

City of St. George
Little Valley Pressurized Irrigation Project
Inquiry No.24-146
Addendum #1
Plans, Specifications & Contract Documents

September 6, 2024

The following additional information and clarifications shall be incorporated into the contract documents, plans, and specifications for the City of St. George *Little Valley Pressurized Irrigation Project - Dated August 2024, Inquiry No. 24-146*. These modifications shall supersede any existing specifications or plans as detailed herein. The contractor shall acknowledge on the bid which he submits that he is in receipt of this addendum.

Specification:

1.0 Section 500 Pump Station.

1.1 Subsection 5.6 Automatic Filter. This section is modified as follows:

The filters shall be 10" Model SAF-6000 Full Stainless Steel Body automatic **suction scanner filter with diaphragm** flushing valve and 200 micron wedge-wire stainless steel 316L screen.

2.0 Section 501 Vertical Turbine Pumps. This section is modified as follows:

The main pumps shall have the following characteristics:

Number required: Four
Motor Speed: 1,770 rpm
Capacity: **670** GPM each
Design Flow: 2,000 gpm (3 pumps in parallel)
Head: Pump Head 315 feet @ 2,000 gpm
Efficiency: Not less than 82%
Minimum Horse Power per Pump: 75
Voltage: 480 V, 3Ø, 60 Hz

The pressure sustaining pump shall have the following characteristics:

Number required: One
Motor Speed: 1,775 rpm
Capacity: 335 GPM
Head: Pump Head 315 feet
Efficiency: Not less than **78%**
Minimum Horse Power: **40**
Voltage: 480 V, 3Ø, 60 Hz

The pumps shall be designed at a maximum flow of 2,000 gpm at 315 feet of head (3 pumps in parallel) and a minimum flow of 150 gpm at 315 feet of head. The pump system shall maintain system pressure. The pump supplier shall submit a pump curve that allows the

pump to operate within both minimum and maximum flow requirements while maintaining a minimum of 82% efficiency **for main pump and 78% efficiency for pressure sustaining pumps.**

2.1 (I) Motor

The motor for driving the pump shall be of the Premium Efficiency Inverter Duty Rated, full voltage starting, **vertical solid shaft**, squirrel cage induction type, shall comply with ASA Specification C70, and shall be Premium Efficiency High Standard Thrust. The motor shall be equipped with winding heaters to reduce humidity around the motor windings. The motor shall be of the proper size to drive the pump continuously over the specified operating range without the load exceeding the nameplate rating of the motor. The motor shall have a service factor applicable to the enclosure specified.

2.2 (j) Seals

All pumps shall be provided with a **Chesterton S10 Hard faced seals** or engineer approved equal mechanical seal with plan 13 seal piping.

2.3 (l) Testing

Testing. All components shall be non-witness hydrostatically tested to 150% of pump shut off or 200 PSI, whichever is greater. Pump assembly shall be non-witness performance tested in accordance with HI 14.6, level **1-E**. Discharge heads shall undergo Reed Critical Frequency analysis. An operating range shall be provided. The RCF analysis shall be +/- 20% of this operating range. All testing shall be submitted and approved, by the engineer, prior to shipment.

3.0 Section 500 Pump Station. Section 2. Motors

This section is modified as follows:

All motors, unless otherwise specified, shall be constant-speed, squirrel cage, induction-type with roller or ball bearings in accordance with NEMA standards. All motors, unless otherwise specified, shall be 460-volt, 3-phase, 60 hertz for the mechanical equipment. The motors for the pumps shall be Premium Efficiency High Standard Thrust and **be a U.S. Motor. The motors for the pumps shall be operated with VFD's and shall be equipped with a Shaft Grounding Ring and an insulated upper bearing.**

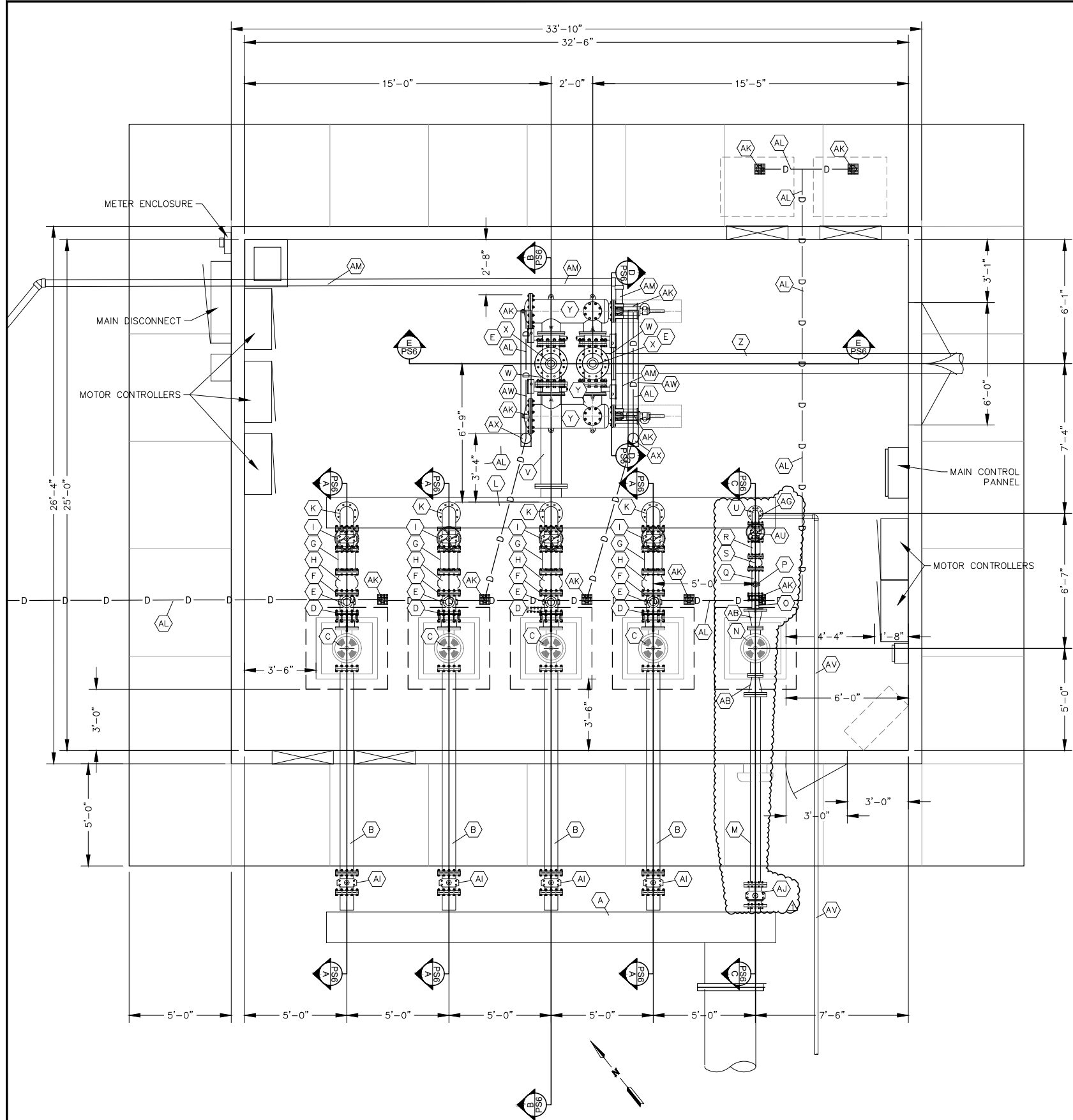
Construction Drawings:

1.0 Sheet PS5 – Pump Station Piping Layout. This sheet has been modified to add an additional pressure gauge and ball valve on the pressurized filter flush line per the manufacturer recommendation. This sheet has also been modified to show 6" inlet and outlet piping for the pressure sustaining pump. This sheet has been re-issued with this Addendum.

2.0 Sheet PS6 – Piping Sections. This sheet has been modified to show the additional pressure gauge and ball valve on the pressurized filter flush line per the manufacturer recommendation. This sheet has also been modified to show 6” inlet and outlet piping for the pressure sustaining pump. This sheet has been re-issued with this Addendum.

End of Addendum #1

P:\041-139 St. George Little Valley Irrigation Pump Station\Drawings\Construction Drawings\041-139 MST PS PIPING.dwg, 9/5/2024 11:19:32 AM, tdaniels



PIPING PLAN
SCALE: 1" = 6' (11X17 SHEET)

PIPING SCHEDULE				
MARK	REQ'D	SIZE	CONNEC-TION	DESCRIPTION
A	1	-	-	FABRICATED STEEL INTAKE MANIFOLD
B	4	8"	FL	8" FLANGED SPOOL 10'-0" LONG
C	4	8"	FL	PRIMARY 670 GPM PUMP WITH U.S. MOTOR
D	4	8"	-	8" ROMAC DJ-400 DISMANTLING JOINT
E	6	1"	NPT	COMBO AIR/VAC RELEASE VALVE BERMAD DN25 1" OR APPROVED EQUAL
F	4	8"	FL	8" FLANGED SPOOL 1'-0" LONG
G	4	8"	FL	ENDRESS HAUSER 8" PROLINE PROMAG W400 AAHLHA00UA12GA WATER METER
H	4	8"	FL	8" FLANGED GLOBE STYLE SILENT CHECK VALVE
I	4	8"	FL	8" FLANGED GATE VALVE WITH HAND WHEEL
J	4	8"	FL	8" FLANGED SPOOL (PLC HDR) LONG.
K	4	8"	FL	8" FLANGED 90° ELBOW
L	1	-	FL	FABRICATED STEEL OUTLET MANIFOLD
M	1	6"	FL	6" FLANGED SPOOL 9'-3.75" LONG
N	1	-	-	150 GPM PUMP
O	1	6"	-	ROMAC DJ-400 DISMANTLING JOINT
P	1	1"	-	COMBO AIR/VAC RELEASE VALVE BERMAD DN25 1" OR APPROVED EQUAL
Q	1	6"	FL	6" FLANGED SPOOL 1'-0" LONG
R	1	6"	FL	ENDRESS HAUSER 6" PROLINE PROMAG W400 AAHLHA00UA12GA WATER METER
S	1	6"	FL	6" FLANGED GLOBE STYLE SILENT CHECK VALVE
T	-	-	-	NOT USED
U	1	6"	FL	6" FLANGED 90° ELBOW
V	1	12"	FL	12" FLANGED SPOOL 5' LONG
W	2	12"	FL	12 FLANGED 90° ELBOW
X	2	-	FL	10" X 10" X 12" X 12" FLANGED CROSS WITH 12" x 1" TREADED FLANGE
Y	2	-	FL	AMIAD 10" SAF 6000 FULL STAINLESS BODYWITH 200 MICRON SCREEN. PROVIDE WITH AMIAD CONTROL BOX FOR EACH FILTER. DRAWING NO. 720172-00523-ELEC
Z	2	12"	FL	12" FLANGED SPOOL 20'-0" LONG
AA	2	12"	FL	12" FLANGED SPOOL 5'-6" LONG.
AB	2	6"	FL	4" X 6" REDUCER
AC	6	-	NPT	0-200# PRESSURE GAUGE & BALL VALVE
AD	5	1"	NPT	1" BRASS BALL VALVE
AE	-	-	-	(N O T U S E D)
AF	1	-	NPT	6"x1" STAINLESS STEEL DOUBLE BANDED TAPPING SADDLE
AG	5	-	NPT	8"x1" STAINLESS STEEL DOUBLE BANDED TAPPING SADDLE
AH	1	6"	FLG	6" FLANGED SPOOL 5'-9" LONG
AI	4	8"	FLG	8" FLANGED GATE VALVE W/VALVE CAN. SEE DETAIL E, SHEET D1.
AJ	1	6"	FLG	6" FLANGED GATE VALVE W/VALVE CAN. SEE DETAIL E, SHEET D1.
AK	11	4"	-	4" FLOOR DRAIN
AL	-	4"	-	4" PVC FLOOR DRAIN DRAIN PIPE
AM	-	4"	NPT	4" PRESSURIZED FLUSH PIPE FROM AMIAD FILTERS
AN	-	2"	NPT	2" PRESSURIZED FLUSH PIPE FROM AMIAD FILTERS
AO	2	2"x4"	NPT	2" X 4" REDUCER
AP	-	-	-	POLY DRAIN PIPE - EXTEND TO FLOOR DRAIN
AQ	5	-	-	TAPPING SADDLE FOR PRESSURE TRANSDUCER. SIZE TO BE DETERMINED BY ELECTRICAL ENGINEER *PRESSURE SENSOR WILL BE OWNER PROVIDED
AR	2	-	-	2" PVC UNION
AS	2	-	-	2" PVC BALL VALVE
AT	4	10"	FLG	10 FLANGE X FLANGE BUTTERFLY VALVE
AU	1	6"	FLG	6" FLANGED GATE VALVE W/HAND WHEEL
AV	1	?"	-	BACKWASH LINE TO SCREEN
AW	2	-	-	ZURN Z886-PVS TRENCH DRAIN 80" LONG
AX	2	-	-	ZURN BOTTOM OUTLET. SEE SHEET PS3 FOR CONTINUATION.

PUMP DESIGN:

PRIMARY PUMPS (KEYED NOTE C)
FLOW PER PUMP = 670 gpm
TOTAL NUMBER OF PUMPS = 4
DESIGN FLOW (Q) = 2,010 GPM (3 PUMPS IN PARALLEL)
DESIGN HEAD = 315 FEET AT 2,010 gpm
DESIGN EFFICIENCY = 82%
HORSEPOWER PER PUMP = 75 HP

PRESSURE SUSTAINING PUMP (KEYED NOTE N)

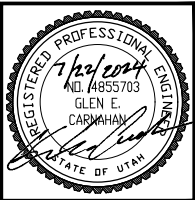
TOTAL NUMBER OF PUMPS = 1
DESIGN FLOW (Q) = 335 gpm
DESIGN HEAD = 315 FEET AT 335 gpm
DESIGN EFFICIENCY = 78%
HORSEPOWER PER PUMP = 40 HP

NOTES:

1. ACTUAL DIMENSIONS OF PUMP DISCHARGE HEADS, VALVES, AND FITTINGS MAY VARY DEPENDING ON MANUFACTURER. CONTRACTOR TO SUBMIT DIMENSIONED DRAWINGS OF ALL PUMPS, DISCHARGE HEADS, VALVES, ETC. AND ADJUST DI SPOOL LENGTHS AS NEEDED.
2. ALL UNDERGROUND PIPING AND CONDUITS TO BE INSPECTED BY OWNER AND ENGINEER PRIOR TO PLACING CONCRETE. REFER TO ELECTRICAL DRAWINGS FOR CONDUIT PLACEMENT.
3. ALL PIPING UNDER PUMP STATION AND WITHIN A 10 FOOT PERIMETER TO BE BACKFILLED WITH FLOWABLE CONCRETE BACKFILL MATERIAL.
4. DEPTH OF VERTICAL TURBINE PUMP CANISTERS TO BE DETERMINED BY PUMP MANUFACTURER.
5. ALL WATER PIPING TO BE DUCTILE IRON PIPE WITH THE EXCEPTION OF THE STEEL MANIFOLDS. STEEL MANIFOLDS TO BE EPOXY LINED & COATED.
6. ALL BURIED PIPING AND VALVES SHALL HAVE POLYETHYLENE WRAP.

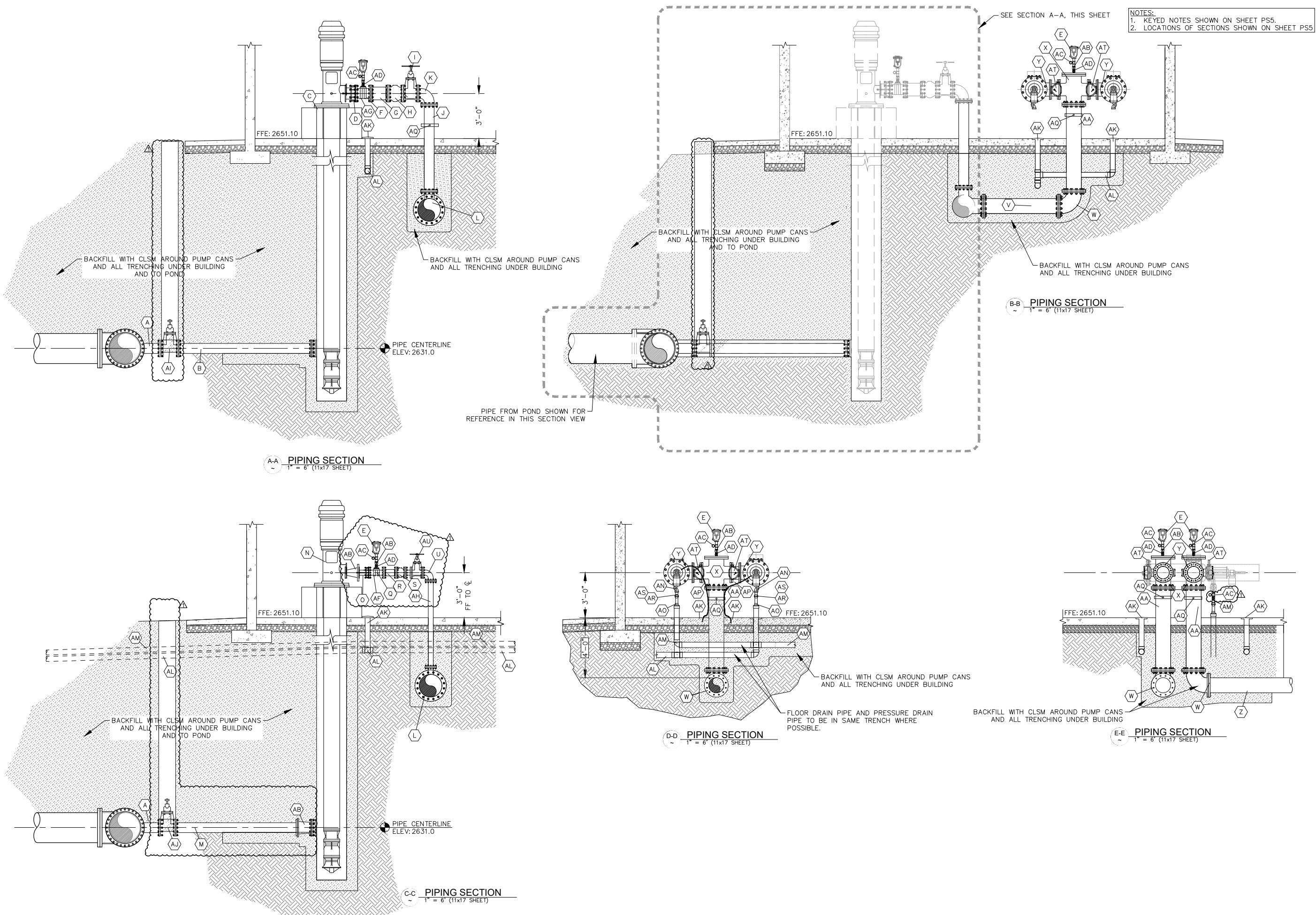
NO.	DATE	BY	DESCRIPTION
1	9/4/24	TJD	ADDENDUM #1

REVISIONS



PUMP STATION PIPING LAYOUT	
LITTLE VALLEY IRRIGATION PUMP STATION	
ST GEORGE, UTAH	

PROJECT #	041-139
NAME	CWL
DATE	JULY 22, 2024
SCALE	AS NOTED
SHEET	PS5
FILE	041-139 MST PS PIPING.dwg



REVISIONS



LITTLE VALLEY IRRIGATION PUMP STATION ST GEORGE, UTAH PIPING SECTIONS

PROJECT #	041-139
NAME	CWL
DATE	JULY 22, 2024
SCALE	AS NOTED
SHEET	
PS6	
9 OF 33	
FILE	041-139 MST PS PIPING.dwg