

Recorder's Office Cover Sheet

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Department: PUBLIC WORKS



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KAREN ELLISON, RECORDER

Type of Document: (please select one)

- Agreement
- Contract
- Grant
- Change Order
- Easement
- Other

specify: _____

CONTRACT FOR SERVICES BY AN INDEPENDENT CONTRACTOR

A CONTRACT BETWEEN

DOUGLAS COUNTY, NEVADA

AND

HDR ENGINEERING, INC.

FILED

NO. 2020-043

3-3-20
DATE

DOUGLAS COUNTY CLERK
MINDEN, NV

BY [Signature] DEPUTY

This Contract for Services by an Independent Contractor (the "Contract") is entered into by and between Douglas County, a political subdivision of the State of Nevada, through the Board of County Commissioners (the "County"), and HDR Engineering, Inc. ("Contractor"). The County and Contractor are at times collectively referred to hereinafter as the "Parties" or individually as the "Party."

WHEREAS, Douglas County, a political subdivision of the State of Nevada, from time to time requires the services of independent contractors; and

WHEREAS, it is deemed that the services of Contractor herein specified are both necessary and desirable and in the best interests of Douglas County; and

WHEREAS, Contractor represents that Contractor is duly qualified, equipped, staffed, ready, willing and able to perform and render the services hereinafter described.

NOW, THEREFORE, in consideration of the mutual promises and covenants herein made, the County and Contractor mutually agree as follows:

1. TERM AND EFFECTIVE DATE OF CONTRACT. The Contract will become effective on the date it is approved and signed by representatives of both Parties. Time is of the essence for performance of the professional services described herein and all tasks must be completed by Sunday, January 01, 2023, subject to delays caused by events beyond Contractor's reasonable control.

2. INDEPENDENT CONTRACTOR STATUS. The Parties agree Contractor will have the status of an independent contractor and that the Contract, by explicit agreement of the Parties, incorporates and applies the provisions of NRS 333.700, as necessarily adapted to the Parties, including the express understanding that Contractor is not an employee of the County and that:

There shall be no:

- (1) Withholding of income taxes by the County;
- (2) Industrial insurance coverage provided by the County;
- (3) Participation in group insurance plans which may be available to employees of the County;

- (4) Participation or contributions by either the Contractor or the County to the public employee's retirement system;
- (5) Accumulation of vacation leave or sick leave;
- (6) Unemployment compensation coverage provided by the County if the requirements of NRS 612.085 for independent contractors are met.

Additionally, the Contractor is not in the classified or unclassified service of the County and has none of the rights or privileges available to officers, employees or other appointees of the County.

3. INDUSTRIAL INSURANCE. Contractor further agrees that, prior to the commencement of any work and as a precondition to any obligation of the County to make any payment under the Contract, Contractor will provide the County with a work certificate and/or a certificate issued by a qualified insurer in accordance with NRS 616B.627. Contractor also agrees that, prior to commencing any work under the Contract, Contractor will complete and provide evidence to the County that Contractor has made the following written request to Contractor's insurer:

HDR Engineering, Inc. has entered into a contract with Douglas County to perform work through Sunday, January 01, 2023 and requests that an authorized insurer provide to Douglas County: (1) A certificate of coverage issued pursuant to NRS 616B.627 and (2) Notice of any lapse in coverage or nonpayment of coverage that the Contractor is required to maintain.

The certificate and notice should be mailed to:

*Douglas County
Public Works Department
Post Office Box 218
Minden, Nevada 89423*

Contractor agrees to maintain all required workers' compensation coverage throughout the entire term of the Contract. If Contractor does not maintain the required coverage throughout the entire term of the Contract, Contractor agrees that the County may, at any time the coverage is not maintained by Contractor, order the Contractor to stop work, suspend the Contract, or terminate the Contract at the sole discretion of the County. County may, at reasonable times throughout the term of the Contract, request proof of coverage, which must be provided by Contractor within 10 business days of the request.

4. SERVICES TO BE PERFORMED. The Parties agree that the Contractor will perform the following:

1. Engineering design, specification, and drawing preparation services and construction contract and bid solicitation documents for replacement of approximately 15,300 linear feet of water line in the Cave Rock water system including pressure reducing station, and water meter pits and water services, adding a filtration skid to the Cave Rock Water Treatment Plan, installation of submersible pumps for the Cave Rock Lake Intake Pump Station, establishing a new NV Energy electrical service for the Cave Rock Lake Intake Pump Station, and replacement of the Lower Cave Rock Booster Pump Station. These

services are more fully described in the attached Exhibit A, Scope of Services, and Exhibit B, Water Line Replacements in Scope of Work which are attached hereto and incorporated herein.

5. PAYMENT FOR SERVICES. Contractor agrees to provide the services set forth in Paragraph 4 and Exhibit A on a time and materials cost, as defined in Exhibit C, not to exceed a total cost of One Million, Three-Hundred Forty-Nine Thousand, Two-Hundred Twenty-Seven Dollars (\$1,349,270) (the "Contract Price"). Unless Contractor has received a written exemption from the County, Contractor shall submit monthly requests for payment for services performed under this Contract. Requests for payment shall be submitted no later than fifteen (15) days after the end of a month and must include a detailed summary of the expenditures reported in a form that supports the approved budget. County shall pay Contractor undisputed amounts within thirty (30) days of receipt of Contractor's invoice. Specifically, Contractor agrees to provide with each request for payment a schedule of actual expenditures for the period, cumulative total expenditures for the entire contract, and a comparison of cumulative total expenditures to the maximum expected fee for the services and tasks set forth in Paragraph 4.

6. TERMINATION OF CONTRACT. Either Party may terminate the Contract if the other Party fails to correct any breach of the terms of the Contract within 30 days after receiving notice of such breach and having been given a reasonable opportunity to cure the breach. Provided, however, that except as otherwise set forth in this Contract, early termination will not relieve a Party of any obligation that became due prior to the date of termination.

7. NONAPPROPRIATION. All payments required pursuant to the Contract are contingent upon the availability of County funds. In accordance with NRS 354.626 and any other applicable provision of law, the financial obligations between the Parties will not exceed those monies appropriated and approved by the County for the Contract for the then current fiscal year under the Local Government Budget Act. The Contract will terminate and the County's obligations will be extinguished if the County fails to appropriate the necessary funding.

Nothing in the Contract will be construed to provide Contractor with a right of payment from any entity other than the County. Any funds budgeted by the County pursuant to the terms of the Contract that are not paid to Contractor will automatically revert to the County's discretionary control upon the completion, termination, or cancellation of the Contract. The County will not have any obligation to re-award or to provide, in any manner, the unexpended funds to Contractor. Contractor will have no claim of any sort to the unexpended funds.

8. CONSTRUCTION OF CONTRACT. The Contract will be construed and interpreted according to the laws of the State of Nevada. There will be no presumption for or against the drafter in interpreting or enforcing the Contract. The Contract Documents consist of this Document, Exhibits A, B, and C. The Documents are intended to be complimentary to one another and shall be so construed if reasonably possible. If there is an irreconcilable conflict between the Contract Documents, the order of precedence shall be: this document, then Exhibit A, then C, then B. In the event a dispute arises between the Parties, the Parties promise and agree to first meet and confer to resolve any dispute. If such meeting does not resolve the dispute, then the Parties agree to mediate any dispute arising from or relating to the Contract before an independent mediator mutually agreed to by the parties. The fee, rate or charge of the mediator will be shared equally by the Parties, who will otherwise be responsible for their own attorney's fees and costs. If mediation is unsuccessful, litigation may only proceed before a

department of the Ninth Judicial Court of the State of Nevada in and for the County of Douglas that was not involved in the mediation process and attorney's fees and costs will be awarded to the prevailing party at the discretion of the court.

9. COMPLIANCE WITH APPLICABLE LAWS. Contractor promises and agrees to fully and completely comply with all applicable local, state and federal laws, regulations, orders, or requirements of any sort in carrying out the obligations of the Contract, including, but not limited to, all federal, state, and local accounting procedures and requirements, all hazardous materials regulations, and all immigration and naturalization laws.

10. ASSIGNMENT. Contractor will neither assign, transfer nor delegate any rights, obligations or duties under the Contract without the prior written consent of the County.

11. COUNTY INSPECTION. The books, records, documents and accounting procedures and practices of Contractor related to the Contract will be subject to inspection, examination and audit by the County, including, but not limited to, the contracting agency, the County Manager, the District Attorney, and, if applicable, the Comptroller General of the United States, or any authorized representative of those entities.

12. DISPOSITION OF CONTRACT MATERIALS. Upon payment to Contractor in full of undisputed amounts, any books, reports, studies, photographs, negatives or other documents, data, drawings or other materials prepared by or supplied to Contractor in the performance of its obligations under the Contract (the "Materials") will be the exclusive property of the County and all such materials will be remitted and delivered, at Contractor's expense, to the County by Contractor upon the completion, termination or cancellation of the contract. Alternatively, if the County provides its written approval to Contractor, the Materials must be retained by Contractor for a minimum of six years after Contractor's receipt of the final payment from County and all other pending matters are closed. If, at any time during the retention period, the County, in writing, requests any or all of the Materials, then Contractor will promptly remit and deliver the materials, at Contractor's expense, to the County. Unless the County has requested the remittance and delivery by Contractor of the Materials, Contractor will not use, willingly allow or cause to have such Materials used for any purpose other than the performance of Contractor's obligations under the terms of the Contract without the prior written consent of the County. County's reuse of such materials for other projects shall be at County's sole risk and without liability to Contractor.

13. PUBLIC RECORDS LAW. Contractor expressly understands and agrees that all documents submitted, filed, or deposited with the County by Contractor, unless designated and accurately marked by Contractor as confidential or exempt from public disclosure under a specific statute of the State of Nevada, will be treated as public records pursuant to NRS chapter 239 and shall be available for inspection and copying by any person, as defined in NRS 0.039, or any governmental entity. Contractor expressly and indefinitely waives all of its rights to bring, including but not limited to, by way of complaint, interpleader, intervention, or any third party practice, any claims, demands, suits, actions, judgments, or executions, for damages or any other relief, in any administrative or judicial forum, against the County or any of its officers or

employees, in either their official or individual capacity, for violations of or infringement of the copyright laws of the United States or of any other nation.

14. INDEMNIFICATION. Contractor agrees to indemnify and save and hold the County, and its employees harmless from any and all claims, causes of action or liability to the extent arising from or related to Contractor's negligent performance pursuant to the terms of the Contract by Contractor or Contractor's agents or employees.

15. MODIFICATION OF CONTRACT. The Contract and the attached exhibits constitute the entire agreement and understanding between the Parties and may only be modified by a written amendment signed by both of the Parties.

16. AUTHORITY. The Parties represent and warrant that they have the authority to enter into this agreement.

17. STANDARD OF CARE. Contractor will perform all services in a manner consistent with that level of care and skill ordinarily exercised by other members of Contractor's profession currently practicing in the same locality under similar conditions.

18. WAIVER OF LIEN. Contractor understands and agrees that the services it will render to the County are not intended for the improvement of real property or to otherwise grant any rights to Contractor pursuant to NRS chapter 108.

19. THIRD PARTY BENEFICIARY. Nothing contained in this Agreement is intended to convey any rights or to create a contractual relationship with any third party or to otherwise allow a third party to assert a cause of action against either Contractor or County.

20. NOTICES. All notices, requests, demands and other communications hereunder must be in writing and will be deemed delivered when sent via certified mail, return receipt requested or by commercial courier, provided the courier's regular business is delivery service and provided further that it guarantees delivery to the addressee by the end of the next business day following the courier's receipt from the sender, addressed as follows (or any other address that the Party to be notified may have designated to the sender by like notice):

To County: Douglas County
Attn: Public Works Director
1120 Airport Road, F2
Post Office Box 218
Minden, Nevada 89423
Telephone: (775) 782-6227

To Contractor: HDR Engineering, Inc.
Joel Bellin
9805 Double R Blvd., #101
Reno, NV 89521
Telephone: (775) 337-4761

21. CONFLICT OF INTEREST. By signing the Contract, Contractor agrees that any information obtained from Douglas County, in whatever form, will not be divulged to other competing interests without the permission of the County Manager. In the event of a breach of this provision, Douglas County may immediately withdraw, without penalty or any payment, from the Contract. Contractor must notify Douglas County of any other contracts or projects Contractor is working on that may impact Douglas County.

22. OPINIONS OF PROBABLE CONSTRUCTION COSTS (COST ESTIMATES). Any opinions of probable project cost or probable construction cost provided by Contractor are made on the basis of information available to Contractor and on the basis of Contractor's experience and qualifications, and represents its judgment as an experienced and qualified professional engineer. However, since Contractor has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor(s)' methods of determining prices, or over competitive bidding or market conditions, Contractor does not guarantee that proposals, bids or actual project or construction cost will not vary from opinions of probable cost Contractor prepares.

23. Construction Procedures. Contractor shall not control or have charge of, and shall not be responsible for, construction means, methods, techniques, sequences, procedures of construction, health or safety programs or precautions connected with the work and shall not manage, supervise, control or have charge of construction. Contractor shall not be responsible for the acts or omissions of the County's contractor or other parties on the project. Contractor shall be entitled to review all construction contract documents and to require that no provisions extend the duties or liabilities of Contractor beyond those set forth in this Agreement. County agrees to include Contractor as an indemnified party in County's construction contracts for the work, which shall protect Contractor to the same degree as County. Further, County agrees to require construction contractor(s) to include Contractor as an additional insured under the construction contractor's liability insurance policies.

IN WITNESS WHEREOF, the Parties hereto have caused the Contract to be signed and intend to be legally bound thereby.

HDR Engineering, Inc.

By:  2/11/2020
Craig Smart, ~~Vice President~~
Associate Vice President (Date)

Douglas County

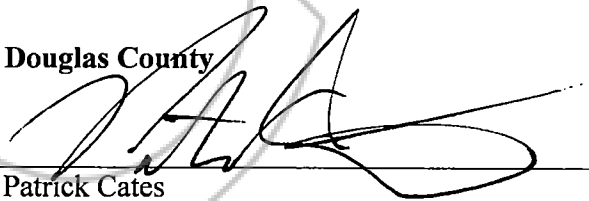
By:  2/28/20
Patrick Cates (Date)
County Manager

EXHIBIT A SCOPE OF SERVICES

Douglas County

Cave Rock Water System Improvements

INTRODUCTION

Douglas County (County) owns and operates the Cave Rock Water System in Glenbrook, Nevada. In 2016, HDR Engineering Inc., (CONSULTANT) completed a preliminary engineering report (PER) to further evaluate system deficiencies, evaluate alternatives solutions, and prioritize recommended improvements. The PER identified the Cave Rock water system distribution lines as a high priority for replacement due to the consequences of failure, frequent repair history, and to improve fire flows.

PROJECT UNDERSTANDING

Currently, CONSULTANT is completing design of a portion of replacement waterline on Cave Rock drive from Highway 50 to Gull Court. This project is planned for construction in 2020.

Construction Manager at Risk Project Delivery

The County intends to use the Construction Manager at Risk (CMAR) approach for construction of the proposed improvements. The improvements will be broken into two CMAR packages. Each package will go through the 30%, 60% and 90% review process prior to negotiation of the GMP. CONSULTANT will participate in each of these reviews and have input on the Value Engineering Study.

CMAR No.1 will include the Cave Rock Water Treatment Plant (WTP) improvements and the lake intake electric service. The WTP project will be constructed during the winter months when water demands are lowest. The electrical service will require grading in excess of the TRPA exempted limit, and thus must be constructed between May 1 and October 15.

CMAR No.2 will include the waterline replacements and the Lower Cave Rock Booster Station. It is anticipated that this project will be completed in 3 phases over 3 years. Phase 1 is expected to include dead ends on Pheasant Lane, Wren, Robin, Lark, Canyon Circle, and Gull Court. Phase 2 is expected to include Sugar Pine Circle, Lincoln, Crane,

Winding Way, Eagle Lane, and Chukkar. Phase 3 will include all the remaining water lines identified in the scope. Each phase will have a separate Guaranteed Maximum Price (GMP).

The anticipated project schedule is attached as Exhibit D. Both CMARs will be covered under this scope of work.

Construction of the Lake Ridge and Upper Winding Way booster pump stations is anticipated to be designed under a future CMAR project. Hidden Woods tank replacement will also be a future project.

CONSULTANT will participate in the CMAR process from design through completion of a guaranteed maximum price. This includes participation in regularly scheduled meetings with CONSULTANT, CMAR, County, and stakeholders, including 30% design review and value engineering (VE) workshop, 60% design review, and 90% design review.

CMAR No.1

Cave Rock Water Treatment Plant

The membrane filtration capacity of the WTP will be expanded to provide equipment redundancy and increase the peak demand treatment capacity. The existing membranes in the Memcor 90M10C skid were replaced in kind in 2012 with polypropylene membranes. Evoqua's "N" series membranes are constructed of PVDF, which is chlorine resistant and operates at a lower feed and backwash pressure. CONSULTANT will evaluate replacement of the membranes in the existing skid with PVDF membranes. CONSULTANT will evaluate both Memcor replacements and up to two other suppliers that manufacture membranes to match the Memcor module dimensions, including membrane systems that can operate at a higher flux to save on rack footprint.

CONSULTANT will also evaluate adding a redundant 48 module skid within the existing WTP building, with a filtrate capacity of approximately 870 gpm. A new 18 module backwash skid will be added to accommodate the increased filtration capacity. Filtrate from the backwash skid goes to the chlorine contact basin. Backwash from the backwash skid goes to sewer. A second backwash tank is anticipated to handle the increased waste volume. Our evaluation will be based on what can reasonably fit in the existing treatment building. Evaluation of a building expansion is not included in our scope of services.

Cave Rock Intake Power Supply

The Cave Rock Water Treatment Plant intake pumping station is now served by a 100

amp, 480 volt, 3 phase electrical power feeder from the Cave Rock Water Treatment Plant. This feeder runs in an underground duct bank for about 3,000 feet, generally along the west side of Highway 50. The duct bank has limited and difficult access under good conditions, and is very difficult to access in winter due to snow. This feeder is known to have suffered conductor insulation damage, and may be impossible to remove for replacement from the underground duct due to silt and grit entrance into the ducts.

The County would like to abandon this feeder from Cave Rock WTP to the location of a proposed new NV Energy service, as this is the section that is damaged.

CONSULTANT will evaluate locations for a new Nevada Energy 277/480 volt, 3 phase, 4 wire, 200 amp service and standby generator. The electrical service will consist of:

- A secondary service conduit for Nevada Energy secondary service conductors from a new Nevada Energy pole, and pole-mounted transformer bank.
- Outdoor pad mounted service/metering switchboard with automatic transfer switch.
- A diesel engine-driven standby generator and concrete pad, with fencing around the generator.
- A 480 volt, 3 phase electrical feeder to connect to the existing underground feeder conductors to the intake.
- Underground duct bank and conductors.
- Associated grading, trenching, backfill, and site work needed for the project.

The existing underground feeder conductors from the vicinity of the proposed new service equipment to the intake have been tested, and are satisfactory for continued service. Capacity of the new service to supply the new submersible booster pump will be verified. A previously identified service location off Tamarack Drive on U.S. Forest Service property is deed restricted, and likely not feasible. Up to 3 alternate service locations will be evaluated in the Preliminary Engineering Report (PER). If no suitable locations for the service are identified in the PER, replacement will be deferred to another project.

Cave Rock Lake Intake Pump Station Submersible Pumps

The County intends to install submersible pumps in Lake Tahoe to augment suction side hydraulics and improve pumping capacity during low water levels in Lake Tahoe. CONSULTANT previously prepared drawings and specifications for placement of the submersible pumps, which included replacement of the lake intake pumps in the intake pump station, modifications to the intake pipeline, and a new intake screen at the end of the line. The County purchased the specified submersible pump, but it was never installed. CONSULTANT will update the project design to

include installation of an Owner furnished submersible pump, and the required piping modifications to the intake as previously designed.

CMAR No.2

Water Line Replacement

The County intends to replace the majority of the remaining water lines within the Cave Rock system that have not been replaced within the last 16 years (dating back to 2003). The replacements are anticipated to be done over 3 construction seasons, and divided into 3 packages with each package having its own GMP. This includes lines in pressure zones A1, B1, and C1, and Hidden Woods. Skyland water system improvements will be constructed under a separate project. The sections of water line to be replaced include the following general areas:

- Gull Court
- Pheasant Lane
- Winding Way north of Gull Court
- Wren Circle
- Robin Circle
- Lark Circle
- Chukkar Drive
- Lincoln Circle
- Canyon Circle
- Cedar Ridge
- Hidden Woods Drive and Eagle Lane
- Highway 50 from the Cave Rock Park to Park Circle

A total of approximately 15,300 linear feet (LF) of water line replacement is anticipated under the project. The water line replacement will be based on the recommended sizes in the *Cave Rock Water System Preliminary Engineering Report* dated October 2016.

However, the exact sections of line to be replaced will be confirmed during preliminary design based on leak data, pipeline age and material, and water modeling.

Exhibit B Figures show the location and size of the anticipated water line replacements, and sections to be evaluated for replacement.

Pressure Reducing Stations

In addition to water line replacement, the project includes construction of approximately nine (9) new pressure reducing stations (PRVs). The PRVs will be located below grade in vaults. The number and location of PRVs will be confirmed during water modeling in preliminary design.

Lower Cave Rock Booster Pumping Station

Nevada Division of Environmental Protection (NDEP) approved a special exception request for Lower Cave Rock Booster to be constructed below grade, based on the analysis in the 10% Design Report, and a lack of feasible alternatives. This scope assumes that the design of the Lower Cave Rock Booster Station will be based on the Alternative D 10% design configuration, within the right-of-way, and below grade in a vault/structure.

Water Meters and Services

All water mains being replaced will have new services and meter pits. The existing lines that are not replaced under the project will have new meter pits installed. Approximately 111 new services will be required, based on the waterline replacements shown. The Cave Rock PER documents 292 un-metered residential customers, thus 292 new meter pits are anticipated for the project.

SCOPE OF WORK

Task 1 – Project Management and Quality Control

Objectives

- Provide coordination and management of CONSULTANT services to meet project objectives.
- Provide for quality assurance/quality control (QA/QC) reviews of technical recommendations and project deliverables.

CONSULTANT Services

- Manage and coordinate CONSULTANT and SUBCONSULTANT services described herein.
- Conduct and document QC reviews on deliverables.
- Prepare monthly project status and budget tracking reports and invoices.
- Assist with contract changes.
- Notify County of budget or schedule issues, or out-of-scope requirements in the monthly status report.
- Conduct project kick-off meeting with County. CONSULTANT project manager and project engineer to attend meeting. Meeting to be at Lake or in Minden at Douglas County Public Works office.

- Work collaboratively with the County and the CMAR during the design process.

County Responsibilities

- Review and pay monthly invoices.
- Work with the CONSULTANT project manager to review and negotiate scope changes.
- Participate in the review of the deliverables.
- Provide review comments and feedback as requested by the project design team. It is assumed that the County will return review comments within 10 working days from submittal.

Assumptions

- The design is anticipated to occur from February 2020 through December 2021, as shown in the attached schedule.

Deliverables

- Monthly invoices and status reports over anticipated project duration of twenty three (23) months.

Task 2 – Site Survey

Objective

- Provide topographic survey of the streets and right-of-way listed in the Project Understanding which encompass the extents of the water line replacements.
- Survey existing utilities as marked by USA North 811.
- Provide topographic survey, visible and marked utilities on the proposed Lake Intake electrical service parcel.

CONSULTANT Services

- SUBCONSULTANT, Turner & Associates, to provide survey of the streets and Lake Intake electric service parcel listed in the Project Understanding.
- Provide two-foot elevation contours based on NAVD 88 datum.
- Provide right-of-way boundary for the streets listed in the Project Understanding.
- Survey all USA North utility markings

- Survey valve boxes, fire hydrants, drain inlets, manholes, and utility boxes in the right-of-way including invert elevations of sewer and storm drain, depth to valve nuts, and lid elevations.
- Survey of parcel identified for location of the proposed new intake electrical service, transfer switch, and standby generator (contingent on PER findings)
- New survey control will be tied in to the current water line replacement on Cave Rock Road and Winding Way.

CONSULTANT or SUBCONSULTANT will contact USA North for utility markings in the project areas. This task may be impacted by winter weather conditions.

County Responsibilities

- Provide existing electronic survey and topographic data for the project areas

Deliverables

- Electronic AutoCAD and PDF copies of survey to be provided to CONSULTANT and County.

Task 2.2 – Utility Potholing

At the written direction of the County, this task would include potholing of existing utilities to supplement information obtained during the data collection task. Potholes would be taken in specific areas to fill in data gaps with respect to depth and location of existing utilities. SUBCONSULTANT will perform a total of 12 potholes using a vector truck. The potholes will be surveyed and measurements taken to top of pipe. The pipe material and size will also be determined. At completion, potholes in paved areas will be patched with a hot asphalt mix to match existing pavement depth.

Task 3 – Lidar Survey and 3D Model

3.1 – Laser Scanning & Data Processing

CONSULTANT will use laser scanning equipment to capture the existing conditions inside the Cave Rock Water Treatment Plant. The information will be used to create a 3D model of the area, for use in sizing and design of the redundant membrane skid and ancillary equipment.

The inside of the building will be scanned which is expected to take a full day. Scan will be in full color with a cloud density of at least 8mm spacing at 10 meters from the scanner.

The point cloud will be registered, cleaned of rogue points, and unified for each area. Once registered, the cloud will represent one three-dimensional environment. Scanning will be within the building only, and the cloud will not be tied into the plant survey control.

3.2 – Modeling

The following elements will be modeled in Revit version 2018:

- a. Floors, walls, doors
- b. Existing membrane equipment and related process piping
- c. Backwash skid, backwash tank and related piping
- d. Pipe Supports
- e. Structural supports within 2-ft of the new equipment and piping
- f. Piping connection points

The point cloud will be used for existing piping and equipment to be removed on the demolition drawings. Piping and equipment to be replaced will not be modeled to reduce cost.

Deliverables: Aligned point cloud in Autodesk ReCap (.rcs and .rcp format), 3D Revit model (version 2018), scanning registration report, alignment accuracy report. Deliverables will be on a portable hard drive to be downloaded and returned.

Task 4 – Hydraulic Modeling

4.1 – Data Collection & Review

The Cave Rock water system hydraulic model that was developed during the Preliminary Engineering Report will be reviewed and refined based on the latest Record Drawings and data (e.g. pumping/consumption data) from the County. CONSULTANT will meet with County staff to understand the existing system configuration including:

- Wren Circle PRV.

- Location of normally closed valve near Wren, Winding Way, and Pheasant which separates Upper and Lower Cave Rock zones.
- Upper Cave Rock booster piping configuration

4.2 – Hydraulic Modeling

CONSULTANT will use the Watercad model to confirm the following:

- Is a PRV needed to eliminate the normally closed valve separating the Upper and Lower Cave Rock zones.
- Confirm location of PER proposed PRV's including PRV-2 at Gull and Winding Way.
- Piping configuration at Winding Way, Pheasant Drive, and Wren Circle.
- Location and confirmation of Lake Ridge Booster Station
- Location and confirmation of upper Winding Way domestic booster station.

A complete fire flow/line size re-analysis for the system will not be performed, but the model will be used to answer specific questions such as PRV locations and minor piping and valve configuration changes that arise during design. The model design criteria including domestic demands, fire flow, and pressure criteria will be the same as used in the PER. Verification of pumps, PRVs and system configuration will be modeled for the following flow scenarios:

- Average Day Demand
- Peak Hour Demand
- Max Day Demand + Fire Flow

4.3 – Technical Memorandum

CONSULTANT will summarize the modeling results in a brief Technical Memorandum (TM), up to 10 pages in length, which will include the following:

- Flow and Pressure Evaluation Criteria
- Model Demand Criteria
- Summary of system configurations modeled
- Evaluate need and location of upper Winding Way Booster Station
- Summary of model results including the following figures:
 - Pressure Zones – Number, hydraulic grade
 - Fire flows
 - ADD pressures

- Proposed System Configuration including:
 - PRV location, elevation, and pressure setting
 - Lake Ridge and upper Winding Way Booster Pump location and elevation
 - Lower Cave Rock Booster Pump location and elevation
 - Booster Pump Sizing (flow and head conditions)
- Model schematic figures showing proposed pumps, PRVs, and line replacements

Note that not all flow and pressure criteria may be met since some of the PER recommended lines for replacement will be deferred, as they were replaced within the last 15 years and are assumed in good condition.

Deliverables: Draft TM electronic pdf copy, and hydraulic model files.

4.4 – Review Meeting

CONSULTANT will meet with the County to discuss the modeling results. The Modeling TM and responses to the County's comments will be incorporated into the Preliminary Engineering Report.

Deliverables: Meeting notes.

Task 5 – Preliminary Engineering Report (30% Design)

The Preliminary Engineering Reports (PER) will be approximately 30% design level, and will serve as the basis of design for the projects. The PERs will also serve as the design report submitted to NDEP for project approval, at the 90% design level. As such, a separate PER will be prepared for CMAR No.1, and three PERs (one for each phase) for CMAR No.2.

CMAR No.1 PER

It is assumed that the proposed membrane expansion will fit inside the existing Cave Rock WTP, based on the initial analysis from the 2016 Cave Rock Water System PER. *If during preliminary design it is determined that space is too limited for the proposed membrane capacity, the skid will either need to be sized down, or the building expanded. These design modifications are outside the scope of services. An amendment request will be discussed with the County and will be submitted to accommodate the selected equipment.* The PER will include the following items:

- Description of proposed project
- Design Criteria
 - Max Day and Peak Hour Demands
 - Membrane design flow and maximum day production
 - Overall WTP efficiency
 - Waste flow to sewer
- Preliminary Membrane Equipment Plan & Elevation Drawings
- Manufacturer equipment information including cut sheets and specifications
- List of anticipated technical specifications
- Cave Rock WTP P&ID drawings
- Identification of major membrane equipment suppliers to be included in the design
- Development of preliminary WTP control logic
- Lake Intake Pump Station Electrical Service
 - Evaluate up to three (3) alternatives for the electrical service
 - Provide recommendation for service alternative
 - Evaluate service capacity for submersible booster pump
 - Summary of design criteria
 - Proposed Electrical Service Site Plan
- Construction Sequencing & Limitations
- Class 4 Cost Opinion

CMAR No.2 PERs

The results from the Hydraulic Modeling TM and be incorporated into the Preliminary Engineering Reports (PER) and attached as an Appendix. Three PERs will be prepared, one for each phase of construction. The PERs will include the following items:

- Description of proposed project
- Design Criteria
 - Fire flow requirements
 - Minimum and maximum pressures under various flow criteria
 - Average day, max day, and peak hour water system demands
- Water model results summary
- Piping and valve design criteria
- Preliminary water line replacement plan (100-ft scale) based on topographic survey and utility information.

- Evaluate the following line sections for replacement. These sections will be evaluated based on age, pipe material, and leak history.
 - 4-in on Lincoln Circle
 - 2-in on Lark Circle
 - 6-in on Chukkar Drive
 - 2-in at end of Cedar Ridge
- Lower Cave Rock Booster Pump Station (Phase 1 only)
 - 30% Design based on the Alternative D (underground) layout presented in the *Lower Cave Rock Booster Station 10% Design Report*, HDR March 2019.
 - Address conditions stipulated by NDEP special exception request
 - Provide Preliminary Site Plans
 - Mechanical Floor Plan and Sections
 - Manufacturer equipment information including cut sheets and specifications
 - HVAC equipment
 - Electrical and controls description
- List of anticipated technical specifications
- Construction Sequencing & Limitations
- Class 4 Cost Opinion

5.1 – Water Line Leak Detection

As part of the previously described water line replacement evaluation, field leak testing will be performed at the County's direction.

SUBCONSULTANT, American Leak Detection, will use ultrasonic and acoustic equipment between two isolated valves to "listen" for leaks in the line. This would supplement the PER analysis, and may be used to help determine whether to replace the referenced line sections. Results of the leak detection will be incorporated into the PER.

Assumptions

- One day and approximately 3,000 lineal feet of pipeline will be tested.
- Additional detection can be performed on a time and materials basis.

Deliverables: Copy of Leak test report from SUBCONSULTANT.

5.2 – Draft Preliminary Engineering Reports

CONSULTANT will prepare one draft PER for CMAR No.1 and three PERs for CMAR No.2, for County review. The CMAR No.2 PERs will be phased sequentially per the project schedule.

Deliverables: PDF files of draft PER.

5.3 – Review Meetings

CONSULTANT will meet with the County to discuss the Preliminary Engineering Reports. It is assumed that each PER review will be a separate meeting, for a total of four meetings. Responses to the County's comments will be incorporated into the final Preliminary Engineering Reports.

Deliverables: Meeting notes.

5.4 – Final Preliminary Engineering Reports

CONSULTANT will revise the draft PERs based on the County comments and discussion during the respective review meetings. This task assumes one round of revisions to the PERs for a total of four PERs.

Deliverables: PDF files and 4 hard copy files of final PER.

5.5 – 30% Design Drawings

Design drawings at the 30% design level will be prepared for CMAR No.1. A list of the anticipated 30% design drawings is provided in the attached Table 1 and 2.

County Responsibilities

County to provide GIS parcel base, relevant project record drawings (in CAD if available), existing survey and base map info for the project area.

Deliverables: Three sets of 11x17 and electronic pdf for each drawing set.

5.6 – 30% Design Review and VE Workshop CMAR No.1 and No.2

CMAR will conduct a total of four (4) design review and value engineering workshops with the CONSULTANT and County, one for CMAR No.1 and three for CMAR No.2.

CONSULTANT will participate in the workshops with the County and CMAR to review the design drawings. For CMAR No.2, there will be no 30% design drawing submittal, instead the drawings will be submitted at the 60% design level to streamline the design process and provide sufficient information for relevant feedback. CMAR No. 2 VE workshop will be conducted after the 60% design submittal. County and CONSULTANT will review input from the workshops, and determine which concepts shall be incorporated into the 60% drawings for CMAR No.1 and 90% drawings for CMAR No.2. The PERs will not be revised from the workshop.

CONSULTANT will participate in the VE Workshops and provide technical input regarding the suggested changes. CONSULTANT will also participate in the 30% reviews and again provide input accordingly.

The project cost estimates prepared by the CMAR will be reviewed at the 30% review meetings, and CONSULTANT shall provide input.

Deliverables: Meeting notes.

Task 6 – Final Design Services

Objectives

Four sets of design plans, specifications, and an engineer's opinion of construction costs will be provided. One set will cover CMAR No.1 and three for CMAR No.2 improvements, phased over time, as described previously. The design will be based on the findings of the final PERs, and include input from the CMAR review process.

The design plans and specifications are anticipated to include the following:

CMAR No.1

- Membrane expansion inside the Cave Rock WTP to provide a redundant 48 module skid within the existing WTP building, with a filtrate capacity of approximately 870 gpm. A new 18 module backwash skid will be added to accommodate the increased filtration capacity. Demolition of existing equipment as required.
- Cave Rock Intake booster pump electric service relocation (pending suitable location determined during preliminary design). If a suitable location is not identified, then the service relocation will be deferred to a future project.

- Cave Rock Intake submersible booster pump replacement. Installation of the County's submersible pump and associated piping modifications from the February 2016 Cave Rock Lake Intake Improvements Project, sheet SP-2, detail 2, will be incorporated into the design.

CMAR No.2

Constructed in three phases over 3 construction years, approximately 15,300 lineal feet of water main replacement, and 111 water services. The water lines to be replaced are per the attached figures, and include the following streets/sections:

- Gull Court
- Pheasant Lane
- Winding Way north of Gull Court
- Wren Circle
- Robin Circle
- Lark Circle
- Chukkar Drive
- Lincoln Circle
- Canyon Circle
- Cedar Ridge
- Hidden Woods Drive and Eagle Lane
- Highway 50 from the Cave Rock Park to Crossing at Cave Rock Dr.
- Nine new pressure reducing stations at the following locations:
 - Gull Court
 - WTP to Lincoln Highway
 - Cedar Ridge to Lincoln Highway
 - Hidden Woods Drive
 - Lower Cave Rock to Pheasant Drive
 - Chukkar Drive (Qty. 2)
 - Robin Circle
 - Cedar Ridge to Sugar Pine Circle
- Water meter pits for all un-metered services (approximately 285)
- New Lower Cave Rock Booster Pump Station (Alternative D, underground)
- TRPA BMP details
- Douglas County standard details

The preliminary list of drawings is provided in Tables 1 and 2 attached to this scope.

6.1 – 60% Design Submittals

Submittals will include 60 percent drawings and list of specifications for the CMAR No.1 and No.2 design packages.

Assumptions

- CONSULTANT shall be entitled to reasonably rely upon the information and data provided by the County or obtained from generally accepted sources within the industry without independent verification except to the extent such verification is expressly included in the Scope of Services.
- The design will be broken into four construction packages (one for CMAR No.1 and three for CMAR No.2).
- CMAR will provide opinion of probable construction costs from this point forward.
- The water line replacements will include plan and profile drawings at 20-foot scale.
- Existing utilities will be based off surveyed USA markings, visible features such as manholes and valve boxes, and record drawings, to the extent available. Potholing of existing utilities is an optional task.
- Drawings will be prepared in AutoCAD 2018 format using HDR standards.
- Drawings will be scaled at 1-inch equals 20-feet in both horizontal and vertical directions.
- Specifications will be prepared using Microsoft Word with HDR master specifications in CSI 6 digit format, and HDR standard formatting.
- Front ends will be provided by the County based on the Engineer's Joint Contract Documents Committee (EJCDC) documents, CONSULTANT will edit the EJCDC documents and prepare the front end documents including the bidder's checklist, advertisement for bids, instructions to bidders, bid form, bid schedule, bid bond, bidder's qualification statement, general conditions, supplementary conditions, Nevada prevailing wage determination, Davis Bacon wage determination, and State Revolving Loan Fund supplementary conditions.

6.2 – 60% Review Meetings

CONSULTANT project manager and project engineer to attend design review meetings with County and CMAR. It is assumed that there will be one meeting for CMAR No.1 and three review meetings No.2. CMAR will provide cost opinion, and CONSULTANT will provide input on costs.

Review comments from the County and CMAR will be incorporated into the 90% Design submittals. CONSULTANT will provide meeting notes to the group.

6.3 – 90% Design Submittals

Submittals will include 90 percent drawings, front end contract documents, and technical specifications for CMAR No.1 and No.2. There will be one submittal for CMAR No.1 and three submittals for CMAR No.2, which will be phased over the project schedule. 90% drawings, specifications, and engineering reports (PERs) will be submitted to NDEP for review. CMAR will provide cost opinion and CONSULTANT will provide input on costs.

6.4 – 90% Review Meetings

CONSULTANT project manager and project engineer to attend design review meetings with County and CMAR. It is assumed that there will be one review meeting for CMAR No.1 and three review meetings for CMAR No.2.

Review comments from the County and CMAR will be incorporated into the Firm Fixed Price submittal. CONSULTANT will provide meeting notes to the group.

6.5 – GMP Submittals

Submittals will include final stamped drawings, front end contract documents, and technical specifications for CMAR No.1 and No.2. There will be one submittal for CMAR No.1 and three submittals (one per construction phase) for CMAR No.2. The CMAR No.2 submittals will be sequentially phased over the project schedule. The submittals will be used for the CMAR to provide Guaranteed Maximum Price (GMP) Proposals to the County.

Deliverables

Table 2 – Final Design Deliverables		
Deliverable	Drawings	Specifications
60%	Three 11x17 sets, electronic PDF	Three hard copies, electronic PDF
90%	Three 11x17 sets, two full size sets, electronic PDF	Five hard copies, electronic PDF

Firm Fixed Price	Three 11x17 sets, two full size sets, electronic PDF	Five hard copies, electronic PDF
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Task 7 – Permitting Assistance

CONSULTANT will assist the County with obtaining project approval from the following agencies.

CMAR No.1 Electrical Service

It is expected this project will require trenching and excavation in excess of 7 cubic yards to install the underground conduit duct bank from the new NV Energy primary service drop. It is also anticipated that the service may be located on a United States Forest Service (USFS) parcel. One of the screening criteria for a USFS application is that no options for use on private land exist. If a USFS SF 299 application is required, it will trigger a survey for heritage resources on both federal and private lands. The cost for such surveys are subject to cost recovery by USFS. The following permits are expected:

- Tahoe Regional Planning Agency Grading Permit
- USFS Standard Form 299 - Application for Transportation and Utility Systems and Facilities on Federal Lands (If USFS lands are encumbered)
- Douglas County Building Permit
- NV Energy Service Application

CMAR No.1 WTP Improvements

The following permits/approvals are anticipated for the Cave Rock WTP Improvements:

- Douglas County Building Permit
- Nevada Department of Environmental Protection (NDEP) - Bureau of Safe Drinking Water
- Tahoe Douglas Fire District approval

CMAR No.2 – Waterline and Lower Cave Rock Booster

The water lines, PRVs, and Lower Cave Rock Booster will fall under the County MOU with TRPA, per the MOU Attachment “B” Line No. 2. As such, no TRPA permits will be required for this portion of the project.

The following permits/approvals are anticipated under CMAR No.2:

- NDEP - Bureau of Safe Drinking Water
- Douglas County Building Permit – Lower Cave Rock Booster only
- Tahoe Douglas Fire District approval

- Nevada Department of Transportation (NDOT) – Highway 50 pipeline only

7.1 – TRPA Permitting

For TRPA permitting assistance, CONSULTANT will:

- Prepare TRPA Grading Permit Application. The application will include the following items:
 - Topographic Site Plan
 - Land capability verification
 - Scenic Impact Assessment
 - Initial Environmental Checklist
 - Coverage Calculation
- Include best management practice (BMP) details and specification language to comply with the construction and grading standards included in the County’s memorandum of understanding (MOU) with TRPA.
- Support the County with plans and description for the required trenching and grading for the water intake electrical service. CONSULTANT will prepare the TRPA applications with County input.

7.1.1 - Meetings

CONSULTANT will attend up to two meetings with TRPA to review the project and/or Grading Permit application, and provide up to twelve (12) hours of project manager time and twelve (12) hours Junior Environmental time for general coordination with TRPA and/or the County regarding the TRPA permit.

7.2 – NDEP Permitting

For NDEP permitting assistance, CONSULTANT will:

- Provide plans and specifications for submission to NDEP at the 90 percent design level, one submittal for CMAR No.1 and three submittals for CMAR No.2, for a total of four submittals.
- As part of the application for approval of a water project, provide design report that complies with NAC 445A.66695, parts three, five, and six with the 90 percent design submittal. One submittal per design package, for a total of four (4) submittals.
- Provide up to twelve (12) hours of project manager time to coordinate with NDEP and/or the County regarding the NDEP project approval.

7.3 – US Forest Service Permitting

With assistance from the County, CONSULTANT will prepare the USFS Standard Form 299 - Application for Transportation and Utility Systems and Facilities on Federal Lands. The application will include a project map submitted at the 30% design level. USFS will conduct a survey for heritage resources on the affected parcel, which is subject to cost recovery.

7.3.1 – Meetings

CONSULTANT will attend up to two meetings with USFS to review the project and/or application, and provide up to twelve (12) hours of project manager time and twelve (12) hours of Junior and twelve (12) hours of Senior Environmental time for general coordination with USFS and/or the County regarding the USFS permit.

7.4 – Douglas County and Tahoe Douglas Fire District Permitting

With assistance from the County, CONSULTANT will prepare the required building permit application for each applicable project. Building permit applications are anticipated for the Cave Rock WTP improvements, Lake Intake Electrical Service, and Lower Cave Rock Booster Station, for a total of 3 permit applications. Building permits are not required for the waterline improvements.

All plans and specifications will also be submitted to Tahoe Douglas Fire District for approval.

7.4.1 Meetings

As part of the minor Design Review, CONSULTANT will attend one meeting with the building department for each permit application, for a total of three meetings.

CONSULTANT will attend up to three meetings with Tahoe Douglas Fire District to review the plans.

7.5 – NDOT Permitting

Approximately 2,050 lineal feet of 8-in water main to be replaced, as shown in Figure 5-1, runs along the west side of Highway 50. While the water line does not appear to be in the paved road section, it is anticipated to be inside the NDOT right-of-way. If this is confirmed during the survey, an NDOT encroachment permit will be required. It

should also be noted that all waterlines inside the NDOT right-of-way are required to be sleeved. However, the applicant can request a deviation to this requirement, in the form of a letter, which is reviewed by the District Engineer. Since the waterline will be constructed with ductile iron pipe, it is assumed the County will want to request a deviation to reduce the construction cost of this waterline section. The permit typically takes a month and a half to be issued and is good for one year from the approval date. If the project schedule is pushed, a permit extension request can be made. If the contractor needs to encroach on a lane to construct the waterline, it will need to be constructed as night work.

7.5.1 Encroachment Permit Application

CONSULTANT will complete the encroachment permit application on behalf of the County. The application will include permit plans showing the new improvements in red, existing in blue, and removed in green. The plans will also reference the NDOT mile marker stationing. CONSULTANT will draft a deviation request letter for sleeving the pipeline, to be submitted by the County.

7.5.2 Meetings

CONSULTANT will meet with NDOT permit coordinator in the Sparks office to submit the encroachment permit application, as part of the Desk Audit.

CONSULTANT will attend up to a total of two meetings with NDOT as part of the permitting process.

7.6 -SRF Application

The County intends to use State Revolving Fund (SRF) monies to fund the project. For SRF compliance, CONSULTANT will:

- Complete SRF project application based on information provided by the County.
- Represent County at the State of Nevada Board for Financing Water Projects meeting for SRF loan commitment.
- Follow SRF guidelines during design and construction which include compliance with American Iron and Steel (AIS) requirements.

County Responsibilities

- Sign NDOT encroachment permit application, deviation letter, and provide contact information

- Notify and communicate with TRPA regarding the project, project scope, and exempt status in accordance with the County's MOU with TRPA.
- Submit grading permit application to TRPA.
- Submit Standard Form 299 to USFS.
- Submit plans, contract documents and specifications, and design reports to NDEP for review and approval.
- Submit Douglas County building permits to the building department.
- Submit plans and specifications to Tahoe Douglas Fire District.
- All permit application fees and excess coverage mitigation fees (if applicable).
- Provide project specific information as requested by CONSULTANT as necessary to complete the SRF application.

Assumptions

- The water lines, PRVs, and Lower Cave Rock Booster will fall under the County MOU with TRPA, per the MOU Attachment "B" Line No. 2.
- Project will not remove (or alter) significant mature vegetation.
- All grading will comply with Section 33.3 of the Tahoe Regional Planning Agency (TRPA) Code, and no grading exceptions are anticipated.
- The Preliminary Engineering Reports will be submitted as the NDEP design reports. The modeling work from the PER will be used for the project basis and line size selection.
- No trips to NDEP are included in the scope of work.
- Task 7.5 covers one SRF application for the entire scope of work (CMAR No.1 and No.2).

Task 8 – Public Outreach, Board of County Commissioners, and Miscellaneous Meetings

Public outreach meetings with Cave Rock GID are anticipated to educate and inform the GID on the status and progress of the projects. This task includes time to attend and assist the County with preparation of materials for the outreach and Board of County Commissioner (BOCC) meetings.

8.1 Public Outreach Meetings

CONSULTANT will attend one outreach meeting for each CMAR No.2 phase, for a total of three meetings.

8.2 Board of County Commissioners Meetings

CONSULTANT will attend one BOCC meeting for each CMAR, for a total of two meetings.

8.3 Miscellaneous Meetings

Up to sixteen (16) hours of project manager time and sixteen (16) hours of EIT time will be budgeted for meetings with the County and/or project stakeholders, not covered under previous tasks.



Task 9 – Additional Services

During the progression of design, additional items may develop that require design services beyond the scope delineated. This task will provide a set aside amount to be used as directed by the County to address specific items not in the original scope, and assist in meeting the intent of the project. At the request of the County, CONSULTANT will prepare a written Task authorization request to obtain written authorization from the County to proceed with additional requested work. The contingency amount budgeted in this scope is \$20,000.



Alternative 1 Cave Rock Zone A1 Improvements

Figure 5-1 EXHIBIT B



Legend

- Distribution Pipe**
-  Replaced
 -  Existing

Pumps

-  Existing
-  Added

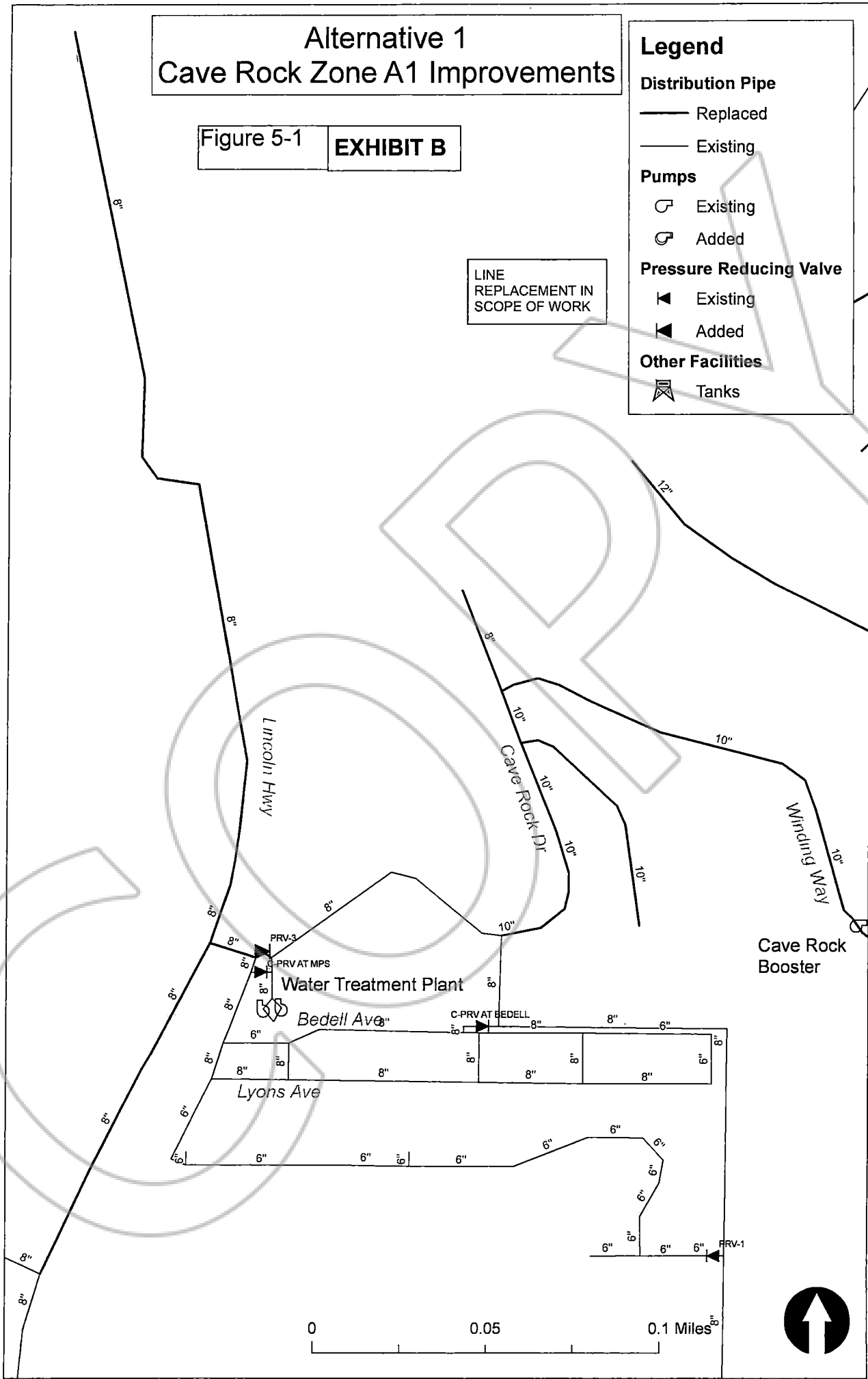
Pressure Reducing Valve

-  Existing
-  Added

Other Facilities

-  Tanks

LINE
REPLACEMENT IN
SCOPE OF WORK





Alternative 1 Cave Rock Zone A1 Improvements



Figure 5-2
EXHIBIT B

Legend



Distribution Pipe

-  Replaced
-  Existing


Pumps

-  Existing
-  Added

Pressure Reducing Valve

-  Existing
-  Added

Other Facilities

-  Tanks

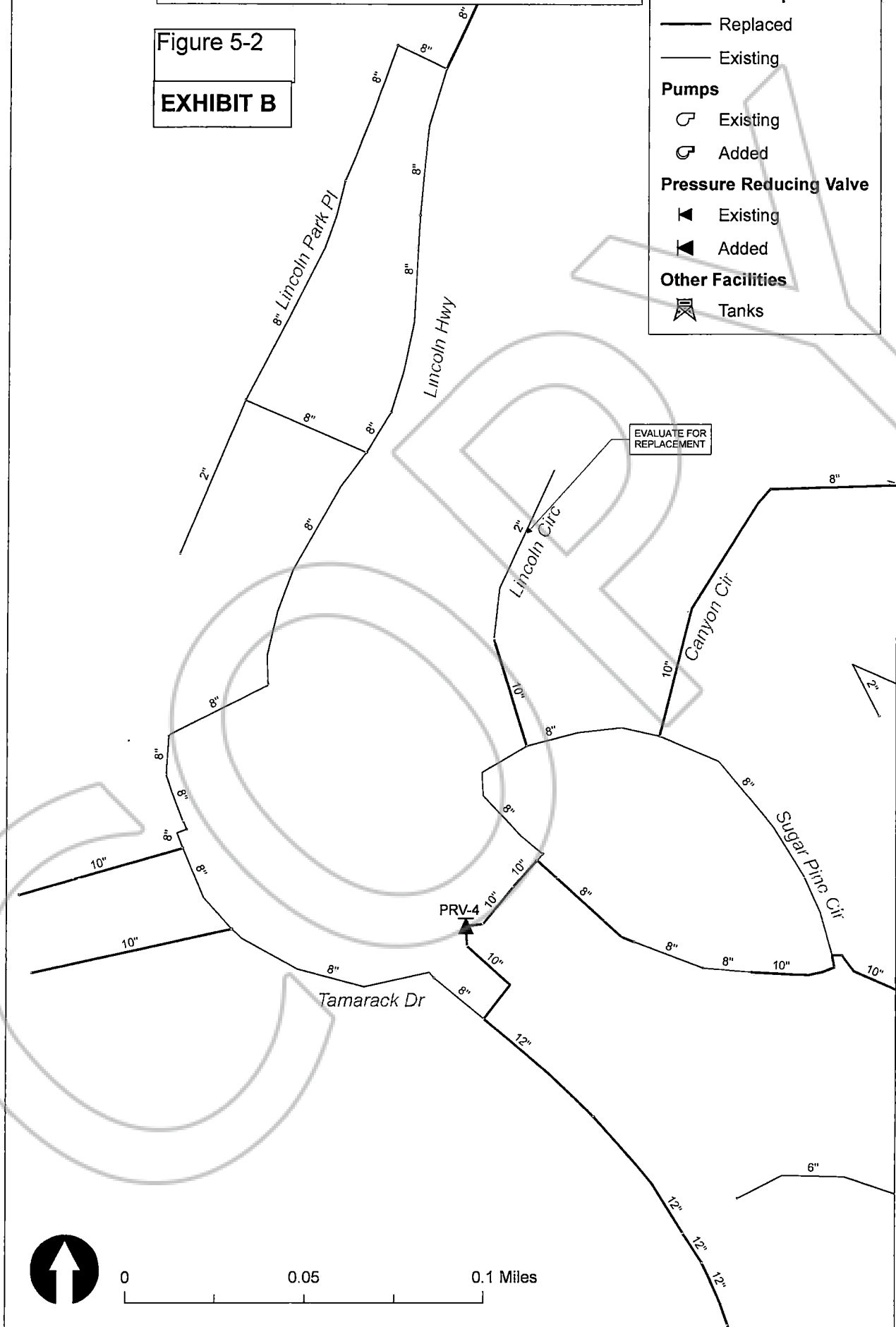
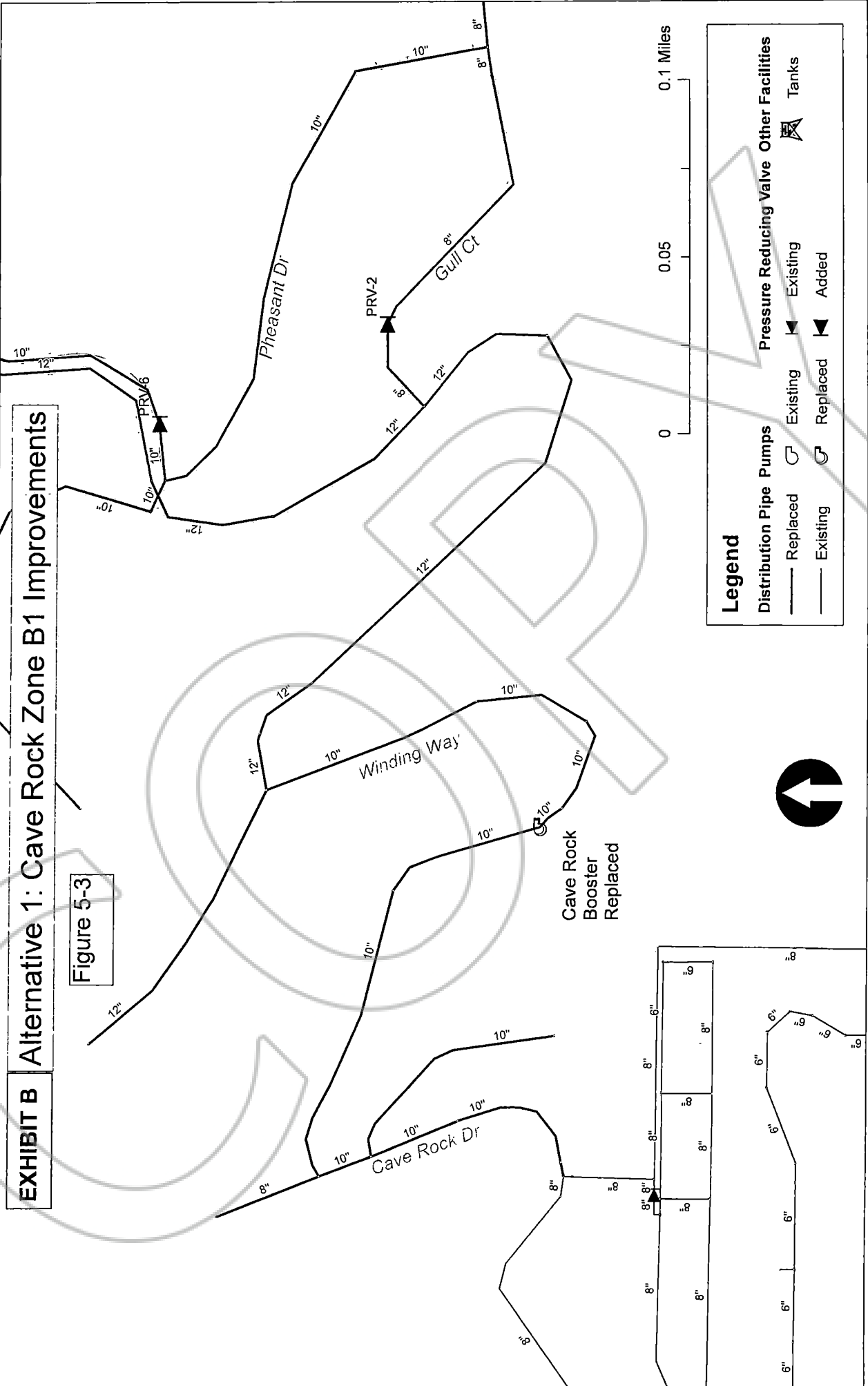


EXHIBIT B Alternative 1: Cave Rock Zone B1 Improvements

Figure 5-3



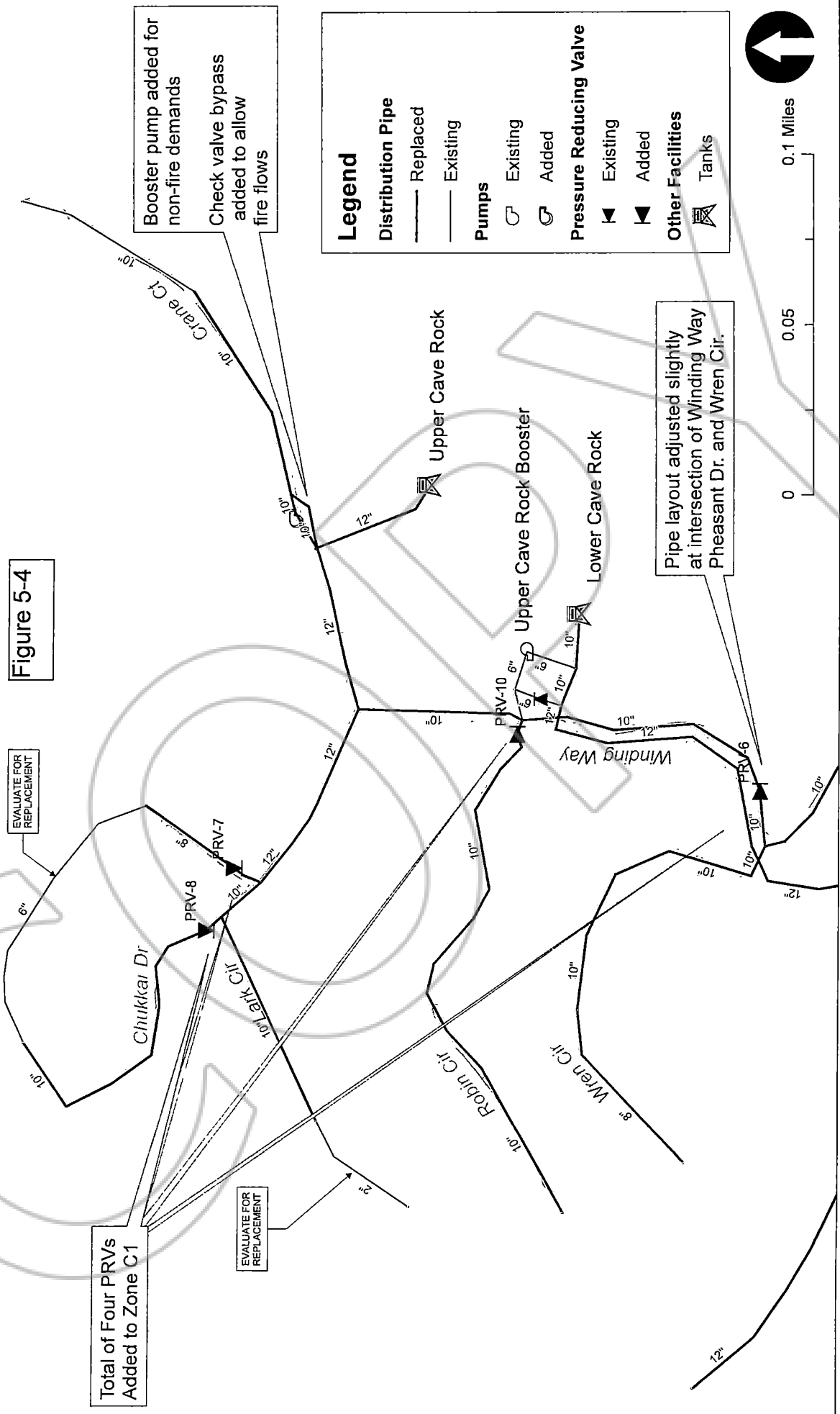
Legend

Distribution Pipe	Pumps	Pressure Reducing Valve	Other Facilities
— Replaced	⊕ Existing	▲ Existing	⊠ Tanks
- - - Existing	⊕ Replaced	▼ Added	



EXHIBIT B Alternative 1: Cave Rock Zone C1 Improvements

Figure 5-4



Booster pump added for non-fire demands
 Check valve bypass added to allow fire flows

Legend

Distribution Pipe
 — Replaced
 — Existing

Pumps
 ☉ Existing
 ☉ Added

Pressure Reducing Valve
 ▼ Existing
 ▼ Added

Other Facilities
 ☒ Tanks

Pipe layout adjusted slightly at intersection of Winding Way Pheasant Dr. and Wren Cir.

EVALUATE FOR REPLACEMENT

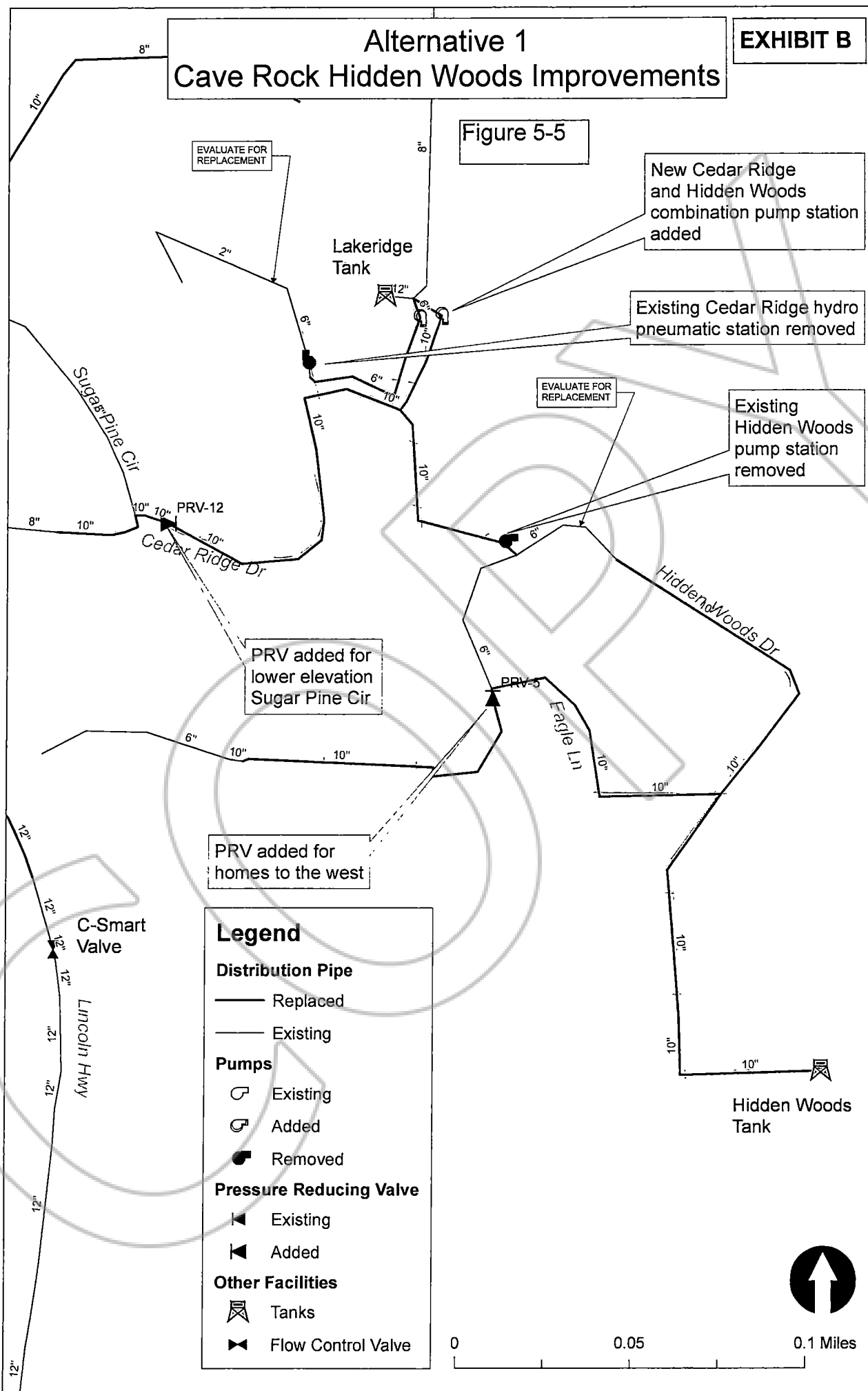
EVALUATE FOR REPLACEMENT

Total of Four PRVs Added to Zone C1

Alternative 1 Cave Rock Hidden Woods Improvements

EXHIBIT B

Figure 5-5



Legend

Distribution Pipe

- Replaced
- - - Existing

Pumps

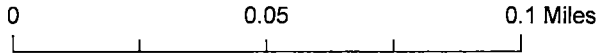
- ⌚ Existing
- ⌚ Added
- Removed

Pressure Reducing Valve

- ◀ Existing
- ◀ Added

Other Facilities

- ⌚ Tanks
- ⌘ Flow Control Valve



**EXHIBIT C
HDR RATE SCHEDULE
CAVE ROCK WATER SYSTEM IMPROVEMENTS**

**Douglas County
January 2020 to December 2021**

Architect	\$170 to \$190
BIM Designer	\$135 to \$165
CAD Designer	\$168 to \$190
CAD Technician	\$116 to \$140
Cost Estimator	\$143 to \$250
Drafter	\$90 to \$118
Electrical Engineer III	\$296 to \$315
Electrical Engineer II	\$185 to \$255
Electrical Engineer I	\$110 to \$150
Engineer/Designer	\$95 to \$115
Environmental Engineer II	\$185 to \$255
Environmental Engineer I	\$110 to \$150
Field Technician	\$90 to \$108
Financial Analyst II	\$160 to \$260
Financial Analyst I	\$90 to \$165
Principal	\$295 to \$325
Process Engineer	\$90 to \$135
Project Controller	\$95 to \$172
Project Coordinator	\$80 to \$105
Project Engineer II	\$170 to \$230
Project Engineer I	\$152 to \$175
Project Manager	\$170 to \$230
Public Outreach Specialist	\$210 to \$235
Staff Engineer	\$110 to \$155
Structural Engineer II	\$185 to \$255
Structural Engineer I	\$110 to \$150
Technical Specialist	\$280 to \$370
Water Modeler II	\$160 to \$200
Water Modeler I	\$125 to \$170

The billing rates cover payroll cost, employee benefits, and HDR overhead and profit.

EXPENSES at cost

Mileage (per mile)
Postage/Shipping
Reproduction
Travel

Current Federal Travel Regulation (FTR)

SUBCONSULTANTS are charged with a five percent markup.

COPY

Douglas County

State of Nevada

CERTIFIED COPY

I certify that the document to which this certificate is attached is a full and correct copy of the original record on file in the Clerk-Treasurer's Office on this

31st day of February, 2020
By [Signature] Deputy