

September 23, 2016

To: All Holders of Contract Documents

Ref: Addendum #3  
Cherokee Service Area Interconnect and Booster Station Replacement  
R303231.08

Addendum #3 shall be incorporated into the Contract Documents for the above referenced project. The Addendum includes information for bidders, updated bid form, updated electrical sheets, technical information for the replacement building for the Cherokee Well House and water tank removal, update to Section 33 13 00, a fencing detail, and information on the existing irrigation well that will need to be plugged as part of the Cherokee Well House Rehabilitation.

Information for Bidders:

- Construction water is provided by the Village at no charge. Contractor must contact the Village and arrange pickup of a meter that will be used to report water used by Contractor.
- All roadway cuts will require a permit from the Village of Ruidoso; permit will be filled free of charge. The Village will replace the asphalt; contractor is responsible for base course to the top of existing asphalt.
- Contractor is responsible for all construction permits. Initial coordination with NMED will be provided on the environmental and cultural resources permitting.
- All testing required APWA Standard specifications will be the responsibility of the Contractor.
- SCADA installation and integration will be performed by Village Staff.
- Project timeline does not include the manufacturing and delivery of the booster systems.

ALL OTHER PROVISIONS OF THE CONTRACT DOCUMENT SHALL REMAIN UNCHANGED. THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS TO THE SAME EXTENT AS THOSE PROVISIONS CONTAINED IN THE ORIGINAL DOCUMENTS AND ALL ITEMS LISTING THEREOF. EACH BIDDER SHALL ACKNOWLEDGE RECEIPT OF ADDENDUM NUMBER TWO (2) ON THE BID PROPOSAL FORM IN THE SPACE PROVIDED.

# HUITT-ZOLLARS

HUITT-ZOLLARS, INC. • 333 Rio Rancho Drive NE • Suite 101 • Rio Rancho, NM 87124-1450 • 505.892.5141 phone • 505.892.3259 fax • [huitt-zollars.com](http://huitt-zollars.com)

## HUITT-ZOLLARS, INC.



Raymond D. De La Vega  
NMPE License #: 21078

Attached: H-272 Declaration, C-410 Bid Form, Section 33 13 00, 33 16 13.12 and 02 53 20A, updated electrical sheets, Section 02 52 20A Well Pump House for Cherokee, and C-502 with a detail for chain link fence.

# BID FORM FOR CONSTRUCTION CONTRACTS

*Prepared by*

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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*a practice division of the*  
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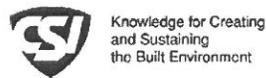
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and the

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**BID FORM**

*CHEROKEE SERVICE AREA INTERCONNECT AND BOOSTER STATION REPLACEMENT*

*RFB#2017-001B*

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

*VILLAGE OF RUIDOSO, NEW MEXICO*

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

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 61 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of Hazardous Environmental Conditions that have been identified in SC-4.06.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

#### **ARTICLE 4 – FURTHER REPRESENTATIONS**

4.01 Bidder further represents that:

- A. this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

**ARTICLE 5 – BASIS OF BID**

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s), items not listed below are considered incidental to contract price:

<b>VILLAGE OF RUIDOSO                      CHEROKEE SERVICE AREA INTERCONNECT AND BOOSTER                      SYSTEM REPLACEMENT                      IFB# 2017-001B</b>						
BID. NO.	QUANT.	UNIT	DESCRIPTION (WITH UNIT PRICE IN WORDS)	UNIT PRICE	TOTAL PRICE	
1	2,261	LF	Construction Staking, compl.			
			at _____ Dollars			
			and _____ Cents			
			per linear foot			
2	2	EA	Construction Project Sign, per Contract Special Provisions, cip			
			at _____ Dollars			
			and _____ Cents			
			per each			
3		%	Construction Mobilization, one-time expense, compl.			
			at _____ Dollars			
			and _____ Cents			
			per percent			
4		%	Construction Demobilization, one-time expense, compl.			
			at _____ Dollars			
			and _____ Cents			
			per percent			
5	2,261	LF	Construction Traffic Control & Barricading, compl.			
			at _____ Dollars			
			and _____ Cents			
			per linear foot			
6	1	LS	NPDES Permitting, compl.			
			at _____ Dollars			
			and _____ Cents			
			per lump sum			
7	8	EA	Pothole, 0-10' deep, Vacuum exploratory excavation, incl. pavement removal, disposal & replacement, vertical & horizontal utility location data, compl.			
			at _____ Dollars			
			and _____ Cents			
			per each			

BID. NO.	QUANT.	UNIT	DESCRIPTION (WITH UNIT PRICE IN WORDS)	UNIT PRICE	TOTAL PRICE
8	2,261	LF	10" C-900 PVC Pipe, incl. restraint, trench & compacted backfill to 5' depth, cip.		
			at _____	Dollars	
			and _____	Cents	
			per linear foot		
9	60	LF	6" DI Pipe, incl. restraint, trench & compacted backfill to 5' depth, cip.		
			at _____	Dollars	
			and _____	Cents	
			per linear foot		
10	75	LF	6" PVC Pipe, incl. restraint, trench & compacted backfill to 5' depth, cip.		
			at _____	Dollars	
			and _____	Cents	
			per linear foot		
11	100	LF	8" DI Pipe, incl. restraint, trench & compacted backfill to 5' depth, cip.		
			at _____	Dollars	
			and _____	Cents	
			per linear foot		
12	6	EA	10" DI 11.25 Degree Bend, incl. restraint, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
13	4	EA	10" DI 45 Degree Bend, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
14	2	EA	10" DI 90 Degree Bend, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
15	1	EA	8" DI 90 Degree Bend, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		

BID. NO.	QUANT.	UNIT	DESCRIPTION (WITH UNIT PRICE IN WORDS)	UNIT PRICE	TOTAL PRICE
16	1	EA	6" DI 45 Degree Bend, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
17	1	EA	6" DI 90 Degree Bend, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
18	1	EA	6" DI 45 Degree Bend, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
19	1	EA	10" X 6"X 10" DI Tee, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
20	1	EA	8" X 6"X 8" DI Tee, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
21	1	EA	10" X 6" Eccentric Reducer, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
22	1	EA	10" X 6" Concentric Reducer, incl. restraints, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
23	4	EA	10" Gate Valve w/Box, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		
24	3	EA	8" Gate Valve w/Box, cip.		
			at _____	Dollars	
			and _____	Cents	
			per each		

BID. NO.	QUANT.	UNIT	DESCRIPTION (WITH UNIT PRICE IN WORDS)	UNIT PRICE	TOTAL PRICE
25	4	EA	6" Gate Valve w/Box, cip.	Dollars Cents	
			at		
			and		
			per each		
26	1	EA	6" Dezurik Check Valve Assembly APCO Series 6000A	Dollars Cents	
			at		
			and		
			per each		
27	3	EA	1" Combination Air Release Valve Assembly Including Vault, cip.	Dollars Cents	
			at		
			and		
			per each		
28	6	EA	Tracer wire box, cip.	Dollars Cents	
			at		
			and		
			per each		
29	5	EA	Fire Hydrant Assembly, Muller Super Centurion 250, cip.	Dollars Cents	
			at		
			and		
			per each		
30	1	EA	Aquaris One-O-One HH 2" Flushing Hidden Hydrant, cip.	Dollars Cents	
			at		
			and		
			per each		
31	1	EA	Kupferle #66 Sampling Station, incl. connection, cip.	Dollars Cents	
			at		
			and		
			per each		
32	2	EA	72" Diameter Concrete Manhole, 6' in depth, cip.	Dollars Cents	
			at		
			and		
			per each		
33	2,496	LF	12 Gauge tracer wire, direct bury, cip.	Dollars Cents	
			at		
			and		
			per linear foot		

BID. NO.	QUANT.	UNIT	DESCRIPTION (WITH UNIT PRICE IN WORDS)	UNIT PRICE	TOTAL PRICE
34	2,261	LF	2" Wide blue non-detectable locator tape located above pipe in trench, complete		
			at	Dollars	
			and	Cents	
			per linear foot		
35	100	SY	Asphalt Saw cut/Remove/Dispose, Replacement by others.		
			at	Dollars	
			and	Cents	
			per square yard		
36	100	CY	Rock Removal/Excavation and Disposal, cip.		
			at	Dollars	
			and	Cents	
			per cubic yard		
37	1	LS	Furnish Cherokee Water Booster Station and related equipment.		
			at	Dollars	
			and	Cents	
			per lump sum		
38	1	LS	Install Cherokee Water Booster Station including, but not limited to, water meter, piping and valves, electrical and specified enclosure, foundation work, all electrical work, re-plumbing the existing pipe, 1" Sch 80 PVC Chemical Feed and Connection (Horizon Equipment by Others, and Vent Kit, cip.		
			at	Dollars	
			and	Cents	
			per lump sum		
39	1	LS	Plug and seal the existing irrigation well (H-272) per New Mexico Environment Department guidelines including all permitting requirements. Known information of the well please see Addendum # 3, cip.		
			at	Dollars	
			and	Cents	
			per lump sum		
40	1	LS	Demo Existing Well House and Replace with New Well House and equipment including, but not limited to, all exposed piping and valves, mag water meter, foundation, and removal and disposal of the existing chlorination system		
			at	Dollars	
			and	Cents	
			per lump sum		

BID. NO.	QUANT.	UNIT	DESCRIPTION (WITH UNIT PRICE IN WORDS)	UNIT PRICE	TOTAL PRICE
41	1	LS	Remove the existing Hell Hole Water Booster Station including, but not limited to, all appurtenances including water meter, piping and valves, foundation, and electrical equipment, cip.		
			at _____ Dollars		
			and _____ Cents		
			per lump sum		
42	1	LS	Remove and Dispose of the existing water tank structure including foundation and ring, cip.		
			at _____ Dollars		
			and _____ Cents		
			per lump sum		
43	1	LS	Remove and dispose of pit vault including all piping, cip.		
			at _____ Dollars		
			and _____ Cents		
			per lump sum		
44	1	LS	Furnish Hellhole Water Booster Station including all equipment.		
			at _____ Dollars		
			and _____ Cents		
			per lump sum		
45	1	LS	Install Hellhole Water Booster Station including, but limited to, all appetences including water meter, piping and valves, electrical and specified enclosure, foundation work, all electrical work, re-plumbing the existing pipe, cip.		
			at _____ Dollars		
			and _____ Cents		
			per lump sum		
46	435	LF	Furnish and install chain link fence per detail, see sheet C-502, cip.		
			at _____ Dollars		
			and _____ Cents		
			per linear foot		
<b>BID SCHEDULE TOTAL AMOUNT: \$</b>					
<b>NMGRT @ 8.4375%</b>					
<b>PROJECT TOTAL AMOUNT: \$</b>					

Unit Prices have been computed in accordance with Paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete within 65 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 14.07.B of the General Conditions within 75 calendar days after the date when the Contract Times commence to run.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are attached to and made a condition of this Bid:
  - A. Required Bid security in the form of a certified check, bank money order, bank draft payable to the Village of Ruidoso or a Bid bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
  - B. List of Proposed Subcontractors
  - C. Bidder Qualification Form

**ARTICLE 8 – DEFINED TERMS**

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

**ARTICLE 9 – BID SUBMITTAL**

9.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of general partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
*(Signature – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_  
(CORPORATE SEAL)

Attest: \_\_\_\_\_  
*(Signature of Corporate Secretary)*

Date of Qualification to do business in \_\_\_\_\_ [State Where Project is Located] is \_\_\_\_ \ \_\_\_\_ \ \_\_\_\_.

A Joint Venture

Name of Joint Venturer: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of first joint venture partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of second joint venture partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business address: \_\_\_\_\_

Phone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Submitted on \_\_\_\_\_, 20\_\_\_\_.

State Contractor License No. \_\_\_\_\_ (If applicable)

New Mexico Workforce Solutions Registration No. \_\_\_\_\_ . (If applicable)

*D. E. Hunter*

IMPORTANT — READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM.

# Declaration of Owner of Underground Water Right

Hondo Basin

Declaration No. H-272 Book \_\_\_\_\_ Date received \_\_\_\_\_

I, E. R. Poteet being first duly sworn upon my oath, depose and say that the following is a full and complete statement prepared in accordance with the instructions on the reverse side of this form and submitted in evidence of ownership of a valid underground water right, that I have carefully read each and all of the items contained therein and that the same are true to the best of my knowledge and belief.

E. R. Poteet, declarant.



Subscribed and sworn to before me this 2nd day of October, A.D. 1956

Commission expires Feb 5 1957  
Lillian May Ward Notary Public

### STATEMENT

1. Name of water right owner E. R. Poteet  
of Box 346, Hollywood  
County of Lincoln, State of New Mexico

2. Source of water supply Shallow  
(state whether artesian or shallow water basin)  
located in Hondo Underground Water Basin  
(name of underground stream, valley, artesian basin, etc.)

3. The well is located in the NE  $\frac{1}{4}$ , SW  $\frac{1}{4}$ , ~~and SW~~  
of section 36, Township 11 S, Range 13 E, N.M.P.M.  
on land owned by Applicant

4. Description of well: date drilled 1945 driller Elzy Perry, Jr. depth 66 feet.  
diameter (outside) of casing 8 inches; original flow 350 gal. per min.;  
present flow 350 gal. per min.; maximum pumping lift 40 feet;  
make and type of pump Johnston Turbine

make, type, horsepower, etc., of power plant 10 H.P. Electric Motor

Fractional or percentage interest claimed in well 100%

5. Quantity of water appropriated and beneficially used 54 (feet depth or acre feet per acre)  
for Irrigation purposes.

6. Acreage actually irrigated and with water right 18 acres,  
located and described as follows (describe only lands actually irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
<u>Pt. NE<sup>1</sup> NW<sup>4</sup> NE<sup>4</sup> SW<sup>4</sup></u>	<u>36</u>	<u>11S</u>	<u>13E</u>	<u>18.3</u>	<u>Applicant</u>
<u>Pt. SE<sup>4</sup> NW<sup>4</sup></u>	<u>36</u>	<u>11S</u>	<u>13E</u>	<u>18.3</u>	

~~(See Description Attached)~~

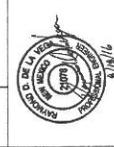
(Note: location of well and acreage actually irrigated must be shown on plat on reverse side.)



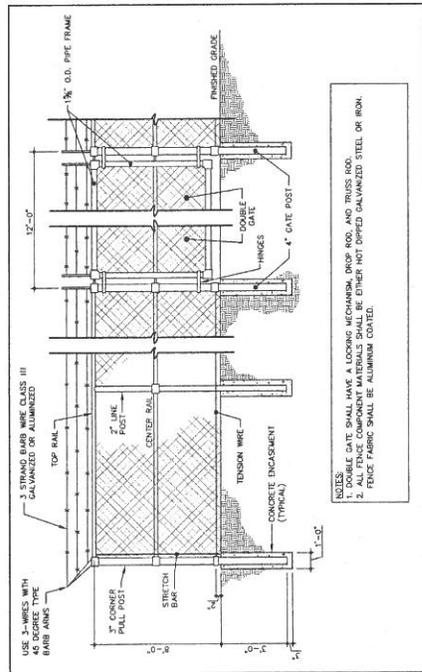
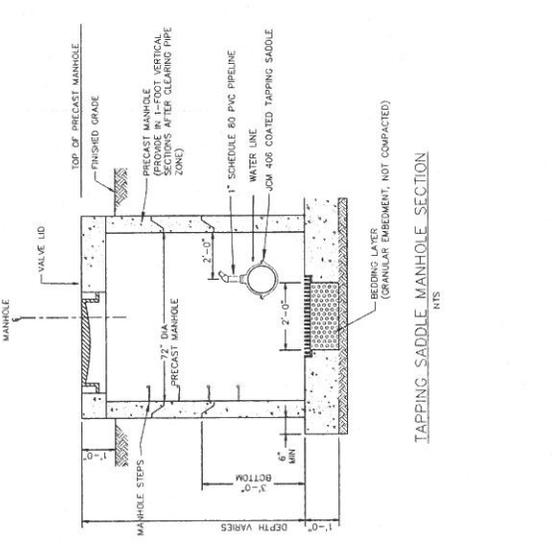
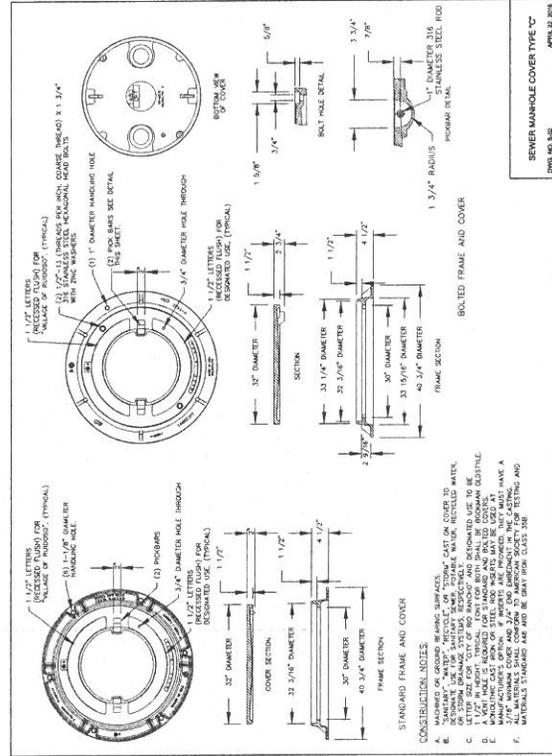
NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			
6			
7			

CREATED BY: HUITT-ZOLLARS  
 333 E. RUIDOSO BLVD. SUITE 100  
 RUIDOSO, NM 87702  
 (505) 892-5141 FAX (505) 892-2929

UTILITY DETAIL SHEET  
 CHEROKEE SERVICE AREA  
 INTERCONNECT & BOOSTER  
 STATION REPLACEMENT  
 RUIDOSO, NEW MEXICO



PROJECT NO: R302231.08  
 DESIGNED BY: RDV  
 DRAWN BY: AJM  
 CHECKED BY: JDB  
 DATE: 08/18/16  
 WDR CHK:  
 SHEET: C-502



CONSTRUCTION NOTES:  
 1. GATE SHALL HAVE A LOCKING MECHANISM, DROP ROD, AND TRUSS ROD.  
 2. ALL FENCE COMPONENT MATERIALS SHALL BE EITHER HOT DIP GALVANIZED STEEL OR IRON.  
 3. FENCE FABRIC SHALL BE ALUMINUM COATED.

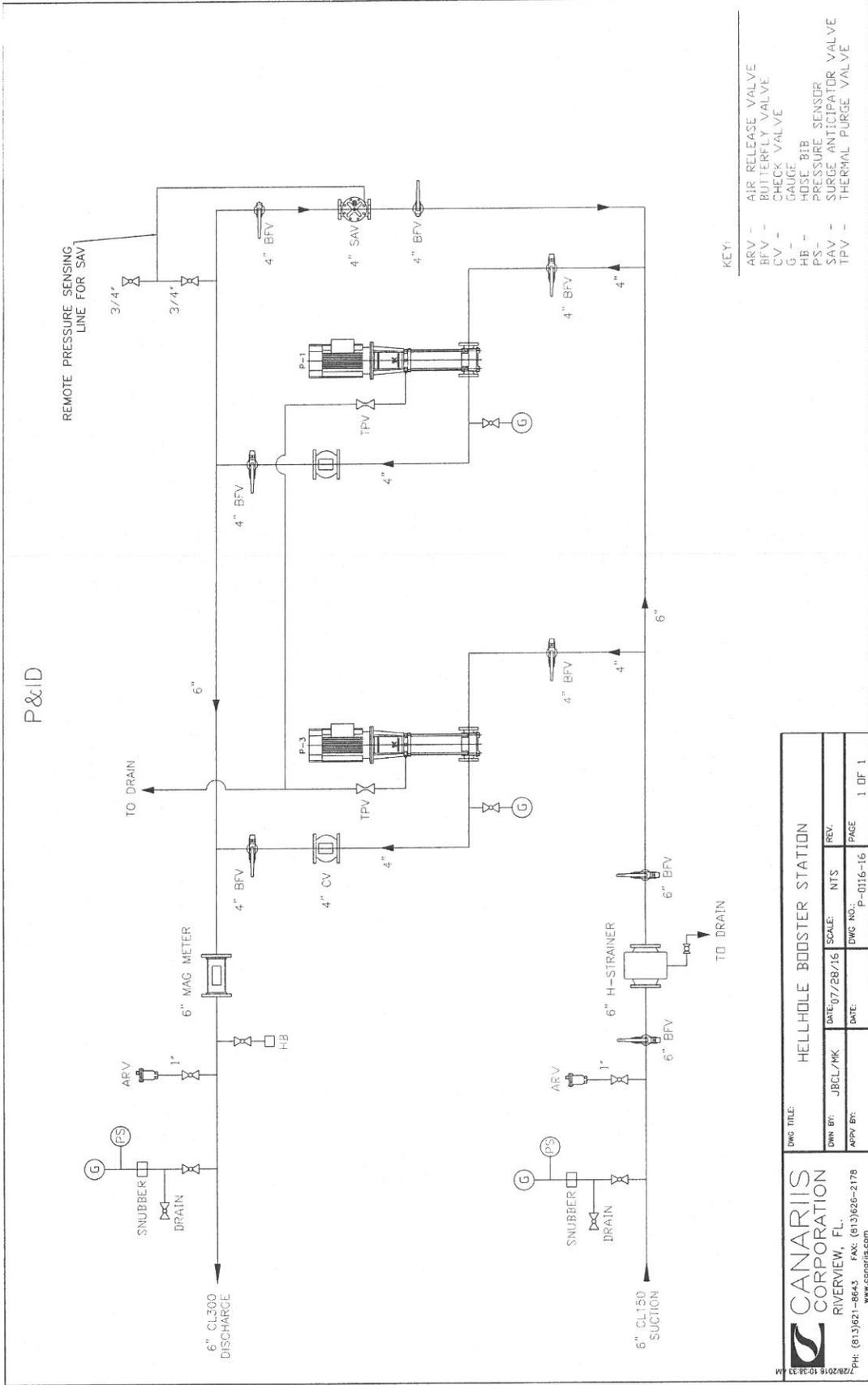








NOTE: ALL ELECTRICAL WORK WILL BE COORDINATED WITH PNM AND THE CONSTRUCTION INDUSTRIES DIVISION.



KEY:

- ARV - AIR RELEASE VALVE
- BFV - BUTTERFLY VALVE
- CV - CHECK VALVE
- G - GAUGE
- HB - HOSE BIB
- PS - PRESSURE SENSOR
- SAV - SURGE ANTICIPATOR VALVE
- TPV - THERMAL PURGE VALVE

DWC TITLE: HELLHOLE BOOSTER STATION		DATE: 07/28/15	SCALE: NTS	REV.	PAGE
DWN BY: JBCL/MK	DATE: 07/28/15	SCALE: NTS	REV.	PAGE	1 OF 1
APPV BY:	DATE:	DWG NO.: P-0116-16			
CANARIIS CORPORATION RIVERVIEW, FL PH: (813)621-8643 FAX: (813)626-2178 www.canariis.com		7/28/2015 10:38:33 AM			

**HELLHOLE ELECTRICAL PLAN**

**CHEROKEE SERVICE AREA**

**STATION REPLACEMENT**

**INTERCONNECT & BOOSTER**

**RUIDOSO, NEW MEXICO**

PROJECT NO: 0302031.08

DESIGNED BY: RDV

DRAWN BY: AJM

CHECKED BY: JDB

DATE: 09/18/16

WFR CHK:

SHEET: **E-105**

**VILLAGE OF RUIDOSO**

Designed For:

HUTT-ZOLLARS

133 Rio Rancho Drive NE, Suite 101  
Rio Rancho, New Mexico 87124  
Phone: (505) 882-5141 Fax: (505) 882-1229

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			
6			
7			

REVISIONS (OR CHANGE NOTICES)

SECTION 02 53 20A  
WELL PUMP ENCLOSURE REPLACEMENT

PART 1 GENERAL

1.02 WORK INCLUDED

- A. Furnish, install, connect, and test all, piping, valves, gauges, electric controls, and all related appurtenances, including VFD, to complete a well pumping system, all enclosed in a new pre-engineered building, approximately 15' by 13' by 9' Tall, as shown on Drawings.
- B. System consists of existing well pumps, motors, piping, isolation valves, check valves, pressure gauges, AFD's, motor controls, and appurtenances
- C. Provide 480 VAC/ 3/ 60 power source connection to the well house.
- D. Demolish existing building and components including existing slab.
- E. Install new pre-engineered building from same manufacture as packaged pumping enclosures as indicated on the drawings and specified in Section 02532.
- F. Install new equipment as described herein and replace piping to existing well and existing pipeline to make a functioning well pump application.

1.03 SUBMITTALS

- A. Submit in accordance with the requirements of Section 01300.
- B. Product Data:
  - 1. Dimensioned elevation and plan views of building.
  - 2. Materials of construction.
  - 3. Building erection drawings showing the exact location of all roof and wall accessories, and exact anchor bolt locations for each accessory.
  - 4. Dimensional and flow data for control valves.
  - 5. Electrical characteristics and operating instructions for AFDs.
  - 6. Certification that installation is ready for use.
- C. Manufacturer's literature, including rating information for electrical components.
  - 1. Connection diagram showing location of each component (identified by function), terminal boards, wiring on the skid, and notation beside terminal board identifying the function of each terminal intended for a field connection.
- D. Wiring Diagrams: Power and control wiring. Differentiate between manufacturer- installed and field-installed wiring and between components provided by manufacturer and those provided by others.
- E. Pre-Approval Requirements: Pre-submittal data as listed from paragraphs 1.03.A through 1.3.D, to include certified AutoCAD drawing, to include electrical wiring diagrams for the entire enclosure.

1.04 WARRANTY

- A. One year warranty for the complete system.

1.05 PROJECT SITE CONDITIONS

- A. Altitude: 6,677 above MSL

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B. Maximum dry bulb temperature: 100°F

1.06 DIMENSIONAL LAYOUT

A. Well pumping system enclosure to dimensions shown on Drawings to maintain layout and clearances.

B. Include in the bid all costs associated with any changes or modifications required to install equipment from an alternate manufacturer which has not been fabricated to the dimensions shown or is not in accordance with these specifications.

PART 2 PRODUCTS

2.02 ACCEPTABLE MANUFACTURERS

A. Well Pumping System:

1. Dupont.
2. Or Engineer reviewed and approved equivalent.

2.03 PUMPING SYSTEM

A. All of the below equipment shall be mounted and ready for operation. All pipes, piping components, and the pressure sensing lines shall be firmly anchored to the concrete floor by means of structural steel supports.

B. All electrical wiring between existing pump, new AFD shall be completed and field tested. All controls, pump sequencing devices, alarms and instrumentation shall be tested and calibrated for proper operation during field testing.

C. The entire finished new piping assembly shall be hydrostatically after installation.

D. All equipment is to be tested in accordance with the requirements of AWWA. All parts shall be new and free from all defects or imperfections.

E. Deep Well valve:

1. Deep Well Valve: 4" Cla-Val Model 61G-02BYKCKXMS with X105LCW, globe pattern, deep well flushing service.
2. No exceptions will be allowed.
3. The main relief valve shall be UL listed.
4. Valve design to be Globe style single diaphragm type; edges of diaphragm shall be exposed
  - a. Main Valve Seat:
    - 1) Single, removable seat with a 5° taper, shall serve as lower stem guide, and include a precision machined O-ring gland.
    - 2) In full port valves 6" and smaller, the seat shall be a screw-in design (to not cause damage to the O-ring).
    - 3) 8" and larger full port valves, seat shall be held in place with screws.
    - 4) Slanted seats are not allowed.
    - 5) Main Valve disc to be retained on 3-1/2 sides, o-ring type discs are not allowed.
  - b. Main Valve Stem:
    - 1) Guided by bearings at the top in the valve cover at the bottom in the valve seat.
    - 2) Stem to be drilled and tapped at cover end to accept accessories (X105LCW limit switch).

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- c. Control system components shall be manufactured by the same company as the main valve. Main valve and control system components shall be cast and assembled in the United States (U.S.-made).
  - 5. Main Valve Diaphragm:
    - a. Vulcanized at stemhole and not used as the seating surface.
    - b. Capable of withstanding Mullins Burst test of 600 psi per nylon layer.
    - c. Fully supported in full open and full closed positions by precision machined surfaces.
    - d. Protected from over-extension in full open position by contact of precision machined surfaces of diaphragm washer and cover stops.
    - e. All necessary repairs and/or modification shall be possible without removing the main valve from the line. Valve to be hydraulically operated, pilot-controlled diaphragm type.
    - f. Valve Cover and Body Mating Surfaces: Precision machined with register fits and serrated surfaces to grip and seal the diaphragm and center the cover without use of locating or alignment pins; valve cover shall be of a single-piece design.
    - g. Rolled diaphragms not allowed.
  - 6. Single-Chamber Type Valves:
    - a. Single operating chambers sealed from each other by the diaphragm.
    - b. Removable guide bearings for main stem.
  - 7. Disc Guide:
    - a. One-piece design with straight edges and radius on top edge; hourglass-shaped designs are not allowed.
  - 8. Materials:
    - a. Main Valve and Body Cover: Ductile Iron ASTM A536, interior and exterior coated with NSF fusion bonded epoxy
    - b. Main Valve Stem, Nut Spring: 303 SS
    - c. Main Valve and Seat Bearings: 316SS
    - d. Diaphragm and Disc: BUNA N Rubber
    - e. Tubing/ Fittings: Copper
    - f. Pilot Valve Body and Cover: Bronze, ASTM B62
    - g. Pilot Seat: 303 SS
    - h. Disc Retainer and Diaphragm Washer: Cast Iron, coated with NSF fusion bonded epoxy
- F. Surge valve:
- 1. Deep Well Valve: 2" Cla-Val Model 52G-03BYKCKXMS with X105LCW, globe pattern, pressure relief and surge anticipation service.
  - 2. No exceptions will be allowed.
  - 3. The main relief valve shall be UL listed.
  - 4. Valve design to be Globe style single diaphragm type; edges of diaphragm shall be exposed
    - a. Main Valve Seat:
      - 1) Single, removable seat with a 5° taper, shall serve as lower stem guide, and include a precision machined O-ring gland.
      - 2) In full port valves 6" and smaller, the seat shall be a screw-in design (to not cause damage to the O-ring).
      - 3) 8" and larger full port valves, seat shall be held in place with screws.
      - 4) Slanted seats are not allowed.
      - 5) Main Valve disc to be retained on 3-1/2 sides, o-ring type discs are not allowed.
    - b. Main Valve Stem:
      - 1) Guided by bearings at the top in the valve cover at the bottom in the valve seat.

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- 2) Stem to be drilled and tapped at cover end to accept accessories (X105LCW limit switch).
- c. Control system components shall be manufactured by the same company as the main valve. Main valve and control system components shall be cast and assembled in the United States (U.S.-made).
5. Main Valve Diaphragm:
  - a. Vulcanized at stemhole and not used as the seating surface.
  - b. Capable of withstanding Mullins Burst test of 600 psi per nylon layer.
  - c. Fully supported in full open and full closed positions by precision machined surfaces.
  - d. Protected from over-extension in full open position by contact of precision machined surfaces of diaphragm washer and cover stops.
  - e. All necessary repairs and/or modification shall be possible without removing the main valve from the line. Valve to be hydraulically operated, pilot-controlled diaphragm type.
  - f. Valve Cover and Body Mating Surfaces: Precision machined with register fits and serrated surfaces to grip and seal the diaphragm and center the cover without use of locating or alignment pins; valve cover shall be of a single-piece design.
  - g. Rolled diaphragms not allowed.
6. Single-Chamber Type Valves:
  - a. Single operating chambers sealed from each other by the diaphragm.
  - b. Removable guide bearings for main stem.
7. Disc Guide:
  - a. One-piece design with straight edges and radius on top edge; hourglass-shaped designs are not allowed.
8. Materials:
  - a. Main Valve and Body Cover: Ductile Iron ASTM A536, interior and exterior coated with NSF fusion bonded epoxy
  - b. Main Valve Stem, Nut Spring: 303 SS
  - c. Main Valve and Seat Bearings: 316SS
  - d. Diaphragm and Disc: BUNA N Rubber
  - e. Tubing/ Fittings: Copper
  - f. Pilot Valve Body and Cover: Bronze, ASTM B62
  - g. Pilot Seat: 303 SS
  - h. Disc Retainer and Diaphragm Washer: Cast Iron, coated with NSF fusion bonded epoxy
- G. Air Relief Valves:
  1. All valves by same manufacturer.
    - a. Main Valve body and Cover: Ductile Iron ASTM A536, interior and exterior coated with NSF fusion bonded epoxy
    - b. Float and internal Nut Spring: 304 SS
    - c. Elastomers: Delrin
  2. Cla-Val series 33A KC Combination air relief; valves installed as follows:
    - a. One located on suction header, one located on discharge header.
- H. Piping:
  1. Include required piping and fittings for one (1) submersible water pump
  2. 4" ductile iron interconnecting piping (ASTM/ASME A312/SA312)

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3. All pipe welds shall be performed by certified welders employed by the pump manufacturer (welders certified per ASME Section IX). Copies of welder certificates can be supplied on request.
4. Properly support, suspend or anchor exposed pipe, fittings, valves, and appurtenances to prevent sagging, overstressing, or movement of piping and to prevent thrusts or loads on or against connected pumps, valves, meters and other equipment.
5. Support Spacing (unless otherwise specified on drawings):
  - a. Support 2 inch and smaller piping on horizontal and vertical runs at maximum 5 feet on center, unless otherwise specified.
  - b. Support larger than 2 inch piping on horizontal and vertical runs at maximum 8 feet on center, unless otherwise specified.
  - c. Support exposed polyvinyl chloride and other plastic pipes at maximum 5 feet on center, regardless of size.
  - d. Support tubing, copper pipe and tubing, fiber-reinforced plastic pipe or duct, and rubber hose and tubing at intervals close enough to prevent sagging greater than 1/4 inch between supports.
  - e. Install Supports at the following Locations (unless otherwise shown on Drawings):
    - 1) Horizontal bends.
    - 2) Both sides of flexible pipe connections.
    - 3) Base of risers.
    - 4) Floor penetrations.
    - 5) Connections to pumps, blowers and other equipment.
    - 6) Valves and appurtenances
  - f. Isolation valves:
    - 1) Ductile iron butterfly, lug style body, with BUNA N seat, stainless steel shaft, and aluminum bronze disc.
    - 2) Butterfly Valves 6" and smaller shall be provided with lever operators and valves 8" and larger shall be provided with hand wheel and gear operator.
    - 3) Furnish one isolation valve for the suction and one for the discharge of each pump.
6. Check valve on domestic service pump:
  - a. globe style, center guided, silent check valve, installed on the discharge of each pump.
  - b. The check valve shall be cast iron body with a pressure rating exceeding the pump shut-off head plus maximum suction pressure.
  - c. Valve shall have a bronze disc, stainless steel shaft and spring and a resilient seat.
7. Sufficient quantity of adapters and/ or couplings shall be supplied to allow easy removal of all plumbed devices within the prefabricated station which will require future service.
8. Piping shall terminate with flanged connections
9. Pressure Gauges:
  - a. Connect pressure gages and pressure switches with Type L copper tubing.
  - b. Provide shutoff cock and drain cock for each.
  - c. System suction, individual pump discharge, and system discharge pressure gauges: Min. 4 1/2" diameter dial for each pump, liquid filled quality gauge. All gauges will be panel mounted off the pipeline, flexible connected to their respective sensing point.
  - d. Gauges shall have protective diaphragm seal, pulsation dampener and shut-off valve.
  - e. Suction gauge shall indicate from 30-in Hg vacuum to 30 psi.
  - f. Discharge gauges shall indicate 0 to 200 psi.
10. Provide other piping and appurtenances as shown on the Drawings.

I. Field Wiring:

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1. All wiring in conduit.
  2. AC wiring: Stranded #14 red for hot, white for neutral, black for switched power.
- J. Coating:
1. Paint steel and iron components with primer and 2 mil finish coat of a protective coating specifically recommended by the coating manufacturer for the respective service.
- K. Pressure and Flow Transmitters:
1. Provide one pressure transmitter that provides a 4 to 20 mA DC output, compatible with the system controls, temperature, and pressure requirements, if existing.
  2. Pressure transmitter shall have zero, span, and damping adjustability. The transmitter shall be installed on the system discharge header and factory wired to the control panel.
  3. Flow Transmitter
- L. Turbine Flow Meter:
1. Provide one rotary turbine flow meter integrated with the pump station header with flow transmitter that provides a 4 to 20 mA DC output, compatible with the system controls, temperature, and pressure requirements
  2. Flow Meter to be McCrometer with local mounted display.
  3. Flow transmitter shall have zero, span, and damping adjustability.
- M. Electrical;
1. Panelboard:
    - a. Manufacturer:
      - 1) Square D
    - b. Panelboard Ratings
      - 1) Panelboards rated 240 Vac or less shall have short-circuit ratings as shown on the drawings or as herein scheduled, but not less than 10,000 amperes RMS symmetrical.
      - 2) Panelboards rated 480 Vac shall have short-circuit ratings as shown on the drawings or as herein scheduled, but not less than 14,000 amperes RMS symmetrical.
      - 3) Panelboards shall be labeled with a UL short-circuit rating. When series ratings are applied with integral or remote upstream devices, a label or manual shall be provided. It shall state the conditions of the UL series ratings including:
        - 4) Size and type of upstream device
        - 5) Branch devices that can be used
        - 6) UL series short-circuit rating
    - c. Panelboard Construction
      - 1) Interiors shall be completely factory assembled. They shall be designed such that switching and protective devices can be replaced without disturbing adjacent units and without removing the main bus connectors.
      - 2) Trims for branch circuit panelboards shall be supplied with a hinged door over all circuit breaker handles.
      - 3) Doors in panelboard trims shall not uncover any live parts.
      - 4) Doors shall have a semi flush cylinder lock and catch assembly.
      - 5) Door-in-door trim shall be provided.
      - 6) Both hinged trim and trim door shall utilize three point latching.
      - 7) No tools shall be required to install or remove trim.
      - 8) Trim shall be equipped with a door-actuated trim locking tab.
      - 9) Equip locking tab with provision for a screw such that removal of trim requires a tool, at the owner's option.

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- 10) Installation shall be tamper resistant with no exposed hardware on the panelboard trim.
  - 11) Distribution panelboard trims shall cover all live parts. Switching device handles shall be accessible.
  - 12) Surface trims shall be same height and width as box. Flush trims shall overlap the box by 3/4 of an inch on all sides.
  - 13) A directory card with a clear plastic cover shall be supplied and mounted on the inside of each door.
  - 14) All locks shall be keyed alike.
2. Bus:
- A. Main bus bars shall be [copper] sized in accordance with UL standards to limit temperature rise on any current carrying part to a maximum of 65 degrees C above an ambient of 40 degrees C maximum.
  - B. A system ground bus shall be included in all panels.
  - C. Full-size (100%-rated) insulated neutral bars shall be included for panelboards shown with neutral. Bus bar taps for panels with single-pole branches shall be arranged for sequence phasing of the branch circuit devices. Neutral busing shall have a suitable lug for each outgoing feeder requiring a neutral connection. 200%-rated neutrals shall be supplied for panels designated on drawings with oversized neutral conductors.
3. Branch Circuit Panelboards:
- A. The minimum short-circuit rating for branch circuit panelboards shall be as specified herein or as indicated on the drawings.
  - B. Panelboards shall be Square D
4. Breakers:
- A. Bolt-on type, heavy-duty, quick-make, quick-break, single- and multi-pole circuit breakers of the types specified herein, shall be provided for each circuit with toggle handles that indicate when unit has tripped.
  - B. Circuit breakers shall be thermal-magnetic type with common type handle for all multiple pole circuit breakers. Circuit breakers shall be minimum 100-ampere frame and through 100-ampere trip sizes shall take up the same pole spacing.
  - C. Circuit breakers shall be UL listed as type SWD for lighting circuits
  - D. Circuit breaker handle locks shall be provided for all circuits that supply exit signs, emergency lights, energy management, and control system (EMCS) panels and fire alarm panels.
  - E. Circuit breakers shall have a minimum interrupting rating of 10,000 amperes symmetrical at 240 volts, and 14,000 amperes symmetrical at 480 volts, unless otherwise noted on the drawings.
5. Distribution Panelboards – Circuit Breaker Type:
- a. Distribution panelboards with bolt-on devices contained therein shall have interrupting ratings as specified herein or indicated on the drawings.
  - b. Panelboards shall be Eaton type Pow-R-Line 3a or Panelboards shall have molded case circuit breakers as indicated below.
  - c. Where indicated, provide circuit breakers UL listed for application at 100% of their continuous ampere rating in their intended enclosure.
  - d. Provide shunt trips, bell alarms, and auxiliary switches as shown on the contract drawings.
6. Panelboard Enclosure:
- a. Enclosures shall be at least 20 inches wide made from galvanized steel. Provide minimum gutter space in accordance with the National Electrical Code. Where feeder

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- cables supplying the mains of a panel are carried through its box to supply other electrical equipment, the box shall be sized to include the additional required wiring space.
- b. At least four interior mounting studs with adjustable nuts shall be provided.
  - c. Enclosures shall be provided with blank ends.
  - d. Where indicated on the drawings, branch circuit panelboards shall be column width type.
7. Nameplates:
- a. Provide an engraved nameplate for each panel section.
10. AFD's – Domestic Service
- a. Manufacturer:
    - i. Grundfos CUE Series.
  - b. Enclosure: NEMA 12.
  - c. Furnish complete VFD as specified herein or in the equipment schedule for loads designated to be variable speed. VFD's shall be user-selectable for either constant or variable torque loads.
  - d. The VFD shall convert incoming fixed frequency three-phase AC power into a variable frequency and voltage for controlling the speed of three-phase AC induction motors. The VFD shall be a six-pulse input design, and the input voltage rectifier shall employ a full wave diode bridge; VFD's utilizing controlled SCR rectifiers shall not be acceptable. The output waveform shall closely approximate a sine wave. The VFD shall be of a PWM output design utilizing current IGBT inverter technology and voltage vector control of the output PWM waveform.
  - e. The VFD shall include a full-wave diode bridge rectifier and maintain a displacement power factor of near unity regardless of speed and load.
  - f. The VFD shall produce an output waveform capable of handling maximum motor cable distances of up to 1,000 ft. (unshielded) without tripping or derating.
  - g. The VFD shall utilize an output voltage-vector switching algorithm, or equivalent, in both variable and constant torque modes. VFD's that utilize Sine-Coded PWM or Look-up tables shall not be acceptable.
  - h. VFD shall automatically boost power factor at lower speeds.
  - i. The VFD will be capable of running either variable or constant torque loads. In either CT or VT mode, the VFD shall be able to provide its full rated output current continuously and 110% of rated current for 60 seconds.
  - j. VFD shall offer 1 PI controller. One controller shall operate the drive in closed loop
  - k. An empty pipe fill mode shall be available to fill an empty pipe in a short period of time, and then revert to the PID controller for stable operation.
  - l. Switching of the input power to the VFD shall be possible without interlocks or damage to the VFD at a minimum interval of 2 minutes.
  - m. Switching of power on the output side between the VFD and the motor shall be possible with no limitation or damage to the VFD and shall require no additional interlocks
  - n. The VFD shall have temperature controlled cooling fans for quiet operation, minimized internal losses, and greatly increased fan life.
  - o. VFD shall provide full torque to the motor given input voltage fluctuations of up to +10% to -15% of the rated input voltage.
  - p. Harmonics

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- i. The VFD shall provide internal DC link reactors to minimize power line harmonics and to provide near unity power factor. VFD's without a DC link reactor shall provide a 5% impedance line side reactor.
- q. Protective Features:
  - i. VFD shall have input surge protection utilizing MOV's, spark gaps, and Zener diodes to withstand surges of 2.3 times line voltage for 1.3 msec.
  - ii. VFD shall include circuitry to detect phase imbalance and phase loss on the input side of the VFD.
  - iii. VFD shall include current sensors on all three-output phases to detect and report phase loss to the motor. The VFD will identify which of the output phases is low or lost.
  - iv. VFD shall auto-derate the output voltage and frequency to the motor in the presence of sustained ambient temperatures higher than the normal operating range, so as not to trip on an inverter temperature fault. The use of this feature shall be user-selectable and a warning will be exported during the event. Function shall reduce switching frequency before reducing motor speed.
  - v. VFD shall auto-derate the output frequency by limiting the output current before allowing the VFD to trip on overload. Speed can be reduced, but not stopped.
  - vi. The VFD shall have the option of an integral RFI filter. VFD enclosures shall be made of metal to minimize RFI and provide immunity
- r. Interface Features:
  - i. VFD shall provide an alphanumeric backlit display keypad, which may be remotely mounted using standard 9-pin cable. VFD may be operated with keypad disconnected or removed entirely. Keypad may be disconnected during normal operation without the need to stop the motor or disconnect power to the VFD.
  - ii. VFD shall display all faults in plain text; VFD's, which can display only fault codes, are not acceptable.
  - iii. All VFD's shall be of the same series, and shall utilize a common control card and LCP (keypad/display unit) throughout the rating range. The control cards and keypads shall be interchangeable through the entire range of drives used on the project.
  - iv. VFD keypad shall be capable of storing drive parameter values in non-volatile RAM uploaded to it from the VFD, and shall be capable of downloading stored values to the VFD to facilitate programming of multiple drives in similar applications, or as a means of backing up the programmed parameters.
  - v. A red FAULT light, a yellow WARNING light and a green POWER-ON light shall be provided. These indications shall be visible both on the keypad and on the VFD when the keypad is removed.
  - vi. A start guide menu with factory preset typical parameters shall be provided on the VFD to facilitate commissioning.
  - vii. VFD shall provide full galvanic isolation with suitable potential separation from the power sources (control, signal, and power circuitry within the drive) to ensure

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compliance with PELV requirements and to protect PLC's and other connected equipment from power surges and spikes.

- viii. All inputs and outputs shall be optically isolated. Isolation boards between the VFD and external control devices shall not be required.
- ix. There shall be three programmable digital inputs for interfacing with the systems external control and safety interlock circuitry. An additional digital input is preprogrammed for start/stop.
- x. The VFD shall have two analog signal inputs. One dedicated for sensor input and one for external set point input.
- xi. One programmable analog output shall be provided for indication of a drive status.
- xii. The VFD shall provide two user programmable relays with selectable functions. Two form 'C' 230VAC/2A rated dry contact relay outputs shall be provided.
- xiii. The VFD shall store in memory the last 5 faults with time stamp and recorded data.
- xiv. The VFD shall be equipped with a standard RS-485 serial communications port.
- s. Adjustments:
  - i. VFD shall include an automatic acceleration and deceleration ramp-time function to prevent nuisance tripping and simplify start-up.
  - ii. The VFD should include control modes for easy operation of different application. Choosing a control mode should select predefined values for the PID controller. Based on the typical performance of pumps in the specified application. Open loop is also a control mode.
  - iii. The VFD will include a user-selectable Auto-Restart function that enables the VFD to power up in a running condition after a power loss, to prevent the need to manually reset and restart the VFD.
  - iv. Service Conditions:
    - v. Ambient Temperature of the VFD, -10 to 45°C (14 to 113°F)
    - vi. 0 to 95% relative humidity, non-condensing.
    - vii. Elevation to 1000 meters (3,300 feet) without derating.
  - viii. VFD's shall be rated for line voltage of 525 to 690VAC, 380 to 480VAC, or 200 to 240VAC; with +10% to -15% variations. Line frequency variation of  $\pm 2\%$  shall be acceptable.
  - ix. No side clearance shall be required for cooling of the units
- t. Quality Assurance:
  - i. The manufacturer shall be both ISO-9001 and ISO-14001 certified.
  - ii. All products shall be CE marked; UL labeled, and meet the requirements of UL-508C.
  - iii. To ensure quality and minimize infantile failures on the jobsite, all VFD's shall be completely tested by the manufacturer. The VFD shall operate a dynamometer at full load and speed under elevated temperature conditions
  - iv. All optional features shall be functionally tested at the factory for proper operation.

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- v. Factory test documentation shall be available upon request.

2.04 ENCLOSURE SYSTEM CONSTRUCTION

1.01 Summary

- A. The work covered by this specification consists of labor, materials, accessories and services for the design, fabrication, supply, delivery and installation of Fabricated, Engineered Floorless Pump House Structures.
- B. Well Pumping System shall be enclosed in these structures. Structures shall be completely assembled pre-fabricated, self-framing buildings free from defects in both appearance and performance and sized correctly for housed equipment.
- C. Enclosure shall be furnished by the Well Pumping System supplier, factory-assembled with the pumping system equipment, and delivered as a single unit.
- D. The fabricator shall provide drill-in foundation anchors, interior and exterior finishes, doors and door hardware, building signage, heating and ventilation, electrical lighting fixtures and receptacles, required seismic restraints, fire extinguishers, and accessories included in the Drawings.
- E. Related Work:
  - 1. Work of this Section is subject to the requirements of Division 01.
  - 2. Division 03: Concrete and Concrete Reinforcement
  - 3. Division 10: Portable Fire Extinguishers
  - 4. Division 26: Electrical
  - 5. Division 44: Section 44 42 56.33 – Well Pumping System

1.02 SUBMITTALS AND QUALITY ASSURANCE

- A. Submit Shop Drawings and Product Data in accordance with Section 01 33 23:
  - 1. Indicate profiles, sizes, spacing, and locations of structural members, connections, attachments, openings, fasteners, cambers, loads, and all other building details.
  - 2. Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths.
  - 3. Indicate framing anchor bolt settings, sizes, and locations from datum.
  - 4. Prepare Shop Drawings, design calculations, and letter of certification under seal of a professional engineer registered in New Mexico.
  - 5. Indicate wall and roof system dimensions, roof plan and structural support details for roof equipment, panel layout, general construction details, anchorages and method of anchorage, and method of installation.
- B. Provide ten-year manufacturer's warranty for exterior and interior prefinished surfaces.
  - 1. Warranty: Cover prefinished color coat against chipping, cracking or crazing, blistering, peeling, chalking, or fading.

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- C. Manufacturer's installation manual, three (3) copies.
- D. Manufacturer's structural engineering design:
  - 1. Computations to verify design building codes and design loads.
  - 2. Computations and shop drawings to be stamped by a Professional Engineer registered in the state of New Mexico.
- E. Proof of design in compliance with IBC, AISC Specifications, and MBMA Design Practices Manual and other applicable specifications and codes.
- F. Installer's qualifications.
- G. Manufacturer's qualifications:
  - 1. Unit supplied by single manufacturer experience in their manufacturer.
    - a. Manufacturer must have a minimum of five (5) years of experience with 100 installations of equal or larger size of the same type of unit as specified herein.
- H. Color selection chart for interior and exterior surfaces.
- I. Samples of veneer panels.

1.03 REFERENCES

- A. ASTM A36 - Structural Steel
- B. ASTM A307 - Carbon Steel Externally Threaded Standard Fasteners
- C. ASTM A325 - High Strength Bolts for Structural Steel Joints
- D. ASTM A386 - Zinc-Coating (Hot-Dip) on Assembled Steel Products
- E. ASTM A490 - Quenched and Tempered Alloy Steel Bolts for Structural Tubing in Rounds and Shapes
- F. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- G. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- H. ASTM A529 - Structural Steel with 42,000 psi Minimum Yield Point
- I. AWS D1.1 - Structural Welding Code
- J. FS HH-I-521 - Insulation Blankets, Thermal, Mineral Fiber
- K. FS TT-P-31 - Paint, Oil: Iron-Oxide, Ready Mixed, Red and Brown
- L. ANSI A58.1 – Building Code Requirements for Minimum Design Loads in Buildings and Other Structures

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1.04 DESIGN CRITERIA

- A. The enclosure must contain a New Mexico seal of construction sticker.
- B. Design Members to withstand dead load, applicable snow load, and design loads due to pressure and suction of wind calculated in accordance with current adopted editions of the New Mexico Commercial Building Code and the International Building Code.
- C. Design structure to permit movement of components without buckling, failure of joint seals, undue stress on fasteners, or other detrimental effects, when subject to temperature range of 120 F degrees
- D. Design exterior wall and roof system to withstand imposed loads with a maximum allowable deflection of span divided by 180.
- E. Design roof system with thermal resistance of R30 sq/ft/hour/degree F, unless otherwise scheduled.
- F. Design exterior wall drainage for water entering or condensation occurring within cladding system.
- G. Design wall system with thermal resistance of R19 sq ft/hour/degree F, unless otherwise scheduled.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Pre-Engineered Structure: Dupont Building, Inc.
- B. Exterior wall finish: Fullerton Finish Systems, Inc. – Fiberglass Stone Flake
- C. Engineer approved equivalent

2.02 Structure MATERIALS

- A. Structures shall be constructed with no floors.
- B. Walls:
  - 1. Factory-fabricated veneer panels over fiberglass – see Exterior Veneer Paneling description below. Install per wall finish System Manufacturer’s installations instructions and include:
    - a. Sealant type and application per manufacturer’s recommendations.
    - b. Backer Rod prior to joint sealant, or
    - c. Bond breaker tape (slick-faced polyvinyl chloride tape), minimum of ¾” wide and equal to #50 by All Type field-applied to surface behind panel joint before panel erection.
    - d. Fasteners: Low profile self-drilling stainless steel or zinc and clear chromate plated for rust resistance.
  - 2. Exterior Weatherproofing: 1/8” of fiberglass reinforced polyester resin applied to exterior surface.
    - a. Openings in walls shall be trimmed with fiberglass for a complete seal.
    - b. Joints and cracks in the exterior sheathing shall be filled with polyester resin filler prior to application of fiberglass.
  - 3. Exterior Sheathing: AC fir exterior grade plywood
  - 4. Base Channel: Steel Perimeter Channel for attachment to concrete footings.
  - 5. Framing: 2x6 at 16”, height as shown on the Drawings.
  - 6. Cavity Insulation: Maximum 25/450 flame spread/smoke developed index thermal batts tested in accordance with ASTM E84.
    - a. Where insulation materials are installed in Construction Type III, Type IV, and Type V, the flame spread and smoke developed limitations do not apply to facings that are installed behind and in substantial contact with the unexposed surface of the ceiling wall or floor finish.
  - 7. Interior Sheathing: 15/32” AC plywood.

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8. Interior Wall Finish: Pre-finished metal wall panels, color white.
- C. Exterior Veneer Panels:
1. Block-Cast panels shall be color as selected by the Owner from the manufacturer's offered range of colors.
  2. Inorganic Fillers shall meet requirements of Federal Specification TTP-P-403A.
  3. Block-Cast panels shall have the following attributes:
    - a. Nominal Thickness: 1" at block and 9/16" at joint
    - b. Dimensional Tolerances:
      - 1) Length and Width: +1/8"
      - 2) Thickness at block: +5/16"
      - 3) Thickness at joint: +1/8"
    - c. Flexural Strength: 1,000 psi
    - d. Flame Spread Index: 0 in accordance with ASTM E-84.
    - e. Smoked Developed Index: 40 in accordance with ASTM E-84.
    - f. Coefficient of Thermal Expansion:  $5.14 \times 10^{-6}$  in accordance with ASTM D-696.
  4. Performance: Block-Cast panel shall withstand the 500 hour carbon exposure test per ASTM method G23.
  5. Testing shall have been performed by an independent testing facility.
- D. Roof:
1. Framing: Minimum 2x6 rafters sloped from a center ridge
  2. Roof Deck Sheathing: AC fir exterior grade plywood
  3. Weather Barrier: 30# asphaltic roofing felt
  4. Metal Roofing:
    - a. Base Metal: Roof panels shall be formed from min 26 gauge conforming to ASTM A792, Gr80 with a minimum yield strength of 80,000 PSI with a coating of hot-dipped zinc-aluminum alloy in accordance with AZ50 and Az5.
    - b. Style: Factory formed ribbed roof "R" Panels or factory formed corrugated "C" roof panels, roll formed, of continuous length, with exposed self tapping fasteners.
  5. Insulation: Maximum 25/450 flame spread/smoke developed index thermal batts tested in accordance with ASTM E84, type II PSK (white) Class A faced glass fiber thermal insulation complying with ASTM C 665.
- E. Gutter And Downspout:
1. Fabricate of same material and finish as roofing metal.
  2. Form gutters and downspouts to collect and remove water. Fabricate with connection pieces.
  3. Form sections in maximum possible lengths. Hem exposed edges. (Allow for expansion at joints.)
  4. Fabricate support straps of same material and finish as roofing metal, color as selected.
- F. Structural joints between wall sections and the roof, both inside and out, shall be secured with polyester resin adhesive and stainless steel bolts.
- G. Exterior hardware shall be attached with stainless steel bolts or screws.
- H. Doors and Frames:
1. Frames shall be constructed of heavy extruded 6063-TS alloy aluminum sections with anchors, thickness of 1/8" or greater. Screws, nuts, and anchors shall be stainless steel. Finish shall be in accordance with the "Alumilite" Specification No. 204-A1R1. Joints shall

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be cut to fit flush. Hardware preparation shall be fabricated and installed in a workmanlike manner, accurately milled, and properly reinforced.

2. Door: Copper-free heavy-duty aluminum by JRJ Alumfab (or an approved equal) with two coats of clear colorless lacquer, fully insulated.
3. Finish hardware: Provide the following:
  - a. Hinges
  - b. Lever
  - c. Closer
  - d. Weatherstripping
  - e. Sill
  - f. Cylinder keyed to Owner's masterkey system and two keys.

I. Mechanical Components:

1. Building heater
2. Wall louver and trim sized and placed as recommended by the Well Pump Equipment Manufacturer
3. Exhaust Fan and trim sized and placed as recommended by the Well Pump Equipment Manufacturer

J. Electrical Components:

1. Provide exterior motion-detecting overhead light at each door shielded to meet the requirements of Night-Sky Protection Act.
2. Interior lighting: two tube, electronic start, switch operated, 32 watt, 48" length fluorescent light fixtures, rated for wet locations.
3. Interior emergency lights.
4. All switches shall be 20 Amp, wall-mounted, with standard ivory coverplates. Switches shall be standard single except lighting if more than one door is used, switches shall be three-way type
5. Power distribution: Four (4) duplex GFCI receptacles, one per wall.
6. (3) spare 120 volt, 20 amp breakers labeled as spares
7. Smoke Detector Alarm: ceiling mounted 120 VAC, smoke detector and relay shall

2.03 STRUCTURE FABRICATION

- A. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.
- B. Fasten sheathing, weatherproofing and Veneer Paneling system to structural supports, aligned level and plumb.
- C. Provide expansion joints where indicated or as required by manufacturer.
- D. Use exposed fasteners.
- E. Install sealant and gaskets to prevent weather penetration.
- F. System shall be free of rattles, noise due to thermal movement, and wind whistles.

2.04 TOLERANCES

- A. Siding and Roofing: 1/8 inch from true position.

2.05 INSTALLATION OF ACCESSORIES

- A. Install door frame, door, overhead door, window and glass, accessories, trim, and mechanical and electrical components in accordance with manufacturer's instructions.

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- B. Seal wall and roof accessories watertight and weathertight with sealant.

2.06 GUTTER AND DOWNSPOUT ERECTION

- A. Rigidly support and secure components. Joint lengths with formed seams sealed watertight. Flash and seal gutters to downspouts.
- B. Slope gutters minimum 1/4 inch per foot.

PART 3 EXECUTION

3.01 Product Delivery, Storage and Handling

- A. Provide drawings and signage to indicate center of gravity and proper handling method for structures.
- B. Provide bracing and restraints to permit shipment of structures to sites without damage.
- C. Provide indication of shipping material and bracing to be removed from the installation at site prior to start-up.
- D. Protruding or exposed fittings, fixtures, openings, etc shall be protected to prevent damage due to dust, moisture, excessive heat or vibration prior to and during shipment.
- E. Loose parts required for assembly shall be properly boxed, labeled and securely fastened for shipment to site.
- F. Provide complete protection from damage during shipping. Close openings with appropriate material to prevent rain, water, dust and debris from entering the structure.
- G. Vendor shall ensure that each "shipping" package meets State and Government regulations with respect to size and weight restrictions. Where over-sized loads are included, cost of "escorts" shall be included in the bid.

2.04 FACTORY TESTS

- A. Notify Engineer minimum one week prior to execution of tests.
- B. Factory Test:
  - 1. The booster system shall be hydrostatically tested (at 50 psig over maximum system working pressure or to 150 psig (whichever is greater) for a minimum of one hour.
  - 2. The booster system shall undergo a complete electric and hydraulic test from 0 to 100% design flow at the factory. Each pump shall be individually tested for performance while at full speed. Pump performance measurements shall include shut-off pressure and pump TDH and motor full load amps at 25%, 50%, 75% and 100% of pump design capacity
  - 3. The testing facility shall include Flow Meters, Test Gauges, Watt Meter, Digital Multi-Meter, Tachometer and Differential Pressure Transmitters for measuring system performance which are traceable to the National Institute of Standards and Technology (NIST). All control devices, including transmitters and all safety features, shall be factory calibrated and tested.
  - 4. Each control panel must be designed, built and tested per UL508A prior to integrating with the pumping system. The testing includes verification of wiring, component operation, programming and sequence testing.
  - 5. The pumping system must be connected to a test tank with the actual components, valves and sensors specific for this project. Any calibrations or adjustments that are required for proper system operation will be performed. All sequencing controls, alarms and system operation must be tested and verified to be functional prior to removal from the test tank. These tests may be witnessed by the engineer, owner or a representative if required.
  - 6. Test results shall be provided to Engineer for review and approval prior to shipment of the station.
- C. Correct all defects before shipping.

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2.05 OPERATION AND MAINTENANCE MANUAL

- A. Operation and Maintenance Data
- B. Preliminary submittal required for engineer review/ acceptance. Additional copies of final, corrected submittals supplied on approval.
- C. Manufacturer's complete operations and maintenance manuals for pumps, motors, pump control valves, flow switches/capacity indicators, and pressure transmitter.

2.06 INSTALLATION

- A. As required by manufacturer's instructions/recommendations.
- B. As shown on Drawings.
- C. Unload using crane. Use spreader bars to protect structure from damage
- D. Lock skid in proper position on slab with four XXXX" anchor bolts, 12" in from each side of each corner of the perimeter channel. Tighten nuts to just snug, then back off one turn and lock in place with a jam nut.
- E. The Contractor shall obtain necessary permits, certificates and approvals for execution of his work and pay fees including inspection and re-inspection fees.
- F. Install in accordance with manufacturer's and fabricator's instructions.
- G. The Owner shall have the right to reject any work that in the opinion of the Engineer does not conform to acceptable standards of quality, appearance and performance. The Contractor shall, at no additional cost to the Owner, rectify said unacceptable work.
- H. Qualified tradesmen experienced in this type of work shall perform the installation.

3.02 Acceptance

- A. Inspection and acceptance of the Work will be made by the Owner and his Engineer to verify conformance with Drawings and specifications.

2.07 FIELD TEST

- A. Furnish the services of the Package Booster Pumping System supplier's Field Service Representative to verify and certify that the installation and alignment is done in accordance with the manufacturer's instruction.
- B. With the assistance of the Field Service Representative, demonstrate that all pumps, valves, gauges, and the low flow protection system operate properly and all elements of the sequence of operations have been programmed as specified.
- C. The service of a factory-trained representative shall be made available on the jobsite for start-up and instructing operating personnel: 8 hours start-up per station, 8 hour follow-up trip for training and system tuning

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2.08 SCHEDULE

A. Ruidoso Cherokee Well Pump Enclosure:

1. Dupont Enclosure

- a. Model: JCH1513

2. Grundfos AFD:

- a. Model: CUE
- b. HP: 75
- c. Voltage: 460/3/6-
- d. Site Elevation: 6,613 feet above MSL
- e. Number of AFDs: One (1)

3. Main Relief and Surge Anticipator Valve:

- a. Size: 2"
- b. Quantity = 1
- c. Design Basis: Cla-Val Model No.: 52G-03BYKCKDKOKXMS with X105LCW closed indication limit switch
- d. Adjustable Range: Relief: 100 to 300 psig; Surge: 15 to 75 psig
- e. End Connections and Pressure Class: 3" flanges, ANSI Class 150
- f. Mounting Position: Globe Pattern
- g. Coating, Inside and Outside: NSF fusion bonded Epoxy Coating
- h. Chamber Design: Single Diaphragm
- i. Options Included:
  - 1) 52-01 = Surge anticipator/pressure relief
  - 2) g = Globe pattern
  - 3) B = Isolation cocks in piloting
  - 4) KC = NSF fusion bonded epoxy interior / exterior
  - 5) KD = Valve stem for hard water service
  - 6) KO = Anti-cav trim
  - 7) KX = project specific features
  - 8) X105LCW = Closed position indication limit switch
  - 9) Electrical Requirements: Limit switch only
  - 10) Conformance: UL listed for relief valve function

4. Deep Well Valve:

- a. Size: 4"
- b. Quantity = 1
- c. Design Basis: Cla-Val Model No.: 61G-02BYKCKXMS with X105LCW closed indication limit switch
- d. Voltage: 120 Vac
- e. End Connections and Pressure Class: 4" flanges, ANSI Class 150
- f. Mounting Position: Globe Pattern
- g. Coating, Inside and Outside: NSF fusion bonded Epoxy Coating
- h. Chamber Design: Single Diaphragm
- i. Options Included:
  - 1) 52-03 = Surge anticipator/pressure relief
  - 2) g = Globe pattern

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- 3) B = Isolation cocks in piloting
- 4) KC = NSF fusion bonded epoxy interior / exterior
- 5) KX = project specific features
- 6) X105LCW = Closed position indication limit switch
- 7) Electrical Requirements: Limit switch and Solenoid
- 8) Conformance: UL listed for relief valve function

5. Air Release Valve:

- a. Model: Cla Val
- b. Size: 1"
- c. Voltage: 460/3/6-
- d. Number: One (1)

6. Piping:

- a. Type: Ductile Iron
- b. Size: 4" and 2"
- c. Connections: 150# Flanges
- d. Qty: Replace as necessary to put back in service

END OF SECTION

SECTION 33 13 00  
DISINFECTING OF WATER UTILITY DISTRIBUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Disinfection of potable water distribution and transmission system.
2. Testing and reporting of results.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA B300 - Hypochlorites.
2. AWWA B302 - Ammonium Sulfate.
3. AWWA B303 - Sodium Chlorite.
4. AWWA C651 - Disinfecting Water Mains.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit procedures, proposed chemicals, and treatment levels.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Certify that cleanliness of water distribution system meets or exceeds New Mexico Environment Department specified requirements.
- E. Certify that water conforms or fails to conform to bacterial standards of the New Mexico Environment Department Drinking Water Bureau.
- F. Certify that water conforms to quality standards of the New Mexico Environment Department Drinking Water Bureau.
- G. Test and Evaluation Reports: Indicate testing results comparative to specified requirements.
- H. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- I. Qualifications Statements:
  1. Submit qualifications for water treatment firm and testing firm.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

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B. Disinfection Report:

1. Type and form of disinfectant used.
2. Date and time of disinfectant injection start and time of completion.
3. Test locations.
4. Name of person collecting samples.
5. Initial and 24-hour disinfectant residuals in treated water in ppm for each outlet tested.
6. Date and time of flushing start and completion.
7. Disinfectant residual after flushing in ppm for each outlet tested.

C. Bacteriological Report:

1. Date issued, project name, and testing laboratory name, address, and telephone number.
2. Time and date of water sample collection.
3. Name of person collecting samples.
4. Test locations.
5. Initial and 24-hour disinfectant residuals in ppm for each outlet tested.
6. Coliform bacteria test results for each outlet tested.
7. Submit bacteriologist's signature and authority associated with testing.

1.5 QUALITY ASSURANCE

- A. Perform Work according to AWWA C651.
- B. Maintain two copies of each standard affecting Work of this Section on Site.

PART 2 - PRODUCTS

2.1 DISINFECTION CHEMICALS

- A. Chemicals:
  1. Hypochlorite: Comply with AWWA B300.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that piping system has been cleaned, inspected, and pressure tested.
- C. Perform scheduling and disinfecting activity with startup, water pressure testing, adjusting and balancing, and demonstration procedures, including coordination with related systems.

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DISINFECTING OF WATER UTILITY DISTRIBUTION

3.2 INSTALLATION

- A. Provide and attach required equipment to perform Work of this Section.
- B. Perform disinfection of water distribution system and installation of system and pressure testing as specified in Section 33 11 16 - Site Water Utility Distribution Piping.
- C. Maintain disinfectant in system for 24 hours.
- D. Flush, circulate, and clean until required cleanliness is achieved using municipal drinking water.
- E. Replace permanent system devices that were removed for disinfection.

3.3 FIELD QUALITY CONTROL

- A. Section 017000 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.
- B. Disinfection, Flushing, and Sampling:
  - 1. Disinfect pipeline installation according to AWWA C651.
  - 2. Use of liquid chlorine is not permitted.
  - 3. Upon completion of retention period required for disinfection, flush pipeline until chlorine concentration in water leaving pipeline is no higher than that generally prevailing in existing system or is acceptable for domestic use.
  - 4. Disposal:
    - a. Legally dispose of chlorinated water.
    - b. When chlorinated discharge may cause damage to environment, apply neutralizing chemical to chlorinated water to neutralize chlorine residual remaining in water.
  - 5. After final flushing and before pipeline is connected to existing system or placed in service, employ an approved independent testing laboratory (Village of Ruidoso) to sample, test, and certify that water quality meets quality standards of authority having jurisdiction.

END OF SECTION 331300

SECTION 33 16 13.12  
WATER STORAGE TANK REMOVAL

**PART 1: GENERAL**

1.1 SECTION INCLUDES

- A. Removal of existing water storage tanks, including disconnecting and capping of all piping, demolition of foundations, and grading and seeding of all disturbed areas.

1.2 REGULATORY REQUIREMENTS

- A. Conform to applicable codes for demolition of existing structures.
- B. Conform to applicable codes for disposal of debris.

1.3 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 – Submittals.
- B. The following additional items shall be submitted for approval in accordance with Section 01 33 00:
  - 1. Detailed Work Plan – This plan shall be submitted within 15 days after the issuance of the Notice to Proceed and shall detail all proposed methods and sequences of operations including, but not limited to:
    - a. Tank appurtenance removal.
    - b. Removal and disposal of industrial waste.
    - c. Dismantling procedures.
    - d. Transportation and disposal of aboveground water tanks and contents.
    - e. Protection of existing structures and utilities.
    - f. Site safety plan.
  - 2. Documentation of acceptance of waste materials by a permitted facility capable to dispose of said waste materials. Documentation must be provided within 7 days of delivery to permitted facility.
  - 3. Letters of acceptance from permitted facilities and haulers. Letters shall be provided at least 14 days prior to transportation of any wastes.
  - 4. Documentation of the weight of demolished materials that were recycled.

1.4 SPECIAL CONDITIONS

- A. Lead Paint Cleanup
  - 1. The Contractor shall take all necessary precautions to prevent any environmental contamination of the surrounding area due to the presence of lead paint on the storage tanks to be removed.
  - 2. The Contractor shall follow all federal, state, and local regulations governing the clean up and disposal of lead paint contamination.

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WATER STORAGE TANK REMOVAL

**PART 2: PRODUCTS - NOT USED**

**PART 3: EXECUTION**

**3.1 REMOVAL OF WATER TANKS**

- A. The procedures to remove the existing water tanks shall include, but not be limited to, the following:
  - 1. Remove all electrical conduit and appurtenances from the tanks prior to dismantling of the tanks.
  - 2. Remove all water that may be present that is capable of being pumped out of the tanks.
  - 3. Drain or flush all water from piping into the tanks.
  - 4. Disconnect and cap all piping.
  - 5. Remove aboveground water tanks in accordance with approved work plan.
- B. The foundations of the aboveground water tanks shall be removed down to a depth of 2' below grade. Contractor shall be responsible for backfill of foundations abandoned in place.

**3.2 DISPOSAL OF TANK CONTENTS AND DEMOLISHED MATERIALS**

- A. All removed tank materials shall be loaded and trucked away from the site in such a manner as to not cause any hazard for passersby or damage to any existing facility. Any damage shall be repaired or replaced by the Contractor at no additional cost to AW.
- B. All waste material shall be disposed of in accordance with all federal, state, and local regulations.
- C. All waste materials shall become the responsibility of the Contractor and the Contractor shall be responsible for the safe and proper removal and disposal of all waste materials.
- D. Storage of waste materials at the site is not permitted.

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WATER STORAGE TANK REMOVAL

- E. All fees and transportation costs are the responsibility of the Contractor. The Contractor shall bear full responsibility for any and all fines against the project resulting from the improper handling and disposal of the waste materials.

3.3 BACKFILL

- A. Backfill of removal areas shall be in accordance with requirements of Section 31 23 33- Excavation and Backfill for Utilities.

3.4 RESTORATION

- A. Restoration of all disturbed areas shall be in accordance with requirements set forth in Section 33 92 00 – Lawn Restoration

**END OF SECTION 33 16 13.12**