GROVER'S HILL IRRIGATION DISTRICT

WATER DELIVERY IMPROVEMENT PROJECT

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Grover's Hill Irrigation District Water Delivery Improvement Project

Executive Summary- March 2019

The Lyman Irrigation Company was organized in 1886 and was legally changed to the Grover's Hill Irrigation District in 2016. The District serves 275 irrigation users on an estimated 1,705 acres of farmland in and around the City of Saint Johns in Apache County, Arizona. The irrigation system draws its water from Lyman Lake located 10 miles south of the city limits and conveys water to its users via more than 15 miles of concrete and earthen canals. The District's three-member board: Norman Brown, Karson Crosby and Jay Platt, meet with District Manager, Delwin Wengert, monthly to monitor and maintain an effective irrigation delivery structure. There have been no major upgrades to the system in the last 50 years. The District has partnered with the Zuni Tribe, Farm Service Agency, and NRCD, to plan two phases for repairs and upgrades to the irrigation system. The phased plan includes conservation, monitoring, efficient delivery, and overall water quality improvements over a three-year period. The planned improvements include replacing existing earthen canals with pressurized HDPE pipe, pressure control valves and meters to measure water usage. The planned upgrades would immediately increase irrigation efficiency since there would be no water lost due to seepage as occurs through the current earthen canal delivery system. One of the primary goal goals of this project is to position farmers for EQIP funding through NRCS, to install pipeline on their properties for more efficient sprinkler system irrigation methods versus the current flood delivery method

BACKGROUND DATA

Lyman Lake, which is located 10 miles south of Saint Johns, Arizona, supplies water to the Grover's Hill Irrigation District. Through a series of earthen and concrete canals, the water system supplies 275 users with the means to flood irrigate 1,705 acres of farmland. There are 3,858 Field Water Shares and 477 Garden Water Shares. The water is used to grow alfalfa for livestock production, support pastures for grazing, and assist with supplemental garden watering. The District starts providing water on April 15th of each year and water delivery ends on September 15th of the same year.

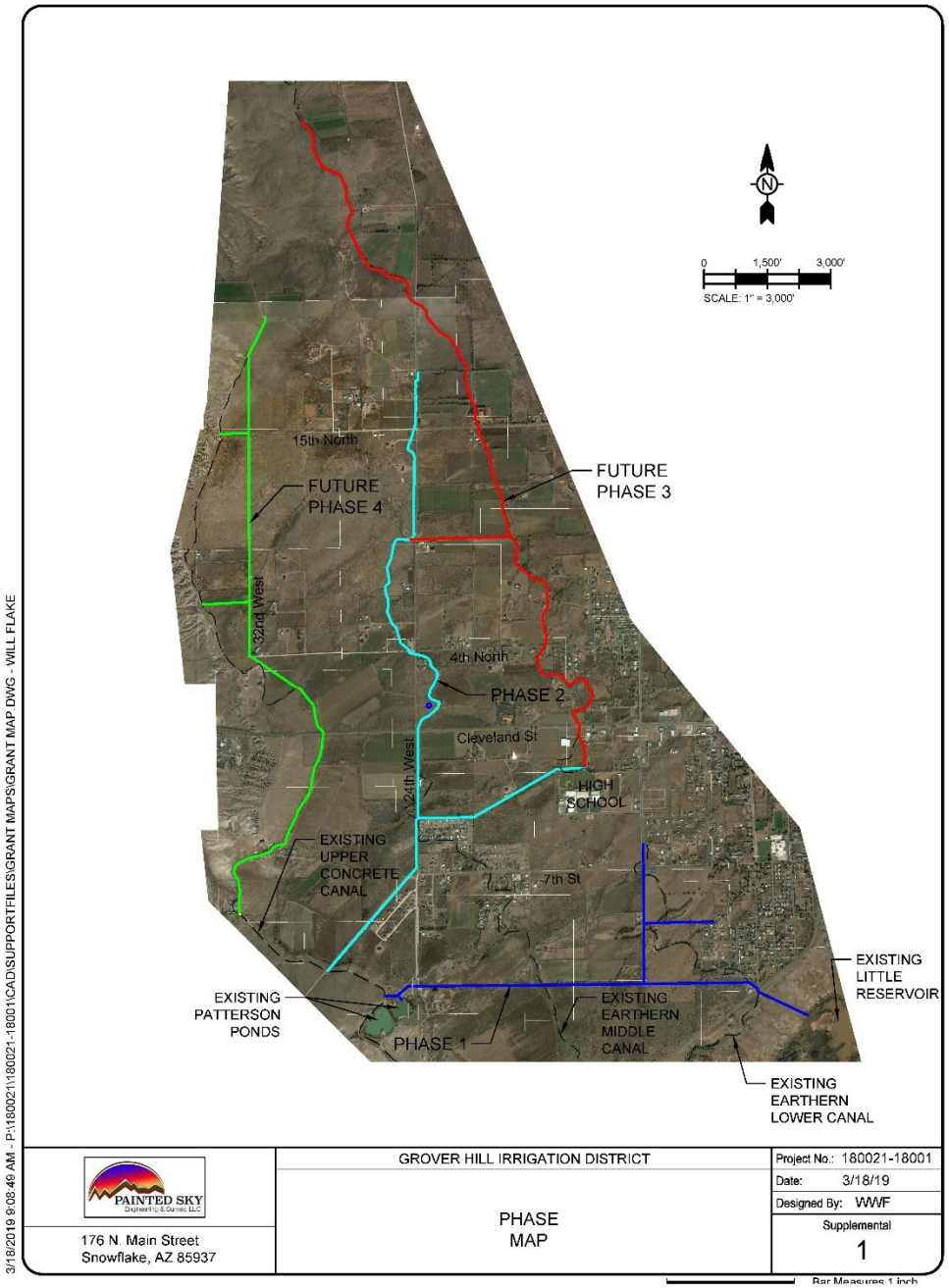
Arizona, and particularly, Apache County, has been in a state of drought for the last 10 years. Water is precious and must be used in the most effective manner possible. Lyman Lake is fed by the Little Colorado River and snowfall runoff is a major factor in determining the water level at the lake. Lasting drought conditions have caused the time allotted per irrigation share to be reduced when water levels fall at Lyman Lake.

The system's greatest need is to increase the water delivery efficiency. Since the District utilizes many earthen canals, considerable water is lost due to seepage. Replacing these earthen canals with pipe would immediately resolve the seepage problem and reduce evaporation. Water meters will be installed to measure and monitor the efficiency of the system after the improvements are in place. The pipe will be installed alongside the ditches in the existing District easements. This will reduce ground disturbance and keep the ditches open as a storm water control structure. Concrete canals were put into use in the 1950's. No other updates to the system have been done since then. Repair and maintenance to the concrete canal is critical and is done on a monthly basis.

A portion of this project was proposed to Arizona Department of Water Quality in 2017. The Department was unable to fund the project as the funding basis required an impaired water source. That communication with ADEQ resulted in outreach to the Bureau of Reclamation in Phoenix, Arizona. A representative met with the District Manager in the Summer of 2018 to review the project. The District retained Painted Sky Engineering in late 2018 to begin the feasibility study. The results of that study are the premise for this proposal.

Project Location

Grover's Hill Irrigation District Water Delivery Improvement Project is in Apache County, Arizona. The irrigation system begins 10 miles south of the City of Saint Johns at Lyman Lake and is located primarily within the city limits. The project coordinates are 34.416873, -109.420512, which is the site of District's main irrigation head gate. Please refer to the map below which shows the overall system.



Technical Project Description

The Irrigation Improvement Project seeks to increase water efficiency in the first two of an overall 4 phase Plan over a three-year time period. The system begins at Lyman Lake state Park where water is removed from the lake. The water flows northward through a concrete canal and crosses Arizona State Highway 180 several times. The concrete canal is called the Upper Canal. An earthen canal diverts from the Upper Canal and flows in a northeasterly direction and is called the Lower Canal. The Lower Canal splits in about a mile and creates the Middle Canal, which flows in a northwesterly direction. The Lower and Middle Canals are made of earth. These three canals supply the irrigation water to users inside of the Saint Johns city limits. The Lower earthen canal can currently carry a maximum of 3 cfs, the HDPE pipe replacing the Lower canal will have the capacity to carry 12 cfs. The Middle earthen canal can currently carry 6 cfs, the HDPE pipe replacing the Middle canal will have the capacity to carry 30 cfs. Replacing the earthen canals with HDPE pipe will significantly increase the capacity of the system, provide pressure for optional sprinkler systems, as well as reducing losses and wait times.

The Overall Improvement Project will replace the Lower and Middle earthen canals, along with the earthen portion of the Upper canal with HDPE pipe.

The Phase I pipe will start at the concrete Upper Canal and flow east to the Little Reservoir (the District is required to deliver a maximum of 400 af/year to the Reservoir). The Phase I pipe will intercept the Upper and Lower earthen canals and will eliminate the need for these two canals from the intercept points south to where they are diverted (see the overall plan map on page 5).

The Phase II pipe will start at the concrete Upper Canal and flow in a northeasterly direction. The pipe will bypass areas through an RV Park and a subdivision where construction would be very difficult. The few remaining shares in this area will be served through a portion of the existing Middle canal that will remain. North of the RV park the pipe will follow the existing easement of the Middle canal to the ending point (see the overall plan map on page 5).

The pipe will use existing culverts to cross under paved roads. Water meters will be installed to measure water delivery to lateral ditches owned by the Farmers and Gardeners. Water meters will also be installed in the main pipelines to measure the efficiency of the system. Globe valves will be installed to control the pressure in the turnouts to the farmers. Each Farmer will have the option of using the pressure in the main lines to use sprinklers in the future.

E.1.1. Evaluation Criterion A—Quantifiable Water Savings (30points)

Describe the amount of estimated water savings:

The current method of irrigation delivery to lateral ditches is primarily through earthen canals (approximately 75%), and a portion (approximately 25%) through a concrete canal. This system is inefficient in its delivery since a significant portion of the water flowing in the dirt canals is lost to seepage and evaporation. The delivery system is not pressurized so users are unable to utilize more efficient methods of irrigation such as sprinklers and must flood irrigate their properties. Users receive garden or field shares. Garden shares are 1cfs or 449 gpm, and field shares are 3cfs or 1,346 gpm. The existing system does not have flow meters, so the flow rate is estimated by water weirs at the lateral head gates. In the 2018 irrigation season, the Water Boss recorded an estimated 1,694-acre feet of water delivered at the lateral ditches owned by the Members of the District. The water released from Lyman Lake and the District wells combined for a total of 3,483 acre-feet delivered into the irrigation system. The difference between the two is 1,789 acre-feet. The estimated loss in the system is calculated to be 51%. It is estimated that 15% of the 1,789 acre-feet, or 516 acre-feet, is due to evaporation, and 85%, or 1,238 acre-feet, is due to seepage. It is estimated that the water savings post Improvement Project will be 1,789 acre-feet.

Describe current losses:

Seepage losses are occurring in the earthen canals, evaporation is occurring in all canals. It is estimated that in the 2018 Season 51% of all water in the system was lost. This amounts to an estimated 1,789 acre-feet.

Describe the support/documentation of estimated water savings:

Painted Sky Engineering, through its feasibility study, has provided the calculations to size the pipes that will replace the earthen Middle and Lower canals (see page 45-46). The calculations for the water losses and estimate of the water savings are shown in the attachment document titled “Water Balance Calculation for 2018 Season”. This document was created by Delwin Wengert, the Manager for the District, who is a registered professional Civil Engineer.

(1) **Canal Lining/Piping:**

The highest priority of the current project is to install 10,628 lineal feet of pipe in Phase 1 and 20,800 lineal feet of pipe in Phase 2, to reduce seepage and evaporation losses in the system.

a) The estimated average annual water savings that will result from the project has been determined by comparing the water that has been actually delivered to the Members of the District at their lateral ditches, versus the metered water delivered into the system from the Lake and the two District wells. The water from the Lyman Lake passes through a weir and electronic measuring device. This device is checked and calibrated annually by the Salt River Project. The water from the wells is metered at the well sites. The water delivered to the Members at their lateral head gates runs through measuring weirs and is monitored and tracked by the Water Boss. The difference between the two is the estimated losses in the

system and the potential water savings that can be realized with the Improvement Project (see the attached Water Balance for 2018 spreadsheet on page 43).

b) The average annual canal seepage losses have been estimated by comparing the amount of water actually delivered to the Members versus the amount of water put into the system from Lyman Lake and the two District wells (page 43). The District has been operated in the same manner for many years and it is felt that the losses are approximately the same as have been calculated for 2018.

c) After all phases are completed, it is expected that the evaporation losses will be reduced by 75% within the City of St. Johns due to approximately 75% of the system canals being replaced by pipe. It is expected that the seepage losses will be reduced by 90% due to the earthen canals being replaced by pipe. The concrete canal has areas that break and, before repairs can be made, seepage occurs. Using the numbers from 2018 and the estimated losses described in this section would mean that 0.25(516) + 0.10(1,238) = 253 acre-feet of losses would occur post project. This represents a reduction in losses of 86%.

d) The loss per mile in the concrete canal is estimated at 253/15 = 16.87 acre-feet/mile. The canals in pipe will experience negligible losses.

e) The actual losses will be monitored by the measured amount leaving Lyman Lake, plus the metered water being pumped versus the metered water being actually diverted to the farmers and gardeners. The difference between the two will allow us to calculate the efficiency of the system, as well as verify the reduction in seepage and evaporation.

(2) Metering and Irrigation Flow Measurement

a) HDPE pipe of varying sizes will be installed along the system. Three sites have been identified to sleeve the existing culverts where water passes under a roadway. The sleeving is most economical as it eliminates the need to break into a roadway and prevents additional permitting.

b) McCrometer Propeller model M0300 flowmeters are planned in the project budget. There will be 21 flowmeters purchased and installed. One in the Lower and Middle canals and one at every user turnout. A Parshall flume will be installed in the existing concrete canal to monitor specific flows. These items will allow GHID to measure flow rates and be certain that users are receiving their allotted irrigation shares and that the Little Reservoir water level is met each irrigation season. The meters and the Parshall flume will also be used to monitor losses and the efficiency of the system post construction.

E.1.2. Evaluation Criterion B—Water Supply Reliability (18points)

The GHID Board makes the decision in April of every year regarding the time allotted per water share, depending on how much water is in the Lake. This time can be increased or decreased depending on rainfall and evaporation that occurs over the irrigation season. The water levels in the lake, as well as the water diverted, are monitored continually throughout the season. There has always been water available for irrigation, although, it varies due to the amount of water received in the spring runoff in the Little Colorado River Watershed.

The improvements proposed in this application will result in significant reductions in the water losses that occur and thereby increase the water available for irrigation of member lands. The reduction of losses in the system will not only make more water available for the Members of the District but also our partners at Lyman Lake, the Zuni Tribe and the Salt River Project.

E.1.3. Evaluation Criterion C—Implementing Hydropower (18points)

This project does not have a hydropower component.

E.1.4. Evaluation Criterion D—Complementing On-Farm Irrigation Improvements (10 points)

One of the objectives of this project is to position farmers and other water users to apply for EQIP funding through NRCS. EQIP funding would support continued piping onto farmlands where the WaterSMART project pipeline ends. Irrigation users would then be able to utilize sprinkler irrigation systems, since the project would create pressurized lines. The local Natural Resources Conservation District (NRCD) located in Springerville, Arizona has presented to the GHID Board and given information to the irrigation users regarding available conservation programs.

The local NRCD office through its conservation manager can:

- Assess and determine the conservation needs of each individual grower.
- Help plan for future water conservation activities through written stewardship/conservation plans.
- Offer guidance for rangeland improvement practices and grazing efficiencies.
- Aid irrigation users in the EQIP application process.

The Apache NRCD is in support of this project and has included a support letter for this application on page 47.

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

The GHID will monitor its water resources through its Engineer and District Manager, Delwin Wengert, and Painted Sky Engineering. Between the two, data will be collected before, during, and after each irrigation season for a better understanding of environmental factors that will be used in water use planning. Some of the environmental factors to note are snow pack measurements which lead to surrounding watershed readings and fire season weather outlooks. These interpretations can better predict the water available for each season regarding increased conservation mechanisms that may need to be employed. This data can then be conveyed to water users within the District at the onset of each irrigation season and make for more effective communication. The District will continue to rely on the NRCS and NRCD agents for continued dialogue and conservation implementation practices with farmers and other producers that depend on irrigation for feed and grazing.

This project Supports the White House Public/Private Partnership Initiative to modernize U.S. infrastructure through partnerships with local, tribal, state and federal offices and private businesses and landowners to upgrade an over 100-year-old irrigation system with up to date controls and mechanisms that warrant efficient and effective water delivery.

The District's membership is comprised of non-commercial farmers and ranchers. The District, through programs like WaterSMART, is facilitating efforts by these businesspeople participate in a large infrastructure project serving the needs of rural Americans. Through the District's service to these people, the lines of communication remain opened where further proactive relationships can be built.

E.1.6. Evaluation Criterion F—Implementation and Results (6 points)

The Grover's Hill Irrigation District hired Painted Sky Engineering to prepare a Feasibility Study of the desired improvements to the District. In the Introduction of the Study it says the following:

"The purpose of this feasibility study is to investigate and determine an overall preliminary layout and general design of the proposed pipe line portion of the GHID system. The study will determine an approximate irrigation pipe alignment of the Upper Ditch, Middle Ditch and Lower Ditch in an underground irrigation pipe line system. The study will consider pressures in the proposed system, water delivery, and will also estimate construction costs for the proposed design. It is planned that the results of the study will be used for future planning for the construction of the new pipe line system. The study included meeting with personnel and board members of the GHID to discuss the existing system and determine an appropriate layout for the proposed system. We observed different portions of the existing system and had several discussions on what appeared to be the best layout for the District."

The Study was completed in July of 2018. It successfully determined the scope and estimated the construction cost of the project.

Since July several things have been determined and/or changed:

1. Patterson Ponds will no longer be an integral part of the system. It was determined that the volume of the ponds was too small and would not allow the efficient operation of the system. Water will still be diverted to fill the Ponds but now the water for the Middle and Lower canals will not go through the Ponds (see the overall plan map on page 5).
2. Instead of all the necessary volume of water needed for the Upper and Lower canals being diverted from the Upper concrete canal through one pipeline near the Patterson Ponds, it was felt it would be more efficient to divert the water through two pipelines. This would allow for redundancy and make it possible to avoid certain areas in both the Middle and Lower canals that would be very difficult and expensive for construction (see the overall plan map on page 5).
3. The overall project has been broken down into phases, with estimated construction costs, and an approximate timeline established.
4. The Construction Plans and Documents for Phase I are complete, the engineering for Phase 2 will begin in the summer of 2019.

Using the recommendations included in the feasibility study, the project will monitor water usage with flowmeters at every turnout. There are 21 sites planned to have flowmeters installed. The data collected from these flowmeters will be recorded and compared with the estimates from the previous season. Those figures can then be compared to the projected water savings. This data can then be compiled into a usable report to be sent to BOR as part of the project reporting requirement.

Maintenance

The GHID employs a full-time 5-man maintenance crew. The crew consists of a foreman and inmates on work release from a nearby state prison. During the off season the crew cleans the earthen canals by cutting weeds and trees that interfere with the flow of water. Because the Upper concrete canal that flows for 10 miles from the Lake to St. Johns is many years old, they also repair areas of the canal that break due to movement of the natural clay under the canal. Between the earthen canals and the concrete canal, the maintenance crew is very busy during the off season.

During the irrigation season, the maintenance crew works to install new head gates as needed, clean screens that catch weeds and other debris in the canals and continue to cut back weeds and trees along the canals. They also work on strengthening drainage structures that pass natural flood waters over and under the main canals.

The installation of pipe in the existing earthen canals will significantly reduce the need for maintenance in these areas. The crew will then be able to focus on other areas that will increase the efficiency and wellbeing of the District.

The Maintenance work is directed by the District Manager, with the help of the Water Boss.

Activity	Phase I	Phase II
Contract in Place	October 1, 2019	October 1, 2019
Environmental Review	October 2019 - November 2019	October 2019 - November 2019
Bid advertisement	November 1, 2019	July 1, 2020
Bid award	December 1, 2019	September 1, 2020
Construction begins	January 1, 2020	October 1, 2020
Progress Report to BOR	January 1, 2020	January 1, 2021
Pipe line installed along existing main canals	Jan 2020-April 2020	Jan 2021-April 2021
Progress Report to BOR	April 1, 2020	April 1, 2021
EQIP planning	October 1, 2020	October 1, 2021
Pipe line installed on private properties	January 2020-April 2020	October 1, 2020-April 2021
Project complete	July 31, 2020	April 15, 2021
Final Report to BOR	October 31, 2020	July 1, 2021

Permitting is not required in this project since most of the work is within existing District easements. Areas where pipelines will traverse private property have been noted in the overall scope of the project. These private landowners have been contacted by the District and have signed Pipeline Easement Consent Agreements. Executed agreements, along with legal descriptions of the properties, can be found on pages 19-36 of this application. Upon project award, the District will reach-out to property owners again to modify the agreements to reflect actual pipeline trench sites with specific easement measurements to allow proper maintenance and monitoring of the line once the work is complete.

Environmental costs have been included in the budget for this project. On March 6, 2019, a call was made to the Phoenix Bureau of Reclamation Office and discussion had with the environmental staff. The environmental specialist noted the existing easements and private properties and felt that the project would require no more than an Environmental Review and quite possibly be a Categorical Exclusion for environmental impacts. The cost has been estimated at $5,000. An email regarding this information is attached on page 17.

E.1.7. Evaluation Criterion G— Nexus to Reclamation Project Activities (4 Points)

The "Colorado River Basin Water Supply and Demand Study" was funded by the Bureau of Reclamation and completed in December of 2012. The Study confirmed that, over the next 50 years, projected water supplies and demands in the Colorado River Basin will experience significant shortfalls. The Study resulted in a call to action that all who rely on Colorado River water take steps and work together to identify positive solutions to address the impending water concerns.

The GHID addresses this concern through its pipeline plan in several ways:

1. By increasing the acre-feet of water left in Lyman Lake
2. Utilizing pipeline for water delivery which will prevent water lost through seepage and evaporation.
3. Continued dialogue with partners like, SRP, NRCS, the Zuni Tribe, and Bureau of Reclamation to monitor water usage and work toward implementation of sustainable water conservation activities.

E.1.8. Evaluation Criterion H— Additional Non-Federal Funding(4 points)

The Grover's Hill Irrigation District has committed to fund at least 50% of this project. A resolution by the GHID Board was adopted on February 7, 2019 indicating this financial commitment. The resolution is included on page 40.

Non-federal funding	**$1,641,115**
Total project costs	**$3,141,115**
Non-federal funding %	**52%**

Funding Plan

The Grover's Hill Irrigation District (GHID or District) holds a reserve account for repairs and maintenance to the irrigation system. This account has gained enough savings to allow the District to provide the 50% match requirement in cash. The District purchased 1,443 linear feet of 10" HDPE pipeline in anticipation of beginning Phase 1 of the proposed project. That cost is reflected as 'installation only' at $11.00/per foot. The District also retained Painted Sky Engineering to complete a feasibility study prior to this proposal. The District has paid the engineering firm $94,000 up to July 2018. Further engineering and monitoring will be required as part of the project and the District has planned for those costs accordingly as a budget line item. The District will maintain its reserve account and matching funds will be readily available at the time of the grant award.

PROJECT BUDGET TABLE

ITEM DESCRIPTION	COST PER UNIT	UNITS	TOTAL COST
Materials			
10" pipe (installation only)	$ 11.00	1,443	$ 15,873.00
12" Pipe	$ 48.00	2,900	$ 139,200.00
15" Pipe	$ 55.00	6,667	$ 366,685.00
18" Pipe	$ 60.00	4,114	$ 246,840.00
21" Pipe	$ 70.00	3,865	$ 270,550.00
24" Pipe	$ 72.00	8,020	$ 577,440.00
30" Pipe	$ 78.00	4,418	$ 344,604.00
Head Works	$ 10,000.00	2	$ 20,000.00
12" turnout w/ flowmeter	$ 15,000.00	15	$ 225,000.00
15" turnout w/ flowmeter	$ 18,000.00	4	$ 72,000.00
4" release valve	$ 600.00	18	$ 10,800.00
12" globe valve	$ 3,300.00	3	$ 9,900.00
15" globe valve	$ 4,000.00	2	$ 8,000.00
24" globe valve	$ 5,000.00	3	$ 15,000.00
21" x 15" reducer	$ 2,200.00	1	$ 2,200.00
15" x 12" reducer	$ 2,600.00	1	$ 2,600.00
30" x 24" reducer	$ 2,800.00	1	$ 2,800.00
30" x 15" reducer	$ 2,600.00	1	$ 2,600.00
15" x 15" tee w/cap	$ 1,800.00	1	$ 1,800.00
24" x 24" tee	$ 2,000.00	1	$ 2,000.00
21" x 45 degree bend	$ 1,700.00	1	$ 1,700.00
21" x 22.5 degree bend	$ 1,700.00	3	$ 5,100.00
21" x 11.25 degree bend	$ 1,700.00	2	$ 3,400.00
15" x 45 degree bend	$ 1,500.00	2	$ 3,000.00
18" x 45 degree bend	$ 1,600.00	9	$ 14,400.00
12" x 45 degree bend	$ 800.00	4	$ 3,200.00
12" x 22.5 degree bend	$ 800.00	3	$ 2,400.00
12" x 11.25 degree bend	$ 800.00	1	$ 800.00
24" x 45 degree bend	$ 1,900.00	5	$ 9,500.00
24" x 22.5 degree bend	$ 1,800.00	16	$ 28,800.00
30" x 45 degree bend	$ 2,200.00	3	$ 6,600.00
12" McCrometer Flowmeter	$ 6,500.00	2	$ 13,000.00
			$ 2,427,792.00
Contractual			
Painted Sky Engineering			$ 241,000.00
Construction			
outlet structure	$ 6,000.00	2	$ 12,000.00
existing culvert encasement	$ 4,000.00	5	$ 20,000.00
mobiliation/demoblization	$ 20,000.00	2	$ 40,000.00
			$ 72,000.00
Other			
Environmental Compliance			$ 5,000.00
Contingencies	13%		$ 395,323.00
TOTAL PROJECT COST			**$ 3,141,115.00**
APPLICANT COST SHARE			**$ 1,641,115.00**
TOTAL FEDERAL FUNDS REQUESTED			**$ 1,500,000.00**

Budget Narrative

The Grover's Hill Irrigation District (GHID) plans to replace 12 miles of earthen irrigation canals with HDPE pipe utilizing Bureau of Reclamation grant funds and GHID funds. Painted Sky Engineering has been working with the District to create a concise engineering and project plan that addresses the needs of the entire water delivery system in four phases. Costs associated with the engineering is $241,000.* This fee includes a four-phased project and includes engineered maps and a complete feasibility study. The District is requesting funds to assist with the first *two* phases of the project. The District Manager, Delwin Wengert, will continue to be the main point of contact on the project and will be tasked with monitoring for compliance and adherence to the proposed plan as well as working with the engineering firm to ensure efficiency goals are being met. The District Manager will be in-charge of progress reporting to the Bureau of Reclamation and submission of reimbursement requests.

The District proposes to install pipeline parallel to the existing dirt canals and within its existing easements. There are sites that will require traversing private properties. Those landowners have been contacted and have given written permissions to install pipeline on their properties. Since there will be limited ground disturbance outside of the existing easements, costs associated with environmental clearance is estimated at $5,000. This estimate comes from the Phoenix, Arizona Bureau of Reclamation Office for an Environmental Review fee.

Materials and Construction are the two largest costs associated with the project. The District will go out to bid for a construction contractor. The budget table reflects material costs with installation budgeted into each unit cost. Material estimates are for 31,427 linear feet of HDPE pipelines ranging from 12" to 21" diameter, globe valves, fittings, and flowmeters. These costs are estimated at $2,421,292. Other construction costs include outlet structures, equipment mobilization and demobilization. An estimated $72,000.00 will be included in the overall construction bid for these items.

A 13% contingency has been added to the budget to meet any overages or material fluctuations.

Total project costs are estimated to be $3,141,115. The District is requesting $1,500,000 in federal funds and plans to pay the remaining $1,641,115.00 to meet the 50% match requirement.

*Phases 1 and 2 cost estimates have been provided on page 41-42 of this application.

Malena Bazurto

From: Graziani, Dominic <dgraziani@usbr.gov>
Sent: Wednesday, March 6, 2019 11:02 AM
To: Malena Bazurto
Subject: BOR - WaterSMART Environmental Costs

Malena,

Per our conversation today, please budget $5000 for the required federal environmental review of your proposed project. You will find my contact information below. Please let me know if you have any questions or concerns.

Very Respectfully,

Dominic Graziani

Dominic Graziani
Environmental Protection Specialist
U.S. Bureau of Reclamation, Lower Colorado Region
Environmental Resource Management Division, Phoenix Area Office
Office Phone: (623) 773-6216
Email: dgraziani@usbr.gov

Grover's Hill Irrigation District

Post Office Box 1919
St. Johns Arizona 85936

Partner Organization Letter

February 18, 2019

To Whom it May Concern;

The Lyman Irrigation Company (now legally known as the Grover's Hill Irrigation District) was organized in 1886. The mission of the District is to monitor the available water in Lyman Lake, maintain the system of canals and deliver irrigation water to its members in the most efficient way possible. The District currently consists of 275 members, irrigating 1,705 acres.

The District is currently involved in the design of a multi-phase improvement project to replace earthen canals with PVC pipe. The project will consist of 3 phases over an approximate 3-year time frame. A feasibility study and construction cost estimate has been completed. The design and construction documents for Phase 1 are nearing completion.

The primary goals of the project are to significantly improve the efficiency of the system by reducing the amount of water lost through seepage in the earthen canals, to decrease the wait time for the delivery of water to the farmers and gardeners, and measure the water delivered through a system of meters. After construction, the system will be monitored to assure the higher system efficiency is maintained.

We commit to participating in and supporting the 2019 Bureau of Reclamation WATERSMART Grant application and project in the following ways:

1. The Board (Norman Brown, Karson Crosby and Jay Platt) will meet on at least a monthly basis to monitor the progress of the grant, to assure compliance with the management plan and to give direction as needed. After construction, the Board will monitor the system and work with staff to maintain the higher system efficiency.
2. Delwin Wengert (Manager of the District) will oversee the management plan of the grant on a daily basis, monitor the funds and how they are expended, work with the contractor and the engineer to assure the project is constructed in accordance with the management plan and the construction plans. After construction, the Manager will work with the Board and staff to assure a higher level of system efficiency.

The individuals listed above and our organization agree to abide by the management plan contained in the application.

Sincerely,

Norman Brown

Norman Brown
President of the District

Consent Agreement to Pipeline Easement

The Parties are Grover's Hill Irrigation District ("District"), a political subdivision of Arizona, and the City of St. Johns ("Landowner") a political subdivision of Arizona.

Background:
WHEREAS, the District desires to apply for grant money to build a pipeline to improve the District's irrigation system, conserve water and reduce sediment.

WHEREAS, the grant application process requires a showing that funds to build a pipeline will not be impeded because the property easements have not been acquired. This Agreement is Intended to fulfill the requirements of the application and provide proof of a consent easement granted to the District. This Agreement is not the easement itself. Please see the included map and legal description of the proposed easement.

WHEREAS, the Parties agree as follows:

A. Landowner agrees to grant the District an easement across its land for installing, Constructing, repairing, maintaining, and replacing an irrigation pipeline.

B. The District agrees to limit the scope of this easement for the purposes to install, construct, maintain, and replace an irrigation pipeline across the Landowner's property. The easement will span the length of the Landowner's property with a width of 100 feet during construction and the width of 50 feet to repair and maintain the pipeline.

C. The Parties agree to negotiate the remaining terms of the easement in good faith.

D. The Parties agree to finalize all necessary documents in a timely manner that will not Impede the pipeline grant application process.

GROVER'S HILL IRRIGATION DISTRICT

By: Norman Brown
Norman Brown, President

Dated: 2/27/19

LANDOWNER: City of St. Johns

By: _____

Dated: 2/22/19

Paul Ramsey, City Manager

LEGAL DESCRIPTION FOR IRRIGATION EASEMENT
(203-41-003 – CITY OF SAINT JOHNS)

A PORTION OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 31, TOWNSHIP 13 NORTH, RANGE 28 EAST, OF THE GILA AND SALT RIVER MERIDIAN, TOWN OF SAINT JOHN'S, APACHE COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 31, MARKED BY A 5/8" REBAR, FROM WHICH AN ADOT HIGHWAY DEPARTMENT ALUMINUM DISK, STAMPED STA 2+00 OLT 2016, AT THE NORTHEAST CORNER OF SAID SECTION 31, BEARS NORTH 00° 42' 02" WEST, A DISTANCE OF 2639.43 FEET, SAID POINT OF COMMENCEMENT ALSO BEING THE POINT OF BEGINNING OF THE PORTION OF LAND HEREIN DESCRIBED.

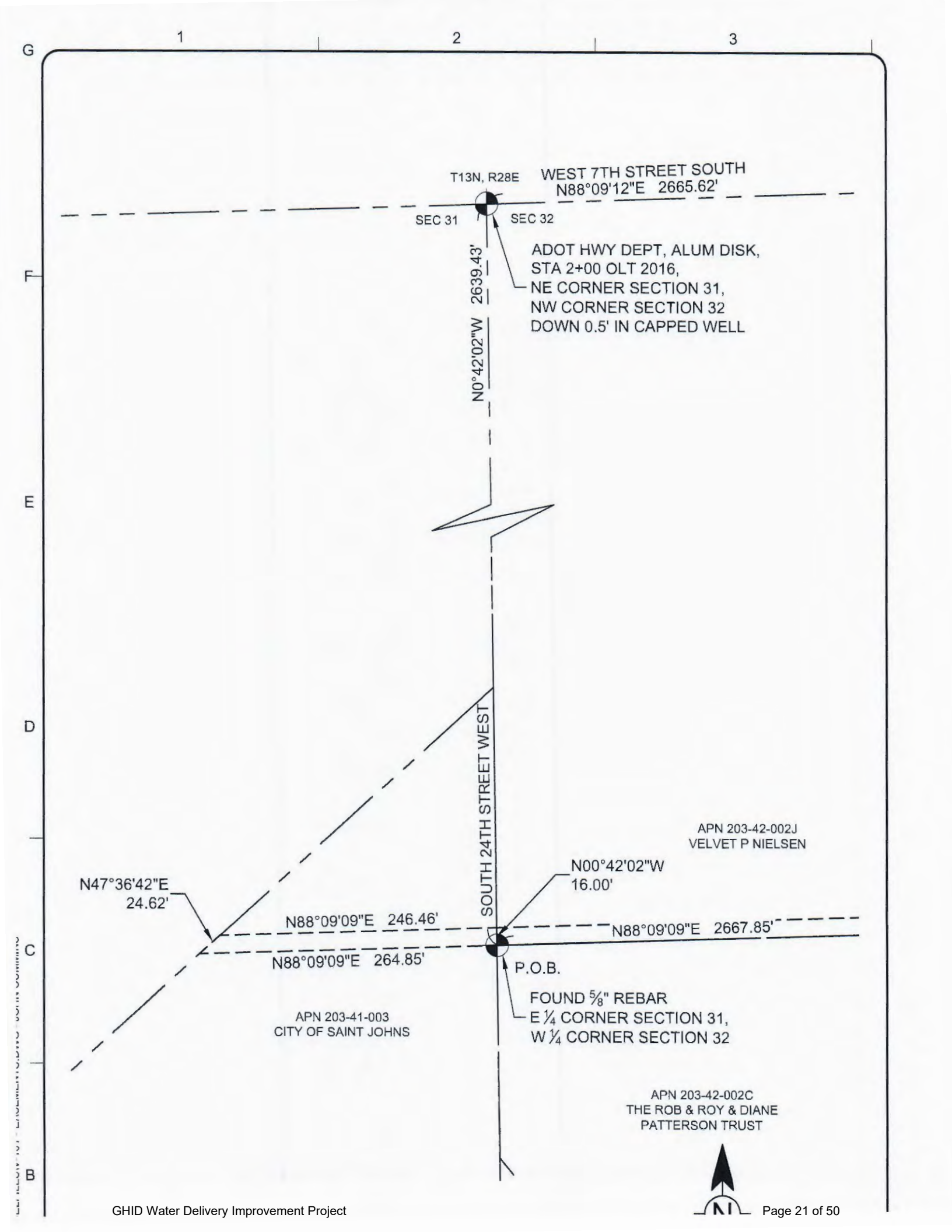
THENCE SOUTH 88° 09' 09" WEST, A DISTANCE OF 264.85 FEET TO A POINT ON THE WESTERLY PROPERTY LINE OF ASSESSOR'S PARCEL NUMBER 203-41-003;

THENCE NORTH 47° 36' 42" EAST, ALONG THE WESTERLY PROPERTY LINE OF SAID PARCEL, A DISTANCE OF 24.62 FEET;

THENCE LEAVING SAID PROPERTY LINE NORTH 88° 09' 09" EAST, A DISTANCE OF 246.46 FEET TO A COMMON POINT ON THE EASTERLY PROPERTY LINE OF ASSESSOR'S PARCEL NUMBER 203-41-003 AND THE EASTERLY SECTION LINE OF SECTION 31;

THENCE SOUTH 00° 42' 02" EAST, ALONG THE EAST SECTION LINE AND THE EASTERLY PROPERTY LINE OF SAID PARCEL, A DISTANCE OF 16.00 FEET TO THE POINT OF BEGINNING.

SAID PORTION OF LAND CONTAINS 0.094 ACRES OF LAND, (4,090 SQ. FT.), MORE OR LESS.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G
F
E
D
C
B
T13N, R28E
WEST 7TH STREET SOUTH
N88°09'12"E 2665.62'
SEC 31
SEC 32
ADOT HWY DEPT, ALUM DISK,
STA 2+00 OLT 2016,
NE CORNER SECTION 31,
NW CORNER SECTION 32
DOWN 0.5' IN CAPPED WELL
N0°42'02"W 2639.43'
SOUTH 24TH STREET WEST
APN 203-42-002J
VELVET P NIELSEN
N00°42'02"W
16.00'
N47°36'42"E
24.62'
N88°09'09"E 246.46'
N88°09'09"E 2667.85'
N88°09'09"E 264.85'
P.O.B.
FOUND 5/8" REBAR
E 1/4 CORNER SECTION 31,
W 1/4 CORNER SECTION 32
APN 203-41-003
CITY OF SAINT JOHNS
APN 203-42-002C
THE ROB & ROY & DIANE
PATTERSON TRUST

Consent Agreement to Pipeline Easement

The Parties are Grover's Hill Irrigation District ("District"), a political subdivision of Arizona, and Velvet P. Nielsen,("Landowner") a private landowner.

Background:
WHEREAS, the District desires to apply for grant money to build a pipeline to improve the District's irrigation system, conserve water and reduce sediment.

WHEREAS, the grant application process requires a showing that funds to build a pipeline will not be impeded because the property easements have not been acquired. This Agreement is Intended to fulfill the requirements of the application and provide proof of a consent easement granted to the District. This Agreement is not the easement itself. Please see the included map and legal description of the proposed easement.

WHEREAS, the Parties agree as follows:

A. Landowner agrees to grant the District an easement across its land for installing, Constructing, repairing, maintaining, and replacing an irrigation pipeline.

B. The District agrees to limit the scope of this easement for the purposes to install, construct, maintain, and replace an irrigation pipeline across the Landowner's property. The easement will span the length of the Landowner's property with a width of 100 feet during construction and the width of 20 feet to repair and maintain the pipeline.

C. The Parties agree to negotiate the remaining terms of the easement in good faith.

D. The Parties agree to finalize all necessary documents in a timely manner that will not Impede the pipeline grant application process.

GROVER'S HILL IRRIGATION DISTRICT

By: Norman Brown Dated: 3-18-19
Norman Brown, President

LANDOWNER

By: Velvet Nielsen Dated: 3/18/19

LEGAL DESCRIPTION FOR IRRIGATION EASEMENT
(203-42-002J – VELVET P NIELSEN)

A PORTION OF LAND LOCATED IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 13 NORTH, RANGE 28 EAST, OF THE GILA AND SALT RIVER MERIDIAN, TOWN OF SAINT JOHN'S, APACHE COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 32, MARKED BY A 5/8" REBAR, FROM WHICH AN ADOT HIGHWAY DEPARTMENT ALUMINUM DISK, STAMPED STA 2+00 OLT 2016, AT THE NORTHWEST CORNER OF SAID SECTION 32, BEARS NORTH 00° 42' 02" WEST, A DISTANCE OF 2639.43 FEET, SAID POINT OF COMMENCEMENT ALSO BEING THE POINT OF BEGINNING OF THE PORTION OF LAND HEREIN DESCRIBED.

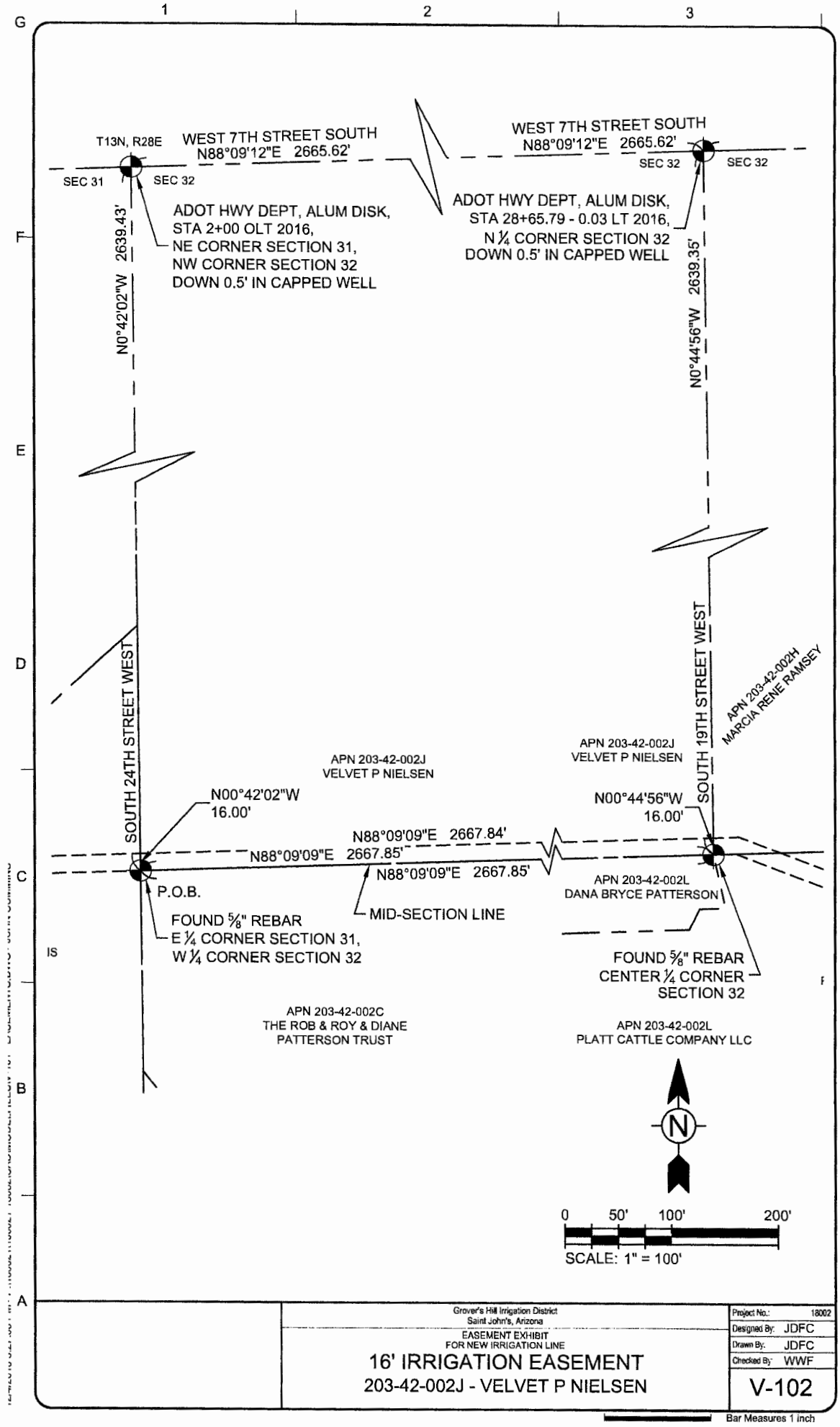
THENCE NORTH 88° 09' 09" EAST ALONG THE MID SECTION LINE OF SECTION 32, A DISTANCE OF 2667.85 FEET TO THE CENTER QUARTER CORNER OF SECTION 32, MARKED BY A 5/8" REBAR, AND A COMMON POINT ON THE EASTERLY PROPERTY LINE OF ASSESSOR'S PARCEL NUMBER 203-42-002J AND THE EASTERLY SECTION LINE OF SECTION 32;

THENCE NORTH 00° 44' 56" WEST, ALONG THE EAST SECTION LINE AND THE EASTERLY PROPERTY LINE OF SAID PARCEL, A DISTANCE OF 16.00 FEET;

THENCE LEAVING SAID PROPERTY LINE NORTH 88° 09' 09" EAST, A DISTANCE OF 2667.84 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-41-003, 203-42-002J AND THE WESTERLY SECTION LINE OF SECTION 32;

THENCE SOUTH 00° 42' 02" EAST, ALONG THE WEST SECTION LINE AND PROPERTY LINES OF SAID PARCELS, A DISTANCE OF 16.00 FEET TO THE POINT OF BEGINNING.

SAID PORTION OF LAND CONTAINS 0.980 ACRES OF LAND, (42,685 SQ. FT.), MORE OR LESS.


T13N, R28E
WEST 7TH STREET SOUTH
N88°09'12"E 2665.62'
SEC 31
SEC 32
ADOT HWY DEPT, ALUM DISK,
STA 2+00 OLT 2016,
NE CORNER SECTION 31,
NW CORNER SECTION 32
DOWN 0.5' IN CAPPED WELL
N0°42'02"W 2639.43'
WEST 7TH STREET SOUTH
N88°09'12"E 2665.62'
SEC 32
SEC 32
ADOT HWY DEPT, ALUM DISK,
STA 28+65.79 - 0.03 LT 2016,
N ¼ CORNER SECTION 32
DOWN 0.5' IN CAPPED WELL
N0°44'56"W 2639.35'
SOUTH 24TH STREET WEST
SOUTH 19TH STREET WEST
APN 203-42-002H
MARCIA RENE RAMSEY
APN 203-42-002J
VELVET P NIELSEN
APN 203-42-002J
VELVET P NIELSEN
N00°42'02"W
16.00'
N00°44'56"W
16.00'
N88°09'09"E 2667.84'
N88°09'09"E 2667.85'
N88°09'09"E 2667.85'
P.O.B.
FOUND ⅝" REBAR
E ¼ CORNER SECTION 31,
W ¼ CORNER SECTION 32
MID-SECTION LINE
APN 203-42-002L
DANA BRYCE PATTERSON
FOUND ⅝" REBAR
CENTER ¼ CORNER
SECTION 32
APN 203-42-002C
THE ROB & ROY & DIANE
PATTERSON TRUST
APN 203-42-002L
PLATT CATTLE COMPANY LLC
N
0
50'
100'
200'
SCALE: 1" = 100'
Grover's Hill Irrigation District
Saint John's, Arizona
EASEMENT EXHIBIT
FOR NEW IRRIGATION LINE
16' IRRIGATION EASEMENT
203-42-002J - VELVET P NIELSEN
Project No.: 18002
Designed By: JDFC
Drawn By: JDFC
Checked By: WWF
V-102
Bar Measures 1 inch

Consent Agreement to Pipeline Easement

The Parties are Grover's Hill Irrigation District ("District"), a political subdivision of Arizona, and Platt Cattle Company, LLC ("Landowner") a private landowner.

Background:
WHEREAS, the District desires to apply for grant money to build a pipeline to improve the District's irrigation system, conserve water and reduce sediment.

WHEREAS, the grant application process requires a showing that funds to build a pipeline will not be impeded because the property easements have not been acquired. This Agreement is Intended to fulfill the requirements of the application and provide proof of a consent easement granted to the District. This Agreement is not the easement itself. Please see the included map and legal description of the proposed easement.

WHEREAS, the Parties agree as follows:

A. Landowner agrees to grant the District an easement across its land for installing, Constructing, repairing, maintaining, and replacing an irrigation pipeline.

B. The District agrees to limit the scope of this easement for the purposes to install, construct, maintain, and replace an irrigation pipeline across the Landowner's property. The easement will span the length of the Landowner's property with a width of 100 feet during construction and the width of 50 feet to repair and maintain the pipeline.

C. The Parties agree to negotiate the remaining terms of the easement in good faith.

D. The Parties agree to finalize all necessary documents in a timely manner that will not Impede the pipeline grant application process.

GROVER'S HILL IRRIGATION DISTRICT

By: Norman Brown
Norman Brown, President

Dated: 2/27/19

LANDOWNER

By: H. J. Platt

Dated: 2/26/19

LEGAL DESCRIPTION FOR IRRIGATION EASEMENT
(203-42-002M – PLATT CATTLE COMPANY LLC)

A PORTION OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 32, TOWNSHIP 13 NORTH, RANGE 28 EAST, OF THE GILA AND SALT RIVER MERIDIAN, TOWN OF SAINT JOHN'S, APACHE COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER QUARTER CORNER OF SAID SECTION 32, MARKED BY A 5/8" REBAR, FROM WHICH AN ADOT HIGHWAY DEPARTMENT ALUMINUM DISK, STAMPED STA 28+65.79 LT 2016, AT THE NORTH QUARTER CORNER OF SAID SECTION 32, BEARS NORTH 00° 44' 56" WEST, A DISTANCE OF 2639.35 FEET, THENCE NORTH 88° 09' 25" EAST ALONG THE MID SECTION LINE OF SECTION 32, A DISTANCE OF 21.43 FEET TO THE POINT OF BEGINNING OF THE PORTION OF LAND HEREIN DESCRIBED.

THENCE SOUTH 69° 20' 51" EAST, A DISTANCE OF 174.64 FEET;

THENCE NORTH 88° 15' 09" EAST, A DISTANCE OF 149.16 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002M AND 203-42-002F

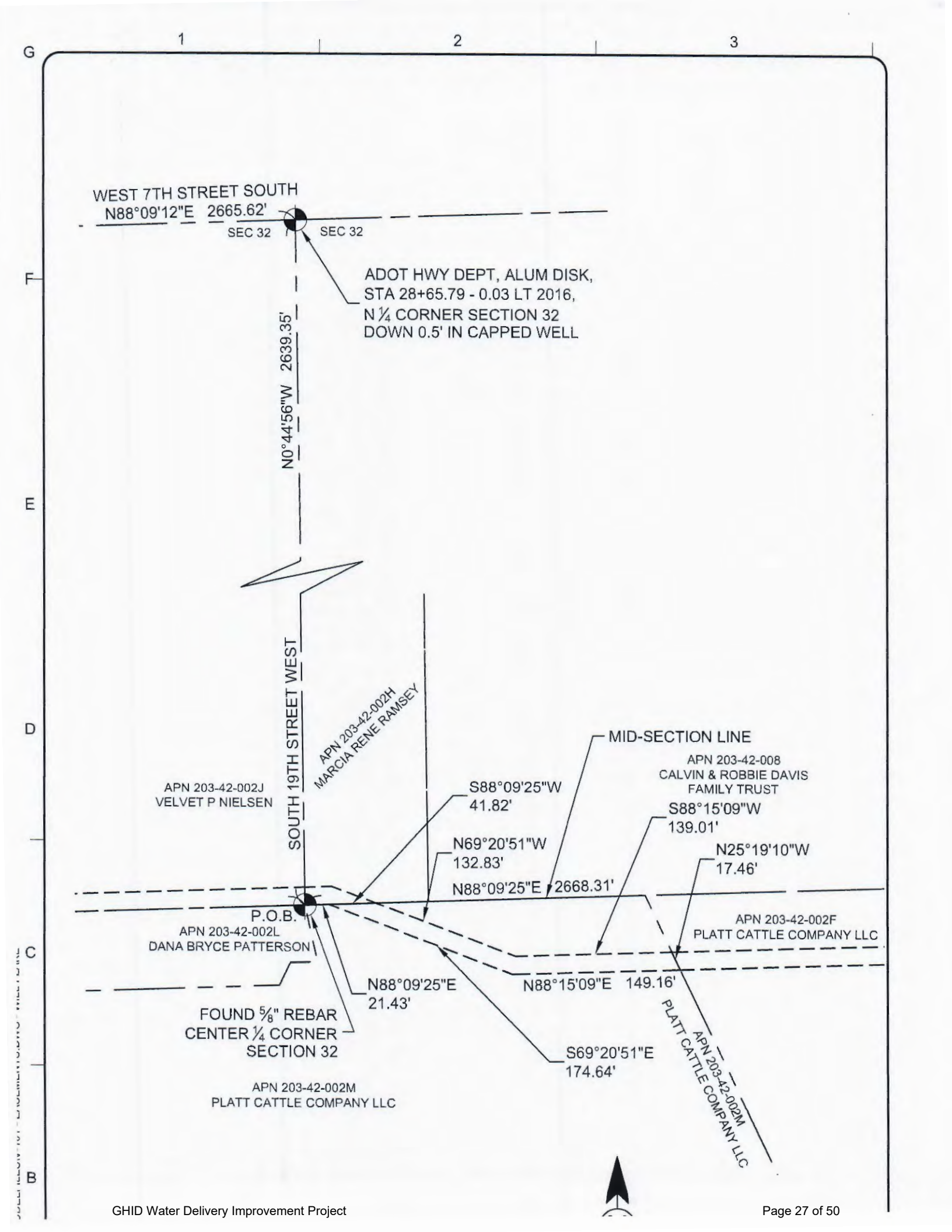
THENCE NORTH 25° 19' 10" WEST, ALONG SAID PROPERTY LINES A DISTANCE OF 17.46 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002M AND 203-42-002F;

THENCE SOUTH 88° 15' 09" WEST, A DISTANCE OF 139.01 FEET;

THENCE NORTH 69° 20' 51" WEST, A DISTANCE OF 132.83 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002M, 203-42-002H AND THE MID SECTION LINE OF SECTION 32;

THENCE SOUTH 88° 09' 25" WEST, ALONG ASSESSOR'S PARCEL NUMBERS 203-42-002M AND 203-42-002H PROPERTY LINES, A DISTANCE OF 41.82 FEET TO THE POINT OF BEGINNING.

SAID PORTION OF LAND CONTAINS 0.109 ACRES OF LAND, (4,765 SQ. FT.), MORE OR LESS.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C
B
WEST 7TH STREET SOUTH
N88°09'12"E 2665.62'
SEC 32
SEC 32
ADOT HWY DEPT, ALUM DISK,
STA 28+65.79 - 0.03 LT 2016,
N ¼ CORNER SECTION 32
DOWN 0.5' IN CAPPED WELL
N0°44'56"W 2639.35'
SOUTH 19TH STREET WEST
APN 203-42-002H
MARCIA RENE RAMSEY
MID-SECTION LINE
APN 203-42-008
CALVIN & ROBBIE DAVIS
FAMILY TRUST
APN 203-42-002J
VELVET P NIELSEN
S88°09'25"W
41.82'
S88°15'09"W
139.01'
N69°20'51"W
132.83'
N25°19'10"W
17.46'
N88°09'25"E 2668.31'
P.O.B.
APN 203-42-002L
DANA BRYCE PATTERSON
APN 203-42-002F
PLATT CATTLE COMPANY LLC
N88°09'25"E
21.43'
N88°15'09"E 149.16'
FOUND ⅝" REBAR
CENTER ¼ CORNER
SECTION 32
S69°20'51"E
174.64'
APN 203-42-002M
PLATT CATTLE COMPANY LLC
APN 203-42-002M
PLATT CATTLE COMPANY LLC

Consent Agreement to Pipeline Easement

The Parties are Grover's Hill Irrigation District ("District"), a political subdivision of Arizona, and Platt Cattle Company, LLC ("Landowner") a private landowner.

Background:
WHEREAS, the District desires to apply for grant money to build a pipeline to improve the District's irrigation system, conserve water and reduce sediment.

WHEREAS, the grant application process requires a showing that funds to build a pipeline will not be impeded because the property easements have not been acquired. This Agreement is Intended to fulfill the requirements of the application and provide proof of a consent easement granted to the District. This Agreement is not the easement itself. Please see the included map and legal description of the proposed easement.

WHEREAS, the Parties agree as follows:

A. Landowner agrees to grant the District an easement across its land for installing, Constructing, repairing, maintaining, and replacing an irrigation pipeline.

B. The District agrees to limit the scope of this easement for the purposes to install, construct, maintain, and replace an irrigation pipeline across the Landowner's property. The easement will span the length of the Landowner's property with a width of 100 feet during construction and the width of 50 feet to repair and maintain the pipeline.

C. The Parties agree to negotiate the remaining terms of the easement in good faith.

D. The Parties agree to finalize all necessary documents in a timely manner that will not Impede the pipeline grant application process.

GROVER'S HILL IRRIGATION DISTRICT

By: Norman R Brown Dated: 2/27/19
Norman Brown, President

LANDOWNER

By: H. J of Pltt Dated: 2/26/19

LEGAL DESCRIPTION FOR IRRIGATION EASEMENT
(203-42-002F – PLATT CATTLE COMPANY LLC)

A PORTION OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 32, TOWNSHIP 13 NORTH, RANGE 28 EAST, OF THE GILA AND SALT RIVER MERIDIAN, TOWN OF SAINT JOHN'S, APACHE COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 32, MARKED BY A 1/2" REBAR, FROM WHICH AN ALUMINUM CAP IN CONCRETE WITH A FAINT SECTIONAL CROSS AT THE NORTHEAST CORNER OF SAID SECTION 32, BEARS NORTH 00° 47' 44" WEST, A DISTANCE OF 2639.52 FEET, THENCE SOUTH 00° 46' 58" EAST ALONG THE EAST LINE OF SECTION 32 AND THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-43-003 AND 203-42-002F A DISTANCE OF 8.31 FEET TO THE POINT OF BEGINNING OF THE PORTION OF LAND HEREIN DESCRIBED.

THENCE CONTINUING SOUTH 00° 46' 58" EAST, ALONG SAID PROPERTY LINES A DISTANCE OF 17.38 FEET;

THENCE SOUTH 66° 12' 02" WEST, A DISTANCE OF 120.60 FEET;

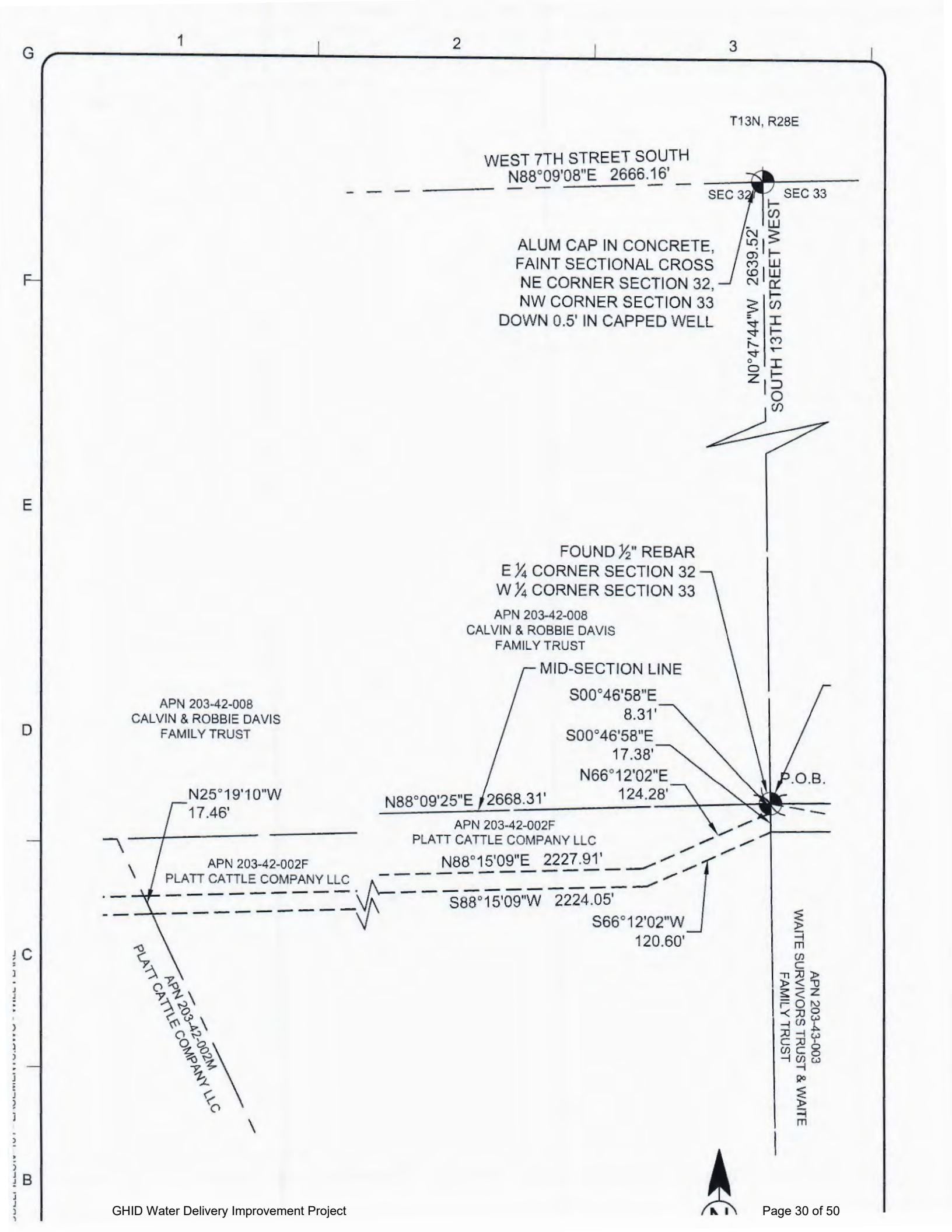
THENCE SOUTH 88° 15' 09" WEST, A DISTANCE OF 2224.05 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002M AND 203-42-002F;

THENCE NORTH 25° 19' 10" WEST, ALONG SAID PROPERTY LINES A DISTANCE OF 17.46 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002M AND 203-42-002F;

THENCE NORTH 88° 15' 09" EAST, A DISTANCE OF 2227.91 FEET;

THENCE NORTH 66° 12' 02" EAST, A DISTANCE OF 124.28 FEET TO THE POINT OF BEGINNING.

SAID PORTION OF LAND CONTAINS 0.863 ACRES OF LAND, (37,574 SQ. FT.), MORE OR LESS.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T13N, R28E
WEST 7TH STREET SOUTH
N88°09'08"E 2666.16'
SEC 32
SEC 33
ALUM CAP IN CONCRETE,
FAINT SECTIONAL CROSS
NE CORNER SECTION 32,
NW CORNER SECTION 33
DOWN 0.5' IN CAPPED WELL
N0°47'44"W 2639.52'
SOUTH 13TH STREET WEST
FOUND ½" REBAR
E ¼ CORNER SECTION 32
W ¼ CORNER SECTION 33
APN 203-42-008
CALVIN & ROBBIE DAVIS
FAMILY TRUST
MID-SECTION LINE
S00°46'58"E
8.31'
S00°46'58"E
17.38'
N66°12'02"E
124.28'
P.O.B.
APN 203-42-008
CALVIN & ROBBIE DAVIS
FAMILY TRUST
N25°19'10"W
17.46'
N88°09'25"E 2668.31'
APN 203-42-002F
PLATT CATTLE COMPANY LLC
APN 203-42-002F
PLATT CATTLE COMPANY LLC
N88°15'09"E 2227.91'
S88°15'09"W 2224.05'
S66°12'02"W
120.60'
APN 203-42-002M
PLATT CATTLE COMPANY LLC
APN 203-43-003
WAITE SURVIVORS TRUST & WAITE
FAMILY TRUST

Consent Agreement to Pipeline Easement

The Parties are Grover's Hill Irrigation District ("District"), a political subdivision of Arizona, and Marcia Ramsey ("Landowner") a private landowner.

Background:
WHEREAS, the District desires to apply for grant money to build a pipeline to improve the District's irrigation system, conserve water and reduce sediment.

WHEREAS, the grant application process requires a showing that funds to build a pipeline will not be impeded because the property easements have not been acquired. This Agreement is Intended to fulfill the requirements of the application and provide proof of a consent easement granted to the District. This Agreement is not the easement itself. Please see the included map and legal description of the proposed easement.

WHEREAS, the Parties agree as follows:

A. Landowner agrees to grant the District an easement across its land for installing, Constructing, repairing, maintaining, and replacing an irrigation pipeline.

B. The District agrees to limit the scope of this easement for the purposes to install, construct, maintain, and replace an irrigation pipeline across the Landowner's property. The easement will span the length of the Landowner's property with a width of 100 feet during construction and the width of 50 feet to repair and maintain the pipeline.

C. The Parties agree to negotiate the remaining terms of the easement in good faith.

D. The Parties agree to finalize all necessary documents in a timely manner that will not Impede the pipeline grant application process.

GROVER'S HILL IRRIGATION DISTRICT

By: Norman Brown
Norman Brown, President

Dated: 2/27/19

LANDOWNER

By: Marcia Ramsey

Dated: 2/27/19

LEGAL DESCRIPTION FOR IRRIGATION EASEMENT
(203-42-002H – MARCIA RENE RAMSEY)

A PORTION OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 32, TOWNSHIP 13 NORTH, RANGE 28 EAST, OF THE GILA AND SALT RIVER MERIDIAN, TOWN OF SAINT JOHN'S, APACHE COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER QUARTER CORNER OF SAID SECTION 32, MARKED BY A A 5/8" REBAR, FROM WHICH AN ADOT HIGHWAY DEPARTMENT ALUMINUM DISK, STAMPED STA 28+65.79 LT 2016, AT THE NORTH QUARTER CORNER OF SAID SECTION 32, BEARS NORTH 00° 44' 56" WEST, A DISTANCE OF 2639.35 FEET, SAID POINT OF COMMENCEMENT ALSO BEING THE POINT OF BEGINNING OF THE PORTION OF LAND HEREIN DESCRIBED.

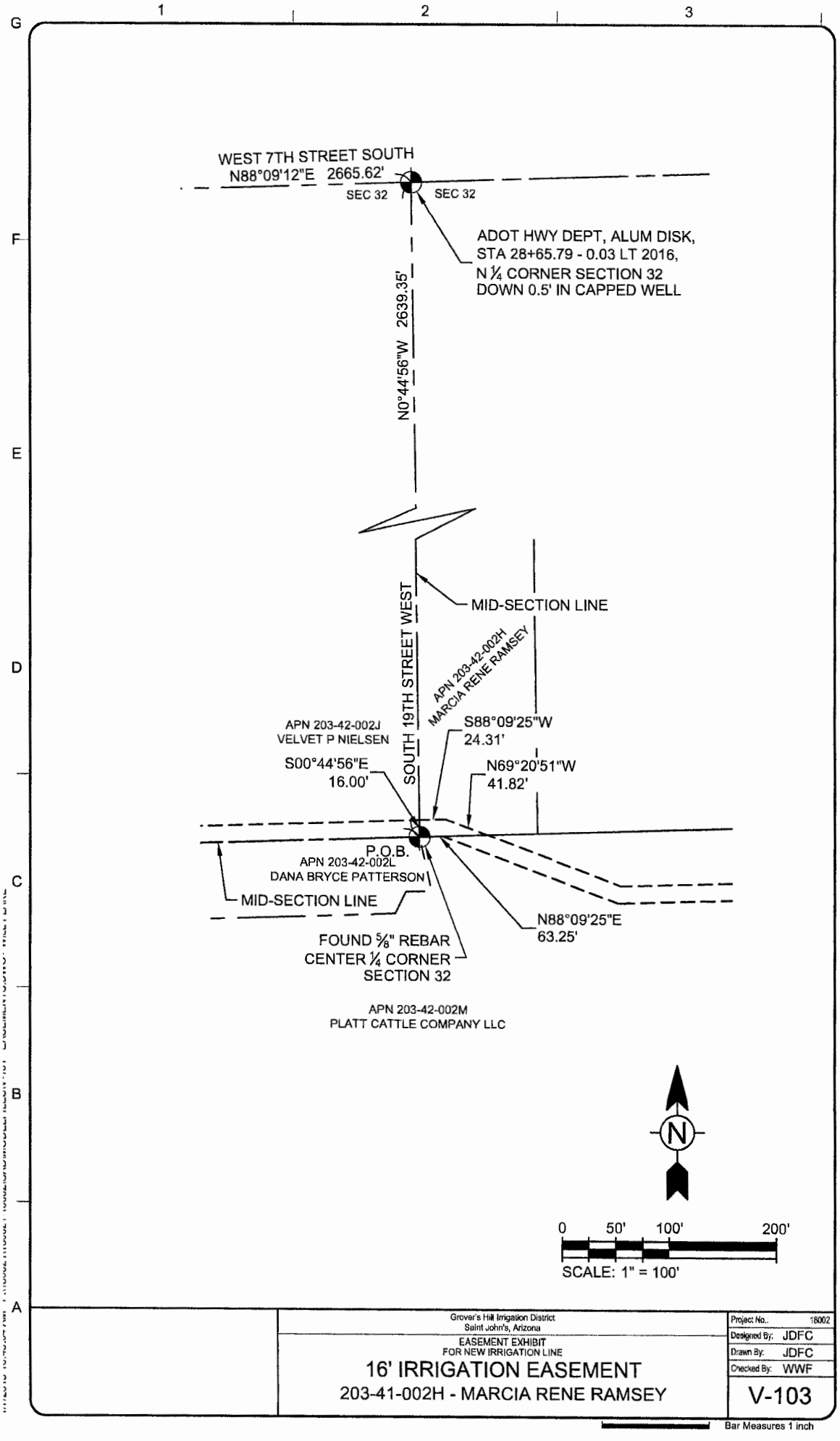
THENCE NORTH 88° 09' 25" EAST ALONG THE MID SECTION LINE OF SECTION 32, A DISTANCE OF 63.25 FEET;

THENCE NORTH 69° 20' 51" WEST, A DISTANCE OF 41.82 FEET;

THENCE SOUTH 88° 09' 25" WEST, A DISTANCE OF 24.31 FEET TO A COMMON POINT ON THE PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002H, 203-42-002J AND THE MID-SECTION LINE OF SECTION 32;

THENCE SOUTH 00° 44' 56" EAST, ALONG THE MID-SECTION LINE AND PROPERTY LINES OF ASSESSOR'S PARCEL NUMBERS 203-42-002H AND 203-42-002J, A DISTANCE OF 16.00 FEET TO THE POINT OF BEGINNING.

SAID PORTION OF LAND CONTAINS 0.016 ACRES OF LAND, (700 SQ. FT.), MORE OR LESS.


WEST 7TH STREET SOUTH
N88°09'12"E 2665.62'
SEC 32
SEC 32
ADOT HWY DEPT, ALUM DISK,
STA 28+65.79 - 0.03 LT 2016,
N ¼ CORNER SECTION 32
DOWN 0.5' IN CAPPED WELL
N0°44'56"W 2639.35'
MID-SECTION LINE
SOUTH 19TH STREET WEST
APN 203-42-002H
MARCIA RENE RAMSEY
APN 203-42-002J
VELVET P NIELSEN
S88°09'25"W
24.31'
S00°44'56"E
16.00'
N69°20'51"W
41.82'
P.O.B.
APN 203-42-002L
DANA BRYCE PATTERSON
MID-SECTION LINE
N88°09'25"E
63.25'
FOUND ⅝" REBAR
CENTER ¼ CORNER
SECTION 32
APN 203-42-002M
PLATT CATTLE COMPANY LLC
N
0
50'
100'
200'
SCALE: 1" = 100'
Grover's Hill Irrigation District
Saint John's, Arizona
EASEMENT EXHIBIT
FOR NEW IRRIGATION LINE
16' IRRIGATION EASEMENT
203-41-002H - MARCIA RENE RAMSEY
Project No.: 18002
Designed By: JDFC
Drawn By: JDFC
Checked By: WWF
V-103
Bar Measures 1 inch

Consent Agreement to Pipeline Easement

The Parties are Grover's Hill Irrigation District ("District"), a political subdivision of Arizona, and the St. Johns Irrigation Company ("Landowner") a political subdivision of Arizona.

Background:
WHEREAS, the District desires to apply for grant money to build a pipeline to improve the District's irrigation system, conserve water and reduce sediment.

WHEREAS, the grant application process requires a showing that funds to build a pipeline will not be impeded because the property easements have not been acquired. This Agreement is Intended to fulfill the requirements of the application and provide proof of a consent easement granted to the District. This Agreement is not the easement itself. Please see the included map and legal description of the proposed easement.

WHEREAS, the Parties agree as follows:

A. Landowner agrees to grant the District an easement across its land for installing, Constructing, repairing, maintaining, and replacing an irrigation pipeline.

B. The District agrees to limit the scope of this easement for the purposes to install, construct, maintain, and replace an irrigation pipeline across the Landowner's property. The easement will span the length of the Landowner's property with a width of 100 feet during construction and the width of 50 feet to repair and maintain the pipeline.

C. The Parties agree to negotiate the remaining terms of the easement in good faith.

D. The Parties agree to finalize all necessary documents in a timely manner that will not Impede the pipeline grant application process.

GROVER'S HILL IRRIGATION DISTRICT

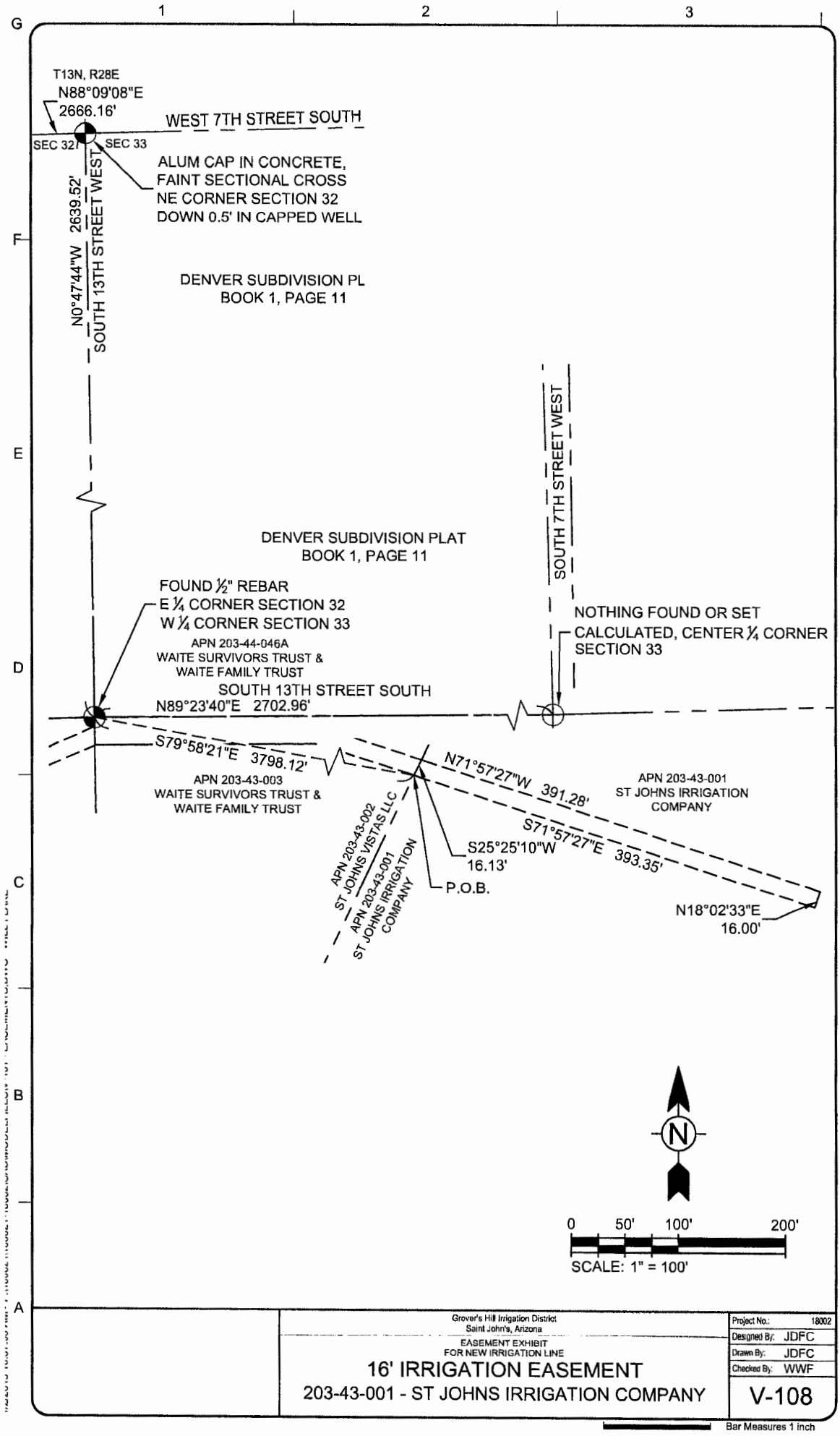
By: Norman Brown Dated: 3-18-19

Norman Brown, President

LANDOWNER: St. Johns Irrigation Company

By: Vanden Nielsen Dated: 3-18-19

Vanden Nielsen, President


T13N, R28E
N88°09'08"E
2666.16'
WEST 7TH STREET SOUTH
SEC 32
SEC 33
ALUM CAP IN CONCRETE,
FAINT SECTIONAL CROSS
NE CORNER SECTION 32
DOWN 0.5' IN CAPPED WELL
N0°47'44"W 2639.52'
SOUTH 13TH STREET WEST
DENVER SUBDIVISION PL
BOOK 1, PAGE 11
SOUTH 7TH STREET WEST
DENVER SUBDIVISION PLAT
BOOK 1, PAGE 11
FOUND ½" REBAR
E ¼ CORNER SECTION 32
W ¼ CORNER SECTION 33
NOTHING FOUND OR SET
CALCULATED, CENTER ¼ CORNER
SECTION 33
APN 203-44-046A
WAITE SURVIVORS TRUST &
WAITE FAMILY TRUST
SOUTH 13TH STREET SOUTH
N89°23'40"E 2702.96'
S79°58'21"E 3798.12'
APN 203-43-003
WAITE SURVIVORS TRUST &
WAITE FAMILY TRUST
N71°57'27"W 391.28'
APN 203-43-001
ST JOHNS IRRIGATION
COMPANY
S71°57'27"E 393.35'
APN 203-43-002
ST JOHNS VISTAS LLC
APN 203-43-001
ST JOHNS IRRIGATION
COMPANY
S25°25'10"W
16.13'
P.O.B.
N18°02'33"E
16.00'
N
0
50'
100'
200'
SCALE: 1" = 100'
Grover's Hill Irrigation District
Saint John's, Arizona
EASEMENT EXHIBIT
FOR NEW IRRIGATION LINE
16' IRRIGATION EASEMENT
203-43-001 - ST JOHNS IRRIGATION COMPANY
Project No.: 18002
Designed By: JDFC
Drawn By: JDFC
Checked By: WWF
V-108
Bar Measures 1 inch

LEGAL DESCRIPTION FOR IRRIGATION EASEMENT
(203-43-001 – ST JOHNS IRRIGATION COMPANY)

A PORTION OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 33, TOWNSHIP 13 NORTH, RANGE 28 EAST, OF THE GILA AND SALT RIVER MERIDIAN, TOWN OF SAINT JOHN'S, APACHE COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 33, MARKED BY A 1/2" REBAR, FROM WHICH AN ALUMINUM CAP IN CONCRETE WITH A FAINT SECTIONAL CROSS AT THE NORTHWEST CORNER OF SAID SECTION 33, BEARS NORTH 00° 47' 44" WEST, A DISTANCE OF 2639.52 FEET, THENCE SOUTH 79° 58' 21" EAST, A DISTANCE OF 3798.12 FEET TO A POINT ON THE WEST PROPERTY LINE OF ASSESSOR'S PARCEL NUMBER 203-43-001 AND THE POINT OF BEGINNING OF THE PORTION OF LAND HEREIN DESCRIBED.

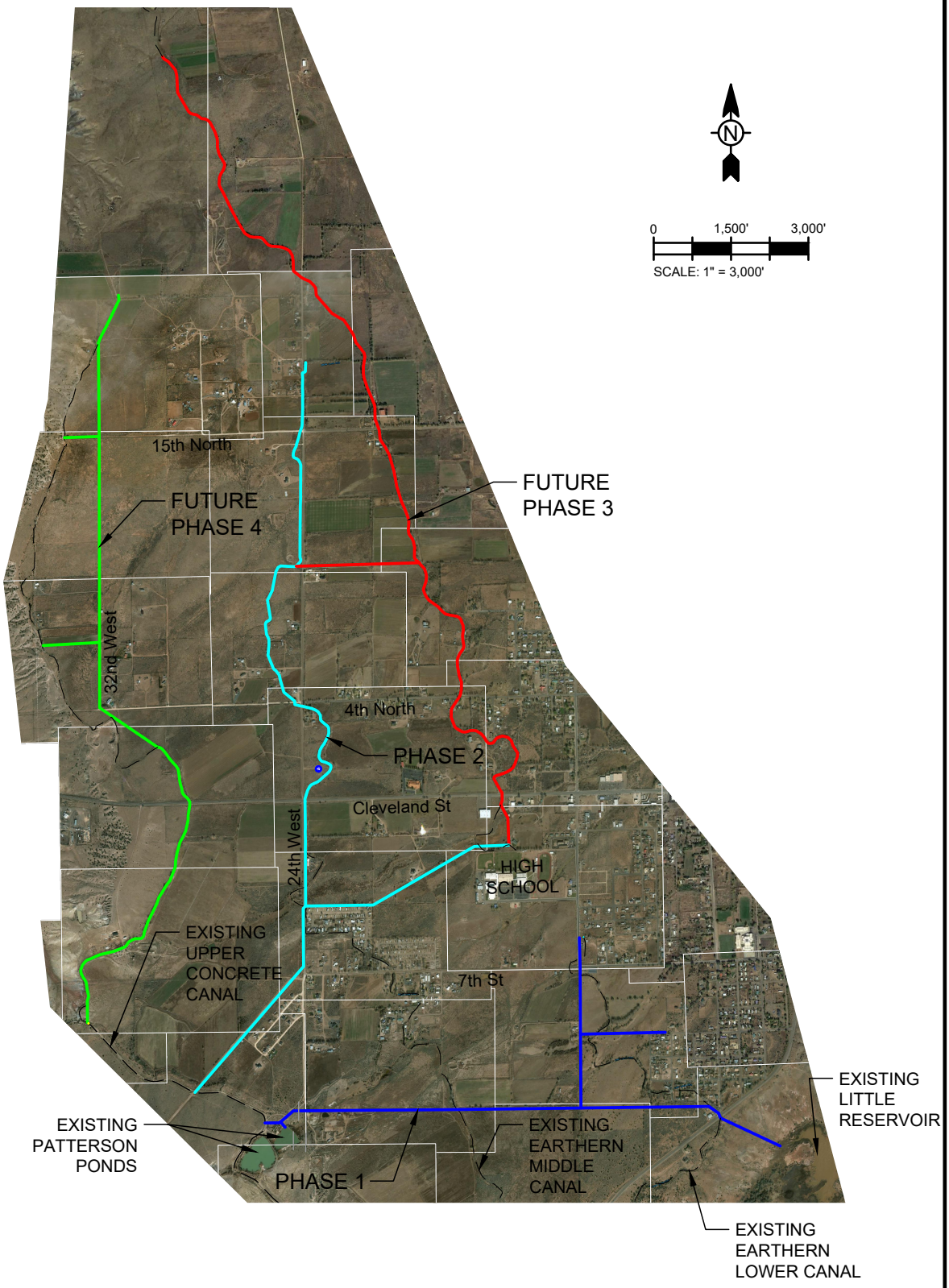
THENCE SOUTH 71° 57' 27" EAST, A DISTANCE OF 393.35 FEET;

THENCE NORTH 18° 02' 33" EAST, A DISTANCE OF 16.00 FEET;

THENCE NORTH 71° 57' 27" WEST, A DISTANCE OF 391.28 FEET TO THE WEST PROPERTY LINE OF ASSESSOR'S PARCEL NUMBER 203-43-001;

THENCE SOUTH 25° 25' 10" WEST, ALONG SAID PROPERTY LINE, A DISTANCE OF 16.13 FEET TO THE POINT OF BEGINNING.

SAID PORTION OF LAND CONTAINS 0.144 ACRES OF LAND, (6,277 SQ. FT.), MORE OR LESS.



PAINTED SKY Engineering & Survey, LLC 176 N. Main Street Snowflake, AZ 85937	GROVER HILL IRRIGATION DISTRICT PHASE MAP	Project No.: 180021-18001 Date: 3/18/19 Designed By: WWF Supplemental 1

Bar Measures 1 inch

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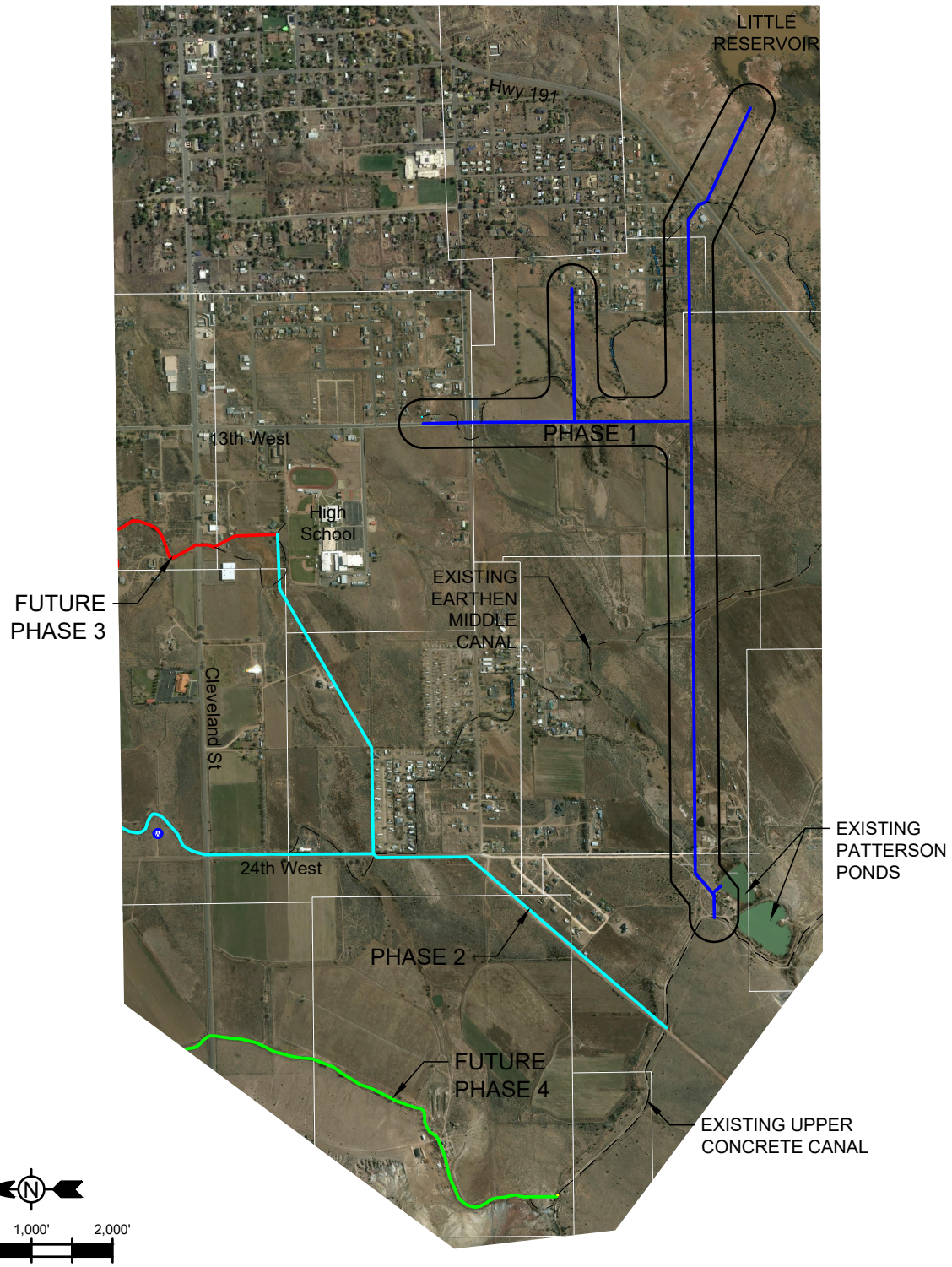

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PAINTED SKY Engineering & Survey, LLC

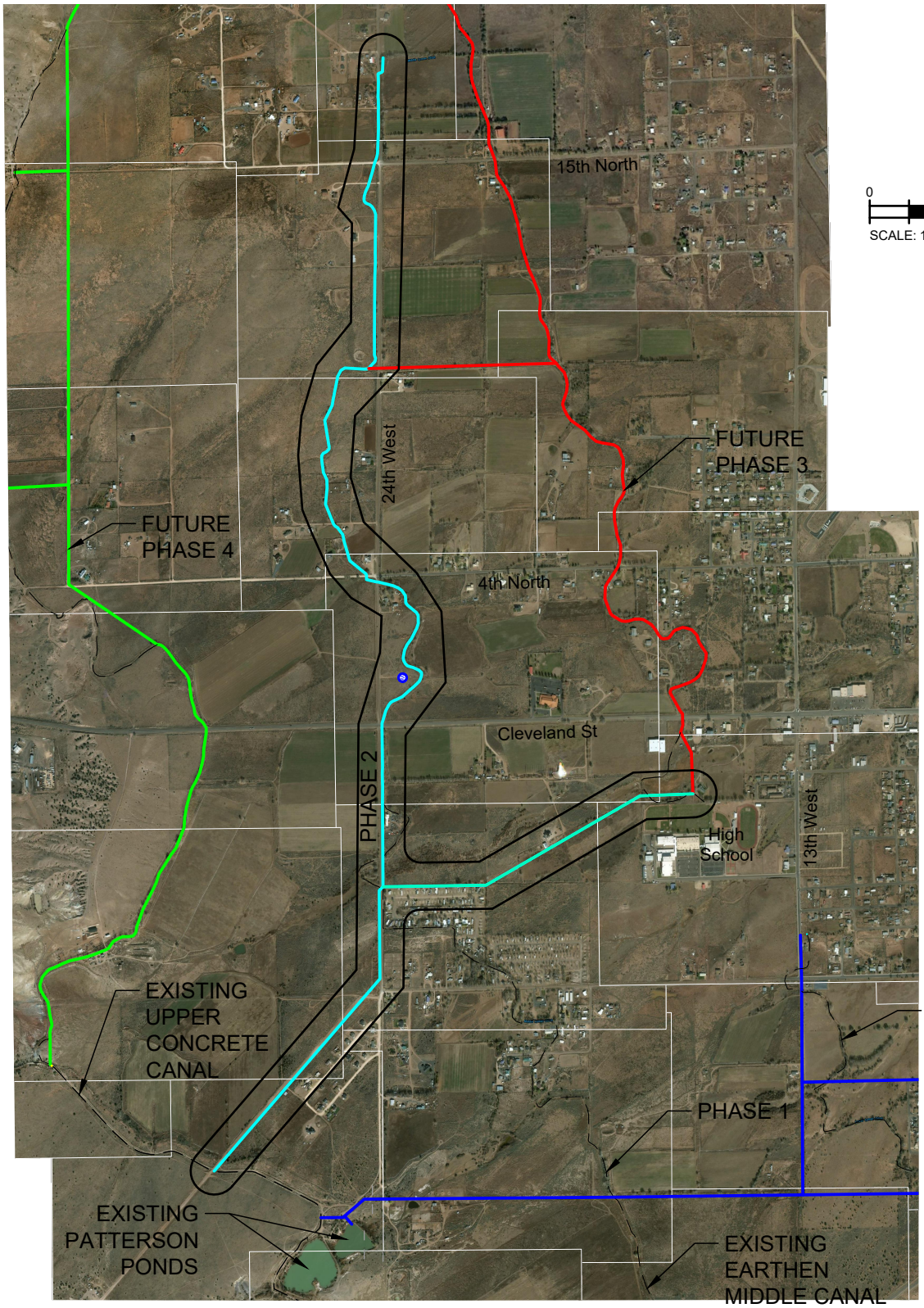
176 N. Main Street
Snowflake, AZ 85937

GROVER HILL IRRIGATION DISTRICT

PHASE 1
MAP

Project No.: 180021-18001
Date: 3/18/19
Designed By: WWF
Supplemental
2

Bar Measures 1 inch



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PAINTED SKY
Engineering & Survey, LLC

176 N. Main Street
Snowflake, AZ 85937

GROVER HILL IRRIGATION DISTRICT

PHASE 2
MAP

Project No.:	180021-18001
Date:	3/18/19
Designed By:	WWF
Supplemental	3

Bar Measures 1 inch

RESOLUTION NUMBER: 2019-1

A RESOLUTION OF THE GOVERNING BOARD OF GROVER'S HILL IRRIGATION DISTRICT (The District)

WHEREAS, the District has identified failures and inefficiencies throughout its irrigation water delivery system;

WHEREAS, the District desires to apply for funding through the Bureau of Reclamation's WaterSMART Grants Program;

WHEREAS, the WaterSMART program can fund up to $1.2 million toward a project that improves water usage and delivery;

WHERAS, the District will be required to match 50% of total project costs;

NOW, THEREFORE, BE IT RESOLVED by the Governing Board of the Grover's Hill Irrigation District:

That the District will apply for funding to address the needs of its irrigation water delivery system;

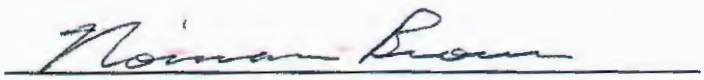
That the District will work with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement;

That the District will match 50% of the project cost.

PASSED AND ADOPTED by the Governing Board of the Grover's Hill Irrigation District, this 7th day of February, 2019.

ATTEST:

Norman Brown
President



PAINTED SKY
Engineering & Survey, LLC

3/8/2019

GROVERS HILL IRRIGATION DISTRICT - PHASE 1 COST ESTIMATE

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
1	MOBILIZATION/DEMOBILIZATION	LS	1	$ 20,000.00	$ 20,000
2	10" PIPE LINE (INSTALLATION ONLY)	LF	1,443	$ 11.00	$ 15,873
3	12" PIPE LINE	LF	2,900	$ 48.00	$ 139,200
4	15" PIPE LINE	LF	2,420	$ 55.00	$ 133,100
5	21" PIPE LINE	LF	3,865	$ 70.00	$ 270,550
6	HEAD WORKS	LS	1	$ 10,000.00	$ 10,000
7	15" TURNOUT COMPLETE	EA	1	$ 18,000.00	$ 18,000
8	12" TURNOUT COMPLETE	EA	3	$ 15,000.00	$ 45,000
9	4" AIR RELEASE VALVE	EA	6	$ 600.00	$ 3,600
10	15" GLOBE VALVE	EA	1	$ 4,000.00	$ 4,000
11	12" GLOBE VALVE	EA	3	$ 3,300.00	$ 9,900
12	21" X 15" REDUCER	EA	1	$ 2,200.00	$ 2,200
13	15" X 12" REDUCER	EA	1	$ 1,800.00	$ 1,800
14	15" X 15" TEE WITH CAP	EA	1	$ 1,800.00	$ 1,800
15	21" X 45° BEND	EA	1	$ 1,700.00	$ 1,700
16	21" X 22.5° BEND	EA	3	$ 1,700.00	$ 5,100
17	21" X 11.25° BEND	EA	2	$ 1,700.00	$ 3,400
18	15" X 45° BEND	EA	2	$ 1,500.00	$ 3,000
19	12" X 45° BEND	EA	4	$ 800.00	$ 3,200
20	12" X 22.5° BEND	EA	3	$ 800.00	$ 2,400
21	12" X 11.25° BEND	EA	1	$ 800.00	$ 800
22	EXIST CULVERT ENCASEMENT	EA	2	$ 4,000.00	$ 8,000
23	12" McCROMETER FLOW METER	EA	1	$ 6,500.00	$ 6,500
24	OUTLET STRUCTURE	EA	1	$ 6,000.00	$ 6,000
25	CONSTRUCTION ENGINEERING, OBSERVATION, SURVEY	LS	1	$ 45,000.00	$ 45,000
				Sub-Total	$ 760,123
				10% Contingency	$ 114,018
				TOTAL:	$ 874,141

PAINTED SKY
Engineering & Survey, LLC

3/8/2019

GROVERS HILL IRRIGATION DISTRICT - PHASE 2 COST ESTIMATE

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Amount
1	MOBILIZATION/DEMOBILIZATION	LS	1	$ 20,000	$ 20,000
2	15" PIPE LINE	LF	4,247	$ 55	$ 233,585
3	18" PIPE LINE	LF	4,114	$ 60	$ 246,840
4	24" PIPE LINE	LF	8,020	$ 72	$ 577,440
5	30" PIPE LINE	LF	4,418	$ 78	$ 344,604
6	HEAD WORKS	LS	1	$ 10,000	$ 10,000
7	15" TURNOUT COMPLETE	EA	3	$ 18,000	$ 54,000
8	12" TURNOUT COMPLETE	EA	12	$ 15,000	$ 180,000
9	4" AIR RELEASE VALVE	EA	12	$ 600	$ 7,200
10	24" GLOBE VALVE	EA	3	$ 5,000	$ 15,000
11	15" GLOBE VALVE	EA	1	$ 4,000	$ 4,000
12	30" X 24" REDUCER	EA	1	$ 2,800	$ 2,800
13	30" X 15" REDUCER	EA	1	$ 2,600	$ 2,600
14	24" X 24" TEE	EA	1	$ 2,000	$ 2,000
15	30" X 45° BEND	EA	3	$ 2,200	$ 6,600
16	24" X 45° BEND	EA	5	$ 1,900	$ 9,500
17	24" X 22.5° BEND	EA	16	$ 1,800	$ 28,800
18	18" X 45° BEND	EA	9	$ 1,600	$ 14,400
19	EXIST CULVERT ENCASEMENT	EA	3	$ 4,000	$ 12,000
20	OUTLET STRUCTURE	EA	1	$ 6,000	$ 6,000
21	CONSTRUCTION ENGINEERING, OBSERVATION, SURVEY	LS	1	$ 98,000	$ 98,000
				Sub-Total	$ 1,875,369
				15% Contingency	$ 281,305
				TOTAL:	$ 2,156,674

Water Balance Calculation for 2018 Season (Updated on 9/16)

Date: September 16, 2018

Water Volume in the Lake:

1 - Measured volume of water in Lyman Lake at midnight April 15, 2018:	10,570 ac-ft, elevation = 5963.75 feet.
2 - Total actual flow released for GHID into canal from 4/15 to 9/15:	2,835 ac-ft
3 - Total actual flow released into the river below the Dam from 4/15 to 9/15:	1,240 ac-ft
4 - Total actual flow released into canal for SRP from 5/10 to 9/15:	516 ac-ft
5 - Total actual flow released from canal into Little Reservoir from 4/15 to 9/15:	150 ac-ft
Total water released:	4,741 ac-ft
6 - Calculated volume of water in Lyman Lake at midnight September 15, 2018:	5,829 ac-ft
7 - Measured volume of water in Lyman Lake at midnight September 15, 2018:	4,861 ac-ft, elevation = 5955.90 feet.
8 - Estimate of net evaporation losses in the Lake from 4/15 to 9/15:	968 ac-ft

Calculation of the Minimum Volume of Water to remain in the Lake on 9/15:

9 - The minimum pool in Lyman Lake is :	889 ac-ft, elevation = 5947 feet.
10 - The SRP balance is (balance minus current order):	636 ac-ft (1,151.6 - 516 ac-ft)
11 - The Zuni balance is:	581 ac-ft.
Total volume to remain:	2,105 ac-ft, elevation = 5950.30

Estimate of Water Delivered by Sam to Members:

12 - A field stream is 3 cfs, a garden stream is 1 cfs.	
13 - The number of field shares being served is:	4,130
14 - The number of garden shares being served is:	482
15 - The approved total time per field share is:	1.5 hrs/share
16 - The approved time per garden share is:	0.33 hrs/share
17 - The total volume for field shares is:	1,536 ac-ft
18 - The total volume for garden shares is (12 turns):	158 ac-ft
Total:	1,694 ac-ft

Volume of Water Delivered into System for Members during 2018 season:

19 -Total actual flow released for Members into canal from 4/15 to 9/15:	2,835 ac-ft
19 - The Ramsey Well produced (through 9/15):	249 ac-ft
20 - The Salado Well produced (through 9/15):	355 ac-ft
Total delivered:	3,438 ac-ft

Estimate of Losses in the System:

21 - Total delivered into system minus amount meaured by Sam to Members:

3,438 - 1,694 = 1,745 ac-ft

22 - Estimate for all losses in the system (evaporation, seepage and waste):	51 percent
22 - Estimated evaporation loss in the canals (15 percent):	516 ac-ft
23 - Estimate of losses in the canals due to seepage and waste (36 percent):	1,238 ac-ft

An anslysis was completed on the general capacity of the canal. Based on survey data, the concrete canal starts at an elevation of 5915.75 feet at the upper end to 5907.57 at the lower end, for a elevation difference of 8.19 feet. With a total canal length of 15,320 feet (2.9 miles), the average canal slope is 0.053% slope. The bottom width of the canal varies between approximately 1.8 feet in width and 2.0 feet. A bottom width of 1.8 feet was used for the analysis. The depth of the canal is approximately 3 feet. A minimum channel slope of 0.06% was used for the slope of the channel for the analysis. Assuming a flow depth of 2.25 feet, it was estimated that the concrete canal has a capacity of 27 cfs. This equates to 9 streams. At this depth, the canal will have a freeboard of about 9 inches.

The analysis included two calculations to produce a graph indicating the flow rate versus the flow depth at two (2) locations in the existing concrete canal. The first location is approximately where the new pipe line is proposed to take water from the concrete canal near the ponds. The graph is indicated in Figure 3 below. The analysis results are indicated in the Appendix.

Figure 3. Concrete Canal Point 1 Graph

The second point that was considered on the existing canal is at the end (northwest) of the canal where the concrete ends. The graph, indicating the flow (Q) versus depth relationship is shown in Figure 4. The calculation results are indicated in the Appendix of the report.

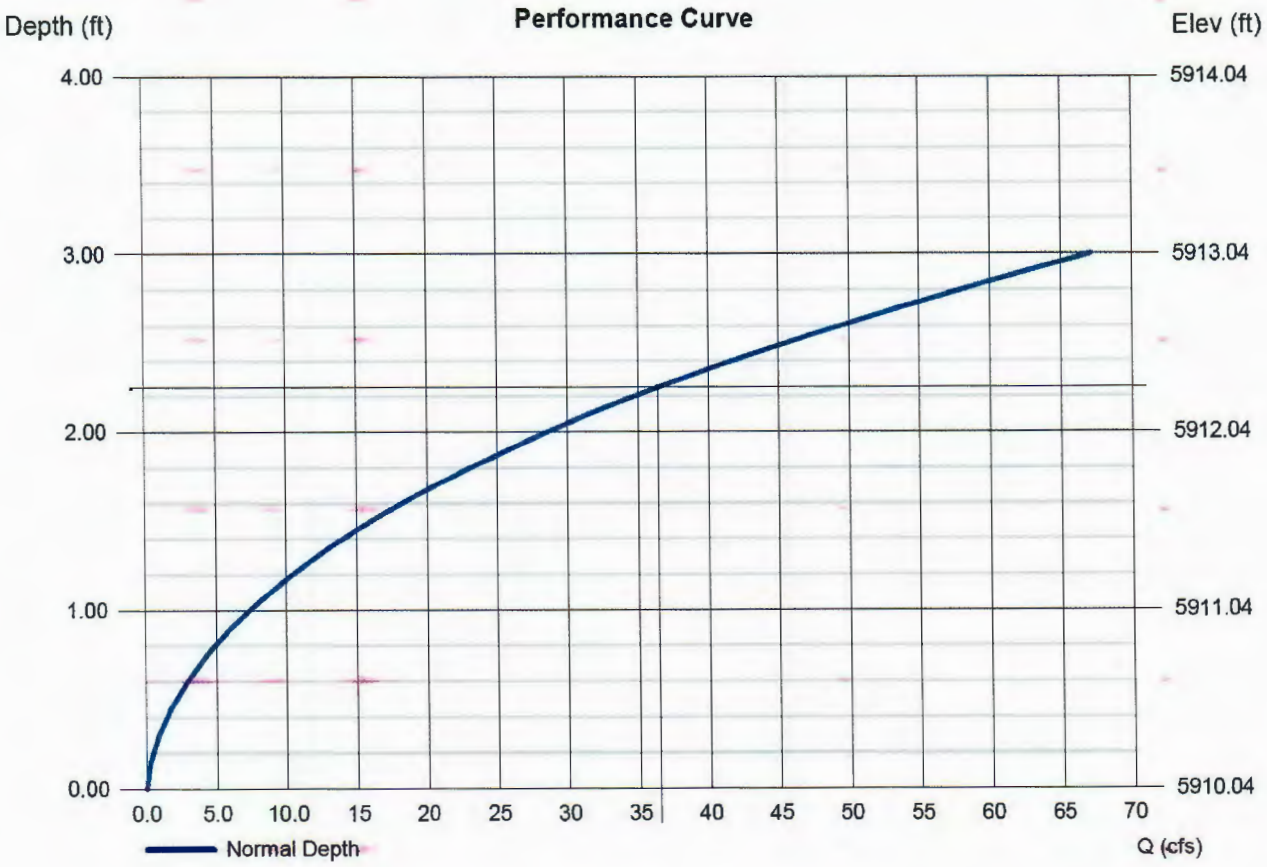


Figure 4. Concrete Canal Point 2 Graph

2.7 FLOW MEASUREMENT

Flow measurement will be an important part of the irrigation system. It is important for the GHID to provide irrigation water to the users at specific flow rates. It is understood that the users have the irrigation water for a specific amount of time for the irrigation season, at a specific flow rate, providing them a certain volume of water for the irrigation season. Also flow measurement in the concrete canal will likely be necessary to determine the flow rate that is coming to the irrigation system.

To ultimately determine what the flow rate is for each user, ideally a flow meter would be installed at each user's turnout. That way the flow rate will be known for each user that is receiving irrigation water. However this will require high construction costs to the District as there will be many flow meters required to accomplish this. There should also be a consideration of maintenance costs to keep all of the meters in working order. This will have to be a decision the District will have to make. There are other locations where knowing the flow will be valuable to the GHID. These include the concrete canal, the inlet to the pipe lines near the ponds as well as the end of the concrete canal where the Upper Ditch pipe line will begin. These points will allow the Water Boss to know what is actually going into the system. These flow measuring devices are expected to be McCrometer Propellor flow meters in the pipe lines and a concrete flume in the concrete canal. The McCrometer Propellor meter is installed directly inside the pipe and connected with a saddle on the pipe. The flow rate indicator can be read directly as the water flows through the pipe.

APACHE NATURAL RESOURCE CONSERVATION DISTRICT
823 E. Main St. – P O Box 329 - Springerville, Arizona 85938
Phone: 928-333-4941 ext. 3

March 8, 2019

Bureau of Reclamation

Financial Assistance Support Section

WaterSMART Grant for Fiscal Year 2019

Attn: Darren Olson

Dear Mr. Olson,

Please accept this letter as the Apache NRCD support for the multi-phased Grover's Hill Irrigation District Improvement Project.

The Grover's Hill Irrigation District partners with the Salt River Project and the Zuni Tribe in the operation of Lyman Lake. The partnership works together to provide water for irrigation, the recharge of aquifers and the restoration of historical wetlands.

The Grover's Hill Irrigation District has been in existence for over 100 years and provides irrigation to approximately 1,705 acres. The Grover's Hill Irrigation District stores water in Lyman Lake and delivers irrigation water through a system comprised of the main concrete canal and several primary earthen canals. There are approximately 15 miles of primary earthen canals, and all lateral ditches to the farms and gardens are also unlined earthen ditches.

It is our understanding, the main goal of the project is to significantly improve the efficiency of the system by reducing the amount of water lost through seepage and evaporation. By replacing the primary earthen canals with PVC pipe, it will decrease the wait time for the delivery of water to the irrigators and allow for measurement and monitoring of the usage of water through a system of measurement flumes and meters.

St. Johns is located in Northeast Arizona and lies on a high arid plateau at an elevation of 5,800 feet. Water is precious and must be used in the most efficient way possible. Replacing the earthen canals with PVC pipe will significantly decrease the water lost to seepage and evaporation. In addition, because the pipe delivery system will be pressurized, the farmers will have the option of installing more efficient sprinkler systems versus the current method of flood irrigation. The plans also show that flow measuring flumes and water meters will be installed to monitor the water usage and calculate the ongoing efficiency of the system after construction.

The construction of the Improvement Project will result in the more efficient use of our limited and precious supply of water. We understand that these improvements have been needed for many years and fully support the efforts of the Grover's Hill Irrigation District.

Sincerely,

Daric Knight, Chairman

USDA United States Department of Agriculture
Farm Production and Conservation
Farm Service Agency
Apache County FSA Office
PO Box 70
St Johns, AZ 85936

February 26, 2019

Bureau of Reclamation
Financial Assistance Support Section
WaterSMART Grant for Fiscal Year 2019
Attn: Darren Olson

Dear Mr. Olson,

Please accept this letter as the USDA Farm Service Agency's support for the multi-phased Grover's Hill Irrigation District Improvement Project.

The District partners with the Salt River Project and the Zuni Tribe in the operation of Lyman Lake. The partnership works together to provide water for irrigation, the recharge of aquifers and the restoration of historical wetlands.

The District has been in existence for over 100 years and provides irrigation to approximately 1,705 acres. The District stores water in Lyman Lake and delivers irrigation water through a system of the main concrete canal and several primary earthen canals. There are approximately 15 miles of primary earthen canals, all lateral ditches to the farms and gardens are also unlined earthen ditches.

It is our understanding the main goals of the project are to significantly improve the efficiency of the system by reducing the amount of water lost through seepage and evaporation by replacing the primary earthen canals with PVC pipe, to decrease the wait time for the delivery of water to the farmers and gardeners, and to measure and monitor the usage of water through a system of measurement flumes and meters.

St. Johns is located in Northeast Arizona and lies on a high arid plateau at an elevation of 5,800 feet. Water is precious and must be used in the most efficient way possible. Replacing the earthen canals with PVC pipe will significantly decrease the water lost to seepage and evaporation. In addition, because the pipe delivery system will be pressurized, the farmers will have the option of installing more efficient sprinkler systems versus the current method of flood irrigation. The plans also show that flow measuring flumes and water meters will be installed to monitor the water usage and calculate the ongoing efficiency of the system after construction.

The construction of the Improvement Project will result in the more efficient use of our limited supply of water. We understand that these improvements have been needed for many years and fully support the efforts of the District.

Sincerely,

Gregg W Norton
District Director
District 2
Arizona Farm Service Agency

Val R. Panteah Sr.
Governor

Carleton R. Bowekaty
Lt. Governor

Virginia R. Chavez
Head Councilwoman

Clyde Yatsattie
Councilman

PUEBLO OF ZUNI
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Zuni, New Mexico 87327
1203-B NM State Hwy 53
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Fax: (505) 782-7202
www.ashiwi.org

505-782-7000 MAIN

Arlen P. Quetawki Sr.
Councilman

Eric Bobelu
Councilman

Ricky R. Penketewa, Sr.
Councilman

Arden Kucate
Councilman

Officially known as the Zuni Tribe of the Zuni Indian Reservation

February 28, 2019

Bureau of Reclamation
Financial Assistance Support Section
WaterSMART Grant for Fiscal Year 2019
Attn: Darren Olson

Dear Mr. Olson:

Please accept this letter as the Zuni Tribe's support for the multi-phased Grover's Hill Irrigation District Improvement Project.

The District partners with the Salt River Project and the Zuni Tribe in the operation of Lyman Lake. The partnership works together to provide water for irrigation, the recharge of aquifers and the restoration of historical wetlands.

The District has been in existence for over 100 years and provides irrigation to approximately 1,705 acres. The District stores water in Lyman Lake and delivers irrigation water through a system of the main concrete canal and several primary earthen canals. There are approximately 15 miles of primary earthen canals, all lateral ditches to the farms and gardens are also unlined earthen ditches.

It is our understanding the main goals of the project are to significantly improve the efficiency of the system by reducing the amount of water lost through seepage and evaporation by replacing the primary earthen canals with PVC pipe, to decrease the wait time for the delivery of water to the farmers and gardeners, and to measure and monitor the usage of water through a system of measurement flumes and meters.

St. Johns is located in Northeast Arizona and lies on a high arid plateau at an elevation of 5,800 feet. Water is precious and must be used in the most efficient way possible. Replacing the earthen canals with PVC pipe will significantly decrease the water lost to seepage and evaporation. In addition, because the pipe delivery system will be pressurized, the farmers will have the option of installing more efficient sprinkler systems versus the current method of flood irrigation. The plans also show that flow measuring flumes and water meters will be installed to monitor the water usage and calculate the ongoing efficiency of the system after construction.

The construction of the Improvement Project will result in the more efficient use of our limited supply of water. We understand that these improvements have been needed for many years and fully snpport the efforts of the District.

Sincerely,

Val Panteah, Sr.
Governor

Delivering water and power™

Salt River Project
P.O. Box 52025
Phoenix, AZ 85072-2025

March 4, 2019

Bureau of Reclamation
Financial Assistance Support Section
WaterSMART Grant for Fiscal Year 2019
Attn: Darren Olson

RE: Letter of Support for GHID's WaterSMART Grant Application offered by the U.S. Bureau of Reclamation for Fiscal Year 2019

Dear Mr. Olson:

The Salt River Project is supportive of the multi-phased Grover's Hill Irrigation District (GHID) Improvement Project.

GHID delivers water to approximately 1,705 acres of land located on a high arid plateau in northeastern Arizona. In partnership with the Salt River Project and the Zuni Tribe, GHID oversees operations associated with water stored in Lyman Lake. The lake is an important resource to downstream users, providing water for irrigation uses via a canal system as well as for instream flow and wildlife in the Little Colorado River.

Irrigation deliveries from Lyman Lake are made through a system of concrete-lined and earthen canals. GHID has proposed to improve the efficiency of their irrigation delivery system and reducing the amount of water lost through seepage and evaporation by replacing the primary earthen canals with PVC pipe. The system enhancements would include flumes and meters to measure water deliveries, enabling GHID to monitor water usage and calculate the ongoing efficiency of the system after construction.

GHID's Improvement Project will result in a more efficient and reliable water delivery system that aligns with water management best practices. We understand that these improvements have been needed for many years and fully support the efforts of GHID.

Sincerely,

Chuck Podolak
Director, Water Rights & Contracts
Salt River Project

CJP/ssm

Enclosures: (0)

cc: (email only)
Delwin Wengert, Grover's Hill Irrigation District