



City Council Staff Report

Date:

September 20, 2023

Applicant:

Mapleton City Public Works

Location:

Hwy 89, 800 South to 2600 South

Prepared By:

Rob Hunter, City Engineer/
Public Works Director

Public Hearing:

Yes

Attachments:

Proposed task order

REQUEST

Approve the task order for Hansen, Allen & Luce to design the extension of the Pressurized Irrigation system south along Highway 89.

BACKGROUND & DESCRIPTION

The 2018 Mapleton City Water Resources Master Plan included extending the pressurized irrigation system along Highway 89 (1600 West) on the list of 10-year projects. Current development construction and updated master plan modeling shows extending this section of the pressurized irrigation system as a high priority. FY 2024 budget GL# 58-74-62 was approved for the design and construction of this fiscal year's pressurized irrigation project.

EVALUATION

Hansen, Allen & Luce is our qualifications-based culinary water and pressurized irrigation consultant. Contracting pressurized irrigations design with them follows Mapleton City's procurements policy. Proposed design costs (including survey, Geotech, and design) is roughly 8% of the estimated construction costs for the 3 segments to be designed. This is a typical design cost for civil design projects like this.

RECOMMENDATION

Approve the task order for Hansen, Allen & Luce to design the extension of the Pressurized Irrigation system south along Highway 89.

RESOLUTION NO. 2023-

A RESOLUTION OF THE CITY OF MAPLETON, UTAH TO APPROVE THE TASK ORDER FOR HANSEN, ALLEN & LUCE TO DESIGN THE EXTENSION OF THE PRESSURIZE IRRIGATION SYSTEM SOUTH ALONG HIGHWAY 89

WHEREAS, the 2018 Mapleton City Water Resources Master Plan included extending the pressurized irrigation system along Highway 89 (1600 West) on the list of 10-year projects; and

WHEREAS, current development construction and updated master plan modeling shows extending this section of the pressurized irrigation system as a high priority; and

WHEREAS, budget was appropriated this fiscal year for pressurized irrigation projects,

NOW THEREFORE, BE IT RESOLVED by the City Council of Mapleton, Utah, that: the City approves the task order for Hansen, Allen & Luce, Inc. to design the extension of the pressurized irrigation system south along Highway 89.

This resolution adopted this 20th day of September, 2023, by the City Council of Mapleton City, Utah.

Dallas Hakes
Mayor

ATTEST:

Camille Brown
City Recorder

TASK ORDER NO. 437.16.100

TO

ENGINEERING SERVICES AGREEMENT

CLIENT: Mapleton City

Effective Date of Agreement: June 1, 2020

THIS TASK ORDER NO. 437.16.100 TO ENGINEERING SERVICES AGREEMENT (this "TASK ORDER") is made and entered into as of the 12th day of September 2023 by and between CLIENT and HANSEN, ALLEN & LUCE, INC., ("HAL"), who agree as follows:

1. PROJECT. The PROJECT associated with this TASK ORDER is described as follows: Highway 89 Pressurized Irrigation Waterline.
The PROJECT SITE is located as follows: Highway 89 (1600 West), 1600 South to 2575 South, 1200 South to 1350 South, and 800 South to 950 South
2. SCOPE OF SERVICES. The SCOPE OF SERVICES associated with this TASK ORDER is attached hereto as Exhibit T.O. 437.16.100 A.
3. FEES. CLIENT shall reimburse HAL for services provided under this AGREEMENT on an hourly billing rate plus reimbursable expenses basis, with an estimated fee of \$99,558 in accordance with the HAL Standard Fee Schedule ("FEE SCHEDULE") attached hereto as Exhibit T.O. 437.16.100 B. CLIENT hereby agrees that all fees and charges set forth in the FEE SCHEDULE are acceptable to CLIENT, and CLIENT further agrees to pay all fees and charges to HAL in accordance with the ENGINEERING SERVICES AGREEMENT and FEE SCHEDULE. See attached Mapleton City Purchase Order # _____.
4. SCHEDULE. The project will begin upon receipt of notice to proceed. We estimate the project can be completed within 5 months of notice to proceed.
5. ATTACHMENTS AND EXHIBITS. All attachments and exhibits referenced in or attached to this TASK ORDER are incorporated herein and are made a part of the ENGINEERING SERVICES AGREEMENT.
6. CLIENT has read and understood all ATTACHMENTS and EXHIBITS and agrees that such items are hereby incorporated into and made a part of the ENGINEERING SERVICES AGREEMENT.

IN WITNESS WHEREOF, CLIENT and HAL have executed this TASK ORDER as of the date first above written.

CLIENT: MAPLETON CITY

HANSEN, ALLEN & LUCE, INC.

By: _____

By: Katie Gibson-Jacobson

Its: _____

Project Manager

BACKGROUND

Mapleton City has requested that Hansen, Allen & Luce, Inc. (HAL) assist the City with the design of a pressurized irrigation (PI) waterline on Highway 89 (1600 West). The purpose of this project is to construct 12-inch diameter PI PVC waterline to provide additional transmission capacity. The project is primarily intended to provide a path for pressurized irrigation water from Central Utah Water Conservancy District (CUWCD) turnouts in the south part of Mapleton City (Harmony Ridge, Mapleton Village, & Mapleton Heights) to return to the main portion of the city's PI system and PI pond. The project can also provide a way for portions of Mapleton Heights and Mapleton Village to be served from the northern portion of the city's PI system.

The initial anticipated project alignment is from 1600 South to approximately 2575 South (approximately 3,250 linear feet). In addition to the beginning and end connections, two connections to existing dry PI pipe are anticipated along this segment of the project. Preliminary hydraulic modeling indicates that the proposed project should meet the goal of providing a path for water from the south part of the city to return to the PI pond. However, better service will be provided if additional segments of pipe on 1600 West are completed to improve connectivity. These segments include approximately 800 South to 950 South (approximately 630 linear feet) and approximately 1200 South to 1350 South (approximately 525 linear feet). These two pipe segments will be included in the project bidding documents as additive alternatives. A segment of pipeline on 1200 South from approximately 1550 West to 1600 West is anticipated to be completed with Whiting Cove Plat F and is not included in this design scope.

The work includes, but it is not limited to: design survey, geotechnical investigation, waterline design, waterline design connections to existing PI waterline mains, details on service connections, and all other necessary design criteria. The work includes coordination with UDOT for work within UDOT right of way.

Design is to include providing final design drawings, specifications, and bidding documents in a complete bidding package, including complete bidding schedules and measurement and payment descriptions to be used for bidding purposes. An engineer's opinion of probable construction cost will also be provided. The work includes attendance at a pre-bid meeting, answering questions from bidders during the bidding process, preparing up to one bid addendum (if required), preparing a bid tabulation after the City holds the bid opening, and making a recommendation for awarding the construction contract.

This scope of work does not include any engineering services during construction.

SCOPE OF SERVICES

The project approach is summarized below by task.

100	Provide project administration.
101	Hold a project kickoff meeting with Mapleton City to discuss design objectives, data needs, etc.
102	Perform utility research and prepare base mapping.
103	Perform a field topographic survey.

104	Geotechnical investigation
105	Review hydraulic model of PI system to verify pipe diameter & connectivity.
106	Prepare plan & profile design drawings of the pipeline. Prepare General and Detail Sheets, including connection details.
107	Have design review meetings with the City at the time of design of the alignments, another to discuss profile design, and at 90% level of design. Make modifications to the design based on City comments.
108	Prepare bidding documents & specifications and submit the documents and design drawings to the City for review and comment.
109	Make final revisions and print documents.
110	Prepare an Engineer's Opinion of Construction Cost.
111	Coordinate with UDOT.
112	Assist with bidding, responding to questions and including providing up to one addendum.
113	Prepare letter of recommendation and bid tabulation.
114	Perform Quality Control / Quality Assurance (QA/QC)

ESTIMATED FEE

We propose an estimated professional engineering fee of \$99,558 to perform the services as outlined in this proposal. Engineering design costs are typically 8-10% of the total construction budget. This proposed fee is 8.3% of the total \$1,200,000 construction budget.

Assumptions included in our fee estimate are as follows:

1. The geotechnical investigation includes 6 borings – four along the 1600 South to 2575 South segment, one for the 800 South to 950 South segment, and one for the 1200 South to 1350 South segment.
2. City GIS will be utilized to identify locations of City utilities, and City staff will perform any required potholing. No potholing is included in this scope.
3. One in-person meeting will be held to complete a site walkthrough. Other review meetings will be remote through Microsoft Teams.
4. The City will publish the notice inviting bidders and manage the bidding process including publishing answers to questions.
5. The scope includes attendance at the pre-bid conference and does not include attendance at the bid opening.
6. No easements are required.
7. Any permitting will be performed by City or Contractors, including UDOT permitting.
8. This scope does not include any engineering services during construction.

PROJECT SCHEDULE

The proposed project schedule is as follows:

Based on a starting date of September 25, 2023, bid documents are expected to be ready by March 1, 2024. It is assumed that the City will provide timely review comments for review submittals.

STANDARD FEE SCHEDULE 2023

PERSONNEL CHARGES

Client agrees to reimburse Hansen, Allen & Luce, Inc. (HAL), for personnel hourly rates related to the completion of the project, in accordance with the following:

Managing Professional III	\$220
Managing Professional II	\$211
Managing Professional I	\$200
Senior Professional III	\$189
Senior Professional II	\$180
Senior Professional I	\$167
Professional III.....	\$157
Professional II.....	\$141
Professional I.....	\$132
Professional Intern.....	\$120
Environmental Scientist I	\$115
Environmental Scientist II	\$128
Engineering Student Intern	\$64
Water Resource Specialist	\$154
Professional Geologist.....	\$143
Senior Designer.....	\$140
Designer	\$122
Senior Field Technician	\$126
Field Technician	\$104
CAD Operator.....	\$104
Public Relations Specialist.....	\$152
Administrative Assistant	\$73
Professional Land Surveyor.....	\$150
1 Man GPS Surveying Services.....	\$168
Drone Pilot	\$202
Expert Legal Services.....	\$338

DIRECT CHARGES

Client also agrees to reimburse HAL for all other costs related to the completion of the project. Charges shall include, but not be limited to, the following:

Communication, Computer, Reproduction	\$7 per labor hour
Out-of-town per diem allowance (lodging not included)	\$64 per day
Vehicle	\$0.70 per mile
Outside consulting and services	Cost plus 10%
Other direct expenses incurred during the project	Cost plus 10%
Trimble GPS Unit	\$150 per day
Data Logger/Transducer.....	\$150 per week

INTEREST CHARGE AFTER 30 DAYS FROM INVOICE DATE.....1.5% per month

Note: Annual adjustments to personnel and direct expense charges will occur in January of each year. Mileage rate changes are based on fuel prices.

HAL PROPOSAL SPREADSHEET

- 10 %
- Contingency
- 5 %
- Billing Period 2 - Projected Rate Increase



CLIENT: Mapleton City

PROJECT: Highway 89 Pressurized Irrigation Pipeline Design

Pha	Task #	Task Activity	Billing Period	Hours							Total Hours	Labor Cost	Communications /Office Expense	Miles Travel	Direct Expense	Expense Cost	Total HAL	Outside Expense	COMMENT	
				Managing Prof MMC	Sr. Prof I KJ	Prof III	Prof II GDS	PEI	Surveying THN	eld Tech/CA							Admin Asst			Cost with Contingency & Rate Inc.
I 1600 SOUTH TO 2575 SOUTH and 1200 SOUTH TO 1350 SOUTH																				
	100	Project administration	1		8						8	\$1,336.00	\$56.00			\$56.00	\$1,531.20	\$11,000.00	5 borings total	
	101	Hold project kickoff meeting with City	1		3			3			6	\$861.00	\$42.00	80		\$98.00	\$1,054.90			
	102	Utility research and base map preparation	1					8		8	16	\$1,792.00	\$112.00			\$112.00	\$2,094.40			
	103	Perform field survey	1						28		28	\$4,704.00	\$196.00			\$196.00	\$5,390.00			
	104	Geotechnical investigation	1								0	\$0.00	\$0.00			\$0.00	\$0.00			
	105	Hydraulic modeling	1	2	16			12			30	\$4,512.00	\$210.00			\$210.00	\$5,194.20			
	106	Pipeline design	2		14		22	142	4	60	242	\$29,392.00	\$1,694.00			\$1,694.00	\$35,904.33			
	107	Review meetings with City - alignment, profile, 90%	2		8			8			16	\$2,296.00	\$112.00			\$112.00	\$2,781.24			
	108	Prepare bidding documents & specifications	2		12		8	20			40	\$5,532.00	\$280.00			\$280.00	\$6,712.86			
	109	Make final revisions and produce bidding package	2		4			4		8	18	\$2,126.00	\$126.00			\$126.00	\$2,601.06			
	110	Prepare engineer's opinion of cost	2		8			8			16	\$2,296.00	\$112.00			\$112.00	\$2,781.24			
	111	Coordinate with UDOT	2		8			8			16	\$2,296.00	\$112.00			\$112.00	\$2,781.24			
	112	Assist with bidding, including providing up to 1 addendum	2		6			8		4	18	\$2,378.00	\$126.00			\$126.00	\$2,892.12			
	113	Prepare letter of recommendation and bid tabulation	2		2						2	\$334.00	\$14.00			\$14.00	\$401.94			
	114	Quality Control (QC) / Quality Assurance (QA)	2		8		8				36	\$6,464.00	\$252.00			\$252.00	\$7,756.98			
	SUBTOTAL HOURS/UNITS:			22	97	0	38	221	32	80	2	492		\$3,444.00	80	0				
	SUBTOTAL:			\$4,400.00	\$16,199.00	\$0.00	\$5,358.00	\$26,520.00	\$5,376.00	\$8,320.00	\$146.00		\$66,319.00	\$3,444.00	\$56.00	\$0.00	\$3,500.00	\$79,877.71	\$11,000.00	Subconsultant Cost
II 800 SOUTH TO 950 SOUTH [OR EACH ADDITIONAL SCHEDULE/1 SHEET (~500 LF)]																				
	200		1					1		1	0	\$0.00	\$0.00			\$0.00	\$0.00	\$1,400.00	approx. 1 boring per 700 LF	
	202	Utility research and base map preparation	1					1		1	2	\$224.00	\$14.00			\$14.00	\$261.80			
	203	Perform field survey	1						4		4	\$672.00	\$28.00			\$28.00	\$770.00			
	204	Geotechnical investigation	1								0	\$0.00	\$0.00			\$0.00	\$0.00			
	206	Pipeline design	2		2		3	18		8	31	\$3,749.00	\$217.00			\$217.00	\$4,580.73			
	208	Prepare bidding documents & specifications	2		1			2			3	\$407.00	\$21.00			\$21.00	\$494.34			
	209	Make final revisions and produce bidding package	2					1			1	\$120.00	\$7.00			\$7.00	\$146.69			
	210	Prepare engineer's opinion of cost	2		1			1			2	\$287.00	\$14.00			\$14.00	\$347.66			
	211	Coordinate with UDOT	2								0	\$0.00	\$0.00			\$0.00	\$0.00			
	212	Assist with bidding, including providing up to 1	2								0	\$0.00	\$0.00			\$0.00	\$0.00			
	213	Prepare letter of recommendation and bid tabulation	2								0	\$0.00	\$0.00			\$0.00	\$0.00			
	214	Quality Control (QC) / Quality Assurance (QA)	2								3	\$567.00	\$21.00			\$21.00	\$679.14			
	SUBTOTAL HOURS/UNITS:			2	5	0	3	23	4	9	0	46		\$322.00	0	0				
	SUBTOTAL:			\$400.00	\$835.00	\$0.00	\$423.00	\$2,760.00	\$672.00	\$936.00	\$0.00		\$6,026.00	\$322.00	\$0.00	\$0.00	\$322.00			\$7,280.35
TOTAL HOURS BY EMPLOYEE:				24	102	0	41	244	36	89	2									

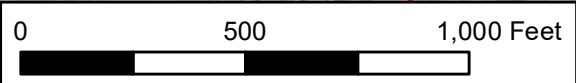
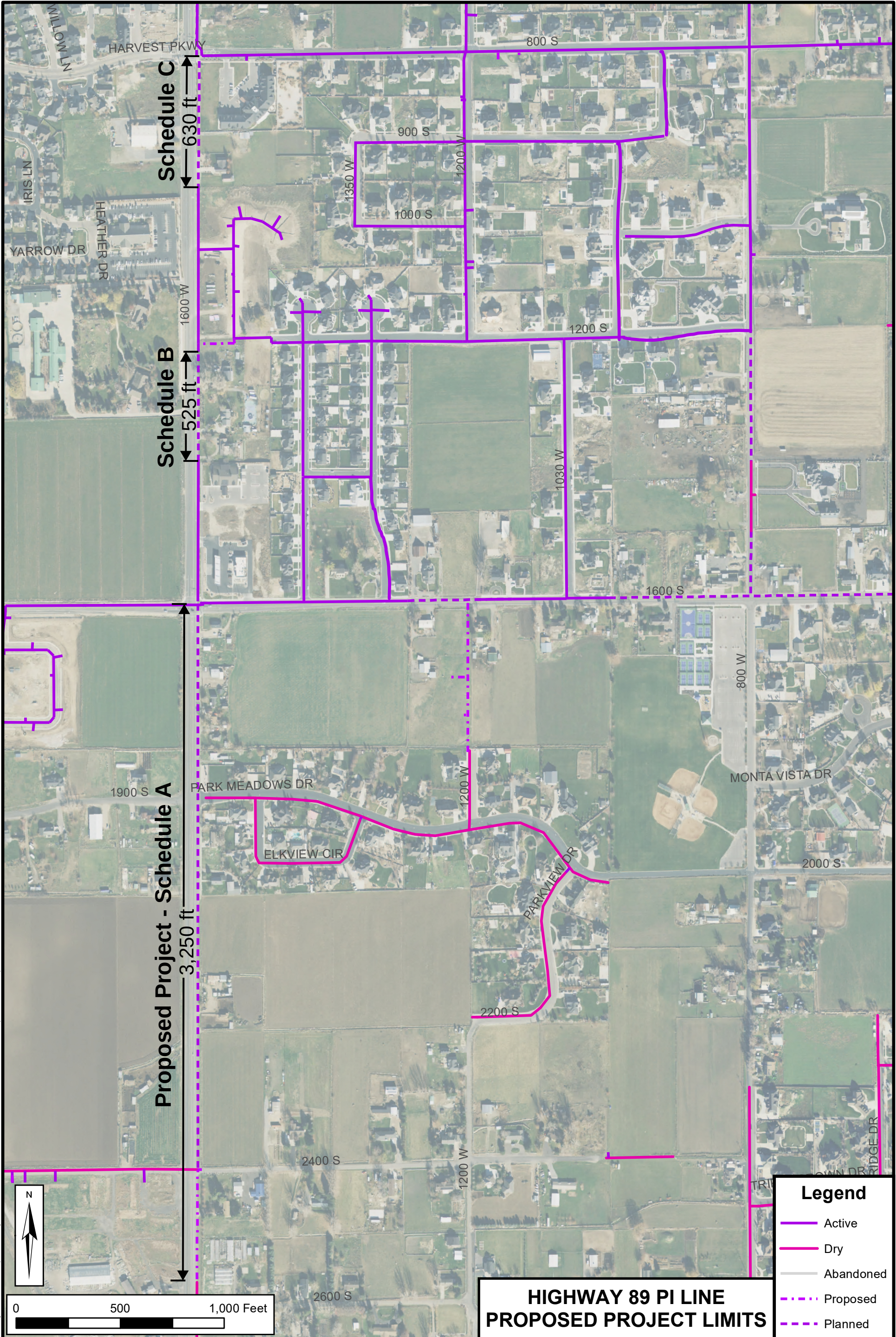
PHASE	TASK	Labor	Direct Exp	Subtotal	Subconsultant	SubTotal with
		Costs	Cost	w/Contingency	Costs	Contingency
I	1600 SOUTH TO 2575 SOUTH and 1200 SOUTH TO 1350 SOUTH	\$66,319.00	\$3,500.00	\$79,877.71	\$11,000.00	\$90,877.71
II	800 SOUTH TO 950 SOUTH [OR EACH ADDITIONAL SCHEDULE/1 SHEET (~500 LF)]	\$6,026.00	\$322.00	\$7,280.35	\$1,400.00	\$8,680.35
	TOTAL w/Contingency:	\$79,579.50	\$4,204.20	\$87,158.06	\$13,640.00	\$99,558.06

Filename: H:\Projects\437 - Mapleton City\16.100 Highway 89 PI WLine\ADMIN\Mapleton Highway 89_HAL Proposal Spreadsheet_2023.xlsm\Schedule

Mapleton Highway 89 PI Pipeline Schedule

Start Date	Due Date	Days	Task
9/25/2023	9/26/2023	1	Kickoff Meeting
9/26/2023	10/17/2023	21	Field survey
	10/26/2023	30	Utility research and base map preparation
	10/26/2023	30	Hydraulic modeling
	10/31/2023	35	Geotechnical investigation
10/26/2023	12/10/2023	45	Alignment design and hold review meeting
12/10/2023	1/24/2024	45	Profile design and hold review meeting
1/24/2024	2/23/2024	30	Prepare bid documents & specs and hold review meeting
2/23/2024	3/1/2024	7	Finalize documents, be ready for advertisement

158 days



MAPLETON CITY

PRESSURIZED IRRIGATION
SYSTEM

FIGURE
1