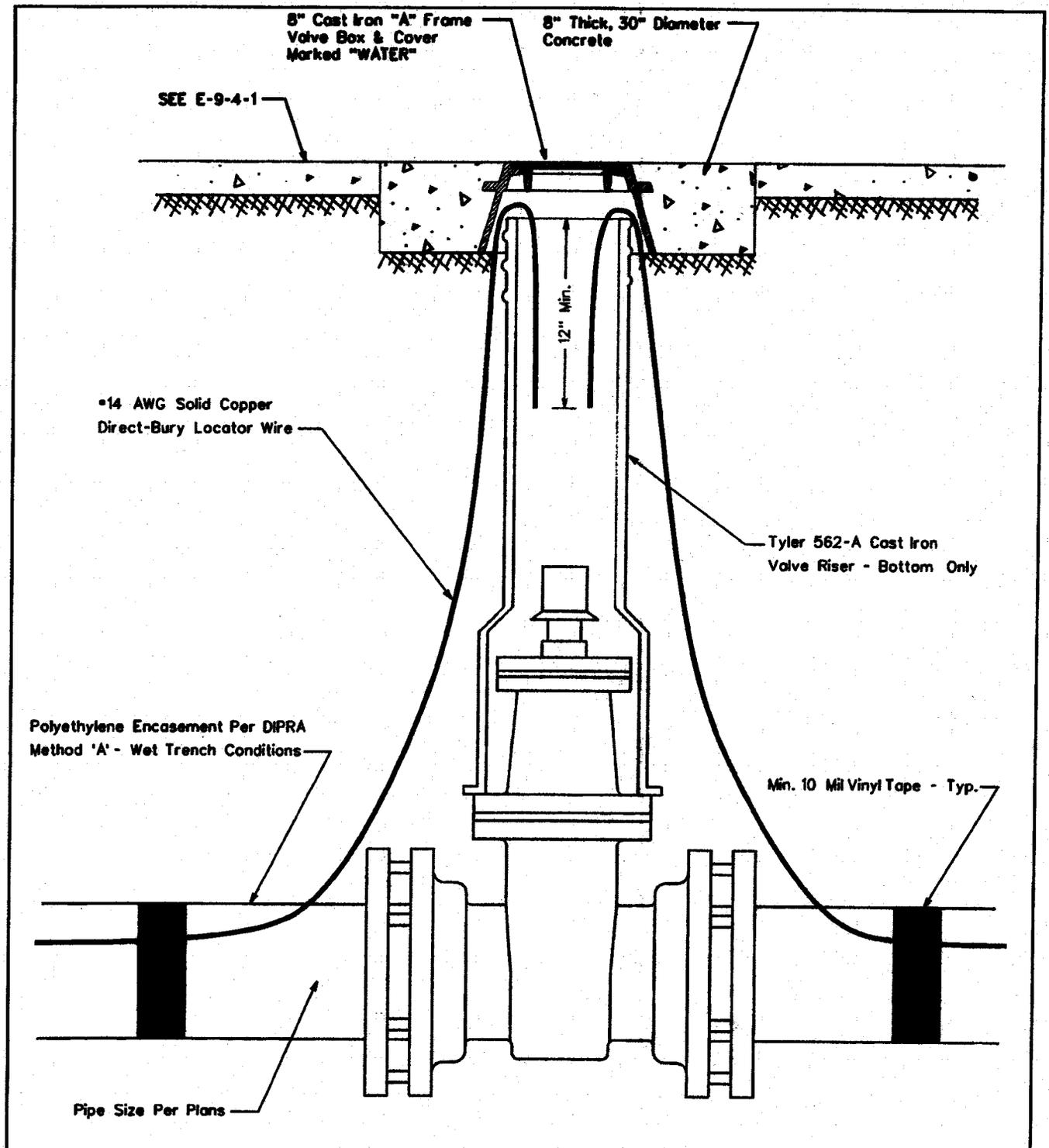
1. Use Terra Tape 3" Marking Tape As Manufactured By Reef Industries Inc. Of Houston, Texas (1-800-231-2417)
2. The Tape Is Blue & Imprinted 'ARIZONA WATER Co.'
3. INSTALLATION: The Pipe Warning Tape shall be installed over all water mains and shall be buried 24 inches below the surface over the center of the pipe.
  - A) The Backfill shall be sufficiently leveled so that the tape is installed on a flat surface.
  - B) The Tape shall be centered in the trench with the printed side up.
  - C) Care shall be exercised to avoid movement of the tape while the remaining backfill is moved into the trench.

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

PIPE WARNING TAPE AND LOCATOR WIRE

DRAWN BY: CB	APPROVED BY:	DATE: 03.24.1997	△ 09.27.2006	E-9-28-1
--------------	--------------	------------------	--------------	----------



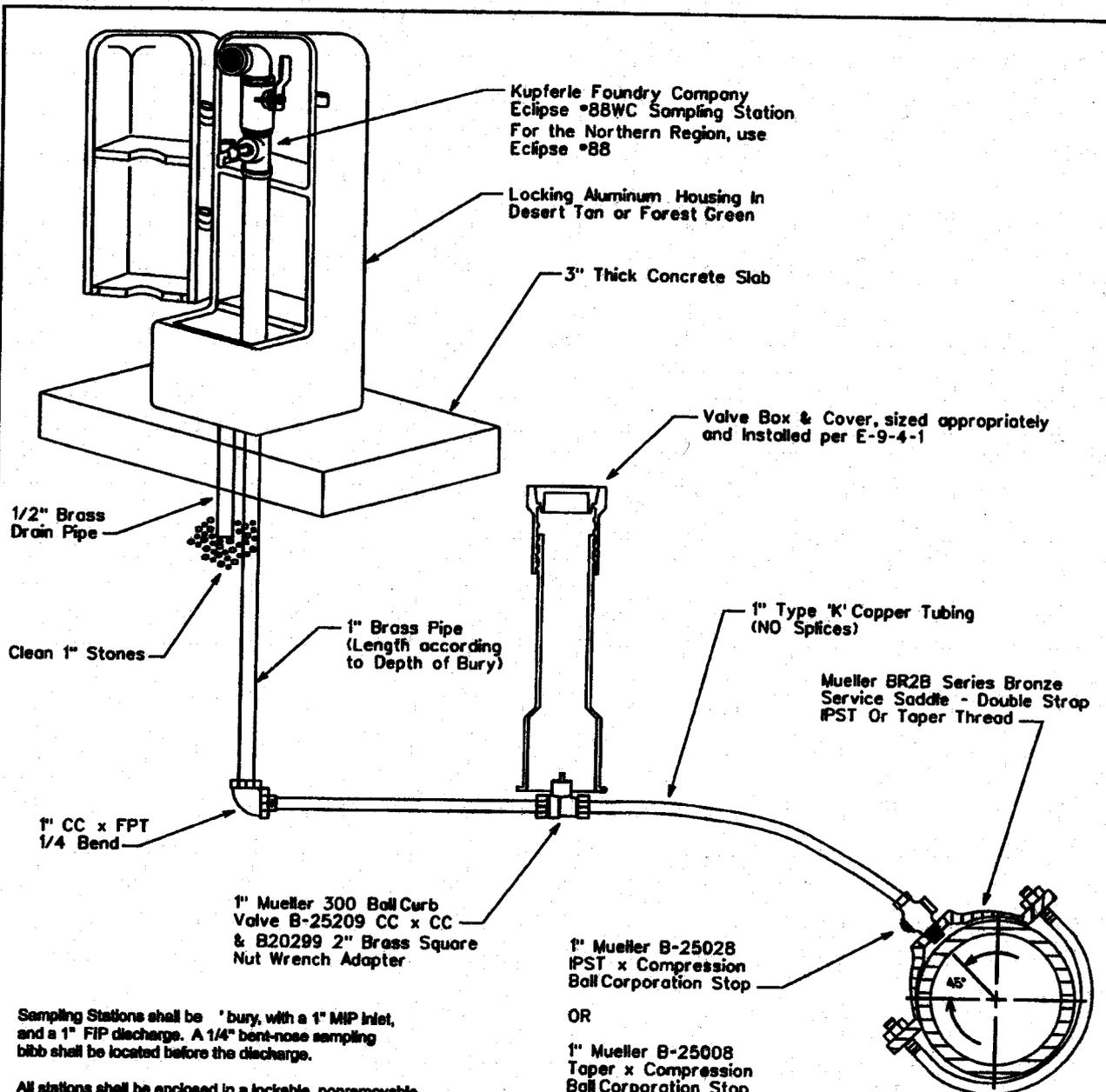
**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

**LOCATOR WIRE TERMINATION**

DRAWN BY: CB	APPROVED BY:	DATE: 09.27.2006	△
-----------------	--------------	---------------------	---

E-9-28-2



Sampling Stations shall be 1' bury, with a 1" MIP inlet, and a 1" FIP discharge. A 1/4" bent-nose sampling bibb shall be located before the discharge.

All stations shall be enclosed in a lockable, nonremovable, aluminum-cast housing.

When opened, the station shall require no key for operation, and the water will flow in an all brass waterway.

All working parts will be of brass and serviceable from above ground with no digging. (OPTIONAL: If desired, a 1/2" brass drain tube will be provided within the locking cover).

A 1" ball valve will control the water flow, and be located before (or after) the sampling bibb, as manufactured by Kupferle Foundry, St. Louis, MO 63102.

**SADDLE TAP TO CA, PVC, OR DI PIPE**

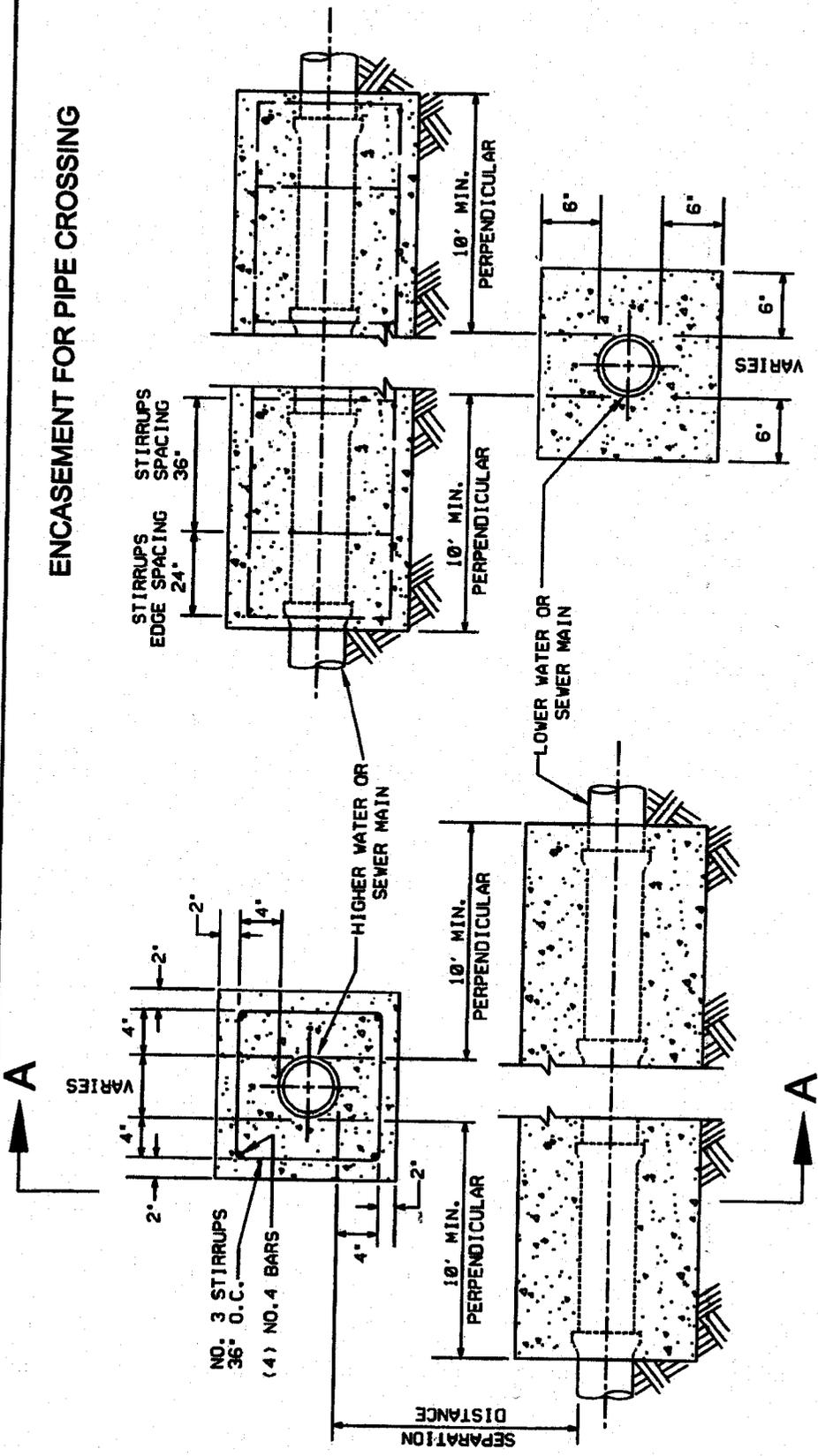
NOTE: The minimum distance between taps on mains other than ductile iron is 12"

Pipe Depth Per  
E-8-1-2, Item 3.



<b>STANDARD SPECIFICATION</b>			
FOR THE INSTALLATION OF			
<b>SAMPLING STATION</b>			
DRAWN BY:	APPROVED BY:	DATE:	SCALE:
CB	MW	01.24.2007	△
			E-8-29-1

**ENCASUREMENT FOR PIPE CROSSING**



**SECTION A-A**

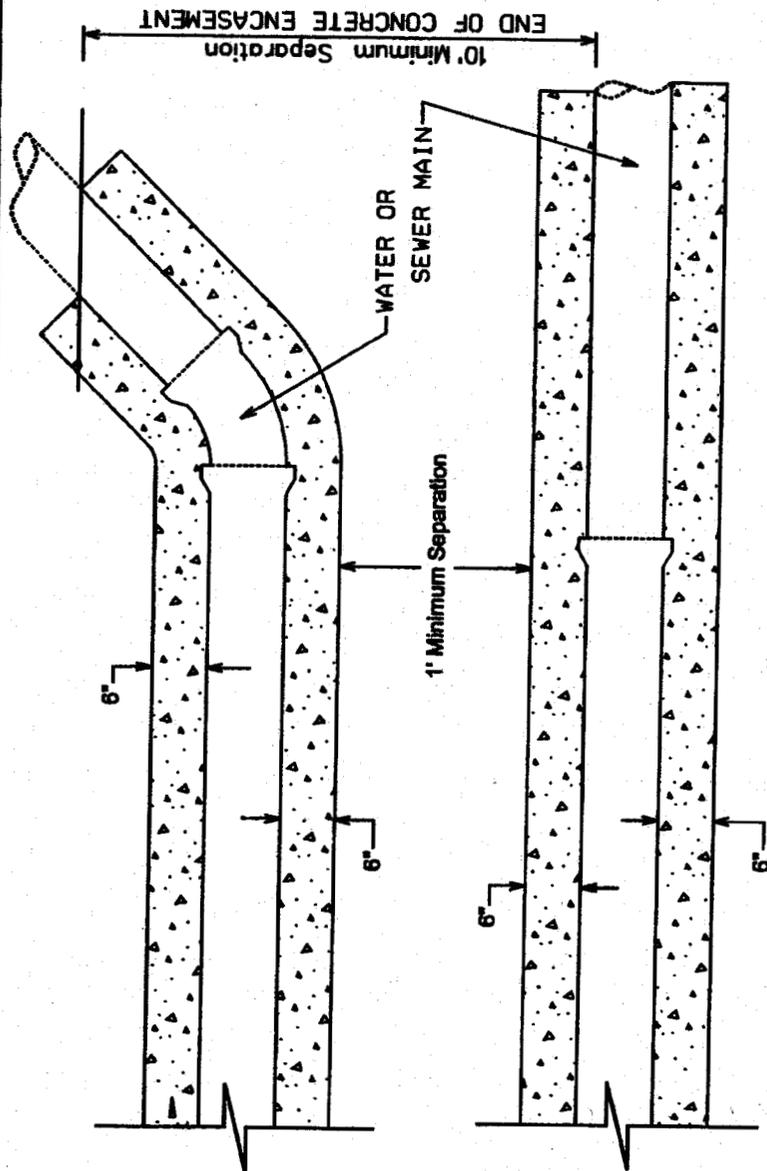
- NOTES:**
1. 2,000 PSI CONCRETE
  2. SEPARATION DISTANCES AND/OR OTHER EXTRA PROTECTION SHALL BE REQUIRED TO PROTECT WATER MAINS FROM CONTAMINATION BY SANITARY SEWER MAINS. SEE AWC STANDARD SPECIFICATION PAGES E-8-1-9 AND E-8-1-10.
  3. SEE CROSS SECTION DETAIL FOR LIMITS OF SEPARATION/EXTRA PROTECTION. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE PIPES.
  4. RECLAIMED WATER SHALL BE CONSIDERED A SANITARY SEWER WHEN PLACED NEXT TO A POTABLE WATER MAIN.

**ARIZONA WATER COMPANY**

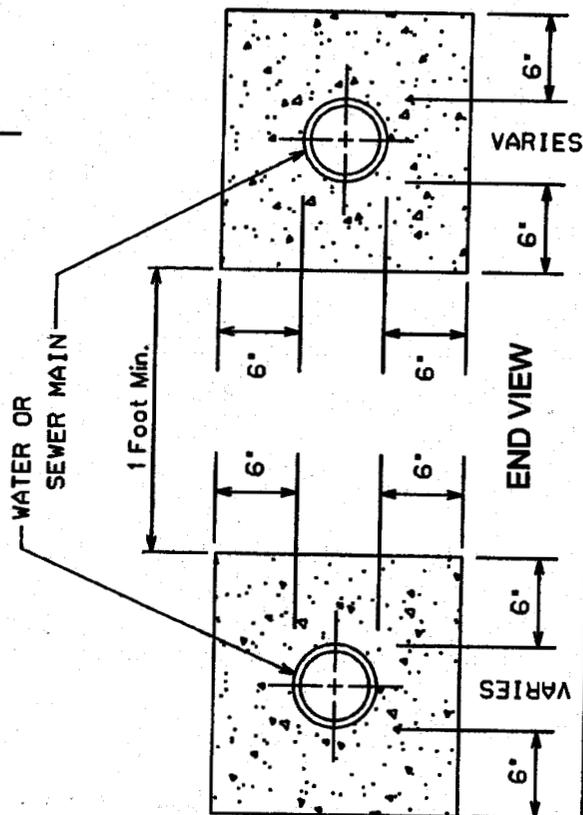
<b>STANDARD SPECIFICATION</b>	
FOR THE INSTALLATION OF	
<b>WATER AND SANITARY SEWER</b>	
<b>SEPARATION/PROTECTION</b>	
DRAWN BY: CB	APPROVED BY: JW
DATE: 04.07.2008	△
E-8-30-1	

**NOTES:**

1. 2,000 PSI CONCRETE
2. SEPARATION DISTANCES AND/OR OTHER EXTRA PROTECTION SHALL BE REQUIRED TO PROTECT WATER MAINS FROM CONTAMINATION BY SANITARY SEWER MAINS. SEE AWC STANDARD SPECIFICATION PAGES E-8-1-9 AND E-8-1-10.
3. SEE CROSS SECTION DETAIL FOR LIMITS OF SEPARATION/EXTRA PROTECTION. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE PIPES.
4. RECLAIMED WATER SHALL BE CONSIDERED A SANITARY SEWER WHEN PLACED NEXT TO A POTABLE WATER MAIN.



**PLAN VIEW**



**END VIEW**

**ENCASUREMENT FOR PARALLEL PIPES**

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
FOR THE INSTALLATION OF

WATER AND SANITARY SEWER  
SEPARATION/PROTECTION

DRAWN BY: CB	APPROVED BY: JW	DATE: 04.07.2008	△
			E-9-30-2









**ENGINEER'S CERTIFICATE OF COMPLETION AND FINAL INSPECTION "ECC"**  
 YAVAPAI COUNTY DEVELOPMENT SERVICES - FLOOD CONTROL DISTRICT

YAVAPAI COUNTY FILE NO.: <b>A52011001372 X DRINKING WATER DESIGN</b> <i>(New separate form now used for WASTEWATER DESIGN)</i> <small>If separate Drinking Water &amp; Wastewater Approvals to Construct were issued, separate ECCs required</small>	COUNTY: <b>YAVAPAI</b> OWNER: <b>ARIZONA WATER COMPANY</b>
Project Name: <b>Antigua Way</b> <span style="float:right;"><small>(as shown on Approval to Construct)</small></span>	
W.A. No. <b>1-4931</b> SYSTEM NO. <b>13-046</b>	
Project Description: <b>Replace 810 LF of existing 4-inch GS with 850 LF of 6-inch DIP w/polywrap and tie over services along Antigua Way in Rimrock, Arizona.</b> <b>Shifted running line from 18 ft to 10 ft left of centerline to avoid conflict with trees. No vertical realignment was needed around storm drain. Two 22 1/2 degree els were added at curve in road. Tie-in location at north end of project adjusted to avoid conflict with culvert. The sum of all adjustments reduced the total length of new 6-inch DIP from 850 LF to 820 LF.</b>	
<small>(as shown on Approval to Construct, unless completed project differed, in which case describe in detail)</small>	

I, **Fredrick K. Schneider**, a Professional Engineer registered in the State of Arizona, have inspected the construction of the above described project, and certify that *(check all applicable boxes, complete applicable blanks)*:

ITEMS 1) THRU 4) MUST BE COMPLETED

- 1) The work on this project was completed on 4/24/12 (date).
- 2) On 4/24/12 a final construction inspection was conducted by  MYSELF [*←check one→*]  under MY DIRECT SUPERVISION by William Alldredge (print name).
- 3) The materials utilized and the installation and construction of those materials and equipment are in conformance with the approved plans and specifications.
- 4) All provisions listed in the ADEQ Approval to Construct for this project, a copy of which I have attached to this certificate, have been fully satisfied or exceptions are listed on the reverse side of this certificate.
- 5) All construction and preoperational tests (infiltration, exfiltration, pressure deflection, chlorination, bacti, etc.) [*circle types performed*] were properly conducted, met ADEQ requirements, and are represented in attachments to this Certificate. The total number of pages of test results attached is 2.

EITHER 6A) or 6B) MUST BE CHECKED

- 6A) Any deviation from the approved plans and the ADEQ Certificate of Approval to Construct have been noted on the attached "As-Built" plans (as stipulated in the Approval to Construct provisions) prepared and sealed pursuant to A.R.S. § 32-125 on May 1, 2012 (date). Of the total 8 sheets of "As-Built" plans attached, deviations from the approved plans are shown on sheets numbered 1 - 6. All deviations from the approved plans comply with the ADEQ minimum design and construction standards contained in statute, rule, bulletin or referenced codes, and with the key elements of the approved plans.
- 6B) The completed project did not deviate from the plans which received the Approval to Construct.

EITHER 7A) or 7B) MUST BE CHECKED

- 7A) This project did not require the preparation of an Operation and Maintenance Manual.  
(the only projects which do NOT require an O&M manual are gravity-only sewage collection systems, single-family residence septic systems, and drinking water distribution projects that include no source, storage, or pressurization facilities).
- 7B) A FINAL Operation and Maintenance Manual has been prepared for this project and a copy is attached. This manual meets all ADEQ minimum design and construction standards contained in statute, rule, bulletin, referenced codes, the key elements of the approved plans, and, if applicable, with Attachment B of the September 10, 1994 Engineering Advisory for Individual Alternate Systems.

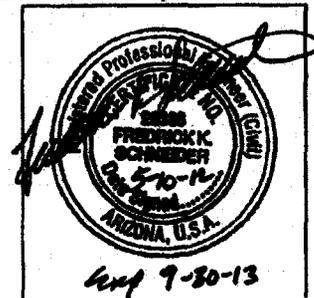
EITHER 8A) or 8B) MUST BE CHECKED

- 8A) Review of this project for Approval of Construction issuance does not require a fee because this project involves only drinking water, not wastewater.
  - 8B) In accordance with A.A.C. R18-9-103 Schedule B, a check in the amount of \$ \_\_\_\_\_ is attached as initial fee for review of the submitted and other information for issuance of an Approval of Construction.
- ADDITIONAL INFORMATION ↓ ENGINEER'S SEAL per AAC R4-30-304.B ↓
- 9) Other, see additional information on reverse side.

Engineer Address PO Box 29006, Phoenix, AZ 85038-9006

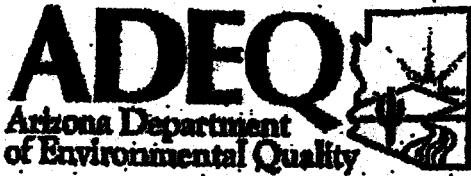
Phone 602-240-8860

YAVAPAI COUNTY DEVELOPMENT SERVICES ACCEPTANCE



*emp 9-30-13*

EMPLOYEE SIGNATURE \_\_\_\_\_ (PRINTED NAME) \_\_\_\_\_ DATE \_\_\_\_\_



**ENGINEERING REVIEW SECTION  
DATA REQUIRED WITH ECC**

**Please complete the test data and submit this form with the Engineers Certificate of Completion. An Approval of Construction cannot be issued without the data identified below in accordance with Arizona Administrative Code (A.A.C.) R18-5-508(C). Please attach all supplemental information and calculations to this form.**

WA# 1-4931  
ARTICIA WAY

1.

PRESSURE TEST DATA				
Indicate Segment Tested		Articula	Way	
Pressure and Leakage Test Results (Pass/Fail)		PASS		
Date Tested		4-3-12		
Time Started		13:00		
Time Finished		15:00		
Pipe Diameter		6" DI		
Feetage Tested		230 LF		
Allowable Leakage		.8%		
Leakage Observed		0		
Pressure at Test Point		200 psi		
Employee Observing the Test (Please Print Legibly)		William Alldredge		
Signature of Employee Observing the Test		<i>William Alldredge</i>		

2.

DISINFECTION SAMPLING				
Initial Sampling (Minimum 90 ppm available chlorine)	Date	4-3-12		
	Time	15:30		
	ppm Cl <sub>2</sub>	50		
After 24 Hours Detention Time (Minimum 10 ppm free chlorine)	Date	4-4-12		
	Time	15:30		
	ppm Cl <sub>2</sub>	50		
After Sufficient Flushing (Water is clear and system Cl <sub>2</sub> residual is measured)	Date	4-17-12		
	Time	11:30		
	ppm Cl <sub>2</sub>	.5		
Bacteriological Sampling(s):	Date	4-17-12		
	Time	11:30		
	Attached (Y/N)			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

3.

<p><b>Certification</b></p> <p>I, <u>William Alldredge</u>, certify that I have inspected the work performed and have found it to be satisfactory and in accordance with Arizona Administrative Code, Arizona Engineering Bulletins, and the approved specifications.</p> <p><u>William Alldredge</u> Authorized Persons Signature</p> <p><u>4/24/12</u> Date</p>	<p align="center"><b>Professional Seal</b> As per A.A.C. R18-5-508(C)</p> <p align="center">Exp 4-30-13</p>
---	---

04-19-12 04:18 PM

17001 N. 20TH AVENUE • PHOENIX, AZ 85020  
P (602) 324-6100 • F (602) 324-6101

# LEGEND

Technical Services, Inc.

www.legend-group.com

Regina Lynde Arizona Water Company 3805 N. Black Canyon Hwy Phoenix, AZ 85015	Project: Specials Project Number: 111-34301-4931 Antigua Way (RR) 4/17/12	Reported: 04/19/12 16:20
--	--	-----------------------------

**Analyte**  
 DRAFT: 111-34301-4931 (SE Corner of Antigua & Cliffside) (2011436-01) Drinking Water (Grab) Sample 04/17/12  
 11:30 Received: 04/18/12 05:01

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----	-------	----------	-------	----------	----------	--------	-------

Legend Technical Services of Arizona, Inc.

### DRAFT: Microbiology

Cell	Absent		P/A	1	B2D0527	04/18/12 16:10	04/18/12 16:10	SM 9223B	
Total Coliforms	Absent		P/A	1	B2D0527	04/18/12 16:10	04/18/12 16:10	SM 9223B	

### Sample Condition Upon Receipt:

Region: Arizona  
 Address: 3805 N. Black Canyon Hwy  
 Case Narrative: Temperature: 5.50 C  
 All samples were received in acceptable condition unless noted otherwise in the case narrative.

**Holding Times:** All holding times were met unless otherwise qualified.  
**QA/QC Criteria:** All analyses met method requirements unless otherwise qualified.  
**Accreditations:** AZ(PHX)0004, AZ(TUC)0004, AIHA#102982, CDC ELITE Member.  
 Accreditation is applicable only to the test methods specified on each scope of accreditation held by LEGEND.  
**Comments:** There were no problems encountered during the processing of the samples, unless otherwise noted. All samples were analyzed on a "wet" basis unless designated as "dry weight".

Notified Will of the absent result and faxed prelims on 04/19/12- BF

### Notes and Definitions

DRAFT REPORT

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

DATA SUBJECT TO CHANGE

Phone Number: (602) 324-6100

