



October 6, 2022

To: All Planholders

RE: **W.O. 22-: West End Intake/Pump Station**
City of Billings Public Works Department, Billings, Montana

Attached is Addendum No. 2 for the above-referenced project. **Note the Bid date has changed.** On the Bid Form, Specification Section 00300, acknowledge this addendum by writing the number and date in the first available blank line in Paragraph 3.01 A.

The Revit model used for design of the project is available for Contractor use. However, Bids must be based on the hard copy drawings, specification and addendums. If you desired to view the Revit model contact me at craig.habben@hdrinc.com and I can provide a link.

Sincerely,

HDR ENGINEERING, Inc.

A handwritten signature in blue ink, appearing to read 'C. E. Habben', with a stylized flourish at the end.

Craig Habben
Project Manager

cc: File

ADDENDUM NO. 2
TO
CONTRACT DOCUMENTS AND SPECIFICATIONS
FOR
W.O. 22-19, WEST END WATER INTAKE/PUMP STATION
FOR
CITY OF BILLINGS, MONTANA
PUBLIC WORKS DEPARTMENT

Prepared by: HDR Engineering, Inc.
970 South 29th Street West
Billings, MT 59102

Owner: City of Billings
Public Works Department

Date: October 6, 2022

TO ALL PLANHOLDERS:

This addendum shall become a part of the Contract Documents as if originally included. The Bidders shall acknowledge receipt of the Addendum on the Bid Form.

The Specifications and Drawings shall be modified as required by the following items:

SPECIFICATIONS

AD-2 Item 1. Section 00100, Page 1 Line 5 and Page 2 Line 11. CHANGE the Bid Date from “October 18, 2022” to “November 9, 2022”

AD-2 Item 2. Section 00800, Supplementary Conditions. ADD the attached new Specification including to the Table of Contents.

AD-2 Item 3. Section 01 30 00, Page 2, Lines 39-43. DELETE these lines in their entirety.

AD-2 Item 4. Section 01 11 00, Page 3, Line 4. ADD the following:

“The USACE has up to 90 days to review the permit.”

AD-2 Item 5. Section 06 82 00, Page 3, Line 2. INSERT the following after Line 2:

- “6 Provide two lifting handles at each end of the grating pieces in the Electrical Room and above the Screen Channel and one handle at each end of the grating pieces above the manual screens to facilitate grating removal. Handles should be recessed when not in use.”

AD-2 Item 6. Section 40 05 00, Page 13, Line 20. ADD the following after Line 20:

“(3) Welded, ASTM A53.”

AD-2 Item 7. Section 40 05 00, Page 13, Line 22. DELETE “Epoxy” and REPLACE with “None”.

AD-2 Item 8. Section 40 05 00, Page 13, Line 29. ADD the following after Line 29:

“(3) Welded, AWWA C206.”

AD-2 Item 9. Section 40 05 00, Page 15, Line 12. DELETE line in it’s entirety.

AD-2 Item 10. Section 40 05 00, Page 15, Line 26. DELETE line in it’s entirety.

AD-2 Item 11. Section 40 05 00, Page 15, Line 35. DELETE line in it’s entirety.

AD-2 Item 12. Section 40 05 52, Page 1, Line 42 through Page 2, Line 14. DELETE and replace with the following:

“B. Combination Air Valve (Water, 1-inch):

1. Acceptable manufactures:
 - a. APCO 143C
 - b. Or approved equal.
2. Materials:
 - a. Body and cover: Cast iron.
 - b. Float: Stainless steel.
 - c. Linkage and hardware: Stainless steel.
 - d. Seat: Buna-N.
3. Design requirements:
 - a. Size: As shown on drawings, minimum size 1-inch.
 - b. Working pressure: 150 psi.
 - c. Release 4 standard cubic feet of air per second at 5 psi differential pressure across valve and at 150 psi line pressure.
 - d. Unit to be standard single valve body.
 - e. Provide isolation valve, type as shown.

C. Combination Air Valve (Water, 4-inch):

4. Acceptable manufactures:
 - a. APCO 149C
 - b. Or approved equal.
5. Materials:

- a. Body and cover: Cast iron.
- b. Float: Stainless steel.
- c. Linkage and hardware: Stainless steel.
- d. Seat: Buna-N.
- 6. Design requirements:
 - a. Size: 4-inch.
 - b. Working pressure: 150 psi.
 - c. Release 35 standard cubic feet of air per second at 5 psi differential pressure across valve and at 150 psi line pressure.
 - d. Unit to be standard single valve body.
 - e. Provide isolation valve, type as shown.”

AD-2 Item 13. Section 40 91 10, Page 10, Line 24. DELETE “sc200” and REPLACE with “SC4500”.

AD-2 Item 14. Section 40 94 43, ATTACHMENT A and B. DELETE ATTACHMENTS A and B and REPLACE with the ones included at the back of this addendum. Changes are highlighted in Yellow.

DRAWINGS

AD-2 Item 15. Sheet 00Y001. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 16. Sheet 00Y002. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 17. Sheet 00Y003. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 18. Sheet 00Y004. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 19. Sheet 00D503, STANDARD DETAIL 40 05 00-29A. ADD a ¼-inch weld on both sides of the weep ring connection to the 30-inch steel pipe.

AD-2 Item 20. Sheet 00D506, DETAIL 3. CHANGE the note on anchors to the following:

“3/4-INCH (MIN) SST ANCHOR BOLTS WITH 8-INCH EMBEDMENT (TYP).”

AD-2 Item 21. Sheet 00Y503. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 22. Sheet 01A101. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 23. Sheet 01A102. ADD the following:

“GENERAL NOTES

1. SEE SHEET 00F002 FOR FIRE EXTINGUISHER LOCATION.
2. SEE SHEET 01A601 FOR DOOR SCHEDULE.
3. SEE SHEET 01A601 FOR ROOM FINISH SCHEDULE.”

AD-2 Item 24. Sheet 01S104, GENERAL SHEET NOTES, Note 6. DELETE “2-TON” and REPLACE with “1-TON”.

AD-2 Item 25. Sheet 01S301. DELETE this sheet in its entirety and REPLACE with the attached sheet.

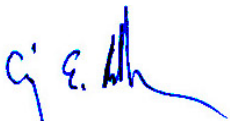
AD-2 Item 26. Sheet 01S501. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 27. Sheet 01D307. DELETE this sheet in its entirety and REPLACE with the attached sheet.

AD-2 Item 28. Sheet 01E607. DELETE this sheet in its entirety and REPLACE with the attached sheet.

This addendum is made part of the specifications and contract documents and shall be noted on the Bid Form. Bidders must acknowledge receipt and acceptance of this Addendum No. 2 by indicating such acknowledge in the Bid Form. FAILURE TO ACKNOWLEDGE RECEIPT AND ACCEPTANCE MAY RESULT IN REJECTION OF THE BID.

HDR ENGINEERING, INC.



Craig Habben, P.E.

DATE: October 6, 2022

SECTION 00800
SUPPLEMENTARY CONDITIONS

Supplementary Conditions per the Montana Public Works Standard Specification, 6th Edition, as Modified by the City of Billings Standard Modification, and as modified below:

Delete 4.01 A.

Replace 4.01 A. with the following:

Contract time commences with the Notice to Proceed which will be issued within 30 days of the Effective Date of the Contract. The Contract Award is contingent on approval status of the Joint Application and US Army Corps of Engineers Section 404 Permit. Approval status is anticipated to be end of March 2023.

END OF SECTION

PLC Component Table
Attachment A

PLC INSTALLED PARTS AND QUANTITIES

DESCRIPTION	ALLEN-BRADLEY MODEL NO.	CP-IPS	SPARES
<u>ALLEN-BRADLEY CONTROLLOGIX PLATFORM</u>			
BACKPLANE (13-SLOT)	1756-A13	1	--
BACKPLANE (17-SLOT)	1756-A17	1	--
POWER SUPPLY MODULE	1756-PA75	2	1
CPU MODULE	1756-L81	1	--
SECURE DIGITAL (SD) CARD	1784-SD1	1	--
ETHERNET/IP BRIDGE/SWITCH	1756-EN2TR	2	--
8-PT ANALOG INPUT (DIFFERENTIAL CURRENT WIRING)	1756-IF16	3	1
8-PT ANALOG OUTPUT (CURRENT WIRING)	1756-OF8	2	1
16-PT DISCRETE INPUT; 24VDC	1756-IB16	12	1
16-PT DISCRETE OUTPUT; 24VDC	1756-OB16I	3	1
BLANK COVER	1756-N2	*	--

* AS REQUIRED TO COVER ALL EMPTY SLOTS IN THE RACK.

PLC PANEL LOCATIONS:

CP-IPS: INTAKE PUMP STATION

PLC Input/Output Usage Table
Attachment B

DEVICE(S)	DESCRIPTION	FUNCTION	TYPE	QTY	PANEL	P&ID	NOTES
IPS-GATE-1 (6)	SCREEN CHANNEL GATE 1 (6)	REMOTE	DI	6	CP-IPS	00Y001	
IPS-GATE-1 (6)	SCREEN CHANNEL GATE 1 (6)	OPENED	DI	6	CP-IPS	00Y001	
IPS-GATE-1 (6)	SCREEN CHANNEL GATE 1 (6)	CLOSED	DI	6	CP-IPS	00Y001	
IPS-GATE-1 (6)	SCREEN CHANNEL GATE 1 (6)	FAULT	DI	6	CP-IPS	00Y001	
IPS-GATE-1 (6)	SCREEN CHANNEL GATE 1 (6)	OPEN CMD	DO	6	CP-IPS	00Y001	
IPS-GATE-1 (6)	SCREEN CHANNEL GATE 1 (6)	CLOSE CMD	DO	6	CP-IPS	00Y001	
IPS-LT-SCRNCHL	SCREEN CHANNEL LEVEL	LEVEL SIGNAL	AI	1	CP-IPS	00Y001	
IPS-LIT-CP	LIT ENCLOSURE	DOOR OPEN	DI	1	CP-IPS	00Y001	
IPS-LIT-CP	LIT ENCLOSURE	TEMPERATURE HIGH	DI	1	CP-IPS	00Y001	
IPS-LIT-CP	LIT ENCLOSURE	TEMPERATURE LOW	DI	1	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	PENDENT E-STOP	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREENS	HOIST/SCRN LOCAL DISAB	DI	1	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	SCRN A ROTATE PULSE	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	SCRN B ROTATE PULSE	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	SCRN A FAULT	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	SCRN B FAULT	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	SCRN A MOTOR TSH	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	SCRN B MOTOR TSH	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	HOIST FULLY RAISED	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	HOIST CABLE SLACK	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	HOIST DOCKED	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	FWD CMD	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	STOP CMD	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	REV CMD	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	RUNNING FWD	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	RUNNING REV	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	HOA IN AUTO	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	ABOVE MID TRAVEL	DI	2	CP-IPS	00Y001	
IPS-SCRN-1 (2)	INTAKE SCREEN 1 (2)	PENDENT DOOR OPEN	DI	2	CP-IPS	00Y001	
IPS-HOIST-SCRN1 (2)	INTAKE SCREEN HOIST 1 (2)	MOVING	DI	2	CP-IPS	00Y001	
IPS-HOIST-SCRN1 (2)	INTAKE SCREEN HOIST 1 (2)	FAULT	DI	2	CP-IPS	00Y001	
IPS-GATE-SCRN1 (2)	INTAKE SCREEN GATE 1 (2)	LOR IN REMOTE	DI	2	CP-IPS	00Y001	
IPS-GATE-SCRN1 (2)	INTAKE SCREEN GATE 1 (2)	OPENED	DI	2	CP-IPS	00Y001	
IPS-GATE-SCRN1 (2)	INTAKE SCREEN GATE 1 (2)	CLOSED	DI	2	CP-IPS	00Y001	
IPS-GATE-SCRN1 (2)	INTAKE SCREEN GATE 1 (2)	FAULT	DI	2	CP-IPS	00Y001	
IPS-GATE-SCRN1 (2)	INTAKE SCREEN GATE 1 (2)	OPEN CMD	DO	2	CP-IPS	00Y001	
IPS-GATE-SCRN1 (2)	INTAKE SCREEN GATE 1 (2)	CLOSE CMD	DO	2	CP-IPS	00Y001	

PLC Input/Output Usage Table
Attachment B

DEVICE(S)	DESCRIPTION	FUNCTION	TYPE	QTY	PANEL	P&ID	NOTES
IPS-LT-WW	RAW WATER WETWELL	LEVEL SIGNAL	AI	1	CP-IPS	00Y002	
IPS-LSL-WW	RAW WATER WETWELL	LOW LEVEL CUTOUT	DI	1	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	HOA IN AUTO	DI	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	RUN STATUS	DI	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	FAULT	DI	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	CV CLOSED	DI	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	CV OPEN	DI	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	START CMD	DO	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	STOP CMD	DO	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	RESET	DO	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	SPEED CMD	AO	3	CP-IPS	00Y002	
IPS-PUMP-2 (3)	IPS PUMP 2 (3)	SPEED FDBK	AI	3	CP-IPS	00Y002	
IPS-PUMP-FLW	FLUSHING WATER PUMP	HOA IN AUTO	DI	1	CP-IPS	00Y002	
IPS-PUMP-FLW	FLUSHING WATER PUMP	RUN STATUS	DI	1	CP-IPS	00Y002	
IPS-PUMP-FLW	FLUSHING WATER PUMP	FAULT	DI	1	CP-IPS	00Y002	
IPS-PUMP-FLW	FLUSHING WATER PUMP	START CMD	DO	1	CP-IPS	00Y002	
IPS-PUMP-FLW	FLUSHING WATER PUMP	STOP CMD	DO	1	CP-IPS	00Y002	
IPS-FIT-FLW-1	FLUSHING WATER FLOW	FLOW RATE	AI	1	CP-IPS	00Y002	
IPS-STRNR-FLW	STRAINER	RUNNING	DI	1	CP-IPS	00Y002	
IPS-STRNR-FLW	STRAINER	HOA IN AUTO	DI	1	CP-IPS	00Y002	
IPS-STRNR-FLW	STRAINER	IN BACKWASH	DI	1	CP-IPS	00Y002	
IPS-STRNR-FLW	STRAINER	FAULT	DI	1	CP-IPS	00Y002	
IPS-PIT-RW	RAW WATER HEADER	PRESSURE SIGNAL	AI	1	CP-IPS	00Y002	
IPS-FIT-RW-1	RAW WATER FLOWMETER	FLOW RATE	AI	1	CP-IPS	00Y002	
IPS-FIT-RW-1	RAW WATER FLOWMETER	FLOW DIRECTION	DI	1	CP-IPS	00Y002	
IPS-MODV-RW-1	BACKFLUSH VALVE	IN REMOTE	DI	1	CP-IPS	00Y002	
IPS-MODV-RW-1	BACKFLUSH VALVE	POSITION CMD	AO	1	CP-IPS	00Y002	
IPS-MODV-RW-1	BACKFLUSH VALVE	POSITION FDBK	AI	1	CP-IPS	00Y002	
IPS-PUMP-5	SUMP PUMP	RUN STATUS	DI	1	CP-IPS	00Y002	
IPS-PUMP-5	SUMP PUMP	FAULT	DI	1	CP-IPS	00Y002	
IPS-PUMP-5	SUMP PUMP	SUMP HIHI	DI	1	CP-IPS	00Y002	
IPS-ACMP	COMPRESSED AIR SYSTEM	RUNNING	DI	1	CP-IPS	00Y003	

PLC Input/Output Usage Table
Attachment B

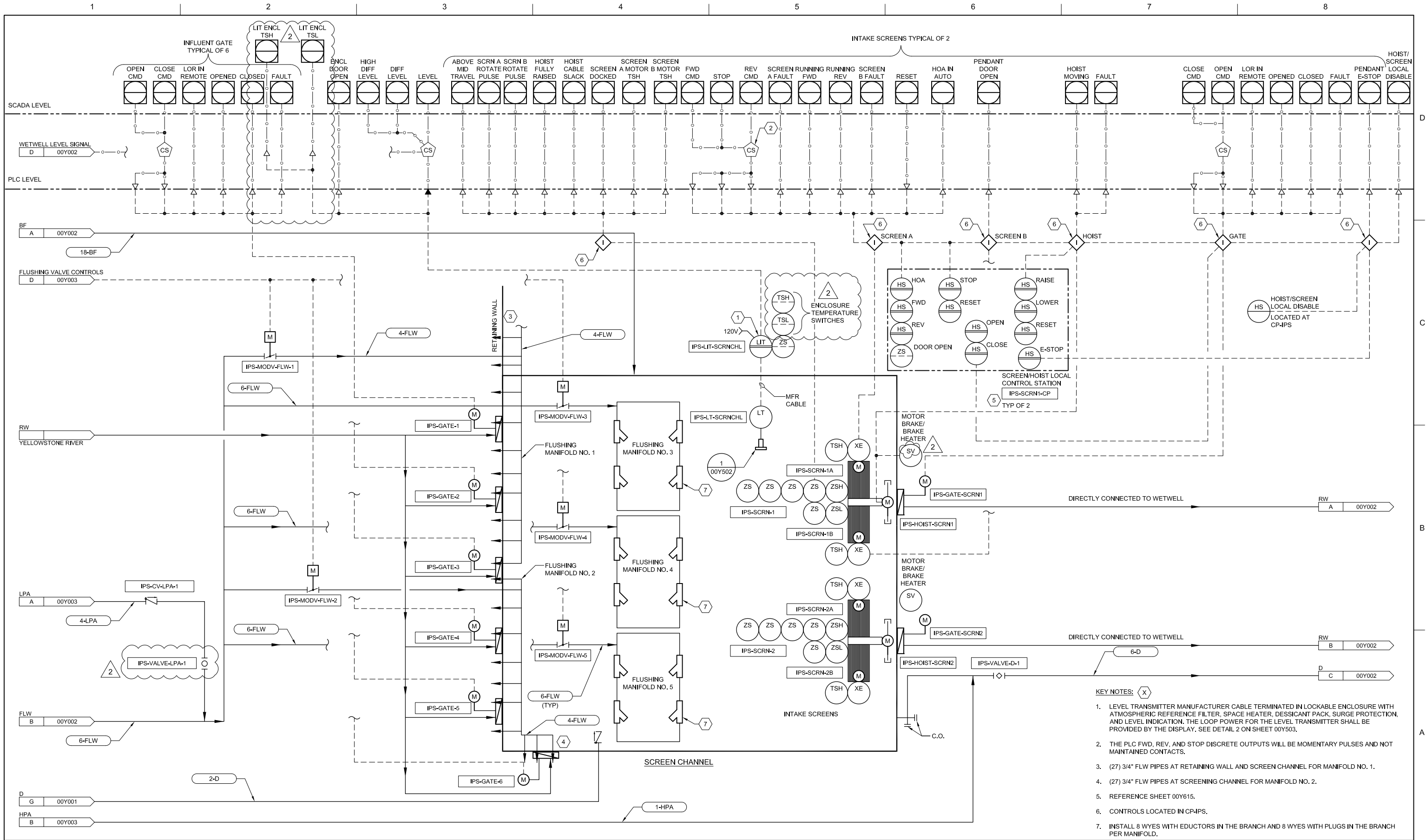
DEVICE(S)	DESCRIPTION	FUNCTION	TYPE	QTY	PANEL	P&ID	NOTES
IPS-ACMP	COMPRESSED AIR SYSTEM	FAULT	DI	1	CP-IPS	00Y003	
IPS-MODV-FLW-1 (5)	FLUSHING MANIFOLD VALVE 1 (5)	OPEN CMD	DO	5	CP-IPS	00Y003	
IPS-MODV-FLW-1 (5)	FLUSHING MANIFOLD VALVE 1 (5)	OCA IN AUTO	DI	5	CP-IPS	00Y003	
IPS-MODV-FLW-1 (5)	FLUSHING MANIFOLD VALVE 1 (5)	OPENED	DI	5	CP-IPS	00Y003	
IPS-MODV-FLW-1 (5)	FLUSHING MANIFOLD VALVE 1 (5)	CLOSED	DI	5	CP-IPS	00Y003	
IPS-SOLV-HPA-1	DRAIN LINE HPA SV	OPEN CMD	DO	1	CP-IPS	00Y003	
IPS-SOLV-HPA-1	DRAIN LINE HPA SV	OCA IN AUTO	DI	1	CP-IPS	00Y003	
IPS-FIT-LPA	FLUSHING AIR FLOWMETER	FLOW RATE	AI	1	CP-IPS	00Y003	
SWBD	SWBD SURGE PROT DEVICE	SWBD SPD FAULT	DI	1	CP-IPS	00Y003	
MCC	MCC SURGE PROTECTION DEVICE	MCC SPD FAULT	DI	1	CP-IPS	00Y003	
MCC	MCC PHASE MONITOR	PHASE LOSS	DI	1	CP-IPS	00Y003	
IPS-TSL-01	ELECTRICAL ROOM TEMP SWITCH	TEMP LOW	DI	1	CP-IPS	00Y003	
IPS-TSH-01	ELECTRICAL ROOM TEMP SWITCH	TEMP HIGH	DI	1	CP-IPS	00Y003	
IPS-ZSC-01(3)	ELECTRICAL ROOM DOOR SWITCH	DOOR CLOSED	DI	3	CP-IPS	00Y003	
IPS-TSL-02	PIPE GALLERY TEMP SWITCH	TEMP LOW	DI	1	CP-IPS	00Y003	
IPS-TIT-01	OUTSIDE AIR TEMPERATURE XMTR	AIR TEMP SIGNAL	AI	1	CP-IPS	00Y003	
IPS-SA-CP	PRIMARY WATER STRAINER	STRAINER PLUGGED	DI	1	CP-IPS	00Y004	
IPS-AIT-TURB	TURBIDITY ANALYZER	TURBIDITY SIGNAL	AI	1	CP-IPS	00Y004	
IPS-AIT-TURB	TURBIDITY ANALYZER	TURBIDITY XMTR FAULT	DI	1	CP-IPS	00Y004	
IPS-AIT-HCARB	HYDROCARBON ANALYZER	OIL IN WATER SIGNAL	AI	1	CP-IPS	00Y004	
IPS-AIT-HCARB	HYDROCARBON ANALYZER	OIL XMTR FAULT	DI	1	CP-IPS	00Y004	
IPS-AIT-pHTEMP	PH ANALYZER	PH SIGNAL	AI	1	CP-IPS	00Y004	
IPS-AIT-pHTEMP	PH ANALYZER	TEMPERATURE SIGNAL	AI	1	CP-IPS	00Y004	
CP-IPS	CONTROL PANEL	POWER ON	DI	2	CP-IPS		
CP-IPS	CONTROL PANEL UPS	ON BATTERY	DI	1	CP-IPS		
CP-IPS	CONTROL PANEL UPS	BATTERY LOW	DI	1	CP-IPS		
CP-IPS	CONTROL PANEL UPS	UPS ALARM	DI	1	CP-IPS		
CP-IPS	SURGE SUPPRESSOR FAULT	FAULT	DI	1	CP-IPS		
CP-IPS	PS REDUNDANCY MODULE	INPUT FAULT	DI	2	CP-IPS		

PLC Input/Output Usage Table
Attachment B

DEVICE(S)	DESCRIPTION	FUNCTION	TYPE	QTY	PANEL	P&ID	NOTES
<u>PLC PANEL LOCATIONS:</u>		<u>PLC INPUT/OUTPUT TYPE:</u>					
CP-IPS: INTAKE PUMP STATION		AI - ANALOG INPUT CHANNEL					
		AO - ANALOG OUTPUT CHANNEL					
		DI - DISCRETE INPUT POINT					
		DO - DISCRETE OUTPUT POINT					

NOTES:

1. NONE.



- KEY NOTES:** (X)
1. LEVEL TRANSMITTER MANUFACTURER CABLE TERMINATED IN LOCKABLE ENCLOSURE WITH ATMOSPHERIC REFERENCE FILTER, SPACE HEATER, DESSICANT PACK, SURGE PROTECTION, AND LEVEL INDICATION. THE LOOP POWER FOR THE LEVEL TRANSMITTER SHALL BE PROVIDED BY THE DISPLAY. SEE DETAIL 2 ON SHEET 00Y503.
 2. THE PLC FWD, REV, AND STOP DISCRETE OUTPUTS WILL BE MOMENTARY PULSES AND NOT MAINTAINED CONTACTS.
 3. (27) 3/4" FLW PIPES AT RETAINING WALL AND SCREEN CHANNEL FOR MANIFOLD NO. 1.
 4. (27) 3/4" FLW PIPES AT SCREENING CHANNEL FOR MANIFOLD NO. 2.
 5. REFERENCE SHEET 00Y615.
 6. CONTROLS LOCATED IN CP-IPS.
 7. INSTALL 8 WYES WITH EDUCTORS IN THE BRANCH AND 8 WYES WITH PLUGS IN THE BRANCH PER MANIFOLD.



2	09/2022	ADDENDUM #2
	JULY 2022	ISSUE FOR BID
ISSUE	DATE	DESCRIPTION

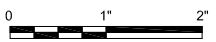
PROJECT MANAGER C. HABBEN	
CIVIL	J. HILLIUS
STRUCTURAL	T. HAMLIN
ARCHITECTURAL	J. RICKERT
PROCESS	J. OSTRANDER
MECHANICAL	R. DALRYMPLE
ELECTRICAL	L. KIRMEYER
INSTRUMENTATION	D. BEST
PROJECT NUMBER	10126753



West End Water Facility
City of Billings, MT
W.O. 22-19

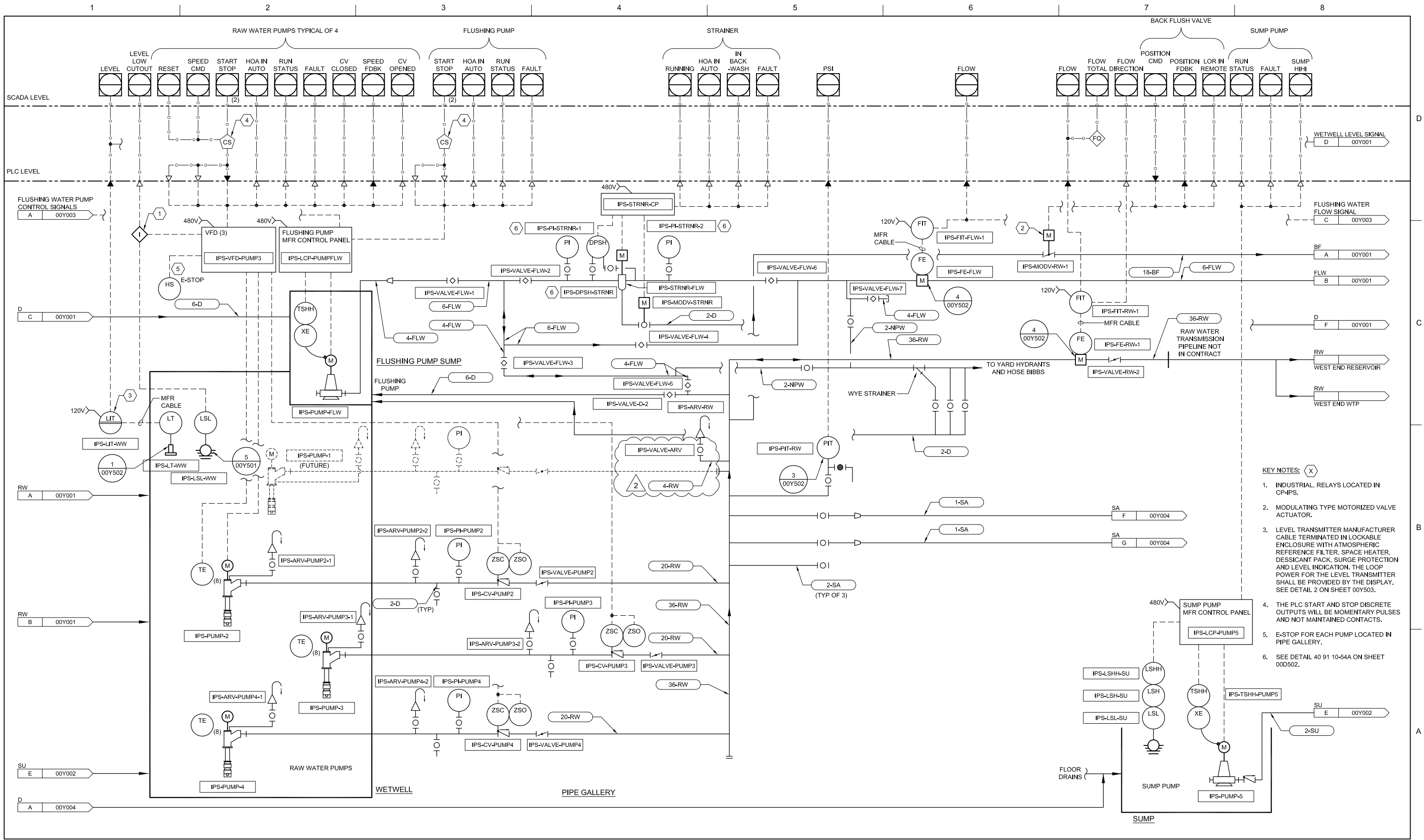
West End Water
Intake/Pump Station
Project

**GENERAL
SCREEN CHANNEL P&ID**



FILENAME 00Y001.dwg
SCALE NONE

SHEET
00Y001



ISSUE	DATE	DESCRIPTION
2	09/2022	ADDENDUM #2
	JULY 2022	ISSUE FOR BID

PROJECT MANAGER	C. HABBEN
CIVIL	J. HILLIUS
STRUCTURAL	T. HAMLIN
ARCHITECTURAL	J. RICKERT
PROCESS	J. OSTRANDER
MECHANICAL	R. DALRYMPLE
ELECTRICAL	L. KIRMEYER
INSTRUMENTATION	D. BEST
PROJECT NUMBER	10126753



West End Water Facility
City of Billings, MT
W.O. 22-19

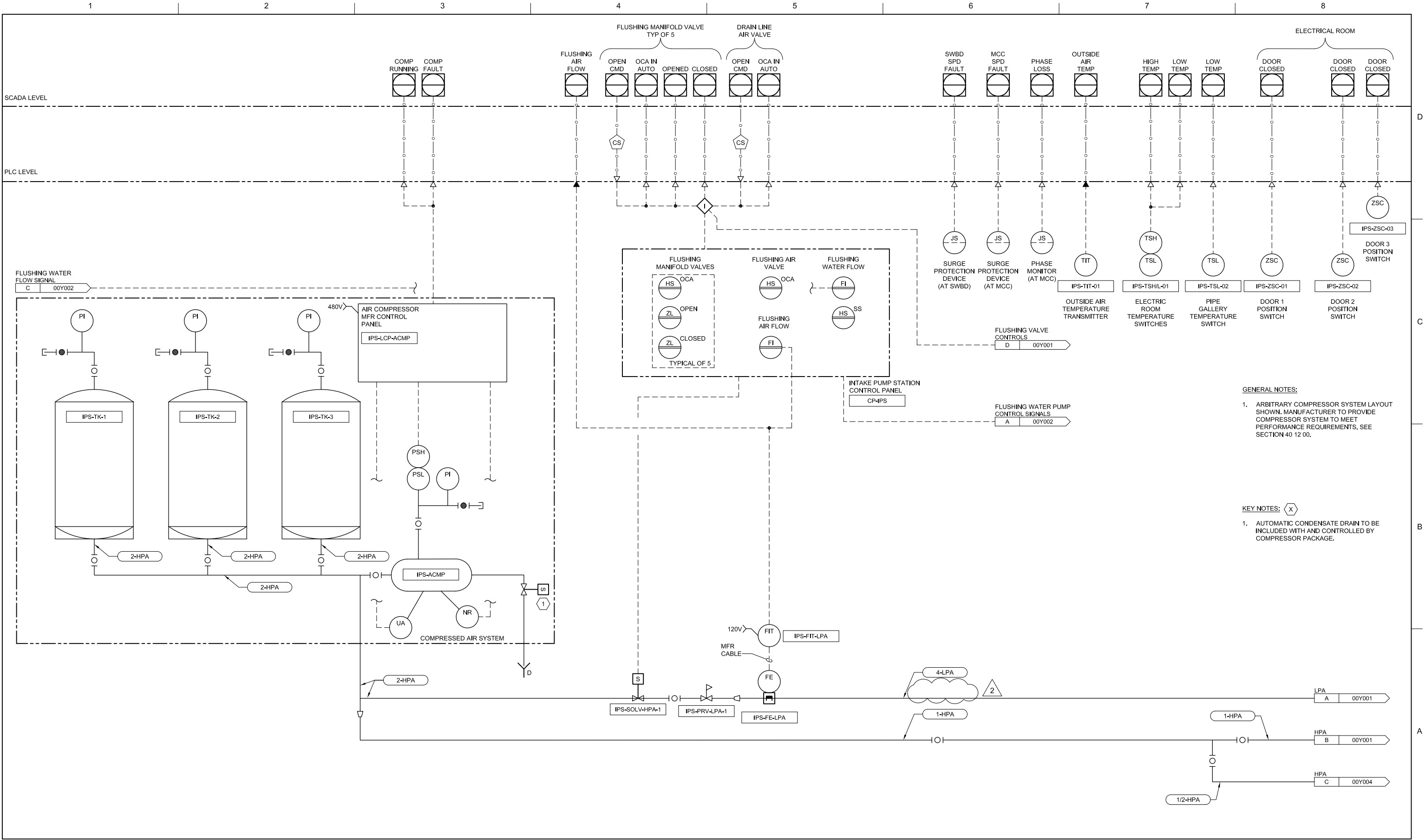
West End Water
Intake/Pump Station
Project



GENERAL
INTAKE PUMPING P&ID

FILENAME 00Y002.dwg
SCALE NONE

SHEET
00Y002



2	09/2022	ADDENDUM #2
	JULY 2022	ISSUE FOR BID
ISSUE	DATE	DESCRIPTION

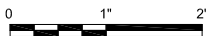
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PROJECT NUMBER	10126753



West End Water Facility
City of Billings, MT
W.O. 22-19

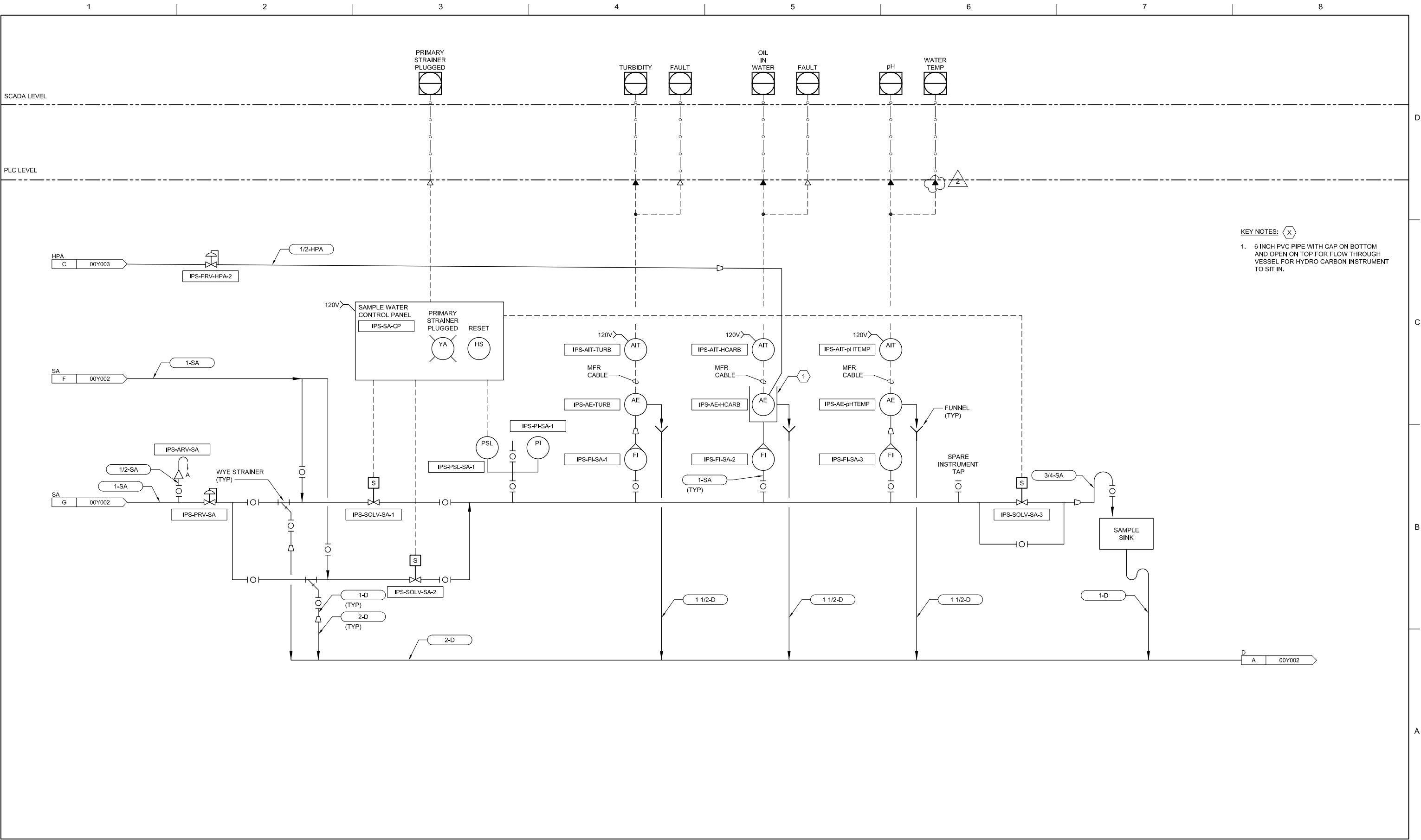
West End Water
Intake/Pump Station
Project

GENERAL
COMPRESSED AIR P&ID



FILENAME 00Y003.dwg
SCALE NONE

SHEET
00Y003



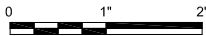
2	09/2022	ADDENDUM #2
	JULY 2022	ISSUE FOR BID
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER C. HABBEN	
CIVIL	J. HILLIUS
STRUCTURAL	T. HAMLIN
ARCHITECTURAL	J. RICKERT
PROCESS	J. OSTRANDER
MECHANICAL	R. DALRYMPLE
ELECTRICAL	L. KIRMEYER
INSTRUMENTATION	D. BEST
PROJECT NUMBER	10126753



West End Water Facility
City of Billings, MT
W.O. 22-19

West End Water
Intake/Pump Station
Project



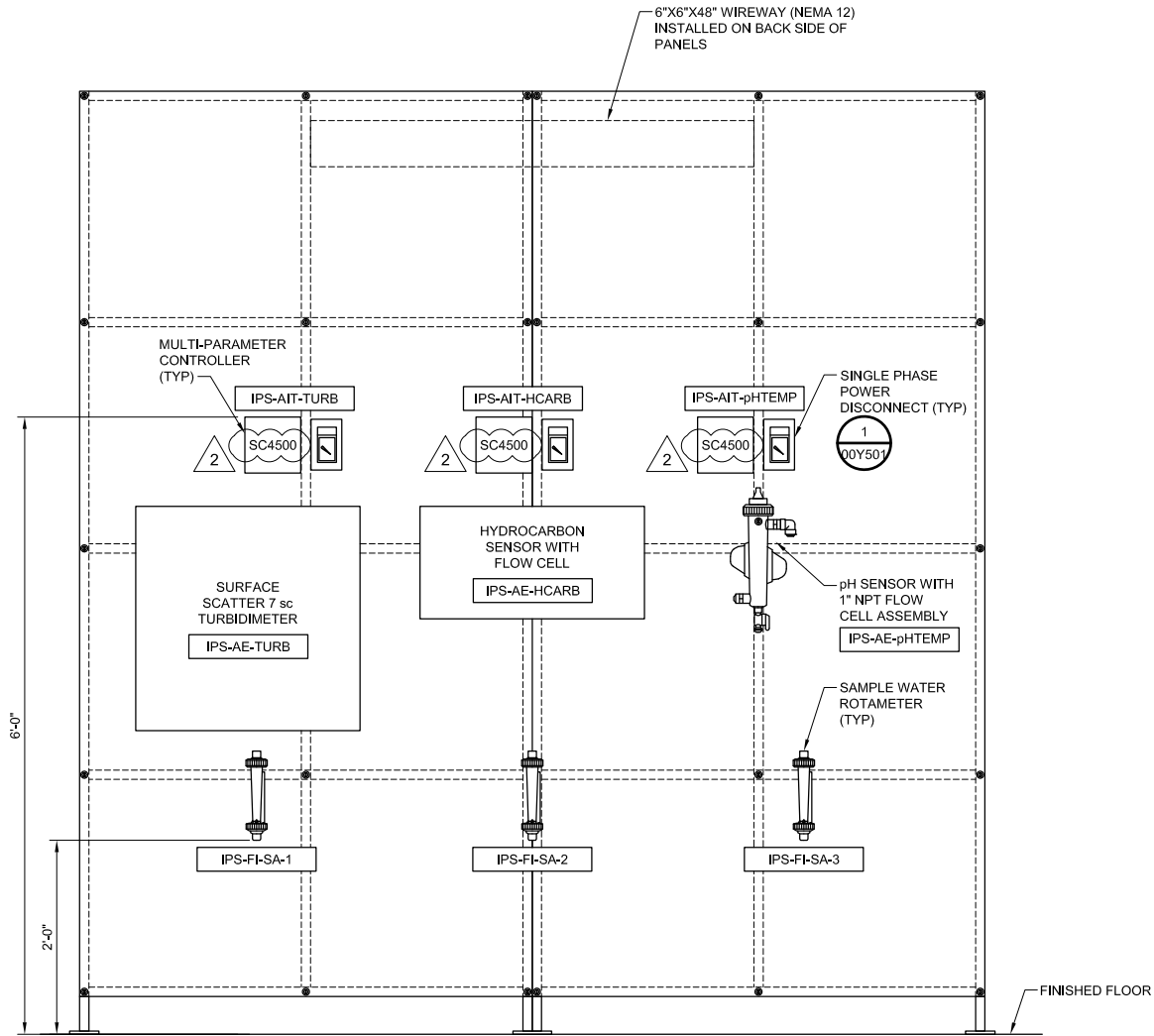
GENERAL
SAMPLE WATER P&ID

FILENAME 00Y004.dwg
SCALE NONE

SHEET
00Y004

NOTES:

1. PANELS FABRICATED FROM TWO WHITE, HDPE PANEL WITH 1/2" THICKNESS AND DIMENSIONS OF 4FT X 8FT INSTALLED SIDE BY SIDE. PANEL REINFORCED AND SUPPORTED WITH MODULAR STRUT.
2. CABLES ROUTED BEHIND PANEL.
3. INSTRUMENTS AND EQUIPMENT SHALL BE MOUNTED A MINIMUM OF 24" AFF.
4. SEE 01D307 FOR ADDITIONAL INFORMATION ON EQUIPMENT LOCATION AND PIPING REQUIREMENTS.



INSTRUMENT PANEL

SCALE: NONE

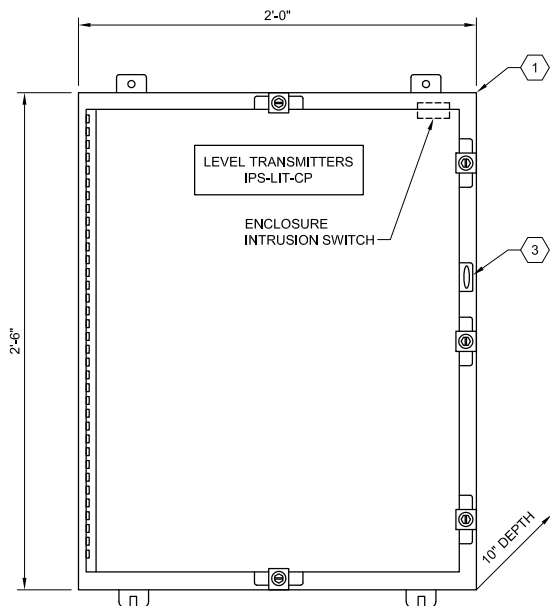


GENERAL NOTES:

1. CONTROL PANEL FABRICATED ACCORDING TO SPECIFICATION 40 98 00.
2. CONTROL AUXILIARIES PER SPECIFICATION 40 97 00. NOT ALL REQUIRED COMPONENTS ARE SHOWN ON THIS DRAWING.
3. THIS PANEL WILL RECEIVE TWO 120VAC POWER CIRCUITS FROM CP-IPS.
 - A. CIRCUIT 1 IS 120V NON-UPS POWER FOR THE SPACE HEATER. PROVIDE A CIRCUIT BREAKER FOR THIS CIRCUIT.
 - B. CIRCUIT 2 IS 120V, UPS POWER FOR THE LEVEL INSTRUMENTS.

KEY NOTES: (X)

1. SINGLE-DOOR, WALL MOUNTED, STAINLESS STEEL ENCLOSURE NEMA 4X ENCLOSURE RATING. HOFFMAN BULLETIN A4S OR APPROVED EQUAL.
2. PAINTED STEEL MOUNTING PANEL.
3. PADLOCKING HASP AND STAPLE.
4. LEVEL TRANSMITTER ACCESSORIES: ATMOSPHERIC REFERENCE FILTER, DESSICANT PACK, SURGE PROTECTION. SEE SPECIFICATION SECTION 40 91 10.
5. THE LOOP POWER FOR THE LEVEL TRANSMITTER SHALL BE PROVIDED BY THE LEVEL METER. SEE SPECIFICATION SECTION 40 91 10.
6. PHENOLIC NAMEPLATE INSCRIBED WITH TEXT "SCREEN CHANNEL LEVEL IPS-LIT-SCRNCHL".
7. PHENOLIC NAMEPLATE INSCRIBED WITH TEXT "WETWELL LEVEL IPS-LIT-WW".
8. ENCLOSURE DUAL THERMOSTAT WITH SETTING RANGE OF 32 DEGF TO 140 DEGF FOR HIGH AND LOW TEMPERATURE PLC INPUT ALARMS. STEGO ZR011, OR EQUAL.



PANEL FRONT

INTERIOR SWING-OUT PANEL

INTERIOR BACK PANEL

LEVEL METER PANEL (IPS-LIT-CP)

SCALE: NONE



2	09/2022	ADDENDUM #2
	JULY 2022	ISSUE FOR BID
ISSUE	DATE	DESCRIPTION

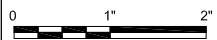
PROJECT MANAGER	C. HABBEN
CIVIL	J. HILLIUS
STRUCTURAL	T. HAMLIN
ARCHITECTURAL	J. RICKERT
PROCESS	J. OSTRANDER
MECHANICAL	R. DALRYMPLE
ELECTRICAL	L. KIRMEYER
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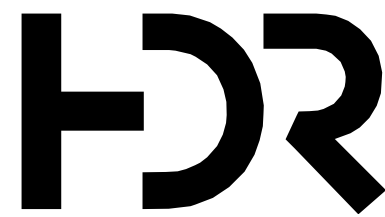
GENERAL
INSTRUMENTATION
STANDARD DETAILS 3



FILENAME | 00Y503.dwg
SCALE | NONE

SHEET
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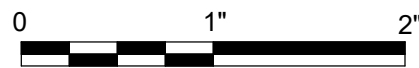
ISSUE	DATE	DESCRIPTION
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1	JULY 2022	ISSUE FOR BID

PROJECT MANAGER C. HABBEN	
CIVIL	J. HILLIUS
STRUCTURAL	T. HAMLIN
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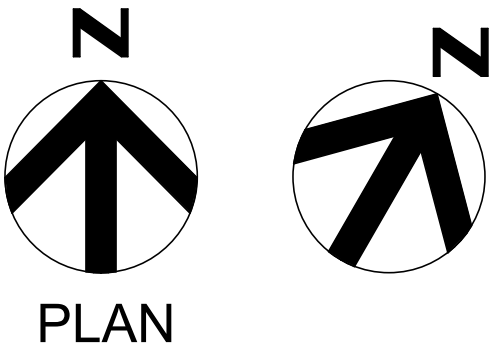
West End Water Facility
City of Billings, MT
W.O. 22-19

West End Water
Intake/Pump Station
Project



FILENAME 10126753_v2020_RAW WATER DELIVERY_ARCH
SCALE 1/4" = 1'-0"

SHEET
01A101



GENERAL NOTES:

- SEE SHEET 00F002 FOR FIRE EXTINGUISHER LOCATIONS
- SEE SHEET 01A601 FOR DOOR SCHEDULE
- SEE SHEET 01A601 FOR ROOM FINISH SCHEDULE

KEYNOTES

- A5 CONC. LANDING
- A7 WALL MOUNTED HAND RAIL
- A8 STAIR GUARDRAIL & HANDRAIL
- A22 SCREEN CHANNEL LADDER W/ SAFETY EXTENSION
- A23 WALL MOUNTED LADDER; SEE 1/01A502
- A30 CONCRETE PIPE SUPPORT; SEE STRUCTURAL TYP
- A34 PROCESS EQUIPMENT; SEE PROCESS
- A43 SLOPE FLOOR TO DRAIN; SEE STRUCTURAL TYP
- A45 GRAFFITI RESISTANT COATING ON ABOVE-GRADE FACE OF CONCRETE; SEE SHEET 00C007 FOR GRADING PLAN. SEE STRUCTURAL FOR EXTENTS
- A46 FULL HEIGHT FLUID APPLIED WATER PROOFING ON CONCRETE WALL
- A47 PARTIAL HEIGHT FLUID APPLIED WATERPROOFING ON BELOW GRADE PORTION OF CONCRETE WALL

BM 360.1/10126753_Bigs_W_End_Water_Facility_2020/10126753_v2020_RAW WATER DELIVERY_STRUCT.M
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ISSUE	DATE	DESCRIPTION
2	09/2022	ADDENDUM #2
	JULY 2022	ISSUE FOR BID

PROJECT MANAGER	C. HABBen
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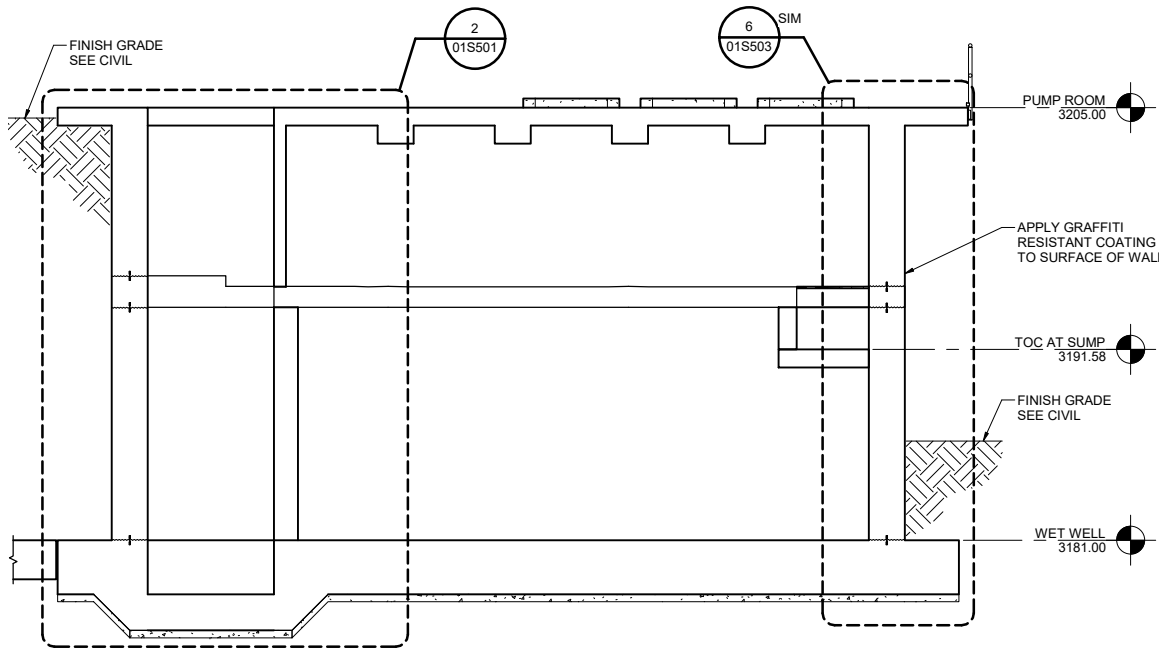
West End Water Facility
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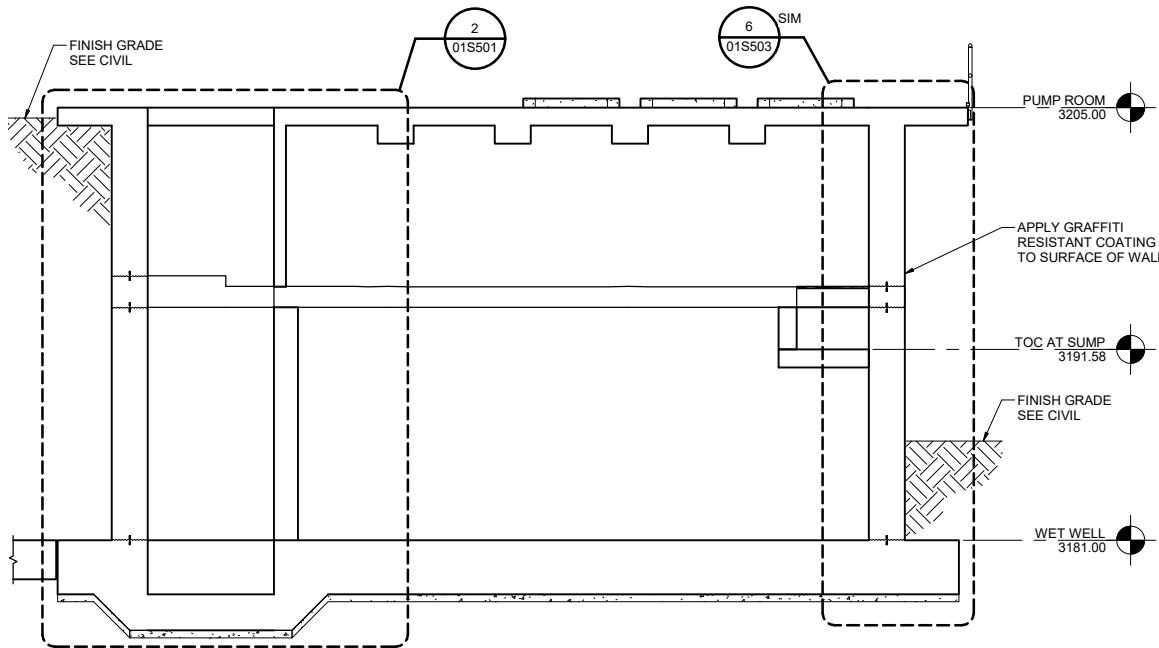
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			SCALE	3/16" = 1'-0"	01S301

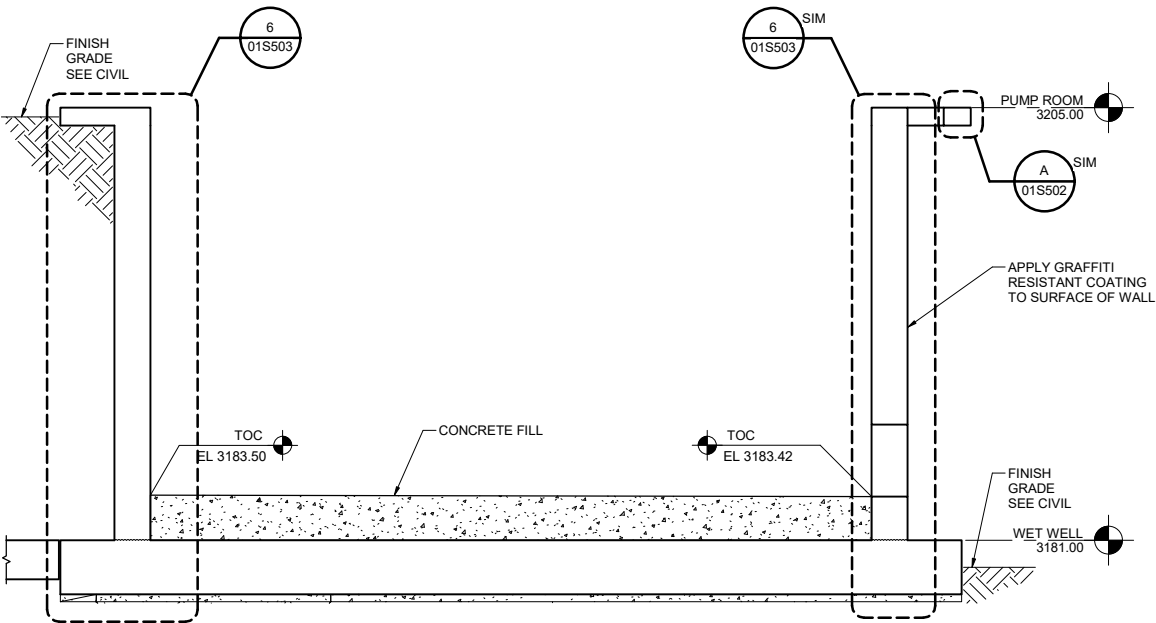
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01S101 3/16" = 1'-0"



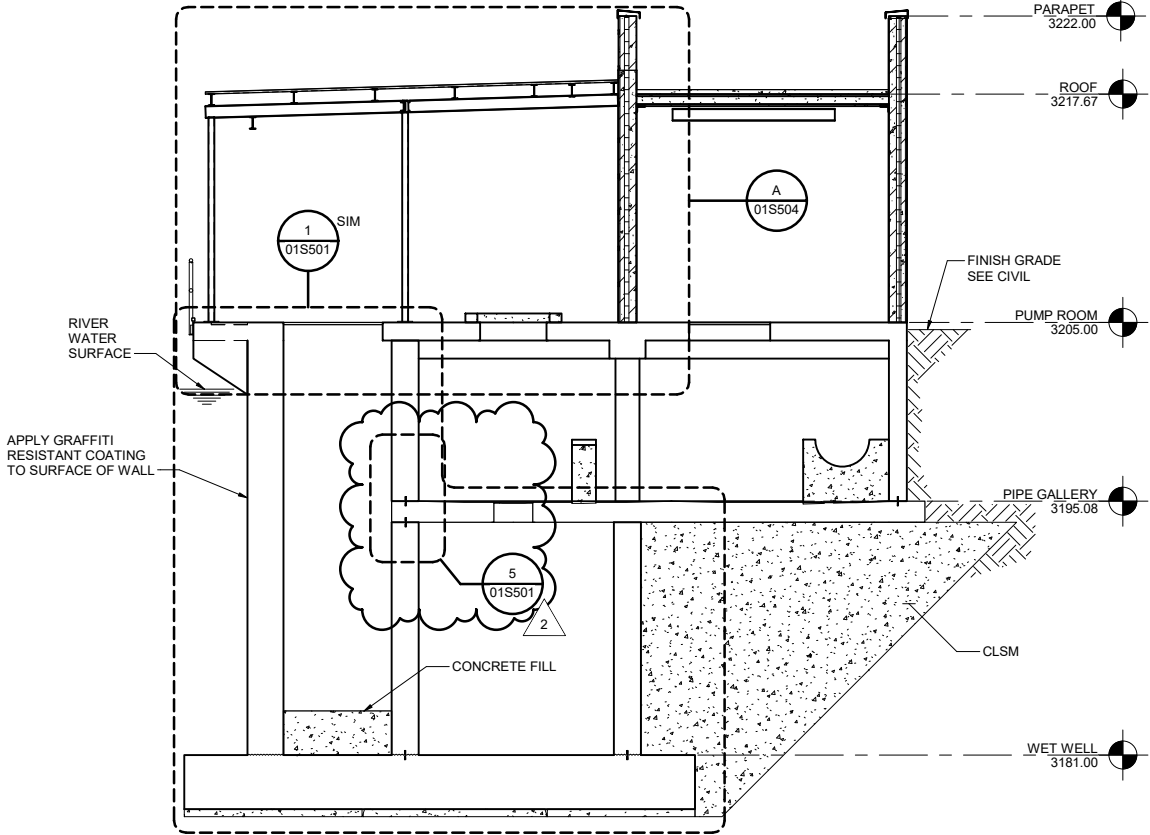
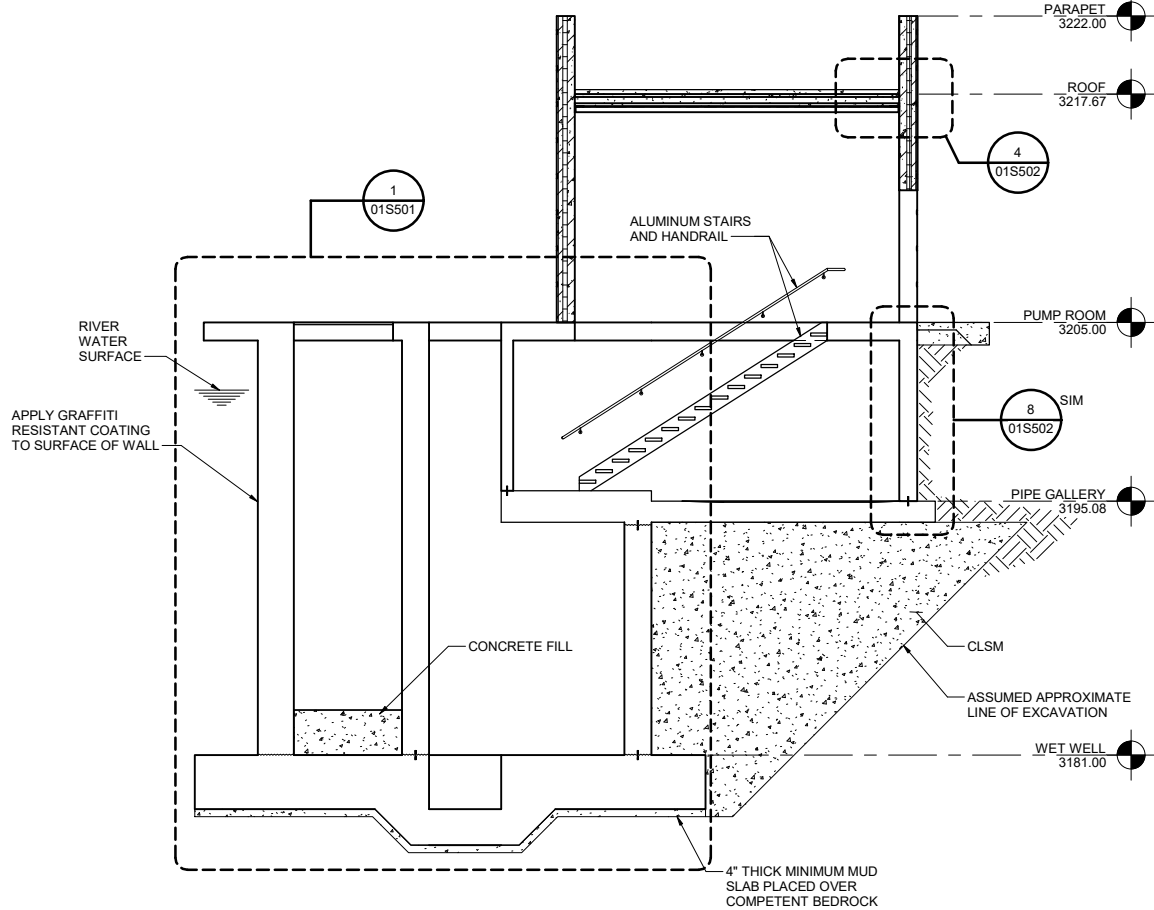
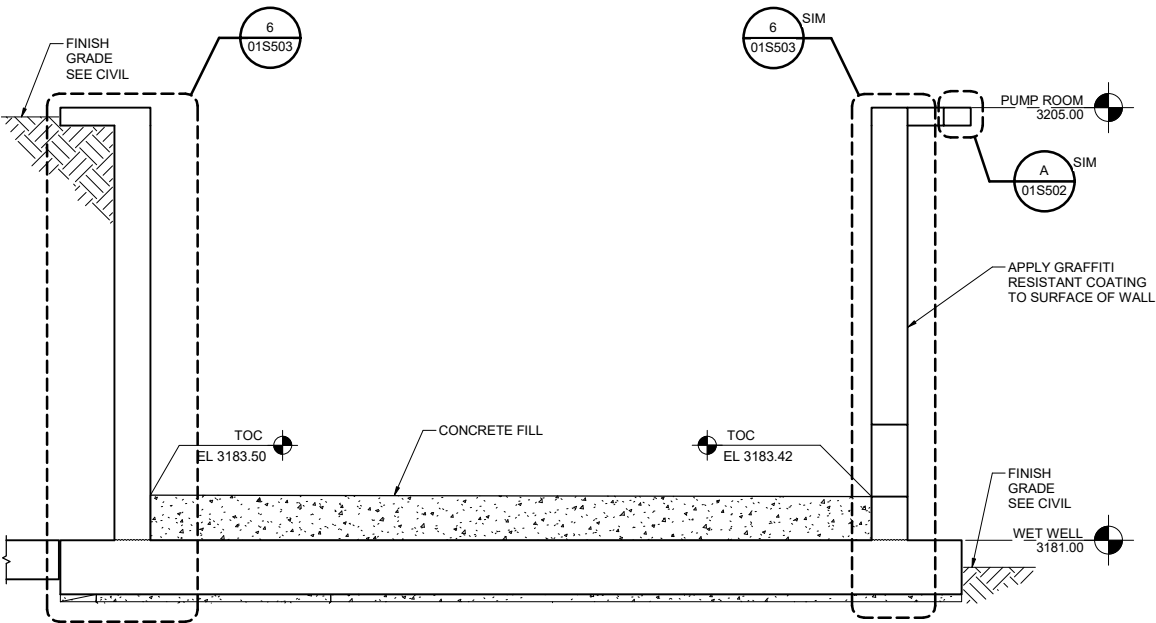
C FULL SECTION
01S101 3/16" = 1'-0"



B FULL SECTION
01S101 3/16" = 1'-0"



D FULL SECTION
01S101 3/16" = 1'-0"



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2	09/2022	ADDENDUM #2
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ISSUE	DATE	DESCRIPTION

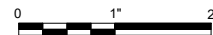
PROJECT MANAGER	C. HABBEN
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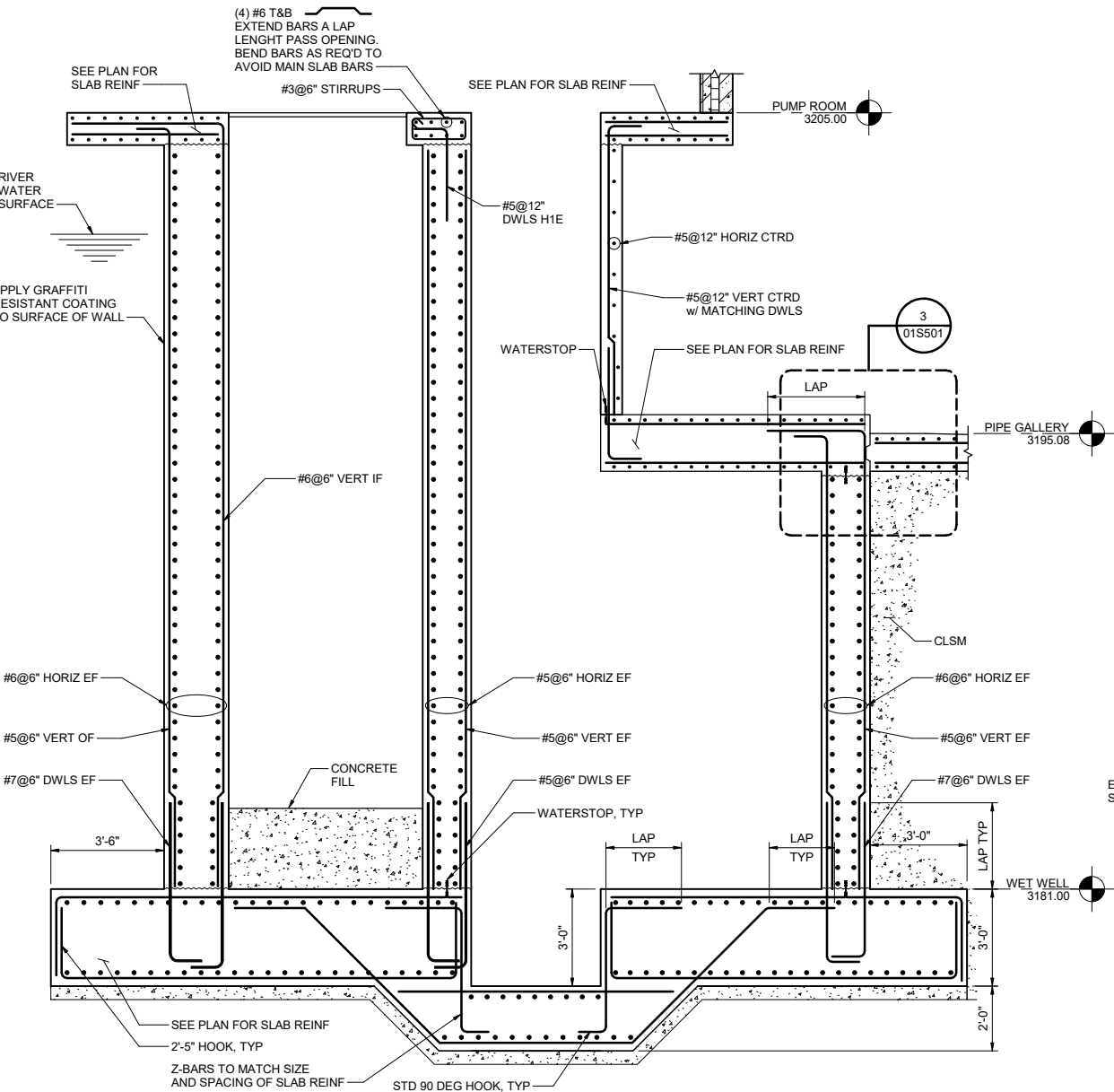
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SECTIONS AND DETAILS 1

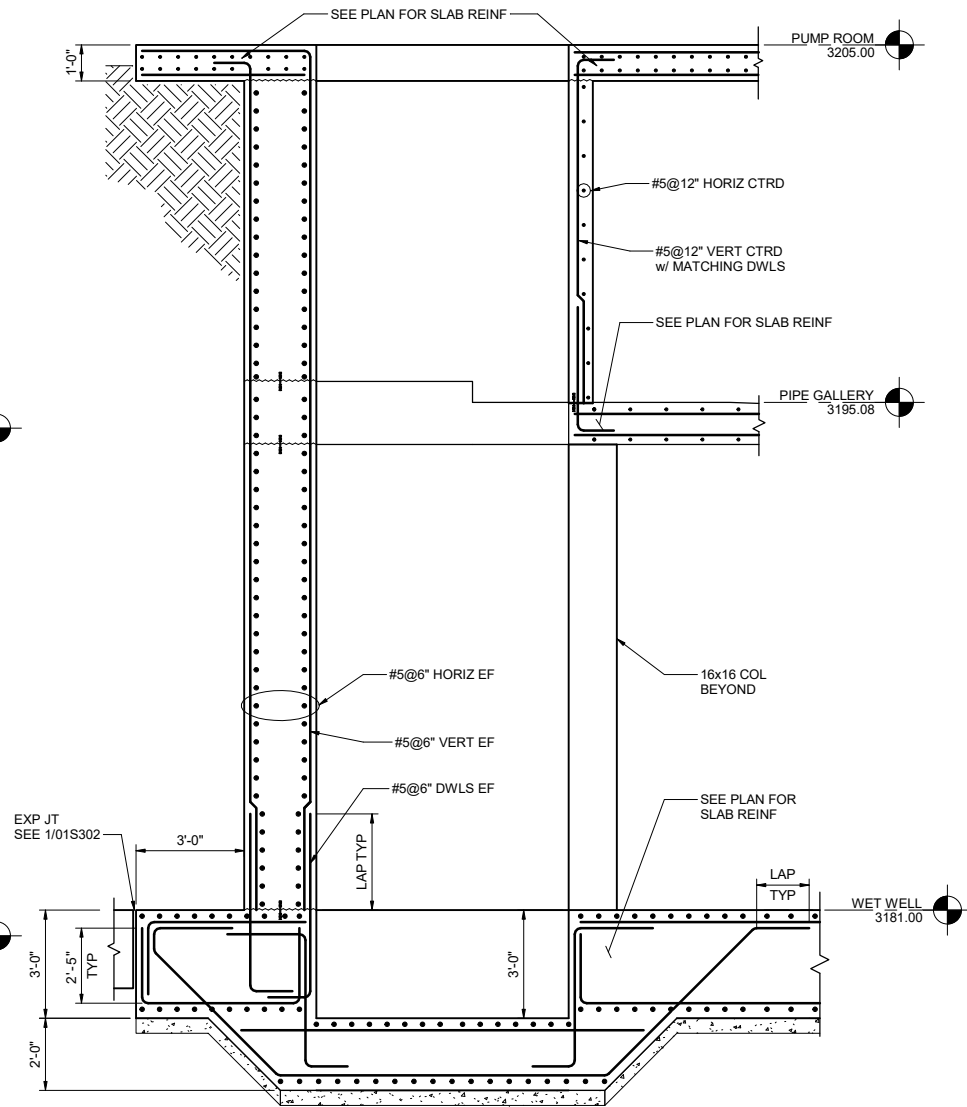


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SCALE | As indicated

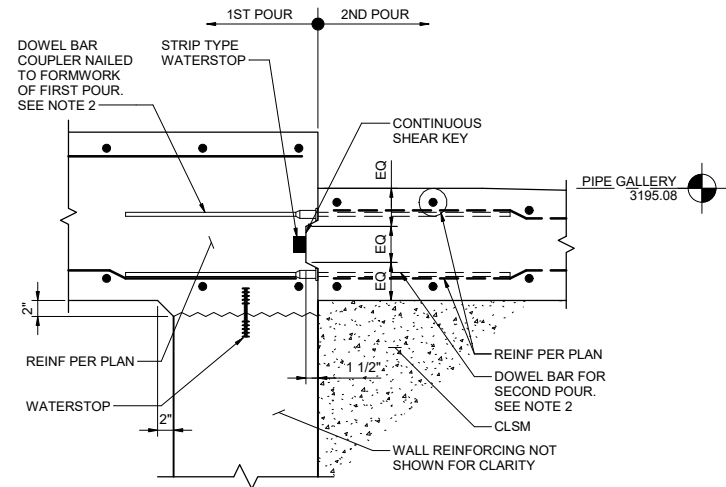
SHEET
01S501



1 WALL REINFORCEMENT
01S301 3/8" = 1'-0"

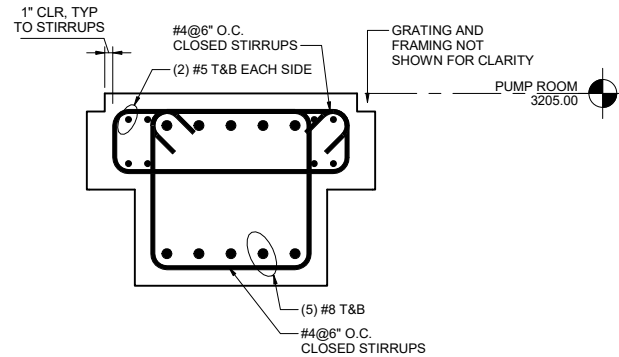


2 WALL REINFORCEMENT
01S301 3/8" = 1'-0"

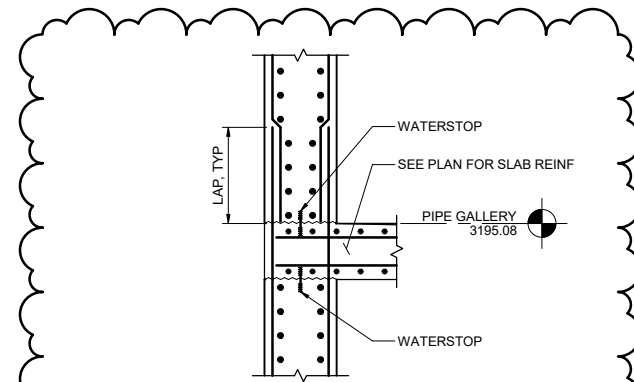


- NOTES:
- CONTRACTOR TO PERFORM LEAK TEST OF WELL PRIOR TO PLACING CLSM BACKFILL AND 2ND POUR SLAB.
 - DOWEL BAR AND COUPLER TO MATCH SIZE AND SPACING OF PIPE GALLERY SLAB REINFORCING, TYP.

3 CONSTRUCTION JOINT AT PIPE GALLERY SLAB
01S501 1" = 1'-0"

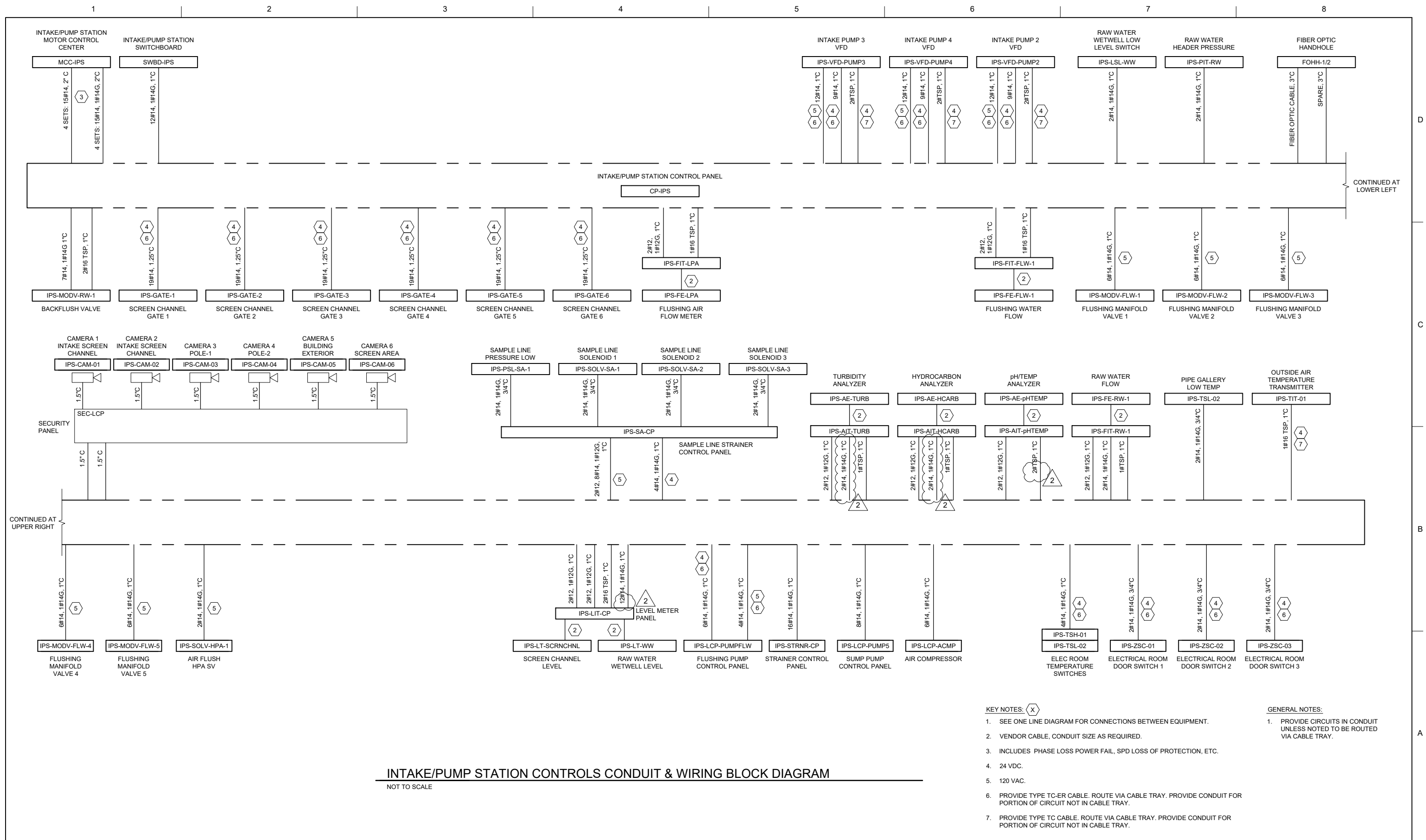


4 BEAM/SLAB REINF AT VALVE OPENING
01S302 1" = 1'-0"



- NOTE:
- SEE DETAIL 1 ON SHEET 01S501 FOR WALL REINFORCEMENT.

5 WALL-SLAB JOINT AT PIPE GALLERY
01S301 1/2" = 1'-0"



INTAKE/PUMP STATION CONTROLS CONDUIT & WIRING BLOCK DIAGRAM

NOT TO SCALE

- KEY NOTES:** (X)
1. SEE ONE LINE DIAGRAM FOR CONNECTIONS BETWEEN EQUIPMENT.
 2. VENDOR CABLE, CONDUIT SIZE AS REQUIRED.
 3. INCLUDES PHASE LOSS POWER FAIL, SPD LOSS OF PROTECTION, ETC.
 4. 24 VDC.
 5. 120 VAC.
 6. PROVIDE TYPE TC-ER CABLE. ROUTE VIA CABLE TRAY. PROVIDE CONDUIT FOR PORTION OF CIRCUIT NOT IN CABLE TRAY.
 7. PROVIDE TYPE TC CABLE. ROUTE VIA CABLE TRAY. PROVIDE CONDUIT FOR PORTION OF CIRCUIT NOT IN CABLE TRAY.

- GENERAL NOTES:
1. PROVIDE CIRCUITS IN CONDUIT UNLESS NOTED TO BE ROUTED VIA CABLE TRAY.



			PROJECT MANAGER C. HABBEN	
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INTAKE/PUMP STATION I&C CONDUIT & WIRING BLOCK DIAGRAM 1



FILENAME	01E607.dwg
SCALE	NONE

01E607