WaterSMART: Small Scale Water Efficiency Projects FY2020

Settlement Canyon Irrigation Municipal Metering Tooele, Utah

PREPARED FOR:
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Executive Summary

DATE:	February 24, 2020
APPLICANT NAME:	Settlement Canyon Irrigation Co.: Bob Clegg, President
CITY, COUNTY, AND STATE:	Tooele City, Tooele County, Utah

The Settlement Canyon Irrigation Company supplies secondary irrigation water for several farms and residential users in the Tooele Valley. However, the system does not currently monitor flow on all points-of-use and, as a result, some shareholders are able to use this water without regard to consumption. The company officials felt that up to 50% of shareholders were over watering. The company then determined that adding flow meters would allow the company to regulate the volume of irrigation water and implement fees for over-use to encourage water conservation.

Constructing irrigation flow meters would also be beneficial because the company could refrain from pumping groundwater into the reservoir in drought years, saving groundwater resources and electricity costs from pumping. Tooele City had agreed to buy culinary-quality water from Settlement Canyon Water Company during periods of excess stream flow. Any water that is saved by adding flow meters would be freed-up to sell to Tooele City. This will provide Tooele City with more culinary water. The saved water and energy will help conserve precious potable water in a basin that is continually dealing with a shortage of water.

If the funding is awarded, the Settlement Canyon Irrigation Company plans to construct as many 1" residential flow meters as possible in the area shown in Figure 1. See Appendix B for a to-scale drawing. It is estimated that over 80 flow meters could be installed in this area. The area is located in Tooele City and spans from 7th South to about 6th North and from 100 West to 200 West. A 1" meter is preferred because the cost of larger diameter meters is significantly more. This way, the company will be able to construct flow meters in a larger portion of its serviced area. This project is estimated to be completed within two years from the fall of 2020. The serviced area does not fall on a Federal facility.

Background Data

As applicable, describe the source of water supply, the total quantity of water supply managed and supplied, the water rights involved, current water uses (i.e., agricultural, municipal, domestic, or industrial), the number of water users served, and the current and projected water demand. If water is primarily used for irrigation, describe major crops and total acres served. Also, identify potential shortfalls in water supply. In addition, describe the applicant's water delivery or distribution system as appropriate. For agricultural systems, please include the types

and approximate total lengths of canals and laterals (e.g., unlined or lined open channel, pipe, including types of pipe and lining materials), the number of irrigation turnouts and other significant existing irrigation improvements (e.g., automated control structures, remote monitoring devices and SCADA systems). For municipal systems, please include the total approximate length of distribution lines, number and sizes of storage tanks, number of pump stations and capacities, and the number of connections and/or number of water users served and any other relevant information describing the system. Identify any past working relationships with Reclamation. This should include the date(s), description of the relationship(s) with Reclamation, and a description of the projects(s).

The Settlement Canyon Irrigation Company has been incorporated since 1903. There are 4,253 shares of stock in the company. Each water connection requires a minimum of one share of stock plus one share per quarter-acre for all additional acreage over ¼ acre. The company manages an average of 1,800 acre-feet of water. The company currently has two water rights; #15-182 & #15-5021. Settlement Canyon Dam is an earthen dam, constructed by Lawrence Engineering during 1962. The reservoir impounded by Settlement Canyon Dam is known as the Settlement Canyon Reservoir. Its primary purpose is to store flows of runoff for irrigation use in Tooele City, Utah. The construction of the Settlement Canyon Dam began in 1961. The embankment was completed in 1962 and initial filling began in 1962.

All irrigation from Settlement Canyon is now by means of a gravity pressure sprinkler system, which begins with a 24-inch diameter outlet pipe in the dam. The main line reduces to 20 inch and 16in. diameter, and extends 2,883 feet to the first service connection – at which point the system branches East and West and culminates in 11 laterals and several sub-laterals. Pipe sizes graduate from 24 inch down to 3-inch diameter laterals and mostly ¾ inch service connections. Combined length of all pipes is in excess of 20 miles. Elevation of the spillway of the dam is 5,360 feet. The minimum water surface is 5,285 feet. The highest irrigated land is at an elevation 5,180 feet, and the lowest lands are at 4,700 feet. Pressure regulating valves are located throughout the system. Settlement Canyon provides pressurized irrigation water from three creeks and two wells in Settlement Canyon to around 800 lawn and garden shareholders and about 60 agriculture shareholders.

The major benefit to the project is estimated to be conserved water volume and energy by incentivizing reduced irrigation.

The company applied for the small-scale WaterSMART grant in FY2017 and was awarded it. The company was able to install over 80 flow meters on the system with the funding and feels that doing so has encouraged users to conserve. The company would like to continue installing flow meters on their system with the help from Reclamation.

Project Location

Provide specific information on the proposed project location or project area including a map showing the geographic location. For example, {project name} is located in {state and county} approximately {distance} miles {direction, e.g., northeast} of {nearest town}. The project latitude is {##°##'N} and longitude is {###°##'W}.

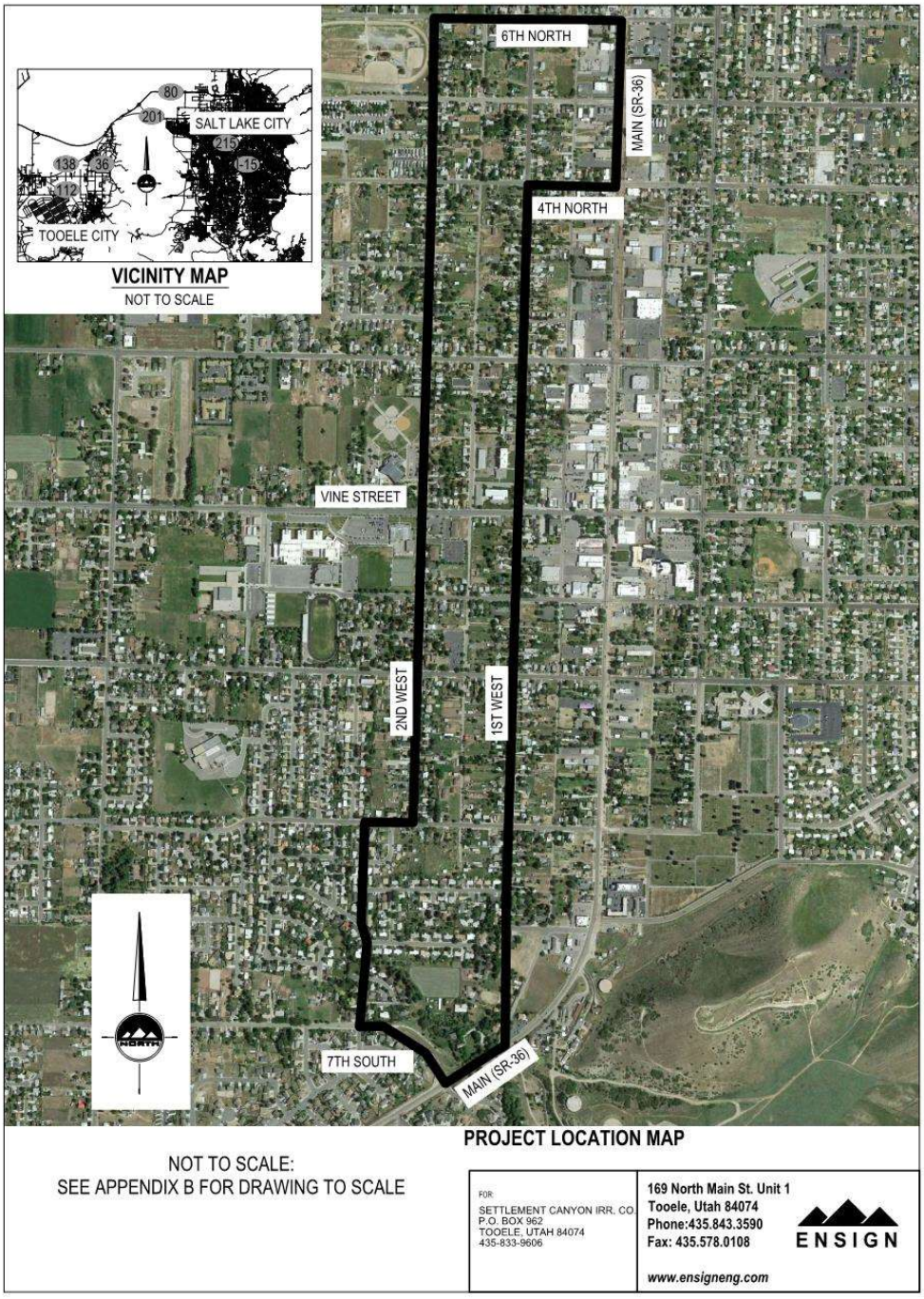


Figure 1: Estimated Project Area

Technical Project Description and Milestones

The technical project description should describe the work in detail, including specific activities that will be accomplished. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal. The technical project description must include milestones for the completion of the project, including, but not limited to, environmental compliance, permitting, final design, and construction. If non-Federal cost share is not yet secured, the milestones should identify when the applicant anticipates that the funds will be available. Note: If the work for which you are requesting funding is a phase of a larger project, please only describe the work that is reflected in the budget and exclude description of other activities or components of the overall project.

- *Identify the problems and needs*
- *Describe how the project is intended to address the problems and needs*
- *Identify the expected outcomes*

The project will consist of completing the environmental compliance, obtaining the necessary permits from the jurisdiction, and then construction. The company has funds immediately available to be utilized for construction costs, so there is no milestone as far as getting third-party funding. Naturally, after the meter is installed, the billing changes will take place. It is estimated that a flow meter can be retrofitted in about a day, (6-8 hours.)

The project schedule is outlined in Table 1.

Evaluation Criteria

E.1.1. Evaluation Criterion A—Project Benefits (35 points)

Up to 35 points may be awarded upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.

- *Describe the expected benefits and outcomes of implementing the proposed project.*

The expected benefit to adding flow meters is raised awareness of water consumption and promoting water and energy conservation by the shareholders. Adding flow meters along with their online monitoring system would benefit the company by allowing them to more easily review water usage and expedite the billing process.

o What are the benefits to the applicant's water supply delivery system?

By adding flow meters into the system, it is expected that the company will conserve more water. Tooele City has agreed to purchase any surplus culinary-quality water from the company and this

collaboration would allow Tooele City more culinary water to supply in their system. It is also expected that the company will need to pump less groundwater to supplement the system in drought years.

o If other benefits are expected explain those as well. Consider the following:

 Extent to which the proposed project improves overall water supply reliability.
 The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)
 Extent to which the proposed project will increase collaboration and information sharing among water managers in the region.
 Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)
Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.

No other benefits are expected besides those listed.

E.1.2. Evaluation Criterion B—Planning Efforts Supporting the Project (35 points)

Up to 35 points may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant's existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.
Describe how your project is supported by an existing planning effort.
• Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?

The project addresses the need for water conservation among its shareholders. The company has observed for roughly 10 years that there is a need to incentivize water conservation. The irrigation company has multiple water conservation plans that are implemented throughout the year. In drought years, the shareholders are put on a watering restriction at the beginning of a watering season. The restriction for residential consumers differs from those using it for agricultural uses. Residential customers are restricted to water only on certain afternoons of the week and for only a few hours at a time. Agricultural consumers are allowed to water in the evenings for 12 hours and only during week days. Some drought years require a tighter restriction. When this is the case the Irrigation Company requires the consumers to water fewer hours or days or both depending on the board's decision. Also, all agricultural users have been required to remove all ½ inch watering jets and replace them with ¼ inch watering jets to reduce the amount of water used during watering times.

Another planning effort the company has implemented is determining the cost of installing meters and gathering funding to contribute to the project along with Reclamation's funding help. The company is appreciative of the help received from Reclamation for the flow meters thus far and wishes to continue installing them.

• *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.*

Installing flow meters is the most effective way to help the community conserve water. Overall water conserved is unknown at this time; however, with water meters installed, water will be monitored and overuse of the pre-determined water allowance per share will be billed at a premium rate. Any water conserved in drought years could save groundwater and energy resources.

E.1.3. Evaluation Criterion C—Project Implementation (10 Points)

Up to 10 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.
• *Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

The expected project milestones are as shown in Table 1.

Table 1: Project Schedule

Project Milestone	Duration	Dates
Complete Environmental and Cultural Compliance	1 Month	August 2020
Purchase and Begin Installation of Meters	6 Months	November 1, 2020-April 30, 2021
Implement Billing Changes	Project Completion	April 30, 2021

• *Describe any permits that will be required, along with the process for obtaining such permits.*

No permits are anticipated to be required, but any work performed in the public right-of-way will require a permit. In the event that work needs to be performed in the public right-of-way, a permit will be obtained from the entity that has jurisdiction of the right-of-way.

• *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

No engineering design will be required.

• *Describe any new policies or administrative actions required to implement the project.*

The project would require a billing change to implement overuse charges.

Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?

Environmental compliance was performed when the company received the grant for FY2017. This process is not expected to take more than a month.

E.1.4. Evaluation Criterion D - Nexus to Reclamation (10 Points)

Up to 10 points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. Describe the nexus between the proposed project and a Reclamation project or activity, including:

Is the proposed project connected to a Reclamation project or activity?
If so, how?

The proposed project is not currently connected to a Reclamation project.

Please consider the following:

• *Does the applicant receive Reclamation project water?*

The applicant does not currently receive Reclamation project water.

• *Is the project on Reclamation project lands or involving Reclamation facilities?*

The proposed project is not currently on Reclamation project land or facilities.

• *Is the project in the same basin as a Reclamation project or activity?*

The project is not known to be in the same basin as a Reclamation project or activity.

• *Will the proposed work contribute water to a basin where a Reclamation project is located?*

The project is not expected to contribute water to a basin where a Reclamation project is located.

• *Will the project benefit any tribe(s)?*

The project is not anticipated to benefit any tribe.

E.1.5. Evaluation Criterion E— Department of the Interior and Bureau of Reclamation Priorities (10 points)

Up to 10 points may be awarded based on the extent that the proposal demonstrates that the project supports Department and Reclamation priorities. Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the Priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.

The project closely aligns with Reclamation Priority #4 Address Ongoing Drought by encouraging irrigation water users to conserve water.

Project Budget

Funding Plan and Letters of Commitment

The company is ready to contribute 50% of the project costs right away. The company requests all of the funding opportunity in fiscal year 2020. It is estimated that the company can construct all 85 estimated meters in the fall and winter of 2020. The company plans to construct as many meters as possible shown in Figure 1, with an estimated total of 85 meters.

Table 2 delineates the funding sources from both the federal and the company's funding sources. Table 3 shows the budget proposal.

Table 2: Total Project Cost Table

Sources	Amount
Costs to be paid by the applicant:	$75,000.00
Costs to be Reimbursed with the requested Federal funding:	$75,000.00
Value of third-party contributions	$0.00
Total Project Funding	**$150,000.00**

Budget Proposal

Table 3: Budget Proposal

Item Description	Computation $/Unit	Quantity	Quantity Type	Total Cost
1" E-Series Meter	$406	85	Per Meter	$34,510
Vault	$73	85	Per Meter	$6,205
Lid	$60	85	Per Meter	$5,100
1" Meter Setter	$289	85	Per Meter	$24,565
1" Poly Pipe (3 ft.)	$9	85	Per Meter	$765
Fittings	$136	85	Per Meter	$11,560
Labor	$762.97	85	Per Meter	$64,852.45
Environmental Compliance	$2,442.55	1	EA	$2,442.55
Total				**$150,000.00**

Budget Narrative

The company is able to pay $75,000 up-front for the first fiscal year. The company requests all of Reclamation's funding for the fiscal year 2020 to be utilized in the fall and winter of 2020. All of the funding will be put towards constructing flow meters. No ancillary equipment or salaries are proposed. Table 3 outlines the budget proposal. These numbers are updated from the contractor who was hired to perform the meter retrofit from the previous grant funding received. The previous price list is shown in Appendix A.

Any unforeseen engineering work will be performed by licensed engineers of the State of Utah. All other or miscellaneous costs are included in the total construction cost.

Salaries and Wages

No salaries or wages are proposed to be utilized from the funding received.

Fringe Benefits

No fringe benefits are proposed as part of this project.

Travel

No travel expenses are expected for the proposed project.

Equipment

There is no equipment anticipated to cost more than $5,000.00. With the install of the flow meters from the last grant received, some costs were allocated to the online monitoring system, but those are no longer required to continue constructing meters.

Material & Supplies

The required materials and supplies are outlined in the budget proposal.

Contractual
The contractual work to be performed is outlined in the budget proposal.

Third-Party In-Kind Contributions
There are no third-party in-kind contributions expected.

Environmental and Regulatory Compliance Costs
The costs for Environmental and Regulatory Compliance are included in the budget proposal shown in Table 3. The environmental compliance review went smoothly the previous time.

Other Expenses
No other expenses, besides those expenses outlined in the budget proposal, are expected.

Indirect Costs
No other indirect costs are expected.

Total Costs
The total estimated cost for the project is $150,00.00.

Environmental and Cultural Resources Compliance
Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The impact of the proposed scope of work would minimally affect the surrounding environment. The earth-disturbing work that would be done is excavating the water line in each shareholder's lot and installing a flow meter and vault. This earth-disturbing work will potentially create a minimal amount of dust and track mud from construction vehicles which could enter the storm drain system and pollute waters of the State. These effects can be minimized by utilizing a water tank to control dust and avoiding working on wet days. The expected water conserved would likely add volume to the Settlement Canyon Reservoir and could affect the species listed below.

• *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

Settlement Canyon Irrigation Company is not aware of any issues with endangered or threated species in the area, but the following are Federally Listed and Endangered (E), Threatened (T), and Candidate (C) species that could be affected by the reservoir water supply. The U.S. Fish and Wildlife Service identifies these species as known or believed to be in Tooele County.

(T) Yellow-billed Cuckoo (COCCYZUS AMERICANUS)

(T) Ute ladies'-tresses (Spiranthes diluvialis)

The benefit of this project to a specific Endangered Species is unknown, but not anticipated to be unbeneficial.

• Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.

Settlement Canyon Irrigation Company is not aware of any issues with wetlands or other surface waters in the proposed project boundary.

• When was the water delivery system constructed?

The construction of the Settlement Canyon Dam began in 1961. The embankment was completed in 1962 and initial filling began in 1962.

• Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The proposed project may affect individual features of the water delivery system, but the effects are not considered significant.

• Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

According to the National Register of Historic Places spreadsheet, updated January 2020, there are no registered historic sites in the proposed project boundary.

• Are there any known archeological sites in the proposed project area?

Settlement Canyon Irrigation Company is not aware of any archeological sites in the area.

• Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

Settlement Canyon Irrigation Company does not expect the project to have an effect to low income or minority populations.

• *Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

Settlement Canyon Irrigation Company does not expect the project to limit access to tribal lands in the area.

• *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

Settlement Canyon Irrigation Company does not anticipate disturbing the native weed species in the area.

Required Permits or Approvals

No permits are anticipated to be required, but any work performed in the public right-of-way will require a permit. In the event that work needs to be performed in the public right-of-way, a permit will be obtained from the entity that has jurisdiction of the right-of-way.

Official Resolution

The Official Resolution will be reviewed and signed at the next board meeting. After the board reviews and signs the Official Resolution it will be submitted before the 30-day deadline.

Conclusion

The Settlement Canyon Irrigation Company has benefitted from implementing flow meters into a portion of their system. The company feels that the metered connections are encouraging users to conserve water and wish to expand this to the rest of the system. Having the online data is also quite beneficial to the company for billing and other purposes. It is expected that the company will need to pump less groundwater to supplement the system in drought years. Tooele City has agreed to buy any surplus culinary-quality water from the company. This will also help provide the city with more culinary water that is being used for secondary purposes.

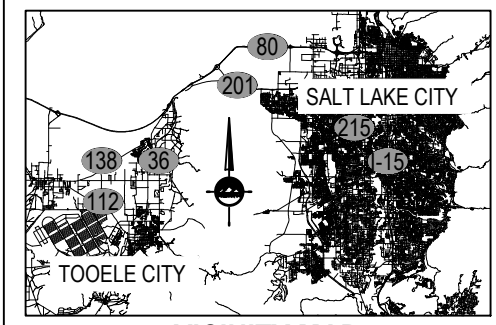
This project would be a great improvement to the way of life in Tooele. Water is such an important commodity to Tooele City, any water that can be saved will be of great value to the community.

Appendix A

Price List from Project from FY2017

			Foreman - $60/hr		
			(2) Laborers - $20/hr each		
Part Description	Material Cost	hour	Labor ($100/hr)	hourly rate plus 30% overhead and profit	Materials plus Labor
1" Meter	380	1.55	154	200.2	580.2
Vault	73	0.562	56.2	73.06	146.06
Lid	60	0.462	46.2	60.06	120.06
1" Meter Setter	289	2.14	214	278.2	567.2
1" Polly (3 feet)	9	11.75	11.75	15.275	24.275
1-1.5" Bell Reducer (2 each)	52	0.4	40	52	104
1" Muller Compression (2 each)	84	0.6475	64.75	84.175	168.175
	947	17.5115	586.9	762.97	1709.97

Appendix B



VICINITY MAP

NOT TO SCALE

6TH NORTH

MAIN (SR-36)

4TH NORTH

VINE STREET

2ND WEST

1ST WEST

7TH SOUTH

MAIN (SR-36)

NORTH

PROJECT LOCATION MAP

HORIZONTAL GRAPHIC SCALE

1000 0 500 1000 2000

(IN FEET)

HORZ: 1 inch = 1000ft.

FOR:

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