



0000165888

# Arizona Water Company W-01445A-15-0277

## Amendment to Application

### PART 6 OF 12

Arizona Corporation Commission  
**DOCKETED**  
AUG 21 2015  
DOCKETED BY 

WA 1-5076

# Western Group Rate Case

Exhibit FKS-1

5076 Arizona Grain

# ARIZONA WATER COMPANY

## WORK AUTHORIZATION

W.A. NUMBER: 1-5076  
 P.E. NUMBER:  
 BUDGET ITEM NO.: Special #12  
 SHEET NO.: 1 of 2

SYSTEM: PINAL VALLEY	WORK TO START BY: UPON AUTHORIZATION
DIVISION: CASA GRANDE	WORK TO BE FINISHED BY: WITHIN 30 DAYS
RESPONSIBLE PERSON: RAY MURRIETA	
TAX CODE: 0489	

DESCRIPTION OF WORK:

Lower and Replace approximately 460 LF of 6-inch CA with 6-inch DIP and related fittings along the UPRR Rail Road in the NW ¼ Sec. 29 T. 6 S. R 6 E. Construct in accordance with attached drawings and/or Arizona Water Company specifications.

FACTORS JUSTIFYING WORK:

The Union Pacific Railroad ("UPRR") is constructing a railroad spur to serve Arizona Grain in Casa Grande. The proposed railroad spur is in conflict with the Company's existing water line. Because the facilities will be located under the proposed rail road spur and continued use of these facilities will be inaccessible for maintenance and repairs and a main break would cause significant damage to the rail road leading to costly repairs, Company engineers have determined the above-listed main must be lowered and placed into steel casing.

COST ESTIMATE		AUTHORIZATION	DATE
COST OF WORK:		PREPARED BY:	
MATERIAL	0	Joe Whelan	4-17-13 5/10/13
LABOR	6,100	REVIEWED FOR ESM/ROW VERIFICATION:	
CONTRACT PORTION	106,114	Charles Briggs	4-17-2013 CB 5-10-2013
OVERHEAD	12,344	REVIEWED BY:	
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 124,558	Mike Loggins	4-17-13 ML 5-10-13
FUNDS RECEIVED:		APPROVED BY ENGINEERING:	
CONTRIBUTIONS RECEIVED	0	Fredrick Schneider	4-22-13 FS 5-13-13
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE:	
TOTAL CONTRIBUTIONS/ADVANCES	0	Joseph Harris	4/23/13
NET COMPANY CASH REQUIRED	\$ 124,558	SPECIAL ITEM EXCEEDING \$10,000; AUTHORIZED BY PRESIDENT:	
		William M Garfield	4-26-13

COMMENTS:

SPECIAL ITEM EXCEEDING \$10,000; AUTHORIZED BY CHAIRMAN:  
 APPROVED VIA FAX  
 M. L. Whitehead  
 4/29/2013

CONSTRUCTION RELEASE:

**RELEASED TO CONSTRUCTION**  
 Authorized by FRED SCHNEIDER  
 Date 5/10/13

AFH

**ARIZONA WATER COMPANY**

W.A. NUMBER: 1-5076

**WORK AUTHORIZATION - DETAIL SHEET**

P.E. NUMBER:

BUDGET ITEM NO.:

SHEET NO.:

Special 12

2 of 2

RETIREMENT PROPERTY UNITS	PLANT PROPERTY ACCOUNT	UNIT DESCRIPTION	QUANTITY	YEAR INSTALLED AND W.A. NUMBER

PROJECT DESCRIPTION:  
 Lower and Replace approximately 460 LF of 6-inch CA with 6-inch DIP and related fittings along the UPRR Rail Road in the NW 1/4 Sec. 29 T. 6 S. R 6 E.

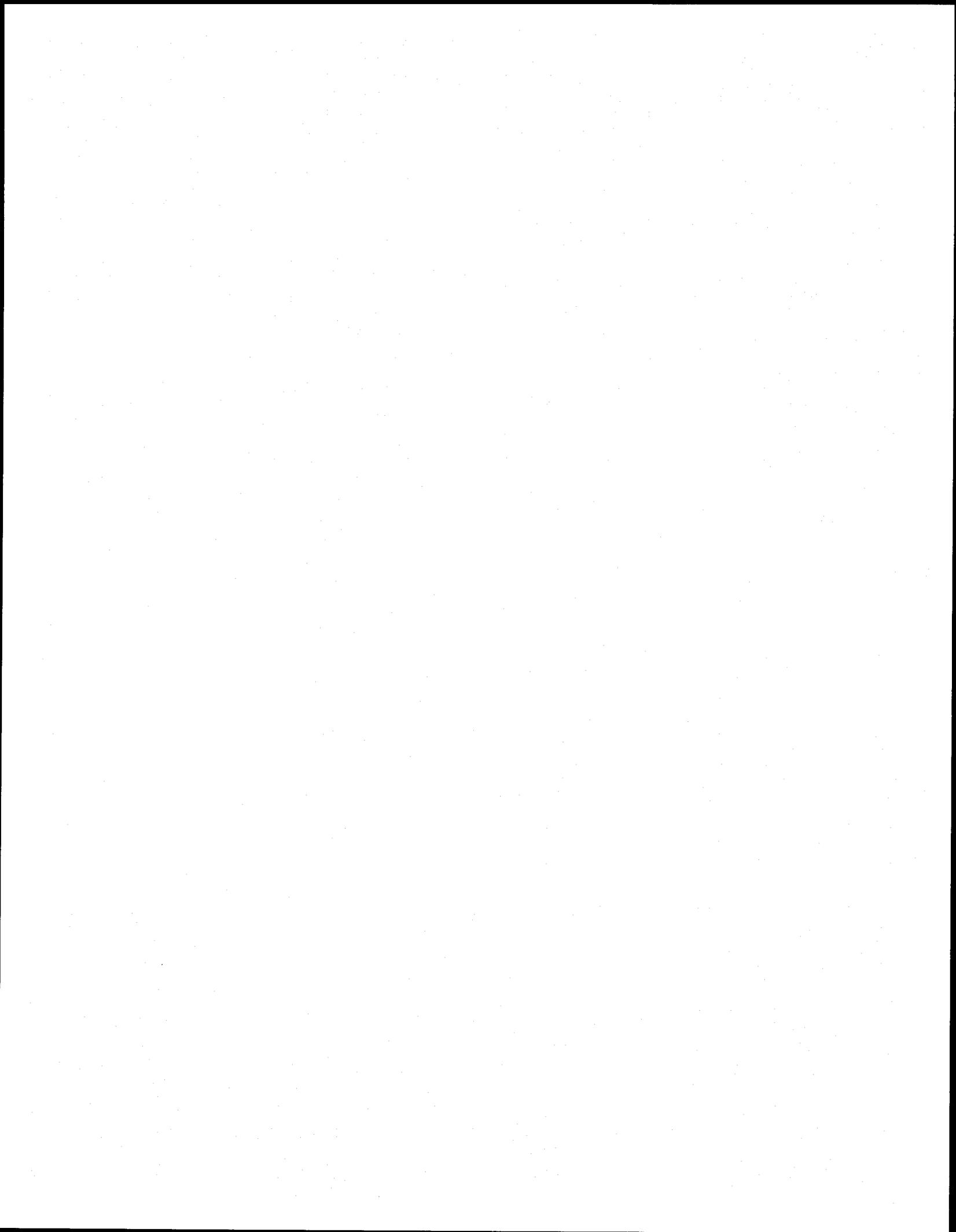
C O N T R A C T W O R K	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL
	Install 16" steel casing	343	400	\$ 164.00	\$ 65,600
	Install 6" DIP and related fittings	343	460	48.00	22,080
	Cut in new 6" MJ gate valve	343	2	1,056.00	2,112
	Install 6" 45° ELL	343	4	488.00	1,952
	Abandon existing 6" water line	343	450	5.85	2,633
	Cut and plug existing 6" waterline	343	2	1,200.00	2,400
	Tie into existing waterline	343	2	510.00	1,020
	Contracting Tax	343	1	5,343.80	5,344
	Tie over customer service line	345	1	385.00	385
PERFORMANCE AND PAYMENT BOND	343	1	2,588.00	2,588	
SERVICE CONNECTIONS COMPLETE: DOUBLE-LONG	345				
SERVICE CONNECTIONS COMPLETE: DOUBLE-SHORT	345				
SERVICE CONNECTIONS COMPLETE: SINGLE-LONG	345				
SERVICE CONNECTIONS COMPLETE: SINGLE-SHORT	345				
<b>TOTAL CONTRACT WORK</b>				<b>\$ 106,114</b>	

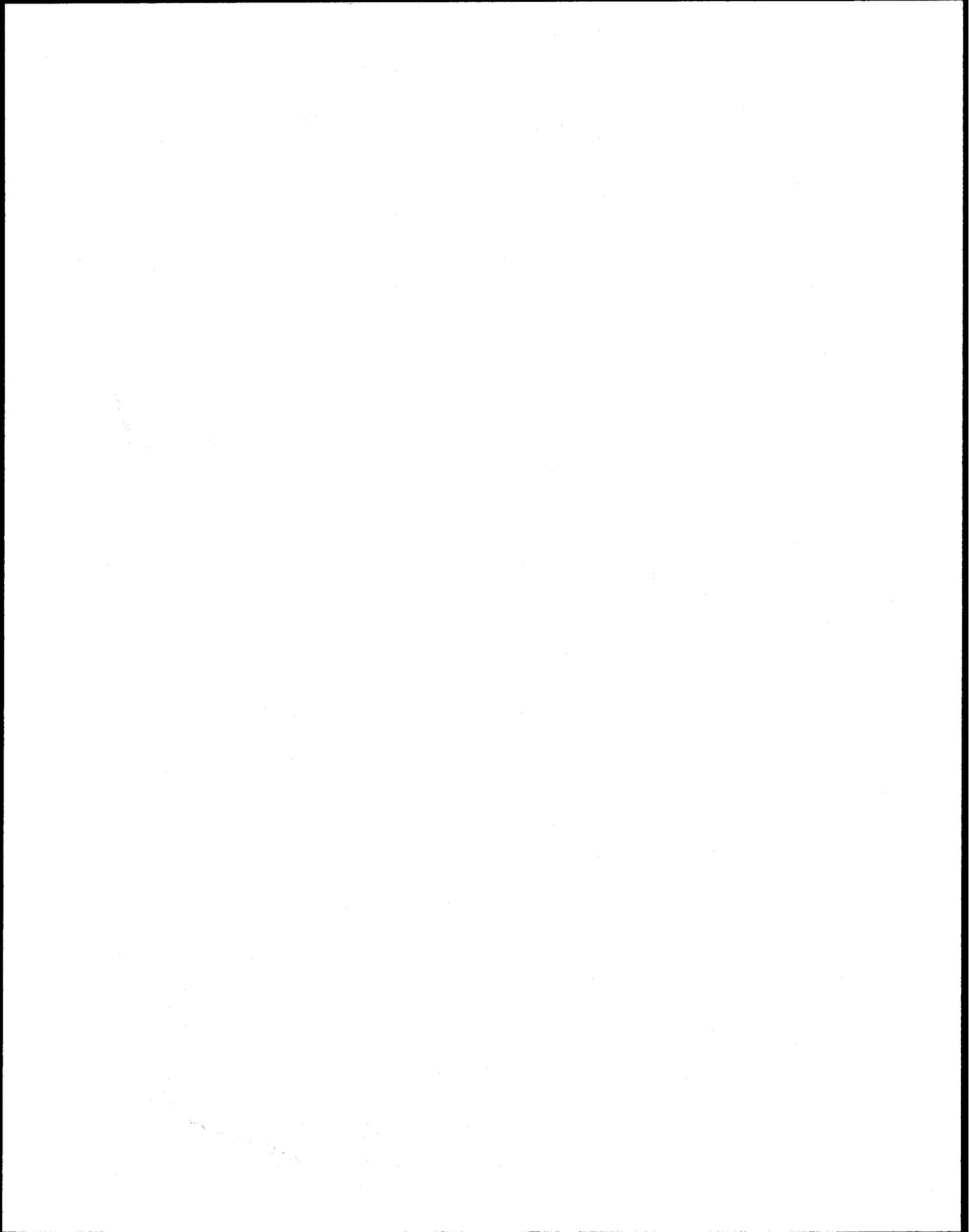
M A T E R I A L S	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL
	SERVICE CONNECTIONS: DOUBLE-LONG	345			
	SERVICE CONNECTIONS: DOUBLE-SHORT	345			
	SERVICE CONNECTIONS: SINGLE-LONG	345			
	SERVICE CONNECTIONS: SINGLE-SHORT	345			
	METERS	346			
<b>TOTAL MATERIALS</b>				<b>\$ -</b>	

L A B O R	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL
	TESTING FEE	343	1	\$ 100.00	100
	PERMIT FEE	343	1	500.00	500
	SURVEY FEE	343	1	2,500.00	2,500
	FIELD INSPECTION	343	1	3,000.00	3,000
	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>\$ 6,100</b>

<b>SUBTOTAL - CONTRACT WORK, MATERIALS, AND LABOR</b>				<b>\$ 112,214</b>
<b>OVERHEAD</b>				<b>12,344</b>
<b>TOTAL</b>	REFUNDABLE PORTION <input type="checkbox"/>	NON-REFUNDABLE PORTION <input type="checkbox"/>	<b>COST ESTIMATE</b>	<b>\$ 124,558</b>

AFH





# ARIZONA WATER COMPANY

## WORK AUTHORIZATION

W.A. NUMBER: 1-5076  
 P.E. NUMBER:  
 BUDGET ITEM NO.: Special No. 15  
 SHEET NO.: 1 of 2

SYSTEM: PINAL VALLEY	RETENTION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
DIVISION: CASA GRANDE	WORK TO START BY: UPON AUTHORIZATION
RESPONSIBLE PERSON: RAY MURRIETA	WORK TO BE FINISHED BY: WITHIN 30 DAYS
TAX CODE: 0489	

DESCRIPTION OF WORK:

Lower and Replace approximately 460 LF of 6-inch CA with 6-inch DIP and related fittings along the UPRR Railroad in the NW ¼ Sec. 29 T. 6 S. R 6 E. Construct in accordance with attached drawings and/or Arizona Water Company specifications.

FACTORS JUSTIFYING WORK:

The Union Pacific Railroad ("UPRR") is constructing a railroad spur to serve Arizona Grain in Casa Grande. The Company's existing water main is in conflict with the proposed railroad spur and is inaccessible for maintenance and repairs. A water main break under the proposed railroad spur would cause significant damage to the railroad resulting in costly repairs. Company engineers determined the water main must be lowered and placed into a steel casing. This project was not completed in 2013 due to conflicts with an existing Kinder Morgan gas line.

COST ESTIMATE		AUTHORIZATION	DATE
<b>COST OF WORK:</b>		PREPARED BY:	
MATERIAL	0	<i>James Wilson JW 5/2/14</i>	4/16/14
LABOR	7,300	REVIEWED FOR ESMT/ROW VERIFICATION:	
CONTRACT PORTION	150,026	<i>Charles Briggs CB 05-02-2014</i>	04-16-2014
OVERHEAD	18,879	REVIEWED BY:	
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 176,205	<i>Mario Mendez MM 5/2/14</i>	4/21/14
<b>FUNDS RECEIVED:</b>		APPROVED BY ENGINEERING:	
CONTRIBUTIONS RECEIVED	0	<i>Fredrick Schneider FS 5-5-14</i>	4-24-14
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE:	
TOTAL CONTRIBUTIONS/ADVANCES	0	<i>Joseph Harris</i>	4/25/14
NET COMPANY CASH REQUIRED	\$ 176,205	SPECIAL ITEM EXCEEDING \$10,000; AUTHORIZED BY PRESIDENT:	
COMMENTS:	Required funds are transferred from WA 1-4913 (Heness ARF Expansion)	<i>William M Garfield</i>	4-26-2014
		SPECIAL ITEM EXCEEDING \$10,000; AUTHORIZED BY CHAIRMAN:	
		APPROVED VIA FAX M. L. Whitehead	4/28/2014
		CONSTRUCTION RELEASE:	
		<b>RELEASED TO CONSTRUCTION</b> Authorized by <u>FRED SCHNEIDER</u> Date <u>4/29/2014</u> <b>2014 RE-AUTHORIZATION AND RE-RELEASE</b>	

**WORK AUTHORIZATION - DETAIL SHEET**

RETIREMENT PROPERTY UNITS	PLANT PROPERTY ACCOUNT	UNIT DESCRIPTION	QUANTITY	YEAR INSTALLED AND W.A. NUMBER

PROJECT DESCRIPTION  
 Lower and Replace approximately 460 LF of 6-inch CA with 6-inch DIP and related fittings along the UPRR Railroad in the NW ¼ Sec. 29 T. 6 S. R 6 E.

	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL
C O N T R A C T W O R K	Install 16" steel casing	343	400	\$ 164.00	\$ 65,600
	Install 6" DIP and related fittings	343	460	48.00	22,080
	Cut in new 6" MJ gate valve	343	2	1,056.00	2,112
	Install 6" 45° ELL	343	4	488.00	1,952
	Abandon existing 6" water line	343	450	5.85	2,633
	Cut and plug existing 6" water line	343	2	1,200.00	2,400
	Tie into existing water line	343	2	510.00	1,020
	Contracting Tax	343	1	5,343.80	5,344
	Tie over customer service line	345	1	385.00	385
	Performance and payment bond	343	1	2,588.00	2,588
	Relocate and tie over two 2-inch services	345	1	3,253.71	3,254
	Pavement Replacement	343	1	13,500.00	13,500
	Expose gas line	343	1	1,133.41	1,133
	Set barricades for Kinder Morgan to tap abandoned gas line	343	1	1,333.37	1,333
	Stand-by for Kinder Morgan removal of gas line from trench	343	1	9,403.69	9,404
	Water Barrier	343	1	775.00	775
	Deepen bore pits and extend trench boxes to go under gas	343	1	8,550.00	8,550
	Backfill and relocate bore pit	343	1	3,962.81	3,963
	Mobilization and Demobilization charges	343	1	2,000.00	2,000

**TOTAL CONTRACT WORK** \$ 150,026

M A T E R I A L S	DESCRIPTION	PLANT PROP ACCT	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	346			

**TOTAL MATERIALS** \$ -

L A B O R	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL
	Project Management	343	16	\$ 75.00	\$ 1,200
	TESTING FEE	343	1	\$ 100.00	100
	PERMIT FEE	343	1	500.00	500
	SURVEY FEE	343	1	2,500.00	2,500
	FIELD INSPECTION	343	1	3,000.00	3,000
	INSTALL SERVICE CONNECTIONS: DOUBLE-LONG	345			
	INSTALL SERVICE CONNECTIONS: DOUBLE-SHORT	345			
	INSTALL SERVICE CONNECTIONS: SINGLE-LONG	345			
	INSTALL SERVICE CONNECTIONS: SINGLE-SHORT	345			

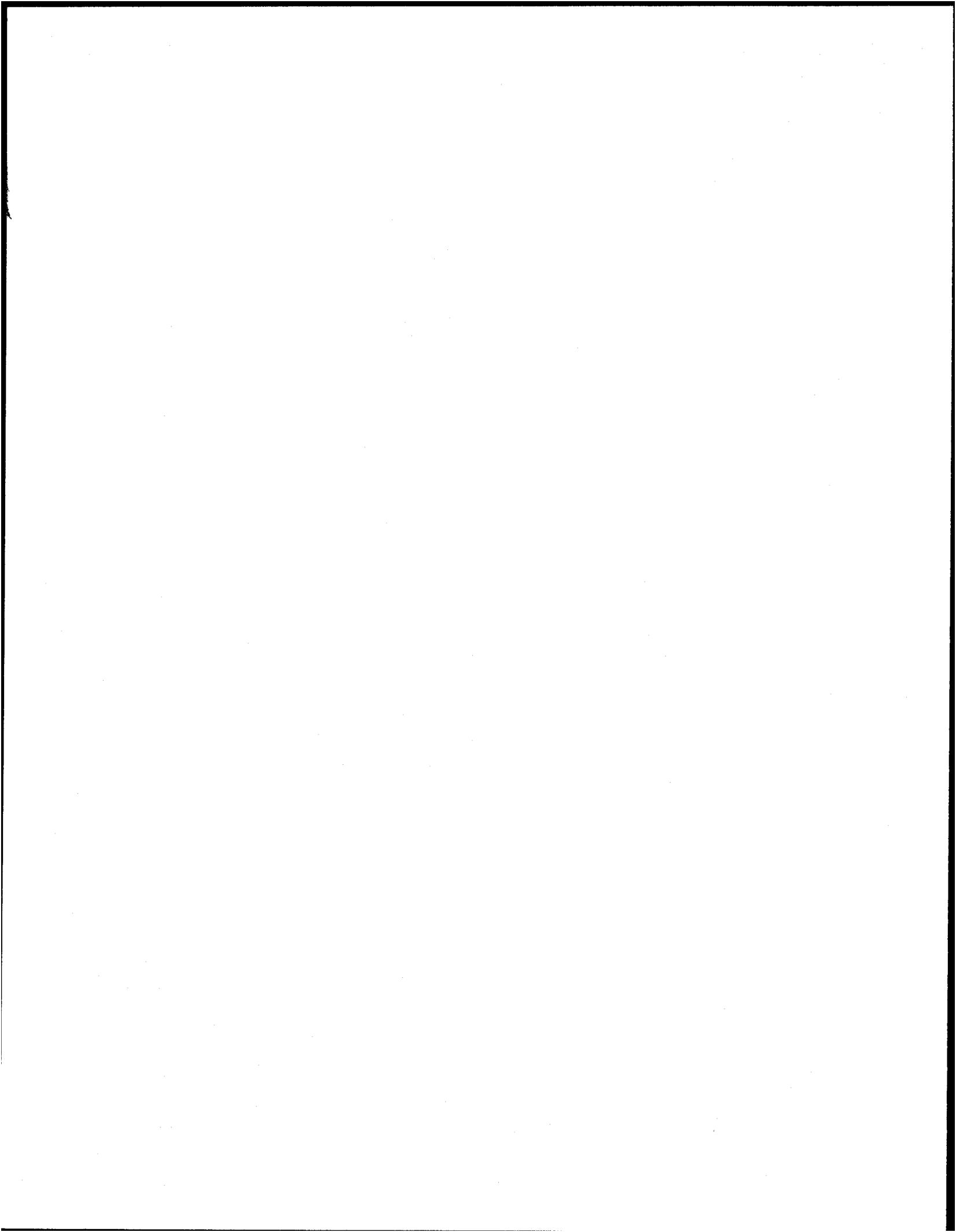
**TOTAL LABOR** \$ 7,300

**SUBTOTAL - CONTRACT WORK, MATERIALS, AND LABOR** \$ 157,326

**OVERHEAD** 18,900

**TOTAL**  REFUNDABLE PORTION  NON-REFUNDABLE PORTION **COST ESTIMATE** \$ 176,226

AFH





ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
CERTIFICATE OF APPROVAL TO CONSTRUCT  
WATER FACILITIES

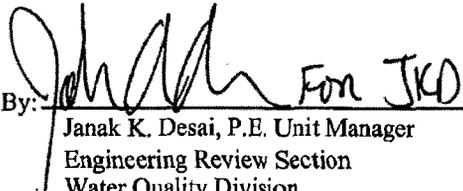
Page 1 Of 2

<b>ADEQ File No:</b> 20130103	<b>LTF No:</b> 57993
<b>System Name:</b> Pinal Valley	<b>System Number:</b> 11-009
<b>Project Owner:</b> Arizona Water Company	
<b>Address:</b> P O Box 29006, Phoenix , AZ 85038	
<b>Project Location:</b> Casa Grande	<b>County:</b> Pinal
<b>Description:</b> ARIZONA WATER COMPANY-PINAL VALLEY WATER SYSTEM (WA 1-5076). ATC PERMIT FOR APPROXIMATELY 460 LF OF 6-INCH CLASS 350 DIP WATERLINE AND RELATED FITTINGS. TO REPLACE EXISTING 6-INCH WATERLINE ALONG SOUTHERN PACIFIC RR @ AZ GRAIN COMPANY.	

*Approval to construct the above-described facilities as represented in the approved documents on file with the Arizona Department of Environmental Quality is hereby given subject to provisions 1 through 5 continued on page 2 through 2*

1. This project must be constructed in accordance with all applicable laws, including Title 49, Chapter 2, Article 9 of the Arizona Revised Statutes and Title 18, Chapter 5, Article 5 of the Arizona Administrative Code.
2. Upon completion of construction, the engineer shall fill out the Engineer's Certificate of Completion and forward it to the Central Regional Office located in Phoenix. If all requirements have been completed, that unit will issue a Certificate of Approval of Construction. R18-5-507(B), Ariz. Admin. Code. At the project owner's request, the Department may conduct the final inspection required pursuant to R18-5-507(B); such a request must be made in writing in accordance with the time requirements of R18-5-507(C), Ariz. Admin. Code.
3. This certificate will be void if construction has not started within one year after the Certificate of Approval to Construct is issued, there is a halt in construction of more than one year, or construction is not completed within three years of the approval date. Upon receipt of a written request for an extension of time, the Department may grant an extension of time; an extension of time must be in writing. R18-5-505(E), Ariz. Admin. Code.
4. Operation of a newly constructed facility shall not begin until a Certificate of Approval of Construction has been issued by the Department. R18-5-507(A), Ariz. Admin. Code.

Reviewed by: FMS

By:  For JKD 5/10/13  
Date  
Janak K. Desai, P.E. Unit Manager  
Engineering Review Section  
Water Quality Division

cc: File No : 20130103  
Regional Office: Central  
Owner: Arizona Water Company  
County Health Department: Pinal  
Engineer: Arizona Water Company  
Planning and Zoning/Az Corp. Commission  
Engineering Review Database - Etr021

**APPROVAL TO CONSTRUCT  
POTABLE WATERLINE  
ADEQ FILE No. 20130103  
PAGE 2 OF 2: PROVISIONS CONTINUED**

5. The Arizona Department of Environmental Quality's review of this application was subject to the requirements of the licensing time frames ("LTF") statute under Arizona Revised Statutes ("A.R.S.") § 41-1072 through § 41-1079 and the LTF rules under Arizona Administrative Code ("A.A.C.") R18-1-501 through R18-1-525. This Notice is being issued within the overall time frame for your application.

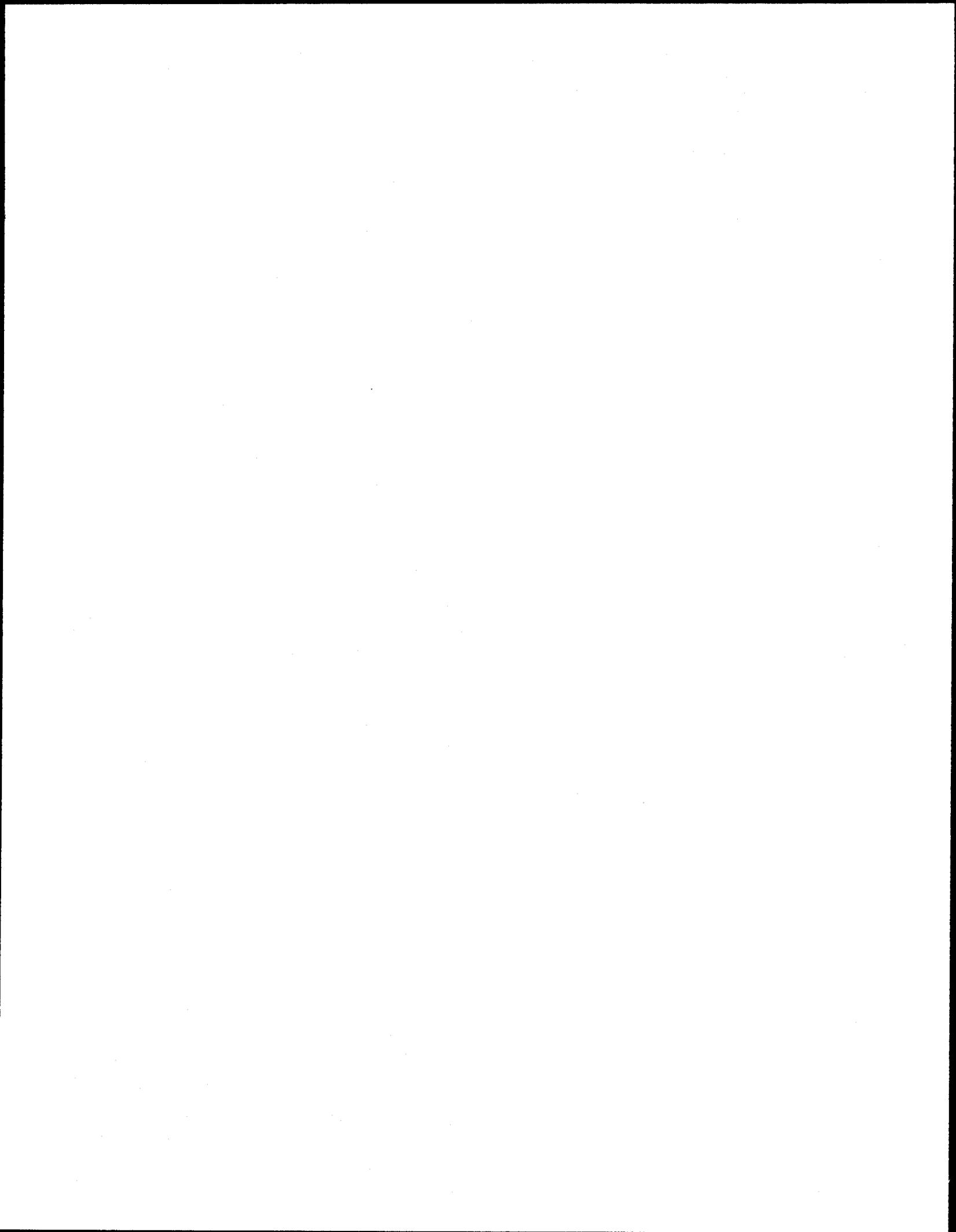
ADEQ hereby approves your application for Approve to Construct Drinking Water Facilities under A.R.S. § 49-351. Your copy is enclosed.

This decision is an appealable agency action under A.R.S. § 41-1092. You have a right to request a hearing and file an appeal under A.R.S. § 41-1092.03(B). You must file a written Request for Hearing or Notice of Appeal within **30 days** of your receipt of this Notice. A Request for Hearing or Notice of Appeal is filed when it is received by ADEQ's Hearing Administrator as follows:

Office of Administrative Counsel  
Arizona Department of Environmental Quality  
1110 W. Washington Street  
Phoenix, AZ 85007

The Request for Hearing or Notice of Appeal shall identify the party, the party's address, the agency and the action being appealed and shall contain a concise statement of the reasons for the appeal. Upon proper filing of a Request for Hearing or Notice of Appeal, ADEQ will serve a Notice of Hearing on all parties to the appeal. If you file a timely Request for Hearing or Notice of Appeal you have a right to request an informal settlement conference with ADEQ under A.R.S. § 41-1092.06. This request must be made in writing no later than **20 days** before a scheduled hearing and must be filed with the Hearing Administrator at the above address.

Please contact Frank M. Smaila at (602) 771-4237 or [fms@azdeq.gov](mailto:fms@azdeq.gov) if you have questions regarding this Notice or the Certificate of Approved to Construct.











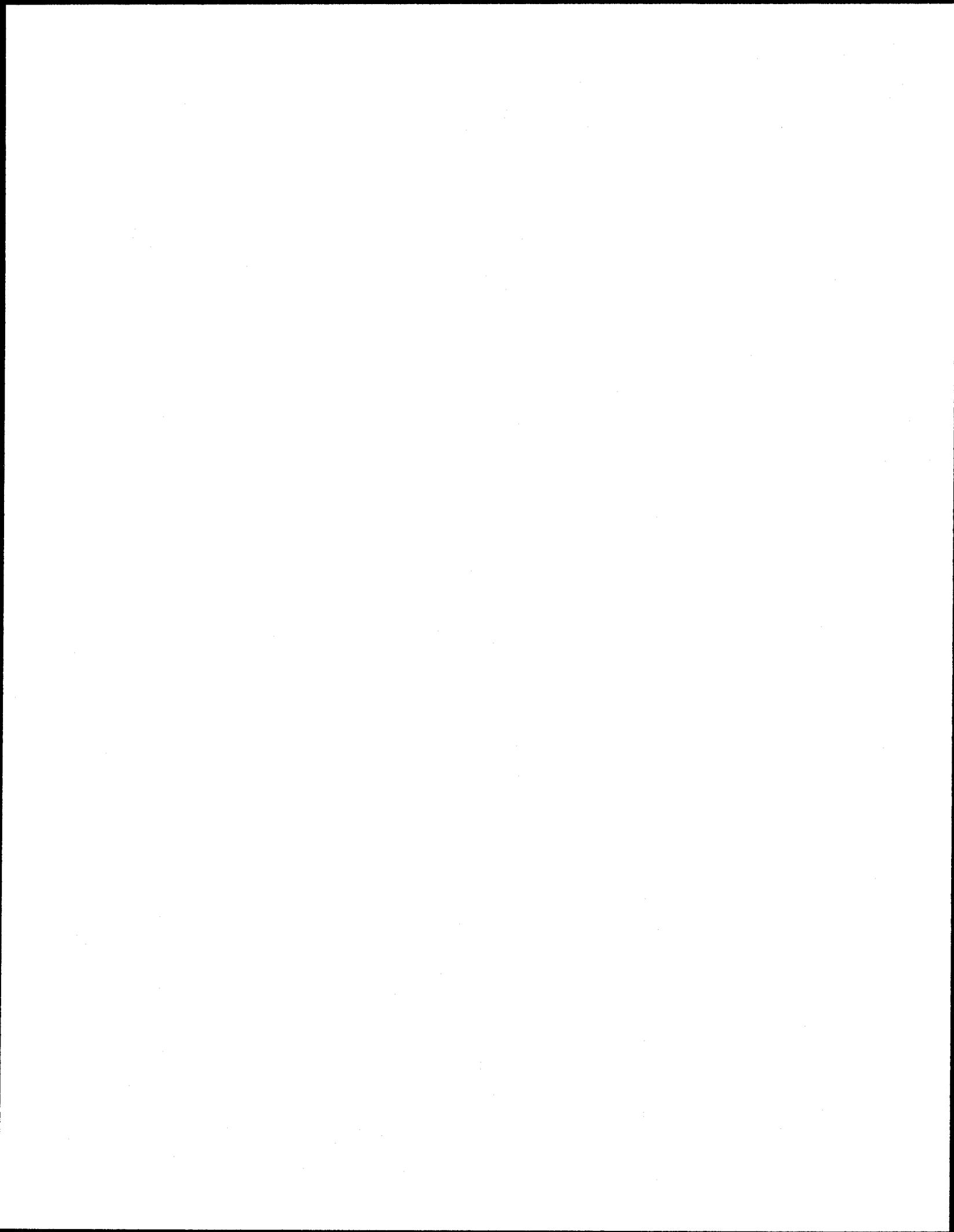


STATE OF ARIZONA } SS  
 COUNTY OF PINAL } 5 of 6  
 I hereby certify that the within instrument is filed in the official records of this County in Book 16 of Surveys.  
 Date: 11/11/05  
 Request of: Vaughn Lands Surveying  
 Witness: Mr. Neil and Missal West  
 LAURA JEAN LITTLE, Pinal County Recorder  
 By: [Signature] Deputy



SEE SHEET 4  
 SEE SHEET 6





# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

May 10, 2013

Mr. Javier Gonzalez  
Talis Construction Corporation  
2342 S. McClintock Drive  
Tempe, AZ 85282

Re: UPRR at Arizona Grain Company

PROJECT: UPRR at Arizona Grain Co.	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
PE. NO.:	W.A. NO.: 1-5076

Dear Mr. Gonzalez:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on May 10, 2013, Talis Construction Corporation acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

---

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

Mr. Javier Gonzalez  
Talis Construction Corporation

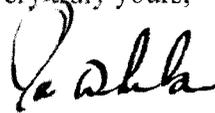
May 10, 2013  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murietta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



Joseph Whelan  
Engineering Development Coordinator  
engineering@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

Casa Grande Office: PO Box 11030- Casa Grande, AZ 85130-1030  
Voice: 520-836-8785 Fax: 520-836-2850

## PROPOSAL/CONTRACT

CONTRACTOR: TALIS Construction Corporation	SYSTEM: Pinal Valley / CG
ADDRESS: 2342 S. McClintock Drive	W.A. No(s): 1-5074
CITY ST ZIP: Tempe, AZ 85282	BID DUE DATE: December 14, 2012

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 30 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/constructed 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:

MUST COMPLY WITH APRR / UPRR PERMIT REQUIREMENTS & THE CITY OF CASA GRANDE RIGHT OF WAY PERMIT & TRAFFIC CONTROL.

CONTRACTOR TALIS CONSTRUCTION	PROPOSAL/CONTRACT ACCEPTED: ARIZONA WATER COMPANY
By: <i>Javier Gonzalez</i>	By: <i>Fredrick K. Schneider</i>
Print Name: Javier Gonzalez	Print Name: Fredrick K. Schneider, PE
Title: Project Manager	Title: Vice President - Engineering
Date: 12/14/12	Date: 5-13-2013



# ARIZONA WATER COMPANY

Casa Grande Office: PO Box 11030 - Casa Grande, AZ 85130-1030  
 Voice: 520-836-8785 Fax: 520-836-2850

## PROPOSAL/CONTRACT

CONTRACTOR: <u>TALIS Construction Corporation</u>		SYSTEM: <u>Pinal Valley / CG</u>
AZ CONTRACTOR LICENSE NO: <u>99126</u>	CLASSIFICATION: <u>General Engineering</u>	W.A. No(s): <u>1-5074</u>
ADDRESS: <u>2342 S. McClintock Drive</u>		BID DUE DATE: <u>December 14, 2012</u>
CITY ST ZIP <u>Tempe, AZ 85282</u>		BID BOND REQUIRED <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

DESCRIPTION OF PROJECT: **Replace Existing 6" Water Line With 6" Ductile Iron Pipe Along GPRR at Arizona Grain Co. Located in Casa Grande, AZ. Located in the W 1/2 of Sec 29 T.6S. - R6E.**

	QUANTITY	UNIT PRICE		TOTAL COST	
		LABOR	MATERIALS	LABOR	MATERIALS
<b>1-2. MATERIALS EXEMPT FROM CONTRACTING TAX (per Paragraph 6)</b>					
Install 16" steel casing 3/8" thick By Bore with related fittings	400	\$134.00	\$30.00	\$53,600.00	\$12,000.00
Install 6" ductile iron pipe with polywrap & related fittings	460	\$20.00	\$28.00	\$9,200.00	\$12,880.00
Install 6" MJ Gate Valve with V.B. & C. with related fittings	2	\$456.00	\$600.00	\$912.00	\$1,200.00
Install 45" MJ ells with related fittings	4	\$300.00	\$188.00	\$1,200.00	\$752.00
Abandon existing 6" waterline / slurry fill abandon waterline (300psi clsm )	450	\$5.00	\$0.85	\$2,250.00	\$382.50
Cut & plug existing 6" waterline	2	\$1,100.00	\$100.00	\$2,200.00	\$200.00
Tie into existing w/ Transition couplings	2	\$260.00	\$250.00	\$520.00	\$500.00
<b>PRICE ONLY</b>					
Install 16" steel casing 3/8" thick By Bore with related fittings	200	\$162.00	\$34.00	XXXXXXXXXX	XXXXXXXXXXXX
Install 6" ductile iron pipe with polywrap & related fittings	230	\$25.00	\$32.00	XXXXXXXXXX	XXXXXXXXXXXX
3. Total Labor to Install Exempt Materials (add the amounts in column 1)				3	\$69,882.00
4. Total Exempt Materials (add the amounts in column 2)				4	\$27,914.50
<b>5-6. NON-EXEMPT MATERIALS</b>					
<b>PRICE ONLY</b>					
Relocate / install a 2" copper service with related fittings	1	\$875.00	\$600.00	XXXXXXXXXX	XXXXXXXXXXXX
Tie into to existing customer line with related fittings	1	\$260.00	\$125.00	\$260.00	\$125.00
7. Total Labor to Install Non-Exempt Materials (add the amounts in column 5)				7	\$260.00
8. Total Non-Exempt Materials (add the amounts in column 6)				8	\$125.00 -
9. Subtotal A (add lines 3, 7 and 8)				9	\$70,267.00 -
10. Contracting Tax Base (multiply the amount on line 9 by 0.65)				10	\$45,673.55 -
11. Applicable Contracting Tax Rate				11	11.7 %
12. Contracting Tax (multiply the amount on line 10 by line 11)				12	\$5,343.80
13. Subtotal B (add lines 4, 9 and 12)				13	\$103,525.31
14. 100% Performance and Payment Bonds Cost				14	\$2,588.13
15. Estimated Total Cost (add lines 13 and 14)				15	\$106,113.44

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



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
4/18/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lovitt & Touche' Inc - Tempe 1050 West Washington St, #233 Tempe AZ 85281	CONTACT NAME: Yvonne Knizek	FAX (Alt. No.): 602-956-2258	
	PHONE (Alt. No. Ext): 602-956-2250	E-MAIL ADDRESS: yknizek@lovitt-touche.com	
INSURED TALIS Construction Corp. 2342 S McClintock Drive Tempe AZ 85281	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: Westfield Insurance Company		24112
	INSURER B:		
	INSURER C:		
	INSURER D:		
	INSURER E:		

COVERAGES CERTIFICATE NUMBER: 278839168 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDC/INSUR INSR	WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liab  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJ <input type="checkbox"/> LOC	Y	Y	CMM7582072	4/18/2013	4/18/2014	EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (EA OCCURRENCE) \$500,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$2,000,000 GENERAL AGGREGATE \$4,000,000 PRODUCTS - COMPROP AGG \$4,000,000 PD Occ Ded \$2,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	Y	Y	CMM7582072	4/18/2013	4/18/2014	COMBINED SINGLE LIMIT (EA OCCURRENCE) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per Occurrence) \$
A	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$0			CMM7582072	4/18/2013	4/18/2014	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N		N/A			WC STATUS: <input type="checkbox"/> FORY LIMITS <input type="checkbox"/> OTH EP E L EACH ACCIDENT \$ D L DISEASE - EA EMPLOYEE \$ P L DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Certificate Holder and others (if applicable) is/are an additional insured as respects to general liability if required in a written contract. Liability Additional Insured, Per Project Aggregate, Primary Non Contributory, and Waiver of Subrogation applies per forms: CG7137 11/12, CG2010S 07/04, CG2037S 07/04, CG2503 5/09. Auto Additional Insured: CA 7078 9/11; Auto Waiver of Subrogation CA0444 3/10. Subject to all policy terms, conditions, definitions and exclusions.

RE: Any and all operations by or on behalf of the insured during the policy terms indicated on this form. Arizona Water Company its officers, agents and employees are additional insureds.

CERTIFICATE HOLDER	CANCELLATION
Arizona Water Company PO Box 29006 Phoenix AZ 85038-9006	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

© 1988-2010 ACORD CORPORATION. All rights reserved.



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

03/30/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER SCF Arizona and its subsidiaries 3030 N. 3rd Street  Phoenix AZ 85012-3068	CONTACT NAME SCF Arizona PHONE (A/C No. Ext): 602.631.2600 or 866.284.2694 FAX (A/C No): 602.631.2599 E-MAIL ADDRESS: askscf@scfaz.com or webcerts@scfaz.com
INSURED TALIS Construction Corporation 2342 S McClintock Dr  Tempe AZ 85282	INSURER(S) AFFORDING COVERAGE INSURER A: SCF Premier Insurance Company NAIC # 12741 INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES CERTIFICATE NUMBER: 423 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSURER	TYPE OF INSURANCE	ADDL SUBR INSR / WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC					EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS					COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTIONS					EACH OCCURRENCE \$ AGGREGATE \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input type="checkbox"/> N/A	P10696	04/01/2013	04/01/2014	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

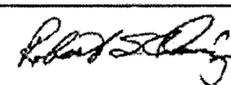
Location: All Jobs

WATER MAIN OR CONNREC CONST-INCL TUN

Should any of the above described policies be cancelled before the expiration date thereof, the issuing insurer will endeavor to mail 30 days written notice to the certificate holder named, but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents and representatives.

## CERTIFICATE HOLDER

## CANCELLATION

Arizona Water Company P.O. Box 29006  Phoenix AZ 85038-9006	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE 
--	--

© 1988-2010 ACORD CORPORATION. All rights reserved.



**ARIZONA WATER COMPANY**

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

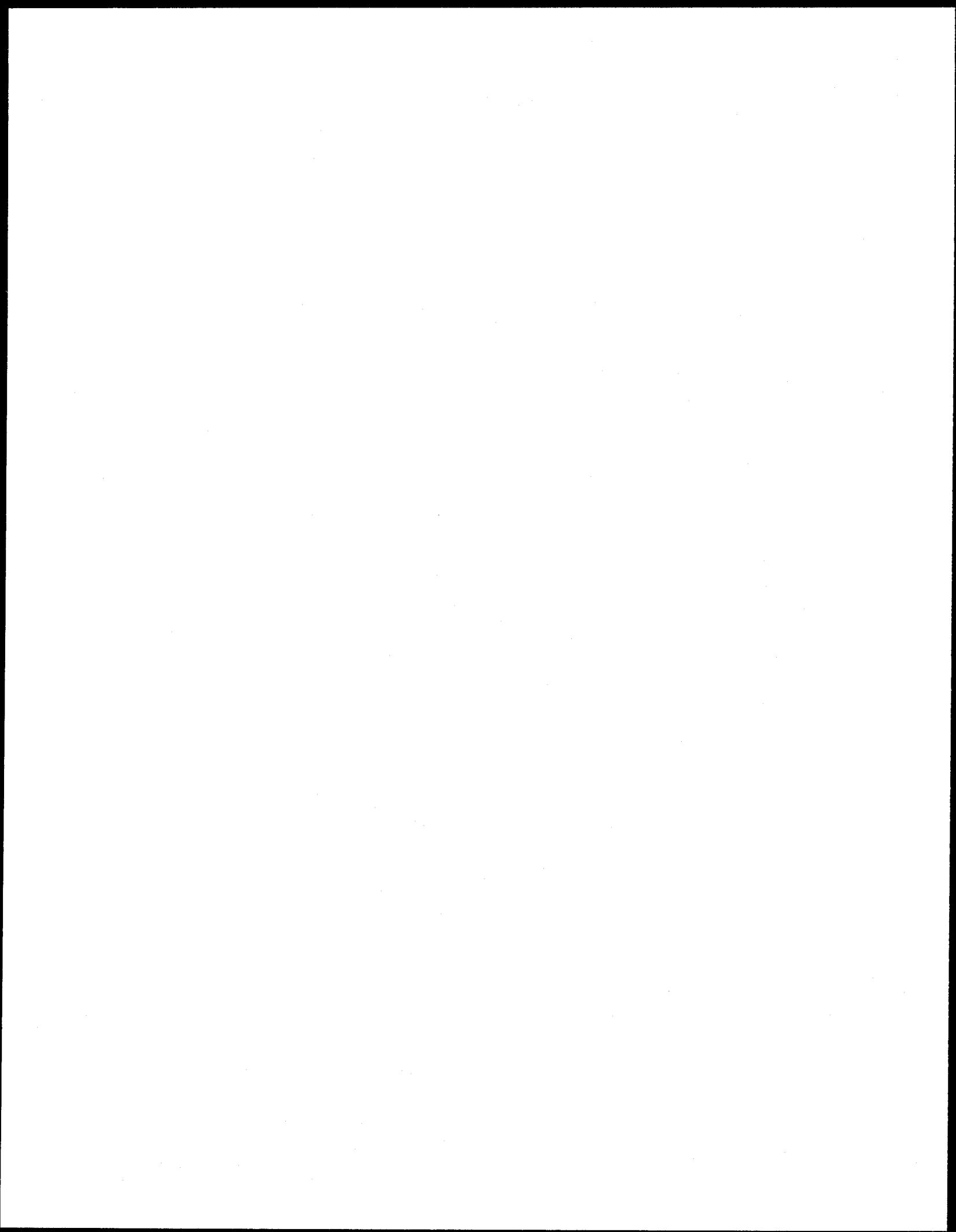
CONSTRUCTION SPECIFICATIONS: E-8-1

STANDARD SPECIFICATION DRAWINGS: E-9-1

**2007 EDITION WITH 2010 REVISIONS;  
2012 GENERAL CONDITIONS OF CONTRACT**

*JW*  
*5/10/13*

A copy of this entire Spec Book was sent out with Talis Construction  
package for WA 1-5076 UPRR @ Az Grain on 5/14/13 Proposal



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

December 1, 2014

Engineering Review Desk  
Arizona Department of Environmental Quality  
1110 W Washington St, 5<sup>th</sup> Floor  
Phoenix, Az 85007

Re: Engineer's Certificate of Completion for Arizona Grain  
AWC W.A. No. 1-5076  
ADEQ File No. 20130103

Dear Engineering Review Desk:

Enclosed is the Engineer's Certificate of Completion for the above-referenced project along with a copy of the Approval to Construct, the pressure, chlorination, bacteriological test data, and As Built Drawing.

If you have any questions concerning this construction, please call or write at your convenience.

Very truly yours,



Andrew J. Haas, P. E.  
Chief Engineer

afh  
Enclosures

---

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

**ENGINEER'S CERTIFICATE OF COMPLETION AND FINAL INSPECTION "ECC"**

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) - WATER QUALITY DIVISION 5/01

<b>ADEQ FILE NO.: 20130103</b> → <b>X</b> <b>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>	<b>COUNTY:</b> Pinal <hr/> <b>OWNER:</b> ARIZONA WATER COMPANY
<b>Project Name:</b> Arizona Grain <span style="float:right;"><i>(as shown on Approval to Construct)</i></span>	
<b>W.A. NO. 1-5076</b> <b>SYSTEM NO. 11-009</b>	
<b>Project Description:</b> Install approximately 460 LF of 6-inch Class 350 DIP water line and related fittings to replace existing 6-inch water line along Southern Pacific RR at Arizona Grain.	
<small><i>(as shown on Approval to Construct, unless completed project differed, in which case describe in detail)</i></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 November 12, 2014 (date).
- 2) On November 12, 2014 a final construction inspection was conducted by  MYSELF [*←check one→*]  under MY DIRECT SUPERVISION by Scott Johnson (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 11-14 (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

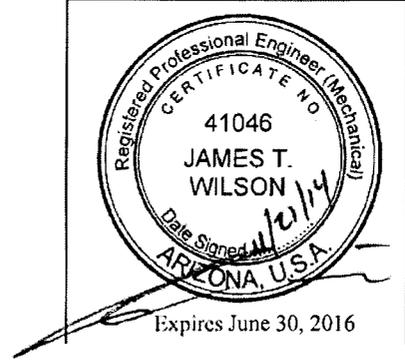
- 8A) Review of this project for Approval of Construction issuance does not require a fee because this project involves only drinking water, not wastewater.
- 8B) In accordance with A.A.C. R18-9-103 Schedule B, a check in the amount of \$ \_\_\_\_\_ is attached as initial fee for review of the submitted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

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

Phone 602-240-6860

**AZ DEPARTMENT OF ENVIRONMENTAL QUALITY ACCEPTANCE**

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



## ENGINEERING REVIEW SECTION

DATA REQUIRED WITH ECC

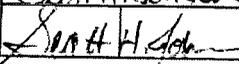
**INSTRUCTIONS**

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.

1-5076

<b>PRESSURE TEST DATA</b>				
Indicate Segment Tested				
Pressure and Leakage Test Results (Pass/Fail)	PASSED			
Date Tested	11-31-14			
Time Started	1:45 pm			
Time Finished	3:45 pm			
Pipe Diameter	6"			
Footage Tested	336 LF			
Allowable Leakage	0.4032			
Leakage Observed	0			
Pressure at Test Point	200 PSI			
Employee Observing the Test (Please Print Legibly)	SCOTT H. THOMPSON			
Signature of Employee Observing the Test				

2.

<b>DISINFECTION SAMPLING</b>				
Initial Sampling (Minimum 50 ppm available chlorine)	Date	10/31/14		
	Time	4:00 pm		
	ppm Cl <sub>2</sub>	200 ppm		
After 24 Hours Detention Time (Minimum 10 ppm free chlorine)	Date	11/3/14		
	Time	10:00 AM		
	ppm Cl <sub>2</sub>	200 ppm		
After Sufficient Flushing (Water is clear and system Cl <sub>2</sub> residual is measured)	Date	11/3/14		
	Time	11:30 AM		
	ppm Cl <sub>2</sub>	1.0		
Bacteriological Sampling(s):	Date	11/3/14		
	Time	11:45 AM		
	Attached (Y/N)	Y		
		(Yes/No)	Yes/No	Yes/No

3.

<b>Certification</b>	
<p>I, <u>SCOTT H. THOMPSON</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>Scott H. Thompson</u> Authorized Persons Signature</p>	<p><u>11/12/14</u> Date</p>
<div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 150px; display: flex; align-items: center; justify-content: center; margin: auto;"> <div style="text-align: center;"> <p style="font-size: small;">Professional Seal As per 22-23</p> <p style="font-size: x-small;">REGISTERED PROFESSIONAL ENGINEER (Mechanical)</p> <p style="font-size: small;">CERTIFICATE NO.</p> <p style="font-size: small;">41046</p> <p style="font-size: small;">JAMES T. WILSON</p> <p style="font-size: x-small;">Date Signed 11/11/14</p> <p style="font-size: x-small;">ARIZONA U.S.A.</p> </div> </div> <p style="margin-top: 10px;"><u>EXPIRES 6/30/2016</u></p>	

Regina Lynde Arizona Water Company 3805 N. Black Canyon Hwy Phoenix, AZ85015	Project: Specials Project Number: Az. Grain Wa-1-5076 11/3/14	Reported: 11/10/14 10:19
---	--	-----------------------------

**Analyte**  
**Az Grain #1 (4110130-01) Drinking Water (Grab) Sampled: 11/03/14 11:45 Received: 11/04/14 08:00**

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									
<b>Microbiology</b>									
E. coli	Absent		P/A	1	B4K0079	11/04/14 10:45	11/04/14 10:45	SM 9223B	
Total Coliforms	Absent		P/A	1	B4K0079	11/04/14 10:45	11/04/14 10:45	SM 9223B	

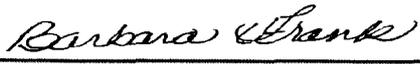
**Sample Condition Upon Receipt:**

Temperature: 2.00 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, 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".  
 Chain of Custody indicates special only do not report to ADEQ- BF  
 Notified Scott of the absent results on 11/07/14. BF

**Notes and Definitions**

Legend Technical Services of Arizona, Inc.  
  
 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

Regina Lynde  
 Arizona Water Company  
 3805 N. Black Canyon Hwy  
 Phoenix, AZ 85015

Project: Specials  
 Project Number: Az. Grain Wa-1-5076 11/3/14

Reported:  
 11/10/14 10:19

Laboratory Sample ID:  
 4110130

**CHAIN OF CUSTODY RECORD**

**LEGEND**  
 Technical Services, Inc.  
 www.legendgroup.com

17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101  
 4585 S. Palo Verde Rd. Ste 425 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

CLIENT INFORMATION											
Client Name ARIZONA WATER CO.			Address 200 E. 2ND ST			City CASA GRANDE		State AZ	Zip 85122	Phone (320) 856-8785	Fax Number or Email Address (602) 856-2780
Project Name AZ. GRAIN			Project Number WA-1-5076			Contact RAY MURZITA		P.O. No.	Fax Results <input checked="" type="checkbox"/>	GC Report <input type="checkbox"/>	EIO <input type="checkbox"/>
SAMPLE TYPE CODES		TURN AROUND TIME		Laboratory Authorization Required for Rush				REQUESTED ANALYSES			
DW-Drinking Water WW-Wastewater SW-Surface Water GW-Groundwater OS-Other		S=Soil/Sediment T=Travel Blank F=Food G=Sediment/Geosolids		<input type="checkbox"/> Standard 7-10 Day <input type="checkbox"/> Other				Composite Grab Sample Type Compliance No. of Containers pH <input checked="" type="checkbox"/> (Lab Use Only)			
Client's Sample Identification		Date	Time	Sample Location				LAB NO.			
AZ Grain #1		11/3/14	11:45 AM	AZ. GRAIN #1				10	01		

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 3 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions (Special) ~~DO NOT REPORT TO A.D.E.A~~ C12-1.0

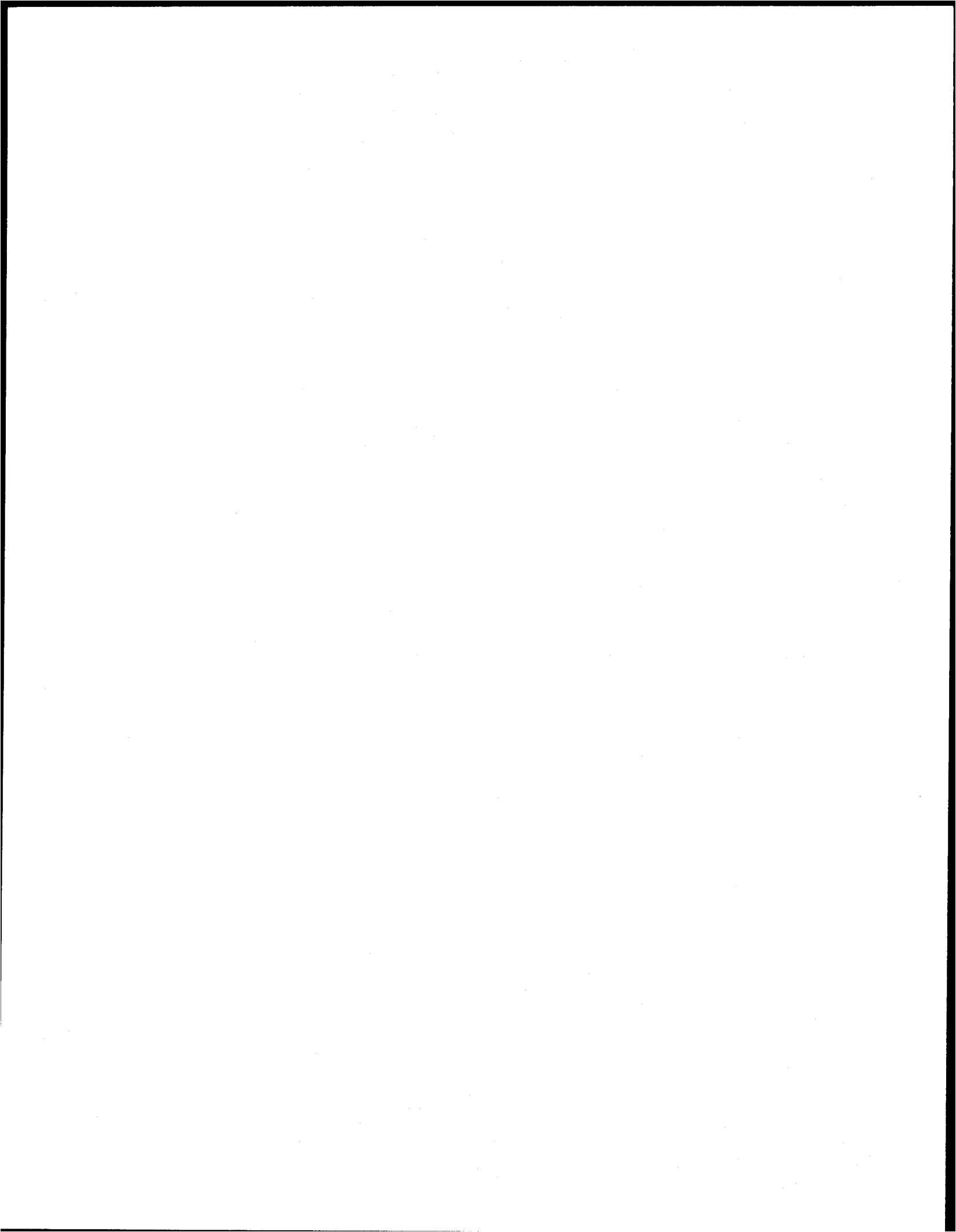
SAMPLE CONDITION UPON RECEIPT (Lab Use)	
No. of Containers	1
Temperature	20 °C
Custody Seals	Y (N)
Seals Intact	Y (N)
Preserved	(Y) (N)

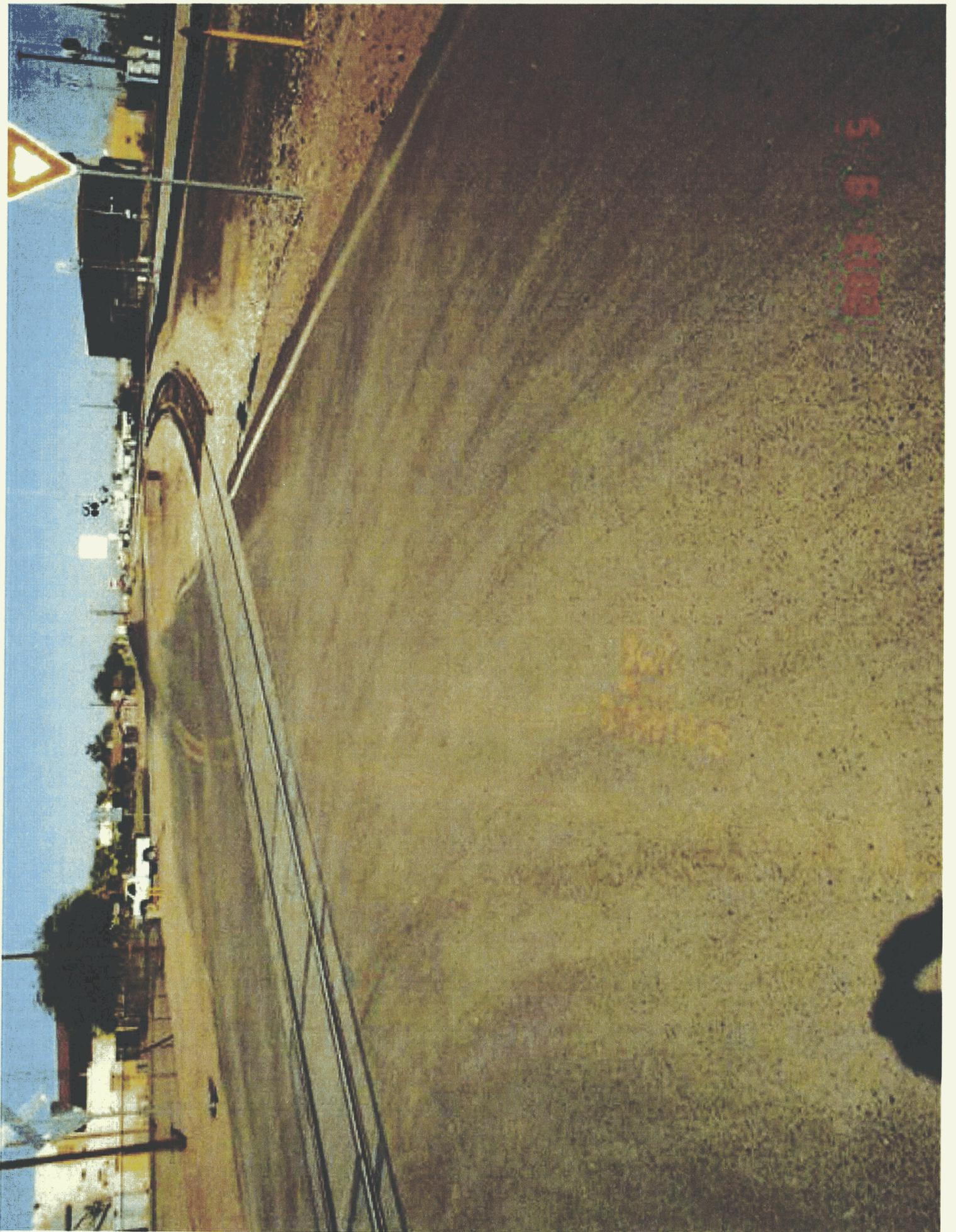
WHITE-LAB YELLOW-CLIENT

RELINQUISHED BY				SAMPLES RECEIVED BY			
Signature	<i>Scott M. Johnson</i>	Date	11/3/14	Signature	<i>UPS</i>	Date	
Signature Printed Name	SCOTT M. JOHNSON	Date		Signature	<i>Almond Howard</i>	Date	11/4/14
Signature	<i>UPS</i>	Date	11/4/14	Signature		Date	11/4/14
Signature		Date		Signature		Date	
Printed Name		Date		Printed Name		Date	

128149041595 661265

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.





S. B. 1111

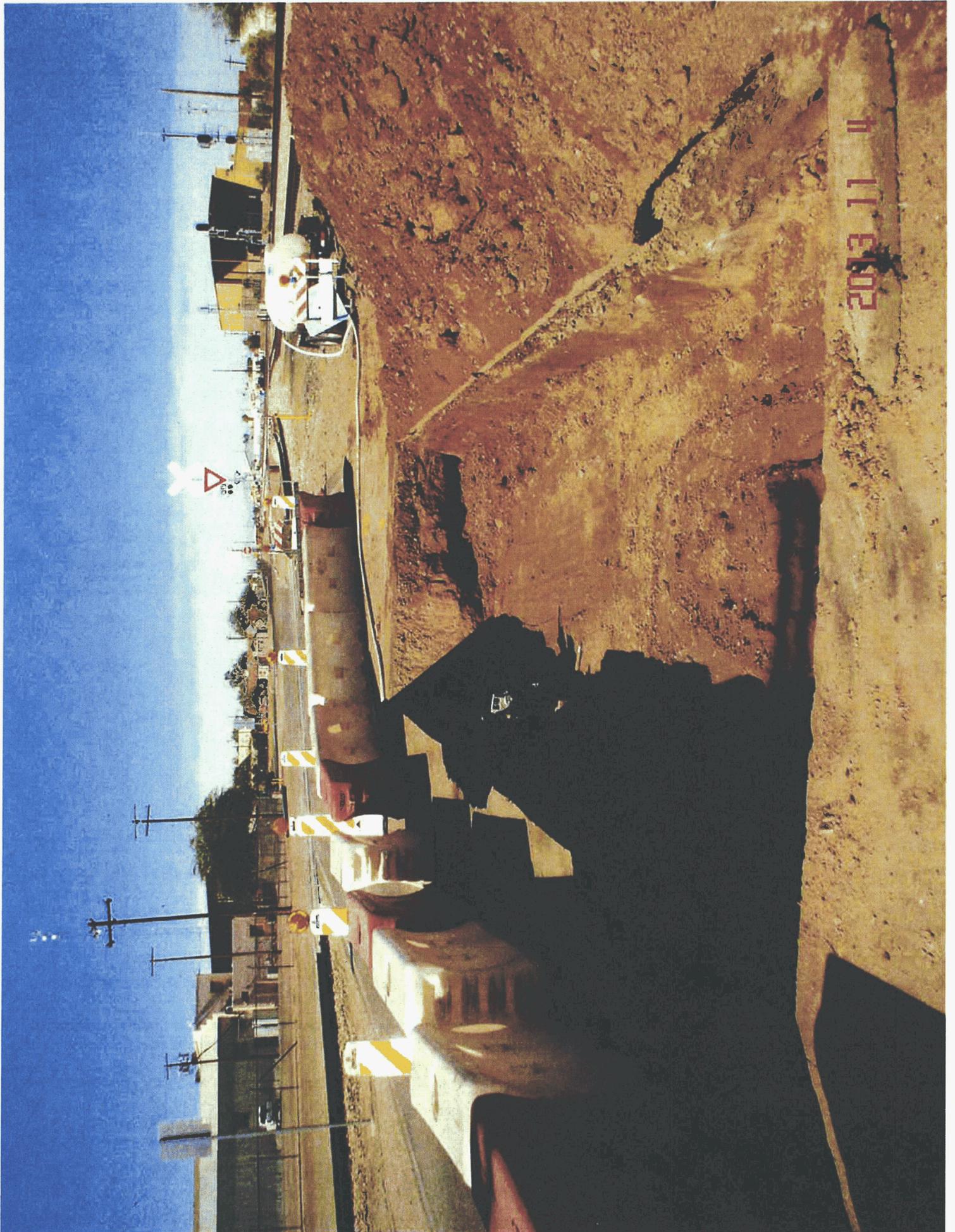




2014 10 23



2013 10 21

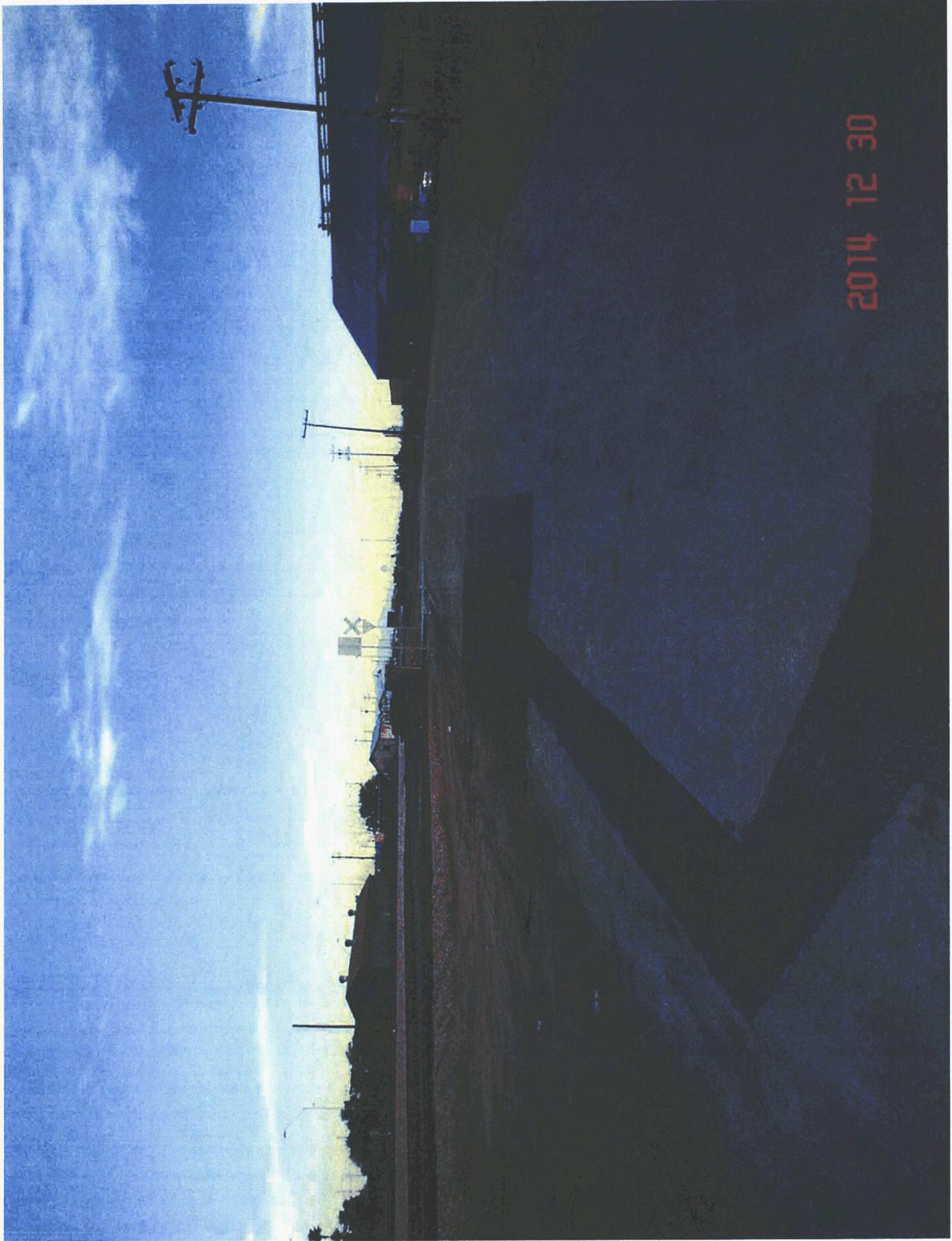




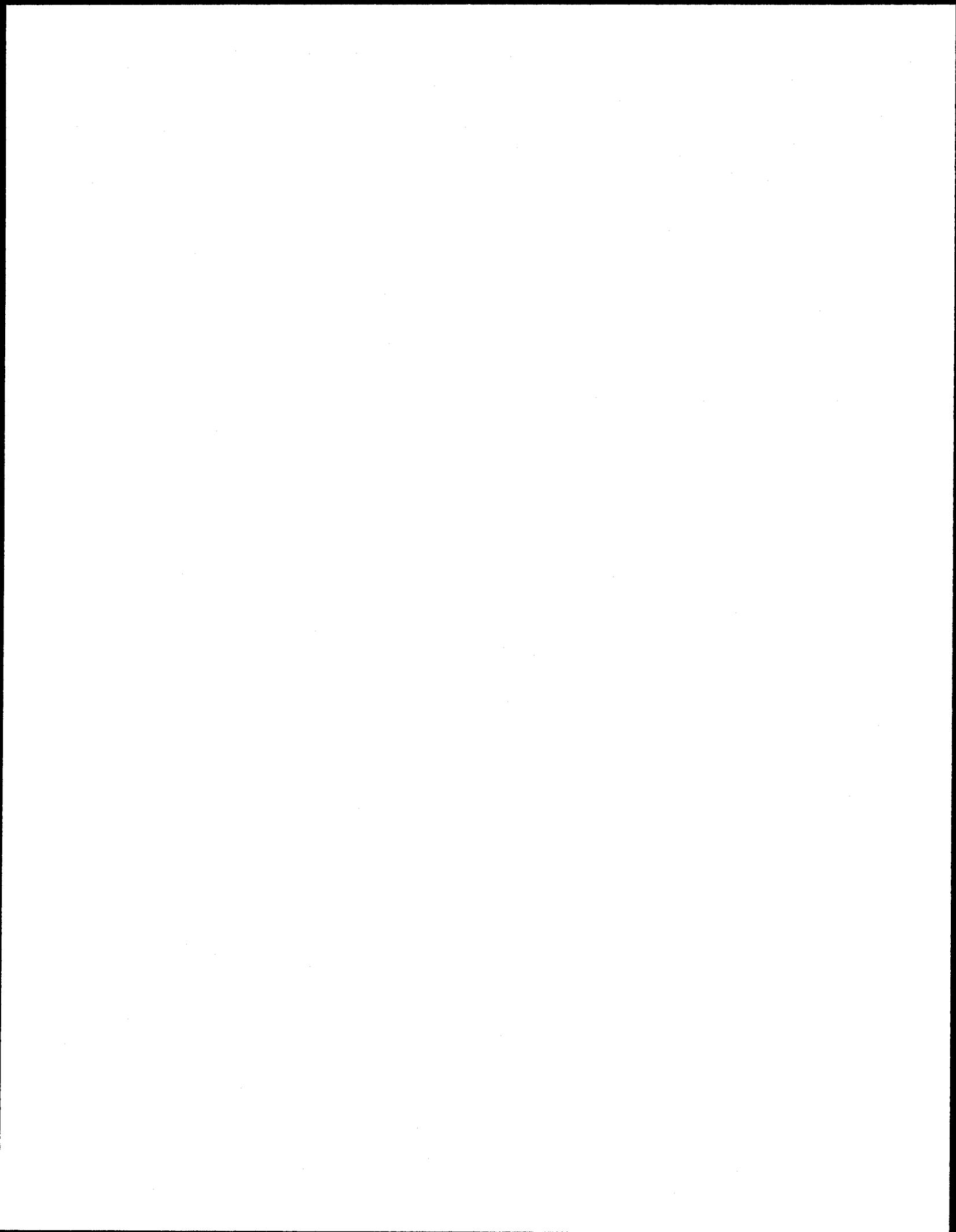
2013 9 26







2014 12 30







REVISED BY MCO ON 10/14/14 PER FIELD AS BUILTS  
4/16/14  
4/16/14  
4/16/14

AS BUILT  
FOR WATER ONLY

REVISIONS

1. 10/14/14 MCO AS BUILT

2. 4/16/14 MCO AS BUILT

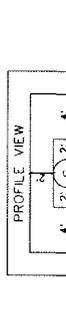
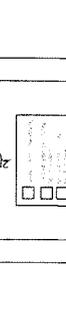
1. This drawing is a part of the contract documents for the project. It is to be read in conjunction with the other drawings and specifications. It is the responsibility of the contractor to verify the accuracy of the information shown on this drawing.

2. The contractor shall be responsible for obtaining all necessary permits and approvals for the work shown on this drawing. It is the contractor's responsibility to ensure that all work is done in accordance with the applicable codes and regulations.

3. The contractor shall be responsible for the safety of all workers and the public during the construction process. It is the contractor's responsibility to implement and maintain a safe work environment.

4. The contractor shall be responsible for the quality of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is done in accordance with the applicable codes and regulations.

5. The contractor shall be responsible for the completion of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is completed in a timely and efficient manner.



1. This drawing is a part of the contract documents for the project. It is to be read in conjunction with the other drawings and specifications. It is the responsibility of the contractor to verify the accuracy of the information shown on this drawing.

2. The contractor shall be responsible for obtaining all necessary permits and approvals for the work shown on this drawing. It is the contractor's responsibility to ensure that all work is done in accordance with the applicable codes and regulations.

3. The contractor shall be responsible for the safety of all workers and the public during the construction process. It is the contractor's responsibility to implement and maintain a safe work environment.

4. The contractor shall be responsible for the quality of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is done in accordance with the applicable codes and regulations.

5. The contractor shall be responsible for the completion of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is completed in a timely and efficient manner.

6. The contractor shall be responsible for the maintenance of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is maintained in accordance with the applicable codes and regulations.

7. The contractor shall be responsible for the repair of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is repaired in accordance with the applicable codes and regulations.

8. The contractor shall be responsible for the replacement of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is replaced in accordance with the applicable codes and regulations.

9. The contractor shall be responsible for the removal of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is removed in accordance with the applicable codes and regulations.

10. The contractor shall be responsible for the installation of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is installed in accordance with the applicable codes and regulations.

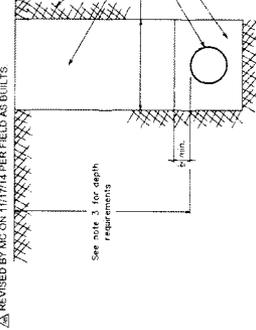
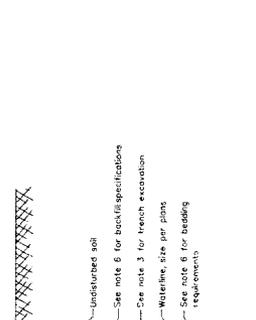
11. The contractor shall be responsible for the testing of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is tested in accordance with the applicable codes and regulations.

12. The contractor shall be responsible for the inspection of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is inspected in accordance with the applicable codes and regulations.

13. The contractor shall be responsible for the approval of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is approved in accordance with the applicable codes and regulations.

14. The contractor shall be responsible for the completion of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is completed in a timely and efficient manner.

15. The contractor shall be responsible for the maintenance of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is maintained in accordance with the applicable codes and regulations.



16. The contractor shall be responsible for the completion of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is completed in a timely and efficient manner.

17. The contractor shall be responsible for the maintenance of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is maintained in accordance with the applicable codes and regulations.

18. The contractor shall be responsible for the repair of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is repaired in accordance with the applicable codes and regulations.

19. The contractor shall be responsible for the replacement of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is replaced in accordance with the applicable codes and regulations.

20. The contractor shall be responsible for the removal of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is removed in accordance with the applicable codes and regulations.

21. The contractor shall be responsible for the installation of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is installed in accordance with the applicable codes and regulations.

22. The contractor shall be responsible for the testing of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is tested in accordance with the applicable codes and regulations.

23. The contractor shall be responsible for the inspection of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is inspected in accordance with the applicable codes and regulations.

24. The contractor shall be responsible for the approval of the work shown on this drawing. It is the contractor's responsibility to ensure that the work is approved in accordance with the applicable codes and regulations.

25. The contractor shall be responsible for the completion of the work shown on this drawing. It is the contractor's responsibility to ensure that all work is completed in a timely and efficient manner.

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL STREET LIGHT FIXTURE

### City of Casa Grande Standard Plan Notes

6.10 Street cuts on asphalt pavement. Cut existing pavement at one (1') from the curb per MAC Section 710. Detail 200 type (1) top. Track edges (Using A 19mm per MAC Section 710) shall be cast in place concrete. Asphalt concrete shall be tested for compaction to 95%. The contractor at his expense will have a private lab core sample and run a Marshall for compaction test, for acceptance on all street cuts. All replacement pavements shall match existing, unless authorized in writing by the City Engineer.

6.12 Asphaltic concrete for shall conform to M.A.G. USSD section 710 mix specifications. The minimum pavement section for Arterials and Major Collectors shall be a 2" (12.5mm) AC surface course with a 3" (19mm) AC base course and a 10" aggregate base course. Alternate pavement sections based on a geotechnical report shall be considered but must contain at least the 2" + 3" AC pavement noted above in the top section of the pavement structure and equivalent load capacity.

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

**ARIZONA WATER COMPANY**

STANDARD SPECIFICATION  
TYPICAL WATER MAIN ENCLOSURE

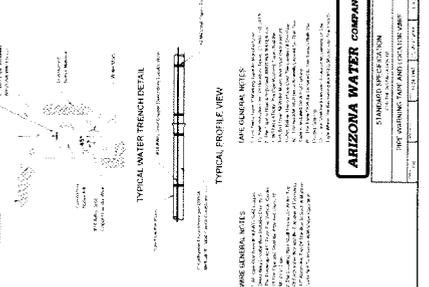
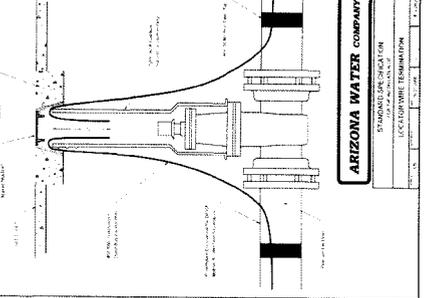
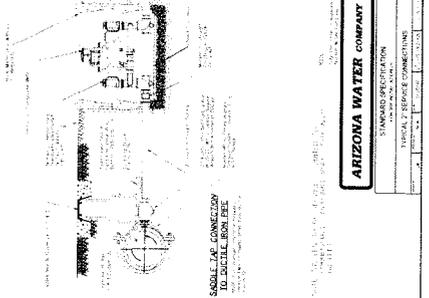
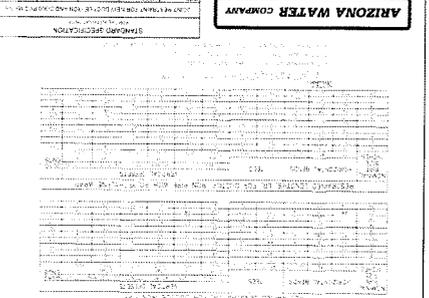
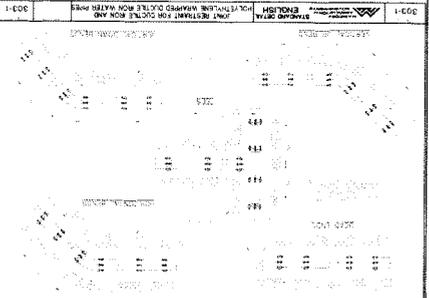
**AS BUILT**  
FOR WATER ONLY

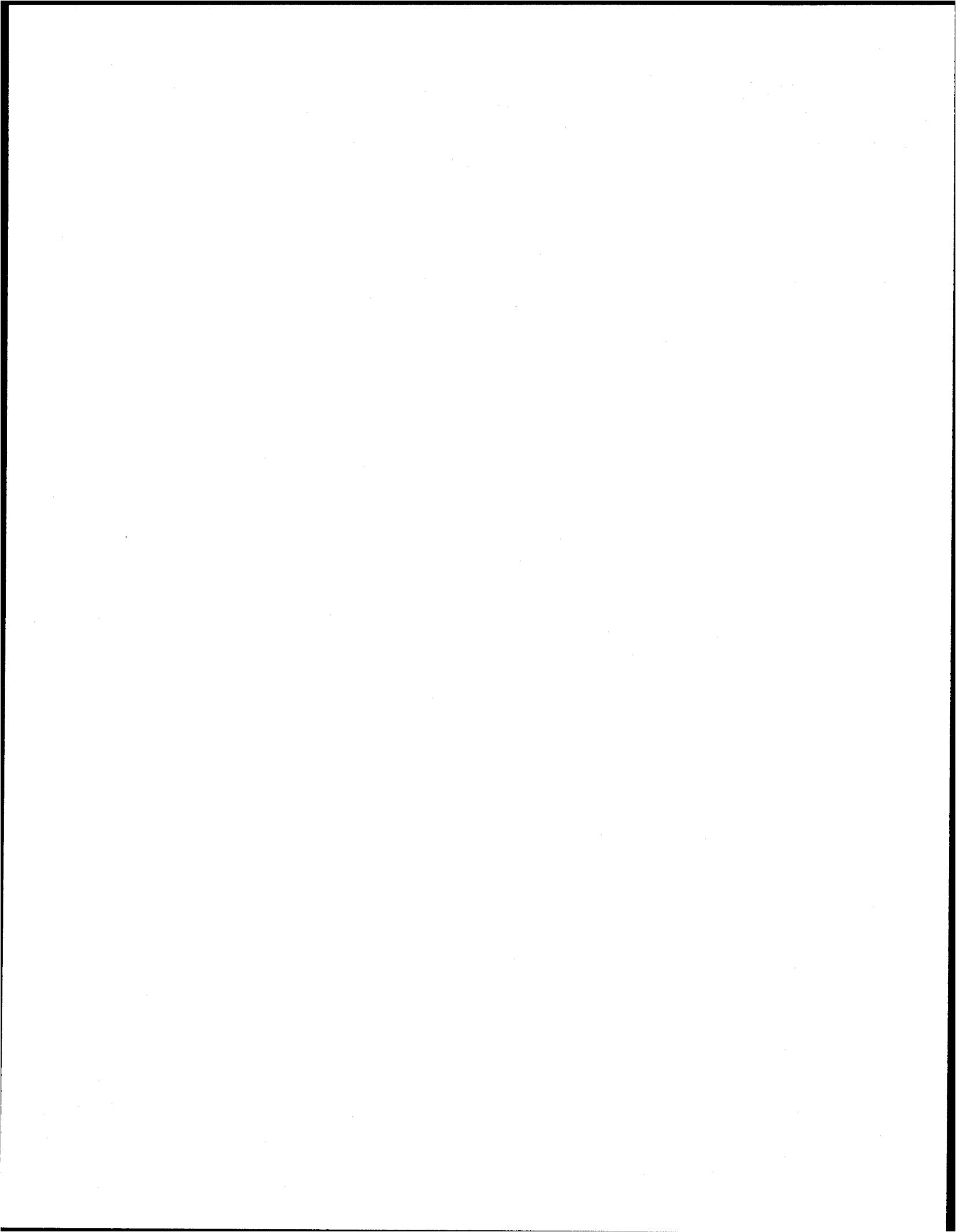
REVISED BY MAC ON 11/17/14 PER FIELD AS BUILTS.

EX-1000

ARIZONA WATER COMPANY  
FORM NO. PV-0017  
SHEET 4 OF 4

263-1100  
1-800-STAN-17







Janice K. Brewer  
Governor

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007  
(602) 771-2300 • azdeq.gov



Henry R. Darwin  
Director

## APPROVAL OF CONSTRUCTION

**Project Description:** Arizona Water Company-Pinal Valley Water System (WA 1-5076). AOC Permit for approximately 340 LF of 6-inch Class 350 DIP Waterlines and Related Fittings. To replace existing 6-inch waterline along Southern Pacific Railroad at Arizona Grain.

**Location:** Casa Grande, AZ

**Project Owner:** Arizona Water Company, c/o Mr. Andrew J. Haas  
**Address:** PO Box 29006, Phoenix, AZ 85038

The Arizona Department of Environmental Quality (ADEQ) hereby issues an Approval of Construction for the above-described facility based on the following provisions of Arizona Administrative Code (A.A.C.) R18-5-507 et seq.

On May 10, 2013, ADEQ issued a Certificate of Approval to Construct for the referenced project.

On November 21, 2014 James T. Wilson, P.E., certified the following:

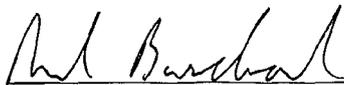
- A final construction inspection was conducted on November 12, 2014;
- The referenced project was constructed according to the as-built plans and specifications and ADEQ's Certificate of Approval to Construct;
- Water system pressure and leakage tests were conducted on October 31, 2014, and the results were within the allowable leakage rates; and
- The applicant has the right to appeal this AOC Permit. Appeal information is on reverse side of this Permit.

Microbiological samples were collected on November 3, 2014 and analyzed on November 4, 2014 by Legend Technical Services, Inc., ADHS License No. AZ0004. The sample results were negative for total coliform.

This Approval of Construction authorizes the owner to begin operating the above-described facilities as represented in the approved plan on file with the ADEQ. Be advised that A.A.C. R18-5-124 requires the owner of a public water system to maintain and operate all water production, treatment and distribution facilities in accordance with ADEQ Safe Drinking Water Rules.

FMS

PWS No.: 11-009  
LTF No.: 61535

 12/11/14  
 \_\_\_\_\_  
 David Burchard, Manager Date Approved  
 Engineering Review Unit

c: TEU File No.: 20130103  
Pinal County Health Department  
AZ Corporation Commission  
Engineer

Southern Regional Office  
400 West Congress Street • Suite 433 • Tucson, AZ 85701  
(520) 628-6733

Printed on recycled paper

### RIGHT TO APPEAL INFORMATION

The Arizona Department of Environmental Quality's review of this application was subject to the requirements of the licensing time frames ("LTF") statute under Arizona Revised Statutes ("A.R.S.") § 41-1072 through § 41-1079 and the LTF rules under Arizona Administrative Code ("A.A.C.") R18-1-501 through R18-1-525. This Notice is being issued within the overall time frame for your application.

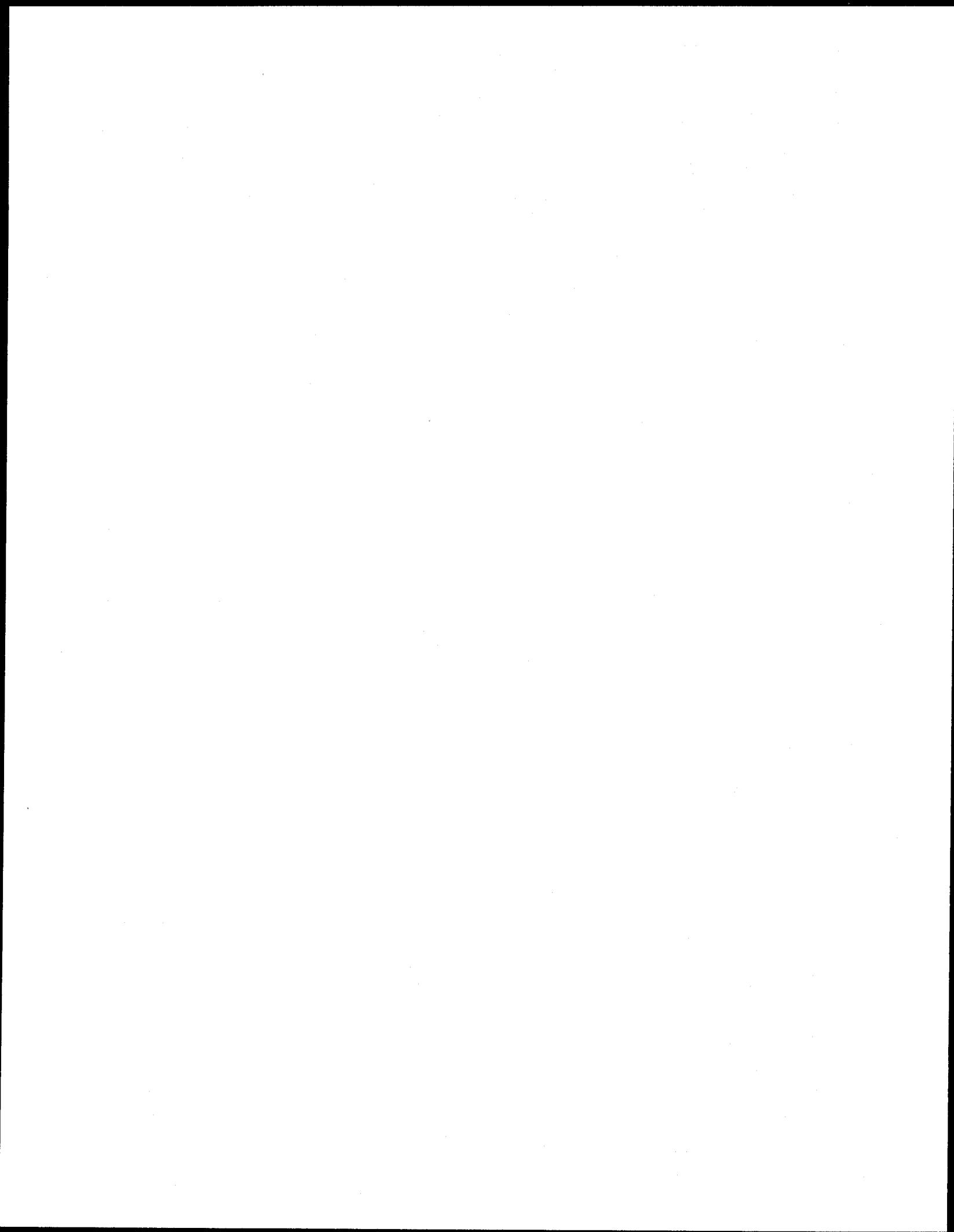
ADEQ hereby approves your application for Approval of Construction Drinking Water Facilities under A.R.S. § 49-351. Your copy of the Approval of Construction Permit is on the reverse side of this Right to Appeal Information sheet.

This decision is an appealable agency action under A.R.S. § 41-1092. You have a right to request a hearing and file an appeal under A.R.S. § 41-1092.03(B). You must file a written Request for Hearing or Notice of Appeal within **30 days** of your receipt of this Notice. A Request for Hearing or Notice of Appeal is filed when it is received by ADEQ's Hearing Administrator as follows:

Office of Administrative Counsel  
Arizona Department of Environmental Quality  
1110 W. Washington Street  
Phoenix, AZ 85007

The Request for Hearing or Notice of Appeal shall identify the party, the party's address, the agency and the action being appealed and shall contain a concise statement of the reasons for the appeal. Upon proper filing of a Request for Hearing or Notice of Appeal, ADEQ will serve a Notice of Hearing on all parties to the appeal. If you file a timely Request for Hearing or Notice of Appeal you have a right to request an informal settlement conference with ADEQ under A.R.S. § 41-1092.06. This request must be made in writing no later than **20 days** before a scheduled hearing and must be filed with the Hearing Administrator at the above address.

Please contact Frank M. Smaila at (602) 771-4237 or [fms@azdeq.gov](mailto:fms@azdeq.gov) if you have questions regarding this Notice or the Certificate of Approved of Construction.





ARIZONA WATER COMPANY

CONSTRUCTION  
PLACED IN SERVICE  
NOTICE

WORK AUTHORIZATION NO.: 1-5076

DIVISION: CG

DATE PLACED IN SERVICE: 12 | 23 | 14

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.

Division Manager or Operations Superintendent  
(signature)

1-8-15

Date

**SUBMIT ORIGINAL TO ACCOUNTING DEPARTMENT**

A-1-3-1  
FKS 11/24/11

*emailed  
to  
Bink  
1-8-15*



# ARIZONA WATER COMPANY

## PROJECT CLOSE-OUT NOTICE

PROJECT CLOSE-OUT DATE:	12/31/14	DIVISION/ SYSTEM:	CG/PV
		WORK AUTHORIZATION NUMBER:	1-5076
THE FOLLOWING RECORD REQUIREMENTS ARE ATTACHED:			PREPARED BY
1. W.A. FINAL COMPLETION CHECKLIST .....			kp
2. FINAL AUTHORIZATION TO BILL HAS BEEN SENT TO PHOENIX ON _____ Date .....			NA

### WA FINAL COMPLETION CHECK LIST

- FACILITIES RECORDS
  - Valve Records – Main & Blow-off
  - Fire Hydrant Records – Include Flow Test Data
- ABANDONED FACILITIES
  - Property Disposal Report (PDR)
  - Voided Valve Records
  - Voided Fire Hydrant Records
- COMPLETION DOCUMENTS
  - Public Fire Hydrants Installation Request (E-3-23)
  - Notice of Fire Hydrant Installation (E-5-5)
  - Permits Acquired By Division Office
  - Bill Of Sale (E-3-36-3)
  - Final Acceptance of Facilities Letter (E-3-36-5)
- ON-SITE PHOTOGRAPHS
  - To Show All New Installations At Completion Of W.A.

### IF NO ATB IS REQUIRED

- ADEQ DATA REQUIRED WITH ECC APPLICATION
  - NOTE: "Footage Tested" to match total pipe installed ("343" ONLY)
- AS-BUILT DRAWING
  - Label Cover Sheet "AS BUILT"
  - Pipe footage and size to be listed on AS-BUILT cover sheet ("343" ONLY)
  - Printed name of AS-BUILT preparer
  - ONLY Changes to original construction drawing to be marked in red on AS-BUILTs, NOTE: Include any additional Air Release Valves
- FORMS
  - Well Record (E-5-7)
  - Storage Tank Record (E-5-8)
  - Booster Pump Record (E-5-9)
  - Hydropneumatic Tank Record (E-5-10)
- OPERATIONS & MAINTENANCE MANUALS
  - Electric S.E.S. & M.C.C.
  - S.C.A.D.A./Controls
  - Treatment Facilities
- AOC (Approval of Construction)
  - Placed in Service Notice
  - Daily Progress Reports

I certify that construction on the above Work Authorization is complete and for which all materials have been accounted. I further certify that I have inspected the work and determined it is satisfactory and in accordance with Company specifications.

  
 \_\_\_\_\_  
 Division Manager, Operations Superintendent, or Project Engineer (signature)

2-17-15  
 \_\_\_\_\_  
 Date of Notice

**ATTACH TO CONSTRUCTION & ENGINEERING FILE COPY OF WORK AUTHORIZATION**

TO: ACCOUNTING DEPARTMENT (ACCOUNTANT II)  
 CC: ENGINEERING DEPARTMENT (ENG. SEC.)

WA 1-5164

# Western Group Rate Case

## Exhibit FKS-1

5164 Coolidge 9 and 10 BPS

# ARIZONA WATER COMPANY WORK AUTHORIZATION

W.A. NUMBER: 1-5164  
 P.E. NUMBER:  
 BUDGET ITEM NO.:  
 SHEET NO.: 1 of 3

SYSTEM: PINAL VALLEY	RETENTION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
DIVISION: CASA GRANDE	WORK TO START BY: UPON AUTHORIZATION
RESPONSIBLE PERSON: JAMES WILSON	WORK TO BE FINISHED BY: WITHIN DAYS
TAX CODE: 2102	

DESCRIPTION OF WORK:  
 Design and construct a vertical can booster pump station (BPS) with a firm capacity of 2,200 gpm at the Vacuum tank site in Coolidge, Arizona (Phase 1 of 2). Construct in accordance with attached drawings and/or Arizona Water Company specifications.

FACTORS JUSTIFYING WORK:  
 Approved 2014 Construction Budget Amount \$75,000  
 The Vacuum tank BPS produces approximately 65% of the water for the Coolidge portion of the Pinal Valley water distribution system. The existing BPS includes two boosters that have been in service for 29 years. Production has decreased from 2,200 gpm to 1,900 gpm. Company engineers initially planned to replace only the pumps, motors and discharge heads. However, during a recent inspection of the pump can interior for booster No. 2, Company engineers discovered severe internal corrosion of the pump cans, and determined the cans are nearing the end of their useful life and require replacement. The existing welded steel suction and discharge headers are also corroded, leaking, and require replacement. The Company cannot remove the existing BPS from service to replace the pump cans and maintain a sufficient supply of water to the distribution system. Therefore, a new BPS must be constructed adjacent to the existing BPS and made operational prior to removing the existing BPS from service. Company engineers designed the new BPS next to the existing BPS so that Company operators can continue to operate the existing BPS while the new BPS is constructed. The Company's design policy requires that all new BPS include a backup pump for use in the event of a pump failure. The new BPS will produce a firm capacity of 2,200 gpm with two pumps and include a third pump for system reliability in the event of a pump failure. Replacing the booster pump station will allow the Company to provide a safe, reliable, and sufficient supply of water to meet the demands of the Pinal Valley Water system.

COST ESTIMATE		AUTHORIZATION	DATE
COST OF WORK:		PREPARED BY:	
MATERIAL	0	<i>James Wilson</i> JW 10/1/14	9/25/14
LABOR	15,400	REVIEWED FOR ESMT/ROW VERIFICATION:	
CONTRACT PORTION	54,472	<i>Charles Briggs</i> CB 10-01-2014	09-25-2014
OVERHEAD	8,400	REVIEWED BY:	
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 78,272	<i>Mario Mendez</i> MM 10/2/14	9/25/14
FUNDS RECEIVED:		APPROVED BY ENGINEERING:	
CONTRIBUTIONS RECEIVED	0	<i>Fredrick Schneider</i> FS 10-3-14	9-25-14
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE:	
TOTAL CONTRIBUTIONS/ADVANCES	0	<i>Joseph Harris</i>	9/27/14
NET COMPANY CASH REQUIRED	\$ 78,272	AUTHORIZED BY PRESIDENT:	
		<i>William Garfield</i>	9-29-14

COMMENTS:  
 Approved 2014 Construction Budget Amount \$75,000  
 Transfer additional funds required (\$ 3,272) from WA 1-4913  
 2014 R.T.C Construction Amount \$78,000  
 2015 Anticipated Construction Budget Amount \$655,000  
 Total Project Cost \$733,000

CONSTRUCTION RELEASE:  
**RELEASED TO CONSTRUCTION**  
 Authorized by FRED SCHNEIDER  
 Date 10/3/14

# ARIZONA WATER COMPANY

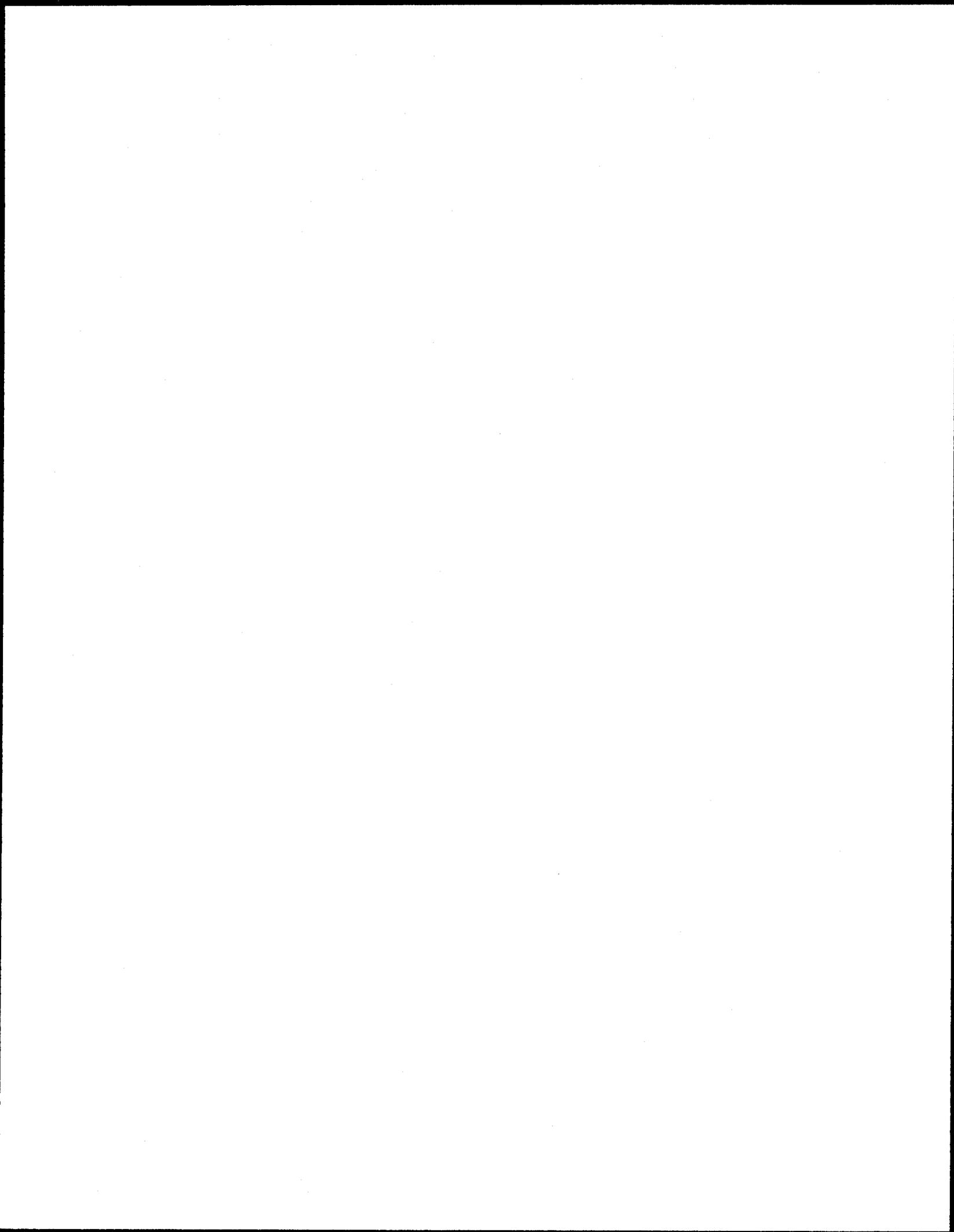
## WORK AUTHORIZATION - DETAIL SHEET

W.A. NUMBER: 1-5164  
 P.E. NUMBER:  
 BUDGET ITEM NO.: B-1  
 SHEET NO.: 2 of 2

RETIREMENT PROPERTY UNITS	PLANT PROPERTY ACCOUNT	UNIT DESCRIPTION	QUANTITY	YEAR INSTALLED AND W.A. NUMBER

PROJECT DESCRIPTION  
 Design and construct a vertical can booster pump station (BPS) with a firm capacity of 2,200 gpm at the Vacuum tank site in Coolidge, Arizona.

	DESCRIPTION	PLANT PROF ACCT	QUANTITY	UNIT COST	TOTAL
	<b>Pull and replace Pancake Tank Booster No. 2</b>				
	Labor to pull and replace booster pump no. 2	325	1	\$ 4,180.00	\$ 4,180
	Provide and install National Pump E12MC (5 stage) bowl assembly	325	1	5,685.00	5,685
	Provide and install stuffing box on existing discharge head	325	1	2,484.00	2,484
	Contracting tax	325	1	859.00	859
	Performance and payment bonds	325	1	264.00	264
	<b>Design and construct a 2,200 gpm vertical can BPS</b>				
	Provide and install 16-inch suction pipe and related fittings	325	0	187,500.00	
	Provide and install 12-inch discharge pipe and related fittings	325	0	95,400.00	
	Provide and install 6-inch Cla-Val Series 581 silent globe check valve	325	0	10,900.00	
	Provide and install 6-inch Endress+Hauser 53W MAG Meter	325	0	4,350.00	
	Design and layout booster pump station and VFD motor controller	325	1	28,500.00	28,500
	Provide and install National Pump E12MC (5 stage) bowl assembly	325	0	0.00	
	Pull existing Booster No. 2 and install the existing National E12MC pump in the No. 3 location of the new booster pump station	325	0	0.00	
	Provide and install pump can, shaft, column, discharge head, 125 HP				
	VSS WP-1 premium inverter duty motor with thermal switch	325	0	37,000.00	
	Provide and install booster pump station concrete foundation	325	0	10,509.00	
	Provide and install 150HP Toshiba HX7 18-pulse VFD motor controller	325	0	18,000.00	
	Provide and install concrete foundation for VFD motor controller	325	0	3,600.00	
	Provide and install all conduits, wires, boxes, relays, terminations, grounding and electrical controls	325	0	27,000.00	
	Paint all above ground booster pump station piping and motors	325	0	5,000.00	
	Provide and install system and SCADA programming	325	0	6,000.00	0
	Booster pump startup, testing and commissioning	325	0	8,910.00	
	Provide and install shade canopy over the MCC and SES	325	0	30,000.00	
	Contracting tax	325	0	17,927.83	
	Performance and payment bonds	325	1	5,000.00	5,000
	Construction contingency	325	0	15,000.00	4,500
	Geotechnical investigation and report	325	1	3,000.00	3,000
	<b>TOTAL CONTRACT WORK</b>				\$ 54,472
	<b>MATERIALS</b>				
	SERVICE CONNECTIONS: DOUBLE-LONG	345			
	SERVICE CONNECTIONS: DOUBLE-SHORT	345			
	METERS	346			
	<b>TOTAL MATERIALS</b>				\$ -
	<b>LABOR</b>				
	Engineering design and review	325	40	\$ 65.00	\$ 2,600
	Project management	325	40	65.00	2,600
	TESTING FEE	325	1	\$ 1,000.00	1,000
	PERMIT FEE	325	1	5,000.00	5,000
	SURVEY FEE	325	1	2,000.00	2,000
	FIELD INSPECTION	325	40	55.00	2,200
	<b>TOTAL LABOR</b>				\$ 15,400
	<b>SUBTOTAL - CONTRACT WORK, MATERIALS, AND LABOR</b>				\$ 69,872
	<b>OVERHEAD</b>				8,400
	<b>TOTAL</b>				\$ 78,272



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

September 30, 2014

Mr. Randy Gates  
MGC Contractors, Inc.  
4110 E. Elwood Street  
Phoenix, AZ 85040

Re: Design-Build a 2,200 GPM Vertical Lineshaft Turbine Booster Pump Station

PROJECT: Coolidge Pancake Tank	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO: 1-5164

Dear Mr. Gates:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on October 3, 2014, MGC Contractors, Inc. acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

Mr. Randy Gates  
MGC Contractors, Inc.

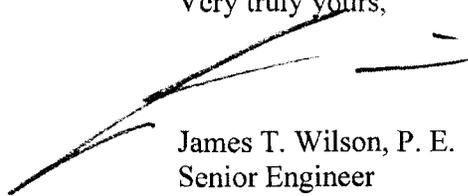
September 30, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



James T. Wilson, P. E.  
Senior Engineer  
jwilson@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande  
220 E. 2nd Street  
Casa Grande, AZ 85122 PH: 520-836-8785

## PROPOSAL/CONTRACT

CONTRACTOR: MGC Contractors, Inc.	SYSTEM: PINAL VALLEY
ADDRESS: 4110 East Elwood Street	WA No(s): 1-5164
CITY ST ZIP: Phoenix, AZ 85040	BID DUE DATE: August 28, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 310 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/constructed 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:

See attached Special Conditions dated: 8-8-2014. The Company will make two progress payments and a final payment.

CONTRACTOR MGC Contractors, Inc. <del>FELIX CONSTRUCTION COMPANY</del>	PROPOSAL/CONTRACT ACCEPTED: ARIZONA WATER COMPANY
By:	By:
Print Name: Randy L. Gates	Print Name: Fredrick K. Schneider, PE
Title: President	Title: Vice President - Engineering
Date: 08/28/2014	Date: 10-3-2014



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande  
 220 E. 2nd Street  
 Casa Grande, AZ 85122 PH: 520-836-8785

## PROPOSAL/CONTRACT

CONTRACTOR: MGC Contractors, Inc.		SYSTEM <b>PINAL VALLEY</b>
AZ CONTRACTOR LICENSE NO: ROC069949	CLASSIFICATION: A Engineering B Comm Bldg	WA No(s): <b>1-5164</b>
ADDRESS: 4110 East Elwood Street		BID DUE DATE <b>August 28, 2014</b>
CITY ST ZIP: Phoenix, AZ 85040		BID BOND REQUIRED <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

DESCRIPTION OF PROJECT: **Design-Build a 2,200 GPM firm capacity vertical lineshaft turbine booster pump station at the Vacuum Tank site in Coolidge, Arizona. Construct in accordance with the attached design plans and Arizona Water Company Specifications.**

	QUANTITY	UNIT PRICE		TOTAL COST		
		LABOR	MATERIALS	LABOR	MATERIALS	
<b>1-2. MATERIALS EXEMPT FROM CONTRACTING TAX (per Paragraph 6)</b>						
Provide and install 16-inch suction pipe and related fittings	Lot	\$19,500	\$168,000	\$19,500	\$168,000	
Provide and install 12-inch discharge pipe and related fittings	Lot	\$15,000	\$80,400	\$15,000	\$80,400	
Provide and install 6-inch Cla-Val Model 60G-11BYKC pump control valve	3	\$2,500	\$8,400	\$7,500	\$25,200	
Provide and install 6-inch Endress+Hauser Promag 53W1F electromagnetic flowmeter	3	\$750	\$3,600	\$2,250	\$10,800	
3. Total Labor to Install Exempt Materials (add the amounts in column 1)				3	\$44,250.00	
4. Total Exempt Materials (add the amounts in column 2)					4	\$284,400
<b>5-6. NON-EXEMPT MATERIALS</b>						
Design and layout booster pump,s piping, VFD motor controller with concrete foundation, conduit, wiring and controls complete	Lot	\$4,500	\$24,000	\$4,500	\$24,000	
Provide and install National Pump E12MC 5 stage, 1770 RPM pump assembly	3					
Provide and install pump can, shaft, column, class 150 flange discharge head with John Crane mechanical seal, 125 HP, VSS WP-1, premium inverter duty motor with thermal switch, and all related fittings	3	\$5,000	\$96,000	\$15,000	\$96,000	
Provide and install booster pump station concrete foundation	1	\$9,300	\$1,200	\$9,300	\$1,200	
Provide and install 150 HP Toshiba HX7 eighteen pulse motor control system	1		\$18,000		\$18,000	
Provide and install concrete foundation for VFD motor controller system	1	\$3,000	\$600	\$3,000	\$600	
Provide and install all conduits, wires, boxes, relays, terminations, grounding and electrical controls	Lot	\$3,000	\$24,000	\$3,000	\$24,000	
Provide and install system and SCADA programming	Lot		\$6,000		\$6,000	
Booster pump startup, testing and commissioning	Lot	\$4,950	\$3,960	\$4,950	\$3,960	
Pull existing Booster No. 2 and install the existing National E12MC pump in the No. 3 location of the new booster pump station (price only)	1	no bid	no bid			
Provide and install alternate, equal Allen Bradley or Eaton motor controller	1		\$25,000			
Provide and install shade canopy over the MCC and SES (price only)	1	\$4000	\$26,000			
7. Total Labor to Install Non-Exempt Materials (add the amounts in column 5)				7	\$39,759.00	
8. Total Non-Exempt Materials (add the amounts in column 6)					8	\$173,760
9. Subtotal A (add lines 3, 7 and 8)					9	\$257,769
10. Contracting Tax Base (multiply the amount on line 9 by 0.85)				10	\$219,103.65	
11. Applicable Contracting Tax Rate				11	0.10700	
12. Contracting Tax (multiply the amount on line 10 by line 11)					12	\$23,444.11
13. Subtotal B (add lines 4, 9 and 12)					13	\$560,096.83
14. 100% Performance and Payment Bonds Cost					14	\$5,000
15. Estimated Total Cost (add lines 13 and 14)					15	\$565,096.83

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

# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • [www.azwater.com](http://www.azwater.com)

August 26, 2014

Mr. Randy Gates  
MGC Contractors, Inc.  
4110 E. Elwood Street  
Phoenix, AZ 85040

Re: Addendum No. 1 to Design-Build a 2,200 GPM firm capacity vertical lineshaft turbine booster pump station at the Vacuum Tank Site in Coolidge, Arizona.

Dear Mr. Gates:

Enclosed with this letter is Addendum No. 1 to the Proposal/Contract for the above referenced project.

For questions regarding this project, please contact James T. Wilson at the Company.

Arizona Water Company  
Attention: James T. Wilson  
3805 N. Black Canyon Hwy.  
Phoenix, Arizona 85015  
Fax: (602) 294-2169  
E-mail: [jwilson@azwater.com](mailto:jwilson@azwater.com)

Contractor shall acknowledge receipt of this Addendum by signing below and submitting a copy of this Addendum with the Proposal/Contract.

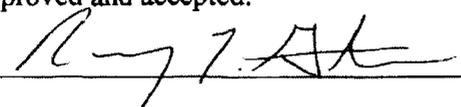
Very truly yours,



Andrew J. Haas, P. E.  
Chief Engineer  
[engineering@azwater.com](mailto:engineering@azwater.com)

#### APPROVAL AND ACCEPTANCE

The terms and conditions set for the above are approved and accepted.

By 

Title Randy L. Gates, President

Date 08/28/2014

afh

---

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

**Arizona Water Company**

**DESIGN-BUILD A 2,200 GPM FIRM CAPACITY VERTICAL LINESHAFT TURBINE  
BOOSTER PUMP STATION AT THE VACUUM TANK SITE IN COOLIDGE, ARIZONA**

**ADDENDUM No. 1**

**August 26, 2014**

**SECTION NO. 1: Questions and Responses**

Question 1

The existing service entrance section (SES) does not appear to be sized to operate three 125 HP booster pumps at the same time. Will the existing SES require an upgrade?

Response: No. The third booster pump is designed as a backup pump and will only operate upon failure of either booster pump one or two. The Contractor shall design an electrical interlock to prevent all three pumps from operating at the same time.

# ARIZONA WATER COMPANY

## VACUUM TANK BOOSTER PUMP STATION – COOLIDGE, AZ SPECIAL CONDITIONS 8-8-2014

### Existing Facility Information

Location: 14732 North Union Road Coolidge, AZ 85128  
Approximately 950' east of Arizona Blvd. and approximately 1300' north of Hwy 287

Site Facilities: See site plan dated 6-20-14 attached as "Exhibit A"

### Bidding

1. MANDATORY PRE-BID MEETING ON August 14, 2014 AT 2:00 PM at the site.
2. RFI's will not be accepted after August 21, 2014.
3. Bids are due by August 28, 2014 AT 2:00 PM at the following address:  
Arizona Water Company  
Attn: James Wilson  
3805 North Black Canyon Highway  
Phoenix, AZ 85015

### Special Conditions

1. Contractor supplied VFD motor controller must match the existing starter panel specifications attached as "Exhibit B". Site electrical record drawings are attached as "Exhibit C".
2. VFD motor controller must conform to the Company's EI&C Design Guidelines and Specifications attached as "Exhibit D".
3. Contractor shall provide detailed design plans signed by a professional engineer:
  - a. Contractor shall plan for, at a minimum, one (1) design review meeting prior to final construction plans.
  - b. Company will provide available CAD drawings for design purposes.
  - c. Contractor shall provide signed and sealed As-Built drawings and O&M manuals at the end of the project (three hard copies and one compact disk).
4. Contractor's electrical subcontractor shall provide 24 hour on-call service for a period of one year following the date of completion and acceptance by the Company.
5. Contractor shall subcontract all programming services to Delta Systems Engineering.
6. Contractor shall provide a complete ADEQ Approval to Construct application package including design plans and report for review and approval by the Company.
7. Existing facility shall be maintained fully operational during construction. Termination of new wiring and switch over shall be completed in less than 2 hours.

### **Canned Vertical Lineshaft Turbine Pumps**

#### Design Conditions:

1. 1,100 GPM @ 293 ft. TDH
2. 500 GPM @ 155 ft. TDH
3.  $NPSH_A = 32$  ft. at the inlet to the existing pump can.
4. Existing Pump Cans: 16-inch  $\varnothing$  x 9-feet deep

#### Equipment to be furnished and installed by the Contractor:

1. Three National E12MC 5-stage vertical lineshaft turbine pumps or alternate with Arizona Water Company Engineering approval.
2. Pump can, column, shaft, discharge head, and John Crane mechanical seals and related appurtenances for complete operation of the booster pumps.
3. Pump assemblies shall be designed and constructed in accordance with all applicable Hydraulic Institute standards
4. The minimum pump can inner diameter is 18-inches
5. The minimum pump can depth is 10-feet
6. All materials removed for disposal shall be removed from the site and disposed of by the Contractor.
7. No invoice will be accepted for payment unless accompanied by a completed Booster Pump Record E-5-9-1 "Exhibit E".

#### Bowl Assembly Construction Materials:

1. Alternate vertical lineshaft turbine pumps may be considered subject to final approval by Arizona Water Company's Engineering department.

### **VFD Starter Panel and Programming**

#### Equipment to be furnished and installed by the Contractor:

1. One new ground mounted Toshiba HX7 Eighteen Pulse 150 HP VFD motor controller.
2. Alternate Allen Bradley or Eaton VFD motor Controllers may be considered subject to final approval by Arizona Water Company's Engineering department.
3. 6-inch concrete foundation. Concrete foundation shall be sized to match existing starter panel foundations.
4. Programming to operate the VFD motor controller. Operation and control of the site will not change. The third pump will operate as a backup pump. The programming shall allow the operator to select the lead, lag and backup pump operation from the Master SCADA computer and onsite OIT.
5. New main feed from existing 600 amp service entrance section.
6. New motor leads to each motor from VFD motor controllers.
7. New VFD control loop and screens on the Master SCADA computer and onsite OIT.
8. Disconnect existing 125 HP motors and remove wires.

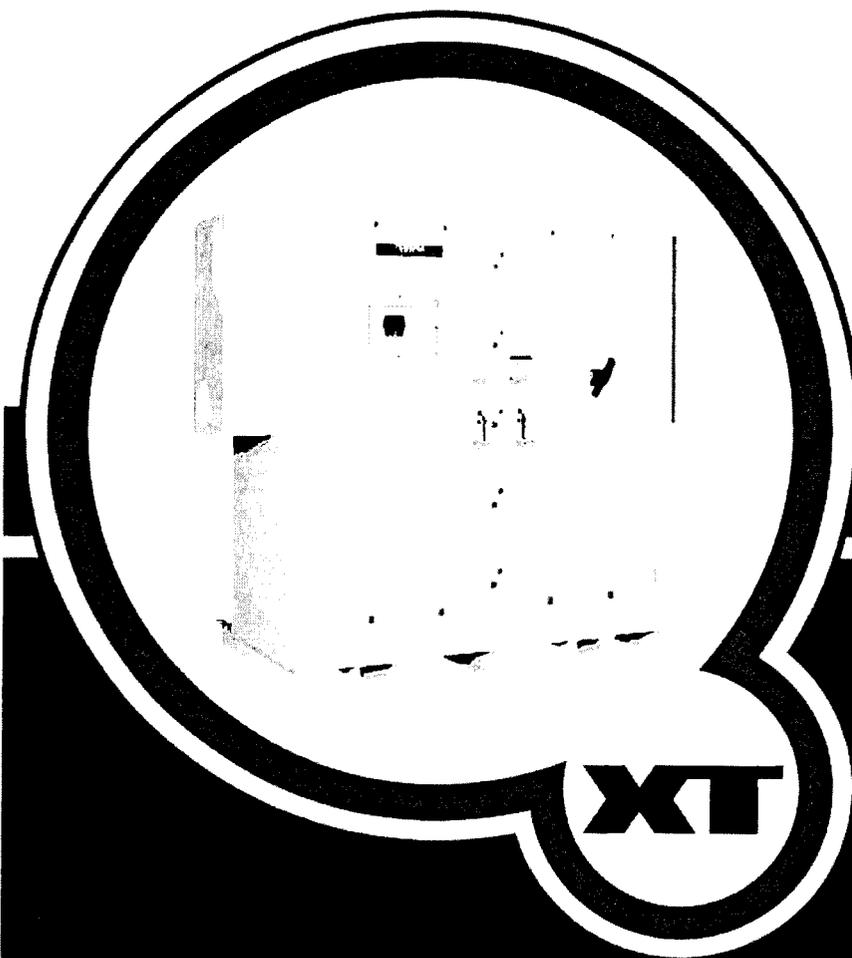
Exhibit A



Exhibit B

**TOSHIBA**

**Adjustable Speed Drives**



**HX7 Plus Pack**

CUST. NAME: ARIZONA WATER COOLIDGE  
 PROJECT NO.: 178876

P.O. NUMBER:  
 DESCRIPTION: PANCAKE TANK BOOSTER STATION  
 150HP VFD PUMP

FINAL

PRELIMINARY

FOR APPROVAL

Note: Final Engineering and Manufacturing will proceed from receipt of final approval

- NOT APPROVED AS NOTED - RESUBMIT DRAWINGS FOR APPROVAL. DO NOT PROCEED WITH FINAL ENGINEERING OR MANUFACTURING.
- APPROVED AS NOTED - PROCEED WITH FINAL ENGINEERING AND MANUFACTURING.
- APPROVED AS SUBMITTED - PROCEED WITH FINAL ENGINEERING AND MANUFACTURING.

APPROVAL BY:

Initial

Date

NO	DRAWING NO	REV	DRAWING DESCRIPTION
00	177876-VFD-00	0	DRAWING LIST
01	---	---	---
02	177876-VFD-02	0	DRAWING LEGEND
03	---	---	---
04	177876-VFD-04	0	SAMPLE SCHEMATIC
05	177876-VFD-05	0	EQUIPMENT RATINGS
06	---	---	---
07	---	---	---
08	177876-VFD-08	0	THREE-LINE DIAGRAM
09	---	---	---
10	---	---	---
11	---	---	---
12	---	---	---
13	---	---	---
14	---	---	---
15	---	---	---

NO	DRAWING NO	REV	DRAWING DESCRIPTION
16	177876-VFD-16	0	CONTROL CIRCUIT - 120VAC VFD CONTROL
17	---	---	---
18	177876-VFD-18	0	LOGIC INTERFACE CIRCUIT
19	---	---	---
20	---	---	---
21	177876-VFD-21	0	CONTROL CIRCUIT - TEMPERATURE CONTROL
22	---	---	---
23	---	---	---
24	---	---	---
25	---	---	---
26	---	---	---
27	---	---	---
28	---	---	---
29	---	---	---
30	177876-VFD-30	0	CUSTOMER CONNECTIONS DIMENSIONS
31	177876-VFD-31	0	ENCLOSURE OUTLINE - OUTDOOR

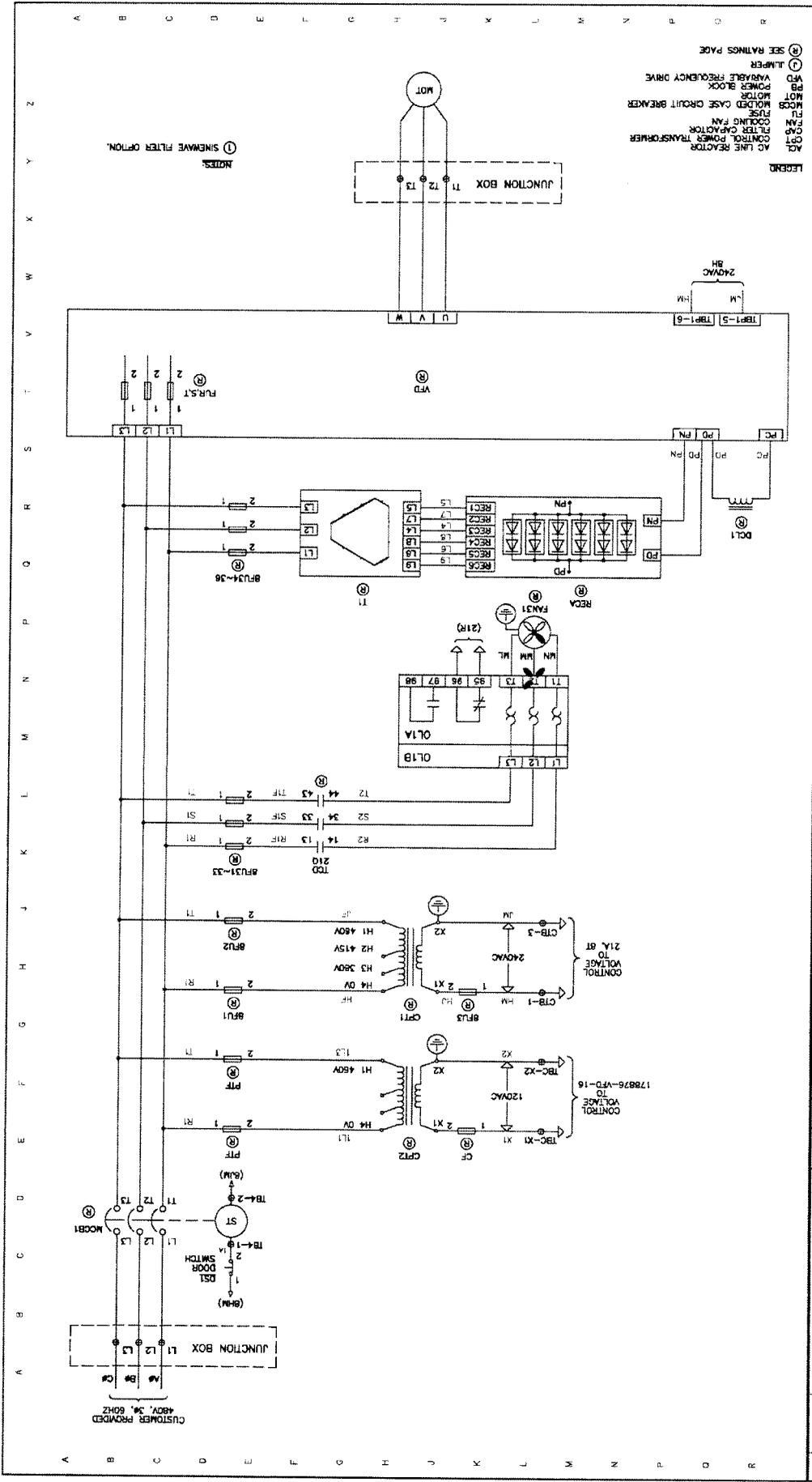
REV	DATE	DESCRIPTION	BY	CHK	APP
0	09/06/13	FIRST ISSUED	HS	DE	

**TOSHIBA**  
 TOSHIBA INTERNATIONAL CORPORATION  
 MADE IN HOUSTON, TEXAS U.S.A.  
 THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL REMAIN UNLESS UNDER WRITTEN AUTHORIZATION IS OBTAINED.

TITLE: DRAWING LIST  
 150HP HX7+ 480VAC 18P  
 CUSTOMER NAME: ARIZONA WATER COOLIDGE  
 PROJECT NO.: 178876

REVISION: 0  
 P.O. NO.:  
 DRAWING NO.: 178876-VFD-CO





REV	DATE	DESCRIPTION	BY	CHK	APPR
0	09/09/13	FIRST ISSUE	HS	CE	
1					
2					
3					
4					

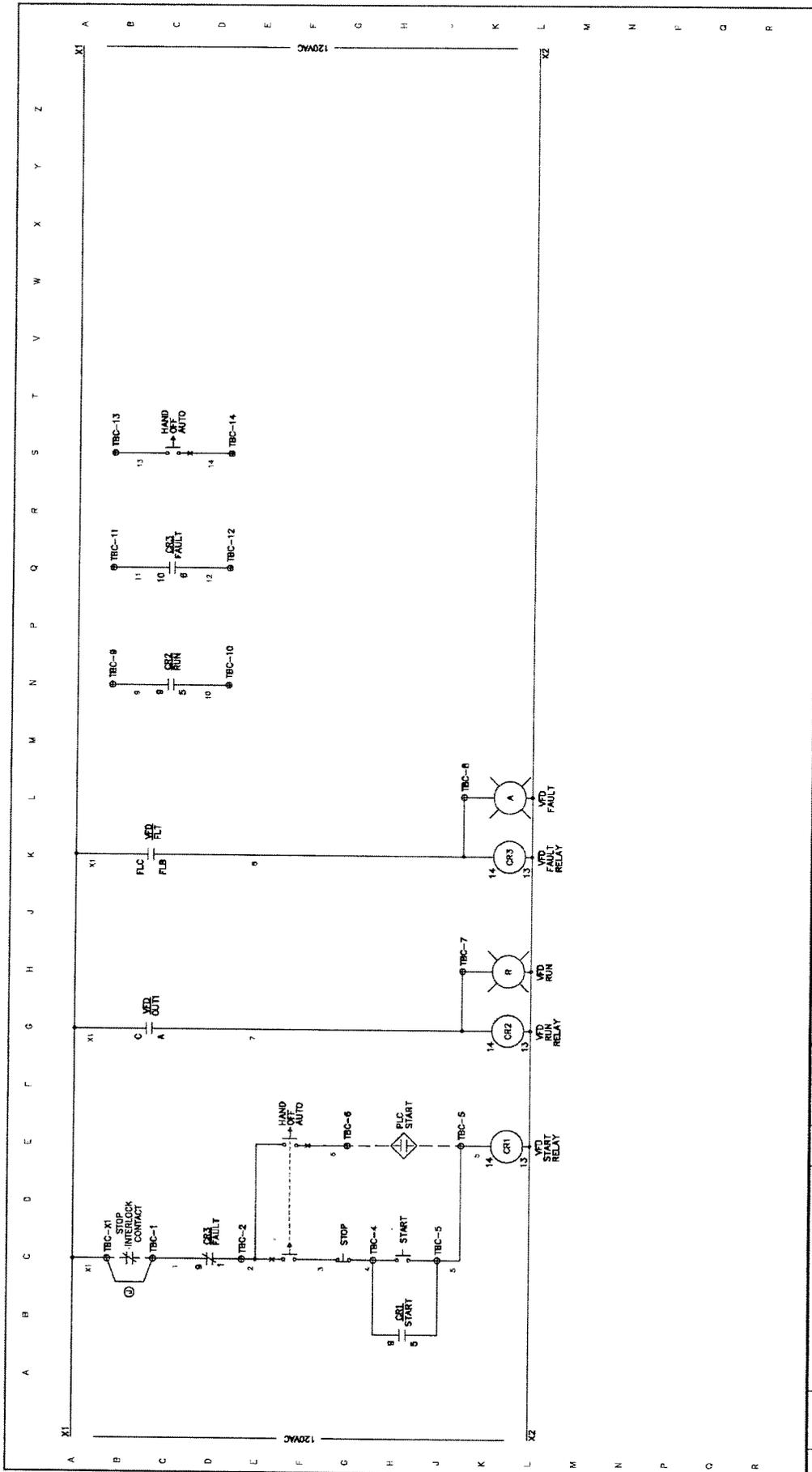
**TOSHIBA**  
TOSHIBA INTERNATIONAL CORPORATION  
MADE IN HOUSTON, TEXAS, U.S.A.  
THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF  
TOSHIBA INTERNATIONAL CORPORATION AND SHALL  
REMAIN THE PROPERTY OF TOSHIBA INTERNATIONAL  
CORPORATION UNLESS SPECIFIC WRITTEN AUTHORIZATION IS OBTAINED.

TITLE: THREE LINE DIAGRAM  
150Hp HX7+ 480VAC 18P  
CUSTOMER NAME: ARIZONA WATER COOLIDGE

PROJECT NO.: 178876  
DRAWING NO.: 1788/6-VFD-08  
P.O.NO.:  
REVISION: 0

- LEGEND
- AC LINE REACTOR
  - CONTROL POWER TRANSFORMER
  - FILTER CAPACITOR
  - COOLING FAN
  - FUSE
  - MOTOR
  - MOTOR CASE CIRCUIT BREAKER
  - MOTOR LOCK
  - POWER BLOCK
  - LAMP
  - SEE RATINGS PAGE

NOTES:  
① SINWAVE FILTER OPTION.



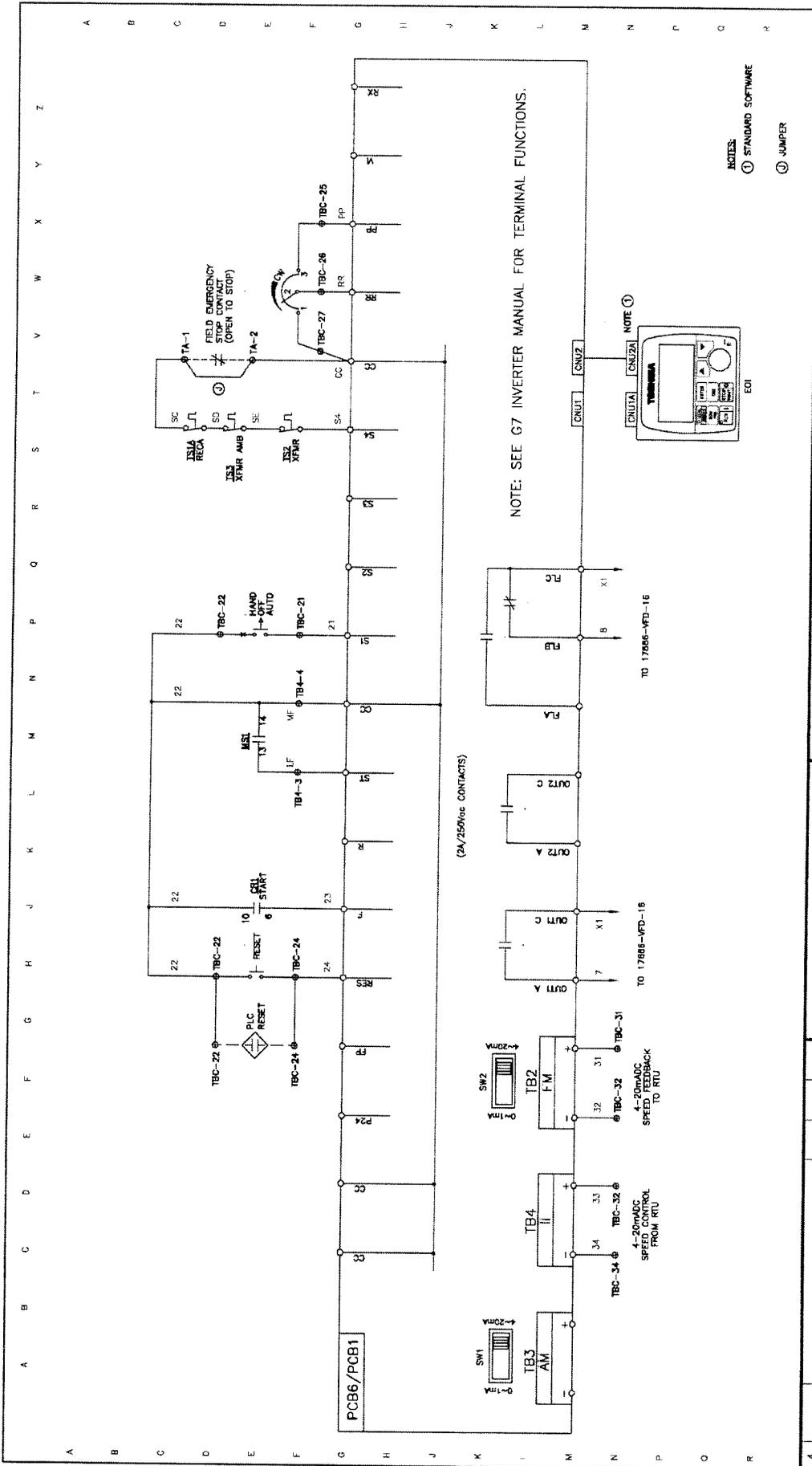
REV	DATE	DESCRIPTION	BY	CHK	APPR
0	08/09/13	FIRST ISSUE	HS	CHK	APPR
1					
2					
3					
4					

TITLE:	CONTROL CIRCUIT - 120VAC VFD CONTROL
P.O.NO.:	0
DRAWING NO.:	178876-VFD-16
CUSTOMER NAME:	ARIZONA WATER COOLIDGE
PROJECT NO.:	178876

**TOSHIBA**  
TOSHIBA INTERNATIONAL CORPORATION  
MADE IN HOUSTON, TEXAS U.S.A.

THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT WRITTEN AUTHORIZATION FROM TOSHIBA INTERNATIONAL CORPORATION.



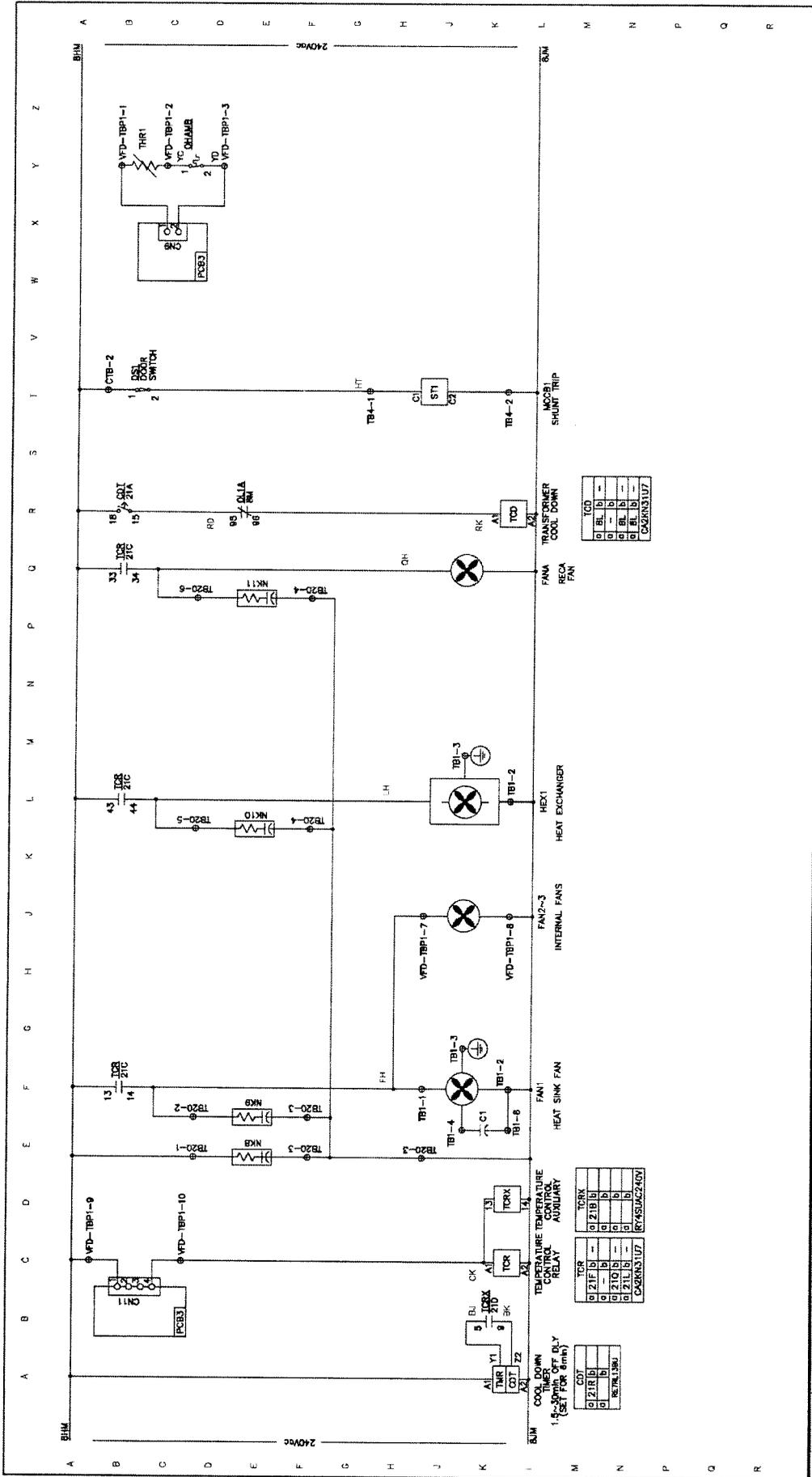
REV	DATE	DESCRIPTION	BY	CHK	APP
0	09/09/13	FIRST ISSUE	HS	CE	
1					
2					
3					
4					

TITLE:	LOGIC INTERFACE CIRCUIT
CUSTOMER NAME:	ARIZONA WATER COOLIDGE
PROJECT NO.:	178876
P.O. NO.:	0
SCALE:	
DRAWING NO.:	178876-VFD-18

**TOSHIBA**  
 TOSHIBA INTERNATIONAL CORPORATION  
 MADE IN HOUSTON, TEXAS, U.S.A.

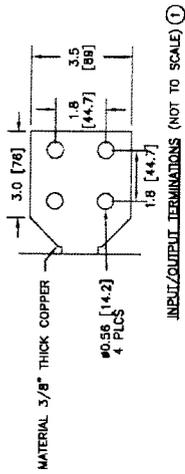
THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL REMAIN THE PROPERTY OF THE COMPANY TO WHICH ISSUED UNLESS EXPRESS WRITTEN AUTHORIZATION IS OBTAINED.



REV.	DATE	FIRST ISSUE	DESCRIPTION	BY	CHK	APPR
0	08/09/13			XN	HP	AM
1						
2						
3						
4						

TOR	TORX
0 21F b	0 21B b
0 21G b	0 21C b
0 21H b	0 21D b
0 21I b	0 21E b
0 21J b	0 21F b
0 21K b	0 21G b
0 21L b	0 21H b
0 21M b	0 21I b
0 21N b	0 21J b
0 21O b	0 21K b
0 21P b	0 21L b
0 21Q b	0 21M b
0 21R b	0 21N b
0 21S b	0 21O b
0 21T b	0 21P b
0 21U b	0 21Q b
0 21V b	0 21R b
0 21W b	0 21S b
0 21X b	0 21T b
0 21Y b	0 21U b
0 21Z b	0 21V b
0 21AA b	0 21W b
0 21AB b	0 21X b
0 21AC b	0 21Y b
0 21AD b	0 21Z b
0 21AE b	0 21AA b
0 21AF b	0 21AB b
0 21AG b	0 21AC b
0 21AH b	0 21AD b
0 21AI b	0 21AE b
0 21AJ b	0 21AF b
0 21AK b	0 21AG b
0 21AL b	0 21AH b
0 21AM b	0 21AI b
0 21AN b	0 21AJ b
0 21AO b	0 21AK b
0 21AP b	0 21AL b
0 21AQ b	0 21AM b
0 21AR b	0 21AN b
0 21AS b	0 21AO b
0 21AT b	0 21AP b
0 21AU b	0 21AQ b
0 21AV b	0 21AR b
0 21AW b	0 21AS b
0 21AX b	0 21AT b
0 21AY b	0 21AU b
0 21AZ b	0 21AV b
0 21BA b	0 21AW b
0 21BB b	0 21AX b
0 21BC b	0 21AY b
0 21BD b	0 21AZ b
0 21BE b	0 21BA b
0 21BF b	0 21BB b
0 21BG b	0 21BC b
0 21BH b	0 21BD b
0 21BI b	0 21BE b
0 21BJ b	0 21BF b
0 21BK b	0 21BG b
0 21BL b	0 21BH b
0 21BM b	0 21BI b
0 21BN b	0 21BJ b
0 21BO b	0 21BK b
0 21BP b	0 21BL b
0 21BQ b	0 21BM b
0 21BR b	0 21BN b
0 21BS b	0 21BO b
0 21BT b	0 21BP b
0 21BU b	0 21BQ b
0 21BV b	0 21BR b
0 21BW b	0 21BS b
0 21BX b	0 21BT b
0 21BY b	0 21BU b
0 21BZ b	0 21BV b
0 21CA b	0 21BW b
0 21CB b	0 21BX b
0 21CC b	0 21BY b
0 21CD b	0 21BZ b
0 21CE b	0 21CA b
0 21CF b	0 21CB b
0 21CG b	0 21CC b
0 21CH b	0 21CD b
0 21CI b	0 21CE b
0 21CJ b	0 21CF b
0 21CK b	0 21CG b
0 21CL b	0 21CH b
0 21CM b	0 21CI b
0 21CN b	0 21CJ b
0 21CO b	0 21CK b
0 21CP b	0 21CL b
0 21CQ b	0 21CM b
0 21CR b	0 21CN b
0 21CS b	0 21CO b
0 21CT b	0 21CP b
0 21CU b	0 21CQ b
0 21CV b	0 21CR b
0 21CW b	0 21CS b
0 21CX b	0 21CT b
0 21CY b	0 21CU b
0 21CZ b	0 21CV b
0 21DA b	0 21CW b
0 21DB b	0 21CX b
0 21DC b	0 21CY b
0 21DD b	0 21CZ b
0 21DE b	0 21DA b
0 21DF b	0 21DB b
0 21DG b	0 21DC b
0 21DH b	0 21DD b
0 21DI b	0 21DE b
0 21DJ b	0 21DF b
0 21DK b	0 21DG b
0 21DL b	0 21DH b
0 21DM b	0 21DI b
0 21DN b	0 21DJ b
0 21DO b	0 21DK b
0 21DP b	0 21DL b
0 21DQ b	0 21DM b
0 21DR b	0 21DN b
0 21DS b	0 21DO b
0 21DT b	0 21DP b
0 21DU b	0 21DQ b
0 21DV b	0 21DR b
0 21DW b	0 21DS b
0 21DX b	0 21DT b
0 21DY b	0 21DU b
0 21DZ b	0 21DV b
0 21EA b	0 21DW b
0 21EB b	0 21DX b
0 21EC b	0 21DY b
0 21ED b	0 21DZ b
0 21EE b	0 21EA b
0 21EF b	0 21EB b
0 21EG b	0 21EC b
0 21EH b	0 21ED b
0 21EI b	0 21EE b
0 21EJ b	0 21EF b
0 21EK b	0 21EG b
0 21EL b	0 21EH b
0 21EM b	0 21EI b
0 21EN b	0 21EJ b
0 21EO b	0 21EK b
0 21EP b	0 21EL b
0 21EQ b	0 21EM b
0 21ER b	0 21EN b
0 21ES b	0 21EO b
0 21ET b	0 21EP b
0 21EU b	0 21EQ b
0 21EV b	0 21ER b
0 21EW b	0 21ES b
0 21EX b	0 21ET b
0 21EY b	0 21EU b
0 21EZ b	0 21EV b
0 21FA b	0 21EW b
0 21FB b	0 21EX b
0 21FC b	0 21EY b
0 21FD b	0 21EZ b
0 21FE b	0 21FA b
0 21FF b	0 21FB b
0 21FG b	0 21FC b
0 21FH b	0 21FD b
0 21FI b	0 21FE b
0 21FJ b	0 21FF b
0 21FK b	0 21FG b
0 21FL b	0 21FH b
0 21FM b	0 21FI b
0 21FN b	0 21FJ b
0 21FO b	0 21FK b
0 21FP b	0 21FL b
0 21FQ b	0 21FM b
0 21FR b	0 21FN b
0 21FS b	0 21FO b
0 21FT b	0 21FP b
0 21FU b	0 21FQ b
0 21FV b	0 21FR b
0 21FW b	0 21FS b
0 21FX b	0 21FT b
0 21FY b	0 21FU b
0 21FZ b	0 21FV b
0 21GA b	0 21FW b
0 21GB b	0 21FX b
0 21GC b	0 21FY b
0 21GD b	0 21FZ b
0 21GE b	0 21GA b
0 21GF b	0 21GB b
0 21GG b	0 21GC b
0 21GH b	0 21GD b
0 21GI b	0 21GE b
0 21GJ b	0 21GF b
0 21GK b	0 21GG b
0 21GL b	0 21GH b
0 21GM b	0 21GI b
0 21GN b	0 21GJ b
0 21GO b	0 21GK b
0 21GP b	0 21GL b
0 21GQ b	0 21GM b
0 21GR b	0 21GN b
0 21GS b	0 21GO b
0 21GT b	0 21GP b
0 21GU b	0 21GQ b
0 21GV b	0 21GR b
0 21GW b	0 21GS b
0 21GX b	0 21GT b
0 21GY b	0 21GU b
0 21GZ b	0 21GV b
0 21HA b	0 21GX b
0 21HB b	0 21GY b
0 21HC b	0 21GZ b
0 21HD b	0 21HA b
0 21HE b	0 21HB b
0 21HF b	0 21HC b
0 21HG b	0 21HD b
0 21HH b	0 21HE b
0 21HI b	0 21HF b
0 21HJ b	0 21HG b
0 21HK b	0 21HH b
0 21HL b	0 21HI b
0 21HM b	0 21HJ b
0 21HN b	0 21HK b
0 21HO b	0 21HL b
0 21HP b	0 21HM b
0 21HQ b	0 21HN b
0 21HR b	0 21HO b
0 21HS b	0 21HP b
0 21HT b	0 21HQ b
0 21HU b	0 21HR b
0 21HV b	0 21HS b
0 21HW b	0 21HT b
0 21HX b	0 21HU b
0 21HY b	0 21HV b
0 21HZ b	0 21HW b
0 21IA b	0 21HX b
0 21IB b	0 21HY b
0 21IC b	0 21HZ b
0 21ID b	0 21IA b
0 21IE b	0 21IB b
0 21IF b	0 21IC b
0 21IG b	0 21ID b
0 21IH b	0 21IE b
0 21IJ b	0 21IF b
0 21IK b	0 21IG b
0 21IL b	0 21IH b
0 21IM b	0 21IJ b
0 21IN b	0 21IK b
0 21IO b	0 21IL b
0 21IP b	0 21IM b
0 21IQ b	0 21IN b
0 21IR b	0 21IO b
0 21IS b	0 21IP b
0 21IT b	0 21IQ b
0 21IU b	0 21IR b
0 21IV b	0 21IS b
0 21IW b	0 21IT b
0 21IX b	0 21IU b
0 21IY b	0 21IV b
0 21IZ b	0 21IW b
0 21JA b	0 21IX b
0 21JB b	0 21IY b
0 21JC b	0 21IZ b
0 21JD b	0 21JA b
0 21JE b	0 21JB b
0 21JF b	0 21JC b
0 21JG b	0 21JD b
0 21JH b	0 21JE b
0 21JI b	0 21JF b
0 21JJ b	0 21JG b
0 21JK b	0 21JH b
0 21JL b	0 21JI b
0 21JM b	0 21JJ b
0 21JN b	0 21JK b
0 21JO b	0 21JL b
0 21JP b	0 21JM b
0 21JQ b	0 21JN b
0 21JR b	0 21JO b
0 21JS b	0 21JP b
0 21JT b	0 21JQ b
0 21JU b	0 21JR b
0 21JV b	0 21JS b
0 21JW b	0 21JT b
0 21JX b	0 21JU b
0 21JY b	0 21JV b
0 21JZ b	0 21JW b
0 21KA b	0 21JX b
0 21KB b	0 21JY b
0 21KC b	0 21JZ b
0 21KD b	0 21KA b
0 21KE b	0 21KB b
0 21KF b	0 21KC b
0 21KG b	0 21KD b
0 21KH b	0 21KE b
0 21KI b	0 21KF b
0 21KJ b	0 21KG b
0 21KK b	0 21KH b
0 21KL b	0 21KI b
0 21KM b	0 21KJ b
0 21KN b	0 21KK b
0 21KO b	0 21KL b
0 21KP b	0 21KM b
0 21KQ b	0 21KN b
0 21KR b	0 21KO b
0 21KS b	0 21KP b
0 21KT b	0 21KQ b
0 21KU b	0 21KR b
0 21KV b	0 21KS b
0 21KW b	0 21KT b
0 21KX b	0 21KU b
0 21KY b	0 21KV b
0 21KZ b	0 21KW b
0 21LA b	0 21KX b
0 21LB b	0 21KY b
0 21LC b	0 21KZ b
0 21LD b	0 21LA b
0 21LE b	0 21LB b
0 21LF b	0 21LC b
0 21LG b	0 21LD b
0 21LH b	0 21LE b
0 21LI b	0 21LF b
0 21LJ b	0 21LG b
0 21LK b	0 21LH b
0 21LL b	0 21LI b
0 21LM b	0 21LJ b
0 21LN b	0 21LK b
0 21LO b	0 21LL b
0 21LP b	0 21LM b
0 21LQ b	0 21LO b
0 21LR b	0 21LP b
0 21LS b	0 21LQ b
0 21LT b	0 21LR b
0 21LU b	0 21LS b
0 21LV b	0 21LT b
0 21LW b	0 21LU b
0 21LX b	0 21LV b
0 21LY b	0 21LW b
0 21LZ b	0 21LX b
0 21MA b	0 21LY b
0 21MB b	0 21LZ b
0 21MC b	0 21MA b
0 21MD b	0 21MB b
0 21ME b	0 21MC b
0 21MF b	0 21MD b
0 21MG b	0 21ME b
0 21MH b	0 21MF b
0 21MI b	0 21MG b
0 21MJ b	0 21MH b
0 21MK b	0 21MI b
0 21ML b	0 21MJ b
0 21MN b	0 21MK b
0 21MO b	0 21ML b
0 21MP b	0 21MN b
0 21MQ b	0 21MO b
0 21MR b	0 21MP b
0 21MS b	0 21MQ b
0 21MT b	0 21MR b
0 21MU b	0 21MS b
0 21MV b	0 21MT b
0 21MW b	0 21MU b
0 21MX b	0 21MV b
0 21MY b	0 21MW b
0 21MZ b	0 21MX b
0 21NA b	0 21MY b
0 21NB b	0 21MZ b
0 21NC b	0 21NA b
0 21ND b	0 21NB b
0 21NE b	0 21NC b
0 21NF b	0 21ND b
0 21NG b	0 21NE b
0 21NH b	0 21NF b
0 21NI b	0 21NG b
0 21NJ b	0 21NH b
0 21NK b	0 21NI b
0 21NL b	0 21NJ b
0 21NM b	0 21NK b
0 21NO b	0 21NL b



**NOTES**

- FOR NEC (INTERNATIONAL ELECTROTECHNICAL COMMISSION) VERSIONS, SEE DRAWING 180BKJ07 FOR JUNCTION BOX DETAILS.
- DIMENSIONS IN INCHES [mm].
- DIMENSIONS FOR REFERENCE ONLY.
- INPUT/OUTPUT TERMINATION BENDING SPACE IN ACCORDANCE WITH NEC TABLE 312-6(b).
- LUGS LISTED DO NOT NECESSARILY INDICATED PROPER CABLE SIZING. INPUT, OUTPUT, AND GROUND CABLES MUST BE SIZED ACCORDING TO NEC OR APPLICABLE LOCAL STANDARDS.

① INPUT/OUTPUT TERMINATIONS 66-163XA (LUG TO BE PROVIDED BY CUSTOMER)

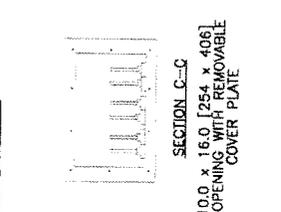
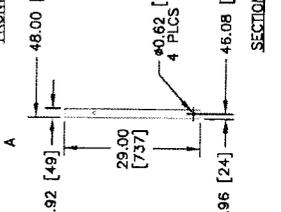
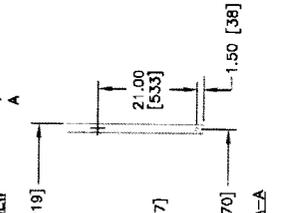
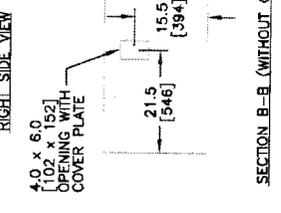
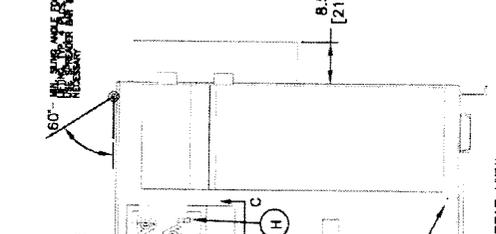
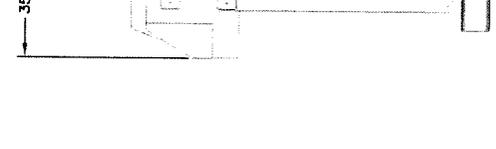
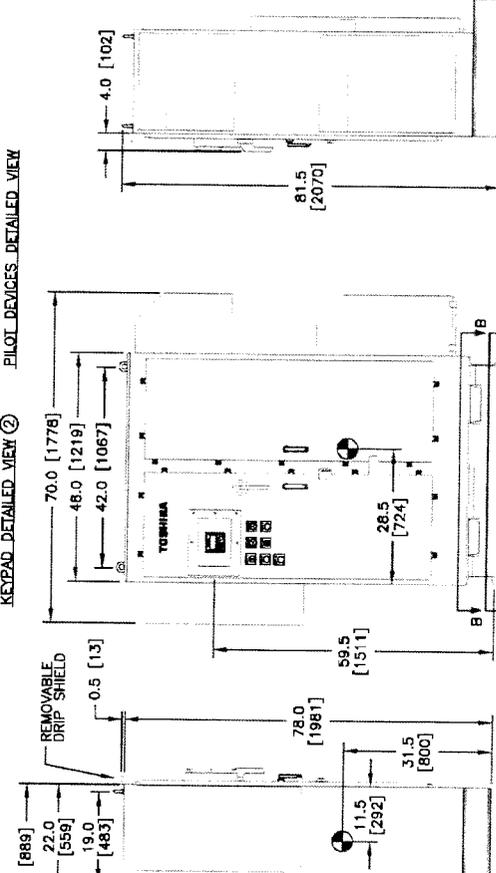
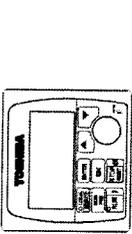
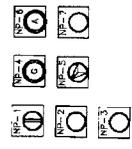
4										REVISION:	0	SCALE:
3										DRAWING NUMBER:	178876-VFD-30	
2										PROJECT NUMBER:	178876	
1										CUSTOMER:	ARIZONA WATER COOLIDGE	
0	12/16/11	FIRST ISSUE										
REV	DATE	DESCRIPTION	KN	HY	CH	APR						

**TOSHIBA**  
 TOSHIBA INTERNATIONAL CORPORATION  
 MADE IN HOUSTON, TEXAS, U.S.A.  
 THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL BE USED FOR THE ORIGINAL PURPOSE ONLY. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.

TITLE:  
 CUSTOMER CONNECTIONS DIMENSIONS  
 150Hp HX7+ 480VAC 18P  
 CUSTOMER:  
 ARIZONA WATER COOLIDGE

**LEGEND**

- H - GROUND LUG (1) 66-163WA 1 x (4MM-3/0) [21.2mm<sup>2</sup>-85mm<sup>2</sup>]
- I - INPUT TERMINATIONS (1) 66-163WA (LUG TO BE PROVIDED BY CUSTOMER, SEE SHEET 30 FOR DETAILS)
- K - OUTPUT TERMINATIONS (1) 66-163WA (LUG TO BE PROVIDED BY CUSTOMER, SEE SHEET 30 FOR DETAILS)
- L - GROUNDING STUD (3/8-16 x 3/4)



**NOTES**

- DIMENSIONS ARE IN INCHES [mm]
- DIMENSIONS FOR REFERENCE ONLY
- WEIGHT: APPROX. 2550lbs [1157kg]
- COLOR: WHITE (NONE IF STAINLESS STEEL)
- INPUT/OUTPUT TERMINATION BENDING SPACE IN ACCORDANCE WITH NEC TABLE 312-6(b).
- LUGS LISTED DO NOT NECESSARILY INDICATE PROPER CABLE SIZING, INPUT, OUTPUT, AND GROUND CABLES MUST BE SIZED ACCORDING TO NEC OR APPLICABLE LOCAL STANDARDS.
- (1) FOR IEC (INTERNATIONAL ELECTROTECHNICAL COMMISSION) VERSIONS, SEE DRAWING 180BKU07 FOR JUNCTION BOX DETAILS.
- (2) STANDARD SOFTWARE

● CENTER OF GRAVITY. 2INCHES [51].

REVISION:	0	SCALE:	1.0=24.0
P.O.NO.:		DRAWING NO.:	178876-VFD-31

TITLE: ENCLOSURE OUTLINE - OUTDOOR  
150Hp HX7+ 480VAC 18P  
CUSTOMER NAME: ARIZONA WATER COOLIDGE  
PROJECT NO.: 178876

**TOSHIBA**  
TOSHIBA INTERNATIONAL CORPORATION  
MADE IN HOUSTON, TEXAS U.S.A.

THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM TOSHIBA INTERNATIONAL CORPORATION.

REV	DATE	DESCRIPTION	BY	CHK	APPR
4					
3					
2					
1					
0	08/09/13	FIRST ISSUE	AN	HP	AM



MOTORS | CONTROLS | SERVICES

1881 E. UNIVERSITY DRIVE  
PHOENIX, AZ 85034

602-437-3015

WWW.KELLERELECTRICAL.COM

PROJECT # 178876

RECORD



1881 E. UNIVERSITY DR.  
PHOENIX, AZ 85034

NO.	DATE	DESCRIPTION	BY	CHKD.	STATUS	REV.
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Exhibit C



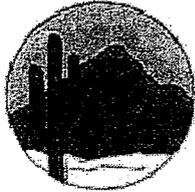








Exhibit D



**ARIZONA WATER COMPANY**

**EI&C DESIGN GUIDELINES  
TECHNICAL SPECIFICATIONS  
NOVEMBER 2009**

**Corporate Office**  
3805 North Black Canyon Hwy • Phoenix, AZ 85015-5351  
P.O. Box 29006 • Phoenix, AZ 85038-9006  
602.240.6860 (Phone)  
602.240.6878 or 602.240.6874 (Fax)

Exhibit E





**ARIZONA WATER COMPANY**

**BOOSTER PUMP RECORD**

[Large empty rectangular box for notes or drawings]

System: Pinal Valley	Map Reference (e.g. Site Name): Vacuum Booster Pump Station	Booster No.
-------------------------	--	-------------

THIS SECTION TO BE COMPLETED BY AWC

PUMP DESIGN DATA	
Design:	G.P.M. @ T.D.H.(feet)
Suction Pressure (PSI): (pump off)	Suction Pressure (PSI): (pump on)
Discharge Pressure (PSI): (pump off)	Discharge Pressure (PSI): (pump on)
Pumping Into:	Controlled By:
Designed By:	Date Designed:
Remarks:	

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

PUMP DATA	
Configuration:	<input type="checkbox"/> Lineshaft Turbine <input type="checkbox"/> Submersible Turbine
Manufacturer:	Model No.:



# ARIZONA WATER COMPANY

## BOOSTER PUMP RECORD

Serial No.:		Stages:	Bowl O.D. (inch):
Impeller O.D. (inch):		Thrust K Factor:	
Shaft Thread O.D. (inch):	Threads Per Inch:	Thread Direction:	
Oil Tube Thread I.D. (inch):	Threads Per Inch:	Thread Direction:	
Column Thread I.D. (inch):	Thread Type:	Threads Per Inch:	
Suction Thread I.D. (inch):	Thread Type:	Threads Per Inch:	
Supplier:		Date Installed:	
Remarks:			

System:	Map Reference (e.g. Site Name):	Booster No.
---------	---------------------------------	-------------

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

COLUMN PIPE DATA		
Column Tread O.D. (inch):	Length (feet):	Thread Type:
Threads Per Inch:	Thread Direction:	
Supplier:		Date Installed:
Remarks:		

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

OIL TUBE DATA		
Oil Tube Thread I.D. (inch):	Threads Per Inch:	Thread Direction:
Supplier:		Date Installed:
Remarks:		



# ARIZONA WATER COMPANY

## BOOSTER PUMP RECORD


THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

SHAFT DATA		
Shaft Thread O.D. (inch):	Threads Per Inch:	Thread Direction:
Supplier:		Date Installed:
Remarks:		
System: Pinal Valley	Map Reference (e.g. Site Name):	Booster No. Vacuum Booster No.

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

AIR LINE DATA		
Air Line O.D. (inch):	Length (feet):	Material:
Supplier:		Date Installed:
Remarks:		

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

DISCHARGE HEAD DATA			
Manufacturer:		Model No.:	
Serial No.:	Suction Size (inch):	Discharge Size (inch):	
Motor Base Dia. (inch):	Surface Plate Dia. (inch) Submersible Only:		



**ARIZONA WATER COMPANY**

**BOOSTER PUMP RECORD**

Supplier:	Date Installed
Remarks:	



# ARIZONA WATER COMPANY

## BOOSTER PUMP RECORD

System: <b>Pinal Valley</b>	Map Reference (e.g. Site Name): <b>Vacuum Booster Pump Station</b>	Booster No.
--------------------------------	---	-------------

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

POWER SUPPLY DATA				
XFMR Type (e.g. Delta, Open Delta, Delta-Wye):		XFMR Size (KVA):		Underground or Overhead Service:
Service Size (Amps):	Disconnect Size (Amps):	Volts:	Phase:	Wires:
Power Provider:			Date Installed:	
Remarks:				

THIS SECTION TO BE COMPLETED BY AWC OR CONTRACTOR

CONTROL / STARTER PANEL DATA			
Manufacturer:		Catalog No.:	
Motor Voltage:	Max. H.P.:	Nema Size:	Nema Enclosure:
Supplier:		Date Installed:	
<input type="checkbox"/> Soft Start With Electronic Overloads	<input type="checkbox"/> Reduced Voltage Contractor	Reduced Voltage XFMR Type:	<input type="checkbox"/> Reactance <input type="checkbox"/> Auto Transformer
Reduced Volt. XFMR H.P.:	<input type="checkbox"/> Voltage Phase Imbalance Protection	<input type="checkbox"/> Current Phase Imbalance Protection	
Voltage Phase Imbalance Protection Manuf. & Mod.:		Current Phase Imbalance Protection Manuf. & Mod.:	
Wire Size to Motor:		<input type="checkbox"/> Parallel Conduits	
Flush Valve Timer (Minutes Max.):		Backspin Timer (Minutes Max.):	
Shut Down Timer (Minutes Max.):		Controlled By:	
Remarks:			



# ARIZONA WATER COMPANY

## BOOSTER PUMP RECORD

System: Pinal Valley	Map Reference (e.g. Site Name): Vacuum Booster Pump Station	Booster No.
-------------------------	--	-------------

PHOTOGRAPHS ARE TO BE TAKEN BY AWC

### SERVICE ENTRANCE SECTION PHOTOGRAPHS

PHOTOGRAPHS ARE TO BE TAKEN BY AWC

### CONTROLS / STARTER PANEL PHOTOGRAPHS







**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;  
2012 GENERAL CONDITIONS OF CONTRACT**

*APK  
8-13-14*

A copy of this entire Spec Book was sent out with *M&C Contractors* invitation to bid package for

*1-5164 Vacuum Tank Booster Pump Station on 8/13/14*  
*APK*

# CNA SURETY

## Bid Bond

Bond No. N/A

**CONTRACTOR:**

(Name, legal status and address)

MGC Contractors, Inc.  
4110 E Elwood St  
Phoenix, AZ 85040

**SURETY: Western Surety Company: South Dakota Corporation**

(Name, legal status and principal place of business)

333 S. Wabash Avenue  
41st Floor  
Chicago, IL 60604

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

**OWNER:**

(Name, legal status and address)

Arizona Water Company  
3805 N. Black Canyon Highway  
Phoenix, AZ 85015-5351

**BOND AMOUNT:** Ten Percent (10%) of the Amount Bid

**PROJECT:**

(Name, location or address, and Project number, if any)

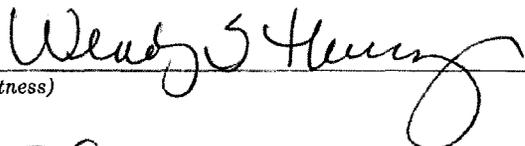
Booster Pump Station at Vacuum Tank Site

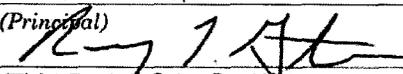
The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

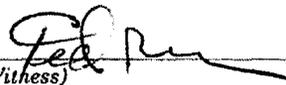
If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

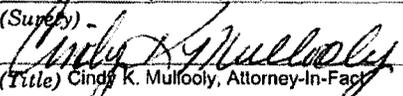
When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 28th day of August, 2014.

  
(Witness)

MGC Contractors, Inc.  
(Principal)  (Seal)  
(Title) Randy L. Gates, President

  
(Witness)

Western Surety Company  
(Surety)  (Seal)  
(Title) Cindy K. Mullooly, Attorney-In-Fact

# Western Surety Company

## POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

**Ted H Rarrick, Cindy K Mullooly, Individually**

of Tempe, AZ, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

### - In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 20th day of March, 2014.



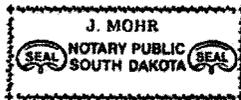
WESTERN SURETY COMPANY

Paul T. Bruflat  
Paul T. Bruflat, Vice President

State of South Dakota }  
County of Minnehaha } ss

On this 20th day of March, 2014, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires  
June 23, 2015



J. Mohr  
J. Mohr, Notary Public

### CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 28th day of August, 2014.



WESTERN SURETY COMPANY

L. Nelson  
L. Nelson, Assistant Secretary

**Authorizing By-Law**

**ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY**

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

STATE  
OF  
ARIZONA

DEPARTMENT OF INSURANCE

*THIS IS TO CERTIFY, THAT THIS  
INSTRUMENT IS A FULL, TRUE AND  
CORRECT COPY OF THE ORIGINAL ON  
FILE WITH THE DEPARTMENT OF  
INSURANCE OF THE STATE OF ARIZONA  
AND CONSISTS OF 1 PAGE(S)*

HEREUNTO SET MY HAND AND THE OFFICIAL SEAL OF THIS DEPARTMENT  
FOR THE DIRECTOR OF INSURANCE THIS 3 JULY 2013.

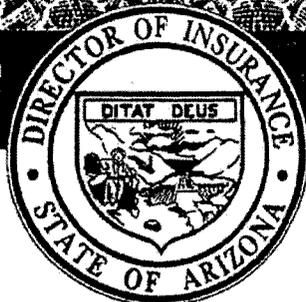
  
AUTHORIZED REPRESENTATIVE

CERTIFICATE No.:

286633



STATE OF



ARIZONA

DEPARTMENT

OF INSURANCE

Phoenix, Arizona

CERTIFICATE OF AUTHORITY

IT IS HEREBY CERTIFIED, That

WESTERN SURETY COMPANY  
Sioux Falls, South Dakota

has complied with the requirements of the Arizona Revised Statutes and is hereby authorized, subject to the provisions thereof and the Charter Powers of said Company, to transact the following kinds of insurance, to-wit:

SURETY  
CASUALTY (EXCLUDING WORKMEN'S COMPENSATION)

within the State of Arizona until terminated at the request of the insurer or suspended or revoked by the Director of Insurance.

Arizona Revised Statute 20-217 (C) states:

A Certificate of Authority remains the property of this state. Upon termination at the request of the insurer or revocation by the Director, the insurer shall immediately deliver the Certificate of Authority to the Director.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Director of Insurance at the City of Phoenix, this 21st day of July, 1979



*[Handwritten Signature]*

Director of Insurance

E-146 7/79

286633



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
12/6/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Lovitt & Touche' Inc - Phoenix P. O. Box 64985 Phoenix AZ 85082		<b>CONTACT NAME:</b> Elaine Leaman <b>PHONE (A/C, No, Ext):</b> 602-956-2250 <b>E-MAIL ADDRESS:</b> eleaman@lovitt-touche.com <b>FAX (A/C, No):</b> 602-956-2258	
<b>INSURED</b> MGCCO-1 MGC Contractors, Inc. P.O. Box 61748 Phoenix AZ 85082		<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> Amerisure Partners Insurance Compan <b>INSURER B:</b> Amerisure Insurance Company <b>INSURER C:</b> Greenwich Insurance Company <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>	

**COVERAGES**

CERTIFICATE NUMBER: 1636119935

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR VVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> \$5,000 PD Ded GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC	Y	Y	CPP2072201	12/31/2013	12/31/2014	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COM/OP AGG \$2,000,000 \$
B	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	Y	Y	CA2072200	12/31/2013	12/31/2014	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$0	Y	Y	CU2072202	12/31/2013	12/31/2014	EACH OCCURRENCE \$9,000,000 AGGREGATE \$9,000,000 \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below Y/N <input checked="" type="checkbox"/> N / A		Y	WC2073813	12/31/2013	12/31/2014	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
C	Professional Pollution	Y	Y	PEC003325703	12/31/2013	12/31/2014	Aggregate \$4,000,000 Each \$2,000,000 Deductible \$15,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Certificate Holder and owner (if applicable) are additional insureds as respects general liability, automobile liability and excess liability if required in a written contract, subject to all the policy terms, conditions, definitions and exclusions. A Waiver of Subrogation in favor of the certificate holder and owner (if applicable) applies to the general liability, automobile liability, excess liability and workers' compensation if required in a written contract. The general liability and excess liability insurance is primary and certificate holder's insurance is non-contributory if required by written contract. (CG7048 11/09, CG7049 11/09, CA7115 11/09, WC000313 04/84, CU2403 09/00, CU7467 08/10)

**CERTIFICATE HOLDER****CANCELLATION**

Arizona Water Company 3805 North Black Canyon Highway Phoenix AZ 85015	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE <i>Dennis M. Tsouis</i>
--	--

© 1988-2010 ACORD CORPORATION. All rights reserved.



**ARIZONA WATER COMPANY**

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

CONSTRUCTION SPECIFICATIONS: E-8-1

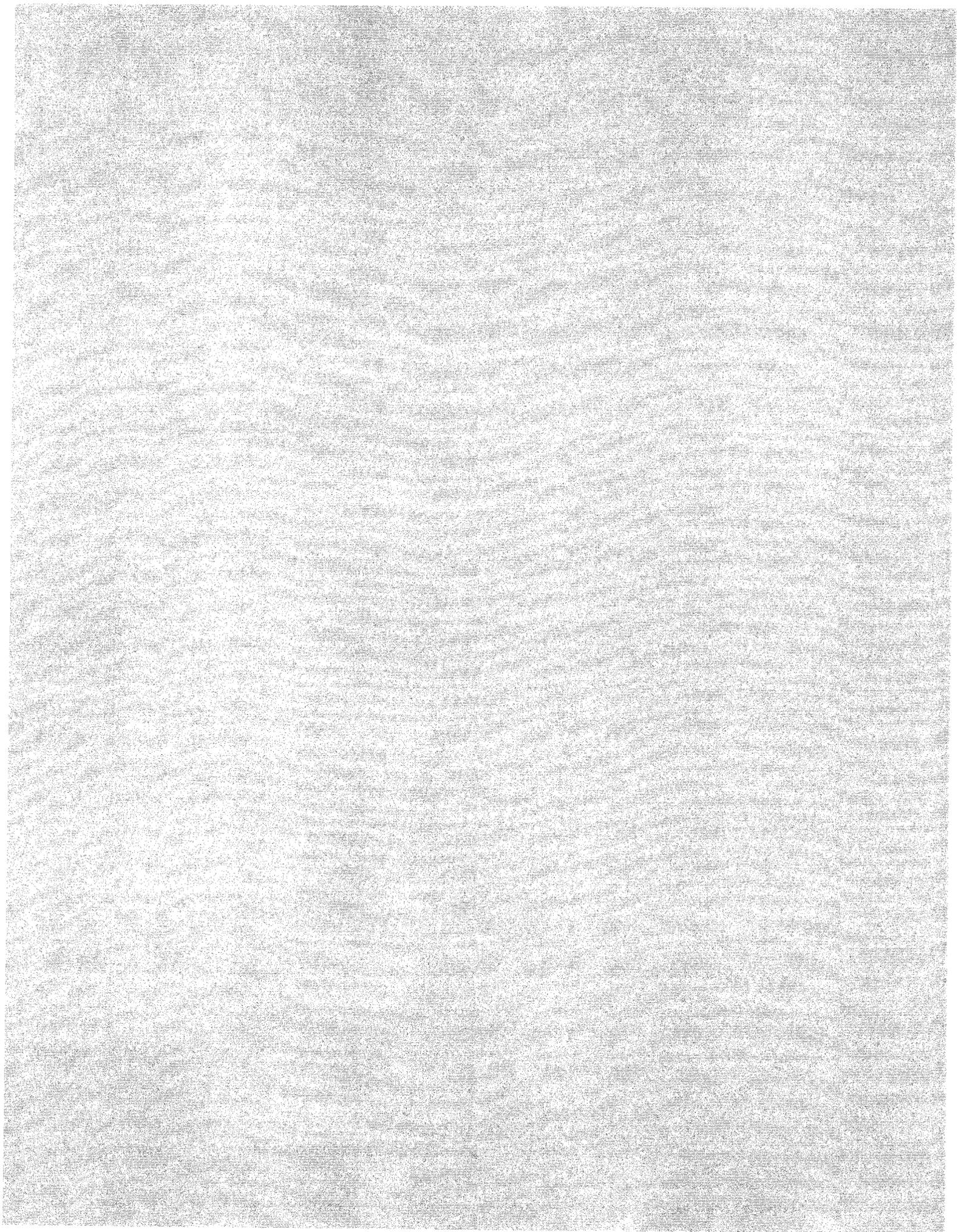
STANDARD SPECIFICATION DRAWINGS: E-9-1

**2007 EDITION WITH 2010 REVISIONS;  
2012 GENERAL CONDITIONS OF CONTRACT**

*10/1/14  
JWB*

A copy of this entire Spec Book was sent out with *MGC Contractors* Proposal package for

*1-5164 Coolidge Pancake Tank on 10/3/14 ADA*



Received

OCT 30 2014

# ARIZONA WATER COMPANY

WeberWaterResources

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

October 29, 2014

Mr. Martin Weber  
Weber Water Resources, LLC  
16825 S. Weber Drive  
Chandler, AZ 85226

Re: Coolidge Pancake Tank Booster No. 2

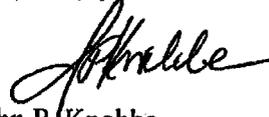
PROJECT: Pump Assemble Replacement	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.: 1-5164

Dear Mr. Weber:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company").

If you have any questions, please call me at this office.

Very truly yours,



John P. Knobbe  
Lead Designer  
jknobbe@azwater.com

afh  
Enclosure

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)



# ARIZONA WATER COMPANY

Pinal Valley - Coolidge  
448 W. Central Avenue

## PROPOSAL/CONTRACT

CONTRACTOR: <b>WEBER WATER RESOURCES, LLC</b>	SYSTEM: <b>PINAL VALLEY</b>
ADDRESS: <b>16825 S. WEBER DRIVE</b>	W.A. No(s): <b>1-5164</b>
CITY ST ZIP: <b>CHANDLER, AZ 85226</b>	BID DUE DATE: <b>June 13, 2014</b>

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 30 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/constructed 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:

See attached Equipment Specifications dated June 10, 2014.

<b>CONTRACTOR</b>	<b>PROPOSAL/CONTRACT ACCEPTED:</b>
<b>WEBER WATER RESOURCES, LLC</b>	<b>ARIZONA WATER COMPANY</b>
By: <i>Fred Tregaskis</i>	By: <i>Fredrick K. Schneider</i>
Print Name: <b>FRED TREGASKIS</b>	Print Name: <b>Fredrick K. Schneider, PE</b>
Title: <b>DIRECTOR</b>	Title: <b>Vice President - Engineering</b>
Date: <b>6-23-14</b>	Date: <b>6-30-2014</b>



# ARIZONA WATER COMPANY

Pinal Valley - Coolidge  
 448 W. Central Avenue  
 Coolidge, AZ 86128 PH: 620-723-5346

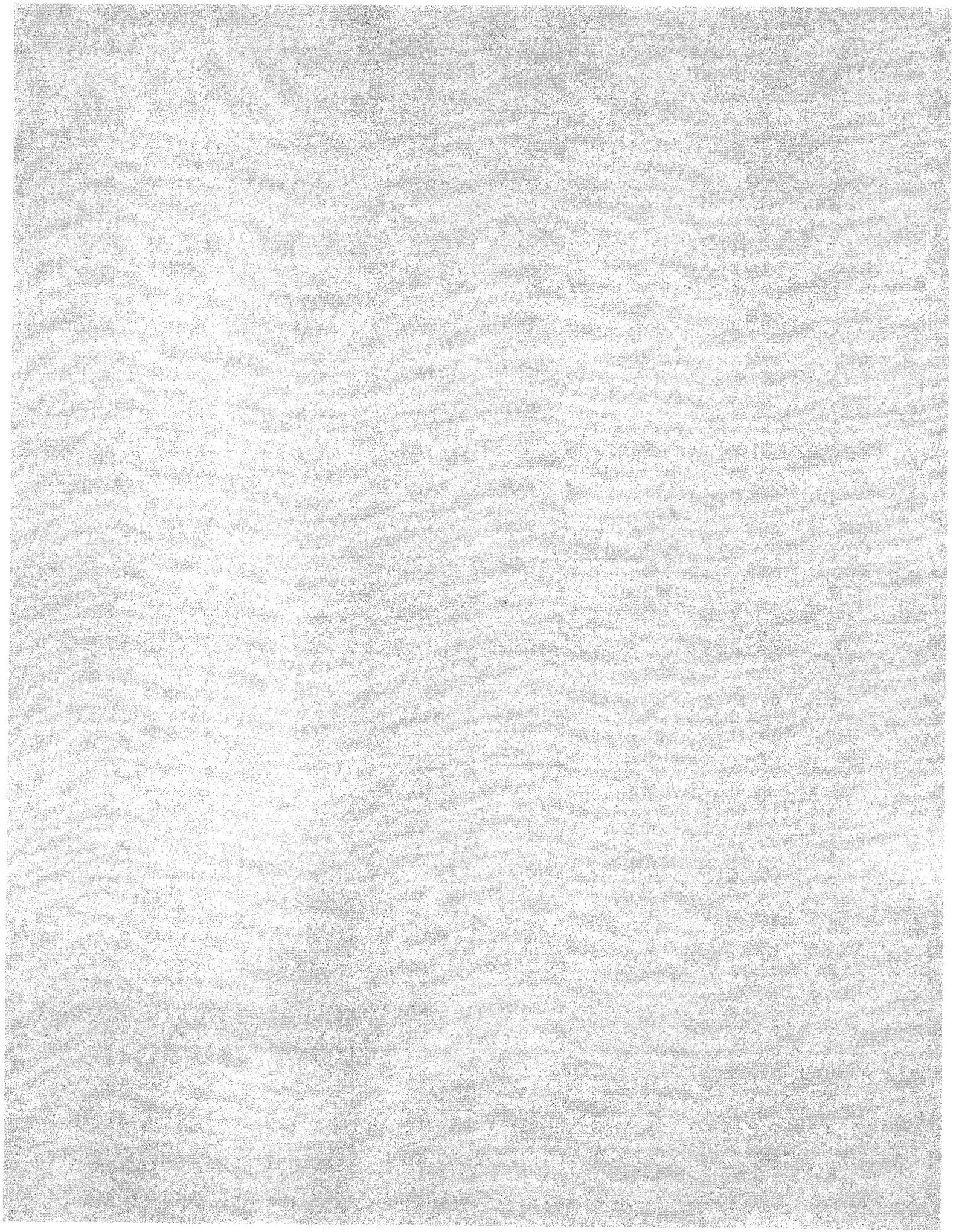
## PROPOSAL/CONTRACT

CONTRACTOR: <b>WEBER WATER RESOURCES, LLC</b>		SYSTEM: <b>PINAL VALLEY</b>
AZ CONTRACTOR LICENSE NO:	CLASSIFICATION:	W.A. No(s): <b>1-5164</b>
ADDRESS: <b>16825 S. WEBER DRIVE</b>		BID DUE DATE: <b>June 13, 2014</b>
CITY ST ZIP: <b>CHANDLER, AZ 85226</b>	BID BOND REQUIRED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

DESCRIPTION OF PROJECT: **Pull and replace Pancake Tank Booster No. 2 pump assembly in Coolidge, Arizona.**

	QUANTITY	UNIT PRICE		TOTAL COST			
		LABOR	MATERIALS	LABOR	MATERIALS		
<b>1-2. MATERIALS EXEMPT FROM CONTRACTING TAX (per Paragraph 6)</b>							
3. Total Labor to Install Exempt Materials (add the amounts in column 1)				3			
4. Total Exempt Materials (add the amounts in column 2)					4		
<b>5-6. NON-EXEMPT MATERIALS</b>							
Labor to pull and replace booster pump	1	4180		4180			
Provide and install National Pump E12MC (5 stage) bowl assembly, 1770 RPM							
9-Inch Ø Impeller, shaft, column and related fittings complete	1	300	5385	300	5385		
Provide and install stuffing box on existing discharge head	1	360	2124	360	2124		
7. Total Labor to Install Non-Exempt Materials (add the amounts in column 5)				7	4840		
8. Total Non-Exempt Materials (add the amounts in column 6)					8	7509	
9. Subtotal A (add lines 3, 7 and 8)						9	12349
10. Contracting Tax Base (multiply the amount on line 9 by 0.65)				10	8027		
11. Applicable Contracting Tax Rate				11	10.7		
12. Contracting Tax (multiply the amount on line 10 by line 11)						12	859
13. Subtotal B (add lines 4, 9 and 12)						13	13208
14. 100% Performance and Payment Bonds Cost						14	264
15. Estimated Total Cost (add lines 13 and 14)						15	13472

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



# ARIZONA WATER COMPANY VACUUM TANK BOOSTER PUMP STATION COOLIDGE, ARIZONA

DECEMBER 2014

DESIGN REVIEW SUBMITTAL  
NOT FOR CONSTRUCTION

**SHEET INDEX**

SHT	DWG	DRAWING TITLE
1	G1	COVER SHEET AND INDEX
2	G2	GENERAL AND ENGINEER NOTES
3	G3	BOOSTER PUMP STATION ISOMETRIC
4	C1	YARD PIPING PLAN
5	M1	BOOSTER PUMP STATION ENLARGED PLAN
6	M2	SECTIONS
7	E1	SINGLE LINE DIAGRAM
8	E2	PANEL SCHEDULE
9	E3	ELECTRICAL SITE LAYOUT
10	I1	BOOSTER PUMP STATION - PROCESS AND INSTRUMENTATION

**OWNER:**

ARIZONA WATER COMPANY  
CONTACT: JAMES WILSON  
PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860  
FAX: (602) 240-6878

DESIGN REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

<p>ARIZONA WATER COMPANY 3809 N. BLACK CANYON HWY. POST OFFICE BOX 28006 PHOENIX, ARIZONA 85028-5006 (602) 240-6860</p>		<p>DATE: DEC 2014 PK: AS SHOWN SCALE: 1/8" = 1'-0"</p>
<p>PROJECT: VACUUM TANK BOOSTER PUMP STATION SHEET: G1</p>		<p>DATE: 1-5-019 PROJECT: PHAL VALLEY</p>
<p>REVISIONS: TWO EXISTING 100 H.P. STARTER PUMPS WITH 17.5 KW VARIABLE FREQUENCY DRIVES (VFD) @ THE COOLIDGE VACUUM TANK SITE IN COOLIDGE, ARIZONA.</p>		<p>DATE: 1-5-019 PROJECT: PHAL VALLEY</p>
<p>COVER SHEET</p>		<p>DATE: 1-5-019 PROJECT: PHAL VALLEY</p>

1-800-STAGE-IT  
263-1100  
Environmental Quality  
The information shown is to be utilized in accordance with the Arizona Water Company Standard Specifications on the Environmental Quality.

**GENERAL NOTES:**

1. THE TERM COMPANY HEREIN SHALL REFERENCE THE ARIZONA WATER COMPANY.
2. REFERENCE COMPANY'S CONSTRUCTION SPECIFICATIONS AND STANDARD SPECIFICATION DRAWINGS (COMPANY SPECIFICATIONS).
3. FOR WORK INVOLVING THE OPERATION OF EXISTING EQUIPMENT AND/OR PROCESS WATER PIPES, THE CONTRACTOR SHALL COORDINATE WITH COMPANY PRIOR TO SHUT DOWN OF EQUIPMENT OR ISOLATION OF PROCESS WATER PIPE.

**WATER NOTES:**

1. ALL PIPE CONNECTIONS SHALL BE RESTRAINED.
2. PIPE SUPPORTS SHALL AT A MINIMUM, BE INSTALLED AT THE FOLLOWING LOCATIONS:
  - A. ON BOTH SIDES OF EACH VALVE, PIECE OF EQUIPMENT OR OTHER APPURTENANCE, SUCH THAT THE WEIGHT OF THE REMOVAL OF THE VALVE, PIECE OF EQUIPMENT, OR OTHER APPURTENANCE WHILE LEAVING THE PIPE SYSTEM FULLY RESTRAINED TO THE SUPPORTS AND NOT TO EQUIPMENT BY PIPE SUPPORT AND NOT BY THE EQUIPMENT.
3. ALONG STRAIGHT RUNS OF PIPE, THE MAXIMUM DISTANCE BETWEEN SUPPORTS SHALL BE AS LISTED BELOW:

PIPE DIA. (IN)	MAXIMUM DISTANCE BETWEEN SUPPORTS (FEET)
2" AND SMALLER	8 FEET
2 1/2" TO 3"	8 FEET
4"	10 FEET
6" TO 12"	10 FEET
14" TO 18"	10 FEET

- A. DIRECTLY SUPPORTING VALVES 8 INCH IN DIAMETER AND LARGER.
  - B. AT LEAST TWO SUPPORTS ON EACH SIDE OF FLEXIBLE COUPLINGS OR FLANGED COUPLING ADAPTERS TO PROVIDE THAT NO LOAD IS APPLIED TO THE FLEXIBLE COUPLING.
  - C. ON THE PIPE WITHIN TWO PIPE DIAMETERS OF EACH SIDE OF ELBOWS AND EACH BRANCH OF TEES AND CROSSES.
  - D. PROVIDE STEEL AND DUCTILE IRON STANCHION COMPONENTS.
  - E. STANCHION-TYP SUPPORT SYSTEMS:
    - i. BLUJNE
    - ii. ANVIL
  - F. ADJUSTABLE PIPE SADDLE SUPPORT
    - i. BLUJNE, FIGURE 30B2
    - ii. COAT STANCHIONS AFTER ASSEMBLY.
3. PRESSURE TEST IN ACCORDANCE WITH COMPANY SPECIFICATIONS.
  4. FLUSH AND DISINFECT IN ACCORDANCE WITH COMPANY SPECIFICATIONS.

**EARTHWORK NOTES:**

1. EROSION CONTROL IMPLEMENT THE CONSTRUCTION PROCEDURES TO ASSURE MINIMUM DAMAGE TO THE ENVIRONMENT DURING CONSTRUCTION. TAKE ALL ADDITIONAL PRECAUTIONS TO AVOID EROSION DAMAGE TO EXISTING APPLICABLE STANDARDS, CODES AND REGULATIONS.
  - A. MAKE PROVISIONS TO REGULATE DRAINAGE, AVOID EROSION AND MINIMIZE DAMAGE TO VEGETATION.
  - B. APPLY MEASURES TO CONTROL EROSION AND TO MINIMIZE THE SILTATION OF THE EXISTING WATERWAYS, AND NATURAL PONDING AREAS.
  - C. CONTROLLED LOW STRENGTH MATERIAL (CLSM):
    - A. SELECT AND PROPORTION INGREDIENTS TO OBTAIN COMPRESSIVE STRENGTH BETWEEN 1500 AND 2000 PSI IN ACCORDANCE WITH ASTM D4822. SUFFICIENT CEMENT SHALL BE ADDED TO MEET THE STRENGTH AND MATERIAL REQUIREMENTS. THE MIXTURE SHALL BE PROPERLY MIXED AND PROVIDE SUFFICIENT STRENGTH FOR COMPACTING OVERLYING TRENCH BACKFILL.
2. MATERIALS:
  - i. CEMENT: ASTM C150, TYPE I OR II, TWO BAGS MINIMUM PER CUBIC YARD.
  - ii. AGGREGATE: ASTM C33, MAXIMUM SIZE 7. THE AMOUNT OF MATERIAL PASSING A NO. 200 SIEVE SHALL NOT EXCEED 5 PERCENT. THE ABOVE NO. 200 SIEVE MATERIAL SHALL BE WELL GRADED SO AS TO AVOID SEGREGATION. THE MINUS #200 SIEVE FRACTION SHALL BE NONPLASTIC.

- A. FLY ASH (IF USED): ASTM C916, CLASS C OR F.
- B. WATER: CLEAN, POTABLE, CONTAINING LESS THAN 500 PPM OF CHLORIDES.
- C. MIX DESIGN: TBD
3. EXPOSED SURFACE SHALL BE SCRAPED MINIMUM 4 INCHES DEEP TO A MINIMUM 95% COMPACTION DENSITY BASED ON ASTM D 1557.
4. PIPE TRENCH SHALL BE IN ACCORDANCE WITH STANDARD DETAIL 2000. COMPACTION REQUIREMENTS NOTED SHALL BE MINIMUM COMPACTION DENSITY BASED ON ASTM D 1557.

**DUST CONTROL NOTES:**

1. PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES AND ACCESS ROADS TO REDUCE ON- AND OFF-SITE DAMAGE AND HEALTH HAZARDS.
2. TAKE ALL ADDITIONAL MEASURES REQUIRED TO CONFORM TO THE REQUIREMENTS OF APPLICABLE STANDARDS, CODES AND REGULATIONS.

**CONCRETE NOTES:**

1. CLASS A CONCRETE SHALL BE STEEL REINFORCED AND INCLUDES:
  - A. FOUNDATION
  - B. SLABS
  - C. PIPE SUPPORT
  - D. EQUIPMENT BASES
2. CEMENT:
  - A. AGGREGATE
  - B. WATER
3. PREPARE DESIGN MIXES OF CONCRETE, MIXES SUBJECT TO THE FOLLOWING LIMITATIONS:
  - A. CLASS A CONCRETE
  - B. SPECIFIED 28-DAY COMPRESSIVE STRENGTH: 4,000 PSI.
  - C. AIR CONTENT: 1.5%.
  - D. SLUMP, BEFORE ADDITION OF SUPERPLASTICIZER: 3 1/2" ± 1/2"

AGGREGATE SIZE	WATER-CEMENT RATIO
3/4"	PER CUBIC YARD SUPERPLASTICIZER 0.375
1"	625 MIN. 500 MAX 0.365
1 1/2"	590 MIN. 500 MAX 0.400

- A. USE SUPERPLASTICIZER IN ALL CLASS A CONCRETE. USE WATER REDUCER IN COMBINATION WITH SUPERPLASTICIZER AS REQUIRED FOR MIXING.
- B. REINFORCING BARS: ASTM A615, GRADE 60.

ARIZONA WATER COMPANY  
 3905 N. BLACK CANYON HWY.  
 PHOENIX, ARIZONA 85026-9006  
 POST OFFICE BOX 28008  
 (602) 240-0880

REFLECT TWO EXISTING 100 P. STARTER PANELS WITH TWO VARIABLE FREQUENCY DRIVES (VFD) @ THE COOLIDGE VACUUM TANK SITE IN COOLIDGE, ARIZONA

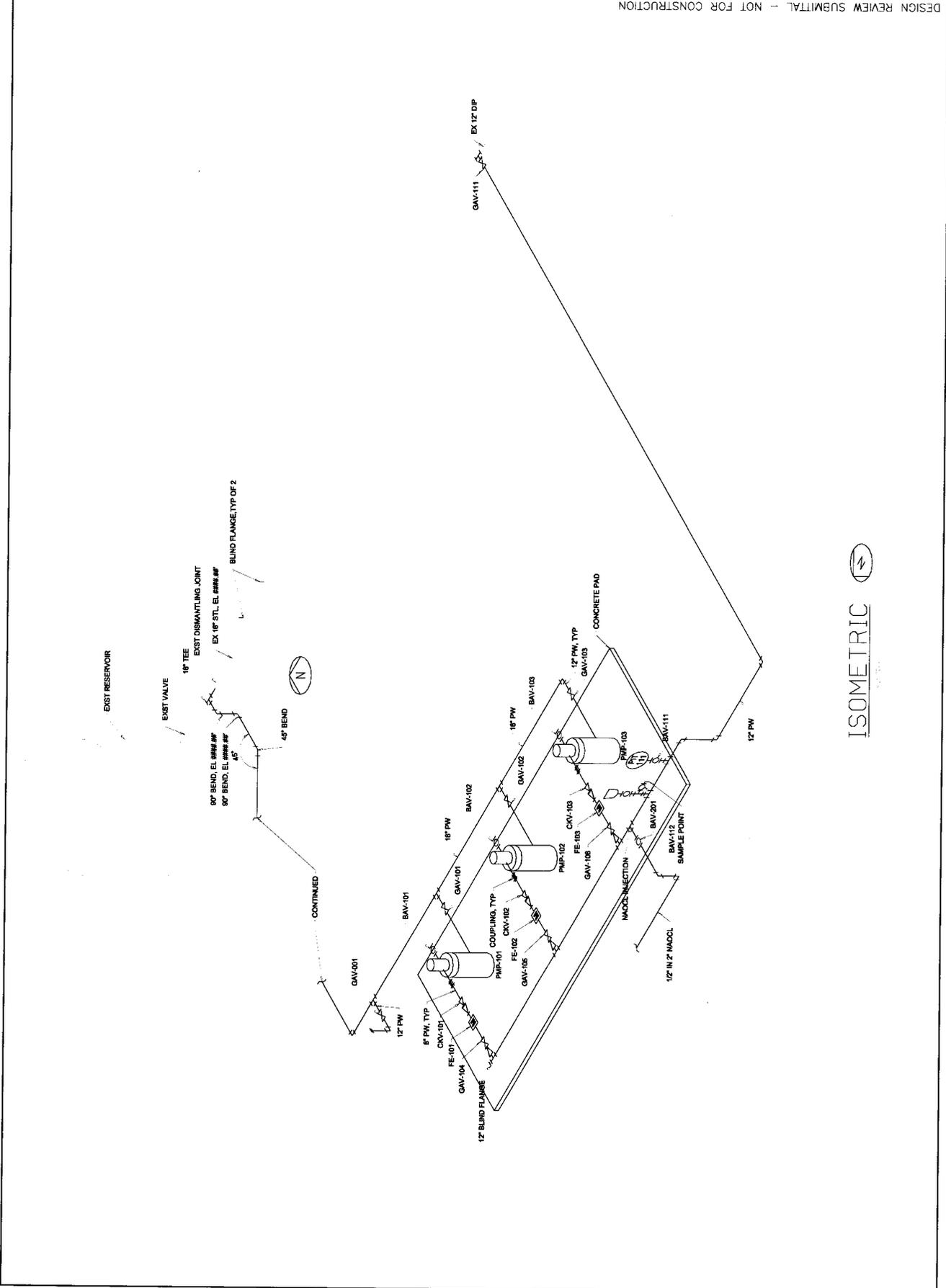
GENERAL NOTES

DATE: DEC 2014  
 DRAWN BY: AS SHOWN  
 CHECKED BY: JPK  
 PROJECT NO: 15 S.R. 8 E  
 SHEET NO: 263-1100  
 SHEET TOTAL: 1-800-STAGE-IT

DESIGN REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

**ARIZONA WATER COMPANY**  
 3805 N. BLACK CANYON HWY.  
 PHOENIX, ARIZONA 85038-9006  
 (602) 240-8980  
 POST OFFICE BOX 28006

PROJECT NO.	1-5019
DATE	DEC 2014
BY	AS SHOWN
CHECKED BY	
SCALE	AS SHOWN
PROJECT NAME	PINAL VALLEY
PROJECT LOCATION	SEC 10-15 S.R. 8 E.
PROJECT NUMBER	263-1100
PROJECT TITLE	1-800-5-TAKE-IT





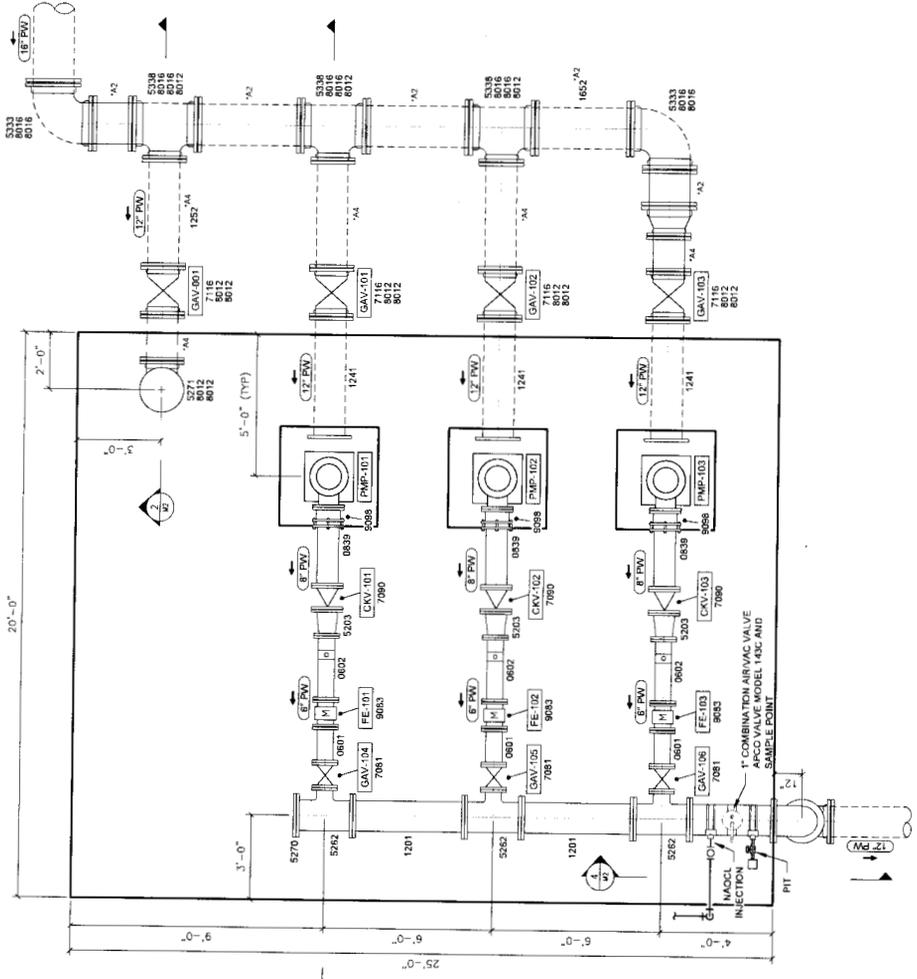
DESIGN REVIEW SUBMITAL - NOT FOR CONSTRUCTION

**ARIZONA WATER COMPANY**  
 3605 N. BLACK CANYON HWY.  
 PHOENIX ARIZONA 85038-9008  
 POST OFFICE BOX 28008  
 (602) 240-8880

PROJECT NO. 1-5019  
 SHEET NO. AS SHOWN  
 DATE DEC 2014  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 APPROVED BY: [Signature]

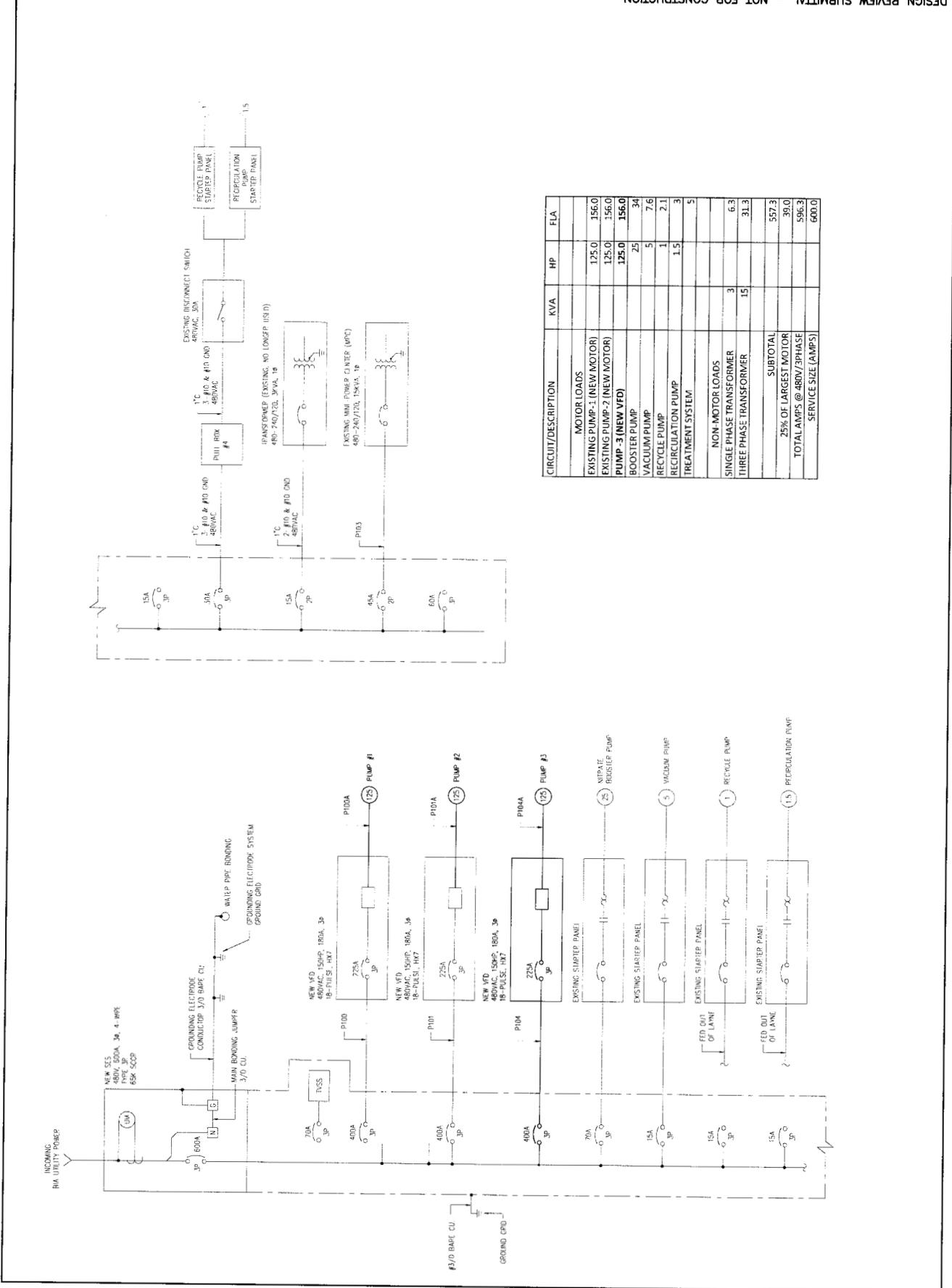
263-1100  
 1-500-512K-11  
 Environmental Control  
 Company standards specifications are in accordance with the Arizona Water with the Arizona Department of Environmental Control

MATERIAL LIST		
NO	QTY	DESCRIPTION
0801	3	8" DI SPOOL (2'-27" FIF)
0802	3	8" DI SPOOL (2'-27" FIF)
0803	3	8" DI SPOOL (2'-27" FIF)
1201	2	12" DI SPOOL (3'-11" 3/4" FIF)
1202	3	12" DI SPOOL (2'-27" FIF)
1203	1	12" DI SPOOL (2'-27" FIF)
1204	1	12" DI SPOOL (2'-27" FIF)
1205	1	12" DI SPOOL (2'-27" FIF)
1206	1	12" DI SPOOL (2'-27" FIF)
1207	1	12" DI SPOOL (2'-27" FIF)
1208	1	12" DI SPOOL (2'-27" FIF)
1209	1	12" DI SPOOL (2'-27" FIF)
1210	1	12" DI SPOOL (2'-27" FIF)
1211	1	12" DI SPOOL (2'-27" FIF)
1212	1	12" DI SPOOL (2'-27" FIF)
1213	1	12" DI SPOOL (2'-27" FIF)
1214	1	12" DI SPOOL (2'-27" FIF)
1215	1	12" DI SPOOL (2'-27" FIF)
1216	1	12" DI SPOOL (2'-27" FIF)
1217	1	12" DI SPOOL (2'-27" FIF)
1218	1	12" DI SPOOL (2'-27" FIF)
1219	1	12" DI SPOOL (2'-27" FIF)
1220	1	12" DI SPOOL (2'-27" FIF)
1221	1	12" DI SPOOL (2'-27" FIF)
1222	1	12" DI SPOOL (2'-27" FIF)
1223	1	12" DI SPOOL (2'-27" FIF)
1224	1	12" DI SPOOL (2'-27" FIF)
1225	1	12" DI SPOOL (2'-27" FIF)
1226	1	12" DI SPOOL (2'-27" FIF)
1227	1	12" DI SPOOL (2'-27" FIF)
1228	1	12" DI SPOOL (2'-27" FIF)
1229	1	12" DI SPOOL (2'-27" FIF)
1230	1	12" DI SPOOL (2'-27" FIF)
1231	1	12" DI SPOOL (2'-27" FIF)
1232	1	12" DI SPOOL (2'-27" FIF)
1233	1	12" DI SPOOL (2'-27" FIF)
1234	1	12" DI SPOOL (2'-27" FIF)
1235	1	12" DI SPOOL (2'-27" FIF)
1236	1	12" DI SPOOL (2'-27" FIF)
1237	1	12" DI SPOOL (2'-27" FIF)
1238	1	12" DI SPOOL (2'-27" FIF)
1239	1	12" DI SPOOL (2'-27" FIF)
1240	1	12" DI SPOOL (2'-27" FIF)
1241	1	12" DI SPOOL (2'-27" FIF)
1242	1	12" DI SPOOL (2'-27" FIF)
1243	1	12" DI SPOOL (2'-27" FIF)
1244	1	12" DI SPOOL (2'-27" FIF)
1245	1	12" DI SPOOL (2'-27" FIF)
1246	1	12" DI SPOOL (2'-27" FIF)
1247	1	12" DI SPOOL (2'-27" FIF)
1248	1	12" DI SPOOL (2'-27" FIF)
1249	1	12" DI SPOOL (2'-27" FIF)
1250	1	12" DI SPOOL (2'-27" FIF)
1251	1	12" DI SPOOL (2'-27" FIF)
1252	1	12" DI SPOOL (2'-27" FIF)
1253	1	12" DI SPOOL (2'-27" FIF)
1254	1	12" DI SPOOL (2'-27" FIF)
1255	1	12" DI SPOOL (2'-27" FIF)
1256	1	12" DI SPOOL (2'-27" FIF)
1257	1	12" DI SPOOL (2'-27" FIF)
1258	1	12" DI SPOOL (2'-27" FIF)
1259	1	12" DI SPOOL (2'-27" FIF)
1260	1	12" DI SPOOL (2'-27" FIF)
1261	1	12" DI SPOOL (2'-27" FIF)
1262	1	12" DI SPOOL (2'-27" FIF)
1263	1	12" DI SPOOL (2'-27" FIF)
1264	1	12" DI SPOOL (2'-27" FIF)
1265	1	12" DI SPOOL (2'-27" FIF)
1266	1	12" DI SPOOL (2'-27" FIF)
1267	1	12" DI SPOOL (2'-27" FIF)
1268	1	12" DI SPOOL (2'-27" FIF)
1269	1	12" DI SPOOL (2'-27" FIF)
1270	1	12" DI SPOOL (2'-27" FIF)
1271	1	12" DI SPOOL (2'-27" FIF)
1272	1	12" DI SPOOL (2'-27" FIF)
1273	1	12" DI SPOOL (2'-27" FIF)
1274	1	12" DI SPOOL (2'-27" FIF)
1275	1	12" DI SPOOL (2'-27" FIF)
1276	1	12" DI SPOOL (2'-27" FIF)
1277	1	12" DI SPOOL (2'-27" FIF)
1278	1	12" DI SPOOL (2'-27" FIF)
1279	1	12" DI SPOOL (2'-27" FIF)
1280	1	12" DI SPOOL (2'-27" FIF)
1281	1	12" DI SPOOL (2'-27" FIF)
1282	1	12" DI SPOOL (2'-27" FIF)
1283	1	12" DI SPOOL (2'-27" FIF)
1284	1	12" DI SPOOL (2'-27" FIF)
1285	1	12" DI SPOOL (2'-27" FIF)
1286	1	12" DI SPOOL (2'-27" FIF)
1287	1	12" DI SPOOL (2'-27" FIF)
1288	1	12" DI SPOOL (2'-27" FIF)
1289	1	12" DI SPOOL (2'-27" FIF)
1290	1	12" DI SPOOL (2'-27" FIF)
1291	1	12" DI SPOOL (2'-27" FIF)
1292	1	12" DI SPOOL (2'-27" FIF)
1293	1	12" DI SPOOL (2'-27" FIF)
1294	1	12" DI SPOOL (2'-27" FIF)
1295	1	12" DI SPOOL (2'-27" FIF)
1296	1	12" DI SPOOL (2'-27" FIF)
1297	1	12" DI SPOOL (2'-27" FIF)
1298	1	12" DI SPOOL (2'-27" FIF)
1299	1	12" DI SPOOL (2'-27" FIF)
1300	1	12" DI SPOOL (2'-27" FIF)



ENLARGED PLAN 'A'  
 MSC DWG CT  
 NORTH





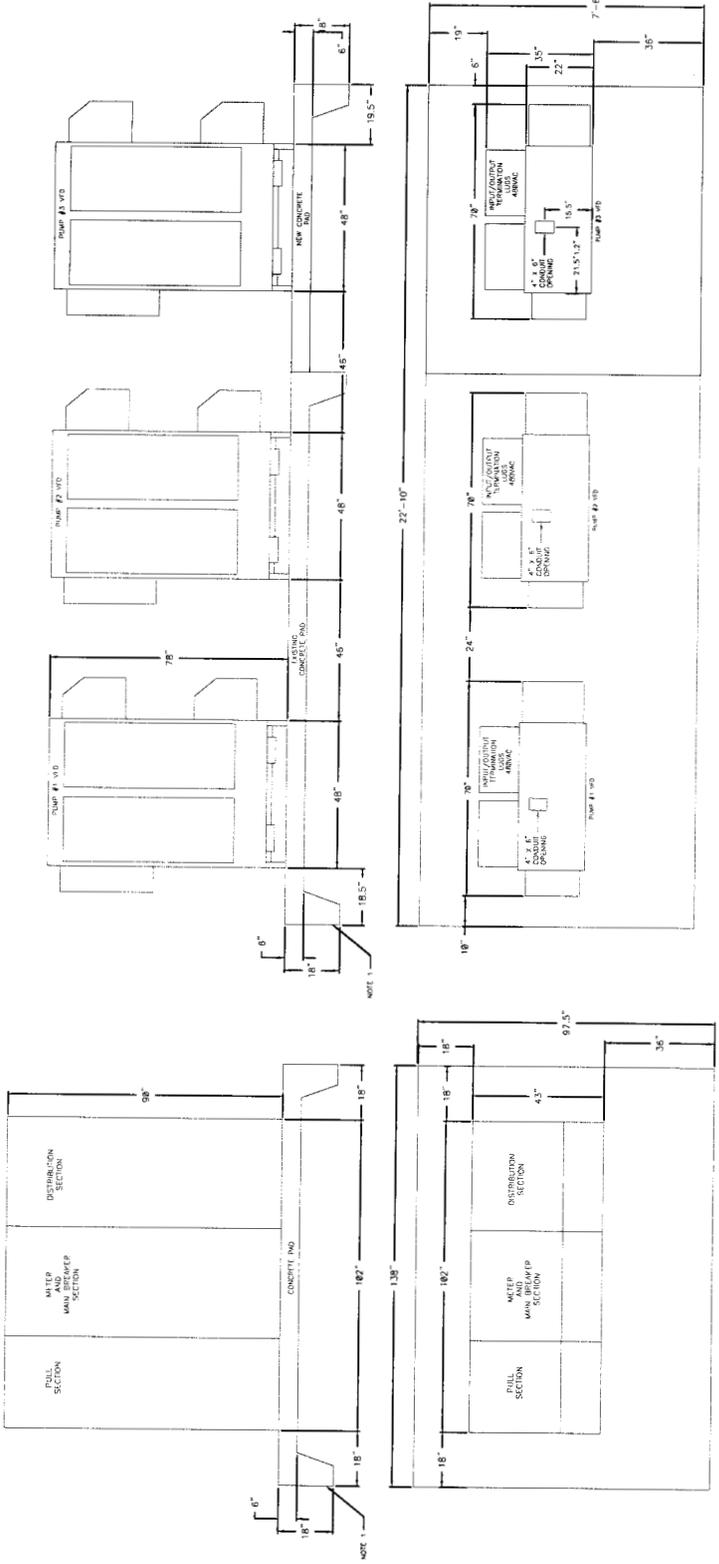
CIRCUIT/DESCRIPTION	KVA	HP	FLA
<b>MOTOR LOADS</b>			
EXISTING PUMP-1 (NEW MOTOR)	125.0	156.0	
EXISTING PUMP-2 (NEW MOTOR)	125.0	156.0	
PUMP-3 (NEW VFD)	125.0	156.0	
BOOSTER PUMP	25	34	
VACUUM PUMP	5	7.6	
RECYCLE PUMP	1	2.1	
RECYCLE PUMP	1.5	3	
TREATMENT SYSTEM			5
<b>NON-MOTOR LOADS</b>			
SINGLE PHASE TRANSFORMER	3	6.3	
THREE PHASE TRANSFORMER	15	31.3	
<b>SUBTOTAL</b>			557.3
25% OF LARGEST MOTOR			39.0
<b>TOTAL AMPS @ 480V/3PHASE</b>			596.3
<b>SERVICE SIZE (AMPS)</b>			600.0

DESIGN REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

ARIZONA WATER COMPANY  
 3805 N. BLACK CANYON HWY.  
 PHOENIX, ARIZONA 85038-9008  
 (602) 240-8880  
 REFERENCE: TWO EXISTING 100 HP STARTER PANELS WITH TWO VARIABLE FREQUENCY DRIVES (VFD) @ THE COOLIDGE VACUUM TANK SITE IN COOLIDGE, ARIZONA.  
 PANEL ELEVATIONS

DATE: DEC 2014  
 DRAWN BY: JLB  
 CHECKED BY: AS SHOWN  
 PROJECT: PINAL VALLEY  
 SHEET: 1-5018  
 SCALE: 1/8" = 1'-0"  
 263-1100  
 1-800-STATE-IT

- GENERAL NOTES:  
 1. ADD 12" TURNDOWN TO PAD.  
 2. PROVIDE #4 REBAR AT 15" O.C.  
 3. EXPOSE EXISTING VFD PAD TO ACCOMMODATE THIS PAD.



VFD PANELS LAYOUT

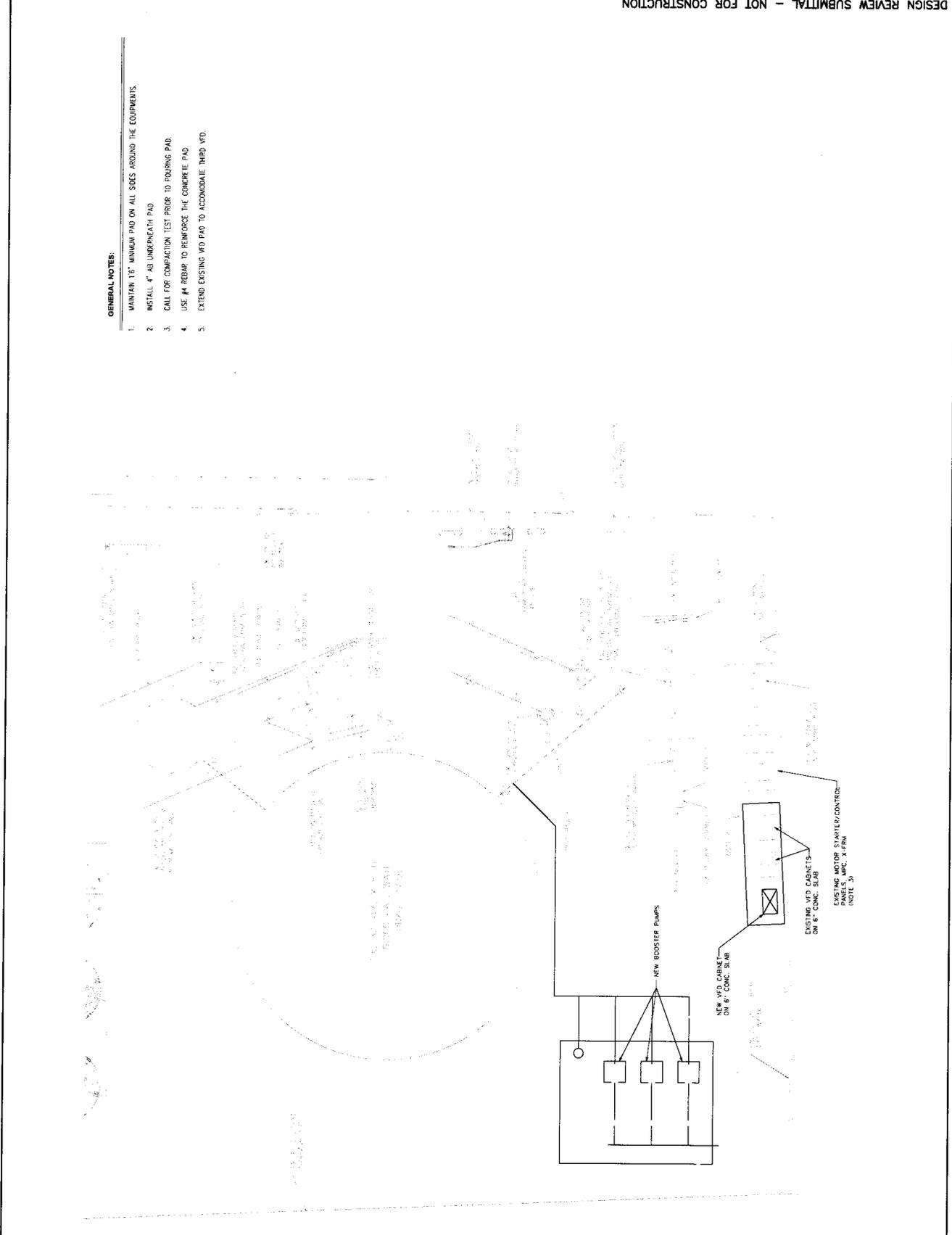
SERVICE ENTRANCE SECTION

DESIGN REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

**ARIZONA WATER COMPANY**  
 3005 N. BLACK CANYON HWY.  
 PHOENIX, ARIZONA 85033-9008  
 (602) 240-8860

PROJECT NO. 1-5019  
 DATE DEC 2014  
 DRAWN BY AS SHOWN  
 CHECKED BY JLB  
 PROJECT TITLE ELECTRICAL SITE LAYOUT

- GENERAL NOTES:**
1. MAINTAIN 18" MINIMUM PAD ON ALL SIDES AROUND THE EQUIPMENTS.
  2. INSTALL 4" AS UNDERNEATH PAD
  3. CALL FOR COMPACTION TEST PRIOR TO POURING PAD.
  4. USE #4 REBAR TO REINFORCE THE CONCRETE PAD
  5. EXTEND EXISTING VFD PAD TO ACCOMMODATE THIRD VFD.



DESIGN REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

ARIZONA WATER COMPANY  
 3905 N. BLACK CANYON HWY.  
 PHOENIX, ARIZONA 85008-9005  
 (602) 240-8860

PRM VALLEY  
 1-9019  
 AS SHOWN  
 DEC 2014  
 JLB

263-1100  
 1-000-STAKE-T1  
 Environmental Agency  
 in accordance with the Arizona Water Company Standard Specifications for this Environmental Agency

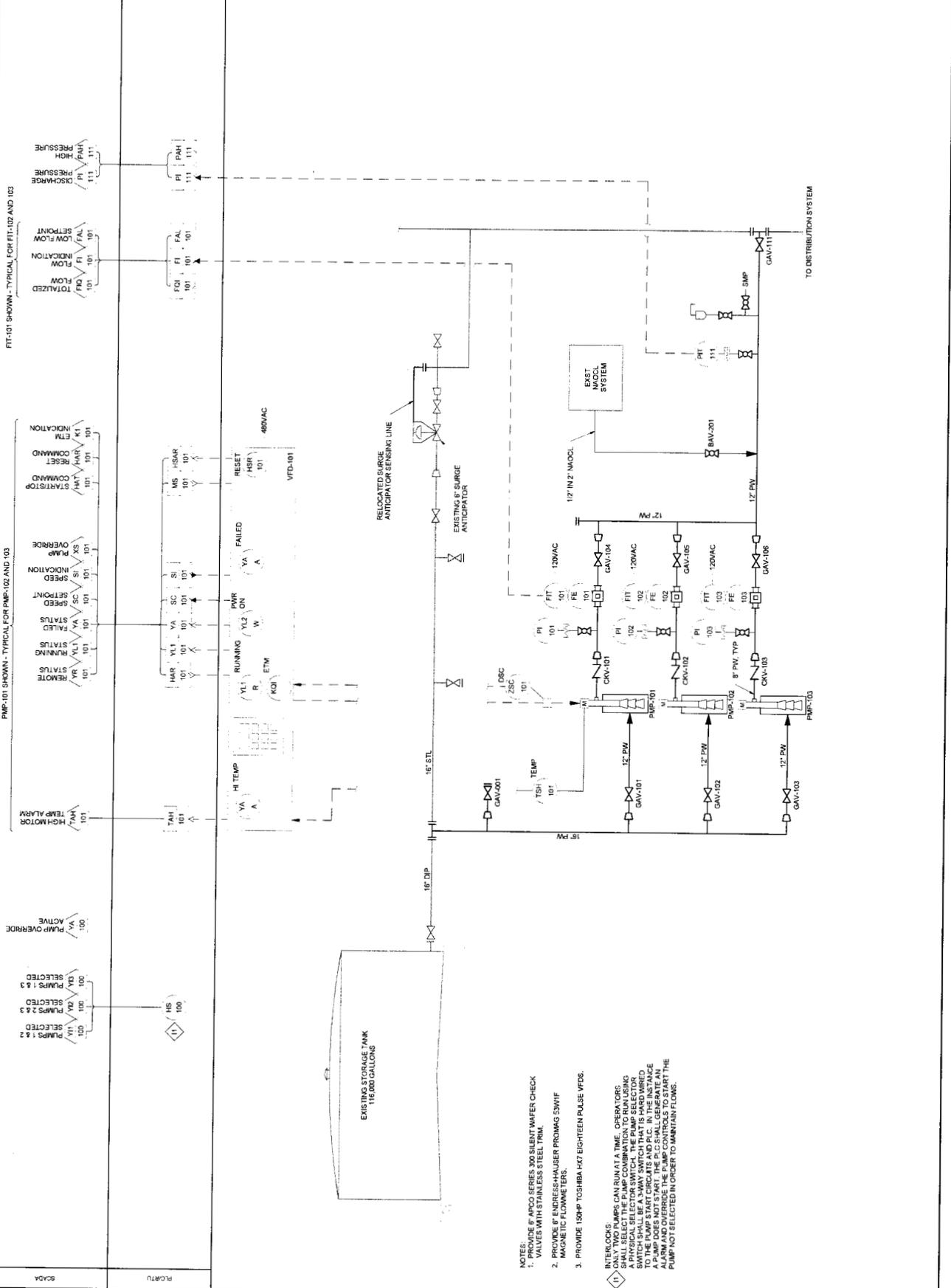


FIG-101 SHOWN - TYPICAL FOR FIT-102 AND 103

PMP-101 SHOWN - TYPICAL FOR PMP-102 AND 103

SCADA

PLC/RTU

- NOTES:
1. PROVIDE 8" AISCO SERIES 300 SILENT WATER CHECK VALVES WITH 6" FLANGES STEEL TRIM.
  2. PROVIDE 8" ENDRESSHAUSER PROMAG 53WIF MAGNETIC FLOWMETERS.
  3. PROVIDE 150HP TOSHIBA 147 EIGHTEEN PULSE VFDS.

INTERLOCKS:  
 (1) ONLY TWO PUMPS CAN RUN AT A TIME. OPERATORS SHALL BE NOTIFIED BY A COMBINATION OF RINGING ALARMS AND A 3-WAY SWITCH THAT IS HARDWIRED TO THE PUMP START CIRCUITS AND P.L.C. IN THE INSTANCE OF A PUMP FAILURE. THE P.L.C. SHALL BE ABLE TO STOP THE PUMP AND OVERRIDE THE P.L.C. CONTROLS TO START THE PUMP NOT SELECTED IN ORDER TO MAINTAIN FLOWS.

**WA 1-5165**

# Western Group Rate Case

## Exhibit FKS-1

### 5165 CMU Block Walls

# ARIZONA WATER COMPANY WORK AUTHORIZATION

W.A. NUMBER: 1-5165  
 P.E. NUMBER:  
 BUDGET ITEM NO.: B-1  
 SHEET NO.: 1 of 3

SYSTEM: PINAL VALLEY	RETENTION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
DIVISION: CASA GRANDE	WORK TO START BY: UPON AUTHORIZATION
RESPONSIBLE PERSON: JAMES WILSON	WORK TO BE FINISHED BY: WITHIN 90 DAYS
TAX CODE: (21,30) 0403 and 0408 (31)	

DESCRIPTION OF WORK:  
 Design, permit and construct 220 LF of 8-foot tall, 8 x 8 x 16 C.M.U. and split-face block wall around Well No. 30. Design and construct 238 LF of 6-foot tall, 8 x 8 x 16 C.M.U. block wall along the east property line and construct onsite retention basin at Well No. 31. Construct 376 LF of 8-foot tall, 8 x 8 x 16 C.M.U. block wall around Well No. 21. Reconstruct and rehabilitate retention basin and install secondary well flush bypass piping at Well No. 26 in Casa Grande, AZ.

FACTORS JUSTIFYING WORK:  
 APPROVED 2014 BUDGET ITEM (\$175,000) The City of Casa Grande requested the Company replace several existing chain link fences with block walls at the Company's water facility sites in the community to reflect the city's modern and developed theme and to help mitigate noise complaints and concerns. Approximately six years ago, at the City's request, the Company began replacing existing chain link fences with block walls at two well sites each year. However, because of budget restrictions, this improvement project was postponed until sufficient funds were available. At a recent meeting with the Casa Grande City Manager, the City requested the Company restart its fence replacements. The wall at Well No. 30 is being constructed due to the high visibility of the site, and a Conditional Use Permit has been acquired for this site. The wall at Well No. 21 is being constructed due to the high visibility of the site and has been permitted for construction. The temporary chain link fence along the east property line at Well No. 31 is failing, falling down and requires replacement. Constructing an onsite retention basin on this site, and rehabilitation of the retention basin at Well No. 26 will mitigate standing discharged water on HOA property in the Tamaron subdivision.

COST ESTIMATE		AUTHORIZATION	DATE
<b>COST OF WORK:</b>		PREPARED BY:	
MATERIAL	0	James Wilson <i>sw</i> 9/10/14	9/4/14
LABOR	16,400	REVIEWED FOR PERMIT/ROW VERIFICATION:	
CONTRACT PORTION	274,403	Charles Briggs <i>CB</i> 09-18-2014	09-04-2014
OVERHEAD	32,900	REVIEWED BY:	
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 323,703	Mario Mendez <i>MM</i> 9/10/14	9/5/14
<b>FUNDS RECEIVED:</b>		APPROVED BY ENGINEERING:	
CONTRIBUTIONS RECEIVED	0	Fredrick Schneider <i>FS</i> 9-20-14	9-16-14
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE:	
TOTAL CONTRIBUTIONS/ADVANCES	0	Joseph Harris	9/12/14
NET COMPANY CASH REQUIRED	\$ 323,703	AUTHORIZED BY PRESIDENT:	
		William Garfield <i>WG</i>	9-17-14

COMMENTS:  
 \$149,703  
 Transfer additional funds required from WA 1-5167 Valley Farms ARF.  
 2014 EXPENDITURE \$324,000  
 2015 ANTICIPATED EXPENDITURE \$20,000  
 TOTAL PROJECT COST \$344,000

CONSTRUCTION RELEASE:  
**RELEASED TO CONSTRUCTION**  
 Authorized by **FRED SCHNEIDER**  
 Date 9/17/14

**ARIZONA WATER COMPANY**

W.A. NUMBER: 1-5165

**WORK AUTHORIZATION - DETAIL SHEET**

P E NUMBER:

BUDGET ITEM NO.:

SHEET NO.:

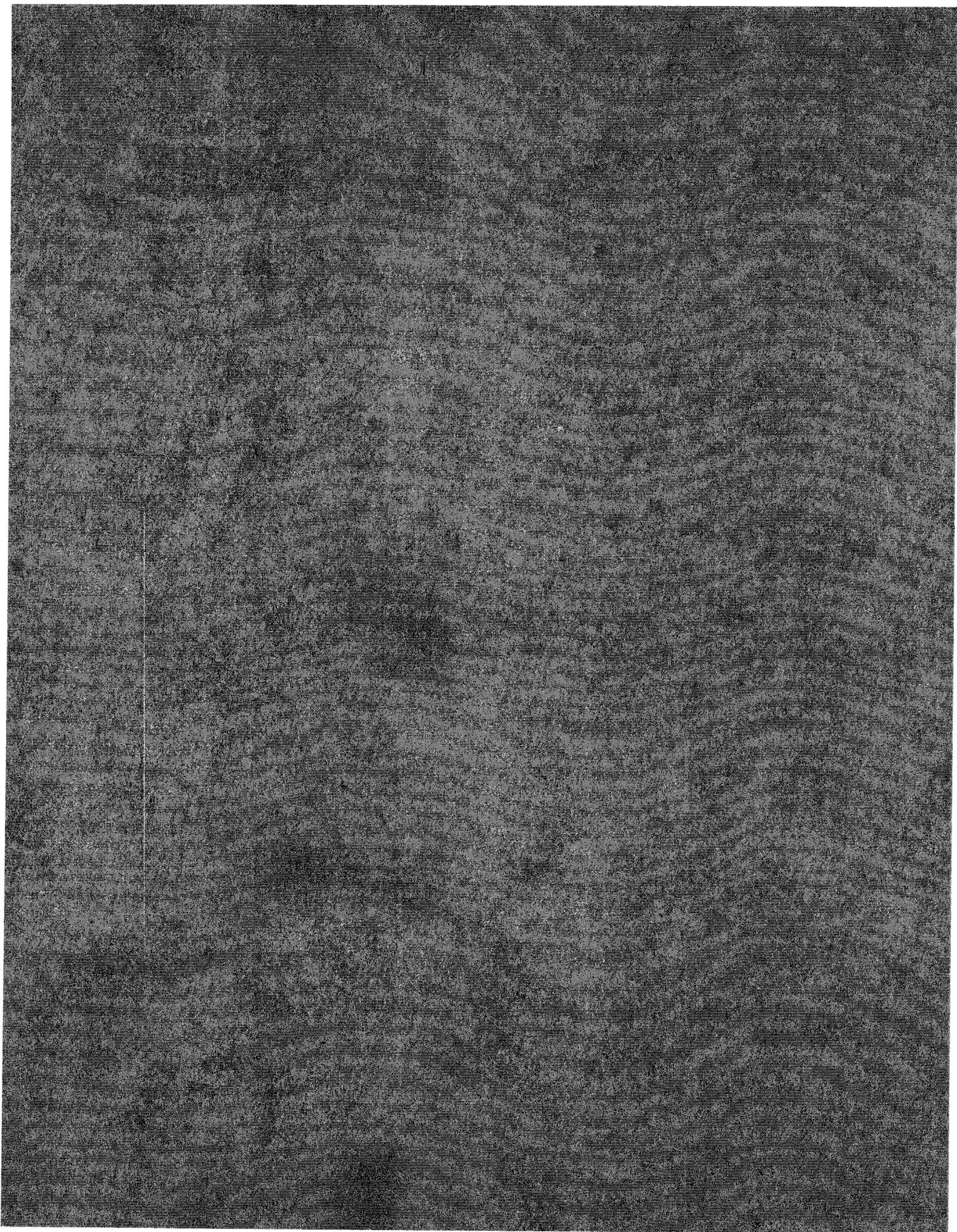
B-1

2 of 2

RETIREMENT PROPERTY UNITS	PLANT PROPERTY ACCOUNT	UNIT DESCRIPTION	QUANTITY	YEAR INSTALLED AND W.A. NUMBER

**PROJECT DESCRIPTION:**  
 Design, permit and construct 220 LF of 8-foot tall, 8 x 8 x 16 C.M.U. and split-face block wall around Well No. 30. Design and construct 238 LF of 6-foot tall, 8 x 8 x 16 C.M.U. block wall along the east property line and construct onsite retention basin at Well No. 31. Construct 376 LF of 8-foot tall, 8 x 8 x 16 C.M.U. block wall around Well No. 21. Reconstruct and rehabilitate retention basin and install secondary well flush bypass piping at Well No. 26 in Casa Grande, AZ.

	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL
C O N T R A C T W O R K	<b>Well No. 21</b>				
	Demolish and remove 400 LF chain link fences and gates	314	1	8,000.00	8,000
	Provide and install 376 LF of C.M.U. block wall and gates	314	1	72,000.00	72,000
	Paint exterior of block walls	314	1	1,300.00	1,300
	Remove and reinstall 16-inch basin outfall pipe	314	1	2,000.00	2,000
	Provide temporary site security fence	314	1	1,000.00	1,000
	Contracting Tax and Performance and Payment Bond	314	1	6,000.00	6,000
	<b>Well No. 26</b>				
	Demolish concrete splash pad and reconstruct retention basin	314	1	3,831.63	3,832
	Provide and install 4' x 48" dia. manhole riser with concrete base	314	1	5,778.30	5,778
	Provide and install concrete stairs in retention basin	314	1	1,702.07	1,702
	Provide and install D50 (6" and 2") riprap (SY)	314	269	12.16	3,271
	Trim dry well pipe and install trash screens	314	2	1,400.54	2,801
	Provide and install 8" D.I.P. catch basin drain pipe (LF)	314	36	70.71	2,546
	Provide and install 6" D.I.P. flush to waste bypass pipe, fittings	314	1	5,265.85	5,266
	Contracting Tax and Performance and Payment Bond	314	1	1,690.09	1,690
	<b>Well No. 30</b>				
	Geotechnical services and Structural calculations and drawings	314	1	3,390.00	3,390
	Demolish and remove chain link fences, gates, and block walls	314	1	4,500.00	4,500
	Provide and install 220 LF of C.M.U. block wall and gates	314	1	40,000.00	40,000
	Provide and install automatic gate opener and 120v power supply	314	1	2,500.00	2,500
	Contracting Tax and Performance and Payment Bond	314	1	6,000.00	6,000
	<b>Well No. 31</b>				
	Geotechnical services and Structural calculations and drawings	314	1	3,390.00	3,390
	Demolish and remove 238 LF chain link fence and gates	314	1	4,760.00	4,760
	Provide and install 18 LF 8-inch D.I.P. and related fittings	314	1	8,269.00	8,269
	Provide and install 12-inch fittings, install Company C-900 pipe	314	1	4,050.15	4,050
	Provide and install 12-inch D.I.P. and 12-inch gate valve for outfall	314	1	8,115.89	8,116
	Provide and install 238 LF of C.M.U. block wall and gates	314	1	23,642.92	23,643
	Paint exterior of block walls	314	1	1,265.00	1,265
	Construct 40' x 30' x 5' retention basin and dry well	314	1	17,632.43	17,632
	Provide and install 4' x 48" dia. manhole riser with concrete base	314	1	5,504.19	5,504
	Provide and install D50 (6") riprap and 3/4-inch crushed rock	314	1	8,616.00	8,616
	Contracting Tax and Performance and Payment Bond	314	1	5,581.81	5,582
	<b>Project Contingency</b>	314	1	10,000.00	10,000
<b>TOTAL CONTRACT WORK</b>					274,403
L	Project Management and Engineering Design	314	80	\$ 55.00	\$ 4,400
A	TESTING FEE	314	3	\$ 1,500.00	4,500
B	PERMIT FEE	314	1	1,500.00	1,500
O	SURVEY FEE	314	1	1,600.00	1,600
R	FIELD INSPECTION	314	80	55.00	4,400
<b>TOTAL LABOR</b>					\$ 16,400
<b>SUBTOTAL - CONTRACT WORK, MATERIALS, AND LABOR</b>					\$ 274,403
<b>OVERHEAD</b>					32,900
<b>TOTAL</b>	REFUNDABLE PORTION <input type="checkbox"/>	NON-REFUNDABLE PORTION <input type="checkbox"/>	<b>COST ESTIMATE</b>		\$ 323,703



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

September 17, 2014

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.  
3152 N. Lear Avenue, Suite 2  
Casa Grande, AZ 85122

Re: Pinal Valley Well No. 21 CMU Block Walls

PROJECT: Well No. 21 CMU Block Walls	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.: 1-5165

Dear Mr. Mills:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on September 22, 2014 Ellison-Mills Contracting, Inc. acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.

September 17, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



Jeff Kelty  
Engineering Technician  
engineering@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

INPUT DIVISION INFORMATION  
DIVISION ADDRESS  
DIVISION PHONE NUMBERS

## PROPOSAL/CONTRACT

CONTRACTOR: ELLISON-MILLS CONTRACTING, INC.	SYSTEM: Pinal Valley
ADDRESS: 3152 N. LEAR AVENUE, SUITE 2	W.A. Note: <b>WELL 21</b> 1-5165
CITY ST ZIP: CASA GRANDE, AZ 85122	BID DUE DATE: September 5, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6), 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 120 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/constructed 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:

Contractors Pollution Liability Insurance is not required for this project. Any request for information (RFI) must be received no later than August 29, 2014.

<b>CONTRACTOR</b> ELLISON-MILLS CONTRACTING, INC.	<b>PROPOSAL/CONTRACT ACCEPTED:</b> ARIZONA WATER COMPANY
By: <i>[Signature]</i>	By: <i>[Signature]</i>
Print Name: Mike Mills	Print Name: Fredrick K. Schneider, PE
Title: Owner	Title: Vice President - Engineering
Date: 9/5/14	Date: 9-22-2014





**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;  
2012 GENERAL CONDITIONS OF CONTRACT**

A copy of this entire Spec Book was sent out with *Ellison Mills* Proposal  
package for *1-5165 Well #21 Fencing on 9/22/14*



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

September 19, 2014

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.  
3152 N. Lear Avenue, Suite 2  
Casa Grande, AZ 85122

Re: Pinal Valley Well No. 26 Retention Basin

PROJECT: Well No. 26 Retention Basin	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.: 1-5165

Dear Mr. Mills:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on September 22, 2014 Ellison-Mills Contracting, Inc. acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

---

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.

September 19, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



Jeff Kelty  
Engineering Technician  
engineering@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande  
220 E. 2nd Street

## PROPOSAL/CONTRACT

CONTRACTOR: ELLISON - MILLS CONTRACTING, INC.	SYSTEM: Pinal Valley
ADDRESS: 3152 N. LEAR AVENUE, SUITE 2	W.A. No(s): <b>Will #26 1-5165</b>
CITY ST ZIP: CASA GRANDE, AZ 85122	BID DUE DATE: August 21, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 120 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/constructed 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:

Mandatory pre-bid meeting on July 31, 2014 at 9:00 AM the site. Any request for information (RFI) must be received no later than August 7, 2014. Company will provide written response to RFI no later than August 14, 2014.

<b>CONTRACTOR</b> <b>ELLISON-MILLS CONTRACTING, INC.</b>	<b>PROPOSAL/CONTRACT ACCEPTED:</b> <b>ARIZONA WATER COMPANY</b>
By:	By:
Print Name: <b>Mike Mills</b>	Print Name: <b>Fredrick K. Schneider, PE</b>
Title: <b>Owner</b>	Title: <b>Vice President - Engineering</b>
Date: <b>8/17/14</b>	Date: <b>9-22-2014</b>

AFF

AJH





**ARIZONA WATER COMPANY**

**COMMENCEMENT  
NOTICE**

CONTRACTOR:

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.  
3152 N. Lear Avenue, Suite 2  
Casa Grande, AZ 85122

DATE: 9/22/14  
DIVISION: CASA GRANDE  
SYSTEM: PINAL VALLEY  
W.A.: 1-5165

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

DESCRIPTION OF WORK:

Reconstruct and rehabilitate Casa Grande Well No. 26 retention basin and install secondary well flush to waste bypass piping in Casa Grande, Arizona.

PERFORMANCE AND  
PAYMENT BONDS  
REQUIRED:  Yes  No

TOTAL DAYS  
ALLOWED: 100

COMPLETION  
DATE: 12/31/14

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting.

**ARIZONA WATER COMPANY**  
Company

**ELLISON-MILLS CONTRACTING, INC**  
Contractor (type name)

By *Judson K. Ellison*  
Title Vice President - Engineering

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

*AFH*



**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;  
2012 GENERAL CONDITIONS OF CONTRACT**

*nk*

A copy of this entire Spec Book was sent out with Ellison Mills Proposal  
package for 1-5165 Well #20 Fencing on 9/22/14 *OK*



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

September 18, 2014

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.  
3152 N. Lear Avenue, Suite 2  
Casa Grande, AZ 85122

Re: Pinal Valley Well No. 31 CMU Block Walls

PROJECT: Well No. 31 CMU Block Walls	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.: 1-5165

Dear Mr. Mills:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on September 22, 2014, Ellison-Mills Contracting, Inc. acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

---

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.

September 18, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



Jeff Kelty  
Engineering Technician  
engineering@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande  
220 E. 2nd Street

## PROPOSAL/CONTRACT

CONTRACTOR: ELLISON-MILLS CONTRACTING, INC.	SYSTEM: PINAL VALLEY
ADDRESS: 3152 N. LEAR AVENUE, SUITE 2	W.A. No(s): 1-5165
CITY ST ZIP: CASA GRANDE, AZ 85122	BID DUE DATE: August 7, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 120 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/constructed 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:

Company will make (1) Progress Payment and (1) Final Payment.

<b>CONTRACTOR</b> ELLISON-MILLS CONTRACTING, INC.	<b>PROPOSAL/CONTRACT ACCEPTED:</b> ARIZONA WATER COMPANY
By: <i>[Signature]</i>	By: <i>[Signature]</i>
Print Name: <i>Mik Mills</i>	Print Name: Fredrick K. Schneider, PE
Title: <i>Owner</i>	Title: Vice President - Engineering
Date: <i>8/7/14</i>	Date: <i>9-22-2014</i>

*AJH*



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande  
 220 E. 2nd Street  
 Casa Grande, AZ 85122 PH: 520-836-8785

## PROPOSAL/CONTRACT

CONTRACTOR: <b>ELLISON-MILLS CONTRACTING, INC.</b>		SYSTEM: <b>PINAL VALLEY</b>
AZ CONTRACTOR LICENSE NO: <b>241166</b>	CLASSIFICATION: <b>A</b>	W.A. No(s): <b>1-5165</b>
ADDRESS: <b>3152 N. LEAR AVENUE, SUITE 2</b>		BID DUE DATE: <b>August 7, 2014</b>
CITY ST ZIP: <b>CASA GRANDE, AZ 85122</b>	BID BOND REQUIRED <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

DESCRIPTION OF PROJECT: **Demolish and remove 238 LF chain link fence and gates, install 238 LF of 6-foot tall 8 x 8 x 16 C.M.U. block wall with Ultra-Barrier on east property line, and construct retention basin at Well Site No. 31 in Casa Grande, Arizona per A.W.C. Dwg. No. PV-0073.**

	QUANTITY	UNIT PRICE		TOTAL COST		
		LABOR	MATERIALS	LABOR	MATERIALS	
<b>1-2. MATERIALS EXEMPT FROM CONTRACTING TAX (per Paragraph 6)</b>						
Provide and install 8-inch D.I.P. and related fittings	18 LF	104.28	355.11	1877.04	6391.78	
Provide and install 12-inch fittings (and install 35 LF of Company-provided 12-inch C-900 PVC flush pipe)	1	2044.96	2005.19	2044.96	2005.19	
Provide and install 12-inch M.J. gate valve	1	1106.46	1941.68	1106.46	1941.68	
Provide and install 8-inch D.I.P. and related fittings (in lieu of 12-inch C-900 PVC and fittings) Price Only	35 LF	58.43	21.44			
3. Total Labor to Install Exempt Materials (add the amounts in column 1)				3	5028.46	
4. Total Exempt Materials (add the amounts in column 2)					4	10358.85
<b>5-6. NON-EXEMPT MATERIALS</b>						
Provide and install approx. 238 LF of 6-foot tall 8 x 8 x 16 C.M.U. block wall with Ultra-Barrier	238 LF	48.78	50.56	11609.64	12033.28	
Paint exterior of block wall	1	605.00	660.00	605.00	660.00	
Construct 40' x 30' x 5' deep retention basin	1	4056.81	0	4056.81	0	
Provide and install 12-inch D.I.P. and tie-in to existing weir box	25 LF	156.88	45.83	3922.00	1145.75	
Provide and install 4-foot tall x 48-inch diameter precast manhole riser with 6-foot x 6-foot x 6-inch thick concrete pad	1	829.19	4675.00	829.19	4675.00	
Provide and install dry well	1	2630.62	10945.00	2630.62	10945.00	
Provide and install 6-inch D(50) riprap	56 SY	33.51	7.78	1876.56	435.68	
Provide and install 3/4-inch decomposed granite	83 CY	22.61	53.34	1876.63	4427.22	
Demolish and remove chain link fence and gates	238 LF	20.00	0	4760.00	0	
7. Total Labor to Install Non-Exempt Materials (add the amounts in column 5)				7	32166.45	
8. Total Non-Exempt Materials (add the amounts in column 6)					8	34321.93
9. Subtotal A (add lines 3, 7 and 8)					9	71516.84
10. Contracting Tax Base (multiply the amount on line 9 by 0.65)				10	46485.95	
11. Applicable Contracting Tax Rate				11	10.770	
12. Contracting Tax (multiply the amount on line 10 by line 11)					12	4974.00
13. Subtotal B (add lines 4, 9 and 12)					13	86829.69
14. 100% Performance and Payment Bonds Cost					14	607.81
15. Estimated Total Cost (add lines 13 and 14)					15	87437.50

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



ARIZONA WATER COMPANY

CONTRACT CHANGE ORDER

CONTRACTOR: ELLISON-MILLS 3152 N. LEAR AVENUE, SUITE 2 CASA GRANDE, AZ 85122	DATE: August 15, 2014	CONTRACT DATE:
	W.A. NO.: 1-5165	CHANGE ORDER NO.: 1
DESCRIPTION OF WORK: Install 8-inch D.I.P. and related fittings in lieu of Company-provided 12-inch C-900 PVC flush pipe.	APPLICABLE C. O. COST: \$ -1,254.70	
	ORIGINAL CONTRACT AMOUNT: \$ 87,437.50	
	SUM OF ALL CHANGE ORDERS TO DATE: \$ -1,254.70	
REASON FOR ADDITIONAL WORK: Cost of using new materials is less than using existing C-900 PVC pipe, which requires rehabilitation prior to installation.	APPROVAL LEVEL REQ'D: (CIRCLE ALL THAT APPLY) (BASED ON COST)	
	<input checked="" type="checkbox"/> Mgr & Eng Up to \$10,000 or 10% whichever is less	<input type="checkbox"/> VP Eng Up to \$100,000 or 20% whichever is less
BASIS OF PAYMENT: <input type="checkbox"/> In accordance with rates contained in Contractor's Proposal/Contract dated: <input checked="" type="checkbox"/> In accordance with material prices, labor and equipment rates shown on Proposal dated: August 7, 2014 <input type="checkbox"/> Lump Sum Price (including taxes) of: (Include supporting documentation) \$ <input type="checkbox"/> Other:		

Contractor is hereby authorized to proceed with the work as described above. The Company will pay for the above-described work as indicated above.

Contractor agrees, as an independent contractor, to perform the above-described work in accordance with the Company's General Conditions of Contract, and the Company's Construction Specifications and Standard Specification Drawings ("General Conditions of Contract") and related construction drawings which, were provided with the original Proposal/Contract and supplemented herein, and agrees that all provisions of said General Conditions of Contract dated as of April 2004, including any subsequent amendments thereto, and related construction drawings, apply to work covered under this Contract Change Order.

Work Authorization Approval for additional funds required

YES  NO  (circle one) If yes, attach applicable form & proof of payment for outside funded work.

Division Superintendent/Manager

Ellison-Mills Contracting  
Contractor: (Name)

Project Engineer/Project Manager

By: [Signature]  
Contractor's Representative Signature

AWC Vice President - Engineering

Name: M.W. Mills  
(Printed)

CHANGE ORDER AUTHORIZATION OVER \$100,000 OR 20% OF THE CONTRACT NOT VALID WITHOUT SIGNATURES BELOW

It's: [Signature]  
(Title or Position)

AWC Vice President and Treasurer
AWC President

Date Work Started

CONTRACTOR'S INVOICE APPROVED BY:

Date Work Completed

Company's Representative Overseeing the Work (signature)

DISTRIBUTION:

Original to Person Authorizing Work and, when completed, to Accounting Dept. with approved invoice for the work with supporting documentation. Copy to Contractor. Copy to Project Engineer.

Labor and Material Releases Required: <input type="checkbox"/> Yes <input type="checkbox"/> No Releases Received and Approved By: _____ Company's Authorized Signature
---



**ARIZONA WATER COMPANY**

**COMMENCEMENT  
NOTICE**

CONTRACTOR:

Mr. Mike Mills  
Ellison-Mills Contracting, Inc.  
3152 N. Lear Avenue, Suite 2  
Casa Grande, AZ 85122

DATE: 9/22/14

DIVISION: CASA GRANDE

SYSTEM: PINAL VALLEY

W.A.: 1-5165

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

DESCRIPTION OF WORK:

Demolish and remove 238 LF chain link fence and gates, install 238 LF of 6-foot tall 8 x 8 x 16 CMU block wall with Ultra-Barrier on east property line, and construct retention basin at Well Site No. 31 in Casa Grande, Arizona per AWC DWG No. PV-0073.

PERFORMANCE AND  
PAYMENT BONDS  
REQUIRED:  Yes  No

TOTAL DAYS  
ALLOWED: 100

COMPLETION  
DATE: 12/31/14

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting.

**ARIZONA WATER COMPANY**  
Company

**ELLISON-MILLS CONTRACTING, INC**  
Contractor (type name)

By *Justin K. Schmidt*  
Title Vice President - Engineering

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



**ARIZONA WATER COMPANY**

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

CONSTRUCTION SPECIFICATIONS: E-8-1

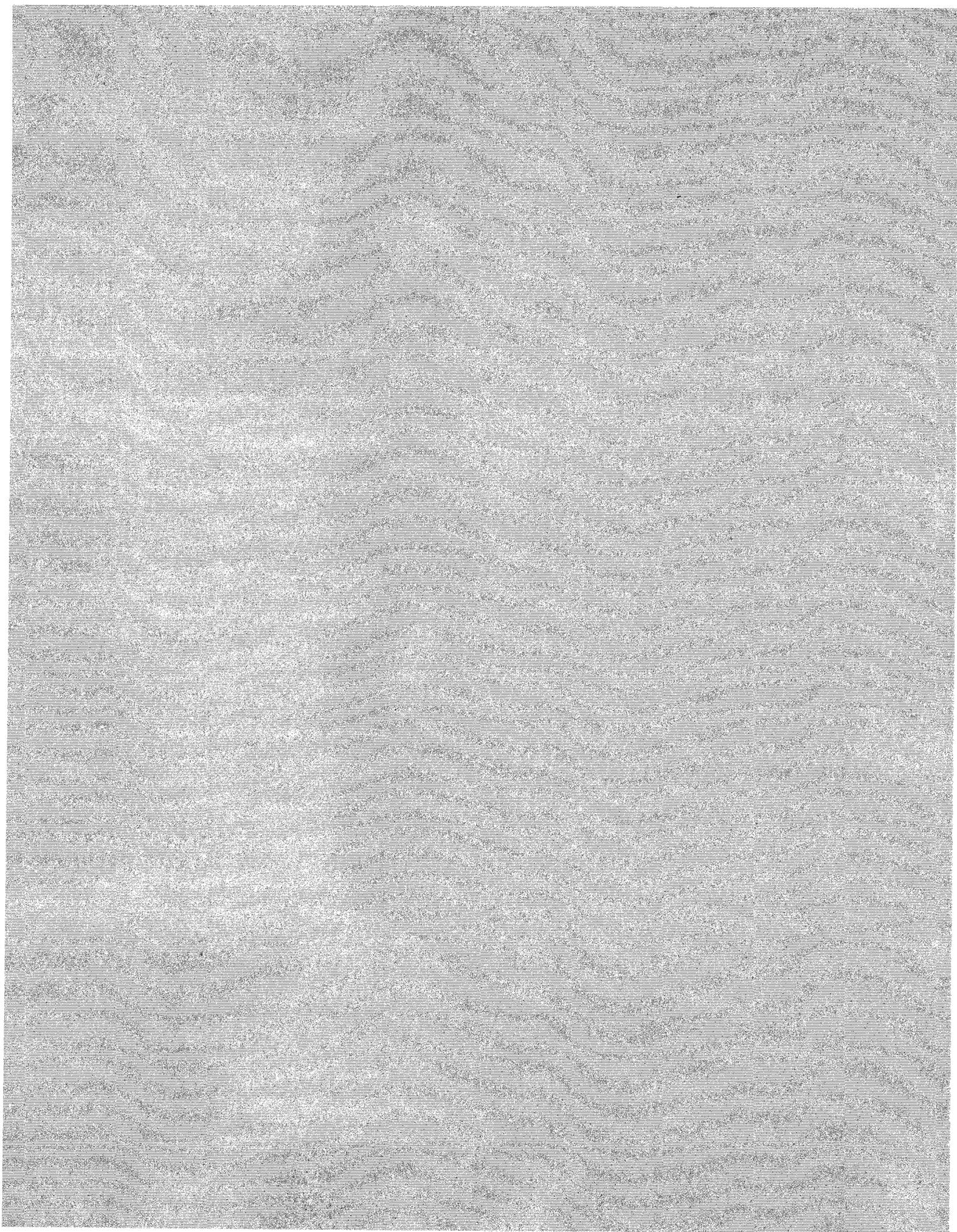
STANDARD SPECIFICATION DRAWINGS: E-9-1

**2007 EDITION WITH 2010 REVISIONS;  
2012 GENERAL CONDITIONS OF CONTRACT**

A copy of this entire Spec Book was sent out with Ellison Mills  
package for

1-5165 Pinal Valley Cmu Blackwells on

Proposal



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

September 17, 2014

Mr. Joel Felix  
Felix Construction Company  
1326 W. Industrial Drive  
Coolidge, AZ 85128

Re: Pinal Valley Well No. 30 CMU Block Walls

PROJECT: Well No. 30 CMU Block Walls	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.: 1-5165

Dear Mr. Felix:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on September 22, 2014, Felix Construction Company acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

---

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

**ARIZONA WATER COMPANY**

Mr. Joel Felix  
Felix Construction Company

September 17, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



Jeff Kelty  
Engineering Technician  
engineering@azwater.com

afh  
Enclosure

---

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)



# ARIZONA WATER COMPANY

INPUT DIVISION INFORMATION  
DIVISION ADDRESS  
DIVISION PHONE NUMBERS

## PROPOSAL/CONTRACT

CONTRACTOR: <b>FELIX CONSTRUCTION COMPANY</b>	SYSTEM: <b>Pinal Valley</b>
ADDRESS: <b>1326 W. INDUSTRIAL AVENUE</b>	WA No(s): <b>1-5165</b>
CITY ST ZIP: <b>COOLIDGE, AZ 85128</b>	BID DUE DATE: <b>September 5, 2014</b>

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B 6.), 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 60 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/constructed 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:

Contractors Pollution Liability Insurance is not required for this project. Any request for information (RFI) must be received no later than August 29, 2014.

<b>CONTRACTOR</b> <b>FELIX CONSTRUCTION COMPANY</b>	<b>PROPOSAL/CONTRACT ACCEPTED:</b> <b>ARIZONA WATER COMPANY</b>
By: <i>Joel Felix</i>	By: <i>Fredrick K. Schneider</i>
Print Name: <b>Joel Felix</b>	Print Name: <b>Fredrick K. Schneider, PE</b>
Title: <b>Manager</b>	Title: <b>Vice President - Engineering</b>
Date: <b>09.05.14</b>	Date: <b>9-27-2014</b>





**ARIZONA WATER COMPANY**

**COMMENCEMENT  
NOTICE**

CONTRACTOR:

Mr. Joel Felix  
Felix Construction Company  
1326 W. Industrial Drive  
Coolidge, AZ 85128

DATE: 9/22/14  
DIVISION: CASA GRANDE  
SYSTEM: PINAL VALLEY  
W.A.: 1-5165

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

DESCRIPTION OF WORK:

Demolish and remove perimeter wall, fences and gates, construct 8-foot tall, 8 x 8 x 16 C.M.U. block wall and gates with Ultra-Barrier and automatic gate opener at Well No. 30 in Casa Grande, Arizona.

PERFORMANCE AND  
PAYMENT BONDS  
REQUIRED:

Yes  No

TOTAL DAYS  
ALLOWED:

70

COMPLETION  
DATE:

12/1/14

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting.

**ARIZONA WATER COMPANY**

Company

**FELIX CONSTRUCTION COMPANY**

Contractor (type name)

By

Joel Felix

Title

Vice President - Engineering

By

Title

AFH

*AFH*



**ARIZONA WATER COMPANY**

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

CONSTRUCTION SPECIFICATIONS: E-8-1

STANDARD SPECIFICATION DRAWINGS: E-9-1

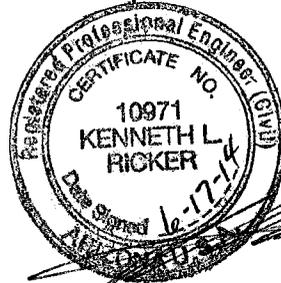
**2007 EDITION WITH 2010 REVISIONS;  
2012 GENERAL CONDITIONS OF CONTRACT**

*K*

A copy of this entire Spec Book was sent out with *Felix Construction* Proposal  
package for *1-5165 Well # 30 Pencing* *9/22/14* *MA*



**Geotechnical Engineering Report  
Screen Walls  
Arizona Water Company  
Well Sites 30 and 31  
1882 East Florence Boulevard  
and 1697 East Elaine Court  
Casa Grande, Arizona  
RAMM Project No. G21393**



*Expires 3/31/2016*

For:  
Arizona Water Company  
3805 North Black Canyon Highway  
Phoenix, Arizona 85015-5351



By:  
Ricker • Atkinson • McBee • Morman & Associates, Inc.  
2105 South Hardy Drive, Suite 13  
Tempe, Arizona 85282

## TABLE OF CONTENTS

REPORT	<u>PAGE</u>
Introduction.....	1
Proposed Construction.....	1
Site Conditions.....	1
Field Explorations.....	1
Laboratory Analysis.....	2
Subsurface Conditions.....	2
Discussion of Test Results.....	3
Foundation Design Recommendations	
Foundations.....	3
Lateral Earth Pressures.....	4
Site Development Recommendations	
Surface Drainage.....	4
Excavatability.....	5
Corrosion Potential.....	5
Concrete Durability.....	5
Workability.....	6
Materials Suitability and Requirements	
Site Soils.....	6
Imported Soils.....	6
Site Preparation and Grading Procedures	
Screen Wall Areas.....	6
APPENDIX A - FIELD EXPLORATION	
Site Plan.....	A1
Soil Legend.....	A2
Test Boring Logs.....	A3
APPENDIX B - LABORATORY ANALYSIS	
Compression.....	B1
Percent Passing No. 200 Sieve, Atterberg Limits, Percent Expansion.....	B3
pH, Minimum Resistivity.....	B4
Soluble Salts, Sulfates and Chlorides.....	B5



*Expires 3/31/2016*

# REPORT



R·A·M·M

## **INTRODUCTION**

This report presents the results of our geotechnical engineering services for the Screen Walls at Well Sites 30 and 31, located in Casa Grande, Arizona. The scope of our services included performing a field exploration program, laboratory analysis and geotechnical engineering evaluation, analysis and recommendations. The geotechnical recommendations presented herein include those for anticipated excavation conditions, foundation design for support of the new facilities, site development, and material use and requirements. We would be pleased to discuss with you any additional recommendations you may require. In addition, we are available to review project specifications and plans for conformance with our recommendations at no charge to you.

This firm should be notified for additional evaluation and recommendations should the project design parameters, site use or conditions encountered during construction differ from those presented herein.

## **PROPOSED CONSTRUCTION**

The proposed Screen Walls will be 6 to 8-foot high masonry walls constructed with 8-inch by 8-inch by 16-inch concrete masonry units (CMU) around the perimeter of the Well Site 30 and along the east side of Well Site 31. The Screen Walls will be supported on spread footings. Maximum structural loads for the Screen Walls are expected to range from 0.3 to 1.0 kips per lineal foot (klf) for walls.

## **SITE CONDITIONS**

Well Site 30 is located at 1882 East Florence Boulevard and Well Site 31 is located at 1697 East Elaine Court. Both sites are in Casa Grande, Arizona. At the time of our investigation, the well sites had existing perimeter chain-link fences with some small areas of masonry fence.

## **FIELD EXPLORATIONS**

Subsurface conditions at the well sites were explored by drilling one test boring to a depth of 20 feet in the proposed screen wall area at each site, at the locations shown on the Site Plans in Appendix A. The test borings were drilled with a CME 55 drill rig using 8-inch diameter, hollow-stem auger. The drilling equipment and crew were provided by D&S Drilling, Inc. The test boring locations were determined in the field by our field technician. During the field

exploration, representative undisturbed and disturbed samples were obtained, the field exploration logged and soils field-classified by our field technician, who also directed the drill crew. Relatively undisturbed samples of the subsoils were obtained by driving a 3-inch diameter, ring-lined, open-end sampler into the soil with a 140-pound hammer dropping 30 inches. In addition to drilling and sampling, continuous penetration tests using a 2-inch diameter rod and the 140-pound hammer dropping 30 inches were performed and extended to a depth of 7 feet adjacent to Test Borings 1 and 2. The results of the field explorations are presented on the Test Boring Logs in Appendix A.

### LABORATORY ANALYSIS

Representative samples obtained during the field explorations were subjected to the following tests in our laboratory.

<u>Type of Test</u>	<u>Type of Sample</u>	<u>Number of Samples Tested</u>
Compression	Undisturbed	2
Percent Passing No. 200 Sieve & Atterberg Limits	Representative	2
Swell	Remolded	2
pH/Minimum Resistivity	Representative	2
Moisture Content/Dry Density *	Undisturbed	8
Soluble Salts, Sulfates and Chlorides **	Representative	2

\* Reported in the test boring logs.

\*\* Testing performed by Motzz Laboratory, Inc.

The results of the laboratory analysis are presented in Appendix B.

### SUBSURFACE CONDITIONS

The results of the test borings are presented in Appendix A in the Test Boring Logs. At Test Boring 1 (Well Site 30), the surface and near-surface soils to a depth of 3.5 feet consisted of sandy clay with some gravel fill. These soils were very stiff, had medium plasticity and were underlain by stiff sandy clay with a trace of gravel which extended to the remaining depth of exploration (20 feet). At Test Boring 2 (Well Site 31), the surface and near surface soils to a depth of 1.0 feet consisted of clayey sand with a trace of gravel fill. These soils were medium dense, had medium plasticity fines and were underlain by medium dense clayey sand with a trace of gravel which extended to the remaining depth of exploration (20 feet). Soil moisture contents

were described as slightly damp to damp in Test Boring 1 to a depth of 3.5 and were described as slightly damp for the remainder of Test Boring 1 and for the full depth of Test boring 2. No groundwater was observed in the test borings during the field exploration.

## **DISCUSSIONS OF TEST RESULTS**

Remolded samples of the near surface soils from Well Site 30 exhibited a moderate swell potential and remolded samples from Well Site 31 exhibited a low swell potential following wetting when tested in the laboratory. Undisturbed samples of the soils from anticipated shallow foundation grades at Well Sites 30 and 31 were found to undergo slight compression during loading to approximate foundation loads. Upon wetting at approximate foundation loads these soils exhibited slight additional compression.

## **FOUNDATION DESIGN RECOMMENDATIONS**

### Foundations:

The proposed screen walls from Well Sites 30 and 31 can be supported on spread footings. Footing elements for the screen walls may be supported on the existing fill, undisturbed native soils and/or new compacted fill. Shallow spread footings may be designed using an allowable bearing pressure of 1000 psf, provided the bottom of the footings are at least 2.0 feet and 1.0 foot below the lowest adjacent finished grade within 5 feet of the perimeter of the screen walls at Well Sites 30 and 31, respectively. Structural loads should not exceed 2 kips per lineal foot. All footing excavations should be reviewed by a representative of the geotechnical engineer prior to placing reinforcing steel or concrete. Any loose fill, disturbed or unstable soils should be removed from the bearing surface and replaced with MAG cement/AB slurry or as otherwise directed by the geotechnical engineer.

The allowable bearing capacity should be applied to maximum, design dead plus live loads and may be increased by one-third when considering temporary loads such as transient wind or seismic loads. A one-third increase may also be used for toe pressures due to eccentric or lateral loadings, assuming the entire footing bearing surface remains in compression. The weight of the footing concrete below grade may be neglected in dead load computations. The recommended minimum footing width is 1.33 feet for continuous wall footings. A Site Class designation of C should be used for the site per the 2006, 2009 and 2012 International Building Code (IBC). The soil profile and site class designations are based on site conditions and a review of available well

holes within a one mile radius of the site. This data was available on ADWR's website and indicated that dense, cemented material exists to depths over 100 feet in the immediate vicinity of the site.

The estimated total and differential footing settlements for the loading conditions described above are on the order of ½ inch. These estimated settlements are applicable where soils below footing level remain at or below the construction moisture content. Additional post-construction, differential settlement of equal magnitude could occur if bearing soils become wet after construction. Therefore, continuous footings and stem walls should be reinforced and masonry walls constructed with properly designed reinforcement and with frequent expansion/contraction joints. Positive drainage away from the perimeter of the Screen Walls is essential to minimize the potential for moisture infiltration into bearing soils.

Lateral Earth Pressures:

The following tabulation presents the recommended lateral earth pressures and base friction values which should be used in the lateral design of footings and earth retaining systems. The lateral pressures are equivalent fluid pressures for average anticipated conditions.

Backfill Pressures:	
Unrestrained walls -----	40 psf/ft
Passive Pressures:	
Continuous -----	250 psf/ft
Coefficient of Base Friction:	
Concrete to soil -----	0.40

The above equivalent fluid pressures are for vertical walls with horizontal backfills and do not include temporary loads imposed by compaction equipment or permanent loads resulting from backfill swell pressures, hydrostatic pressures or surcharge loads. Any retaining walls should contain weep holes to reduce the potential for the buildup of hydrostatic pressures.

**SITE DEVELOPMENT RECOMMENDATIONS**

Surface Drainage:

Most soils will undergo some degree of volume change as the result of wetting. The degree of volume change will depend on the type of soil, swell potential, natural soils structure or degree of compaction (if a fill). These volume changes could result in movements in overlying structures and non-structure elements including sidewalks, planters, screen walls, etc. Therefore, good site

and surface drainage away from these elements is required. In addition, water should not be allowed to pond within 10 feet of the structures or other elements which are sensitive to movements.

Excavatability:

The excavatability of site materials is difficult to evaluate based only on the exploration equipment used during this design report. Therefore, we recommend that the contractor evaluate the excavatability of site materials by performing test excavations with the size and type of equipment the contractor plans on using at the site. For design purposes the following paragraph presents our best analysis as to the excavatability of site soils.

The near surface soils to a depth of at least 10 feet can probably be removed with conventional excavating equipment. OSHA requires all excavations over five feet in depth, in which personnel are to enter, be either braced or sloped in accordance with OSHA regulations.

Corrosion Potential:

As part of this investigation, laboratory pH and Minimum Resistivity, and Soluble Salts, Sulfates and Chlorides testing of site soils was conducted. The results of the laboratory testing are included in Appendix B. Based on these results and corrosion potential criteria presented in the Arizona Department of Transportation (ADOT) Preliminary Engineering and Design Manual, Figure 203.04-5 and National Association of Corrosion Engineers (NACE) International Corrosion Severity Ratings, there appears to be a high potential for corrosion to buried ferrous metal structures and pipelines. This potential is a function of soil type and moisture content, material type and/or composition, water chemistry and other factors. Accordingly, the results of the laboratory testing should be made available to material suppliers and corrosion experts for review.

Concrete Durability:

As part of this investigation, Soluble Salts, Sulfates and Chlorides testing of site soils was conducted. The results of the laboratory testing are included in Appendix B. Based on our laboratory test results and 2006 IBC Concrete Durability Requirements, Section 1904, there appears to be a low potential for deterioration to concrete in contact with site soils. This potential is a function of soil type and moisture content, material type and/or composition, water

chemistry and other factors. Accordingly, the results of the laboratory testing should be made available to material suppliers and corrosion experts for review.

Workability:

Wetting site soils such that moisture contents are at or above optimum could result in some soil pumping under dynamic loadings such as heavy construction equipment driving over the area. In structure areas, some pumping is not detrimental to foundation or exterior slabs provided the specified percent compaction is achieved. However, in structure and slab areas where severe pumping has damaged subgrade conditions, the area should be allowed to dry until soils are workable without pumping or the wetted areas removed and replaced with drier site soils.

**MATERIALS SUITABILITY AND REQUIREMENTS**

Site Soils:

The near surface fill and native soils have medium plasticity fines and exhibit moderate and low swell potentials when compacted and wetted at Well Sites 30 and 31, respectively. These soils may be used as fill and backfill in all areas provided these soils are placed and compacted at moisture contents in the range of optimum to 3% above optimum. All materials should be free of organics, debris, rubble and material greater than 6 inches in size.

Imported Soils:

Fill required beyond that available from site sources and used to raise at-grade equipment areas, or for use as retaining wall backfills, should be imported soils meeting the following requirements:

Maximum Particle Size ----- 6 inches  
Maximum Swell Potential ----- 1.5%\*

\* Based on a sample which is remolded to 95% of the ASTM D698 maximum dry density at a moisture content of 2 percent below optimum, placed under a surcharge load of 100 psf and wetted.

**SITE PREPARATION AND GRADING PROCEDURES**

Screen Wall Areas:

Recommendations presented in the previous sections of this report are based upon the following site preparation and grading procedures. Therefore, all earthwork should be accomplished with observation and testing by a qualified technician under the direction of a registered geotechnical/

materials engineer. The following apply to the areas within and extending 5 feet beyond the screen walls.

1. Clear and grub the area by removing and disposing of all vegetation, debris, rubble and remnants of any former developments.
2. Strip the site of any loose fill zones, any dumped fill piles and any unstable soils. During stripping observe the surface for evidence of buried debris, vegetation or disturbed materials which will require additional removal. Areas steeper than 5H to 1V should be benched and any depressions widened to accommodate compaction equipment.
3. Prepare the ground surface in at-grade areas and in fill areas by scarifying, moisture conditioning and compacting the exposed surface soils to a depth of 8 inches.
4. Moisture condition and place all fill and backfill materials required to achieve specified grades. Fill materials should be moisture conditioned, placed and compacted in horizontal lifts of thickness compatible with the compaction equipment being used.
5. Compact subgrade, fill, backfill or subbase fill to the following minimum percent compaction of the ASTM D698 maximum dry density for each lift.

<u>Material</u>	<u>Minimum Percent Compaction</u>
Soil:	
Below foundations -----	95
Backfill: * -----	90

\* Outside of screen wall areas.

6. The moisture content of soil and base materials at the time of compaction should be:

<u>Type</u>	<u>Area of Use</u>	<u>Moisture Content</u>
On-Site	Screen Walls	Optimum to optimum plus 3%
Imported	Screen Walls	Optimum plus or minus 3%

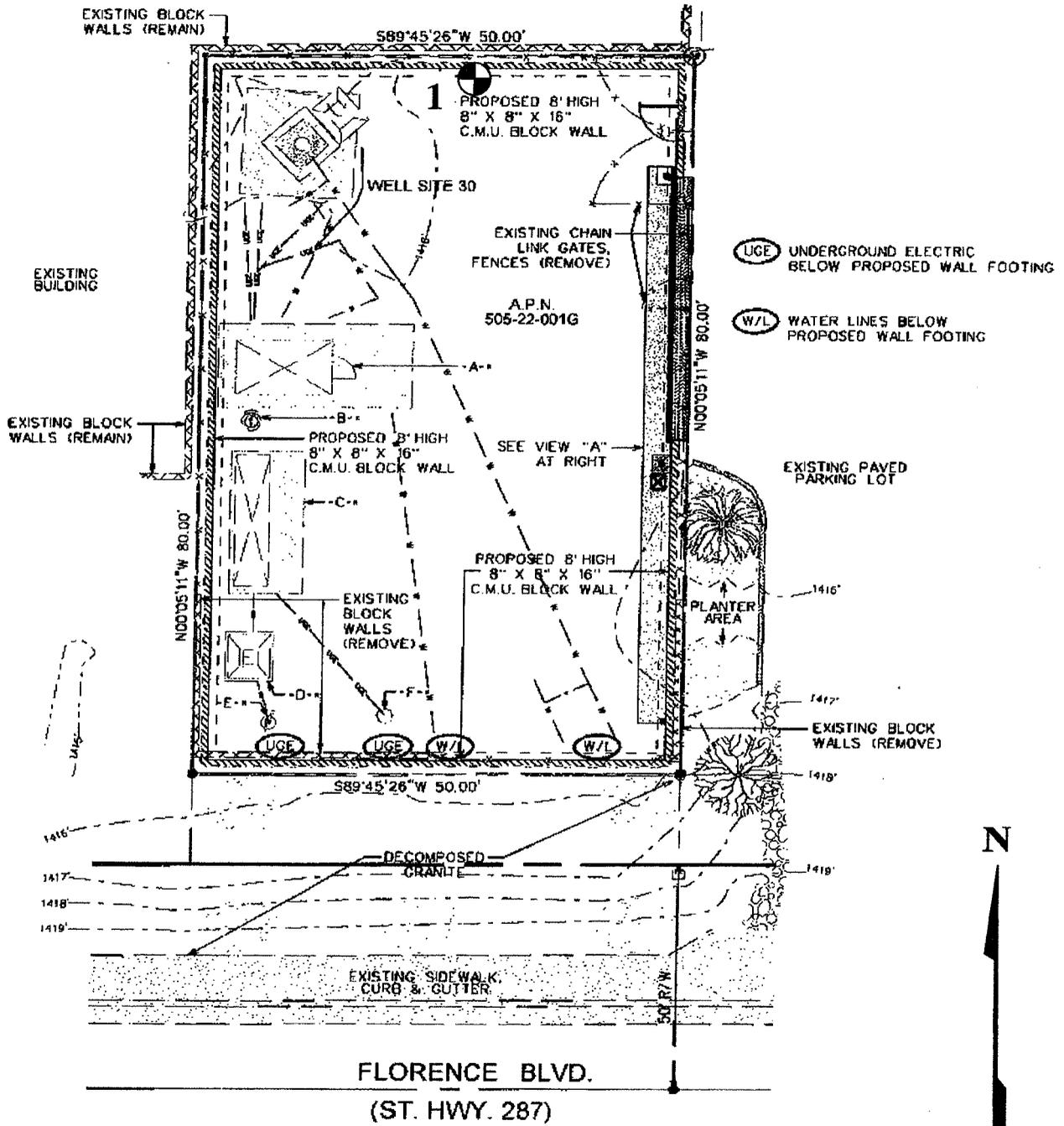
7. Any soils which are disturbed or overexcavated by the contractor outside the limits of the plans or specifications should be replaced with materials compacted as specified above. The above compaction requirements will also apply to any disturbance occurring within the construction limits, including but not limited to backfilling of trenches inside and outside of the building pad.

**APPENDIX A**  
**FIELD EXPLORATIONS**



R·A·M·M

Arizona Water Company - Well Site No. 30  
 1882 East Florence Boulevard, Casa Grande

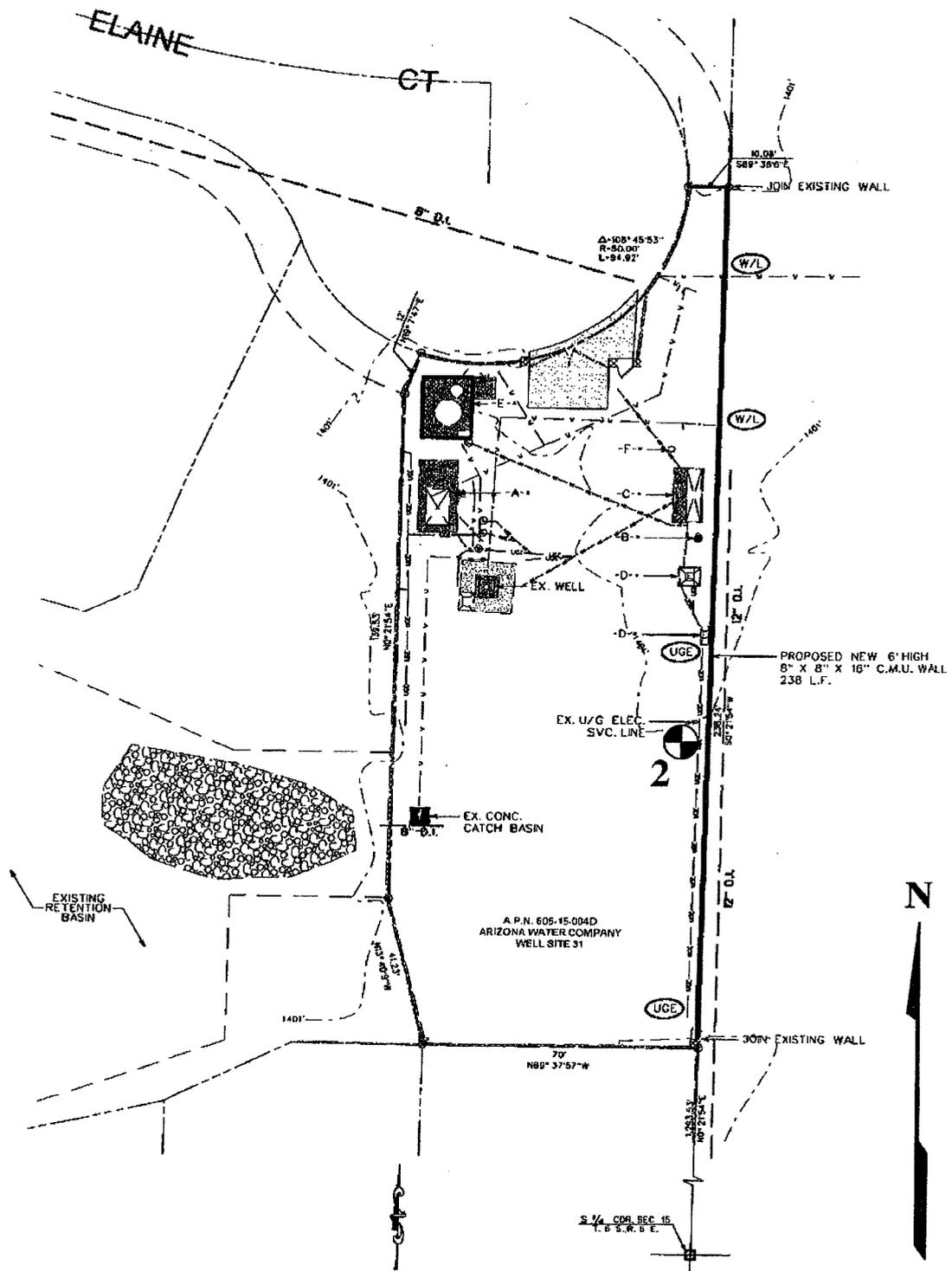


Test Boring Location

Not To Scale

SITE PLAN

Arizona Water Company - Well Site No. 31  
 1697 East Elaine Court, Casa Grande



 Test Boring Location

Not To Scale

SITE PLAN

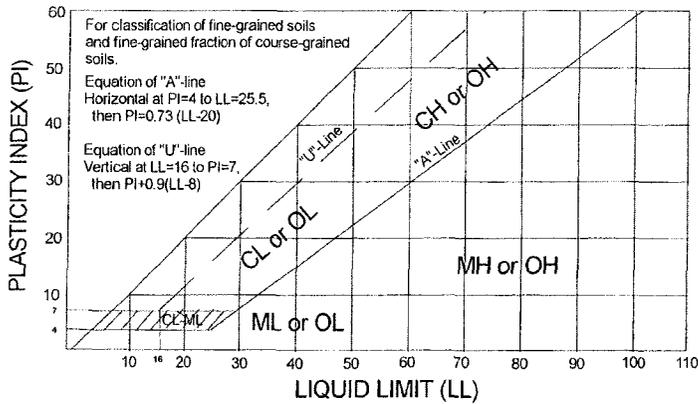
# LEGEND

ASTM Designation: D2487-11

(Based on Unified Soil Classification System)

## CLASSIFICATION OF SOILS

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests				Soil Classification	
				Group Symbol	Name
COARSE-GRAINED SOILS More than 50% retained on No. 200 Sieve	Gravels More than 50% coarse fraction retained on No. 4 Sieve	Clean Gravels Less than 5% fines	$C_u > 4$ and $1 < C_c < 3$	GW	Well graded gravel
		Gravels with Fines More than 12% fines	$C_u < 4$ and/or $1 > C_c > 3$	GP	Poorly graded gravel
		Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines	$C_u > 6$ and $1 < C_c < 3$	SW
	Sands with Fines More than 12% fines	Clean Sands Less than 5% fines	$C_u < 6$ and/or $1 > C_c > 3$	SP	Poorly graded sand
	Sands and Clays Liquid limit less than 50	Inorganic	Fines classify as ML or MH	GM	Silty gravel
	Sands and Clays Liquid limit less than 50	Inorganic	Fines classify as CL or CH	GC	Clayey gravel
FINE-GRAINED SOILS 50% or more passes the No. 200 Sieve	Sands and Clays Liquid limit less than 50	Inorganic	$P_i > 7$ and plots on or above "A" line	CL	Lean clay
		Inorganic	$P_i < 4$ or plots below "A" line	ML	Silt
		Organic	Liquid limit - oven dried < 0.75 Liquid limit - not dried	OL	Organic clay Organic silt
		Organic	$P_i$ plots on or above "A" line	CH	Fat clay
	Sands and Clays Liquid limit 50 or more	Inorganic	$P_i$ plots below "A" line	MH	Elastic silt Organic clay
		Organic	Liquid limit - oven dried < 0.75 Liquid limit - not dried	OH	Organic silt
		Inorganic	$P_i$ plots on or above "A" line	MH	Elastic silt Organic clay
		Organic	Liquid limit - oven dried < 0.75 Liquid limit - not dried	OH	Organic silt
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor			PT	Peat



### TEST BORING LOG DEFINITIONS

Blows per foot using 140 pound hammer with 30 inch free-fall.

Depth, feet	Blows/Foot		Sample Type	Dry Density pcf	Water Content, %	Unified Classification	Description
	C	N/R					

C = Continuous Penetration Resistance (2 inch diameter rod)  
 N = Standard Penetration Resistance (ASTM D1586)  
 R = Penetration Resistance (3 inch diameter ring line sampler)

SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	U.S. STANDARD SERIES SIEVE			GRAIN SIZES		CLEAR SQUARE SIEVE OPENINGS		
	200	40	10	4	3/4"	3"	12"	
	SAND			GRAVEL				
	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLES	BOULDERS	

MOISTURE CONDITION (INCREASING MOISTURE → )

DRY
SLIGHTLY DAMP
DAMP
MOIST  
(Plastic Limit)
VERY MOIST
WET (SATURATED)
(Liquid Limit)

CONSISTENCY CORRELATION			RELATIVE DENSITY CORRELATION		
CLAYS & SILTS	BLOWS/FOOT*		SANDS & GRAVELS	BLOWS/FOOT*	
VERY SOFT	0-2		VERY LOOSE	0-4	
SOFT	2-4		LOOSE	4-10	
FIRM	4-8		MEDIUM DENSE	10-30	
STIFF	8-16		DENSE	30-50	
VERY STIFF	16-32		VERY DENSE	OVER 50	
HARD	OVER 32				

\*Number of blows of 140 lb hammer falling 30" to drive a 2" O.D. (1-3/8" I.D.) split-spoon sampler (ASTM D1586).

**TEST BORING LOG**

Project: Screen Walls-Arizona Water Company – Casa Grande, Arizona      Test Boring: 1  
 Elevation: Not Determined      Datum: ---      Date: 5-30-14

Depth, feet	Blows/Foot		Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description Well Site #30
	C	N/R					
15		24	R	107	9	CL	FILL: Sandy Clay, Some Gravel; brown, slightly damp to damp, very stiff, medium plasticity.
12							
9		11	R	108	12		
5	15					CL	Sandy Clay, Trace Gravel; brown, slightly damp, stiff, medium plasticity, moderate cementation below 9 feet.
	25						
	26	28	R	104	9		
	29						
10		43	R	96	7		
15							
20							
25							Stopped drilling at 20 feet. No groundwater observed.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

### TEST BORING LOG

Project: Screen Walls-Arizona Water Company – Casa Grande, Arizona      Test Boring:           2  
 Elevation: Not Determined      Datum: ---      Date:           5-30-14

Depth, feet	Blows/Foot		Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description Well Site #31
	C	N/R					
19	27	R	120	8	SC	FILL: Clayey Sand, Trace Gravel; brown, slightly damp, medium dense, medium plasticity fines.	
20	27	R	121	6	SC	Clayey Sand, Trace Gravel; brown, slightly damp, medium dense, medium plasticity fines.	
30							
29	26	R	111	7			
31							
34							
10	16	R	88	18			
15							
20						Stopped drilling at 20 feet. No groundwater observed.	
25							

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

**APPENDIX B**  
**LABORATORY ANALYSIS**



R·A·M·M

# LABORATORY TEST RESULTS

Date: 11-Jun-14

SAMPLE SOURCE: 1 @ 2'-3'

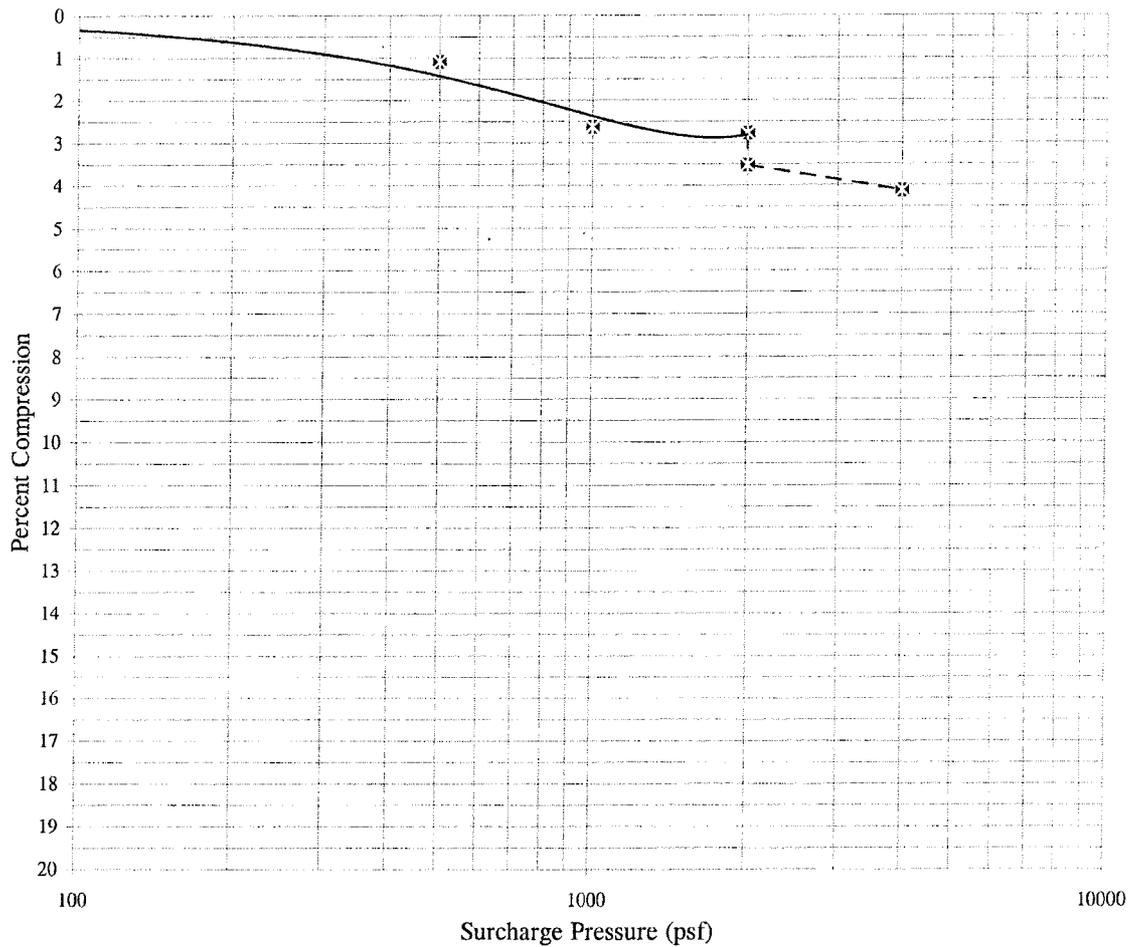
TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAMM/Miller

**RESULTS:**

Dry Density (pcf): 108

Moisture Content (%): 12



REMARKS: Sample submerged at 2000 psf.

# LABORATORY TEST RESULTS

Date: 11-Jun-14

SAMPLE SOURCE: 2 @ 2'-3'

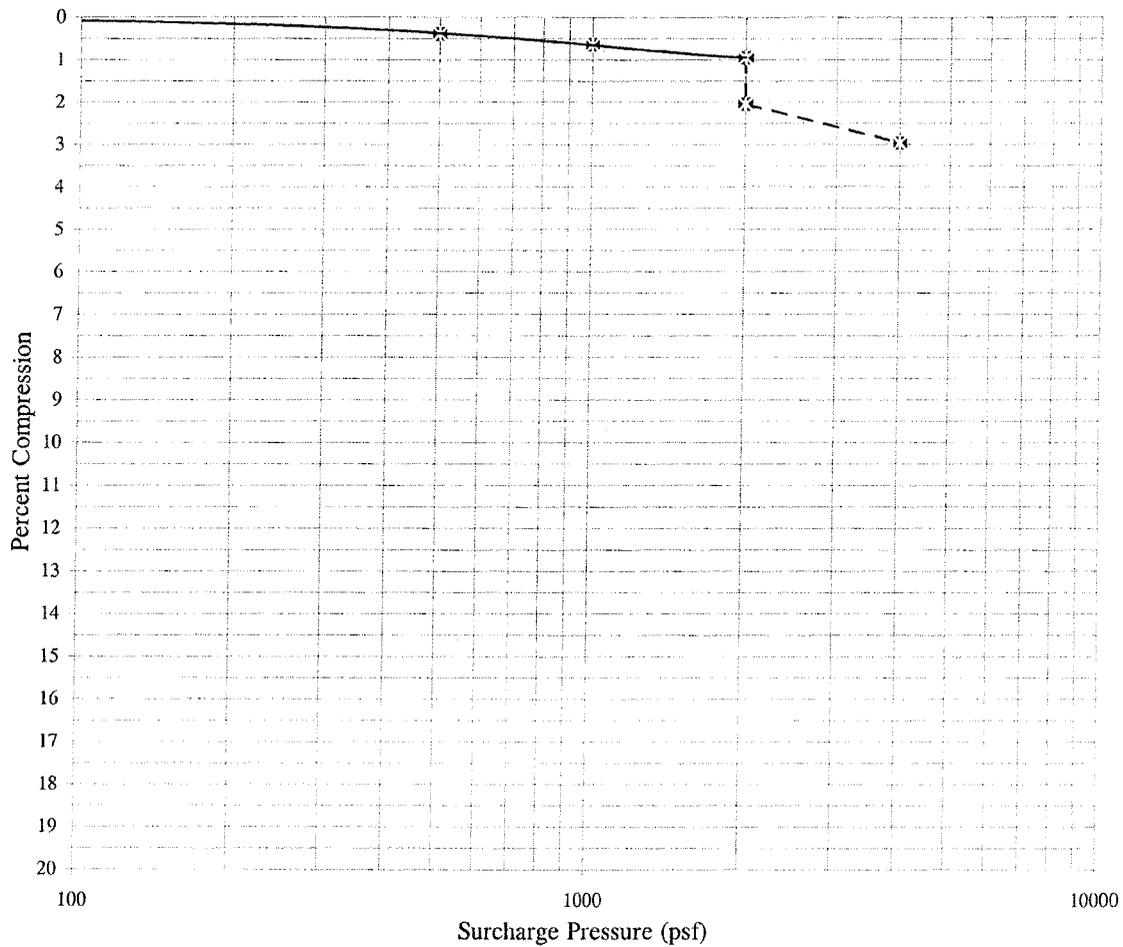
TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAMM/Miller

**RESULTS:**

Dry Density (pcf): 121

Moisture Content (%): 6



REMARKS: Sample submerged at 2000 psf.

## LABORATORY TEST RESULTS

**Date:** 12-May-14

**SAMPLE SOURCE:** As noted below

**TESTING PERFORMED:** Percent Passing No. 200 Sieve, Atterberg Limits, Percent Expansion  
(ASTM D1140, D4318, D4546)

**SAMPLED BY:** RAMM/Miller

**RESULTS:**

<u>Sample Source</u>	<u>Percent Retained No. 4 Sieve</u>	<u>Percent Passing No. 200 Sieve</u>	<u>Liquid Limit</u>	<u>Plasticity Index</u>	<u>Percent Expansion*</u>	<u>Remolded Dry Density (pcf)</u>	<u>Remolded Moisture Content (%)</u>
1 @ 0'-5'	10	57	28	12	4.1	105	14
2 @ 0'-5'	1	41	22	7	0.9	117	9

\* Based upon sample remolded to 95% of the estimated maximum dry density at 2% below the estimated optimum moisture content, with a surcharge pressure of 100 psf.

## LABORATORY TEST RESULTS

Date: 11-Jun-14

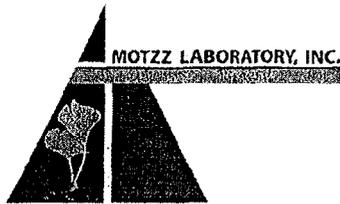
SAMPLE SOURCE: As noted below

TESTING PERFORMED: pH, Minimum Resistivity (ADOT 236a)

SAMPLED BY: RAMM/Miller

### RESULTS:

<u>Sample Source</u>	<u>pH</u>	<u>Minimum Resistivity (ohm-cm)</u>
1 @ 0'-5'	8.1	816
2 @ 0'-5'	8.2	879



## Soil Analysis Report

Ricker-Atkinson-McBee-Morman  
Ken Ricker  
2105 South Hardy Dr.  
Suite 13  
Tempe , AZ 85282-1924

Project: G21393  
Sampler:  
Date Received: 6/6/2014  
Date Reported: 6/11/2014  
PO Number: G21393

Lab Number: 910417-01      1 (0-5')

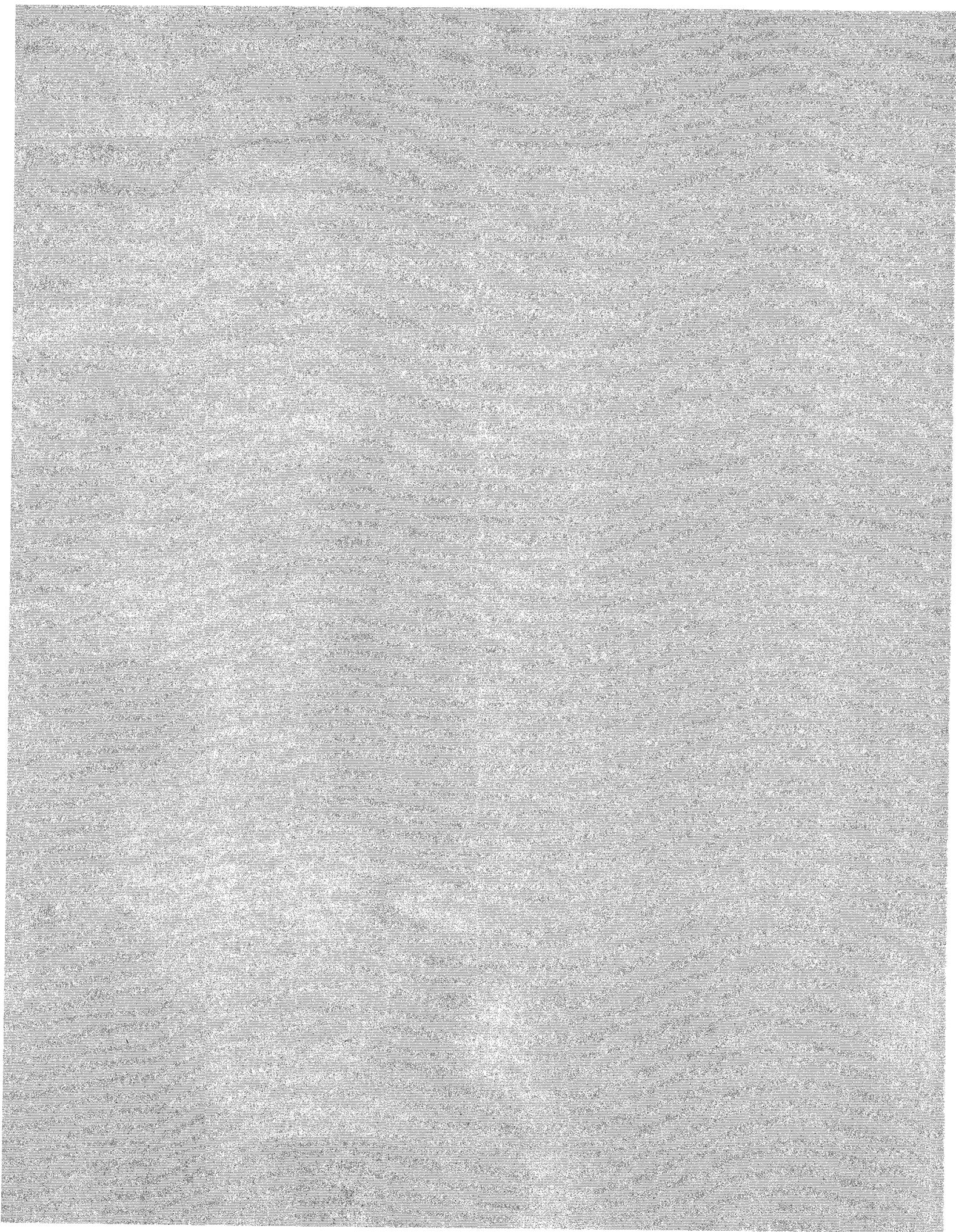
<i>Soluble Salts, Sulfate &amp; Chloride</i>	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	1293	ppm	
Sulfate, SO4	ARIZ 733	161	ppm	
Chloride, Cl	ARIZ 736	83	ppm	

Soluble Salts 0.13%; Sulfate 0.016% ; Chloride 0.0083%

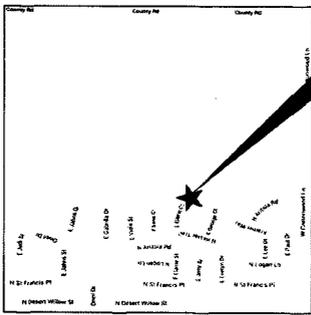
Lab Number: 910417-02      2 (0-5')

<i>Soluble Salts, Sulfate &amp; Chloride</i>	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	1741	ppm	
Sulfate, SO4	ARIZ 733	72	ppm	
Chloride, Cl	ARIZ 736	72	ppm	

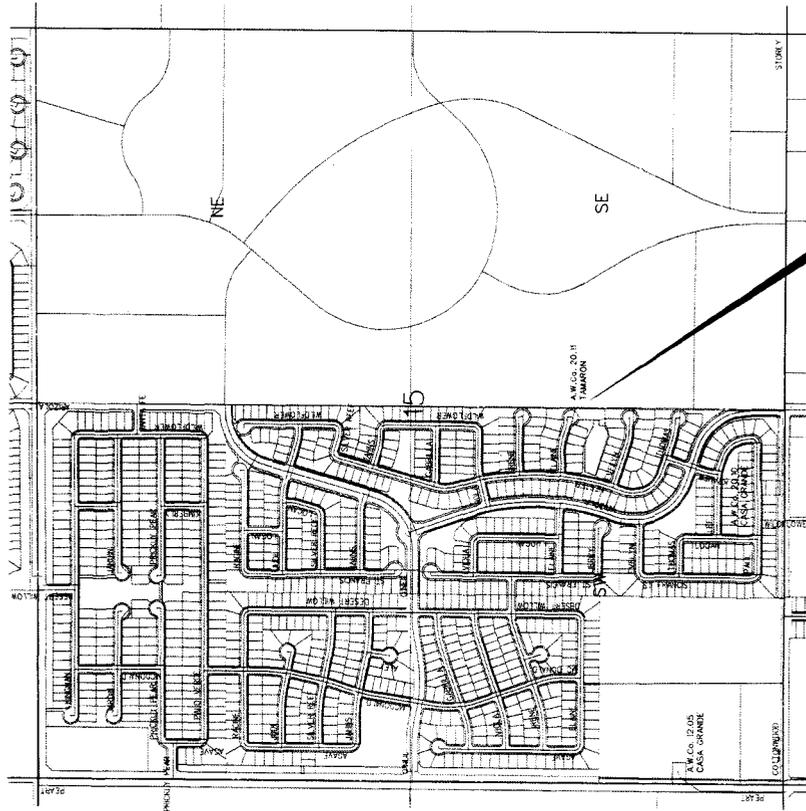
Soluble Salts 0.17%; Sulfate 0.0072% ; Chloride 0.0072%



**CONSTRUCT 238 LF OF 6 FT. HIGH C.M.U. BLOCK WALL  
ALONG THE EAST PROPERTY LINE, CONSTRUCT RETENTION BASIN  
AT WELL 31 CASA GRANDE, AZ.  
SW 1/4 SEC. 15, T. 6 S., R. 6 E.  
OF THE G. & S. R. B. & M.**



**VICINITY MAP**  
SITE ADDRESS: 1897 C. LANE, COURT  
CASA GRANDE, AZ 85222



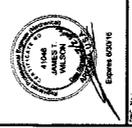
**SITE STATISTICS**  
APN: 502-36-004D  
SITE ADDRESS: 1897 C. LANE, CT  
CASA GRANDE, AZ 85222  
SITE AREA: 0.36 ACRES  
SITE USE: WATER WELL SITE  
ZONING: PWD

**OWNER/ENGINEER/DEVELOPER**  
ARIZONA WATER COMPANY  
POST OFFICE BOX 29008  
PHOENIX, ARIZONA 85028  
PHONE: (602) 240-9880  
FAX: (602) 240-9880  
CONTACT: JAMES WILSON

SHT. No.	DATE	DESCRIPTION	PREPARED BY
1	05/20/14	PROJECT WORK	A.W.C.
2	05/20/14	EXISTING SITE AND EXISTING PLAN	A.W.C.
3	05/20/14	PROPOSED CONSTRUCTION DETAILS	A.W.C.
4	05/20/14	PROPOSED CONSTRUCTION DETAILS	A.W.C.
5	05/20/14	PROPOSED CONSTRUCTION DETAILS	A.W.C.
6	05/20/14	PROPOSED CONSTRUCTION DETAILS	A.W.C.

- LEGEND**
- 1/2" REBAR PROPERTY CORNER
  - ELECTRICAL EQUIPMENT BOXES
  - LIGHT/FLOWER Poles
  - ANTENNA/TELESTAL
  - WATER VALVE
  - EYEWASH/SHOVER STATION
  - STREET CENTERLINE/MONUMENT LINE
  - PROPERTY LINE
  - EASEMENT LINE
  - EXIST. WATER LINE (BURIED)
  - EXIST. UNDERGROUND ILLUM. LINE
  - EXIST. WALLS
  - EXIST. CHAIN LINK FENCE
  - PROPOSED NEW WALL
  - CONTOURS

REVISIONS  
SEP 2 2 2011  
FRED SCHNEIDER



**PV-0073**  
SHEET 1 OF 5

**ARIZONA WATER COMPANY**  
3806 N. BLACK CANYON HWY. POST OFFICE BOX 29008  
PHOENIX, ARIZONA 85028  
PHONE: (602) 240-9880

**PROJECT OVERALL**  
CONSTRUCT 238 LF OF 6 FT. HIGH C.M.U. BLOCK WALL ALONG THE  
EAST PROPERTY LINE, CONSTRUCT RETENTION BASIN AT WELL 31 CASA GRANDE, AZ.  
PROJECT SHEET 01-01  
DATE: 05/20/14  
DRAWN BY: JAK  
CHECKED BY: JAK  
SCALE: AS SHOWN  
SHEET NO.: 0108  
SHEET TOTAL: 0108  
SHEET TITLE: SW 1/4 SEC. 15, T. 6 S., R. 6 E.  
PROJECT NO.: PINAL VALLEY  
PROJECT ADDRESS: 1897 C. LANE  
PROJECT CITY: CASA GRANDE, AZ 85222  
PROJECT STATE: AZ  
PROJECT ZIP: 85222  
PROJECT COUNTY: MARICOPA  
PROJECT TOWN: CASA GRANDE  
PROJECT SUBDIVISION: CASA GRANDE  
PROJECT LOT: 1337  
PROJECT ACRES: 0.36  
PROJECT PERMITS: 1-16165



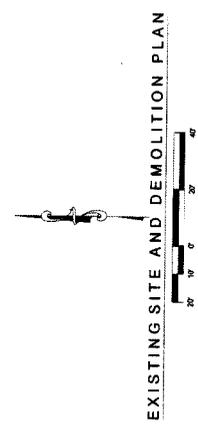
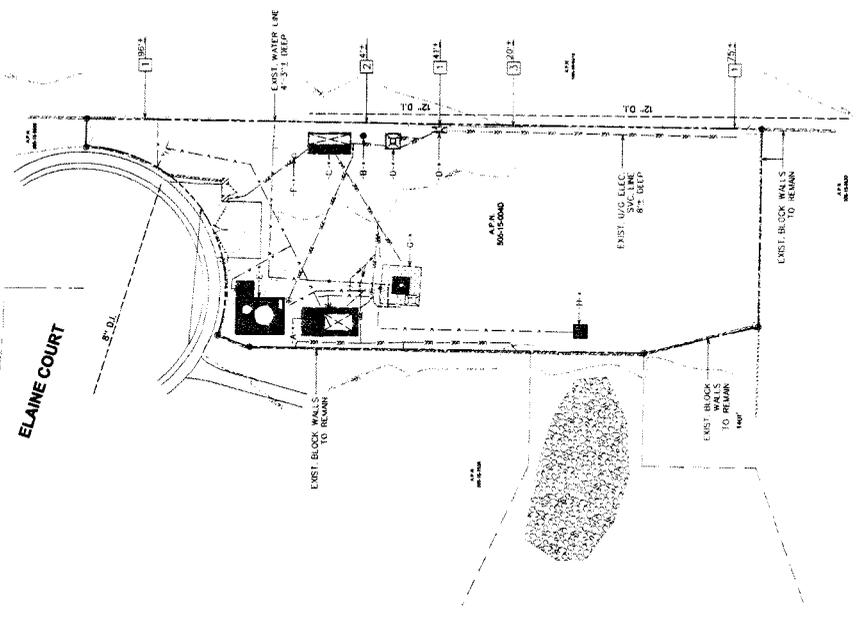
PROJECT NO. PV-0073  
SHEET 2 OF 5

**ARIZONA WATER COMPANY**  
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006  
PHOENIX, ARIZONA 85028-0006  
(602) 240-6800

EXISTING SITE AND DEMOLITION PLAN  
PROJECT: 2282  
CONSTRUCT 238 LF OF 8 FT HIGH C.M.U. BLOCK WALL ALONG THE EAST PROPERTY LINE, CONSTRUCT RETENTION BASIN AT WELL 31, CASA GRANDE, AZ  
PROJECT SHEET: 2282  
DATE: 11/2/2014  
DRAWN BY: JMK  
CHECKED BY: AS SHOWN  
DATE: 11/2/2014  
SCALE: AS SHOWN  
PROJECT: 2282  
CONSTRUCT 238 LF OF 8 FT HIGH C.M.U. BLOCK WALL ALONG THE EAST PROPERTY LINE, CONSTRUCT RETENTION BASIN AT WELL 31, CASA GRANDE, AZ  
PROJECT SHEET: 2282  
DATE: 11/2/2014  
DRAWN BY: JMK  
CHECKED BY: AS SHOWN  
DATE: 11/2/2014  
SCALE: AS SHOWN

DEMOLITION PLAN NOTES  
TO BE DEMOLISHED AND REMOVED  
1. APPROX. 712 LF OF EXISTING 6 FT TALL CHAIN LINK FENCE  
2. REMOVE FENCING ALONG EAST PROPERTY LINE ONLY  
3. CHAIN LINK SWING GATE 4' WIDE X 6' TALL  
4. CHAIN LINK SLIDING GATE 20' WIDE X 6' TALL

- LEGEND**
- 1/2" REBAR PROPERTY CORNER
  - ELECTRICAL EQUIPMENT/ARMARIES
  - LIGHT/TOWER POLES
  - ANCHORS/POSTS
  - WATER VALVE
  - EYE/WASH/POWER STATION
  - STREET CENTERLINE/MANHOLE LINE
  - PROPERTY LINE
  - EASTMENT LINE
  - EAST WATER LINE
  - EAST WATER LINE (HIGHEST)
  - EAST UNDERGROUND ELECTRIC
  - EAST WALLS
  - EAST CHAIN LINK FENCE
  - PROPOSED NEW WALL
  - CONTOURS



**• SITE EQUIPMENT INDEX**

INDEX	NAME	DESCRIPTION OF EQUIPMENT
A	CHURN BULK	6' X 9' X 7' HIGH CELESTORATOR SHELL ON CONCRETE
B	ANTENNA	APPROX. 15' HIGH RADIO ANTENNA
C	WATER TOWER	APPROX. 20' HIGH TOWER ON CONCRETE
D	WATER TOWER	APPROX. 20' HIGH TOWER ON CONCRETE
E	COVERED TANK	CHEMICAL STORAGE PART/WASH STATION
F	17.5 LIGHT POLE	APPROX. 17' HIGH SITE LIGHT
G	WELL NO. 31	TESTING WELL
H	WELL NO. 31	WELL DISCHARGE DRAINAGE

- NOTES:**
- CONTRACTOR TO PROVIDE TEMPORARY SITE SECURITY FENCE DURING CONSTRUCTION.
  - ARIZONA WATER COMPANY WILL BE RESPONSIBLE FOR PROPERTY CORNER STAKES IF NECESSARY.
  - CONTRACTOR TO REMOVE SURBERENT LAYER ON C-900 PIPE.
  - SEE FRANCHISE WITH 18" - 24" SAND NATIVE SOIL TO BACKFILL WITH MECHANICAL COMPACTION.
  - CONTRACTOR TO ADD 3.4" RECOMPOSED GRANITE APPROXIMATELY 2' DEEP TO ENTIRE SITE.
  - CONTRACTOR TO PAINT EXTERIOR OF WALL TO MATCH EXISTING WALLS.







**PV-0073**  
SHEET 5 OF 5

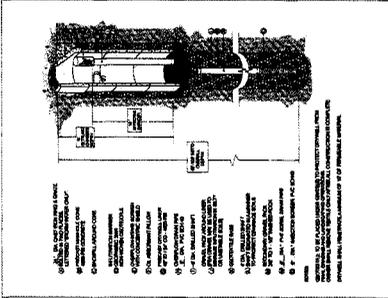
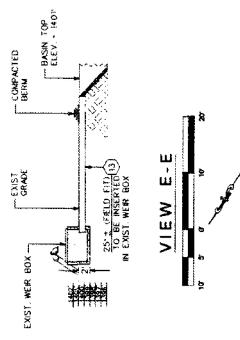
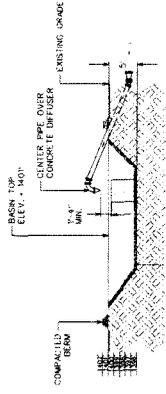
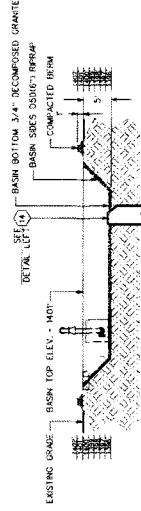
**ARIZONA WATER COMPANY**  
3905 N BLACK CANYON HWY. POST OFFICE BOX 28008  
PHOENIX, ARIZONA 85028-8008  
(602) 240-6660

PROJECT NO.	15-165
DATE	12/20/14
PROJECT NAME	CONSTRUCT 238 LF OF 8 FT HIGH CMU BLOCK WALL ALONG THE EAST PROPERTY LINE, RECONSTRUCT RETENTION BASIN AT WELL 31, CASA GRANDE, AZ.
CLIENT	DMOS
PROJECT ADDRESS	DM SEC. 15, T 6 S, R 6 E
PROJECT LOCATION	PINAL VALLEY
PROJECT NUMBER	1337

THE RETENTION BASIN IS TO BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE APPROVED CONSTRUCTION COMPANY'S STANDARD SPECIFICATIONS ON THE ENVIRONMENTAL QUALITY.

253-1100  
400-STRICKLAND

- NOTES:**
1. CONTRACTOR TO PROVIDE TEMPORARY SITE SECURITY FENCE DURING CONSTRUCTION.
  2. ARIZONA WATER COMPANY WILL BE RESPONSIBLE FOR PROPERTY CORNER STAKING IF NECESSARY.
  3. CONTRACTOR TO REMOVE 24" MIN. LAYER ON C-900 (H.C. NAT'L) SUE. TO BACKFILL WITH MECHANICAL COMPACTION APPROXIMATELY 2" DEEP TO ENTIRE SITE.
  4. FILL TRENCHES WITH 18" - 24" SAND.
  5. CONTRACTOR TO ADD 2 1/2" DECOMPOSED GRANITE.



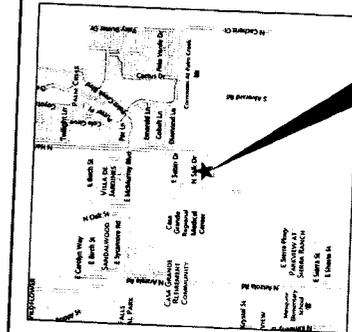
QTY	DESCRIPTION	QUANTITY	SUPPLIED BY	INSTALLED BY
1	8" DIA. CONCR. COVER	1	CONTR.	CONTR.
2	8" M.J. FIT. CONCR. COVER	1	CONTR.	CONTR.
3	8" YOSIER ADAPTER CONCR. COVER	4	CONTR.	CONTR.
4	8" M.J. DATE VALVE BOX AND COVER	2	CONTR.	CONTR.
5	8" M.J. 17" X 8" REDUCER	2	CONTR.	CONTR.
6	2" C-900 PIPE (A.W.C. INVENTORY - SEE NOTE 3.)	35.1 FT	A.W.C.	CONTR.
7	12" M.J. 90° ELL.	1	CONTR.	CONTR.
8	8" M.J. 22.5° ELL.	1	CONTR.	CONTR.
9	8" M.J. X 110. 22.5° ELL.	1	CONTR.	CONTR.
10	8" PIG. 200' ELL.	1	CONTR.	CONTR.
11	8" PIG. 200' ELL.	1	CONTR.	CONTR.
12	1/2" DIA. 8" PIG. 200' ELL. CHECK VALVE (GLA VAL. 093)	1	CONTR.	CONTR.
13	1/2" DIA. 8" PIG. 200' ELL. (BENSON PRECAST MANHOLE RISER W/CONCRETE PAD)	25.1 FT	CONTR.	CONTR.
14	8" M.J. DATE VALVE	1	CONTR.	CONTR.
15	12" M.J. DATE VALVE	1	CONTR.	CONTR.

**PIPING AND BASIN SECTIONS**

DESIGNED BY: FRED SCHNEIDER  
577 S 27TH

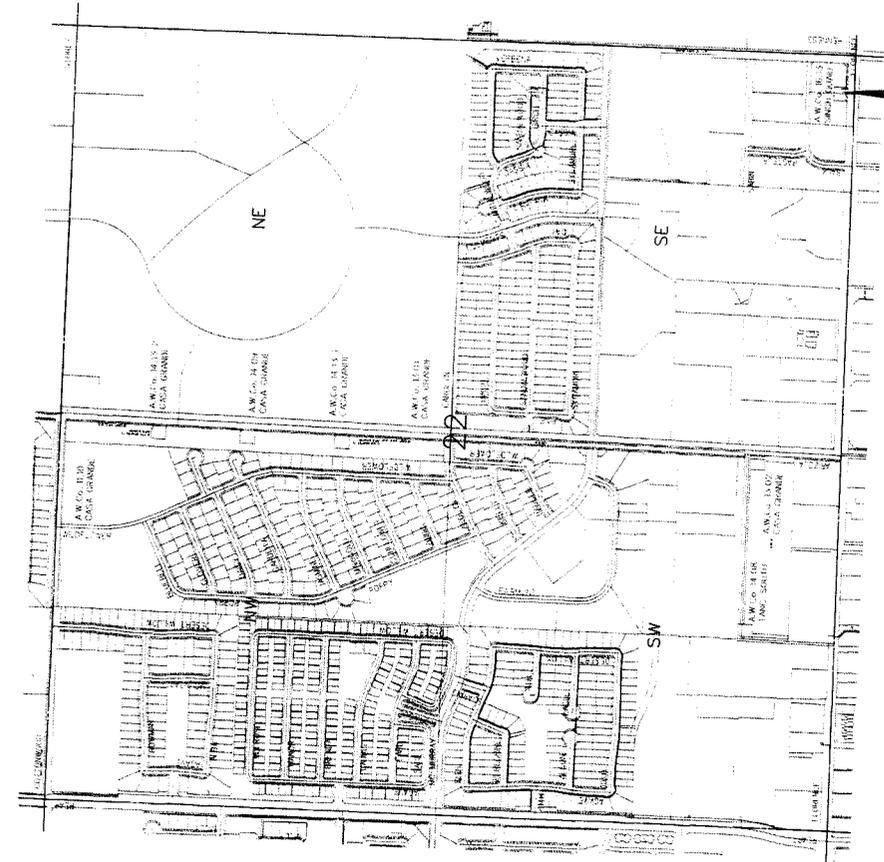


**REMOVE EXISTING BLOCK WALL AND CHAIN LINK FENCE AND REPLACE WITH 220 LF OF 8' HIGH C.M.U. PERIMETER WALL AND GATES AROUND WELL SITE NO. 30, CASA GRANDE, AZ. SE 1/4 SEC. 22, T. 6 S., R. 6 E. OF THE G. & S. R. B. & M.**



**PROJECT LOCATION**  
 SITE ADDRESS: 1882 E FLORENCE BLVD.  
 CASA GRANDE, AZ 85222

**VICINITY MAP**



**PROJECT LOCATION**

**SHEET INDEX**

SHEET NO.	DWG. NO.	DESCRIPTION
1	20-0023	PREPARED BY
2	20-0024	PROJECT VICINITY
3	20-0025	EXISTING SITE AND DEMOLITION PLAN
4	20-0026	CONSTRUCTION PLAN
5	PV-0072	REMOVE EXISTING BLOCK WALL AND CHAIN LINK FENCE AND REPLACE WITH 220 LF OF 8' HIGH C.M.U. PERIMETER WALL AND GATES AROUND WELL SITE NO. 30
6	20-0027	STANDARD SPECIFICATIONS
7	20-0028	STRUCTURAL WALL AND GATES

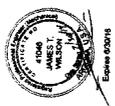
- LEGEND**
- 1/2" REINFORCED PROPERTY CORNER
  - ELECTRICAL EQUIPMENT/BOXES
  - LIGHT-PUMP POLES
  - ANTENNAS/TOWERS
  - WATER VALVE
  - EXT. WASH/OWNER STATION
  - EXISTING TREES
  - STREET CENTERLINE/ADJACENT LINE
  - RIGHT-OF-WAY LINE
  - PROPERTY LINE
  - 1/4" BENT LINE
  - E.X. WATER LINE
  - E.X. WATER LINE (SUBSTANT)
  - E.X. UNDERGROUND ELECTRIC
  - EXISTING WALLS
  - E.X. CHAIN LINK FENCE
  - PROPOSED WALLS
  - C.M.U. BLOCK SPITFACE
  - CASING INFERIOR/SUCCESS WALLS
  - CONTIGUES



**SITE STATISTICS**  
 APN: 205-19-0140  
 1882 E FLORENCE BLVD.  
 CASA GRANDE, AZ 85222  
 1882 E FLORENCE BLVD.  
 CASA GRANDE, AZ 85222  
 1882 E FLORENCE BLVD.  
 CASA GRANDE, AZ 85222

**OWNER/ENGINEER/DEVELOPER**  
 ARIZONA WATER COMPANY  
 3605 N BLACK CANYON HWY.  
 PHOENIX, AZ 85028-9005  
 VOICE: 602-944-8000  
 CONTACT: JIM WELSON

**ZONING: UR**



**ARIZONA WATER COMPANY**  
 3605 N BLACK CANYON HWY.  
 PHOENIX, ARIZONA 85028-9005  
 POST OFFICE BOX 29008  
 (602) 240-0800

**PV-0072**  
 SHEET 1 OF 5

RELEASED TO CONSTRUCTION  
 SEP 8 2014  
 PRED SCHNEIDER

**PROJECT VICINITY**

REMOVE EXISTING BLOCK WALL AND CHAIN LINK FENCE AND REPLACE WITH 220 LF OF 8' HIGH C.M.U. PERIMETER WALL AND GATES AROUND WELL SITE NO. 30

PROJECT VICINITY

DATE: 11/20/14  
 DRAWN BY: JMK  
 CHECKED BY: JMK  
 AS SHOWN

0403  
 SE 1/4 SEC. 22, T. 6 S., R. 6 E.  
 PINAL VALLEY  
 1-5165  
 1337

283-1100  
 1-800-STREET



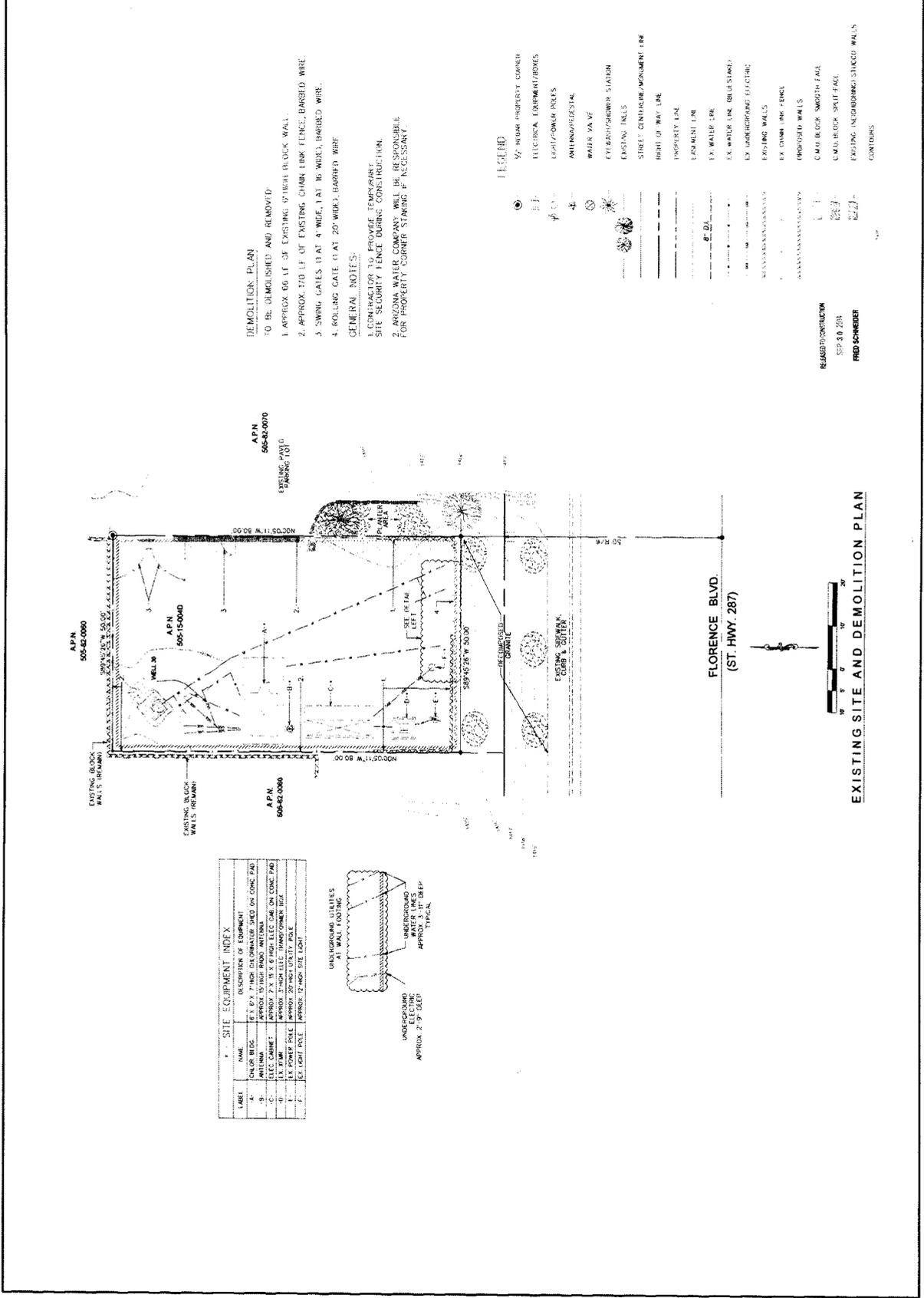
PV-0072  
SHEET 2 OF 5

**ARIZONA WATER COMPANY**  
3905 N. BLACK CANYON HWY. POST OFFICE BOX 29008  
PHOENIX, ARIZONA 85038-9008  
(602) 240-0899

PROJECT NO. 0403  
DATE 1/22/14  
JOB AS SHOWN  
SHEET NO. 0403  
SCALE 1" = 40' (SEE 22, 21, 6, 9, R, 6 E)  
PROJECT LOCATION PINAL VALLEY

PROJECT NO. 263-1100  
DATE 1-20-14  
JOB AS SHOWN  
SHEET NO. 0403  
SCALE 1" = 40' (SEE 22, 21, 6, 9, R, 6 E)  
PROJECT LOCATION PINAL VALLEY

THE REGISTERED PROFESSIONAL ENGINEER HAS REVIEWED THIS PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY.

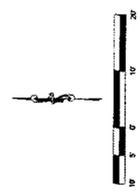


**DEMOLITION PLAN**  
TO BE DEMOLISHED AND REMOVED:  
1. APPROX. 66 LF OF EXISTING 6" HIGH BLOCK WALL.  
2. APPROX. 170 LF OF EXISTING CHAIN LINK FENCE, BARBED WIRE.  
3. SWING GATES (1 AT 4" WIDE, 1 AT 16" WIDE), BARBED WIRE.  
4. ROLLING GATE (1 AT 20" WIDE), BARBED WIRE.

**GENERAL NOTES:**  
1. CONTRACTOR TO PROVIDE TEMPORARY SITE SECURITY FENCE DURING CONSTRUCTION.  
2. ARIZONA WATER COMPANY WILL BE RESPONSIBLE FOR PROPERTY CORNER STAKING IF NECESSARY.

- LEGEND**
- W/ NEAR PROPERTY CORNER
  - ELECTRICAL EQUIPMENT/BOXES
  - LIGHT/POWER POLES
  - ANTENNA/RECEPTACLE
  - WATER VA/VF
  - CYBERSECURITY STATION
  - EXISTING TUNNELS
  - STREET CENTERLINE/MONUMENT LINE
  - RIGHT OF WAY LINE
  - PROPERTY LINE
  - EXISTING FENCE
  - EX. WATER LINE (8" BUSTAMBE)
  - EX. UNDERGROUND ELECTRIC
  - EXISTING WALLS
  - EX. CHAIN LINK FENCE
  - PROPOSED WALLS
  - CHAIN LINK SWATH TAIL
  - CHAIN LINK SPILT FAC
  - EXISTING IMPROVING STUCCO WALLS
  - CONTIGUOUS

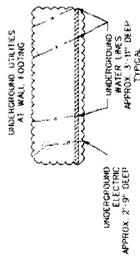
RELEASED TO CONSTRUCTION  
SEP 30 2014  
FRED SCHNEIDER



**EXISTING SITE AND DEMOLITION PLAN**

**SITE EQUIPMENT INDEX**

LABEL	NAME	DESCRIPTION OF EQUIPMENT
A	CHAIN BLOC	6' X 6' X 7" HIGH CHAIN BLOC ON CONC PAD
B	ANTENNA	APPROX. 15' HIGH RADIO ANTENNA
C	ELEC. CABINET	APPROX. 7' X 15' X 6" HIGH ELEC CAB ON CONC PAD
D	EX. POWER POLES	APPROX. 20' HIGH UTILITY POLES
E	ELEC. LIGHT POLE	APPROX. 12' HIGH SITE LIGHT

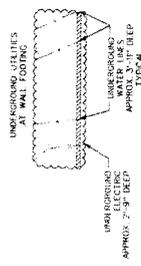


**CONSTRUCTION NOTES:**

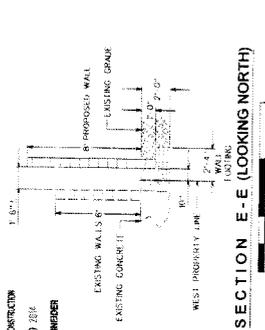
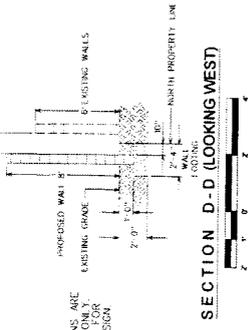
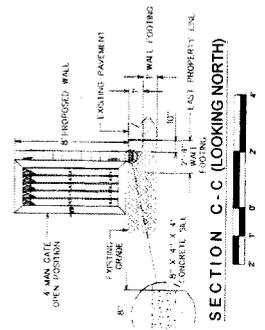
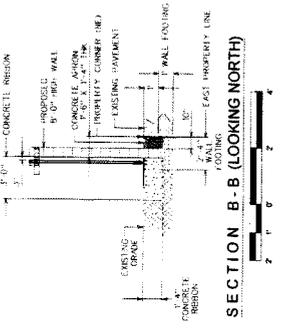
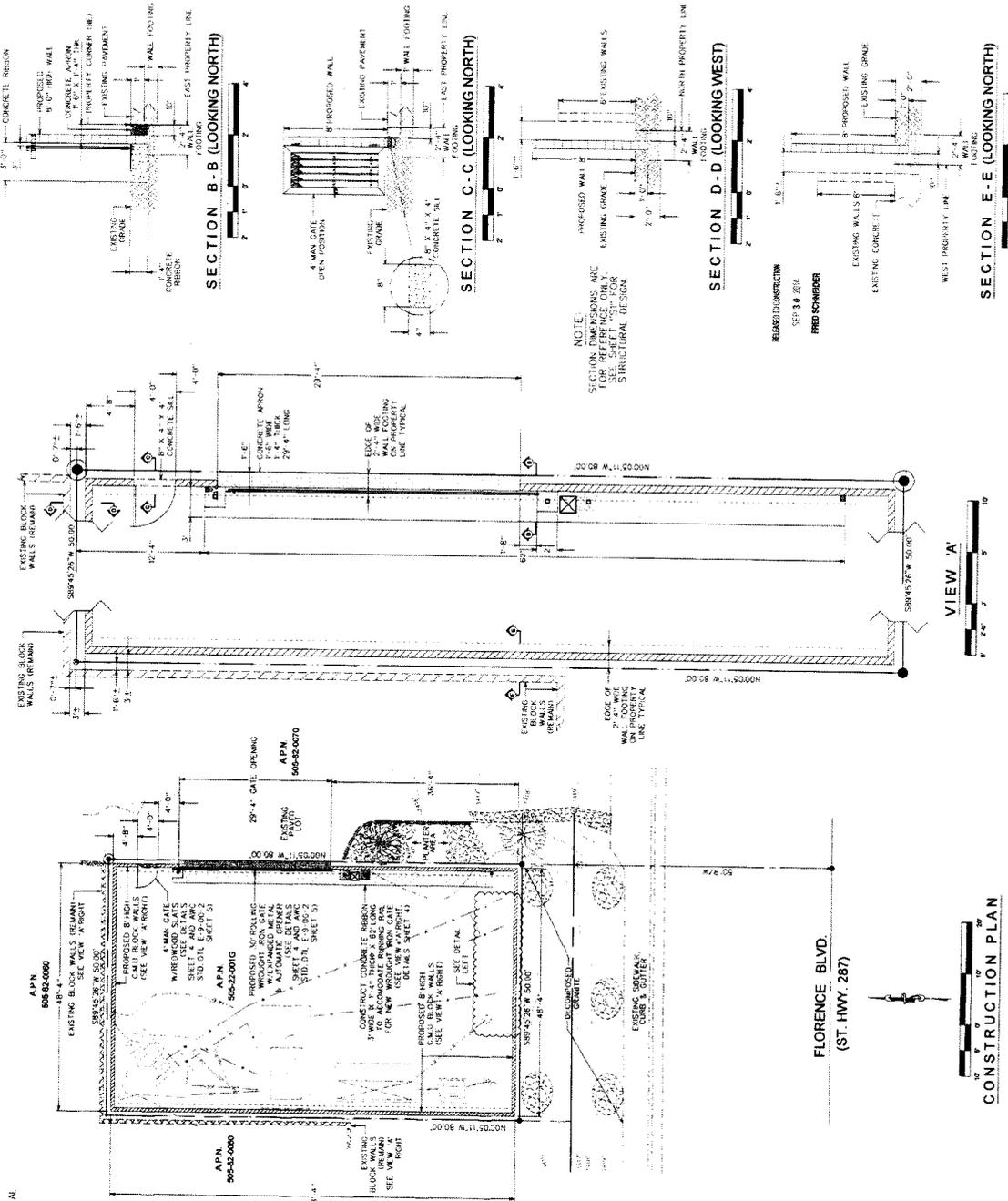
1. SEE SHEET 4 FOR BLOCK WALL LAYOUT (BLOCK PATTERN).
2. 30-FOOT ROLLING GATE WITH 3/4" No. 9 EXPANDED METAL POWDER COAT TO MATCH EXTERIOR WALL COLOR.
3. METAL ULTRA BARRIER ALONG THE TOP OF EXISTING BLOCK WALLS.
4. PROPOSED 8' TALL, 8" X 8" X 16" CMU BLOCK WALL TO BE WESTERN BROWN ON EQUIPMENT.
5. CONTRACTOR TO PROVIDE 120V POWER AND 40 AMP BREAKER TO THE GATE OPENER.
6. CONTRACTOR TO PROVIDE TEMPORARY SECURITY FENCE DURING CONSTRUCTION.
7. ARIZONA WATER COMPANY WILL BE RESPONSIBLE FOR PROPERTY CORNER STAKING IF NECESSARY.

**GENERAL NOTES:**

1. CONTRACTOR TO PROVIDE TEMPORARY SECURITY FENCE DURING CONSTRUCTION.
2. ARIZONA WATER COMPANY WILL BE RESPONSIBLE FOR PROPERTY CORNER STAKING IF NECESSARY.

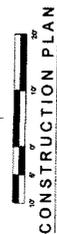


- LEGEND**
- 1/2" REBAR PROPERTY CORNER
  - ELECTRICAL EQUIPMENT/BOXES
  - 120V POWER POLES
  - ANTENNA/PET STAIL
  - WATER VALVE
  - TELEPHONE/SHOWER STATION
  - EXISTING TREES
  - SHEET CENTERLINE/ADJUTMENT LINE
  - RIGHT OF WAY LINE
  - PROPERTY LINE
  - FASBMENT LINE
  - EA-WATER LINE
  - EX-WATER LINE (BLESTAKED)
  - EX-UNDERGROUND ELECTRIC
  - EXISTING WALLS
  - EX-CHAIN LINK FENCE
  - PROPOSED WALLS
  - CMU BLOCK SMOOTH FACE
  - CMU BLOCK SPLIT FACE
  - EXISTING NEIGHBORING STUCCO WALLS
  - CURTAINS



**NOTE:**  
SECTION DIMENSIONS ARE FOR REFERENCE ONLY. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STRUCTURAL DESIGN.

REVISIONS:  
SEP 30 2014  
PRO SCHWENGER



FLORENCE BLVD.  
(ST. HWY. 287)

**ARIZONA WATER COMPANY**  
3805 N. BLACK CANYON HWY. POST OFFICE BOX 28008  
PHOENIX, ARIZONA 85028-9008  
(602) 240-6880

REMOVE EXISTING BLOCK WALL AND CHAIN LINK FENCE AND REPLACE WITH 20' LF OF 8 HIGH CMU PERIMETER WALL AND GATES AROUND WELL SITE NO. 30

CONSTRUCTION PLAN

DATE: 12/2014  
DRAWN BY: JAK  
CHECKED BY: AS SHOWN

PROJECT: PINAL VALLEY  
SHEET NO: 22 T 6 S, R 6 E  
SHEET NO: 1-5165  
SHEET NO: 1337

263-1100  
1530-15-0000  
1530-15-0000



PV-0072  
SHEET 3 OF 5





**GENERAL STRUCTURAL NOTES:**

LOCAL CODES:  
 CODE: 2008 EDITION OF THE INTERNATIONAL BUILDING CODE  
 V (2-SECOND EDITION) + 40 MPH  
 WIND SPEED FACTOR, W = 1.00  
 EXPOSURE: C

**MODEL TO CONTRACTOR:**

PROJECT SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR OR PERSONS UNDER HIS CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

VERIFY EXISTING CONDITIONS SHOWN IN DRAWINGS. PROPERTY SURVEY THE EXISTING CONDITIONS SHOWN IN DRAWINGS. PROPERTY SURVEY THE EXISTING CONDITIONS SHOWN IN DRAWINGS. PROPERTY SURVEY THE EXISTING CONDITIONS SHOWN IN DRAWINGS.

VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS AND WITH ACTUAL FIELD CONDITIONS. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS AND WITH ACTUAL FIELD CONDITIONS. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR.

IF THERE ARE CONFLICTS IN THE DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESOLVING THE CONFLICTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESOLVING THE CONFLICTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESOLVING THE CONFLICTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE, AND COMPLIANCE WITH ALL APPLICABLE REGULATIONS, ORDINANCES, AND CODES.



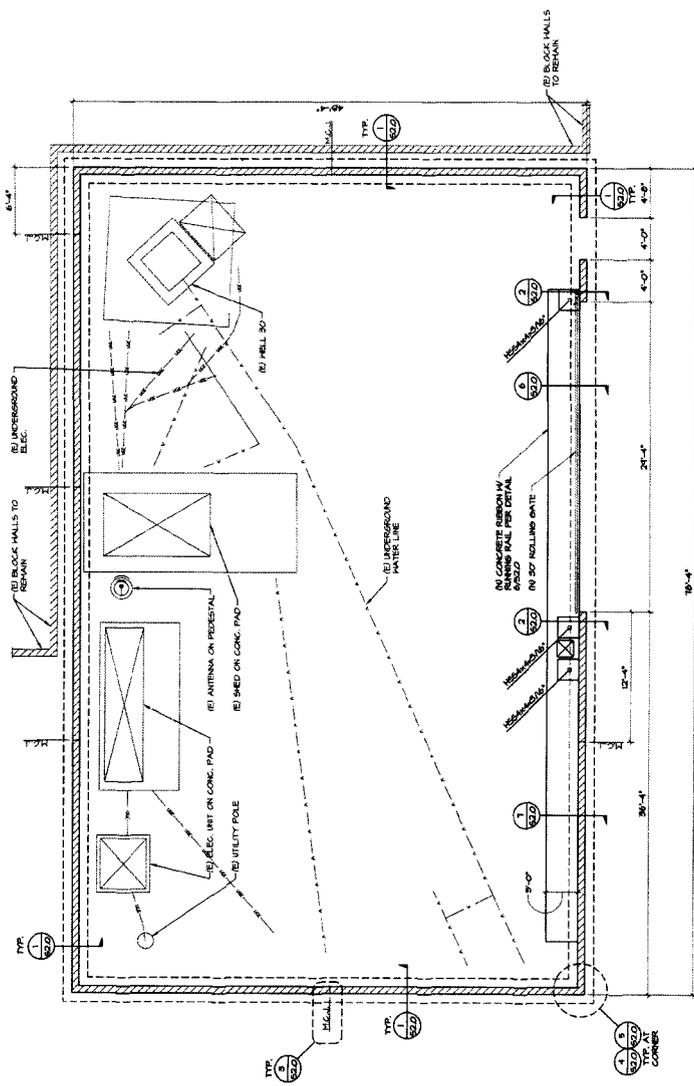
Starling Madison Lorquist, Inc.  
 5224 S. 39th Street  
 Phoenix, Arizona 85040  
 (602) 438-2500  
 fax: (602) 438-2505



WELL SITE 30  
 1882 E. FLORENCE BLVD.  
 CASA GRANDE AZ, 85222

ARIZONA WATER COMPANY  
 P. O. BOX 29006  
 PHOENIX AZ, 85038-9006

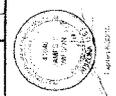
0.10



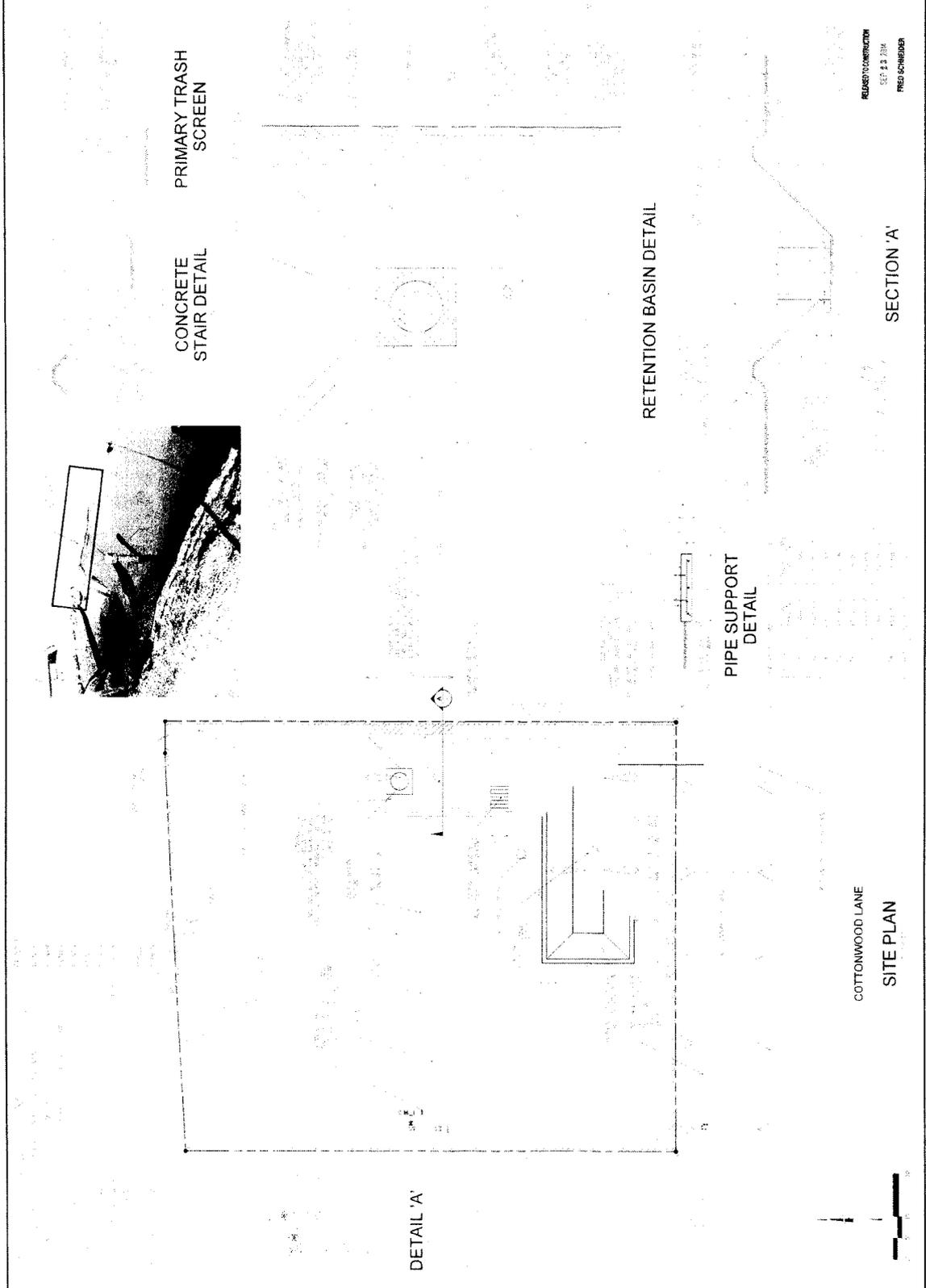
RELEASED BY INSTRUCTION  
 SET 8 8 2014  
 FRED SCHMIDT



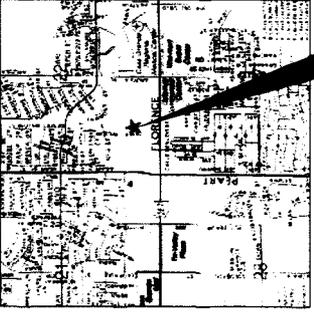
ARIZONA WATER COMPANY 2812 N. BLACK CHAMPION BLVD. POST OFFICE BOX 2805 PHOENIX, ARIZONA 85008-9505 602-242-8875	REHAB. C. V. ELL. NO. 26 RETENTION BASIN IN CASA GRANDE, ARIZONA	SITE PLAN & DETAILS
	FINAL VALLEY SW & SE, 15 - 18 S. R. GE.	4/24/2014 AS SHOWN 04/28



FOR WATER ONLY  
**PV-0078**  
 SHEET 1 OF 1



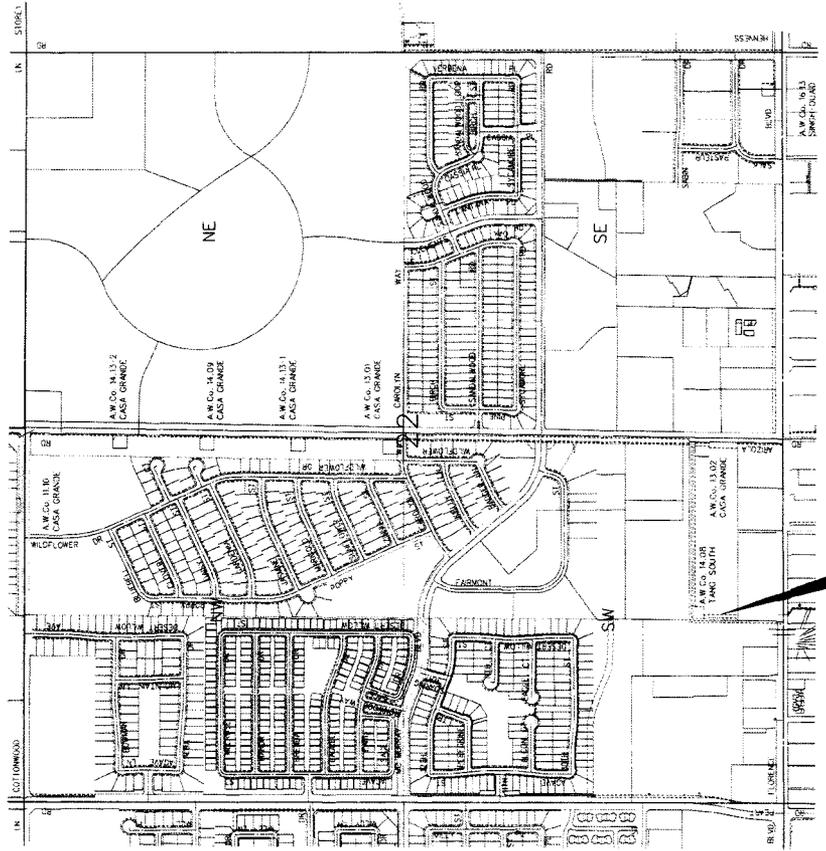
**REMOVE EXISTING CHAIN LINK FENCE AND GATES,  
 INSTALL 375 LF OF 8' HIGH C.M.U. PERIMETER WALL,  
 25' ROLLING GATE AND 4' MAN GATE  
 AROUND WELL SITE NO. 21  
 SW 1/4 SEC. 22, T. 6 S., R. 6 E.  
 OF THE G. & S. R. B. & M.**



**PROJECT LOCATION**  
 5411 ADDRESS: TRAVIS T. LINDSEY BLVD.  
 CACTA GRANITE, AZ 85227

**VICINITY MAP**

- LEGEND**
- PROPERTY CORNER
  - PROPERTY LINE
  - EASEMENT LINE
  - EXIST. WATER LINE
  - EXIST. CHAIN LINK FENCE
  - N.W. WALL
  - CONTOURS

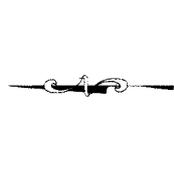


**SHEET INDEX**

SHEET NO.	DWG. NO.	DESCRIPTION	PREPARED BY
1	PV 0049	PROPOSED	A.W. CO.
2	PV 0049	EXISTING SITE AND DIMENSION PLAN	A.W. CO.
3	PV 0049	SECTIONAL AND DETAILS	A.W. CO.
4	PV 0049	STRUCTURAL, MECH. AND DETAILS	A.W. CO.
5	PV 0049	SECTIONAL AND DETAILS	A.W. CO.
6	PV 0049	SECTIONAL AND DETAILS	A.W. CO.

**OWNER/ENGINEER/DEVELOPER**  
 ARIZONA WATER COMPANY  
 3805 N. BLACK CANYON HWY. POST OFFICE BOX 29008  
 PHOENIX, ARIZONA 85028-9008  
 PHONE: (602) 240-8860  
 FAX: (602) 240-8860  
 CONTACT: JAMES WILSON

**SITE STATISTICS**  
 APN: 500-19-0240  
 SITE ADDRESS: 5411 TRAVIS T. LINDSEY BLVD.  
 CACTA GRANITE, AZ 85227  
 SITE AREA: 0.23 ACRES  
 SITE USE: WATER WELL SITE



**ARIZONA WATER COMPANY**  
 3805 N. BLACK CANYON HWY. POST OFFICE BOX 29008  
 PHOENIX, ARIZONA 85028-9008  
 PHONE: (602) 240-8860  
 FAX: (602) 240-8860

**PROJECT VICINITY**  
 375 LF OF 8' HIGH C.M.U. PERIMETER WALL AND GATES AROUND WELL SITE NO. 21  
 SW 1/4 SEC. 22, T. 6 S., R. 6 E.  
 PINAL VALLEY

1-15651-5029

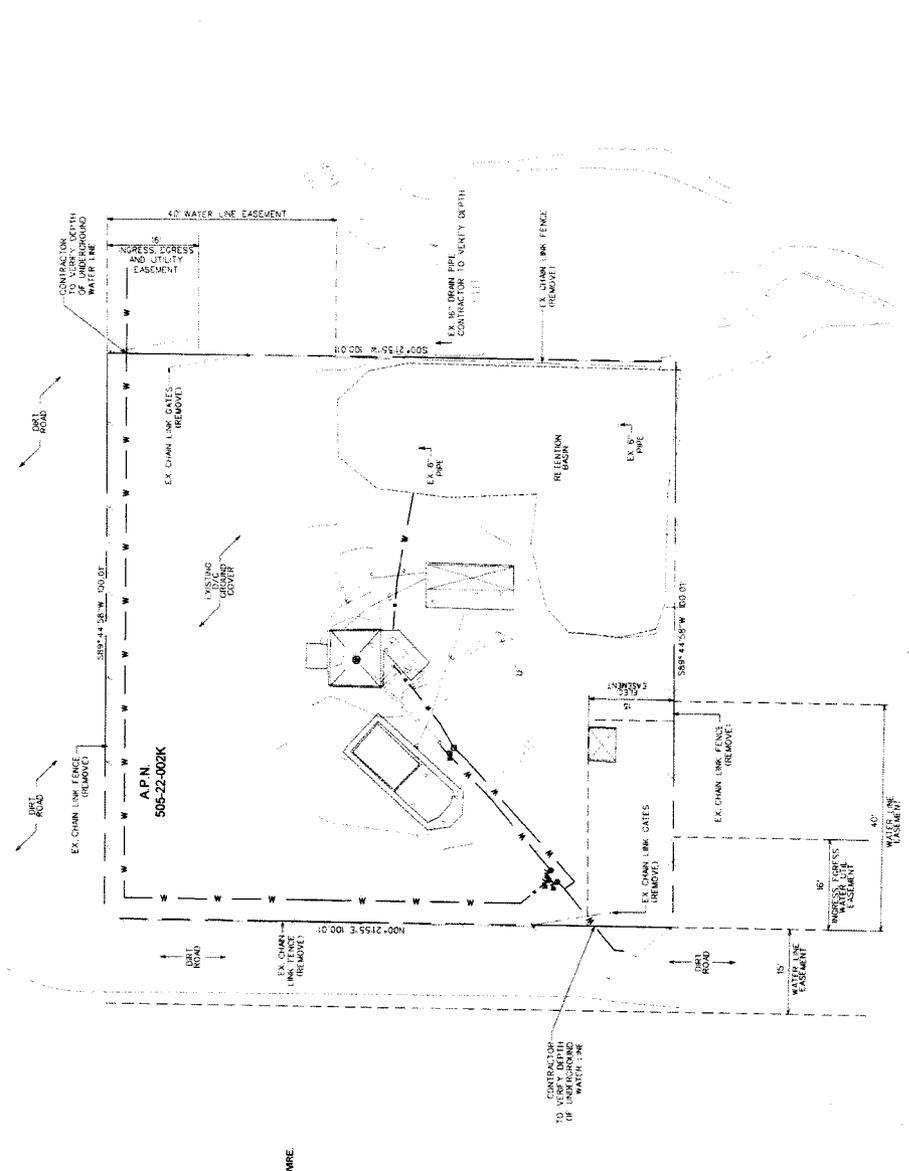
PROJECT SHEET: 0530  
 DATE: 1/20/14  
 AS SHOWN

263-1100  
 1-800-STAVE-IT

**PV-0049**  
 SHEET 1 OF 5

RELEASED TO: CONSTRUCTION  
 SHEET # 3 OF 5  
 PREP BY: JIM WILSON  
 CHECKED BY: JIM WILSON

RELEASED FOR CONSTRUCTION  
 SEP 23 2014  
 FRID SCHNEIDER



**LEGEND**  
 - - - - - PROPERTY CORNER  
 - - - - - PROPERTY LINE  
 - - - - - EASEMENT LINE  
 - - - - - EX. 8\"/>

**NOTES:**  
 TO BE DEMOLISHED AND REMOVED:  
 1. APPROX. 350 LF OF EXISTING 6\"/>

**CONTRACTOR TO PROVIDE TEMPORARY SITE SECURITY FENCE DURING CONSTRUCTION. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING CORNER STAKES IF NECESSARY.**

EXISTING SITE AND DEMOLITION PLAN  
 0 5 10 20



**PV-0049**  
SHEET 3 OF 5

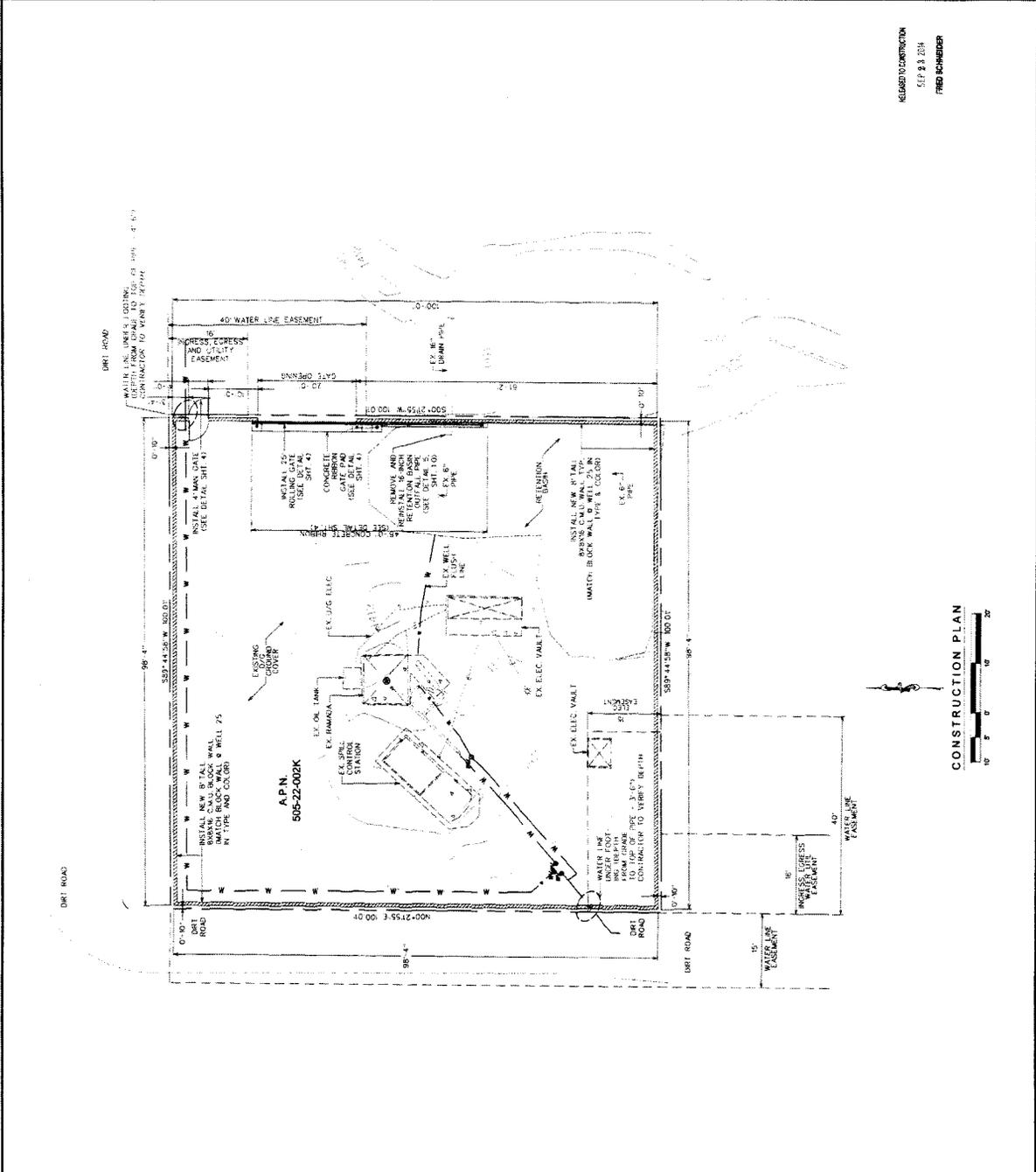
**ARIZONA WATER COMPANY**  
3905 N. BLACK CANYON HWY., POST OFFICE BOX 20006  
PHOENIX, ARIZONA 85038-9006  
(602) 240-6660

**CONSTRUCTION PLAN**  
REMOVE EXISTING CHAIN LINK FENCE AND REPLACE WITH  
375 LF OF 8" HIGH CMU PERIMETER WALL AND GATES AROUND WELL SITE NO. 21

DATE: 1/22/2014  
DRAWN BY: JAK  
CHECKED BY: [Signature]  
AS SHOWN  
PROJECT NO: 0003  
JOB NO: 14M SEC 22 T 6 S, R 6 E  
SHEET NO: 3 OF 5  
PROJECT NAME: PINAL VALLEY  
PROJECT ADDRESS: 1-51851-5229

263-1100  
1400-01-02-11  
Environmental Services  
Consulting Engineers and Architects  
In accordance with the Arizona Water  
Company Standard Specifications for  
Construction of Water Facilities  
with the Arizona Department of  
Environmental Quality

RELEASED TO CONSTRUCTION  
SEP 8 3 2014  
FRID SCHMIDER



- NOTES:**
1. CONTRACTOR TO PROVIDE TEMPORARY SITE SECURITY FENCE DURING CONSTRUCTION.
  2. ARIZONA WATER COMPANY WILL BE RESPONSIBLE FOR PROPERTY CORNER STAKING IF NECESSARY.

- LEGEND**
- PROPERTY CORNER
  - PROPERTY LINE
  - CASEMENT LINE
  - WATER LINE
  - EXIST CHAIN LINK FENCE
  - NEW WALL
  - CONTIGUES

ARIZONA WATER COMPANY  
3905 N. BLACK CANYON HWY.  
PHOENIX, ARIZONA 85038-9006  
(602) 240-6660  
WWW.AZARIZONAWATER.COM





**GENERAL STRUCTURAL NOTES**

COMPLY WITH THE 2008 EDITION OF THE INTERNATIONAL BUILDING CODE

SPECIAL STRUCTURAL INSPECTION:

PROVIDE SPECIAL INSPECTION SECTION TO THE INSPECTORS CONDUCTED BY THE DEPARTMENT OF BUILDING SAFETY. SPECIAL INSPECTION WORK NOT SECTION 107. OWNER MUST RESUBMIT THE INSPECTIONS REQUIRED BY IBC SECTION 107.

PROVIDE SAME ACCESS TO THE WORK FACILITIES BY THE SPECIAL STRUCTURAL INSPECTOR. NOTIFY OWNER OF CONSTRUCTION START DATE AND SPECIAL INSPECTION SCHEDULE. SPECIAL INSPECTIONS MAY BE CONDUCTED AS INFORMATION TO THE CONTRACTOR. SEE IBC CHAPTER 17 FOR MORE SCHEDULE INFORMATION.

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION PER IBC CHAPTER 17:

- 1. MASONRY REINFORCING AND GROUT PLACEMENT PRIOR TO GROUT PLACEMENT

**REMARKS:**

BLACK LINTS: ASTM C489 (Type I, 1500 PSI) RUNNING BOND. MORTAR: TYPE S MORTAR. LAY UP: 20 DAY STRENGTH OF 3000 PSI. VIBRATE GROUT IN REINFORCED CELLS EXCESS 2" IN BLOCK WALLS. ALL GROUT LINTS OVER 4" SHALL HAVE CHAIRS AND PLATE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO AIR AT ALL SOLID GRouted MASONRY. 4" OF MORTAR USE OVER END BLOCK. VERTICAL REINFORCING SHALL BE REPLACED PER STRUCTURAL DETAILS AND AS FOLLOWS:

- 1. LAY UP AT ALL CORNERS (AND 18" ADJACENT CELL TO CORNER).

**CONCRETE:**

REINFORCING ON MORTARED SOLE OR APPROVED ENHANCED FILL AT INTERSECTIONS, WALL ENDS, AND EACH SIDE OF EXPANSION JOINTS.

CONCRETE SHALL BE PLACED AND FINISHED PER IBC CHAPTER 19 FOR ALL EXPOSED SURFACES.

**CONCRETE:**

SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT STATE OF THE A.C.I. MANUAL OF CONCRETE PRACTICE WITH TYPE III CEMENT.

MINIMUM 28 DAY STRENGTH OF 3000 PSI.

MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. HARBOR SLUMP 5" ±.

ASTM A995, GRADE 60 EXCEPT AS FOLLOWS:

41 BARS OR SMALLER..... GRADE 40

ALL REINFORCING BARS EXCEPTED THE LATEST A.C.I. CODE AND DETAILING MANUAL SHALL APPLY. GRADE 60 BARS SHALL NOT BE FIELD BENT.

**SPACERS:**

MADE OF:

LAP SPACERS SHALL BE 48 BAR DIAMETERS.

CONCRETE LAYERS SHALL BE IN ACCORDANCE WITH A.C.I. 308.1R SECTION 12.14 AND 12.8. CLASSE B SPACERS SHALL BE OTHERWISE NOTED. THE FOLLOWING TABLE MAY BE USED FOR LAP SPACERS:

BAR SIZE	MINIMUM TO MAXIMUM SPACER
#4	12" - 24"
#5	18" - 36"

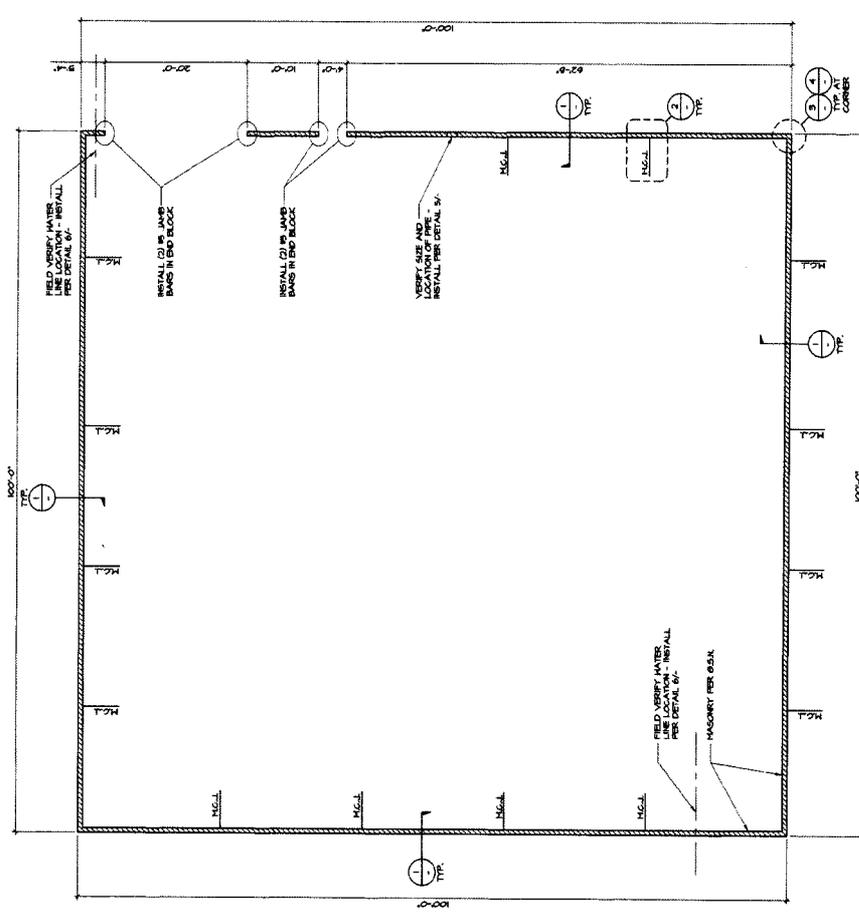
**NOTES TO CONTRACTORS:**

FOR ANY REASON THE DETAILS AND INFORMATION CONTAINED ON THESE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTION.

THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING, STRUTS OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD ALL OPENINGS AND REINFORCING IN PLACE UNTIL ALL MASONRY AND PLASTERING IS COMPLETE. THE CONTRACTOR SHALL VERIFY IN FIELD ALL DIMENSIONS AND CONDITIONS SHOWN IN DRAWINGS. CONTRACTOR SHALL PROVIDE PROTECTIVE MEASURES TO PREVENT DAMAGE TO EXISTING WORK.

PROJECT SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR OR PERSONS IN CHARGE OF THE DAY-TO-DAY CONSTRUCTION.

ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAT THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF ARIZONA.

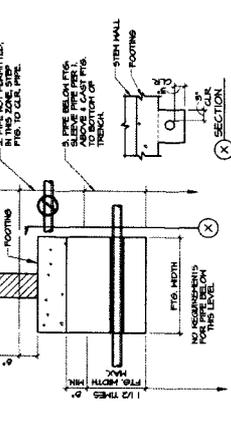


**SITEWALL PLAN**  
SCALE: 1/8"=1'-0"

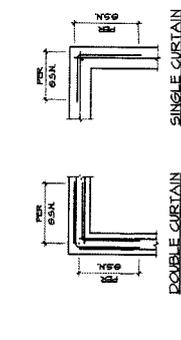


**ELEVATION**  
SCALE: 1/8"=1'-0"

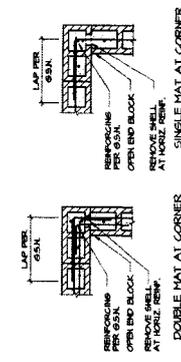
EXISTING PIPES  
MASONRY PER 65K  
AT ALL PIPES, REINFORCE WITH 2# REINFORCING PER IBC CHAPTER 17.07.01. USE COMPRESSIBLE MATERIAL. ALL ANGLES.



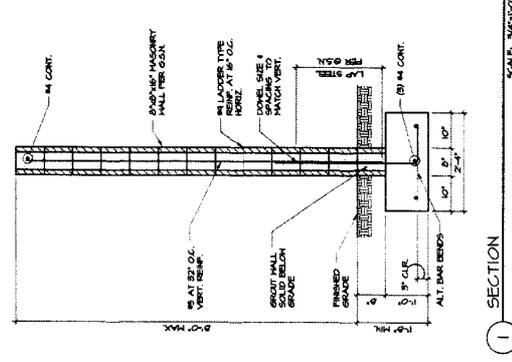
**PIPE AT WALL FOOTING**  
SCALE: 3/4"=1'-0"



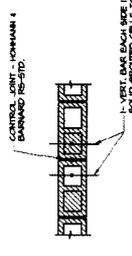
**REINFORCING AT CONC. FOOTING**  
SCALE: 3/4"=1'-0"



**MASONRY CONTROL JOINT (M.C.J.)**  
SCALE: 3/4"=1'-0"



**SECTION 1**  
SCALE: 3/4"=1'-0"



**MASONRY CONTROL JOINT (M.C.J.)**  
SCALE: 3/4"=1'-0"



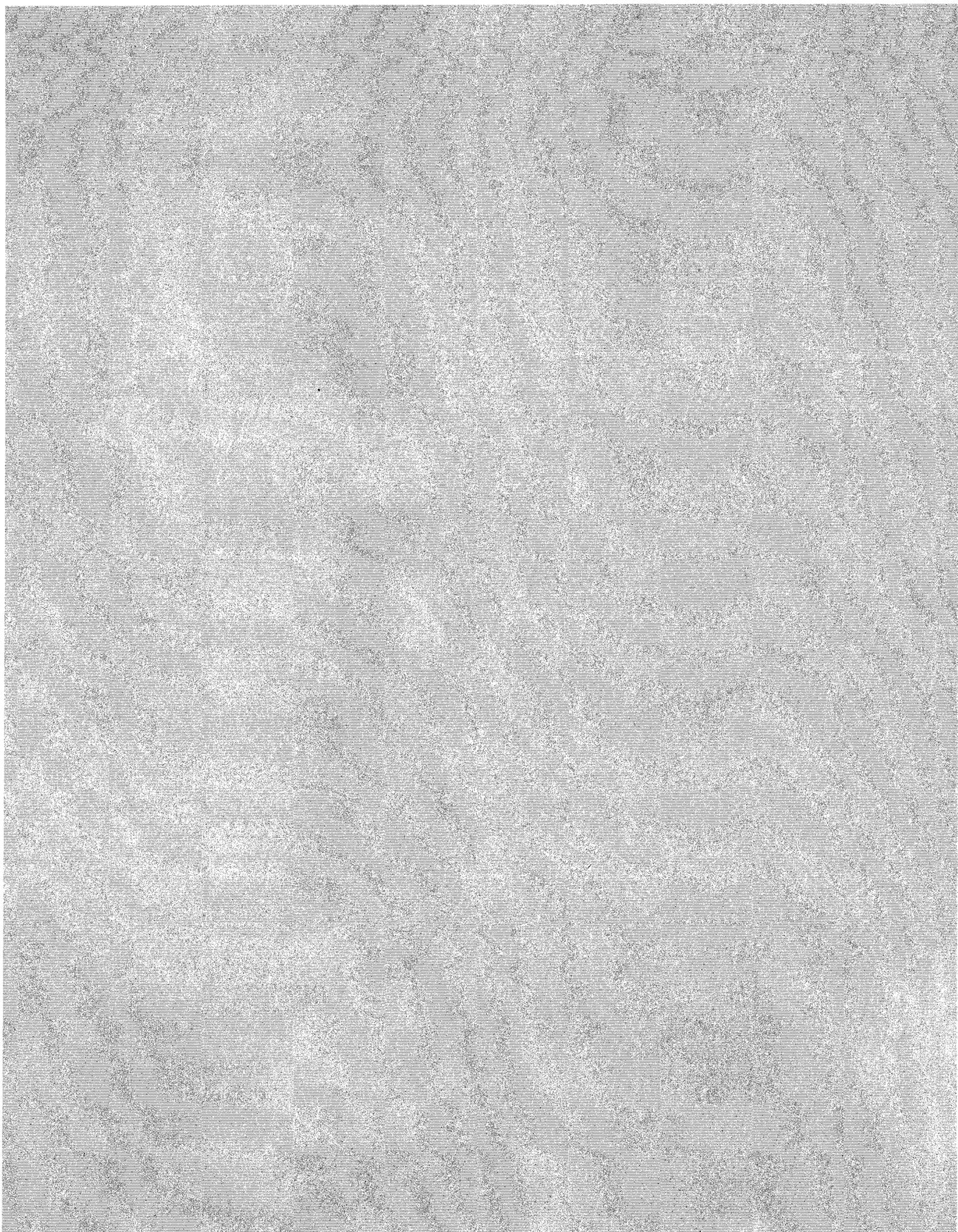
Starling Madison Loftquist, Inc.  
5224 S. 39th Street  
Phoenix, Arizona 85006  
(602) 438-2500  
Fax: (602) 438-2505



PERIMETER MASONRY SITE FENCE  
CASA GRANDE WELL #21  
CASA GRANDE, ARIZONA

ARIZONA WATER COMPANY  
P.O. BOX 29006  
3805 N. BLACK CANYON HWY.  
PHOENIX, AZ 85038-9006

**S1.0**



**AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND HANSEN LAND SURVEYING, INC.**

**TASK ORDER AUTHORIZATION**

Hansen Land Surveying Project Number    140140

AWC Project Number: Casa Grande Well Site 21 & 31 Property Corner Staking.

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

Effective Date of Authorization    October 3, 2014

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

**SCOPE OF SERVICES**

As per the attached "Scope of Services" per the attached Exhibit A. **NOTE: Authorization to commence will be given verbally by Division Manager (Ray Murrieta or in his absence, Kevin Pakka, Operations Superintendent).**

**COMPENSATION**

As per the attached "Exhibit B" dated September 30, 2014

**GENERAL TERMS AND CONDITIONS**

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

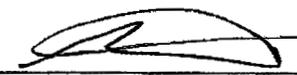
The services performed within this Task Order shall commence on or about October 3, 2014, and shall be complete on or before October 24, 2014.

Hansen Land Surveying's Representative in charge of the services is Taylor Hansen, who may be contacted at 520-723-3261 and taylor@hansensurvey.com. Client's Representative in charge of the services is Charles Briggs, who may be contacted at 602-240-6860 and cbriggs@azwater.com.

Arizona Water Company    1-5165

**HANSEN LAND SURVEY**

By 

By 

Title REAL PROPERTY SPECIALIST

Title PRES.

Date OCTOBER 1, 2014

Date 10/2/14



September 30, 2014

**Well Site 21 & 31  
Property Corner Staking & Construction Staking  
Casa Grande, Arizona**

We at Hansen Engineering and Surveying want to thank you for the opportunity to serve you on your project. We pride ourselves in building strong relationships with our clients and contractors. It is our integrity, work ethic and professional experience that have kept our company progressing for over 35 years. It is our goal to meet or exceed our client's needs and expectations to deliver a successful project. That is what you can expect when we partner up to meet the challenges in our market and the kind of service you can expect in this project.

The following is our proposal for services that we believe will allow you to meet your schedules and complete your project on time.

Should you have any questions or concerns we would be glad to meet with you and discuss how we can meet your specific needs.

Sincerely

A handwritten signature in black ink that reads "Taylor S. Hansen".

Taylor S. Hansen, RLS (37512), President  
Hansen Engineering and Surveying  
Arizona Board of Technical Registration Firm Registration # 10345-0  
Office (520) 723-3261

CB  
10-1-14  
1-5165



Hansen Engineering and Surveying Proposed Survey Plan  
For  
Well Site 21 & 31  
Property Corner Staking & Construction Staking  
Casa Grande, Arizona

September 30, 2014

1. **Project Control:** We will verify the project horizontal and vertical controls through standard survey practices and provide a formal report if required.
2. **Construction Staking:** This will be done in accordance with project specifications. We will set double offset reference stakes for the drywell.
3. **Property Corners:** This will be done in accordance with project specifications and Arizona State Board of Technical Registration requirements. We will determine and mark the specified property corners of both well sites. Upon marking any of said property corners, we find that the monuments called for on either of the respective Records of Survey do not match or have been removed, we will properly monument said corners. This will require a new Record of Survey to be completed which we will prepare and record, and provide copies to the owner.

CB  
10-1-14  
1-5165



Hansen Engineering and Surveying Proposal of Survey Services  
For  
Well Site 21 & 31  
Property Corner Staking & Construction Staking  
Casa Grande, Arizona

September 30, 2014

Property Corner Staking and Construction Staking:

Staking:	\$1,800
*Record of Survey Preparation and Recording (if necessary):	\$1,150

Hourly Service Rates - Registered Land Surveyor / \$140, Project Manager / \$180,  
Calculations / \$85, 1 man crew / \$105, 2 man crew / \$135  
3 man crew / \$165, Travel / \$ 0.55/mi.

We are pleased to provide survey services at our hourly rate plan for items outside of this proposal. This proposal is based on our services being completed within 1 site visit. Additional mobilizations due to alternate construction schedules will include a \$300 fee to compensate us for travel and set-up expenses.

If this proposal is acceptable please sign below and return a copy to our office. You will be invoiced according to the project specifications. This proposal when accepted shall become part of the subcontract agreement as representation of services offered for this project. Offer good for thirty days.

Thank you,

Taylor S. Hansen, RLS (37512), President  
Hansen Engineering and Surveying  
Office (520) 723-3261

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

*CAD*

Date: 10-01-2014

1-5165

# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • [www.azwater.com](http://www.azwater.com)

October 1, 2014

Mr. Taylor Hansen  
Hansen Land Surveying  
115 S. Main Street  
Coolidge, Arizona 85228

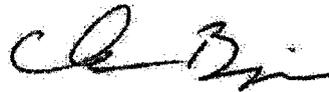
Re: Casa Grande Well Site 21 & 31 Property Corner Staking

Dear Mr. Hansen:

Attached is a copy of the Task Order for the above referenced projects. Please sign and return it to my attention.

If you have any questions, please call me at this office.

Very truly yours,



Charles E. Briggs  
Real Property Specialist  
[engineering@azwater.com](mailto:engineering@azwater.com)

afh  
Enclosure

---

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

AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND STARLING MADISON LOFQUIST, INC.

TASK ORDER AUTHORIZATION

Starling Madison Lofquist, Inc. Project Number 44691

AWC Project Number 1-5165 Casa Grande Well No. 21 CMU Perimeter Wall

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

Effective Date of Authorization October 10, 2014

Upon execution of this Task Order, and effective as of the date shown above, the parties agree that Starling Madison Lofquist, Inc. shall perform the following services:

SCOPE OF SERVICES

See Proposal attached as Exhibit A, dated October 16, 2014.

COMPENSATION

Lump sum fee of \$107.50 in accordance with Exhibit A, dated October 16, 2014, attached hereto.

GENERAL TERMS AND CONDITIONS

Starling Madison Lofquist, Inc.'s services shall be governed by the Master Agreement dated June 26, 2014 together with this Task Order and any Exhibits attached hereto.

The services performed within this Task Order shall commence on or about October 10, 2014, and shall be complete on or before October 16, 2014.

Starling Madison Lofquist, Inc.'s Representative in charge of the services is Tres Warner, who may be contacted at 602-438-2500 and twarner@smleng.com. Client's Representative in charge of the services is Jeff Kelty, who may be contacted at 602-240-6860 and jkelly@azwater.com.

Arizona Water Company

Starling Madison Lofquist, Inc.

By 

By 

Title ENGINEER/TECHNICIAN

Title DESIGN DIVISION MANAGER

Date OCT - 16, 2014

Date 10/16/14

# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • [www.azwater.com](http://www.azwater.com)

April 28, 2014

Mr. Kenneth Ricker  
Ricker, Atkinson, McBee, Morman & Associates, Inc.  
2105 S. Hardy Drive, Suite 13  
Tempe, AZ 85282

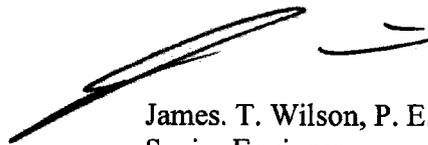
Re: WA 1-5165 Casa Grande Well Sites 30 and 31

Dear Mr. Ricker:

Enclosed is your copy of the Task Order for the above referenced project, which has been accepted by Arizona Water Company (the "Company").

If you have any questions, please call me at this office.

Very truly yours,



James. T. Wilson, P. E.  
Senior Engineer  
[engineering@azwater.com](mailto:engineering@azwater.com)

afh  
Enclosure

---

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

**AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND RICKER, ATKINSON, MCBEE, MORMAN & ASSOCIATES, INC.**

**TASK ORDER AUTHORIZATION**

Ricker, Atkinson, McBee, Morman & Associates, Inc. Project Number \_\_\_\_\_

AWC Project Number WA 1-5165 Casa Grande Well Sites 30 and 31

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

Effective Date of Authorization April 28, 2014

Upon execution of this Task Order, and effective as of the date shown above, the parties agree that Ricker, Atkinson, McBee, Morman & Associates, Inc. shall perform the following services:

**SCOPE OF SERVICES**

Describe here, or attach an Exhibit entitled "Exhibit "A"" dated March 26, 2014

**COMPENSATION**

Describe here, or attach an Exhibit entitled "Exhibit "B"" dated March 26, 2014

**GENERAL TERMS AND CONDITIONS**

Ricker, Atkinson, McBee, Morman & Associates, Inc.'s services shall be governed by the Master Agreement dated April 26, 2012 together with this Task Order and any Exhibits attached hereto.

The services performed within this Task Order shall commence on or about May 5, 2014, and shall be complete on or before May 26, 2014.

Ricker, Atkinson, McBee, Morman & Associates, Inc.'s Representative in charge of the services is Kenneth Ricker, who may be contacted at 480-921-8100 and krickere@rammeng.com. Client's Representative in charge of the services is James Wilson who may be contacted at 602-240-6860 and engineering@azwater.com.

Arizona Water Company

**Ricker, Atkinson, McBee, Morman & Associates, Inc.**

By:   
Title SR. ENGINEER  
Date 5/6/14

By:   
Title PROSIDENT  
Date 4/25/14



**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**  
***Geotechnical Engineering • Construction Materials Testing***

**R·A·M·M**

Arizona Water Company  
3805 North Black Canyon Highway  
Phoenix, Arizona 85015-5351

March 26, 2014

Attention: James Wilson, email ([jwilson@azwater.com](mailto:jwilson@azwater.com))

Re: Proposal for Geotechnical Engineering Services      RAMM Proposal No. PG14471  
Casa Grande Well Sites 30 and 31  
1882 East Florence Boulevard and 1697 East Elaine Court  
Casa Grande, Arizona

Ricker, Atkinson, McBee, Morman & Associates, Inc. is pleased to submit this proposal to conduct Geotechnical Engineering Services for the above-referenced project.

If this proposal meets with your approval, please sign, date and return one copy of the enclosed Attachment "A", which outlines project description, our scope of services, completion time and fee to perform services.

If there are any questions regarding the proposed scope of work, please call. Thank you for considering our firm for this project.

Respectfully submitted,

RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.

Kenneth L. Ricker, P.E.

/dh

EXHIBIT "A"

3/26/2014 JAK

**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**

ATTACHMENT "A" Proposal for Geotechnical Engineering Services

For: Arizona Water Company

RAMM Proposal No. PG14471

PROJECT: Casa Grande Well Sites 30 and 31  
1882 East Florence Boulevard and 1697 East Elaine Court  
Casa Grande, Arizona

DESCRIPTION:

The proposed project will include a new masonry wall at each site. Each site will be in the separate reports but field work will be accomplished in the same trip.

SCOPE OF SERVICES:

1. Test borings will be performed to determine subsurface conditions and obtain representative samples for laboratory analyses. Two test borings (one at each site) 20 feet in depth are proposed inside the fenced area. Test Borings will be Blue Staked. Site access and on-site utility locations will be provided by Arizona Water Company Casa Grande office.
2. Laboratory analyses of representative samples will include:
  - Moisture Content and Dry Density
  - Compression
  - Swell
  - Minus No. 200 Sieve and Plasticity Index
  - pH/Minimum Resistivity, Soluble Salts, Sulfate, Chloride
3. The field and laboratory data will be used in engineering evaluation and analyses to formulate our geotechnical recommendations.
4. An Engineer's report will be provided presenting the results of the field and laboratory testing and recommendations for foundation support (including footing depth, bearing capacity, and estimated settlement), lateral earth pressures, site grading and preparation procedures, thickness of pavements, corrosion potential and concrete durability parameters.

EXHIBIT "B"

3/26/2018 JAK

**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**

ATTACHMENT "A" Proposal for Geotechnical Engineering Services

For: Arizona Water Company

RAMM Proposal No. PG14471

PROJECT: Casa Grande Well Sites 30 and 31  
1882 East Florence Boulevard and 1697 East Elaine Court  
Casa Grande, Arizona

COMPLETION TIME:

Final report approximately 3 weeks after authorized to proceed.

FEE: \$ 2,900.00

The undersigned agrees to the forgoing Scope and Fee.

**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**

By:

  
\_\_\_\_\_  
Kenneth L. Ricker, P.E., Project Engineer

Client: \_\_\_\_\_

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

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

**AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND RICKER, ATKINSON, MCBEE, MORMAN & ASSOCIATES, INC.**

**TASK ORDER AUTHORIZATION**

Ricker, Atkinson, McBee, Morman & Associates, Inc. Project Number \_\_\_\_\_

AWC Project Number WA 1-5165 Casa Grande Well Sites 30 and 31

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

Effective Date of Authorization April 28, 2014

Upon execution of this Task Order, and effective as of the date shown above, the parties agree that Ricker, Atkinson, McBee, Morman & Associates, Inc. shall perform the following services:

**SCOPE OF SERVICES**

Describe here, or attach an Exhibit entitled "Exhibit "A"" dated March 26, 2014

**COMPENSATION**

Describe here, or attach an Exhibit entitled "Exhibit "B"" dated March 26, 2014

**GENERAL TERMS AND CONDITIONS**

Ricker, Atkinson, McBee, Morman & Associates, Inc.'s services shall be governed by the Master Agreement dated April 26, 2012 together with this Task Order and any Exhibits attached hereto.

The services performed within this Task Order shall commence on or about May 5, 2014, and shall be complete on or before May 26, 2014.

Ricker, Atkinson, McBee, Morman & Associates, Inc.'s Representative in charge of the services is Kenneth Ricker, who may be contacted at 480-921-8100 and krickere@rammeng.com. Client's Representative in charge of the services is James Wilson who may be contacted at 602-240-6860 and engineering@azwater.com.

Arizona Water Company

**Ricker, Atkinson, McBee, Morman & Associates, Inc.**

By \_\_\_\_\_  
Title SIC. ENGINEER  
Date 5/6/14

By \_\_\_\_\_  
Title PRESIDENT  
Date \_\_\_\_\_



**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**  
***Geotechnical Engineering • Construction Materials Testing***

**R·A·M·M**

Arizona Water Company  
3805 North Black Canyon Highway  
Phoenix, Arizona 85015-5351

March 26, 2014

Attention: James Wilson, email ([jwilson@azwater.com](mailto:jwilson@azwater.com))

Re: Proposal for Geotechnical Engineering Services      RAMM Proposal No. PG14471  
Casa Grande Well Sites 30 and 31  
1882 East Florence Boulevard and 1697 East Elaine Court  
Casa Grande, Arizona

Ricker, Atkinson, McBee, Morman & Associates, Inc. is pleased to submit this proposal to conduct Geotechnical Engineering Services for the above-referenced project.

If this proposal meets with your approval, please sign, date and return one copy of the enclosed Attachment "A", which outlines project description, our scope of services, completion time and fee to perform services.

If there are any questions regarding the proposed scope of work, please call. Thank you for considering our firm for this project.

Respectfully submitted,

RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.



Kenneth L. Ricker, P.E.

/dh

EXHIBIT "A"

3/26/2014 JAK

**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**

ATTACHMENT "A" Proposal for Geotechnical Engineering Services

For: Arizona Water Company

RAMM Proposal No. PG14471

PROJECT: Casa Grande Well Sites 30 and 31  
1882 East Florence Boulevard and 1697 East Elaine Court  
Casa Grande, Arizona

**DESCRIPTION:**

The proposed project will include a new masonry wall at each site. Each site will be in the separate reports but field work will be accomplished in the same trip.

**SCOPE OF SERVICES:**

1. Test borings will be performed to determine subsurface conditions and obtain representative samples for laboratory analyses. Two test borings (one at each site) 20 feet in depth are proposed inside the fenced area. Test Borings will be Blue Staked. Site access and on-site utility locations will be provided by Arizona Water Company Casa Grande office.
2. Laboratory analyses of representative samples will include:
  - Moisture Content and Dry Density
  - Compression
  - Swell
  - Minus No. 200 Sieve and Plasticity Index
  - pH/Minimum Resistivity, Soluble Salts, Sulfate, Chloride
3. The field and laboratory data will be used in engineering evaluation and analyses to formulate our geotechnical recommendations.
4. An Engineer's report will be provided presenting the results of the field and laboratory testing and recommendations for foundation support (including footing depth, bearing capacity, and estimated settlement), lateral earth pressures, site grading and preparation procedures, thickness of pavements, corrosion potential and concrete durability parameters.

EXHIBIT "B"

3/26/2012 JAK

**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**

ATTACHMENT "A" Proposal for Geotechnical Engineering Services

For: Arizona Water Company

RAMM Proposal No. PG14471

PROJECT: Casa Grande Well Sites 30 and 31  
1882 East Florence Boulevard and 1697 East Elaine Court  
Casa Grande, Arizona

COMPLETION TIME:

Final report approximately 3 weeks after authorized to proceed.

FEE: \$ 2,900.00

The undersigned agrees to the forgoing Scope and Fee.

**RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.**

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

  
Kenneth L. Ricker, P.E., Project Engineer

Client: \_\_\_\_\_

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

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

# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • [www.azwater.com](http://www.azwater.com)

July 17, 2014

Mr. Tres Warner, P. E.  
Starling Madison Lofquist, Inc.  
5224 S. 39<sup>th</sup> Street  
Phoenix, AZ 85040

Re: Casa Grande Well Sites 30 and 31 CMU Wall

Dear Mr. Warner:

Enclosed is your copy of the Task Order for the above referenced project, which has been accepted by Arizona Water Company (the "Company").

If you have any questions, please call me at this office.

Very truly yours,



Jeff Kelty  
Engineering Technician  
[engineering@azwater.com](mailto:engineering@azwater.com)

afh  
Enclosure

---

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

**AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND STARLING MADISON LOFQUIST, INC.**

**TASK ORDER AUTHORIZATION**

**Starling Madison Lofquist, Inc.** Project Number 397-14

AWC Project Number 1-5165 Casa Grande Well No. 31 CMU Perimeter Wall

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

Effective Date of Authorization July 10, 2014

Upon execution of this Task Order, and effective as of the date shown above, the parties agree that **Starling Madison Lofquist, Inc.** shall perform the following services:

**SCOPE OF SERVICES**

See Proposal attached as Exhibit A, dated June 20, 2014.

**COMPENSATION**

Lump sum fee of \$1,940.00 in accordance with Exhibit B, dated June 20, 2014, attached hereto.

**GENERAL TERMS AND CONDITIONS**

**Starling Madison Lofquist, Inc.**'s services shall be governed by the Master Agreement dated June 26, 2014 together with this Task Order and any Exhibits attached hereto.

The services performed within this Task Order shall commence on or about July 10, 2014, and shall be complete on or before July 17, 2014.

**Starling Madison Lofquist, Inc.**'s Representative in charge of the services is Tres Warner, who may be contacted at 602-438-2500 and twarner@smleng.com. Client's Representative in charge of the services is Jeff Kelty, who may be contacted at 602-240-6860 and jkelty@azwater.com.

**Arizona Water Company**

By   
Title ENGINEERING TECHNICIAN  
Date JULY 11, 2014

**Starling Madison Lofquist, Inc.**

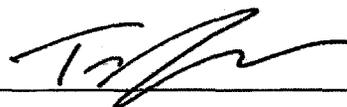
By   
Title DESIGN MANAGER  
Date 7-14-14

EXHIBIT A



**Starling Madison Lofquist, Inc.**  
*Consulting Structural and Forensic Engineers*

5224 South 39<sup>th</sup> Street, Phoenix, Arizona 85040  
tel: (602) 438-2500 fax: (602) 438-2505

**PROPOSAL**

**TO:** Arizona Water Company  
3805 N. Back Canyon Hwy  
Phoenix, AZ 85015  
Attn: Jeff Kelty

June 20, 2014

**PROJECT:** Well Site No. 31 – CMU Perimeter Wall  
Casa Grande, Arizona  
SML No. 397-14

**DESCRIPTION**

This proposal is based on the information provided by Arizona Water Company (“the Company”) contained in the e-mail and attachments received from Jeff Kelty (Arizona Water Co.) on Wednesday, June 18, 2014. This proposal is for Structural Design and Special Structural Inspection Services.

**Our detailed Scope of Work for the project is shown in the attached EXHIBIT A. Our Lump Sum fee for the work is shown in the attached EXHIBIT B. ~~Design changes and additions to the project scope will be billed hourly in accordance with the attached Fee Schedule, with prior approval from the client. This proposal is subject to the attached General Conditions.~~**

Please sign and return one copy of this proposal.

**APPROVALS:**

FOR: STARLING MADISON LOFQUIST, INC.  
Tres J. Warner, PE (ENGINEER)

ARIZONA WATER COMPANY  
(CLIENT)

Design Division Manager 06/20/2014

TITLE: DATE:

DATE:

Well Site No. 31 – CMU Perimeter Wall  
Casa Grande, Arizona  
Structural Fee Proposal  
June 20, 2014

## **EXHIBIT A - SCOPE OF WORK:**

### **A. Structural Design**

1. Review the site-specific geotechnical report prepared by RAMM & Associates.
2. Prepare the structural design of the 6 foot tall CMU perimeter wall and *L-Shaped* foundation in accordance with the requirements of the International Building Code (IBC). The specifications will be shown in note form on the drawings.
3. Prepare the structural design for a 7'-4" section of wall that cannot have a footing beneath it due to the presence of existing utilities. We expect this section of wall will have more horizontal reinforcing than is standard, and also a larger footing on each side.

### **B. Special Structural Inspection**

1. Observe and report on construction activities as required by Chapter 17 of the IBC for Structural Masonry / Grout Placement.
2. Provide on-site, on-call special structural inspector for the activities listed above. We request as much advance notice as possible, but we require at least 24 hours notice. If we are called to perform an inspection, and we arrive on-site and the contractor is not ready, we will still bill for the inspection.
3. A written report will be left with the field superintendent. A final stamped/signed report will be issued within 5 business days.
4. At the end of the project, once all non-compliant items have been addressed, we will issue a final letter of compliance to the Company stating that the construction is in substantial conformance with the approved drawings, change orders and engineer's directives.
5. The following items are specifically excluded from this proposal:
  - a. Geotechnical Engineering inspections, including sub-grade preparation, special grading, excavation, and compaction.
  - b. Materials testing (e.g. concrete and grout compression tests)
  - c. Weekend or holiday work. If we are able to work the inspection into our schedule, weekend or holiday work will be billed at 50% premium over our normal rates.

Well Site No. 31 – CMU Perimeter Wall  
 Casa Grande, Arizona  
 Structural Fee Proposal  
 June 20, 2014

**EXHIBIT B - FEES:**

We propose to provide the services outlined in the Scope of Work as follows:

Structural Calculations and Drawings for Well Site No. 31	\$1040.00
Special Inspection for Well Site No. 31 (2x \$450/inspection)	\$900.00
<hr/>	
<b>Total Fee</b>	<b>\$1940.00</b>

Billing will be monthly based upon the percentage of work completed.

Services not included in the scope of work, including design changes, will be provided at our current hourly rates as follows or under a separate agreement.

~~Fee Schedule 2014:  
 Fed Tax ID #86-1002197~~

<del>Engineer .....</del>	<del>\$145.00/hr</del>
<del>Forensic Investigation (Principal).....</del>	<del>\$195.00/hr</del>
<del>Forensic Investigation (Staff) .....</del>	<del>\$160.00/hr</del>
<del>Expert Witness Testimony .....</del>	<del>\$395.00/hr</del>
<del>Engineering Technician .....</del>	<del>\$110.00/hr</del>
<del>CADD Drafting .....</del>	<del>\$95.00/hr</del>
<del>Administration .....</del>	<del>\$65.00/hr</del>
<del>Travel expenses (automobile) .....</del>	<del>\$0.56 / mile</del>
<del>Out-of-pocket expenses .....</del>	<del>Cost + 10%</del>
<del>Reproductions, printing, photo processing .....</del>	<del>Cost + 10%</del>
<del>Digital Imaging .....</del>	<del>\$2.00/sheet</del>
<del>CADD plotting .....</del>	<del>\$10.00/sheet</del>
<del>Special Inspections .....</del>	<del>\$110.00/hr</del>
	<del>\$290.00 trip minimum</del>

**AGREEMENT FOR GENERAL ENGINEERING SERVICES BETWEEN ARIZONA WATER COMPANY AND STARLING MADISON LOFQUIST, INC.**

**TASK ORDER AUTHORIZATION**

**Starling Madison Lofquist, Inc.** Project Number 397-14

AWC Project Number 1-5165 Casa Grande Well No. 30 CMU Perimeter Wall

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

Effective Date of Authorization July 10, 2014

Upon execution of this Task Order, and effective as of the date shown above, the parties agree that **Starling Madison Lofquist, Inc.** shall perform the following services:

**SCOPE OF SERVICES**

See Proposal attached as Exhibit A, dated June 20, 2014.

**COMPENSATION**

Lump sum fee of \$1,940.00 in accordance with Exhibit B, dated June 20, 2014, attached hereto.

**GENERAL TERMS AND CONDITIONS**

**Starling Madison Lofquist, Inc.**'s services shall be governed by the Master Agreement dated June 26, 2014 together with this Task Order and any Exhibits attached hereto.

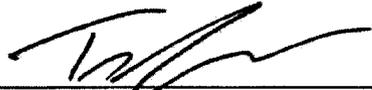
The services performed within this Task Order shall commence on or about July 10, 2014, and shall be complete on or before July 17, 2014.

**Starling Madison Lofquist, Inc.**'s Representative in charge of the services is Tres Warner, who may be contacted at 602-438-2500 and twarner@smleng.com. Client's Representative in charge of the services is Jeff Kelty, who may be contacted at 602-240-6860 and jkelly@azwater.com.

**Arizona Water Company**

**Starling Madison Lofquist, Inc.**

By 

By 

Title ENGINEERING TECHNICIAN

Title DESIGN MANAGER

Date JULY 11, 2014

Date 7.14.14

EXHIBIT A



**Starling Madison Lofquist, Inc.**  
*Consulting Structural and Forensic Engineers*

5224 South 39<sup>th</sup> Street, Phoenix, Arizona 85040  
tel: (602) 438-2500 fax: (602) 438-2505

**PROPOSAL**

**TO:** Arizona Water Company  
3805 N. Back Canyon Hwy  
Phoenix, AZ 85015  
Attn: Jeff Kely

June 20, 2014

**PROJECT:** Well Site No. 30 – CMU Perimeter Wall  
Casa Grande, Arizona  
SML No. 397-14

**DESCRIPTION**

This proposal is based on the information provided by Arizona Water Company (“the Company”) contained in the e-mail and attachments received from Jeff Kely (Arizona Water Co.) on Wednesday, June 18, 2014. This proposal is for Structural Design and Special Structural Inspection Services.

**Our detailed Scope of Work for the project is shown in the attached EXHIBIT A. Our Lump Sum fee for the work is shown in the attached EXHIBIT B. ~~Design changes and additions to the project scope will be billed hourly in accordance with the attached Fee Schedule, with prior approval from the client. This proposal is subject to the attached General Conditions.~~**

Please sign and return one copy of this proposal.

**APPROVALS:**

~~FOR: STARLING MADISON LOFQUIST, INC. ARIZONA WATER COMPANY  
Tres J. Warner, PE (ENGINEER) (CLIENT)~~

~~Design Division Manager 06/20/2014  
TITLE: DATE:~~

~~DATE:~~

Well Site No. 30 – CMU Perimeter Wall  
Casa Grande, Arizona  
Structural Fee Proposal  
June 20, 2014

**EXHIBIT A - SCOPE OF WORK:**

**A. Structural Design**

1. Review the site-specific geotechnical report prepared by RAMM & Associates.
2. Prepare the structural design of the 8 foot tall CMU perimeter wall and foundation in accordance with the requirements of the International Building Code (IBC). The specifications will be shown in note form on the drawings.
3. Prepare the structural design for a 30 foot rolling gate and automatic gate opener.

**B. Special Structural Inspection**

1. Observe and report on construction activities as required by Chapter 17 of the IBC for Structural Masonry / Grout Placement.
2. Provide on-site, on-call special structural inspector for the activities listed above. We request as much advance notice as possible, but we require at least 24 hours notice. If we are called to perform an inspection, and we arrive on-site and the contractor is not ready, we will still bill for the inspection.
3. A written report will be left with the field superintendent. A final stamped/signed report will be issued within 5 business days.
4. At the end of the project, once all non-compliant items have been addressed, we will issue a final letter of compliance to the Company stating that the construction is in substantial conformance with the approved drawings, change orders and engineer's directives.
5. The following items are specifically excluded from this proposal:
  - a. Geotechnical Engineering inspections, including sub-grade preparation, special grading, excavation, and compaction.
  - b. Materials testing (e.g. concrete and grout compression tests)
  - c. Weekend or holiday work. If we are able to work the inspection into our schedule, weekend or holiday work will be billed at 50% premium over our normal rates.

Well Site No. 30 – CMU Perimeter Wall  
 Casa Grande, Arizona  
 Structural Fee Proposal  
 June 20, 2014

**EXHIBIT B - FEES:**

We propose to provide the services outlined in the Scope of Work as follows:

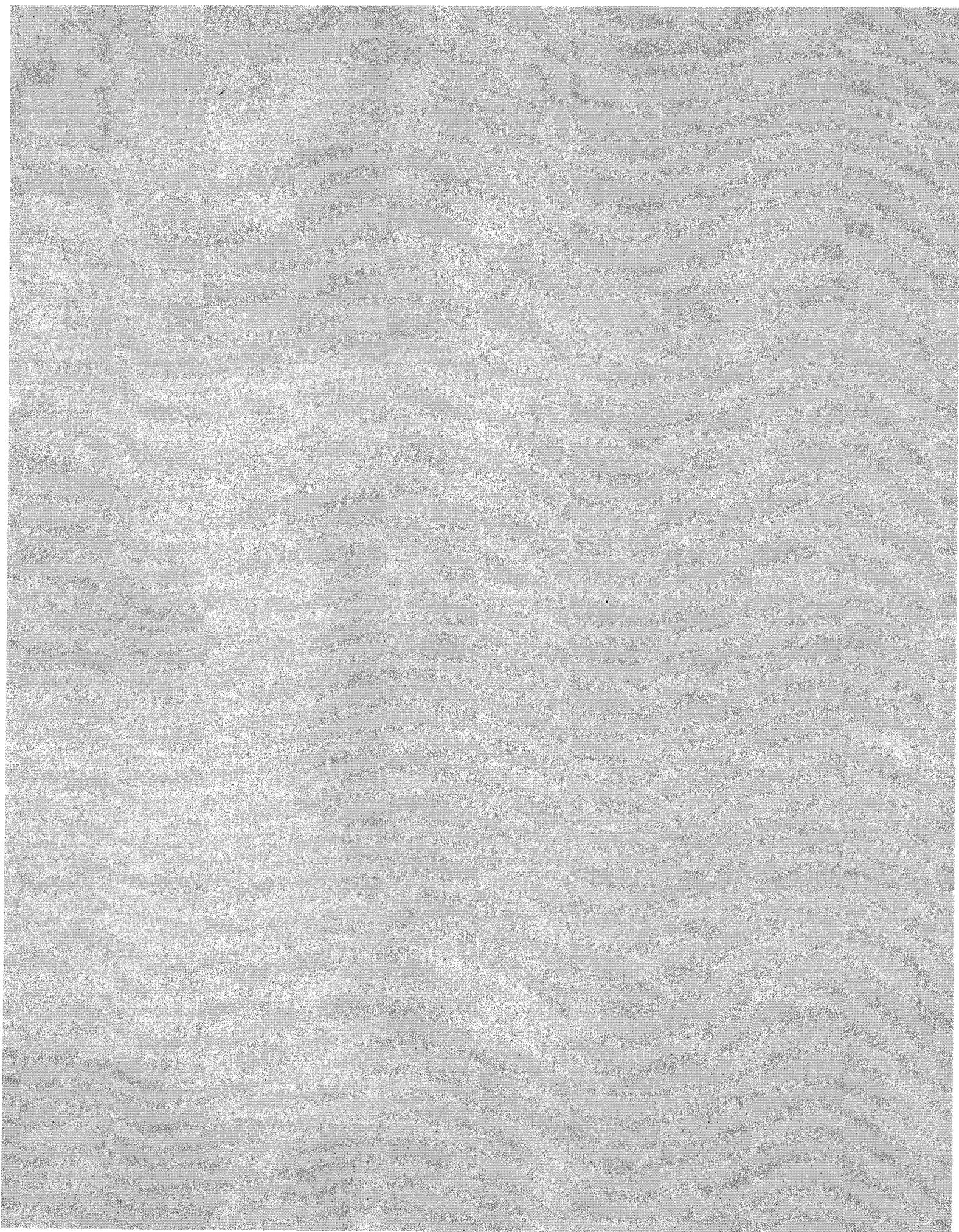
Structural Calculations and Drawings for Well Site No. 30	\$1040.00
Special Inspection for Well Site No. 30 (2x \$450/inspection)	\$900.00
<hr/>	
<b>Total Fee</b>	<b>\$1940.00</b>

Billing will be monthly based upon the percentage of work completed.

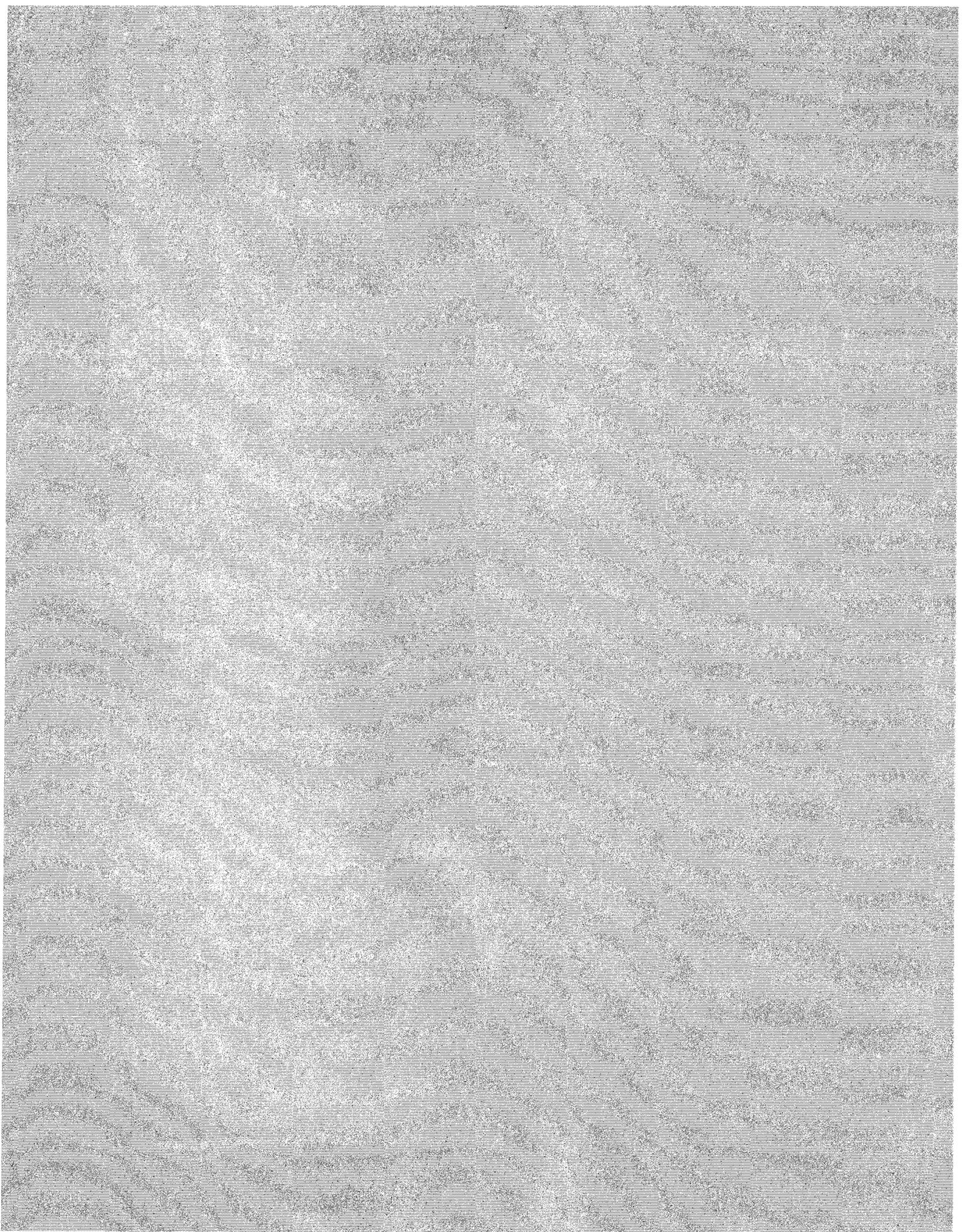
Services not included in the scope of work, including design changes, will be provided at our current hourly rates as follows or under a separate agreement.

~~Fee Schedule 2014:  
 Fed Tax ID #86-1002197~~

Engineer .....	\$145.00/hr
Forensic Investigation (Principal).....	\$195.00/hr
Forensic Investigation (Staff).....	\$160.00/hr
Expert Witness Testimony .....	\$395.00/hr
Engineering Technician .....	\$110.00/hr
CADD Drafting .....	\$95.00/hr
Administration .....	\$65.00/hr
Travel expenses (automobile).....	\$0.56 / mile
Out-of-pocket expenses .....	Cost + 10%
Reproductions, printing, photo processing .....	Cost + 10%
Digital Imaging .....	\$2.00/sheet
CADD plotting .....	\$10.00/sheet
Special Inspections .....	\$110.00/hr
	\$290.00 trip minimum







**CITY OF CASA GRANDE, ARIZONA  
DEVELOPMENT SERVICES  
510 East Florence Blvd. 85122**



---

## **Certificate of Completion**

---

**Permit #: CDP-14-01052**

### **Department of Building Regulations**

This certificate is issued pursuant to the requirements of Section 308 of the City of Casa Grande International Building Code - 2003 ICC. Certifying that at the time of issuance this structure was in compliance with the various ordinances of the City regulating building construction or use for the following:

**Address: 1882 E FLORENCE BLVD  
Casa Grande, AZ 85122**

**Type of Use: Well Site Perimeter Fence - Arizona  
Water Co**

**Property Owner: ARIZONA WATER COMPANY**

**Parcel Number: 505-22-001-G**

**Occupancy Load:**

**Sprinkler System: NO**

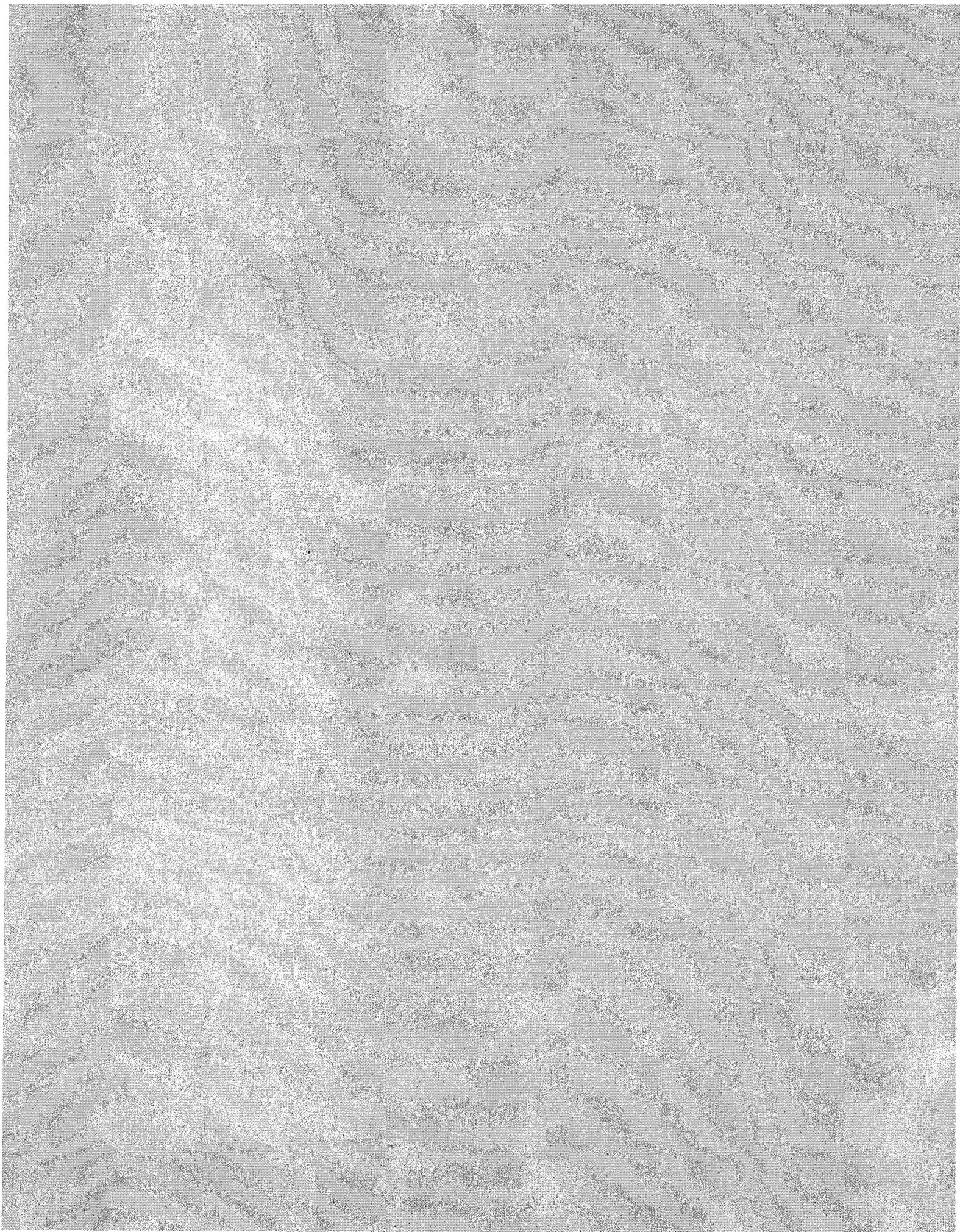
**Construction Type: Type V-B**

**Occupancy Group: U**

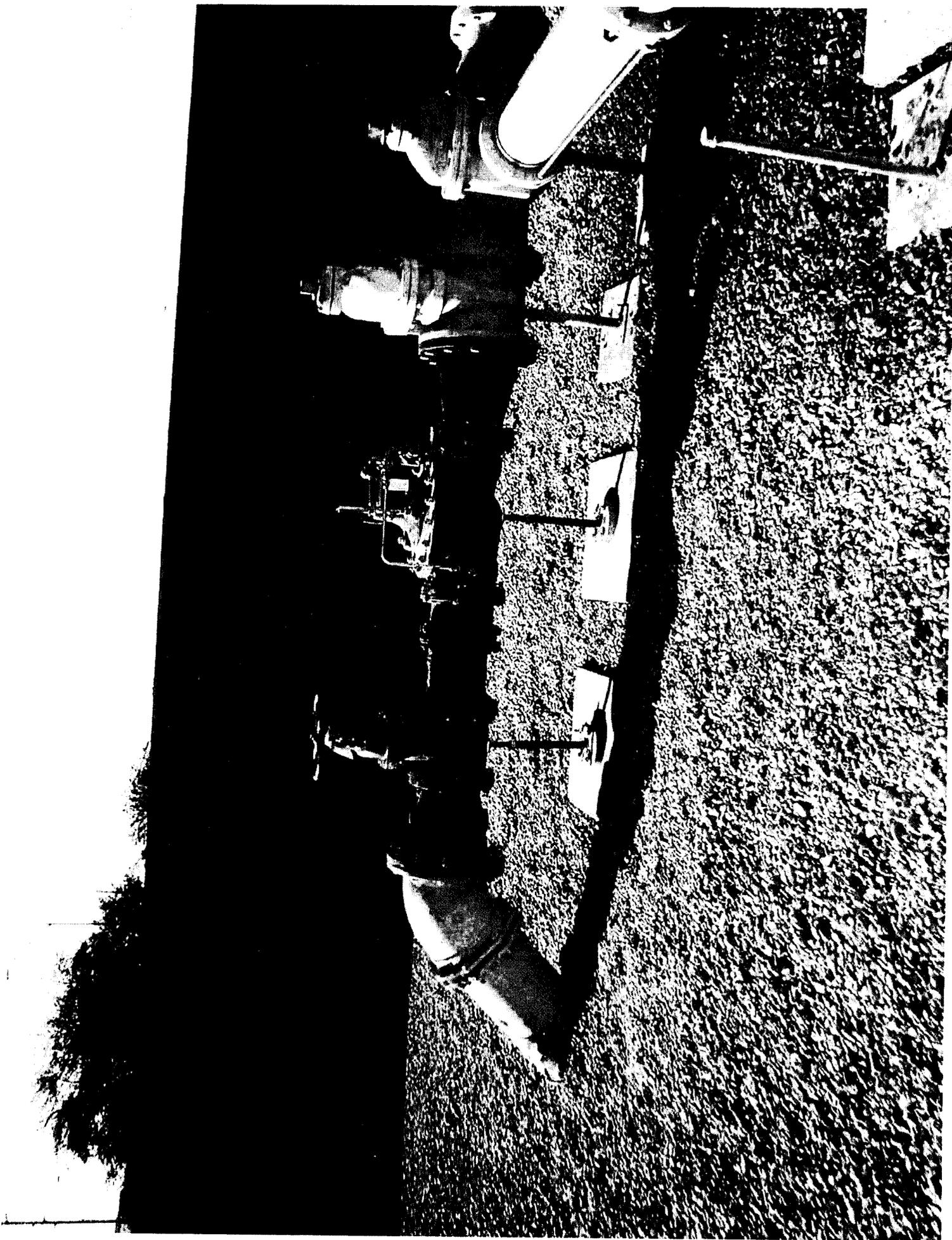
**Signature:**   
**for** Dwight Williams, Building Official

**Issued: 1/13/2015**

Note: Should any of the above statements change, this Certificate of Occupancy will become void.  
**Post in a conspicuous place.**



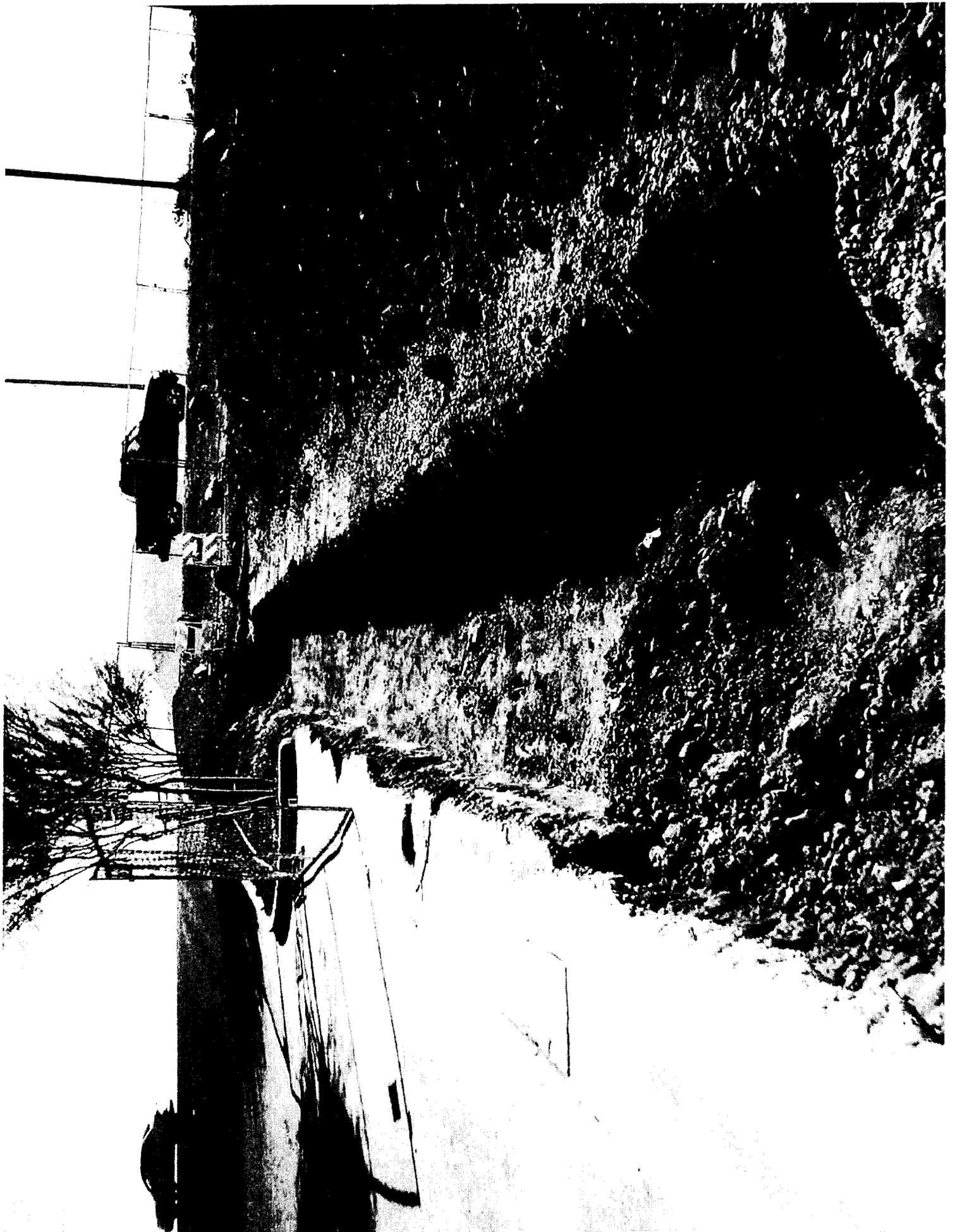


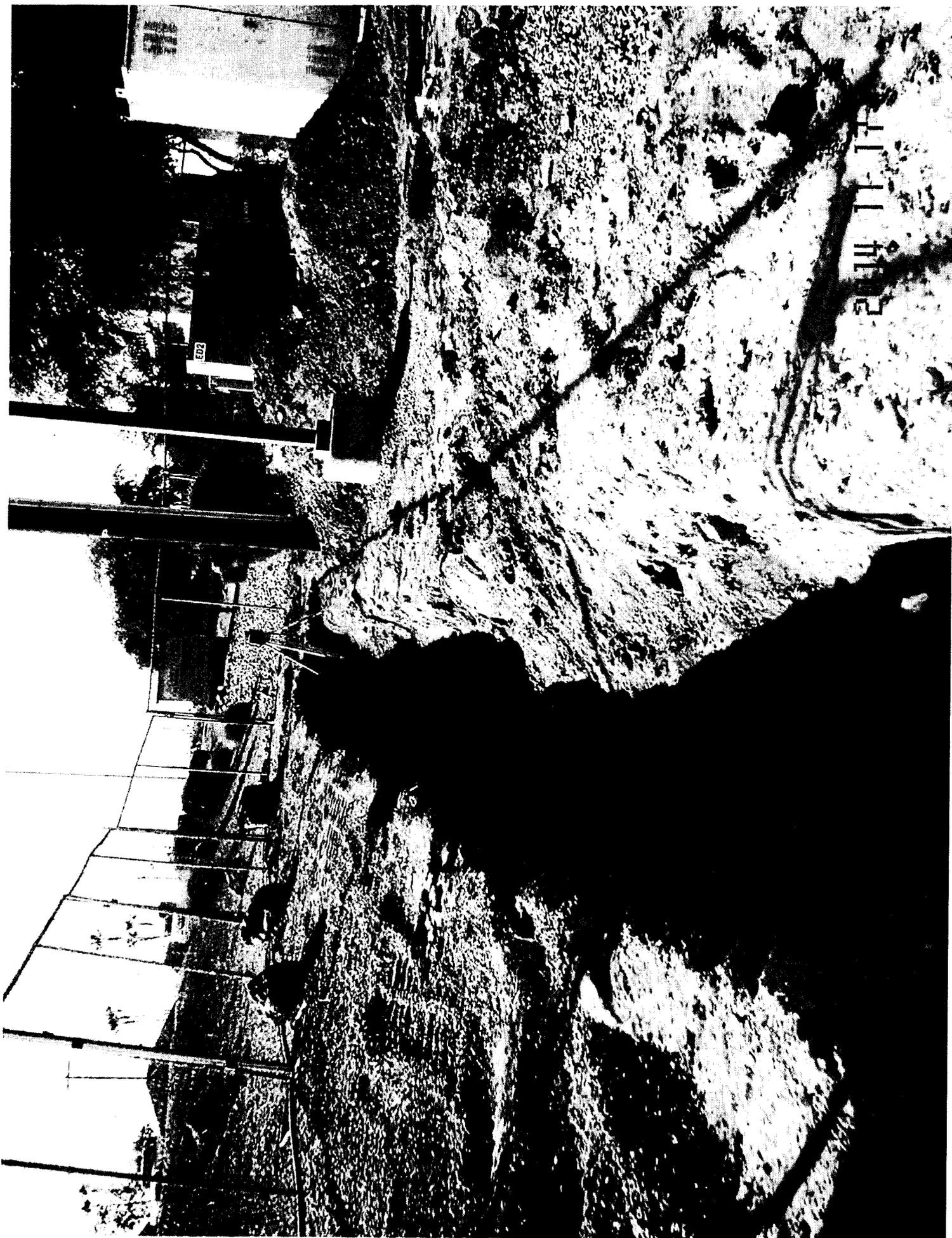


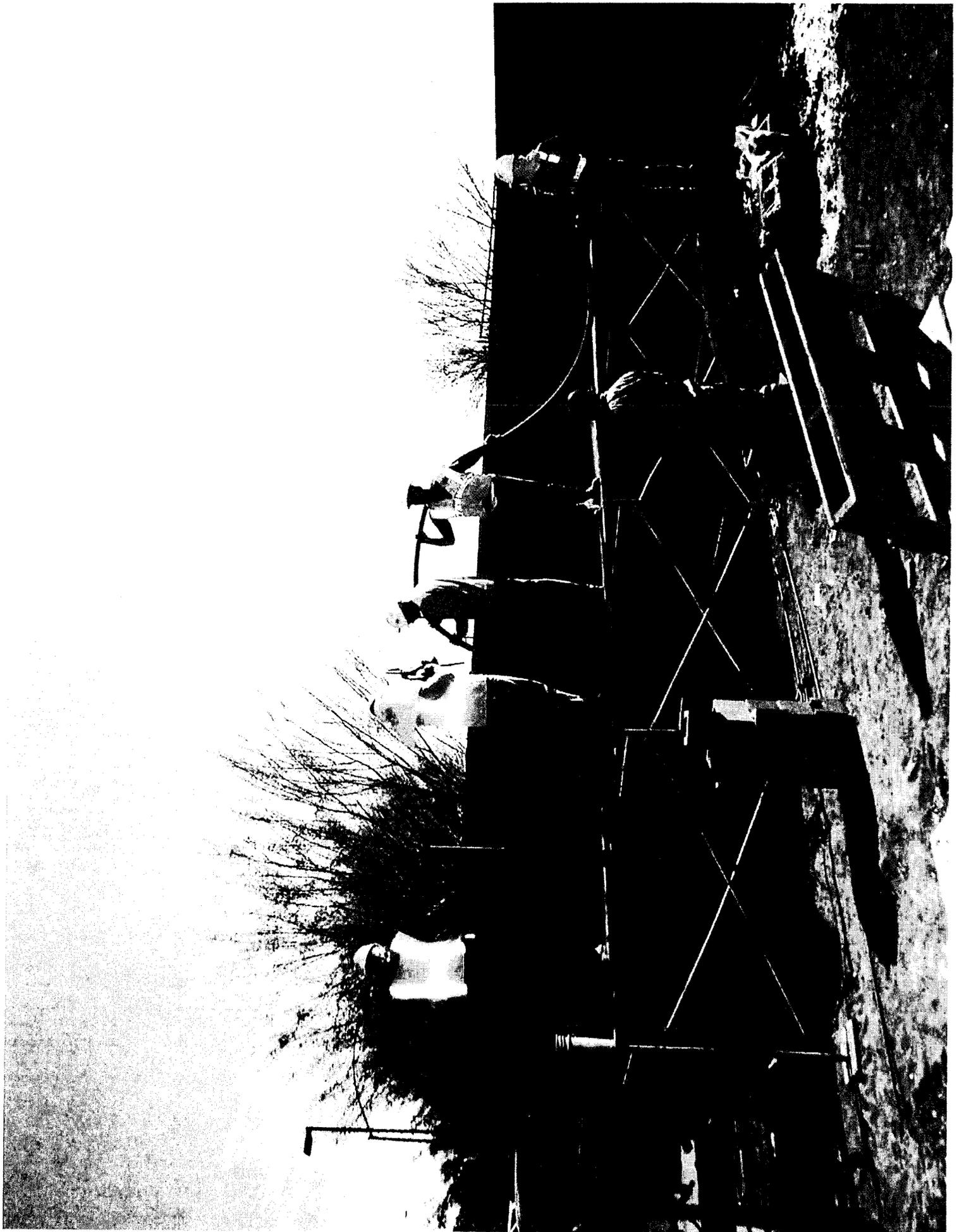


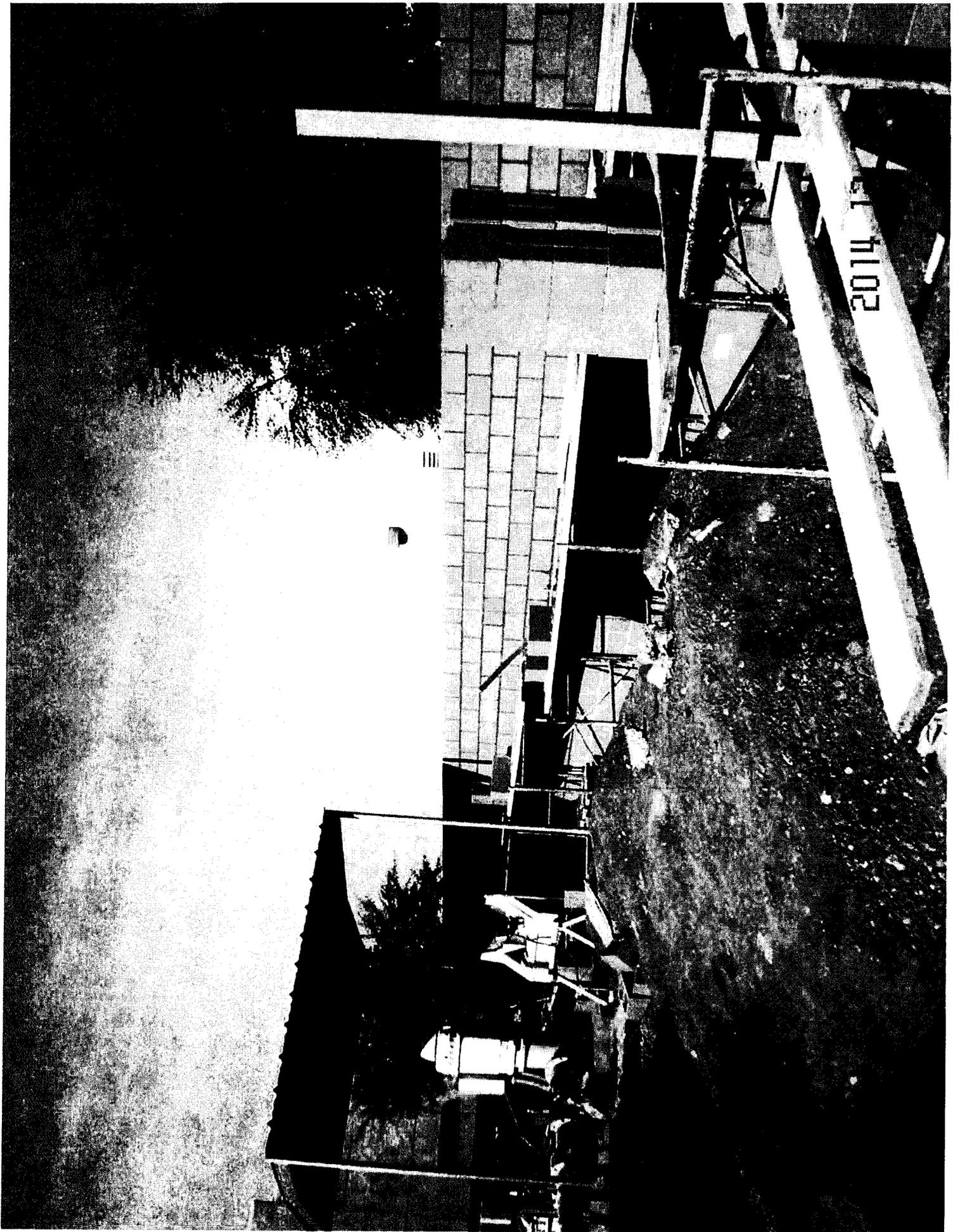


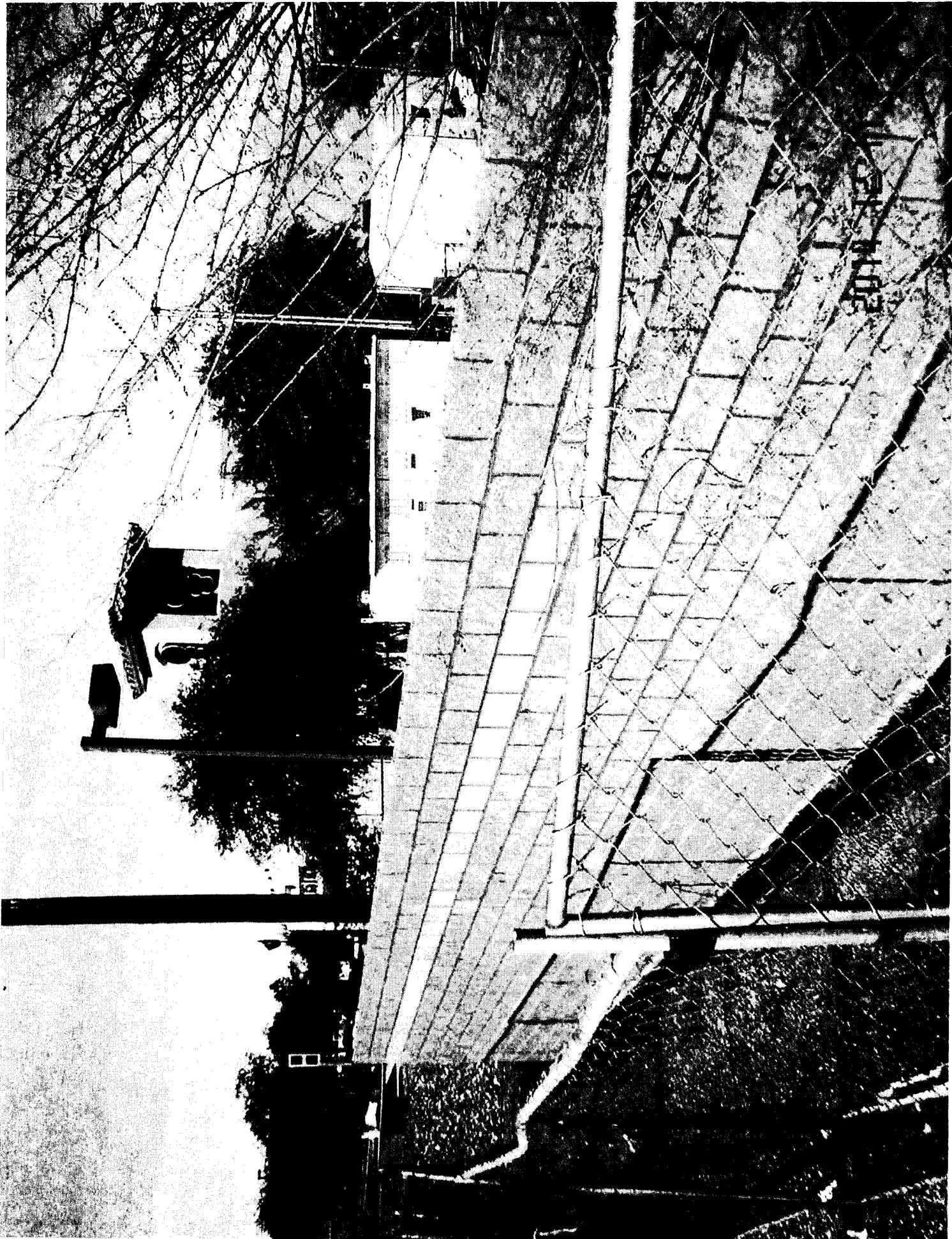


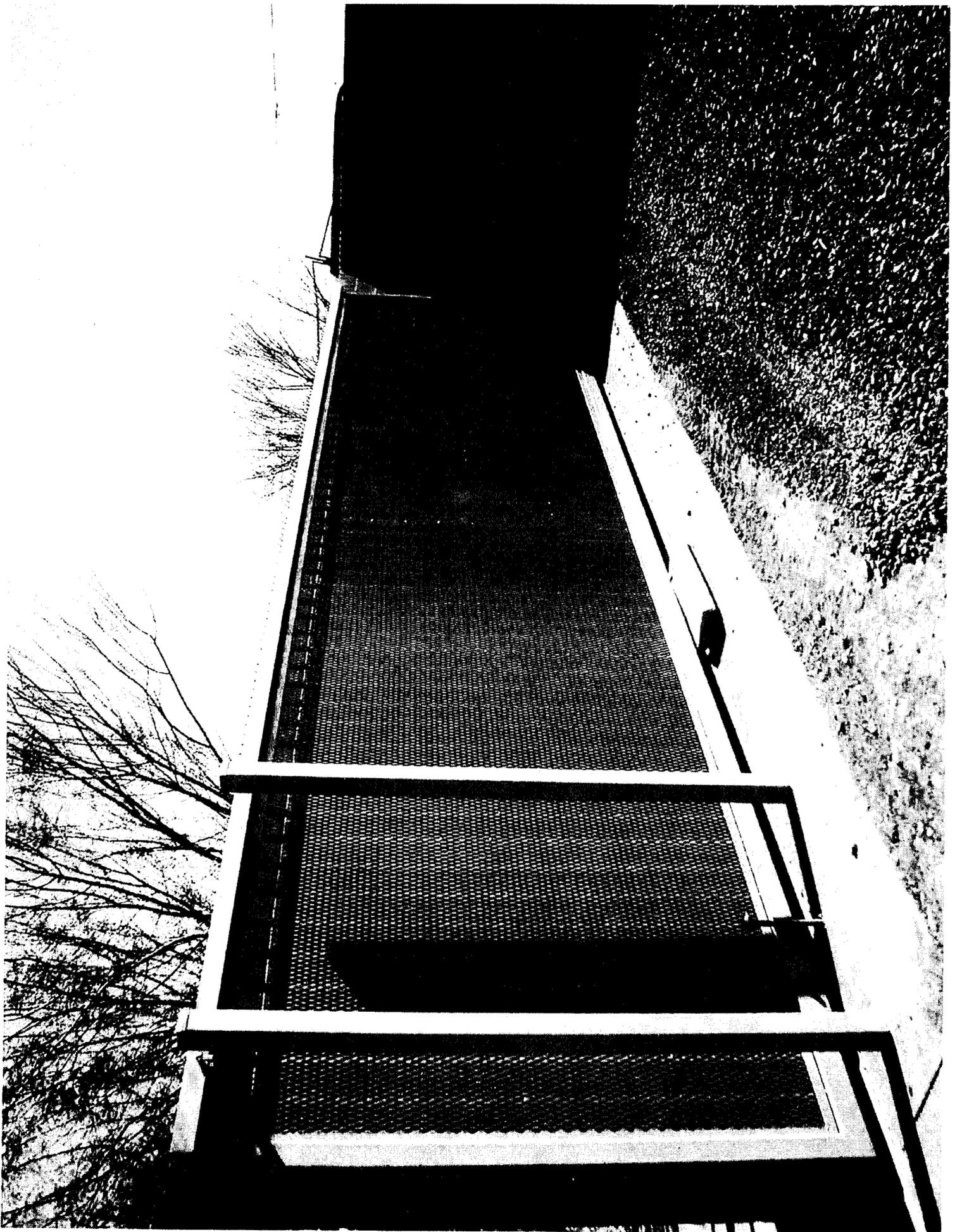


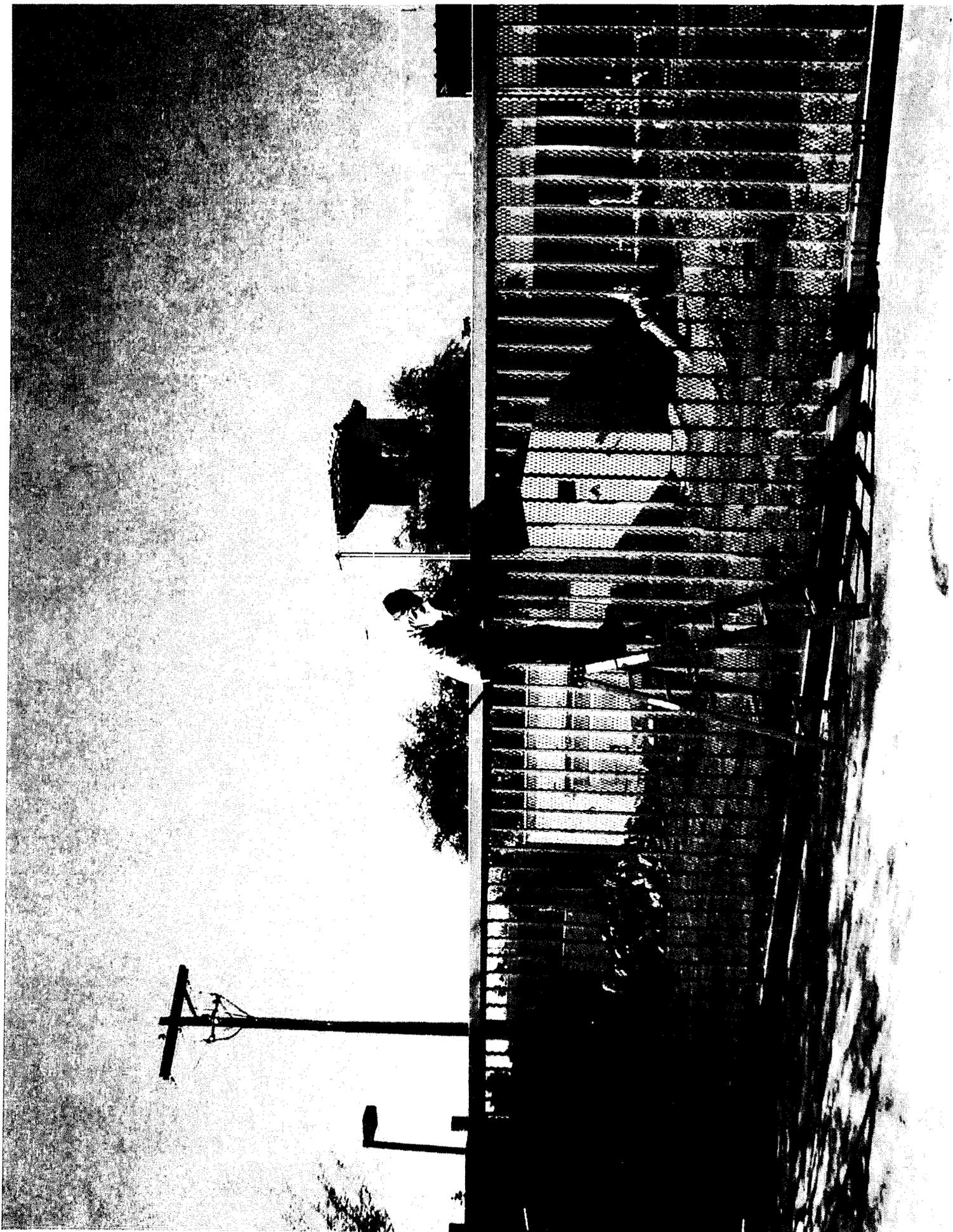


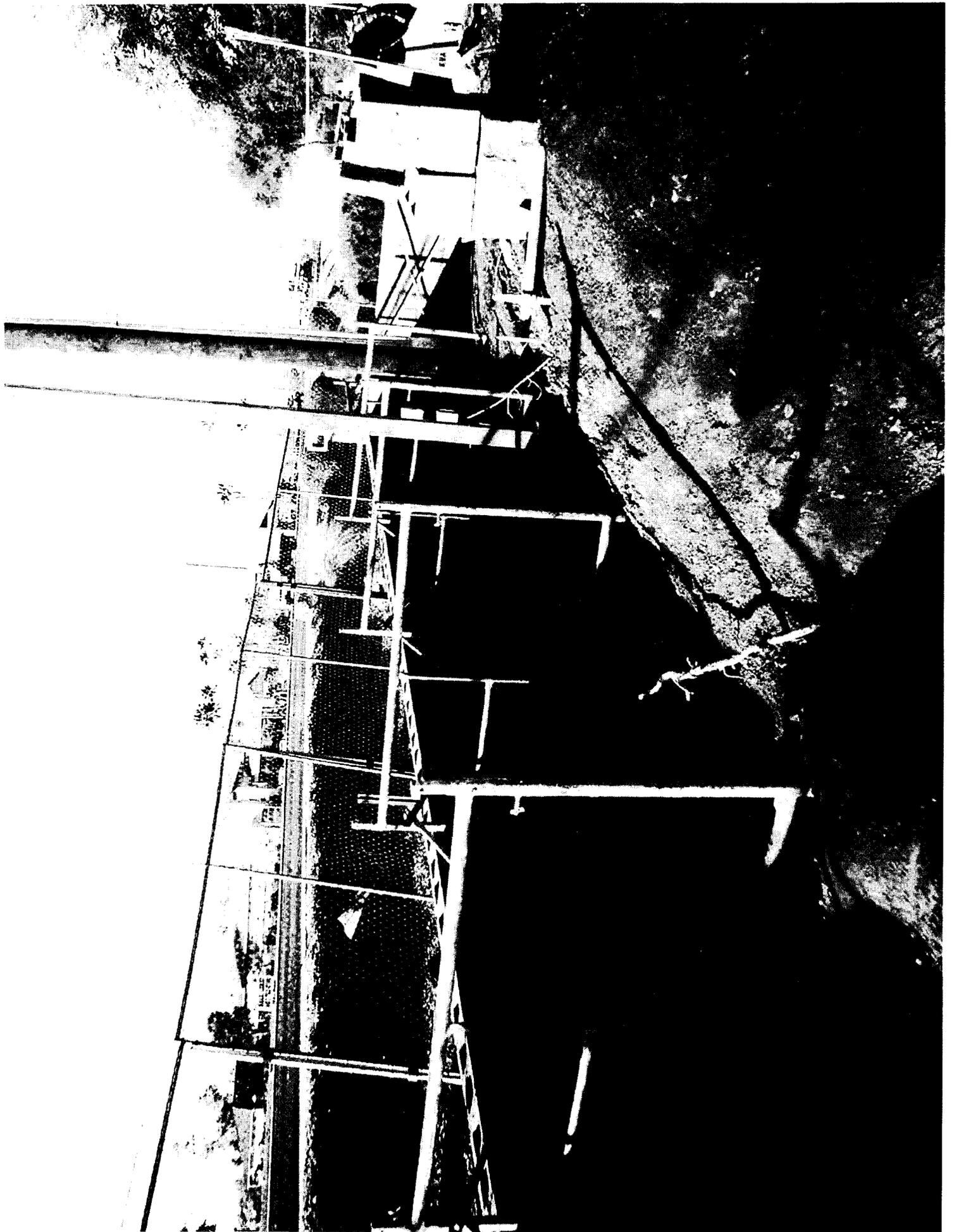












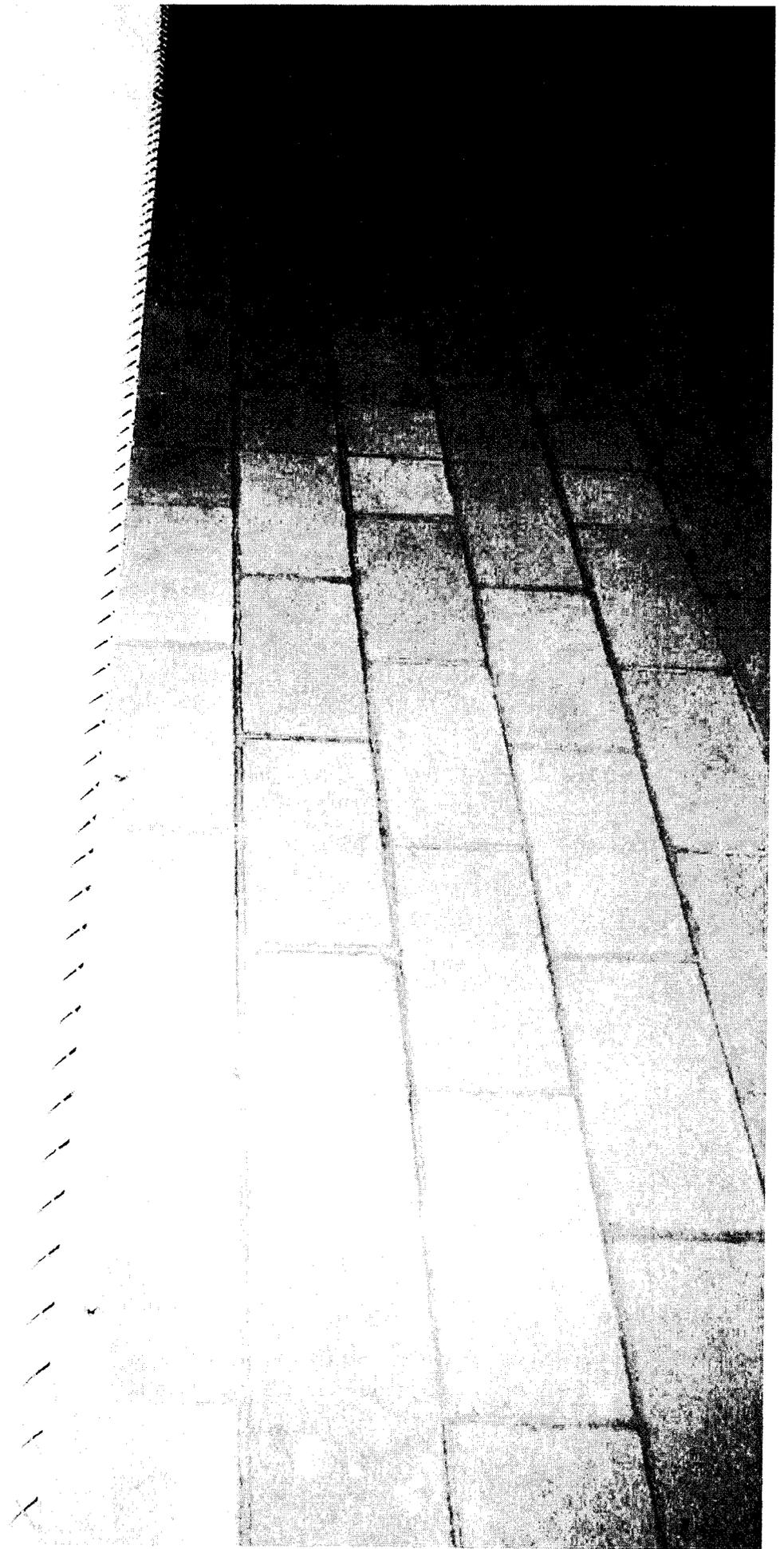


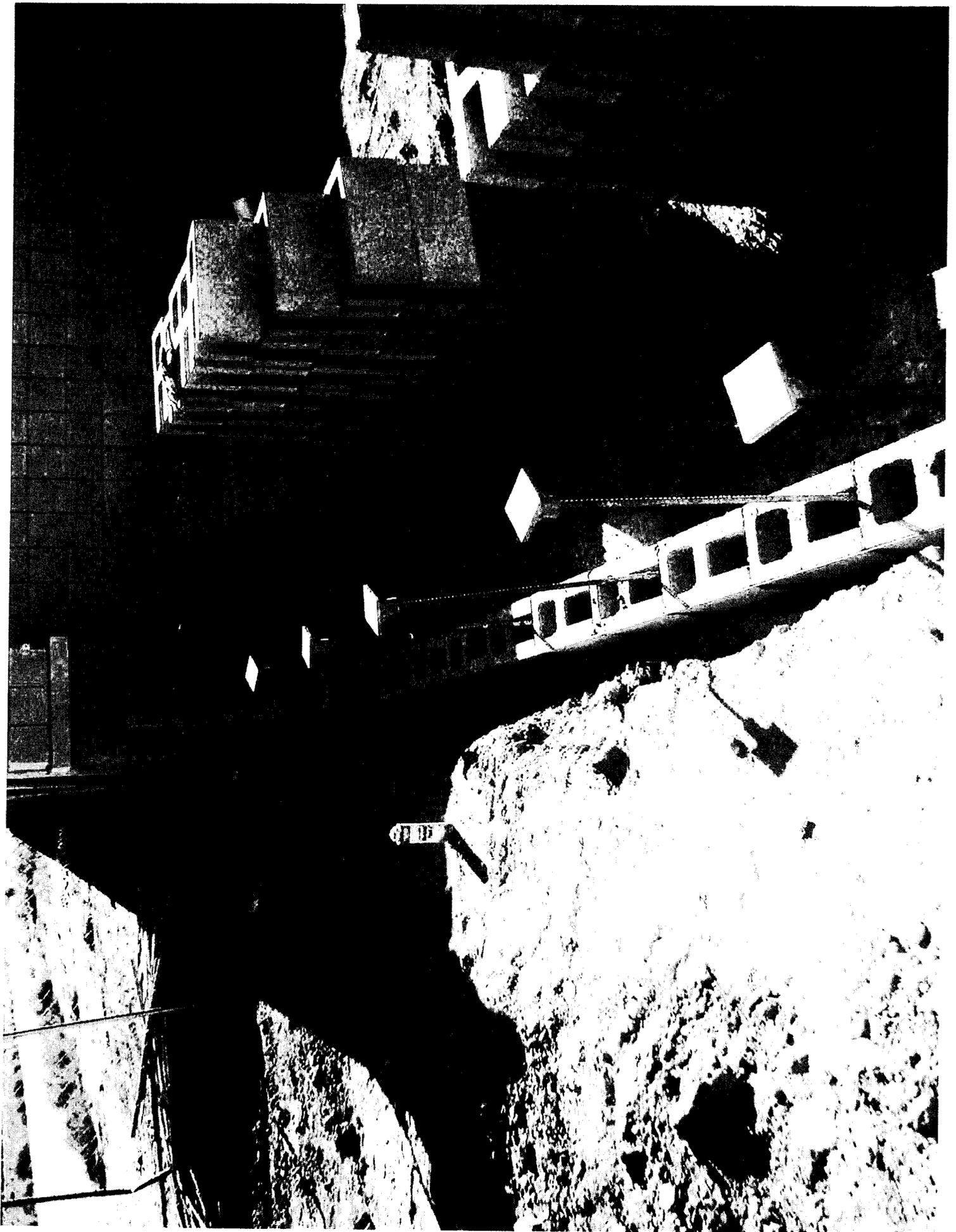
2014 11 14





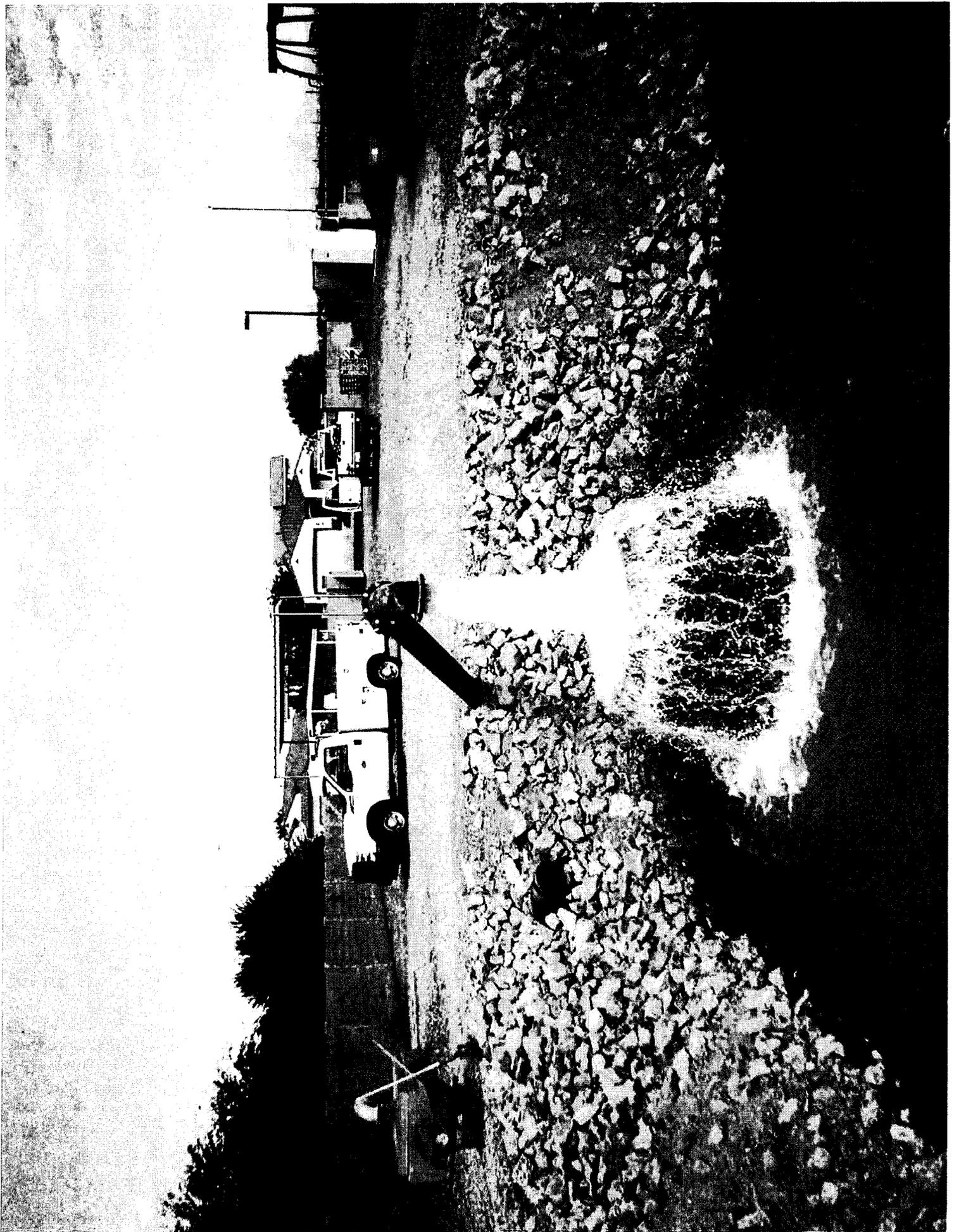


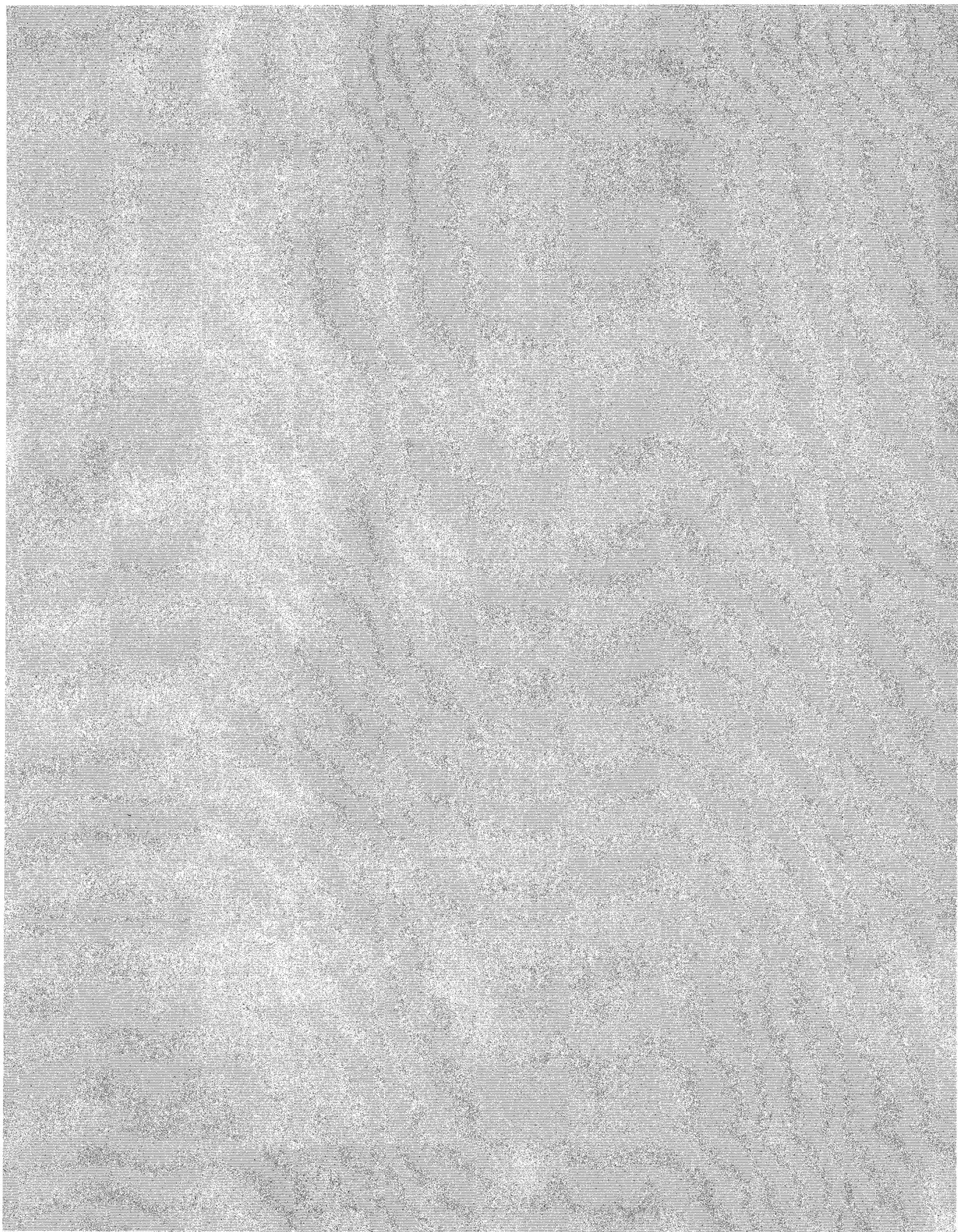






014 10 24







ARIZONA WATER COMPANY

CONSTRUCTION  
PLACED IN SERVICE  
NOTICE

WORK AUTHORIZATION NO.: 1-5165

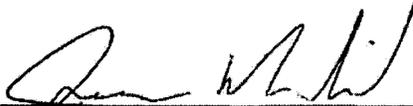
DIVISION: PV-CG

DATE PLACED IN SERVICE: 1/12/15

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.

  
\_\_\_\_\_  
Division Manager or Operations Superintendent  
(signature)

1-12-15  
\_\_\_\_\_  
Date

A-13-1  
FCS 11/24/11



# ARIZONA WATER COMPANY

## PROJECT CLOSE-OUT NOTICE

PROJECT CLOSE-OUT DATE:	1-12-15	DIVISION/SYSTEM:	PV-CG
		WORK AUTHORIZATION NUMBER:	
THE FOLLOWING RECORD REQUIREMENTS ARE ATTACHED:			
1. W.A. FINAL COMPLETION CHECKLIST .....			PREPARED BY
2. FINAL AUTHORIZATION TO BILL HAS BEEN SENT TO PHOENIX ON _____			<i>[Signature]</i>
Date			

### WA FINAL COMPLETION CHECK LIST

- FACILITIES RECORDS
  - Valve Records - Main & Blow-off
  - Fire Hydrant Records - Include Flow Test Data
- ABANDONED FACILITIES
  - Property Disposal Report (PDR)
  - Voided Valve Records
  - Voided Fire Hydrant Records
- COMPLETION DOCUMENTS
  - Public Fire Hydrants Installation Request (E-3-23)
  - Notice of Fire Hydrant Installation (E-5-8)
  - Permits Acquired By Division Office
  - Bill Of Sale (E-3-36-3)
  - Final Acceptance of Facilities Letter (E-3-36-5)
- ON-SITE PHOTOGRAPHS
  - To Show All New Installations At Completion Of W.A.

### IF NO ATB IS REQUIRED

- ADEQ DATA REQUIRED WITH ECC APPLICATION
  - NOTE: "Footage Tested" to match total pipe installed ("343" ONLY)
- AS-BUILT DRAWING
  - Label Cover Sheet "AS BUILT"
  - Pipe footage and size to be listed on AS-BUILT cover sheet ("343" ONLY)
  - Printed name of AS-BUILT preparer
  - ONLY Changes to original construction drawing to be marked in red on AS-BUILTs.
  - NOTE: Include any additional Air Release Valves
- FORMS
  - Well Record (E-5-7)
  - Storage Tank Record (E-5-8)
  - Booster Pump Record (E-5-9)
  - Hydropneumatic Tank Record (E-5-10)
- OPERATIONS & MAINTENANCE MANUALS
  - Electric S.E.S. & M.C.C.
  - S.C.A.D.A./Controls
  - Treatment Facilities
- AOC (Approval of Construction)
  - Placed In Service Notice
  - Daily Progress Reports

I certify that construction on the above Work Authorization is complete and for which all materials have been accounted. I further certify that I have inspected the work and determined it is satisfactory and in accordance with Company specifications.

*[Signature]*  
 Division Manager, Operations Superintendent, or Project Engineer (signature)

1-12-15  
 Date of Notice

TO: ACCOUNTING DEPARTMENT (ACCOUNTANT II)  
 CC: ENGINEERING DEPARTMENT (ENG. SEC.)

**WA 1-5167**

# Western Group Rate Case

Exhibit FKS-1

5167 Valley Farms

**ARIZONA WATER COMPANY**  
**WORK AUTHORIZATION**

W.A. NUMBER: 1-5167  
 P.E. NUMBER:  
 BUDGET ITEM NO.: B-1  
 SHEET NO.: 1 of 2

SYSTEM: PINAL VALLEY	RETENTION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
DIVISION: CASA GRANDE	WORK TO START BY: UPON AUTHORIZATION
RESPONSIBLE PERSON: JAMES WILSON	WORK TO BE FINISHED BY: WITHIN 60 DAYS
TAX CODE: 2103 2103	

DESCRIPTION OF WORK:  
 Design and Construct an arsenic removal facility ("ARF") at Valley Farms Well Nos. 1 and 2 in the Pinal Valley water system. The ARF construction will be complete in 2014. Construct in accordance with attached drawings and/or Arizona Water Company specifications.

FACTORS JUSTIFYING WORK:  
**APPROVED 2014 BUDGET ITEM (\$750,000)**  
 The arsenic concentration in Well No. 2 has increased over the Maximum Contaminant Level (MCL) of 10 ppb. Prior to exceeding the MCL of 10 ppb, the Company removed Well No. 2 from service. Lab results show the arsenic concentration in Well Nos. 1 and 2 as high as 4 ppb and 16 ppb, respectively. Company Engineers reviewed possible blending scenarios and determined that compliance with the arsenic MCL through blending does not meet peak system demand requirements of the Valley Farms and Coolidge portion of the Pinal Valley water system. In the event of a pump failure in Well No. 1 blending is not possible. Well No. 2 would need to be shut down to avoid exceeding the arsenic MCL. Production from at least one of these wells is required to maintain safe, reliable, and adequate water service during peak system demand in the Valley Farms and Coolidge portion of the Pinal Valley water system. Company engineers will analyze and select the most cost effective arsenic removal technology and arsenic removal media for the ARF

COST ESTIMATE		AUTHORIZATION	DATE
<b>COST OF WORK:</b>		PREPARED BY: <i>John Knobbe</i>	3-20-2014
MATERIAL	0	John Knobbe	
LABOR	1,560	REVIEWED FOR ESMT/ROW VERIFICATION: <i>Charles Briggs</i>	03-20-2014
CONTRACT PORTION	26,980	Charles Briggs	
OVERHEAD	3,139	REVIEWED BY: <i>James Wilson</i>	3/21/14
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 31,679	James Wilson	
<b>FUNDS RECEIVED:</b>		APPROVED BY ENGINEERING: <i>Fredrick Schneider</i>	3-23-14
CONTRIBUTIONS RECEIVED	0	Fredrick Schneider	
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE: <i>Joseph Harris</i>	3/24/14
TOTAL CONTRIBUTIONS/ADVANCES	0	Joseph Harris	
NET COMPANY CASH REQUIRED	\$ 31,679	AUTHORIZED BY PRESIDENT: <i>William Garfield</i>	3-25-2014
		William Garfield	

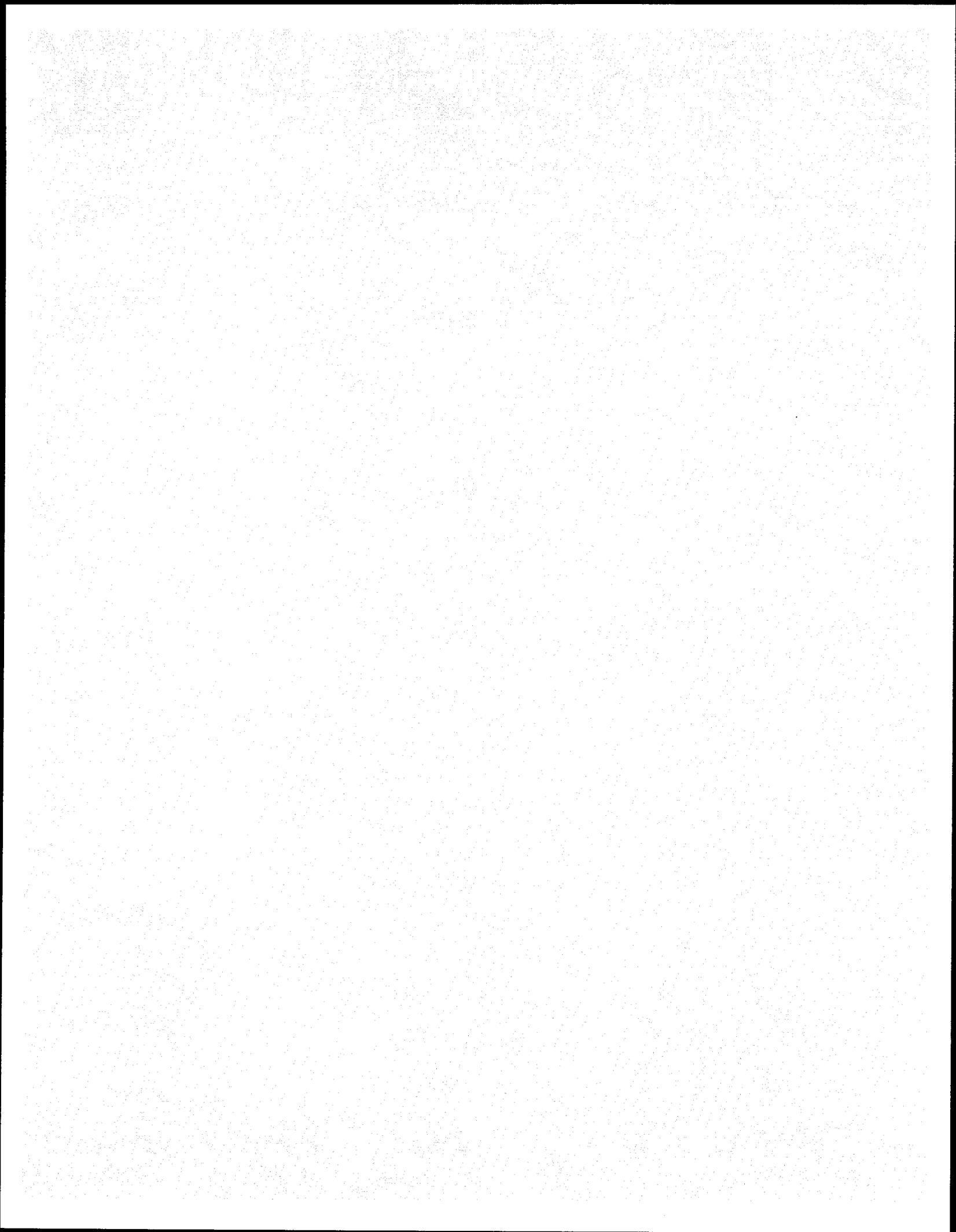
COMMENTS:  
**RELEASE TO DESIGN ONLY**

CONSTRUCTION RELEASE:



**2014 BUDGET**





SCANNED

## ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

April 7, 2014

Mr. Mark Gross  
Carollo Engineers  
4600 E. Washington Street, Suite 500  
Phoenix, AZ 85034

Re: Valley Farms Wells No. 1 and 2 ARF Technologies

Dear Mr. Gross:

Enclosed is your copy of the Consulting Agreement for the above referenced project, which has been accepted by Arizona Water Company (the "Company").

If you have any questions, please call me at this office.

Very truly yours,



John P. Knobbe  
Lead Designer  
engineering@azwater.com

afh  
Enclosure

FILE COPY

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

AGREEMENT FOR CONSULTING SERVICES BETWEEN  
ARIZONA WATER COMPANY AND  
CAROLLO ENGINEERS, INC

THIS AGREEMENT is made and entered into on this 8<sup>th</sup> day of April, 2014, by and between Arizona Water Company, an Arizona corporation, hereinafter referred to as "Company," and Carollo Engineers, an ~~Arizona~~ Delaware corporation hereinafter referred to as "Consultant".

RECITALS

WHEREAS, Company is authorized to and desires to retain Consultant to provide engineering services for Valley Farms Wells Nos. 1 and 2 arsenic removal technology and media alternatives evaluation.

WHEREAS, Consultant is agreeable to providing personnel and facilities necessary to perform the desired services within Company's required time; and

WHEREAS, Company desires to retain Consultant to perform the services in the manner, at the time, and for the compensation set forth herein;

NOW, THEREFORE, Company and Consultant agree as follows:

1. Description of Project

Company and Consultant agree that Project is as described in Exhibit A, hereto, incorporated by reference herein and entitled "Scope of Work," dated February 17, 2014. If, during the course of Project, Company and Consultant agree to changes in Project, such changes shall be effective only after being incorporated in this Agreement by written amendment, signed by representative of Company and Consultant.

2. Scope of Consultant Services

Consultant agrees to perform those services described hereafter. Unless modified in writing by both parties, duties of Consultant shall not be construed to exceed those services specifically set forth herein

a. Basic Services Consultant agrees to perform those services described in the Scope of Work (the "Services"). Any tasks not specifically described in the Scope of Work will be Additional Services.

b. Additional Services Company shall pay Consultant all fees and costs incurred in performing Additional Services provided the services were authorized by Company in writing. Unless otherwise agreed in writing, Additional Services shall be compensated in accordance with Consultant's standard billing rates at the time the Additional Services are performed.

c. Litigation Assistance Unless specifically stated therein, the Scope of Work does not include assistance to support, prepare, document, bring, defend or assist in litigation undertaken or defended by Company. All such services required or requested of the Consultant by Company or any third party (except claims between Company and Consultant) will be reimbursed at Consultant's applicable rates for such litigation services.

### 3. Responsibilities of Company

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

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

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

c. Furnish Consultant with all technical data in Company'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.

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

e. Provide access to and/or obtain permission for Consultant to enter upon project related property during normal business hours, whether or not owned by Company, as required to perform and complete the Services.

### 4. Americans with Disabilities Act

Any other provision of this Agreement to the contrary notwithstanding, unless otherwise specified in the Scope of Services, Company's contractors shall have sole responsibility as between Company 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 Company with applicable ADA criteria, which may be required.

### 5. Authorization and Completion

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

6. Compensation

a. Amount. For the Services described in Exhibit A, Company agrees to pay, and Consultant agrees to accept compensation in accordance with Exhibit B, attached hereto and incorporated herein. Where Consultant has provided Company with a breakdown of the total compensation into subtasks, such breakdowns are estimates only. Consultant may reallocate compensation between tasks, provided total compensation is not exceeded without the prior written approval of Company.

b. Payment As long as Consultant has not defaulted under this Agreement, Company shall pay Consultant within thirty (30) days of the date of Consultant's invoices for services performed and reimbursable expenses incurred under this Agreement. If Company has reason to question or contest any portion of any such invoice, amounts questioned or contested shall be identified and notice given to Consultant within thirty (30) 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 thirty (30) days of the date of the invoice. Company agrees to cooperate with Consultant in a mutual effort to resolve promptly any contested portions of Consultant's invoices.

In the event any uncontested portions of any invoice are not paid within thirty (30) days of the date of Consultant's invoice, interest on the unpaid balance shall accrue beginning with the 31st day at the rate of 1.5% per month, and Consultant shall have the right to suspend work per Article XV, Suspension of Work.

7. 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 the Services and any Additional Services in accordance with generally accepted standards and practices customarily utilized by competent engineering firms in effect at the time Services and any Additional 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 Company.

c. Consultant's Opinion of Costs

Company 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. Company 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, however, Consultant agrees to exercise its best Professional Judgment in rendering its opinions.

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 Company 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 for the purpose of determining that the work is proceeding in conformance with the intent of the project specifications and contract documents. 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 Work, 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 services completed under direct contract to Consultant, 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 services completed under direct contract to Consultant, Consultant is not responsible for any errors or omissions in the information from others that are incorporated into the record drawings.

e. Scope of Work

1. Before preparing the scope of work, Consultant specifically acknowledges and agrees that it has inspected and familiarized itself with Company's site. The Consultant has received, or had the opportunity to inquire about and/or request all relevant information concerning the Scope of Work from Company or any other source Consultant deems necessary. The Scope of Work has been prepared by the Consultant and to the best of its knowledge includes all applicable work required to successfully complete Valley Farms Nos. 1 and 2 arsenic removal technology and media alternatives evaluation.

8. Asbestos/Hazardous Material

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.

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 Company and Consultant mutually agree on an amendment to this Agreement to address the issue, or Company retains another specialist consultant or contractor to identify, classify, abate and/or remove the asbestos and/or hazardous materials.

9. 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 Company when Consultant has been fully compensated as set forth herein. Consultant may keep copies of all work product(s) for its records.

Consultant and Company recognize that Consultant's work product submitted in performance of this Agreement is intended only for the project described in this Agreement. Company's alteration of Consultant's work product or its use by Company for any other purpose shall be at Company's sole risk.

b. Electronic Copies

If requested, solely as an aid and accommodation to Company, 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. Company 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.

10. Indemnification

a. The Consultant 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 Consultant 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 Consultant 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 Consultant 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 Consultant 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. Consultant 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 10.

c. Consultant 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 site of any material, substance, or waste,

hazardous or nonhazardous, 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.

11. Consultant's Insurance

Consultant shall procure and maintain the following minimum insurance:

a. 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.

b. 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.

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

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

Consultant shall either require each of its subconsultants to procure and to maintain the insurance specified in this section or insure its subconsultants in the Consultants own policy, in like amounts.

Company shall be named as additional insured on policies a and b above. Upon execution of this Agreement, Consultant will provide a certificate of insurance to Company. 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.

12. Confidentiality

Consultant agrees it will maintain the confidentiality of all material it receives from Company and will not disclose, distribute, or publish to any third party such information without the prior permission of Company. Notwithstanding the foregoing, Consultant shall have no confidentiality obligation with respect to information that:

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

b. was available to Consultant prior to its disclosure by Company;

c. 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 Company and shall cooperate with Company prior to disclosure so that Company may take necessary actions to protect such confidential information from disclosure.

13. 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.

14. Suspension of Work

Work under this Agreement may be suspended as follows:

a. By Company By written notice to Consultant, Company may suspend all or a portion of the Work under this Agreement if unforeseen circumstances beyond Company's control make normal progress of the Work impracticable.

b. By Consultant By written notice to Company, 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 Company has not made timely payment in accordance with Article VI, compensation.

15. Termination of Work

a. This Agreement may be terminated by Company as follows: (1) for its convenience on thirty (30) days' notice to Consultant, or (2) for cause, if Consultant materially breaches this Agreement through no fault of Company and Consultant neither cures such material breach nor makes reasonable progress toward cure within fifteen (15) days after Company has given written notice of the alleged breach to Consultant.

b. This Agreement may be terminated by Consultant as follows: (1) for cause, if Company materially breaches this Agreement through no fault of Consultant and Company neither cures such material breach nor makes reasonable progress toward cure within thirty (30) days after Consultant has given written notice of the alleged breach to Company.

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 Company.

16. 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 Company or Consultant without prior, written consent of the other.

17. No Benefit for Third Parties

The services to be performed by Consultant are intended solely for the benefit of Company, 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.

18. Force Majeure

Consultant and Company 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 Company to furnish timely information or to approve or disapprove Consultant's instruments of service promptly; and (4) faulty performance or nonperformance by Consultant or Company, Company's or Consultant independent consultants or contractors, or governmental agencies. Consultant and Company shall not be liable for damages arising out of any such delay, nor shall the Consultant or Company be deemed to be in breach of this Agreement as a result thereof.

19. Integration

This Agreement represents the entire understanding of Company 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.

20. 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.

21. 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.

22. Attorneys' Fees

In the event any claim, controversy, or legal action arises under this Agreement, the prevailing party shall be entitled to recover from the other party all attorneys' fees, costs, expenses and other fees incurred by the prevailing party.

23. Notice Provisions

Notices concerning this Agreement shall be in writing and sent by certified mail or by courier (such as Federal Express), or by hand-delivery addressed as follows:

To the Company: Arizona Water Company  
3805 North Black Canyon Highway  
Phoenix, AZ 85015-5351  
Attention: President

or

Arizona Water Company  
Post Office Box 29006  
Phoenix, AZ 85038-9006  
Attention: President

To Consultant: Carollo Engineers, Inc.  
4600 E. Washington Street, Suite 500  
Phoenix, AZ 85034  
Attention: Mr. Mark Gross

Either party may change its address for purposes of this Section by giving written notice of such change of address to the other party.

24. 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, each of the parties hereto has caused this instrument to be executed by their respective duly authorized officers as of the date first written above.

**CAROLLO ENGINEERS, INC.**  
an Arizona corporation

*Delaware*  
By: *M. J. Ewer*  
Its: *Vice President*

**ARIZONA WATER COMPANY,**  
an Arizona corporation

By: *Julius H. Blunt*  
Its: *VP - engineering*

*AJH*

Exhibit A



**Arizona Water Company  
Scope of Work and Fee  
Valley Farms Wells No. 1 and 2 Arsenic Removal Facility  
Arsenic Removal Technology and Media Alternatives Evaluation  
February 17, 2014**

**INTRODUCTION**

This proposed Scope of Work defines the engineering services which Carollo Engineers, Inc. (Carollo) will provide Arizona Water Company (AWC) for the Valley Farms Wells No. 1 and 2 Arsenic Removal Technology and Media Alternatives Evaluation Study (Study). The services to be provided include an evaluation of potential arsenic removal technology alternatives for the site, and an evaluation of arsenic removal media alternatives.

The Valley Farms water well site (Site) has two wells, Well No. 1 and Well No. 2. The arsenic concentration in Well No. 2 has increased over the Maximum Contaminant Levels (MCL) of 10 micrograms per liter. Prior to exceeding the MCL, AWC removed Well No. 2 from service. AWC then conducted pump tests after the well was removed from service. Lab results indicate that the arsenic concentrations in Wells No. 1 and No. 2 are 4 and 16 micrograms per liter, respectively. Blending the two wells together to produce a maximum of 8 micrograms per liter would reduce the production of Well No. 2 from 250 to 75 gpm.

AWC intends to permit and construct an arsenic removal facility (ARF) at the Valley Farms site (Site). The new ARF will be designed to reduce the arsenic concentrations in the groundwater to less than 7 micrograms per liter. The near-term and long-term range of duty cycles for the wells will be estimated by AWC as part of the Study. The design and alternative evaluation will accommodate future expansion of the ARF for additional flows from future well(s), also to be defined by AWC during the Study.

The goal of this study is to evaluate arsenic removal technology alternatives for the Site, and then identify the most cost effective alternative for implementation that meets regulatory agency and AWC requirements.

Three arsenic removal technology options will be considered for this study:

- Coagulation/Filtration
- Ion Exchange
- Adsorption

Each technology will be evaluated with multiple process trains (i.e. partial flow vs. full flow, single vessel vs. multiple vessels, and series flow vs. parallel flow). The following constraints will be included in the evaluation process for each arsenic removal technology alternative:

## Exhibit A

- Site space restrictions, new and future equipment spacing and layouts
- Potential limitations on equipment heights
- Potential of blending groundwater for partial stream treatment to reduce treatment equipment footprints and costs
- Disposal costs for residuals streams from the treatment processes for each of the arsenic removal technology alternatives evaluated (disposal of treatment residuals via sewer connection is assumed not viable)
- Well production, AWC system production requirements, well water quality parameters and their impacts on the different removal technologies

In order to select the best available and most cost effective arsenic removal technology, the evaluation process for this study will include, but may not necessarily be limited to the following components:

- Capital construction costs for each alternative
- O&M costs, including waste disposal costs for each alternative
- 20-year life cycle costs for each alternative

Pros and cons of each alternative including, but not limited to:

- Removal technology effectiveness and reliability
- Ease of operations, and the ability of the ARF to be removed from service for weeks or months and then re-started (summertime/wintertime operation)
- Disposal of residuals, regulatory permitting, and potential issues and costs associated with generation and disposal of Resource Conservation and Recovery Act (RCRA) wastes
- Constructability
- Footprint

The Scope of Services for this Study is described below.

### **SCOPE OF SERVICES**

#### **Task Series 100 - Preliminary Evaluation of Alternatives and Results Workshop**

Task 110 - Carollo will review water quality data and perform a preliminary evaluation of the arsenic removal technology alternatives noted above. Some additional sampling and analysis of key water quality data parameters may be requested during Task 110 to confirm suitability of treatment technologies and blending strategies, if Carollo determines additional water quality samples are required. For example, pH measurements will be needed for the Valley Farm wells, and confirmation sampling for iron concentrations. In order to determine the best available arsenic removal technology, Carollo will provide AWC a list of the additional water quality samples required in writing prior to the completion of Task 110. Carollo will then perform a preliminary evaluation of the alternatives and present the results at a workshop for AWC's review and input. Prior to the workshop, Carollo will provide an agenda and a draft of the study evaluation results to date.

**Assumptions:** A project kick-off meeting will be held with AWC and the Carollo project manager and key staff. A project workshop will be held upon completion of the preliminary evaluations to present results.

## Exhibit A

**AWC inputs:** 1) Provide CAD file of Site Plan. 2) Provide historical water quality and operations data. 3) Provide input on preferred ARF technology.

**Deliverables:** Carollo will provide 1) Workshop handouts and 2) Preliminary evaluation results.

### **Task Series 200 - Evaluation of Media Systems**

The goal of this task is to evaluate potential arsenic removal medias for the technology configurations selected as part of Task 100, and identify the cost effective medias.

Task 210 - As a new installation, it is likely that the media will be procured as part of a system. It is also likely that a supplier will provide the media, contactor vessels, internal piping, face piping, and valves. The controls and instrumentation (e.g., programmable logic controller, pressure transmitter, flow meter, rupture disc, etc.) could also be provided by the vessels and media supplier. Carollo will perform a preliminary evaluation of arsenic media systems currently available on the market. This preliminary list will then be reduced to three media systems based on go/no-go criteria using the site constraints and AWC's preferences (e.g., media systems that use off-site regeneration are not acceptable to AWC). Carollo will perform an evaluation of the three media systems and the evaluation will include the following criteria:

#### **Coagulation/Filtration**

Based on AWC's previous experience with coagulation/filtration technology, media selection may not be appropriate at this time and should be addressed during the detailed design process.

#### **Ion Exchange**

- Salt, brine, waste volume storage requirements
- Projected regeneration rate based on available water quality data
- Supplier's ability to provide equipment that meets the physical site constraints
- Approximate relative equipment cost, salt delivery and brine disposal cost
- Waste Quality / Disposal requirements
- Expected useful life of IX resin
- Resin cost and availability

#### **Adsorption**

- Projected bed volumes for media based on available water quality data
- Supplier's ability to provide equipment that meets the physical site constraints
- Standard treatment performance guarantee with reimbursements/credits when such performance quarantines are not met, i.e., when bed life is less than expected
- Approximate relative equipment cost, media replacement cost, and media disposal cost
- Supplier taking full responsibility for disposed media and indemnifying AWC. AWC currently also has third party contracts for media disposal. Both supplier disposal and AWC contract disposal alternatives, if feasible, will be included as part of the evaluation for this study
- Waste quality/disposal requirements
- Availability of media
- Media storage requirements

## Exhibit A

- Ease of installation, preparation, and disposal of media
- Chemical/backwash requirements
- Required backwash flow rate/storage volume and other requirements

Carollo will collect this information and then develop a recommendation based on a 20-year life cycle cost comparison. Important system specific features that are not quantified in the costs (e.g., delivery times, indemnification clauses, manufacturer's openness to modifying standard package, etc.) will be noted as separate evaluation factors. Carollo will present the results of this analysis at a workshop with AWC.

**Assumptions:** None.

**AWC inputs:** Attend review meeting.

**Deliverables:** Carollo will present the results of this analysis at a workshop with AWC.

### **Task Series 300 - Draft and Final Study Technical Memorandum**

Task 310 - Upon completion of the preliminary results and the presentation of results at the workshop in Task 110, Carollo will prepare a draft technical memorandum that details the evaluation criteria, costs, and the recommended arsenic removal technology and media proposed for use at the site. The draft technical memorandum will also include conceptual schematic site plans for the recommended arsenic removal technology at the Site. The draft technical memorandum will also incorporate or address comments made by the AWC during the workshop(s). AWC will review and comment on the draft technical memorandum and Carollo will then finalize such memorandum incorporating or addressing the AWC's comments.

**AWC inputs:** Review and comment on the draft technical memorandum.

**Deliverables:** Carollo will provide electronic and four (4) hard copies of the draft and final technical memorandum.

### **Allowance – Review Suitability of Reusing Existing Pressure Vessels for Valley Farms Site**

Task Allowance – If directed by AWC, Carollo will review the suitability of reusing AWC's existing pressure vessels from the former Montezuma and Rainbow arsenic removal facility systems, if applicable for the selected treatment technology at Valley Farms. The Montezuma and Rainbow Valley ARFs referenced were taken out of service. The evaluation will include a process evaluation to determine suitability of materials of construction, suitability for retrofitting with applicable inlet/outlet piping if needed, and for compatibility of necessary operating flows and pressures.

**AWC inputs:** AWC will provide photos and dimensioned cut sheets of the existing proposed filter pressure vessels.

**Deliverables:** Carollo will provide include the suitability of reusing existing pressure vessels analysis as part of the Task Series 300 Technical Memorandum.

Exhibit A

**PROJECT SCHEDULE**

The schedule for the project is as follows:

Notice to Proceed (NTP).....	
Complete Data Collection and Preliminary Evaluation .....	<u>three weeks after NTP</u>
Complete Review Workshop.....	<u>four weeks after NTP</u>
Draft Technical Memorandum Submittal .....	<u>five weeks after NTP</u>
Final Technical Memorandum Submittal .....	<u>six weeks after NTP</u>

Carollo's fee for services is included as Exhibit B.

**Exhibit B**  
**Valley Farms Wells No. 1 and 2**  
**Arsenic Removal Technology and Media Alternatives Evaluation**  
**Proposal from Carolco Engineers**  
**February 17, 2014**

TASK DESCRIPTIONS	Services										Total Labor	Total \$
	Rate (\$)	Tech. Adv. \$225	Proj. Mgr. \$190	Disc. Eng. \$165	Proj. Eng. \$130	Staff Eng. \$95	Tech \$110	Word Pro. \$80	Total Labor	Total \$		
<b>Task Series 100 - Preliminary Eval. Of Alts. And Results</b>												
Task 110 - Kickoff Meeting and review water quality data		1	2	4	4						10	\$1,560
Task 120 - Preliminary evaluation - arsenic removal tech. alts.		2	2	24	24						51	\$7,685
Task 130 - Technical alternatives evaluation workshop		2	4	8	8						22	\$3,570
<b>Task Series 200 - Evaluation of Media Systems</b>												
Task 210 - Evaluation of medias, review workshop		2	4	16	16						38	\$5,930
<b>Task Series 300 - Draft and Final Study Tech Memo</b>												
Task 310 - Draft and Final Study Technical Memorandum		1	6	14	12			4			37	\$5,555
<b>Total Hrs</b>		6	18	66	64	0	0	4	Sub-Total		158	\$24,300
Project Equipment & Computer Expenses (PECE) \$10/hr												\$1,580
Reproduction												\$0
Mileage/Travel												\$100
Subconsultants												\$0
<b>Total</b>									<b>Total</b>			<b>\$25,980</b>

TASK DESCRIPTIONS	Allowance										Total Labor	Total \$
	Rate (\$)	Tech. Adv. \$225	Proj. Mgr. \$190	Disc. Eng. \$165	Proj. Eng. \$130	Staff Eng. \$95	Tech \$110	Word Pro. \$80	Total Labor	Total \$		
<b>Allowance</b>												
Evaluate reuse of existing pressure filter vessels		0	1	4	4	0	0	0			5	\$850
<b>Total Hrs</b>		0	1	4	0	0	0	0	Sub-Total		5	\$850
Project Equipment & Computer Expenses (PECE) \$10/hr												\$50
Reproduction												\$0
Mileage/Travel												\$100
Subconsultants												\$0
<b>Total</b>									<b>Total</b>			<b>\$1,000</b>

### Architects and Engineers

*The following policy language is from Commercial General Liability Coverage Forms*

The following are mandatory forms on the policy identified on the Certificate of Insurance:

#### **421-0080 (01 03) COMMERCIAL GENERAL LIABILITY SPECIAL BROADENING ENDORSEMENT**

##### **• Additional Insured by Contract, Agreement or Permit**

Under Section II-Who Is An Insured, Paragraph 4 is added as follows:

4. a. Any person or organization with whom you agreed, because of a written contract, written agreement or permit to provide insurance is an insured, but only with respect to:

- (1) "Your work" for the additional insured(s) at the location designated in the contract, agreement or permit; or
- (2) Premises you own, rent, lease or occupy.

This insurance applies on a primary basis if that is required by the written contract, written agreement or permit.

b. This provision does not apply:

(1) Unless the written contract or written agreement has been executed or permit has been issued prior to the "bodily injury", "property damage", "personal injury" or "advertising injury".

(2) To any person or organization included as an insured by an endorsement issued by us and made part of this Coverage Part.

(3) To any person or organization included as an insured under item 2 of this endorsement

(4) To any lessor of equipment:

(a) After the equipment lease expires; or

(b) If the "bodily injury", "property damage", "personal injury" or "advertising injury" arises out of sole negligence of the lessor.

(5) To any:

(a) Owners or other interests from whom land has been leased which takes place after the lease for the land expires; or

(b) Managers or lessors of premises if:

(i) The occurrence takes place after you cease to be a tenant in that premises; or

(ii) The "bodily injury", "property damage", "personal injury" or "advertising injury" arises out of structural

alterations, new construction or demolition operations performed by or on behalf of the manager or lessor.

##### **• Aggregate Limit Per Location**

(1) Under Section III - Limits of Insurance the General Aggregate Limit applies separately to each of your "locations owned by or rented to you.

(2) Under Section V - Definitions, definition 23, is added as follows:

23. "Location" means premises involving the same or connecting lots or premises whose connection is interrupted only by a street, roadway, waterway or right-of-way of a railroad.

#### **CG 2503(05 09) DESIGNATED CONSTRUCTION PROJECT(S) GENERAL AGGREGATE LIMIT**

##### **• Aggregate Limit of Insurance (Per Project)**

COMMERCIAL GENERAL LIABILITY COVERAGE PART

#### SCHEDULE

Designated Construction Projects:

Your projects away from premises owned by or rented to you

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section II - Coverage A, and for all medical expenses caused by accidents under Section I - Coverage C, which can be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.

2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage A, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage C regardless of the number of:

Includes copyrighted material of Insurance Services Offices, Inc., with its permission

- a. Insured's;
  - b. Claims made or "suits" brought; or
  - c. Persons or organizations making claims or bringing "suits".
3. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the Designated Construction Project General Aggregate limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.
4. The limits shown in the Declarations for Each Occurrence, Damage to Premises Rented to You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.
- B. For all sums which the Insured becomes legally obligated to pay as damages caused by "occurrences" under Section 1 - Coverage A, and for all medical expenses caused by accidents under Section I - Coverage C, which cannot be attributed only to ongoing operations at a single designated construction project show in the Schedule above:
- 1. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the amount available under the General Aggregate limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
  - 2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.
- C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.
- D. If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or time tables, the project will still be deemed to be the same construction project.
- E. The provisions of Section III - Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

**421-0452 (06 07) OTHER INSURANCE-PRIMARY AND NON-CONTRIBUTORY (ADDITIONAL INSURED)**

**- Additional Insured by Contract, Agreement or Permit Amended-Primary & Non-Contributory**

The following is added to Section IV - Commercial General Liability Conditions

**4. Other Insurance**

**a. Additional Insured's**

If you agree in a written contract, written agreement or permit that the insurance provided to any person or organization included as an Additional Insured under Section II - Who is An Insured, is primary and non-contributory, the following applies:

If other valid and collectable insurance is available to the Additional Insured for a loss we cover under Coverages A or B of this Coverage Part, our obligations are limited as follows:

**1. Primary Insurance**

This insurance is primary to other insurance that is available to the Additional Insured which covers the Additional Insured as a Named Insured. We will not seek contribution from any other insurance available to the Additional Insured except:

- I. For the sole negligence of the Additional insured;
- II. When the Additional Insured is an Additional Insured under another primary liability policy; or
- III. When 2. below applies.

If this insurance is primary, our obligations are not affected unless any of the other insurance is also primary. Then, we will share with all that other insurance by the method described in 3. below.

**2. Excess Insurance**

This insurance is excess over:

(1) All of the other insurance, whether primary, excess, contingent or on any other basis:

- (a) That is fire, Extended Coverage, Builder's Risk, Installation Risk or similar coverage for "your work";
- (b) That is fire insurance for premises rented to the Additional Insured or temporarily occupied by the Additional Insured with permission of the owner;
- (c) That is insurance purchased by the Additional Insured to cover the Additional Insured's liability as a tenant for "property damage" to premises rented to the Additional Insured or temporarily occupied by the Additional Insured with permission of the owner; or
- (d) If the loss arises out of the maintenance or use of aircraft, "autos" or watercraft to the extent not subject to Exclusion g. of Section I - Coverage A - Bodily Injury And Property Damage Liability.

Includes copyrighted material of Insurance Services Offices, Inc., with its permission

When this insurance is excess, we will have no duty under Coverages A or B to defend the insured against any "suit" if any other insurer has a duty to defend the insured against that "suit". If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.

When this insurance is excess over other Insurance, we will pay only our share of the amount of the loss, if any, that exceeds the sum of:

- 1) The total amount that all such other insurance would pay for the loss in the absence of this Insurance; and
- 2) The total of all deductible and self-insured amounts under all that other Insurance.

We will share the remaining loss, if any, with any other Insurance that is not described in this Excess Insurance provision and was not bought specifically to apply in excess of the Limits of Insurance shown in the Declarations of this Coverage Part.

3. Method Of Sharing

If all of the other Insurance permits contribution by equal shares, we will follow this method also under this approach each insurer contributes equal amounts until it has paid its applicable limit of Insurance or none of the loss remains, whichever comes first.

If any of the other Insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of Insurance to the total applicable limits of insurance of all insurers.

**CG0001 (1207) COMMERCIAL GENERAL LIABILITY COVERAGE FORM**

• **Separation of Insured's**

Except with respect to the Limits of Insurance, and any rights or duties specifically assigned in this Coverage Part to the first Named Insured, this Insurance applies:

- a. As if each Named Insured were the only Named Insured; and
- b. Separately to each insured against whom claim is made or "suit" is brought.

**CG 2404 (05 09) WAIVER OF TRANSFER OF RIGHTS OF RECOVERY TO US**

• **Waiver of Subrogation**

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

**SCHEDULE**

Name Of Person Or Organization: Persons or organizations with whom you have a written contract executed prior to the "bodily injury" or "property damage," that requires you to waive your rights of recovery
---

The following is added to Paragraph 8. Transfer Of Rights Of Recovery Against Others To Us of Section IV- Conditions:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.



\_\_\_\_\_  
Authorized Representative

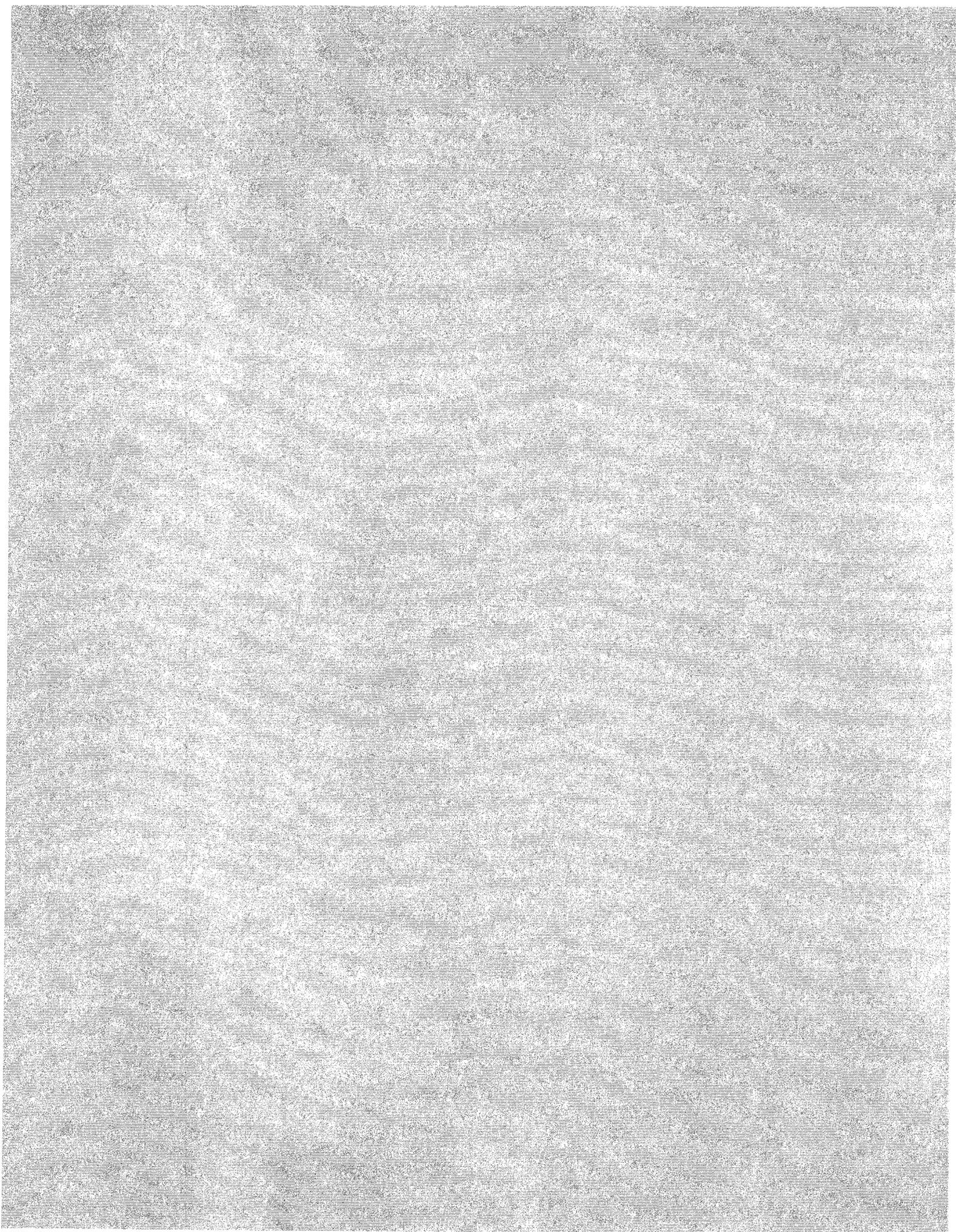
**Name Insured:** Carollo Engineers      **Policy No.** ZHF8944892-03      **Effective:** 12/31/2013

**Additional Insured:** Any person or organization with whom the named insured agreed in a written contract to name as additional insured.

This Notice does not form a part of the insurance contract.

No coverage is provided by this Notice, nor can it be construed to replace any provisions of the policy (including its endorsements). If there is any conflict between this Notice and the policy (including its endorsements), the provisions of the policy (including its endorsements) shall prevail.

Includes copyrighted material of Insurance Service Offices, Inc., with its permission



**ARIZONA WATER COMPANY**  
**WORK AUTHORIZATION**

W.A. NUMBER: 1-5167  
P.E. NUMBER:  
BUDGET ITEM NO.: B-1  
SHEET NO.: 1 of 2

SYSTEM: PINAL VALLEY	RETENTION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
DIVISION: CASA GRANDE	WORK TO START BY: UPON AUTHORIZATION
RESPONSIBLE PERSON: JAMES WILSON	WORK TO BE FINISHED BY: WITHIN 180 DAYS
TAX CODE: 2103	

DESCRIPTION OF WORK:  
Design, Permit, Construct, and make operational an Arsenic Removal Facility ("ARF") at Valley Farms Well No. 2 in the Pinal Valley water system. Construct in accordance with attached drawings and/or Arizona Water Company specifications.

FACTORS JUSTIFYING WORK:  
**APPROVED 2014 BUDGET ITEM (\$750,000)**  
The arsenic concentration in Well No. 2 has increased over the Maximum Contaminant Limit (MCL) of 10 ppb. Prior to exceeding the MCL of 10 ppb, the Company removed Well No. 2 from service. Lab results show the arsenic concentration in Well No. 2 as high as 16 ppb. Company Engineers reviewed possible blending scenarios and determined that in the event of a pump failure in Well No. 1, blending is not feasible and Company Operators must shut down Well No. 2 to avoid exceeding the arsenic MCL. An ARF is required to reduce arsenic concentrations in Well Nos. 1 and 2 because production from at least one of these wells is required to maintain safe, reliable, and adequate water supply in the Valley Farms and Coolidge portion of the Pinal Valley water system. The ARF will use the best available treatment technology. Through an evaluation of water quality, site sizing constraints, anticipated construction and projected operating costs, Company engineers determined that the new ARF will utilize adsorptive media.

COST ESTIMATE		AUTHORIZATION	DATE
<b>COST OF WORK:</b>		PREPARED BY:	
MATERIAL	0	<i>James Wilson</i> James Wilson <i>9/4/14</i>	8-29-14
LABOR	24,900	REVIEWED FOR ESMT ROW VERIFICATION:	
CONTRACT PORTION	476,430	<i>Charles Briggs</i> Charles Briggs <i>08-09-04-2014</i>	08-29-2014
OVERHEAD	60,200	REVIEWED BY:	
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 561,530	<i>MJM Mendez</i> Mario Mendez <i>9/4/14</i>	8/29/14
<b>FUNDS RECEIVED:</b>		APPROVED BY ENGINEERING:	
CONTRIBUTIONS RECEIVED	0	<i>Fredrick Schneider</i> Fredrick Schneider <i>9-4-14</i>	8-29-2014
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE:	
TOTAL CONTRIBUTIONS/ADVANCES	0	<i>Joseph Harris</i>	8/29/14
NET COMPANY CASH REQUIRED	\$ 561,530	AUTHORIZED BY PRESIDENT:	
		<i>William M Garfield</i> William Garfield	9-2-2014

COMMENTS:  
  
2014 Expenditure \$562,000  
2015 Anticipated Expenditure \$660,000  
Total Project Cost \$1,220,000

CONSTRUCTION RELEASE:  
  
**RELEASED TO CONSTRUCTION**  
Authorized by **FRED SCHNEIDER**  
Date 9/3/2014

AFH

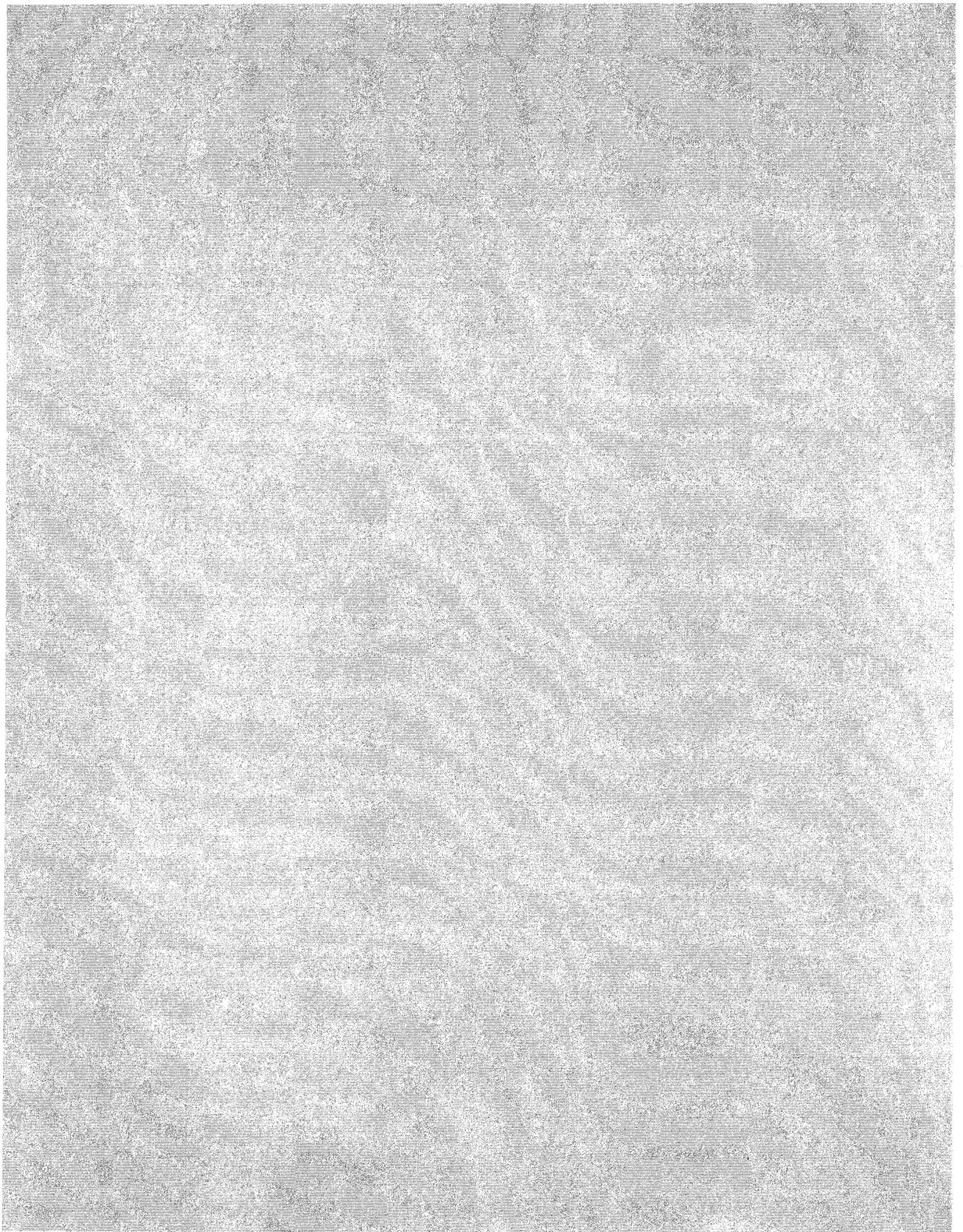
# ARIZONA WATER COMPANY

## WORK AUTHORIZATION - DETAIL SHEET

W.A. NUMBER: 1-5167  
 P.E. NUMBER:  
 BUDGET ITEM NO.: B-1  
 SHEET NO.: 2 of 2

RETIREMENT PROPERTY UNITS		PLANT PROPERTY ACCOUNT	UNIT DESCRIPTION	QUANTITY	YEAR INSTALLED AND W.A. NUMBER		
PROJECT DESCRIPTION							
Design, Permit, Construct, and make operational an Arsenic Removal Facility ("ARF") at Valley Farms Well No. 2 in the Pinal Valley water system. Construct in accordance with attached drawings and/or Arizona Water Company specifications.							
CONTRACT WORK	DESCRIPTION	PLANT PROP ACCT	QUANTITY	UNIT COST	TOTAL		
	Provide & install chlorine injection system incl. containment area, fiberglass building with associated power & controls	332					
	Provide and install on-site piping with related fittings	332	1	60,000.00	60,000		
	Provide and install new backwash system including tanks, piping, pumps, and associated power and controls	332	1	60,000.00	60,000		
	Building and hydro-pneumatic tank demolition and removal	332	1	22,000.00	22,000		
	Provide & install ARF Vessel with media and related fittings	332	1	60,000.00	60,000		
	Testing, commissioning and on-site operator training	332					
	ARF alarm programming	332					
	Engineering Design and Permitting	332	1	85,850.00	85,850		
	Construction Inspection	332	1	30,000.00	30,000		
	Electrical Drawing and submittal review	332	1	25,000.00	25,000		
	Contracting Tax	332	1	32,300.00	32,300		
	100% Performance and Payment Bond	332	1	15,300.00	15,300		
	Arsenic Removal Technology and Media Alternatives Evaluation	332	1	25,980.00	25,980		
	Provide and install submersible pump, motor, and related appurtenances for Well No. 2	325	1	60,000.00	60,000		
	<b>TOTAL CONTRACT WORK</b>					\$	476,430
	MATERIALS	SERVICE CONNECTIONS: DOUBLE-LONG	345				
		SERVICE CONNECTIONS: DOUBLE-SHORT	345				
		SERVICE CONNECTIONS: SINGLE-LONG	345				
		SERVICE CONNECTIONS: SINGLE-SHORT	345				
METERS		346					
<b>TOTAL MATERIALS</b>					\$	-	
LABOR	Design and Submittal review	332	40	\$ 55.00	\$ 2,200		
	Construction Phase Project Management & Inspection	332	30	55.00	1,650		
	TESTING FEE						
	PERMIT FEE	332	1	12,800.00	12,800		
	SURVEY FEE						
	INSPECTION BY FIELD STAFF	332	150	55.00	8,250		
	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>					\$	24,900	
<b>SUBTOTAL - CONTRACT WORK, MATERIALS, AND LABOR</b>					\$	501,330	
<b>OVERHEAD</b>						60,200	
<b>TOTAL</b>					\$	561,530	
		REFUNDABLE PORTION <input type="checkbox"/>	NON-REFUNDABLE PORTION <input type="checkbox"/>	<b>COST ESTIMATE</b>		\$ 561,530	

AFH



**ARIZONA WATER COMPANY**  
**WORK AUTHORIZATION**

W.A. NUMBER: 1-5167  
P.E. NUMBER:  
BUDGET ITEM NO.: B-1  
SHEET NO.: 1 of 2

SYSTEM: PINAL VALLEY	RETENTION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
DIVISION: CASA GRANDE	WORK TO START BY: UPON AUTHORIZATION
RESPONSIBLE PERSON: JAMES WILSON	WORK TO BE FINISHED WITHIN 180 DAYS
TAX CODE: 2103	

DESCRIPTION OF WORK:  
  
Complete construction of the Arsenic Removal Facility ("ARF") at Valley Farms Well No. 2 in the Pinal Valley water system.

FACTORS JUSTIFYING WORK:  
  
APPROVED 2015 BUDGET ITEM (\$912,000)  
The arsenic concentration in Well No. 2 has increased over the Maximum Contaminant Limit (MCL) of 10 ppb. Prior to exceeding the MCL of 10 ppb, the Company removed Well No. 2 from service. Lab results show the arsenic concentration in Well No. 2 as high as 16 ppb. Company Engineers reviewed possible blending scenarios and determined that in the event of a pump failure in Well No. 1, blending is not feasible and Company Operators must shut down Well No. 2 to avoid exceeding the arsenic MCL. An ARF is required to reduce arsenic concentrations in Well No. 2 because production from at least one of these wells is required to maintain safe, reliable, and adequate water supply in the Valley Farms and Coolidge portion of the Pinal Valley water system. The ARF design utilizes the best available treatment technology. Through an evaluation of water quality, site sizing constraints, anticipated construction and projected operating costs, Company engineers determined that adsorptive media is the best available technology for the ARF. ARF design and permitting was completed and construction started in 2014. Construction completion is scheduled to occur on May 1, 2015.

COST ESTIMATE		AUTHORIZATION	DATE
<b>COST OF WORK:</b>		PREPARED BY:	
MATERIAL	0	James Wilson gw 2/24/15	2/18/15
LABOR	21,050	REVIEWED FOR ESTIMATOR VERIFICATION:	
CONTRACT PORTION	851,095	Charles Briggs CB 02-24-2015	02-18-2015
OVERHEAD	104,700	REVIEWED BY:	
TOTAL AUTHORIZED EXPENDITURES CHARGEABLE TO THIS W.A.	\$ 976,845	Andrew Haas ASH 2-25-15	2-20-15
<b>FUNDS RECEIVED:</b>		APPROVED BY ENGINEERING:	
CONTRIBUTIONS RECEIVED	0	Frederick Schneider 2-25-15	2-20-15
REFUNDABLE ADVANCES RECEIVED	0	APPROVED BY FINANCE:	
TOTAL CONTRIBUTIONS/ADVANCES	0	Joseph Harris	2/20/15
NET COMPANY CASH REQUIRED	\$ 976,845	AUTHORIZED BY PRESIDENT:	
		William M Garfield	2-24-15

COMMENTS:  
  
Transfer additional funds required (\$64,845) from the following WA's:  
\$12,000 from 1-5018 (Cottonwood and Pearl)  
\$7,000 from 1-5170 (Cottonwood Lane BPS)  
\$45,845 from 1-5166 (Coolidge Airport ARF)  
2014 Expenditure \$272,719  
2015 Expenditure \$976,845  
Total Project Cost \$1,249,564

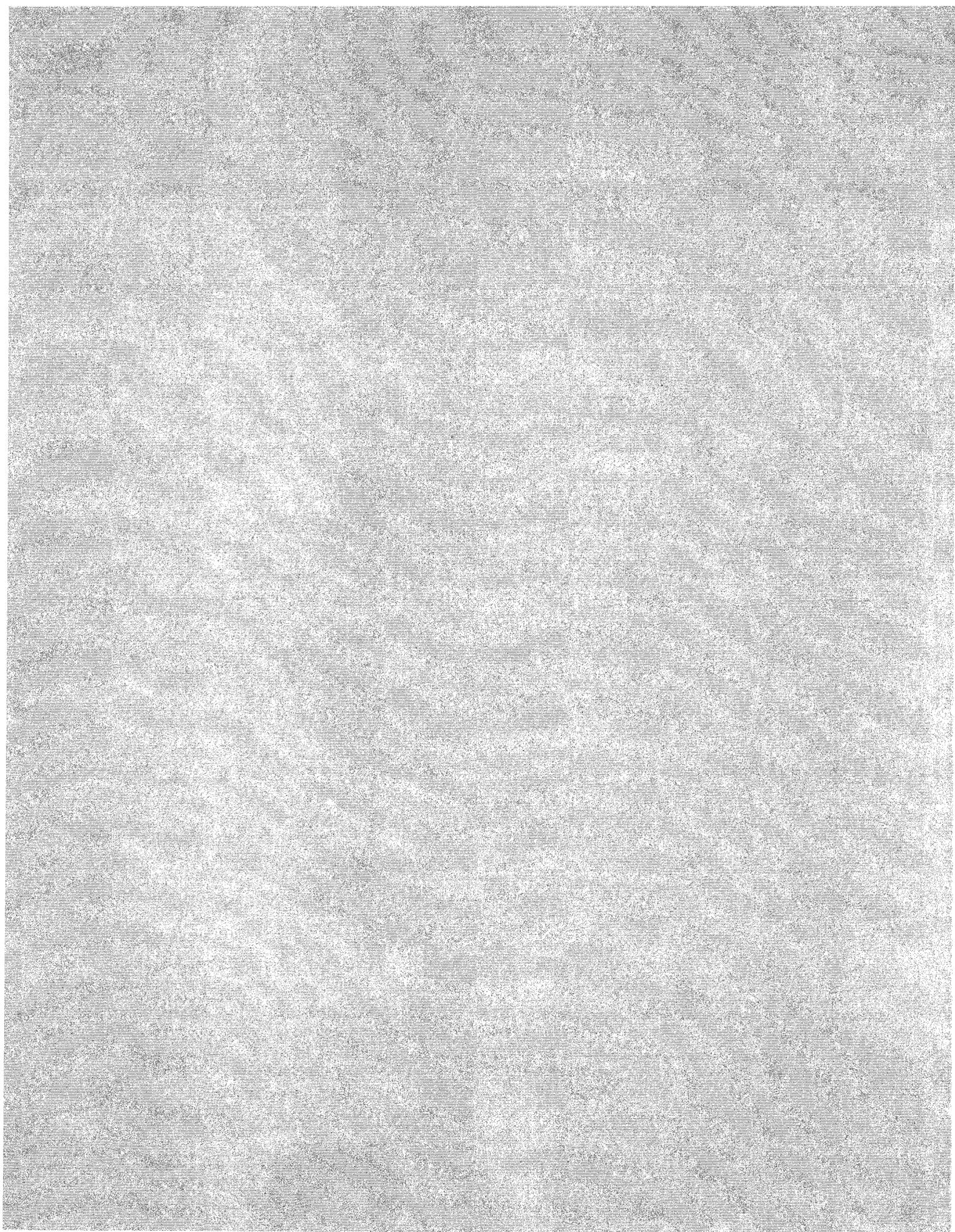
CONSTRUCTION RELEASE:

**RELEASED TO CONSTRUCTION**  
Authorized by **FRED SCHNEIDER**  
Date 2/24/15

**2015 RE-RELEASE**

AFH



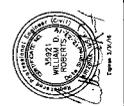












PROJECT SHEET NO. 12345  
 PROJECT DATE: 12/17/2014  
 PROJECT: VALLEY FARMS ARSENAL REMOVAL FACILITY  
 10904 E VAH KINN ROAD - VALLEY FARMS, AZ 85191

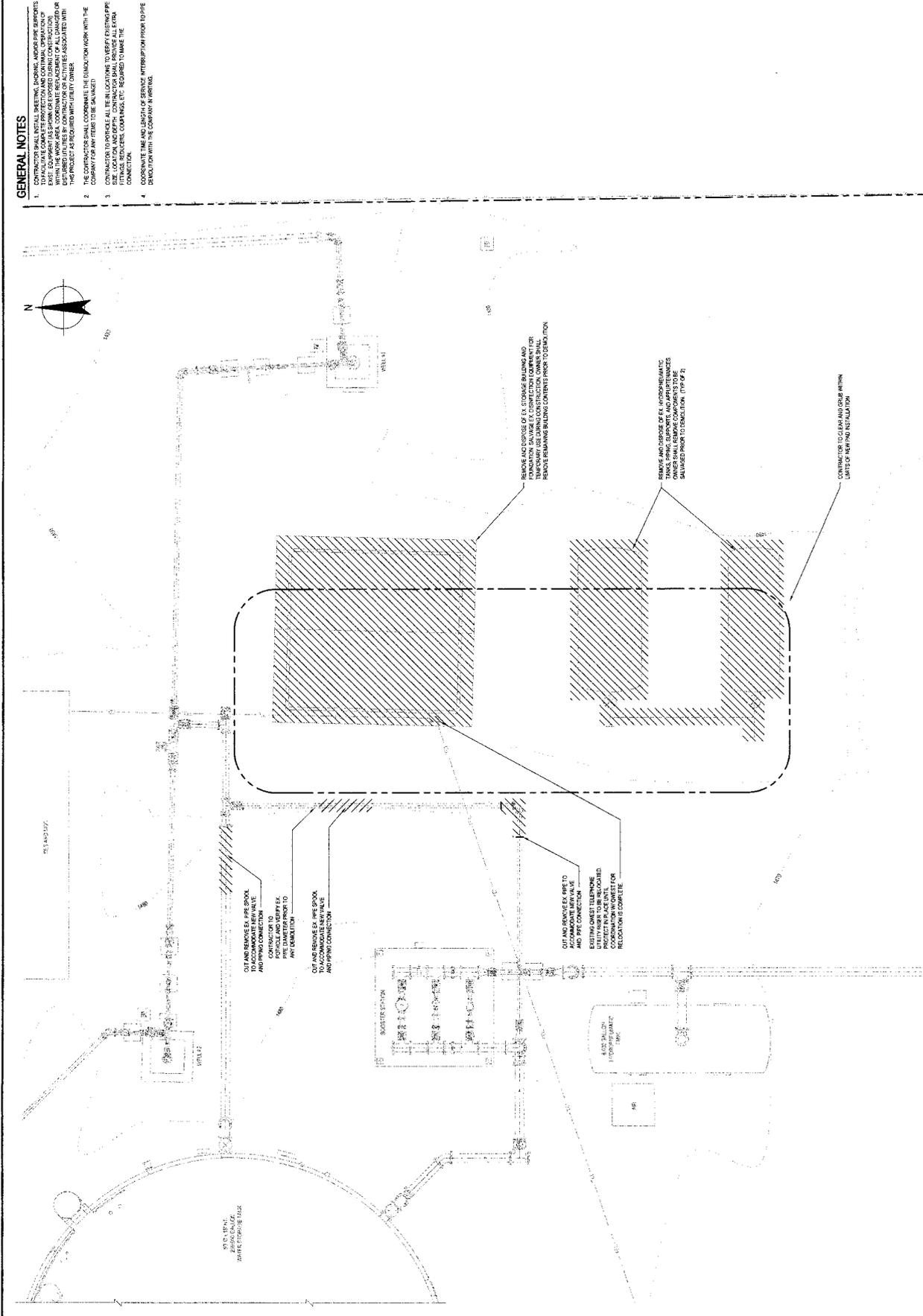
**ARIZONA WATER COMPANY**  
 3905 N. BLACK CANYON HWY. POST OFFICE BOX 29006  
 PHOENIX, ARIZONA 85028-9006  
 (602) 240-8898

DATE:	12/17/2014
SCALE:	1"=5'
SECTION:	SEC 17 - TSS - R9E
PROJECT:	FHT
CLIENT:	1-800-STAKE-IT
PROJECT NO.:	283-1100

7020 NORTH 19TH STREET SUITE 205 PHOENIX ARIZONA 85020 USA  
 T 602 216 7200 F 1 602 816 2720  
 E phoenix@awc.com W www.awc.com

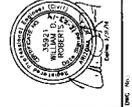
SCALE 1"=5'  
 0 2.5 5 7.5 10'

DEMOLITION PLAN  
 SCALE 1"=5'



**GENERAL NOTES**

- CONTRACTOR SHALL INSTALL SHEETING, SHORING, AND/OR PIPE SUPPORTS TO PROTECT EXISTING UTILITIES AND STRUCTURES DURING DEMOLITION. EXIST. EQUIPMENT (AS SHOWN) TO BE EXPOSED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES AND STRUCTURES PRIOR TO ANY DEMOLITION. THE PROJECT IS TO BE CONDUCTED IN ACCORDANCE WITH THE PROJECT AS REQUIRED BY THE UTILITY OWNER.
- THE CONTRACTOR SHALL COORDINATE THE DEMOLITION WORK WITH THE COMPANY FOR ANY ITEMS TO BE SALVAGED.
- CONTRACTOR TO PORTAL ALL THE IN-LOCATIONS TO VERIFY EXISTING PIPE AND STRUCTURES PRIOR TO ANY DEMOLITION. CONTRACTOR TO VERIFY EXISTING FITTINGS, REDUCERS, COMPANETS, ETC. REQUIRED TO MAKE THE CONNECTION.
- COORDINATE TIME AND LENGTH OF SERVICE INTERRUPTION PRIOR TO PIPE DEMOLITION WITH THE COMPANY IN WRITING.



C2  
SHEET 6 OF 25

**ARIZONA WATER COMPANY**  
 3905 N. BLACK CANYON HWY. POST OFFICE BOX 29005  
 PHOENIX, ARIZONA 85038-9006  
 (602) 240-9860

VALLEY FARMS ARSENIC REMOVAL FACILITY  
 10804 E. VAH KI INN ROAD - VALLEY FARMS AZ 85191

SITE LAYOUT, GRADING, AND DRAINAGE

PROJECT SHEET NO.	AS SHOWN
DATE	12/17/2014
DESIGNED BY	AEF
CHECKED BY	FHT
SCALE	AS SHOWN
SECTION	SEC 17 - TSS - RFE

**263-1100**  
 14000-07-10-01-01  
 Environmental Civil  
 The contractor shall be responsible for obtaining all necessary permits and approvals from the appropriate agencies in accordance with the Arizona Water Company standard specifications on the drawings.

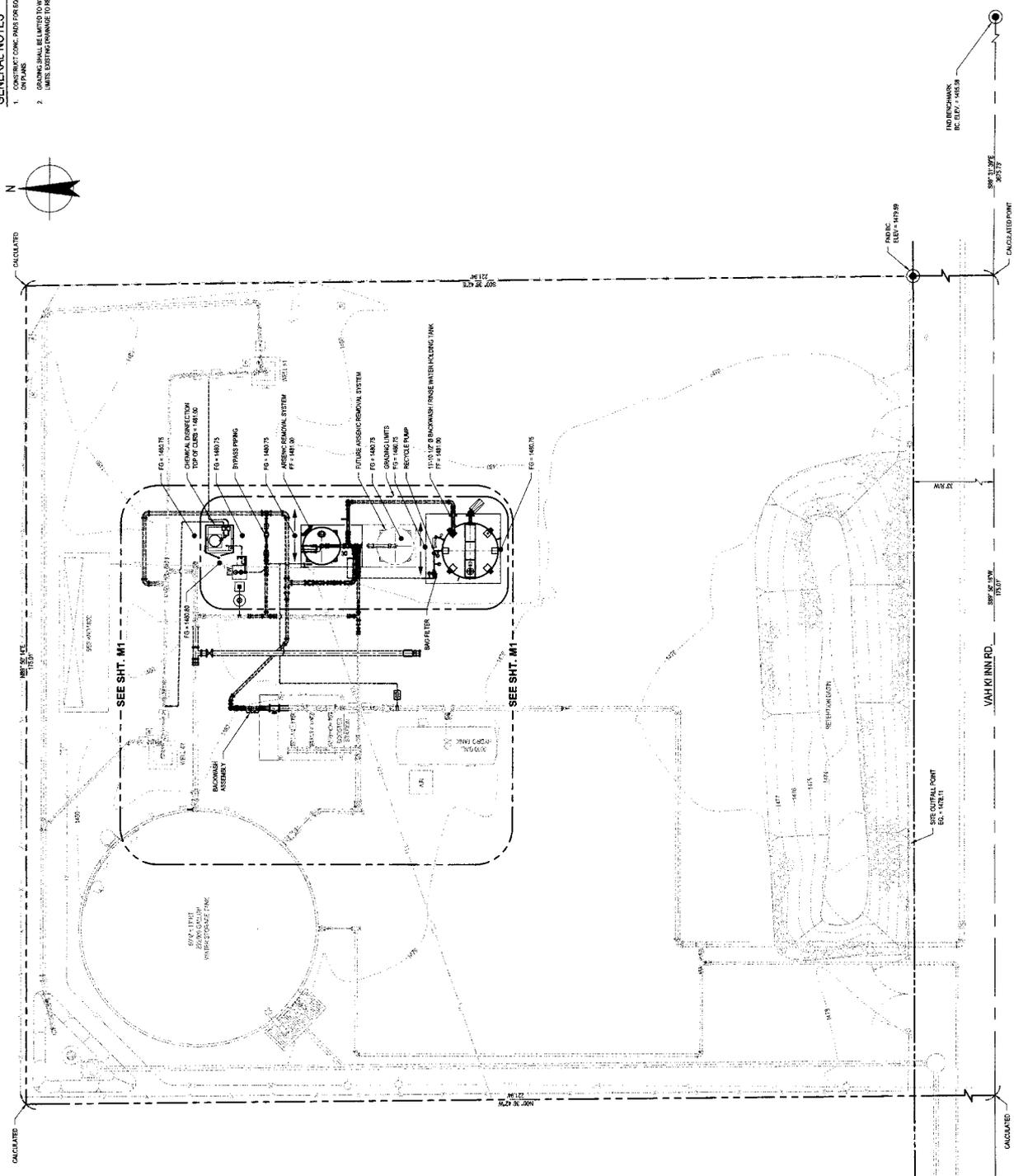
263-1100  
 14000-07-10-01-01-01  
 Environmental Civil  
 1900 North 16th Street Suite 205, Phoenix Arizona 85020 USA  
 T 602 216 7200 F 602 216 7201  
 E rjhines@awc.com W www.awc.com

**GENERAL NOTES**

1. CONTRACTOR SHALL PROVIDE EQUIPMENT TO ELEVATIONS SHOWN ON DRAWING.
2. GRADING SHALL BE LIMITED TO WITHIN PAD AND CONSTRUCTION LIMITS LISTED TO DRAWING TO REMAIN.



SCALE 1"=10' AT ORIGINAL SIZE



**SITE PLAN**  
 SCALE 1"=10'





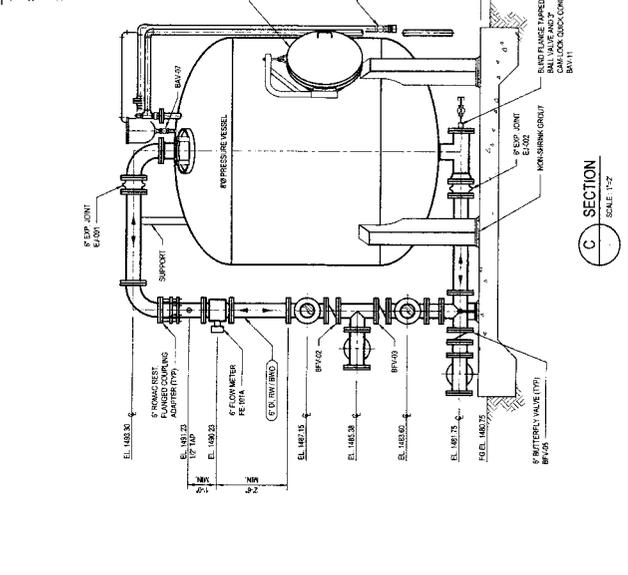
**GENERAL NOTES**

1. PROVIDE INSULATING COUPLERS BETWEEN DISSIMILAR METALS.
2. EQUIPMENT VALVE, METER, FORMER AND GAUGE MANUFACTURERS AND MODEL NUMBER TO BE SUBMITTED FOR APPROVAL.
3. ALL WELDS SHALL BE FULL PENETRATION BUTT JOINTS.
4. ALL WELDS SHALL BE FULL PENETRATION BUTT JOINTS.
5. FACTORY COATING THE FLOW COATING SHALL BE THERMITE AND AS FOLLOWS:
  - 1. PRIMER SERIES OF HIGH-BUILD EPOXYWINE 2.4L DPT
  - 2. INTERMEDIATE SERIES OF HIGH-BUILD EPOXYWINE 2.4L DPT
  - 3. FINISH COATING OF HIGH-BUILD EPOXYWINE 2.4L DPT
6. COLOR IDENTIFICATION SHALL BE AS FOLLOWS:
  - 1. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 2. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 3. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 4. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 5. COLOR IDENTIFICATION SHALL BE AS FOLLOWS

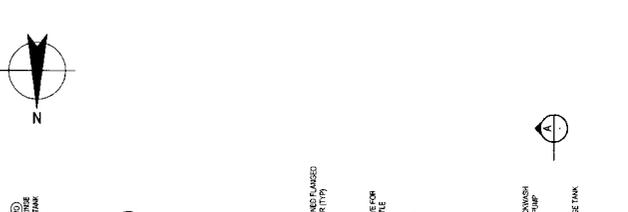
**EQUIPMENT TABLE**

ITEM NO.	DESCRIPTION	QUANTITY	MANUFACTURER	MODEL	SIZE
1	PRESSURE SUSTAINING VESSEL	1			
2	FLANGED COUPLER	1			
3	FLANGED COUPLER	1			
4	FLANGED COUPLER	1			
5	FLANGED COUPLER	1			
6	FLANGED COUPLER	1			
7	FLANGED COUPLER	1			
8	FLANGED COUPLER	1			
9	FLANGED COUPLER	1			
10	FLANGED COUPLER	1			
11	FLANGED COUPLER	1			
12	FLANGED COUPLER	1			
13	FLANGED COUPLER	1			
14	FLANGED COUPLER	1			
15	FLANGED COUPLER	1			
16	FLANGED COUPLER	1			
17	FLANGED COUPLER	1			
18	FLANGED COUPLER	1			
19	FLANGED COUPLER	1			
20	FLANGED COUPLER	1			
21	FLANGED COUPLER	1			
22	FLANGED COUPLER	1			
23	FLANGED COUPLER	1			
24	FLANGED COUPLER	1			
25	FLANGED COUPLER	1			
26	FLANGED COUPLER	1			
27	FLANGED COUPLER	1			
28	FLANGED COUPLER	1			
29	FLANGED COUPLER	1			
30	FLANGED COUPLER	1			
31	FLANGED COUPLER	1			
32	FLANGED COUPLER	1			
33	FLANGED COUPLER	1			
34	FLANGED COUPLER	1			
35	FLANGED COUPLER	1			
36	FLANGED COUPLER	1			
37	FLANGED COUPLER	1			
38	FLANGED COUPLER	1			
39	FLANGED COUPLER	1			
40	FLANGED COUPLER	1			
41	FLANGED COUPLER	1			
42	FLANGED COUPLER	1			
43	FLANGED COUPLER	1			
44	FLANGED COUPLER	1			
45	FLANGED COUPLER	1			
46	FLANGED COUPLER	1			
47	FLANGED COUPLER	1			
48	FLANGED COUPLER	1			
49	FLANGED COUPLER	1			
50	FLANGED COUPLER	1			
51	FLANGED COUPLER	1			
52	FLANGED COUPLER	1			
53	FLANGED COUPLER	1			
54	FLANGED COUPLER	1			
55	FLANGED COUPLER	1			
56	FLANGED COUPLER	1			
57	FLANGED COUPLER	1			
58	FLANGED COUPLER	1			
59	FLANGED COUPLER	1			
60	FLANGED COUPLER	1			
61	FLANGED COUPLER	1			
62	FLANGED COUPLER	1			
63	FLANGED COUPLER	1			
64	FLANGED COUPLER	1			
65	FLANGED COUPLER	1			
66	FLANGED COUPLER	1			
67	FLANGED COUPLER	1			
68	FLANGED COUPLER	1			
69	FLANGED COUPLER	1			
70	FLANGED COUPLER	1			
71	FLANGED COUPLER	1			
72	FLANGED COUPLER	1			
73	FLANGED COUPLER	1			
74	FLANGED COUPLER	1			
75	FLANGED COUPLER	1			
76	FLANGED COUPLER	1			
77	FLANGED COUPLER	1			
78	FLANGED COUPLER	1			
79	FLANGED COUPLER	1			
80	FLANGED COUPLER	1			
81	FLANGED COUPLER	1			
82	FLANGED COUPLER	1			
83	FLANGED COUPLER	1			
84	FLANGED COUPLER	1			
85	FLANGED COUPLER	1			
86	FLANGED COUPLER	1			
87	FLANGED COUPLER	1			
88	FLANGED COUPLER	1			
89	FLANGED COUPLER	1			
90	FLANGED COUPLER	1			
91	FLANGED COUPLER	1			
92	FLANGED COUPLER	1			
93	FLANGED COUPLER	1			
94	FLANGED COUPLER	1			
95	FLANGED COUPLER	1			
96	FLANGED COUPLER	1			
97	FLANGED COUPLER	1			
98	FLANGED COUPLER	1			
99	FLANGED COUPLER	1			
100	FLANGED COUPLER	1			

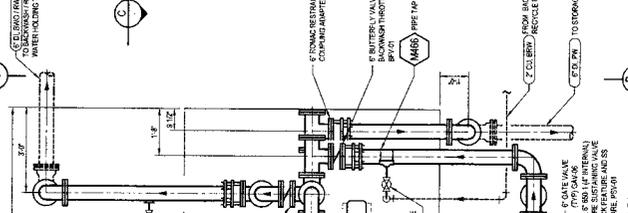
**ARSENIC REMOVAL SYSTEM PLAN**



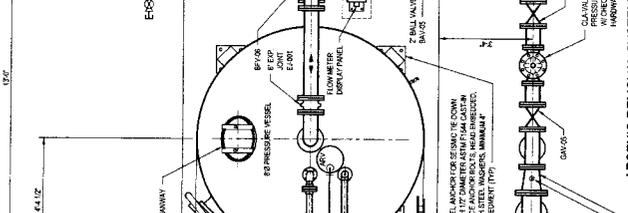
**SECTION C**



**SECTION B**



**SECTION A**



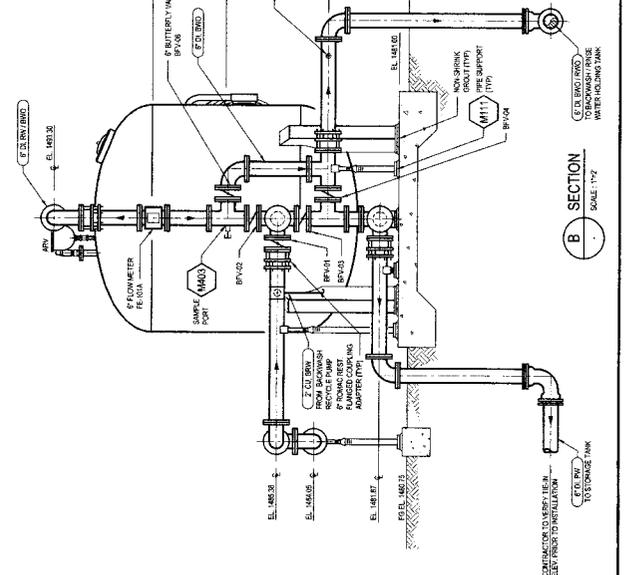
**GENERAL NOTES**

1. PROVIDE INSULATING COUPLERS BETWEEN DISSIMILAR METALS.
2. EQUIPMENT VALVE, METER, FORMER AND GAUGE MANUFACTURERS AND MODEL NUMBER TO BE SUBMITTED FOR APPROVAL.
3. ALL WELDS SHALL BE FULL PENETRATION BUTT JOINTS.
4. ALL WELDS SHALL BE FULL PENETRATION BUTT JOINTS.
5. FACTORY COATING THE FLOW COATING SHALL BE THERMITE AND AS FOLLOWS:
  - 1. PRIMER SERIES OF HIGH-BUILD EPOXYWINE 2.4L DPT
  - 2. INTERMEDIATE SERIES OF HIGH-BUILD EPOXYWINE 2.4L DPT
  - 3. FINISH COATING OF HIGH-BUILD EPOXYWINE 2.4L DPT
6. COLOR IDENTIFICATION SHALL BE AS FOLLOWS:
  - 1. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 2. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 3. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 4. COLOR IDENTIFICATION SHALL BE AS FOLLOWS
  - 5. COLOR IDENTIFICATION SHALL BE AS FOLLOWS

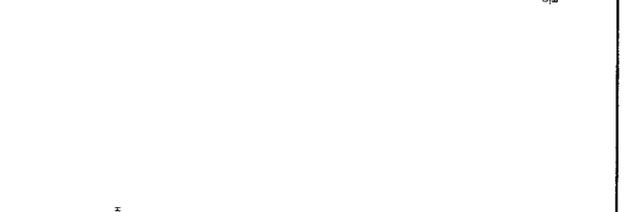
**EQUIPMENT TABLE**

ITEM NO.	DESCRIPTION	QUANTITY	MANUFACTURER	MODEL	SIZE
1	PRESSURE SUSTAINING VESSEL	1			
2	FLANGED COUPLER	1			
3	FLANGED COUPLER	1			
4	FLANGED COUPLER	1			
5	FLANGED COUPLER	1			
6	FLANGED COUPLER	1			
7	FLANGED COUPLER	1			
8	FLANGED COUPLER	1			
9	FLANGED COUPLER	1			
10	FLANGED COUPLER	1			
11	FLANGED COUPLER	1			
12	FLANGED COUPLER	1			
13	FLANGED COUPLER	1			
14	FLANGED COUPLER	1			
15	FLANGED COUPLER	1			
16	FLANGED COUPLER	1			
17	FLANGED COUPLER	1			
18	FLANGED COUPLER	1			
19	FLANGED COUPLER	1			
20	FLANGED COUPLER	1			
21	FLANGED COUPLER	1			
22	FLANGED COUPLER	1			
23	FLANGED COUPLER	1			
24	FLANGED COUPLER	1			
25	FLANGED COUPLER	1			
26	FLANGED COUPLER	1			
27	FLANGED COUPLER	1			
28	FLANGED COUPLER	1			
29	FLANGED COUPLER	1			
30	FLANGED COUPLER	1			
31	FLANGED COUPLER	1			
32	FLANGED COUPLER	1			
33	FLANGED COUPLER	1			
34	FLANGED COUPLER	1			
35	FLANGED COUPLER	1			
36	FLANGED COUPLER	1			
37	FLANGED COUPLER	1			
38	FLANGED COUPLER	1			
39	FLANGED COUPLER	1			
40	FLANGED COUPLER	1			
41	FLANGED COUPLER	1			
42	FLANGED COUPLER	1			
43	FLANGED COUPLER	1			
44	FLANGED COUPLER	1			
45	FLANGED COUPLER	1			
46	FLANGED COUPLER	1			
47	FLANGED COUPLER	1			
48	FLANGED COUPLER	1			
49	FLANGED COUPLER	1			
50	FLANGED COUPLER	1			
51	FLANGED COUPLER	1			
52	FLANGED COUPLER	1			
53	FLANGED COUPLER	1			
54	FLANGED COUPLER	1			
55	FLANGED COUPLER	1			
56	FLANGED COUPLER	1			
57	FLANGED COUPLER	1			
58	FLANGED COUPLER	1			
59	FLANGED COUPLER	1			
60	FLANGED COUPLER	1			
61	FLANGED COUPLER	1			
62	FLANGED COUPLER	1			
63	FLANGED COUPLER	1			
64	FLANGED COUPLER	1			
65	FLANGED COUPLER	1			
66	FLANGED COUPLER	1			
67	FLANGED COUPLER	1			
68	FLANGED COUPLER	1			
69	FLANGED COUPLER	1			
70	FLANGED COUPLER	1			
71	FLANGED COUPLER	1			
72	FLANGED COUPLER	1			
73	FLANGED COUPLER	1			
74	FLANGED COUPLER	1			
75	FLANGED COUPLER	1			
76	FLANGED COUPLER	1			
77	FLANGED COUPLER	1			
78	FLANGED COUPLER	1			
79	FLANGED COUPLER	1			
80	FLANGED COUPLER	1			
81	FLANGED COUPLER	1			
82	FLANGED COUPLER	1			
83	FLANGED COUPLER	1			
84	FLANGED COUPLER	1			
85	FLANGED COUPLER	1			
86	FLANGED COUPLER	1			
87	FLANGED COUPLER	1			
88	FLANGED COUPLER	1			
89	FLANGED COUPLER	1			
90	FLANGED COUPLER	1			
91	FLANGED COUPLER	1			
92	FLANGED COUPLER	1			
93	FLANGED COUPLER	1			
94	FLANGED COUPLER	1			
95	FLANGED COUPLER	1			
96	FLANGED COUPLER	1			
97	FLANGED COUPLER	1			
98	FLANGED COUPLER	1			
99	FLANGED COUPLER	1			
100	FLANGED COUPLER	1			

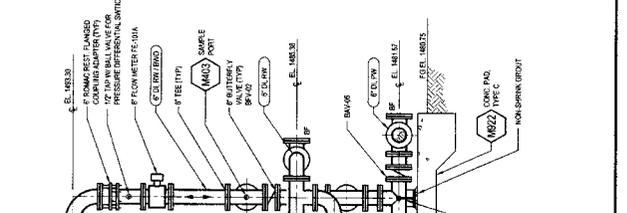
**ARSENIC REMOVAL SYSTEM PLAN**



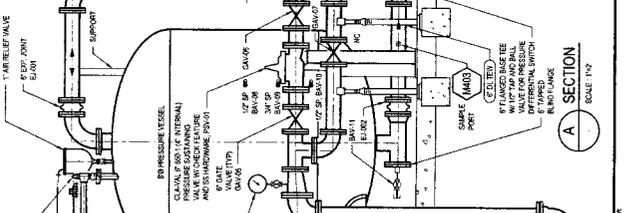
**SECTION C**



**SECTION B**



**SECTION A**



**ARIZONA WATER COMPANY**  
 3605 N. BLACK CANYON HWY., POST OFFICE BOX 29006  
 PHOENIX, ARIZONA 85028-9006  
 (602) 240-8800

PROJECT SHEET NO. 19804 E. VAH N INN ROAD - VALLEY FARMS, AZ 85191

DATE: 12/17/2014  
 DRAWN BY: SJS  
 CHECKED BY: FHT

SCALE: 1/2" = 1'-0"

SECTION: SEC 17 - TSS - R9E

PROJECT NO. 19804 E. VAH N INN ROAD - VALLEY FARMS, AZ 85191

DATE: 12/17/2014

SCALE: 1/2" = 1'-0"

SECTION: SEC 17 - TSS - R9E

PROJECT NO. 19804 E. VAH N INN ROAD - VALLEY FARMS, AZ 85191

DATE: 12/17/2014

SCALE: 1/2" = 1'-0"

SECTION:

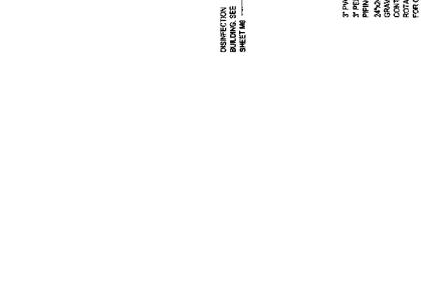
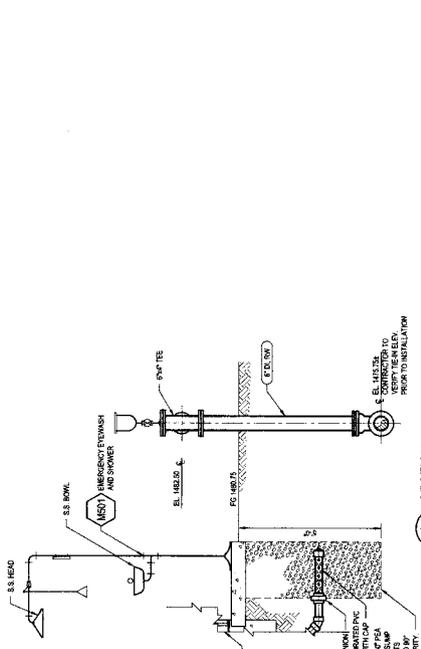
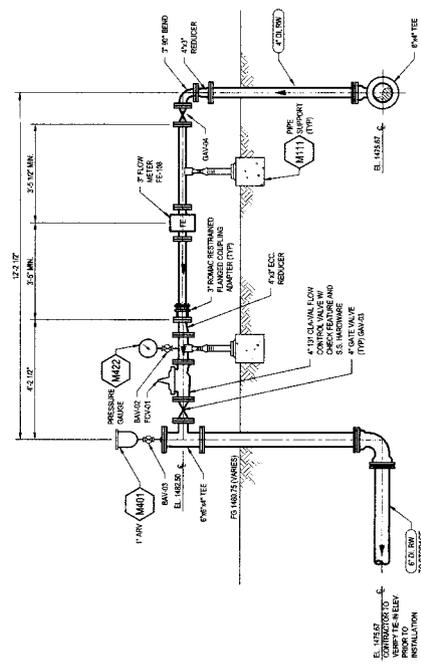




**ARIZONA WATER COMPANY**  
 3905 N. BLACK CANYON HWY. POST OFFICE BOX 29006  
 PHOENIX, ARIZONA 85028-9006  
 (602) 240-6860  
 VALLEY FARMS ARSENIC REMOVAL FACILITY  
 10804 E. VAH KINN ROAD - VALLEY FARMS, AZ 85191

PROJECT SHEET NO. 10804 E. VAH KINN ROAD - VALLEY FARMS, AZ 85191  
 PLAN, SECTIONS, AND DETAILS  
 PROJECT NO. 10804 E. VAH KINN ROAD - VALLEY FARMS, AZ 85191  
 DATE: 12/17/2014  
 AS SHOWN  
 SCALE: AS SHOWN  
 SEC 17 - TSS - RRE

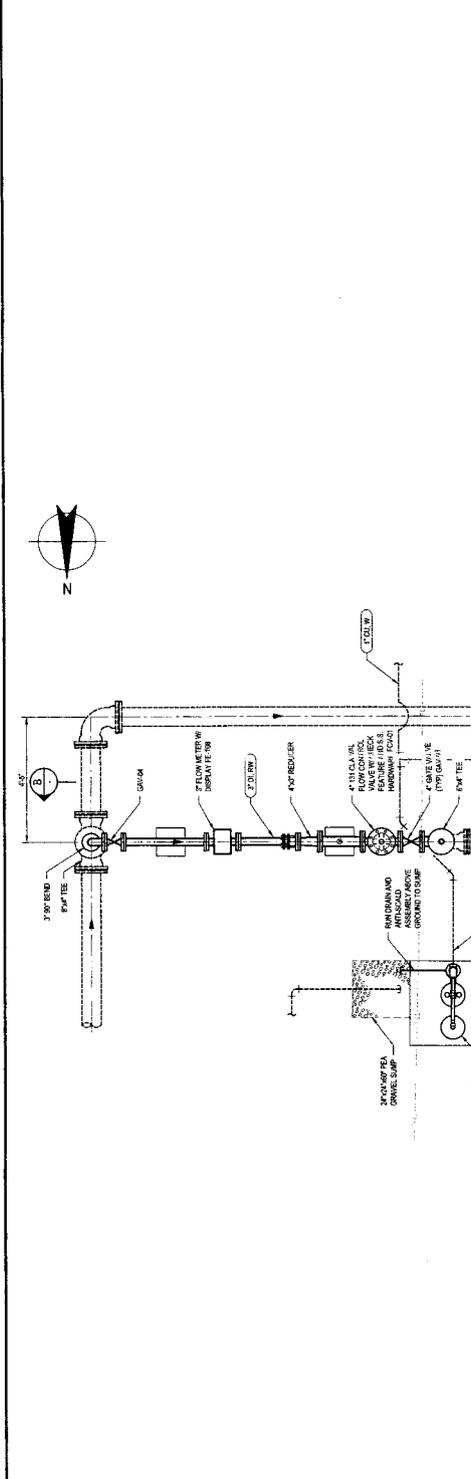
PROJECT NO. 10804 E. VAH KINN ROAD - VALLEY FARMS, AZ 85191  
 DATE: 12/17/2014  
 AS SHOWN  
 SCALE: AS SHOWN  
 SEC 17 - TSS - RRE



- GENERAL NOTES**
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE EQUIPMENT SHALL BE PROTECTED FROM VIBRATION AND TOXIC FACTOR CONTAMINATION. THE EQUIPMENT SHALL BE PROTECTED FROM VIBRATION AND TOXIC FACTOR CONTAMINATION.
  - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE EQUIPMENT SHALL BE PROTECTED FROM VIBRATION AND TOXIC FACTOR CONTAMINATION.
  - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE EQUIPMENT SHALL BE PROTECTED FROM VIBRATION AND TOXIC FACTOR CONTAMINATION.
  - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE EQUIPMENT SHALL BE PROTECTED FROM VIBRATION AND TOXIC FACTOR CONTAMINATION.

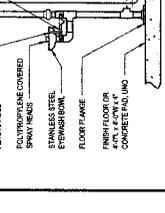
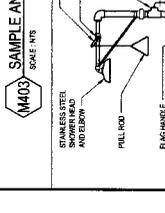
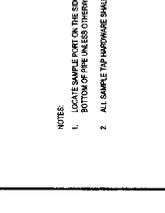
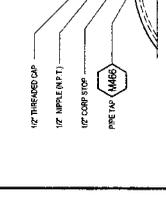
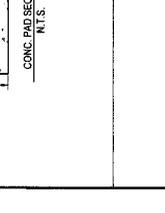
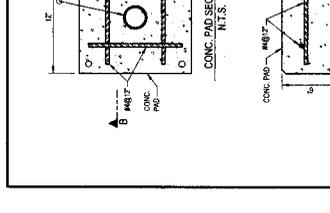
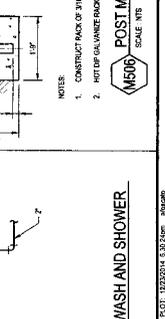
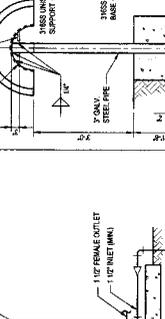
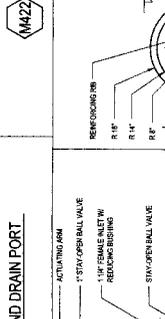
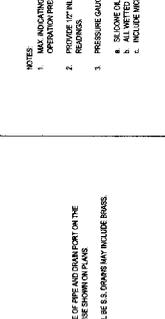
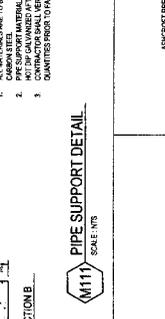
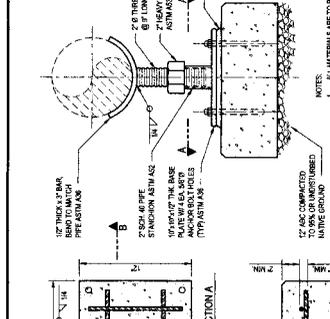
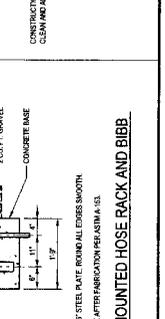
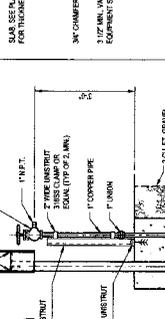
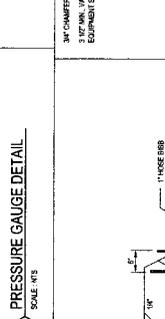
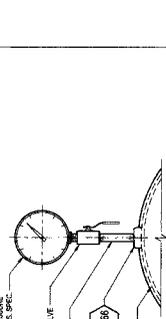
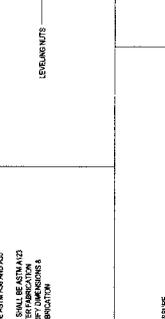
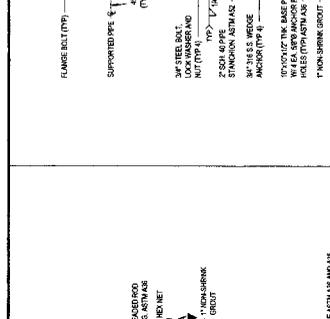
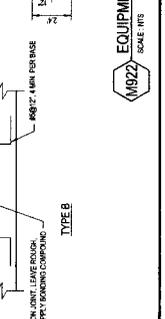
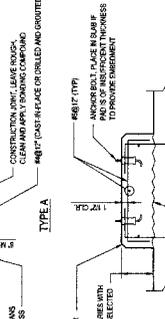
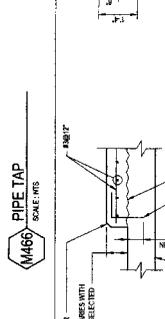
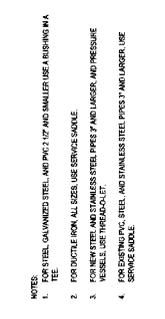
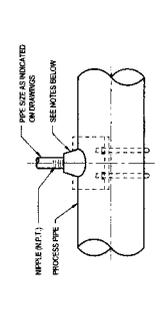
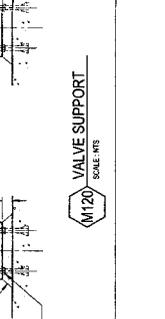
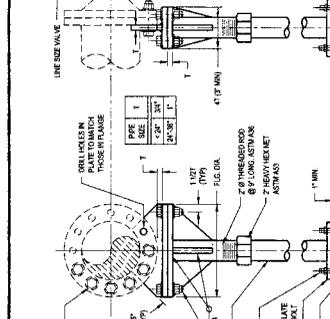
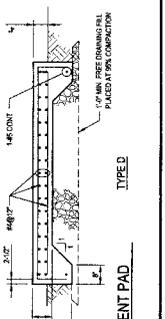
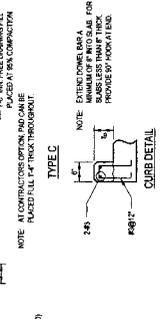
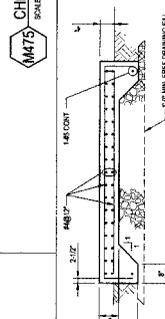
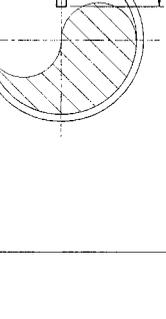
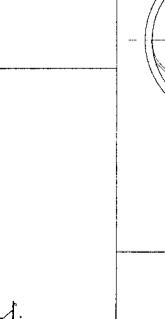
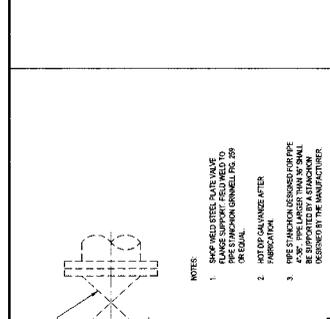
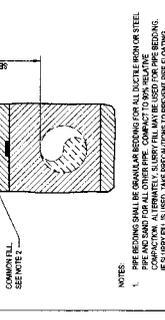
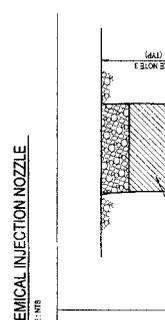
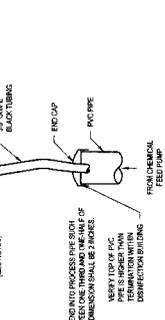
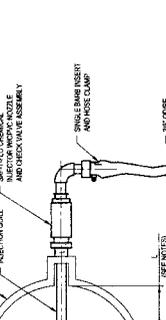
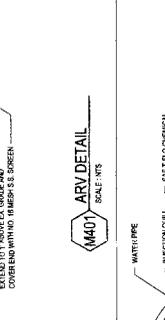
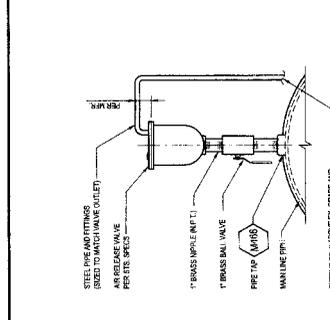
**EQUIPMENT TABLE**

EQUIPMENT	QUANTITY	MANUFACTURER	MODEL	SIZE
1. 4\"/>				









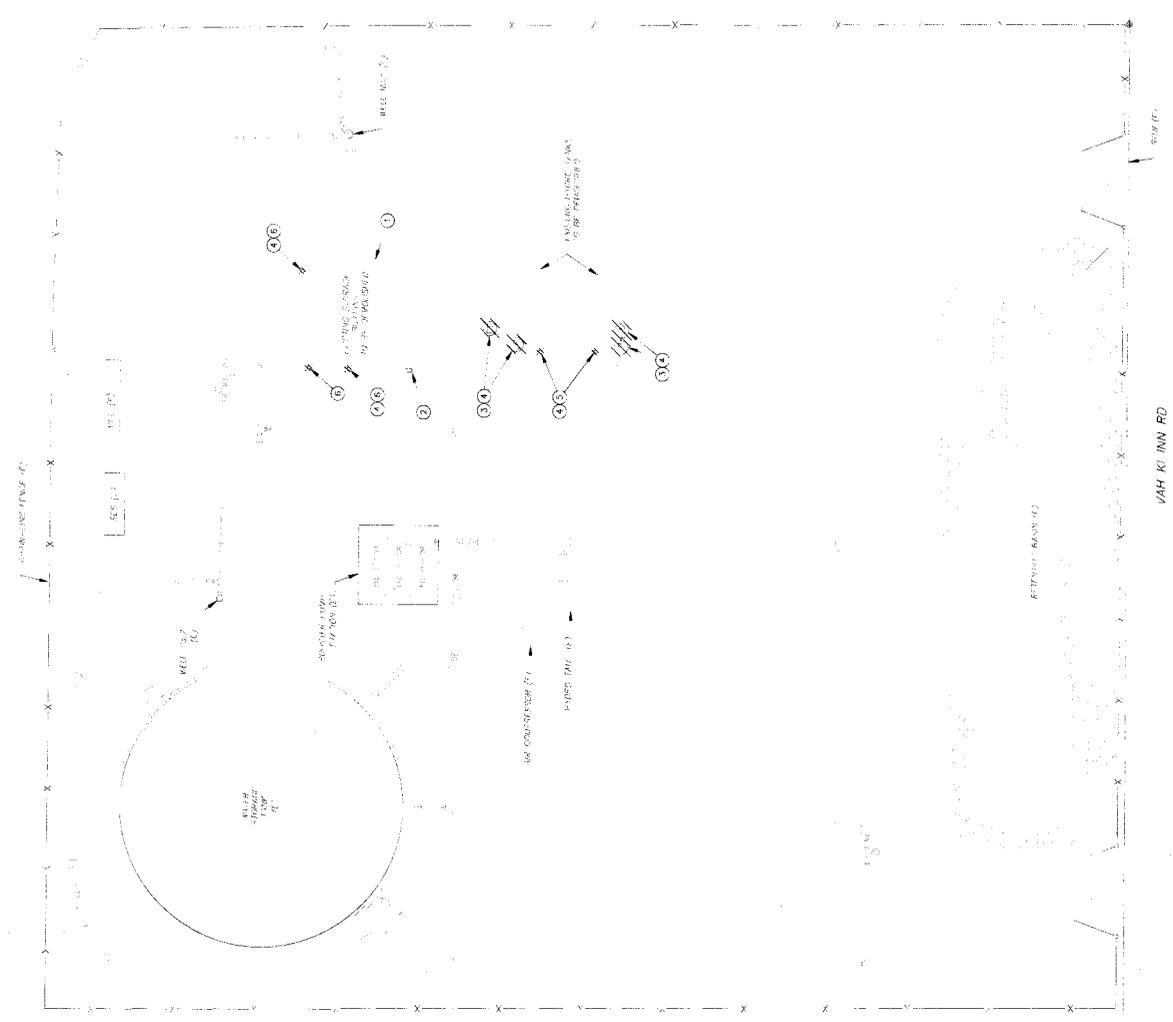


**GENERAL DEMOLITION NOTES**

1. DISCONNECT AND REMOVE CONDUITS AS INDICATED. REMOVAL OF CONDUITS INCLUDES REMOVAL AND DISPOSAL OF EXISTING EXPOSED CONDUITS.
2. ALL REMOVED MATERIAL NOT BEING SALVAGED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR REMOVAL AND DISPOSAL.
3. ALL EXISTING MATERIAL TO BE REMOVED SHALL BE Hauled OFF SITE AND DISPOSED OF AT AN APPROVED LANDFILL.
4. THE CONTRACTOR SHALL REPAIR ALL WORK ON THIS PROJECT WHILE THE EXISTING FACILITIES AND SURROUNDING UTILITIES ARE OPERATING. ALL CONNECTIONS OF NEW WORK SHALL BE MADE TO EXISTING UTILITIES AND SHALL BE MADE TO MATCH EXISTING OPERATIONAL PRACTICES AND AS SPECIFIED AND SHOWN ON THESE SHEETS.

**KEY NOTES**

1. DISCONNECT AND REMOVE EXISTING CONDUITS AND TERMINATE OR REMOVE EXPOSED CONDUITS TO SOURCE. DISCONNECT AND REMOVE ALL LIGHTS, SWITCHES, RECEPTACLES, TERMINALS, DISCONNECTS, BOXES AND EXPOSED CONDUIT.
2. EXISTING TERMINAL BOX TO BE RELOCATED TO REFER TO DRAWING E2 FOR RELOCATION.
3. DISCONNECT AND REMOVE EXISTING 120V TANK PRESSURE SWITCH, 1/2" FL. BRONZE AND PROBE VALVE.
4. DISCONNECT AND REMOVE CONDUCTORS BACK TO SOURCE.
5. DISCONNECT AND REMOVE ALL EXPOSED CONDUIT TO THE EXISTING STORAGE BUILDING. CUT UNDERGROUND CONDUIT IN BETTER GRADE AND ABANDON IN PLACE.



0 10 20 30  
 FEET  
 SCALE IN 1/4" = 1'-0"

**DARCOR**  
 ELECTRICAL CONSULTING ENGINEERS  
 7600 N. 14TH ST.  
 SUITE 200-A  
 PHOENIX, AZ 85018  
 PH: (602) 761-5899  
 WWW.DARCORINC.COM



E2  
 SHEET 16 OF 25

**ARIZONA WATER COMPANY**  
 3905 N. BLACK CANYON HWY. POST OFFICE BOX 29006  
 PHOENIX, ARIZONA 85028-9006  
 (602) 240-6660  
 VALLEY FARMS ARSENIC REMOVAL FACILITY  
 16801 E. VAH KI INN ROAD - COOLIDGE, AZ 85128

DATE	12/29/2014	DRG	NONE
BY	JLG	REVISED BY	JLG
PROJECT	SEC 17 - TSS - R9E		

**GHD**  
 7600 North 14th Street Suite 205, Phoenix Arizona 85020 USA  
 T 602 278 2000 F 602 278 2001  
 E ghd@ghd.com W www.ghd.com

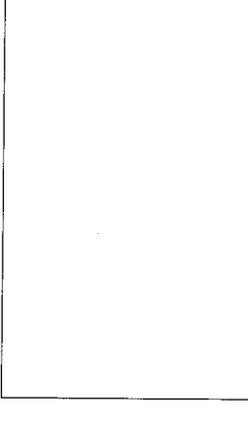


**GENERAL NOTE**

- REFER TO APPROVED SINGLE LINE DIAGRAM FOR SPECIFIC REQUIREMENTS FOR ADDITIONAL CIRCUIT & CONDUCTOR REQUIREMENTS.

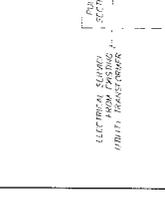
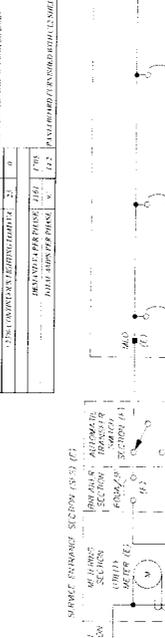
**KEY NOTES**

- INSTALL NEW 15A/3P CIRCUIT BREAKER IN RETROFIT BRACKET
- MOUNT EXISTING 60A/3P PANEL INSIDE PULL SECTION USING A 15A/3P CIRCUIT BREAKER IN RETROFIT BRACKET. ALL EXISTING CIRCUIT BREAKERS ARE LOCATED BEHIND CONTROL PANEL
- REPLACE EXISTING 20A/1P CIRCUIT BREAKERS WITH A 60A/3P CIRCUIT BREAKER (CONSOLE, D. 040000). RELABEL EXISTING PANEL SCHEDULE ACCORDINGLY.
- REPLACE EXISTING 20A/1P CIRCUIT BREAKERS WITH A 60A/3P CIRCUIT BREAKER (CONSOLE, D. 040000). RELABEL EXISTING PANEL SCHEDULE ACCORDINGLY.
- REFER TO DRAWINGS E7 & E8 FOR MODIFICATIONS REQUIRED IN EXISTING WELL PUMP No. 2 STARTER SECTION.
- REFER TO DRAWING E8 FOR MODIFICATIONS REQUIRED IN EXISTING WELL PUMP No. 1 STARTER SECTION.
- SEE PANEL SCHEDULE ON THIS SHEET FOR REQUIRED
- UNLESS EXISTING CIRCUIT FOR POLE MOUNTED AREA LIGHTING



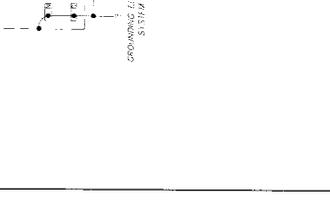
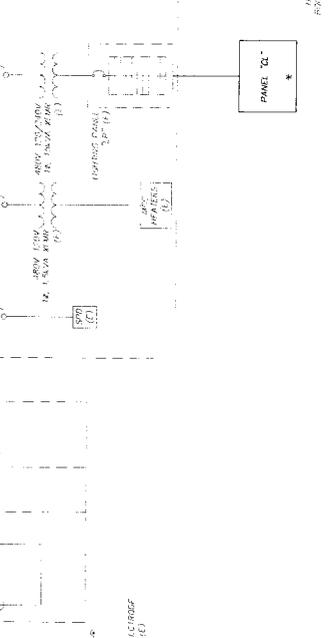
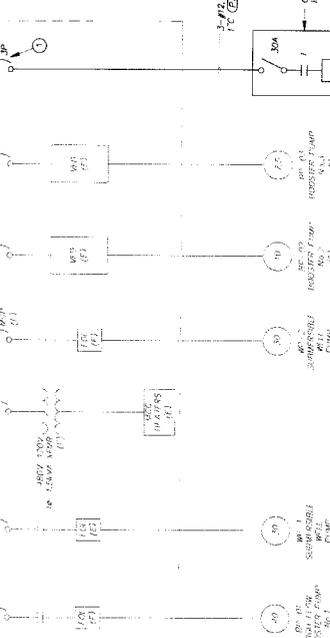
**EXISTING AMP & LOAD CALCULATIONS**

CIRCUIT / EQUIPMENT	AMPS	LOAD
EXISTING 15A/3P CIRCUIT BREAKER	15	15
EXISTING 60A/3P PANEL	60	60
EXISTING 20A/1P CIRCUIT BREAKERS	20	20
EXISTING 30A/1P CIRCUIT BREAKERS	30	30
EXISTING 40A/1P CIRCUIT BREAKERS	40	40
EXISTING 50A/1P CIRCUIT BREAKERS	50	50
EXISTING 60A/1P CIRCUIT BREAKERS	60	60
EXISTING 70A/1P CIRCUIT BREAKERS	70	70
EXISTING 80A/1P CIRCUIT BREAKERS	80	80
EXISTING 90A/1P CIRCUIT BREAKERS	90	90
EXISTING 100A/1P CIRCUIT BREAKERS	100	100
EXISTING 110A/1P CIRCUIT BREAKERS	110	110
EXISTING 120A/1P CIRCUIT BREAKERS	120	120
EXISTING 130A/1P CIRCUIT BREAKERS	130	130
EXISTING 140A/1P CIRCUIT BREAKERS	140	140
EXISTING 150A/1P CIRCUIT BREAKERS	150	150
EXISTING 160A/1P CIRCUIT BREAKERS	160	160
EXISTING 170A/1P CIRCUIT BREAKERS	170	170
EXISTING 180A/1P CIRCUIT BREAKERS	180	180
EXISTING 190A/1P CIRCUIT BREAKERS	190	190
EXISTING 200A/1P CIRCUIT BREAKERS	200	200
EXISTING 210A/1P CIRCUIT BREAKERS	210	210
EXISTING 220A/1P CIRCUIT BREAKERS	220	220
EXISTING 230A/1P CIRCUIT BREAKERS	230	230
EXISTING 240A/1P CIRCUIT BREAKERS	240	240
EXISTING 250A/1P CIRCUIT BREAKERS	250	250
EXISTING 260A/1P CIRCUIT BREAKERS	260	260
EXISTING 270A/1P CIRCUIT BREAKERS	270	270
EXISTING 280A/1P CIRCUIT BREAKERS	280	280
EXISTING 290A/1P CIRCUIT BREAKERS	290	290
EXISTING 300A/1P CIRCUIT BREAKERS	300	300
EXISTING 310A/1P CIRCUIT BREAKERS	310	310
EXISTING 320A/1P CIRCUIT BREAKERS	320	320
EXISTING 330A/1P CIRCUIT BREAKERS	330	330
EXISTING 340A/1P CIRCUIT BREAKERS	340	340
EXISTING 350A/1P CIRCUIT BREAKERS	350	350
EXISTING 360A/1P CIRCUIT BREAKERS	360	360
EXISTING 370A/1P CIRCUIT BREAKERS	370	370
EXISTING 380A/1P CIRCUIT BREAKERS	380	380
EXISTING 390A/1P CIRCUIT BREAKERS	390	390
EXISTING 400A/1P CIRCUIT BREAKERS	400	400
EXISTING 410A/1P CIRCUIT BREAKERS	410	410
EXISTING 420A/1P CIRCUIT BREAKERS	420	420
EXISTING 430A/1P CIRCUIT BREAKERS	430	430
EXISTING 440A/1P CIRCUIT BREAKERS	440	440
EXISTING 450A/1P CIRCUIT BREAKERS	450	450
EXISTING 460A/1P CIRCUIT BREAKERS	460	460
EXISTING 470A/1P CIRCUIT BREAKERS	470	470
EXISTING 480A/1P CIRCUIT BREAKERS	480	480
EXISTING 490A/1P CIRCUIT BREAKERS	490	490
EXISTING 500A/1P CIRCUIT BREAKERS	500	500
EXISTING 510A/1P CIRCUIT BREAKERS	510	510
EXISTING 520A/1P CIRCUIT BREAKERS	520	520
EXISTING 530A/1P CIRCUIT BREAKERS	530	530
EXISTING 540A/1P CIRCUIT BREAKERS	540	540
EXISTING 550A/1P CIRCUIT BREAKERS	550	550
EXISTING 560A/1P CIRCUIT BREAKERS	560	560
EXISTING 570A/1P CIRCUIT BREAKERS	570	570
EXISTING 580A/1P CIRCUIT BREAKERS	580	580
EXISTING 590A/1P CIRCUIT BREAKERS	590	590
EXISTING 600A/1P CIRCUIT BREAKERS	600	600
EXISTING 610A/1P CIRCUIT BREAKERS	610	610
EXISTING 620A/1P CIRCUIT BREAKERS	620	620
EXISTING 630A/1P CIRCUIT BREAKERS	630	630
EXISTING 640A/1P CIRCUIT BREAKERS	640	640
EXISTING 650A/1P CIRCUIT BREAKERS	650	650
EXISTING 660A/1P CIRCUIT BREAKERS	660	660
EXISTING 670A/1P CIRCUIT BREAKERS	670	670
EXISTING 680A/1P CIRCUIT BREAKERS	680	680
EXISTING 690A/1P CIRCUIT BREAKERS	690	690
EXISTING 700A/1P CIRCUIT BREAKERS	700	700
EXISTING 710A/1P CIRCUIT BREAKERS	710	710
EXISTING 720A/1P CIRCUIT BREAKERS	720	720
EXISTING 730A/1P CIRCUIT BREAKERS	730	730
EXISTING 740A/1P CIRCUIT BREAKERS	740	740
EXISTING 750A/1P CIRCUIT BREAKERS	750	750
EXISTING 760A/1P CIRCUIT BREAKERS	760	760
EXISTING 770A/1P CIRCUIT BREAKERS	770	770
EXISTING 780A/1P CIRCUIT BREAKERS	780	780
EXISTING 790A/1P CIRCUIT BREAKERS	790	790
EXISTING 800A/1P CIRCUIT BREAKERS	800	800
EXISTING 810A/1P CIRCUIT BREAKERS	810	810
EXISTING 820A/1P CIRCUIT BREAKERS	820	820
EXISTING 830A/1P CIRCUIT BREAKERS	830	830
EXISTING 840A/1P CIRCUIT BREAKERS	840	840
EXISTING 850A/1P CIRCUIT BREAKERS	850	850
EXISTING 860A/1P CIRCUIT BREAKERS	860	860
EXISTING 870A/1P CIRCUIT BREAKERS	870	870
EXISTING 880A/1P CIRCUIT BREAKERS	880	880
EXISTING 890A/1P CIRCUIT BREAKERS	890	890
EXISTING 900A/1P CIRCUIT BREAKERS	900	900
EXISTING 910A/1P CIRCUIT BREAKERS	910	910
EXISTING 920A/1P CIRCUIT BREAKERS	920	920
EXISTING 930A/1P CIRCUIT BREAKERS	930	930
EXISTING 940A/1P CIRCUIT BREAKERS	940	940
EXISTING 950A/1P CIRCUIT BREAKERS	950	950
EXISTING 960A/1P CIRCUIT BREAKERS	960	960
EXISTING 970A/1P CIRCUIT BREAKERS	970	970
EXISTING 980A/1P CIRCUIT BREAKERS	980	980
EXISTING 990A/1P CIRCUIT BREAKERS	990	990
EXISTING 1000A/1P CIRCUIT BREAKERS	1000	1000



**MARKER DRAWING SECTION (S) (E)**

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



**MARKER DRAWING SECTION (S) (E)**

MARKER	SECTION	DESCRIPTION
1	S	MARKER 1
2	E	MARKER 2
3	S	MARKER 3
4	E	MARKER 4
5	S	MARKER 5
6	E	MARKER 6
7	S	MARKER 7
8	E	MARKER 8
9	S	MARKER 9
10	E	MARKER 10
11	S	MARKER 11
12	E	MARKER 12
13	S	MARKER 13
14	E	MARKER 14
15	S	MARKER 15
16	E	MARKER 16
17	S	MARKER 17
18	E	MARKER 18
19	S	MARKER 19
20	E	MARKER 20
21	S	MARKER 21
22	E	MARKER 22
23	S	MARKER 23
24	E	MARKER 24
25	S	MARKER 25
26	E	MARKER 26
27	S	MARKER 27
28	E	MARKER 28
29	S	MARKER 29
30	E	MARKER 30
31	S	MARKER 31
32	E	MARKER 32
33	S	MARKER 33
34	E	MARKER 34
35	S	MARKER 35
36	E	MARKER 36
37	S	MARKER 37
38	E	MARKER 38
39	S	MARKER 39
40	E	MARKER 40
41	S	MARKER 41
42	E	MARKER 42
43	S	MARKER 43
44	E	MARKER 44
45	S	MARKER 45
46	E	MARKER 46
47	S	MARKER 47
48	E	MARKER 48
49	S	MARKER 49
50	E	MARKER 50
51	S	MARKER 51
52	E	MARKER 52
53	S	MARKER 53
54	E	MARKER 54
55	S	MARKER 55
56	E	MARKER 56
57	S	MARKER 57
58	E	MARKER 58
59	S	MARKER 59
60	E	MARKER 60
61	S	MARKER 61
62	E	MARKER 62
63	S	MARKER 63
64	E	MARKER 64
65	S	MARKER 65
66	E	MARKER 66
67	S	MARKER 67
68	E	MARKER 68
69	S	MARKER 69
70	E	MARKER 70
71	S	MARKER 71
72	E	MARKER 72
73	S	MARKER 73
74	E	MARKER 74
75	S	MARKER 75
76		



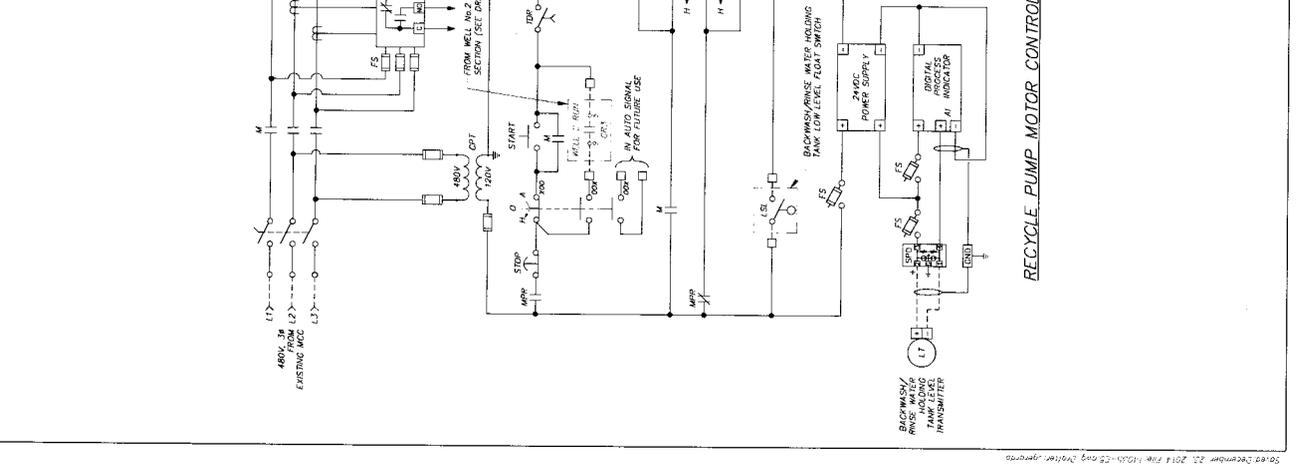
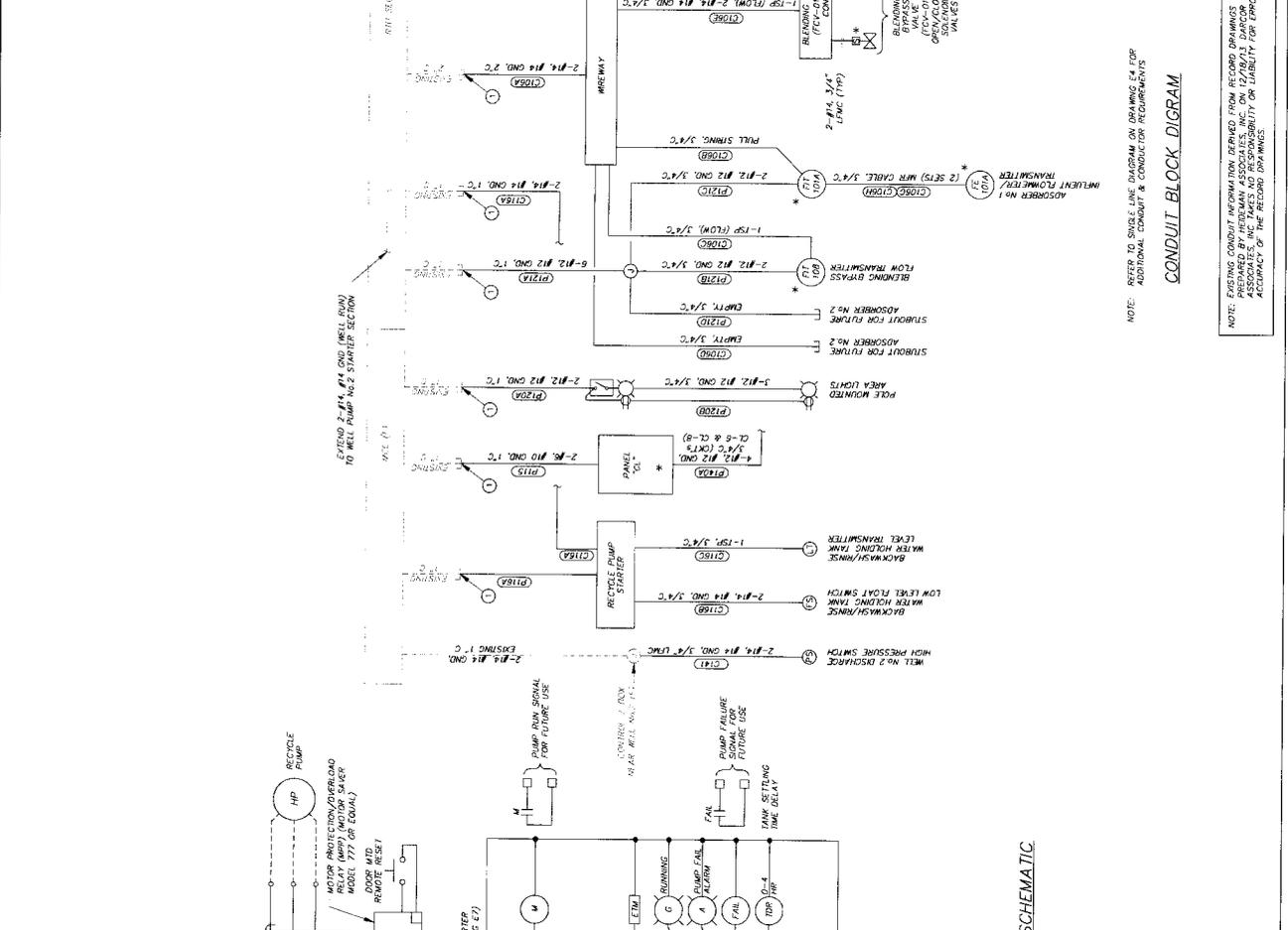
ARIZONA WATER COMPANY  
 3605 N. BLACK CANYON HWY., POST OFFICE BOX 29006  
 PHOENIX, ARIZONA 85028-9006  
 (602) 240-6800  
 18001 E. VAN HORN ROAD, AZ 85128  
 VALLEY FARMS ARSENIC REMOVAL FACILITY

E5  
 SHEET 19 OF 25

DARCOR  
 ELECTRICAL CONSULTING ENGINEERS  
 7600 N. 48TH ST., SUITE 102, SCOTTSDALE, AZ 85258  
 TEL: (602) 796-5000  
 WWW.DARCORINC.COM

CONDUIT BLOCK DIAGRAM & RECYCLE PUMP SCHEMATIC  
 12/23/2014  
 NONE  
 JLG  
 SEC 17 - TSS - R9E  
 THE INFORMATION SHOWN IS TO BE OBTAINED IN ACCORDANCE WITH THE ARIZONA WATER COMPANY STANDARD SPECIFICATIONS FOR ENVIRONMENTAL QUALITY  
 1-800-STRATEIT  
 263-1100  
 CHD  
 7600 NORTH 18TH STREET, SUITE 205, PHOENIX, ARIZONA 85020 USA  
 T 602 216 7200 F 602 216 7201  
 E PHOENIX@CHD.COM W WWW.CHD.COM

KEY NOTE  
 1 EXISTING CONDUIT TO BE EXTENDED.



RECYCLE PUMP MOTOR CONTROL SCHEMATIC

NOTE: REFER TO CONDUIT BLOCK DIAGRAM ON REVISIONS TO SEE ADDITIONAL CONDUIT & CONDUIT REQUIREMENTS

CONDUIT BLOCK DIAGRAM

\* RECYCLE EQUIPMENT FURNISHED AS PART OF PACKAGED SYSTEMS

NOTE: EXISTING CONDUIT INFORMATION DERIVED FROM RECORD DRAWINGS & ASSUMED. DARCOR INC TAKES NO RESPONSIBILITY OR LIABILITY FOR ERRORS OR INACCURACIES OF THE RECORD DRAWINGS.



E6

SHEET 20 OF 25

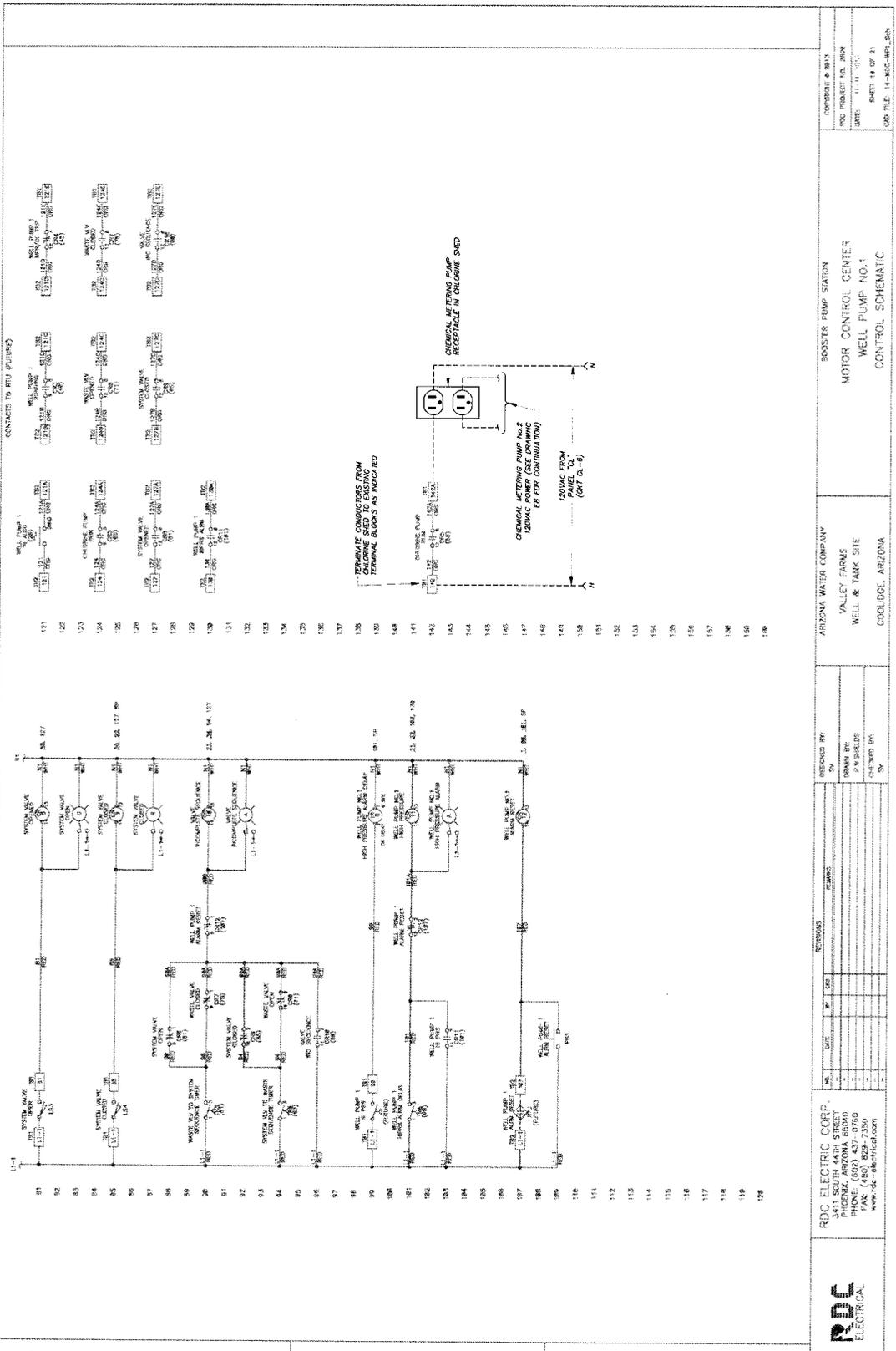
**ARIZONA WATER COMPANY**  
 3605 N. BLACK CANYON HWY. PHOENIX, ARIZONA 85008-9005  
 (602) 240-8800  
 VALLEY FARMS ARSENIC REMOVAL FACILITY  
 16901 E VAH-KI INN ROAD - COOLIDGE, AZ 85128  
 WELL NO. 1 STARTER SECTION MODIFICATIONS

DATE: 12/23/2014  
 DRAWN BY: JLC  
 CHECKED BY: NONE  
 SECTION: SEC 17 - ISS - R9E

263-1100  
 1-800-STAKE-IT  
 7600 North 19th Street, Suite 205, Phoenix, Arizona 85020 USA  
 E: bpharm@ghd.com W: www.ghd.com

NOTE: THIS WIRING DIAGRAM PREPARED BY DDC ON 11/11/11 HAS BEEN PROVIDED FOR INFORMATION ONLY. DARCOR & ASSOCIATES, ELECTRICAL CONSULTING ENGINEERS, IS NOT RESPONSIBLE FOR THE WIRING DIAGRAMS INDICATED ON THIS SHEET.

**DARCOR**  
 ELECTRICAL CONSULTING ENGINEERS WWW.DARCORINC.COM  
 7000 N. 10TH ST. SUITE 200-T PHOENIX, AZ 85020  
 TEL: (602) 706-2800



RECORD DRAWING  
 THIS DRAWING MUST BE FIELD VERIFIED BEFORE USE  
 DRAWING NOT TO SCALE UNLESS SCALE BAR IS PRESENT



**RDC ELECTRIC CORP.**  
 1000 N. CENTRAL AVENUE  
 PHOENIX, ARIZONA 85004  
 PHONE: (602) 437-0760  
 FAX: (480) 829-7350  
 WWW.RDC-ELECTRICAL.COM

REVISIONS  

NO.	DATE	BY	DESCRIPTION
1		J.P.	ISSUED FOR CONSTRUCTION

ARIZONA WATER COMPANY  
 VALLEY FARMS  
 WELL & TANK SITE  
 COOLIDGE, ARIZONA

BOOSTER PUMP STATION  
 MOTOR CONTROL CENTER  
 WELL PUMP NO. 1  
 CONTROL SCHEMATIC

DATE: 11/11/11  
 SHEET: 14 OF 21  
 JOB NO.: 11-002-001-001

DESIGNED BY: JLC  
 CHECKED BY: NONE

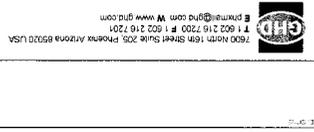


E7

SHEET 21 OF 25

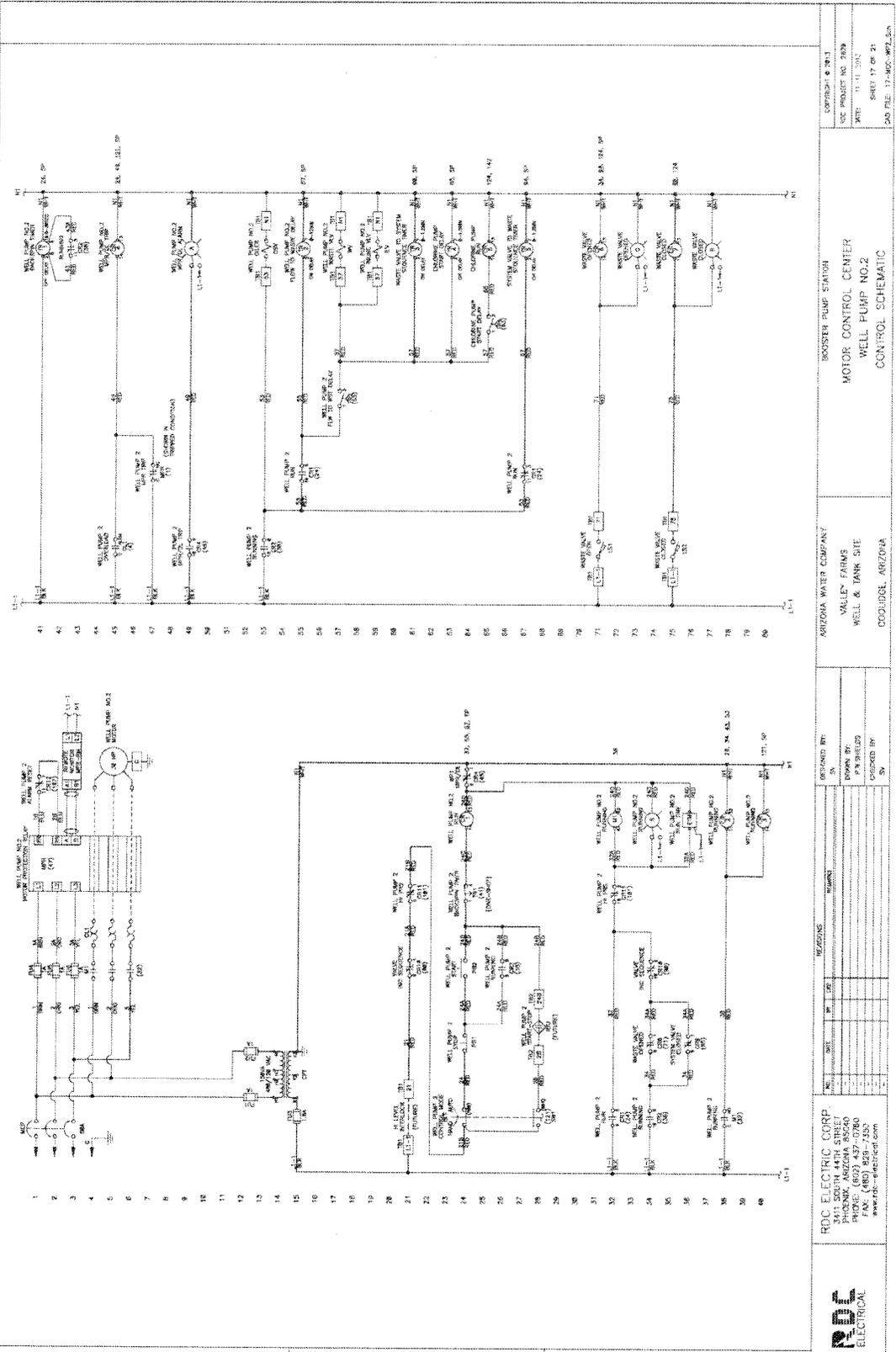
**ARIZONA WATER COMPANY**  
 3905 N. BLACK CANYON HWY. POST OFFICE BOX 29008  
 PHOENIX, ARIZONA 85038-9008 (602) 240-6960  
 VALLEY FARMS ARSENIC REMOVAL FACILITY  
 16801 E. YAKINI INN ROAD, COOLIDGE, AZ 85128  
 PROJECT NO. 2009  
 DATE: 11.11.2014  
 SHEET 17 OF 21  
 CAD FILE: 17-ARC-WP15.dwg

WELL NO. 2 STARTER SECTION MODIFICATIONS - I  
 DATE: 12/23/2014  
 DRAWN BY: JLG  
 CHECKED BY: NONE  
 SEC 17 - TSS - R9E  
 Environmental Quality  
 The installation shown is to be installed in accordance with the Arizona Water Company Standard Specifications for the Environmental Quality  
 263-1100  
 1-800-STRATE-IT  
 7600 NORTH 16TH STREET SUITE 205, PHOENIX ARIZONA 85020 USA  
 PH: 602.216.7200 F: 602.216.7201  
 WWW.AWC.COM



**DARCOOR**  
 ELECTRICAL CONSULTING ENGINEERS  
 7600 N. 10TH ST.  
 SUITE 200-A  
 PHOENIX, AZ 85020  
 PH: (602) 796-5888  
 WWW.DARCOOR.COM

NOTE: THIS WIRING DIAGRAM PREPARED BY DDC ON 11/11/14 HAS BEEN PROVIDED FOR INFORMATION ONLY. DARCOOR & ASSOCIATES, ELECTRICAL CONSULTING ENGINEERS, ASSUMES NO LIABILITY FOR THE WIRING DIAGRAMS INDICATED ON THIS SHEET.



**RECORD DRAWING**  
 THIS DRAWING MUST BE FIELD VERIFIED BEFORE USE  
 DRAWING NOT TO SCALE UNLESS SCALE BAR IS PRESENT

<b>ARIZONA WATER COMPANY</b> VALLEY FARMS WELL & TANK SITE COOLIDGE, ARIZONA		<b>BOOSTER PUMP STATION</b> MOTOR CONTROL CENTER WELL PUMP NO.2 CONTROL SCHEMATIC	
PREPARED BY: SN DRAWN BY: JLG CHECKED BY: SN	PROJECT NO: 2009 DATE: 11.11.2014 SHEET 17 OF 21	DDC ELECTRIC CORP. PHOENIX, ARIZONA 85050 PHONE: (602) 437-0760 FAX: (480) 825-2550 www.ddc-electrical.com	



# ARIZONA WATER COMPANY

3605 N. BLACK CANYON HWY. - POST OFFICE BOX 29008  
PHOENIX, ARIZONA 85028-9008  
(602) 240-8860

VALLEY FARMS ARSENIC REMOVAL FACILITY  
16911 E. VAH KINN ROAD - COOLIDGE, AZ 85128

WELL NO. 2 STARTER SECTION MODIFICATIONS - II

DATE	12/23/2014
DRG	NONE
JLC	
SEC 17 - TSS - RSE	

263-1100  
1-800-STAKE-IT  
Environmental Quality

GHD  
7000 North 19th Street, Suite 205, Phoenix, Arizona 85020 USA  
T 1 602 278 7200 F 1 602 278 7201  
E phar@ghd.com W www.ghd.com

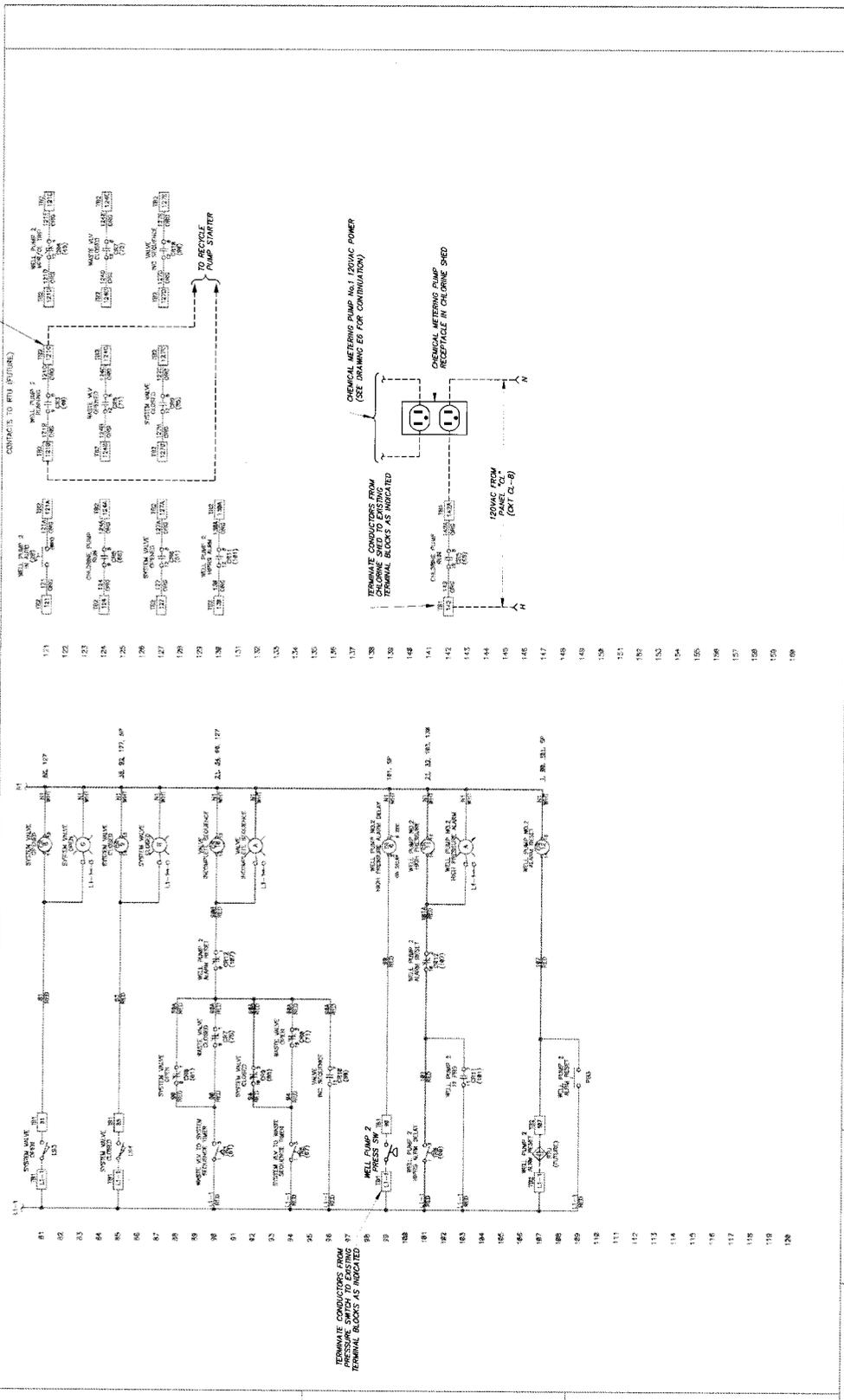
E8

SHEET 22 OF 25



7600 N. 14TH ST.  
SUITE 100  
PHOENIX, AZ 85020  
TEL: (602) 735-2899  
WWW.DARCOR.COM

NOTE: THIS WIRING DIAGRAM PREPARED BY RDC ON 11/17/13 HAS BEEN PROVIDED FOR INFORMATION ONLY. DARCOR & ASSOCIATES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE WIRING DIAGRAMS INDICATED ON THIS SHEET.



TERMINATE CONDUCTORS FROM RECYCLE PUMP STARTER TO EXISTING TERMINAL BLOCKS AS INDICATED

CONNECTIONS TO BE IN FUTURE

TERMINATE CONDUCTORS FROM CHEMICAL METERING PUMP RECEPTACLE IN CHLORINE SHED AS INDICATED

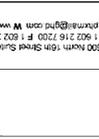
TERMINATE CONDUCTORS FROM PRESSURE SWITCH TO EXISTING TERMINAL BLOCKS AS INDICATED

RDC ELECTRIC CORP. 1001 N. CENTRAL AVENUE PHOENIX, ARIZONA 85004 PHONE: (602) 437-0780 FAX: (602) 437-7350 WWW.RDC-ELECTRIC.COM		REVISIONS	DESIGNED BY: BY	ARIZONA WATER COMPANY VALLEY FARMS WELL & PUMP SITE COOLIDGE, ARIZONA	BOOSTER PUMP STATION MOTOR CONTROL CENTER WELL PUMP NO. 2 CONTROL SCHEMATIC
RDC ELECTRICAL		NO.	DATE	BY	DATE
		1	11/17/13	J.P. SHELDON	
		2	11/17/13	J.P. SHELDON	
		3	11/17/13	J.P. SHELDON	
		4	11/17/13	J.P. SHELDON	
		5	11/17/13	J.P. SHELDON	
		6	11/17/13	J.P. SHELDON	
		7	11/17/13	J.P. SHELDON	
		8	11/17/13	J.P. SHELDON	
		9	11/17/13	J.P. SHELDON	
		10	11/17/13	J.P. SHELDON	
		11	11/17/13	J.P. SHELDON	
		12	11/17/13	J.P. SHELDON	
		13	11/17/13	J.P. SHELDON	
		14	11/17/13	J.P. SHELDON	
		15	11/17/13	J.P. SHELDON	
		16	11/17/13	J.P. SHELDON	
		17	11/17/13	J.P. SHELDON	
		18	11/17/13	J.P. SHELDON	
		19	11/17/13	J.P. SHELDON	
		20	11/17/13	J.P. SHELDON	
		21	11/17/13	J.P. SHELDON	
		22	11/17/13	J.P. SHELDON	
		23	11/17/13	J.P. SHELDON	
		24	11/17/13	J.P. SHELDON	
		25	11/17/13	J.P. SHELDON	
		26	11/17/13	J.P. SHELDON	
		27	11/17/13	J.P. SHELDON	
		28	11/17/13	J.P. SHELDON	
		29	11/17/13	J.P. SHELDON	
		30	11/17/13	J.P. SHELDON	
		31	11/17/13	J.P. SHELDON	
		32	11/17/13	J.P. SHELDON	
		33	11/17/13	J.P. SHELDON	
		34	11/17/13	J.P. SHELDON	
		35	11/17/13	J.P. SHELDON	
		36	11/17/13	J.P. SHELDON	
		37	11/17/13	J.P. SHELDON	
		38	11/17/13	J.P. SHELDON	
		39	11/17/13	J.P. SHELDON	
		40	11/17/13	J.P. SHELDON	
		41	11/17/13	J.P. SHELDON	
		42	11/17/13	J.P. SHELDON	
		43	11/17/13	J.P. SHELDON	
		44	11/17/13	J.P. SHELDON	
		45	11/17/13	J.P. SHELDON	
		46	11/17/13	J.P. SHELDON	
		47	11/17/13	J.P. SHELDON	
		48	11/17/13	J.P. SHELDON	
		49	11/17/13	J.P. SHELDON	
		50	11/17/13	J.P. SHELDON	
		51	11/17/13	J.P. SHELDON	
		52	11/17/13	J.P. SHELDON	
		53	11/17/13	J.P. SHELDON	
		54	11/17/13	J.P. SHELDON	
		55	11/17/13	J.P. SHELDON	
		56	11/17/13	J.P. SHELDON	
		57	11/17/13	J.P. SHELDON	
		58	11/17/13	J.P. SHELDON	
		59	11/17/13	J.P. SHELDON	
		60	11/17/13	J.P. SHELDON	
		61	11/17/13	J.P. SHELDON	
		62	11/17/13	J.P. SHELDON	
		63	11/17/13	J.P. SHELDON	
		64	11/17/13	J.P. SHELDON	
		65	11/17/13	J.P. SHELDON	
		66	11/17/13	J.P. SHELDON	
		67	11/17/13	J.P. SHELDON	
		68	11/17/13	J.P. SHELDON	
		69	11/17/13	J.P. SHELDON	
		70	11/17/13	J.P. SHELDON	
		71	11/17/13	J.P. SHELDON	
		72	11/17/13	J.P. SHELDON	
		73	11/17/13	J.P. SHELDON	
		74	11/17/13	J.P. SHELDON	
		75	11/17/13	J.P. SHELDON	
		76	11/17/13	J.P. SHELDON	
		77	11/17/13	J.P. SHELDON	
		78	11/17/13	J.P. SHELDON	
		79	11/17/13	J.P. SHELDON	
		80	11/17/13	J.P. SHELDON	
		81	11/17/13	J.P. SHELDON	
		82	11/17/13	J.P. SHELDON	
		83	11/17/13	J.P. SHELDON	
		84	11/17/13	J.P. SHELDON	
		85	11/17/13	J.P. SHELDON	
		86	11/17/13	J.P. SHELDON	
		87	11/17/13	J.P. SHELDON	
		88	11/17/13	J.P. SHELDON	
		89	11/17/13	J.P. SHELDON	
		90	11/17/13	J.P. SHELDON	
		91	11/17/13	J.P. SHELDON	
		92	11/17/13	J.P. SHELDON	
		93	11/17/13	J.P. SHELDON	
		94	11/17/13	J.P. SHELDON	
		95	11/17/13	J.P. SHELDON	
		96	11/17/13	J.P. SHELDON	
		97	11/17/13	J.P. SHELDON	
		98	11/17/13	J.P. SHELDON	
		99	11/17/13	J.P. SHELDON	
		100	11/17/13	J.P. SHELDON	

THIS DRAWING MUST BE FIELD VERIFIED BEFORE USE  
DRAWING NOT TO SCALE UNLESS SCALE BAR IS PRESENT

RECORD DRAWING





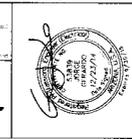
263-1100  
 1-800-STAKE-IT

SEC 17-155-R9E  
 The installation shown is to be installed in accordance with the Arizona State Company standard specifications on the drawings with the Arizona State Department of Environmental Quality.

DATE: 12/23/2014  
 DRC: NONE  
 JLC: NONE

VALLEY FARMS ARSENIC REMOVAL FACILITY  
 16801 E VAH KINN ROAD COOLIDGE AZ 85128  
 (602) 240-8860  
 3805 N. SLACK CANYON HWY. POST OFFICE BOX 29008  
 PHOENIX, ARIZONA 85028-9008

**ARIZONA WATER COMPANY**  
 RTU SECTION MODIFICATIONS - II



NOTE: THIS ARSINIC DIAGRAM PREPARED BY DRC ON 12/23/14 HAS BEEN PROVIDED FOR INFORMATION ONLY. DARCOOR & ASSOCIATES, INC. MAKES NO WARRANTY AS TO THE ACCURACY OF THE DRAWING. DRAWINGS ASSOCIATED ON THIS SHEET.

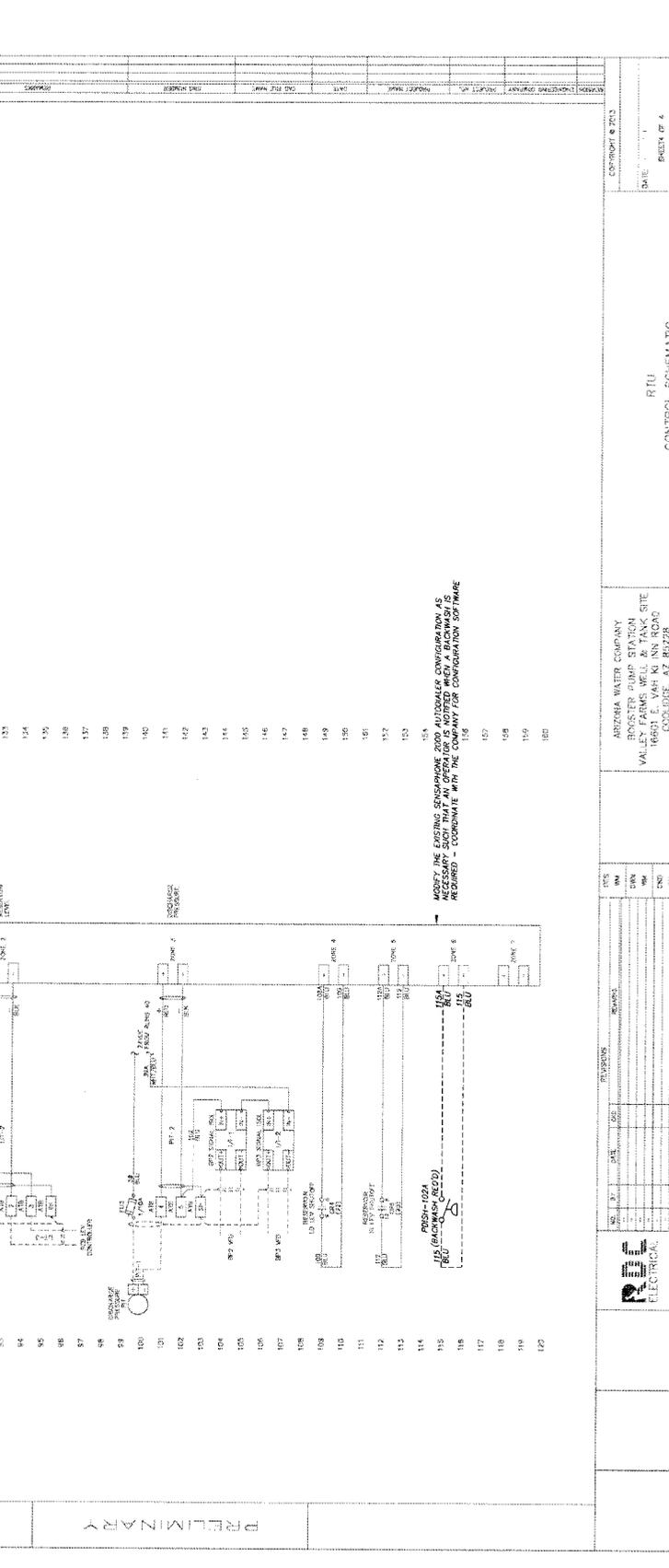
7000 N. 19TH ST.  
 SUITE 205-A  
 PHOENIX, AZ 85028  
 PH: (602) 240-8860  
 WWW.DARCOOR.COM

**DARCOOR**  
 ELECTRICAL CONSULTING ENGINEERS

COMMIT # 2513  
 DATE: 12/23/14  
 SHEET OF 4  
 JOB NO. 14-0101-504

ARIZONA WATER COMPANY  
 BOOSTER PUMP STATION  
 VALLEY FARMS WELL & TANK SITE  
 16801 E VAH KINN ROAD  
 COOLIDGE, AZ 85128

RTU  
 CONTROL SCHEMATIC

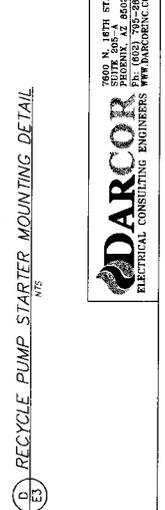
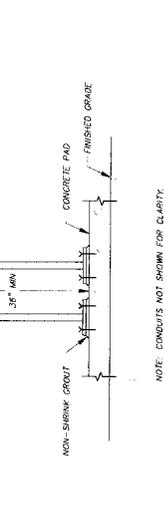
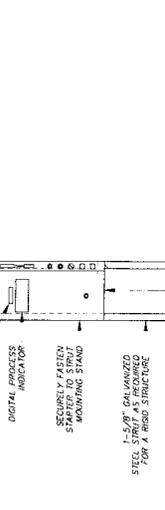
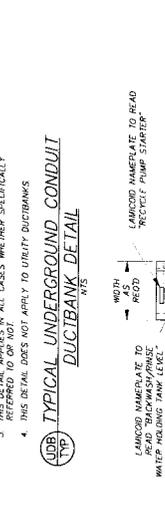
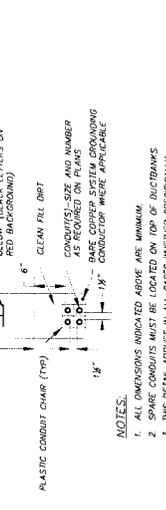
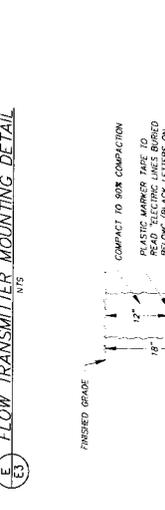
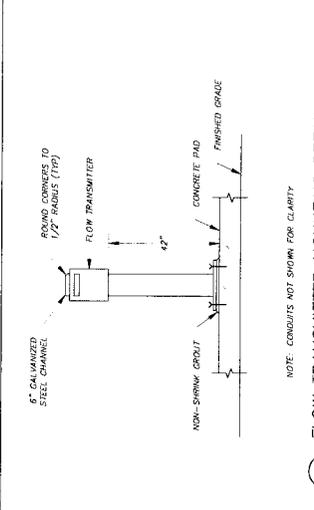


NO.	DATE	BY	REVISION
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

VERIFY THE EXISTING CONNECTIONS. THE ENGINEER CONSULTING IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING CONNECTIONS. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE EXISTING CONNECTIONS. REQUIRED - COORDINATE WITH THE COMPANY FOR CONFIGURATION SOFTWARE.

121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160

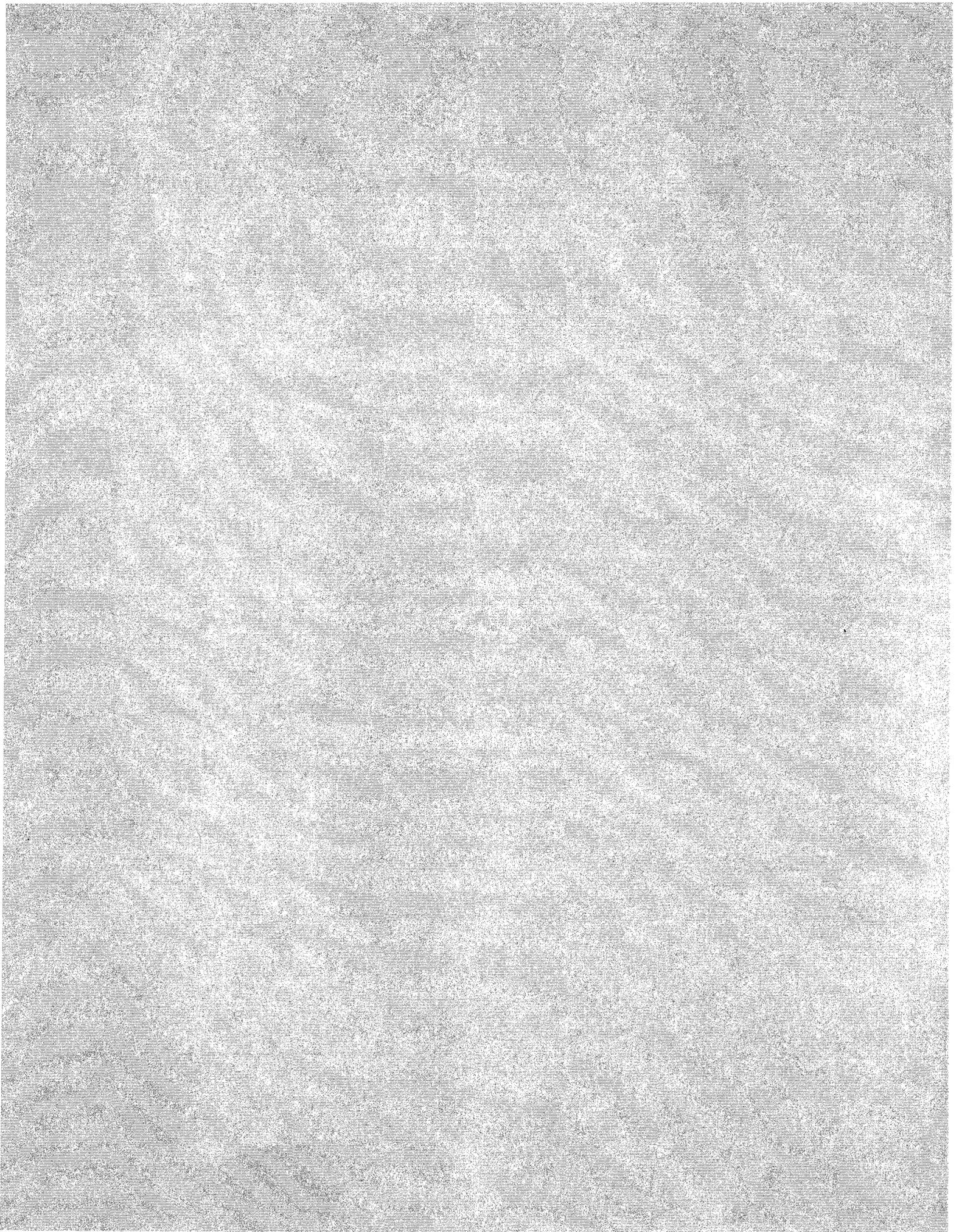
121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160



**NOTES:**

1. ALL DIMENSIONS INDICATED ABOVE ARE MINIMUM.
2. SPARE CONDUITS MUST BE LOCATED ON TOP OF DUCTBANKS.
3. REFER TO OR NOT ALL CASES WHERE SPECIFICALLY REFERRED TO OR NOT.
4. THIS DETAIL DOES NOT APPLY TO UTILITY DUCTBANKS.

**NOTE:** CONDUITS NOT SHOWN FOR CLARITY.





**ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
 CERTIFICATE OF APPROVAL TO CONSTRUCT  
 WATER FACILITIES**

<b>ADEQ File No:</b> 20140293	<b>LTF No:</b> 61519
<b>System Name:</b> Az Water Pinal Valley	<b>System Number:</b> 11-009
<b>Project Owner:</b> Arizona Water Comapany	
<b>Address:</b> P O Box 29006, Phoenix , AZ 85038	
<b>Project Location:</b> Valley Farms	<b>County :</b> Pinal
<b>Description:</b> INSTALLATION OF AN ARSENIC REMOVAL SYSTEM WITH ASSOCIATED BLENDING PLAN, BOOSTER PUMPS AND RELATED APPURTENANCES AND PIPING.	

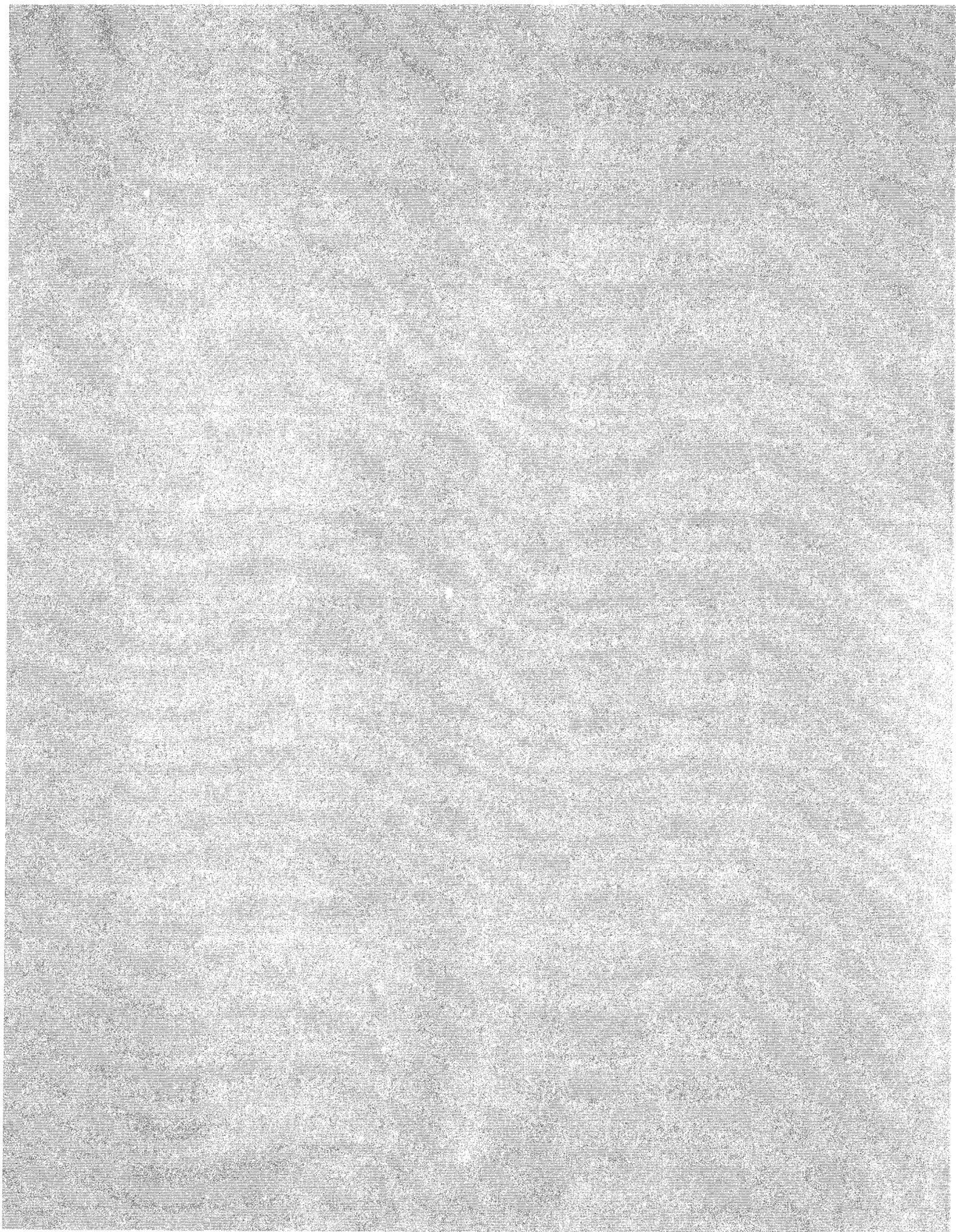
*Approval to construct the above-described facilities as represented in the approved documents on file with the Arizona Department of Environmental Quality is hereby given subject to provisions 1 through 4 continued on page 1 through 1*

1. This project must be constructed in accordance with all applicable laws, including Title 49, Chapter 2, Article 9 of the Arizona Revised Statutes and Title 18, Chapter 5, Article 5 of the Arizona Administrative Code.
2. Upon completion of construction, the engineer shall fill out the Engineer's Certificate of Completion and forward it to the Central Regional Office located in Phoenix. If all requirements have been completed, that unit will issue a Certificate of Approval of Construction. R18-5-507(B), Ariz. Admin.Code. At the project owner's request, the Department **may** conduct the final inspection required pursuant to R18-5-507(B); such a request must be made in writing in accordance with the time requirements of R18-5-507(C), Ariz. Admin. Code.
3. This certificate will be void if construction has not started within one year after the Certificate of Approval to Construct is issued, there is a halt in construction of more than one year, or construction is not completed within three years of the approval date. Upon receipt of a written request for an extension of time, the Department may grant an extension of time; an extension of time must be in writing. R18-5-505(E), Ariz. Admin. Code.
4. Operation of a newly constructed facility shall not begin until a Certificate of Approval of Construction has been issued by the Department. R18-5-507(A), Ariz. Admin. Code.

Reviewed by: RDR

By: David Burchard 1/12/15  
 David Burchard Date  
 Water Quality Division

cc: File No : 20140293  
 Regional Office: Central  
 Owner: Arizona Water Comapany  
 County Health Department: Pinal  
 Engineer: Ghd, Inc  
 Planning and Zoning/Az Corp. Commission  
 Engineering Review Database - Etr021



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

October 28, 2014

Mr. Martin Weber  
Weber Water Resources, LLC  
16825 S. Weber Drive  
Chandler, AZ 85226

Re: Valley Farms Well No. 2

PROJECT: Pump & Motor Replacement	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.:

Dear Mr. Weber:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on October 28, 2014, Weber Water Resources, LLC acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

---

E-MAIL: [MAIL@AZWATER.COM](mailto:MAIL@AZWATER.COM)

Mr. Martin Weber  
Weber Water Resources, LLC

October 28, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



Andrew J. Haas, P. E.  
Chief Engineer  
ahaas@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande  
220 E. 2nd Street

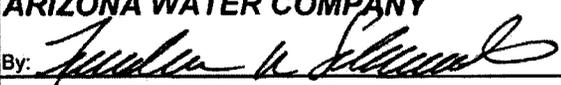
## PROPOSAL/CONTRACT

CONTRACTOR: WEBER WATER RESOURCES, LLC	SYSTEM: PINAL VALLEY
ADDRESS: 16825 S. WEBER DRIVE	W.A. No(s):
CITY ST ZIP: CHANDLER, AZ 85226	BID DUE DATE: October 16, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 30 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/constructed 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:

<b>CONTRACTOR</b>	<b>PROPOSAL/CONTRACT ACCEPTED:</b>
<b>WEBER WATER RESOURCES, LLC</b>	<b>ARIZONA WATER COMPANY</b>
By: 	By: 
Print Name: <u>Mark A. Weber</u>	Print Name: Fredrick K. Schneider, PE
Title: <u>CEO</u>	Title: Vice President - Engineering
Date: <u>10/16/14</u>	Date: <u>10-28-2014</u>

AFH

VF-2





**ARIZONA WATER COMPANY**

**COMMENCEMENT  
NOTICE**

CONTRACTOR:

Mr. Martin Weber  
Weber Water Resources, LLC  
16825 S. Weber Drive  
Chandler, AZ 85226

DATE: 10/29/14  
DIVISION: PINAL VALLEY  
SYSTEM: CASA GRANDE  
W.A.: \_\_\_\_\_

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

DESCRIPTION OF WORK:

Install submersible pump and motor, column, check valves  
and submersible cable at Valley Farms Well No. 2.

PERFORMANCE AND  
PAYMENT BONDS  
REQUIRED:  Yes  No

TOTAL DAYS  
ALLOWED: 40

COMPLETION  
DATE: 12/18/14

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting.

**ARIZONA WATER COMPANY**  
Company

**WEBER WATER RESOURCES, LLC**  
Contractor *(type name)*

By *Judith K. Leonard*  
Title Vice President - Engineering

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

AFH

*AFH*



**ARIZONA WATER COMPANY**

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

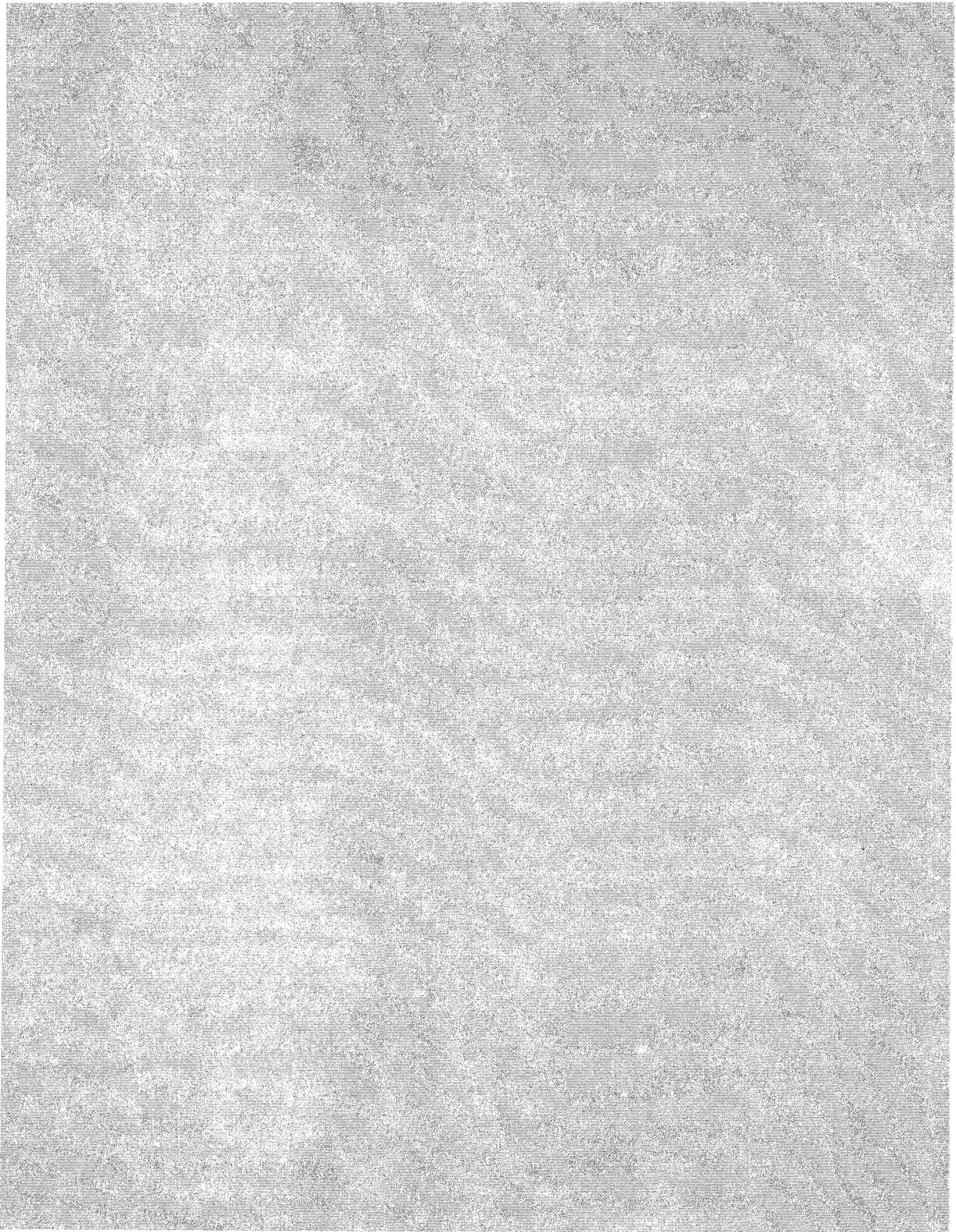
CONSTRUCTION SPECIFICATIONS: E-8-1

STANDARD SPECIFICATION DRAWINGS: E-9-1

**2007 EDITION WITH 2010 REVISIONS;  
2012 GENERAL CONDITIONS OF CONTRACT**

AJH  
10-29-14

A copy of this entire Spec Book was sent out with *Weber Water Resources* Proposal package for *Valley Farms Well #2* on *10/29/14* *ADJ*



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

September 4, 2014

Mr. Archie Lopez  
Felix Construction Company  
1326 W. Industrial Drive  
Coolidge, AZ 85128

Re: Valley Farms Arsenic Removal Facility

PROJECT: Valley Farms ARF	
SYSTEM: Pinal Valley	
CONTRACT NO.:	
P.E. NO.:	W.A. NO.: 1-5167

Dear Mr. Lopez:

Enclosed is your copy of the Proposal/Contract for the above-referenced project, which has been accepted by Arizona Water Company (the "Company"). The project shall be constructed in accordance with the Company's *General Conditions of Contract, the Specifications and the Drawings* which were included with the Company's previously provided Proposal/Contract, copies of which are being provided again and attached herewith.

Also enclosed are two copies of the Commencement Notice for the above-referenced project. Please sign one of the copies and return it to my attention retaining the other for your records.

As provided in paragraph 4 of the Company's Proposal/Contract executed by the Company on September 4, 2014 Felix Construction Company acknowledged that one hundred percent (100%) Performance and Payment Bonds are required and must be provided to the Company prior to the commencement of work. In addition, as provided in paragraph 44 of the Company's General Conditions of Contract, the 100% Performance and Payment Bonds must be provided within ten (10) calendar days of the date of the Commencement Notice. Failure to provide an acceptable 100% Performance and Payment Bond does not limit the Company's

---

E-MAIL: MAIL@AZWATER.COM

Mr. Archie Lopez  
Felix Construction Company

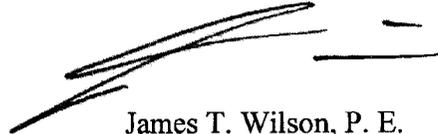
September 4, 2014  
Page 2

ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur.

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting. Prior to the pre-construction meeting, the Contractor must provide proof of insurance of no less than the minimum amounts provided in paragraph 5 of the Company's General Conditions of Contract. Failure to provide acceptable proof of insurance does not limit the Company's ability to terminate the Proposal/Contract or seek restitution for damages that the Company may have or will incur. In addition, please provide the required Performance and Payment Bonds to the Company promptly so that the contracted work can be completed within the contract's timeline.

If you have any questions, please call me at this office.

Very truly yours,



James T. Wilson, P. E.  
Senior Engineer  
engineering@azwater.com

afh  
Enclosure



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande Division  
220 E. 2nd Street

## PROPOSAL/CONTRACT

CONTRACTOR: FELIX CONSTRUCTION COMPANY	SYSTEM: PINAL VALLEY
ADDRESS: 1326 W. INDUSTRIAL DRIVE	W A No(s): 1-5167
CITY ST ZIP: COOLIDGE, AZ 85128	BID DUE DATE: July 23, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 187 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/constructed 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:

See attached Request for Proposal and Technical Specifications, dated June 18, 2014.  
Mandatory Pre-Bid Meeting, June 24, 2014, at 9:00 am at Valley Farms Well Nos. 1 and 2 Site.  
Company will allow three (3) progress payments and one (1) final payment.

<b>CONTRACTOR</b>	<b>PROPOSAL/CONTRACT ACCEPTED:</b>
	<b>ARIZONA WATER COMPANY</b>
By: <i>Archie D. Lopez</i>	By: <i>Fredrick K. Schneider</i>
Print Name: Archie Lopez	Print Name: Fredrick K. Schneider, PE
Title: President	Title: Vice President - Engineering
Date: 07/23/2014	Date: 7-4-2014





CONTRACTOR:

Mr. Archie Lopez
Felix Construction Company
1326 W. Industrial Drive
Coolidge, AZ 85128

DATE: 9/4/14

DIVISION: CASA GRANDE

SYSTEM: PINAL VALLEY

W.A.: 1-5167

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

DESCRIPTION OF WORK:

Design and construct Arsenic Removal Facility at Valley Farms ARF in Pinal Valley water system.

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

TOTAL DAYS ALLOWED: 239

COMPLETION DATE: 5/1/15

Prior to the start of construction, please call Ray Murrieta, Division Manager at 520-836-8785 to schedule a pre-construction meeting.

Prior to the pre-construction meeting, the Contractor must provide proof of insurance of no less than the minimum amounts provided in paragraph 5 of the Company's General Conditions of Contract.

The total days allowed and completion date reflects the additional days authorized by Change Order No. 1.

ARIZONA WATER COMPANY
Company

FELIX CONSTRUCTION COMPANY
Contractor (type name)

By [Signature]
Title Vice President - Engineering

By
Title

AFH

# ARIZONA WATER COMPANY

## Arsenic Removal Facility – Technical Specifications June 18, 2014

### 1. SCOPE OF WORK

A. General: The intent of these Technical Specifications is to provide general descriptions and establish minimum requirements for the major components and appurtenances of the ARF. It is the Contractor's responsibility to provide a complete, fully functional, and reliable ARF which complies with Treatment Performance Requirements and specifications set forth herein.

B. Design: The Contractor shall design, or arrange for the design of the Arsenic Removal Facility ("ARF") by a professional engineer registered in the State of Arizona with documented experience in designing Arsenic Removal Facilities. The Contractor is responsible for civil, mechanical, electrical, and all other components of the project. The Contractor is responsible for all permits and governmental approvals for the ARF including, but not limited to: Approval to Construct ("ATC"), Approval of Construction ("AOC") and an approval of the proposed blend plan from the Arizona Department of Environmental Quality ("ADEQ"), building permit, special use permit, and conditional use permit. Contractor is responsible for any design reports required to obtain an ATC, AOC and approved blend plan. The Contractor shall design the ARF to provide treatment of water to meet the Treatment Performance Requirements of Section 3.

C. Equipment Supply: The Contractor shall supply a complete ARF including, but not limited to, vessels, media, piping, valves, meters, controls, related appurtenances, electrical equipment, chemicals, start-up/commissioning, and O&M Manual. Contractor shall paint all external components of the ARF in accordance with regulatory agency requirements and must be approved by the Company in writing. All equipment installed must be NSF Certified or compliant for drinking water. Contractor shall submit a certified bill of materials from the original manufacturer to Company for approval for any materials without NSF certification.

D. Attachment "A" lists the adsorptive medias approved for use in the design, permitting, construction, and operation of the ARF.

E. Construction: The Contractor must provide all civil, mechanical, electrical and all other contractors necessary to provide a complete, fully functional ARF. Contractor shall complete construction and ensure ADEQ issues an AOC by November 28th, 2014. Contractor shall coordinate the demolition and removal of the existing building and 2 hydro-pneumatic tanks shown on site layout. Upon completion of construction, Contractor shall return the site to its original condition. Contractor shall coordinate construction staging locations and acquire the required approvals to use such locations. Contractor shall ensure that all ARF components are located on Company property after delivery and during construction. Contractor is responsible for capturing and disposing of all wastewater generated during construction and for

obtaining proper approvals to do so. Contractor shall not discharge any water, backwash water, wastewater, or any other discharge onto or off the site without written approval from the Company and the governing regulatory agencies. The allowed working hours are 8am-5pm Monday-Friday; Company will consider exemptions on a case by case basis and must be approved in writing.

F. All chemical and materials that contact potable water shall conform to National Sanitation Foundation Standards 60 and 61.

H. Media Change-out Agreement: Contractor shall be responsible for replacing the treatment media for a period of 5 years per Attachment "E". Contractor shall provide a media performance guarantee per Attachment "E".

## 2. SUBMITTALS

A. Contractor shall submit the following items to Company for approval:

i. Detailed engineering design reports for ARF and blend plan for submittal to regulatory agencies.

ii. Drawings and specifications for all items and equipment. Include all dimensions, weights, parts, construction details, and materials required to demonstrate compliance with these specifications.

iii. Scaled piped drawings in both plan and section. The drawings shall show size of all piping, valves, and appurtenances.

iv. List of chemicals used in the treatment process and the quantity, concentration, and storage requirements for each.

v. Performance specifications for all equipment.

vi. A media performance guarantee per Attachment "E".

vii. Complete electrical instrumentation control schematics, wiring diagrams, load calculations and terminal strip information. Contractor shall provide factory pre-wired panels only.

viii. Process flow schematic of the proposed facility.

ix. Detailed design criteria including chemical dosages, hydraulic loading rates, empty bed contact times, backwashing rates and frequencies, pressure drops, type of media, adsorptive media performance guarantee, media volumes, backwash volumes, and other related process information. Contractor shall provide the maximum pressure drop through the ARF throughout the full life-cycle of media. Contractor shall provide calculations verifying the design of the ARF to demonstrate that

the ARF shall comply with the Treatment Performance Requirements set forth in Section 3.

x. Written procedures detailing the ARF start-up, shutdown, backwash, operation, control, and monitoring.

xi. A list of any and all parameters, ratings, or other characteristics where the proposed ARF equipment deviates from the requirements set forth in these Specifications. Any and all such deviations must be approved in writing by the Company.

xii. Site plan and piping drawings including ancillary facilities.

xiii. List of recommended spare parts for an operating period of 3 years. The list shall describe each part; include the manufacturer's part number, the quantity recommended, and the unit price of the part. Company may purchase from Contractor all, some, or none of the recommended spare parts at the Company's option.

xiii. Field Acceptance Test Report including the results of all field tests conducted on the ARF within two weeks of completion of each test required.

xiv. Operation and Maintenance Manual must be submitted two weeks prior to start-up.

### **3. TREATMENT PERFORMANCE REQUIREMENTS**

#### **A. General**

The ARF shall reduce the effluent arsenic level to less than or equal to seven (7) micrograms per liter throughout the full life-cycle of all media. The ARF shall maintain or improve the quality of the treated water as it relates to other chemical constituents. Contractor shall submit, in writing, all changes to treated water quality and their respective impact on the water distribution system for Company approval during design. Contractor shall fully mitigate negative impacts to water quality or the distribution system in the ARF design.

#### **B. Hydraulic Design Criteria**

Design flow capacities, system pressures, and other hydraulic information are provided in Attachment "B"

#### **C. Water Quality Data**

Pertinent water quality data for Valley Farms Wells No. 1 and 2 ("Wells") is provided in Attachment "C"

D. Existing Site Plans

Existing site plans are provided in Attachment "D"

E. Special Site Conditions

i. Valley Farms Wells No. 1 and 2 (APN: 202-29-001): The Valley Farms ARF shall combine flows from Valley Farms Wells No. 1 and 2. Both Wells are located at the Valley Farms well site. Currently, Valley Farms Wells No. 1 and 2 are called to run by on-site tank level controls. Valley Farms Wells No. 1 and 2 are routinely alternated as the lead well. The Contractor shall maintain this operational plan. The Contractor shall design the Valley Farms ARF Site to run under three operating scenarios: (1) flow from Valley Farms Well No. 1 shall bypass the ARF when it is set as the lead well and it is the only well running; (2) the ARF shall treat a partial flow from Valley Farms Well No. 2 only, when the Valley Farms Well No. 2 is set as the lead well; and (3) the Valley Farms ARF Site shall blend flow from Valley Farms Wells No. 1 and 2 and shall treat a portion of the blended flow through the ARF. Contractor shall design the ARF bypass with operator adjustable bypass flow rate set points for each scenario. Contractor shall use CLA-Val control valves to control Flow rate through the bypass line and ARF. Contractor shall demolish existing chlorination storage building and construct new liquid chlorination station in accordance with Section 4.A.5.

**4. GENERAL FACILITY COMPONENT REQUIREMENTS**

A. Description

i. The Contractor shall design the ARF described herein to remove arsenic from groundwater, accommodating all water quality parameters provided in Attachment "C". Any analysis of water quality parameters that may affect performance of the ARF, life-cycle of any media, or waste produced are the responsibility of the Contractor or its Engineer. Effluent from the ARF shall flow into the on-site 250,000 gallon water storage tank. Contractor shall install a chlorine analyzer to ensure effluent contains a minimum free chlorine residual of 1.0 milligrams per liter at the Entry Point to the Distribution System.

ii. The ARF shall consist of treatment vessels containing one of the approved adsorptive medias in Attachment "A" for removal of arsenic to the concentrations specified in Section 2. The Contractor shall provide all necessary controls, piping, and all other appurtenances which may be required.

iii. Raw water flow through the ARF will range from 125 gpm to 400 gpm.

iv. Contractor shall design the ARF so that the media is backwashed in place without removal. A manual operation of the backwash procedure is required. The Contractor shall design the on-site piping to utilize the distribution system as the

backwash water source. An on-site backwash tank shall capture all backwash water. Sufficient time is required for any fines in the backwash water to adequately settle. A backwash re-injection pump shall transfer water from the backwash tank and blend with the raw well water on the influent side of the ARF for treatment. Level controls in the backwash tank shall control the operation of the backwash re-injection pump but at no time shall the backwash water re-injection rate exceed 10 percent treated water flow rate. Backwash re-injection pump shall only operate when a well is operating and water is being treated.

v. If included in the design of the ARF treatment process, Contractor shall provide pH adjustment upstream and/or downstream of the ARF as required to meet the Treatment Performance Requirements and to readjust the effluent water quality to match historical pH levels. Contractor shall install one pH analyzer for each pH adjustment system. In the event pH adjustment is required, Contractor shall provide a chemical injection system for each chemical required. Contractor shall install each such chemical injection on a concrete pad with a containment curb and shade canopy. The chemical dosing pumps shall be a Grundfos DDA 12-10 series dosing pump. All chemical storage tanks shall include a level indicator, manufactured by Poly Processing Company, be double-walled for 100% secondary containment and be located inside the concrete containment curb. Dosing pump and chemical storage tank shall be founded on elevated concrete pedestals within the containment curb. Contractor shall determine the type of chemical utilized and submit to Company for approval. All chemicals used must conform to NSF 60 standards.

vi. The Contractor shall integrate the ARF into the Pinal Valley SCADA system. Water production and pH data and alarms shall be sent to the Casa Grande office. Contractor shall sub-contract and coordinate all SCADA programming with Delta Systems Engineering.

## 5. FILTER SIZING DESIGN

### A. General

The ARF at Valley Farms Wells No. 1 and 2 shall treat water produced from the wells satisfying the Media Flux Rate and Empty Bed Contact Time requirements described in Sections 5.C and 5.D, respectively. The Contractor shall design the ARF to transfer, from partially treated flow to fully treated flow as the adsorptive media becomes exhausted.

### B. Blend Plan

i. Contractor shall submit a blend plan for approval by Company and ADEQ. Contractor shall also submit a detailed engineering design report of the blend plan for approval by Company and ADEQ.

### C. Media Flux Rate

i. The Contractor shall design the flux rate of water across the media beds shall not exceed 6 gpm/per square foot during normal service conditions based on the well design flow rates in Attachment "B".

ii. The Contractor shall design the size of filter vessel(s) and controls to conform to the manufacturer's minimum recommended flux rate during all operating conditions but shall not exceed the maximum design flux rate in Section 5.C.1.

iii. The Contractor shall design the size of filter vessel(s) as to not exceed the manufacturer's maximum recommended flux rate during any operating condition, including during backwash water re-injection as described in Section 4.A.4. The flux rate shall not exceed the design flux rate in Section 5.C.1.

D. Empty Bed Contact Time

i. The Contractor shall design the Empty Bed Contact Time ("EBCT") at a minimum of 3.5 minutes for the flow listed in Section 3.F.1. during all operating conditions, including during backwash water reinjection as described in Section 4.A.4, unless the media or equipment manufacturers recommend more stringent requirements.

**6. TREATMENT FACILITY COMPONENTS**

A. Filter Vessel(s)

i. Carbon steel ASME and National Code stamped pressure vessels.

ii. The Contractor shall line the Filter vessels with Carboline 4500S (30-40 mil) epoxy coating meeting the Company's Coating Specifications: O-12-2 (Attachment "F") and approved in writing by the Company.

iii. Capable of, and designed to, operate at the respective design pressures listed in Attachment "B".

iv. Manual backwash with manual butterfly valves for all service, backwash, and rinse cycles.

v. Stainless steel sample ports for operator monitoring of raw water, treated water from each vessel and blended water sample location.

vi. Media sample port for obtaining media sample for testing.

vii. Magnetic flow/totalizer meters on each vessel for measuring individual instantaneous gallons per minute and total gallons through the system in service and in backwash cycles.

viii. All piping and fittings including laterals internal to the filter vessels shall be Type 304 or higher grade stainless steel. Contractor shall provide isolation kits at dissimilar metal connections and address any dissimilar metal concerns within the vessel.

ix. Internal laterals shall be sized appropriately to distribute flow uniformly across the cross sectional area of the filter vessels during treatment and backwashing. Treatment vessels, internal laterals, and ground support bed design must be approved, in writing, by the adsorptive media manufacturer, filter vessel manufacturer, and the Company.

x. Internal laterals shall be sized appropriately for proper operation with all of the approved adsorptive medias in Attachment "A".

xi. The adsorptive media manufacturer must state, in writing, if gravel under bed is required. Gravel under bed design must be approved, in writing, by the adsorptive media manufacturer, filter vessel manufacturer, and the Company.

xii. 12" x 18" Access manway on the side and inspection hatch on the top.

xiii. Filter vessels must be permanently attached to an engineered concrete slab.

#### B. External Piping

i. External connections shall consist of flanged pipe connections or flanged coupling adaptors (raw water inlet, finished water outlet, backwash feed inlet, and backwash waste outlet).

##### a. Manufacturers:

- 1) Dresser, Inc. Style 128-w.
- 2) Romac Industries, Inc. Style FCA501 or Style FC400.
- 3) Smith-Blair, Inc. Series 913.

ii. All external piping 3 inch and larger shall be ductile iron pipe ("DIP") and must conform to the Company's Construction Specifications: E-8-1 and Standard Specification Drawings: E-9-1.

iii. All external piping smaller than 3 inch shall be seamless copper conforming to ASTM B88.

a. Buried potable water lines shall be Type K, soft or hard temper.

- b. Exposed potable water lines shall be Type L, hard drawn.
- c. All fittings shall be compression type per the Company's Construction Specification: E-8-1 and Standard Specification Drawings: E-9-1.
- d. All pipe, fittings, and appurtenances shall conform to the Company's Construction Specifications: E-8-1 and Standard Specification Drawings: E-9-1, unless otherwise specified. Contractor shall inform Company in writing of any conflict in specifications, and Company will determine the prevailing specification.

iv. Stainless Steel Pipe

Above ground pipe on pipe and valve tree adjacent to the filter vessels may be Type 304L stainless steel in accordance with ASTM A 240 or higher grade.

a. Fittings

- 1) Material shall be in accordance with ASTM A 240 stainless steel, grade to match the pipe,
- 2) Fittings shall be manufactured in accordance with ASTM A 774 for piping 3-inches in nominal diameter and greater, and in accordance with ASTM A 403, Class WP for piping less than 3-inches in diameter.
- 3) Wall thickness shall be in accordance with ASME B36.19 and ASME B16.11.

b) Joints

- 1) Joints at valves and pipe appurtenances shall be flanged.
- 2) All other joints shall be flanged or welded. Piping less than 4-inches in diameter shall have single butt-welded joints. Piping 4-inches through 12-inches in diameter shall have double butt-welded joints.

v. All external above ground pipe and fittings shall be painted with Tnemec or approved equal. The approved color will be determined by the County, City and/or the Company.

C. Valves and Appurtenances

i. Manual Butterfly Valves

a. Manually actuated butterfly valves with hand wheels shall be installed aboveground on the pipe and valve tree for the control of flows for backwash, rinse, and normal treatment operations.

b. Manufacturers:

- 1) Mueller.
- 2) Dezurik.
- 3) Pratt

ii. Pressure Switch High

a. High pressure cut-off switches shall be installed between the well discharge heads and the inlet of the ARF

b. Manufacturers:

- 1) Mercoïd

D. Flow Meters

i. One per filter vessel. Flow meters shall be supplied with remote mounted transmitters.

ii. General

a. Type: Magnetic flow meter conforming to NSF 61

b. Materials:

- 1) Main Body: PVC sensor body or stainless steel
- 2) Electronics Housing: Powder coated aluminum
- 3) Electrodes: Hastelloy electrodes

iii. Flow rate display indication in gpm and totalized flow in gallons

iv. Accuracy: +/-0.5% of flow rate or better

v. End Connection: Flanged

vi. Manufacturer:

a. Endress + Hauser – Promag 53W.

E. Valves, meters, and appurtenances shall be provided as required to complete the work. Valves and appurtenances shall be in accordance with the Company's Construction Specifications: E-8-1 and Standard Specification Drawings: E-9-1, unless otherwise specified.

F. High Density Polyethylene (HDPE) Backwash Tank

i. General

a. Tanks shall be rotationally molded, one-piece seamless construction, cylindrical in cross-section and vertical in axis.

b. Tanks shall fully conform to ASTM D 1998-04.

c. All tank fitting attachments shall be provided with flexible couplings or other provisions to allow for movement without rupture or separation of connections. Flexible couplings shall allow minimum 4 percent deflection in all directions. All connections larger than 2-inches shall be supported independently from the tank to prevent weight transfer to the tank flange.

d. Tanks shall include an Endress-Hauser level transmitter displaying water level on an LCD screen

e. Tanks shall be clearly marked with manufacturer, date of manufacture, and serial number.

f. All opening cut edges shall be trimmed smooth.

g. Uncoated or exposed carbon steel appurtenances, fasteners, or anchorage will not be accepted.

h. Provide anchor bolts sized by the manufacturer. Installed on engineered concrete slab or other anchoring point approved by the Company.

i. Minimum required wall thickness for the cylinder must be sufficient to support its own weight in an upright position without any external support.

j. The top head must be integrally molded with the cylinder straight shell.

k. The bottom head must be integrally molded with the cylinder straight shell.

l. Tanks shall have a sloped floor and side molded outlet to provide complete drainage of the tank.

m. Tanks shall have a minimum of three (3) lifting lugs integrally molded in the cylinder straight shell. Lifting lugs shall be Type 316 stainless steel.

n. Provide a minimum of four (4) tie-down lugs integrally molded into the top head. Tie-down lugs shall be designed to allow tank retention in wind and seismic loading without damage to the tank.

o. Manway: 18-inch threaded polyethylene, vented and easily accessible.

p. Concrete tank pad shall be level and smooth to the tolerances recommended by the tank manufacturer.

q. Each tank must be vented for the material, flow, and withdrawal rates expected.

ii. Design Loads

a) Resistance of both wind and seismic loads shall be provided for both tank full and tank empty conditions.

b) Contractor shall be fully responsible for design and provision of adequate anchorage system for the service conditions.

c) Design must be approved in writing by the tank manufacturer.

d) Anchorage systems requiring tank penetrations are not acceptable.

e) All anchorage systems shall be galvanized carbon steel unless otherwise specified.

iii. Materials

a) Tanks shall be virgin polyethylene resin as compounded and certified by the manufacturer.

b) Resin shall contain a minimum of a UV 8 stabilizer as compounded by the resin manufacturer.

iv. Fittings

a) Threaded bulkhead fittings shall not be allowed for connections greater than 2 inches in diameter.

b) Bolted double 150 lb. flange fittings shall be constructed with two (2) 150 lb. flanges and two (2) 150 lb. flange gaskets, and the correct number and size of all-thread bolts for the flange specified by the flange manufacturer.

G. Chemical Tubing and Conduit

i. General

a. For liquid chemical service, provide tubing compatible with chemicals used in the treatment process. Install tubing in electrical conduit for ease of installation/replacement, as well as non-pressure rated secondary containment. Tubing manufacturer shall confirm chemical compatibility of tubing with chemical system being served. Tubing shall be UV resistant.

ii. Provide tubing adequately sized for the flow and pressure requirements of this application with the minimum following dimensions and pressure rating:

a. Outside diameter: 3/8 inch.

b. Inside diameter: 1/4 inch.

c. Pressure Rating at 70° Fahrenheit: 200 psi.

iii. Conduit for chemical tubing shall be PVC electrical conduit with sweeps instead of elbows. Conduit size shall be 2 inch for tubing with outside diameter of 3/8 inch through 5/8 inch. Conduit size shall be 3 inch for tubing with outside diameter of 3/4 inch through 1 inch.

iv. Provide all necessary fittings clamps, and adapters for connection of tubing at the chemical metering pump outlet, chemical feed point, and any other connections. Provide barbed or compression-style fittings, specifically designed for use with the tubing being provided, and compatible with the service (both with the fluid being carried in pipe and pressure rating). Fittings shall be located so that they are accessible at all times. No fittings shall be located in the carrier pipe. All connections shall be constructed per tubing manufacturer's recommendations to provide a connection which is equal to or greater than tubing pressure rating. All parts or fittings in contact with the fluid in the tubing shall be compatible with the chemical being carried.

#### H. Freeze Protection

i. All components of the ARF and appurtenances shall be protected from freezing. This section is meant to provide general descriptions and establish minimum requirements of the freeze protection required as part of the construction of the ARF. Passive freeze protection must be used including but not limited to pipe insulation on exposed components.

##### ii. Insulation.

a. All outdoor piping, valves, fittings, tubing 2-inches and smaller, gauges, air release valves, and all other appurtenances, shall be insulated based on a design ambient temperature of 20° Fahrenheit.

b. The insulation shall be protected with aluminum or stainless steel metal jacketing with a minimum thickness of 0.016 inch (0.4 mm) with moisture barrier, secured in accordance with the jacket manufacturer's recommendations. Joints shall be applied so they will shed water and shall be sealed completely.

c. Valves and fittings shall be insulated and jacketed with preformed fitting covers matching outer jacketing used on straight pipe sections, with all joints weather sealed.

d. All piping shall be supported in such a manner that neither the insulation nor the moisture barrier is compromised by the hanger/pipe support or the effects of the hanger/pipe support. In all cases, hanger spacing shall be such that the circumferential joint may be made outside the hanger/pipe support.

e. Metal jacket must be painted. The approved color will be determined by the County, City and/or the Company.

I. Chemical Pumps

i. Chemical pumps shall be Grundfos DDA (model No. FC-PV/T/C-F-311004BQ) compatible for use with Sodium Hypochlorite, H<sub>2</sub>SO<sub>4</sub>, HCL, FeCL and any other chemical used.

**7. ELECTRICAL**

A. General

i. All electrical components shall comply with the Company's EI&C Design Guidelines Technical Specification, enclosed with this RFP.

ii. Design and programming services shall be provided by Delta Engineering

B. SCADA

i. Contractor shall provide and install a complete and functional SCADA system with alarms, displays and controls in substantial conformance with SCADA controls at the Company's existing treatment, well and pump stations.

ii. Contractor shall integrate the Valley Farms Site into the existing Pinal Valley SCADA system via GE I-net II radio or SixNet cellular network.

iii. Contractor shall provide and install SCADA controls utilizing Modicon M-340 programmable logic controllers with 20% available spare I/O.

iv. All analog values shall be historized at the Casa Grande master SCADA computer (Master Computer).

v. Runtime and totalized flow values will have current day, previous day, current week, previous week, current month, and previous month values calculated and displayed locally and at the Master Computer.

vi. All alarms shall be sent to the Master Computer for operator notification via Win911.

### C. Equipment Monitoring

i. Contractor shall provide and install one (1) Schneider Electric 10.5" OIT for onsite SCADA monitoring and control.

ii. The Contractor shall provide the necessary programming and to monitor and control the following equipment and processes:

a. Two well pumps including all phase voltage, current, and power readings from the existing Motor Saver 777 Ethernet base power quality meter. Local/remote, auto/manual, run/stopped, alarm, fail-to-run, and start/stop count. Two (2) Cla-Vals per well. Well discharge flow meters

b. Three (3) high service pumps (2 with VFD controls) including all phase voltage, current, and power readings from the existing Motor Saver 777 Ethernet base power quality meter. Local/remote, auto/manual, run/stopped, alarm, fail-to-run, and start/stop count.

c. Booster pump station discharge pressure and flow.

d. ARF influent flow meter, bypass flow meter, backwash flow meter, bypass flow control valve with operator adjustable set points for each well operational scenario, influent pressure, and effluent chlorine and pH levels.

e. Backwash/recycle tank level, and recycle pump run/stopped, alarm, fail-to-run (display only).

f. NaOCL chemical injection pump operator adjustable effluent chlorine set point, run/stopped, alarm, fail-to-run (display only).

g. H2SO4 chemical injection pump operator adjustable pH set point, run/stopped, alarm, fail-to-run (display only).

h. NaOCl tank level indication.

- i. H2SO4 tank level indication.
- j. Water storage reservoir level and Cla-Val open/closed status with user programmable tank level set points for open/close operation.
- k. Hydro pneumatic tank air compressor pump status, run/stopped (display only).
- l. Hydropneumatic tank pressure (display only)
- m. ARF influent flow meter (display only)
- n. ARF bypass meter (display only)

## Attachment "A"

### Approved Adsorptive Medias

#### Media Requirements

Adsorptive media shall be discardable as solid waste in a RCRA subtitle D (non-hazardous) landfill when saturated and pass all TCLP tests.

Adsorptive media shall be a durable, attrition resistant media suitable for backwashing and removal of Arsenic.

#### Approved Manufacturers:

1. Severn Trent Bayoxide E-33 Granular Ferric Oxide (GFO) adsorption media

Attachment "B"  
Hydraulic Design Criteria

Valley Farms Well No. 1 and 2 ARE

Design Capacity: 400 gpm plus (max 10%) recycled water

Minimum Design Pressure, Static: 100 psi

Minimum EBCT: 3.5 minutes

Maximum Flux Rate: 6 gpm/sq. ft.

Valley Farms Well No. 1

Design Flow: 150 gpm

Valley Farms Well No. 1

Design Flow: 250 gpm

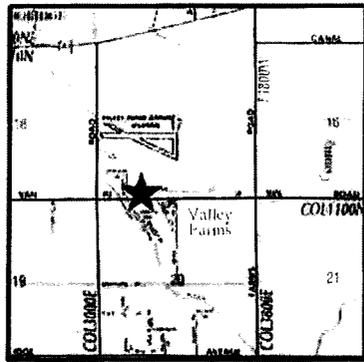
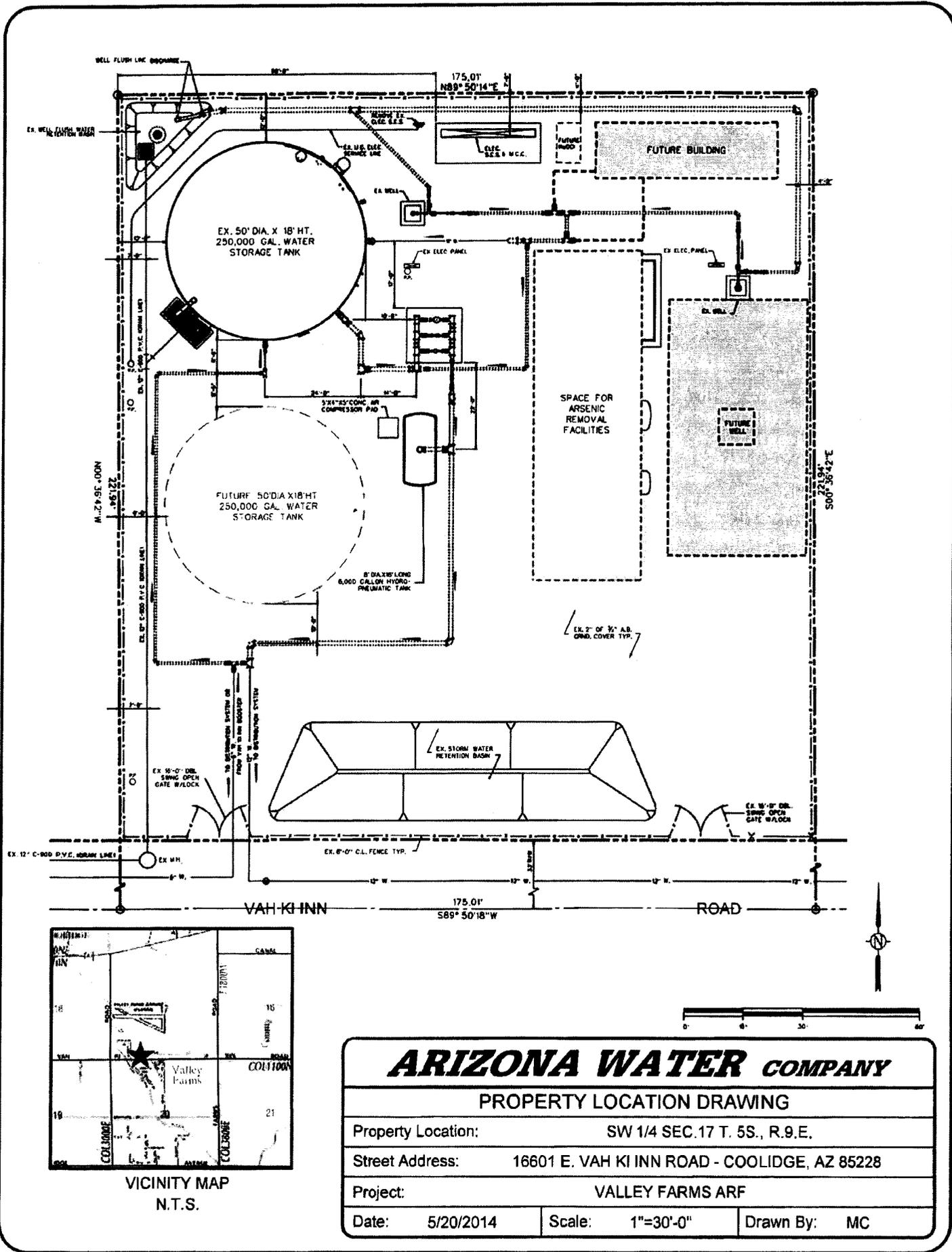
## Attachment "C"

## Water Quality Data

Valley Farms Well Nos. 1 and 2 Site - Arizona		
Analyte	Concentration	
	Well No. 1	Well No. 2
Arsenic III+V	3.5 ppb	14.5 ppb
Iron	<0.05 mg/L	<0.05 mg/L
pH	7.7	8 - 8.2
Calcium Hardness	245 mg/L	45 mg/L
Total Alkalinity	108 mg/L	100 mg/L
Sulfate	119 mg/L	65 mg/L
Calcium	98 mg/L	16 mg/L
Chromium	<0.005 mg/L	<0.1 mg/L
Magnesium	11 mg/L	1.5 mg/L
Uranium	8.9 ppb	-- ppb
Cadmium	<0.0001 mg/L	<0.0005 mg/L
Manganese	<0.02 mg/L	<0.02 mg/L
Lead	<0.001 mg/L	<0.02 mg/L
Total Suspended Solids	2 mg/L	--
Selenium	0.0068 mg/L	0.009 mg/L
Sulfide	<0.04 mg/L	<0.04 mg/L
Turbidity (NTU)	<1 mg/L	--
Silica, Total	28.9 mg/L	34 mg/L
Total Phosphorus	<0.01 mg/L	<0.05 mg/L
Vanadium	0.007 mg/L	0.016 mg/L

Attachment "D"

Existing Site Plan



VICINITY MAP  
N.T.S.

Attachment "E"  
Media Change Out Contract



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande Division  
220 E. 2nd Street

## PROPOSAL/CONTRACT

CONTRACTOR:	<b>DRAFT</b>	SYSTEM:	PINAL VALLEY
ADDRESS:		W.A. No(s):	1-5167
CITY ST ZIP:		BID DUE DATE:	

\_\_\_\_\_, an Arizona corporation, ("CONTRACTOR") SUBMITS this PROPOSAL/CONTRACT to ARIZONA WATER COMPANY, an Arizona corporation (the "Company"), to perform the work as specifically described in Attachment "A" hereto, which by this reference is incorporated herein ("Work") as an independent prime contractor.

- 1a. 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 as Attachment "B". The General Conditions of Contract and Specifications are incorporated into this Proposal/Contract. Contractor affirms 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.
- 1b. Section 2 and 36 in General Conditions of Contract are modified as provided in Attachment "A", and Section 41 of the General Conditions of Contract is replaced in its entirety by paragraph 4C of Attachment "A". In all other respects the General Conditions of Contract remain in full force and effect.
2. 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.
3. Contractor represents that this Proposal/Contract is fair and honest in all respects, is submitted in good faith and is not submitted in collusion with any other company, entity or person.
4. 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.
5. 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.
6. Contractor will furnish all labor, tools, equipment and materials required to complete the Work according to this Proposal/Contract and the General Conditions of Contract and Specifications. 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 Work after Contractor receives payment of the final invoice from the Company. The cost of materials incorporated into the Work 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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.
7. Contractor will maintain detailed accounting records of all materials purchased and incorporated into the Work. Such records will include all supporting original vendor invoices for all materials purchased. Following completion of the Work, 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 Work, and the disposition of such materials will remain Contractor's responsibility.
8. The Estimated Total Cost of the Work, 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.
9. Prior to the commencement of the 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 Work, including testing, training of Company Personnel and the final Project invoice.
10. Contractor will not commence the Work until the Company gives Contractor a written Commencement Notice. Contractor will complete the Work within the time specified in Section 6 of Attachment A.
11. Following the Company's written notice of satisfactory completion of the Work, and upon receipt of the final invoice from Contractor, the Company shall pay Contractor the actual total cost of the Work, which will be calculated as shown on Page 2, except that actual labor and material quantities installed/constructed 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.
12. The Company may deduct from the Company's payment of the final invoice the amount of applicable liquidated damages if Contractor does not deliver or perform within the time limit shown in Paragraph 10. 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.
13. This Proposal/Contract shall continue until \_\_\_\_\_, unless terminated earlier as provided in paragraph 14, (the "Term").
14. The Company, at its option, may terminate this Proposal/Contract at any time prior to the end of the Term upon thirty (30) days notice to Contractor.

### SPECIAL CONDITIONS:

CONTRACTOR	<b>DRAFT</b>	PROPOSAL/CONTRACT ACCEPTED:	ARIZONA WATER COMPANY
By:		By:	
Print Name:		Print Name:	Fredrick K. Schneider, PE
Title:		Title:	Vice President - Engineering
Date:		Date:	

AFH



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande Division  
 220 E. 2nd Street  
 Casa Grande, AZ 85122 PH: 520-836-8785

## PROPOSAL/CONTRACT

CONTRACTOR: _____	SYSTEM: PINAL VALLEY
AZ CONTRACTOR LICENSE NO: _____	W.A. No(s): _____
ADDRESS: _____	BID DUE DATE: _____
CITY ST ZIP _____	BID BOND REQUIRED <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

DRAFT

DESCRIPTION OF PROJECT: **Remove and replace used media from Valley Farms Well Nos. 1 and 2 Arsenic Removal Facility.**

	UNIT PRICE			TOTAL COST	
	QUANTITY	LABOR	MATERIALS	LABOR	MATERIALS
<b>1-2. MATERIALS EXEMPT FROM CONTRACTING TAX (per Paragraph 6)</b>					
Media Change-Out per Attachment "A"	1			1	2
3. Total Labor to Install Exempt Materials (add the amounts in column 1)				3	
4. Total Exempt Materials (add the amounts in column 2)					4
<b>5-6. NON-EXEMPT MATERIALS</b>					
7. Total Labor to Install Non-Exempt Materials (add the amounts in column 5)				7	
8. Total Non-Exempt Materials (add the amounts in column 6)					8
9. Subtotal A (add lines 3, 7 and 8)					9
10. Contracting Tax Base (multiply the amount on line 9 by 0.65)				10	
11. Applicable Contracting Tax Rate				11	
12. Contracting Tax (multiply the amount on line 10 by line 11)					12
13. Subtotal B (add lines 4, 9 and 12)					13
14. 100% Performance and Payment Bonds Cost					14
15. Estimated Total Cost (add lines 13 and 14)					15

DRAFT

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

The Company's Valley Farms Well Nos. 1 and 2 (the "Wells") are equipped with an adsorption media treatment system (the "Facilities") used to reduce the concentration of arsenic (the "Contaminant") to ensure that the water from the Wells complies with applicable Safe Drinking Water Standards.

1. Site.

The Facilities are located at 16601 E. Vah Ki Inn Road, Coolidge, AZ 85128 ("Site").

2. Removal and Replacement of Used Media.

As more specifically set forth below, Contractor will provide all equipment, material and labor necessary and appropriate to remove and replace the used media in the Facilities ("Media Change-Out"). Used media may contain arsenic and other substances.

2.1 Characterization and Classification of Used Media.

Contractor shall obtain from the Site a representative sample of the used media. Contractor will obtain a laboratory analysis of the used media using a method of analysis approved by the United States Environmental Protection Agency or State of Arizona. Such analysis must be performed by an Arizona Department of Health Services certified laboratory. Contractor will use the laboratory results to complete all characterization, classification and documentation required by all regulatory agencies. Characterization, classification and documentation shall be conducted in accordance with all federal, state, and local requirements. Contractor will provide, or arrange for its laboratory to provide copies of the test results to Company within three (3) days of Contractor's receipt of such test results. Company will provide the following information to Contractor at the time of Media Change-Out:

- A. Flow totalizer readings at the time of initial media installation or previous Media Change-Out.
- B. Flow totalizer reading at time the Facilities are removed from service for current Media Change-Out.
- C. Most recent laboratory test results for the Contaminant.

2.2 Removal of Used Media from the Vessels.

Contractor will make the necessary arrangements to remove the used media. Contractor will use a vacuum extractor to remove all used media from the vessels and thoroughly clean out the backwash tanks. Contractor will remove all residual media from the vessel by spraying residual media off the sides of the vessel and interior of the backwash tank with a hose. Contractor shall handle and dispose of all water used at the Site during the removal of the used media, in compliance with all applicable laws and regulations. No water will be discharged onto or from the Site. After each vessel and backwash tank is cleaned, Contractor will notify

DRAFT

Company that the vessels and backwash tanks are clean and ready for inspection. Contractor will clean up any spilled media and restore the Site to its original condition.

### 2.3 Packaging, Transportation and Disposal of Used Media.

Contractor will remove, package, transport and dispose of the used media from the Site in compliance with all applicable federal, state and local laws, regulations and standards. Contractor will transport and dispose of used media in a disposal facility that is expressly authorized to receive such used media. Contractor will provide waste manifests and all other waste documentation required under all laws applicable to the used media to Company within thirty (30) days of the date the used media is removed from the Site or with Contractor's Approval to Bill, whichever is earlier. No payments will be made to Contractor before Company receives all required documentation.

### 2.4 Inspection of the Vessels.

Contractor will inspect the interior of each vessel, distribution laterals and nozzles of the empty vessels upon each Media Change-Out at no additional cost to Company. Contractor will enter each vessel and visually inspect the interior of the vessel, including the distribution laterals and nozzles, after removing the used media from the vessel per Section 2.2. Contractor must comply with all applicable confined space entry requirements established by the Occupational Safety and Health Administration or other governing agencies with jurisdiction over Contractor's work. Contractor will identify any corrosion, accumulation of scale or other buildup that may be present inside the vessels or backwash tanks during its inspection. If Contractor finds any clogged or obstructed distribution laterals or nozzles, Contractor will immediately notify Company. The Company will be present or available by telephone during the inspection. Company may choose to repair or replace internal components prior to the replacement of the media. Company will separately negotiate the price and terms of such repairs or replacements of distribution laterals, nozzles or coating, if any, directly with Contractor or others. Within fifteen (15) days after the Media Change-Out is completed, Contractor will submit a written report to Company for each inspection completed. Contractor will not charge Company for any stand-by costs incurred while Company completes the repairs or replacements.

Contractor will supply all tools, labor, and equipment necessary to inspect the vessels and backwash tank at its own cost. Contractor is responsible for determining the details of vessel entry and access at the Site prior to commencement of the Work. Contractor must properly reinstall any part(s) removed to gain entry or access to the vessels after completing its inspection and restore the vessels to working order.

### 2.5 Replacement of Used Media.

After Contractor removes used media and the vessels are determined to be in good condition or after repairs have been completed, Contractor will load new media into the vessels.

Contractor will load new Severn Trent Bayoxide®E33 media into each empty vessel in accordance with all applicable manufacturer recommendations, specifications and

DRAFT

warranty requirements. Contractor will provide any necessary hoses, pumping equipment and piping for water needed to load or rinse any new media. Contractor must take all necessary precautions to prevent spills of used media, liquid, or new media.

2.6 Disinfection and Coliform Testing.

After completing the inspection and all necessary repairs, Contractor shall notify Company when vessels are ready for disinfection. Contractor will disinfect all vessels to comply with the Company's requirements. Contractor must document and verify adequate disinfection of all media and vessels. Contractor shall place the Facilities back in service after authorized by Company.

3. Water Quality.

After Contractor completes a Media Change-Out, Contractor will return Facilities to full operation and all water produced by the Facilities must comply with the Water Quality Specification in Exhibit A. Contractor further warrants and guarantees that its performance under this Proposal/Contract will at all times comply with the terms and provisions of the Media Performance Guarantee described below.

4. Modifications to the General Conditions of Contract.

4.1 Section 2, "Bonds", is modified as follows:

Contractor shall furnish Company with a performance bond and a material payment bond in the amount of \$200,000 in a form and from a surety acceptable to Company.

4.2 Section 36, "Working Hours", is modified to include the following:

Work shall only be performed between the hours of 8 a.m. and 4 p.m., Monday through Friday, unless otherwise authorized by the Company in writing.

4.3 In addition to all implied or expressed warranties and guarantees, whether set forth in the General Conditions of Contract or otherwise:

Contractor also provides a Media Performance Guarantee (defined below), which guarantees that the adsorptive media ("Media") it provides and loads into the Facilities will remove arsenic to a concentration less than or equal to 7 micrograms per liter to comply with the Water Quality Specification in Exhibit A. Contractor further guarantees that Media shall continue to remove arsenic to comply with the Water Quality Specification for a minimum volume of water treated of not less than \_\_\_\_\_ gallons ("Media Performance Guarantee"). In the event that the Media does not treat the minimum volume of water before a Media Change-Out is required, Contractor will provide a prorated savings ("Discount") on the future purchases and installations of Media for use in the Facilities for the Term. At its sole discretion, Company may require Contractor to pay Discount in cash in lieu of future Media purchases. In the event that Contractor proposes a new, improved, or different Media that would have a performance benefit to Company over the present Media, Contractor will offer such new, improved, or different Media at an equal Discount, if accepted by Company.

Design Parameters for Media Performance Guarantee:

DRAFT

- A. Company's Valley Farms Well Nos. 1 and 2 supplying the Facilities
- B. Total Flow – 400 gpm
- C. Treatment Requirement – Treated water arsenic concentration less than or equal to 7 micrograms per liter.
- D. Configuration – Vessel(s) in parallel
- E. Pretreatment – Chlorination with liquid sodium hypochlorite ("NaOCl")
- F. \_\_\_\_\_ -ft. diameter vessel with \_\_\_\_\_ cubic feet of Media

Wells	Total Media Volume, cubic feet	Media Change-Out Fee	Media Type	Media Performance Guarantee, Gallons
Valley Farms Well Nos. 1 and 2		\$	Bayoxide E-33	

G. Company and Contractor agree that the raw water quality set forth below is representative of the water being treated in the Facility. This water quality is the basis for the media Performance Guarantee. Variances greater than ten percent (10%) above these values (or +0.3 pH units) may result in recalculation of the Media Performance Guarantee. In such event, Company and Contractor will meet and confer and mutually agree to such recalculated Media Performance Guarantee. Contractor bears the responsibility to demonstrate the impacts to the Media Performance Guarantee.

**Valley Farms Well Nos. 1 and 2 Site - Arizona**

Analyte	Concentration	
	Well No. 1	Well No. 2
Arsenic III+V	3.5 ppb	14.5 ppb
Iron	<0.05 mg/L	<0.05 mg/L
pH	7.7	8 - 8.2
Calcium Hardness	245 mg/L	45 mg/L
Total Alkalinity	108 mg/L	100 mg/L
Sulfate	119 mg/L	65 mg/L
Calcium	98 mg/L	16 mg/L
Chromium	<0.005 mg/L	<0.1 mg/L
Magnesium	11 mg/L	1.5 mg/L
Uranium	8.9 ppb	-- ppb
Cadmium	<0.0001 mg/L	<0.0005 mg/L
Manganese	<0.02 mg/L	<0.02 mg/L
Lead	<0.001 mg/L	<0.02 mg/L
Total Suspended Solids	2 mg/L	--
Selenium	0.0068 mg/L	0.009 mg/L
Sulfide	<0.04 mg/L	<0.04 mg/L
Turbidity (NTU)	<1 mg/L	--
Silica, Total	28.9 mg/L	34 mg/L
Total Phosphorus	<0.01 mg/L	<0.05 mg/L
Vanadium	0.007 mg/L	0.016 mg/L

If the treated water arsenic concentration from the treatment vessels exceeds 9 micrograms per liter before the media treats \_\_\_\_\_ gallons, Contractor will replace the Total Media Volume stated above at the current Media Change-Out Fee less the Discount, as set forth by the following formula:

Discount equals Media Change-Out Fee multiplied by  
 [(Media Performance Guarantee (gallons) minus  
 Actual gallons of water treated) divided by  
 Media Performance Guarantee (gallons)]

Example of Discount Calculation

Media Change-Out Fee = \$77,925.00  
 Media Performance Guarantee = 67,200,000 gallons  
 Actual quantity of water treated = 60,000,000 gallons  
 Discount = \$77,925.00 x [(67,200,000 - 60,000,000) / 67,200,000]  
 Discount = \$8,349.11

If Contractor replaces any Media pursuant to this Media Performance Guarantee or otherwise, such replacement Media will also be guaranteed under the Media Performance Guarantee throughout the Term. Contractor will credit or deduct the full amount of the Discount provided by the Media Performance Guarantee from the final invoice.

5. Time for Performance.

Contractor will perform its obligations under this Agreement in a diligent, lawful, prompt, timely, and professional manner. Company will monitor the water quality of water produced from the Facilities and will notify Contractor when a Media Change-Out is required.

Company will notify Contractor when a Media Change-Out is required. Contractor will provide Company with a written schedule for Media Change-Out within five (5) business days of receipt of Company's notice. Contractor will coordinate the Media Change-Out by contacting Company's Division Manager at the following address:

Arizona Water Company  
220 East 2nd Street  
Casa Grande, AZ 85122  
Attn: Manager  
Phone: 520-836-8785  
Fax: 520-836-2850

Contractor must complete any Media Change-Out within fifteen (15) days of receipt of notice to perform a Media Change-Out, but no later than two (2) days after starting any Media Change-Out.

**EXHIBIT A**

**Arizona Water Company  
Arsenic Removal Facility**

**DRAFT**

**Valley Farms Well Nos. 1 and 2**

**Water Quality Specifications**

<b>Arizona Water Company Well</b>	<b>Treated Water Arsenic Concentration</b>
Valley Farms Well Nos. 1 and 2	Less than or equal to 7 micrograms per liter

Attachment "F"

Arizona Water Company Tank Coating Specifications O-12-2

**ARIZONA WATER COMPANY**

O-12-2

**WATER STORAGE TANK COATING SPECIFICATIONS**

**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, any Division Manager 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 contracted with to provide the services detailed in the Contract and as specified herein.
- D. *Contract* — The word "Contract" means the written document titled "Contract" when such document has been signed by an officer or other authorized representative of both the Contractor and the Company.
- E. *General Conditions of Contract* — The words "General Conditions of Contract" refer to the Company's Operating Order O-12-3 in the Company's Operating Memorandums.
- F. *Independent Coating Inspector* — The words "Independent Coating Inspector" mean any Certified NACE III inspector hired by the Company to inspect coatings on water storage tanks.

1. GENERAL

These specifications identify the material and workmanship necessary to produce a quality coating system. All work shall be completed in a safe, workmanlike manner in strict accordance with:

- (a) Product manufacturer's instructions
- (b) General Conditions of Contract for Tank Coating (0-12-3)
- (c) American Water Works Association Standard AWWA C652
- (d) Applicable sections of ANSI/AWWA D102-97, "Standard for Coating Steel Water Storage Tanks"
- (e) ANSI/AWWA D101-53 (R86), "Standard for Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks, for Water Storage"
- (f) ANSI/NSF Std. 61, Section 5, "Protective (Barrier) Materials"
- (g) SSPC-SP1 – Solvent Cleaning  
SSPC-SP2 – Hand Tool Cleaning  
SSPC-SP3 – Power Tool Cleaning  
SSPC-SP5 – White Metal Blast Cleaning  
SSPC-SP6 – Commercial Blast Cleaning  
SSPC-SP7 – Brush-off Blast Cleaning  
SSPC-SP10 – Near White Metal Blast Cleaning  
SSPC-SP11 – Power Tool Cleaning to Bare Metal  
SSPC-SP12 – Hydroblasting
- (h) SSPC PA2 – Dry Paint Thickness with Magnetic Gauges
- (i) SSPC-Guide 7 – Guide for the Disposal of Lead-Contaminated Surface Debris

2. QUALITY OF PAINT

The protective coatings identified in these specifications are set up as standards of quality. The standard "or equal" clause shall apply.

No substitution shall be considered unless the Company's Authorized Representative has received a written request for approval at least ten (10) days prior to the date for receipt of bids. Each such request must include: (a) the name of the specified material for which a substitution is being requested; (b) the name and number of the proposed substitution material; (c) a complete description of the proposed substitute, including performance and test data; and (d) any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitute is upon the Contractor. Approval or disapproval of the proposed substitution rests solely with the Company's authorized representative and his decision shall be final.

Protective coatings for interior wet applications must be listed by NSF International as approved for potable water contact according to ANSI/NSF Std. 61, Section 5, "Protective (Barrier) Materials."

The Contractor shall be responsible for assuring that all materials are delivered to the job site in the original sealed and labeled containers of the protective coating manufacturer. All material on the job shall be subject to inspection by the Company's Authorized Representative.

The Company's Authorized Representative shall select colors not previously specified.

3. SPECIAL PROVISIONS

The Contractor shall be responsible for completing the removal of all remaining water, sediment, rust, etc. that is required prior to surface preparation. All preliminary preparation work will be at the Contractor's expense.

The Contractor shall:

- (a) Protect aluminum gauge boards and nametags during sandblasting and painting procedures.
- (b) Protect copper lines, light fixtures, valve threads, and electrical boxes.
- (c) Replace all manhole bolts with cadmium-plated bolts if the Contractor opens a manhole.
- (d) Replace all gaskets.

The Contractor shall NOT:

- (a) Paint concrete unless otherwise specified.
- (b) Allow the use of silica sand for surface preparation.

The Contractor shall only mix FULL kits of approved coating. No partial kits will be saved or mixed at a later time.

4. MATERIALS TO BE PROVIDED AND PROCEDURES TO BE FOLLOWED BY THE CONTRACTOR

Unless otherwise specified in the contract, the Contractor shall supply all of the necessary materials to complete the work. The Contractor shall provide the following materials and services:

- a. TANKS WITH EXISTING COATING SYSTEM: Interior Steel – Conventional Coating System; Surface Preparation: SSPC-SP 10 Near White Metal Blast Cleaning.

*All abrasive materials shall be thoroughly removed from the surface of the tank in accordance with SSPC-SP 10 standards prior to coating.*

**Tnemec Coating**

- (1) Prime Coat\*: Tnemec Series N140-1255 (Beige) Pota Pox Plus\*\*, one (1) coat; spray applied; 5 to 7 mils dry film thickness ("DFT").
- (2) Finish Coat: Tnemec Series N140-15BL (Tank White) Pota Pox Plus; one (1) coat; spray applied; 5 to 7 mils DFT.

TOTAL DFT: 10-14 mils DFT.

\* Weld Seams: All plate weld seams shall receive an additional brushed coat of Series N140 Pota Pox Plus in color 15BL (Tank White). This application will be made after the full prime coat. Additionally, brush coating shall be applied on all welds, corners, nuts, bolts, edges, or other irregular surfaces.

\*\* Tnemec Series N140 Pota Pox Plus FC (fast cure) may be substituted for Series N140 Pota Pox Plus when conditions warrant. It may be beneficial when curing between 35° F and 56° F is required.

OR

**Devoe Coating**

- (1) Prime Coat\*: Devoe Bar-Rust 233H1642 (Buff)\*\*, one (1) coat; spray applied; 5 to 7 mils DFT.
- (2) Finish Coat: Devoe Bar-Rust 233 H3501 (White), one (1) coat; spray applied; 5 to 7 mils DFT.

TOTAL DFT: 10 to 14 mils DFT.

• Weld Seam: All plate weld seams shall receive an additional brushed coat of Devco's Bar-Rust 233H in or 3501 (White) after the full prime coat. Additionally, brush coating shall be applied on all corners, welds, nuts, bolts, edges, or other irregular surfaces.

\*\* Devco Bar-Rust 233H is a high solids (80%) advanced technology NSF International (National Sanitation Foundation) approved epoxy, which can be applied at steel temperatures down to 0° F (-18° C).

- b. **TANKS WITH EXISTING COATING SYSTEM:** Interior Steel – Alternative Floor Coating System for Badly Pitted Tank Floors. For floors in existing tanks that are highly corroded with severe pitting, the following floor system may be applied after completion of the Series N140 system to the roof and shell, subject to prior approval by the Company's Authorized Representative.

Floor Surface Preparation: SSPC-SP10 Near White Metal Blast Cleaning.

*All abrasive materials shall be thoroughly removed from the surface of the tank in accordance with SSPC-SP10 standards prior to coating.*

#### **Tnemec Coating**

- (1) Steel Conditioners: Wet the floor surface and up the wall a few inches with a fine mist of Tnemec Series 260 Tnemec-Bond. Allow to evaporate and apply the topcoat within four (4) hours.
- (2) Elastomeric Urethane: After mixing according to the manufacturer's recommendations, pour out and level with trowels or notched squeegees, Tnemec Series 264 Elasto-Shield over the entire floor to DFT of 80 to 100 mils and bring up the wall to where there is a two- to three-inch (2" to 3") overlap on the newly applied epoxy coating system.

TOTAL DFT: 80 to 100 mils DFT.

OR

**Devoe Coating**

- (1) 100% Solids Epoxy Finish Coat: Apply Devoe's Devron 133 100% Solids Epoxy Tank Coating at 80 to 100 mils DFT.

TOTAL DFT: 80 mils minimum DFT.

All welds, corners, nuts, bolts, edges, or other irregular surfaces shall be hand brushed to assure proper coverage.

- c. **TANKS WITH EXISTING COATING SYSTEM:** Exterior Steel; Level 1 Re-coat: For aged epoxy/urethane systems that are in sound shape and where re-coat adhesion is assured, the following overcoat system applies:

**Tnemec Coating**

- (1) Surface preparation: Remove all dust, dirt, grime, and chalk by power washing with a trisodium phosphate/water solution (0.25 lbs. of trisodium phosphate ["TSP"] per gallon of water) with 3,500 PSI pressure at the nozzle. Power rinse with clean water immediately after TSP wash-down to avoid drying of the TSP on the surface.

All rusted, abraded, and exposed steel shall be power tool cleaned to bare metal according to SSPC-SP 11. All loose paint shall be removed with the same power tools. Feather all edges. Existing runs and chips shall be sanded out.

- (2) Spot Prime (exposed metal): Tnemec Series 135 Chembuild or Series N140 Pota Pox Plus; one (1) coat; roller, brush, or spray applied, overlapping to the feathered areas; 3 to 5 mils DFT.

- (3) Finish Coat: Tnemec Series 73 (spec color) Endura-Shield; one (1) coat; spray applied; 3 to 5 mils DFT.

TOTAL ADDITIONAL DFT: 3 to 5 mils DFT (on top of existing system).

OR

#### **Devco Coating**

- (1) Surface preparation: Remove all dust, dirt, grime, and chalk by power washing with Devco's Devprep 88 with 3500 PSI pressure at the nozzle. Power rinse with clean water immediately after washing to avoid drying of the Devprep 88 on the surface.

All rusted, abraded, and exposed steel shall be power tool cleaned to bare metal according to SSPC-SP 11. All loose paint shall be removed with the same power tools. Feather all edges. Existing runs and chips shall be sanded out.

- (2) Spot Prime (exposed metal): Devco's 233H Bar-Rust one (1) coat; roller, brush, or spray applied, overlapping to the feathered areas; at 3 to 5 mil DFT.
- (3) Finish Coat: Devco's Devthane 378 aliphatic Acrylic Urethane (spec color), one (1) coat; spray applied; 3 to 4 mils DFT.

TOTAL ADDITIONAL DFT: 3 to 5 mils DFT (on top of existing system).

- d. **TANKS WITH EXISTING COATING SYSTEM:** Exterior Steel; Level 2 Re-coat. If complete removal of the existing system is required, the following overcoat system applies:

Surface preparation: SSPC-SP 6 Commercial Abrasive Blast Cleaning.

*All abrasive materials shall be thoroughly removed from the surface of the tank in accordance with SSPC-SP 10 standards prior to coating.*

**Tnemec Coating**

- (1) Prime Coat: Tnemec Series N140-1255 (Beige) Pota Pox Plus; one (1) coat; spray applied; 4 to 6 mils DFT.
- (2) Finish Coat: Tnemec Series 73 (spec color) Endura-Shield III; one (1) coat; spray applied; 3 to 5 mils DFT.

TOTAL DFT: 7 to 11 mils.

OR

**Devoe Coating**

- (1) Prime Coat: Devoe's Bar-Rust 235 Epoxy; one (1) coat; spray applied; 4 to 6 mils DFT.
- (2) Finish Coat: Devoe's Devthane 378 aliphatic Acrylic Urethane (spec color); one (1) coat; spray applied; 3 to 5 mils DFT.

TOTAL DFT: 7 to 11 mils DFT.

- e. **TANKS WITH NEW STEEL:** Exterior steel – Surface preparation: SSPC-SP 6 Commercial Abrasive Blast Cleaning.

*All abrasive materials shall be thoroughly removed from the surface of the tank in accordance with SSPC-SP 10 standards prior to coating.*

**Tnemec Coating**

- (1) Prime Coat: Tnemec Series N140-1255 (Beige) Pota Pox Plus; one (1) coat; spray applied; 4 to 6 mils DFT.
- (2) Finish Coat: Tnemec Series 73 (spec color) Endura-Shield III; one (1) coat; spray applied; 3 to 5 mils DFT.

TOTAL DFT: 7 to 11 mils.

OR

**Devoe Coating**

- (1) Prime Coat: Devoe's Bar-Rust 235 Epoxy; one (1) coat; spray applied; 4 to 6 mils DFT.
- (2) Finish Coat: Devoe's Devthane 378 aliphatic Acrylic Urethane (spec color); one (1) coat; spray applied; 3 to 5 mils DFT.

TOTAL DFT: 7 to 11 mils DFT.

- f. **TANKS WITH NEW STEEL:** Interior Steel – Conventional Coating System; Surface Preparation: SSPC-SP 10 Near White Metal Blast Cleaning.

*All abrasive materials shall be thoroughly removed from the surface of the tank in accordance with SSPC-SP 10 standards prior to coating.*

### **Tnemec Coating**

- (1) Prime Coat\*: Tnemec Series N140-1255 (Beige) Pota Pox Plus\*\*, one (1) coat; spray applied; 5 to 7 mils DFT.
- (2) Finish Coat: Tnemec Series 20-WH02 (Tank White) Pota Pox; one (1) coat; spray applied; 5 to 7 mils DFT.

TOTAL DFT: 10 to 14 mils DFT.

\* Weld Seams: All plate weld seams shall receive an additional brushed coat of Series N140 Pota Pox Plus in either the color 1255 (Beige) or WH02 (Tank White). This application will be made after the full prime coat. Additionally, brush coating shall be applied on all welds, corners, nuts, bolts, edges, or other irregular surfaces.

\*\* Tnemec series N140 Pota Pox Plus FC (fast cure) may be substituted for Series N140 Pota Pox Plus when conditions warrant. It may be beneficial when curing between 35° F and 56° F is required.

OR

### **Devoe Coating**

- (1) Prime Coat\*: Devoe Bar-Rust 233H1642 (Buff)\*\*, one (1) coat; spray applied; 5 to 7 mils DFT.
- (2) Finish Coat: Devoe Bar-Rust 233 H3501 (White), one (1) coat; spray applied; 5 to 7 mils DFT.

TOTAL DFT: 10 to 14 mils DFT.

\* Weld Seam: All plate weld seams shall receive an additional brushed coat of Devoe's Bar-Rust 233H in 3501 (White). The application of the stripe coat will be made after the application of the full prime coat. Additionally, brush coating shall be applied on all corners, welds, nuts, bolts, edges, or other irregular surfaces.

\*\* Devoe Bar-Rust 233H is a high solids (80%) advanced technology NSF International (National Sanitation Foundation) approved epoxy, which can be applied at steel temperatures down to 0° F (-18° C).

5. TANK REPAIRS PRIOR TO TANK COATING/PAINTING

The Contractor is required to notify the Company's Authorized Representative on a timely basis when tank repairs are necessary, and to identify the nature and extent of repairs that are required.

If repairs to the tank are necessary, the Contractor shall be responsible for coordinating all such repairs, and shall request a change order from the Company's Authorized Representative before initiating such repairs as required in the General Conditions of Contract.

All repairs are to be made according to ANSI/AWWA D101-53 (R86), "Standard for Inspection and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks, for Water Storage."

The Company will not allow the Contractor to alter the structure of the tank.

6. SURFACE PREPARATION – DEBRIS CONTAINMENT AND DISPOSAL

When required by Federal, State, or local regulation, the Contractor shall enclose the entire tank and structure and contain surface preparation debris. Refer to SSPC-Guide 6, "Guide for Containing Debris Generated During Paint Removal Operations."

The Contractor shall dispose of all surface preparation debris according to applicable Federal, State, and local regulations. Refer to SSPC-Guide 7, "Guide for the Disposal of Lead-Contaminated Surface Debris."

Worker protection and environmental protection shall be followed in accordance with the following Federal Regulatory Standards and other applicable Federal, State, or local regulations:

1. 29 CFR 1910 – OSHA General Industry Standards
2. 29 CFR 1910.134 – Respiratory Protection
3. 29 CFR 1910.1000 – Air Contaminants – Permissible Exposure Limits
4. 29 CFR 1910.1020 – Employee Access to Exposure and Medical Records
5. 29 CFR 1926 – OSHA Construction Industry Standards
6. 29 CFR 1926.59 – Hazard Communications
7. 29 CFR 1926.62 – Lead Exposure in Construction; Interim Final Rule
8. 40 CFR 261 – Identification and Listing of Hazardous Waste
9. 40 CFR 262 – Standards Applicable to Generators of Hazardous Waste
10. 40 CFR 263 – Standards Applicable to Transporters of Hazardous Waste
11. 40 CFR 264 – Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

Cleaning:

Surfaces that have been in contact with chemicals can be assumed to be contaminated. Depending on the type of chemical, it may be necessary to clean the surface before dry blasting and again after blasting in order to remove contaminants that can otherwise cause blistering of the coating system.

Most common methods are:

- Steam Cleaning
- Hot Water/Detergent Washing (Pressure)
- Solvent Washing
- Hydroblasting or Wet Sandblasting
- Prebaking at Very High Temperatures

The first two methods can efficiently remove most soluble and emulsified contaminants. Solvent cleaning is only feasible for small tanks or small areas. Solvent cleaning will not remove water-soluble materials. When detergents are used, a fresh water rinse is necessary to remove traces of the detergent left on the surface.

Hydroblasting will seldom be used for the cleaning of tanks due to the very high pressure involved. Wet sandblasting is possible. It can remove old coatings, water soluble contaminants, and corrosion products simultaneously. It cannot remove oil or grease products.

Before cleaning takes place, the surface must be free from oil, grease, salt deposits, and other foreign material that cannot be removed by abrasive blasting. These contaminants, which differ from mill scale and rust, would otherwise be forced into the profile and interfere with the adhesion and the chemical resistance.

Blasting:

Steel surfaces must be blasted to white metal (SSPC-SP5/SA3) or as near as possible to white metal, but never less than near-white-metal (SSPC-SP10/SA2 ½).

Mill scale, when present on a ferrous surface, is cathodic to the surface, meaning the steel will sacrifice itself to save the mill scale. All mill scale MUST be removed prior to coating application. Although the surface may in fact already have a coating visible, the CONTRACTOR SHALL NOT assume that the previous contractor has removed the mill scale prior to applying the existing coating. All bids will be submitted with the understanding that mill scale MAY be present beneath the existing coating, and that an

SP-10 (near-white) blast will be required prior to any new coating application. NO additional costs, above the bid price, will be submitted to Arizona Water Company for removal of any mill scale that is found on the surface. Arizona Water Company requires that ALL bids reflect this understanding by the CONTRACTOR.

Profile:

The blast anchor profile must average 2 to 3 mils, but preferably 2.5 mils.

Abrasives:

The abrasive media shall be garnet and shall be of sufficient grit size to attain a specified blast anchor profile between 2 to 3 mils DFT.

Pre-Preparation and Operational Testing of Abrasives for Soluble Salts Contamination

Test abrasive media for chloride contamination using test kit as described below, entitled "Test Kit for Measuring Chlorides in Abrasives." The maximum allowable chloride concentration is 7 PPM. Test media immediately prior to use, and in no case more than 24 hours prior to use.

Pre-Preparation Testing of Abrasive Media Shipped in Bulk Containers

For bulk containers 1350kg 3000 pounds or less, test one composite sample from each container. Reject entire container for non-conforming test. For bulk containers over 1350kg 3000 pounds, test one composite sample for each 1350kg 3000 pounds, one sample from each compartment, as appropriate. Reject entire container or compartment for non-conforming test.

Pre-Preparation Testing of Abrasive Media Shipped in Bags (Normal 50-110 lb. Bags)

Maintain palletized grouping as provided from supplier. Test composite sample from one bag of each pallet, but no less than one sample for each 1350kg 3000 pounds of abrasive. Reject entire pallet for non-conforming test. If palletized grouping is not maintained, sample and test one bag for every 450kg 1000 pounds of abrasive. Reject each 450kg 1000 pounds represented by a non-conforming test. If bags are stamped with lot number, test composite samples from each of two bags per lot. Reject entire lot for non-conforming test.

Pre-Application Testing for Soluble Salts Contamination

Test blasted surfaces for chloride contamination using the Test Kit described below, entitled "Test Kit for Measuring Chlorides on Steel Surfaces." Test all surfaces at the rate of three tests for the first 1000 square feet plus one test for each additional 3000 square feet or part thereof. Concentrate testing of bare steel at areas of coating failure to bare steel and areas of corrosion pitting. Perform 30% of tests on bare metal at welds, divided equally between horizontal and vertical welds. One or more readings greater than 5 micrograms per square centimeter of chlorides shall be cause for rejection of surface. Wash all surfaces with Chlor\*Rid according to the manufacturer's recommendations, allow to dry and retest until all required test show allowable results. Re-blast tested and cleaned areas to required specifications. Label all test tubes and retain for test verification.

ALLOWABLE SOLUBLE SALTS TEST KITS

Test kit for measuring Chlorides on Steel Surfaces

(Test Kits called Chlor\*Test, as manufactured by CHLOR\*RID International, Inc. of Chandler, Arizona ([www.chlor-rid.com](http://www.chlor-rid.com))).

**Test kit for measuring Chlorides In Abrasives**

(Test Kits called Chlor\*Test "A", as manufactured by CHLOR\*RID International, Inc. of Chandler, Arizona ([www.chlor-rid.com](http://www.chlor-rid.com))).

**Welds and Edges:**

These areas need special attention because they are often the first place where corrosion starts. Weld splatters must be removed by power tool grinding. Welds must be ground to a smooth radius and sharp edges must be rounded to prevent the coating from pulling away.

**Dehumidification:**

Depending on the ambient conditions, it may be necessary to use dehumidifiers to prevent rustblooming of the blasted steel surface. In all instances the dewpoint must remain at least 5°F or 3°C below the steel temperature.

Although not very often the case with new steel, black spotrusting may occur shortly after blasting. This is a sign that the steel has been infected with sulfates or chlorides, etc., which cannot completely be removed by dry abrasive blasting. In such a case, refer to section B, Old Corroded and/or Previously Coated Steel Surfaces.

**Dust Removal:**

After the blasted steel surface is approved, abrasive dust must be removed with a vacuum cleaner. The broom is insufficient. Most effective is the combination of blowing and vacuum cleaning in that order. Dust particles left on the surface will interfere with coating adhesion.

**7. PREPARATION OF COATING MATERIAL**

**Storage:**

At least 24 hours before coating material will be used, the pail must be placed in an area where the temperature is kept between 50°F and 86°F (10°C - 30°C).

### Premixing:

The coating system is a two-component thermosetting material that requires thorough mechanical mixing.

After opening the can of base component, it is necessary to premix the base until no sediment is left on the bottom of the can. A squirrel-cage-type mixer such as the Jiffy mixer is efficient. Care must be taken not to introduce air (foam). After sufficient premixing, the hardener component may be added to the base and mixed immediately.

### Mixing Ratio:

Unless otherwise indicated, base and hardener are supplied in the correct ratio: one can of hardener to one can of base. The use of the exact ratio is of prime importance for the chemical resistance of the cured coating film. Therefore, the hardener container must be emptied completely into the base. A very small amount of thinner may be used for cleaning the hardener can. The amount used must be deducted from the overall amount of thinner used for correction of spray viscosity.

### Spray Equipment:

Conventional air spray or airless spray may be used to apply coatings. Because airless spray is almost exclusively used, the following information will deal only with this method.

The airless pump must have a pressure ratio of at least 30 to 1, but preferably 45 to 1. A tip size between 0.018" and 0.021" is strongly recommended. A reversible tip is recommended.

All equipment and lines must be absolutely clean to prevent blocking of the tip and to prevent coating contamination.

8. APPLICATION OF PROTECTIVE COATINGS

The Contractor shall apply each coating according to the specifications and the protective coating manufacturer's recommendations.

The Contractor shall apply the coating at the specified thickness. If the specified thickness is not obtained, the Contractor shall apply an additional coating.

The Contractor shall apply all protective coatings in strict accordance with the applicable manufacturer's current printed product data sheet and container label. The Contractor shall not apply protective coatings above or below the minimum/maximum surface temperatures as stated on the product data sheet. The Contractor shall not apply protective coatings to wet or damp surfaces and shall not apply protective coatings in rain, snow, fog, or mist. Surface temperatures must be at least 5° F above the dew point and the Contractor shall delay painting until such condition exists. The Contractor shall complete the painting well in advance of the probable time of day when condensation may occur and/or the surface temperature may be expected to drop below the minimum listed on the applicable product data sheet.

The Contractor shall measure DFT according to current SSPC PA2, "Dry Paint Thickness with Magnetic Gauges."

It is essential that the first coat wet the steel surface perfectly. An addition of up to 10% thinner may be made, but care must be taken to avoid runs or sags. When wet film thickness gauges are used, it must be kept in mind that the steel profile will have an effect on the readings. Thinner ratios can vary from project to project due to application equipment, weather conditions, substrate conditions, etc.

Before starting the actual spray application, it is a good practice to observe the spray pattern on a separate piece of steel or cardboard. Good atomization without fingering, heavy spots, or insufficient flow, etc. must be obtained. If imperfections occur, corrections must be made quickly. Use a somewhat higher pressure or use the next size smaller tip. If this does not correct the problem, add a small amount of thinner.

Dry spray or coarse paint globules at extremes of the spray pattern are unacceptable.

Dry spray or overspray is often caused by spraying at improper angles to the surface. Move the gun parallel with the surface, releasing the trigger of the gun before reversing direction for the next stroke.

Measure the wet film thickness regularly.

The second coat is applied in the same way, and using the same thinning ratio, after sufficient drying time of the previous coat.

#### Stripe Coating:

As an extra measure for corrosion protection, it is standard practice to apply a stripe coat of the primer with a brush in the welds, edges, and areas that are hard to reach with the spray gun. For that purpose, enough of the mixed primer must be thinned with approximately 25% thinner. The lower viscosity of this mixture will help to penetrate crevices and will prevent an undesirable film build-up. This stripe coating can best be done with a short round-tip bristle brush. Another stripe coat may be applied when the full primer coat has dried sufficiently.

#### Potlife and Thinning:

No mixed material may be used beyond the potlife. No thinner may be used to increase the potlife. Methyl Ethyl Ketone shall not be used for thinning purposes. Thinners must be that as manufactured by the coating supplier utilized for each specific project.

#### Drying/Curing Interval:

The ideal temperature of air and steel for the application and drying between coats is between 68°F and 77°F (20°C and 25°C).

Best results are obtained by drying for 16 to 24 hours at 68°F (20°C) between coats. Lower temperatures require longer drying intervals. When hot air blowers are used to bring the steel temperatures higher than 68°F (20°C), it is strongly recommended to let the coating dry for one (1) hour at ambient temperature with sufficient fresh air ventilation before application of heat. It is further recommended that only indirect fire heaters be used for forced air curing in order to prevent intercoat contamination.

#### Total Dry Film Thickness:

The ideal total DFT is 10 to 12 mils DFT. It is strongly recommended to keep the total milage below 16 mils. Small areas of somewhat higher milage do not have to be a reason for rejection, but must be the exception.

#### Final Curing:

At 68°F (20°C) the tank lining will cure enough for most services in 7 days minimum. Ventilation is required for the first 24 hours. When not enough time is available to cure at 68°F (20°C), hot air blowers should be used to continuously circulate heated fresh air to maintain a surface temperature of 140°F (60°C).

### 9. INSPECTION

The inspection during and after the tank lining job can be divided into two different functions:

- A. Inspection on a pass/fail basis.
- B. The above-mentioned function together with preventive actions during the application.

The following list gives the essential checkpoints for an inspection:

TEST

Blast Profile  
Temperatures  
Humidity/Dew Point  
Thickness of Each Coat  
Pinhole/Sags/Runs/Dryspray/Flow  
Cure

INSTRUMENTS

Replica Tape of Comparator  
Surface Thermometer  
Sling Psychrometer or Digital  
Magnetic Film Thickness Gauge  
Holiday Detector and Magnifying Glass  
MEK Rubs (50 rubs)

Preventive Inspection:

Inspection service can be very helpful when attention is paid to all parts of the operation. Although not claimed to be complete, the following list may contribute:

- Type of abrasive and cleanliness of the abrasive
- Cleaning method used before blasting
- Check for salt contamination on the steel surface after blasting
- Dehumidification
- Mixing procedure
- Paint storage and consumption
- Spray pattern
- Wet film thickness
- Ventilation
- Pinhole and holiday detection
- Drying/curing procedures
- Safety procedures

Dry Film Thickness:

One of the most controversial subjects of application and inspection is the measurement and judgment of DFT.

Highly skilled application techniques are required to keep the DFT within specified limits. It must be understood that most tank linings are exposed to severe conditions. In such a case, the idea "the thicker the better" is definitely false.

The coating should be applied in total DFT of 10 to 14 mils in 2 coats of approximately equal thickness.

Five spot measurements must be taken over an area of 100 square feet. Each spot measurement consists of three gauge readings next to one another. The average of three readings is used to calculate the average of the spot readings.

The average of the spot readings has to be in the specified mil thickness range. According to SSPC-PA2, no spot reading lower than 80% of the specified milage is acceptable. Therefore, no spot reading may be lower than 8.0 mils.

In addition, the maximum film thickness also is limited. No spot reading (average of a cluster of three gauge readings) higher than 120% of the specified film thickness is acceptable. 16.8 mils is therefore the maximum allowable film thickness.

Between the three cluster readings which form one spot reading, a higher reading than 16.8 mils is still acceptable as long as this, together with the other two readings, does not average higher than 120% (16.8 mils) of the maximum specified (14) mils.

Where the film thickness is too low, an extra coat must be applied in accordance with procedures established in this guide.

In case of high film thickness, the thick area must be sanded (after sufficient curing) and a very light extra finish coat applied to "renew" the film.

The magnetic film thickness gauges must be calibrated frequently enough to ensure correct readings. The original calibration must take place with shims placed on the blasted surface as described in SSPC-PA2. This method prevents higher thickness readings found than are actually applied, especially with deeper profiles.

10. LITERATURE

Additional literature to be used in conjunction with these guidelines:

A. Steel Structures Painting Manual, Volume 1

In particular, chapters:

- 2.0 Surface Preparation
- 2.2 Metallic Abrasives
- 2.4 Abrasive Air Blast Cleaning
- 2.6 Hand and Power Tool Cleaning
- 2.9 Chemical Cleaning
  - a. Solvent Wipe
  - b. Steam Cleaning
  - c. High Pressure – Hot Detergent
- 5.3 Safety in Paint Application
- 6.0 Inspection
- 14.2 The Lining of Tanks

B. Steel Structures Painting Manual, Volume 2

Surface Preparation Standards

Chapter 5, Paint Application Specifications SSPC-PA2

A Guide to Safety in Paint Application SSPC-PA Guide 311

11. CURING, VENTILATION, AND DISINFECTION

The Contractor shall provide adequate ventilation to effectively remove solvent vapors for proper drying of paint on interior surfaces. The Contractor shall be required, upon request from the Company's Authorized Representative or the Independent Coating Inspector, during the pre-construction meeting to provide specific details on its plan to provide adequate curing and ventilation.

A combination of forced and natural ventilation shall be continued after coating application is completed to ensure complete curing and solvent removal. Coating life may be shortened if there is inadequate ventilation during the curing period and residual coating solvent may contribute to taste and odor problems in stored water. Lower temperatures or higher humidity may extend the time that ventilation is necessary. The Contractor shall use forced air ventilation with heating units when applying coatings at low temperatures and higher humidities. The ventilation must be designed in such a way that no solvent vapors remain in corners, etc. The air used must be clean and dry enough to prevent any condensation of moisture on the coated surface. Good ventilation will prevent solvent entrapment in the film.

Following final coat application and final inspection, the Contractor shall not disinfect the tank until the coating system is fully cured and approved by the Independent Coating Inspector. Refer to the applicable product data sheet for dry time/temperature requirements. The Contractor shall disinfect the tank according to the current American Water Works Association Standard AWWA C652, or as instructed by the Company's Authorized Representative. The Contractor, at its expense, shall be responsible for disinfecting the tank immediately before placing the tank in service.

All cathodic protection systems shall be disabled and locked out before initiating tank draining and shall remain disabled until completion of the interior warranty inspection. Once the tank is placed back into service, the lock shall be removed and the cathodic protection system energized.

## 12. CLEAN 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 from its operations. In the event the Contractor fails to do so, the Company may remove same at the expense of the Contractor.

**Arizona Water Company**  
**VALLEY FARMS WELL NOS. 1 AND 2**  
**ARSENIC REMOVAL FACILITY**

**16601 E. VAH KI INN ROAD**  
**COOLIDGE, ARIZONA 85128**

**ADDENDUM No. 1**

**July 7, 2014**

In reference to the Request for Proposal and Technical Specifications for the subject project, please note the following items which address comments and revisions to drawings and specifications noted:

**SECTION NO. 1: Questions and Responses**

Question 1. Does the interior of the vessels have to be painted?

Response: Contractor must paint the interior of the arsenic vessels with Carboline 4500S (30-40 mils) epoxy coating in accordance with manufacturer's requirements and not the paint specified in Attachment F.

Question 2. Will the new chlorine analyzer be located after the storage tank or before?

Response: Contractor must install the new chlorine analyzer after the treatment vessels and before the storage tank.

Question 3. When does the one year warranty period begin?

Response: The one year warranty period begins after the Company's final written acceptance of the ARF.

Question 4. Are temporary chlorination facilities required?

Response: Contractor must install temporary facilities to maintain operation of Well Nos. 1 and 2. Before temporary facilities are constructed, Contractor must submit a MOPO to the Company for review and approval.

Question 5. Are there any restrictions on working area?

Response: Contractor must allow the Company continuous access to its facilities and not impinge on well lay down areas.

Question 6. What are the allowed working hours?

Response: The allowed working hours are as specified in the Request for Proposal and Technical Specifications. The Company will consider

exceptions on a case by case basis and require Company approval in advance.

Question 7. What is the ultimate footprint considering future demands?

Response: The new ARF facility design must allow for future expansion of the treatment process. The Company has estimated future flows at 800gpm. Refer to Attachment "D": Existing Site Plan for footprint.

Question 8. What capacity should the chemical storage and chemical spill containment be?

Response: Contractor must design the chemical storage tanks to store a full 30-day supply. Contractor must design and the unlined concrete spill containment area to store a minimum of 10% of the chemical tank capacity and have a minimum of 6-inch tall curbing.

Question 9. Will the contractor be able to start construction prior to the 90%/100% approval from the Company?

Response: If the Contractor starts construction prior to Company's 100% approval and all regulatory approvals, then Contractor is proceeding at his own risk.

Question 10. Is a discharge permit required?

Response: Contractor is responsible for determining what permits are required. As noted in General Conditions of Contract, E-4-1, Item 21, Permits, Fees and Inspections, the contractor is responsible for obtaining any permits required for the completion of the work, including dust control, SWPP, AZPDES for construction water discharge, etc.

Question 11. What is the utilization rate for each well?

Response: The Company shall routinely alternate between the Wells as the lead and lag well. For six months during the low demand season, the lead well is expected to run at any given time. Each well is expected to produce 1 million gallons per month for a total of 12 million gallons for the season. For the remaining six months during the high demand season, both Wells are expected to run concurrently and produce a total of 2.75 million gallons per month for a total of 16.5 million gallons of water for the season. The total production of the Valley Farms site is 28.5 million gallons of water per year.

Question 12. Please define the level of record drawings required. Are these hard copies of the design drawings that are marked by hand, marked up in CAD, or redrawn in CAD. Do they need to be sealed by the Engineer and/or a Surveyor??

Response: Contractor is responsible for providing record drawings re-drawn in CAD, signed and sealed by the registered Engineer.

Question 13. What is the maximum acceptable head loss / well discharge reduction across the proposed treatment system?

Response: The flux rate shall not exceed 6 gpm/per square foot or the manufacturer's requirements, whichever is less. Maximum pipe velocities shall not exceed 5 feet per second. Head loss through the ARF shall not exceed 10 psi.

Question 14. Please verify that life cycle costs will be limited to chemical and media costs and do not need to accommodate labor, equipment replacements, interest, inflation, etc.?

Response: Life cycle costs shall include chemical and media change out costs (labor and materials)

Question 15. What has been the historic chlorine demand of your raw well water?

Response: Approximately 0.5 mg/L

Question 16. What is your preferred chemical for reducing pH?

Response: Sulfuric acid

Question 17. Is Delta required to provide the electrical and controls design in addition to SCADA work?

Response: No

Question 18. What is the arsenic speciation of your raw water?

Response: Arsenic (V) is the prevalent species of Arsenic in the raw water from the Wells. Arsenic (III) concentration levels of the raw water are non-detect.

Question 19. Will the Company provide a certified operator during start-up and commissioning?

Response: Yes

Question 20. In the past the Company has limited the allowed electricians. Will the project have limited allowed electrician, or will it be open to the public?

Response: Electrical contractor must provide 24/7 on-call services.

Question 21. The drawing included in the packet show a space labeled for Future Chlorine system. Is the Contractor required to use this space on this project?

Response: No. All chemical systems shall be located in the space designated for "Arsenic Removal Facilities" on Attachment "D"

Question 22. Parts a), b) and c) of question B.i.a.5 of the Request for Proposal seem to not pertain to the contractor's list of similar projects. These parts seem like they should appear under question B.i.a. Is that correct?

Response: Include B.i.a.5 parts b) and c) with section B.i.a not B.i.a.5. Include B.i.a.5 part a) with B.i.a and B.i.a.5.

Question 23. Are electrical as-builts of the existing system available?

Response: See Attachment "G".

Question 24. Could you send out a sample set of plans that reflect your current design preferences?

Response: See Attachment "H" and "I".

### **SECTION NO. 2: Request for Proposal Revisions**

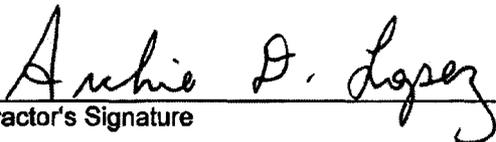
Proposal Rev 1. The bid due date is revised to July 16, 2014 at 2:00 pm.

### **SECTION NO. 3: Additional Attachments**

Additional Attachment 1. Attachment "G" is the Company's as-built drawings for the Valley Farms Booster Pump Station construction project.

Additional Attachment 2. Attachment "H" is a set record drawings for the Montezuma Haven Well Nos. 2 and 3 Arsenic Removal Facility construction project.

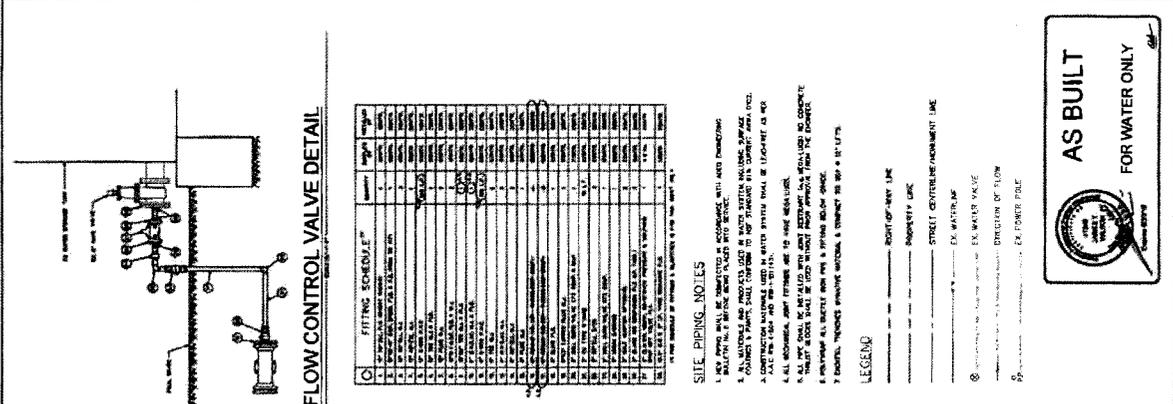
Additional Attachment 3. Attachment "I" is a sample set of sheets detailing the Company's preference for the design of chemical systems.

  
Contractor's Signature

\_\_\_\_\_  
Date

Note: A signed copy of this Addendum shall be returned with the Contractor's proposal and/or the Contractor shall acknowledge this Addendum in the space provided on the Proposal.



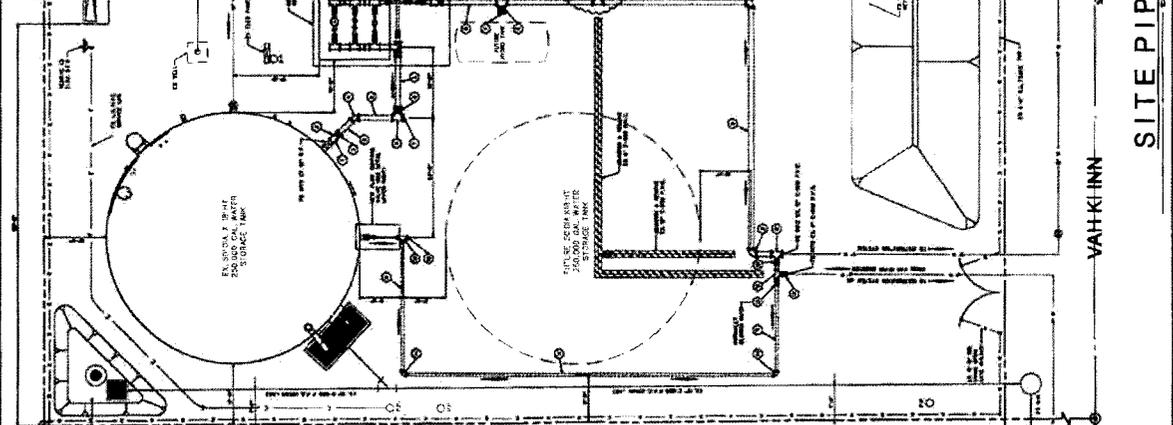
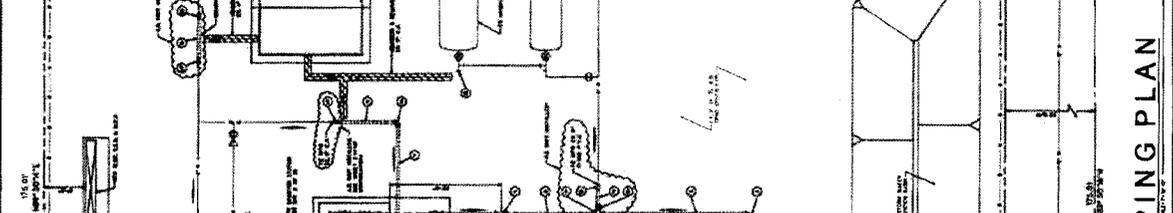


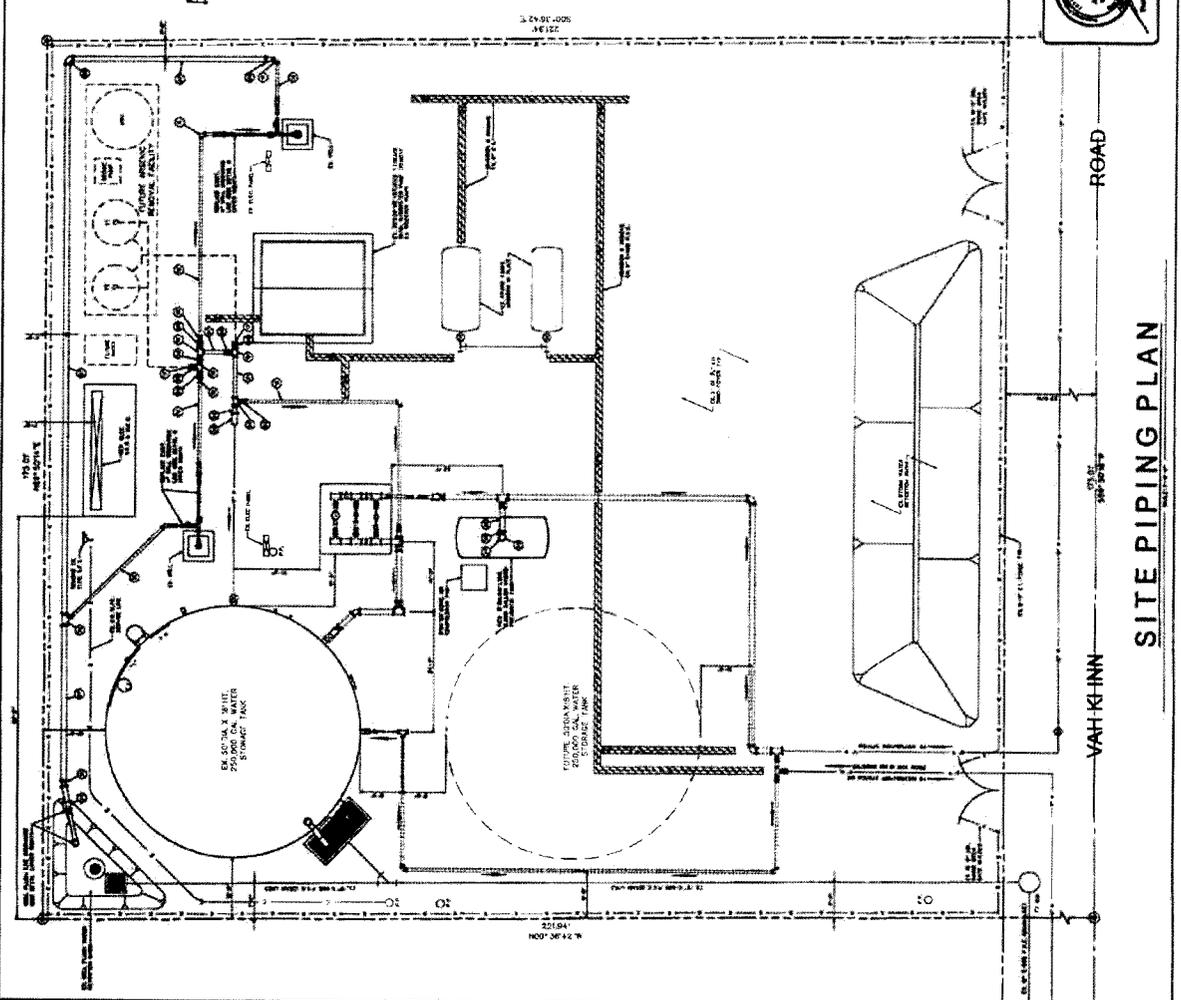
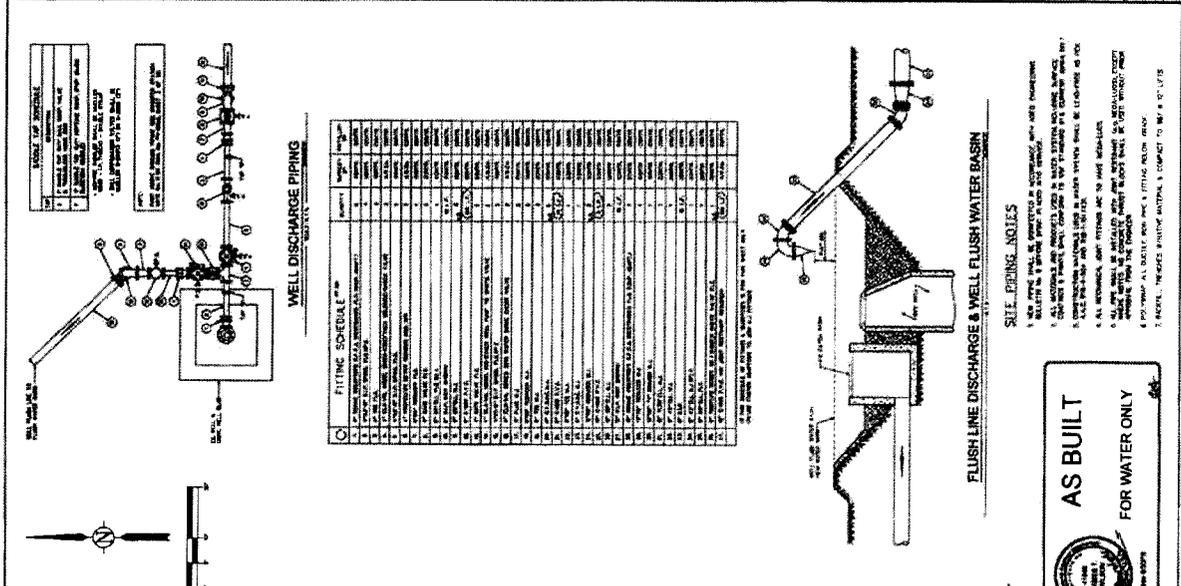
**FITTING SCHEDULE**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	1/2" SCH. 40 STEEL PIPE	100	LINEAL FEET
2	1/2" SCH. 40 STEEL ELBOW	10	PIECES
3	1/2" SCH. 40 STEEL TEES	5	PIECES
4	1/2" SCH. 40 STEEL CROSS	2	PIECES
5	1/2" SCH. 40 STEEL END CAP	2	PIECES
6	1/2" SCH. 40 STEEL FLANGE	10	PIECES
7	1/2" SCH. 40 STEEL GASKET	10	PIECES
8	1/2" SCH. 40 STEEL BOLT	100	PIECES
9	1/2" SCH. 40 STEEL NUT	100	PIECES
10	1/2" SCH. 40 STEEL WASHER	100	PIECES
11	1/2" SCH. 40 STEEL LOCKWASHER	100	PIECES
12	1/2" SCH. 40 STEEL RIVET	100	PIECES
13	1/2" SCH. 40 STEEL RIVET WASHER	100	PIECES
14	1/2" SCH. 40 STEEL RIVET NUT	100	PIECES
15	1/2" SCH. 40 STEEL RIVET WASHER NUT	100	PIECES
16	1/2" SCH. 40 STEEL RIVET WASHER NUT WASHER	100	PIECES
17	1/2" SCH. 40 STEEL RIVET WASHER NUT WASHER WASHER	100	PIECES
18	1/2" SCH. 40 STEEL RIVET WASHER NUT WASHER WASHER WASHER	100	PIECES
19	1/2" SCH. 40 STEEL RIVET WASHER NUT WASHER WASHER WASHER WASHER	100	PIECES
20	1/2" SCH. 40 STEEL RIVET WASHER NUT WASHER WASHER WASHER WASHER WASHER	100	PIECES

**SITE PIPING NOTES**

1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
2. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
3. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
4. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
5. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
6. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
7. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
8. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
9. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
10. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
11. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
12. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
13. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
14. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
15. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
16. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
17. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
18. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
19. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.
20. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C900.

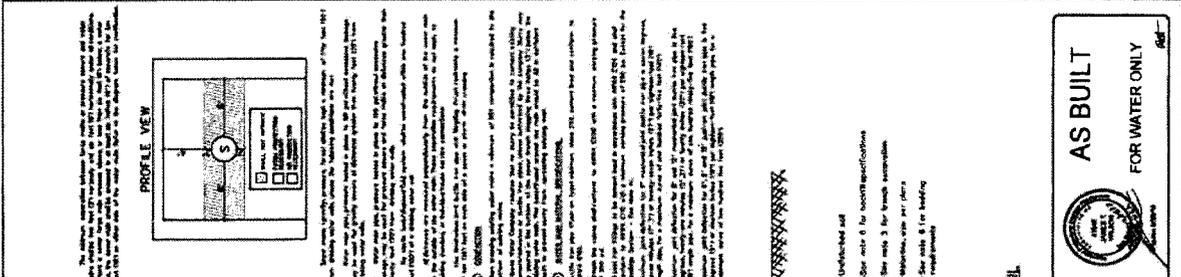




**SEE PIPING NOTES**  
 1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 2. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 3. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 4. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 5. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 6. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 7. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 8. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 9. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.  
 10. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PHOENIX WATER DEPARTMENT SPECIFICATIONS.

**AS BUILT**  
**FOR WATER ONLY**





TYPICAL FRENCH DRAIN  
 PER M&E CONTRACT NO. A-2, REV. 4.8

**AS BUILT FOR WATER ONLY**

1. The contractor shall provide and install a French drain system in accordance with the following specifications:

2. The French drain shall be constructed using 12 inch 3/4 inch mesh geotextile fabric, 1/2 inch 1/2 inch mesh geotextile fabric.

3. The French drain shall be installed in a trench that is 12 inches wide and 12 inches deep.

4. The French drain shall be covered with a 1/2 inch 1/2 inch mesh geotextile fabric.

5. The French drain shall be tested for flow capacity in accordance with the following specifications:

6. The French drain shall be tested for flow capacity using a flow rate of 100 gpm.

7. The French drain shall be tested for flow capacity using a flow rate of 100 gpm.

8. The French drain shall be tested for flow capacity using a flow rate of 100 gpm.

9. The French drain shall be tested for flow capacity using a flow rate of 100 gpm.

10. The French drain shall be tested for flow capacity using a flow rate of 100 gpm.

**INSTALLATION OF GEOTEXTILE FABRIC**

1. The contractor shall provide and install geotextile fabric in accordance with the following specifications:

2. The geotextile fabric shall be installed in a trench that is 12 inches wide and 12 inches deep.

3. The geotextile fabric shall be covered with a 1/2 inch 1/2 inch mesh geotextile fabric.

4. The geotextile fabric shall be tested for flow capacity in accordance with the following specifications:

5. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

6. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

7. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

8. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

9. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

10. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

**INSTALLATION OF CONCRETE FRENCH DRAIN**

1. The contractor shall provide and install a concrete French drain in accordance with the following specifications:

2. The concrete French drain shall be installed in a trench that is 12 inches wide and 12 inches deep.

3. The concrete French drain shall be covered with a 1/2 inch 1/2 inch mesh geotextile fabric.

4. The concrete French drain shall be tested for flow capacity in accordance with the following specifications:

5. The concrete French drain shall be tested for flow capacity using a flow rate of 100 gpm.

6. The concrete French drain shall be tested for flow capacity using a flow rate of 100 gpm.

7. The concrete French drain shall be tested for flow capacity using a flow rate of 100 gpm.

8. The concrete French drain shall be tested for flow capacity using a flow rate of 100 gpm.

9. The concrete French drain shall be tested for flow capacity using a flow rate of 100 gpm.

10. The concrete French drain shall be tested for flow capacity using a flow rate of 100 gpm.

**INSTALLATION OF GEOTEXTILE FABRIC (CONTINUED)**

1. The contractor shall provide and install geotextile fabric in accordance with the following specifications:

2. The geotextile fabric shall be installed in a trench that is 12 inches wide and 12 inches deep.

3. The geotextile fabric shall be covered with a 1/2 inch 1/2 inch mesh geotextile fabric.

4. The geotextile fabric shall be tested for flow capacity in accordance with the following specifications:

5. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

6. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

7. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

8. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

9. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.

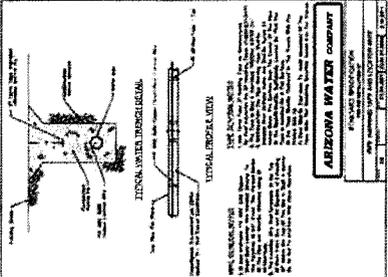
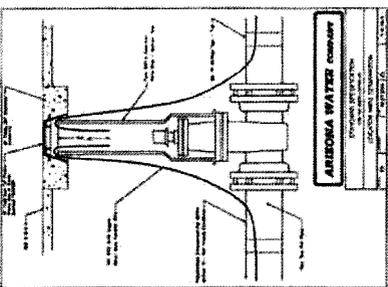
10. The geotextile fabric shall be tested for flow capacity using a flow rate of 100 gpm.


 PV-0042  
 SHEET 5 OF 15

**ARIZONA WATER COMPANY**  
 380 N BLACK CANYON HOPE, POST OFFICE BOX 2000  
 TUCSON, ARIZONA 85701  
 (520) 243-9900

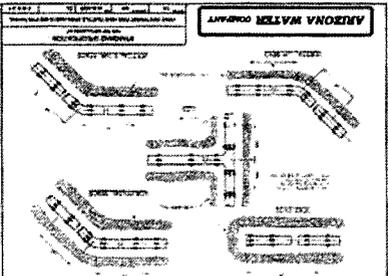
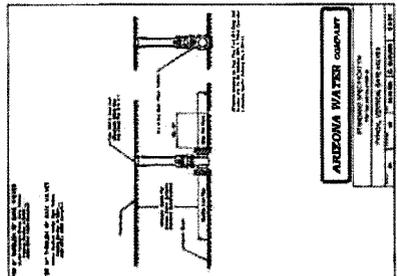
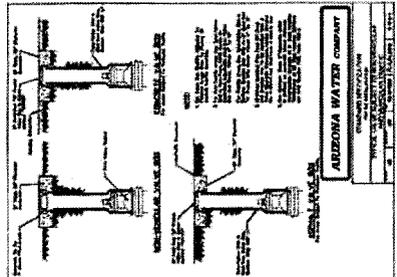
PROJECT: 17-07-03-00  
 DATE: 2-9-2012  
 DRAWN BY: AS SHAWAN  
 CHECKED BY: [Signature]  
 PROJECT NO.: 17-07-03-00

**AS BUILT**  
 FOR WATER ONLY



**ARIZONA WATER COMPANY**  
 380 N BLACK CANYON HOPE, POST OFFICE BOX 2000  
 TUCSON, ARIZONA 85701  
 (520) 243-9900

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	18" DIA. RISING MAIN	100	LINEAL FEET
2	18" DIA. RISING MAIN	100	LINEAL FEET
3	18" DIA. RISING MAIN	100	LINEAL FEET
4	18" DIA. RISING MAIN	100	LINEAL FEET
5	18" DIA. RISING MAIN	100	LINEAL FEET
6	18" DIA. RISING MAIN	100	LINEAL FEET
7	18" DIA. RISING MAIN	100	LINEAL FEET
8	18" DIA. RISING MAIN	100	LINEAL FEET
9	18" DIA. RISING MAIN	100	LINEAL FEET
10	18" DIA. RISING MAIN	100	LINEAL FEET









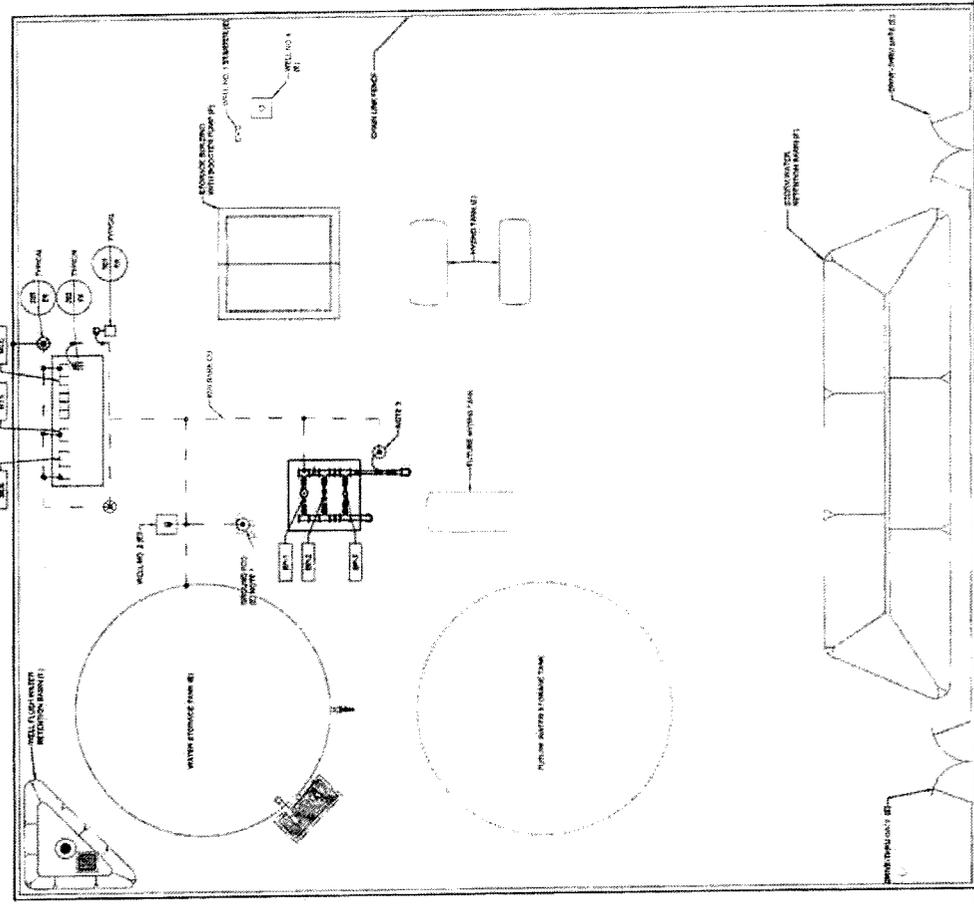
**ARIZONA WATER COMPANY**  
 3605 N. BUCK GARDEN HWY.  
 PHOENIX, ARIZONA 85038-9008  
 (602) 240-8860

PROJECT NO.	1-5024
DATE	3/15/20
BY	JAM
CHECKED BY	AS SHOWN
DATE	3-29-2013
SCALE	AS SHOWN
PROJECT NAME	CONSTRUCT A BOOSTER PUMP STATION AT THE VALLEY PARKS WELL & TANK SITE IN COOLIDGE, ARIZONA

- FOR CONSTRUCTION.
- RECORD DRAWINGS.

**SHEET NOTES:**

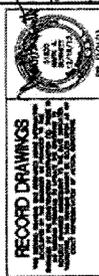
- THE IS DRAWING ON MECHANICAL ELECTRICAL SYSTEMS
- CONTRACTOR TO VERIFY ALL ELECTRICAL REQUIREMENTS
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL AND STATE REGULATIONS
- CONTRACTOR TO VERIFY ALL ELECTRICAL REQUIREMENTS
- CONTRACTOR TO VERIFY ALL ELECTRICAL REQUIREMENTS



**GROUNDING SITE PLAN**  
 SHERMAN & KNEIP

**SHERMAN & KNEIP ASSOCIATES, INC.**  
 1000 N. CENTRAL EXPRESSWAY, SUITE 100  
 PHOENIX, ARIZONA 85004  
 (602) 240-8860





**RECORD DRAWINGS**  
THIS DRAWING IS THE PROPERTY OF MEIDENBAUM ASSOCIATES, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS 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 MEIDENBAUM ASSOCIATES, INC.

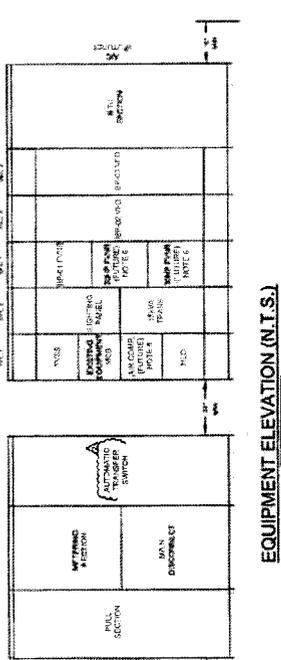
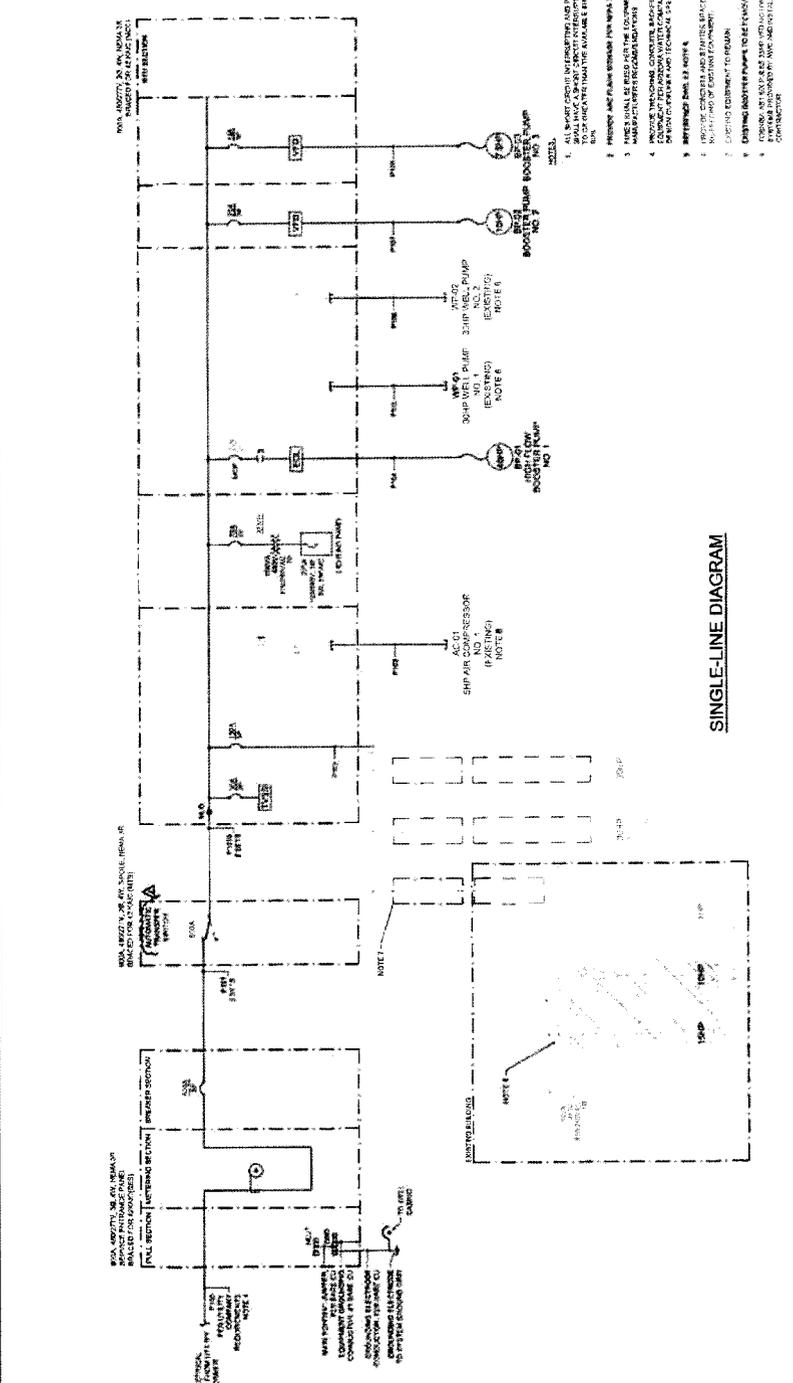
**ARIZONA WATER COMPANY**  
3805 N. BLACK CANYON HWY.  
PHOENIX, ARIZONA 85028-9008  
(602) 240-6980  
CONSTRUCTION OF BOOSTER PUMP STATION AT THE VALLEY MARKS WELL & TANK SITE IN GILBERT, ARIZONA  
SINGLE LINE DIAGRAM AND CALCULATIONS

DATE: 5-29-2013  
BY: AS SHOWN  
CHECKED BY: MAB  
PROJECT NO: 1-5024  
SHEET NO: 10 OF 15

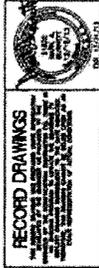
1. FOR CONSTRUCTION.  
2. RECORD DRAWINGS.

**LOAD CALCULATIONS**

NO.	DESCRIPTION	AMP	HP
1	BOOSTER PUMP NO. 1	150	1.5
2	BOOSTER PUMP NO. 2	150	1.5
3	BOOSTER PUMP NO. 3	150	1.5
4	SHIP AIR COMPRESSOR (PASTEUR)	100	1.0
5	300HP WTR PUMP (EXISTING)	100	1.0
6	300HP WTR PUMP (EXISTING)	100	1.0
7	300HP WTR PUMP (EXISTING)	100	1.0
8	300HP WTR PUMP (EXISTING)	100	1.0
9	300HP WTR PUMP (EXISTING)	100	1.0
10	300HP WTR PUMP (EXISTING)	100	1.0
11	300HP WTR PUMP (EXISTING)	100	1.0
12	300HP WTR PUMP (EXISTING)	100	1.0
13	300HP WTR PUMP (EXISTING)	100	1.0
14	300HP WTR PUMP (EXISTING)	100	1.0
15	300HP WTR PUMP (EXISTING)	100	1.0
16	300HP WTR PUMP (EXISTING)	100	1.0
17	300HP WTR PUMP (EXISTING)	100	1.0
18	300HP WTR PUMP (EXISTING)	100	1.0
19	300HP WTR PUMP (EXISTING)	100	1.0
20	300HP WTR PUMP (EXISTING)	100	1.0
21	300HP WTR PUMP (EXISTING)	100	1.0
22	300HP WTR PUMP (EXISTING)	100	1.0
23	300HP WTR PUMP (EXISTING)	100	1.0
24	300HP WTR PUMP (EXISTING)	100	1.0
25	300HP WTR PUMP (EXISTING)	100	1.0
26	300HP WTR PUMP (EXISTING)	100	1.0
27	300HP WTR PUMP (EXISTING)	100	1.0
28	300HP WTR PUMP (EXISTING)	100	1.0
29	300HP WTR PUMP (EXISTING)	100	1.0
30	300HP WTR PUMP (EXISTING)	100	1.0
31	300HP WTR PUMP (EXISTING)	100	1.0
32	300HP WTR PUMP (EXISTING)	100	1.0
33	300HP WTR PUMP (EXISTING)	100	1.0
34	300HP WTR PUMP (EXISTING)	100	1.0
35	300HP WTR PUMP (EXISTING)	100	1.0
36	300HP WTR PUMP (EXISTING)	100	1.0
37	300HP WTR PUMP (EXISTING)	100	1.0
38	300HP WTR PUMP (EXISTING)	100	1.0
39	300HP WTR PUMP (EXISTING)	100	1.0
40	300HP WTR PUMP (EXISTING)	100	1.0
41	300HP WTR PUMP (EXISTING)	100	1.0
42	300HP WTR PUMP (EXISTING)	100	1.0
43	300HP WTR PUMP (EXISTING)	100	1.0
44	300HP WTR PUMP (EXISTING)	100	1.0
45	300HP WTR PUMP (EXISTING)	100	1.0
46	300HP WTR PUMP (EXISTING)	100	1.0
47	300HP WTR PUMP (EXISTING)	100	1.0
48	300HP WTR PUMP (EXISTING)	100	1.0
49	300HP WTR PUMP (EXISTING)	100	1.0
50	300HP WTR PUMP (EXISTING)	100	1.0
51	300HP WTR PUMP (EXISTING)	100	1.0
52	300HP WTR PUMP (EXISTING)	100	1.0
53	300HP WTR PUMP (EXISTING)	100	1.0
54	300HP WTR PUMP (EXISTING)	100	1.0
55	300HP WTR PUMP (EXISTING)	100	1.0
56	300HP WTR PUMP (EXISTING)	100	1.0
57	300HP WTR PUMP (EXISTING)	100	1.0
58	300HP WTR PUMP (EXISTING)	100	1.0
59	300HP WTR PUMP (EXISTING)	100	1.0
60	300HP WTR PUMP (EXISTING)	100	1.0
61	300HP WTR PUMP (EXISTING)	100	1.0
62	300HP WTR PUMP (EXISTING)	100	1.0
63	300HP WTR PUMP (EXISTING)	100	1.0
64	300HP WTR PUMP (EXISTING)	100	1.0
65	300HP WTR PUMP (EXISTING)	100	1.0
66	300HP WTR PUMP (EXISTING)	100	1.0
67	300HP WTR PUMP (EXISTING)	100	1.0
68	300HP WTR PUMP (EXISTING)	100	1.0
69	300HP WTR PUMP (EXISTING)	100	1.0
70	300HP WTR PUMP (EXISTING)	100	1.0
71	300HP WTR PUMP (EXISTING)	100	1.0
72	300HP WTR PUMP (EXISTING)	100	1.0
73	300HP WTR PUMP (EXISTING)	100	1.0
74	300HP WTR PUMP (EXISTING)	100	1.0
75	300HP WTR PUMP (EXISTING)	100	1.0
76	300HP WTR PUMP (EXISTING)	100	1.0
77	300HP WTR PUMP (EXISTING)	100	1.0
78	300HP WTR PUMP (EXISTING)	100	1.0
79	300HP WTR PUMP (EXISTING)	100	1.0
80	300HP WTR PUMP (EXISTING)	100	1.0
81	300HP WTR PUMP (EXISTING)	100	1.0
82	300HP WTR PUMP (EXISTING)	100	1.0
83	300HP WTR PUMP (EXISTING)	100	1.0
84	300HP WTR PUMP (EXISTING)	100	1.0
85	300HP WTR PUMP (EXISTING)	100	1.0
86	300HP WTR PUMP (EXISTING)	100	1.0
87	300HP WTR PUMP (EXISTING)	100	1.0
88	300HP WTR PUMP (EXISTING)	100	1.0
89	300HP WTR PUMP (EXISTING)	100	1.0
90	300HP WTR PUMP (EXISTING)	100	1.0
91	300HP WTR PUMP (EXISTING)	100	1.0
92	300HP WTR PUMP (EXISTING)	100	1.0
93	300HP WTR PUMP (EXISTING)	100	1.0
94	300HP WTR PUMP (EXISTING)	100	1.0
95	300HP WTR PUMP (EXISTING)	100	1.0
96	300HP WTR PUMP (EXISTING)	100	1.0
97	300HP WTR PUMP (EXISTING)	100	1.0
98	300HP WTR PUMP (EXISTING)	100	1.0
99	300HP WTR PUMP (EXISTING)	100	1.0
100	300HP WTR PUMP (EXISTING)	100	1.0





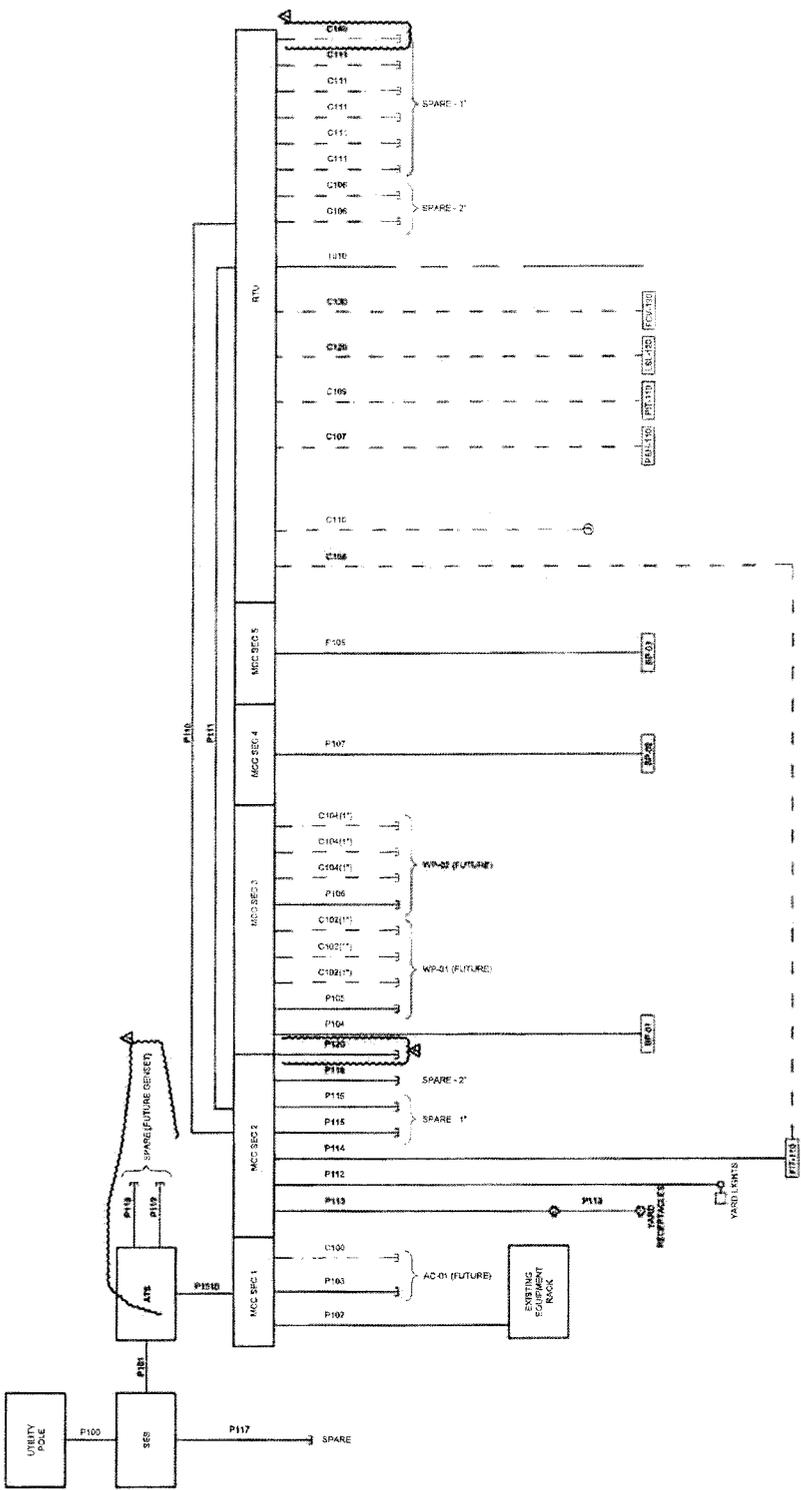


RECORD DRAWINGS  
THIS DRAWING IS TO BE USED FOR RECORD PURPOSES ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE ORIGINAL DESIGNER.

ARIZONA WATER COMPANY  
3905 N. BLACK CANYON HWY.  
PHOENIX, ARIZONA 85018-9008  
POST OFFICE BOX 29006  
(602) 240-0900  
CONSISTENT A BOOSTER PUMP STATION AT THE VALLEY PARKS  
WELL & PUMP SITE IN COCHISE, ARIZONA  
CONTRACT NO. 2013-0001  
DATE: 05-29-2013  
DESIGNED BY: AS SHOWN  
CHECKED BY: S.M.J.  
SCALE: AS SHOWN  
PROJECT NO: 263-1100  
1. FOR CONSTRUCTION.  
2. RECORD DRAWINGS.

CONDUIT DIAGRAM

POWER CONDUIT  
CONTROL CONDUIT  
TELEPHONE CONDUIT





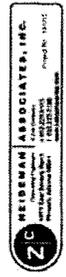
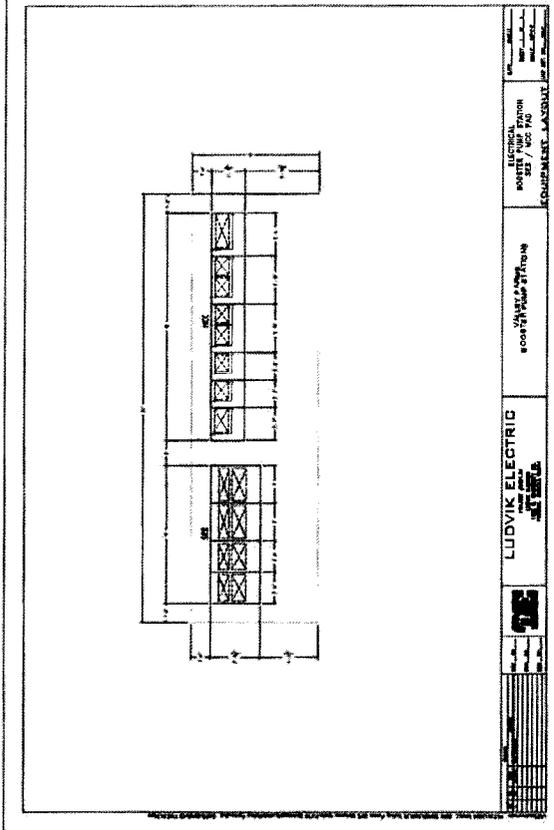
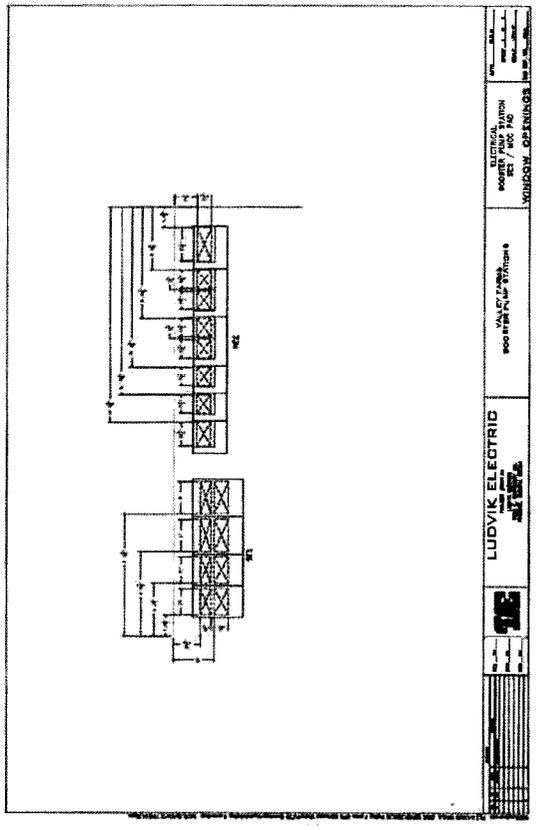
**RECORD DRAWINGS**  
These drawings are to be used for record purposes only. They are not to be used for construction. All work shall be done in accordance with the approved plans and specifications.

**ARIZONA WATER COMPANY**  
3805 N. BUCK CANYON HWY.  
PHOENIX, ARIZONA 85038-2008  
(602) 240-8000  
POST OFFICE BOX 28406

CONSTRUCT & INSTALL 2000 GPM PUMP STATION IN THE VALLEY PARKS WELLS & TANK SITE IN COOLIDGE, ARIZONA

DATE: 1-2024	BY: P.M.V. VALLEY
DATE: 3-29-2013	BY: AS SHOWN
DATE: 5-11-2011	BY: AS SHOWN
DATE: 1-2011	BY: AS SHOWN

1. FOR CONSTRUCTION.  
2. RECORD DRAWINGS.



**ZC HERBMAN ASSOCIATES, INC.**  
Professional Engineer  
1100 S. LAS VEGAS BLVD. SUITE 100  
LAS VEGAS, NV 89102  
TEL: 702-735-1100  
WWW.ZCHERBMAN.COM

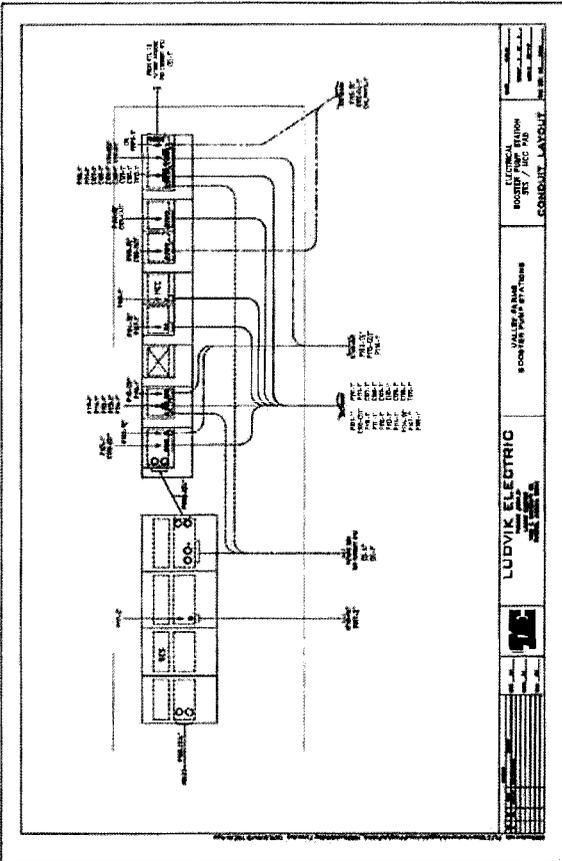


**RECORD DRAWINGS**  
 THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEER OR ARCHITECT AND ARE NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER OR ARCHITECT.

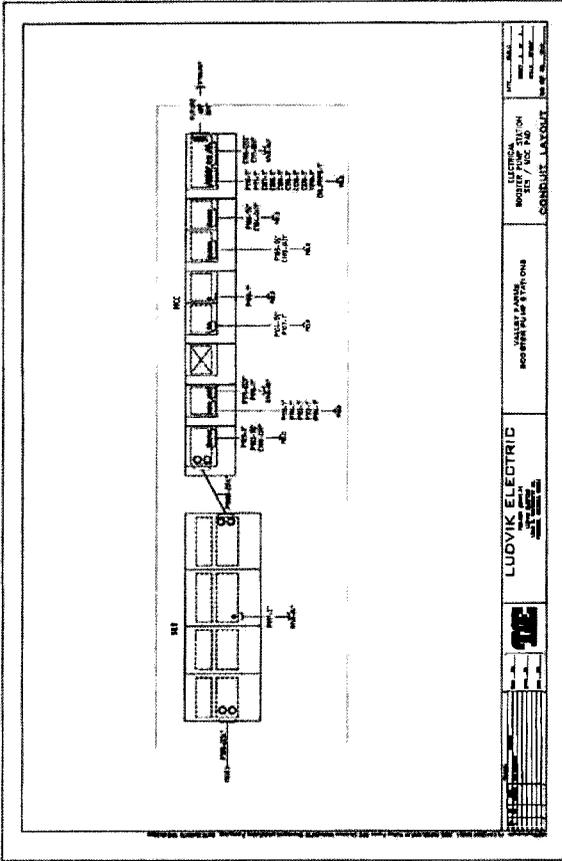
**ARIZONA WATER COMPANY**  
 2805 N. BLACK CANYON HWY. POST OFFICE BOX 29006  
 PHOENIX, ARIZONA 85033-9006  
 (602) 240-8960  
 WELL & TANK SITE IN COOLIDGE, ARIZONA  
 CONSTRUCT A BOOSTER PUMP STATION AT THE VALLEY PARKS

1-8024  
 51930  
 PINAL VALLEY  
 2-29-2013  
 AS SHOWN  
 MAB

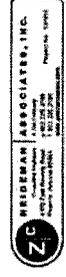
1. FOR CONSTRUCTION  
 2. RECORD DRAWINGS  
 THE ENGINEER'S RESPONSIBILITY IS TO PROVIDE THE INFORMATION NECESSARY TO CONSTRUCT THE PROJECT AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR VERIFYING THE ACCURACY OF ALL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR VERIFYING THE ACCURACY OF ALL FIELD CONDITIONS.



**LUDVIK ELECTRIC**  
 VALLEY PARKS BOOSTER PUMP STATION  
 ELECTRICAL SCHEMATIC FOR BOOSTER PUMP STATION  
 SHEET 14 OF 15



**LUDVIK ELECTRIC**  
 VALLEY PARKS BOOSTER PUMP STATION  
 ELECTRICAL SCHEMATIC FOR BOOSTER PUMP STATION  
 SHEET 14 OF 15



**WEIDEMAN ASSOCIATES, INC.**  
 1500 North Central Expressway  
 Suite 200  
 Phoenix, Arizona 85004  
 Phone: (602) 998-1100  
 Fax: (602) 998-1101  
 Project No. 10000

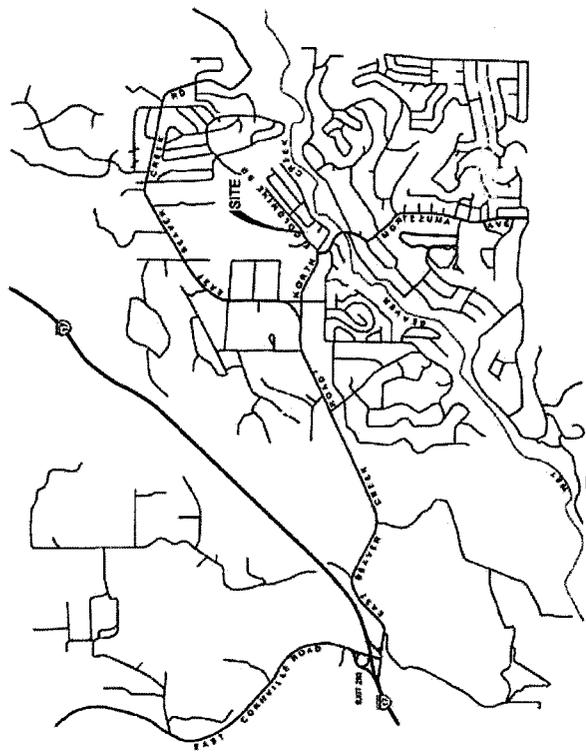
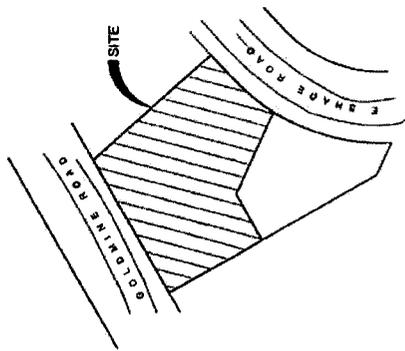


Attachment "H"

Montezuma Haven Well Nos. 2 and 3 Arsenic Removal Facility Record Drawings

**ARIZONA WATER COMPANY**  
**MONTEZUMA HAVEN WELLS NO. 2 AND NO. 3**  
**ARSENIC REMOVAL FACILITY**  
**4105 EAST GOLDMINE ROAD, LAKE MONTEZUMA, AZ 86335**

**AWC PROJECT NO. 1-4874**  
**DECEMBER 2011**



**ENGINEER**  
**WATERWORKS ENGINEERS**  
 8848 E. Chandler Road, Suite 300  
 Scottsdale, AZ 85258  
 Phone: (480) 885-1742-1742  
 Fax: (480) 885-1743  
 Contact: Ben Lee, P.E.

**OWNER**  
**ARIZONA WATER COMPANY**  
 3002 N. Black Canyon Hwy  
 Phoenix, AZ 85015  
 Phone: (602) 438-6889  
 Fax: (602) 288-4768  
 Contact: Andrew Hahn

**RECORD DRAWINGS**  
 THESE DRAWINGS REFLECT CHANGES FROM THE ORIGINAL DRAWINGS AND HAVE BEEN PREPARED DURING CONSTRUCTION AND HAVE BEEN PREPARED FROM THE DRAWINGS PROVIDED TO THE ENGINEER. THE ENGINEER DOES NOT WARRANT THESE DRAWINGS TO BE COMPLETE AND ACCURATE IN ALL RESPECTS.  
**WATERWORKS ENGINEERS, LLC**  
 871 W. BROADWAY W. LEE  
 MARCH 2012



<p><b>WATERWORKS ENGINEERS</b>                  871 W. BROADWAY W. LEE                  MARCH 2012</p>	<p>ARIZONA WATER COMPANY                  MONTEZUMA HAVEN WELLS NO. 2 AND NO. 3                  ARSENIC REMOVAL FACILITY</p>	<p>GENERAL                  COVER SHEET</p>	<p>SCALE: AS SHOWN</p>
--	---	---	------------------------

CALL TWO ENGINEERS TODAY  
 BEFORE YOU DIG  
**602-933-1100**  
**1-888-STAKE-IT**  
 (outside Maricopa County)

DESIGNED AND SEALED BY  
 ARIZONA REGISTERED PROFESSIONAL ENGINEER (P.E.)  
 BENJAMIN M. LEE  
 No. 11402  
 OR 12/21/11

CHECKED AND SEALED BY  
 ARIZONA REGISTERED PROFESSIONAL ENGINEER (P.E.)  
 JOSHUA WATTA  
 No. 11402  
 OR 12/21/11

THIS DOCUMENT IS THE PROPERTY OF WATERWORKS ENGINEERS, LLC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. ANY REUSE OR MODIFICATION OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF WATERWORKS ENGINEERS, LLC IS STRICTLY PROHIBITED.

**DRAWING INDEX**

DRAWING NUMBER	TITLE
1	COVER SHEET
2	DRAWING INDEX AND NOTES
3	ABOVE GROUND
4	STANDARD DESCRIPTIONS
5	LEGEND
6	PROCESS FLOW DIAGRAM 1
7	PROCESS FLOW DIAGRAM 2

DRAWING NUMBER	TITLE
8	CIVIL
9	C-100 SITE PLAN

DRAWING NUMBER	TITLE
10	STRUCTURAL
11	S-201 NOTES AND ABBREVIATIONS
12	S-301 DETAILS

DRAWING NUMBER	TITLE
13	MECHANICAL
14	M-100 ISOMETRIC
15	M-100 SITE PLAN
16	M-100 PARTIAL PLAN 1
17	M-201 SECTIONS
18	M-301 TYPICAL DETAILS 1
19	M-302 TYPICAL DETAILS 2

DRAWING NUMBER	TITLE
20	ELECTRICAL
21	E-101 SPECIFICATIONS AND LEGEND
22	E-102 SEE AND HOC SINGLE LINE DIAGRAM
23	E-103 SITE PLAN
24	E-104 EXISTING WELL PUMP #1
25	E-105 SCHEMATIC DIAGRAM REVISIONS
26	E-106 MISCELLANEOUS
27	E-107 SCHEMATIC DIAGRAMS
28	E-108 DETAILS

**GENERAL NOTES**

1. THE ENGINEER IS NOT PROVIDING DETAILS REFER TO THE UNKNOWN STANDARD DETAILS FOR PLUMBING CONSTRUCTION, SPONGING AND D. STRIPPER BY THE MARICOPA ASSOCIATION OF GOVERNMENT, LATEST VERSION.
2. ALL WORK UNDER THE PUBLIC WORKS PROGRAM SHALL BE DONE IN ACCORDANCE WITH THE MAG SPECIFICATIONS AND DETAILS, UNLESS OTHERWISE STATED ON PLANS. MINIMUM DIMENSIONS SHALL BE 1/2" FOR ALL DIMENSIONS AND 1/4" FOR ALL DIMENSIONS. DIMENSIONS SHALL BE 1/2" FOR ALL DIMENSIONS AND 1/4" FOR ALL DIMENSIONS.
3. THE ARIZONA WATER COMPANY (AWC) OPERATIONS STAFF SHALL BE NOTIFIED 48 HOURS PRIOR TO STARTING CONSTRUCTION.
4. ACCEPTANCE OF THE COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL RED LINE DRAWINGS AS-BUILTS HAVE BEEN GIVEN TO AND APPROVED BY THE ENGINEER.
5. CONTRACTOR SHALL ENSURE CONSTRUCTION MATERIALS REMAIN ISOLATED FROM THE WATER DISTRIBUTION SYSTEM. ISOLATION VALVES CONNECTING TO THE DISTRIBUTION SYSTEM SHALL BE LOCATED IN A CONCEALED POSITION BY CONTRACTOR.
6. BACKFILL CONDUCTION BY FLOODING OR WATER IS PROHIBITED.
7. NO JOBS WILL BE CONSIDERED COMPLETE UNTIL CURB, PAVEMENT AND SIDEWALKS ARE COMPLETED AND ALL CURB AND DEBRIS AND ALL DISTURBED SURFACE MONUMENTS REPLACED.
8. ALL EXISTING MONUMENTATION SHALL BE PRESERVED.
9. THE CONTRACTOR SHALL PROVIDE ALL EVIDENCE TO THE ENGINEER THAT THE CONSTRUCTION WILL LOCATE OR HAVE LOCATED ALL EXISTING UTILITIES AND PIPE LINES. TELEPHONE CONDUITS SHALL BE LOCATED AND MARKED PRIOR TO CONSTRUCTION AND WILL BE MAINTAINED THROUGHOUT CONSTRUCTION TO AVOID DAMAGE TO THE SAME.
10. BACKFILL SHALL NOT BE STRAPPED WITH LINES AND INSPECTED BY THE ENGINEER AND AWC INSPECTOR 14 HOURS PRIOR TO NOTIFICATION MUST BE GIVEN.
11. APPROVAL BY THE ENGINEER INDICATED REVIEW FOR GENERAL CONFORMANCE WITH STANDARDS. THIS APPROVAL SHALL NOT PREVENT AWC FROM REQUIRING CORRECTION OF ERRORS OR OMISSIONS OR VIOLATIONS OF ANY LAW OR ORDINANCE.
12. EXISTING UTILITIES AND OTHER FACILITIES SHOWN ON PLANS ARE BASED ON INFORMATION PROVIDED BY THE ARIZONA WATER COMPANY. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES WHICH PERTAIN TO AND MAY AFFECT CONSTRUCTION. NO ADDITIONAL PARTIES SHOULD BE NOTIFIED BY CONTRACTOR.
13. THE CONTRACTOR SHALL MAINTAIN AN APPROVED SET OF PLANS, WHICH SHALL BE ON THE JOB SITE AT ALL TIMES WHILE CONSTRUCTION ACTIVITIES ARE IN OPERATION.
14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE ENGINEER AND AWC BEFORE THE FITTINGS ARE COVERED TO INSURE THAT ALL NECESSARY FITTINGS ARE TYPED. ANY CHANGES TO THE APPROVED PLANS MUST BE AUTHORIZED BY THE ENGINEER AND AWC BEFORE THE CHANGE IS MADE IN THE FIELD.
15. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
16. CONTRACTOR TO VERIFY EXISTING UTILITIES WHICH MAY COMPLY WITH CONTRACTORS APPROVATION. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
17. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
18. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
19. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
20. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
21. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
22. PROVIDE SEPARATION BETWEEN UTILITIES PER MAG STANDARD SPECIFICATIONS #10 AND #11 ON THE DRAWINGS.
23. PROVIDE SEPARATION BETWEEN UTILITIES PER MAG STANDARD SPECIFICATIONS #10 AND #11 ON THE DRAWINGS.
24. BEANS BEHIND AND DIMENSIONS AS SHOWN. DO NOT COUNT ON UNRECORDED LAYOUT AND JOINTS REQUIRED TO INSTALL. PIPELINES IN ACCORDANCE WITH THE FITTINGS SHOWN ON THE DRAWINGS.
25. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
26. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED BY THE ARIZONA WATER COMPANY AND ALL APPLICABLE REGULATIONS AND ORDINANCES. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.
27. THE FIELD ENGINEER AND AWC SHALL INSPECT AND APPROVE ALL TRENCHING, BEHIND AND DIMENSIONS AS SHOWN. DO NOT COUNT ON UNRECORDED LAYOUT AND JOINTS REQUIRED TO INSTALL. PIPELINES IN ACCORDANCE WITH THE FITTINGS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL PERMITS AND CONDITIONS OF ALL PERMITS.

28. CONTRACTOR SHALL ARRANGE FOR ALL INSPECTIONS REQUIRED BY REGULATORY AGENCIES.
29. ALL FRAMES, COVERS, VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADE PRIOR TO THE COMPLETION OF CONSTRUCTION.
30. PRESSURE AND LEAKAGE TESTING SHALL CONFORM TO AWWA STANDARD SPEC. S.2. HYDRAULIC TESTING.
31. METERS - MINIMUM FITTING FIRE PIPE DIA. UPSTREAM (UP A DOWNSTREAM) OF METER: 1/2" UP, 3/4" DOWN. METER SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C501, C502, AND C503.
32. VERIFY ALL ABOVE GROUND PIPING AS PER ODEB BULLETIN NO. 19 (REVISED 11/18). LABEL ALL ABOVE GROUND PIPING WITH DIRECTION OF FLOW ARROWS.
33. PAINT ALL ABOVE GROUND PIPING TO MATCH VESSELS / BACKWASH TANKS / ENCLOSURES.
34. CONTRACTOR SHALL CLEAN AND DISINFECT ALL NEWLY CONSTRUCTED AND REPAIRED PIPING AND EQUIPMENT IN ACCORDANCE WITH AWWA C501, C502, AND C503.



**MGC**  
MAG CONTRACTORS, INC.



**WATERWORKS**  
ENGINEERS



ARIZONA WATER COMPANY  
WATERWORKS DIVISION

**DRAWING INDEX AND NOTES**

GENERAL

PROJECT: 14-0000  
SHEET: 002

DATE: 11/18/11  
BY: BERTRAM M. LEE  
CHECKED: 4/25/12



### PROCESS FLOW STREAM IDENTIFIERS

PIPING SYSTEM IDENTIFICATION	PIPING SYSTEM DESCRIPTION	PIPELINE MATERIAL
BW	BACKWASH	DIP
DM	DRAIN	COP
GW	GROUND WATER	DIP
OF	OVERFLOW	DIP
SIC OR MCI	SODIUM HYPOCHLORITE	LOPE
REC	RECYCLED WATER	COP
PW	POTABLE WATER	DIP
V	VENT	GALV

### EQUIPMENT TYPE IDENTIFIERS

ABBREVIATION	DESCRIPTION
AVV	AUSSEIGNON MEDIA VESSEL
ARV	AIR RELEASE VALVE
BAV	BALL VALVE
BPV	BUTTERFLY VALVE
CKV	CHECK VALVE
F	FILTER
FE	FLOW ELEMENT
GVV	GATE VALVE
IQ	INJECTION OIL
LE	LEVEL ELEMENT
RD	RUPTURE DISK
RP	RECICLE PUMP
T	TANK

### STANDARD VALVE AND OPERATOR

VALVE TYPE: CRV-10  
 NUMBER: \_\_\_\_\_

### UNIQUE VALVE AND OPERATOR

VALVE TYPE: BRV-11 \_\_\_\_\_ UNIT NUMBER: \_\_\_\_\_  
 \_\_\_\_\_ UNIQUE NUMBER: \_\_\_\_\_

### EQUIPMENT DESIGNATION

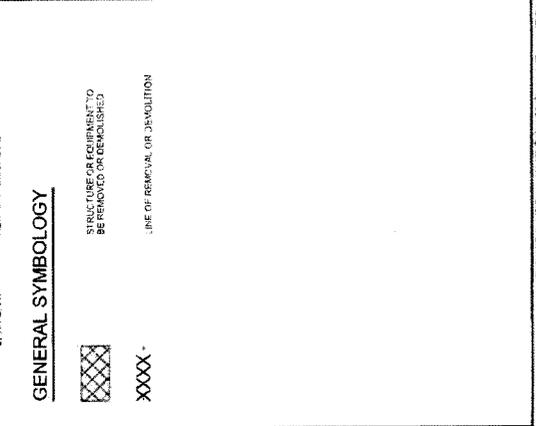
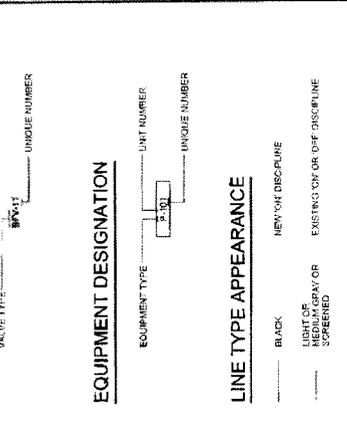
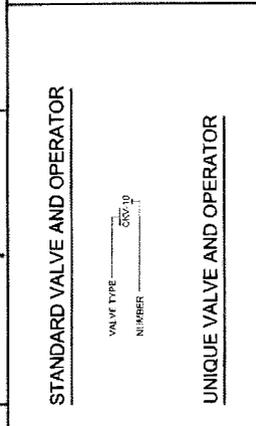
EQUIPMENT TYPE: 3-101 \_\_\_\_\_ UNIT NUMBER: \_\_\_\_\_  
 \_\_\_\_\_ UNIQUE NUMBER: \_\_\_\_\_

### LINE TYPE APPEARANCE

BLACK: NEW/OUT DISCIPLINE  
 LIGHT OR MEDIUM GRAY OR SCREENED: EXISTING OR NEW/OUT DISCIPLINE  
 DARK GRAY: NEW/OUT DISCIPLINE

### GENERAL SYMBOLOGY

STRUCTURE OR EQUIPMENT TO BE REMOVED OR DEMOLISHED  
 XXXX: LINE OF REMOVAL OR DEMOLITION



### STANDARD VALVE AND OPERATOR

VALVE TYPE: CRV-10  
 NUMBER: \_\_\_\_\_

### UNIQUE VALVE AND OPERATOR

VALVE TYPE: BRV-11 \_\_\_\_\_ UNIT NUMBER: \_\_\_\_\_  
 \_\_\_\_\_ UNIQUE NUMBER: \_\_\_\_\_

### EQUIPMENT DESIGNATION

EQUIPMENT TYPE: 3-101 \_\_\_\_\_ UNIT NUMBER: \_\_\_\_\_  
 \_\_\_\_\_ UNIQUE NUMBER: \_\_\_\_\_

### LINE TYPE APPEARANCE

BLACK: NEW/OUT DISCIPLINE  
 LIGHT OR MEDIUM GRAY OR SCREENED: EXISTING OR NEW/OUT DISCIPLINE  
 DARK GRAY: NEW/OUT DISCIPLINE

### GENERAL SYMBOLOGY

STRUCTURE OR EQUIPMENT TO BE REMOVED OR DEMOLISHED  
 XXXX: LINE OF REMOVAL OR DEMOLITION

### SECTION

SECTION LETTER: A

ON DRAWING WHERE SECTION LINE IS TAKEN

DRAWING NUMBER WHERE SHOWN

DRAWING NUMBER WHERE TAKEN

### DETAIL

DETAIL NUMBER: 1

ON DRAWING WHERE DETAIL IS TAKEN

DRAWING NUMBER WHERE SHOWN

DRAWING NUMBER WHERE TAKEN

### DISCIPLINE

LETTER	DISCIPLINE
G	GENERAL
D	DEMOLITION
C	CIVIL YARD
A	ARCHITECTURAL
S	STRUCTURAL
M	MECHANICAL
H	HEATING, VENTILATION AND COOLING
P	PLUMBING
E	ELECTRICAL
N	INSTRUMENTATION

### DRAWING NUMBERING

DRAWING SERIES	DESCRIPTION
100	GENERAL OVERALL PLANS
200	DETAILS
300	ELEVATIONS
400	SCHEDULES
500	SCHEDULES

### DRAWING NUMBER

DISCIPLINE: MCC \_\_\_\_\_ SEQUENTIAL NUMBER: \_\_\_\_\_  
 \_\_\_\_\_ DRAWING SERIES

PIPE AND FITTING SYMBOLS	
DOUBLE LINE	SINGLE LINE

PIPE AND FITTING SYMBOLS	
DOUBLE LINE	SINGLE LINE
VALVE SYMBOLS	
DOUBLE LINE	SINGLE LINE

PIPE AND FITTING SYMBOLS	
DOUBLE LINE	SINGLE LINE

PIPE AND FITTING SYMBOLS	
DOUBLE LINE	SINGLE LINE

PIPE AND FITTING SYMBOLS	
DOUBLE LINE	SINGLE LINE

PIPING DESIGNATION	
DOUBLE LINE	SINGLE LINE

**LEGEND**  
 GENERAL  
 1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE PIPING. ALL OTHER CONNECTIONS ARE SHOWN AS SINGLE LINE PIPING. SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS AND THE PIPING SCHEDULE.  
 2. ONLY REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.  
 NOTES:  
 1. ELECTRIC VALVE SHOWN, MANUAL VALVE SIMILAR.  
 2. ONLY REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.  
 REGISTERED PROFESSIONAL ENGINEER (P.E.)  
 BENJAMIN LEE  
 ON 10/27/11  
 SCALE: 1" = 10'-0"

NO. 1	DATE	BY	REVISION
1	3/12	JAC	REVISED FOR CONSTRUCTION

PROJECT	ARIZONA WATER GOVERNMENT
CLIENT	ARIZONA WATER GOVERNMENT
DESIGNER	WATERWORKS ENGINEERS
DATE	1/2008
SCALE	AS SHOWN

**WATERWORKS ENGINEERS**

ARIZONA WATER GOVERNMENT  
MONTICELLO AND NO. 5  
ARIZONA REMOVAL FACILITY

GENERAL

PROCESS FLOW DIAGRAM 1

ARIZONA REGISTERED PROFESSIONAL ENGINEER (CIVIL)  
BENJAMIN W. LEE  
4752  
04/23/11

ORIGINALY SIGNED AND SEALED BY

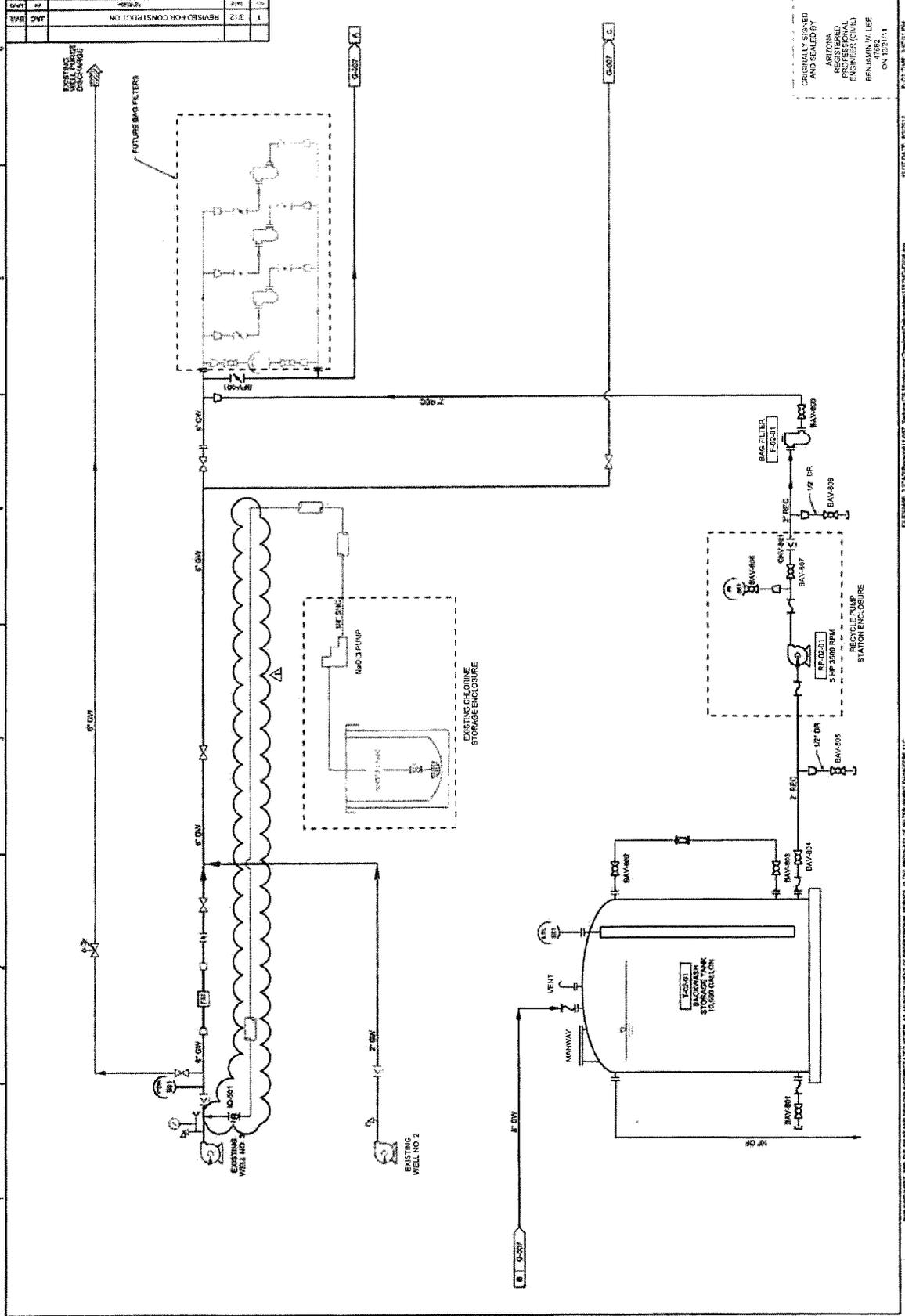


FIGURE 3.1.2 (continued) - Station 02, Recycle Pump Station Enclosure (continued)

SCALE: AS SHOWN

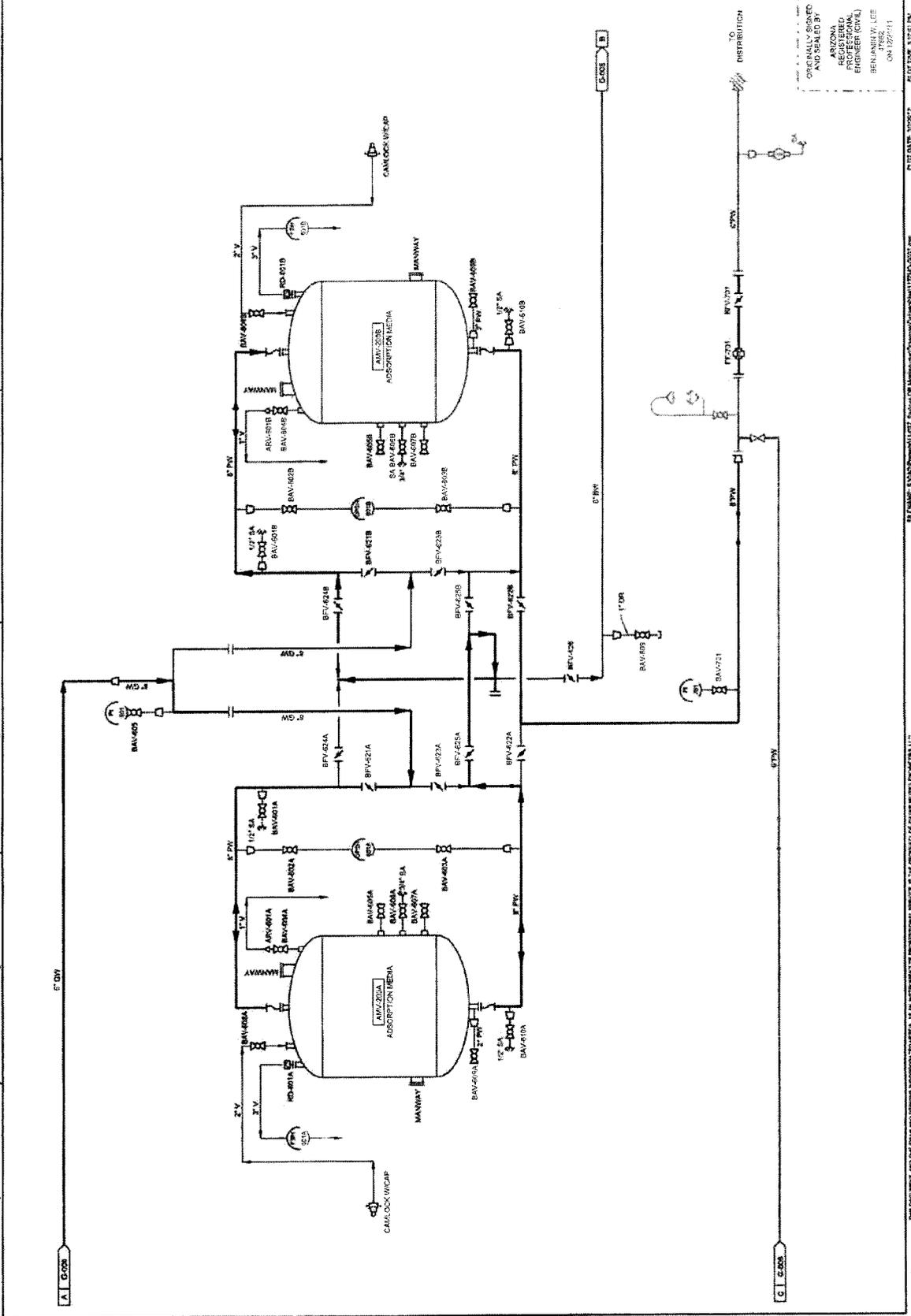
DATE: 1/2008

PROJECT: ARIZONA WATER GOVERNMENT

CLIENT: ARIZONA WATER GOVERNMENT

DESIGNER: WATERWORKS ENGINEERS, L.L.C.

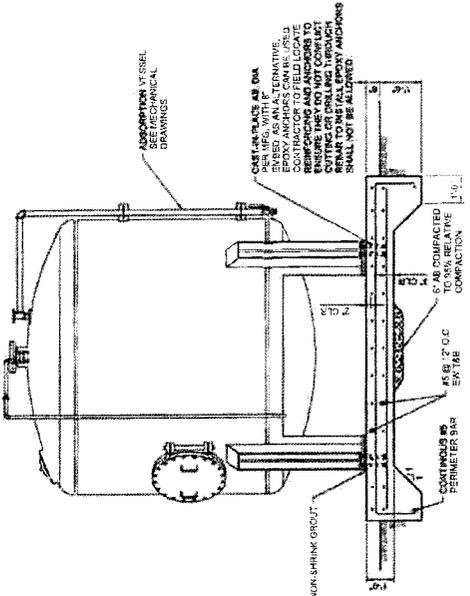
DATE: 1/2008



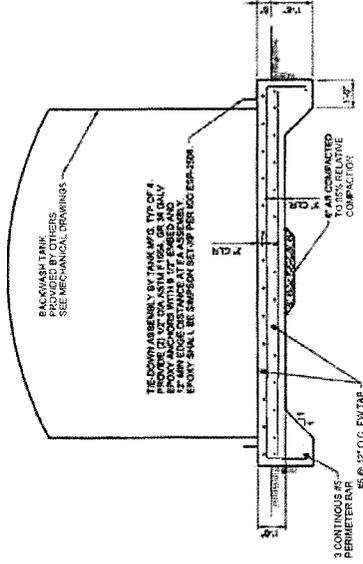
REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE ENGINE AND DESIGN INFORMATION CONTAINED HEREIN, IS AN INSTRUMENT OF PROFESSIONAL SERVICE, THE PROPERTY OF MCG CONTRACTORS, INC. AND ENGINEERS, L.P. ANY REUSE OR MODIFICATION OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF MCG CONTRACTORS, INC. AND ENGINEERS, L.P. IS STRICTLY PROHIBITED.



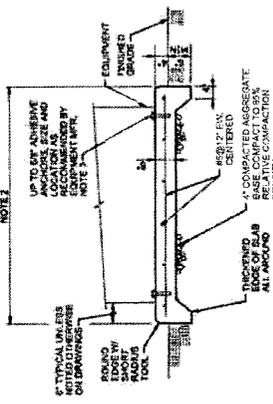




**2 ADSORPTION VESSEL SLAB**  
 11/15/20

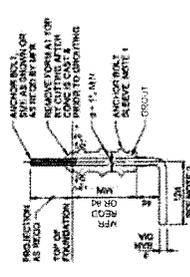


**1 BACKWASH TANK SLAB**  
 11/15/20

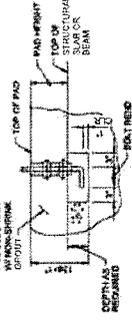


- NOTES**
- THE SIZE NUMBER, TYPE, LOCATION AND THREAD PROJECTION OF THE ANCHOR SHALL BE AS SHOWN ON DRAWINGS. ANCHOR BOLT SHALL BE WITHIN LATCH OF THE F.M.A. LOCATION REQUIRED FOR EQUIPMENT MOUNTING OR EQUIPMENT PAD SHALL BE DESCRIBED AND RECONSTRUCTED.
  - EQUIPMENT PADS PER DRAWINGS. WHERE PAD SIZE IS NOT SHOWN, ANCHOR BOLTS ARE CALLED OUT FOR ON DRAWINGS. PROVIDE ANCHOR BOLTS PER DT1 THIS SHEET IN LIEU OF ADHESIVE ANCHORS.
  - ANCHOR BOLT LOCATION SHALL BE WITHIN LATCH OF THE F.M.A. LOCATION REQUIRED FOR EQUIPMENT MOUNTING OR EQUIPMENT PAD SHALL BE DESCRIBED AND RECONSTRUCTED.
  - EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.

**3 TYPICAL EQUIPMENT SLAB**  
 11/15/20



**MACHINERY ANCHOR BOLT DETAIL**



**ANCHOR BOLT BLOCKOUT**

- NOTES**
- ANCHOR BOLT STEEL BY THE ANCHOR BOLT SLEEVE COMPANY, SHELTON, CT. OR EQUAL.
  - IF THE ANCHOR BOLTS ARE USED IN THE CONCRETE, REINFORCING SHALL BE PROVIDED.

**ANCHOR BOLT DETAILS**  
 11/15/20

MECHANICAL  
ISOMETRIC

DATE: 11/27/11  
 DRAWN BY: BENJAMIN V. LEE  
 CHECKED BY: [Signature]  
 PROJECT: [Project Name]

ANIZONA WATER COMPANY  
 1501 EAST WASHINGTON AVENUE  
 PHOENIX, AZ 85016

**WATERWORKS**  
 ENGINEERS

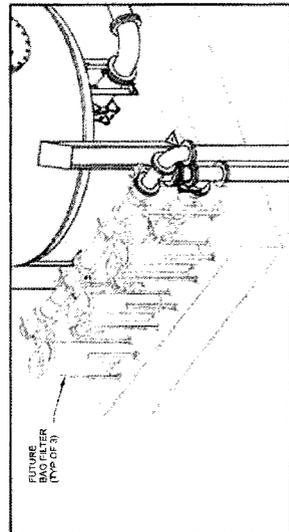
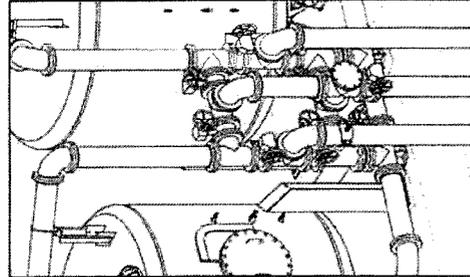
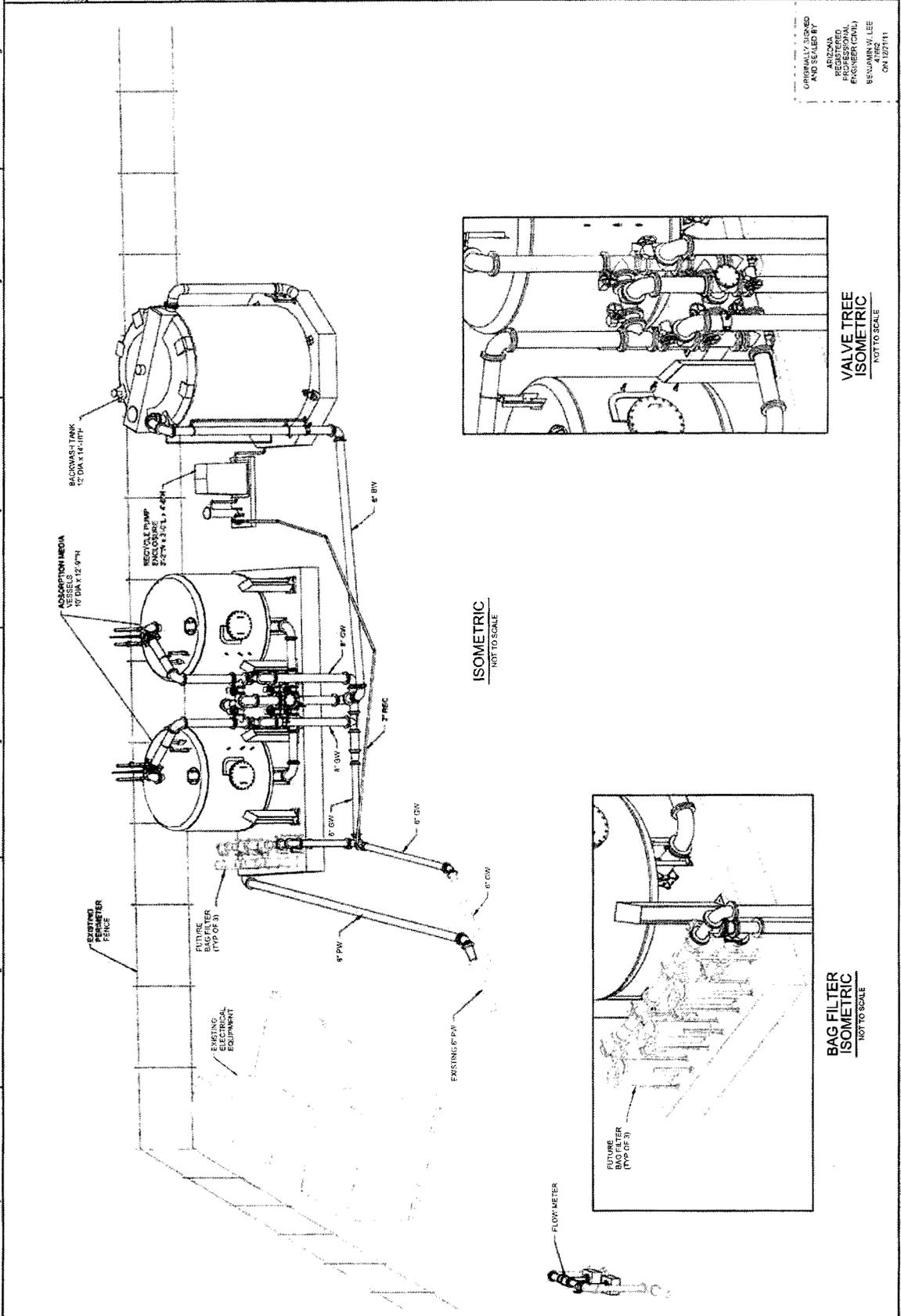


MECHANICAL  
 ISOMETRIC

DATE: 11/27/11  
 DRAWN BY: BENJAMIN V. LEE  
 CHECKED BY: [Signature]  
 PROJECT: [Project Name]

ANIZONA WATER COMPANY  
 1501 EAST WASHINGTON AVENUE  
 PHOENIX, AZ 85016

MECHANICAL  
 ISOMETRIC



THIS DOCUMENT IS THE PROPERTY OF WATERWORKS ENGINEERS. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. ANY REUSE OR MODIFICATION OF THIS DOCUMENT WITHOUT THE WRITTEN AUTHORIZATION OF WATERWORKS ENGINEERS, LLC, IS STRICTLY PROHIBITED. ANY PART OF THIS PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WATERWORKS ENGINEERS, LLC, IS STRICTLY PROHIBITED.





DATE	DESCRIPTION
11/15/11	ISSUED FOR PERMITS
08/14/11	ISSUED FOR CONSTRUCTION
07/27/11	ISSUED FOR PERMITS
07/27/11	ISSUED FOR PERMITS
07/27/11	ISSUED FOR PERMITS

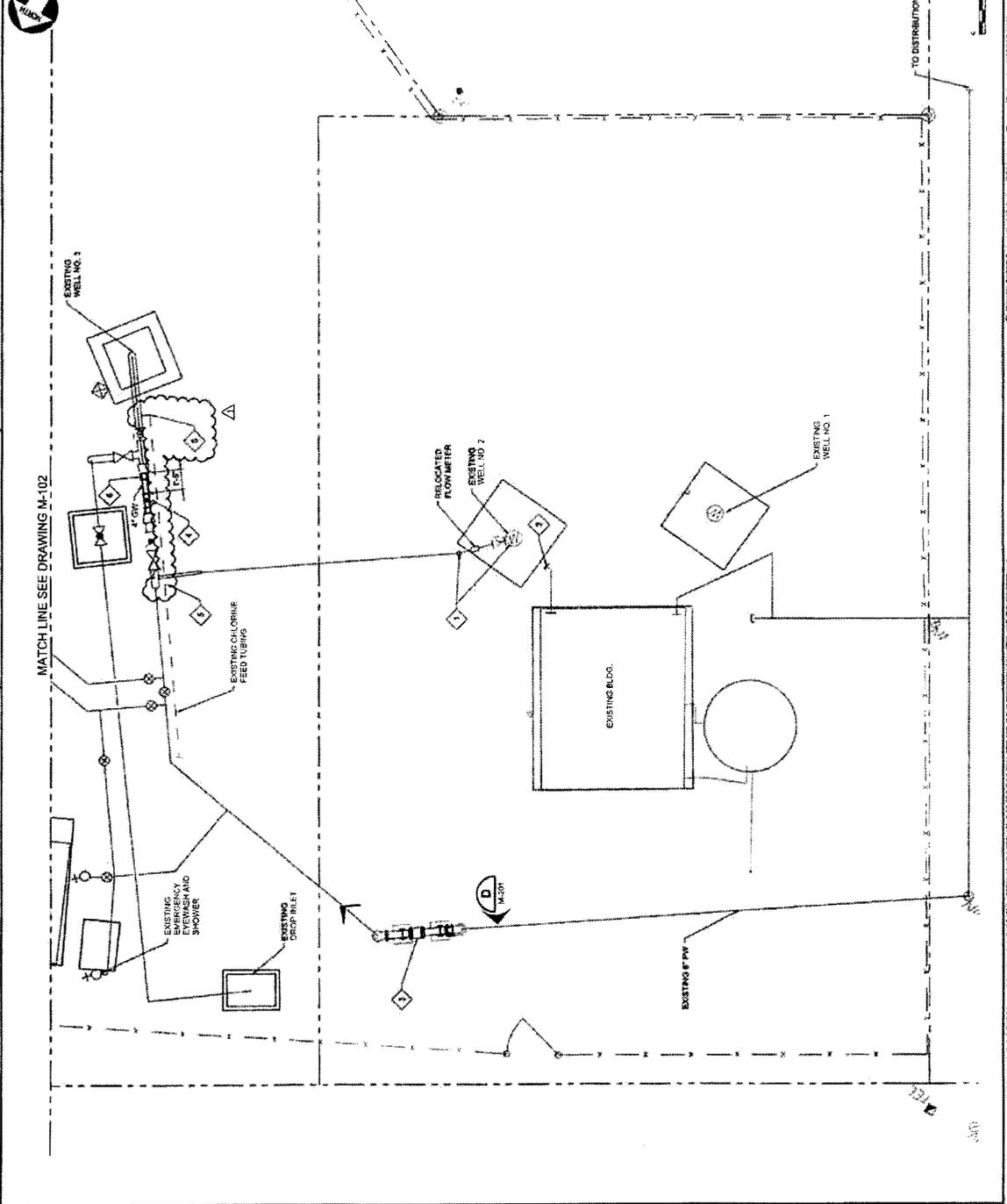
**WATERWORKS ENGINEERS**  
 1400 N. CENTRAL AVENUE, SUITE 200  
 PHOENIX, ARIZONA 85004  
 TEL: 602.254.1100  
 FAX: 602.254.1101  
 WWW.WATERWORKS-ENGINEERS.COM

ARIZONA WATER COMPANY  
 1000 N. CENTRAL AVENUE, SUITE 200  
 PHOENIX, ARIZONA 85004  
 TEL: 602.254.1100  
 FAX: 602.254.1101  
 WWW.AZWA.COM

PARTIAL PLAN 2  
 MECHANICAL

REVISIONS  
 NO. DATE BY  
 1 08/14/11 JVS  
 2 08/14/11 JVS  
 3 08/14/11 JVS  
 4 08/14/11 JVS  
 5 08/14/11 JVS  
 6 08/14/11 JVS  
 7 08/14/11 JVS  
 8 08/14/11 JVS  
 9 08/14/11 JVS  
 10 08/14/11 JVS  
 11 08/14/11 JVS  
 12 08/14/11 JVS  
 13 08/14/11 JVS  
 14 08/14/11 JVS  
 15 08/14/11 JVS  
 16 08/14/11 JVS  
 17 08/14/11 JVS  
 18 08/14/11 JVS  
 19 08/14/11 JVS  
 20 08/14/11 JVS  
 21 08/14/11 JVS  
 22 08/14/11 JVS  
 23 08/14/11 JVS  
 24 08/14/11 JVS  
 25 08/14/11 JVS  
 26 08/14/11 JVS  
 27 08/14/11 JVS  
 28 08/14/11 JVS  
 29 08/14/11 JVS  
 30 08/14/11 JVS  
 31 08/14/11 JVS  
 32 08/14/11 JVS  
 33 08/14/11 JVS  
 34 08/14/11 JVS  
 35 08/14/11 JVS  
 36 08/14/11 JVS  
 37 08/14/11 JVS  
 38 08/14/11 JVS  
 39 08/14/11 JVS  
 40 08/14/11 JVS  
 41 08/14/11 JVS  
 42 08/14/11 JVS  
 43 08/14/11 JVS  
 44 08/14/11 JVS  
 45 08/14/11 JVS  
 46 08/14/11 JVS  
 47 08/14/11 JVS  
 48 08/14/11 JVS  
 49 08/14/11 JVS  
 50 08/14/11 JVS  
 51 08/14/11 JVS  
 52 08/14/11 JVS  
 53 08/14/11 JVS  
 54 08/14/11 JVS  
 55 08/14/11 JVS  
 56 08/14/11 JVS  
 57 08/14/11 JVS  
 58 08/14/11 JVS  
 59 08/14/11 JVS  
 60 08/14/11 JVS  
 61 08/14/11 JVS  
 62 08/14/11 JVS  
 63 08/14/11 JVS  
 64 08/14/11 JVS  
 65 08/14/11 JVS  
 66 08/14/11 JVS  
 67 08/14/11 JVS  
 68 08/14/11 JVS  
 69 08/14/11 JVS  
 70 08/14/11 JVS  
 71 08/14/11 JVS  
 72 08/14/11 JVS  
 73 08/14/11 JVS  
 74 08/14/11 JVS  
 75 08/14/11 JVS  
 76 08/14/11 JVS  
 77 08/14/11 JVS  
 78 08/14/11 JVS  
 79 08/14/11 JVS  
 80 08/14/11 JVS  
 81 08/14/11 JVS  
 82 08/14/11 JVS  
 83 08/14/11 JVS  
 84 08/14/11 JVS  
 85 08/14/11 JVS  
 86 08/14/11 JVS  
 87 08/14/11 JVS  
 88 08/14/11 JVS  
 89 08/14/11 JVS  
 90 08/14/11 JVS  
 91 08/14/11 JVS  
 92 08/14/11 JVS  
 93 08/14/11 JVS  
 94 08/14/11 JVS  
 95 08/14/11 JVS  
 96 08/14/11 JVS  
 97 08/14/11 JVS  
 98 08/14/11 JVS  
 99 08/14/11 JVS  
 100 08/14/11 JVS

- NOTES**
1. TURN WELL PUMP COLUMN APPROXIMATELY 90 DEGREES CLOCKWISE. RELOCATE EXISTING CHLORINE FEED TUBING TO NEW LOCATION. RELOCATE EXISTING FLOW METER AND VALVE TO NEW LOCATION. 2" GALVANIZED STEEL PIPE AS NECESSARY.
  2. PIPE SUPPORT SIMILAR TO DETAIL 3.04 (MS01)
  3. RELOCATE ABOVEGROUND PIPING AND SALVAGE THE EXISTING FLOW METER. INSTALL THE NEW FLOW METER AND VALVE PRE-INSTALLED ON WELLSITE (MS01)
  4. RELOCATE EXISTING FLOW METER
  5. RUN NEW EXISTING CHLORINE FEED TUBING TO INJECTION POINT
  6. INSTALL PCCA



ORIGINALLY SIGNED AND SEALED BY  
 ANTHONY J. VANCE  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)  
 NO. 47982  
 BENJAMIN W. LEE  
 04/12/21/11

SCALE: 1/8" = 1'-0"  
 0 4 8 FEET

REUSE OF DOCUMENTS: THE DOCUMENT AND THE DATA AND INFORMATION CONTAINED HEREIN IS THE PROPERTY OF PROFESSIONAL ENGINEER ANTHONY J. VANCE. ANY REUSE OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF ANTHONY J. VANCE IS PROHIBITED.



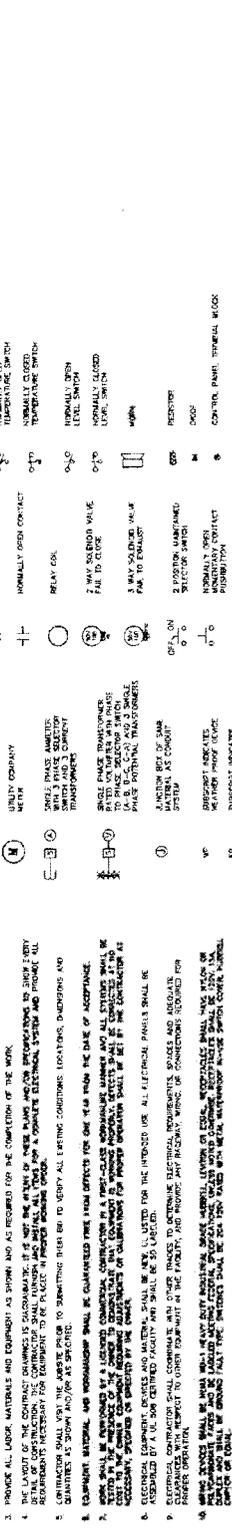




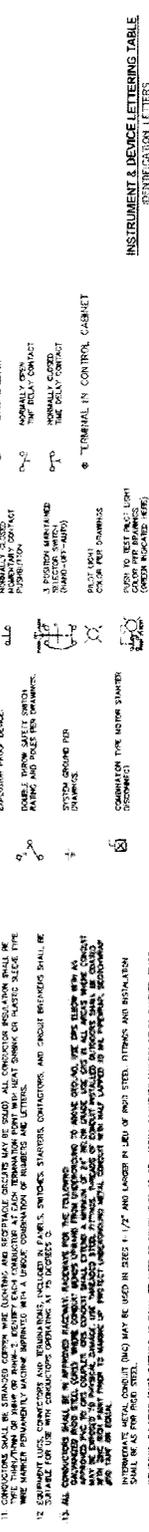
**ELECTRICAL SPECIFICATIONS AND GENERAL NOTES**

1. CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC UTILITY COMPANY TO OBTAIN THE REQUIREMENTS TO PROVIDE THE ELECTRIC SERVICE FOR THE FACILITY.
2. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT AS SHOWN AND AS REQUIRED FOR THE COMPLETION OF THE WORK.
3. THE LAYOUT OF THE CONDUIT SYSTEMS IS APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND TO PROVIDE THE NECESSARY SUPPORTS FOR THE CONDUITS TO BE PLACED IN PROPER POSITION.
4. CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS TO BE REMOVED OR TO BE MAINTAINED. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND LOCATIONS AS SHOWN AND AS SPECIFIED.
5. EQUIPMENT, MATERIALS, AND INSTRUMENTS SHALL BE QUALIFIED FROM THE MANUFACTURER FOR THE USE OF THE FACILITY.
6. VERIFY THE LOCATION OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
7. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
8. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
9. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
10. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
11. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
12. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.
13. ALL CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED. VERIFY THE LOCATION AND DEPTH OF ALL CONDUITS AND EQUIPMENT TO BE INSTALLED.

**SINGLE LINE AND CONDUIT DIAGRAM SYMBOLS**



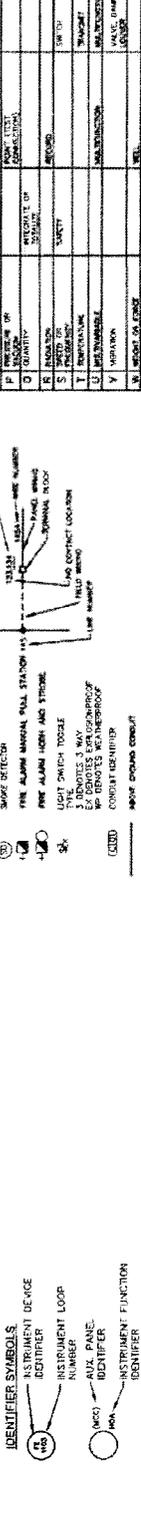
**SCHEMATIC DIAGRAM SYMBOLS**



**INSTRUMENT & DEVICE LETTERING TABLE**

MEASUREMENT OR IDENTIFYING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	SUCCESSING LETTERS
A ANALOG			
B BINARY			
C CAPACITANCE			
D DENSITY			
E ELECTRIC FIELD			
F FORCE			
G GRAVITY			
H HAZARD			
I ILLUMINATION			
J JUNCTION			
K KILOHMS			
L LIGHT			
M MASS			
N NUMBER			
O OMEGA			
P PRESSURE			
Q QUANTITY			
R RESISTANCE			
S SPEED			
T TEMPERATURE			
U UNITS			
V VOLTS			
W WEIGHT			
X UNCLASSIFIED			
Y UNCLASSIFIED			
Z UNCLASSIFIED			

**IDENTIFIER SYMBOLS**



**HAND SWITCH FUNCTIONS**

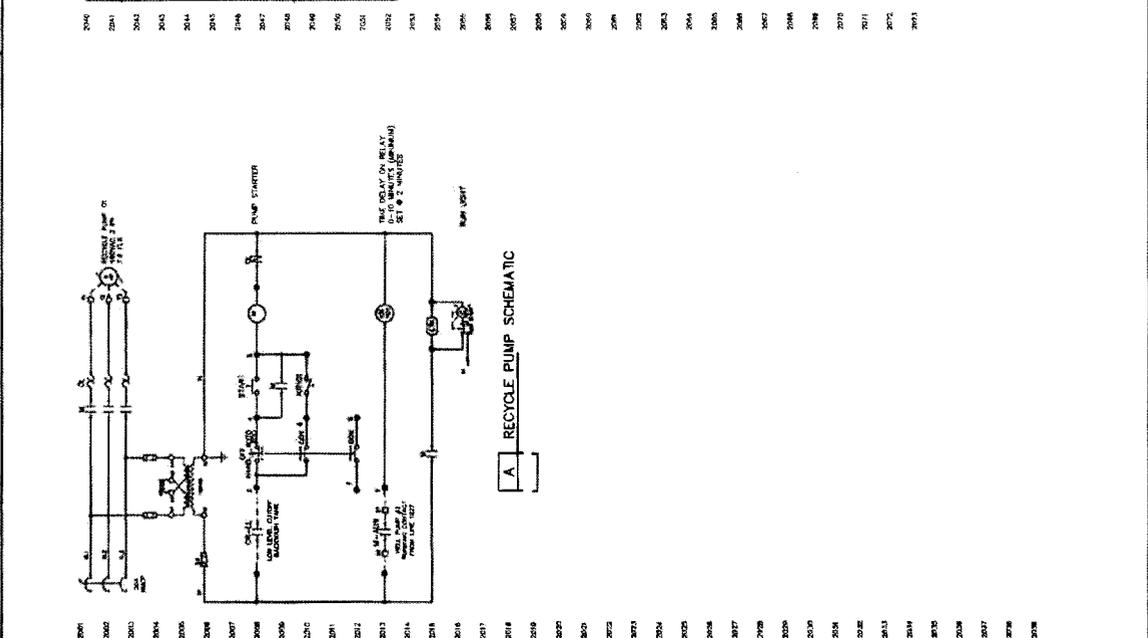
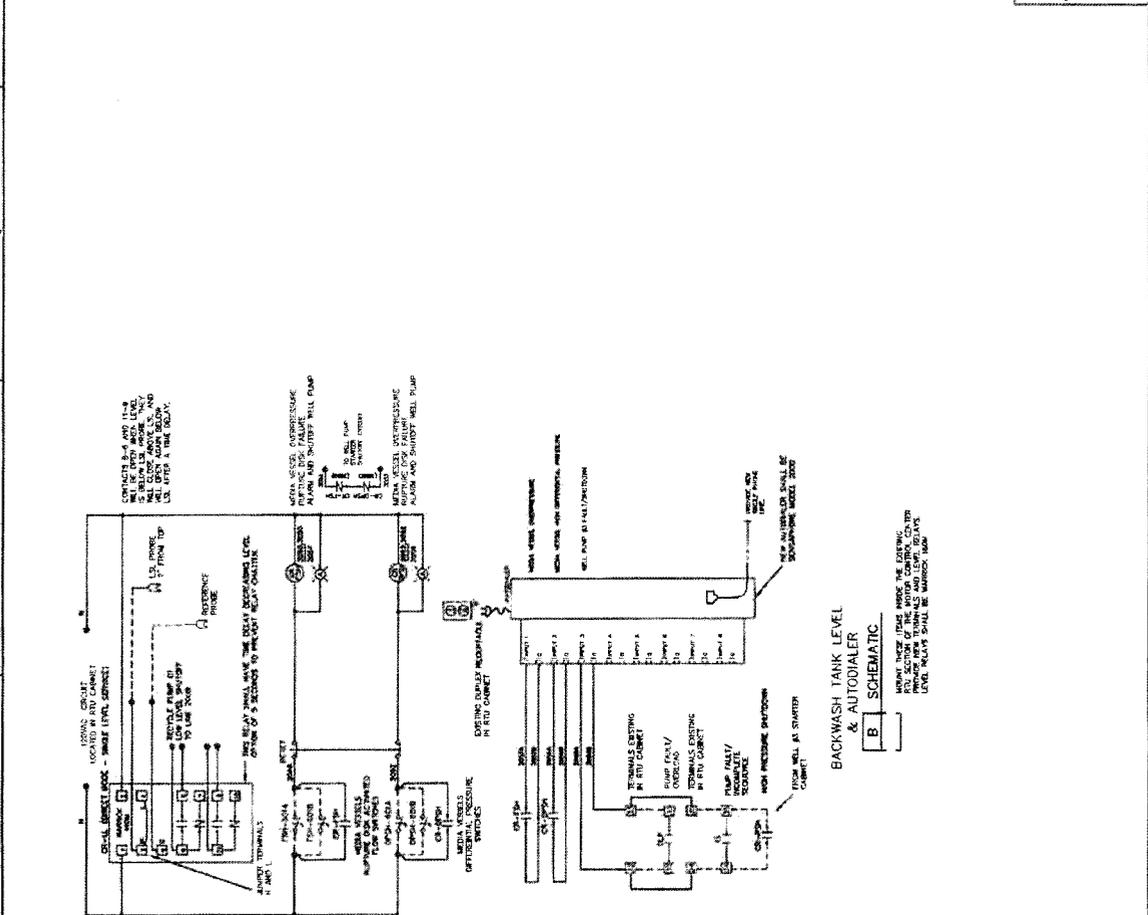
- HSA - HAND-OFF-AUTO  
 HCA - OPEN-CLOSE-AUTO  
 HDA - OFF-ON  
 HCS - OPEN-CLOSE-STOP  
 HMA - MANUAL-AUTO  
 HST - BYP - SOFT-BYPASS
- EXAMPLES:  
 HSA HSA HSA HSA  
 HCA HCA HCA HCA  
 HDA HDA HDA HDA  
 HCS HCS HCS HCS  
 HMA HMA HMA HMA  
 HST HST HST HST

RELEASE OF DOCUMENTS: THIS DOCUMENT AND THE DATA AND INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF METRO ENGINEERS & ARCHITECTS, INC. 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 METRO ENGINEERS & ARCHITECTS, INC.

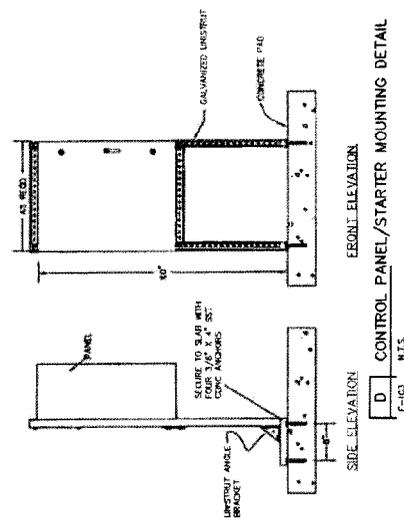








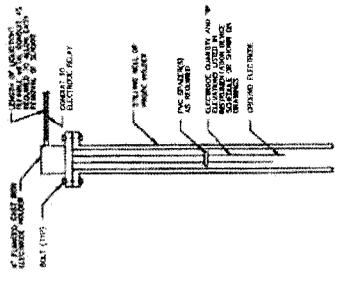
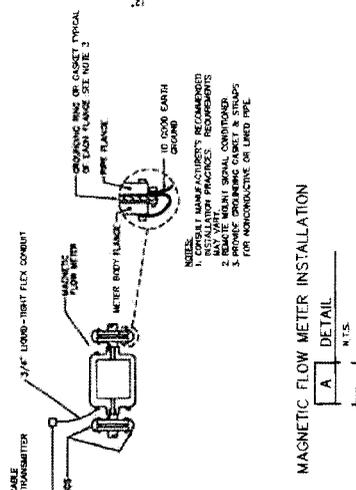
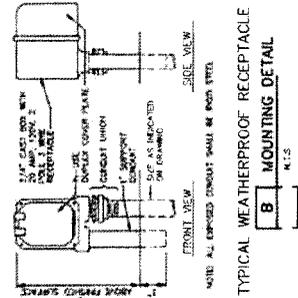
THIS DOCUMENT IS THE PROPERTY OF WATERWORKS ENGINEERS, L.L.C. IT IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF WATERWORKS ENGINEERS, L.L.C.



**PANEL SCHEDULE**

NO.	QTY	DESCRIPTION	UNIT	REMARKS
1	1	CONTROL PANEL/STARTER	EA	SEE SPECIFICATIONS
2	1	CONCRETE P40	EA	SEE SPECIFICATIONS
3	1	GALVANIZED UNICOIT	EA	SEE SPECIFICATIONS
4	1	WATERPROOFING	EA	SEE SPECIFICATIONS
5	1	INSULATION	EA	SEE SPECIFICATIONS
6	1	FINISH	EA	SEE SPECIFICATIONS
7	1	WATERPROOFING	EA	SEE SPECIFICATIONS
8	1	INSULATION	EA	SEE SPECIFICATIONS
9	1	FINISH	EA	SEE SPECIFICATIONS
10	1	WATERPROOFING	EA	SEE SPECIFICATIONS
11	1	INSULATION	EA	SEE SPECIFICATIONS
12	1	FINISH	EA	SEE SPECIFICATIONS
13	1	WATERPROOFING	EA	SEE SPECIFICATIONS
14	1	INSULATION	EA	SEE SPECIFICATIONS
15	1	FINISH	EA	SEE SPECIFICATIONS
16	1	WATERPROOFING	EA	SEE SPECIFICATIONS
17	1	INSULATION	EA	SEE SPECIFICATIONS
18	1	FINISH	EA	SEE SPECIFICATIONS
19	1	WATERPROOFING	EA	SEE SPECIFICATIONS
20	1	INSULATION	EA	SEE SPECIFICATIONS
21	1	FINISH	EA	SEE SPECIFICATIONS
22	1	WATERPROOFING	EA	SEE SPECIFICATIONS
23	1	INSULATION	EA	SEE SPECIFICATIONS
24	1	FINISH	EA	SEE SPECIFICATIONS
25	1	WATERPROOFING	EA	SEE SPECIFICATIONS
26	1	INSULATION	EA	SEE SPECIFICATIONS
27	1	FINISH	EA	SEE SPECIFICATIONS
28	1	WATERPROOFING	EA	SEE SPECIFICATIONS
29	1	INSULATION	EA	SEE SPECIFICATIONS
30	1	FINISH	EA	SEE SPECIFICATIONS

NOTE: ITEMS SHOWN AS OLD ARE TO BE REMOVED AND REINSTALLED AS SHOWN IN THIS PROJECT.



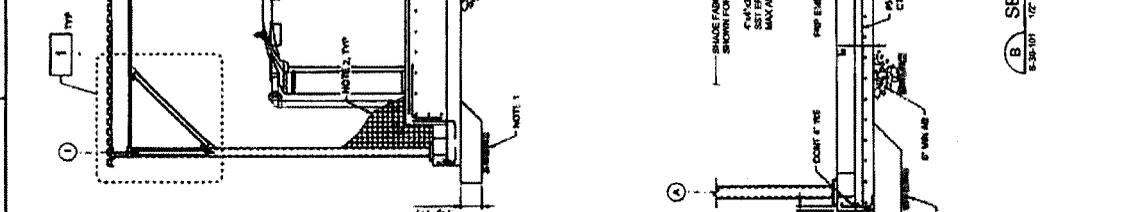
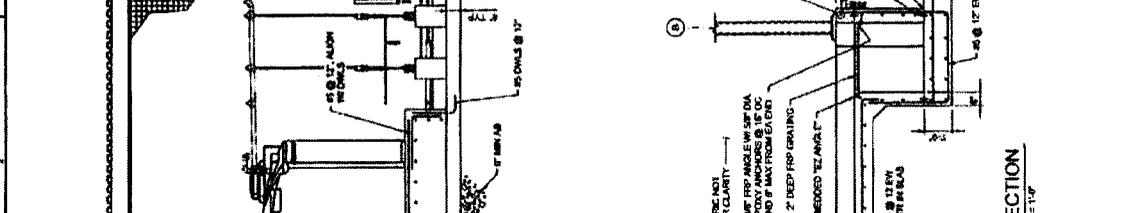
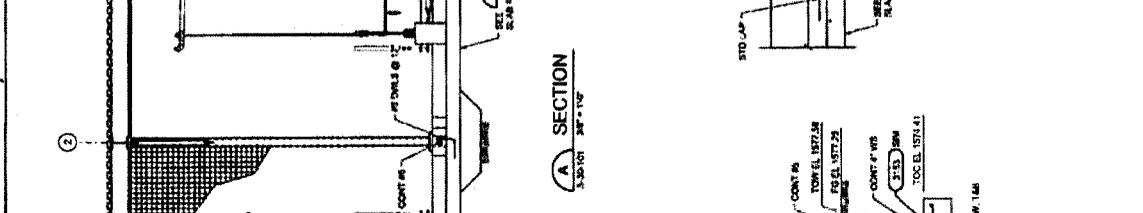
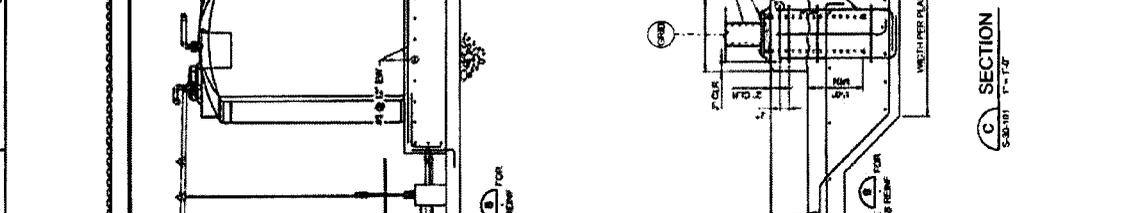
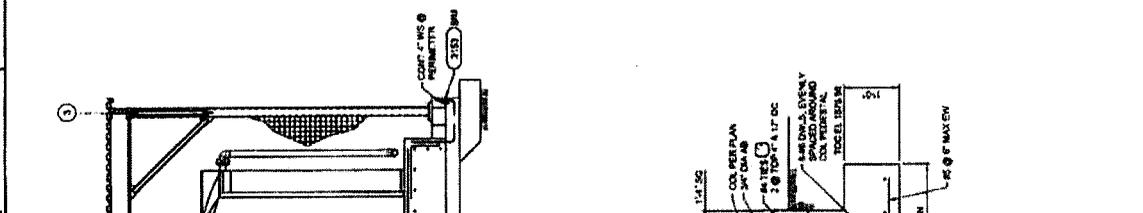
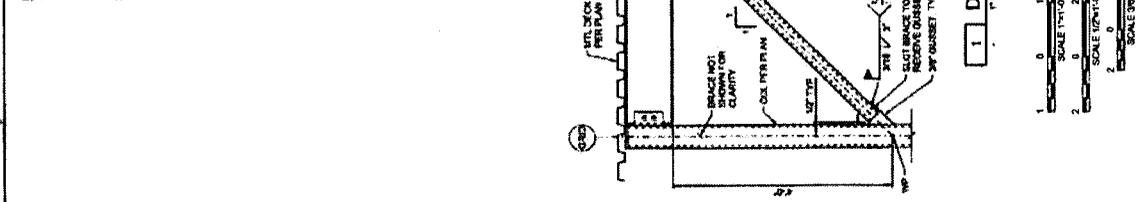
**ELECTRODE RELAY TYPE LEVEL SWITCH**  
**ELECTRODE INSTALLATION DETAIL**  
 N.T.S.

Attachment "I"

Sample Design of Chemical System

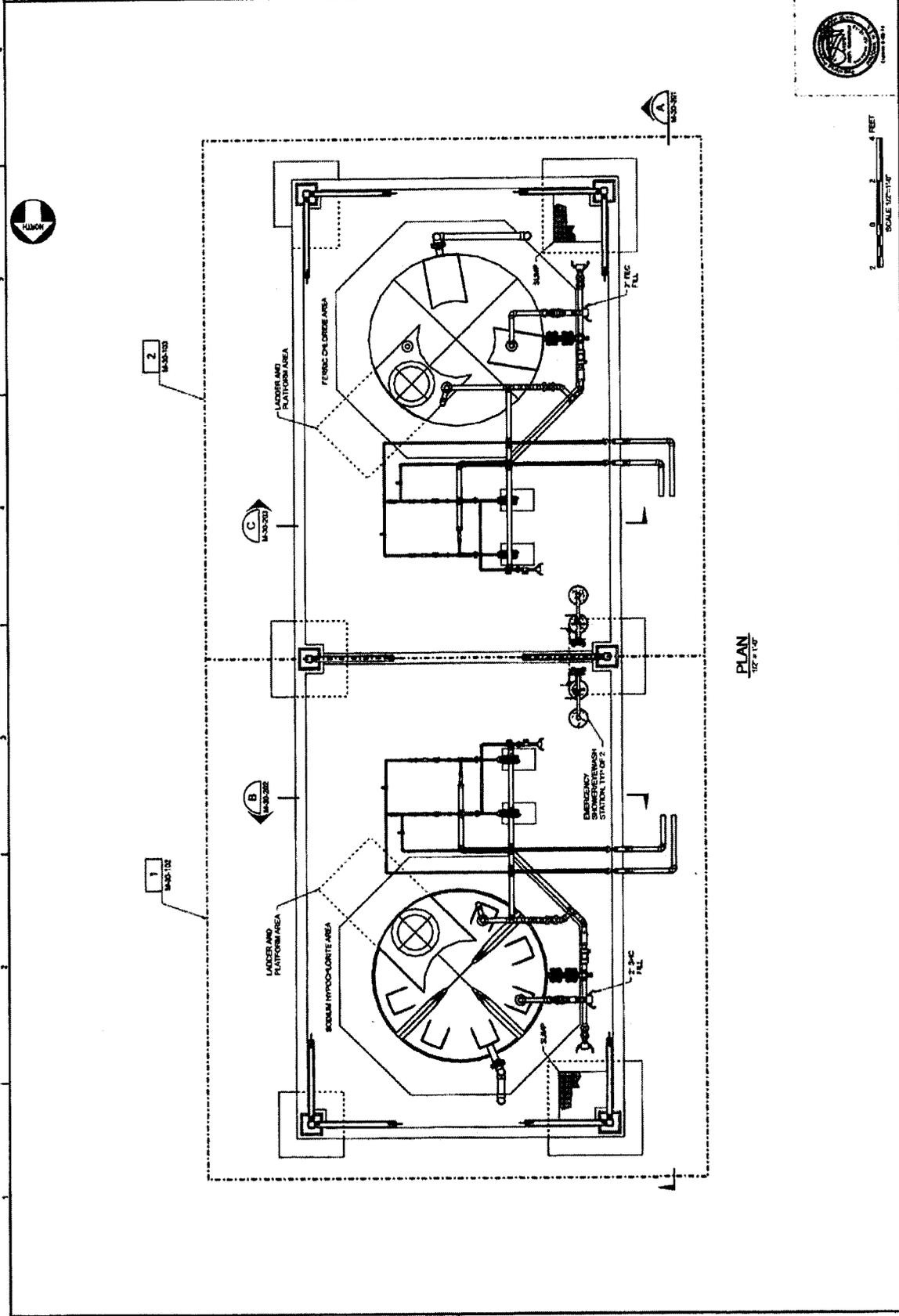


**NOTES:**  
 1. INDICATE BELOW OUTSIDE STRUCTURE TO A MINIMUM EL. 1575.00  
 EXTEND ELEVATION HORIZONTALLY FIVE (5) FEET FROM THE STRUCTURE TO THE FOOTPRINT. REPLACE W/ SELECT FILL AND AGG BASE.  
 2. INSTALL SHADE FABRIC AROUND STRUCTURE PERIMETER. ATTACH TO RECOMMENDATIONS. HARDWARE SHALL INCLUDE SNAP LINKS AT THE CURTAIN AND STAYS AT THE CURTAIN. A DOWN-LIP ASSEMBLY ALONG LOAD LINE. INSTALL INTERMEDIATE SHADE FABRIC SUPPORTS AS REQUIRED FOR FABRIC.

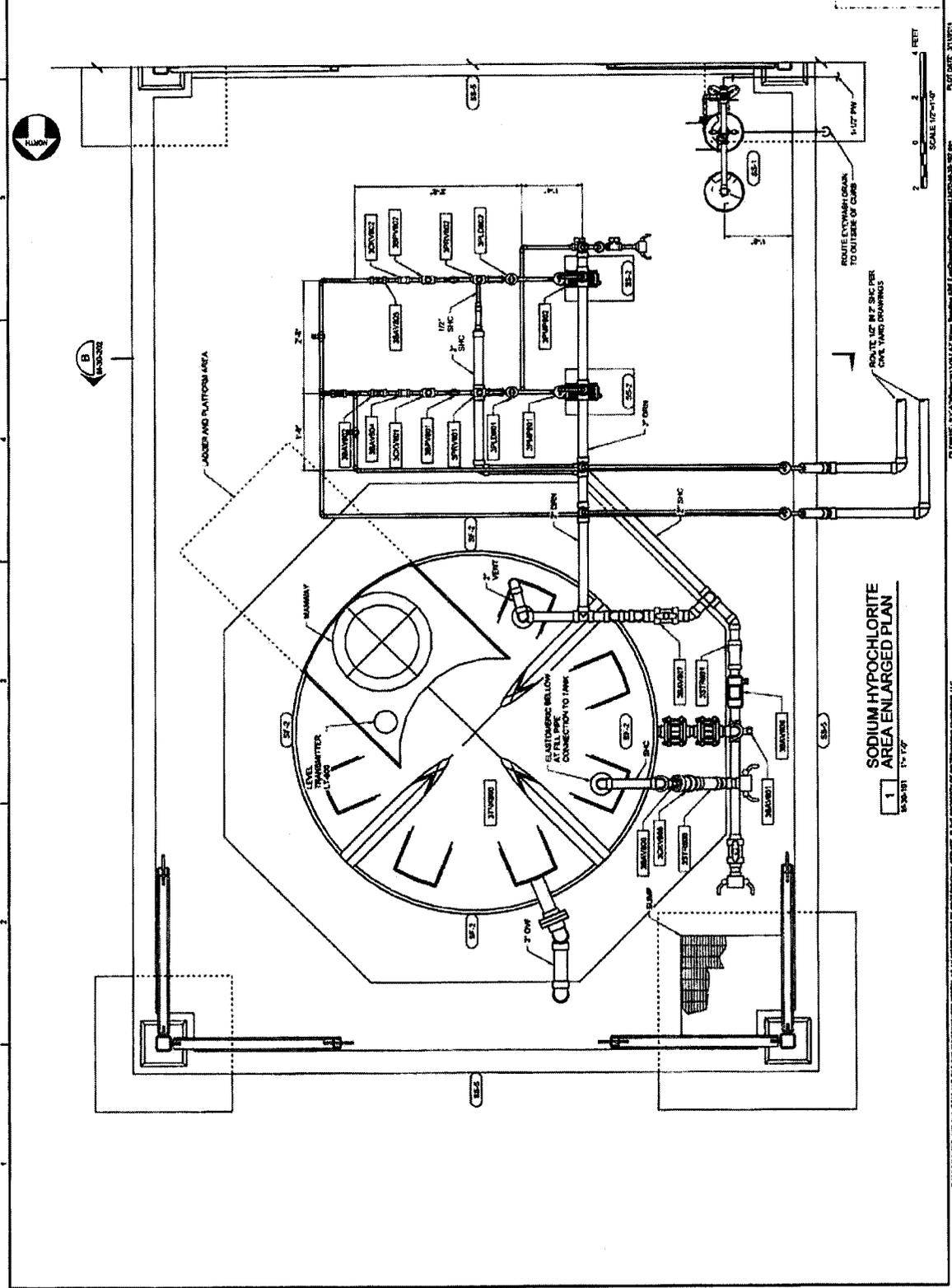


**REVISIONS:**  
 1. 01/20/2011: REVISED PER COMMENTS FROM ARCHITECT AND ENGINEER.  
 2. 01/20/2011: REVISED PER COMMENTS FROM ARCHITECT AND ENGINEER.  
 3. 01/20/2011: REVISED PER COMMENTS FROM ARCHITECT AND ENGINEER.

<b>VERIFY SCALE</b> DRAWN BY: [ ] CHECKED BY: [ ] DATE: [ ]	<b>ARIZONA WATER</b> COMPANY	<b>WATERWORKS</b> ENGINEERS	<b>ARIZONA WATER COMPANY</b> BASELINE FACILITY ARSENIC REMOVAL FACILITY EXPANSION	<b>CHEMICAL AREA PLAN</b>	<b>MECHANICAL</b>
				PROJECT NO: [ ] SHEET NO: [ ] TOTAL SHEETS: [ ]	



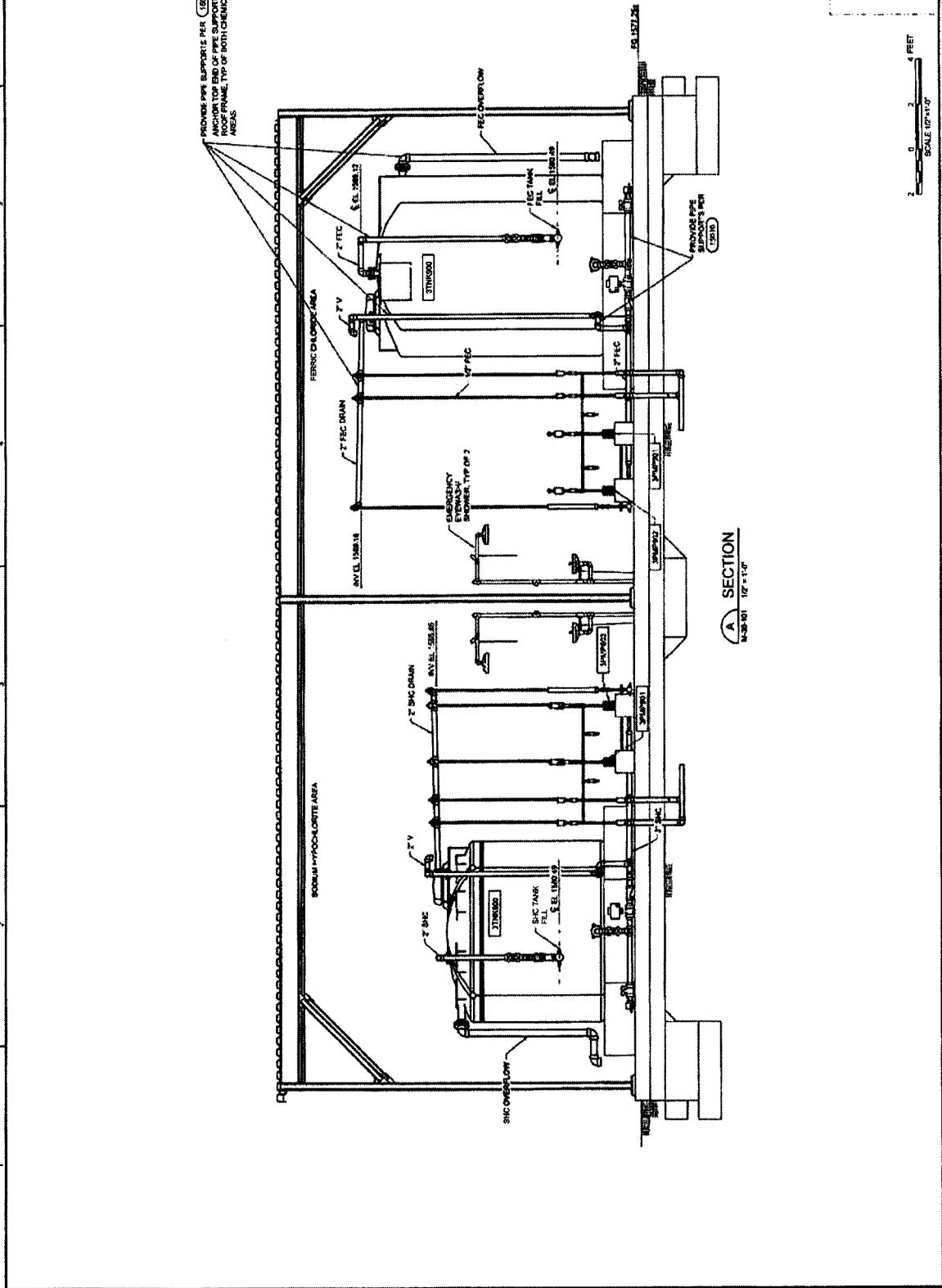
SCALE: 1/2" = 1'-0"  
 DATE: 11/18/09  
 PROJECT: ARIZONA WATER COMPANY BASELINE FACILITY ARSENIC REMOVAL FACILITY EXPANSION  
 SHEET: 102-71-102  
 TOTAL SHEETS: 102-71-101 TO 102-71-103  
 DRAWN BY: [ ]  
 CHECKED BY: [ ]  
 DATE: [ ]





<b>VERIFY AGAIN</b> ALL DIMENSIONS TO FACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO FACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO FACE UNLESS NOTED OTHERWISE.	PROJECT NO. 14-30-201 SHEET NO. 13-01 DATE: 11/17/14
	PROJECT: ARSENIC REMOVAL FACILITY EXPANSION CLIENT: ARIZONA WATER COMPANY DRAWN BY: [Name] CHECKED BY: [Name]

<b>WATERWORKS ENGINEERS</b> 1000 N. CENTRAL AVENUE, SUITE 100 PHOENIX, AZ 85004 TEL: 602.254.1100 FAX: 602.254.1101 WWW.WATERWORKS-ENGINEERS.COM	<b>ARIZONA WATER COMPANY</b> 1000 N. CENTRAL AVENUE, SUITE 100 PHOENIX, AZ 85004 TEL: 602.254.1100 FAX: 602.254.1101 WWW.AZARIZONAWATER.COM
---	--

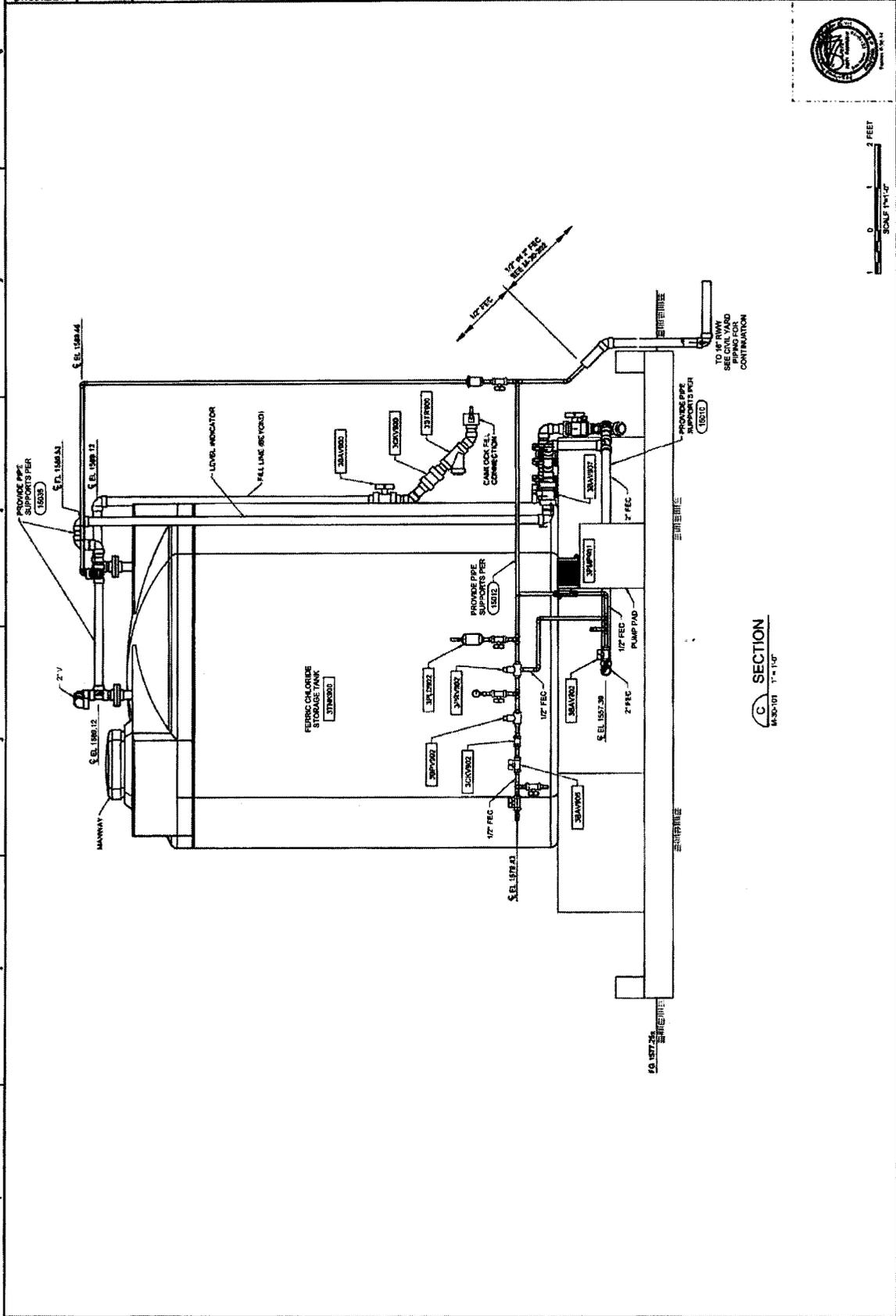


**A SECTION**  
 1/2" = 1'-0"

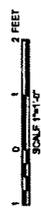
REUSE OF DOCUMENTS: THE USER OF THIS DOCUMENT SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS FROM THE ORIGINAL DESIGNER. THE ORIGINAL DESIGNER IS NOT RESPONSIBLE FOR THE REUSE OF THIS DOCUMENT.



ARIZONA WATER COMPANY 	WATERWORKS ENGINEERS 	ARIZONA WATER COMPANY BASELINE ARSENIC REMOVAL FACILITY EXPANSION	MECHANICAL SECTION FERRIC CHLORIDE	SHEET NO. 11-001 PROJECT NUMBER: M-30-203 DATE: 11-07-03
				SCALE: 1" = 1'-0" DATE: 11-07-03



**C SECTION**  
1" = 1'-0"



REVISIONS: THE DOCUMENTS AND THE DATA AND/OR INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF WATERWORKS ENGINEERS, L.L.C. AND SHALL BE KEPT IN CONFIDENTIALITY. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED 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 WATERWORKS ENGINEERS, L.L.C.

**Arizona Water Company**

**VALLEY FARMS WELL NOS. 1 AND 2  
ARSENIC REMOVAL FACILITY**

**16601 E. VAH KI INN ROAD  
COOLIDGE, ARIZONA 85128**

**ADDENDUM No. 2**

**July 10, 2014**

In reference to the Request for Proposal and Technical Specifications for the subject project, please note the following items which address comments and revisions to drawings and specifications noted:

**SECTION NO. 1: Questions and Responses**

Question 1. Number 11 states that the project will be paid based on actual labor and material quantities installed/constructed. Is this true only if the costs under run the estimate provided? In other words, is the price that we are providing with the proposal a Guaranteed Maximum Price, so if there are overruns in the pricing that is our risk?

Response: The Contractor will provide a Guaranteed Maximum Price per line item on the Contract/Proposal with their proposal. Company shall pay the Contractor the line item price listed in the Proposal/Contract in whole once the scope of the work of the line item is complete.

Question 2. In the proposal schedule of values there is no line item for design costs, which I believe would fall under the tax exempt line items. Is it the expectation that we spread the design costs throughout the items listed or will a separate item for design costs be added?

Response: Contractor will spread the design costs throughout the line items in the Proposal/Contract.

Question 3. In Section ii.b., should full page resumes be provided and if so, should they be provided in that section or as attachments/appendices to the proposal

Response: Yes. Contractor will submit resumes in an appendix.

Question 4. Section vi of the proposal states that the contractor and engineer should list all current projects in the State of Arizona along with pertinent project information. Should this include just the projects that the key team members are working on? Should that be included as an attachment or appendix or just be included as part of Section vi

Response: Contractor will include the most relevant projects the team members have worked on. Contractor will submit this information as part of Section vi.

Question 5. Should we include our completed Contract/Proposal and the Media Contract/Proposal in Section viii of the Proposal or as an attachment/appendix?

Response: Contractor will include the Contract/Proposal for the construction of the ARF and the media change outs in an appendix.

Question 6. The specification exhibit B shows the system pressure is 100 PSI static. Is system running pressure higher than the static? What is the desired pressure rating for the contactor vessels?

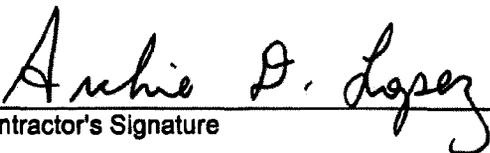
Response: The design pressure for the ARF is 100 psi.

Question 7. What is the capacity of the booster pump station at the Valley Farms site?

Response: The distribution system can supply 700 gpm of water for backwash purposes.

Question 8. If the incoming pH is reduced for treatment using the equipment you have outlined, are we only allowed to raise the pH back up based on blended water or can a NaOH system be added to the back end for raising the pH?

Response: Yes, post treatment pH adjustment with NaOH is acceptable.

  
Contractor's Signature

\_\_\_\_\_  
Date

Note: A signed copy of this Addendum shall be returned with the Contractor's proposal and/or the Contractor shall acknowledge this Addendum in the space provided on the Proposal.

Arizona Water Company  
VALLEY FARMS WELL NOS. 1 AND 2  
ARSENIC REMOVAL FACILITY

16601 E. VAH KI INN ROAD  
COOLIDGE, ARIZONA 85128

ADDENDUM No. 3

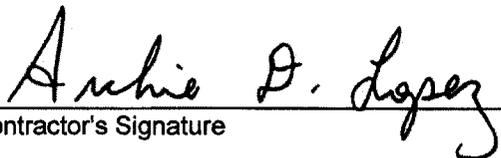
July 14, 2014

**Addendum No. 3 corrects the response given to question no. 17 of Addendum No. 1.**

In reference to the Request for Proposal and Technical Specifications for the subject project, please note the following items which address comments and revisions to drawings and specifications noted:

Question 1. Is Delta required to provide the electrical and controls design in addition to SCADA work?

Response: Yes.

  
Contractor's Signature

\_\_\_\_\_  
Date

Note: A signed copy of this Addendum shall be returned with the Contractor's proposal and/or the Contractor shall acknowledge this Addendum in the space provided on the Proposal.

**Arizona Water Company**

**VALLEY FARMS WELL NOS. 1 AND 2  
ARSENIC REMOVAL FACILITY**

**16601 E. VAH KI INN ROAD  
COOLIDGE, ARIZONA 85128**

**ADDENDUM No. 4**

**July 16, 2014**

***Addendum No. 4 clarifies and amends the responses given to question nos. 16 and 17 of Addendum No. 1, question nos. 2, 6 and 8 of Addendum No. 2 and question no. 1 of Addendum No. 3***

In reference to the Request for Proposal and Technical Specifications for the subject project, please note the following items which address comments and revisions to drawings and specifications noted:

**SECTION NO. 1: Questions and Responses**

**Question 16 - Addendum No. 1 and Question 1 - Addendum No. 3:**

Is Delta required to provide the electrical and controls design in addition to SCADA programming services?

Response: No. Contractor is only required to use Delta for SCADA programming.

**Question 17 - Addendum No. 1:**

What is your preferred chemical for reducing pH?

Response: 93% Sulfuric acid.

**Question 2 - Addendum No 2:**

In the Proposal/Contract there is no line item for design costs. Is it the expectation that we spread the design costs throughout the items listed or will a separate item for design costs be added?

Response: Contractor will submit pricing for design under the "Engineering design and permitting" line item on the amended Proposal/Contract attached to this addendum. (Attachment J).

**Question 6 - Addendum No 2:**

The specification exhibit B shows the system pressure is 100 PSI static. Is system running pressure higher than the static? What is the desired pressure rating for the contactor vessels?

Response: The design pressure for the vessels is 100 psi. All pipe, fittings and related equipment will conform to the Company's Construction Specifications and the Valley Farms Technical Specifications.

**Question 8 - Addendum No 2:**

If the incoming pH is reduced for treatment using the equipment you have outlined, are we only allowed to raise the pH back up based on blended water or can a NaOH system be added to the back end for raising the pH?

Response: Yes, post treatment pH adjustment with NaOH is acceptable. Contractor must design ARF to use both 25% and 50% concentration NaOH.

**SECTION NO. 2: Request for Proposal Revisions**

Proposal Rev 1. The bid due date is revised to July 23, 2014 at 2:00 pm.

  
Contractor's Signature  
7/23/2014  
Date

Note: A signed copy of this Addendum shall be returned with the Contractor's proposal and/or the Contractor shall acknowledge this Addendum in the space provided on the Proposal.

Attachment "J"

Amended Proposal Contract



# ARIZONA WATER COMPANY

Pinal Valley - Casa Grande Division  
220 E. 2nd Street

## PROPOSAL/CONTRACT

CONTRACTOR:	SYSTEM: PINAL VALLEY
ADDRESS:	W.A. No(s): 1-5167
CITY ST ZIP:	BID DUE DATE: July 23, 2014

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 affirms 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, 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 operating the pipes or valves (A.R.S. §42-5061 B.6.), 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 \_\_\_\_\_ 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/constructed 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:

See attached Request for Proposal and Technical Specifications, dated June 18, 2014.  
Mandatory Pre-Bid Meeting, June 24, 2014, at 9:00 am at Valley Farms Well Nos. 1 and 2 Site.  
Company will allow three (3) progress payments and one (1) final payment.

<b>CONTRACTOR</b>	<b>PROPOSAL/CONTRACT ACCEPTED:</b> <b>ARIZONA WATER COMPANY</b>
By:	By:
Print Name:	Print Name: Fredrick K. Schneider, PE
Title:	Title: Vice President - Engineering
Date:	Date:



**Arizona Water Company**  
**VALLEY FARMS WELL NOS. 1 AND 2**  
**ARSENIC REMOVAL FACILITY**

**16601 E. VAH KI INN ROAD**  
**COOLIDGE, ARIZONA 85128**

**ADDENDUM No. 5**

**July 21, 2014**

***Addendum No. 5 clarifies and amends the responses given to question nos. 6, 12 and 22 of Addendum No. 1 and question nos. 1, 3, 4 and 7 of Addendum No. 2***

In reference to the Request for Proposal and Technical Specifications for the subject project, please note the following items which address comments and revisions to drawings and specifications noted:

**SECTION NO. 1: Questions and Responses**

**Question 6 - Addendum No. 1:**

What are the allowed working hours?

Response: The allowed working hours are as specified in the Request for Proposal and Technical Specifications.

**Question 12 - Addendum No. 1:**

Please define the level of record drawings required. Are these hard copies of the design drawings that are marked by hand, marked up in CAD, or redrawn in CAD. Do they need to be sealed by the Engineer and/or a Surveyor?

Response: Contractor is responsible for providing record drawings re-drawn in Bentley Microstation v8i, signed and sealed by the registered Engineer.

**Question 22 - Addendum No 1:**

Please clarify the intent of section 2.B of the Request for Proposal.

Response: Section 2.B of the Request for Proposal is hereby replaced in its entirety with the following:

**B. Selection Criteria**

*The Company shall select the successful bidder based upon a combination of the following criteria weighted as determined by the Company:*

*i. Relevant Experience and Qualification of the Contractor and Engineer.*

*a. The Contractor will provide with its proposal submittal the following information to the Company, along with other pertinent information the Contractor may deem necessary, to demonstrate its qualifications to design, permit, and construct the ARF as described in this RFP:*

- 1. Name and address of Contractor.*
- 2. Number of years Contractor has been in business.*
- 3. Information concerning the Contractor's financial capacity and stability to assure the full and timely performance of the Contractor.*
- 4. Number of ARF Contractor has designed, permitted, constructed, and made operational for the removal of arsenic.*
- 5. Name and address of Engineer.*
- 6. Number of years Engineer's key personnel have been registered engineers.*
- 7. Number and description of ARF's the Engineer has designed.*
- 8. List a minimum of three (3) similar projects that Contractor has successfully completed. This list must include at a minimum:
  - a) Name and address of Engineer.*
  - d) The dates of work.*
  - e) The type of work performed, including the contaminant removed, capacity of water treated and the influent and effluent contaminant levels.*
  - f) The name and telephone number of a contact person or owner of the Facility.**

**Question 1 - Addendum No 2:**

Paragraph 11 of the Proposal/Contract states that the project will be paid based on actual labor and material quantities installed/constructed. Is this true only if the costs under run the estimate provided? In other words, is the price that we are providing with the Proposal/Contract a Guaranteed Maximum Price, so if there are overruns in the pricing that is our risk?

Response: The Contractor will provide a price per line item on the Proposal/Contract. Company shall make payment to Contractor in accordance with Company's GCC's, Section 39. Changes in scope of work and fee are negotiated in accordance with Company's GCC's, Sections 23 and 24.

Question 3 - Addendum No 2:

In Section 2.ii.b. of the Request for Proposal, should full page resumes be provided and if so, should they be provided in that section or as attachments/appendices to the proposal?

Response: Contractor will submit full page resumes in an appendix to his proposal.

Question 4 - Addendum No 2:

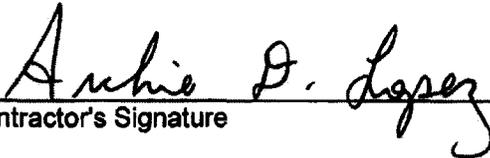
Section vi of the proposal states that the contractor and engineer should list all current projects in the State of Arizona along with pertinent project information. Should this include just the projects that the key team members are working on? Should that be included as an attachment or appendix or just be included as part of Section vi?

Response: Contractor will include the most relevant projects the team members have worked on and are currently working on.

Question 7 - Addendum No 2:

Is the booster pump station or the distribution system the source of water supply for backwashing the vessels?

Response: The distribution system is the water source for backwashing the vessels. The distribution system can supply 700 gpm of water for backwash purposes.

  
Contractor's Signature

7/23/2014

Date

Note: A signed copy of this Addendum shall be returned with the Contractor's proposal and/or the Contractor shall acknowledge this Addendum in the space provided on the Proposal.



**ARIZONA WATER COMPANY**

# **SPECIFICATIONS**

GENERAL CONDITIONS OF CONTRACT: E-4-1

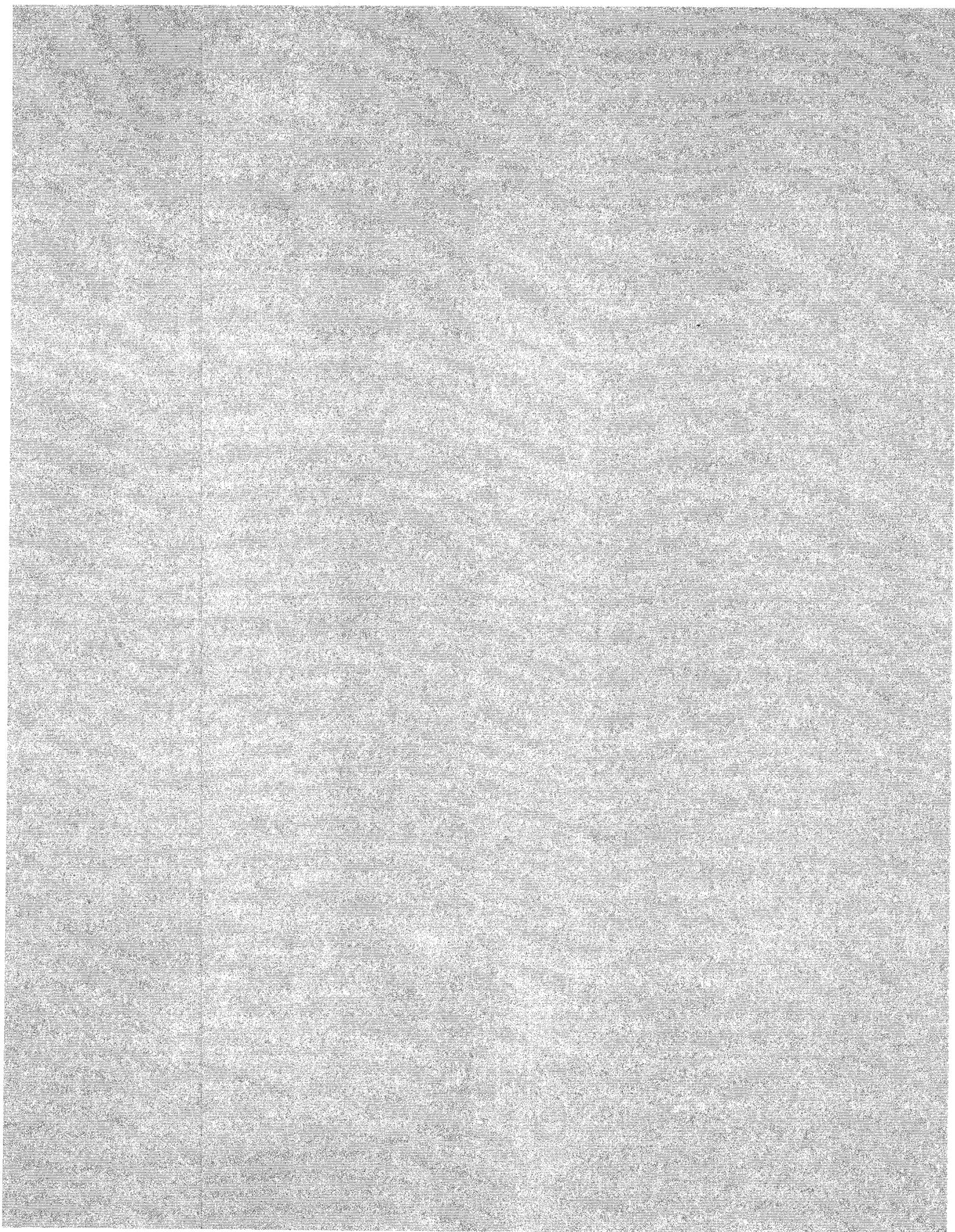
CONSTRUCTION SPECIFICATIONS: E-8-1

STANDARD SPECIFICATION DRAWINGS: E-9-1

*sw  
9/4/14*

**2007 EDITION WITH 2010 REVISIONS;  
2012 GENERAL CONDITIONS OF CONTRACT**

A copy of this entire Spec Book was sent out with *Felix Construction* Proposal package for *WA 1-5167 Valley Farms ABF 1+2* on *9/4/14*



# ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006  
PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • [www.azwater.com](http://www.azwater.com)

October 14, 2014

Mr. Ben Lee  
Waterworks Engineers, LLC  
7580 N. Dobson Road, Suite 200  
Scottsdale, AZ 85256

Re: Valley Farms Arsenic Removal Facility

Dear Mr. Lee:

Enclosed is your original of the Agreement for Consulting Services for the above referenced project, which has been accepted by Arizona Water Company.

If you have any questions, please call me at this office.

Very truly yours,



Mario L. Mendez, E.I.T.  
Engineer  
[engineering@azwater.com](mailto:engineering@azwater.com)

afh  
Enclosure

---

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

AGREEMENT FOR CONSULTING SERVICES BETWEEN  
ARIZONA WATER COMPANY AND  
WATERWORKS ENGINEERS, LLC

THIS AGREEMENT is made and entered into on this 3<sup>RD</sup> day of November 2014 by and between Arizona Water Company, an Arizona corporation, hereinafter referred to as "Company," and Waterworks Engineers, a limited liability company hereinafter referred to as "Consultant".

RECITALS

WHEREAS, Company is authorized to and desires to retain Consultant to provide engineering design, post design and construction administration services for Construction Administration and Inspection for Valley Farms Wells Arsenic Removal Facility ("Project").

WHEREAS, Consultant is agreeable to providing personnel and facilities necessary to perform the desired services within Company's required time; and

WHEREAS, Company desires to retain Consultant to perform the services in the manner, at the time, and for the compensation set forth herein;

NOW, THEREFORE, Company and Consultant agree as follows:

1. Description of Project

Company and Consultant agree that Project is as described in Exhibit A, hereto, incorporated by reference herein and entitled "Scope of Work," dated October 3, 2014. If, during the course of Project, Company and Consultant agree to changes in Project, such changes shall be effective only after being incorporated in this Agreement by written amendment, signed by representative of Company and Consultant.

2. Scope of Consultant Services

Consultant agrees to perform those services described hereafter. Unless modified in writing by both parties, duties of Consultant shall not be construed to exceed those services specifically set forth herein.

a. Basic Services: Consultant agrees to perform those services described in the Scope of Work (the "Services"). Any tasks not specifically described in the Scope of Work will be Additional Services.

b. Additional Services: Company shall pay Consultant all fees and costs incurred in performing Additional Services provided the services were authorized by Company in writing. Unless otherwise agreed in writing, Additional Services shall be

compensated in accordance with Consultant's standard billing rates at the time the Additional Services are performed.

c. Litigation Assistance: Unless specifically stated therein, the Scope of Work does not include assistance to support, prepare, document, bring, defend or assist in litigation undertaken or defended by Company. All such services required or requested of the Consultant by Company or any third party (except claims between Company and Consultant) will be reimbursed at Consultant's applicable rates for such litigation services.

### 3. Responsibilities of Company

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

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

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

c. Furnish Consultant with all technical data in Company'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.

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

e. Provide access to and/or obtain permission for Consultant to enter upon project related property during normal business hours, whether or not owned by Company, as required to perform and complete the Services.

### 4. Americans with Disabilities Act

Any other provision of this Agreement to the contrary notwithstanding, unless otherwise specified in the Scope of Services, Company's contractors shall have sole responsibility as between Company 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 Company with applicable ADA criteria, which may be required.

5. Authorization and Completion

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

6. Compensation

a. Amount: For the Services described in Exhibit A, Company agrees to pay, and Consultant agrees to accept compensation in accordance with Exhibit B, attached hereto and incorporated herein. Where Consultant has provided Company with a breakdown of the total compensation into subtasks, such breakdowns are estimates only. Consultant may reallocate compensation between tasks, provided total compensation is not exceeded without the prior written approval of Company.

b. Payment: As long as Consultant has not defaulted under this Agreement, Company shall pay Consultant within thirty (30) days of the date of Consultant's invoices for services performed and reimbursable expenses incurred under this Agreement. If Company has reason to question or contest any portion of any such invoice, amounts questioned or contested shall be identified and notice given to Consultant within thirty (30) 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 thirty (30) days of the date of the invoice. Company agrees to cooperate with Consultant in a mutual effort to resolve promptly any contested portions of Consultant's invoices.

In the event any uncontested portions of any invoice are not paid within thirty (30) days of the date of Consultant's invoice, interest on the unpaid balance shall accrue beginning with the 31st day at the rate of 1.5% per month, and Consultant shall have the right to suspend work per Article XV, Suspension of Work.

7. 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 the Services and any Additional Services in accordance with generally accepted standards and practices customarily utilized by competent engineering firms in effect at the time Services and any Additional 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 Company.

c. Consultant's Opinion of Costs: Company 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. Company 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, however, Consultant agrees to exercise its best Professional Judgment in rendering its opinions.

d. Construction Phase Services

i. 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 Company 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 for the purpose of determining that the work is proceeding in conformance with the intent of the project specifications and contract documents. 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 Work, Consultant has no duty to inspect, observe, correct, or report on health or safety deficiencies of the construction contractor.

ii. 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 services completed under direct contract to Consultant, 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.

iii. 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 services completed under direct contract to Consultant, Consultant is not responsible for any errors or omissions in the information from others that are incorporated into the record drawings.

e. Scope of Work: Before preparing the scope of work, Consultant specifically acknowledges and agrees that it has inspected and familiarized itself with Company's site. The Consultant has received, or had the opportunity to inquire about and/or request all relevant information concerning the Scope of Work from Company or any other source Consultant deems necessary. The Scope of Work has been prepared by the Consultant and to the best of its knowledge includes all applicable work required to successfully complete Construction Administration and Inspection for Valley Farms Wells Arsenic Removal Facility

#### 8. Asbestos/Hazardous Material

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.

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 Company and Consultant mutually agree on an amendment to this Agreement to address the issue, or Company retains another specialist consultant or contractor to identify, classify, abate and/or remove the asbestos and/or hazardous materials.

#### 9. 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 Company when Consultant has been fully compensated as set forth herein. Consultant may keep copies of all work product(s) for its records.

Consultant and Company recognize that Consultant's work product submitted in performance of this Agreement is intended only for the project described in this Agreement. Company's alteration of Consultant's work product or its use by Company for any other purpose shall be at Company's sole risk.

b. Electronic Copies: If requested, solely as an aid and accommodation to Company, 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. Company 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.

10. Indemnification

a. The Consultant 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 Consultant 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 Consultant 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 Consultant 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 Consultant 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. Consultant 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 10.

c. Consultant 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 site of any material, substance, or waste, hazardous or nonhazardous, 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.

## 11. Consultant's Insurance

Consultant shall procure and maintain the following minimum insurance:

a. 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.

b. 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.

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

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

Consultant shall either require each of its subconsultants to procure and to maintain the insurance specified in this section or insure its subconsultants in the Consultants own policy, in like amounts.

Company shall be named as additional insured on policies a and b above. Upon execution of this Agreement, Consultant will provide a certificate of insurance to Company. 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.

## 12. Confidentiality

Consultant agrees it will maintain the confidentiality of all material it receives from Company and will not disclose, distribute, or publish to any third party such information without the prior permission of Company. Notwithstanding the foregoing, Consultant shall have no confidentiality obligation with respect to information that:

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

b. was available to Consultant prior to its disclosure by Company;

c. 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 Company

and shall cooperate with Company prior to disclosure so that Company may take necessary actions to protect such confidential information from disclosure.

13. 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.

14. Suspension of Work

Work under this Agreement may be suspended as follows:

a. By Company: By written notice to Consultant, Company may suspend all or a portion of the Work under this Agreement if unforeseen circumstances beyond Company's control make normal progress of the Work impracticable.

b. By Consultant: By written notice to Company, 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 Company has not made timely payment in accordance with Article VI, compensation.

15. Termination of Work

a. This Agreement may be terminated by Company as follows: (1) for its convenience on thirty (30) days' notice to Consultant, or (2) for cause, if Consultant materially breaches this Agreement through no fault of Company and Consultant neither cures such material breach nor makes reasonable progress toward cure within fifteen (15) days after Company has given written notice of the alleged breach to Consultant.

b. This Agreement may be terminated by Consultant as follows: (1) for cause, if Company materially breaches this Agreement through no fault of Consultant and Company neither cures such material breach nor makes reasonable progress toward cure within thirty (30) days after Consultant has given written notice of the alleged breach to Company.

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 Company.

16. 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 Company or Consultant without prior, written consent of the other.

17. No Benefit for Third Parties

The services to be performed by Consultant are intended solely for the benefit of Company, 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.

18. Force Majeure

Consultant and Company 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 Company to furnish timely information or to approve or disapprove Consultant's instruments of service promptly; and (4) faulty performance or nonperformance by Consultant or Company, Company's or Consultant independent consultants or contractors, or governmental agencies. Consultant and Company shall not be liable for damages arising out of any such delay, nor shall the Consultant or Company be deemed to be in breach of this Agreement as a result thereof.

19. Integration

This Agreement represents the entire understanding of Company 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.

20. 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.

21. 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.

22. Attorneys' Fees

In the event any claim, controversy, or legal action arises under this Agreement, the prevailing party shall be entitled to recover from the other party all attorneys' fees, costs, expenses and other fees incurred by the prevailing party.

23. Notice Provisions

Notices concerning this Agreement shall be in writing and sent by certified mail or by courier (such as Federal Express), or by hand-delivery addressed as follows:

To the Company: Arizona Water Company  
3805 North Black Canyon Highway  
Phoenix, AZ 85015-5351  
Attention: President

or

Arizona Water Company  
Post Office Box 29006  
Phoenix, AZ 85038-9006  
Attention: President

To Consultant: Waterworks Engineers, LLC  
7580 N. Dobson Road, Suite 200  
Scottsdale, AZ 85256  
Attention: President

Either party may change its address for purposes of this Section by giving written notice of such change of address to the other party.

24. 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, each of the parties hereto has caused this instrument to be executed by their respective duly authorized officers as of the date first written above.

**WATERWORKS ENGINEERS,**  
a limited liability company

**ARIZONA WATER COMPANY,**  
an Arizona corporation *78*

By: John Matto

By: Judson K. Blund

Its: Manager

Its: W-Engineering

## Exhibit A

### Scope of Services

*Project: Valley Farms Arsenic Removal Facility*

*Engineer: Water Works Engineers*

*Owner: Arizona Water Company*

*Date: 9/16/2014 (Revised 10/3/2014)*

#### **Task Series 500 - Office Engineering & Construction Phase Services**

**Task 510 - Submittal Reviews**

Review up to 20 submittals and coordinate comments with the Company.

**Task 520 - RFI Responses**

Review and respond to a maximum of 10 RFIs and issue clarifications and coordinate responses with the Company

**Task 530 - Start-up Services**

Oversee ARF start-up and coordinate start-up with the Company. Start-up operations activities to be completed by the Design/Build with operational support provided by the Company.

**Task 540 - Regulatory Compliance**

Ensure compliance with regulatory agency permit conditions, stipulations and inspections

**Task 550 - As-Built Drawings**

Review and verify as-built drawings per Contractor redlines at project close-out. CAD redlines to be provided by the Design/Build team.

**Task 560 - O&M Manual Review**

Review and provide comments on the arsenic removal plant O&M manual provided by the Design/Build team.

#### **Assumptions:**

- 1) The Company will maintain the administrative files and logs for the project during construction including submittals, correspondence, payment applications, etc.
- 2) The Company will review all Contractor payment applications.
- 3) Engineer shall review the submittals for conformance with the design concept of the project and compliance with the information given in the construction documents.
- 4) The Company's project manager will take the lead on interfacing with Contractor and coordinating or delegating construction related questions.
- 5) The arsenic removal equipment vendor will provide assistance with plant start-up and commissioning and operator training.
- 6) The O&M manual prepared by the Design/Build team shall document the function and control of the project elements.

#### **AWC inputs:**

- 1) Review of Design/Build submittal reviews and clarifications.
- 2) Review of compliance agency submittals.
- 3) Review and approval of O&M manual.

**Deliverables:**

- 1) Submittal comments
- 2) RFI responses

**Task Series 600 - Resident Inspection Services**

**Task 610 - Field Inspection**

Provide on-site field inspection an average of once per week (8 hours) for a period of 20 weeks.

**Assumptions:**

- 1) 20 week construction phase duration from the Contractor NTP to the final acceptance of the project.
- 2) Engineers on-site field inspection shall average eight (8) hours per week.
- 3) Engineer will perform intermediate and various site inspections such as pipe pressure and disinfection testing. These tests will be coordinated between the Company and the Design/Build Team. The Design/Build team will provide the required inspections to complete the necessary paper work for ADEQ's ECOC and AOC.
- 4) Under the terms and conditions of the Company's General Conditions of Contract, the Contractor shall arrange and pay for all field and materials testing including but not limited to compaction testing, soils testing and concrete testing. Contractor shall provide these test results to Engineer for review and approval.
- 5) The Vendor shall arrange and pay for all filter pressure vessel welding and coating inspections and provide inspection results to Engineer.
- 6) The Company shall arrange and pay for a final filter pressure vessel coating inspection.
- 7) Engineer shall maintain a construction punch list of deficient work items that are inspected by Engineer and shall communicate the deficient work items to the Contractor and Company on a regular basis.
- 8) Contractor will coordinate directly with the Company for providing Vendor and manufacturer's training.
- 9) Post construction warranty services will be coordinated by the Company and the Contractor.

**AWC inputs:**

- 1) As noted above.
- 2) Final filter pressure vessel coating inspection.

**Deliverables:**

- 1) Field inspection and special inspection reports such as concrete reinforcement, concrete, structural, filter pressure vessels and others as needed.

**Exhibit B**

**Engineering Fee Estimate: Construction Administration and Inspection  
Arizona Water Company Valley Farms Arsenic Removal Facility**

Design Tasks	Hours Estimate, hrs											Subtotal	Electrical	
	PIC	PJ	SPE	PE	SE	Sr	Des	Drft	Admin	Total				
	\$165	\$150	\$130	\$110	\$90	\$125	\$95	\$75	\$55					
Task Series 500 – Office Engineering and Construction Phase Services													\$ 11,940.00	\$ 6,000.00
Task 510 - Submittal Review		1	8	40		4			4	57		\$ 6,310.00		
Task 520 - RFI Responses		2		8		2			4	16		\$ 1,650.00		
Task 530 - Start-up Services		4		4						8		\$ 1,040.00		
Task 540 - Regulatory Compliance		2								2		\$ 300.00		
Task 550 - As-Built Drawings										8		\$ 880.00		
Task 560 - O&M Manual Review				16						16		\$ 1,760.00		
Task Series 600 - Resident Inspection Services													\$ 20,800.00	\$ 1,650.00
Task 610 - Field Inspection			160							160		\$ 20,800.00		
Subtotal WaterWorks Services	0	9	168	76	0	6	0	0	8	267			\$	40,390

**LEGEND**

PIC: Principal-In-Charge  
 PM: Project Manager  
 SPE: Senior Project Engineer  
 PE: Project Engineer  
 Str: Structural Engineer  
 Des: CAD Designer  
 Drft: CAD Drafter  
 Admin: Administrative Assistant





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
10/27/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

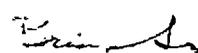
<b>PRODUCER</b> InterWest Insurance Serv., Inc License #0B01094 310 Hemsted Dr., Suite 200 Redding, CA 96002-0935 Brian Seamans	Phone: 530-222-1737 Fax: 530-222-3771	<b>CONTACT NAME:</b> Cindy Beymer PHONE (A/C, No, Ext): 530-722-2614 FAX (A/C, No): 530-722-3559 E-MAIL ADDRESS: cbeymer@iwins.com													
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A: Golden Eagle Ins Corp</td> <td>10836</td> </tr> <tr> <td>INSURER B: National Union Fire Insurance</td> <td>32298</td> </tr> <tr> <td>INSURER C: Lloyds of London</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Golden Eagle Ins Corp	10836	INSURER B: National Union Fire Insurance	32298	INSURER C: Lloyds of London		INSURER D:		INSURER E:		INSURER F:
INSURER(S) AFFORDING COVERAGE	NAIC #														
INSURER A: Golden Eagle Ins Corp	10836														
INSURER B: National Union Fire Insurance	32298														
INSURER C: Lloyds of London															
INSURER D:															
INSURER E:															
INSURER F:															
<b>INSURED</b> Water Works Engineers, LLC 7850 N.Dobson Rd., Se 200 Scottsdale, AZ 85260															

**COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY	X	X	BOP56141750	07/11/2014	07/11/2015	EACH OCCURRENCE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Pollution 5,000,000 GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COM/OP AGG \$ 4,000,000
A	AUTOMOBILE LIABILITY	X	X	BOP56141750	07/11/2014	07/11/2015	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$
B	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000			EBU020703162	07/11/2014	07/11/2015	EACH OCCURRENCE \$ 8,000,000 AGGREGATE \$ 8,000,000 \$ \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A				WC STATU- TORY LIMITS <input type="checkbox"/> OTH- ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
C	Professional Liab			B0595EO0843602014	07/11/2014	07/11/2015	Per Claim 5,000,000
A	Valuable Papers			BOP56141750	07/11/2014	07/11/2015	VP Limit 25,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)  
Project: Valley Farms Arsenic Removal Facility. As respects General and Auto Liability, Additional Insured status applies as per endorsement attached.  
Professional Liability-Claim Made-Retroactive Date 07/01/05

<b>CERTIFICATE HOLDER</b>  AZW3805  Arizona Water Company 3805 N. Black Canyon Hwy Phoenix, AZ 85015	<b>CANCELLATION</b>  SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE 
--	--

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## ADDITIONAL INSURED – ENGINEERS, ARCHITECTS OR SURVEYORS

This endorsement modifies insurance provided under the following:

### BUSINESSOWNERS COVERAGE FORM

**Section II – Liability** is amended as follows:

**A.** The following is added to Paragraph **C. Who Is An Insured**:

3. Any architect, engineer or surveyor engaged by you is also an additional insured but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf in connection with your premises or in the performance of your ongoing operations.

However:

- a. The insurance afforded to such additional insured only applies to the extent permitted by law; and
- b. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

**B.** With respect to the insurance afforded to these additional insureds, the following is added to Paragraph **D. Liability And Medical Expenses Limits Of Insurance**:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits Of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits Of Insurance shown in the Declarations.

Insured: Water Works Engineers, Inc  
Policy #: BOP56141750  
Effective: 07/11/14 to 07/11/15

BUSINESSOWNERS  
BP 14 88 07 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

### BUSINESSOWNERS COVERAGE FORM

The following is added to Paragraph H. **Other Insurance of Section III – Common Policy Conditions** and supersedes any provision to the contrary:

#### **Primary And Noncontributory Insurance**

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

1. The additional insured is a Named Insured under such other insurance; and

2. You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

POLICY NUMBER: **BOP56141750**

**BUSINESSOWNERS**  
BP 04 97 01 06

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**WAIVER OF TRANSFER OF RIGHTS OF RECOVERY  
AGAINST OTHERS TO US**

This endorsement modifies insurance provided under the following:

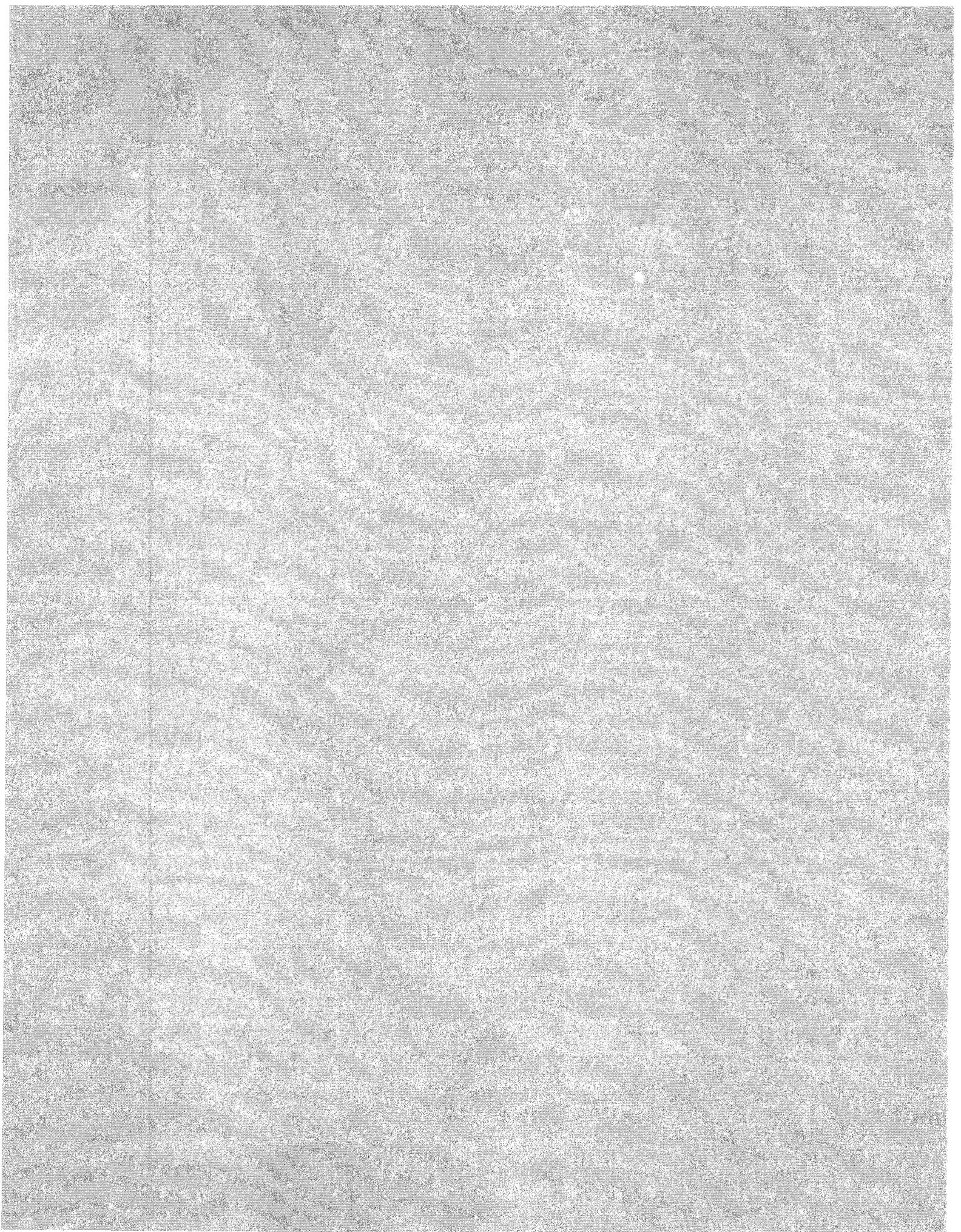
**BUSINESSOWNERS COVERAGE FORM**

**SCHEDULE**

<b>Name Of Person Or Organization:</b>
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Paragraph K. **Transfer Of Rights Of Recovery Against Others To Us** in **Section III – Common Policy Conditions** is amended by the addition of the following:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.



## ENGINEERING REVIEW SECTION DATA REQUIRED WITH ECC

### INSTRUCTIONS

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	Above Pipe	Vessel Pipe
Pressure and Leakage Test Results (Pass/Fail)		Pass	Pass
Date Tested		5-11-15	6-1-15
Time Started		7:00	13:00
Time Finished		9:00	15:00
Pipe Diameter		6	6
Footage Tested		43'6"	25'
Allowable Leakage		.05	.03
Leakage Observed		0	0
Pressure at Test Point		200	90 PSF
Employee Observing the Test (Please Print Legibly)		Steve D. Sletten	Steve D. Sletten
Signature of Employee Observing the Test		<i>[Signature]</i>	<i>[Signature]</i>

2.

DISINFECTION SAMPLING			
Initial Sampling (Minimum 50 ppm available chlorine)	Date	5-12-15	6-2-15
	Time	10:00	11:00
	ppm Cl <sub>2</sub>	200	300
After 24 Hours Detention Time (Minimum 10 ppm free chlorine)	Date	6-13-15	6-3-15
	Time	10:10	00:00
	ppm Cl <sub>2</sub>	200	25
After Sufficient Flushing (Water is clear and system Cl <sub>2</sub> residual is measured)	Date	6-13-15	6-3-15
	Time	13:00	14:00
	ppm Cl <sub>2</sub>	0.8	0.3
Bacteriological Sampling(s):	Date	5-13-15	6-3-15
	Time	13:40	14:22
	Attached (Y/N)	Y	Y
	(Yes/No)	(Yes/No)	Yes/No

3.

Certification	Professional Seal
<p>I, <u>Steve Ontel</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 style="text-align: center;"><i>[Signature]</i> Authorized Persons Signature</p> <p style="text-align: center;"><u>6/5/15</u> Date</p>	<p>As per A.A.C. R18-5-507(B)(1)</p>



**ENGINEERING REVIEW SECTION  
DATA REQUIRED WITH ECC**

**INSTRUCTIONS**

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	SEC. # 4	SEC. # 3	SEC. # 1	SEC. # 2
	Pressure and Leakage Test Results (Pass/Fail)	PASS	PASS	PASS
Date Tested	2-17-15	2-18-15	2-18-15	2-16-15
Time Started	11:30	12:30	13:00	12:30
Time Finished	1:30	2:30	15:00	14:30
Pipe Diameter	6"	6"	6"	12"
Footage Tested	45'	65'	110'	44'
Allowable Leakage	.05	.07	0.13	.10
Leakage Observed	0	0	0	0
Pressure at Test Point	200	200	200	200
Employee Observing the Test (Please Print Legibly)	Stoltz	Stoltz	Stoltz	Stoltz
Signature of Employee Observing the Test	S.O.	S.O.	S.O.	S.O.

2.

DISINFECTION SAMPLING					
Initial Sampling (Minimum 50 ppm available chlorine)	Date	5-12-15	5-13-15	5-13-15	2-16-15
	Time	10:00	10:00	10:40	14:30
	ppm Cl <sub>2</sub>	200+	200+	200+	100
After 24 Hours Detention Time (Minimum 10 ppm free chlorine)	Date	5-13-15	5-13-15	5-13-15	2-17-15
	Time	11:00	11:10	11:15	14:40
	ppm Cl <sub>2</sub>	200+	200+	200+	100
After Sufficient Flushing (Water is clear and system Cl <sub>2</sub> residual is measured)	Date	5-13-15	5-13-15	5-13-15	2-18-15
	Time	00:45	00:30	00:55	11:00
	ppm Cl <sub>2</sub>	1.2	1.1	1.1	2.1
Bacteriological Sampling(s):	Date	5-13-15	5-13-15	5-13-15	2-18-15
	Time	13:45	13:20	13:15	12:00
	Attached (Y/N)				
	Yes/No	Yes/No	Yes/No	Yes/No	

3.

<p><b>Certification</b></p> <p>I, <u>Steve Ontie</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>Stoltz</u> Authorized Persons Signature</p> <p><u>6/5/15</u> Date</p>	<p style="text-align: center;">Professional Seal As per A.A.C. R18-5-507(B)(1)</p>
---	--

# LEGEND

Technical Services, Inc.

www.legend-group.com

17631 N. 25th Avenue • Phoenix, AZ 85023.  
P (602) 324-6100 • F (602) 324-6101

Regina Lynde  
Arizona Water Company  
3805 N. Black Canyon Hwy  
Phoenix, AZ 85015

Project: Specials  
Project Number: Valley Farms 11-009 5/13/15

Reported:  
05/19/15 13:49

### Analyte

#1 (Hose Bib) (5051158-01) Drinking Water (Grab) Sampled: 05/13/15 13:15 Received: 05/14/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	
Total Coliforms	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	

#2 (Sample Port) (5051158-02) Drinking Water (Grab) Sampled: 05/13/15 13:20 Received: 05/14/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	
Total Coliforms	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	

#3 (4" Line Spigot) (5051158-03) Drinking Water (Grab) Sampled: 05/13/15 13:30 Received: 05/14/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	
Total Coliforms	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	

#4 (8" Line Spigot) (5051158-04) Drinking Water (Grab) Sampled: 05/13/15 13:40 Received: 05/14/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	
Total Coliforms	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	

#5 (6" Line Spigot) (5051158-05) Drinking Water (Grab) Sampled: 05/13/15 13:45 Received: 05/14/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	
Total Coliforms	Absent		P/A	1	B5E0390	05/14/15 12:05	05/14/15 12:05	SM 9223B	

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

Page 1 of 3

# LEGEND

Technical Services, Inc.

www.legend-group.com

17631 N. 25th Avenue • Phoenix, AZ 85023  
P (602) 324-6100 • F (602) 324-6101

Regina Lynde  
Arizona Water Company  
3805 N. Black Canyon Hwy  
Phoenix, AZ85015

Project: Specials  
Project Number: V.F. ARF 11-009 2/18/15

Reported:  
02/24/15 16:39

### Analyte

#1 11-009 (Sec. #2 12" Line) (5021707-01) Drinking Water (Grab) Sampled: 02/18/15 11:50 Received: 02/19/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5B0544	02/19/15 14:50	02/19/15 14:50	SM 9223B	
Total Coliforms	Absent		P/A	1	B5B0544	02/19/15 14:50	02/19/15 14:50	SM 9223B	

#2 11-009 (Sec. #2 12" Line) (5021707-02) Drinking Water (Grab) Sampled: 02/18/15 11:54 Received: 02/19/15 08:00

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

### Microbiology

E. coli	Absent		P/A	1	B5B0544	02/19/15 14:50	02/19/15 14:50	SM 9223B	
Total Coliforms	Absent		P/A	1	B5B0544	02/19/15 14:50	02/19/15 14:50	SM 9223B	

### Sample Condition Upon Receipt:

Temperature: 2.00 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, AIHA#102982, CDC ELITE Member.

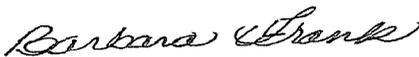
Accreditation is applicable only to the test methods specified on each scope of accreditation held by LEGEND.

**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".

### Notes and Definitions

Legend Technical Services of Arizona, Inc.

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.



Client Services Representative

Phone Number: (602) 324-6100

Page 1 of 2



Regina Lynde Arizona Water Company 3805 N. Black Canyon Hwy Phoenix, AZ85015	Project: Specials Project Number: Well #2 V.F. 11-009 12/22/14	Reported: 12/29/14 14:47
---	---	-----------------------------

**Analyte**

**Well #2 V.F. (10804 E. Vah Ki Inn Rd.) (4121965-01) Drinking Water (Grab) Sampled: 12/22/14 14:13 Received: 12/23/14 11:15**

Analyte	Result	PQL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.									

**Microbiology**

E. coli	Absent		P/A	1	B4L0648	12/23/14 13:25	12/23/14 13:25	SM 9223B	
Total Coliforms	Absent		P/A	1	B4L0648	12/23/14 13:25	12/23/14 13:25	SM 9223B	

**Sample Condition Upon Receipt:**

Temperature: 2.00 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, 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".  
 Not for compliance as indicated on the chain of custody- BF

**Notes and Definitions**

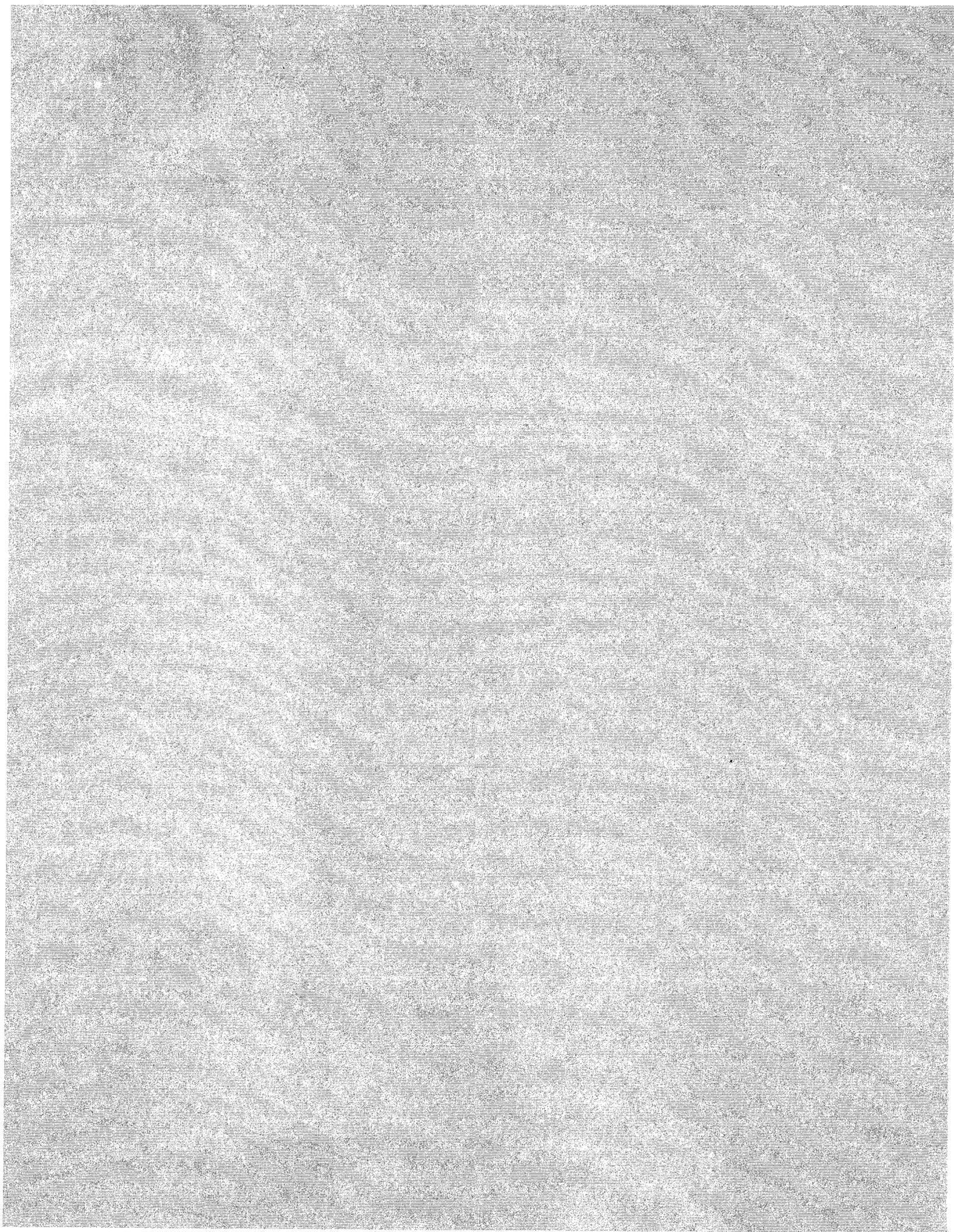
Legend Technical Services of Arizona, Inc.

*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





**ARIZONA WATER COMPANY**

**PRECONSTRUCTION CONFERENCE OUTLINE**

1. Contractors Bid Proposal

- A. Proposal/Contract dated \_\_\_\_\_
- B. Prior to bidding as well as prior to construction Contractor has walked this project site and understands the nature, scope and requirements of the work to be performed.
- C. Any changes required which the Contractor feels he should be reimbursed over and above the contract price, must be submitted in writing prior to installation.

2. Construction Schedule

- A. Agree that the project will be completed with in the days called for on the proposal.
- B. Definition of a day is a calendar day.
- C. A work day is 8 hours. *STARTING MONS.*
- D. Stress importance of finishing the job in a timely manner.
- E. It was agreed that construction will start on *SEPTEMBER SIX BY MONS (COPY ALL MEMOS)*
- F. A commencement was signed and given to the contractor.
- F. Contractor must request in writing for time extensions or any reason. All requests must be submitted to the Casa Grande Office.

3. Inspection

- A. The Company's inspectors will be: *STEVE / POSITION. POINT OF CONTACT*
- B. Contractor will request inspections a MINIMUM of 24 hours in advance
- C. Inspector WILL NOT aid in the neither construction nor offer advice as to how the work should be performed. Inspector will only indicate that the job does or does not meet Arizona Water Company's Specifications. Arizona Water Company personnel are the ONLY personnel authorized to turn off an existing valve.



ARIZONA WATER COMPANY

PRECONSTRUCTION CONFERENCE OUTLINE

4. Permits

*ATTN*

NOT REQUIRED	RECEIVED	REQUIRED	WILL BE PROVIDED BY ENG. DEPT.	DOCUMENT / FORM
<input checked="" type="checkbox"/>				Maricopa County/ADOT - Railroad Permit
<input checked="" type="checkbox"/>				City of Casa Grande / Coolidge
<input checked="" type="checkbox"/>				Pinal County
<input type="checkbox"/>				<del>Pima County</del>
<input type="checkbox"/>				Other

*FILED TO FORWARD LETTER FROM CO. + KEEP ON SITE.*

- A. All construction will be subject to State, County, City and any other jurisdictions permits.
- B. Permit will be obtained by FCCIA
- C. Contractor must have a copy of permit on the job site at ALL times.
- D. Traffic control will be required as outlined on the permit and traffic control plan.
- E. If compaction tests are required, cost will be paid by 19 BY CO. If the test fails to meet the required compaction the contractor will correct the problem and pay for the retest.
- F. Construction costs will not be paid or accepted until proof of regulatory agency satisfaction (example) must have ROW inspector sign off on ROW work. *CASE-CULLA SEND ATCHM CONTRACT INFO.*
- G. Contractor is not to store materials in the right of way. *ON SITE.*
- H. **CONTRACTOR IS NOT TO ENCR OACH ON PRIVATE PROPERTY UNDER ANY CIRCUMSTANCES. WITH OUT WRITTEN APPROVAL (i.e.) EASEMENT.**
- I. Work performed in easements **MUST** remain within the boundaries of the easements.



## ARIZONA WATER COMPANY

### PRECONSTRUCTION CONFERENCE OUTLINE

#### 5. Staking

- Staking will be provided by AWC (BLUE STAKE) CONSTRUCTION FELIX
- A. Contact person \_\_\_\_\_ and phone: \_\_\_\_\_
- B. Surveyor will be paid by FELIX

#### 6. Utility Conflicts "Blue Stake"

- A. The location of utilities shall be the responsibility of the contractor.
- B. Contractor shall be responsible for any damage to any utility including Arizona Water Company's.
- C. Contractor must exercise extreme caution when digging around utilities.

#### 7. Pressure Test

- A. Make sure test is holding before calling inspector.
- B. Pressure test shall be performed, after giving 24 hour notice prior to test, per Arizona Water Company's Construction Specifications E-8-1.

Leakage test will be for a period of (2) two hours at 200 plus or minus 5 PSI at the point of lowest elevation; leakage may not exceed 0.1 Gallons per hour per (1) one thousand feet (1000') of pipe per inch of Diameter.

- C. Inspectors will only be available during Arizona Water Company business hours,
- D. Arizona Water Company reserves the right to require a second pressure tests after all other utilities are installed.
- E. Chlorine solution will be required for disinfection. Only NSF approved containers will be used for disinfection.
8. Payments
- F. All invoices **MUST** be itemized.



**ARIZONA WATER COMPANY**

**PRECONSTRUCTION CONFERENCE OUTLINE**

- G. Arizona Water Company will only make payment for items installed based on the contract prices.
- H. Counts of items billed for **MUST** be field verified with Arizona Water Company's Inspector and Contractors representative **PRIOR** to submitting an invoice for payment.

*X* Change orders must be submitted on a separate invoice.

- J. Contractor will require MONTHLY (4 PER CONTRACT) partial payments. 80% - 20%.

9. Construction Crew

- A. Contractor will be using a 3-4 + 2 FOR MECHANICAL/CONCRETE CONCRETE SOFT man crew.
- B. Superintendent for the project TIM ROCKHOLT
  - 1. Contact Number 602-390-0139
- C. Foreman for Project SAM
  - 1. Contact Number \_\_\_\_\_

- D. Construction crew is expected to behave in a professional manner.
- E. Must have an English speaking person with authority on the job site.



## ARIZONA WATER COMPANY

### PRECONSTRUCTION CONFERENCE OUTLINE

---

#### 10. General Construction

A. All work will be performed as per Arizona Water Company's General Conditions of Contract, Construction Specifications, and Construction Specification Drawings.

B. Water for compaction, dust control, will be purchased by the contractor.

*AWC WILL PROVIDE WATER MIXTURE, FELIX TO PROVIDE RP*

C. Clean up is subject to approval of ADOT, County, City, Arizona Water Company and property owners.

All new mains will be filled, tested, and flushed through a jumper meter with an approved reduced pressure backflow preventer water will be provided by Arizona Water Company. 4" meter or larger will be Mandatory for subdivisions that will need fire protection due to construction of homes. Use of fire hydrants will only be allowed for fire protection.

E. Contractor WILL comply with all the requirements of his Permit for De Minimus Discharge and plan for Best Management Practices. *AWC FELIX REQUIRE TO GET DISCHARGE PERMIT*

F. Will Contractor be screening or importing bedding and shade material?



## ARIZONA WATER COMPANY

### PRECONSTRUCTION CONFERENCE OUTLINE

---

#### 11. Regulations

- A. Contractor acknowledges that he has in his possession all the permits, licenses, and training necessary for the prosecution of the work, including, but not limited to:
1. Any National Pollution Discharge Elimination Systems (NPDES) Permits required by U.S. Environmental Protection Agency or Arizona Department of Environmental Quality.
  2. Best Management Practices Plan for De Minimus Discharges
  3. Competent Person for trench safety
  4. Competent Person for confined space
  5. Competent Person for asbestos abatement



ARIZONA WATER COMPANY

PRECONSTRUCTION CONFERENCE OUTLINE

12. Notes

STREET/CO/UTILITY/SEWER  
 PROVIDE COPIES OF ALL PLANS/SPEC/CONTRACTS ETC / STOP WORK  
 CAP AND ABANDON EX. LINES IN PLACE. HAVE OFF ALL PERM MATT.  
 GALT WILL INSPECT BEFORE PIPING AND SITE  
 PERM TO PROVIDE SAFETY PLAN.  
 CALL ME AT 9:00 AM EVERY OTHER WK REC RE FIRST WK.  
 GET RUMBA CURVE & DRAIN TOWN INFO TO GALT.



ARIZONA WATER COMPANY

PRECONSTRUCTION CONFERENCE OUTLINE

DATE: 12/8/14 TIME: 9:00 CONTRACTOR: EELIX DIVISION: PU

W.A. NUMBER 1-5167 JOB DESCRIPTION: VALLEY FARMS AKK

NAME	COMPANY	TITLE	PHONE NUMBERS
STEVE ORTIZ	AZ WATER CO.	Senior Services	(520) 705-4247

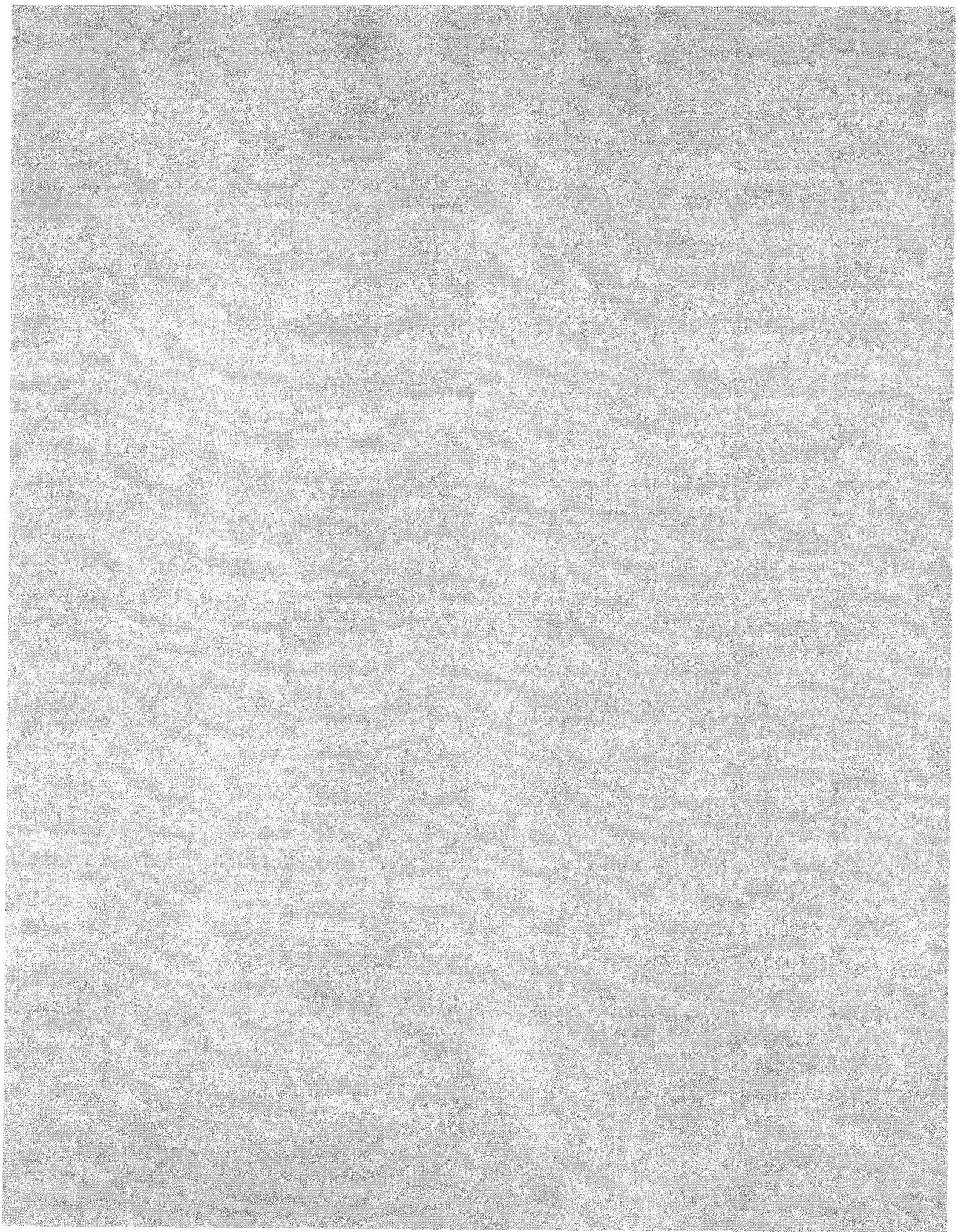


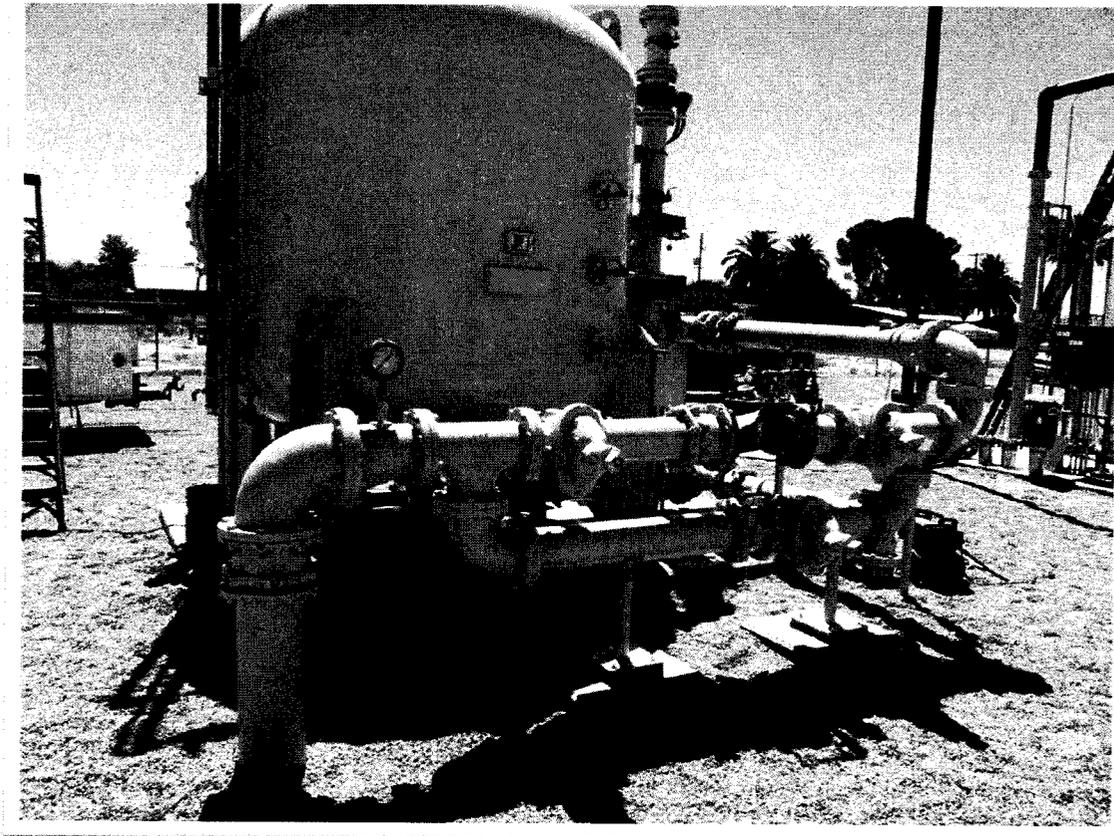
ARIZONA WATER COMPANY

PRECONSTRUCTION CONFERENCE OUTLINE

NAME	COMPANY	TITLE	PHONE NUMBER
JAMES WILSON	AWC	SR ENGINEER	602-240-6060
Archie Lopez	FCC	PM	602-469-5208
Dan Anderson	FCC	PM	480-266-1728
FREDERIC TACK	GHD	PE	602.826.0509
BILL ROBERTS	GHD	PE	602.723.9565
Mario Mendez	AWC	Engineer	602 240 6060
DARIN BEAUM	WATER WORKS LLC	FIELD ENGINEER	480-661-1742
DANA WATTS	FCC	R/IBC DIV MGR	602 390 4727
Ed Redwanski	AW	Construction Engineer	602-568-8701

hereinafter referred to as "Company" \_\_\_\_\_ will be hereinafter referred to as "Contractor" and Arizona Water Company will be





**Arizona Water Company**  
Valley Farms Arsenic Removal Facility  
Operation and Maintenance Manual

June 2015

## Table of Contents

1.	Contact Information.....	2
1.1	Owner and Managerial Responsibility.....	2
1.2	Engineer.....	2
1.3	Contractor.....	2
2.	Introduction.....	3
2.1	Purpose.....	3
2.2	Site Information.....	3
2.3	Regulatory Information.....	4
2.4	Description of System and Plant.....	4
2.5	Target Efficiency and Performance.....	4
2.6	Principle Design Criteria.....	5
3.	Operational Strategies.....	6
	Operational Scenario 1.....	6
	Operational Scenario 2.....	6
	Operational Scenario 3.....	6
3.1	Disinfection System.....	6
4.	Start-Up Information and Results.....	7
5.	Maintenance Plan.....	8
5.1	Backwash Operations.....	8

## Figure index

Figure 1 - Project Vicinity Map.....	3
--------------------------------------	---

## Appendices

- Appendix A – Process Flow Diagram
- Appendix B – Blending Plan
- Appendix C - Process Description
- Appendix D - Media Information
- Appendix E - Initial Start-up and Monitoring Form
- Appendix F - Component O&M and Information
- Appendix G - Mechanical Equipment and Instruments



# 1. Contact Information

## 1.1 Owner and Managerial Responsibility

Arizona Water

Contact: James Wilson

3805 North Black Canyon Highway, Phoenix, AZ 850378

(602) 240-9565

[jwilson@azwater.com](mailto:jwilson@azwater.com)

## 1.2 Engineer

GHD

Contact: Bill Roberts

4747 North 22<sup>nd</sup> Street, Suite 200, Phoenix, AZ 85016

(602) 723-9565

[bill.roberts@ghd.com](mailto:bill.roberts@ghd.com)

GHD

Contact: Frederick Tack

4747 North 22<sup>nd</sup> Street, Suite 200, Phoenix, AZ 85016

(602) 826-0509

[frederick.tack@ghd.com](mailto:frederick.tack@ghd.com)

## 1.3 Contractor

Felix Construction

Contact: Dan Anderson

1326 West Industrial Drive, Coolidge, AZ 85128

(480) 266-1728

[daniela@felixconstruction.com](mailto:daniela@felixconstruction.com)



## 2. Introduction

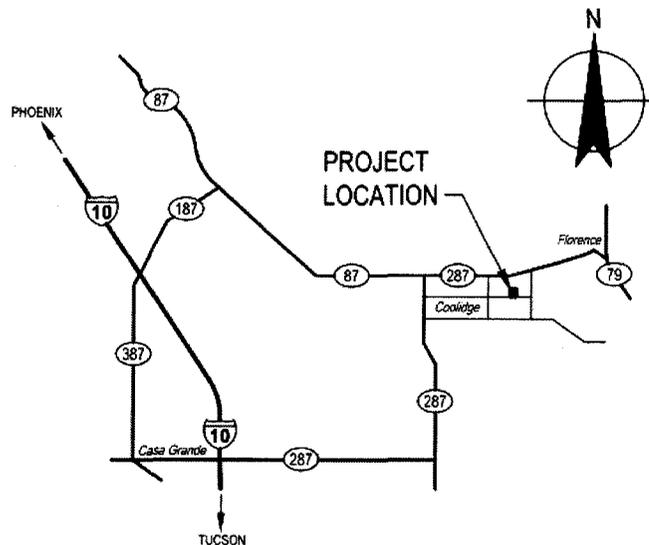
### 2.1 Purpose

The purpose of this manual is to provide instructions on the operation and maintenance of the addition of an Arsenic Removal Vessel and blending component to the existing Valley Farms water production and distribution facility. The manual includes regulatory information, the blending plan, the system's monitoring plan, as-builts, start-up information and results, maintenance plans, and information for only the addition of the arsenic removal system, and does not include any operational or maintenance information for the existing water production, storage or distribution system.

### 2.2 Site Information

The site's address is 10804 East Vah Ki Inn Road in Valley Farms, AZ. It is located along the north side of Vah Ki Inn Road, approximately 0.3 miles east of the intersection of North Clemans Road in Valley Farms, AZ. The site consists of approximately 0.89 acres of land. The project location is depicted in Figure 1 below.

**Figure 1 - Project Vicinity Map**



#### 2.2.1 Legal Description

A parcel of land situated within the Southwest Quarter of Section 17, Township 5 South, Range 9 East of the Gila and Salt River Base and Meridian, Pinal County, Arizona, said parcel being more particularly described as follows:

Beginning at a point on the county road right of way, which point bears South 89° 59' West, 1071.18 feet from the South Quarter Corner of said Section 17, said Quarter Corner being marked by a 2 inch iron pipe with brass cap; thence South 89° 59' West, 175.00 feet; thence North 0° 28' West, 222.00 feet; thence North 89° 59' East, 175.00 feet; thence South 0° 28' East, 222.00 feet to the point of beginning.



The Pinal County Assessor No. is 202290010 and the legal description is recorded in Docket #124, page 196 of the Pinal County Recorder's office.

### 2.3 Regulatory Information

The approving agency for the Valley Farms Arsenic Removal Facility is the Arizona Department of Environmental Quality (ADEQ). In order to ensure that public drinking water systems in Arizona are designed and built to standards that provide safe, potable water to customers, ADEQ conducts a detailed technical review of water system design prior to and after its construction. Projects that undergo this review are awarded an Approval to Construct before construction, and an Approval of Construction after construction. Both of these permits for the Valley Farms Arsenic Removal Facility are included in this manual. Details from these permits include:

- ADEQ File # 20140293      TF # 61519

### 2.4 Description of System and Plant

The production facility consists of one (1) 250,000 gallon above ground steel storage tank and two (2) groundwater wells.

The distribution system components at the facility include a three (3) pump booster station, one (1) hydropneumatic tank. The booster station is connected to the arsenic removal plant through a backflow prevention device to provide water for backwashing.

A disinfection system provides the ability to disinfect the water produced at both wells.

The arsenic removal portion of the facility includes an 8-foot diameter arsenic pressure vessel which provides the capacity to reduce the arsenic concentration to target levels. Additionally there is a 10,500 gallon backwash tank to collect and store the backwash from the arsenic vessel, which will be recirculated to the head to the arsenic removal vessel for treatment. Additionally there is a blending header capable of blending water from well #2 with water from well #1 as the volume of water treated varies throughout the season.

### 2.5 Target Efficiency and Performance

The arsenic removal system is design to reduce the arsenic concentration to less than 0.007 mg/L.

Guiding performance criteria including maximum system pressure, maximum Flux rate and maximum velocities in the arsenic removal system are included below:

**Table 1 - Target Performance Table**

Treatment System Criteria	Target Performance
Maximum Pressure	100 psi
Target arsenic concentration	< 7.0 ppb (0.007 mg/L)
Maximum Flux Rate	6 gallon per minute per square foot (gpm/sf)
Minimum Empty Bed Contact Time	3.5 minutes
Maximum Velocity	6.0 feet per second (fps)



## 2.6 Principle Design Criteria

The facility includes two wells, Well #1 and Well #2. The quality of the groundwater produced by Well #2 exceeds the compliant arsenic concentration limit of 0.010 mg/L. The ability to blend Well #2 with Well #1 to meet a compliant arsenic level is not possible. Therefore treatment is required to utilize Well #2.

### 2.6.1 SORB 33© Engineered Arsenic System (EAS)

The 2001 arsenic final rule published in the Federal Register identified Adsorption as one of the Best Available Technologies (BATs) for compliance with the new arsenic MCL. The adsorption treatment technology is provided by Severn Trent Water Purification, Inc. (STWP).

The SORB 33© EAS system uses an adsorption media to removal arsenic from the groundwater. The principle treatment technology is the use of Bayoxide E33 iron oxide media supplied by Severn Trent Services, which is filled in the pressure vessel.

Additional process design description as prepared by the equipment manufacturer is attached in [XXXXX.dwg](#).

Information about the arsenic removal media as prepared by the media supplier is attached in [XXXXX.dwg](#).



### 3. Operational Strategies

The existing wells are to be operated under three (3) different operational scenarios to meet the various seasonal demands of the surrounding distribution system. Those operational scenarios are described below:

#### Operational Scenario 1

Well # 1 operates alone for 3 months per year and bypasses the proposed treatment system. The flow rate for Scenario 1 is 150 gpm. This flow rate is sent directly to storage and the treatment flowrate is zero (0) gpm.

#### Operational Scenario 2

Well # 2 operates alone for 3 months per year and bypasses the proposed treatment system and the remaining flow is sent to storage. The flow rate for Scenario 2 is 150 gpm. This flow rate is sent directly to storage and the treatment flowrate is zero (0) gpm.

#### Operational Scenario 3

Well # 1 and Well # 2 are operated together for 6 months per year. During this time, Well No. 1 bypasses the treatment. A portion of flow from Well #2 also is blended and bypasses the treatment. The blended and treated Well #2 flows are discussed in the blending section below.

Each time the arsenic removal media is installed or after backwashing, the arsenic concentrations in its effluent will be low and higher bypass flow rates may be achieved.

Operators should periodically monitor the system's arsenic concentrations.

When blended concentrations approach 7 ppb, the blend ratio is to be adjusted to increase the flowrate through the media. These adjustments will continue over time until no blending occurs to achieve target performance. At that time, the media must be replaced. Severn Trent estimates that the proposed media could remain in service for approximately 8 years.

The process flow for the system is depicted in [Figure 3-1](#).

The blending plan for the system is depicted in [Figure 3-2](#).

Additional process design description as prepared by the equipment manufacturer is attached in [Appendix B](#).

#### 3.1 Disinfection System

The disinfection system is a sodium hypochlorite feed system enclosed in a fiberglass containment shed. The sodium hypochlorite is stored in a double-walled XLPE 60 gallon tank, set on an elevated pad inside the containment shed, also set on a containment curb. Two (2) metering pumps are used to disinfect each well. Each metering pump is only operating when their respective well is running.

Stroke speed will be adjusted manually to align their dose with their corresponding well's flow rate.

The disinfection equipment is connected to the existing injection ports at Well #1 and Well #2.

The design features for the disinfection metering pumps for this project are listed in Table 4 below.

When both wells are running, the sodium hypochlorite tank will have to be filled weekly.



## 4. Start-Up Information and Results

The ADEQ Initial Start-up and Monitoring Form attached as **Appendix E** should be completed and submitted in accordance with the ADEQ regulatory and reporting requirements.



## 5. Maintenance Plan

### 5.1 Backwash Operations

Periodic backwashing or "fluffing" of the media in the pressure vessel is required to prevent the compaction of which may lead to the development of preferential flow channels that cause short circuiting or reduced adsorption.

Another reason for backwashing is to free the media bed of suspended solids that could increase the differential pressure. Suspended material that may accumulate in the media includes:

- Sediments from Well No. 2
- Oxidized iron precipitate from the feed water
- Other suspended materials

Therefore backwash is required and is recommended as follows:

- at frequency of once (1) every three months, or
- when the pressure drop across the media bed exceeds 10 psi

The water stored in the backwash tank will be decanted back to the inlet of the pressure vessel for re-treatment. A recycle pump will convey the backwash water. Additionally a bag filter is provided between the pump and the vessel inlet to prevent any fines or media from returning back to the treatment system.

#### 5.1.1 Backwash and Forward Rinse Cycles

The backwash tank can accommodate a backwash cycle time of 12 minutes at 550 gpm which equals 6,600 gallons.

There will also be a forward rinse that is directed to the backwash tank of 250 gpm for 2 minutes, which equals an additional 500 gallons.

The 10,500 gallon tank provides adequate freeboard and capacity for any variations in operation.

Additional O&M information as provided by the equipment manufacture has been provided in Appendix H.

