APPENDIX A - PROPOSAL COVER SHEET
CITY OF DULUTH
RFP 21-AA30
Professional Services for Enger Park Golf Course Irrigation Design

Bidder Information:	
Bidder Name	Irrigation Consulting, Inc.
Mailing Address	20 Merrit Parkway, 2nd Floor, Nashua, NH 03062
Contact Person	Brian Vinchesi
Contact Person's Phone Number	508-328-1201 (Mobile)
Contact Person's E-Mail Address	bvinchesi@irrigationconsulting.com
Federal ID Number	04-3147807
Authorized Signature	
Authorized Signer's Name	Brian E. Vinchesi
Authorized Signer's Email Address	bvinchesi@irrigationconsulting.com
Title	President

Irrigation Consulting , Inc.

Providing innovative design solutions for irrigation worldwide.

December 20, 2021

City of Duluth
Attn: Purchasing Department
City Hall, Room 120
411 West 1st Street
Duluth, MN 55802

RE: RFP Number 21-AA30

To Whom It May Concern:

Please find enclosed one (1) original of a submittal packet proposing to provide irrigation design services for the Enger Park Golf Course in Duluth, Minnesota. This packet contains the required information pursuant to the RFP Number 21-AA30 for the Enger Park Golf Course Irrigation Design dated November 30, 2021.

Irrigation Consulting's goal is to assist the Enger Park Golf Course and the City of Duluth with the planning, design and installation of a new irrigation system that allows the turf management staff to irrigate the golf course the way they want, with a system that is properly engineered, water efficient, well-constructed and designed for reduced maintenance in the future. The system should also include all of the equipment necessary for your staff to properly manage the turf and the available water supply. Our job would be to engineer the system so that it will operate correctly and to assist the City of Duluth and Enger Park Golf Course with all irrigation related issues from design through construction.

Some of our more well-known national golf course clients that we have designed new irrigation systems for are: The Creek, Shadow Creek, Milwaukee Country Club, Laurel Valley Country Club (twice), The Kirtland Club, Rolling Rock Club (twice), Olympia Fields Country Club,

Chicago Golf Club, Sebonack Golf Club, Conway Farms Golf Club and Aronimink Golf Club. We have also significant experience working with publicly owner golf facilities having worked on over 60 town, city, county, state and federal courses.

Irrigation Consulting, Inc. deals only with irrigation design, is completely independent and non-bias in our decision-making and has no ties to manufacturers, distributors or contractors. Our firm has worked on over 400 golf courses throughout the United States and Internationally. We are staffed with a mixture of irrigation engineers, former irrigation distributors and former irrigation contractors, which gives us hands on insight to all aspects of the design, installation and maintenance of golf course irrigation systems. Our staff includes three American Society of Irrigation Consultants professional members, three Irrigation Association nationally certified golf course irrigation designers, four EPA WaterSense Partners and three degreed engineers.

Other aspects of our company that set us apart from our competitors include the fact that we perform all work in-house with our own personnel and do not subcontract our services. In addition, every aspect of our work is customized for each project. Drawings, specifications and details are customized and designed by us not others and do not include blanket statements that cover possible scenarios not applicable to the Enger Park project. Everything is custom designed in house for every project.

Irrigation Consulting exceeds the expectations of our customers by using WaterCAD computer hydraulic piping analysis to size pipe, producing color drawing packages and using our in-house, GPS systems to increase the accuracy of our drawings, bid results and the golf course irrigation system final record drawings. Our total commitment to the Client's needs and the quality of our work is well respected within the golf course community by Clients, Architects, Distributors, Manufacturers and Contractors.

Irrigation Consulting is excited about working with the City of Duluth on the design of Enger Park's proposed twenty-seven-hole irrigation system. As you review the submitted information, if you have any questions, please do not hesitate to contact me at 508-328-1201 or via email: bvinchesi@irrigationconsulting.com.

Sincerely,

Brian E. Vinchesi
President

ENGER PARK
GOLF COURSE

27 HOLE
AUTOMATIC IRRIGATION SYSTEM
DESIGN PROPOSAL

Prepared for:

City of Duluth
Attn: Purchasing Division
City Hall, Room 120
411 West 1st Street
Duluth, Minnesota 55802

Prepared by:

Irrigation Consulting, Incorporated

20 Merrit Parkway, 2nd Floor
Nashua, NH 03062
978.433.8972

112 S. Old Statesville Road, Suite 109
Huntersville, NC 28078
704.843.3688

December 20, 2021

SCOPE OF WORK

GENERAL

Irrigation Consulting, Inc. designs sustainable golf course irrigation systems with water and energy conservation as a focal point in selecting system components and making design decisions.

Enger Park Golf Course's irrigation system will be custom designed from an AutoCAD base drawing provided by the City of Duluth in a dwg. format by Irrigation Consulting and according to state-of-the-art irrigation design procedures by our in-house staff. A computer generated; electronic design will be created using AutoCAD R-2021 software. The manufacturer's materials selected for the design will be as selected by the City of Duluth, with Irrigation Consulting's input or through competitive "apples to apples" bidding following a strict criterion established by the City of Duluth and Irrigation Consulting, Inc.

PHASE I - PRELIMINARY DESIGN

PRELIMINARY DESIGN

During the preliminary design portion of Phase-I, Irrigation Consulting will prepare a design showing a proposed sprinkler layout for the twenty-seven-hole golf course irrigation system and associated practice areas. This preliminary design will be reviewed at our first design visit to the site I will walk the golf course with the golf course superintendent to determine areas to be watered or not watered and to check the layout and location of each sprinkler.

Once a certain amount of direction has been given as to the type of system desired and the sprinkler layout has been fine-tuned from the initial drawing, Irrigation Consulting will present you with a color "coverage" drawing of the twenty-seven holes and associated practice areas.

The color coverage drawings will show all areas that:

a. receive adequate irrigation water;
b. receive some irrigation water; and
c. receive no irrigation water.

The City of Duluth can then, with the use of this drawing, remove or add areas to be irrigated. In this way, the City of Duluth will be able to precisely pinpoint areas to be watered, areas not to be watered, and areas to receive incidental watering before the system is installed. This could take several iterations with the golf course staff and city personnel. Through this procedure areas that may be bid as alternates can also easily be identified.

WATER USE/WATER BALANCE ANALYSIS

Within Phase-I, a water use/water balance analysis for the proposed irrigation system will be prepared. The water use analysis will look at greens, tees, fairways and rough from a weekly and yearly water use standpoint. The analysis will outline anticipated yearly usage from both a precipitation rate method and a deficit method based on Regional Climatic Center rainfall and evapotranspiration data for more accurate results. The analysis will not only show anticipated water use, but also determine the appropriate pond storage volume and pumping capacity for the proposed golf course irrigation system. The recommendation on pumping rates considers the newly proposed system, acceptable time for watering, syringing requirements, the USGA standards for watering time and a certain degree of safety.

The results of the analysis will be used to determine the required water storage volume and working with the Civil Engineers, the size of the size of the proposed irrigation pond.

IRRIGATION SPECIFICATIONS

Irrigation Consulting will produce preliminary specifications for the irrigation design for Enger Park Golf Course.

COST ESTIMATES

Cost estimates will be derived from the preliminary documents for the irrigation and pump system. Recommendations will be taken into consideration and a project budget will be established, with individual budget numbers for each aspect of the project provided.

PRELIMINARY DESIGN MEETING

Upon delivery of the coverage drawing, Irrigation Consulting will meet with City of Duluth and Enger Park Golf Course personnel to review the design to date. The meeting will facilitate any and all changes that are required to the preliminary design.

PHASE 2 - FINAL DESIGN & BIDDING

FINAL IRRIGATION DESIGN

Following the review and approval of the preliminary design information, Irrigation Consulting will prepare the final design. At this point in the design process, irrigation pipe routing (we will walk the pipe routings for accuracy) and sizes, field decoders, quick coupler, air relief and isolation valve locations along with typical installation details will be available for review. Hydraulic analysis of the complete piping system will be provided using state of the art "WaterCAD" computer hydraulic modeling software. This software in conjunction with our expertise ensures a hydraulically sound, yet economically feasible

piping design that will provide the required pressure to all the sprinklers installed on the new irrigation system. With the final design we will also submit an updated cost estimate for the complete irrigation and pump system installations.

IRRIGATION SPECIFICATIONS

Irrigation Consulting will produce written specifications to enhance the final approved irrigation design for Enger Park Golf Course. The specifications will be written to ensure that only qualified Golf Course Irrigation Contractors will be able to submit bids for the work. Specifications will be written to ensure fair bidding among the major manufacturers of golf course irrigation equipment. All model numbers, part numbers and other pertinent information, for each manufacturer's equipment, will be provided in the specifications. This allows the City of Duluth, with our direction, to allow or disallow any particular product if it meets or does not meet the specifications.

Additionally, the professionally written specifications cover every aspect of the relationship between the Contractors working on site and Enger Park Golf Course, and the City of Duluth, including staging and coordination of materials on-site, payment issues, phasing of the work to be completed, warranty information and numerous other items mandatory for the proper installation of an irrigation system for an existing public facility of this magnitude. The City of Duluth shall provide boiler plate up front material and wage rates.

PUMPING SYSTEM

As part of the irrigation engineering services to be provided, Irrigation Consulting will determine, design and specify new pumping equipment capable of providing water for the twenty-seven-hole irrigation system and its associated practice areas from the proposed new pond. The pumping system will be customized for the requirements of the irrigation system to be installed at Enger Park Golf Course and to meet the final watering window requirements of the proposed design. The pumping components will conform to all local, state and federal codes for installations of this type. Coordination with the Electrical Engineers, but not design, of new electrical supplies to the pump system is included in our proposal. Schematic pump house design to provide the Architect with the required dimensions and components is also included as well as wet well and intake pipe design.

PUMP SPECIFICATIONS

Irrigation Consulting will produce written specifications to enhance the final approved pump system for this project. The specification will be written to ensure that only qualified pump system Contractors / Manufacturers will be able to submit proposals for the work. Specifications will be written to ensure competitive bidding among the major manufacturers of golf course pumping equipment. The City of Duluth shall provide boiler plate up front material and wage rates.

FINAL REVIEW MEETING

Upon completion of the final design information, a review meeting will be held with City of Duluth personnel to discuss the final design. Any changes required by the meeting will be addressed before final bid documents are produced.

BID DOCUMENTS

Irrigation Consulting will assist the City of Duluth in preparing the bid package for the irrigation and pump systems as required by the City of Duluth. Irrigation Consulting's proposal package will consist of an informational cover sheet, a minimum of 4 drawings including a piping drawing, two electrical drawings (one Rain Bird and one Toro), installation details and pump system mechanical drawings as required. A set of Project Documents, as described under specifications, will be provided for the irrigation and pump systems. The Project Documents will include as necessary: instructions to bidder's, bid form, insurance and bonding requirements, supplementary conditions, technical specifications and the contract procedure. Irrigation Consulting's specifications will follow the Construction Specifications Institute format or as required by the City of Duluth.

BIDDING SERVICES

Irrigation Consulting will assist the City of Duluth with bidding this project to qualified Contractors. Our office will color reproduce the bid documents. Once the Contractors have received the documentation, and on a schedule arrived at by the City of Duluth, Irrigation Consulting will hold a pre-bid meeting with all the Contractors. The meeting will be held at the golf course to walk the Contractors through the project and answer questions about the irrigation system drawings and specifications.

PHASE - II CONSTRUCTION COORDINATION

CONSTRUCTION COORDINATION SERVICES

Irrigation Consulting will perform construction coordination services on all phases of the irrigation and pump system installations described above. To help fully coordinate the project and protect the interests of the City of Duluth, our firm will advise on the administrative aspects of the relationship between Enger Park Golf Course, the City of Duluth and the selected Contractor as follows:

1. *Addenda*: During the bidding process, any issues that arise requiring an addendum will be initiated by our office.

2. *Shop Drawings*: As required under the specifications, Contractors will submit shop drawings and product submittals for review and approval by our office before irrigation system materials can be ordered. The review of these shop drawings will

be made to ensure materials conform to the drawings and specifications before they arrive on site.

3. *Material Review*: Upon arrival of the irrigation materials on the site, and in conjunction with our first visit to perform equipment staking as described below, our staff will review irrigation materials delivered to the site to ensure they conform to the approved product submittals.

4. *Payment Requisitions*: All requests for payment from the Contractors will be reviewed and approved by our office prior to the City of Duluth's approval. This allows our office to ensure the Contractor is invoicing only for an amount equal to the work performed.

In addition to administrative tasks during the irrigation construction phase, Irrigation Consulting will perform on site construction coordination for the irrigation and pump system installations as described below. We have included a minimum of fourteen (14) days on-site during construction of the irrigation system and pump systems. These fourteen (14) days include a minimum of twelve (12) site visits for general construction observation and staking of irrigation equipment locations, and a minimum of two (2) days for the complete punch listing of the irrigation and pump systems after the installations are complete.

All site visits are followed up with a written report to the City of Duluth, the supplier and the contractor outlining what was performed and observed while on site, as well as the progress of the Contractor. Final punch lists will be generated to highlight all areas of the project installation that need to be addressed due to lack of compliance to the irrigation or pump system specifications or drawings. Correction of all punch list items is required by Irrigation Consulting and the City of Duluth before final payment to the contractors will be approved.

GPS SERVICES

RECORD DRAWINGS

Items that will be included in the data collection for the irrigation system record drawings will include sprinklers, valves, mainline pipe routing, wire routing, wire splices and grounding grids.

Irrigation Consulting will prepare the GPS record drawing for integration into the mapping feature of the irrigation central control software. Our office will convert the GPS file to a format compatible with the chosen software when provided with the database.

Our office will provide one (1) hole-by-hole, color laminated field books with separate sheets for both mechanical and electrical irrigation system information.

A yardage marker plan identifying the yardage of each sprinkler to the center of the green will also be provided. All sprinklers between 50 and 250 yards of the green will have their yardage identified. Yardage markers shall be provided by Enger Park Golf Course/City of Duluth.

Accurate square-foot area measurements for greens, tees, fairways and bunkers will be provided as part of the GPS mapping services. This information will be provided on a drawing and on an Excel spreadsheet for your use. Additionally, the location/measurement of the center of the green will be provided.

DELIVERABLES:

The following finished products will be delivered under this scope of work:

- 1" = 200' color base map
- 1" = 100' color irrigation mechanical and electrical maps (1 each)
- (1) Color laminated field books
- 1" = 200' color sprinkler yardage plan
- 1" = 200' color feature area plan
- Excel spreadsheet with feature areas
- CD-Rom with all digital files upon completion

PROGRAMMING

Irrigation Consulting will provide programming in conjunction with the local distributor of the chosen software databases based on the record drawings produced. This will include sprinkler databases, and hydraulic trees.

PERMITTING

Irrigation Consulting will coordinate with the chosen Landscape Architecture and Civil Engineers to identify and provide information for any required permits. Potential permits include , but may not be limited to freshwater wetlands, dredging and land disturbance.

SUMMARY OF SERVICES PROVIDED

Our independent irrigation design services include all the functions necessary for the complete master planning, design and implementation of Enger Park Golf Course's proposed twenty-seven-hole irrigation and pump systems.

* Irrigation and pump system design to the parameters and objectives outlined by Enger Park Golf Course/City of Duluth.

* Drawings, schematics and details to adequately and precisely show the design of the new irrigation and pump systems and their associated equipment.

* Specifications to compliment and emphasize the irrigation and pump system designs.

* Electrical Supply Coordination

* Cost estimates for all aspects of the project.

* Attendance at a Pre-bid Meeting.

* Bid Review.

* Submittal Review.

* Staking and Site Observation for the irrigation and pump system installations as outlined.

* Final Punch List for the irrigation and pump systems.

* GPS Record Drawing Generation in an electronic format as outlined.

* Programming as outlined.

* Permitting Coordination as outlined.

EXCLUSIONS

Specifically excluded from this proposal are professionally stamped drawings (Minnesota PE or Architect – we will stamp with our Certified Golf Course Irrigation Designer stamp), pump house, restroom and other related building designs, permitting, well design, bathymetry, programming, wetland mapping, surveying, hydrogeologic and well testing services and pond or water storage facility design, pump station power supply design, pump

house design and irrigation for other than twenty-seven golf holes and associated practice areas.

Statement of Strength and Unique Insight

Irrigation Consulting, Incorporated is one of the nation's largest consulting firms specializing in golf course irrigation. We provide design, construction observation, water management, pump system engineering and GPS mapping services as they specifically apply to irrigation projects. Our firm was founded in 1988, and have offices/personnel located in Nashua, New Hampshire and Huntersville, North Carolina. Irrigation Consulting, Inc. is incorporated in Massachusetts.

Through the years, our firm has been involved in over 380 golf course irrigation projects, both new construction and system renovations. Our experience and past references include 9-hole systems through entire 54-hole complexes in both the private and public sectors. We have worked on golf courses from New England to South Carolina and Georgia, west to Oregon and Nevada and internationally in Mexico, Canada, Puerto Rico and Guatemala. Our broad list of past project experiences gives us a unique perspective when approaching the design of a new system. We know what works and what does not, especially in the public sector, having worked on over 60 publicly owned facilities.

Irrigation Consulting employs a talented staff of degreed agricultural and civil engineers, landscape horticulturalists, certified golf course irrigation designers and EPA WaterSense Partners including Brian Vinchesi, the 2009 EPA WaterSense Irrigation Partner of the Year. Our work is performed 100% electronically using AutoCAD design and state of the art WaterCAD hydraulic computer modeling software's. Computerized hydraulic water distribution modeling is an invaluable tool when designing a cost effective, yet technically sound mainline pipe network. We have also developed a bid specification through years of experience that provides the utmost protection to our clients, especially public clients, during bidding and construction phases.

The firm maintains close contact with the irrigation industry through involvement with education, leadership roles dealing in technical issues, and knowledge of new technology and equipment, resulting in a firm wide dedication to success on all design projects.

Irrigation Consulting, Inc.
Providing innovative design solutions for irrigation worldwide.

Enger Park Relevant 2-Wire Client References

1. **Conway Farms Golf Club (2018-2022)**
   Conner Healy, Golf Course Superintendent (847.895.2589)
   Lake Forest, Illinois
   18-Hole Irrigation System Design, Transfer Pipe System and Pumping, Staking, Construction Administration and GPS Services
   chealy@conwayfarmsgc.com

2. **Eugene Country Club (2020-2021)**
   Tim Clonninger, Golf Course Superintendent (702.540.9112)
   Eugene, Oregon
   18 Hole Irrigation System Design, Pump Control Retrofit, Staking, Construction Administration and GPS Services.
   tcloninger@eugenecountryclub.com

3. **Champion Hills Country Club (2017-2020)**
   Alan Burnette, Golf Course Superintendent (828.808.0234)
   Hendersonville, North Carolina
   18-Hole Irrigation System Design, 5 Booster Pump Stations, Transfer Automation, Staking, Construction Administration and GPS Services
   Alan@championhills.com

4. **Woodland Golf Club (2018-2021)**
   Christopher Donadio, Golf Course Superintendent (781.630.0120)
   Auburndale, Massachusetts
   18-Hole Irrigation System Design, Well Pump System Renovations, Staking, Construction Administration and GPS Services.
   cdonadio@woodlandgolfclub.com

5. **Hatherly Country Club (2019-2021)**
   Rich Caughley, Golf Course Superintendent (617.653.1832)
   Scituate, Massachusetts
   18-Hole Irrigation System Design, Pond Design, Pump Station Design, Well Pump System Automation, Staking, Construction Administration and GPS Services.
   rich.caughey@hatherlycc.com

Description of Key Members and Role

Brian E. Vinchesi – President, Irrigation Consulting, Inc.

As President of Irrigation Consulting, Incorporated, Brian has been involved in over 2,000 irrigation projects ranging from golf courses to cranberry bog irrigation. Brian is assigned to project evaluation, project management, specification writing, engineering, field staking and design review. Key experiences and qualifications relevant to the Enger Park Golf Course project are as follows:

- 2009 EPA WaterSense Irrigation Partner of the Year
- 2015 Irrigation Association Industry Achievement Award
- 2017 ASIC Roy Williams Award Winner
- LEED Accredited Professional
- Degreed Agricultural Engineer (B.S. Montana State)
- Irrigation Association Certified Golf Course Irrigation Designer, Auditor and Water Manager – Past Chairman, Certification Board
- Irrigation industry leader – Past President, Member of the Irrigation Association
- Worked on over 150 public irrigation projects for municipalities, county, state and the federal government including 55 golf courses.
- Member, American Society of Agricultural and Biological Engineers (ASABE)
- Past President, Professional Member American Society of Irrigation Consultants (ASIC)
- Expert in efficient irrigation practices and design
- Expert in all aspects of irrigation engineering; material specifications, proper installation techniques, applicable standards, environmental regulations, water supply development and pump system engineering
- Coauthor: Golf Course Irrigation Design (John Wiley and Sons)
- GCSAA, Rutgers University, University of Massachusetts and Irrigation Association Instructor

Stacy O. Gardner – Project Designer, Irrigation Consulting, Inc.

As a project designer with 43 years' experience, Stacy has been involved in over 200 golf irrigation projects. Stacy is assigned to irrigation design; materials take offs and design review. Key experiences and qualifications relevant to the Enger Park Golf Course project are as follows:

- EPA WaterSense Partner
- Irrigation Association Certified Golf Course Irrigation Designer and Auditor
- Professional Member American Society of Irrigation Consultants (ASIC)
- 35 years' experience in efficient irrigation practices and design
- Expert in all aspects of irrigation design; material specifications, proper installation techniques and applicable standards.

Justin Montani – Project Design Engineer, Irrigation Consulting, Inc.

As a project engineer, Justin has worked on over40 golf course irrigation design projects throughout the United States. Justin is assigned to engineering, design, GPS collection and processing as well as programming. Key experiences and qualifications relevant to the Enger Park Golf Course project are as follows:

- Degreed Civil Engineer (B.S. University of Massachusetts, Dartmouth)
- Five years' experience as a water resources professional
- Five years' experience as a practicing irrigation engineer
- Highly proficient in computer aided design
- Member, Irrigation Association
- Member, American Society of Civil Engineers

ENGER PARK GOLF COURSE
IRRIGATION CONSULTING, INC.
PROPOSED SCHEDULE

	MONTH	JANUARY				FEBRUARY					MARCH				APRIL				MAY					JUNE				JULY				AUGUST					SEPTEMBER			
	W/O	1/3	1/10	1/17	1/24	2/1	2/7	2/14	2/21	2/28	3/7	3/14	3/21	3/28	4/4	4/11	4/18	4/25	5/2	5/9	5/16	5/23	5/30	6/6	6/13	6/20	6/27	7/4	7/11	7/18	7/25	8/1	8/8	8/15	8/22	8/29	9/5	9/12	9/19	9/26
Work Item																																								
Contract Award				1/14																																				
Preliminary Design of System																																								
Water Use																																								
Specifications																																								
Cost Estimates																																								
Complete Phase 1															4/1																									
Coordination																																								
Pump Station Wet Well Design																																								
Final Specifications																																								
Final Design																																								
Develop Bid Documents																																								
Complete Phase 2																			5/6																					
Begin Construction																																					9/1			
Course Closed/Construction																																						9/16		

Professional Fees:

Phase I Bid:

- Our fixed fee for professional fees to complete the scope of services as outlined in the RFP – Phase I is FIFTEEN THOUSAND FOUR HUNDRED FORTY AND 00/100 DOLLARS ... **($15,440.00)** plus applicable direct expenses.

Phase II Bid:

- Our fixed fee for professional fees to complete the scope of services as outlined in the RFP – Phase II is THIRTY-SIX THOUSAND SIXTY AND 00/100 DOLLARS ... **($36,060.00)** plus applicable direct expenses.

Phase III Bid:

- Our fixed fee for professional fees to complete the scope of services as outlined in the RFP – Phase II is FORTY THOUSAND FOUR HUNDRED FIFTY AND 00/100 DOLLARS ... **($40,450.00)** plus applicable direct expenses.

Terms and Conditions:

- All direct expenses including airfare, hotel, parking, rental car, fuel, mileage, overnight delivery, plotting, copying, binding, etc. are in addition to this proposal.

Irrigation Consulting, Inc. Personnel List/Hourly Rates:

Name	Title	Hourly Rate
Brian Vinchesi	Principal	$150.00
Jeff Bowman	Senior Project Engineer	$120.00
Stacy Gardner	Project Designer	$100.00
Justin Montani	Design Engineer	$110.00
Greg DeBruhl	Irrigation Designer	$85.00
Jessica Watters	Irrigation Designer	$85.00
Connor Bolte	Irrigation Designer	$85.00

Enger Park Golf Course Irrigation System Design Services RFP #21-AA30
27 Hole Golf Course Facility
Man Hour Task Breakdown

Task	Principal	Senior Designer	Design Engineer
	Brian Vinchesi	Stacy Gardner	Justin Montani
HOURLY RATE	$150.00	$100.00	$110.00
PRELIMINARY DESIGN -PHASE 1			
1: PRELIMINARY DESIGN	12	40	0
2: SITE VISITS (2 MEETINGS)	24	0	0
3: COVERAGE DRAWINGS	2	10	0
4: WATER USE CALCULATIONS	2	0	6
5: WATER SUPPLY REPORT/POND VOLUME	4	0	2
6: COST ESTIMATES	4	2	2
7: COORDINATION	10	0	4
HOURS:	58	52	14
SUBTOTAL:	$ 8,700.00	$ 5,200.00	$ 1,540.00
PRELIMINARY DESIGN PHASE TOTAL:	$ 15,440.00		
CONSTRUCTION DOCUMENTS AND BIDDING - PHASE 2			
1: IRRIGATION SYSTEM			
a: IRRIGATION DESIGN	14	60	16
b: DETAILS	4	0	20
c: (1 day)	12	0	0
d. COST ESTIMATE	4	0	4
e: HYDRAULIC ANALYSIS (1 MEETING)	14	20	0
f: SPECIFICATIONS	20	0	0
g: WELL SUPPLIES	4		4
2: PERMITTING COORDINATION			
a: PUMP STATION DESIGNS	12	0	10
b: ELECTRICAL COORDINATION	2	8	0
c: WET WELL/INTAKE DESIGN	4	0	12
d: TRANSFER PIPING DESIGN	2	0	8

3: FINAL CONSTRUCTION COST ESTIMATES	4	0	4
4: IRRIGATION SYSTEM BID DOCUMENTS	4	4	4
5: WATER SUPPLY BID DOCUMENTS	4	0	4
6: PRE BID MEETINGS (1 MEETING)	12	0	0
HOURS:	116	92	86
SUBTOTALS:	$ 17,400.00	$ 9,200.00	$ 9,460.00
CONTRACTING AND SPECIFICATIONS TOTAL:	$ 36,060.00		
CONSTRUCTION ADMINISTRATION AND MANAGEMENT OF PROJECT-PHASE 3			
1. SUBMITTAL REVIEW	8	0	0
2. STAKING/OBSERVATION VISITS (12 days)	144	0	0
3: FIELD REPORTS	9	0	0
4: PUNCH LIST (2 days)	24	0	0
5: PAYMENT VOUCHER REVIEW	9		
6: COORDINATION AND MANAGEMENT	6	0	0
5: GPS RECORD DRAWINGS (6 days)	7	0	60
6: PROGRAMMING (2 days)	4	0	20
HOURS:	211	0	80
SUBTOTALS:	$ 31,650.00	$ -	$ 8,800.00
CONSTRUCTION ADMINISTRATION AND MANAGEMENT TOTAL:	$ 40,450.00		

PROJECT DESIGN TOTAL:	$ 91,950.00		

EXPENSES: $850 per trip x 23 trips	$ 19,550.00