

- NOTES:**
- FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS SEE DRAWING PL000.
 - NOT ALL VALVES SHOWN FOR CLARITY. REFER TO PLAN DRAWINGS.
- KEYED NOTES: #**

- REMOTE OPEN/CLOSE FILL VALVE. FAIL CLOSED. TIE INTO BUILDING BAS SYSTEM SO OPERATOR CAN OPEN/CLOSE THE VALVE FROM THE PLANT WORKSTATION. REFER TO SPECIFICATION SECTION 23 09 23 DIRECT DIGITAL CONTROL SYSTEM FOR HVAC.
- REMOTE TOWER WATER PRESSURE SENSOR. TIE-IN PRESSURE SENSOR AT TOWER TO NEW BOOSTER PUMPS (12-BP-1/2).
- REFER TO SPECIFICATION 22 67 13 DEALKALIZER TANK.

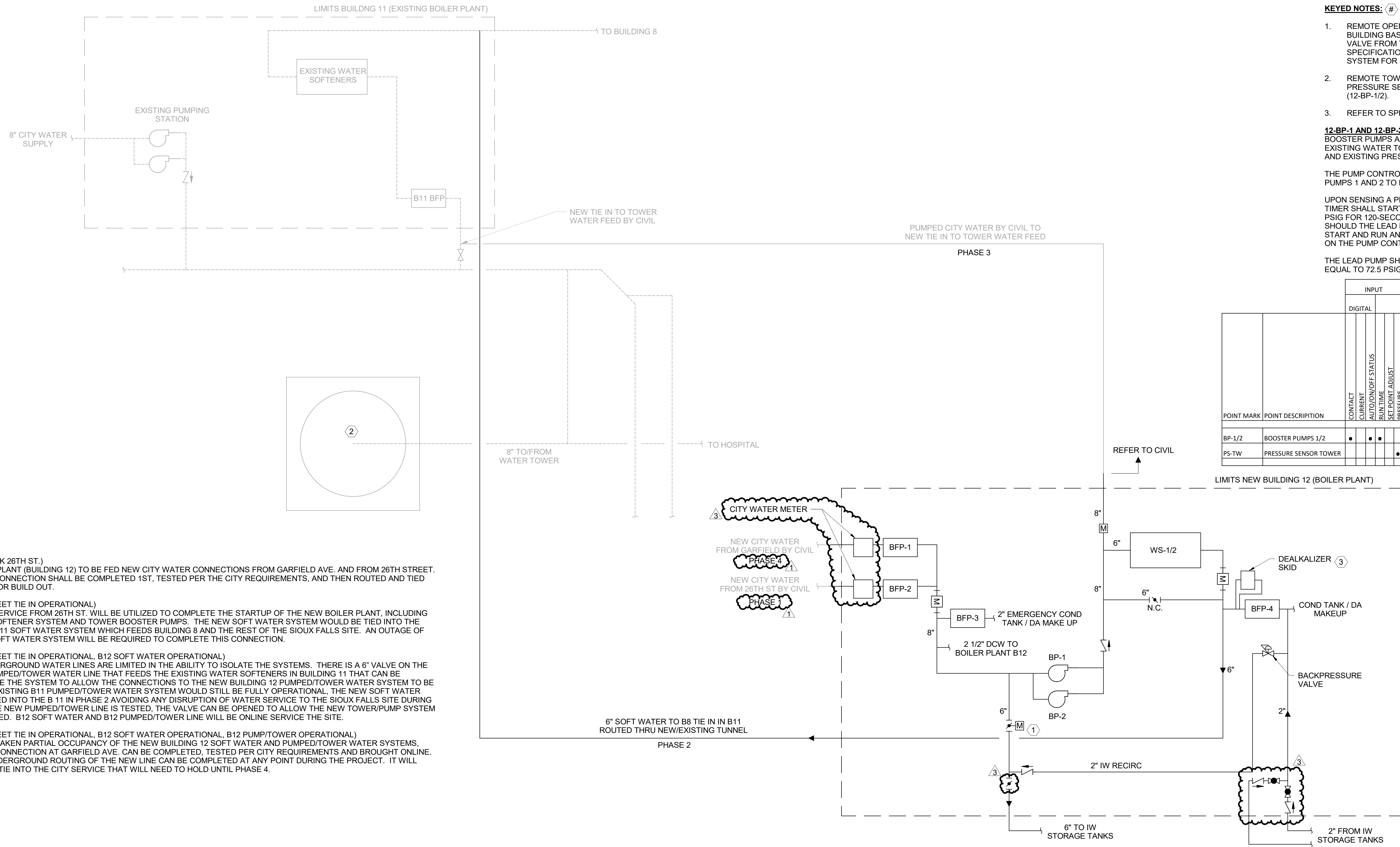
12-BP-1 AND 12-BP-2 SEQUENCE
 BOOSTER PUMPS ARE DESIGNED TO FILL THE EXISTING WATER TOWER AND SHALL OPERATE OFF AND EXISTING PRESSURE SENSOR IN THE TOWER.

THE PUMP CONTROL PANEL SHALL ALTERNATE BETWEEN PUMPS 1 AND 2 TO EQUALIZE RUN TIME.

UPON SENSING A PRESSURE OF <69.0 PSIG, A 120-SECOND TIMER SHALL START. IF THE PRESSURE REMAINS BELOW 69 PSIG FOR 120-SECONDS, THE LEAD PUMPS SHALL START AND RUN. SHOULD THE LEAD PUMP FAIL TO START, THE LAG PUMP SHALL START AND RUN AND AN ALARM SHALL SIGNAL TO THE BAS AND ON THE PUMP CONTROL PANEL.

THE LEAD PUMP SHALL RUN UNTIL THE TOWER PRESSURE IS EQUAL TO 72.5 PSIG AND THE LEAD PUMP SHALL CYCLE OFF.

POINT MARK	POINT DESCRIPTION	INPUT		OUTPUT		ALARMS		FUNCTION	
		DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG		
BP-1/2	BOOSTER PUMPS 1/2	•	•	•	•	•	•	•	•
PS-TW	PRESSURE SENSOR TOWER	•	•	•	•	•	•	•	•



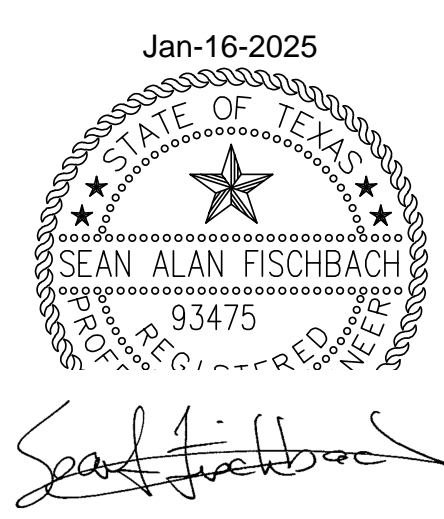
PHASE 1 (NEW WORK 26TH ST.)
 THE NEW BOILERS PLANT (BUILDING 12) TO BE FED NEW CITY WATER CONNECTIONS FROM GARFIELD AVE. AND FROM 26TH STREET. THE 26TH STREET CONNECTION SHALL BE COMPLETED 1ST, TESTED PER THE CITY REQUIREMENTS, AND THEN ROUTED AND TIED INTO BUILDING 12 FOR BUILD OUT.

PHASE 2 (26TH STREET TIE IN OPERATIONAL)
 THIS NEW WATER SERVICE FROM 26TH ST. WILL BE UTILIZED TO COMPLETE THE STARTUP OF THE NEW BOILER PLANT, INCLUDING THE NEW WATER SOFTENER SYSTEM AND TOWER BOOSTER PUMPS. THE NEW SOFT WATER SYSTEM WOULD BE TIED INTO THE EXISTING BUILDING 11 SOFT WATER SYSTEM WHICH FEEDS BUILDING 8 AND THE REST OF THE SIOUX FALLS SITE. AN OUTAGE OF THE BUILDING 11 SOFT WATER SYSTEM WILL BE REQUIRED TO COMPLETE THIS CONNECTION.

PHASE 3 (26TH STREET TIE IN OPERATIONAL, B12 SOFT WATER OPERATIONAL)
 THE EXISTING UNDERGROUND WATER LINES ARE LIMITED IN THE ABILITY TO ISOLATE THE SYSTEMS. THERE IS A 6" VALVE ON THE UNDERGROUND PUMPED/TOWER WATER LINE THAT FEEDS THE EXISTING WATER SOFTENERS IN BUILDING 11 THAT CAN BE UTILIZED TO ISOLATE THE SYSTEM TO ALLOW THE CONNECTIONS TO THE NEW BUILDING 12 PUMPED/TOWER WATER SYSTEM TO BE COMPLETED. THE EXISTING B11 PUMPED/TOWER WATER SYSTEM WOULD STILL BE FULLY OPERATIONAL. THE NEW SOFT WATER SYSTEM WAS BE TIED INTO THE B 11 IN PHASE 2 AVOIDING ANY DISRUPTION OF WATER SERVICE TO THE SIOUX FALLS SITE DURING PHASE 3. ONCE THE NEW PUMPED/TOWER LINE IS TESTED, THE VALVE CAN BE OPENED TO ALLOW THE NEW TOWER/PUMP SYSTEM TO BE COMMISSIONED. B12 SOFT WATER AND B12 PUMPED/TOWER LINE WILL BE ONLINE SERVICE THE SITE.

PHASE 4 (26TH STREET TIE IN OPERATIONAL, B12 SOFT WATER OPERATIONAL, B12 PUMP/TOWER OPERATIONAL)
 ONCE THE VA HAS TAKEN PARTIAL OCCUPANCY OF THE NEW BUILDING 12 SOFT WATER AND PUMPED/TOWER WATER SYSTEMS, THE FINAL WATER CONNECTION AT GARFIELD AVE. CAN BE COMPLETED. TESTED PER CITY REQUIREMENTS AND BROUGHT ONLINE. NOTE THAT THE UNDERGROUND ROUTING OF THE NEW LINE CAN BE COMPLETED AT ANY POINT DURING THE PROJECT. IT WILL JUST BE THE FINAL TIE INTO THE CITY SERVICE THAT WILL NEED TO HOLD UNTIL PHASE 4.

WATER FLOW DIAGRAM
 NOT TO SCALE



1 Addendum 1 2 Addendum 3 Revisions:	08-09-2024 01-17-2025 Date:	CONSULTANT Burns & McDonnell Engineering Company, Inc. 9450 WARD PARKWAY, KANSAS CITY, MO	ARCHITECT/ENGINEER OF RECORD Architecture Engineering Design-Build 200 Envoy Circle, Suite 201, Louisville, KY 40299 www.paradigmusa.com	STAMP Office of Construction and Facilities Management U.S. Department of Veterans Affairs	Drawing Title WATER FLOW DIAGRAM	Phase 100% CONSTRUCTION DOCUMENTS	Project Title SIOUX FALLS BOILER PLANT	Project Number 438-22-900
					Approved: Project Director	Fully Sprinklered	Location VAMC-Sioux Falls: 2501 W 22nd St, Sioux Falls, SD 57105	Building Number 12