EXHIBIT A

COCHISE COUNTY, ARIZONA
DEPARTMENT OF FACILITIES

SCOPE OF SERVICES

BISBEE-DOUGLAS INTERNATIONAL AIRPORT
WATER SYSTEM IMPROVEMENTS PROJECT
ENGINEERING DESIGN SERVICES

GENERAL

The Bisbee-Douglas International Airport Water System was constructed in the 1940s when the site was a military installation. The water system currently consists of two serviceable water supply wells, a distribution system consisting of 6-inch to 12-inch welded black steel pipe and numerous pipe service lines of 3 inches or less. A 200,000 gallon elevated tank serves as the water supply storage. Besides the prison facility, five other water demand points within the airport site area are the terminal building, three hanger buildings, and the old dog crematorium building. The major water demand on the system is for the state prison facility adjacent to the airport facility and to the east of the water elevated tank.

A Preliminary Engineering Report (PER) was developed in November 2011 that recommended improvements to the system. Cochise County, hereinafter called the "County" in the progress of the design effort, would like to move forward with design of a portion of the water system recommendations. The pipeline conveyance system improvements consists of installing a new pipeline from the elevated water tank north parallel to the prison outer fence and then connecting to the existing pipeline on the north side of the prison complex. In addition, a new pipeline will be installed from the north side of the prison complex directly west and tie into the northern end of the existing outer perimeter pipeline. By connecting the outer perimeter pipeline to the north prison complex pipeline, additional reliability and redundancy will be added to the water system. The total new pipe installation is approximately 2,950 linear feet of 8-inch diameter pipe. This Scope and Fee includes updating the PER and associated hydraulic model to a basis of design report, design of the recommended water conveyance system piping, Arizona Department of Environmental Quality (ADEQ) permitting assistance, construction inspections services, and development of Record Drawings.

TASK 100 – PROJECT MANAGEMENT

Objective: To provide monthly project status updates to County. Services in this task are exclusiveof other review/input tasks.

Activities:

101.1 Kickoff Meeting – Prepare Agenda and coordinate list of key stakeholders to kickoff meeting with County. Meeting will establish agreed milestones and priorities as well as means of communication among the stakeholders for the project. It is assumed that the kickoff meeting will be held in Bisbee, Arizona.

101.2 Monthly Status Reports – Provide County with detailed monthly status reports, which identify work completed by subtask, task, work anticipated, earned value analysis percent complete, updated schedule and any significant events affecting the project's progress.

101.3 Schedule Updates – The project manager will develop an overall schedule based on Microsoft Project, which will be updated on a monthly basis, per County requirements. The schedule will include task activities, start/completion dates, subtask interrelationships, deliverable milestones and key interface points with Utility staff.

Deliverables:

1. Kick-off Meeting Minutes
2. Monthly Status Reports
3. Monthly Schedule Updates

TASK 200 – LOCATING AND POTHOLING SERVICES

Objective: Perform locating and potholing services to identify and confirm pipe size and pipe materials at key tie-in locations and to locate pipelines to be abandoned and/or capped to isolate the water system grid.

Activities:

200.1 Locating and Potholing Services

Brown and Caldwell's subconsultant Cardo will perform locating and potholing services based on input from Brown and Caldwell, County, and Arizona Department of Corrections to verify pipe locations, pipe diameter, pipe depth, and pipe material to be used during the design phase to develop plan and profile drawings of the new water pipelines. This effort has been determined to be necessary due to the lack of accurate as-built drawings of the existing system and the multiple undocumented repairs that have occurred over the years. By performing locating and potholing services prior to design, Contractor delays and change orders will be reduced during construction. Subconsultant Cardno's scope and fee are included as Attachment A to this exhibit.

A. Survey of located pipelines.

TASK 300 – PRELIMINARY DESIGN

Objective: Prepare Basis of Design Report and preliminary plans that will represent the 30 percent design stage.

Activities:.

300.1 Basis of Design Report

Brown and Caldwell will prepare a Basis of Design Report addressing the following project criteria: preliminary pipe alignment plan, pipe material, costs, geotechnical conditions, and a preliminary opinion of probable cost prior to design of the project. The Basis of Design Report will incorporate all activities/tasks. The Basis of Design Report will serve as a 30 percent design phase effort.

A. Draft Basis of Design Report

A draft Basis of Design Report will be generated to address and include the following items:

1) Pipeline Alignment – Pipeline location and preliminary drawings showing plan and profile at a scale of 1 inch = 40 feet horizontal and 1 inch = 4 feet vertical.
2) Hydraulic Constraints – Provide a brief discussion of the hydraulic constraints and criteria governing the design of the pipeline. Hydraulic constraints will be based on hydraulic data modeled by Brown and Caldwell in the PER. The hydraulic model will be updated based on pipeline conveyance piping configuration updates since the PER was finalized in November 2011.
3) Material Evaluation – Pipeline material evaluation and recommendations based upon cost, corrosion potential, resistance and burial depth.
4) Existing Facilities/Utilities – Brown and Caldwell will contact utility agencies suspected of having facilities in the area of the pipeline route.
5) Implementation Schedule – Provisions for construction relative to maximum allowable downtime for construction and tie-in connections will be addressed.
6) Special Structures – Requirements for special structures will be identified and preliminary detail drawings will be developed and included in the Basis of Design Report.
7) Geotechnical Report – The geotechnical field investigation, analysis and engineering report will be used as a basis of design. Geotechnical data obtained during development of the PER will be attached to the Basis of Design Report.
8) Cathodic Protection – Cathodic protection of the water pipeline will be addressed in the Basis of Design Report based on data contained in the Geotechnical report.
9) Opinion of Probable Cost – A detailed opinion of probable cost for the project that addresses all aspects of design and construction will be included.

10) Recommendations and Conclusions – Final recommendations and conclusions for the project will be included in the report.

B. Final Basis of Design Report
The final Basis of Design Report will incorporate County's comments and revisions on the draft Basis of Design Report. Design of the project will proceed based upon information contained in the final Basis of Design Report.

Deliverables:

A. Draft Basis of Design Report – Three Copies to County.
B. Final Basis of Design Report – Three Copies to County.

TASK 400 – DESIGN SERVICES

Objective: Prepare Plan and Profile Drawings and Specifications for the Bisbee-Douglas Airport Water System Improvements Project based on the Basis of Design Report, available record drawings of the existing pipelines, evaluation of field survey and geotechnical data gathered for this project.

County Activities:
Review and comment on plan and profile drawings and specifications for 60 and 90 percent design phases.

Brown and Caldwell Activities:

400.1 Prepare the 60 percent plan and profile drawings for approximately 2,950 linear feet of new 8-inch waterline at a scale of 1 inch = 40 feet horizontal and 1 inch = 4 feet vertical. Tucson Water standard details will be utilized wherever possible with Brown and Caldwell standard details used when no Tucson Water standard detail is available.

400.2 Prepare and design the connections for the new piping to the existing piping at tie-in locations of the pipeline. Prepare the necessary plan and detail drawings for the connections and necessary tie-ins to existing water connections/services along the route.

400.3 Subconsultant Peak Corrosion Control, Inc. will prepare a corrosion monitoring and cathodic protection design for the new 8-inch ductile iron pipeline. The scope and fee for this work is included in Attachment B to this exhibit. If during the basis of design report an alternate non-corrosive material is selected, the corrosion monitoring and cathodic protection design work will not be executed and the fee will be reduced from the total budget allocated to this design work.

400.4 Prepare the 90 percent plan and profile drawings for the new 8-inch pipeline. The design documents will be reviewed at the 90 percent stage by a senior Brown and Caldwell technical specialist. This review will be conducted as a quality control/quality assurance measure.

400.5 Prepare submittals for the final set of construction contract documents.

Deliverables:

A. Submit one copy of half-size set of the 90 percent drawings to utility companies (Southwest Gas, Arizona Public Service, Qwest, Cable One, and other utilities determined to be present on site).
B. Submit three full-size sets of the 60 percent and 90 percent plans to County for review and comment. It is assumed that there will be a review meeting after each submittal to review comments. It is assumed that the review meetings will be held either in Bisbee or Tucson, Arizona.
C. Provide the 100 percent master set of drawings, signed and sealed to the County Project Manager for County printing and advertisement.
D. Submit one copy of full size final drawings to ADEQ for approval to construct.

TASK 500 – PERMITTING ASSISTANCE

Objective: Provide ADEQ permitting assistance to obtain Construction Authorization.

Brown and Caldwell will assist the County with applying for ADEQ Construction Authorization and packaging the permit documentation for installation of approximately 2,950 linear feet of 8-inch water pipeline. ADEQ permit fees are specifically excluded from this scope and fee due to the permit fee amount being unknown at this time. Brown and Caldwell will assist with closeout of the Construction Authorization permit after completion of the Record Drawings.

TASK 600 – SUBMITTAL REVIEWS AND RFIs

Objective: Review and approve submittals, shop drawings, and Requests for Information (RFIs).

Brown and Caldwell will receive, log, evaluate, and distribute shop drawings, RFIs, and other data from the County for which the Contractor is required to submit for the waterline project. Brown and Caldwell will maintain a log showing dates of submittals and RFIs, dates of return and review action. RFI review effort will be based on 5 RFIs. Submittal review efforts are based upon 8 submittals and a maximum of 12 total submittal reviews. In the event the total number of RFIs and/or Submittal reviews is exceeded, prior to expending the additional effort, Brown and Caldwell shall notify the County of the additional effort required for this activity. Submittals for this project are limited to pipe material, fittings, valves, bedding, shading, backfill material within the pipeline excavation trench, and pipeline appurtenances.

TASK 700 – CONSTRUCTION INSPECTION SERVICES

Objective: Provide construction inspection services.

In order to verify that the project is constructed in accordance with the Construction Documents, Brown and Caldwell will perform on-site inspection services and review of inspection and testing performed by other on-site inspection and testing agencies.

It is anticipated that Brown and Caldwell's construction inspection services would be on a part time basis and would be supplemented with full-time County inspection staff insuring that day-to-day construction activities and the new installation are in compliance with the approved Construction Documents.

For the purpose of this proposal it is assumed that Brown and Caldwell Inspection staff will perform 8 site visits to complete the construction inspection. The purpose of the site visits will be to observe specific hold points of construction that Brown and Caldwell will identify prior to the beginning of construction. Brown and Caldwell will rely on the County inspection staff to notify Brown and Caldwell 24 hours in advance of when specific Hold Points are reached so that Brown and Caldwell can make field trips to confirm the installation's acceptability.

Because of the location of the construction site, it is anticipated that each visit will take 8 hours to perform.

In addition, Brown and Caldwell will be provided daily construction observation reports, photographs and other information which will provide proof of proper installation. This information will be provided by on-site County Inspection staff. As part of the acceptance, Brown and Caldwell will rely on the material testing agency to perform compaction test in accordance with the contract documents and provide material testing reports to Brown and Caldwell. The material testing agency will be provided by others. In addition, pipeline pressure test reports and disinfection test reports will be provided to Brown and Caldwell for review as part of the inspection effort. Brown and Caldwell, as part of the inspection, will review these reports and rely on this information as part of the inspection effort. The total inspection effort is expected to take 72 hours. This includes 8 site visits and 8 hours of review of daily inspection reports and material test. It is assumed that the last site visit will be for final inspection.

TASK 800 – RECORD DRAWINGS

Objective: Prepare Record Drawings to document changes to design during construction activities for submittal to ADEQ.

It is anticipated that Redline drawings shall be kept up to date for review by Brown and Caldwell during site visits. Brown and Caldwell will rely on the accuracy of the Redline drawings when preparing the Record Drawings. Brown and Caldwell will incorporate Contractor provided Redline drawings, RFIs, contract changes and inspection data into the Record Drawings to document constructed infrastructure. The Record Drawings will be signed and sealed by Brown and Caldwell as the Engineer of Record provided inspection oversight is completed in Task 700. The Record Drawings, in addition to other testing results, are required to be submitted to ADEQ in order to close out the Construction Authorization permit and obtain authorization to commission the pipeline for potable water use. Brown and Caldwell will assist with closeout of the Construction Authorization permit under task 500.

ASSUMPTIONS AND EXCLUSIONS

- The County shall take responsibility for all activities associated with construction period schedule development and review and management.

- The County will perform all functions associated with Pay Request review, approval and execution.
- Follow-up Operations and Warranty Services are not included.
- Quality Control materials testing will be by others.
- Permitting fees, if any, are not included.
- Brown and Caldwell shall provide no on-site facilities during the construction.
- During the construction period Brown and Caldwell shall have access to on-site facilities for the purpose of reviewing project documentation and preparing inspection reports.

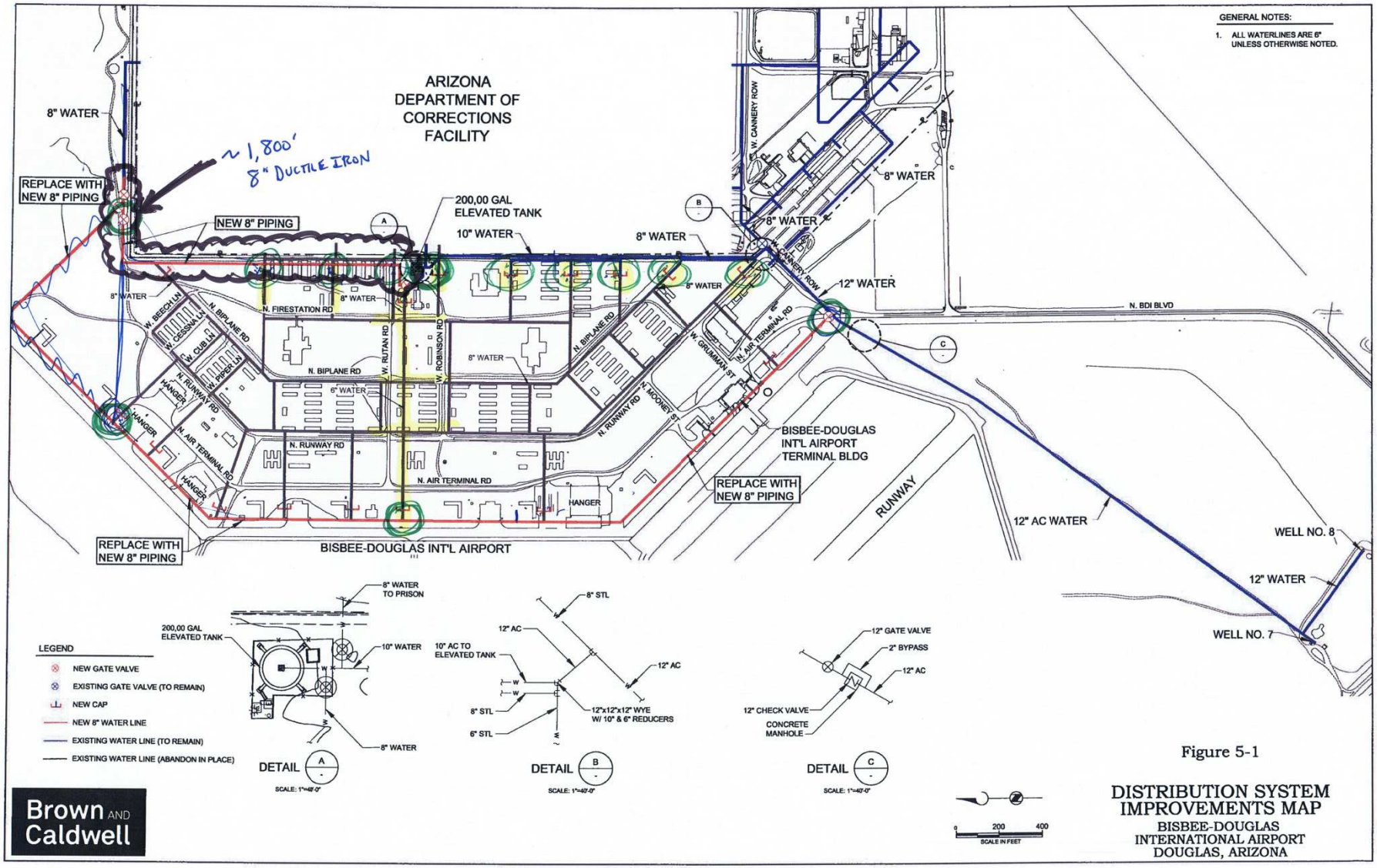

Figure 5-1

DISTRIBUTION SYSTEM IMPROVEMENTS MAP
BISBEE-DOUGLAS INTERNATIONAL AIRPORT
DOUGLAS, ARIZONA

TBE Group, Inc. (d/b/a Cardno TBE) is pleased to submit this proposal to provide professional Subsurface Utility Investigation services for the above referenced project to Brown and Caldwell (Client). The scope of work and fee structure are as follows:

SCOPE OF WORK

Project limits for Subsurface Utility Investigation services are identified with yellow highlight marks on the attached exhibit entitled received Monday, March 30, 2015 during our meeting at your office to augment previously conducted utility designating and mapping. Cardno will provide utility designating services of existing traceable subsurface water lines (either metallic or non-metallic buried with trace wire) utilizing a variety of geophysical locating equipment to detect, verify and designate the approximate horizontal location of subsurface water lines from above ground, untraceable (nonmetallic) utilities will not be marked. Designated lines shall be marked in the field using the standard APWA color convention. Once designated the utilities will be surveyed and incorporated into a CAD format for delivery to Client. Cardno does not guarantee the completeness of utility designation services within the requested areas due to the lack of utility as-built data. Use of this service does not negate an excavator's responsibility to notify the Arizona 811 One Call Center 48 hours prior to any excavation. Client shall provide any available utility record information to Cardno prior to providing designating service. It is understood that none of this additional utility investigation will involve entering the Arizona Department of Corrections (ADOC) facility. Prior to providing service, Client will provide CAD files containing the project topographic base mapping, preferred CAD standards (linetypes, symbols, sheet borders, etc.), existing rightof- way and monument lines, along with horizontal and vertical survey control signed and sealed by an Arizona Professional Land Surveyor.

After Client has reviewed the utility mapping, Cardno will, on a separate mobilization, provide up to fifteen (15) vacuum excavation potholes (testholes) on existing water lines at locations yet to be determined but possibly as identified circled in green on attached exhibit. The utility data obtained through our standard potholing procedure includes the depth, horizontal and vertical location tied to project datum via survey, size, and material composition of the utility exposed. Our standard potholing procedure includes backfilling pothole with compacted native material and pavement restoration with "permanent" asphalt cold patch.

Prior to beginning work, Cardno will request the following:

- A pothole request list in spreadsheet format identifying the pothole number (numbered without alpha
- characters), horizontal location in coordinate format, and the anticipated size and type of utility to be potholed.
- One set of 11" x 17" plan sheets displaying background culture, existing utilities, and pothole locations clearly marked and annotated with the corresponding pothole number.

DELIVERABLES

Cardno will provide utility mapping in electronic MicroStation format utilizing Client's CAD standards and conventions as well as one hard copy deliverable signed and sealed by an Arizona Professional Land Surveyor. Pertinent utility data will be presented in electronic format on our

standard “Testhole Data Summary” form sealed by an Arizona Registered Land Surveyor or Arizona Registered Professional Engineer that includes the depth, horizontal coordinates, vertical elevation, size, and material composition of the utility line exposed at each pothole along with submittal of an electronic Microstation CAD file depicting the horizontal pothole locations. Data will be submitted in both sealed hard copy formatand electronic Excel format.

SCHEDULE

Cardno will work closely with the project team to provide deliverables in a timeframe consistent with the overall project schedule.

Estimated time to complete each task is as follows:

- Utility Designating, Survey , & Mapping – 10 business day
- Utility Vacuum Excavation & Deliverable Preparation – 10 business days

ESTIMATED FEE

For the requested SUE services Cardno proposes compensation on an **Hourly** basis as follows:

Subsurface Utility Designation, Survey and Mapping Services

Classification	Rate	Estimated Quantities	Unit	Total Amount
Project Manager	$125.00	4	Hours	$500.00
Survey Manager	$140.00	2	Hours	$280.00
Two Person Designating Crew, Truck, and Equipment (Portal to Portal from Tucson Office)	$150.00	18	Hours	$2,700.00
Two Person Survey Crew with GPS, Truck and Equipment (Portal to Portal from Tucson Office)	$160.00	14	Hours	$2,240.00
CAD Technician	$85.00	16	Hours	$1,360.00
Subsistence with Overnight Stay – Per Crew Person Per Day	$130.00	2	Days	$260.00
Subsistence without Overnight Stay – Per Crew Person Per Day	$35.00	2	Days	$70.00
Administrative Support	$65.00	1	Hours	$65.00
Subtotal				**$7,405.00**

Air-Vacuum Excavation Services

Classification	Rate	Estimated Quantities	Unit	Total Amount
Project Manager	$125.00	3	Hours	$375.00
Survey Manager	$140.00	2	Hours	$280.00
Two Person Vacuum Excavation Crew, Truck and Equipment (Portal to Portal from Tucson Office)	$190.00	28	Hours	$5,320.00
Two Person Survey Crew with GPS, Truck and Equipment (Portal to Portal from Tucson Office)	$160.00	14	Hours	$2,240.00
CAD Technician	$85.00	16	Hours	$1,360.00
Subsistence with Overnight Stay – Per Crew Person Per Day	$130.00	4	Days	$520.00
Subsistence without Overnight Stay – Per Crew Person Per Day	$35.00	2	Days	$70.00
Administrative Support	$65.00	1	Hours	$65.00
Subtotal				**$10,230.00**

TOTAL ESTIMATED FEE **$17,705.00**

Cardno will not exceed the estimated fee without prior authorization from Client. **Cardno will prepare an invoice upon completion for the hours worked plus reimbursable expenses up to the total Estimated Amount.**

Proposal and Scope of Services – Rev. 1

Peak Corrosion Control, Inc. is submitting the following revised 3000 LF (from 9100 LF) Proposal and Scope for the Corrosion Monitoring and Cathodic Protection design referenced above. The geotechnical report states that soil resistivities range from 200 to 330 ohm-cm which is extremely low and highly corrosive soils. It is our recommendation, that sacrificial (galvanic) cathodic protection be designed for the 8-inch ductile iron pipe waterline including corrosion monitoring test stations.

<u>Corrosion Monitoring and Cathodic Protection 1 Lump Sum</u> …….… $5,100.00
Design of corrosion test station locations, sacrificial cathodic protection system along with electrical continuity joint bonding and isolation

1. Locations of other pipelines and utilities crossing or near proposed main of concern
2. Stray current control devices
3. Electrical isolations
4. Casing crossings
5. Details on 8-1/2”x11” MacDraft drawings. Plan drawings by others.
6. Review and redline 50% and 90% specifications, plans and drawings.
7. Review final 100% specifications, plans and drawings
8. Construction cost estimate for Corrosion Monitoring and Sacrificial Cathodic Protection

Exhibit B Compensation

Cochise, County of (AZ) – BDI Airport Water Design

		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Reproduction		Company Vehicles		Cardo		Peak Corrosion					
Phase	Phase Description	PM	PA	QA/QC	Engineer	Drafting	Modeling	WP	Acct	Cost Est	Total Labor Hours	Total Labor Effort		Total ODCs		Total Unit Pricing Effort	Hours	Cost	Hours	Cost	Total Sub Cost	Total Expense Cost	Total Expense Effort	Total Effort
		$167.00	$148.00	$219.00	$107.00	$148.00	$196.00	$126.00	$107.00	$196.00														
100	Project Management	24	12	4	8	0	0	0	8	0	68	8,372	0	0	150	160		0		0	0	0	160	8,622
200	Locate/Potholing	20	0	0	0	8	0	0	0	0	28	4,624	0	0	150	160		17,705		0	17,706	17,706	17,866	22,379
300	Preliminary Design	24	0	4	24	0	8	6	0	16	82	12,912	0	0	0	0		0		0	0	0	0	12,912
400	Waterline Design	60	0	10	48	80	0	12	0	0	210	30,688	300	300	300	300		0		5,100	5,100	5,400	5,700	36,388
500	Permitting Assistance	20	0	0	20	0	0	4	0	0	44	5,984	0	0	0	0		0		0	0	0	0	5,984
600	Submittals / RFIs	32	0	0	16	0	0	0	0	0	48	7,068	0	0	0	0		0		0	0	0	0	7,068
700	Inspection Services	72	0	0	0	0	0	0	0	0	72	12,024	0	0	1,200	1,200		0		0	0	0	1,200	13,224
800	Record Drawings	8	0	0	0	12	0	0	0	0	20	3,112	300	300	0	0		0		0	0	300	300	3,412
	GRAND TOTAL	260	12	18	116	100	8	22	8	16	680	84,682	600	600	1,800	1,800		17,706		5,100	22,806	23,406	25,206	109,887

BROWN AND CALDWELL
SCHEDULE OF FEES

Level	Engineering	Technical/Scientific	Administrative	Rate
A			Office/Support Services I	$59
B	Drafter Trainee Student Trainee I	Field Service Technician I	Office/Support Services II Project Assistant Word Processor I	$71
C	Assistant Drafter Student Trainee II	Field Service Technician II	Office/Support Services III Sr. Project Assistant Word Processor II	$80
D	Drafter Engineer Aide Engineering Technician I Inspection Aide	Field Service Technician III	Office/Support Services IV Project Coordinator I Word Processor III Project Accountant I	$91
E	Sr. Drafter Assistant Designer Engineer I Engineering Technician II Inspector I	Sr. Field Service Technician Geologist/Hydrogeologist I Scientist I Computer Programmer	Word Processor IV Project/Contract Coordinator Project Coordinator II Project Accountant II	$107
F	Lead Drafter Designer Engineer II Engineering Technician III Inspector II	Geologist/Hydrogeologist II Scientist II Comp Sys Analyst/Programmer I	Executive Support Services II Supervising Word Processor Sr. Project Coordinator Technical Writer Project Accountant III	$126
G	Supervising Drafter Sr. Designer Engineer III Sr. Engineering Technician Inspector III	Geologist/Hydrogeologist III Scientist III Comp Sys Analyst/Program II	Contracts Administrator Sr. Tech Coordinator/Analyst Project Accountant IV	$148
H	Chief Drafter Principal Designer Sr. Engineer	Sr. Geologist/Hydrogeologist St. Scientist Manager Computer Services	Project Control Manager Sr. Technical Writer Accounting Manager	$167
I	Supervising Designer Principal Engineer	Principal Geologist/Hydrogeologist Principal Scientist Sr. IT Analyst/Developer	Corp. Contract Administrator Sr. Elect Media Specialist	$189
J	Chief Designer Supervising Engineer	Supervising Geol/Hydrogeologist Supervising Scientist Sr. IT Analyst Developer	Risk Manager	$196
K	Managing Engineer	Managing Geol/Hydrogeologist Managing Scientist IT Program Manager Information Technology Director	Corp Health & Safety Director	$219
L	Chief Engineer Executive Engineer	Chief Geologist/Hydrogeologist Chief Scientist Manager, Info Tech Services Principal IT Analyst/Developer	Corporate Counsel Sr. Client & Bus. Developer	$236
M	Vice President			$252
N	Sr. Vice President			$264
O	Executive Vice President			$274