VALVE NO.	SERVICE	SIZE	TYPE	ACTUATOR	REMARKS
V-101	P-101 DISCHARGE	14"	SCV		
V-102	P-101 ISOLATION	14"	BFV	ELECTRIC	
V-103	P-102 DISCHARGE	14"	SCV		
V-104	P-102 ISOLATION	14"	BFV	ELECTRIC	
V-105	STR-101 SUCTION ISOLATION	14"	BFV	MANUAL	
V-106	STR-101 DISCHARGE ISOLATION	14"	BFV	MANUAL	
V-107	STR-102 SUCTION ISOLATION	14"	BFV	MANUAL	
V-108	STR-102 DISCHARGE ISOLATION	14"	BFV	MANUAL	
V-109	STR INTERCONNECT	14"	BFV	MANUAL	
V-110	NOT USED				
V-111	BW FORWARDING FEED	6"	BFV	MANUAL	
V-112	BW FORWARDING ISOLATION	6"	BFV	PNEUMATIC	MEMCOR
V-120	MU-101 FILTRATE CONTROL	8"	BFV	PNEUMATIC	MEMCOR
V-121	MU-102 FILTRATE CONRTOL	8"	BFV	PNEUMATIC	MEMCOR
V-122	MU-103 FILTRATE CONTROL	8"	BFV	PNEUMATIC	MEMCOR
V-123	MU-104 FILTRATE CONTROL	8"	BFV	PNEUMATIC	MEMCOR
V-124	MU-105 FILTRATE CONTROL	8"	BFV	PNEUMATIC	MEMCOR
V-130	MU-101 CIP CONTROL	6"	BFV	PNEUMATIC	MEMCOR
V-131	MU-102 CIP CONTROL	6"	BFV	PNEUMATIC	MEMCOR
V-132	MU-103 CIP CONTROL	6"	BFV	PNEUMATIC	MEMCOR
V-133	MU-104 CIP CONTROL	6"	BFV	PNEUMATIC	MEMCOR
V-134	MU-105 CIP CONTROL	6"	BFV	PNEUMATIC	MEMCOR
V-135	MU-101 CIP FEED ISOLATION	6"	BFV	MANUAL	
V-136	MU-102 CIP FEED ISOLATION	6"	BFV	MANUAL	
V-137	MU-103 CIP FEED ISOLATION	6"	BFV	MANUAL	
V-138	MU-104 CIP FEED ISOLATION	6"	BFV	MANUAL	
V-139	MU-105 CIP FEED ISOLATION	6"	BFV	MANUAL	
V-150	MU-101 AIR ISOLATION	4"	GV	MANUAL	MEMCOR
V-151	MU-102 AIR ISOLATION	4"	GV	MANUAL	MEMCOR
V-152	MU-103 AIR ISOLATION	4"	GV	MANUAL	MEMCOR
V-153	MU-104 AIR ISOLATION	4"	GV	MANUAL	MEMCOR
V-154	MU-105 AIR ISOLATION	4"	GV	MANUAL	MEMCOR
V-160	MU-101 FEED ISOLATION	8"	BFV	MANUAL	
V-161	MU-102 FEED ISOLATION	8"	BFV	MANUAL	
V-162	MU-103 FEED ISOLATION	8"	BFV	MANUAL	
V-163	MU-104 FEED ISOLATION	8"	BFV	MANUAL	
V-164	MU-105 FEED ISOLATION	8"	BFV	MANUAL	
V-170	BW TANK TO WASTE	8"	BFV	PNEUMATIC	MEMCOR
V-171	BW TANK TO STORM	8"	BFV	PNEUMATIC	MEMCOR

VALVE NO.	SERVICE	SIZE	TYPE	ACTUATOR	REMARKS
V-201	P-201 SUCTION ISOLATION	10"	BFV	MANUAL	
V-202	P-201 DISCHARGE ISOLATION	10"	CHECK		MEMCOR
V-203	P-201 DISCHARGE ISOLATION	10"	BFV	MANUAL	
V-204	P-202 SUCTION ISOLATION	10'	BFV	MANUAL	
V-205	P-202 DISCHARGE ISOLATION	10"	CHECK		MEMCOR
V-206	P-202 DISCHARGE ISOLATION	10'	BFV	AUTOMATIC	
V-207	TANK DRAIN	6"	BFV	MANUAL	MEMCOR
V-210	MU-101 BW ISOLATION	6"	BFV	MANUAL	
V-211	MU-102 BW ISOLATION	6"	BFV	MANUAL	
V-212	MU-103 BW ISOLATION	6"	BFV	MANUAL	
V-213	MU-104 BW ISOLATION	6"	BFV	MANUAL	
V-214	MU-105 BW ISOLATION	6"	BFV	MANUAL	
V-310	T-301 DRAIN ISOLATION	6"	BFV	MANUAL	MEMCOR
V-311	T-301 OUTLET ISOLATION	10"	BFV	MANUAL	MEMCOR
V-312	ACID FEED CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-313	ACID STRAINER ISOLATION	10"	BFV	MANUAL	MEMCOR
V-314	ACID STRAINER ISOLATION	10"	BFV	MANUAL	MEMCOR
V-315	ACID FEED CHECK	8"	SCV		MEMCOR
V-316	ACID FEED ISOLATION	10"	BFV	MANUAL	MEMCOR
V-317	ACID FEED/CW INTERCONNECT	10"	BFV	PNEUMATIC	MEMCOR
V-318	ACID/CAUSTIC CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-350	T-302 DRAIN ISOLATION	6"	BFV	MANUAL	MEMCOR
V-351	T-302 OUTLET ISOLATION	10"	BFV	MANUAL	MEMCOR
V-352	CAUSTIC FEED CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-353	CAUSTIC/ACID INTERCONNECT	10"	BFV	PNEUMATIC	MEMCOR
V-354	CAUSTIC STRAINER ISOLATION	10"	BFV	MANUAL	MEMCOR
V-355	CAUSTIC STRAINER ISOLATION	10"	BFV	MANUAL	MEMCOR
V-356	CAUSTIC FEED CHECK	8"	SCV		MEMCOR
V-357	CAUSTIC FEED ISOLATION	10"	BFV	MANUAL	MEMCOR
V-358	CAUSTIC FEED/CW INTERCONNECT	10"	BFV	PNEUMATIC	MEMCOR
V-359	CAUSTIC/ACID CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-370	CW/T-301 CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-371	CW/T-302 CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-372	CW/T-301 FILL CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-373	CW/DRAIN CONTROL	8"	BFV	PNEUMATIC	MEMCOR
V-374	CW/T-302 FILL CONTROL	10"	BFV	PNEUMATIC	MEMCOR
V-375	CW/DRAIN CONTROL	8"	BFV	PNEUMATIC	MEMCOR
V-401	AIR	4"	CHECK		
V-402	AIR ISOLATION	4"	BFV	MANUAL	
V-403	AIR ISOLATION	4"	BFV	MANUAL	
V-501	CIP NEUTRALIZATION WASTE	6"	BFV	ELECTRIC	
V-502	CIP NEUTRALIATION RECIRCULATION	6"	BFV	ELECTRIC	
V-503	P-501 DISCHARGE	6"	CHECK		
V-504	P-501 DISCHARGE ISOLATION	6"	BFV	MANUAL	
V-505	P-502 DISCHARGE	6"	CHECK		
V-506	P-502 DISCHARGE ISOLATION	6"	BFV	MANUAL	
V-507	P-501 SUCTION ISOLATION	6"	BFV	MANUAL	
V-508	P-502 SUCTION ISOLATION	6"	BFV	MANUAL	

VALVE NO.	SERVICE	SIZE	TYPE	ACTUATOR	REMARKS

GENERAL NOTES:

1. VALVES LISTED AS MEMCOR WILL BE SUPPLIED BY US FILTER/MEMCOR AND INSTALLED BY GENERAL CONTRACTOR.
2. VALVES LESS THAN 4" DIA. ARE NOT INDICATED IN THE VALVE SCHEDULE.
3. VALVE SIZE LISTED IS INCHES IN DIAMETER.
4. REFER TO SPECIFICATION SECTION 15100 GENERAL VALVE SCHEDULE.
5. ALL ELECTRIC ACTUATORS ARE 120 VOLTS, SINGLE-PHASE, UNLESS OTHERWISE NOTED.

VALVE TYPE LEGEND:

BFV – BUTTERFLY VALVE
GV – GATE VALVE
BV – BALL VALVE
SCV – SWING CHECK VALVE

REV.	DATE	BY	APP.	DESCRIPTION
1	9/13/2001			REVISED AS PER ADDENDUM DATED (9/13/2001)
0	8/27/2001			ISSUED FOR CONSTRUCTION

RECORD DRAWING
APRIL 28, 2003

Wiley & Wilson
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IN ASSOCIATION WITH
HDR
HDR Engineering, Inc.

DESIGNED ADE	DRAWN JMB	PROJECT	CRYSTAL SPRING WATER TREATMENT PLANT FOR THE CITY OF ROANOKE, VIRGINIA
CHECKED PJD			
COMM. NO.		REFERENCE	GENERAL
CADD NO.		TITLE	VALVE SCHEDULE
DATE AUGUST 27, 2001		DWG. NO. P-21	SHEET NO. / REV.