

## PUMP ROOM CONTROL

No Scale

### Sequence of Operations:

The Building Automation System (BAS) is to monitor, control, and alarm the backup domestic water pumping system. This system consists of three large storage tanks, two pumps, isolation valves, and a sump pump for the new pump building.

The BAS shall monitor water levels in each tank and generate an alarm anytime any of the water levels get below their minimum setpoint.

The project shall incorporate a backup UPS system to supply the controller with power in the event of a power loss. The BAS shall monitor the incoming circuit and generate an alarm anytime power is lost to the system's UPS.

During normal operation, the BAS shall monitor the city's inlet domestic water supply pressure, as sensed by PT-01. There shall be five automated isolation valves in the new pump room. Each pump shall have two isolation valves. There will be a bypass loop in the pump room that will flow the city's water supply through the tanks and around the backup pumps during normal operation. If the city's inlet pressure is below the minimum setpoint for a certain amount of time (adjustable), an alarm shall be sent to the BAS workstation. If the operators determine the city's water supply is not sufficient to meet the buildings demands, the operator will enable the emergency backup pumping mode to compensate for this pressure loss. The operators must manually open and close the associated valves for emergency backup pumping mode.

Once the emergency backup pumping mode has been enabled, the BAS shall open the isolation valves associated with bringing on the lead pump and close the isolation valve in the bypass loop. After a time delay and the valves have proven open, the lead pump shall be enabled and shall modulate its VFD speed to maintain the system's setpoint, as sensed by PT-02. The pumps are 100% redundant and shall never run at the same time. The pump running in lead will be alternated based on runtime.

Once the city's inlet water supply pressure, as sensed by PT-01, is above the minimum setpoint for a certain amount of time, the alarm at the operator's workstation shall clear. Once the operators turn off the emergency backup pump mode, the system shall disable the pumps, close the isolation valves associated with the backup pumps and open the bypass isolation valve. The operators can then return the manual valves to their required positions to return to normal operations.

The BAS system shall monitor the sump pump in the new pump building. A current switch will be installed to monitor its run status. An alarm output from the sump pump will also be monitored. In the event that the sump pump fails, an alarm shall be generated at the BAS workstation.

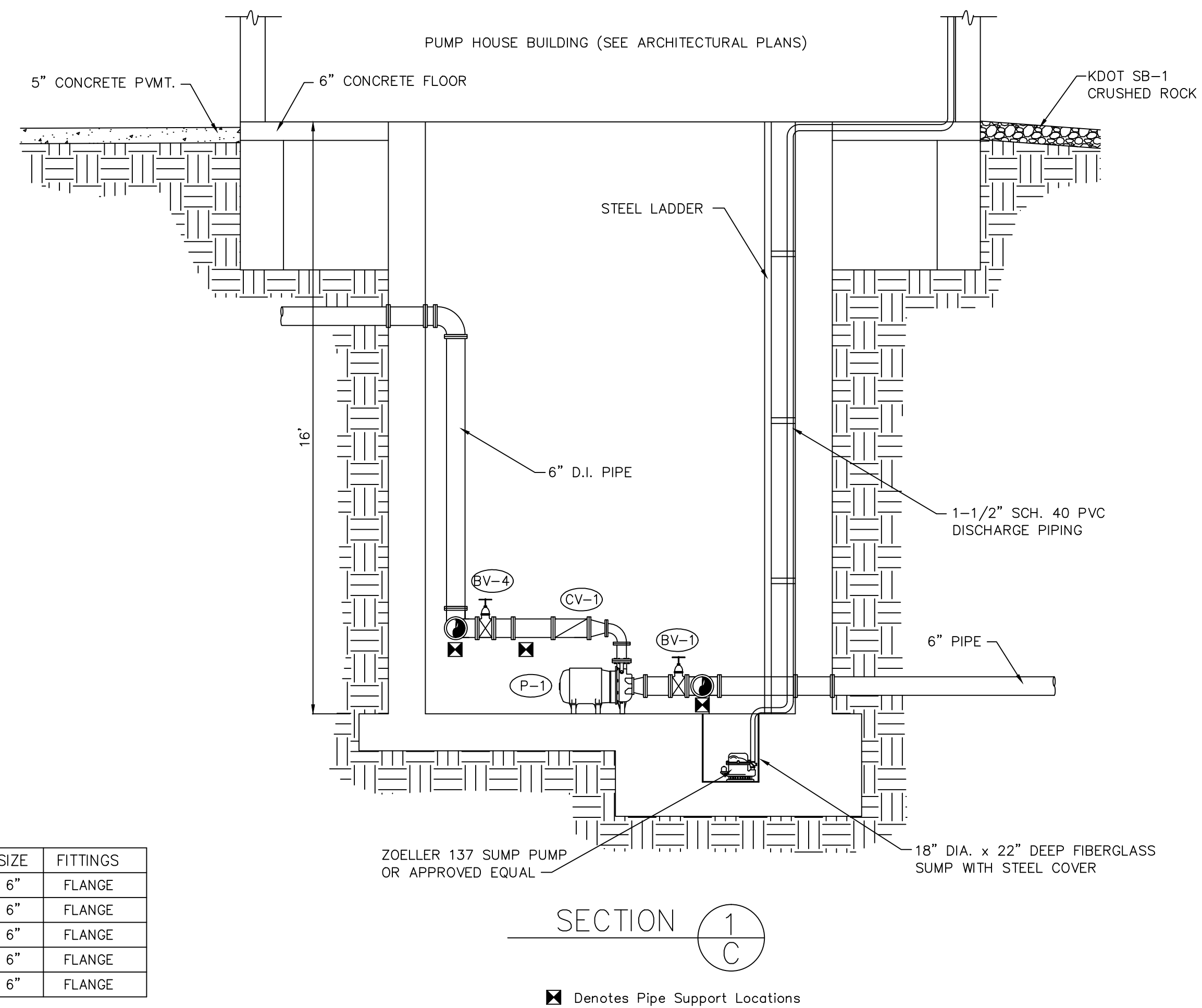
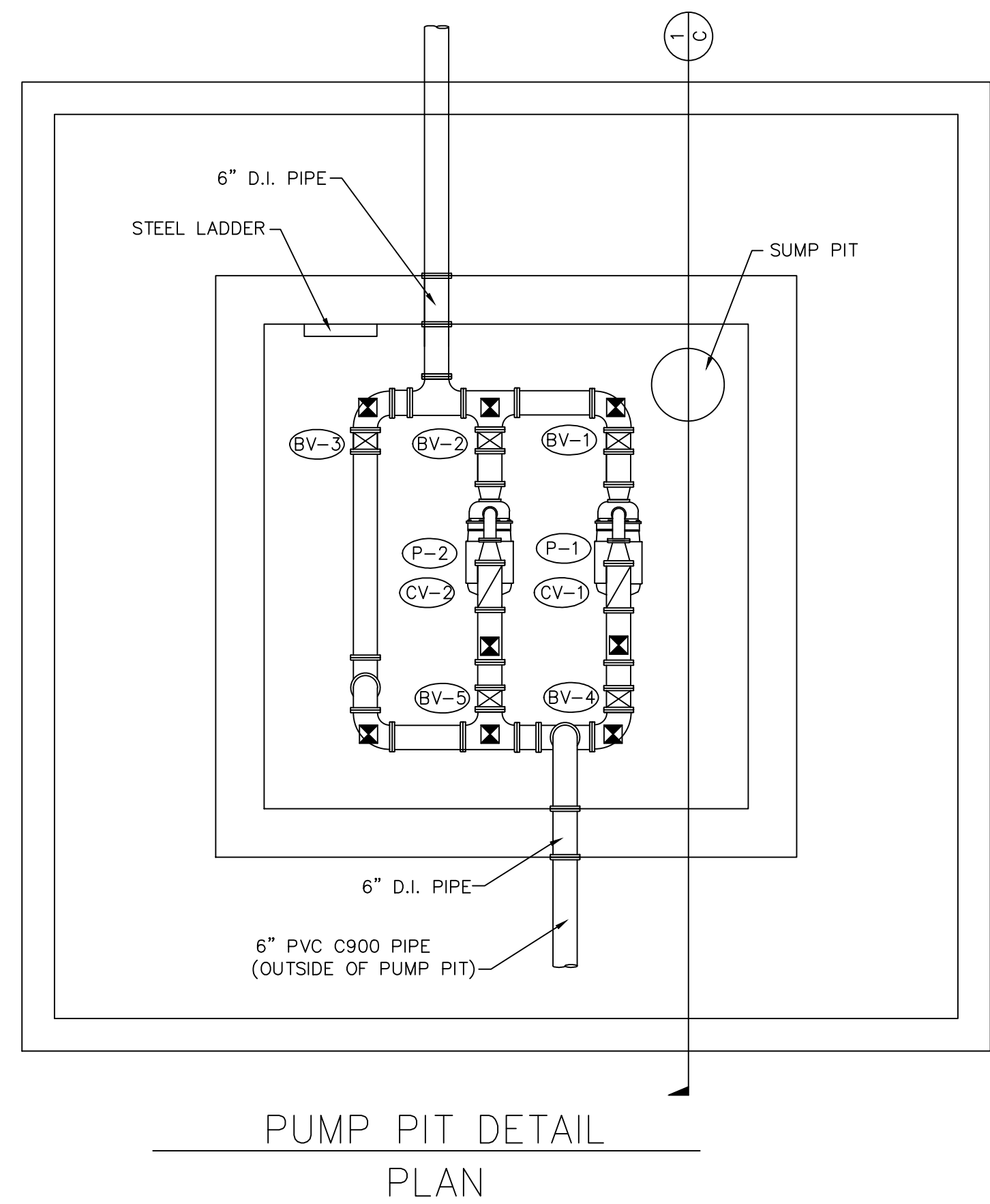
## NOTES

- The controls for the new system shall operate directly on the existing campus control system network and not require additional software or hardware to function with the existing system.
- All piping inside valve pit shall be ductile iron. Piping shall be color coded per specifications.
- Sump pump shall be Zoeller Model 137 submersible sump pump or equal by Weil or Liberty. Pump shall have capacity of 35 GPM at 20 ft. head. Motor shall have overload protection: 115/60/1, 1/2 H.P., 1750 RPM. Furnish with tethered "piggy back" type float operated switch and waterproof power cord with grounding type plug for both the pump and float switch.
- Provide 18" Dia. 22" deep fiberglass sump with steel cover with openings for pump and manhole and anti-flotation ring.

BUTTERFLY VALVE SCHEDULE				
NO.	LOCATION	STATUS	SIZE	FITTINGS
BV-1	PUMP PIT	NEW	6"	FLANGE
BV-2	PUMP PIT	NEW	6"	FLANGE
BV-3	PUMP PIT	NEW	6"	FLANGE
BV-4	PUMP PIT	NEW	6"	FLANGE
BV-5	PUMP PIT	NEW	6"	FLANGE

CHECK VALVE SCHEDULE				
NO.	LOCATION	STATUS	SIZE	FITTINGS
CV-1	PUMP PIT	NEW	6"	FLANGE
CV-2	PUMP PIT	NEW	6"	FLANGE

PUMP SCHEDULE						
NO.	MODEL	LOCATION	STATUS	GPM	FT. HEAD	HP
P-1	GOULDS 10SHKS2D0	PUMP PIT	NEW	65	150	7.5
P-2	GOULDS 10SHKS2D0	PUMP PIT	NEW	65	150	7.5



NOTE TO CONTRACTOR:  
LOCATIONS WHERE PIPE SUPPORTS ARE REQUIRED ARE SHOWN ON PLANS. WALL BRACKETS, CLEVISSES, STEEL OR CONCRETE SUPPORTS SHALL BE POSITIONED AT THESE LOCATIONS. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE PIPE SUPPORTS THAT HAVE BEEN SELECTED. CONTRACTOR SHALL INSTALL/CONSTRUCT ANY ADDITIONAL PIPE SUPPORTS AS DEEMED NECESSARY.

## PUMP PIT DETAIL

Scale 3/8"= 1'-0"



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P316-262-7271 P316-262-0149

BLDG. LOCATION & ORIENTATION CHANGES 4-1-13  
REVISIONS DATE



PROJECT TITLE  
CONSTRUCT BACKUP WATER SYSTEM

PROJECT NUMBER  
589A7-12-127

BUILDING NUMBERS

LOCATION  
WICHITA VAM&ROC  
5500 E KELLOGG

ISSUE DATE  
6-20-2014

CHECKED  
R.B.K.

DRAWN  
R.M.C.

DRAWING NUMBER  
**C102**

DWG 4 OF 8

Office of  
Facilities  
Management



Department of  
Veterans Affairs