CITY OF GRAND JUNCTION

BID DOCUMENTS

FOR

CLETC Water Line Project
IFB-4079-15-DH

CITY OF Grand Junction COLORADO

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND PLANNING
ENGINEERING DIVISION

BID DOCUMENTS
FOR
CLETC Water Line Project

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BID INFORMATION

INVITATION TO BID

The City of Grand Junction will receive sealed bids at the Office of the City Clerk at City Hall, 250 North Fifth Street, Grand Junction, Colorado, 81501, prior to 2:00 p.m. on Tuesday, August 18, 2015 for the CLETC Water Line Project. All bids will be opened and read aloud at the City Auditorium immediately following the submittal deadline. The project generally consists of installation of approximately 6,700 lineal feet of 6" DR-18 C-900 PVC Water line, installation of two owner supplied 20,000 gallon fiberglass water tanks and appurtenances, installation of two owner supplied Baker pitless booster pumps and appurtenances, installation of electrical service conduits and wire for two service locations (one at the booster pumps and one at the fire pump), completion of 150 foot directionally bored 10" diameter HDPE casing pipe, miscellaneous grading and site work. The water tanks are approximately 10 feet in diameter and 38 feet in length. The tanks will be used for storing finished water at the CLETC site, and will be operated by the Clifton Water District.

Contractors submitting bids over $50,000 must be prequalified in accordance with the City's "Rules and Procedures for Prequalification of Contractors." Application forms for prequalification are available at the Administration Office of the Department of Public Works and Planning (970-256-4126) or on the Public Works & Planning/Engineering page at www.gjcity.org. Prequalification applications must be submitted by June 23, 2015. Bids received from non-prequalified contractors will not be opened.

The July 2010 edition of the "City Standard Contract Documents for Capital Improvements Construction", Plans, Specifications and other Bid Documents are available for review or download on the Public Works & Planning/Engineering page at www.gjcity.org. Electronic copies may be obtained on a CD format at the Department of Public Works and Planning at City Hall.

For technical information, please contact Bret Guillory, Utility Engineer at the Department of Public Works (970-244-1590).

For contractual information, please contact Duane Hoff Jr., Purchasing Supervisor (970-244-1545).

A pre-bid meeting will be held at 10:00 a.m. on August 10, 2015, in the City Hall Auditorium followed by a site visit. Attendance at the meeting is mandatory.

The City Clerk's Office will stamp the date and mark the time received on all bids. Bids not received prior to the date and time indicated on the Invitation to Bid will not be considered. The City is not responsible for delays occasioned by the U.S. Postal Service, the internal mail delivery system of the City, or any other means of delivery employed by the Bidder.

Each Bid shall be submitted on a form furnished by the City and must be accompanied by a certified check, cashier's check or Bid Bond in an amount not less than 5% of the amount of the Bid and made payable to the City of Grand Junction, Colorado. The successful Bidder will be required to furnish a Performance Bond and a Labor and Material Payment Bond, both in the amount of 100% of the total Contract amount, in conformity with the requirements of the Contract Documents and on forms provided by the City.

CITY OF GRAND JUNCTION, COLORADO

_____

Duane Hoff Jr., Senior Buyer

Published: The Daily Sentinel – July 30, August 2, 9, 2015

INSTRUCTIONS TO BIDDERS

The following instructions are given for the purpose of guiding Bidders in properly preparing their bids and constitute a part of the *Contract Documents* and shall be strictly complied with.

1. Definitions and Terms. See Article I, Section 3 of the General Contract Conditions in the *Standard Contract Documents for Capital Improvements Construction*.

2. Copies of *Bid Documents*. Complete sets of the *Bid Documents* may be reviewed at the Administration Office of the Department of Public Works and Utilities at City Hall, 250 North 5th Street, Grand Junction, Colorado 81501.

   Complete sets of *Bid Documents* shall be used in preparing Bids; neither City nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of *Bid Documents*.

   City and Engineer in making copies of *Bid Documents* available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3. Prequalification of Bidders: Contractors submitting bids over $50,000 must be prequalified in accordance with the City's "Rules and Procedures for Prequalification of Contractors." Application forms for prequalification are available at the Administration Office of the Department of Public Works and Utilities. Contractors who are currently prequalified with the Colorado Department of Transportation (CDOT) will meet the requirements for prequalification by the City, unless the City has information or basis to the contrary. Application forms for Contractor prequalification are available at the Administration Office of the Department of Public Works and Utilities, City Hall, 250 North 5th Street, Grand Junction, CO, 81501.

4. Liquidated Damages for Failure to Enter Into Contract. Should the Successful Bidder fail or refuse to enter into the Contract within ten Calendar Days from the issuance of the Notice of Award, the City shall be entitled to collect the amount of such Bidder's Bid Guaranty as Liquidated Damages, not as a penalty but in consideration of the mutual release by the City and the Successful Bidder of all claims arising from the City's issuance of the Notice of Award and the Successful Bidder's failure to enter into the Contract and the costs to award the Contract to any other Bidder, to readvertise, or otherwise dispose of the Work as the City may determine best serves its interest.

5. Time of Completion. Time is of the essence with respect to the time of completion of the Project and any other milestones or deadline which are part of the Contract. It will be necessary for each Bidder to satisfy the City of its ability to complete the Work within the Contract Time set forth in the Contract Documents.

6. Examination of Contract Documents and Site. Before submitting a Bid, each Bidder shall:

   a. Examine the *Contract Documents* thoroughly;

   b. Visit the site to familiarize itself with local conditions that may in any manner affect cost, progress, or performance of the Work;

   c. Become familiar with federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress or performance of the Work;

   d. Study and carefully correlate Bidder's observations with the *Contract Documents*, and;

   e. Notify the Engineer of all conflicts, errors, ambiguities or discrepancies in or among the *Contract Documents*

   On request, the City will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of a Bid. It shall be the Bidder's responsibility to make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (including without limitation, surface, subsurface and underground utilities) at or contiguous to the site or otherwise which may affect cost, progress or performance of the work and which the Bidder deems necessary to determine its Bid for performing the work in accordance with the time, price and other terms and conditions of the Contract Documents. Location of any excavation or boring made by Bidder shall be subject to prior approval of City and applicable agencies. Bidder shall fill all holes, restore all pavements to match the existing structural section and shall clean up and restore the site to its former condition upon completion of such exploration. The City reserves the right to require the Bidder to execute an access agreement with the City prior to accessing the site.

   The lands upon which the Work is to be performed, rights of way, and access thereto, and other lands designated for use by Contractor in performing the Work, are identified on the Drawings.

   Information and data reflected in the *Contract Documents* with respect to underground utilities at or contiguous to the site are based upon information and data furnished to the City and the Engineer by the owners of such underground utilities or others, and the City does not assume responsibility for the accuracy or completeness thereof, unless it is expressly provided otherwise in the *Contract Documents*.

By submission of a Bid, the Bidder shall be conclusively presumed to represent that the Bidder has complied with every requirement of these Instructions to Bidders, that the *Contract Documents* are not ambiguous and are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

7. Interpretations. All questions about the meaning or intent of the *Contract Documents* shall be submitted to the Engineer in writing.

   Written comments or questions must be received by the Engineer at least forty-eight (48) hours (excluding Saturdays, Sundays, and Holidays) prior to the time set for Bid Opening.

   If questions received by the Engineer are deemed to be sufficiently significant and received sufficiently in advance of the Bid opening, an Addendum to the *Bid Documents* may be issued. Otherwise, a written copy of the question and decision or interpretation will be posted in the Engineer's office. It shall be the responsibility of each Bidder to make itself aware of all such posted questions and decisions or interpretations and, by submitting a Bid, each Bidder shall be conclusively be deemed to have such knowledge. After Bid Opening, all Bidders must abide by the decision of the Engineer as to all such decisions or interpretations. Bidders may not rely upon oral interpretations of the meaning of the plans, specifications or other bid documents and any oral or other interpretations or clarifications will be without legal force or effect.

8. Quantities of Work. Materials or quantities stated as unit price items in the Bid are supplied only to give an indication of the general scope of the Work. The City does not expressly or by implication agree that the actual amount of Work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any unit item of the Work without a change in the unit price except as set forth in Article VIII, Section 70 of the *General Contract Conditions*. The City also reserves the right to make changes in the Work (including the right to delete any bid item in its entirety or add additional bid items) as set forth in Article VIII, Sections 69 through 71 of the *General Contract Conditions*.

9. Substitutions. The materials, products and equipment described in the *Bid Documents* shall be regarded as establishing a standard of required performance, function, dimension, appearance, or quality to be met by any proposed substitution. No substitution will be considered prior to receipt of Bids unless the Bidder submits a written request for approval to the Engineer at least ten (10) days prior to the date for receipt of Bids. Such requests for approval shall include the name of the material or equipment for which substitution is sought and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for evaluation, including samples if requested. The Bidder shall set forth changes in other materials, equipment, or other portions of the Work including changes of the work of other contracts, which incorporation of the proposed substitution would require to be included. The Engineer’s decision of approval or disapproval of a proposed substitution shall be final. If the Engineer approves a proposed substitution before receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

10. Bid Guaranty. Each Bid shall as a guaranty of good faith on the part of the Bidder be accompanied by a Bid Guaranty consisting of: a certified or cashier's check drawn on an approved national bank or trust company in the State of Colorado, and made payable without condition to the City; or a Bid Bond in the form set forth in the *Bid Documents* executed by an approved corporate surety in favor of the City. The amount of the Bid Guaranty shall not be less than 5% of the total Bid amount.

Once the City issues a Notice of Award, the apparent Successful Bidder has ten (10) Calendar Days to enter into a Contract in the form prescribed and to furnish the required Performance and Payment Bonds. Failure to do so will result in forfeiture of the Bid Guaranty to the City as Liquidated Damages.

Bid Guaranties for all except the three lowest qualified Bids shall be returned within five (5) Working Days of Bid Opening. When the Successful Bidder files satisfactory Performance and Payment Bonds and Certificates of Insurance, the Bid Guaranties of the three lowest Bidders shall be returned.

Each bidder shall guaranty its total bid price for a period of ninety (90) Calendar Days from the date of the bid opening. Except for forfeiture due to reasons discussed above, Bid Guaranties of all Bidders shall be returned to them within ninety (90) Calendar Days from the date of Bid Opening.

11. Bid Form. The Bid Form, provided by the City, must be completed in ink or by typewriter.

The Bidder shall specify a unit price in figures for each pay item for which a quantity is given and shall provide the products (in numbers) of the respective unit prices and quantities in the Extended Amount column. The total Bid price shall be equal to the sum of all extended amount prices. When an item in the Bid Schedule provides a choice to be made by the Bidder, Bidder's choice shall be indicated in accordance with the specifications for that particular item and thereafter no further choice shall be permitted.

Where the unit of a pay item is lump sum, the lump sum amount shall be shown in the "extended amount" column and included in the summation of the total Bid.

All blank spaces in the Bid Form must be properly filled out.

Bids by corporations must be executed in the corporate name by the president or vice president or other corporate office accompanied by evidence of authority to sign. The corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.

All names must be typed or printed below the signature.

The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

The address to which communications regarding the Bid are to be directed must be shown.

12. Irregular Bids. A Bid will be considered irregular and may be rejected for the following reasons:

    a. Submission of the Bid on forms other than those supplied by the City;

    b. Alteration, interlineation, erasure, or partial detachment of any part of the forms which are supplied herein;

    c. Inclusion of unauthorized additions conditional or alternate Bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite, or ambiguous as to its meaning;

    d. Failure to acknowledge receipt of any or all issued Addenda;

    e. Failure to provide a unit price or a lump sum price, as appropriate, for each pay item listed except in the case of authorized alternative pay items;

    f. Failure to list the names of Subcontractors used in the Bid preparation as required in the Bid Form;

    g. Submission of a Bid that in the opinion of the City Manager is unbalanced so that each item does not reasonably carry its own proportion of cost or which contains inadequate or unreasonable prices for any item;

    h. Tying of the Bid with any other bid or contract; and

    i. Failure to calculate Bid prices as described herein.

13. Submission of Bids. The completed Bid Form and Bid Guaranty shall be submitted at the time and place indicated in the Invitation to Bid and must be in a ten-inch by thirteen-inch opaque sealed envelope marked SEALED BID with the project title and the name and address of the Bidder.

14. Modification and Withdrawal of Bids Before Opening. Bids may be modified or withdrawn by an appropriate document duly executed and delivered to the place where Bids are to be submitted at any time prior to Bid Opening.

15. Opening of Bids. Bids will be opened and read aloud at the time and place stated in the Invitation to Bid. All Bidders, their representatives, and other interested parties are encouraged to attend the Bid Opening.

Within five (5) Working Days after Bid Opening, all Bids will be tabulated and copies sent to all Bidders. The bid tabulation sheet(s) will be available to the public.

16. Disqualification of Bidders. A Bid will not be accepted from, nor shall a Contract be awarded to, any person, firm, or corporation that is in arrears to the City, upon debt or contract, or that has defaulted, as surety or otherwise, upon any obligation to the City, or that is deemed irresponsible or unreliable.

Bidders may be required to submit satisfactory evidence that they are responsible, have a practical knowledge of the project bid upon and that they have the necessary financial and other resources to complete the proposed Work.

Either of the following reasons, without limitation, shall be considered sufficient to disqualify a Bidder and Bid:

a. More than one Bid is submitted for the same Work from an individual, firm, or corporation under the same or different name; and

b. Evidence of collusion among Bidders. Any participant in such collusion shall not receive recognition as a Bidder for any future work of the City until such participant has been reinstated as a qualified bidder.

17. Withdrawal of Bids After Opening. No Bid may be withdrawn by any bidder for sixty-five (65) Calendar Days after the Bid Opening.

18. Evaluation of Bids and Bidders. The City reserves the right to:
- reject any and all Bids,
- waive any and all informalities,
- negotiate final terms with the Successful Bidder, and
- disregard any and all nonconforming, nonresponsive or conditional Bids.

Discrepancies between words and figures will be resolved in favor of words. Discrepancies between Unit Prices and Extended Prices will be resolved in favor of the Unit Prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. The corrected extensions and totals will be shown in the tabulation of Bids.

The City may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work as to which the identity of Subcontractors and other persons and organizations must be submitted. Operating costs, maintenance considerations performance data, and guarantees of materials and equipment may also be considered by the City.

The City will conduct such investigations as deemed necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the Work in accordance with the *Contract Documents* to the City's satisfaction within the Contract Time.

The Bidder shall furnish the City all information and data requested by the City to determine the ability of the Bidder to perform the Work. The City reserves the right to reject the Bid if the evidence submitted by, or investigation of such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

By submitting a Bid, each Bidder authorizes the City to perform such investigation of the Bidder as the City deems necessary to establish the responsibility, qualifications and financial ability of the Bidder and, by its signature thereon, authorizes the City to obtain reference information concerning the Bidder and releases the party providing such information and the City from any and all liability to the Bidder as a result of such reference information so provided.

The City reserves the right to reject the Bid of any Bidder who does not pass any evaluation to the City's satisfaction.

If the Contract is to be awarded, it will be awarded to the Bidder who, by evaluation, the City determines will best meet the City's interests.

The City reserves the right to accept or reject the Work contained in any of the Bid Schedules or alternates, either in whole or in part.

19. Award of Contract. Unless otherwise indicated, a single award will be made for all the bid items in an individual bid schedule. In the event that the Work is contained in more than one Bid Schedule, the City may award Schedules individually or in combination. In the case of two Bid Schedules which are alternative to each other, only one of such alternative Schedules will be awarded. Within forty-five (45) Calendar Days of Bid Opening, the City will issue a Notice of Award to the Successful Bidder which will be accompanied by four (4) unsigned copies of the Contract and the Performance and Payment Bond forms. Within ten (10) Calendar Days thereafter, the Successful Bidder shall sign and deliver four (4) copies of the Contract, Performance Bond, Payment Bond and Certificates of Insurance to the City. Within ten (10) Calendar Days thereafter, the City will deliver two (2) fully executed counterparts of the Contract to the Contractor. No contract shall exist between the Successful Bidder and the City and the Successful Bidder shall have no rights at law or in equity until the Contract has been duly executed by the City.

The Successful Bidder's failure to sign and submit a Contract and other documents set forth in this Paragraph within the prescribed time shall be just cause of annulment of the award, and forfeiture of the Bid Guaranty. The award of Contract may then be made to the next qualified Bidder in the same manner as previously prescribed.

20. Insurance. The Contractor shall secure and maintain such insurance policies as will provide the coverage and contain other provisions specified in the General Contract Conditions, or as modified in the Special Contract Conditions.

    The Contractor shall file four (4) copies of the policies or Certificates of Insurance acceptable to the City with the Engineer within ten (10) Calendar Days after issuance of the Notice of Award. These Certificates of Insurance shall contain a provision that coverage afforded under the policies shall not be canceled unless at least thirty (30) Calendar Days prior written notice has been given to the City.

21. Sales and Use Taxes. The Contractor and all Subcontractors are required to obtain exemption certificates from the Colorado Department of Revenue for sales and use taxes in accordance with the provisions of the General Contract Conditions. Bids shall reflect this method of accounting for sales and use taxes on materials, fixtures and equipment.

22. Affirmative Action. In executing a Contract with the City, the Contractor agrees to comply with Affirmative Action and Equal Employment Opportunity regulations presented in the General Contract Conditions.

23. Preconstruction Meeting. Prior to the commencement of construction activities, a preconstruction meeting shall be held which shall include the Contractor, representatives of the City, utility companies and others effected by or involved in the project. Attendance by the Contractor is mandatory.

24. Pre-Bid Meeting. See the Special Conditions for details of pre-bid meeting (if any).

BID FORMS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND PLANNING
ENGINEERING DIVISION

BID FORM
FOR
CLETC Water Line

TO: The City of Grand Junction
250 North Fifth Street
Grand Junction, Colorado 81501-2668

The undersigned Bidder, having thoroughly examined the Construction Drawings, Specifications, and other Bid Documents; having investigated the location of, and conditions affecting the proposed work, and being acquainted with and fully understanding the extent and character of the Work covered by this Bid; and all other factors and conditions affecting or which may be affected by the Work:

HEREBY PROPOSES and agrees, if this Bid is accepted, to enter into a Contract with the City on the form included in the *Contract Documents* and to furnish all required materials, tools, equipment, and plant; to perform all necessary labor and superintendence; and to undertake and complete the Work or approved portions thereof, in full accordance with and in conformity with the Construction Drawings, Specifications, and all other Contract Documents hereto attached or by reference made a part hereof, and for the following prices.

Bid Schedule: CLETC Water Line

Company Name:_____

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
1	103/104	Booster Pump Assembly	1.	LS	$_____	$_____
2	103/104	Fire Pump Assembly	1.	LS	$_____	$_____
3	103/104	Meter Vault Assembly	1.	LS	$_____	$_____
4	108.2	4" C-900 Water Line	340.	LF	$_____	$_____
5	108.2	6" C-900 Water Line	6,500.	LF	$_____	$_____
6	108.2	8" C-900 Water Line	165.	LF	$_____	$_____
7	108.2	32 Road Bore and Casing for new 6" line	150.	LF	$_____	$_____
8		20,000 Gallon Water Tank(s) & Appertenances	1.	LS	$_____	$_____
9	108.3	4" gate valve	1.	Ea	$_____	$_____
10	108.3	4" 45 degree bend	2.	Ea	$_____	$_____
11	108.3	6" Gate Valve	4.	Ea	$_____	$_____
12	108.3	6" 45 degree bend	1.	Ea	$_____	$_____
13	108.3	6" 90 degree bend	1.	Ea	$_____	$_____
14	108.3	6" tee	2.	Ea	$_____	$_____
15	108.3	6" Solid sleeve	3.	Ea	$_____	$_____
16	108.3	8" 45 degree bend	2.	Ea	$_____	$_____
17	108.3	8" 90 degree bend	2.	Ea	$_____	$_____
18	108.3	8" tee	2.	Ea	$_____	$_____
19	108.3	8" solid sleeve	5.	Ea	$_____	$_____
20	108.3	8" gate valve	2.	Ea	$_____	$_____
21	108.3	8" x 4" tee	6.	Ea	$_____	$_____
22		Combination Air vac relief	1.	LS	$_____	$_____
23	625	Survey	1.	LS	$_____	$_____
24		Sanitary Facility	1.	LS	$_____	$_____

Bid Schedule: CLETC Water Line

Company Name:_____

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
25	630	Traffic Control	1.	LS	$_____	$_____
26	208	Storm Water Management	1.	LS	$_____	$_____
MCR		Minor Contract Revisions	1.	LS		$ 10,000.00

Bid Amount: $_____

Bid Amount:

_____ **dollars**

The undersigned Bidder hereby agrees to execute the Contract in conformity with this Bid, to have ready and furnish the required Payment and Performance Bonds, executed by a Surety acceptable to the City and provide Certificates of Insurance evidencing the coverage and provisions set forth in Contract within ten (10) Calendar Days of the City's issuance of a Notice of Award.

The _____, a corporation of the State of _____, is hereby proposed as Surety on said Performance and Payment Bonds. If such Surety is not approved by the City, another and satisfactory Surety will be proposed.

Enclosed herewith is a Bid Guaranty as defined in the attached Instructions to Bidders in the amount of _____which Bid Guaranty the undersigned Bidder agrees to be paid to and become the property of the City, as Liquidated Damages and not as a penalty should the Bid be accepted, the Contract Notice of Award issued, and should the Bidder fail or refuse for any reason to enter into the Contract in the form prescribed. The Bidder shall furnish the required Bonds and Insurance Certificates within ten (10) Calendar Days of issuance of the Notice of Award.

The following persons, firms or corporations are interested as joint ventures, partners or otherwise with the undersigned Bidder in this proposal:

Name: _____

Address: _____

Name: _____

Address: _____

If there are no such persons, firms or corporations, please so state in the following space. _____

_____

The undersigned Bidder proposes to subcontract the following portion of Work:

Name & address of Sub-Contractor	Description of work to be performed	% of Contract

The undersigned Bidder acknowledges the right of the City to reject any and all Bids submitted and to waive informalities and irregularities therein in the City's sole discretion.

By submission of the Bid, each Bidder certifies, and in the case of a joint Bid each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without collusion, consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

The Work shall be completed within the Contract Time as specified in the Special Conditions.

Bidder hereby acknowledges receipt of Addenda Numbers: ___, ___, ___, ___.

By submission of a Bid, the Bidder shall be conclusively presumed to represent that the Bidder has complied with every requirement of the "Instructions to Bidders".

Bidder, by his signature hereon, hereby authorizes the obtaining of reference information containing the Bidder's qualifications, experience and general ability to perform the work and hereby releases the party providing such information and the City from any and all liability to Bidder as the result of such reference information being provided. Bidder further waives any right to receive copies of information so provided to the City.

Bidder agrees to perform all Work described in the Contract Documents for the unit prices or the lump sum as shown on the Bid Form, and acknowledges that the quantities shown on the Bid Schedule are approximate only and are intended principally to serve as guides for the purpose of comparing and evaluating Bids.

It is further agreed that any quantities of work to be performed at unit prices and material to be furnished may be increased or decreased as may be considered necessary in the opinion of the City, to complete the Work fully as planned and contemplated, and that all quantities of Work, whether increased or decreased, are to be performed at the unit prices set forth in the Bid, except as otherwise provided for in the Contract Documents.

It is further agreed that any lump sum prices may be increased to cover additional work ordered by the City, but not shown on the Plans or required by the Specifications, in accordance with the provisions of the Contract Documents. Similarly, they may be decrease to cover deletions of work so ordered.

By submitting a Bid, the Bidder acknowledges that the bid process is solely intended to serve the public interest in achieving the highest quality of services and goods at the lowest price, and that no right, interest or expectation shall inure to the benefit of the Bidder as the result of any reliance or participation in the process.

The undersigned Bidder further grants to the City the right to award this Contract on the basis of any possible combination of base bids and alternate(s) (if any) that best suit the City's needs.

Dated this _____ day of _____, 20___.

Bidder: _____

Address: _____

_____

Signature: _____

Name printed: _____

Title: _____

If a corporation:

State of incorporation: _____

Attest: _____ (seal)

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

that we, _____ (___ an individual, ___ a partnership, ___ a corporation incorporated in the State of _____) as Principal, and _____ (incorporated in the State of _____) as Surety, are held and firmly bound unto the City of Grand Junction, Colorado, (hereinafter called "City") in the penal sum of _____ _____ dollars ($ _____), lawful money of the United States, for the payment of which sum we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that WHEREAS the Principal has submitted the accompanying Bid dated _____for construction of _____ _____ (the Project) for the City and

WHEREAS, the City has required as a condition for receiving said Bid that the Principal deposit with the City either a cashier's check or a certified check equivalent to not less than five percent of the amount of said Bid or in lieu thereof furnish a Bid Bond for said amount conditioned that in event of a failure to execute the proposed Contract for such construction and to provide the required Performance and Payment Bonds and Insurance Certificates if the Contract be awarded to the Bidder, that said sum be paid immediately to the City as Liquidated Damages and not as a penalty for the Principal's failure to perform.

NOW, THEREFORE, if the Principal shall, within the period specified therefore, on the attached prescribed forms presented to the Bidder for signature, enter into a written Contract with the City in accordance with said Bid as accepted, and give Performance and Payment Bonds with good and sufficient Surety, or Sureties, as may be required upon the forms prescribed by the City, for the faithful performance and the proper fulfillment of said Contract, provide Certificates of Insurance as required by said Contract, and provide all other information and documentation required by the Contract Documents, then this obligation shall be void and of no effect, otherwise to remain in full force and effect. In the event suit is brought upon this bond by the City and the City prevails, the principal and surety shall pay all costs incurred by the City in such suit, including reasonable attorneys' fees and costs to be fixed by the Court.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals the name and corporate seal of each corporate party being hereto affixed and duly signed by its undersigned representative pursuant to authority of its governing board.

Dated this _____ day of _____, 20___.

Principal: _____

Address: _____

_____

Signed: _____ (seal)

Title: _____

Surety: _____

Address: _____

_____

Signed: _____ (seal)

Title: _____

INSTRUCTIONS FOR COMPLETING BID BOND

1. The full legal name and residence of each individual executing this Bond as Principal must be inserted in the first paragraph.

2. If the Principal is a partnership, the full name of the partnership and all individuals must be inserted in the first paragraph which must recite that individuals are partners composing the partnership, and all partners must execute the Bond as individuals.

3. The State of incorporation of each corporate Principal or Surety to the Bond must be inserted in the first paragraph and the Bond must be executed under the corporate seal of said party attested by its secretary or other appropriate officer.

4. Attach a copy of the power-of-attorney for the Surety's agent.

SPECIAL CONDITIONS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND PLANNING
ENGINEERING DIVISION

CLETC Water Line
SPECIAL CONDITIONS

The performance of the Work for this Project shall conform to the General Contract conditions presented in the City of Grand Junction's *Standard Contract Documents for Capital Improvements Construction,* July 2010, except as specifically modified or supplemented herein or on the Construction Drawings.

SC-1 **Project Description:** The project generally consists of installation of approximately 6,700 lineal feet of 6" DR-18 C-900 PVC Water line, relocation and painting of a 100,000 gallon steel water tank, installation of two owner supplied Baker pitless booster pumps and appurtenances, installation of one owner supplied 50 Hp Barmesa Inline Centrifugal fire pump and appurtenances, installation of electrical service conduits and wire for two service locations (one at the booster pumps and one at the fire pump), completion of 150 foot directionally bored 10" diameter HDPE casing pipe, miscellaneous grading and site work. The tank is approximately 32 feet in diameter and 17 feet in height at the side, rising to 22 feet in height at the center.

SC-2 **Project Engineer:** The Project Engineer for the Project is Bret Guillory, who can be reached at (970) 244-1590. All notices, letters, submittals, and other communications directed to the City shall be addressed and mailed or delivered to:

City of Grand Junction
Department of Public Works and Planning
Attn: Bret Guillory, Utility Engineer
250 North Fifth Street
Grand Junction, CO 81501

SC-3 **Pre-Bid Meeting:**
There will be a pre-bid meeting for this project. The pre-bid meeting is mandatory. A pre-bid meeting will be held at 10:00 a.m. on Monday August 10, 2015, in the City Hall Auditorium located at 250 North 5th Street. The Pre-Bid Meeting will include a site visit.

SC-4 **Pre-Qualification Requirement for Bidders:** Contractors submitting bids over $50,000 must be prequalified in accordance with the City's "Rules and Procedures for Prequalification of Contractors." Application forms for prequalification are available at the Administration Office of the Department of Public Works and Utilities (970-244-1575) or on the Public Works & Planning/Engineering page at www.gjcity.org. Prequalification applications must be submitted by Tuesday June 23, 2015. Bids received from non-prequalified contractors will not be opened.

In addition to the requirements detailed in the City's "Rules and Procedures for Prequalification of Contractors," in order to be pre-qualified and approved the Contractor shall demonstrate that they have successfully completed a minimum of five projects in the past five years that are of similar magnitude to this project and involved the application of specified products to the surfaces of steel water tanks. The Contractor shall substantiate this requirement by furnishing a list of references.

SC-5 **Affirmative Action:** The Contractor is not required to submit a written Affirmative Action Program for the Project.

SC-6 **Time of Completion:** The scheduled time of Completion for the Project is (November 9, 2015) **56 Calendar Days** from the starting date specified in the Notice to Proceed. Completion is achieved when site clean-up and all punch list items (resulting from the final inspection) have been completed. Final Completion and Substantial Completion shall have the meaning set forth in Article I, Section 3 (Definitions and Terms) of the General Contract Conditions.

The anticipated schedule for the Project is as follows:

Advertise for Bids:	Sunday, July 26, August 2 & 9
Pre-Bid Meeting:	Monday, August 10, 2015
Bid Opening:	Tuesday, August 18, 2015
City Council approval:	Wednesday, September 2, 2015
Notice of Award:	Thursday, September 3, 2015
Contractor delivers Contract, Bond and Insurance Cert.	Thursday, September 10, 2015
Preconstruction meeting:	Thursday, September 10, 2015
Begin work:	Monday, September 14, 2015
Final Completion:	Monday, November 9, 2015

- City observed holidays during construction period:
  Labor Day — Monday September 7, 2015

SC-7 **Liquidated Damages:**

If the Contractor does not achieve Final Completion (entire project) or Substantial Completion (of the crossing of Highway 6) by the required dates, whether by neglect, refusal or any other reason, the parties agree and stipulate that the Contractor shall pay liquidated damages to the City for each such day that final completion or substantial completion is late. As provided elsewhere, this provision does not apply for delays caused by the City. The date for Final Completion or Substantial Completion may be extended in writing by the Owner.

The Contractor agrees that as a part of the consideration for the City's awarding of this Contract liquidated damages in the daily amount of **$500.00** is reasonable and necessary to pay for the actual damages resulting from such delay. The parties agree that the real costs and injury to the City for such delay include hard to quantify items such as: additional engineering, inspection and oversight by the City and its agents; additional contract administration; inability to apply the efforts of those employees to the other

work of the City; perceived inefficiency of the City; citizens having to deal with the construction and the Work, rather than having the benefit of a completed Work, on time; inconvenience to the public; loss of reputation and community standing for the City during times when such things are very important and very difficult to maintain.

The Contractor must complete the Work and achieve final completion included under the Bid Schedule in the number of consecutive calendar days after the City gives its written Notice to Proceed. When the Contractor considers the entire Work ready for its intended use, Contractor shall certify in writing that the Work is substantially complete. In addition to the Work being substantially complete, Final Completion date is the date by which the Contractor shall have fully completed all clean-up, and all items that were identified by the City in the inspection for final completion. Unless otherwise stated in the Special Conditions, for purposes of this liquidated damages clause, the Work shall not be finished and the Contract time shall continue to accrue until the City gives its written Final Acceptance.

If the Contractor shall fail to pay said liquidated damages promptly upon demand thereof after having failed to achieve Final Completion on time, the City shall first look to any retainage or other funds from which to pay said liquidated damages; if retainage or other liquid funds are not available to pay said liquidated damages amounts, the Surety on the Contractor's Performance Bond and Payment Bond shall pay such liquidated damages. In addition, the City may withhold all, or any part of, such liquidated damages from any payment otherwise due the Contractor.

Liquidated damages as provided do not include any sums to reimburse the City for extra costs which the City may become obligated to pay on other contracts which were delayed or extended because of the Contractor's failure to complete the Work within the Contract Time. Should the City incur additional costs because of delays or extensions to other contracts resulting from the Contractor's failure of timely performance, the Contractor agrees to pay these costs that the City incurs because of the Contractor's delay, and these payments are separate from and in addition to any liquidated damages.

The Contractor agrees that the City may use its own forces or hire other parties to obtain Substantial or Final Completion of the work if the time of completion has elapsed and the Contractor is not diligently pursuing completion. In addition to the Liquidated Damages provided for, the Contractor agrees to reimburse the City for all expenses thus incurred.

SC-8 **Working Days and Hours:** The working days and hours shall be as stated in the General Contract Conditions, Section VI, or as mutually agreed upon in the preconstruction meeting.

SC-9 **Permits:** The following permits are required for the Project and will be obtained by the City at no cost to the Contractor:

CDOT Construction Permit

The following permits are required for the Project and shall be obtained and paid for by the Contractor, with the costs included in the total bid price for the Project:

State Storm Water Permit

SC-10 **Insurance Limits:** The minimum insurance limits for the Project are as stated in the General Contract Conditions, Section IV. The City of Grand Junction shall be listed as additionally insured on the insurance policy.

SC-11 **City Furnished Materials:** The City will furnish the following materials for the Project:

Tank Booster Station Equipment
Fire Flow Pump Equipment
Communication Equipment for Tank Level Control
Water Storage Tanks (2)

SC-12 **Authorized Representatives of the City:** Those authorized to represent the City shall include engineers and inspectors employed or contracted by the City, only.

SC-13 **Uranium Mill Tailings:** It is anticipated that radioactive mill tailings will not be encountered on this project.

SC-14 **Fugitive Petroleum or Other Contamination:** It is anticipated that soil contamination from fugitive petroleum or other contaminants will not be encountered with the Project.

SC-15 **Schedule of Submittals:** As a minimum, the Contractor shall submit the following information for review by the Engineer prior to the start of construction.

1. Initial Project Schedule. Schedule shall be updated as necessary to reflect actual conditions.
2. Product and material descriptive literature for each material or product used on the project, including certification of conformance with referenced specifications. Submittal shall be made prior to material delivery.

SC-16 **Staging Area:** Area is available on site adjacent to the tanks. Any materials, equipment or construction vehicles stored or used on site shall be placed in locations that do not interfere with normal traffic or plant operations.

SC-17 **Coordination of Work:** The booster pump station, will have cathodic protection systems installed in conjunction with this construction project. The City's contractor in charge of cathodic protection services, Anode Systems, will perform the installation of the cathodic protection systems. The Contractor shall coordinate their work with Anode Systems and give a minimum of two weeks' notice prior to the start of work in the area of the booster pumps, to allow time for the systems to be installed. The contact information for Anode Systems is:

Anode Systems, 124 N. 22nd Court, Grand Junction, CO 81501
(970) 243-4149; Anodesystems.com, Hans Schmoldt, Manager,
hans@anodesystems.com

Munro Supply will be providing the Baker booster pumps and the Fire Pump Equipment that will be pre-purchased by the City and installed by the Contractor. The contact at Munro Supply for coordination of delivery of this equipment is:

Justin McDaniel
Munro Supply
Cell 970-260-3758
Office 970-263-2206

Mountain Peak Controls, Inc. will be providing the tank level controls and communication equipment that will be pre-purchased by the City and installed by Mountain Peak Controls. The contact at Mountain Peak Controls for coordination of installation of this equipment is:

Brian Mitchem
Mountain Peak Controls, Inc.
303-885-5967 (cell)

SC-18 **Warranty Period** The warranty period for this project shall be extended to eighteen (18) months in accordance with Section XI. Warranty and Guarantee 76. IV., of the Standard Contract Documents.

SPECIAL PROVISIONS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND PLANNING
ENGINEERING DIVISION

CLETC Water Line
SPECIAL PROVISIONS

The performance of the Work for this Project shall conform to the General Contract conditions presented in the City of Grand Junction's *Standard Contract Documents for Capital Improvements Construction,* July 2010, except as specifically modified or supplemented herein or on the Construction Drawings.

SPECIAL PROVISIONS

GENERAL:

The descriptions of the pay items listed in the Bid Schedule for this Project may not agree with those listed in the Standard Specifications. Payment for all Work performed, as required in the Contract Documents, will be in accordance with the items and units listed in the Bid Schedule.

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION:

The ***City of Grand Junction Standard Specifications for Road and Bridge Construction*** are hereby modified or supplemented for this Project by the following modifications to ***The Standard Specifications for Road and Bridge Construction***, State Department of Highways, Division of Highways, State of Colorado:

SP-1 SECTION 601 – STRUCTURAL CONCRETE

Section 601 of the Standard Specifications is hereby revised for this project as follows:

This CDOT Specification has been added to this Project:

The Contractor shall furnish a batch ticket (delivery ticket) with each load for all concrete. Concrete delivered without a batch ticket containing complete information as specified shall be rejected. The Contractor shall collect and complete the batch ticket at the placement site and deliver all batch tickets to the Engineer or his representative at the end of each day. The Engineer or his representative shall have access to the batch tickets at any time during the placement. The following information shall be provided on each ticket:

1. Suppliers name and date
2. Truck number
3. Project name and location
4. Concrete class and designation number
5. Cubic yards batched

6. Type brand and amount of each admixture
7. Type, brand, and amount of cement and fly ash
8. Weights of fine and course aggregates
9. Moisture of fine and course aggregates
10. Gallons of batch water

The contractor shall add the following information to the batch ticket at time of placement:

1. Gallons of water added by the truck operator.
2. Number of revolutions of the drum for mixing
3. Discharge time

SP-2 SECTION 608 – CURBS, GUTTERS, SIDEWALKS, AND BIKEWAYS

Section 608 of the Standard Specifications is hereby revised for this project as follows:

Subsections 608.06, Basis of Payment shall include the following:

> The Contract Unit Price for the various concrete items shall be full compensation for all equipment, labor, materials, and incidentals required for the complete installation. Incidental items include clearing; excavating to subgrade, subgrade compaction, cutting and removal of asphalt in areas where concrete will be installed; removal of existing concrete, disposal of excavated and removed materials; furnishing, placement and compaction of Aggregate Base Course; forming, furnishing and placement, finishing, curing and protection of the concrete; reinforcing steel and joint filler.

STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATER LINES, SANITARY SEWERS, STORM DRAINS, UNDERDRAINS AND IRRIGATION SYSTEMS

The City of Grand Junction ***Standard Specifications for Construction of Water Lines, Sanitary Sewers, Storm Drains, Underdrains and Irrigation Systems*** are hereby modified for this Project as follows:

SP-1 SECTION 102 – MATERIALS

Section 102 of the Standard Specifications is hereby revised for this project as follows:

Subsection 102.7b, PVC Water Distribution Pipe, shall include the following material specification:

PART 1 – GENERAL

1.01 DESCRIPTION

A. SCOPE

1. This material specification covers requirements of fusible polyvinylchloride (PVC) pipe, including Fusible C-900.

2. Pipe shall conform to the following dimensionality and properties table:

Pipe Description	Nominal Diameter (in.)	DR	Color	Pressure Class (psi)	Required Inner Diameter (in.)
AWWA C-900 Fusible PVC	**6”**	**18**	**Blue**	**235**	**6.09”**

1.02 QUALITY ASSURANCE

A. REFERENCES

1. References indicated shall mean the latest revision or issuance, unless specifically indicated in the table below:

Reference	Title
AWWA C900-97	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm through 300mm), for Water Distribution
AWWA C905-97	Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm-1200mm), for Water Distribution
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

Reference	Title
ASTM D2152	Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F679	Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
NSF-14	Plastics Piping System Components and Related Materials
NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

B. MANUFACTURER REQUIREMENTS

1. Fusible polyvinylchloride pipe shall be tested at the extrusion facility for properties required to meet all applicable parameters as outlined in either AWWA C900, AWWA C905, applicable sections of ASTM D2241, ASTM D3034, or ASTM F679 . Testing priority shall be in conformance with AWWA C900 and AWWA C905, except for pipe made to the ASTM D3034 or ASTM F679 standards, which shall be tested to those standards. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.

C. FUSION TECHNICIAN REQUIREMENTS

PART 1 Fusion Technician shall be fully qualified by the pipe supplier to install fusible polyvinylchloride pipe of the type(s) and size(s) being used. Qualification shall be current as of the actual date of fusion performance on the project.

D. SPECIFIED PIPE SUPPLIERS

1. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051.

E. WARRANTY

1. The pipe shall be warranted for one year per the pipe supplier’s standard terms.
2. In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider’s standard terms.

F. PRE-CONSTRUCTION SUBMITTALS

1. The following PRODUCT DATA is required from the pipe supplier and/or fusion provider:

    1. Pipe Size
    2. Dimensionality
    3. Pressure Class per applicable standard
    4. Color
    5. Recommended Minimum Bending Radius
    6. Recommended Maximum Safe Pull Force
    7. Pipe and fusion services warranty information
    8. Fusion technician qualification indicating conformance with this specification.

G. POST-CONSTRUCTION SUBMITTALS

1. The following AS-RECORDED DATA is required from the contractor and/or fusion provider to the Owner or pipe supplier upon request:

    - Fusion report for each fusion joint performed on the project, including joints that were rejected. Specific requirements of the Fusion Technician's joint report shall include:

        a. Pipe Size and Thickness
        b. Machine Size
        c. Fusion Technician Identification
        d. Job Identification
        e. Fusion Joint Number
        f. Fusion, Heating, Drag Pressure Settings
        g. Heat Plate Temperature
        h. Time Stamp
        i. Heating and Cool Down Time of Fusion
        j. Ambient Temperature

PART 2 – PRODUCTS

2.01 FUSIBLE PVC PIPE FOR POTABLE WATER

A. Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensions if applicable. Testing shall be in accordance with AWWA standards for all pipe types.

B. Rework material shall be allowed per AWWA C900 and AWWA C905 standards.

C. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

D. Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.

E. Fusible polyvinylchloride pipe shall be blue in color for potable water use.

F. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

1. Nominal pipe size
2. PVC
3. Dimension Ratio, Standard Dimension Ratio or Schedule
4. AWWA pressure class or standard pressure rating for non-AWWA pipe
5. AWWA Standard designation number or pipe type for non-AWWA pipe
6. NSF-61 mark verifying suitability for potable water service
7. Extrusion production-record code
8. Trademark or trade name
9. Cell Classification 12454 and/or PVC material code 1120 may also be included

G. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

2.02 FUSION JOINTS

A. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's guidelines for this procedure. All fusion joints shall be completed as described in this specification.

PART 3 – EXECUTION

3.01 DELIVERY AND OFF-LOADING

A. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the Owner or Engineer.

B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify Owner or Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color and type.

C. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.

D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.

E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.

F. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks

3.02 HANDLING AND STORAGE

A. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the Owner or Engineer.

B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the Owner or Engineer.

C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.

E. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required preventing excess heat accumulation.

F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.03 FUSION PROCESS

A. GENERAL

1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following properties, including the following elements:
    a. HEAT PLATE - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly, cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
    b. CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
    c. GENERAL MACHINE - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
    d. DATA LOGGING DEVICE - The current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
5. Other equipment specifically required for the fusion process shall include the following:
    a. Pipe rollers shall be used for support of pipe to either side of the machine.
    b. A weather protection canopy that allows full machine motion of the

heat plate, fusion assembly and carriage shall be provided for fusion in inclement and /or windy weather.

c. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.

d. Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.

e. An infrared (IR) pyrometer for checking pipe and heat plate temperatures.

B. JOINT RECORDING

Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of thermoplastic pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

3.04 GENERAL INSTALLATION

A. Installation guidelines from the pipe supplier shall be followed for all installations

B. The fusible PVC pipe will be installed in a manner so as not to exceed the recommended bending radius.

C. Where fusible PVC pipe is installed by pulling tension, the recommended Safe Pulling Force, according to the pipe supplier, will not be exceeded.

D. The Contractor shall use the Grand Avenue and Ouray Avenue roadway alignment for pipe fusion and laying the pipe on the ground prior to Horizontal Directional Drilling. Traffic control will have to take into account the length of fused pipe laying on top of the roadway and accommodate the lane closures accordingly.

-END OF SECTION-

SP-2 SECTION 104 – INSTALLATION OF PIPE AND APPURTENANCES

Section 104 of the Standard Specifications is hereby revised for this project as follows:

Include the following specification into Subsection 104.3j, Installation of Pressure Pipe using Horizontal Directional Drilling:

PART 1 –GENERAL

1.01 DRILLING SYSTEM EQUIPMENT

A. GENERAL

1. The directional drilling equipment, as a minimum, shall consist of a directional drilling rig of sufficient capacity to perform the bore(s) and pull-back of the pipe(s), a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project. All required equipment shall be included in the emergency and contingency plan as submitted per these specifications.

B. DRILLING RIG

1. The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull drill pipe while delivering a pressurized fluid mixture to a drill head. The machine shall be anchored to withstand the pulling, pushing and rotating forces required to complete the project.

2. The drilling rig hydraulic system shall be of sufficient pressure and volume to power drilling operations. The hydraulic system shall be free from leaks.

3. The drilling rig shall have a system to monitor pull-back hydraulic pressure during pull-back operations.

C. DRILL HEAD

1. The horizontal directional drilling equipment shall produce a stable fluid lined tunnel with the use of a steer-able drill head and any subsequent pre-reaming heads.

2. The system must be able to control the depth and direction of the drilling operation.

3. Drill head shall contain all necessary cutters and fluid jets for the operation, and shall be of the appropriate design for the ground medium being drilled.

D. DRILLING FLUID SYSTEM

1. DRILLING FLUID (DRILLING MUD)

a. Drilling fluid shall be composed of clean water and the appropriate additive(s) for the fluid to be used. Water shall be from a clean source and shall meet the mixing requirements of the mixture manufacturer(s).

b. The water and additives shall be mixed thoroughly to assure the absence of any clumps or clods. No hazardous additives may be used.

c. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall(s).

d. Drilling fluid shall be disposed of off-site in accordance with local, state and federal requirements and/or permit conditions.

e. No additional chemicals or polymer surfactants shall be allowed to be added to the drilling fluid unless they have been submitted per this specification.

2. MIXING SYSTEM

a. A drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid for the project.

b. The mixing system shall be able to ensure thorough mixing of the drilling fluid. The drilling fluid reservoir tank shall be sized for adequate storage of the fluid.

c. The mixing system shall continually agitate the drilling fluid during drilling operations.

3. DRILLING FLUID DELIVERY AND RECOVERY SYSTEM

a. The drilling fluid pumping system shall have a minimum capacity to supply drilling fluid in accordance with the drilling equipment pull-back rating at a constant required pressure.

b. The delivery system shall have filters or other appropriate in-line equipment to prevent solids from being pumped into the drill pipe.

c. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. The use of spill containment measures shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps, vacuum truck(s), and/or storage of sufficient size shall be in place to contain excess drilling fluid.

d. A closed-loop drilling fluid system and a drilling fluid cleaning system should be used to whatever extent practical, depending upon project size and conditions. Under no circumstances shall

drilling fluid that has escaped containment be reused in the drilling system.

E. DRILLING CONTROL SYSTEM

1. Calibration of the electronic detection and control system shall be verified prior to the start of the bore.

2. The drilling head shall be remotely steer-able by means of an electronic or magnetic detection system. The drilling head location shall be monitored in three dimensions:

   a. Offset from the baseline,

   b. Distance along the baseline, and

   c. Depth of cover.

3. Point of rotation of the head shall also be monitored.

4. For gravity application and on-grade drilling, sonde/beacon or approved equipment applicable for grade increments of $1/10^{th}$ of one percent shall be used.

1.02 PIPE PULL HEADS

A Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.

B Pipe pull heads shall be specifically designed for use with fusible polyvinylchloride pipe, and shall be as recommended by the pipe supplier.

1.03 PIPE ROLLERS

A Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe during handling and pullback operations.

B A sufficient quantity of rollers and spacing, per the pipe supplier's guidelines shall be used to assure adequate support and excessive sagging of the product pipe.

PART 2 – EXECUTION

2.01 DRILLING OPERATIONS

A GENERAL

1. Bore path and alignment are as indicated in the contract documents. The path of the bore may be modified based on field and equipment conditions. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.

2. Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.

B LOCATION AND PROTECTION OF UNDERGROUND UTILITIES

1. Correct location of all underground utilities that may impact the HDD

installation is the responsibility of the Contractor, regardless of any locations shown on the drawings or previous surveys completed.

2. Utility location and notification services shall be contacted by the Contractor prior to the start of construction.

3. All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the Contractor and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities. This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.

C SITE LOCATION PREPARATION

1. Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made

2. Contractor shall confine all activities to designated work areas.

D DRILLING LAYOUT AND TOLERANCES

1. The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.

2. Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.

3. Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.

E PILOT HOLE BORE

1. Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require contractor to pull-back and re-drill from the location along bore path before the deviation.

2. The Contractor shall limit curvature in any direction to reduce force on the pipe during pull-back. The minimum radius of curvature shall be no less than that specified by the pipe supplier and as indicated on the drawings.

F REAMING

1. After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimated guide:

Nominal Pipe Diameter	Bore Hole Diameter
< 8 inches	Pipe Dia. + 4 inches
8 inches to 24 inches	Pipe Dia. X 1.5
> 24 inches	Pipe Dia. + 12 inches

2. Multiple reaming passes shall be used at the discretion of the Contractor and shall conform to this specification.

3. In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the Contractor shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss.

2.02 PIPE PULL-BACK INSERTION

A Pipe shall be fused prior to insertion, if the site and conditions allow, into one continuous length.

B Contractor shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.

C The pipe entry area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.

1. The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.

2. The fusible polyvinylchloride pipe may be continuously or partially supported on rollers or other Owner and Engineer approved friction decreasing implement during joining and insertion, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.

3. A swivel shall be used between the reaming head and the fusible polyvinylchloride pipe to minimize torsion stress on the pipe assembly.

D Buoyancy modification shall be at the sole discretion of the Contractor, and shall not exceed the pipe supplier's guidelines in regards to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the Contractor.

E Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.

F The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the Contractor's operations shall be corrected by the Contractor.

2.03 INSTALLATION CLEAN-UP

A Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction condition of the site. All excavations will be backfilled and compacted per the construction documents and City of Grand Junction standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be re-landscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.

B Contractor shall verify that all utilities, structures, and surface features in the project area are sound.

2.04 TESTING

A PARTIAL TESTING

1. Segments of the pipe may be tested separately in accordance with standard testing procedure, as approved by the owner and engineer. Testing of each HDD installation prior to connection to the system or other piping is preferred.

-END OF SECTION-

SP-3 INSTALLATION OF TANK BOOSTER PUMP AND APPURTENANCES

Method of Measurement:
The Tank Booster Pump Assembly shall include all materials and installation to provide a complete pump assembly as shown on the project plan set, and as required to meet all current electrical code. This will include all items from, and including, the 4" x 6" reducer to 4" x 6" reducer, as shown on the project plan set. Mega Lug joint restraint shall be used on all fittings within the assembly that are not flanged. This work shall include all electrical work as needed to meet current code, and as shown on the plan set. This work shall include excavation and materials to provide including coordination with Grand Valley Power to

Method of Payment:
This item will be paid as a lump sum for the Booster Pump Assembly.

SP-4 INSTALLATION OF FIRE PUMP AND APPURTENANCES

Method of Measurement:
The Fire Pump Assembly shall include all materials and installation to provide a complete pump assembly as shown on the project plan set, and as required to meet all current electrical code. This will include all items from the 8" gate valve to 8" gate valve, as shown on the project plan set. Mega Lug joint restraint shall be used on all fittings within the assembly that are not flanged.

Method of Payment:
This item will be paid as a lump sum for the Fire Pump Assembly.

SP-5 INSTALLATION OF PIPE LINE AND APPURTENANCES

Method of Measurement:
The 6" and 8" C-900 DR-18 PVC water lines will be measured by the lineal foot, and will include all joint restraint appurtenances and installation per City of Grand Junction specification. Mega Lug restraints shall be utilized on all fittings, and on all bell and spigot joints within 30 feet of any fitting.

Fusible C-900 PVC may be used in lieu of standard bell and spigot pipe.

Method of Payment:
This item will be paid by the lineal foot.

SP-6 INSTALLATION OF CASING AND CARRIER PIPE LINE AND APPURTENANCES

Method of Measurement:
The 12" DR-11 HDPE Casing Pipe and 6" C-900 DR-18 PVC carrier pipe shall be measured by the lineal foot together, as shown on the plan set, and will not be measured separately. This will in include all appurtenances and installation per City of Grand Junction specification and/or project specification. Either Certa-Loc DR-17 or fusible C-900 DR-18 pipe may be utilized as carrier pipe for this installation. Casing end seals will be included in the per foot cost of this pay item.

Method of Payment:
This item will be paid by the lineal foot.

SP-7 INSTALLATION OF 20,000 GALLON WATER TANKS AND APPURTENANCES

Method of Measurement:
The installation of the two 20,000 gallon water tanks shall be measured by the lump sum to install both tanks and will not be measured separately. Measurement shall include all excavation, appurtenances, specified back fill and bedding materials required for installation per City of Grand Junction specification and/or project specification included in Appendix A

Method of Payment:
This item will be paid by the lump sum.

Appendix A

Single Wall
NSF Approved
20,000 Gallon Water Storage Tanks (Typ)

Appendix B

Geotechnical Report

White Water Hill Training Facility Geotechnical Investigation

March 20, 2015

Test hole #1 Station 0+50 location north side of HWY 141 at the toe of the road prism

0 to 2 ½ Feet the material was generally consistent with that of a silty sand (SM) material. 2 ½ - 5 feet the material was a pit run cobble material (SM). 5 – 7 feet the material turned to a decomposed shale material.

Test hole #2 approximate station 2+50 location south side of HWY 141 at the toe of the road prism

The top 1 foot was generally consistent with that of a sandy clay (CL) material. 1 - 4 feet the material was a pit run, cobble material (SM). 4 – 7 feet the material turned to a decomposed shale material.

Test hole #3 approximate station 10+50, location top of the hill

The full depth of the test hole to 5 feet consisted of pit run cobble material poorly graded with a sand-silt mixtures (SM).

Test hole #4 approximate station 63+38, Center location of the proposed water tank

The top 1 ½ foot was generally consistent with that of a sandy clay (CL) material. 1 ½ - 4 feet the material was a very fine sand /rock flour material (ML).

APPENDIX C

Tank Booster Pump

800.933.1290 • FAX: 970.241.1368
P.O. BOX 519 • GRAND JUNCTION, COLORADO 81502

PUMP • SUPPLY • MANUFACTURING • SYSTEMS • PARTS & SERVICE

City Of Grand Junction
Attn: Bret Guillory

02/27/2015

Job Name: Clifton Water Tank Booster Station.

Munro Systems Inc. is pleased to offer the following equipment and services as described below.

Booster Station: (58 GPM @ 55 PSI)

- 2 EA Baker Monitor Pitless Booster Units. Model # 3.5PS56TBWX12F46.54SX.
  3.5' Bury depth, 5" resivoir tank, 6" upper casing, water tight cap, closed spool passage, 2" drop pipe, 4" flanged suc/dis and powder coated NSF red.
- 2 EA Wilo submersible pumps model # TWI4.70-5.30, 3 Hp, 230v, 3ph.
- 1 EA 80' # 10 Submersible wire.
- 2 EA #10 submersible wire splice kits.

Control Panel: (3/3 Hp, 230v, 1ph)

- 1 EA Type 3R industrial electrical enclosure 60X48X18" w/ legs and dead front door.
- 2 EA Yaskawa VFD model # A10002A0040FAA, 230v, 1ph input. (37 Amp HD input)
- 2 EA Motor circuit protection breakers, 50 amp.
- 1 EA Set of H-O-A Switches and manual speed rheostats.
- 1 EA Set of terminal blocks line/load and control.
- 1 EA Panel heater. 115v.

1 EA Installation of customer provided automation equipment.
1 EA Panel U.L. Listing 508A industrial control panels.
1 EA Set of I/O/M Manuals.

Total:	$ 25,685.00
Freight Est:	$ 1,000.00

Allow 6 weeks delivery.

munro COMPANIES
800.933.1290 • FAX: 970.241.1368
P.O. BOX 519 • GRAND JUNCTION, COLORADO 81502
PUMP • SUPPLY • MANUFACTURING • SYSTEMS • PARTS & SERVICE

Proposal Clarifications

1) Customer is responsible for all electrical to meet NEC.
2) Customer is responsible for clarifying electrical supply for specific project. If order is placed and the system is designed for the wrong electrical supply the customer will pay for parts, labor and U.L. listing of the control panel for changes necessary.
3) Customer is responsible for all mechanical connections not previously assembled at factory.(VT pumps, suction, discharge, pressure transducers etc.)
4) Customer is responsible for signing proposal contract and drawings if applicable, before construction begins.
5) A 50% down payment is required before construction begins, unless prior arrangements have been made.
6) Munro Systems Inc. will supply start up assistance for one day (included in proposal cost). In the event that more than one day is needed a charge of $ 130.00 per hour shop to shop plus mileage will be applied. (A start up authorizing document will be supplied. Customer is responsible for completing and returning. A minimum, one week advanced notice is required.)
7) 3 copies of operation, installation and maintenance manuals will be supplied.
8) Quote is good for 30 days from proposal date.
9) Customer is responsible for offloading pump station and related equipment at the jobsite.
10) All shipping costs will be billed separately. Including, but not limited to inbound and outbound freight costs unless otherwise noted.
11) Pump station will be delivered by common carrier or customer is responsible for receiving pump station at production facility in Grand Junction, Colorado.
12) A monthly charge of $ 100.00 will be applied to all pump stations stored at the Grand Junction, Colorado production facility longer than 30 days.
13) Warranty: There are no warranties expressed or implied by Munro Systems Inc. on the accessories and or pumps sold by Munro Systems Inc. The manufacturers printed warranty will be delivered to the purchaser and shall apply and the same is made part hereof as fully set forth here. The manufacturers warranties is the only warranty applicable to such pumps and accessories and is expressly in lieu of all warranties by Munro Systems Inc. A total disclaimer is available upon customer request.
14) This proposal is based on customer supplied information.
15) Taxes apply, and are not included in proposal totals.

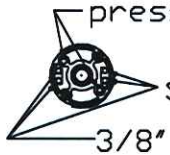
Prepared by: Justin McDaniel, Munro Systems Inc.
Accepted by:_____
Date:_____

PART NO. 150290 Model Code: 3.5PS56TBWX12F46.54FSX

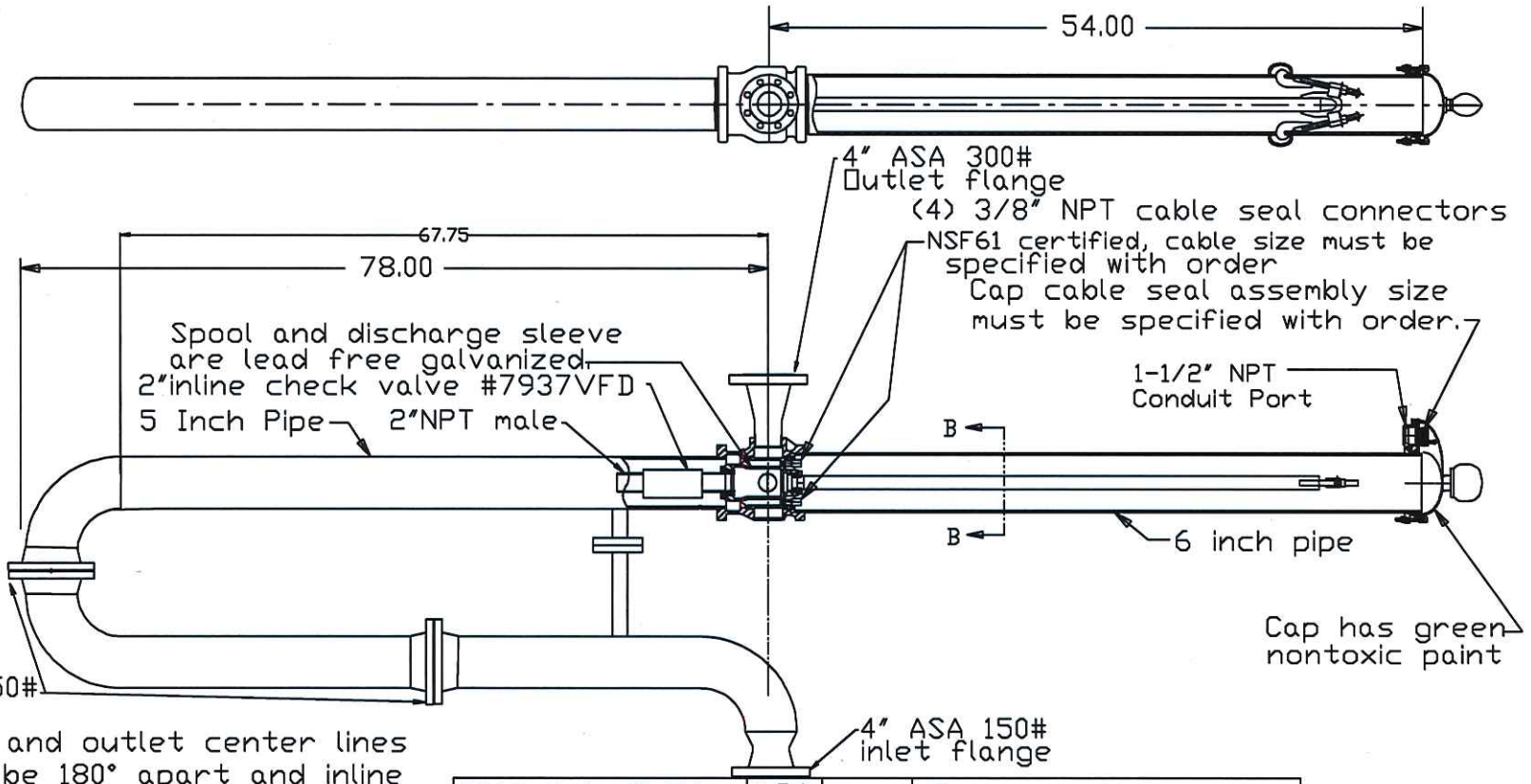
This unit will be completely assembled and tested before shipment

Maximum Inlet pressure 150 psig.
Maximum usable inlet pressure may be limited by the cable connectors depending on actual cable size and material.

NSF 61 CERTIFIED



DWG. NO. 150290



REV	DATE	REVISION
A	2/27/15	Released To Sales

This information is confidential to Baker Mfg. Co. (Baker). It can not be disclosed to others without the written consent of Baker.

BY: RJ Proj#2002
DATE: 2/27/15

Baker Mfg. Co.
133 Enterprise St., Evansville, WI, USA 53536

DWG. SIZE B
DWG. NO. 150290

APPENDIX D

Fire Flow Pump

800.933.1290 • FAX: 970.241.1368
P.O. BOX 519 • GRAND JUNCTION, COLORADO 81502
PUMP • SUPPLY • MANUFACTURING • SYSTEMS • PARTS & SERVICE

City Of Grand Junction
Attn: Bret Guillory

06/02/2015

Job Name: Training Facility Fire Flow Pumping Station

Munro Systems Inc. is pleased to offer the following equipment and services as described below.

Pump Station: (1,500 GPM @ 80' TDH)

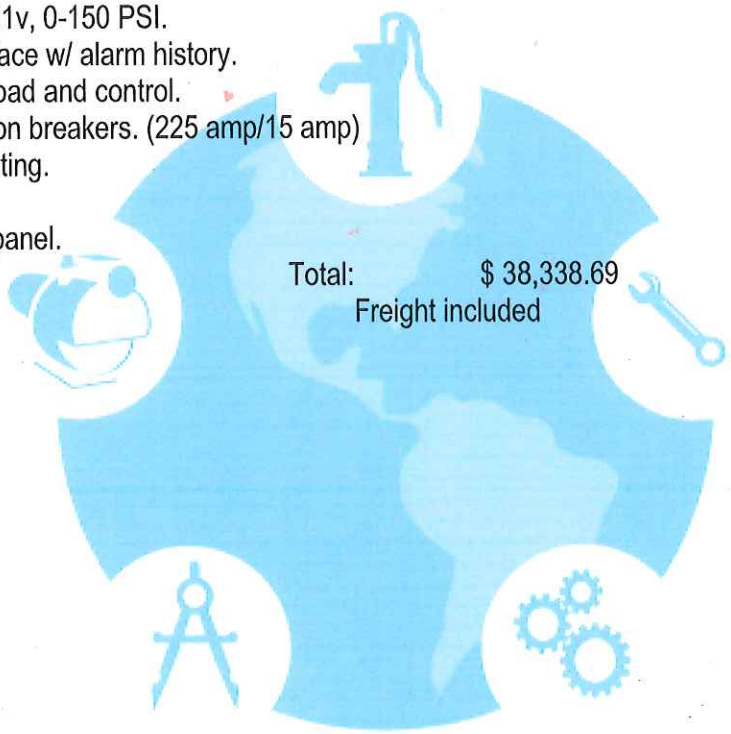
- 1 EA Barmesa Inline centrifugal pump model # BVL-8X8X10-50-4, 50 Hp, 480v, 3ph, 1,750 RPM, TEFC motor.
- 1 EA Wilo Inline vertical multistage pump, 2 Hp, 480v, 3ph, 3,450 RPM, TEFC motor.
- 1 EA 8" Globe Style check valve.
- 1 EA 2" Grooved style inline check valve.
- 1 EA Set of isolation valves and pressure gauges suc/dis.

Control Panel: (50 Hp, 480v, 1ph)

- 1 EA Type 3R Out door industrial electrical enclosure w/ ventilation. (72"X72"X18")
- 1 EA Yaskawa VFD model # A10004A0208FAA, w/ j-box. (170 Amps input)
- 1 EA Yaskawa VFD model # A10004A009FAA. (8.2 amp input)
- 1 EA MTE 1ph Harmonics 50 hp, 480v, 3ph. Type 3R outdoor enclosure w/ bypass contactor.
- 1 EA Set of H-O-A Switches and manual speed rheostats.
- 1 EA SS pressure transducer 1-11v, 0-150 PSI.
- 1 EA 4" Color touch screen interface w/ alarm history.
- 1 EA Set of terminal blocks line/load and control.
- 1 EA Set of motor circuit protection breakers. (225 amp/15 amp)

1 EA Station set up programming and testing.
1 EA Set of I/O/M Manuals.
1 EA U.L. Listing 508A industrial control panel.

Total: $ 38,338.69
Freight included



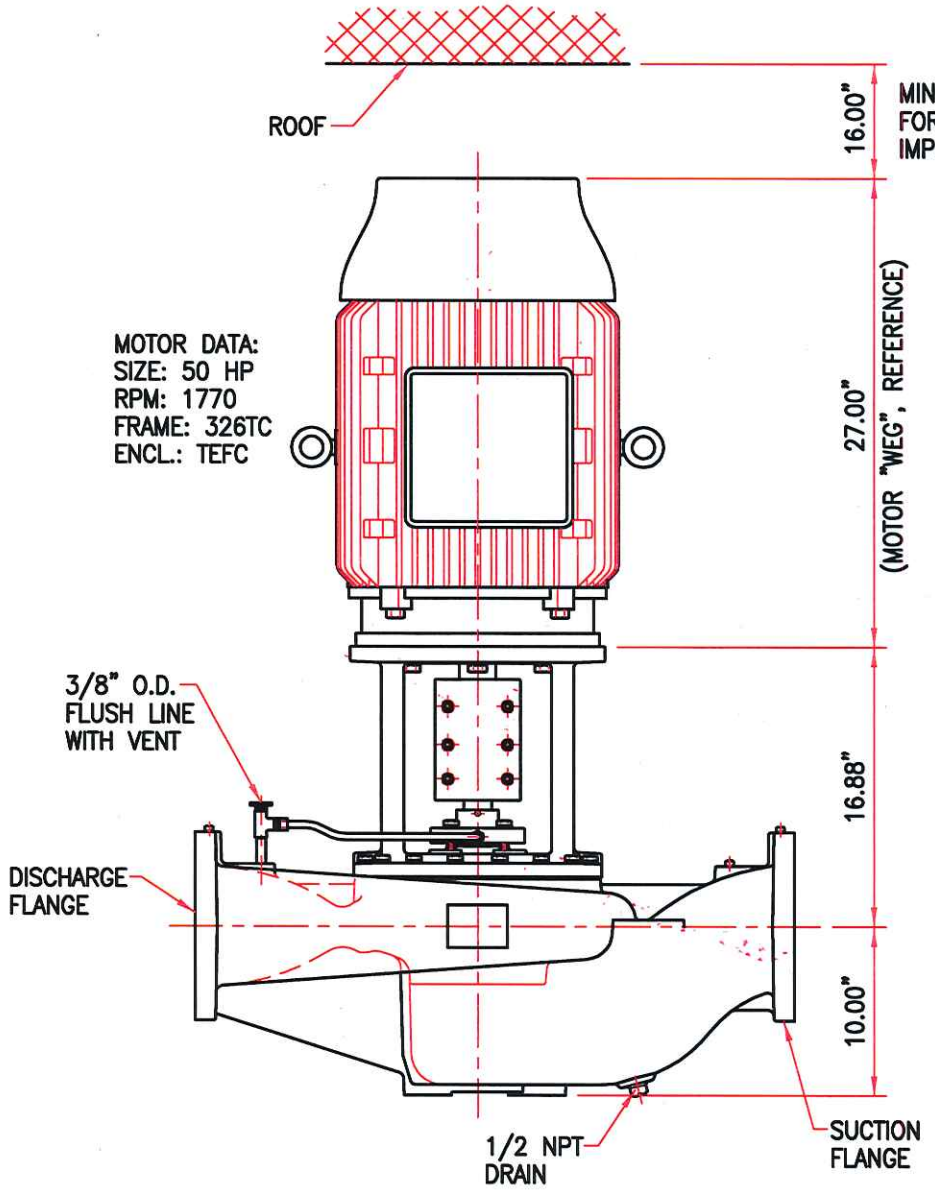
800.933.1290 • FAX: 970.241.1368
P.O. BOX 519 • GRAND JUNCTION, COLORADO 81502

PUMP • SUPPLY • MANUFACTURING • SYSTEMS • PARTS & SERVICE

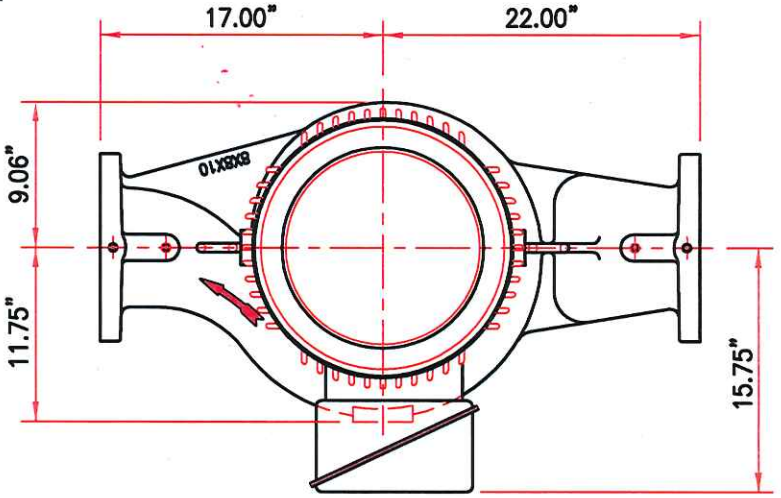
Proposal Clarifications

1) Customer is responsible for all electrical to meet NEC.
2) Customer is responsible for clarifying electrical supply for specific project. If order is placed and the system is designed for the wrong electrical supply the customer will pay for parts, labor and U.L. listing of the control panel for changes necessary.
3) Customer is responsible for all mechanical connections not previously assembled at factory.(VT pumps, suction, discharge, pressure transducers etc.)
4) Customer is responsible for signing proposal contract and drawings if applicable, before construction begins.
5) A 50% down payment is required before construction begins, unless prior arrangements have been made.
6) Munro Systems Inc. will supply start up assistance for one day (included in proposal cost). In the event that more than one day is needed a charge of $ 130.00 per hour shop to shop plus mileage will be applied. (A start up authorizing document will be supplied. Customer is responsible for completing and returning. A minimum, one week advanced notice is required.)
7) 3 copies of operation, installation and maintenance manuals will be supplied.
8) Quote is good for 30 days from proposal date.
9) Customer is responsible for offloading pump station and related equipment at the jobsite.
10) All shipping costs will be billed separately. Including, but not limited to inbound and outbound freight costs unless otherwise noted.
11) Pump station will be delivered by common carrier or customer is responsible for receiving pump station at production facility in Grand Junction, Colorado.
12) A monthly charge of $ 100.00 will be applied to all pump stations stored at the Grand Junction, Colorado production facility longer than 30 days.
13) Warranty: There are no warranties expressed or implied by Munro Systems Inc. on the accessories and or pumps sold by Munro Systems Inc. The manufacturers printed warranty will be delivered to the purchaser and shall apply and the same is made part hereof as fully set forth here. The manufacturers warranties is the only warranty applicable to such pumps and accessories and is expressly in lieu of all warranties by Munro Systems Inc. A total disclaimer is available upon customer request.
14) This proposal is based on customer supplied information.
15) Taxes apply, and are not included in proposal totals.

Prepared by: Justin McDaniel, Munro Systems Inc.
Accepted by:_____
Date:_____



FRONTAL VIEW



UPPER VIEW

DIMENSIONAL DRAWING FOR:
VERTICAL IN-LINE CENTRIFUGAL PUMP
MODEL: BVL 8X8X10-50-4

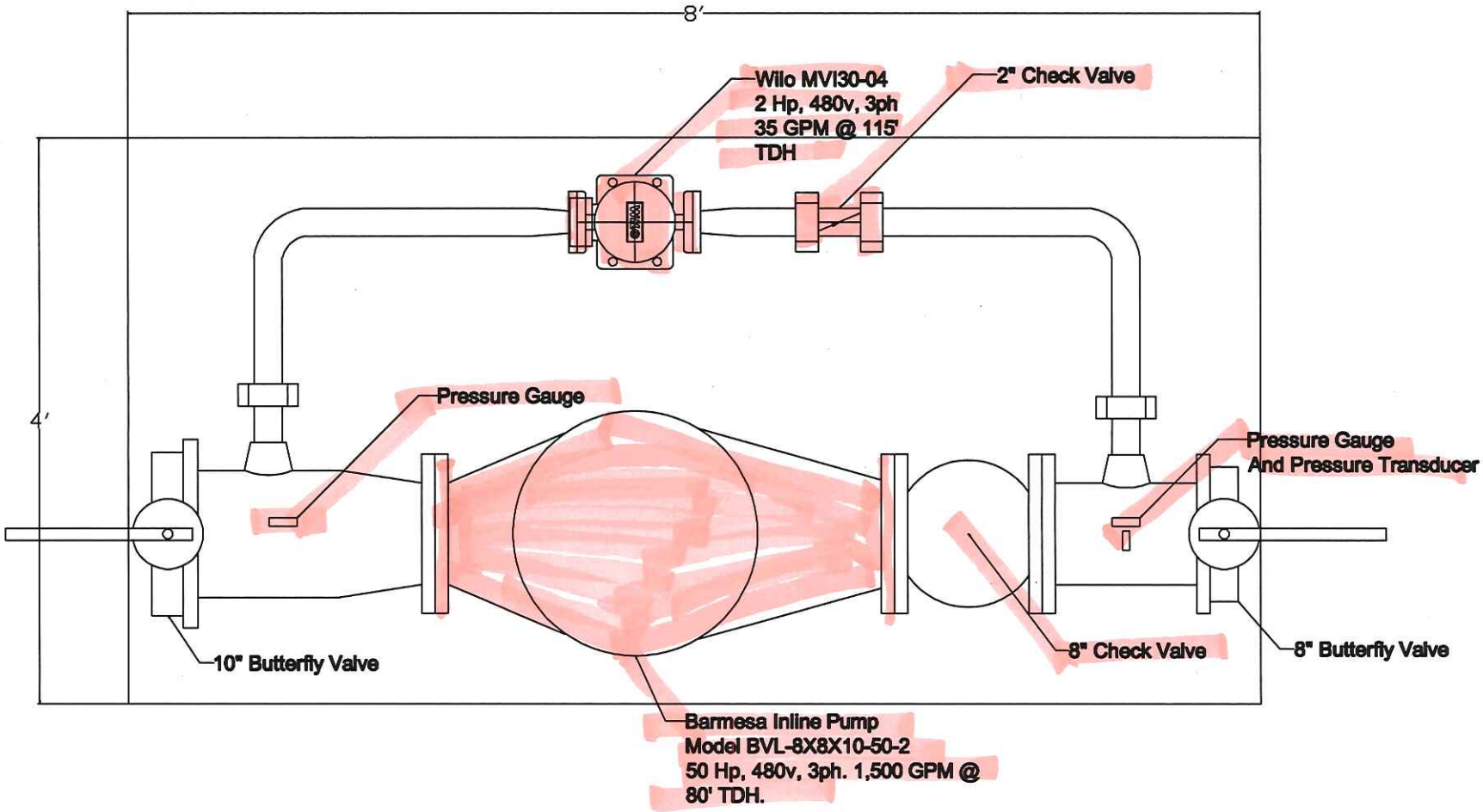
DIMENSIONS IN INCHES

FLANGES	
SUCTION:	8.0"
DISCHARGE:	8.0"
RATING:	125 PSI
O.D.:	13.50"
BOLTS:	8
BOLTS SIZE:	.75"Ø
BCD:	11.75"
THICKNESS:	1.13"

BARNES DE MEXICO, S.A. de C.V.

D. LADRON DE GUEVARA # 302 OTE. APARTADO POSTAL No. 1774
64500 MONTERREY, N.L., MEXICO 64000 MONTERREY, N.L., MEXICO
TELS.: 8351-3737 y 8351-8830
FAX.: 8331-1777

DRAWN BY:
LEOPOLDO MONTALVO



Note: This drawing is provided for recommendation only for the aid and services of our customers & is not to be construed as a Professional Engineered Design . This design is done per customer request, and information is supplied to us by the customer. Any changes will effect the design. All dimensions are for reference only and need to be verified before installation.

Authorized signature is required before fabrication.

Signed By: _____ Title: _____

munro SYSTEMS Ltd.
A MUNRO COMPANY

Project		Rev #
Date: 5/08/2015	Drafted By JM	Sheet # 1

APPENDIX E

Communication Equipment

Mountain Peak Controls, Inc.
13551 W. 43rd Dr. Unit A
Golden, CO 80403
(303) 271-0376 • Fax (303) 271-0617

Date: May 4, 2015

To: Bret Guillory
City of Grand Junction

Subject: 32 Rd. Pump Station and Tank Level Controls

Bret,

Thank you for the opportunity to quote to you regarding the pump station project. Below is a breakdown of the control & monitoring requirements for each site. Communications between the pump station and Clifton Water tank building still need verified. I would like the communications between the 2 tanks and the pump station on a separate spread spectrum 900Mhz (Non-licensed) network in order to keep it "self contained". Communications back to the Water plant would be handled by the PLC at the Control building. I will need to do a physical radio path check of the system to verify if the 900Mhz radio's will work. If they don't, then the system will need to be built around the licensed radio's which increase costs somewhat due to how they have to be implemented.

Pump Station

Provide a control system that will monitor the new 100K tank level and enable pumps per operator setpoints. Additionally, the system will monitor the level of Clifton's 32 Rd. tank level to ensure that adequate water supply is available for pumping. The pumps will be alternated each pump cycle. The station will require an antenna mast approximately 10 ft. in height. The controls will be housed in the pump control panel provided by Munro.

- Qty. 1 – Allen Bradley PLC system with operator interface terminal.
- Qty 1 – Radio modem for communications to the 2 water tanks
- Lot – (1) 900Mhz Range Omni antenna, cable, lightning arrestor
- Lot – Installation of the above.
- Lot – System programming as needed based on parameters outlined by CWD.

100K Tank

Provide a level monitoring system and send the tank level via radio back to the pump station. The tank will have a small enclosure mounted next to it which supply power (by others). The level transmitter is a submersible type which would be installed from the top of the tank through a hole in the hatch. An antenna will be mounted off of the ladder at the top of the tank..

- Qty. 1 – Radio modem with analog input capability for communications to the pump station. This will be housed in a small weatherproof enclosure.
- Qty. 1 - Digital display for tank reading
- Lot – (1) 900Mhz Range Yagi antenna, cable, lightning arrestor
- Lot – Installation of the above
- *Note: This unit is not a UL508 listed assembly although all components are UL. If UL is required, add an additional $250 to the cost.*

Mountain Peak Controls, Inc.
13551 W. 43rd Dr. Unit A
Golden, CO 80403
(303) 271-0376 • Fax (303) 271-0617

32 Road Tank

Provide a radio modem with analog input capability to monitor the tank level via the existing site level system and send the level back to the pump station. An antenna will be mounted off of the roof of the building at a height of approximately 10 ft.

- Qty. 1 – Allen Bradley PLC System to monitor tank level and handle communications between sites.
- Qty 1 – Radio modem for communications to the pump station and the 100K tank. This will be housed in a small enclosure inside the existing building.
- Lot – (1) 900Mhz Range Omni antenna
- Lot – Installation of the above.

Clifton Water WTP

Tie in new pump station to the existing WTP SCADA system.

- Lot – System programming and testing.

Cost : *$16,585.00* (based on 900Mhz radio network)

Thank you for the opportunity to provide this proposal and should you have any questions, please contact me on my cell at 303-885-5967 or email at bmitchem@mountainpeakcontrols.com

Brian Mitchem
Mountain Peak Controls, Inc.

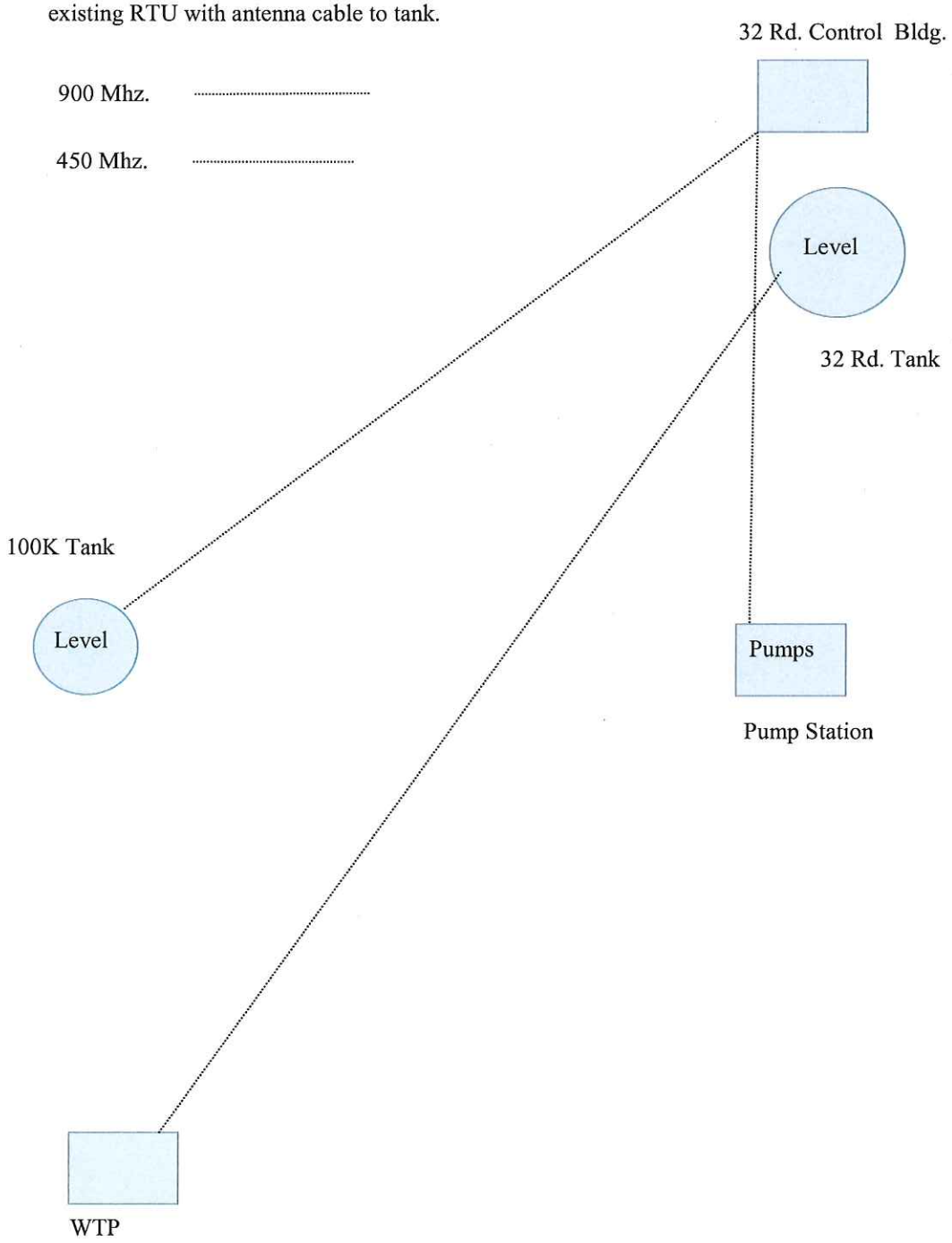
Mountain Peak Controls, Inc.
13551 W. 43rd Dr. Unit A
Golden, CO 80403
(303) 271-0376 • Fax (303) 271-0617

Terms & Conditions

1. Payment terms are 2% Net 10 or full amount Net 30 with progress billings.
2. Billing will be as follows:
   a. 40% of project value at acceptance of proposal
   b. 40% upon delivery of all equipment to jobsite
   c. 20% upon project completion
3. No local, state or federal taxes have been included in this proposal and will be added if required.
4. The services and materials do not include any licenses or bond premium costs.
5. Proposal good for 30 days and subject to cost adjustment after that time.
6. Pricing is FOB shipping point with freight allowed to the job site.
7. Only materials specifically listed as being furnished by MPC are included.
8. Standard manufacturers warranty will apply to all hardware and equipment.
9. All electrical conduit and wiring outside of MPC enclosures is by others unless specifically included

Mountain Peak Controls, Inc.
13551 W. 43rd Dr. Unit A
Golden, CO 80403
(303) 271-0376 • Fax (303) 271-0617

Lines are from antenna location. 32 Rd. Control building has existing RTU with antenna cable to tank.



APPENDIX F

Grand Valley Power Electrical Service Requirements

GRAND VALLEY POWER
A Touchstone Energy® Cooperative

845 22 Road, P. O. Box 190
Grand Junction, CO 81502-0190
970.242.0040 - FAX 970.242.0612
www.GVP.org

BOOSTER PUMP(S)

July 21, 2015

Bret Guillory
% City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Subject: Electrical service to your property at 111 32 Road.
Work Order 14/1056 PR email: prupp@gvp.org

Dear Mr. Guillory:

Per your request for electrical service at the subject location, we are providing you with the following proposal.

Based on the design by our field representative, this proposal provides for service to your pump along Hwy 141 from a new 15 kva pole mounted transformer as a "point of electric service delivery/connection" for an underground service to your meter pedestal. The cost for this proposed work is $2875.00 and includes a service entrance surge protector, meter for a single phase, 120/240 volt, 200 ampere service and pole riser wire cover. You are responsible to provide the necessary meter pedestal, underground service wire and trench from the new service location to the pole. Leave a 40 foot coil of wire at the pole. We do require payment before construction can begin.

The guidelines for electric service are available on the Grand Valley Power website (www.gvp.org) under the "About GVP" tab, "Service Guidelines". If you need a printed copy of the Guidelines for Electric Service, please contact the Engineering Department at 242-0040, and we will send you one.

Due to the heavy workload, you will be requested to set up an appointment if you want to come into the office to complete the necessary paper work.

Your job will be scheduled at the earliest possible date after receipt of payment.

This proposal shall supersede all prior proposals if any and shall be valid for **60 days** from the date of this letter indicated above, at such time and thereafter, this proposal shall be null and void.

The company reserves the right to change unit costs, construction standards and tariffs. We look forward to serving your electrical needs. **Please call and let us know if you would like to proceed with this project so that we may prepare contracts, easements, etc.**

Sincerely,

GRAND VALLEY RURAL POWER LINES, INC.
Steve Don
Manager of Engineering

GRAND VALLEY POWER

A Touchstone Energy® Cooperative

FIRE PUMP

845 22 Road, P. O. Box 190
Grand Junction, CO 81502-0190
970.242.0040 - FAX 970.242.0612
www.GVP.org

July 22, 2015

Bret Guillory
% City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Subject: Electrical service to your property at 111 32 Road.
Work Order 15/2003 PR email: prupp@gvp.org

Dear Mr. Guillory:

Per your request for electrical service at the subject location, we are providing you with the following proposal.

Based on the design by our field representative, we are providing two proposals for providing electric service to your project near the law enforcement facility.

Option No. 1 provides for a new 75 kva pad mounted transformer as a "point of electric service delivery/connection" for an underground service to your meter pedestal. The cost for this proposed work is $5058.00 and includes a meter for a single phase, 240/480 volt, 200 ampere service. If you wish to increase the transformer size to 100 kva, the cost for this proposed work is $7867.00. You are responsible to provide the necessary meter pedestal, underground service wire and trench from the new service location to the new transformer. Leave a 12 foot coil of wire at the transformer. We do require payment before construction can begin.

Option No. 2 provides for a 250 foot primary underground line extension and new 75 kva pad mounted transformer as a "point of electric service delivery/connection" for an underground service to your meter pedestal. The cost for this proposed work is $6890.00 and includes a meter for a single phase, 240/480 volt, 200 ampere service. If you wish to increase the transformer size to 100 kva, the cost for this proposed work is $9898.00. You are responsible to provide the trench for the primary line extension to Grand Valley Power's specifications including two 3" conduits under the road. You are also responsible for the necessary meter pedestal, underground service wire and trench from the new service location to the new transformer. Leave a 12 foot coil of wire at the transformer. We do require payment before construction can begin.

This proposal is contingent upon obtaining a tap share waiver from Mesa County. The 50 hp motor near the law enforcement facility will require variable speed control so that the motor can be brought up to speed slowly. Variable speed controlled motors must be equipped with filters to mitigate harmonics and comply with IEEE Std. 519. Harmonics generated by non-linear loads shall be limited to the guidelines included in IEEE Std 519, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems.

The guidelines for electric service are available on the Grand Valley Power website (www.gvp.org) under the "About GVP" tab, "Service Guidelines". If you need a printed

copy of the Guidelines for Electric Service, please contact the Engineering Department at 242-0040, and we will send you one.

Due to the heavy workload, you will be requested to set up an appointment if you want to come into the office to complete the necessary paper work.

Your job will be scheduled at the earliest possible date after receipt of payment.

This proposal shall supersede all prior proposals if any and shall be valid for **60 days** from the date of this letter indicated above, at such time and thereafter, this proposal shall be null and void.

The company reserves the right to change unit costs, construction standards and tariffs. We look forward to serving your electrical needs. **Please call and let us know if you would like to proceed with this project so that we may prepare contracts, easements, etc.**

Sincerely,

GRAND VALLEY RURAL POWER LINES, INC.
Steve Don
Manager of Engineering

APPENDIX G

Project Submittals

Project Submittals

PROJECT SUBMITTAL FORM

PROJECT: CLETC Water Line Project

CONTRACTOR:

Project Engineer: Bret Guillory

Description	Date Received	Resubmittal Requested	Resubmittal Received	Date Accepted
STREET CONSTRUCTION				
Base course gradation, Proctor curve (Class 6)				
ASTM C33 (sand)				
Concrete mix design, CDOT Class B (4,500 psi mix)				
WATERLINE CONSTRUCTION				
Pipe – AWWA C-900 PVC, DR-18				
Pipe – AWWA Fusible C-900 PVC, DR-18 and Fusion Process (Option B)				
Pipe – HDPE Casing Pipe				
Horizontal Directional Drilling (HDD) Equipment and Methodology (Option B)				
Fittings – Elbows, Tees, Tapping Saddles, Corp. Stops, Crosses, Couplings, Curb Stops				
Valves - 4”, 6”, 8” Gate Valves				
Tracing Wire & Splices				
Bedding Gradation (Type A)				

Description	Date Received	Resubmittal Requested	Resubmittal Received	Date Accepted
Imported Trench Backfill (Class 3) Gradation, Procter Curve				
Valve Box				
Fire Hydrant Assembly				
Mechanical Joint Restraints				

EROSION CONTROL / STORMWATER MANAGEMENT

Inlet Basin Protection				
Concrete Washout				

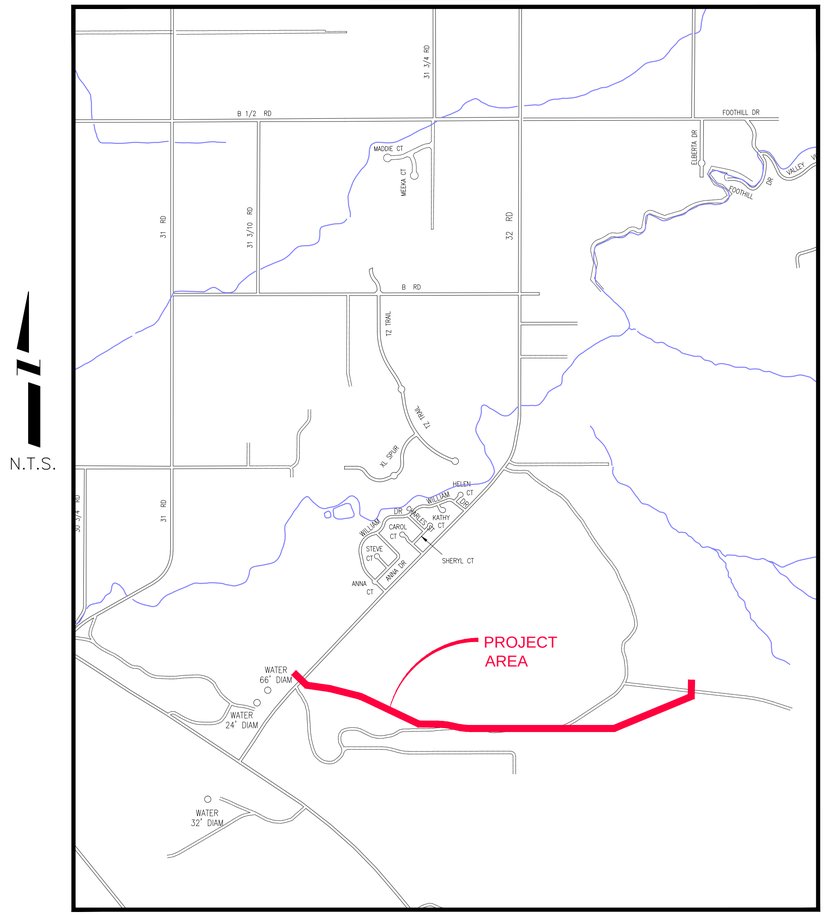
PERMITS, PLANS, OTHER

Traffic Control Plan(s)				
Contractor's Construction Schedule				
CDOT Traffic Control Plan				
Hourly Labor and Equipment Rate Tables				

PROJECT NO. XXXX-FXXXX

WHITEWATER HILL TRAINING FACILITY JULY, 2015

VICINITY MAP



UTILITIES AND AGENCIES								
AGENCY	NAME	POSITION	ROLE	MAILING ADDRESS	STREET ADDRESS	CITY, STATE	VOICE–WK	FAX
GRAND JUNCTION, CITY OF	BRET GUILLORY	UTILITY ENGINEER	PROJECT ENGINEER	250 N. 5th STREET	250 N. 5th STREET	GRAND JCT., CO 81501	(970) 244–1590	(970) 256–4022
GRAND JUNCTION TRAP CLUB	LARRY BEUPREZ	BOARD MEMBER						
GRAND JUNCTION MODELIERS	LEE SIMCOX	————	————	————	————	————	(970) 216–8073	
	HEATHER SIMCOX	————	————	————	————	————	(970) 216–0818	
GRAND JUNCTION DRAG STRIP	TAMMY BAILEY	MANAGER	————	————	————	GRAND JCT., CO	(970) 640–3987	n/a
GRAND VALLEY POWER	PERRY RUPP	FIELD ENGINEER	ELECTRIC	PO BOX 190	845 22 ROAD	GRAND JCT., CO 81502	(970) 242–0400	(970) 242–0612
CLIFTON SANITATION DISTRICT	BRIAN WOODS	MANAGER	SANITARY SEWER	3217 D ROAD	3217 D ROAD	CLIFTON, CO 81520	(970) 434–7422	
U.S. WEST/QWEST	CHRIS JOHNSON	ENGINEER	TELEPHONE	2524 BLICHMANN AVE	2524 BLICHMANN AVE	GRAND JCT., CO 81504	(970) 244–4311	(970) 240–4349
CLIFTON WATER	DAVE REINERTSON	SYSTEM SUPERVISOR	WATER	510 34 ROAD	510 34 ROAD	CLIFTON, CO 81520	(970) 434–7328	
MESA COUNTY	GREG LINZA	PARKS & LANDSCAPE MANAGER	MANAGER	200 S SPRUCE ST	200 S SPRUCE ST	GRAND JCT., CO 81502	(970) 244–3232	(970) 244–3240

COORDINATE SYSTEM:
The coordinate system used for this Project is the Mesa County LCS (Local Coordinate System) zone "GVALCS" being a Transverse Mercator Coordinate Projection where as the Point of Origin (N50,000/E100,000) and Central Meridian being the SIMS point SN01 and GLO6 (Initial Point – Ute Meridian). The Geodetic Coordinates of said SIMS point SN01 being Lat. 39°06'22.72746 N and Long. -108°32'01.43552" W. Basis of Bearings is True Geodetic North at the Central Meridian.

CITY OF Grand Junction COLORADO

Public Works & Utilities
Engineering Division

NOTE: NOTIFY AFFECTED UTILITY VENDOR 48 HOURS PRIOR TO EXCAVATIONS THAT WILL EXPOSE UTILITY LINES. THE COVER SHEET WILL HAVE A LISTING OF UTILITY VENDORS AND TELEPHONE NUMBERS.

	DESCRIPTION	DATE
REVISION 1		
REVISION 2		
REVISION 3		
REVISION 4		

DRAWING STATUS:
- ○ PROGRESS
- ● FINAL CONSTRUCTION DRAWINGS
- ○ ASBUILT

DESIGNED BY:
BRET GUILLORY, PROJECT ENGINEER DATE

REVIEWED BY:
BRET GUILLORY, UTILITY ENGINEER DATE

AUTHORIZED FOR CONSTRUCTION
TRENTON C. PRALL, CITY ENGINEER DATE

ACCEPTED AS CONSTRUCTED
BRET GUILLORY, PROJECT ENGINEER DATE

WHITEWATER HILL TRAINING FACILITY, JULY, 2015, Plan Set No. —

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PROJECT NO. xxxx-Fxxxxx

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ABC	AGGREGATE BASE COURSE
AC	ASBESTOS CEMENT
AP	ANGLE POINT
ASB	ANCHORED STRAW BALES
ASP	ALUMINIZED STEEL PIPE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BACK OF CURB
BF	BUTTERFLY VALVE
BOW	BACK OF WALK
BCR	BEGIN CURB RETURN
BOT	BOTTOM
BSWMP	BETTER STORM WATER MANAGEMENT PRACTICES
CH	CHORD
CAP	CORRUGATED ALUMINUM PIPE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CI	CAST IRON
C,G,& SW	CURB, GUTTER & SIDEWALK
℄	CENTER LINE
CL	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COMB	COMBINATION (AS IN STORM SEWER AND SANITARY SEWER)
CONC	CONCRETE
CSM	CITY SURVEY MONUMENT
CSP	CORRUGATED STEEL PIPE
CU	COPPER
DI	DUCTILE IRON
DWY	DRIVEWAY
E	ELECTRIC
ECR	END CURB RETURN
EG	EDGE OF GUTTER
EL	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
FB	FULL BODY
FC	FACE OF CURB
FG	FINISHED GRADE
℄	FLOW LINE
FL	FLANGE
FM	FORCE MAIN
FO	FIBER OPTICS
FS	FAR SIDE
FTG	FOOTING
G	GAS
GB	GRADE BREAK
GM	GAS METER
GV	GATE VALVE
HBP	HOT BITUMINOUS PAVEMENT
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
IRR	IRRIGATION
L	LENGTH OF ARC
LC	LONG CHORD
LF	LINEAR FEET
LL	LONG ARC
LS	SHORT ARC
LT	LEFT
MB	MAILBOX
MCSM	MESA COUNTY SURVEY MONUMENT
MH	MANHOLE
MJ	MECHANICAL JOINT
MW	MILL WRAP
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOP	NO ONE PERSON
NRCP	NON-REINFORCED CONCRETE PIPE
NS	NEAR SIDE
NTS	NOT TO SCALE
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RG	RESTRAINED GLANDS
RL	LONG RADIUS
ROW	RIGHT OF WAY
RP	RADIUS POINT
RR	RAIL ROAD
RS	SHORT RADIUS
RT	RIGHT
S	SLOPE
SAN	SANITARY
SC	SHORT CHORD
SCD	STANDARD CONTRACT DOCUMENTS
SCH	SCHEDULE
SF	SILT FENCE
SL	SECTION LINE
SSRB	STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION
SSUU	STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UNDERGROUND UTILITIES
STA	STATION
STL	STEEL
STM	STORM
T	TELEPHONE
TAN	LENGTH OF TANGENT
TC	TOP OF CURB
TH	TEST HOLE
TV	TELEVISION
(TYP)	TYPICAL
UU	UNDERGROUND UTILITIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VPC	VERTICAL POINT OF CURVATURE
VPCC	VERTICAL POINT OF COMPOUND CURVATURE
VPRC	VERTICAL POINT OF REVERSE CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W	WATER
△	DELTA ANGLE

LEGEND

BSWMP DRAINAGE BASIN BOUNDARY

BSWMP ANCHORED STRAW BALES — ASB ASB ASB ASB ASB ASB ASB

BSWMP SILT FENCE — SF SF SF SF SF SF SF

BUILDING

CONCRETE CURB AND GUTTER — 2' CURB AND GUTTER

CONCRETE CURB,GUTTER, & SIDEWALK — 7' C, G, & SW

CONCRETE DITCH — CONCRETE

CONCRETE SIDEWALK — 4' SW

CULVERT — 18" RCP

EARTH DITCH — EARTH EARTH EARTH

EDGE OF GRAVEL

EDGE OF PAVEMENT

FENCE (BARBED WIRE)

FENCE (CHAIN LINK)

FENCE (IRON)

FENCE (PLASTIC)

FENCE (TEMPORARY CONSTRUCTION)

FENCE (WOOD)

FENCE (WOVEN WIRE)

GUARD RAIL

HATCHING: INDICATES ASPHALT REMOVAL

HATCHING: INDICATES CONCRETE REMOVAL

HATCHING: INDICATES STAGING AREA — ~STAGING AREA~

LINE (CENTER OF IMPROVEMENTS) — CENTERLINE

LINE (CITY LIMITS) — CITY LIMITS

LINE (CONTROL) — CONTROL LINE

LINE (EASEMENT)

LINE (MONUMENT/SECTION) — MONUMENT/SECTION LINE

LINE (PROPERTY)

LINE (RIGHT OF WAY)

MATCH LINE — MATCH LINE SEE SHEET NO ?

PIPE (IRRIGATION) — 4" IRR

PIPE (SIPHON) — 4" SIPHON

PROPOSED CONCRETE CURB AND GUTTER

PROPOSED CONCRETE CURB,GUTTER,& SIDEWALK

PROPOSED CONCRETE SIDEWALK

PROPOSED "WET" UTILITIES (CONSTRUCTION NOTE WILL INDICATE TYPE, SIZE, AND MATERIAL OF NEW MAIN) — 8" PVC SANITARY SEWER

ALL PROPOSED FEATURES NOT SHOWN IN LEGEND WILL BE SHOWN THE SAME AS THEIR EXISTING COUNTERPART, BUT INDICATED BY BOLDER LINETYPE

RAIL ROAD

RETAINING WALL — 1' RETAINING WALL

STRIPING (CONTINUOUS WHITE) — WHITE

STRIPING (DASHED WHITE) — WHITE

STRIPING (CONTINUOUS YELLOW) — YELLOW

STRIPING (DASHED YELLOW) — YELLOW

TOP OF SLOPE

CONTOUR LINES (SHOWN BETWEEN TOP & TOE) — 4580 — 4570

TOE OF SLOPE

TRAFFIC DETECTOR LOOP

UTILITY LINE (ABANDON) (THIS CASE A WATER LINE) — W (ABANDONED) 8" W

UTILITY LINE (CABLE TV) — TV TV

UTILITY LINE (ELECTRIC) — E E

UTILITY LINE (FIBER OPTIC) — FO QWEST FO

UTILITY LINE (GAS) — G 1 1/4" MW G

UTILITY LINE (HIGH VOLTAGE OVERHEAD POWER) — HVOHP

UTILITY LINE (OVERHEAD POWER) — OHP

UTILITY LINE (OVERHEAD TELEPHONE) — OHT

UTILITY LINE (SANITARY SEWER) — 8" SAN

UTILITY LINE (SANITARY SEWER FORCE MAIN) — 8" FM

UTILITY LINE (SANITARY SEWER SERVICE) — SS

UTILITY LINE (STORM SEWER) — 8" STM

UTILITY LINE (STORM SEWER, PERFORATED) — 6" PERF

UTILITY LINE (STORM/SANITARY SEWER SEWER COMBINATION) — 18" COMB

UTILITY LINE (TELEPHONE) — T T

UTILITY LINE (WATER) — W 8" W

SYMBOLS

BENCH MARK — A

CATCH BASIN

CLEAN OUT — SSCO

CURB STOP

FIRE HYDRANT

GUY WIRE ANCHOR

HEADGATE

IRRIGATION PUMP — P

MAILBOX — MB

MANHOLE (ELECTRIC) — E

MANHOLE (GAS) — G

MANHOLE (SANITARY/STORM)

MANHOLE (TELEPHONE) — T

MANHOLE (TV) — tv

MANHOLE (WATER) — W

METER (GAS) — GM

METER (WATER)

PEDESTAL (TELEPHONE) — △

PEDESTAL (TV) — △TV

PROPERTY PIN

PULL BOX — ⊠

REDUCER FITTING

SIGN OR POST (SIGN TYPE NOTED) — STOP

SPRINKLER HEAD

STREET LIGHT

SURVEY MONUMENT (CITY) — CSM

SURVEY MONUMENT (TYPE NOTED) — MCSM

TEST HOLE

TRAFFIC PAINT MARKING

TRAFFIC SIGNAL POLE AND MAST ARM

UTILITY POLE

VALVE (GAS) — GV

VALVE (IRRIGATION) — IRR

VALVE (WATER) — WV

VEGETATION (HEDGE OR BUSH)

VEGETATION (TREE STUMP)

VEGETATION (TREE) (CALIPER SIZE NOTED) — 6"

WATER HYDRANT — WH

WEIR

YARD LIGHT

NORTH ARROW:

BAR SCALE:

GRAPHIC SCALE

10 0 20 60

(IN FEET)
1 inch = 20 ft.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY	JCS	DATE	4-02
DESIGNED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	

SCALE

PLAN		PROFILE	
HORIZ.	1"=20'	HORIZ.	
		VERT.	

CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

CITY OF GRAND JUNCTION STANDARD ABBREVIATIONS, LEGEND, AND SYMBOLS SHEET

2

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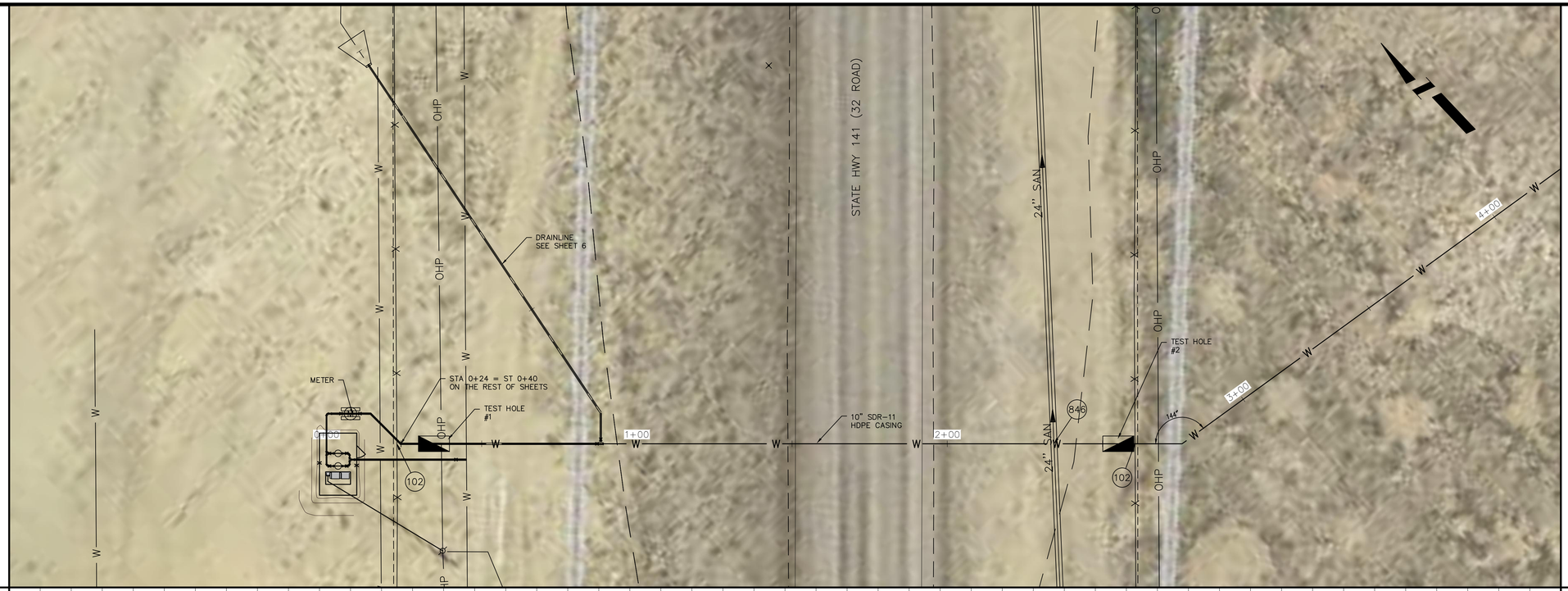
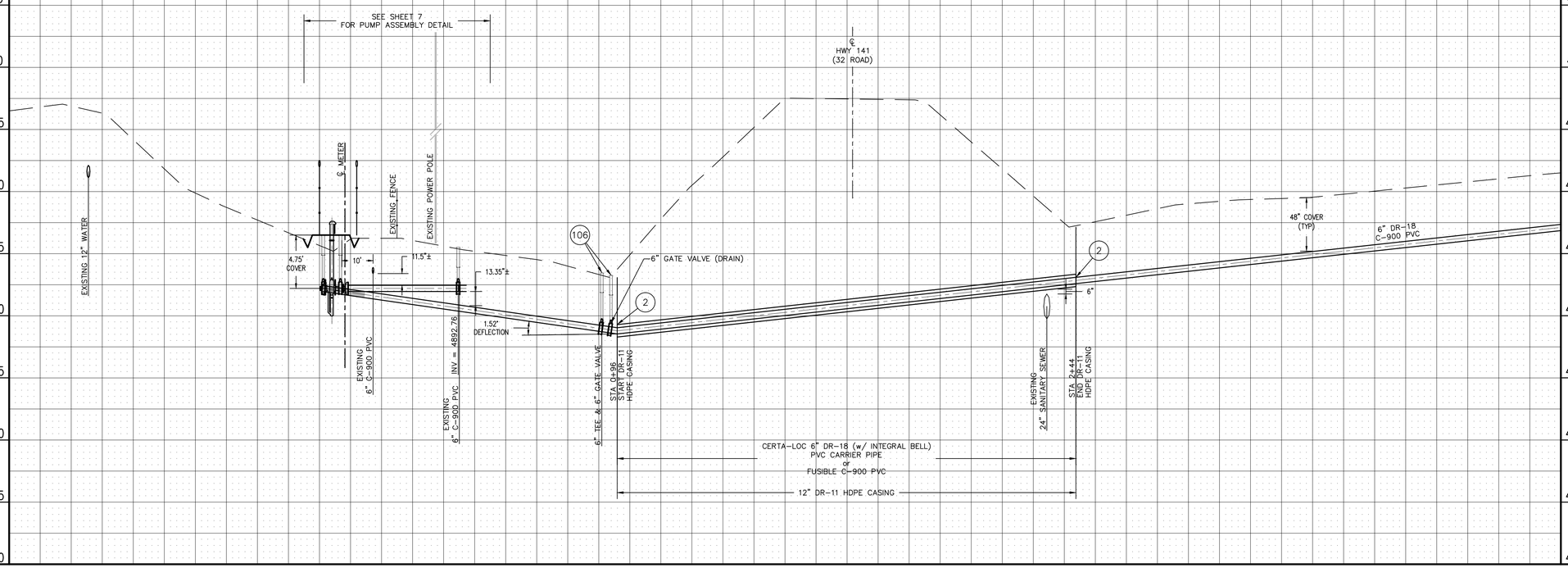
PROJECT NO. XXXX-FXXXX

CONSTRUCTION NOTES

1. GRAND VALLEY POWER TRANSFORMER PAD
2. CASCADE MODEL CCES END SEAL
102. 210 – REMOVE AND REPLACE FENCE IN EXISTING CONDITION – COST INCIDENTAL TO WATER LINE CONSTRUCTION.
106. 210 – SET TOP OF VALVE BOX 6" ABOVE ADJACENT GRADE
846. EXISTING CLIFTON SANITATION DISTRICT SEWER LINE TO BE POT HOLED DURING DIRECTIONAL BORE INSTALLATION OF CASING PIPE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING PIPE.





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REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES:
PLAN HORIZONTAL 0 5 10 20
PROFILE HORIZONTAL 0 5 10 20, VERTICAL 0 2.5 5

CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY
32 ROAD CROSSING FOR DIRECTIONAL BORE
STA 0+00 TO STA 4+00

3

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CONSTRUCTION NOTES

(102) 210 – REMOVE AND REPLACE EXISTING FENCING AS NEEDED TO FACILITATE CONSTRUCTION.

(402) 102.7/108.2 – 6" WATER MAIN PIPE (SDR–18 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(672) 304 – REPLACE GRAVEL ROAD SURFACE WITH 12" C1–6 BASE COMPACTED TO 95%.

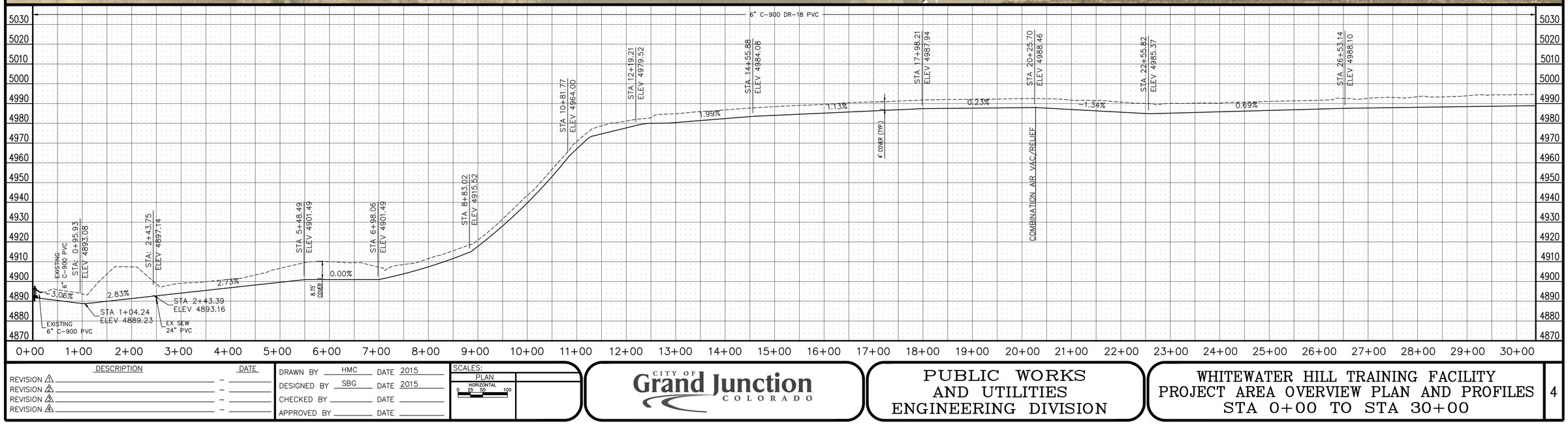
(817) PROTECT SURVEY MONUMENT IN PLACE

(827) PROTECT EXISTING WATER SERVICE IN PLACE.

(829) PROTECT EXISTING TELEPHONE/COMMUNICATION SERVICE IN PLACE.

(846) EXISTING CLIFTON SANITATION DISTRICT SEWER LINE TO BE POT HOLED DURING DIRECTIONAL BORE INSTALLATION OF CASING PIPE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING PIPE.

(851) MAINTAIN ACCESS TO GRAVEL ROAD AT ALL TIMES. PROTECT GRAVEL ROAD SURFACE FROM SPOIL MATERIAL OR STAGED MATERIALS.



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REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES:
PLAN
HORIZONTAL 0 25 50 100

CITY OF Grand Junction COLORADO

PUBLIC WORKS
AND UTILITIES
ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY
PROJECT AREA OVERVIEW PLAN AND PROFILES
STA 0+00 TO STA 30+00

4

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CONSTRUCTION NOTES

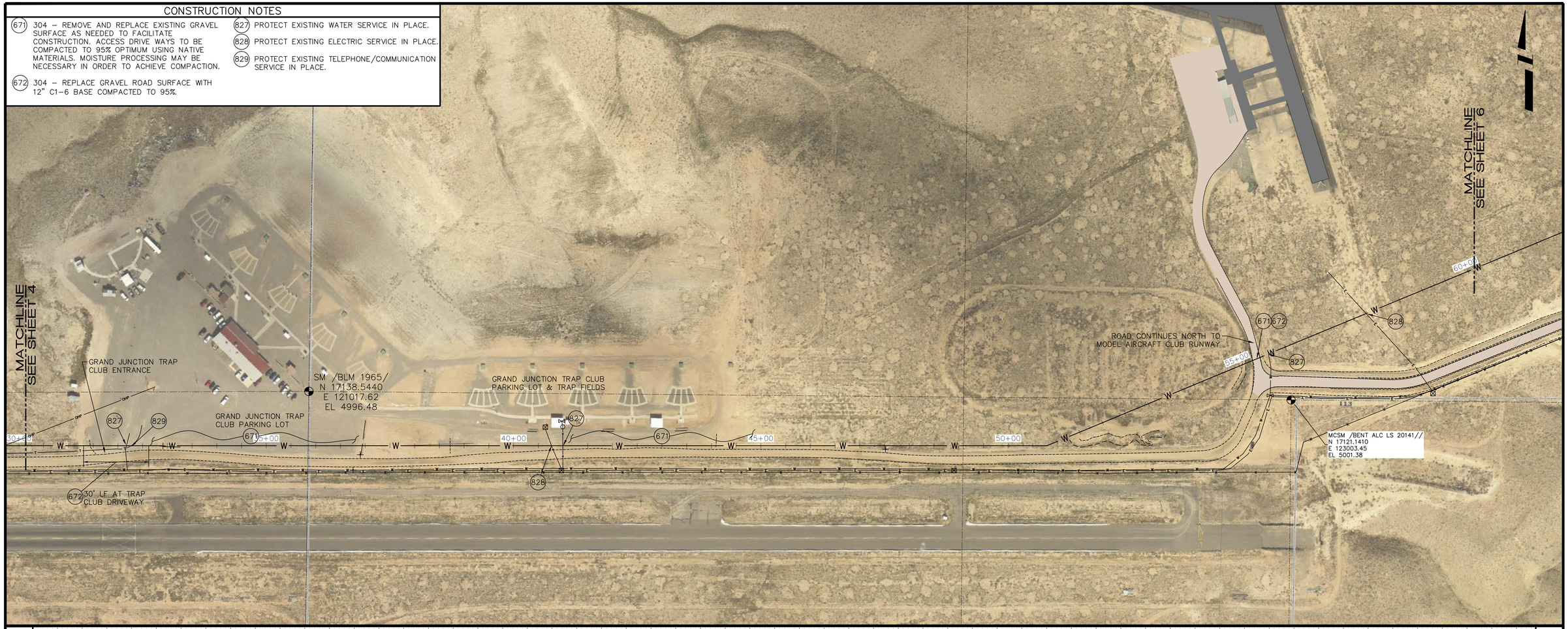
671 304 – REMOVE AND REPLACE EXISTING GRAVEL SURFACE AS NEEDED TO FACILITATE CONSTRUCTION. ACCESS DRIVE WAYS TO BE COMPACTED TO 95% OPTIMUM USING NATIVE MATERIALS. MOISTURE PROCESSING MAY BE NECESSARY IN ORDER TO ACHIEVE COMPACTION.

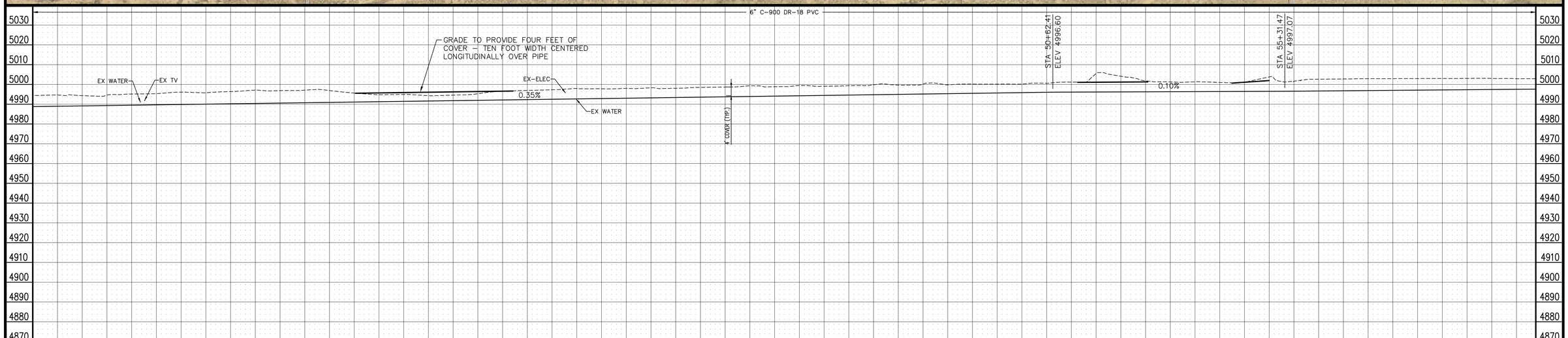
672 304 – REPLACE GRAVEL ROAD SURFACE WITH 12" C1-6 BASE COMPACTED TO 95%.

827 PROTECT EXISTING WATER SERVICE IN PLACE.

828 PROTECT EXISTING ELECTRIC SERVICE IN PLACE.

829 PROTECT EXISTING TELEPHONE/COMMUNICATION SERVICE IN PLACE.





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REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES:
PLAN
HORIZONTAL 0 25 50 100

CITY OF Grand Junction COLORADO

PUBLIC WORKS
AND UTILITIES
ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY
PROJECT AREA OVERVIEW PLAN AND PROFILES
STA 30+00 TO STA 60+00

5

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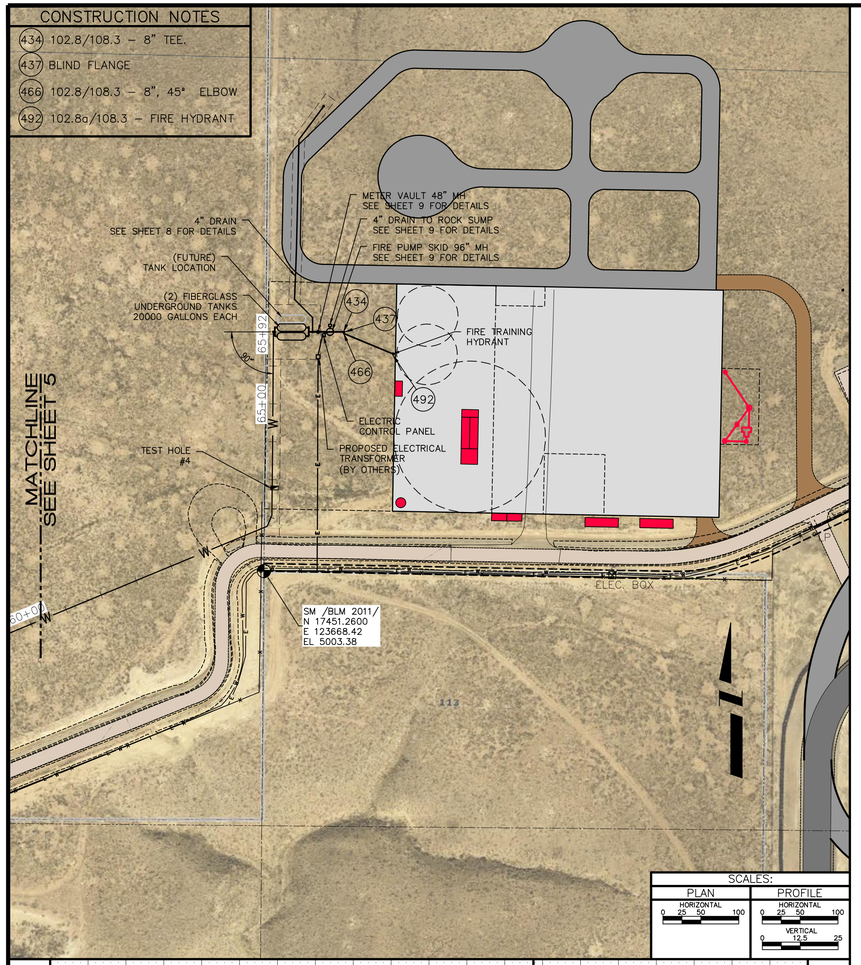
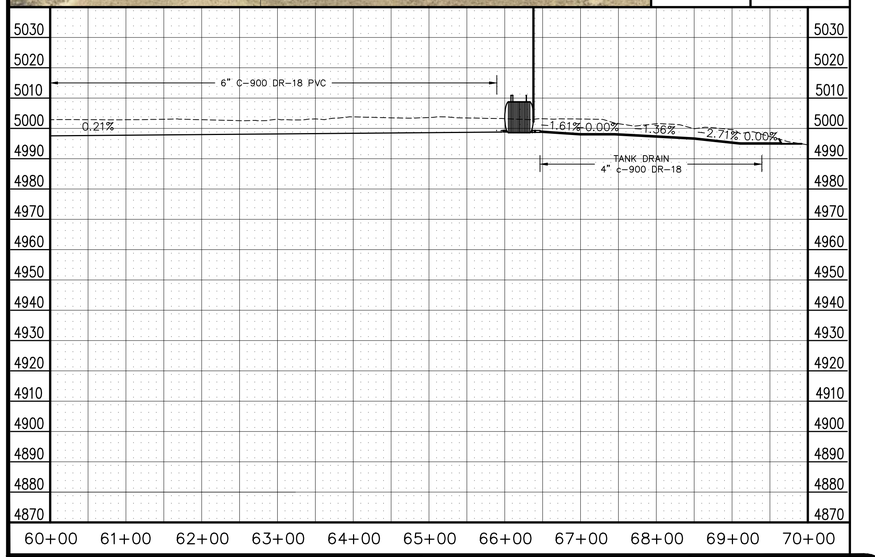
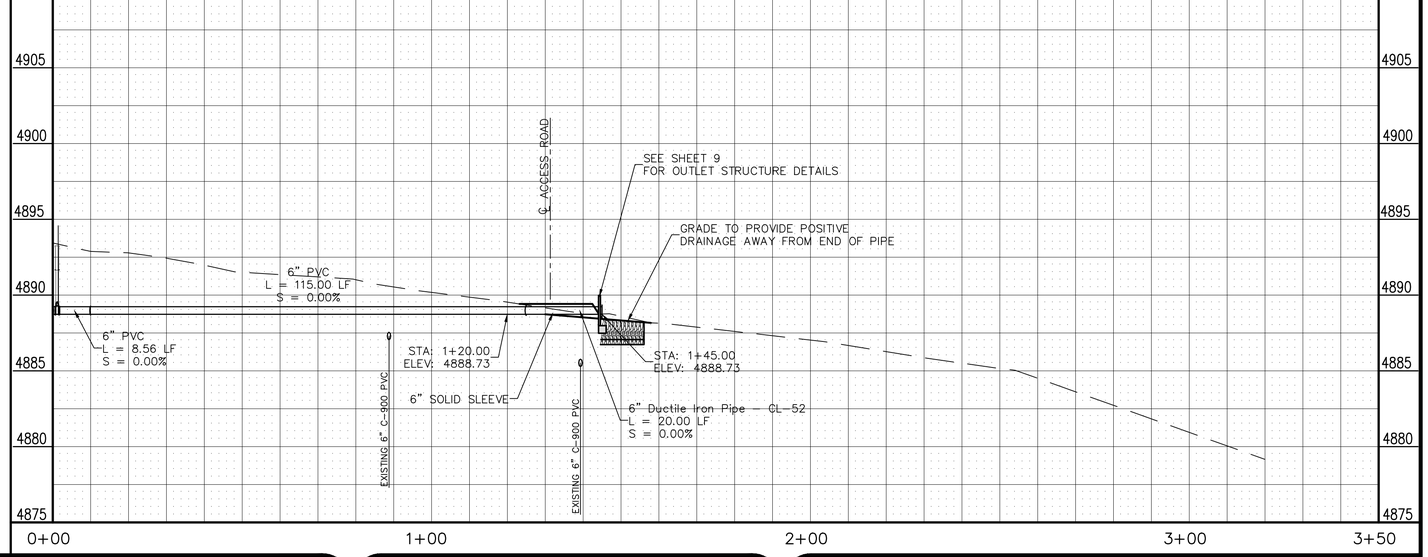
CONSTRUCTION NOTES

(434) 102.8/108.3 – 8" TEE.
(437) BLIND FLANGE
(466) 102.8/108.3 – 8", 45° ELBOW
(492) 102.8a/108.3 – FIRE HYDRANT







DESCRIPTION	DATE
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REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES:

CITY OF Grand Junction COLORADO

PUBLIC WORKS
AND UTILITIES
ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY
PROJECT AREA OVERVIEW PLAN AND PROFILES
STA 60+00 TO STA 70+00

6

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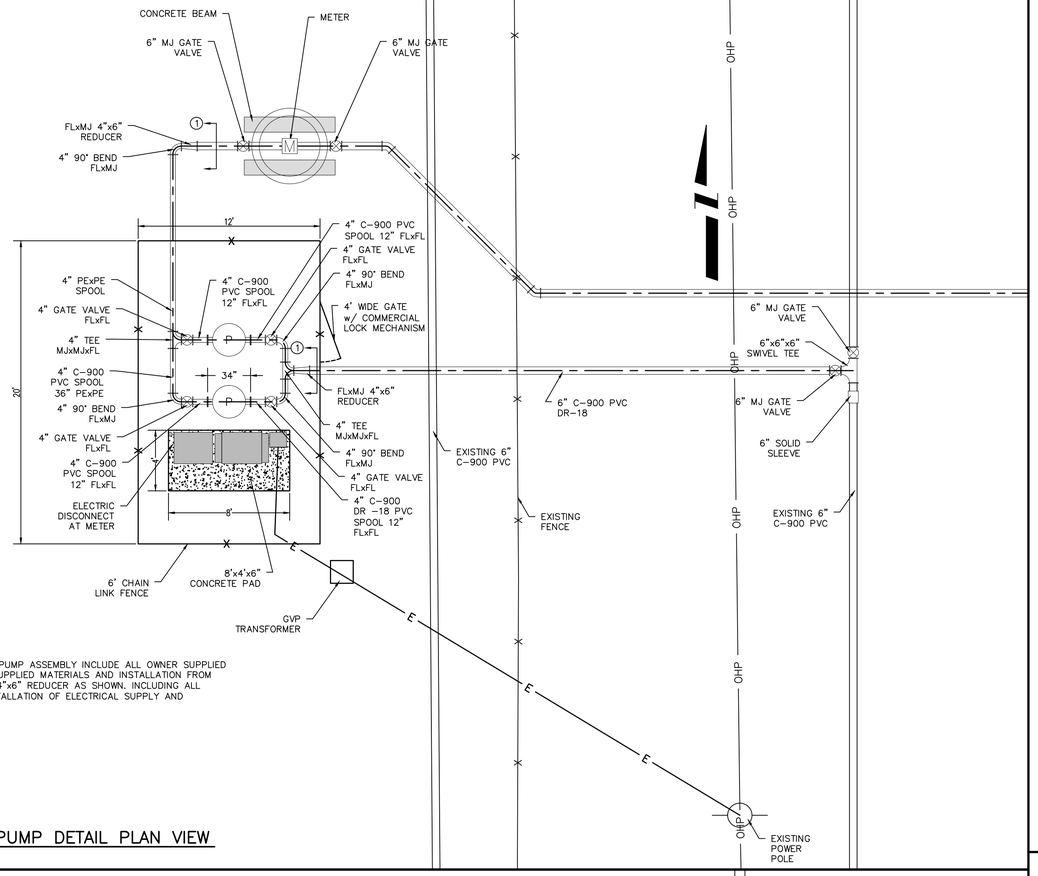
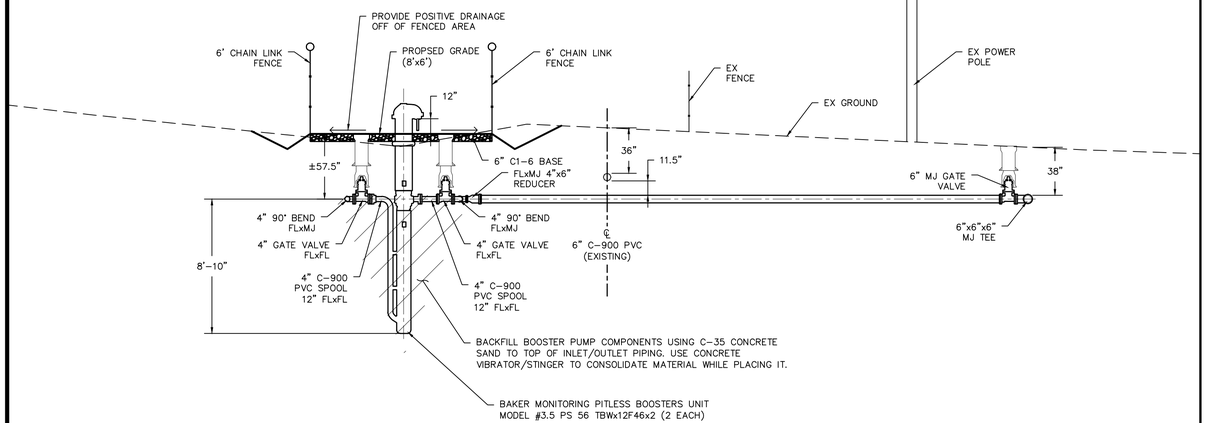
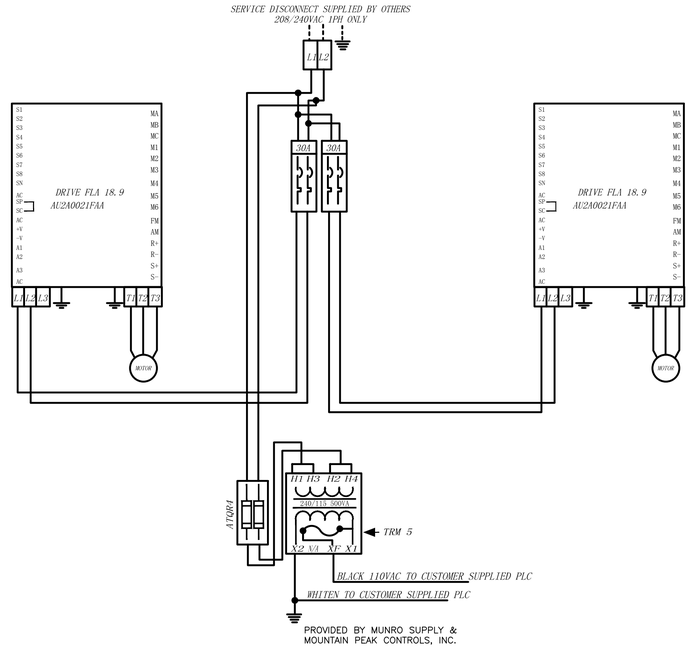


① LIMITS OF BOOSTER PUMP ASSEMBLY INCLUDE ALL OWNER SUPPLIED AND CONTRACTOR SUPPLIED MATERIALS AND INSTALLATION FROM 4"x6" REDUCER TO 4"x6" REDUCER AS SHOWN, INCLUDING ALL MATERIALS AND INSTALLATION OF ELECTRICAL SUPPLY AND COMPONENTS.

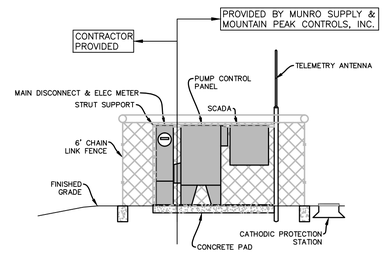
TANK BOOSTER PUMP DETAIL PLAN VIEW
1" = 5'



TANK BOOSTER PUMP DETAIL PROFILE VIEW LOOKING NORTH
1" = 5'



BOOSTER PUMP STATION – STA 0+00
ONE LINE DIAGRAM
PROVIDED BY MUNRO SUPPLY & MOUNTAIN PEAK CONTROLS, INC.



TYPICAL ELECTRICAL CONTROL PANEL
SCALE: NTS

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES: PLAN HORIZONTAL 0 2.5 5

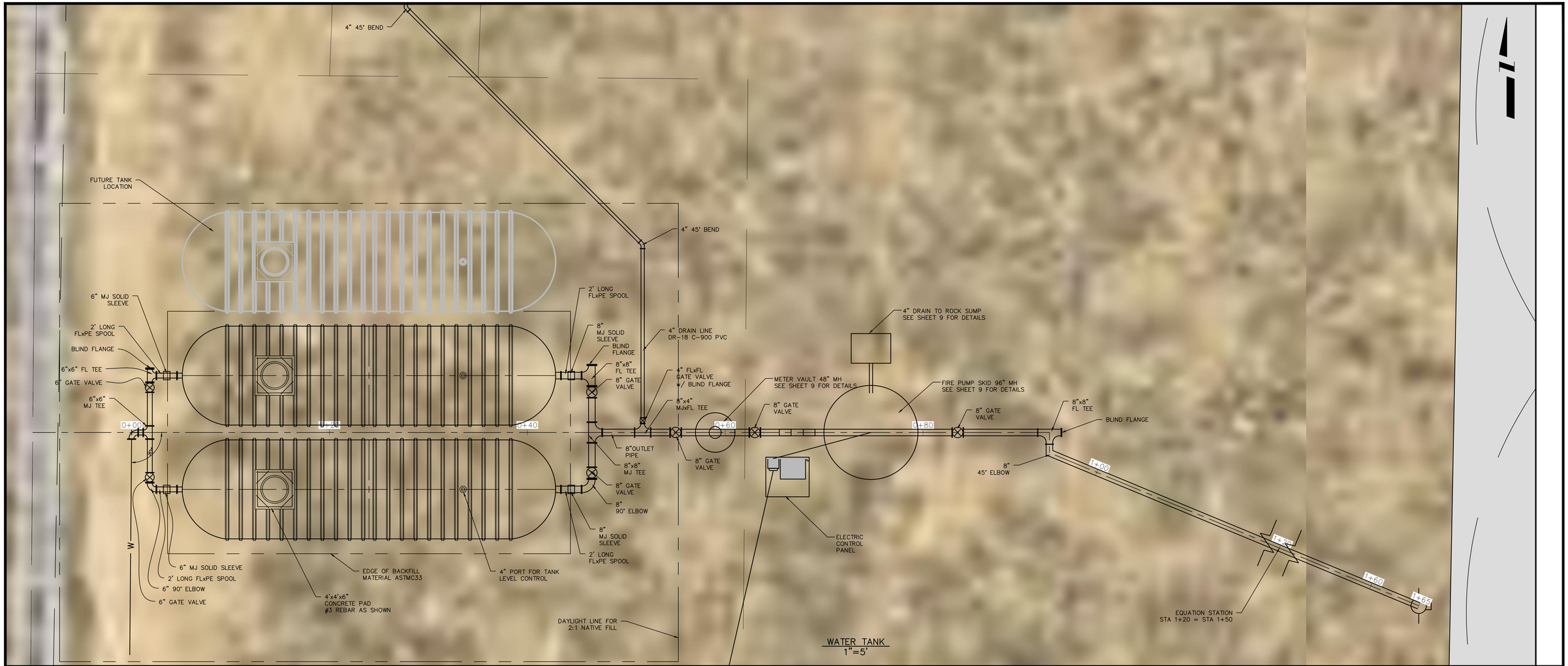
CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

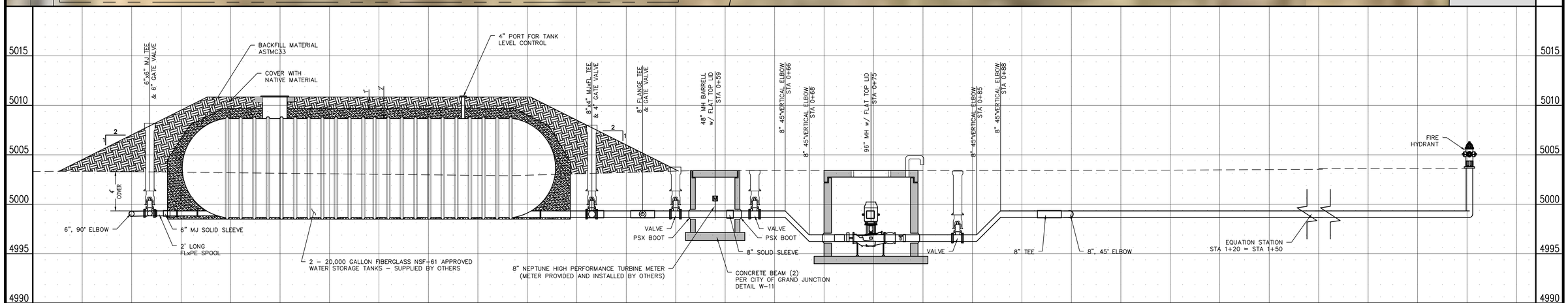
WHITEWATER HILL TRAINING FACILITY
PUMP DETAILS

7

N:\Vendors\FIRE TRAINING CENTER\Dwgs\WhiteWater Hill.dwg, 7 Pump Station Details, 7/29/2015 4:06:54 PM



WATER TANK
1"=5'



DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES:
PLAN HORIZONTAL 0 2.5 5
PROFILE HORIZONTAL 0 2.5 5
PROFILE VERTICAL 0 2.5 5

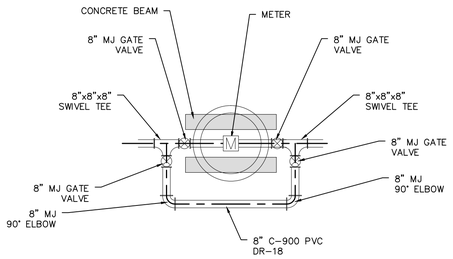
CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY TANK PLAN & PROFILE & FOUNDATION DETAILS

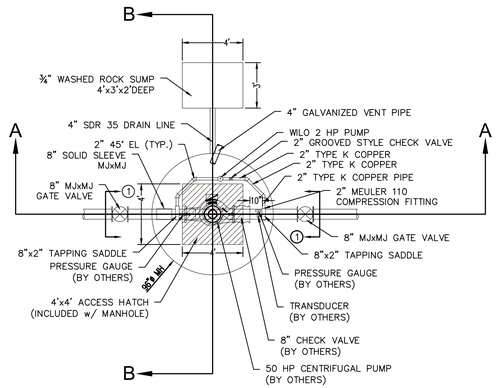
8

N:\Vandorn\FIRE TRAINING CENTER\Dwgs\WhiteWater Hill.dwg, 8 Tank Plan Profile & Details, 7/23/2015 4:09:12 PM

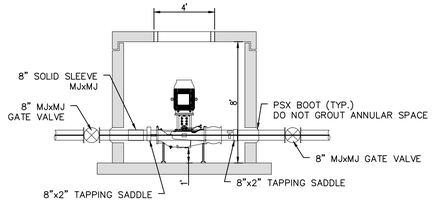


TYPICAL METER ASSEMBLY w/ BY PASS
1"=5'

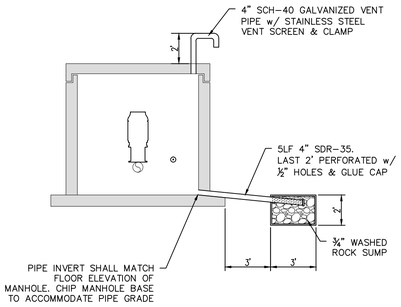
① LIMITS OF FIRE PUMP ASSEMBLY INCLUDE ALL OWNER SUPPLIED, AND CONTRACTOR SUPPLIED, MATERIALS AND INSTALLATION FROM GATE VALVE TO GATE VALVE AS SHOWN BELOW AND IN SECTIONS AA AND BB. INCLUDING MATERIALS AND INSTALLATION OF ELECTRICAL SUPLLY AND COMPONENTS.



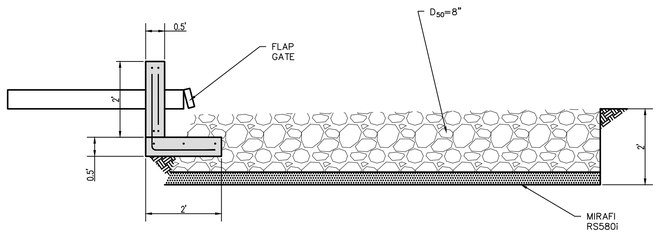
FIRE PUMP PLAN VIEW
STA: 0+49
1"=5'

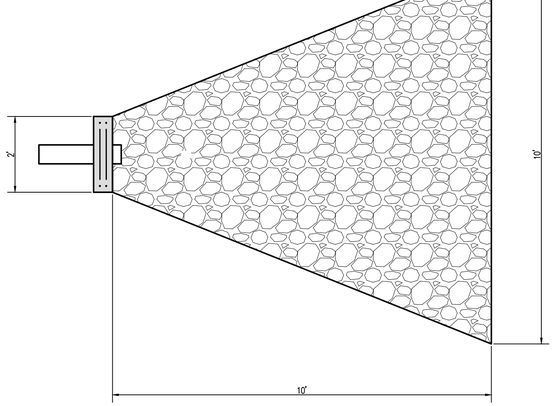


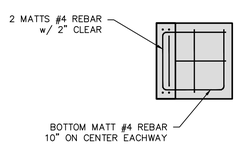
FIRE PUMP SECTION AA
1"=5'

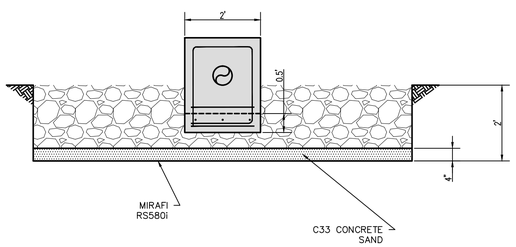


FIRE PUMP SECTION BB
1"=5'

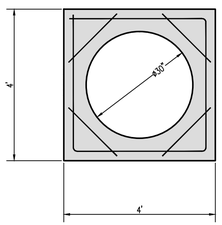








TYPICAL DRAIN OUTLET STRUCTURE
1"=2'



4'x4'x6" CONCRETE PAD FOR TANK ACCESS
1"=2'

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY HMC DATE 2015
DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES: PLAN
HORIZONTAL 0 2.5 5
UNLESS OTHERWISE NOTED

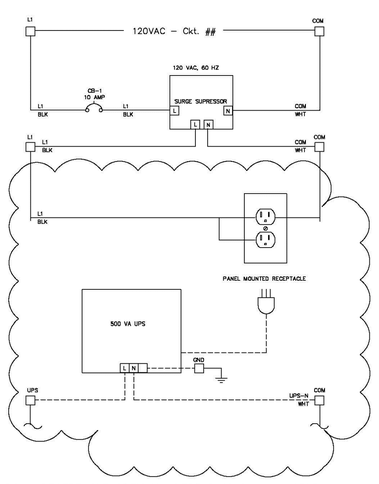
CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

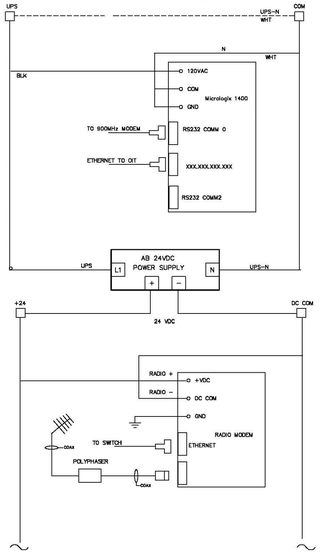
WHITEWATER HILL TRAINING FACILITY TANK FOUNDATION DETAILS

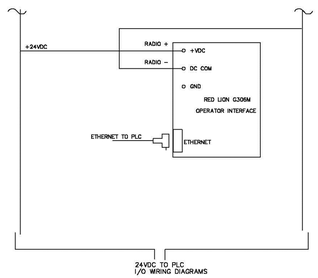
9

N:\Vendors\FIRE TRAINING CENTER\dwgs\WhiteWater Hill.dwg, 9 Tank Foundation Details, 7/29/2015 4:09:41 PM



UPS & RECEPTACLE OPTIONAL DEPENDING ON AVAILABLE PANEL SPACE





24VDC TO PLC I/O WIRING DIAGRAMS

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MOUNTAIN PEAK CONTROLS, INC.
13551 W. 43RD DR. UNIT A
GOLDEN, CO 80403
(303) 271-0376
WWW.MOUNTAINPEAKCONTROLS.COM

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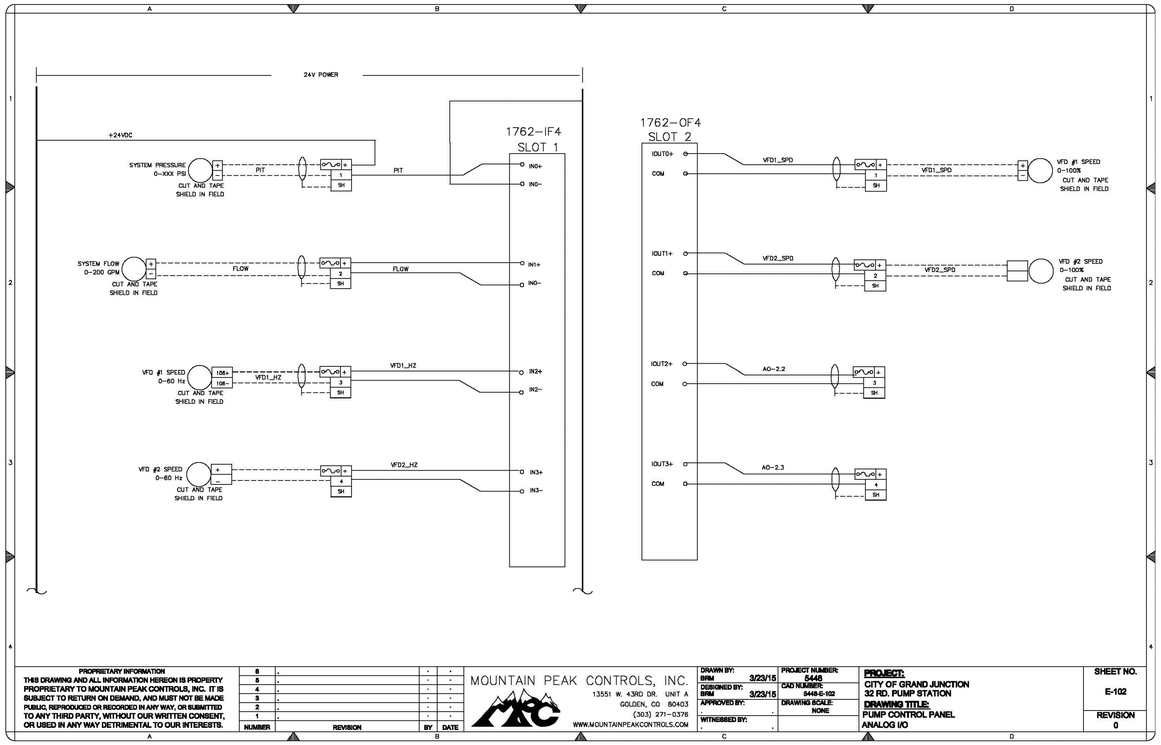
DESIGNED BY: BRM 3/23/15	CAD NUMBER: 5448-E100
APPROVED BY: . .	DRAWING SCALE: NONE
WITNESSED BY: . .	

PROJECT: CITY OF GRAND JUNCTION
32 RD. PUMP STATION
DRAWING TITLE: PUMP CONTROL PANEL
PRIMARY POWER WIRING

SHEET NO. E-100
REVISION 0



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MOUNTAIN PEAK CONTROLS, INC.
13551 W. 43RD DR. UNIT A
GOLDEN, CO 80403
(303) 271-0376
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DESIGNED BY: BRM 3/23/15	CAD NUMBER: 5448-E-102
APPROVED BY: . .	DRAWING SCALE: NONE
WITNESSED BY: . .	

PROJECT: CITY OF GRAND JUNCTION
32 RD. PUMP STATION
DRAWING TITLE: PUMP CONTROL PANEL
ANALOG I/O

SHEET NO. E-102
REVISION 0

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13551 W. 43RD DR. UNIT A
GOLDEN, CO 80403
(303) 271-0376
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DESIGNED BY: BRM 3/23/15	CAD NUMBER: 5448-E-101
APPROVED BY: . .	DRAWING SCALE: NONE
WITNESSED BY: . .	

PROJECT: CITY OF GRAND JUNCTION
32 RD. PUMP STATION
DRAWING TITLE: PUMP CONTROL PANEL
IO BASE DISCRETE I/O WIRING

SHEET NO. E-101
REVISION 0

DESCRIPTION	DATE
REVISION 1	
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REVISION 3	
REVISION 4	

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APPROVED BY DATE

SCALES:

CITY OF Grand Junction COLORADO

PUBLIC WORKS
AND UTILITIES
ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY
TANK LEVEL CONTROL ONE LINE DIAGRAM

10

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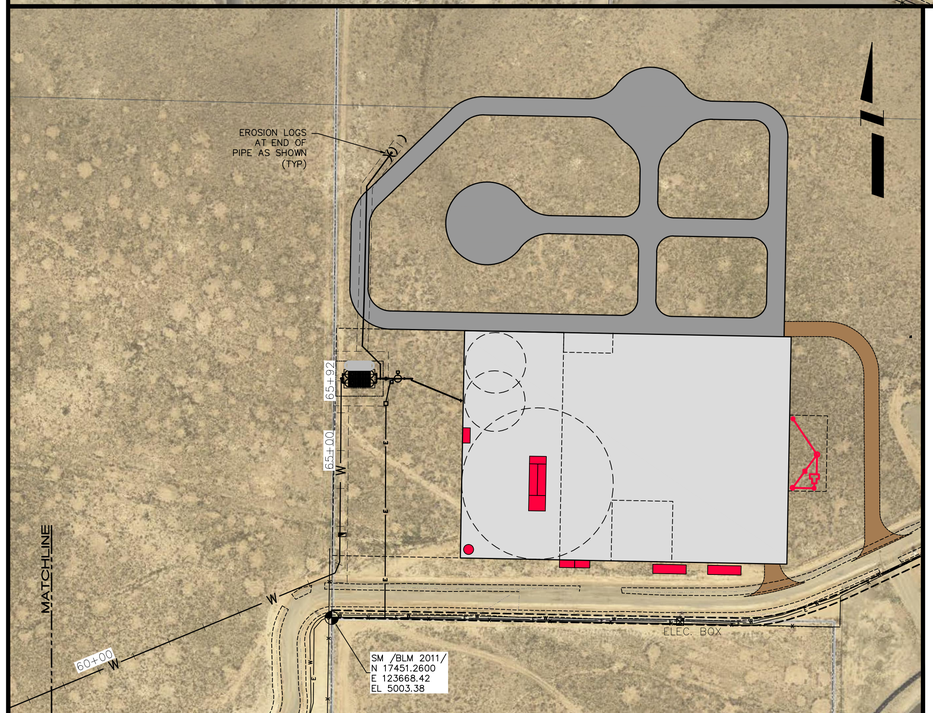
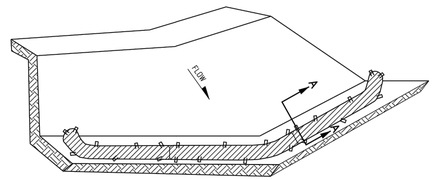
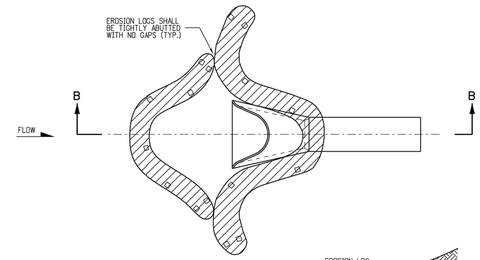
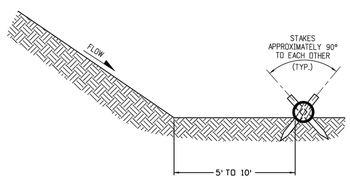




ISOMETRIC VIEW



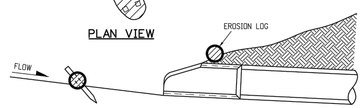
PLAN VIEW



SECTION A-A

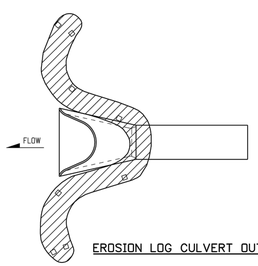
NOTES:
1. EROSION LOGS USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
2. EROSION LOGS SHALL BE PLACED ON THE CONTOUR, WITH ENDS FLARED UP SLOPE.

EROSION LOG TOE OF SLOPE PROTECTION



SECTION B-B

EROSION LOG CULVERT INLET PROTECTION



EROSION LOG CULVERT OUTLET PROTECTION

EROSION LOG APPLICATIONS
NOT TO SCALE

DESCRIPTION	DATE
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REVISION 2	
REVISION 3	
REVISION 4	

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DESIGNED BY SBG DATE 2015
CHECKED BY DATE
APPROVED BY DATE

SCALES:
PLAN
HORIZONTAL 0 25 50 100

CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

WHITEWATER HILL TRAINING FACILITY
STORM WATER MANAGEMENT PLAN

11

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