

APPENDIX K

HYDRAULIC MODELING RESULTS

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
10	3.1	47.1	1,000	44.4	32.5	J-8211		3,654	3,524	3,524	0
12	3.1	115.7	1,000	94.5	34.1	J-8211	15	1,567	1,853	1,567	0
14	3.1	73.9	1,000	69.7	33.8	J-8211	P-19	3,015	3,760	3,015	0
16	3.1	56.4	1,000	50.9	32.9	J-8211	29	2,883	2,757	2,757	0
18	3.1	52.9	1,000	48.1	32.9	J-8211		3,135	2,650	2,650	0
20	3.1	53.7	1,000	49.1	32.9	J-8211	P-71	3,016	2,964	2,964	0
22	3.1	42.0	1,000	38.2	33.0	J-8211	35	2,802	2,886	2,802	0
24	3.1	42.9	1,000	39.4	33.0	J-8211		3,114	3,122	3,114	0
26	3.1	39.7	1,000	36.4	32.9	J-8211		2,835	2,841	2,835	0
28	3.1	39.4	1,000	35.0	32.9	J-8211		2,423	2,427	2,423	0
J-1	3.1	73.9	1,000	71.2	33.8	J-8211		4,181	4,185	4,181	0
J10	3.1	91.7	2,500	20.5	-27.1	J242		2,517	1,207	1,207	1,293
J-10	3.1	122.4	1,000	119.4	34.1	J-8211	P-9001	3,525	4,786	3,525	0
J102	3.1	58.1	1,000	41.6	33.0	J-8211	P111	1,564	1,616	1,564	0
J104	3.1	74.5	1,000	52.6	33.0	J-8211	P113	1,567	1,616	1,567	0
J108	3.1	40.7	1,000	33.7	32.9	J-8211	P115	1,567	1,876	1,567	0
J-11	3.1	71.6	2,500	54.0	33.5	J-8211	P-24	3,485	3,950	3,485	0
J110	3.1	39.3	1,000	35.6	32.9	J-8211		2,661	2,667	2,661	0
J112	3.1	39.7	1,000	30.6	30.6	J112		1,555	1,556	1,555	0
J118	3.1	40.6	2,500	9.4	9.4	J118		1,991	1,993	1,991	509
J-12	3.1	72.5	2,500	58.1	33.5	J-8211		4,272	4,129	4,129	0
J120	3.1	84.3	1,000	78.3	33.8	J-8211	P129	2,434	3,900	2,434	0
J122	3.1	65.5	1,000	15.1	15.1	J122	P133	881	942	881	119
J124	3.1	87.6	1,000	78.8	33.8	J-8211	P135	1,567	3,926	1,567	0
J-13	3.1	72.5	2,500	56.0	33.5	J-8211	P-25	2,847	4,011	2,847	0
J132	3.1	77.2	1,000	58.7	33.3	J-8211		2,062	1,819	1,819	0
J134	3.1	75.0	1,000	56.5	33.3	J-8211		2,037	1,826	1,826	0
J136	3.1	72.8	1,000	54.7	33.3	J-8211		2,033	1,830	1,830	0
J138	3.1	101.6	1,000	33.3	24.9	J142	9001U	878	1,043	878	122
J14	3.1	126.7	2,500	94.6	34.0	J-8211	P17	2,395	4,028	2,395	105
J-14	3.1	73.4	2,500	58.0	33.5	J-8211	P-32	3,817	4,232	3,817	0
J140	3.1	53.1	1,000	38.2	33.4	J-8211	P149	1,319	1,736	1,319	0
J144	3.1	93.2	1,000	42.3	27.3	J148		1,232	1,091	1,091	0
J146	3.1	84.5	1,000	34.1	27.3	J148		1,154	1,091	1,091	0
J148	3.1	73.7	1,000	19.7	19.7	J148		1,000	1,000	1,000	0
J150	3.1	75.1	2,500	59.9	33.5	J-8211		4,283	4,275	4,275	0
J152	3.1	76.8	2,500	60.0	33.5	J-8211	P177	4,173	4,217	4,173	0
J154	3.1	73.8	1,000	70.0	33.8	J-8211	P169	3,830	4,054	3,830	0
J156	3.1	72.9	1,000	66.9	33.8	J-8211	P167	1,567	3,396	1,567	0
J158	3.1	74.7	1,000	71.0	33.8	J-8211	P171	3,005	4,194	3,005	0
J16	3.1	104.9	1,000	62.2	32.9	J-8211	P19	881	1,470	881	119
J-16	3.1	72.9	2,500	57.8	33.5	J-8211		4,232	4,236	4,232	0
J160	3.1	75.1	1,000	70.7	33.8	J-8211	P175	3,032	3,966	3,032	0
J162	3.1	75.5	1,000	71.7	33.8	J-8211	P177	3,275	4,163	3,275	0
J164	3.1	79.5	1,000	77.4	33.8	J-8211		4,719	4,472	4,472	0
J166	3.1	73.0	1,000	63.9	33.8	J-8211	P183	1,567	2,625	1,567	0
J168	3.1	75.1	2,500	57.9	33.5	J-8211	P187	3,119	4,165	3,119	0
J-17	3.1	72.9	2,500	58.5	33.5	J-8211	P185	3,025	4,283	3,025	0
J170	3.1	73.8	2,500	58.9	33.5	J-8211		4,270	4,240	4,240	0
J172	3.1	75.1	2,500	59.5	33.5	J-8211		4,258	4,241	4,241	0
J174	3.1	76.0	3,500	46.3	33.3	J-8211		4,237	4,230	4,230	0
J176	3.1	73.8	3,750	28.5	28.5	J176	P347	2,306	3,950	2,306	1,444
J178	3.1	73.8	3,750	34.8	33.3	J-8211	P203	2,459	4,107	2,459	1,291
J18	3.1	86.2	1,000	71.7	32.9	J-8211	P21	1,567	2,385	1,567	0
J-18	3.1	72.9	2,500	57.5	33.5	J-8211	P-32	3,701	4,217	3,701	0
J180	3.1	76.0	2,500	59.2	33.5	J-8211	P-44	3,931	4,209	3,931	0
J182	3.1	76.0	2,500	56.6	33.5	J-8211	P209	3,053	4,065	3,053	0
J184	3.1	76.0	2,500	57.7	33.5	J-8211	P213	2,433	4,127	2,433	67
J186	3.1	79.4	2,500	59.1	33.5	J-8211	P325	2,101	4,046	2,101	399
J188	3.1	72.5	2,500	46.2	33.5	J-8211	P219	2,732	3,653	2,732	0
J-19	3.1	103.3	1,000	72.3	33.2	J-8211	P-35	1,561	1,922	1,561	0
J190	3.1	99.8	2,500	38.1	33.5	J-8211	P221	1,567	2,884	1,567	933
J192	3.1	114.9	1,000	84.4	33.8	J-8211		1,884	1,682	1,682	0
J194	3.1	112.8	1,000	83.7	33.8	J-8211	P225	1,551	1,700	1,551	0
J196	3.1	95.4	1,000	64.3	33.8	J-8211		1,635	1,635	1,635	0

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J198	3.1	59.4	1,000	33.0	33.0	J198		1,307	1,307	1,307	0
J-2	3.1	73.9	1,000	70.3	33.8	J-8211	P-83	3,069	3,955	3,069	0
J20	3.1	53.4	1,000	16.3	16.3	J20	P23	875	920	875	125
J200	3.1	52.2	1,000	43.2	33.8	J-8211	P281	2,930	3,372	2,930	0
J202	3.1	83.9	1,000	-103.1	-103.1	J202		549	549	549	451
J204	3.1	70.1	1,000	-71.5	-71.5	J204		559	559	559	441
J206	3.1	53.4	1,000	46.5	32.9	J-8211		2,569	2,572	2,569	0
J208	3.1	71.6	1,000	45.8	33.2	J-8211	P247	1,567	1,732	1,567	0
J-21	3.1	91.0	1,000	40.1	27.3	J148		1,211	1,091	1,091	0
J216	3.1	54.4	2,500	-25.8	-36.2	J242		1,412	1,140	1,140	1,360
J218	3.1	50.9	2,500	-32.2	-39.1	J242		1,304	1,121	1,121	1,379
J22	3.1	66.4	1,000	27.0	16.3	J20		1,135	920	920	80
J-22	3.1	62.0	1,000	39.7	30.2	J-9512	P-43	1,324	1,574	1,324	0
J220	3.1	48.3	2,500	-43.5	-45.0	J222		1,180	1,085	1,085	1,415
J222	3.1	44.0	2,500	-62.3	-62.3	J222		997	997	997	1,503
J228	3.1	91.9	1,000	74.3	32.9	J-8211	P-9200	1,567	2,222	1,567	0
J-23	3.1	75.0	1,000	36.2	33.8	J-8211	P-45	830	1,207	830	170
J230	3.1	73.4	2,500	55.1	33.5	J-8211		4,064	4,068	4,064	0
J232	3.1	72.5	2,500	45.5	33.5	J-8211	P217	3,014	3,612	3,014	0
J234	3.1	48.3	2,500	-53.9	-53.9	J234		1,121	1,052	1,052	1,448
J236	3.1	87.7	1,000	79.4	34.1	J-8211	P73	1,561	3,209	1,561	0
J238	3.1	105.0	1,000	91.4	34.1	J-8211	P295	1,567	2,811	1,567	0
J24	3.1	100.0	1,000	-31.5	-31.5	J24	P27	392	767	392	608
J-24	3.1	74.8	1,000	72.1	33.8	J-8211		4,190	4,194	4,190	0
J242	3.1	44.0	2,500	-63.3	-63.3	J242		992	993	992	1,508
J244	3.1	46.6	2,500	-125.3	-125.3	J244		838	838	838	1,662
J246	3.1	53.9	1,000	-22.1	-22.1	J246		604	604	604	396
J248	3.1	100.5	1,000	-68.2	-68.2	J248	P303	392	668	392	608
J-25	3.1	93.6	1,000	91.2	33.8	J-8211	P-51	2,942	4,335	2,942	0
J26	3.1	54.3	1,000	29.2	29.2	J26	PRV-22	552	1,193	552	448
J262	3.1	114.7	2,500	59.3	29.7	J242	P369	2,448	4,113	2,448	52
J266	3.1	41.9	2,500	30.1	26.4	J-8211		3,520	3,492	3,492	0
J268	3.1	47.1	1,000	43.3	32.5	J-8211		2,988	2,993	2,988	0
J-27	3.1	69.5	1,000	53.1	34.1	J-8211	PRV-12	2,328	3,111	2,328	0
J270	3.1	83.4	2,500	40.6	33.5	J-8211	P131	2,448	3,136	2,448	52
J272	3.1	80.2	1,000	30.4	27.3	J148		1,117	1,091	1,091	0
J274	3.1	77.2	1,000	28.3	27.3	J148		1,097	1,091	1,091	0
J276	3.1	78.0	1,000	29.7	27.3	J148		1,113	1,091	1,091	0
J28	3.1	63.7	1,000	46.2	33.3	J-8211		1,927	1,790	1,790	0
J-28	3.1	60.7	1,000	27.9	27.9	J-29		1,152	1,152	1,152	0
J-3	3.1	113.7	1,000	94.9	34.1	J-8211	P-10000	1,567	2,434	1,567	0
J30	3.1	72.5	2,500	59.7	33.5	J-8211		4,379	4,317	4,317	0
J-30	3.1	88.0	1,000	65.8	33.8	J-8211		2,059	1,814	1,814	0
J-31	3.1	44.2	1,000	40.1	33.0	J-8211		2,878	2,884	2,878	0
J32	3.1	106.5	1,000	61.7	33.0	J242		1,954	1,377	1,377	0
J-32	3.1	45.9	1,000	41.3	33.0	J-8211		2,784	2,788	2,784	0
J-33	3.1	114.8	1,000	96.2	33.8	J-8211	P-72	1,567	2,294	1,567	0
J34	3.1	104.4	2,500	45.2	22.3	J-8157	P39	3,522	2,637	2,637	0
J-34	3.1	102.6	1,000	59.5	32.9	J242	P-75	1,875	1,419	1,419	0
J-35	3.1	103.2	1,000	60.2	31.4	J242	P-78	705	1,598	705	295
J36	3.1	111.3	2,500	54.2	25.1	J-8157	P-9319	3,470	2,825	2,825	0
J-36	3.1	95.2	1,000	81.4	32.8	J-8211	P-82	1,567	2,664	1,567	0
J-37	3.1	73.1	1,000	69.5	33.8	J-8211	17	2,691	3,977	2,691	0
J38	3.1	95.7	1,000	53.8	32.5	J242	P41	1,567	2,425	1,567	0
J-38	3.1	74.4	1,000	71.2	33.8	J-8211	P-85	2,971	4,071	2,971	0
J-39	3.1	117.4	1,000	72.6	32.9	J242		2,180	1,394	1,394	0
J-4	3.1	80.0	1,000	78.1	33.8	J-8211		4,765	4,499	4,499	0
J40	3.1	100.0	1,000	60.7	32.5	J242	P43	2,448	2,637	2,448	0
J44	3.1	106.5	2,500	54.7	30.8	J242		4,984	4,539	4,539	0
J46	3.1	95.7	2,500	34.0	30.8	J242	P51	3,111	3,270	3,111	0
J48	3.1	76.4	2,500	38.7	31.0	J-8663	P53	1,567	3,367	1,567	933
J52	3.1	55.6	2,500	43.1	33.6	J-8211	P59	3,598	5,131	3,598	0
J-6	3.1	74.3	1,000	71.5	33.8	J-8211	P-49	3,620	4,136	3,620	0
J64	3.1	87.7	1,000	77.0	34.1	J-8211	P291	1,564	2,629	1,564	0
J66	3.1	78.6	1,000	59.8	34.1	J-8211	P75	1,567	1,886	1,567	0

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J-7	3.1	73.9	1,000	69.5	33.8	J-8211	21	2,962	3,695	2,962	0
J72	3.1	69.4	1,000	-142.0	-142.0	J72	P83	364	391	364	636
J-8002	3.1	47.2	1,000	43.4	32.9	J-8211		3,211	3,161	3,161	0
J-8003	3.1	53.2	1,000	48.3	32.9	J-8211		3,150	3,155	3,150	0
J-8004	3.1	72.5	2,500	59.8	33.5	J-8211		4,387	4,301	4,301	0
J-8008	3.1	80.3	2,500	65.8	33.5	J-8211	P-9341	3,838	4,468	3,838	0
J-8101	3.1	123.7	2,500	112.2	34.1	J-8211	P-9002	3,513	4,786	3,513	0
J-8102	3.1	123.7	2,500	87.2	34.1	J-8211	P-9003	1,567	4,559	1,567	933
J-8103	3.1	123.7	2,500	95.0	34.1	J-8211	P-9004	1,564	4,786	1,564	936
J-8104	3.1	120.2	1,000	117.7	34.1	J-8211	P-7037	7,789	4,786	4,786	0
J-8105	3.1	123.8	1,000	110.9	31.2	J242	P-9321	1,559	1,481	1,481	0
J-8106	3.1	128.3	2,750	0.9	0.9	J-8109	P-9007	1,371	1,873	1,371	1,379
J-8107	3.1	128.3	1,000	88.6	32.0	J242	P-9009	1,561	1,873	1,561	0
J-8108	3.1	128.3	1,000	86.4	32.0	J242	P-9011	1,567	1,873	1,567	0
J-8109	3.1	128.3	1,000	84.6	32.0	J242	P-9012	1,567	1,845	1,567	0
J-8110	3.1	126.5	2,500	63.5	20.0	J-8157	P-9010	3,793	2,504	2,504	0
J-8111	3.1	113.0	2,500	51.3	19.8	J-8157		3,762	2,493	2,493	7
J-8112	3.1	127.3	2,500	24.1	19.8	J-8157	P-80	2,448	2,493	2,448	52
J-8113	3.1	114.7	2,500	65.7	29.7	J242	P-9318	4,619	4,113	4,113	0
J-8114	3.1	128.2	2,500	74.7	29.1	J242	P-9016	2,960	4,160	2,960	0
J-8115	3.1	112.2	2,500	54.8	28.6	J242	P-9018	2,991	4,197	2,991	0
J-8116	3.1	109.6	1,000	66.7	31.9	J242	P-9019	1,489	1,964	1,489	0
J-8117	3.1	106.8	1,000	91.7	28.9	J242	P-78	3,042	1,331	1,331	0
J-8118	3.1	115.1	1,000	100.4	29.3	J242		3,831	1,357	1,357	0
J-8119	3.1	123.7	1,000	109.7	29.9	J242	P-9008	3,998	1,394	1,394	0
J-8120	3.1	125.0	1,000	101.4	29.9	J242	P-9025	1,567	1,394	1,394	0
J-8121	3.1	117.7	1,000	70.9	29.3	J242	P-9024	881	1,357	881	119
J-8122	3.1	109.9	2,500	49.3	-16.6	J242		3,432	1,301	1,301	1,199
J-8123	3.1	100.0	2,500	43.0	30.8	J242	P-9026	2,442	3,960	2,442	58
J-8124	3.1	101.7	2,500	50.8	30.8	J242	P-9028	4,107	4,902	4,107	0
J-8125	3.1	97.4	2,500	52.8	31.6	J242	P391	2,607	5,384	2,607	0
J-8126	3.1	113.7	1,000	110.2	34.1	J-8211	P-9005	5,568	5,342	5,342	0
J-8127	3.1	113.7	1,000	110.2	34.1	J-8211	P-9029	4,297	5,295	4,297	0
J-8128	3.1	113.7	1,000	109.2	34.1	J-8211	P-9031	2,980	4,726	2,980	0
J-8129	3.1	118.0	2,500	89.4	34.0	J-8211	P-9033	3,362	4,043	3,362	0
J-8130	3.1	120.2	2,500	88.2	34.0	J-8211		4,920	3,799	3,799	0
J-8131	3.1	122.3	2,500	88.5	34.0	J-8211	P-9037	3,287	3,664	3,287	0
J-8132	3.1	74.7	1,000	66.0	34.1	J-8211	P-9039	2,330	2,293	2,293	0
J-8133	3.1	73.4	1,000	67.2	34.1	J-8211	P-9329	2,264	3,672	2,264	0
J-8134	3.1	77.3	1,000	73.5	34.1	J-8211	P-9042	3,064	5,398	3,064	0
J-8135	3.1	61.7	1,000	58.6	34.1	J-8211	P65	3,354	5,730	3,354	0
J-8136	3.1	61.7	2,500	49.6	33.9	J-8211	P65	3,193	5,802	3,193	0
J-8137	3.1	52.6	2,500	26.2	26.2	J-8137	P-9047	2,020	2,840	2,020	480
J-8138	3.1	59.5	2,500	40.8	34.1	J-8211	P-9047	3,230	4,026	3,230	0
J-8139	3.1	67.8	1,000	64.5	34.1	J-8211	P-9044	3,885	5,595	3,885	0
J-8140	3.1	74.7	1,000	71.7	34.1	J-8211	P-9053	3,186	6,128	3,186	0
J-8141	3.1	68.6	1,000	64.3	34.1	J-8211	P-9050	3,022	4,398	3,022	0
J-8142	3.1	70.4	2,500	44.5	29.1	J-8663	P-9055	2,922	3,376	2,922	0
J-8143	3.1	76.4	2,500	50.8	31.0	J-8663	P-9058	2,145	3,842	2,145	355
J-8145	3.1	70.3	1,000	61.3	34.1	J-8211	P-9056	1,517	3,015	1,517	0
J-8146	3.1	69.2	1,000	-10.9	-25.4	J-8663	P-9059	348	620	348	652
J-8149	3.1	65.5	1,000	-136.6	-147.5	J-8663		429	366	366	634
J-8151	3.1	70.9	1,000	-369.7	-369.7	J-8151		295	295	295	705
J-8155	3.1	103.1	1,000	65.6	32.5	J242		3,459	2,487	2,487	0
J-8157	3.1	79.7	1,000	34.2	32.9	J242		1,279	1,280	1,279	0
J-8158	3.1	126.0	2,500	30.3	19.8	J-8157	P-79	2,445	2,493	2,445	55
J-8160	3.1	127.7	1,000	58.9	34.1	J-8211		1,285	1,285	1,285	0
J-8161	3.1	95.7	1,000	50.2	33.0	J242		1,685	1,350	1,350	0
J-8162	3.1	127.1	1,000	37.5	34.1	J-8211	P-9079	937	1,099	937	63
J-8166	3.1	53.1	2,500	15.1	15.1	J-8166	P-9048	1,288	2,319	1,288	1,212
J82	3.1	53.0	1,000	40.3	34.1	J-8211	P95	1,567	1,717	1,567	0
J-8201	3.1	87.8	2,500	-835.0	-835.0	J-8201		590	590	590	1,910
J-8202	3.1	70.9	1,000	-53.8	-53.8	J-8202		604	550	550	450
J-8203	3.1	52.8	1,000	-86.0	-86.0	J-8203		445	445	445	555
J-8204	3.1	53.8	1,000	49.6	32.9	J-8211		3,455	3,347	3,347	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8206	3.1	41.7	2,500	24.4	24.4	J-8206		2,835	2,841	2,835	0
J-8207	3.1	39.8	2,500	22.7	22.7	J-8207		2,710	2,716	2,710	0
J-8208	3.1	38.4	2,500	23.4	23.4	J-8208		2,803	2,810	2,803	0
J-8209	3.1	38.0	2,500	24.8	24.8	J-8209		2,977	2,985	2,977	0
J-8210	3.1	38.5	2,500	21.3	21.3	J-8210		2,599	2,604	2,599	0
J-8212	3.1	38.0	2,500	27.9	26.1	J-8211		3,473	3,463	3,463	0
J-8213	3.1	39.7	2,500	28.7	26.3	J-8211		3,457	3,469	3,457	0
J-8214	3.1	73.5	1,000	65.1	32.8	J-8211	11	2,277	3,007	2,277	0
J-8215	3.1	59.7	1,000	53.2	32.9	J-8211	P-9117	2,316	3,051	2,316	0
J-8216	3.1	49.8	1,000	35.1	32.9	J-8211		1,502	1,502	1,502	0
J-8217	3.1	47.3	2,500	-1,626.0	-1,628.2	J116		264	252	252	2,248
J-8220	3.1	77.9	1,000	64.5	32.8	J-8211	P-9123	1,419	2,373	1,419	0
J-8222	3.1	74.7	1,000	54.1	33.2	J-8211	P-9122	1,786	1,922	1,786	0
J-8223	3.1	83.8	1,000	60.3	33.2	J-8211	P-9124	1,548	1,922	1,548	0
J-8224	3.1	94.6	1,000	67.6	33.2	J-8211	P-9127	1,661	1,922	1,661	0
J-8225	3.1	95.0	1,000	-134.4	-134.4	J-8225	P-9129	392	516	392	608
J-8226	3.1	111.5	1,000	73.9	33.2	J-8211	P-36	1,564	1,814	1,564	0
J-8227	3.1	115.4	1,000	71.0	33.2	J-8211	P-9132	1,567	1,652	1,567	0
J-8228	3.1	96.8	1,000	-0.2	-0.2	J-8228	P-9131	706	867	706	294
J-8229	3.1	66.4	1,000	48.1	33.1	J-9512		2,004	1,860	1,860	0
J-8230	3.1	64.2	1,000	45.0	33.2	J-9512		1,915	1,858	1,858	0
J-8231	3.1	54.7	1,000	37.2	32.4	J-9512	P29	1,052	1,816	1,052	0
J-8232	3.1	55.5	1,000	32.9	28.7	J-9512	P-9136	1,285	1,467	1,285	0
J-8233	3.1	55.1	1,000	31.2	27.4	J-9512	P-9137	1,379	1,363	1,363	0
J-8234	3.1	53.4	1,000	28.4	25.7	J-9512		1,308	1,250	1,250	0
J-8235	3.1	56.4	1,000	6.8	6.8	J-8235		794	794	794	206
J-8236	3.1	89.1	1,000	21.0	21.0	J-8236	P-9141	881	1,011	881	119
J-8237	3.1	80.4	1,000	35.3	32.9	J-8211	P-9116	878	1,185	878	122
J-8240	3.1	63.7	1,000	46.1	33.3	J-8211		1,923	1,801	1,801	0
J-8241	3.1	68.5	1,000	50.6	33.3	J-8211		1,974	1,737	1,737	0
J-8242	3.1	53.3	1,000	35.4	33.3	J-8211		1,703	1,704	1,703	0
J-8243	3.1	53.3	1,000	37.1	33.3	J-8211	9001D	1,415	1,774	1,415	0
J-8244	3.1	75.0	1,000	56.8	33.3	J-8211		2,045	1,814	1,814	0
J-8245	3.1	79.3	1,000	60.7	33.3	J-8211		2,088	1,822	1,822	0
J-8246	3.1	70.7	1,000	46.7	33.3	J-8211	P-9148	1,567	1,723	1,567	0
J-8247	3.1	68.1	1,000	50.6	33.3	J-8211		2,008	1,817	1,817	0
J-8248	3.1	75.0	1,000	56.2	33.3	J-8211		2,058	1,831	1,831	0
J-8249	3.1	79.3	1,000	56.2	33.3	J-8211	P-9151	1,567	1,831	1,567	0
J-8253	3.1	39.8	1,000	36.0	32.9	J-8211		2,678	2,683	2,678	0
J-8256	3.1	48.5	1,000	43.7	32.9	J-8211		2,856	2,662	2,662	0
J-8257	3.1	42.4	1,000	37.7	32.9	J-8211		2,491	2,387	2,387	0
J-8258	3.1	45.0	1,000	37.7	32.9	J-8211		2,031	2,033	2,031	0
J-8259	3.1	49.4	1,000	37.9	32.9	J-8211	P-9163	1,422	1,714	1,422	0
J-8262	3.1	50.0	1,000	42.4	32.9	J-8211		2,227	2,229	2,227	0
J-8263	3.1	46.8	1,000	17.3	14.7	J-8665	P-9169	875	895	875	125
J-8264	3.1	46.8	1,000	5.6	5.6	J-8264		784	784	784	216
J-8266	3.1	58.1	1,000	51.6	32.9	J-8211		2,861	2,561	2,561	0
J-8267	3.1	57.6	1,000	50.6	32.9	J-8211		2,705	2,446	2,446	0
J-8268	3.1	52.9	1,000	44.5	33.0	J-8211		2,241	2,018	2,018	0
J-8269	3.1	70.6	1,000	63.8	32.9	J-8211		3,242	2,459	2,459	0
J-8270	3.1	71.5	1,000	64.2	32.9	J-8211		3,156	2,417	2,417	0
J-8271	3.1	67.2	1,000	60.6	32.9	J-8211		3,197	2,533	2,533	0
J-8272	3.1	61.6	1,000	55.0	32.9	J-8211		2,977	2,591	2,591	0
J-8273	3.1	68.0	1,000	60.6	32.9	J-8211		2,985	2,535	2,535	0
J-8275	3.1	64.0	1,000	-20.3	-20.3	J-8275	P-9188	513	690	513	487
J-8276	3.1	56.4	1,000	50.4	32.9	J-8211	39	1,530	2,790	1,530	0
J-8277	3.1	72.8	1,000	65.6	32.9	J-8211		3,227	2,520	2,520	0
J-8278	3.1	75.4	1,000	68.2	32.9	J-8211		3,321	2,482	2,482	0
J-8279	3.1	78.9	1,000	70.7	32.9	J-8211	P-9191	3,114	2,490	2,490	0
J-8280	3.1	82.3	1,000	72.5	32.9	J-8211	P-9192	2,302	2,502	2,302	0
J-8281	3.1	81.0	1,000	70.6	32.9	J-8211		2,795	2,506	2,506	0
J-8282	3.1	85.8	1,000	74.8	32.9	J-8211		2,819	2,515	2,515	0
J-8283	3.1	85.6	1,000	-290.7	-290.7	J-8283		381	381	381	619
J-8284	3.1	83.0	1,000	-201.9	-201.9	J-8284	P-9199	385	433	385	615
J-8285	3.1	71.8	1,000	-83.1	-83.1	J-8285		540	540	540	460

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8286	3.1	82.8	1,000	71.9	32.9	J-8211		2,751	2,519	2,519	0
J-8287	3.1	84.5	1,000	72.7	32.9	J-8211		2,676	2,506	2,506	0
J-8288	3.1	92.7	1,000	80.9	32.9	J-8211		2,855	2,505	2,505	0
J-8289	3.1	86.7	1,000	75.9	32.9	J-8211		2,882	2,504	2,504	0
J-8291	3.1	112.2	1,000	86.0	32.9	J-8211	P-9205	878	1,938	878	122
J-8299	3.1	95.3	1,000	80.5	33.8	J-8211	P-9431	2,356	2,305	2,305	0
J-8301	3.1	80.5	1,000	79.0	33.8	J-8211		4,825	4,537	4,537	0
J-8302	3.1	79.5	2,500	68.3	33.5	J-8211		4,678	4,397	4,397	0
J-8304	3.1	76.4	1,000	68.0	33.8	J-8211	P163	1,567	2,932	1,567	0
J-8306	3.1	82.7	1,000	80.2	33.8	J-8211	P393	3,604	4,157	3,604	0
J-8308	3.1	75.2	1,000	71.7	33.8	J-8211	P-48	2,239	4,003	2,239	0
J-8309	3.1	79.7	1,000	28.6	28.6	J-8309	P-9222	881	1,092	881	119
J-8310	3.1	73.8	1,000	69.5	33.8	J-8211	P165	2,760	3,859	2,760	0
J-8311	3.1	73.7	1,000	27.4	27.3	J148		1,091	1,091	1,091	0
J-8312	3.1	82.4	1,000	32.9	27.3	J148		1,144	1,091	1,091	0
J-8313	3.1	93.2	1,000	38.7	27.3	J148		1,185	1,091	1,091	0
J-8314	3.1	86.7	1,000	35.9	27.3	J148		1,170	1,091	1,091	0
J-8315	3.1	82.3	1,000	25.8	25.8	J-8315		1,060	1,060	1,060	0
J-8316	3.1	93.2	1,000	40.1	27.3	J148		1,203	1,091	1,091	0
J-8317	3.1	75.9	1,000	16.3	16.3	J-8317		968	968	968	32
J-8318	3.1	78.1	2,500	66.8	33.5	J-8211		4,632	4,355	4,355	0
J-8319	3.1	77.3	2,750	63.7	33.5	J-8211		4,589	4,348	4,348	0
J-8320	3.1	77.3	2,500	65.5	33.5	J-8211		4,575	4,339	4,339	0
J-8321	3.1	72.5	2,500	58.5	33.5	J-8211	P-9237	4,175	4,301	4,175	0
J-8322	3.1	69.5	2,500	55.4	33.5	J-8211		4,216	4,221	4,216	0
J-8323	3.1	70.8	2,500	57.6	33.5	J-8211		4,312	4,246	4,246	0
J-8324	3.1	72.9	2,500	58.1	33.5	J-8211		4,255	4,176	4,176	0
J-8325	3.1	72.5	2,500	54.5	33.5	J-8211		4,061	4,064	4,061	0
J-8326	3.1	75.1	2,500	59.4	33.5	J-8211		4,254	4,241	4,241	0
J-8330	3.1	82.4	1,000	70.2	33.8	J-8211	P-7023	1,533	2,147	1,533	0
J-8331	3.1	97.2	1,000	79.6	33.8	J-8211	P-9249	1,539	1,728	1,539	0
J-8332	3.1	110.6	1,000	86.0	33.8	J-8211	P-9251	1,545	1,728	1,545	0
J-8333	3.1	93.3	1,000	64.2	33.8	J-8211	P-9253	1,567	1,671	1,567	0
J-8334	3.1	128.8	1,000	88.3	33.8	J-8211	P-9254	1,561	1,540	1,540	0
J-8335	3.1	81.6	3,375	55.6	33.4	J-8211	P441	4,150	4,392	4,150	0
J-8336	3.1	80.7	2,500	62.8	33.5	J-8211	P-9257	3,498	4,252	3,498	0
J-8337	3.1	82.4	2,500	64.3	33.5	J-8211	P-9260	3,591	4,276	3,591	0
J-8338	3.1	85.5	2,500	69.5	33.5	J-8211	P-9261	3,013	4,416	3,013	0
J-8339	3.1	84.6	2,500	69.0	33.5	J-8211		4,479	4,416	4,416	0
J-8340	3.1	83.7	2,500	70.9	33.5	J-8211		4,675	4,508	4,508	0
J-8341	3.1	82.4	2,500	69.7	33.6	J-8211		4,626	4,561	4,561	0
J-8342	3.1	82.4	2,500	70.5	33.6	J-8211		4,658	4,485	4,485	0
J-8343	3.1	73.3	2,500	59.5	33.6	J-8211		4,278	4,276	4,276	0
J-8344	3.1	84.6	1,000	78.3	33.8	J-8211	P-9262	1,561	3,862	1,561	0
J-8345	3.1	86.8	1,000	77.0	33.8	J-8211	P-9269	1,564	3,012	1,564	0
J-8346	3.1	71.1	2,500	57.4	33.6	J-8211		4,227	4,230	4,227	0
J-8347	3.1	80.2	2,500	59.9	33.6	J-8211	P-9271	2,724	4,062	2,724	0
J-8348	3.1	84.5	2,500	43.0	33.6	J-8211	P-9273	1,567	3,221	1,567	933
J-8349	3.1	70.7	2,500	57.1	33.6	J-8211		4,228	4,187	4,187	0
J-8350	3.1	75.9	2,500	63.0	33.7	J-8211	P-9274	4,029	4,226	4,029	0
J-8351	3.1	80.2	2,500	68.6	33.7	J-8211		4,598	4,348	4,348	0
J-8352	3.1	80.2	2,500	67.3	33.7	J-8211	P-9277	3,639	4,450	3,639	0
J-8353	3.1	84.1	2,500	73.7	33.7	J-8211	P-9279	2,694	4,468	2,694	0
J-8354	3.1	84.5	1,000	79.0	33.8	J-8211		5,086	4,410	4,410	0
J-8356	3.1	90.2	1,000	83.5	33.8	J-8211	P-9404	2,506	4,059	2,506	0
J-8357	3.1	71.5	1,000	63.6	33.8	J-8211	P319	2,569	3,783	2,569	0
J-8358	3.1	75.9	2,500	59.4	33.7	J-8211	P-9266	3,789	4,078	3,789	0
J-8359	3.1	65.9	2,500	44.7	33.7	J-8211	P275	3,347	3,650	3,347	0
J-8360	3.1	62.9	1,000	54.0	33.8	J-8211	P-9287	2,955	3,336	2,955	0
J-8361	3.1	63.7	1,000	55.9	33.8	J-8211	P-9425	2,278	3,662	2,278	0
J-8363	3.1	65.0	2,500	31.0	31.0	J-8363	P-9407	2,082	2,974	2,082	418
J-8364	3.1	65.0	2,500	9.6	9.6	J-8364	P-9291	2,029	2,208	2,029	471
J-8365	3.1	66.3	2,500	-15.6	-15.6	J-8365	P-9293	1,524	1,785	1,524	976
J-8366	3.1	67.2	2,500	-17.6	-17.6	J-8366	P-9295	1,674	1,770	1,674	826
J-8367	3.1	68.9	2,500	27.4	27.4	J-8367		2,766	2,768	2,766	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8368	3.1	71.5	2,500	24.7	24.7	J-8368		2,651	2,654	2,651	0
J-8369	3.1	63.3	2,500	17.2	17.2	J-8369		2,406	2,408	2,406	94
J-8370	3.1	71.5	1,000	56.6	33.8	J-8211	P-9297	1,295	2,346	1,295	0
J-8371	3.1	74.5	1,000	54.4	33.8	J-8211	P-9299	1,864	1,833	1,833	0
J-8372	3.1	69.8	1,000	47.7	33.8	J-8211		1,714	1,715	1,714	0
J-8373	3.1	75.8	1,000	53.4	33.8	J-8211		1,811	1,799	1,799	0
J-8374	3.1	59.4	1,000	41.5	33.8	J-8211		1,729	1,721	1,721	0
J-8375	3.1	79.9	2,500	62.5	33.5	J-8211	P193	4,248	4,218	4,218	0
J-8376	3.1	73.4	2,500	58.7	33.5	J-8211		4,280	4,234	4,234	0
J-8378	3.1	78.1	2,500	60.7	33.5	J-8211		4,217	4,175	4,175	0
J-8379	3.1	145.2	1,000	97.2	33.8	J-8211	P-9256	1,567	1,540	1,540	0
J-8380	3.1	108.4	1,000	62.8	33.8	J-8211		1,437	1,437	1,437	0
J-8381	3.1	78.0	2,500	58.0	33.6	J-8211	P-9268	2,625	4,031	2,625	0
J-8383	3.1	67.2	2,500	53.1	33.6	J-8211		4,109	4,113	4,109	0
J-8384	3.1	80.2	2,500	62.8	33.6	J-8211	P-9336	2,878	4,213	2,878	0
J-8387	3.1	86.1	1,000	83.1	33.8	J-8211	P-9330	3,769	4,559	3,769	0
J-8388	3.1	80.0	1,000	78.4	33.8	J-8211		4,798	4,525	4,525	0
J-8389	3.1	80.6	1,000	78.0	33.8	J-8211	P-9309	2,900	4,110	2,900	0
J-8390	3.1	80.6	1,000	79.7	33.8	J-8211		4,774	4,579	4,579	0
J-8392	3.1	78.4	1,000	69.8	33.8	J-8211	P-9347	1,744	2,598	1,744	0
J-8394	3.1	59.4	1,000	40.7	33.8	J-8211	P-9362	1,318	1,675	1,318	0
J-8396	3.1	72.8	2,500	21.2	21.2	J-8396		2,537	2,539	2,537	0
J84	3.1	81.2	1,000	71.3	34.1	J-8211	P-7041	2,566	2,001	2,001	0
J-8401	3.1	63.7	1,000	32.3	32.3	J-8401	P-9304	1,211	1,240	1,211	0
J-8403	3.1	71.5	1,000	32.1	32.1	J-8403	P-9306	1,127	1,183	1,127	0
J-8404	3.1	93.2	1,000	65.6	33.8	J-8211	P-66	1,150	1,594	1,150	0
J-8408	3.1	88.9	1,000	82.8	33.8	J-8211	P-9419	2,170	4,259	2,170	0
J-8409	3.1	65.0	2,500	41.6	33.8	J-8211	P-9410	1,915	3,487	1,915	585
J-8410	3.1	66.3	1,000	60.9	33.9	J-8211		4,627	4,450	4,450	0
J-8415	3.1	78.0	1,000	72.5	33.9	J-8211		4,922	4,423	4,423	0
J-8417	3.1	68.1	1,000	46.6	33.9	J-8211	P313	875	1,645	875	125
J-8419	0	65.5	1,000	60.0	33.9	J-8211		4,614	4,477	4,477	0
J-8420	3.1	75.9	1,000	37.0	33.9	J-8211	P-9426	881	1,252	881	119
J-8423	3.1	90.2	1,000	82.4	33.8	J-8211	25	1,829	3,814	1,829	0
J-8424	3.1	96.0	2,500	30.1	-16.6	J242		2,821	1,301	1,301	1,199
J-8425	3.1	78.7	2,500	4.2	-16.6	J242		2,001	1,301	1,301	1,199
J-8426	3.1	70.0	2,500	-9.9	-16.6	J242		1,762	1,301	1,301	1,199
J-8427	3.1	87.3	2,500	7.2	-16.6	J242		2,115	1,301	1,301	1,199
J-8428	3.1	78.7	2,500	-12.8	-16.6	J242	P-9439	1,567	1,301	1,301	1,199
J-8429	3.1	93.8	2,500	25.3	-16.6	J242		2,667	1,301	1,301	1,199
J-8601	3.1	97.4	2,500	51.4	31.4	J242	P-9313	3,121	5,307	3,121	0
J-8605	3.1	91.3	2,500	42.5	29.7	J242		4,456	4,031	4,031	0
J-8606	3.1	123.5	1,000	114.5	34.1	J-8211	P-9320	1,511	1,853	1,511	0
J-8608	3.1	75.0	1,000	52.9	33.3	J-8211	P-9126	1,868	1,842	1,842	0
J-8609	3.1	124.9	2,500	90.4	34.0	J-8211	P-9325	2,239	3,836	2,239	261
J-8610	3.1	124.5	1,000	109.6	34.1	J-8211	P-9038	978	3,025	978	22
J-8611	3.1	126.3	1,000	44.4	34.1	J-8211		1,159	1,159	1,159	0
J-8612	3.1	123.0	2,500	39.4	19.8	J-8157	P-9015	2,442	2,493	2,442	58
J-8613	3.1	66.0	1,000	60.9	34.1	J-8211	P61	2,860	3,559	2,860	0
J-8614	3.1	74.7	2,500	67.3	34.1	J-8211	P-7036	9,176	5,940	5,940	0
J-8616	3.1	79.1	2,500	70.9	34.1	J-8211	P-9331	9,990	5,603	5,603	0
J-8622	3.1	88.4	1,000	75.6	32.9	J-8211	P-9202	2,485	2,506	2,485	0
J-8623	3.1	76.3	1,000	65.0	32.9	J-8211		2,549	2,504	2,504	0
J-8624	3.1	60.2	1,000	53.0	32.9	J-8211		2,767	2,294	2,294	0
J-8627	3.1	43.4	1,000	39.8	33.1	J-8211		3,093	3,100	3,093	0
J-8628	3.1	70.2	1,000	61.4	33.0	J-8211	P-68	2,463	2,292	2,292	0
J-8629	3.1	45.9	1,000	36.9	33.0	J-8211		1,870	1,871	1,870	0
J-8630	3.1	48.5	1,000	38.4	33.0	J-8211	P-9350	1,761	1,829	1,761	0
J-8634	3.1	106.4	1,000	-483.3	-483.3	J-8634		349	349	349	651
J-8635	3.1	89.3	1,000	72.6	32.9	J-8211	P-9355	1,564	2,259	1,564	0
J-8636	3.1	77.1	1,000	69.5	32.9	J-8211		3,236	2,463	2,463	0
J-8637	3.1	55.0	1,000	39.6	33.0	J-8211	P-9351	1,567	1,603	1,567	0
J-8638	3.1	53.1	2,500	40.5	33.3	J-8211	P-9357	3,513	4,797	3,513	0
J-8651	3.1	69.0	1,000	53.8	33.8	J-8211	P-9250	1,567	1,935	1,567	0
J-8652	3.1	66.4	1,000	38.8	33.8	J-8211		1,317	1,318	1,317	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8661	3.1	62.1	1,000	39.7	33.2	J-8211	P-9135	1,449	1,738	1,449	0
J-8662	3.1	60.1	1,000	52.9	32.6	J-8211	23	1,977	2,798	1,977	0
J-8664	3.1	44.9	1,000	37.0	32.5	J-8211	P-9112	1,567	1,872	1,567	0
J-8665	3.1	44.2	1,000	9.2	9.2	J-8665		811	811	811	189
J-8666	3.1	78.8	1,000	-107.0	-107.0	J-8666	P-9063	481	528	481	519
J-8667	3.1	87.3	2,500	65.0	34.1	J-8211	P-9333	1,957	4,712	1,957	543
J-8669	3.1	102.2	2,500	50.5	30.8	J242	P-9314	4,377	4,573	4,377	0
J88	3.1	104.0	1,000	85.1	32.9	J-8211	P99	1,567	2,326	1,567	0
J-9	3.1	75.2	1,000	72.2	33.8	J-8211	P-14	3,090	4,114	3,090	0
J90	3.1	104.4	1,000	91.4	32.9	J-8211	P101	2,714	2,718	2,714	0
J94	3.1	80.6	1,000	71.8	32.9	J-8211	P103	2,745	2,476	2,476	0
J-94	3.1	58.5	1,000	36.1	33.8	J-8211		1,442	1,442	1,442	0
J-9504	3.1	68.6	2,500	44.8	33.5	J-8211	P-21	2,411	3,631	2,411	89
J-9505	3.1	73.3	2,500	52.4	33.7	J-8211	P-7025	2,784	3,866	2,784	0
J-9507	3.1	93.2	1,000	39.9	27.3	J148		1,200	1,091	1,091	0
J-9508	3.1	80.2	1,000	60.8	33.3	J-8211		2,112	1,838	1,838	0
J-9509	3.1	78.5	1,000	55.5	33.2	J-8211	P-7030	1,669	1,841	1,669	0
J-9510	3.1	92.7	1,000	77.2	33.8	J-8211	P-52	878	2,158	878	122
J-9511	3.1	89.2	1,000	58.0	33.8	J-8211	P-7033	881	1,491	881	119
J-9512	3.1	49.0	1,000	23.5	23.5	J-9512		1,134	1,134	1,134	0
J-9513	3.1	109.0	2,500	45.7	-19.3	J242		3,283	1,274	1,274	1,226
J-9514	3.1	113.0	2,500	31.7	28.6	J242	P-7039	1,567	2,842	1,567	933
J-9516	3.1	92.0	1,000	81.7	34.1	J-8211	P-9037	2,087	2,081	2,081	0
J-9517	3.1	44.9	1,000	34.8	32.8	J-8211	P-7044	1,567	1,661	1,567	0
J-9518	3.1	47.1	2,500	22.6	17.6	J118		2,644	2,359	2,359	141
J-9519	3.1	40.6	3,500	-5.0	-5.0	J118		2,259	2,261	2,259	1,241
J-9520	0	40.5	2,500	16.0	16.0	J-9520		2,266	2,269	2,266	234
J-9521	0	39.6	2,500	15.7	17.9	J-9520		2,241	2,370	2,241	259

- (1) Based on City zoning or building specific calculations by the Fire Marshal
- (2) Pipe in which velocities exceed 10 feet/second
- (3) Available flow to node if velocities do not exceed 10 ft/s
- (4) Available flow to node if system pressures are above 20 psi
- (5) Available flow considering both velocity and pressure limitations

<u>ID</u>	<u>Demand (gpm)</u>	<u>Elevation (ft)</u>	<u>Head (ft)</u>	<u>Pressure (psi)</u>		
10	5.1	300	430.0	56.3		
12	5.1	45	327.6	122.4		
14	5.1	345	514.6	73.5	Minimum Pressure of Demand Nodes	43 psi
16	5.1	282	428.9	63.6	Maximum Pressure of Demand Nodes	145 psi
18	5.1	290	429.0	60.2	Average Pressure of Demand Nodes	83 psi
20	5.1	288	429.2	61.2		
22	5.1	315	429.5	49.6		
24	5.1	313	429.5	50.5		
26	5.1	320	429.5	47.4		
28	5.1	321	429.4	47.0		
J-1	5.1	345	514.7	73.5		
J10	5.1	100	326.6	98.2		
J-10	5.1	30	328.8	129.5		
J102	5.1	278	429.0	65.4		
J104	5.1	240	429.0	81.9		
J106	5.1	308	429.3	52.6		
J108	5.1	318	429.3	48.2		
J-11	5.1	350	514.0	71.0		
J110	5.1	321	429.4	47.0		
J112	5.1	320	429.5	47.4		
J114	5.1	297	428.7	57.1		
J116	5.1	308	429.0	52.4		
J118	5.1	318	429.4	48.3		
J-12	5.1	348	514.0	71.9		
J120	5.1	321	514.4	83.8		
J122	5.1	364	513.4	64.7		
J124	5.1	313	513.4	86.9		
J126	5.1	235	415.1	78.0		
J128	5.1	243	415.1	74.6		
J-13	5.1	348	514.0	71.9		
J130	5.1	250	415.1	71.5		
J132	5.1	225	415.1	82.4		
J134	5.1	230	415.1	80.2		
J136	5.1	235	415.1	78.1		
J138	5.1	280.5	513.3	100.9		
J14	5.1	20	328.7	133.8		
J-14	5.1	346	514.0	72.8		
J140	5.1	280.5	415.1	58.3		
J142	5.1	300	513.3	92.4		
J144	5.1	300	513.3	92.4		
J146	5.1	320	513.3	83.8		
J148	5.1	345	513.4	73.0		
J-15	0.0	290	329.7	17.2		
J150	5.1	342	514.0	74.5		
J152	5.1	338	514.0	76.3		
J154	5.1	345	514.0	73.2		
J156	5.1	347	514.0	72.4		
J158	5.1	343	514.0	74.1		
J16	5.1	170	428.7	112.1		
J-16	5.1	347	514.0	72.4		
J160	5.1	342	514.0	74.5		
J162	5.1	341	514.0	75.0		
J164	5.1	332	514.6	79.1		
J166	5.1	347	514.6	72.6		
J168	5.1	342	514.0	74.5		
J-17	5.1	347	514.0	72.4		
J170	5.1	345	514.0	73.2		
J172	5.1	342	514.0	74.5		
J174	5.1	340	514.0	75.4		
J176	5.1	345	514.0	73.2		
J178	5.1	345	514.0	73.2		
J18	5.1	213	428.7	93.5		
J-18	5.1	347	514.0	72.4		

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J180	5.1	340	514.0	75.4
J182	5.1	340	514.0	75.4
J184	5.1	340	514.0	75.4
J186	5.1	332	514.0	78.8
J188	5.1	348	514.0	71.9
J-19	5.1	165	415.7	108.6
J190	5.1	285	514.0	99.2
J192	5.1	250	513.7	114.3
J194	5.1	255	513.7	112.1
J196	5.1	295	513.7	94.8
J198	5.1	378	513.2	58.6
J-2	5.1	345	514.7	73.5
J20	5.1	280	415.3	58.6
J200	5.1	192	328.9	59.3
J202	5.1	218	427.6	90.8
J204	5.1	250	427.9	77.1
J206	5.1	290	429.0	60.2
J208	5.1	238	415.4	76.9
J-21	5.1	305	513.3	90.3
J212	0.0	50	57.0	3.0
J214	0.0	50	326.6	119.9
J216	5.1	186	326.6	60.9
J218	5.1	194	326.6	57.5
J22	5.1	250	415.3	71.6
J-22	5.1	260	415.2	67.2
J220	5.1	200	326.6	54.9
J222	5.1	210	326.6	50.5
J226	0.0	364	513.4	64.7
J228	5.1	200	428.7	99.1
J-23	5.1	342	513.5	74.3
J230	5.1	346	514.0	72.8
J232	5.1	348	514.0	71.9
J234	5.1	200	326.6	54.9
J236	5.1	110	328.8	94.8
J238	5.1	70	328.8	112.1
J24	5.1	285	515.4	99.8
J-24	5.1	343	514.6	74.4
J240	5.1	60	328.8	116.5
J242	5.1	210	326.6	50.5
J244	5.1	204	326.6	53.1
J246	5.1	280	418.9	60.2
J248	5.1	180	428.7	107.7
J-25	5.1	300	515.6	93.4
J250	5.1	318	429.4	48.3
J252	0.0	60	326.6	115.5
J254	5.1	345	514.0	73.2
J26	5.1	278	415.6	59.6
J-26	0.0	364	432.1	29.5
J262	5.1	46	324.8	120.8
J264	5.1	307	430.1	53.3
J266	5.1	312	430.1	51.2
J268	5.1	300	430.1	56.4
J-27	5.1	152	328.6	76.5
J270	5.1	323	514.4	83.0
J272	5.1	330	513.3	79.4
J274	5.1	337	513.3	76.4
J276	5.1	335	513.4	77.3
J28	5.1	256	415.1	69.0
J-28	5.1	375	513.2	59.9
J280	0.0	278	415.6	59.6
J282	0.0	285	515.6	99.9
J284	0.0	209	329.5	52.2
J286	0.0	248	329.6	35.4

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J288	0.0	246	428.8	79.2
J-29	5.1	375	513.2	59.9
J290	0.0	264	428.8	71.4
J296	0.0	323	427.7	45.4
J298	0.0	0	328.7	142.4
J-3	5.1	50	328.8	120.8
J30	5.1	348	514.0	71.9
J-30	5.1	312	513.2	87.2
J300	0.0	0	328.7	142.4
J302	0.0	0	328.7	142.4
J304	0.0	325	513.9	81.9
J306	0.0	333	513.9	78.4
J-31	5.1	310	429.3	51.7
J32	5.1	65	324.8	112.6
J-32	5.1	306	429.6	53.5
J-33	5.1	250	513.3	114.1
J34	5.1	70	324.8	110.4
J-34	5.1	74	324.8	108.7
J-35	5.1	73	325.4	109.4
J36	5.1	54	324.8	117.3
J-36	5.1	195	429.1	101.4
J-37	5.1	347	514.7	72.7
J38	5.1	90	324.8	101.7
J-38	5.1	344	514.8	74.0
J-39	5.1	40	324.8	123.4
J-4	5.1	331	514.7	79.6
J40	5.1	80	324.8	106.1
J42	5.1	80	323.3	105.4
J44	5.1	65	324.8	112.6
J46	5.1	90	324.8	101.7
J48	5.1	136	328.7	83.5
J-5	0.0	349	432.2	36.1
J50	5.1	194	427.6	101.2
J52	5.1	184	328.8	62.8
J54	5.1	142	328.7	80.9
J56	5.1	156	328.6	74.8
J58	5.1	105	328.4	96.8
J-6	5.1	344	514.6	73.9
J60	5.1	118	324.2	89.3
J62	5.1	142	324.1	78.9
J64	5.1	110	328.8	94.8
J66	5.1	131	328.8	85.7
J68	5.1	135	324.2	82.0
J-7	5.1	345	514.6	73.5
J70	5.1	100	323.9	97.0
J72	5.1	151	325.5	75.6
J74	5.1	140	325.5	80.4
J76	5.1	140	325.2	80.3
J78	5.1	20	326.7	132.9
J80	5.1	20	326.3	132.7
J-8000	0.0	350	431.0	35.1
J-8001	0.0	350	575.3	97.6
J-8002	5.1	304	429.1	54.2
J-8003	5.1	294	429.1	58.5
J-8004	5.1	348	514.0	71.9
J-8008	5.1	330	513.8	79.6
J-8101	5.1	27	328.8	130.8
J-8102	5.1	27	328.8	130.8
J-8103	5.1	27	328.8	130.8
J-8104	5.1	35	328.8	127.3
J-8105	5.1	26	326.9	130.4
J-8106	5.1	15	325.6	134.6
J-8107	5.1	15	325.6	134.6

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8108	5.1	15	325.6	134.6
J-8109	5.1	15	325.6	134.6
J-8110	5.1	19	324.8	132.5
J-8111	5.1	50	324.8	119.1
J-8112	5.1	17	324.8	133.4
J-8113	5.1	46	324.8	120.8
J-8114	5.1	15	324.8	134.2
J-8115	5.1	52	324.8	118.2
J-8116	5.1	58	325.1	115.7
J-8117	5.1	65	326.7	113.4
J-8118	5.1	46	326.7	121.6
J-8119	5.1	26	326.7	130.3
J-8120	5.1	23	326.7	131.6
J-8121	5.1	40	326.7	124.2
J-8122	5.1	58	326.6	116.4
J-8123	5.1	80	324.8	106.1
J-8124	5.1	76	324.8	107.8
J-8125	5.1	86	324.8	103.5
J-8126	5.1	50	328.8	120.8
J-8127	5.1	50	328.8	120.8
J-8128	5.1	50	328.7	120.8
J-8129	5.1	40	328.7	125.1
J-8130	5.1	35	328.7	127.2
J-8131	5.1	30	328.7	129.4
J-8132	5.1	140	328.7	81.8
J-8133	5.1	143	328.8	80.5
J-8134	5.1	134	328.8	84.4
J-8135	5.1	170	328.8	68.8
J-8136	5.1	170	328.8	68.8
J-8137	5.1	191	328.9	59.7
J-8138	5.1	175	328.8	66.7
J-8139	5.1	156	328.8	74.9
J-8140	5.1	140	328.9	81.8
J-8141	5.1	154	328.8	75.8
J-8142	5.1	150	328.7	77.4
J-8143	5.1	136	328.7	83.5
J-8145	5.1	150	328.6	77.4
J-8146	5.1	152	327.2	75.9
J-8147	5.1	110	327.1	94.1
J-8148	5.1	151	325.8	75.7
J-8149	5.1	160	325.8	71.8
J-8151	5.1	147	324.4	76.9
J-8152	5.1	131	324.2	83.7
J-8153	5.1	126	324.2	85.9
J-8155	5.1	73	324.8	109.1
J-8157	5.1	127	324.8	85.7
J-8158	5.1	20	324.8	132.1
J-8159	5.1	20	323.1	131.3
J-8160	5.1	17	327.1	134.4
J-8161	5.1	90	324.8	101.8
J-8162	5.1	18	326.2	133.6
J-8163	5.1	18	323.8	132.5
J-8166	5.1	190	328.9	60.2
J82	5.1	190	328.7	60.1
J-8200	5.1	190	427.6	102.9
J-8201	5.1	209	427.6	94.7
J-8202	5.1	248	427.9	77.9
J-8203	5.1	290	428.0	59.8
J-8204	5.1	290	429.1	60.3
J-8206	5.1	316	429.3	49.1
J-8207	5.1	320	429.4	47.4
J-8208	5.1	323	429.5	46.1
J-8209	5.1	323	429.6	46.2

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8210	5.1	322	429.6	46.6
J-8211	5.1	330	430.2	43.4
J-8212	5.1	321	430.2	47.3
J-8213	5.1	317	430.1	49.0
J-8214	5.1	245	429.1	79.8
J-8215	5.1	278	429.1	65.5
J-8216	5.1	298	429.1	56.8
J-8217	5.1	303	429.1	54.6
J-8219	5.1	195	429.0	101.4
J-8220	5.1	229	428.8	86.6
J-8221	5.1	202	428.7	98.2
J-8222	5.1	231	415.7	80.0
J-8223	5.1	210	415.7	89.1
J-8224	5.1	185	415.7	100.0
J-8225	5.1	184	415.7	100.4
J-8226	5.1	146	415.7	116.9
J-8227	5.1	137	415.7	120.8
J-8228	5.1	180	415.7	102.1
J-8229	5.1	250	415.6	71.8
J-8230	5.1	255	415.6	69.6
J-8231	5.1	277	415.6	60.1
J-8232	5.1	275	415.4	60.8
J-8233	5.1	276	415.4	60.4
J-8234	5.1	280	415.3	58.6
J-8235	5.1	273	415.3	61.7
J-8236	5.1	210	429.1	94.9
J-8237	5.1	230	429.1	86.3
J-8240	5.1	256	415.1	69.0
J-8241	5.1	245	415.1	73.7
J-8242	5.1	280	415.1	58.6
J-8243	5.1	280	415.1	58.5
J-8244	5.1	230	415.1	80.2
J-8245	5.1	220	415.1	84.5
J-8246	5.1	240	415.1	75.9
J-8247	5.1	246	415.1	73.3
J-8248	5.1	230	415.2	80.2
J-8249	5.1	220	415.2	84.6
J-8250	0.0	307	431.9	54.1
J-8253	5.1	320	429.5	47.4
J-8256	5.1	300	429.3	56.0
J-8257	5.1	314	429.3	50.0
J-8258	5.1	308	429.3	52.6
J-8259	5.1	298	429.3	56.9
J-8262	5.1	297	429.0	57.2
J-8263	5.1	304	429.0	54.2
J-8264	5.1	304	429.0	54.2
J-8266	5.1	278	428.8	65.3
J-8267	5.1	279	428.8	64.9
J-8268	5.1	290	428.8	60.2
J-8269	5.1	249	428.8	77.9
J-8270	5.1	247	428.8	78.8
J-8271	5.1	257	428.8	74.4
J-8272	5.1	270	428.8	68.8
J-8273	5.1	255	428.8	75.3
J-8275	5.1	264	428.0	71.1
J-8276	5.1	282	428.8	63.6
J-8277	5.1	244	428.8	80.1
J-8278	5.1	238	428.8	82.7
J-8279	5.1	230	428.7	86.1
J-8280	5.1	222	428.7	89.6
J-8281	5.1	225	428.7	88.3
J-8282	5.1	214	428.7	93.0
J-8283	5.1	214	427.5	92.5

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8284	5.1	220	427.5	89.9
J-8285	5.1	246	427.7	78.7
J-8286	5.1	221	428.7	90.0
J-8287	5.1	217	428.7	91.7
J-8288	5.1	198	428.7	100.0
J-8289	5.1	212	428.7	93.9
J-8290	5.1	171	428.7	111.6
J-8291	5.1	153	428.7	119.4
J-8298	0.0	290	329.7	17.2
J-8299	5.1	295	513.3	94.6
J-8301	5.1	330	514.9	80.1
J-8302	5.1	332	514.2	79.0
J-8304	5.1	339	514.0	75.8
J-8305	0.0	349	516.1	72.4
J-8306	5.1	325	515.4	82.5
J-8308	5.1	342	514.4	74.7
J-8309	5.1	332	515.4	79.5
J-8310	5.1	345	514.2	73.3
J-8311	5.1	345	513.4	73.0
J-8312	5.1	325	513.3	81.6
J-8313	5.1	300	513.3	92.4
J-8314	5.1	315	513.3	85.9
J-8315	5.1	325	513.3	81.6
J-8316	5.1	300	513.3	92.4
J-8317	5.1	340	513.4	75.1
J-8318	5.1	335	514.0	77.6
J-8319	5.1	337	514.0	76.7
J-8320	5.1	337	514.0	76.7
J-8321	5.1	348	514.0	71.9
J-8322	5.1	355	514.0	68.9
J-8323	5.1	352	514.0	70.2
J-8324	5.1	347	514.0	72.3
J-8325	5.1	348	514.0	71.9
J-8326	5.1	342	514.0	74.5
J-8330	5.1	325	513.8	81.8
J-8331	5.1	291	513.8	96.5
J-8332	5.1	260	513.8	110.0
J-8333	5.1	300	513.8	92.6
J-8334	5.1	218	513.7	128.1
J-8335	5.1	327	513.9	81.0
J-8336	5.1	329	513.9	80.1
J-8337	5.1	325	513.9	81.8
J-8338	5.1	318	513.9	84.9
J-8339	5.1	320	513.9	84.0
J-8340	5.1	322	513.8	83.1
J-8341	5.1	325	513.7	81.8
J-8342	5.1	325	513.6	81.7
J-8343	5.1	346	513.5	72.6
J-8344	5.1	320	513.9	84.0
J-8345	5.1	315	513.9	86.2
J-8346	5.1	351	513.5	70.4
J-8347	5.1	330	513.5	79.5
J-8348	5.1	320	513.5	83.8
J-8349	5.1	352	513.5	70.0
J-8350	5.1	340	513.4	75.2
J-8351	5.1	330	513.4	79.5
J-8352	5.1	330	513.4	79.5
J-8353	5.1	321	513.4	83.4
J-8354	5.1	320	513.4	83.8
J-8356	5.1	307	513.5	89.5
J-8357	5.1	350	513.4	70.8
J-8358	5.1	340	513.4	75.2
J-8359	5.1	363	513.4	65.2

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8360	5.1	370	513.4	62.1
J-8361	5.1	368	513.4	63.0
J-8363	5.1	365	513.3	64.3
J-8364	5.1	365	513.3	64.3
J-8365	5.1	362	513.3	65.6
J-8366	5.1	360	513.3	66.4
J-8367	5.1	356	513.3	68.2
J-8368	5.1	350	513.3	70.7
J-8369	5.1	369	513.3	62.5
J-8370	5.1	350	513.2	70.7
J-8371	5.1	343	513.2	73.7
J-8372	5.1	354	513.2	69.0
J-8373	5.1	340	513.2	75.0
J-8374	5.1	378	513.2	58.6
J-8375	5.1	331	514.0	79.3
J-8376	5.1	346	514.0	72.8
J-8378	5.1	335	514.0	77.5
J-8379	5.1	180	513.7	144.6
J-8380	5.1	265	513.7	107.8
J-8381	5.1	335	513.5	77.3
J-8382	5.1	322	513.9	83.1
J-8383	5.1	360	513.5	66.5
J-8384	5.1	330	513.5	79.5
J-8386	5.1	350	513.4	70.8
J-8387	5.1	317	514.8	85.7
J-8388	5.1	331	514.8	79.7
J-8389	5.1	330	515.6	80.4
J-8390	5.1	330	515.6	80.4
J-8391	5.1	336	515.8	77.9
J-8392	5.1	335	515.7	78.3
J-8394	5.1	378	513.2	58.6
J-8396	5.1	347	513.3	72.0
J84	5.1	125	328.7	88.3
J-8401	5.1	368	513.2	62.9
J-8402	5.1	366	513.2	63.8
J-8403	5.1	350	513.2	70.7
J-8404	5.1	300	513.2	92.4
J-8408	5.1	310	513.4	88.2
J-8409	5.1	365	513.4	64.3
J-8410	5.1	362	513.4	65.6
J-8412	0.0	332	432.0	43.3
J-8413	0.0	362	432.0	30.3
J-8415	5.1	335	513.4	77.3
J-8417	5.1	358	513.4	67.3
J-8419	0.0	364	513.4	64.7
J-8420	5.1	340	513.4	75.1
J-8421	0.0	364	432.1	29.5
J-8422	0.0	364	582.1	94.5
J-8423	5.1	307	513.5	89.5
J-8424	5.1	90	326.6	102.5
J-8425	5.1	130	326.6	85.2
J-8426	5.1	150	326.6	76.5
J-8427	5.1	110	326.6	93.9
J-8428	5.1	130	326.6	85.2
J-8429	5.1	95	326.6	100.4
J86	5.1	123	428.6	132.4
J-8601	5.1	86	324.8	103.5
J-8602	5.1	80	323.6	105.6
J-8605	5.1	100	324.8	97.4
J-8606	5.1	27	327.6	130.2
J-8608	5.1	230	415.3	80.3
J-8609	5.1	24	328.7	132.0
J-8610	5.1	25	328.5	131.5

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8611	5.1	20	326.6	132.9
J-8612	5.1	27	324.8	129.1
J-8613	5.1	160	328.8	73.1
J-8614	5.1	140	329.0	81.9
J-8616	5.1	130	328.9	86.2
J-8622	5.1	208	428.7	95.6
J-8623	5.1	236	428.7	83.5
J-8624	5.1	273	428.8	67.5
J-8627	5.1	312	429.8	51.1
J-8628	5.1	250	429.3	77.7
J-8629	5.1	306	428.9	53.2
J-8630	5.1	300	429.0	55.9
J-8634	5.1	166	427.5	113.3
J-8635	5.1	206	428.7	96.5
J-8636	5.1	234	428.8	84.4
J-8637	5.1	285	428.9	62.3
J-8638	5.1	190	328.9	60.2
J-8651	5.1	356	513.8	68.4
J-8652	5.1	362	513.8	65.8
J-8661	5.1	260	415.5	67.4
J-8662	5.1	270	429.7	69.2
J-8663	5.1	185	325.8	61.0
J-8664	5.1	305	430.1	54.2
J-8665	5.1	310	429.0	51.6
J-8666	5.1	130	327.1	85.4
J-8667	5.1	111	328.8	94.4
J-8669	5.1	75	324.8	108.2
J88	5.1	172	428.7	111.2
J-9	5.1	342	514.7	74.8
J90	5.1	171	428.7	111.6
J94	5.1	226	428.8	87.9
J-94	5.1	380	513.2	57.7
J-9504	5.1	357	513.9	68.0
J-9505	5.1	346	513.4	72.5
J-9507	5.1	300	513.3	92.4
J-9508	5.1	218	415.2	85.5
J-9509	5.1	222	415.4	83.8
J-9510	5.1	302	515.6	92.5
J-9511	5.1	310	515.6	89.1
J-9512	5.1	290	415.3	54.3
J-9513	5.1	60	326.6	115.5
J-9514	5.1	50	324.8	119.1
J-9516	5.1	100	328.7	99.1
J-9517	5.1	308	429.4	52.6
J-9518	5.1	303	429.4	54.8
J-9519	5.1	318	429.4	48.3
J-9520	0.0	318	429.4	48.3
J-9521	0.0	320	429.5	47.4
J-9524	0.0	0	430.1	186.4

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
10	4.7	46.8	1,000	43.3	31.7	J-8211		3,503	3,268	3,268	0
12	4.7	113.3	1,000	90.8	31.3	J242	15	1,567	1,639	1,567	0
14	4.7	73.6	1,000	68.2	33.0	J-8211	P-19	3,015	3,543	3,015	0
16	4.7	54.4	1,000	49.0	32.5	J-8211	29	2,809	2,553	2,553	0
18	4.7	50.9	1,000	46.3	32.5	J-8211		2,952	2,463	2,463	0
20	4.7	51.8	1,000	47.4	32.6	J-8211	P-71	2,979	2,742	2,742	0
22	4.7	40.0	1,000	36.6	32.7	J-8211		2,679	2,684	2,679	0
24	4.7	40.9	1,000	37.8	32.7	J-8211		2,896	2,902	2,896	0
26	4.7	38.0	1,000	34.8	32.5	J-8211		2,631	2,637	2,631	0
28	4.7	37.6	1,000	33.5	32.5	J-8211		2,255	2,258	2,255	0
J-1	4.7	73.6	1,000	69.7	33.0	J-8211		3,927	3,931	3,927	0
J10	4.7	89.1	2,500	18.4	-29.3	J242		2,454	1,062	1,062	1,438
J-10	4.7	120.2	1,000	116.8	33.8	J-8211	P-9001	3,525	4,365	3,525	0
J102	4.7	56.0	1,000	39.7	32.7	J-8211		1,555	1,555	1,555	0
J104	4.7	72.4	1,000	50.7	32.7	J-8211	P113	1,567	1,555	1,555	0
J108	4.7	38.9	1,000	32.0	32.0	J108	P115	1,567	1,760	1,567	0
J-11	4.7	71.2	2,500	52.5	32.8	J-8211	P-24	3,464	3,687	3,464	0
J110	4.7	37.6	1,000	34.1	32.5	J-8211		2,473	2,478	2,473	0
J112	4.7	38.0	1,000	29.0	29.0	J112		1,467	1,468	1,467	0
J118	4.7	39.1	2,500	7.0	7.0	J118		1,879	1,880	1,879	621
J-12	4.7	72.0	2,500	56.6	32.8	J-8211		3,994	3,849	3,849	0
J120	4.7	83.9	1,000	76.7	33.0	J-8211	P129	2,440	3,697	2,440	0
J122	4.7	64.9	1,000	14.8	14.8	J122	P133	881	941	881	119
J124	4.7	87.0	1,000	78.7	33.2	J-8211	P135	1,567	3,743	1,567	0
J-13	4.7	72.0	2,500	54.5	32.8	J-8211	P-25	2,820	3,742	2,820	0
J132	4.7	73.9	1,000	58.2	32.9	J-8211		1,983	1,730	1,730	0
J134	4.7	71.7	1,000	56.0	32.9	J-8211		1,957	1,736	1,736	0
J136	4.7	69.5	1,000	54.2	32.9	J-8211		1,951	1,740	1,740	0
J138	4.7	101.0	1,000	29.2	20.8	J142	9001U	877	1,010	877	123
J14	4.7	124.5	2,500	92.5	32.4	J242	P17	2,394	3,829	2,394	106
J-14	4.7	72.9	2,500	56.5	32.8	J-8211	P-32	3,825	3,965	3,825	0
J140	4.7	49.8	1,000	38.0	32.9	J-8211	P149	1,335	1,654	1,335	0
J144	4.7	92.6	1,000	38.3	23.5	J148		1,176	1,035	1,035	0
J146	4.7	83.9	1,000	30.1	23.5	J148		1,095	1,035	1,035	0
J148	4.7	73.1	1,000	15.8	15.8	J148		969	968	968	32
J150	4.7	74.7	2,500	58.4	32.8	J-8211		4,012	3,978	3,978	0
J152	4.7	76.4	2,500	58.4	32.8	J-8211		3,962	3,956	3,956	0
J154	4.7	73.4	1,000	68.1	33.0	J-8211		3,818	3,801	3,801	0
J156	4.7	72.5	1,000	65.1	33.0	J-8211	P167	1,567	3,295	1,567	0
J158	4.7	74.2	1,000	69.2	33.0	J-8211	P171	3,000	3,931	3,000	0
J16	4.7	102.8	1,000	59.8	32.5	J-8211	P19	881	1,442	881	119
J-16	4.7	72.5	2,500	56.3	32.8	J-8211		3,962	3,966	3,962	0
J160	4.7	74.7	1,000	68.8	33.0	J-8211	P175	3,031	3,727	3,031	0
J162	4.7	75.1	1,000	69.9	33.0	J-8211	P177	3,276	3,905	3,276	0
J164	4.7	79.2	1,000	75.8	33.0	J-8211		4,427	4,158	4,158	0
J166	4.7	72.7	1,000	62.3	33.0	J-8211	P183	1,567	2,588	1,567	0
J168	4.7	74.7	2,500	56.4	32.8	J-8211	P187	3,131	3,907	3,131	0
J-17	4.7	72.5	2,500	57.1	32.8	J-8211	P185	3,008	4,003	3,008	0
J170	4.7	73.3	2,500	57.3	32.8	J-8211		3,997	3,947	3,947	0
J172	4.7	74.6	2,500	58.0	32.8	J-8211		3,989	3,947	3,947	0
J174	4.7	75.5	3,500	39.1	32.5	J-8211		3,972	3,938	3,938	0
J176	4.7	73.3	3,750	17.9	17.9	J176	P347	2,307	3,709	2,307	1,443
J178	4.7	73.3	3,750	24.2	24.2	J178	P203	2,456	3,851	2,456	1,294
J18	4.7	84.2	1,000	69.4	32.5	J-8211	P21	1,567	2,309	1,567	0
J-18	4.7	72.5	2,500	56.0	32.8	J-8211	P-32	3,698	3,950	3,698	0
J180	4.7	75.5	2,500	57.6	32.8	J-8211	P-44	3,926	3,948	3,926	0
J182	4.7	75.5	2,500	55.0	32.8	J-8211	P209	3,053	3,818	3,053	0
J184	4.7	75.5	2,500	56.2	32.8	J-8211	P213	2,432	3,873	2,432	68
J186	4.7	79.0	2,500	57.6	32.8	J-8211	P325	2,098	3,791	2,098	402
J188	4.7	72.0	2,500	44.6	32.8	J-8211	P219	2,729	3,436	2,729	0
J-19	4.7	100.1	1,000	71.5	32.8	J-8211	P-35	1,557	1,820	1,557	0
J190	4.7	99.3	2,500	36.5	32.8	J-8211	P221	1,567	2,848	1,567	933
J192	4.7	114.4	1,000	81.8	33.0	J-8211		1,860	1,658	1,658	0
J194	4.7	112.3	1,000	81.0	33.0	J-8211	P225	1,543	1,675	1,543	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J196	4.7	94.9	1,000	61.7	33.0	J-8211		1,611	1,612	1,611	0
J198	4.7	58.7	1,000	32.3	32.3	J198		1,290	1,290	1,290	0
J-2	4.7	73.6	1,000	68.8	33.0	J-8211	P-83	3,065	3,724	3,065	0
J20	4.7	50.1	1,000	15.5	15.5	J20	P23	872	905	872	128
J200	4.7	50.1	1,000	43.2	33.5	J-8211	P281	2,932	3,258	2,932	0
J202	4.7	81.7	1,000	-109.0	-109.0	J202		532	532	532	468
J204	4.7	67.9	1,000	-76.3	-76.3	J204		540	540	540	460
J206	4.7	51.5	1,000	44.8	32.4	J-8211		2,448	2,451	2,448	0
J208	4.7	68.3	1,000	45.1	32.9	J-8211	P247	1,567	1,671	1,567	0
J-21	4.7	90.4	1,000	36.1	23.5	J148		1,154	1,035	1,035	0
J216	4.7	51.8	2,500	-28.1	-38.5	J242		1,288	1,006	1,006	1,494
J218	4.7	48.3	2,500	-34.4	-41.4	J242		1,180	990	990	1,510
J22	4.7	63.1	1,000	26.2	15.5	J20		1,120	905	905	95
J-22	4.7	58.7	1,000	39.1	29.5	J-9512	P-43	1,315	1,513	1,315	0
J220	4.7	45.7	2,500	-45.8	-47.3	J222		1,062	959	959	1,541
J222	4.7	41.4	2,500	-64.7	-64.7	J222		885	886	885	1,615
J228	4.7	89.8	1,000	72.1	32.5	J-8211	P-9200	1,567	2,162	1,567	0
J-23	4.7	74.5	1,000	32.7	31.4	J148	P-45	803	1,138	803	197
J230	4.7	72.9	2,500	53.5	32.8	J-8211		3,810	3,813	3,810	0
J232	4.7	72.0	2,500	43.9	32.8	J-8211	P217	3,012	3,410	3,012	0
J234	4.7	45.7	2,500	-56.2	-56.2	J234		1,011	931	931	1,569
J236	4.7	85.6	1,000	76.7	33.8	J-8211	P73	1,557	3,160	1,557	0
J238	4.7	102.9	1,000	88.8	33.8	J-8211	P295	1,567	2,772	1,567	0
J24	4.7	99.9	1,000	-33.1	-33.1	J24	P27	392	764	392	608
J-24	4.7	74.5	1,000	70.5	33.0	J-8211		3,933	3,936	3,933	0
J242	4.7	41.4	2,500	-65.6	-65.6	J242		882	882	882	1,618
J244	4.7	44.0	2,500	-127.7	-127.7	J244		760	760	760	1,740
J246	4.7	51.4	1,000	-22.7	-22.7	J246		587	587	587	413
J248	4.7	98.5	1,000	-70.9	-70.9	J248	P303	392	661	392	608
J-25	4.7	93.4	1,000	90.0	33.0	J-8211	P-51	2,924	4,078	2,924	0
J26	4.7	51.1	1,000	28.6	28.6	J26	PRV-22	490	1,178	490	510
J262	4.7	111.8	2,500	58.6	27.1	J242	P369	2,448	3,976	2,448	52
J266	4.7	41.6	2,500	28.5	24.9	J-8211		3,336	3,239	3,239	0
J268	4.7	46.8	1,000	42.3	31.6	J-8211		2,878	2,883	2,878	0
J-27	4.7	67.3	1,000	50.2	33.8	J-8211	PRV-12	2,222	3,029	2,222	0
J270	4.7	83.1	2,500	39.9	32.8	J-8211	P131	2,448	3,103	2,448	52
J272	4.7	79.6	1,000	26.4	23.5	J148		1,057	1,035	1,035	0
J274	4.7	76.6	1,000	24.4	23.5	J148		1,041	1,035	1,035	0
J276	4.7	77.4	1,000	25.8	23.5	J148		1,053	1,035	1,035	0
J28	4.7	60.5	1,000	45.7	32.9	J-8211		1,844	1,704	1,704	0
J-28	4.7	60.0	1,000	27.2	27.2	J-29		1,139	1,139	1,139	0
J-3	4.7	111.6	1,000	92.3	33.8	J-8211	P-10000	1,567	2,395	1,567	0
J30	4.7	72.1	2,500	58.3	32.8	J-8211		4,094	4,017	4,017	0
J-30	4.7	87.3	1,000	65.2	33.2	J-8211		2,040	1,794	1,794	0
J-31	4.7	42.3	1,000	38.4	32.6	J-8211		2,688	2,693	2,688	0
J32	4.7	103.6	1,000	55.2	28.8	J242		1,927	1,350	1,350	0
J-32	4.7	43.8	1,000	39.6	32.8	J-8211		2,619	2,623	2,619	0
J-33	4.7	114.3	1,000	95.8	33.2	J-8211	P-72	1,567	2,257	1,567	0
J34	4.7	101.4	2,500	44.0	21.0	J-8157	P39	3,477	2,559	2,559	0
J-34	4.7	99.7	1,000	52.9	28.7	J242	P-75	1,861	1,390	1,390	0
J-35	4.7	100.3	1,000	54.5	27.2	J242	P-78	673	1,579	673	327
J36	4.7	108.3	2,500	53.1	23.7	J-8157	P-9319	3,419	2,738	2,738	0
J-36	4.7	93.9	1,000	80.0	32.0	J-8211	P-82	1,567	2,617	1,567	0
J-37	4.7	72.7	1,000	68.1	33.0	J-8211	17	2,685	3,742	2,685	0
J38	4.7	92.7	1,000	48.9	28.8	J242	P41	1,567	2,390	1,567	0
J-38	4.7	74.1	1,000	69.8	33.0	J-8211	P-85	2,982	3,830	2,982	0
J-39	4.7	114.4	1,000	66.0	28.8	J242		2,153	1,366	1,366	0
J-4	4.7	79.7	1,000	76.6	33.0	J-8211		4,471	4,183	4,183	0
J40	4.7	97.1	1,000	55.5	28.7	J242	P43	2,448	2,559	2,448	0
J44	4.7	103.6	2,500	54.3	28.3	J242		4,914	4,484	4,484	0
J46	4.7	92.7	2,500	33.6	28.3	J242	P51	3,111	3,241	3,111	0
J48	4.7	74.3	2,500	37.3	29.3	J-8663	P53	1,567	3,305	1,567	933
J52	4.7	53.5	2,500	41.3	33.3	J-8211	P-9357	3,659	4,918	3,659	0
J-6	4.7	74.0	1,000	70.0	33.0	J-8211	P-49	3,637	3,884	3,637	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J64	4.7	85.6	1,000	74.3	33.8	J-8211	P291	1,562	2,591	1,562	0
J66	4.7	76.5	1,000	57.0	33.8	J-8211	P75	1,567	1,831	1,567	0
J-7	4.7	73.6	1,000	67.9	33.0	J-8211	21	2,963	3,489	2,963	0
J72	4.7	66.6	1,000	-152.9	-152.9	J72	P83	350	354	350	650
J-8002	4.7	45.5	1,000	41.9	32.4	J-8211		3,017	2,930	2,930	0
J-8003	4.7	51.7	1,000	46.9	32.2	J-8211		3,008	3,012	3,008	0
J-8004	4.7	72.0	2,500	58.4	32.8	J-8211		4,100	4,003	4,003	0
J-8008	4.7	79.8	2,500	64.8	32.8	J-8211	P-9341	3,823	4,152	3,823	0
J-8101	4.7	121.5	2,500	109.7	31.4	J242	P-9002	3,506	4,365	3,506	0
J-8102	4.7	121.5	2,500	84.6	31.4	J242	P-9003	1,567	4,365	1,567	933
J-8103	4.7	121.5	2,500	92.4	31.4	J242	P-9004	1,562	4,365	1,562	938
J-8104	4.7	118.1	1,000	115.2	33.8	J-8211	P-7037	7,786	4,365	4,365	0
J-8105	4.7	121.2	1,000	106.7	26.9	J242	P-9321	1,461	1,294	1,294	0
J-8106	4.7	125.5	2,750	-1.3	-1.3	J-8109	P-9007	1,405	1,607	1,405	1,345
J-8107	4.7	125.5	1,000	82.9	27.8	J242	P-9009	1,557	1,607	1,557	0
J-8108	4.7	125.5	1,000	80.7	27.8	J242	P-9011	1,567	1,607	1,567	0
J-8109	4.7	125.5	1,000	78.9	27.8	J242	P-9012	1,567	1,607	1,567	0
J-8110	4.7	123.5	2,500	62.2	18.6	J-8157	P-9010	3,843	2,432	2,432	68
J-8111	4.7	110.1	2,500	50.0	18.4	J-8157		3,701	2,421	2,421	79
J-8112	4.7	124.4	2,500	22.7	18.4	J-8157	P-80	2,448	2,421	2,421	79
J-8113	4.7	111.8	2,500	65.0	27.1	J242	P-9318	4,643	3,976	3,976	0
J-8114	4.7	125.2	2,500	73.9	26.5	J242	P-9016	2,939	4,021	2,939	0
J-8115	4.7	109.2	2,500	54.0	26.0	J242	P-9018	2,973	3,994	2,973	0
J-8116	4.7	106.7	1,000	60.5	27.7	J242	P-9019	1,475	1,943	1,475	0
J-8117	4.7	104.3	1,000	87.3	24.4	J242	P-78	2,975	1,167	1,167	0
J-8118	4.7	112.5	1,000	96.0	24.9	J242		3,764	1,189	1,189	0
J-8119	4.7	121.2	1,000	105.3	25.6	J242	P-9008	3,970	1,222	1,222	0
J-8120	4.7	122.5	1,000	97.0	25.6	J242	P-9025	1,567	1,222	1,222	0
J-8121	4.7	115.1	1,000	66.4	24.9	J242	P-9024	881	1,189	881	119
J-8122	4.7	107.3	2,500	47.2	-18.6	J242		3,363	1,141	1,141	1,359
J-8123	4.7	97.1	2,500	42.6	28.4	J242	P-9026	2,439	3,908	2,439	61
J-8124	4.7	98.8	2,500	50.4	28.4	J242	P-9028	4,074	4,820	4,074	0
J-8125	4.7	94.5	2,500	52.5	29.1	J242	P391	2,512	5,250	2,512	0
J-8126	4.7	111.5	1,000	107.6	33.8	J-8211	P-9005	5,564	5,056	5,056	0
J-8127	4.7	111.5	1,000	107.6	33.8	J-8211	P-9029	4,300	5,013	4,300	0
J-8128	4.7	111.5	1,000	106.5	33.8	J-8211	P-9031	2,961	4,481	2,961	0
J-8129	4.7	115.8	2,500	87.3	32.4	J242	P-9033	3,343	3,842	3,343	0
J-8130	4.7	118.0	2,500	86.0	32.3	J242		4,828	3,616	3,616	0
J-8131	4.7	120.2	2,500	86.3	32.2	J242	P-9037	3,264	3,490	3,264	0
J-8132	4.7	72.5	1,000	63.4	33.8	J-8211	P-9039	2,317	2,211	2,211	0
J-8133	4.7	71.3	1,000	64.6	33.8	J-8211	P-9329	2,262	3,577	2,262	0
J-8134	4.7	75.2	1,000	71.0	33.8	J-8211	P-9042	3,046	5,114	3,046	0
J-8135	4.7	59.6	1,000	56.1	33.8	J-8211	P65	3,426	5,432	3,426	0
J-8136	4.7	59.6	2,500	47.8	33.4	J-8211	P65	3,116	5,561	3,116	0
J-8137	4.7	50.5	2,500	24.2	24.2	J-8137	P-9047	2,030	2,744	2,030	470
J-8138	4.7	57.4	2,500	38.9	33.6	J-8211	P-9047	3,218	3,880	3,218	0
J-8139	4.7	65.6	1,000	62.0	33.8	J-8211	P-9044	3,859	5,452	3,859	0
J-8140	4.7	72.6	1,000	69.2	33.8	J-8211	P-9053	3,202	5,580	3,202	0
J-8141	4.7	66.5	1,000	61.8	33.8	J-8211	P-9050	3,004	4,301	3,004	0
J-8142	4.7	68.2	2,500	43.1	27.1	J-8663	P-9055	2,995	3,188	2,995	0
J-8143	4.7	74.3	2,500	49.4	29.3	J-8663	P-9058	2,346	3,647	2,346	154
J-8145	4.7	68.2	1,000	58.4	33.8	J-8211	P-9056	1,488	2,842	1,488	0
J-8146	4.7	66.8	1,000	-17.1	-31.9	J-8663	P-9059	322	568	322	678
J-8149	4.7	62.8	1,000	-146.8	-157.6	J-8663		397	332	332	668
J-8151	4.7	67.9	1,000	-385.4	-385.4	J-8151		272	272	272	728
J-8155	4.7	100.1	1,000	59.9	28.6	J242		3,396	2,416	2,416	0
J-8157	4.7	76.7	1,000	27.6	27.6	J-8157		1,256	1,257	1,256	0
J-8158	4.7	123.1	2,500	28.9	18.4	J-8157	P-79	2,443	2,421	2,421	79
J-8160	4.7	125.2	1,000	54.5	33.8	J-8211		1,255	1,255	1,255	0
J-8161	4.7	92.7	1,000	43.6	28.8	J242		1,660	1,324	1,324	0
J-8162	4.7	124.5	1,000	32.4	30.4	J-8159	P-9079	943	1,067	943	57
J-8166	4.7	51.0	2,500	12.9	12.9	J-8166	P-9048	1,300	2,210	1,300	1,200
J82	4.7	50.9	1,000	37.5	33.8	J-8211	P95	1,567	1,630	1,567	0
J-8201	4.7	85.6	2,500	-846.8	-846.8	J-8201		572	572	572	1,928

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8202	4.7	68.8	1,000	-58.8	-58.8	J-8202		583	523	523	477
J-8203	4.7	50.6	1,000	-90.3	-90.3	J-8203		425	424	424	576
J-8204	4.7	52.1	1,000	48.1	32.3	J-8211		3,280	3,097	3,097	0
J-8206	4.7	40.1	2,500	22.0	22.0	J-8206		2,645	2,649	2,645	0
J-8207	4.7	38.1	2,500	20.3	20.3	J-8207		2,523	2,527	2,523	0
J-8208	4.7	36.8	2,500	21.1	21.1	J-8208		2,597	2,603	2,597	0
J-8209	4.7	36.8	2,500	22.8	22.8	J-8209		2,771	2,778	2,771	0
J-8210	4.7	37.3	2,500	19.2	19.2	J-8210		2,436	2,441	2,436	64
J-8212	4.7	37.7	2,500	26.4	24.7	J-8211		3,264	3,207	3,207	0
J-8213	4.7	39.4	2,500	27.2	24.8	J-8211		3,262	3,225	3,225	0
J-8214	4.7	72.2	1,000	63.7	32.0	J-8211	11	2,236	2,927	2,236	0
J-8215	4.7	58.2	1,000	51.9	32.1	J-8211	P-9117	2,334	2,937	2,334	0
J-8216	4.7	48.2	1,000	33.6	32.3	J-8211		1,447	1,448	1,447	0
J-8217	4.7	45.7	2,500	-1,632.5	-1,634.7	J116		255	243	243	2,257
J-8220	4.7	77.4	1,000	63.3	32.2	J-8211	P-9123	1,402	2,341	1,402	0
J-8222	4.7	71.5	1,000	53.4	32.8	J-8211	P-9122	1,750	1,820	1,750	0
J-8223	4.7	80.6	1,000	59.5	32.8	J-8211	P-9124	1,538	1,820	1,538	0
J-8224	4.7	91.4	1,000	66.8	32.8	J-8211	P-9127	1,654	1,820	1,654	0
J-8225	4.7	91.9	1,000	-135.8	-135.8	J-8225	P-9129	392	512	392	608
J-8226	4.7	108.3	1,000	73.0	32.8	J-8211	P-36	1,562	1,771	1,562	0
J-8227	4.7	112.2	1,000	70.1	32.8	J-8211	P-9132	1,567	1,639	1,567	0
J-8228	4.7	93.6	1,000	-1.2	-1.2	J-8228	P-9131	706	863	706	294
J-8229	4.7	63.2	1,000	47.5	32.6	J-9512		1,921	1,762	1,762	0
J-8230	4.7	61.1	1,000	44.3	32.7	J-9512		1,835	1,760	1,760	0
J-8231	4.7	51.5	1,000	36.6	31.8	J-9512	P29	1,011	1,721	1,011	0
J-8232	4.7	52.3	1,000	32.2	28.1	J-9512	P-9136	1,277	1,427	1,277	0
J-8233	4.7	51.9	1,000	30.5	26.8	J-9512	P-9137	1,372	1,327	1,327	0
J-8234	4.7	50.1	1,000	27.7	25.1	J-9512		1,281	1,220	1,220	0
J-8235	4.7	53.2	1,000	6.0	6.0	J-8235		784	784	784	216
J-8236	4.7	87.7	1,000	19.4	19.4	J-8236	P-9141	881	1,000	881	119
J-8237	4.7	79.0	1,000	33.8	32.1	J-8211	P-9116	877	1,167	877	123
J-8240	4.7	60.5	1,000	45.6	32.9	J-8211		1,839	1,698	1,698	0
J-8241	4.7	65.2	1,000	50.1	32.9	J-8211		1,892	1,661	1,661	0
J-8242	4.7	50.0	1,000	34.9	32.9	J-8211		1,631	1,631	1,631	0
J-8243	4.7	50.0	1,000	36.7	32.9	J-8211	9001D	1,455	1,697	1,455	0
J-8244	4.7	71.7	1,000	56.4	32.9	J-8211		1,965	1,726	1,726	0
J-8245	4.7	76.0	1,000	60.2	32.9	J-8211		2,009	1,733	1,733	0
J-8246	4.7	67.4	1,000	46.2	32.9	J-8211	P-9148	1,567	1,669	1,567	0
J-8247	4.7	64.8	1,000	50.1	32.9	J-8211		1,923	1,721	1,721	0
J-8248	4.7	71.7	1,000	55.6	32.9	J-8211		1,978	1,734	1,734	0
J-8249	4.7	76.1	1,000	55.6	32.9	J-8211	P-9151	1,567	1,734	1,567	0
J-8253	4.7	38.0	1,000	34.4	32.6	J-8211		2,490	2,494	2,490	0
J-8256	4.7	46.6	1,000	42.1	32.5	J-8211		2,699	2,503	2,503	0
J-8257	4.7	40.6	1,000	36.1	32.5	J-8211		2,334	2,226	2,226	0
J-8258	4.7	43.2	1,000	36.1	32.5	J-8211		1,926	1,927	1,926	0
J-8259	4.7	47.5	1,000	36.3	32.5	J-8211	P-9163	1,422	1,640	1,422	0
J-8262	4.7	48.1	1,000	40.7	32.5	J-8211		2,119	2,121	2,119	0
J-8263	4.7	44.9	1,000	15.3	12.7	J-8665	P-9169	872	859	859	141
J-8264	4.7	44.9	1,000	3.6	3.6	J-8264		760	760	760	240
J-8266	4.7	56.1	1,000	49.6	32.5	J-8211		2,708	2,374	2,374	0
J-8267	4.7	55.6	1,000	48.6	32.5	J-8211		2,561	2,270	2,270	0
J-8268	4.7	50.8	1,000	42.5	32.6	J-8211		2,120	1,886	1,886	0
J-8269	4.7	68.6	1,000	61.8	32.5	J-8211		3,094	2,281	2,281	0
J-8270	4.7	69.5	1,000	62.2	32.5	J-8211		3,017	2,244	2,244	0
J-8271	4.7	65.2	1,000	58.6	32.5	J-8211		3,044	2,349	2,349	0
J-8272	4.7	59.5	1,000	53.0	32.5	J-8211		2,826	2,401	2,401	0
J-8273	4.7	66.0	1,000	58.5	32.5	J-8211		2,849	2,352	2,352	0
J-8275	4.7	61.9	1,000	-24.7	-24.7	J-8275	P-9188	497	663	497	503
J-8276	4.7	54.4	1,000	48.5	32.5	J-8211	39	1,511	2,553	1,511	0
J-8277	4.7	70.8	1,000	63.6	32.5	J-8211		3,085	2,338	2,338	0
J-8278	4.7	73.4	1,000	66.2	32.5	J-8211		3,177	2,303	2,303	0
J-8279	4.7	76.8	1,000	68.6	32.5	J-8211		3,039	2,310	2,310	0
J-8280	4.7	80.3	1,000	70.3	32.5	J-8211	P-9192	2,277	2,321	2,277	0
J-8281	4.7	79.0	1,000	68.4	32.5	J-8211		2,690	2,325	2,325	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8282	4.7	83.7	1,000	72.7	32.5	J-8211		2,722	2,334	2,334	0
J-8283	4.7	83.3	1,000	-298.1	-298.1	J-8283		369	369	369	631
J-8284	4.7	80.8	1,000	-208.8	-208.8	J-8284	P-9199	382	418	382	618
J-8285	4.7	69.5	1,000	-88.9	-88.9	J-8285		519	519	519	481
J-8286	4.7	80.7	1,000	69.7	32.5	J-8211		2,655	2,337	2,337	0
J-8287	4.7	82.4	1,000	70.5	32.5	J-8211		2,582	2,325	2,325	0
J-8288	4.7	90.7	1,000	78.7	32.5	J-8211		2,762	2,325	2,325	0
J-8289	4.7	84.6	1,000	73.7	32.5	J-8211		2,780	2,324	2,324	0
J-8291	4.7	110.2	1,000	83.7	32.5	J-8211	P-9205	877	1,894	877	123
J-8299	4.7	94.8	1,000	80.1	33.2	J-8211	P-9431	2,341	2,257	2,257	0
J-8301	4.7	80.2	1,000	77.6	33.0	J-8211		4,530	4,218	4,218	0
J-8302	4.7	79.1	2,500	67.0	32.8	J-8211		4,385	4,090	4,090	0
J-8304	4.7	76.0	1,000	66.1	33.0	J-8211	P163	1,567	2,879	1,567	0
J-8306	4.7	82.5	1,000	79.0	33.0	J-8211	P393	3,588	3,921	3,588	0
J-8308	4.7	74.8	1,000	70.1	33.0	J-8211	P-48	2,205	3,753	2,205	0
J-8309	4.7	79.5	1,000	27.3	27.3	J-8309	P-9222	881	1,062	881	119
J-8310	4.7	73.4	1,000	67.7	33.0	J-8211	P165	2,757	3,631	2,757	0
J-8311	4.7	73.1	1,000	23.5	23.5	J148		1,035	1,035	1,035	0
J-8312	4.7	81.8	1,000	29.0	23.5	J148		1,084	1,035	1,035	0
J-8313	4.7	92.6	1,000	34.8	23.5	J148		1,132	1,035	1,035	0
J-8314	4.7	86.1	1,000	31.9	23.5	J148		1,112	1,035	1,035	0
J-8315	4.7	81.8	1,000	21.8	21.8	J-8315		1,018	1,018	1,018	0
J-8316	4.7	92.6	1,000	36.1	23.5	J148		1,148	1,035	1,035	0
J-8317	4.7	75.3	1,000	12.4	12.4	J-8317		940	939	939	61
J-8318	4.7	77.7	2,500	65.5	32.8	J-8211		4,338	4,052	4,052	0
J-8319	4.7	76.8	2,750	62.2	32.7	J-8211		4,296	4,045	4,045	0
J-8320	4.7	76.8	2,500	64.1	32.8	J-8211		4,283	4,037	4,037	0
J-8321	4.7	72.0	2,500	57.1	32.8	J-8211		4,020	4,008	4,008	0
J-8322	4.7	69.0	2,500	54.0	32.8	J-8211		3,939	3,943	3,939	0
J-8323	4.7	70.3	2,500	56.2	32.8	J-8211		4,028	3,953	3,953	0
J-8324	4.7	72.5	2,500	56.6	32.8	J-8211		3,981	3,890	3,890	0
J-8325	4.7	72.0	2,500	53.0	32.8	J-8211		3,805	3,808	3,805	0
J-8326	4.7	74.6	2,500	57.9	32.8	J-8211		3,986	3,948	3,948	0
J-8330	4.7	82.0	1,000	68.0	33.0	J-8211	P-7023	1,515	2,103	1,515	0
J-8331	4.7	96.7	1,000	77.3	33.0	J-8211	P-9249	1,524	1,692	1,524	0
J-8332	4.7	110.1	1,000	83.4	33.0	J-8211	P-9251	1,534	1,692	1,534	0
J-8333	4.7	92.8	1,000	61.6	33.0	J-8211	P-9253	1,567	1,647	1,567	0
J-8334	4.7	128.3	1,000	85.6	33.0	J-8211	P-9254	1,557	1,521	1,521	0
J-8335	4.7	81.1	3,375	50.8	32.5	J-8211	P441	4,149	4,085	4,085	0
J-8336	4.7	80.2	2,500	61.6	32.8	J-8211	P-9257	3,499	4,002	3,499	0
J-8337	4.7	82.0	2,500	63.1	32.8	J-8211	P-9260	3,589	4,029	3,589	0
J-8338	4.7	85.0	2,500	68.3	32.8	J-8211	P-9261	2,980	4,106	2,980	0
J-8339	4.7	84.1	2,500	67.8	32.8	J-8211		4,218	4,106	4,106	0
J-8340	4.7	83.2	2,500	70.0	32.8	J-8211		4,395	4,187	4,187	0
J-8341	4.7	81.9	2,500	68.6	32.8	J-8211		4,349	4,219	4,219	0
J-8342	4.7	81.9	2,500	69.5	32.9	J-8211		4,380	4,182	4,182	0
J-8343	4.7	72.7	2,500	58.6	32.9	J-8211		4,015	3,997	3,997	0
J-8344	4.7	84.1	1,000	76.4	33.0	J-8211	P-9262	1,557	3,653	1,557	0
J-8345	4.7	86.3	1,000	75.1	33.0	J-8211	P-9269	1,562	2,969	1,562	0
J-8346	4.7	70.6	2,500	56.5	32.9	J-8211		3,963	3,956	3,956	0
J-8347	4.7	79.7	2,500	59.0	32.9	J-8211	P-9271	2,720	3,835	2,720	0
J-8348	4.7	84.0	2,500	42.1	32.9	J-8211	P-9273	1,567	3,123	1,567	933
J-8349	4.7	70.1	2,500	56.3	32.9	J-8211		3,963	3,918	3,918	0
J-8350	4.7	75.3	2,500	62.3	32.9	J-8211	P-9274	3,998	3,952	3,952	0
J-8351	4.7	79.6	2,500	68.1	33.0	J-8211		4,325	4,061	4,061	0
J-8352	4.7	79.6	2,500	66.8	33.0	J-8211	P-9277	3,633	4,125	3,633	0
J-8353	4.7	83.5	2,500	73.4	33.0	J-8211	P-9279	2,635	4,121	2,635	0
J-8354	4.7	84.0	1,000	79.0	33.2	J-8211		4,784	4,090	4,090	0
J-8356	4.7	89.6	1,000	83.4	33.2	J-8211	P-9404	2,471	3,769	2,471	0
J-8357	4.7	71.0	1,000	63.5	33.2	J-8211	P319	2,570	3,593	2,570	0
J-8358	4.7	75.3	2,500	58.8	33.0	J-8211	P-9266	3,790	3,832	3,790	0
J-8359	4.7	65.3	2,500	44.4	33.0	J-8211	P275	3,344	3,458	3,344	0
J-8360	4.7	62.3	1,000	53.8	33.2	J-8211	P-9287	2,950	3,162	2,950	0
J-8361	4.7	63.2	1,000	55.9	33.2	J-8211	P-9425	2,268	3,469	2,268	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8363	4.7	64.4	2,500	30.6	30.6	J-8363	P-9407	2,070	2,903	2,070	430
J-8364	4.7	64.4	2,500	9.2	9.2	J-8364	P-9291	2,027	2,197	2,027	473
J-8365	4.7	65.7	2,500	-16.1	-16.1	J-8365	P-9293	1,523	1,777	1,523	977
J-8366	4.7	66.6	2,500	-18.1	-18.1	J-8366	P-9295	1,673	1,762	1,673	827
J-8367	4.7	68.3	2,500	27.0	27.0	J-8367		2,743	2,745	2,743	0
J-8368	4.7	70.9	2,500	23.8	23.8	J-8368		2,625	2,627	2,625	0
J-8369	4.7	62.7	2,500	16.6	16.6	J-8369		2,390	2,391	2,390	110
J-8370	4.7	70.9	1,000	56.2	33.2	J-8211	P-9297	1,280	2,319	1,280	0
J-8371	4.7	73.9	1,000	53.8	33.2	J-8211	P-9299	1,854	1,813	1,813	0
J-8372	4.7	69.1	1,000	47.2	33.2	J-8211		1,696	1,697	1,696	0
J-8373	4.7	75.2	1,000	52.7	33.2	J-8211		1,793	1,780	1,780	0
J-8374	4.7	58.8	1,000	41.0	33.2	J-8211		1,706	1,697	1,697	0
J-8375	4.7	79.4	2,500	61.0	32.8	J-8211		4,005	3,927	3,927	0
J-8376	4.7	72.9	2,500	57.2	32.8	J-8211		4,005	3,942	3,942	0
J-8378	4.7	77.7	2,500	59.1	32.8	J-8211		3,960	3,907	3,907	0
J-8379	4.7	144.7	1,000	94.4	33.0	J-8211	P-9256	1,567	1,521	1,521	0
J-8380	4.7	107.9	1,000	60.1	33.0	J-8211		1,421	1,422	1,421	0
J-8381	4.7	77.5	2,500	57.1	32.9	J-8211	P-9268	2,624	3,802	2,624	0
J-8383	4.7	66.6	2,500	52.4	32.9	J-8211		3,848	3,851	3,848	0
J-8384	4.7	79.6	2,500	62.1	32.9	J-8211	P-9336	2,876	3,941	2,876	0
J-8387	4.7	85.8	1,000	81.5	33.0	J-8211	P-9330	3,774	4,279	3,774	0
J-8388	4.7	79.7	1,000	77.0	33.0	J-8211		4,503	4,207	4,207	0
J-8389	4.7	80.5	1,000	77.0	33.0	J-8211	P-9309	2,899	3,886	2,899	0
J-8390	4.7	80.5	1,000	78.5	33.0	J-8211		4,489	4,260	4,260	0
J-8392	4.7	78.3	1,000	68.7	33.0	J-8211	P-9347	1,746	2,565	1,746	0
J-8394	4.7	58.8	1,000	40.2	33.2	J-8211	P-9362	1,321	1,655	1,321	0
J-8396	4.7	72.2	2,500	20.5	20.5	J-8396		2,516	2,517	2,516	0
J84	4.7	79.0	1,000	68.6	33.8	J-8211	P-7041	2,556	1,914	1,914	0
J-8401	4.7	63.1	1,000	31.6	31.6	J-8401	P-9304	1,210	1,227	1,210	0
J-8403	4.7	70.9	1,000	31.4	31.4	J-8403	P-9306	1,127	1,174	1,127	0
J-8404	4.7	92.5	1,000	65.0	33.2	J-8211	P-66	1,148	1,577	1,148	0
J-8408	4.7	88.3	1,000	82.7	33.2	J-8211	P-9419	2,145	3,950	2,145	0
J-8409	4.7	64.4	2,500	41.3	33.2	J-8211	P-9410	1,901	3,308	1,901	599
J-8410	4.7	65.8	1,000	60.8	33.3	J-8211		4,319	4,124	4,124	0
J-8415	4.7	77.5	1,000	72.5	33.2	J-8211		4,618	4,104	4,104	0
J-8417	4.7	67.5	1,000	46.4	33.3	J-8211	P313	872	1,641	872	128
J-8419	0.0	64.9	1,000	60.0	33.3	J-8211		4,304	4,145	4,145	0
J-8420	4.7	75.3	1,000	36.7	33.3	J-8211	P-9426	881	1,250	881	119
J-8423	4.7	89.6	1,000	82.2	33.2	J-8211	25	1,816	3,572	1,816	0
J-8424	4.7	93.4	2,500	28.0	-18.6	J242		2,751	1,141	1,141	1,359
J-8425	4.7	76.1	2,500	2.1	-18.6	J242		1,894	1,141	1,141	1,359
J-8426	4.7	67.4	2,500	-12.1	-18.6	J242		1,646	1,141	1,141	1,359
J-8427	4.7	84.7	2,500	5.1	-18.6	J242		2,073	1,141	1,141	1,359
J-8428	4.7	76.1	2,500	-14.9	-18.6	J242	P-9439	1,567	1,141	1,141	1,359
J-8429	4.7	91.2	2,500	23.2	-18.6	J242		2,601	1,141	1,141	1,359
J-8601	4.7	94.5	2,500	51.1	28.9	J242	P-9313	3,080	5,177	3,080	0
J-8605	4.7	88.4	2,500	41.7	27.1	J242		4,373	3,898	3,898	0
J-8606	4.7	121.1	1,000	110.8	31.3	J242	P-9320	1,420	1,639	1,420	0
J-8608	4.7	71.8	1,000	52.3	32.9	J-8211		1,842	1,745	1,745	0
J-8609	4.7	122.8	2,500	88.3	32.3	J242	P-9325	2,242	3,650	2,242	258
J-8610	4.7	122.3	1,000	106.6	33.8	J-8211	P-9038	963	2,976	963	37
J-8611	4.7	123.7	1,000	39.6	33.8	J-8211		1,130	1,130	1,130	0
J-8612	4.7	120.0	2,500	38.0	18.4	J-8157	P-9015	2,439	2,421	2,421	79
J-8613	4.7	63.9	1,000	58.3	33.8	J-8211	P61	2,833	3,393	2,833	0
J-8614	4.7	72.6	2,500	64.5	33.4	J242	P-7036	9,289	5,409	5,409	0
J-8616	4.7	76.9	2,500	68.3	32.9	J242	P-9331	9,950	5,101	5,101	0
J-8622	4.7	86.3	1,000	73.3	32.5	J-8211	P-9202	2,480	2,325	2,325	0
J-8623	4.7	74.2	1,000	62.9	32.5	J-8211		2,452	2,323	2,323	0
J-8624	4.7	58.2	1,000	51.0	32.6	J-8211		2,628	2,134	2,134	0
J-8627	4.7	41.1	1,000	38.1	32.9	J-8211		2,887	2,894	2,887	0
J-8628	4.7	68.1	1,000	59.6	32.7	J-8211	P-68	2,451	2,160	2,160	0
J-8629	4.7	43.9	1,000	35.0	32.6	J-8211		1,754	1,755	1,754	0
J-8630	4.7	46.4	1,000	36.5	32.7	J-8211		1,731	1,732	1,731	0
J-8634	4.7	104.1	1,000	-491.4	-491.4	J-8634		341	341	341	659

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8635	4.7	87.2	1,000	70.4	32.5	J-8211	P-9355	1,562	2,192	1,562	0
J-8636	4.7	75.1	1,000	67.4	32.5	J-8211		3,104	2,286	2,286	0
J-8637	4.7	53.0	1,000	37.6	32.6	J-8211		1,535	1,535	1,535	0
J-8638	4.7	50.9	2,500	39.0	33.1	J-8211	P-9357	3,692	4,593	3,692	0
J-8651	4.7	68.5	1,000	51.6	33.0	J-8211	P-9250	1,567	1,901	1,567	0
J-8652	4.7	65.9	1,000	36.4	33.0	J-8211		1,299	1,299	1,299	0
J-8661	4.7	58.8	1,000	39.1	32.8	J-9512	P-9135	1,448	1,668	1,448	0
J-8662	4.7	59.8	1,000	51.9	31.9	J-8211	23	1,960	2,734	1,960	0
J-8664	4.7	44.6	1,000	36.0	31.6	J-8211	P-9112	1,567	1,821	1,567	0
J-8665	4.7	42.3	1,000	7.2	7.2	J-8665		782	782	782	218
J-8666	4.7	76.3	1,000	-113.8	-113.8	J-8666	P-9063	479	505	479	521
J-8667	4.7	85.1	2,500	62.7	31.3	J-8663	P-9333	1,929	4,448	1,929	571
J-8669	4.7	99.2	2,500	50.1	28.3	J242	P-9314	4,342	4,517	4,342	0
J88	4.7	101.9	1,000	82.8	32.5	J-8211	P99	1,567	2,268	1,567	0
J-9	4.7	74.9	1,000	70.7	33.0	J-8211	P-14	3,068	3,868	3,068	0
J90	4.7	102.4	1,000	89.1	32.5	J-8211	P101	2,707	2,325	2,325	0
J94	4.7	78.6	1,000	69.7	32.5	J-8211	P103	2,738	2,298	2,298	0
J-94	4.7	57.9	1,000	35.5	33.2	J-8211		1,423	1,424	1,423	0
J-9504	4.7	68.1	2,500	43.2	32.8	J-8211	P-21	2,392	3,400	2,392	108
J-9505	4.7	72.7	2,500	52.1	33.0	J-8211	P-7025	2,790	3,665	2,790	0
J-9507	4.7	92.6	1,000	35.9	23.5	J148		1,145	1,035	1,035	0
J-9508	4.7	77.0	1,000	60.1	32.9	J-8211		2,033	1,741	1,741	0
J-9509	4.7	75.3	1,000	54.9	32.9	J-8211	P-7030	1,670	1,773	1,670	0
J-9510	4.7	92.6	1,000	76.0	33.0	J-8211	P-52	877	2,139	877	123
J-9511	4.7	89.1	1,000	56.7	33.0	J-8211	P-7033	881	1,485	881	119
J-9512	4.7	45.8	1,000	22.8	22.8	J-9512		1,109	1,109	1,109	0
J-9513	4.7	106.4	2,500	43.6	-21.4	J242		3,215	1,119	1,119	1,381
J-9514	4.7	110.1	2,500	30.9	26.0	J242	P-7039	1,567	2,816	1,567	933
J-9516	4.7	89.9	1,000	79.0	33.8	J-8211	P-9037	2,095	1,998	1,998	0
J-9517	4.7	43.5	1,000	33.3	32.3	J-8211	P-7044	1,567	1,587	1,567	0
J-9518	4.7	45.6	2,500	20.3	15.3	J118		2,517	2,219	2,219	281
J-9519	4.7	39.1	3,500	-8.2	-8.2	J118		2,127	2,129	2,127	1,373
J-9520	0.0	39.1	2,500	13.8	13.8	J-9520		2,134	2,137	2,134	366
J-9521	0.0	38.2	2,500	13.5	15.7	J-9520		2,106	2,230	2,106	394

- (1) Based on City zoning or building specific calculations by the Fire Marshal
- (2) Pipe in which velocities exceed 10 feet/second
- (3) Available flow to node if velocities do not exceed 10 ft/s
- (4) Available flow to node if system pressures are above 20 psi
- (5) Available flow considering both velocity and pressure limitations

<u>ID</u>	<u>Demand (gpm)</u>	<u>Elevation (ft)</u>	<u>Head (ft)</u>	<u>Pressure (psi)</u>		
10	7.8	300	426.3	54.7		
12	7.8	45	318.0	118.3		
14	7.8	345	512.8	72.7	Minimum Pressure of Demand Nodes	42 psi
16	7.8	282	425.7	62.2	Maximum Pressure of Demand Nodes	143 psi
18	7.8	290	425.8	58.9	Average Pressure of Demand Nodes	79 psi
20	7.8	288	425.9	59.7		
22	7.8	315	425.9	48.1		
24	7.8	313	425.9	48.9		
26	7.8	320	426.1	46.0		
28	7.8	321	426.1	45.5		
J-1	7.8	345	512.9	72.8		
J10	7.8	100	315.9	93.5		
J-10	7.8	30	320.6	125.9		
J102	7.8	278	425.5	63.9		
J104	7.8	240	425.5	80.4		
J106	7.8	308	425.9	51.1		
J108	7.8	318	426.0	46.8		
J-11	7.8	350	511.3	69.9		
J110	7.8	321	426.1	45.6		
J112	7.8	320	426.1	46.0		
J114	7.8	297	426.4	56.1		
J116	7.8	308	426.1	51.2		
J118	7.8	318	426.5	47.0		
J-12	7.8	348	511.3	70.8		
J120	7.8	321	512.4	82.9		
J122	7.8	364	510.1	63.3		
J124	7.8	313	510.2	85.4		
J126	7.8	235	394.2	69.0		
J128	7.8	243	394.2	65.5		
J-13	7.8	348	511.3	70.8		
J130	7.8	250	394.2	62.5		
J132	7.8	225	394.2	73.3		
J134	7.8	230	394.2	71.2		
J136	7.8	235	394.3	69.0		
J138	7.8	281	509.9	99.4		
J14	7.8	20	320.4	130.2		
J-14	7.8	346	511.4	71.7		
J140	7.8	281	394.2	49.3		
J142	7.8	300	509.9	90.9		
J144	7.8	300	509.9	91.0		
J146	7.8	320	509.9	82.3		
J148	7.8	345	510.0	71.5		
J-15	0.0	290	322.6	14.1		
J150	7.8	342	511.4	73.4		
J152	7.8	338	511.4	75.1		
J154	7.8	345	511.5	72.1		
J156	7.8	347	511.5	71.3		
J158	7.8	343	511.4	73.0		
J16	7.8	170	425.1	110.5		
J-16	7.8	347	511.4	71.2		
J160	7.8	342	511.4	73.4		
J162	7.8	341	511.4	73.8		
J164	7.8	332	512.6	78.3		
J166	7.8	347	512.6	71.8		
J168	7.8	342	511.4	73.4		
J-17	7.8	347	511.4	71.2		
J170	7.8	345	511.4	72.1		
J172	7.8	342	511.4	73.4		
J174	7.8	340	511.3	74.2		
J176	7.8	345	511.4	72.1		
J178	7.8	345	511.4	72.1		
J18	7.8	213	425.2	91.9		
J-18	7.8	347	511.4	71.2		

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J180	7.8	340	511.4	74.3
J182	7.8	340	511.4	74.3
J184	7.8	340	511.4	74.2
J186	7.8	332	511.3	77.7
J188	7.8	348	511.3	70.8
J-19	7.8	165	395.5	99.9
J190	7.8	285	511.3	98.1
J192	7.8	250	510.8	113.0
J194	7.8	255	510.8	110.9
J196	7.8	295	510.8	93.5
J198	7.8	378	509.6	57.0
J-2	7.8	345	512.9	72.8
J20	7.8	280	394.7	49.7
J200	7.8	192	320.9	55.9
J202	7.8	218	423.0	88.8
J204	7.8	250	423.5	75.2
J206	7.8	290	426.9	59.3
J208	7.8	238	394.8	67.9
J-21	7.8	305	509.9	88.8
J212	0.0	50	57.0	3.0
J214	0.0	50	315.9	115.2
J216	7.8	186	315.8	56.3
J218	7.8	194	315.8	52.8
J22	7.8	250	394.7	62.7
J-22	7.8	260	394.4	58.2
J220	7.8	200	315.8	50.2
J222	7.8	210	315.8	45.9
J226	0.0	364	510.1	63.3
J228	7.8	200	425.2	97.6
J-23	7.8	342	510.4	73.0
J230	7.8	346	511.3	71.6
J232	7.8	348	511.3	70.8
J234	7.8	200	315.8	50.2
J236	7.8	110	320.6	91.3
J238	7.8	70	320.6	108.6
J24	7.8	285	514.4	99.4
J-24	7.8	343	512.8	73.6
J240	7.8	60	320.6	112.9
J242	7.8	210	315.8	45.9
J244	7.8	204	315.8	48.5
J246	7.8	280	402.2	53.0
J248	7.8	180	425.1	106.2
J-25	7.8	300	514.9	93.1
J250	7.8	318	426.4	47.0
J252	0.0	60	315.9	110.9
J254	7.8	345	511.4	72.1
J26	7.8	278	395.3	50.8
J-26	0.0	364	425.9	26.8
J262	7.8	46	311.9	115.2
J264	7.8	307	426.3	51.7
J266	7.8	312	426.3	49.5
J268	7.8	300	426.3	54.7
J-27	7.8	152	320.3	72.9
J270	7.8	323	512.4	82.1
J272	7.8	330	509.9	78.0
J274	7.8	337	510.0	74.9
J276	7.8	335	510.0	75.8
J28	7.8	256	394.3	59.9
J-28	7.8	375	509.6	58.3
J280	0.0	278	395.3	50.8
J282	0.0	285	514.9	99.6
J284	0.0	209	322.2	49.0
J286	0.0	248	322.4	32.2

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J288	0.0	246	425.4	77.7
J-29	7.8	375	509.6	58.3
J290	0.0	264	425.5	70.0
J296	0.0	323	421.0	42.5
J298	0.0	0	320.4	138.8
J-3	7.8	50	320.6	117.2
J30	7.8	348	511.4	70.8
J-30	7.8	312	509.6	85.6
J300	0.0	0	320.4	138.8
J302	0.0	0	320.4	138.8
J304	0.0	325	511.2	80.7
J306	0.0	333	511.2	77.2
J-31	7.8	310	425.9	50.2
J32	7.8	65	311.9	107.0
J-32	7.8	306	425.9	51.9
J-33	7.8	250	509.9	112.6
J34	7.8	70	311.9	104.8
J-34	7.8	74	311.9	103.1
J-35	7.8	73	313.2	104.1
J36	7.8	54	311.9	111.7
J-36	7.8	195	429.4	101.6
J-37	7.8	347	512.9	71.9
J38	7.8	90	311.9	96.1
J-38	7.8	344	513.1	73.3
J-39	7.8	40	311.9	117.8
J-4	7.8	331	512.9	78.8
J40	7.8	80	311.9	100.5
J42	7.8	80	308.6	99.1
J44	7.8	65	311.8	107.0
J46	7.8	90	311.8	96.1
J48	7.8	136	320.5	79.9
J-5	0.0	349	427.1	33.8
J50	7.8	194	422.8	99.1
J52	7.8	184	320.7	59.2
J54	7.8	142	320.5	77.3
J56	7.8	156	320.2	71.2
J58	7.8	105	319.7	93.0
J-6	7.8	344	512.8	73.1
J60	7.8	118	310.4	83.4
J62	7.8	142	310.4	73.0
J64	7.8	110	320.6	91.3
J66	7.8	131	320.6	82.2
J68	7.8	135	310.4	76.0
J-7	7.8	345	512.8	72.7
J70	7.8	100	309.8	90.9
J72	7.8	151	313.4	70.4
J74	7.8	140	313.4	75.1
J76	7.8	140	312.8	74.9
J78	7.8	20	316.1	128.3
J80	7.8	20	315.1	127.9
J-8000	0.0	350	424.2	32.2
J-8001	0.0	350	556.7	89.5
J-8002	7.8	304	427.2	53.4
J-8003	7.8	294	431.1	59.4
J-8004	7.8	348	511.4	70.8
J-8008	7.8	330	511.0	78.4
J-8101	7.8	27	320.6	127.2
J-8102	7.8	27	320.6	127.2
J-8103	7.8	27	320.6	127.2
J-8104	7.8	35	320.6	123.8
J-8105	7.8	26	316.4	125.8
J-8106	7.8	15	313.6	129.4
J-8107	7.8	15	313.6	129.4

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8108	7.8	15	313.6	129.4
J-8109	7.8	15	313.6	129.4
J-8110	7.8	19	311.9	126.9
J-8111	7.8	50	311.9	113.5
J-8112	7.8	17	311.9	127.8
J-8113	7.8	46	311.9	115.2
J-8114	7.8	15	311.9	128.6
J-8115	7.8	52	311.9	112.6
J-8116	7.8	58	312.5	110.3
J-8117	7.8	65	315.9	108.7
J-8118	7.8	46	316.0	117.0
J-8119	7.8	26	316.1	125.7
J-8120	7.8	23	316.1	127.0
J-8121	7.8	40	316.0	119.6
J-8122	7.8	58	315.9	111.7
J-8123	7.8	80	311.8	100.5
J-8124	7.8	76	311.8	102.2
J-8125	7.8	86	311.8	97.9
J-8126	7.8	50	320.6	117.2
J-8127	7.8	50	320.6	117.2
J-8128	7.8	50	320.5	117.2
J-8129	7.8	40	320.4	121.5
J-8130	7.8	35	320.3	123.6
J-8131	7.8	30	320.3	125.8
J-8132	7.8	140	320.5	78.2
J-8133	7.8	143	320.6	77.0
J-8134	7.8	134	320.6	80.9
J-8135	7.8	170	320.7	65.3
J-8136	7.8	170	320.7	65.3
J-8137	7.8	191	320.8	56.3
J-8138	7.8	175	320.7	63.2
J-8139	7.8	156	320.7	71.4
J-8140	7.8	140	320.8	78.3
J-8141	7.8	154	320.7	72.2
J-8142	7.8	150	320.4	73.8
J-8143	7.8	136	320.5	79.9
J-8145	7.8	150	320.3	73.8
J-8146	7.8	152	317.1	71.5
J-8147	7.8	110	317.0	89.7
J-8148	7.8	151	314.0	70.6
J-8149	7.8	160	314.0	66.7
J-8151	7.8	147	311.1	71.1
J-8152	7.8	131	310.5	77.8
J-8153	7.8	126	310.5	80.0
J-8155	7.8	73	311.9	103.5
J-8157	7.8	127	311.9	80.1
J-8158	7.8	20	311.9	126.5
J-8159	7.8	20	308.1	124.8
J-8160	7.8	17	317.0	130.0
J-8161	7.8	90	311.9	96.2
J-8162	7.8	18	315.0	128.7
J-8163	7.8	18	309.7	126.4
J-8166	7.8	190	321.0	56.8
J82	7.8	190	320.4	56.5
J-8200	7.8	190	422.8	100.9
J-8201	7.8	209	423.0	92.7
J-8202	7.8	248	423.5	76.0
J-8203	7.8	290	423.8	58.0
J-8204	7.8	290	428.3	59.9
J-8206	7.8	316	426.7	48.0
J-8207	7.8	320	426.2	46.0
J-8208	7.8	323	426.2	44.7
J-8209	7.8	323	426.3	44.8

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8210	7.8	322	426.4	45.2
J-8211	7.8	330	426.4	41.8
J-8212	7.8	321	426.4	45.7
J-8213	7.8	317	426.3	47.4
J-8214	7.8	245	429.4	79.9
J-8215	7.8	278	430.1	65.9
J-8216	7.8	298	427.3	56.0
J-8217	7.8	303	426.4	53.5
J-8219	7.8	195	429.2	101.5
J-8220	7.8	229	424.8	84.9
J-8221	7.8	202	424.8	96.5
J-8222	7.8	231	395.6	71.3
J-8223	7.8	210	395.6	80.4
J-8224	7.8	185	395.6	91.2
J-8225	7.8	184	395.5	91.6
J-8226	7.8	146	395.5	108.1
J-8227	7.8	137	395.5	112.0
J-8228	7.8	180	395.5	93.4
J-8229	7.8	250	395.3	63.0
J-8230	7.8	255	395.3	60.8
J-8231	7.8	277	395.3	51.3
J-8232	7.8	275	394.9	52.0
J-8233	7.8	276	394.8	51.5
J-8234	7.8	280	394.7	49.7
J-8235	7.8	273	394.7	52.7
J-8236	7.8	210	430.0	95.3
J-8237	7.8	230	430.1	86.7
J-8240	7.8	256	394.3	59.9
J-8241	7.8	245	394.3	64.7
J-8242	7.8	280	394.3	49.5
J-8243	7.8	280	394.2	49.5
J-8244	7.8	230	394.2	71.2
J-8245	7.8	220	394.2	75.5
J-8246	7.8	240	394.2	66.8
J-8247	7.8	246	394.3	64.3
J-8248	7.8	230	394.4	71.2
J-8249	7.8	220	394.4	75.6
J-8250	0.0	307	425.9	51.5
J-8253	7.8	320	426.1	46.0
J-8256	7.8	300	425.9	54.6
J-8257	7.8	314	426.0	48.5
J-8258	7.8	308	426.0	51.1
J-8259	7.8	298	425.9	55.4
J-8262	7.8	297	426.1	56.0
J-8263	7.8	304	425.8	52.8
J-8264	7.8	304	425.8	52.8
J-8266	7.8	278	425.5	63.9
J-8267	7.8	279	425.4	63.4
J-8268	7.8	290	425.4	58.7
J-8269	7.8	249	425.4	76.4
J-8270	7.8	247	425.4	77.3
J-8271	7.8	257	425.4	73.0
J-8272	7.8	270	425.5	67.4
J-8273	7.8	255	425.4	73.8
J-8275	7.8	264	423.8	69.2
J-8276	7.8	282	425.6	62.2
J-8277	7.8	244	425.4	78.6
J-8278	7.8	238	425.4	81.2
J-8279	7.8	230	425.3	84.6
J-8280	7.8	222	425.2	88.1
J-8281	7.8	225	425.2	86.7
J-8282	7.8	214	425.2	91.5
J-8283	7.8	214	422.7	90.4

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8284	7.8	220	422.8	87.9
J-8285	7.8	246	423.0	76.7
J-8286	7.8	221	425.2	88.5
J-8287	7.8	217	425.2	90.2
J-8288	7.8	198	425.2	98.4
J-8289	7.8	212	425.2	92.4
J-8290	7.8	171	425.1	110.1
J-8291	7.8	153	425.1	117.9
J-8298	0.0	290	321.8	13.8
J-8299	7.8	295	509.9	93.1
J-8301	7.8	330	513.5	79.5
J-8302	7.8	332	511.9	77.9
J-8304	7.8	339	511.4	74.7
J-8305	0.0	349	516.1	72.4
J-8306	7.8	325	514.5	82.1
J-8308	7.8	342	512.3	73.8
J-8309	7.8	332	514.5	79.1
J-8310	7.8	345	511.7	72.3
J-8311	7.8	345	510.0	71.5
J-8312	7.8	325	509.9	80.1
J-8313	7.8	300	509.9	91.0
J-8314	7.8	315	509.9	84.5
J-8315	7.8	325	509.9	80.1
J-8316	7.8	300	509.9	91.0
J-8317	7.8	340	510.0	73.7
J-8318	7.8	335	511.4	76.4
J-8319	7.8	337	511.4	75.6
J-8320	7.8	337	511.4	75.6
J-8321	7.8	348	511.3	70.8
J-8322	7.8	355	511.3	67.7
J-8323	7.8	352	511.3	69.0
J-8324	7.8	347	511.3	71.2
J-8325	7.8	348	511.3	70.8
J-8326	7.8	342	511.4	73.4
J-8330	7.8	325	511.1	80.6
J-8331	7.8	291	511.0	95.3
J-8332	7.8	260	510.9	108.7
J-8333	7.8	300	510.9	91.4
J-8334	7.8	218	510.8	126.9
J-8335	7.8	327	511.2	79.8
J-8336	7.8	329	511.2	78.9
J-8337	7.8	325	511.1	80.6
J-8338	7.8	318	511.1	83.7
J-8339	7.8	320	511.1	82.8
J-8340	7.8	322	510.9	81.9
J-8341	7.8	325	510.7	80.5
J-8342	7.8	325	510.4	80.4
J-8343	7.8	346	510.3	71.2
J-8344	7.8	320	511.1	82.8
J-8345	7.8	315	511.1	85.0
J-8346	7.8	351	510.2	69.0
J-8347	7.8	330	510.2	78.1
J-8348	7.8	320	510.2	82.4
J-8349	7.8	352	510.2	68.6
J-8350	7.8	340	510.2	73.7
J-8351	7.8	330	510.2	78.1
J-8352	7.8	330	510.2	78.1
J-8353	7.8	321	510.2	82.0
J-8354	7.8	320	510.1	82.4
J-8356	7.8	307	510.2	88.1
J-8357	7.8	350	510.2	69.4
J-8358	7.8	340	510.2	73.7
J-8359	7.8	363	510.1	63.7

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8360	7.8	370	510.1	60.7
J-8361	7.8	368	510.1	61.6
J-8363	7.8	365	509.9	62.8
J-8364	7.8	365	509.9	62.8
J-8365	7.8	362	509.9	64.1
J-8366	7.8	360	509.9	65.0
J-8367	7.8	356	509.9	66.7
J-8368	7.8	350	509.8	69.2
J-8369	7.8	369	509.9	61.1
J-8370	7.8	350	509.7	69.2
J-8371	7.8	343	509.6	72.2
J-8372	7.8	354	509.6	67.4
J-8373	7.8	340	509.6	73.5
J-8374	7.8	378	509.7	57.1
J-8375	7.8	331	511.3	78.1
J-8376	7.8	346	511.4	71.6
J-8378	7.8	335	511.3	76.4
J-8379	7.8	180	510.8	143.3
J-8380	7.8	265	510.8	106.5
J-8381	7.8	335	510.2	75.9
J-8382	7.8	322	511.1	81.9
J-8383	7.8	360	510.2	65.1
J-8384	7.8	330	510.2	78.1
J-8386	7.8	350	510.2	69.4
J-8387	7.8	317	513.1	85.0
J-8388	7.8	331	513.2	79.0
J-8389	7.8	330	514.9	80.1
J-8390	7.8	330	514.9	80.1
J-8391	7.8	336	515.5	77.8
J-8392	7.8	335	515.1	78.0
J-8394	7.8	378	509.7	57.1
J-8396	7.8	347	509.8	70.5
J84	7.8	125	320.4	84.7
J-8401	7.8	368	509.6	61.3
J-8402	7.8	366	509.6	62.2
J-8403	7.8	350	509.6	69.1
J-8404	7.8	300	509.6	90.8
J-8408	7.8	310	510.2	86.7
J-8409	7.8	365	510.0	62.8
J-8410	7.8	362	510.1	64.2
J-8412	0.0	332	425.9	40.7
J-8413	0.0	362	425.9	27.7
J-8415	7.8	335	510.1	75.9
J-8417	7.8	358	510.1	65.9
J-8419	0.0	364	510.1	63.3
J-8420	7.8	340	510.1	73.7
J-8421	0.0	364	425.9	26.8
J-8422	0.0	364	575.9	91.8
J-8423	7.8	307	510.2	88.0
J-8424	7.8	90	315.9	97.9
J-8425	7.8	130	315.9	80.5
J-8426	7.8	150	315.9	71.9
J-8427	7.8	110	315.9	89.2
J-8428	7.8	130	315.9	80.5
J-8429	7.8	95	315.9	95.7
J86	7.8	123	425.1	130.9
J-8601	7.8	86	311.8	97.9
J-8602	7.8	80	309.2	99.3
J-8605	7.8	100	311.9	91.8
J-8606	7.8	27	318.0	126.1
J-8608	7.8	230	394.6	71.3
J-8609	7.8	24	320.3	128.4
J-8610	7.8	25	320.0	127.8

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8611	7.8	20	315.9	128.2
J-8612	7.8	27	311.9	123.5
J-8613	7.8	160	320.6	69.6
J-8614	7.8	140	321.1	78.5
J-8616	7.8	130	320.9	82.7
J-8622	7.8	208	425.1	94.1
J-8623	7.8	236	425.2	82.0
J-8624	7.8	273	425.4	66.0
J-8627	7.8	312	425.9	49.4
J-8628	7.8	250	425.7	76.1
J-8629	7.8	306	425.4	51.7
J-8630	7.8	300	425.5	54.4
J-8634	7.8	166	422.6	111.2
J-8635	7.8	206	425.2	95.0
J-8636	7.8	234	425.4	82.9
J-8637	7.8	285	425.4	60.8
J-8638	7.8	190	320.9	56.7
J-8651	7.8	356	511.1	67.2
J-8652	7.8	362	511.0	64.5
J-8661	7.8	260	395.0	58.5
J-8662	7.8	270	425.9	67.6
J-8663	7.8	185	314.0	55.9
J-8664	7.8	305	426.3	52.6
J-8665	7.8	310	425.8	50.2
J-8666	7.8	130	317.0	81.0
J-8667	7.8	111	320.6	90.8
J-8669	7.8	75	311.8	102.6
J88	7.8	172	425.2	109.7
J-9	7.8	342	512.8	74.0
J90	7.8	171	425.1	110.1
J94	7.8	226	425.3	86.4
J-94	7.8	380	509.6	56.2
J-9504	7.8	357	511.3	66.8
J-9505	7.8	346	510.1	71.1
J-9507	7.8	300	509.9	91.0
J-9508	7.8	218	394.5	76.5
J-9509	7.8	222	394.8	74.9
J-9510	7.8	302	514.9	92.2
J-9511	7.8	310	514.8	88.8
J-9512	7.8	290	394.6	45.3
J-9513	7.8	60	315.9	110.9
J-9514	7.8	50	311.9	113.5
J-9516	7.8	100	320.4	95.5
J-9517	7.8	308	426.5	51.4
J-9518	7.8	303	426.5	53.5
J-9519	7.8	318	426.5	47.0
J-9520	0.0	318	426.5	47.0
J-9521	0.0	320	426.4	46.1
J-9524	0.0	0	426.4	184.7

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
10	4.7	47.4	1,000	44.0	35.4	J-8212	11	3,235	2,989	2,989	0
12	4.7	114.0	1,000	98.4	38.2	J-8212	15	1,567	2,743	1,567	0
14	4.7	74.0	1,000	70.3	37.6	J-8212	P-19	3,013	3,804	3,013	0
16	4.7	59.9	1,000	51.1	37.6	22		3,905	2,996	2,996	0
18	4.7	56.3	1,000	47.8	37.5	22		3,691	3,258	3,258	0
20	4.7	56.6	1,000	47.8	37.2	22	31	2,608	2,776	2,608	0
22	4.7	43.6	1,000	36.4	36.4	22		2,274	2,279	2,274	0
24	4.7	44.3	1,000	37.6	37.1	22		2,558	2,565	2,558	0
26	4.7	84.9	1,000	79.6	37.6	J-8212		3,758	3,761	3,758	0
28	4.7	84.4	1,000	77.5	37.6	J-8212	P119	1,714	3,301	1,714	0
J-1	4.7	74.1	1,000	71.7	37.6	J-8212		4,245	4,249	4,245	0
J10	4.7	210.9	2,500	133.6	38.2	J-8212	P11	3,492	3,565	3,492	0
J-10	4.7	120.5	1,000	117.8	38.2	J-8212	P-9001	3,525	8,411	3,525	0
J102	4.7	60.4	1,000	40.9	37.6	22	P111	1,562	1,626	1,562	0
J104	4.7	76.8	1,000	51.9	37.6	22	P113	1,567	1,626	1,567	0
J108	4.7	85.7	1,000	73.4	37.6	J-8212	P115	1,567	2,457	1,567	0
J-11	4.7	71.8	2,500	55.2	37.0	J-8212	P-24	3,464	4,085	3,464	0
J110	4.7	84.4	1,000	79.0	37.6	J-8212	51	2,916	3,728	2,916	0
J112	4.7	84.9	1,000	73.8	37.6	J-8212	P121	1,567	2,565	1,567	0
J118	4.7	85.7	2,500	61.5	37.0	J-8212		4,095	4,098	4,095	0
J-12	4.7	72.7	2,500	58.2	37.0	J-8212	P-23	4,350	4,216	4,216	0
J120	4.7	84.5	1,000	81.8	37.6	J-8212	P129	4,024	4,518	4,024	0
J122	4.7	65.9	1,000	16.5	16.5	J122	P133	881	965	881	119
J124	4.7	88.0	1,000	80.9	37.6	J-8212	P135	1,567	4,009	1,567	0
J-13	4.7	72.7	2,500	57.1	37.0	J-8212	P-25	2,832	4,147	2,832	0
J132	4.7	78.9	1,000	59.9	36.9	J-8212	P137	2,778	2,648	2,648	0
J134	4.7	76.8	1,000	57.8	36.9	J-8212	P141	2,748	2,690	2,690	0
J136	4.7	74.6	1,000	56.1	36.9	J-8212	P-9149	2,459	2,695	2,459	0
J138	4.7	101.8	1,000	75.9	37.6	J-8212	9001U	1,562	1,738	1,562	0
J14	4.7	124.9	2,500	95.6	36.6	J82	P17	2,399	4,148	2,399	101
J-14	4.7	73.6	2,500	58.1	37.0	J-8212	P-32	3,811	4,315	3,811	0
J140	4.7	54.9	1,000	38.5	37.0	J-8212	P149	1,472	2,546	1,472	0
J144	4.7	93.4	1,000	73.4	37.6	J-8212		2,019	1,890	1,890	0
J146	4.7	84.7	1,000	65.0	37.6	J-8212		1,886	1,863	1,863	0
J148	4.7	73.9	1,000	49.8	37.6	J-8212		1,511	1,511	1,511	0
J150	4.7	75.3	2,500	60.0	37.0	J-8212		4,375	4,362	4,362	0
J152	4.7	77.0	2,500	60.2	37.0	J-8212	P177	4,253	4,306	4,253	0
J154	4.7	74.0	1,000	70.8	37.6	J-8212	P169	3,835	4,132	3,835	0
J156	4.7	73.1	1,000	67.7	37.6	J-8212	P167	1,567	3,438	1,567	0
J158	4.7	74.9	1,000	71.9	37.6	J-8212	P171	2,999	4,278	2,999	0
J-16	4.7	73.1	2,500	57.9	37.0	J-8212	P-31	4,285	4,321	4,285	0
J160	4.7	75.3	1,000	71.6	37.6	J-8212	P175	3,028	4,035	3,028	0
J162	4.7	75.7	1,000	72.6	37.6	J-8212	P177	3,253	4,246	3,253	0
J164	4.7	79.7	1,000	78.1	37.6	J-8212		4,805	4,570	4,570	0
J166	4.7	73.2	1,000	64.6	37.6	J-8212	P183	1,567	2,623	1,567	0
J168	4.7	75.3	2,500	58.0	37.0	J-8212	P187	3,109	4,243	3,109	0
J-17	4.7	73.2	2,500	58.6	37.0	J-8212	P185	2,995	4,372	2,995	0
J170	4.7	74.0	2,500	59.0	37.0	J-8212		4,360	4,329	4,329	0
J172	4.7	75.3	2,500	59.6	37.0	J-8212		4,344	4,329	4,329	0
J174	4.7	76.2	3,500	47.8	36.8	J-8212		4,329	4,318	4,318	0
J176	4.7	74.0	3,750	32.8	32.8	J176	P347	2,382	4,081	2,382	1,368
J178	4.7	74.0	3,750	41.6	36.7	J-8212		4,325	4,330	4,325	0
J18	4.7	89.6	1,000	72.0	37.6	22	P21	1,567	2,498	1,567	0
J-18	4.7	73.1	2,500	57.6	37.0	J-8212	P-32	3,715	4,300	3,715	0
J180	4.7	76.2	2,500	59.2	37.0	J-8212	P-44	3,922	4,291	3,922	0
J182	4.7	76.2	2,500	57.4	37.0	J-8212	P209	3,305	4,181	3,305	0
J184	4.7	76.2	2,500	59.6	37.0	J-8212		4,308	4,312	4,308	0
J186	4.7	79.6	2,500	60.2	37.0	J-8212	P325	2,280	4,219	2,280	220
J188	4.7	72.7	2,500	50.7	37.0	J-8212	P285	2,870	3,919	2,870	0
J-19	4.7	105.1	1,000	75.1	36.4	J-8212	P-35	1,557	2,126	1,557	0
J190	4.7	100.0	2,500	73.1	37.0	J-8212	P221	3,525	3,919	3,525	0
J192	4.7	115.1	1,000	85.0	37.6	J-8212		1,881	1,675	1,675	0
J194	4.7	112.9	1,000	84.3	37.6	J-8212	P225	1,543	1,694	1,543	0
J196	4.7	95.6	1,000	64.9	37.6	J-8212		1,627	1,628	1,627	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J198	4.7	59.8	1,000	35.6	35.6	J198		1,326	1,326	1,326	0
J-2	4.7	74.1	1,000	70.9	37.6	J-8212	P-83	3,068	3,995	3,068	0
J20	4.7	55.2	1,000	30.2	30.2	J20		1,364	1,364	1,364	0
J200	4.7	50.4	1,000	43.2	38.1	J-8212	P281	2,919	3,333	2,919	0
J202	4.7	87.5	1,000	70.8	37.6	22	P-9088	1,879	2,538	1,879	0
J204	4.7	73.8	1,000	60.3	37.7	22	P243	2,207	2,641	2,207	0
J206	4.7	58.4	1,000	47.0	37.9	J-8212	P245	2,729	2,862	2,729	0
J208	4.7	73.4	1,000	49.1	36.7	J-8212	P247	1,567	1,910	1,567	0
J-21	4.7	91.2	1,000	71.3	37.6	J-8212		1,989	1,902	1,902	0
J216	4.7	173.6	2,500	87.2	38.2	J-8212		3,481	3,342	3,342	0
J218	4.7	170.1	2,500	80.8	38.2	J-8212		3,368	3,276	3,276	0
J22	4.7	68.2	1,000	40.9	30.2	J20	P25	1,567	1,364	1,364	0
J-22	4.7	63.8	1,000	42.2	34.0	J-9512	P-43	1,416	1,906	1,416	0
J220	4.7	167.5	2,500	69.4	38.2	J-8212	P259	1,967	3,152	1,967	534
J222	4.7	163.2	2,500	50.5	38.2	J-8212	P265	2,771	2,860	2,771	0
J-23	4.7	75.2	1,000	59.7	37.6	J-8212	P-45	1,437	1,962	1,437	0
J230	4.7	73.6	2,500	55.3	37.0	J-8212		4,150	4,154	4,150	0
J232	4.7	72.7	2,500	54.0	37.0	J-8212		4,105	4,109	4,105	0
J234	4.7	167.5	2,500	59.0	38.2	J-8212	P289	2,411	2,971	2,411	89
J236	4.7	85.9	1,000	77.7	38.2	J-8212	P73	1,557	3,200	1,557	0
J238	4.7	103.2	1,000	89.9	38.2	J-8212	P295	1,567	2,805	1,567	0
J24	4.7	100.1	1,000	-31.7	-31.7	J24	P27	392	767	392	608
J-24	4.7	74.9	1,000	72.6	37.6	J-8212		4,273	4,277	4,273	0
J242	4.7	163.2	2,500	49.6	38.2	J-8212		2,845	2,846	2,845	0
J244	4.7	165.8	2,500	-12.5	-12.5	J244	P299	1,567	2,238	1,567	933
J246	4.7	55.4	1,000	43.5	36.3	J-8212		2,669	2,672	2,669	0
J248	4.7	103.9	1,000	84.5	37.6	22	P427	1,883	2,591	1,883	0
J-25	4.7	93.6	1,000	91.3	37.6	J-8212	P-51	3,014	4,431	3,014	0
J26	4.7	56.2	1,000	38.1	37.2	J-8212	P29	852	1,313	852	148
J262	4.7	113.4	2,500	77.8	38.2	J-8212	P369	2,448	4,276	2,448	52
J266	4.7	42.1	2,500	26.4	24.3	J-8212		3,099	2,955	2,955	0
J268	4.7	47.3	1,000	42.8	35.4	J-8212		2,731	2,736	2,731	0
J-27	4.7	67.6	1,000	51.2	38.2	J-8212	PRV-12	2,278	3,110	2,278	0
J270	4.7	83.6	2,500	64.9	37.0	J-8212		4,342	4,346	4,342	0
J272	4.7	80.4	1,000	61.1	37.6	J-8212		1,833	1,833	1,833	0
J274	4.7	77.4	1,000	58.8	37.6	J-8212		1,820	1,820	1,820	0
J276	4.7	78.2	1,000	61.3	37.6	J-8212		1,929	1,898	1,898	0
J28	4.7	65.5	1,000	47.7	36.9	J-8212		2,737	2,562	2,562	0
J-28	4.7	61.1	1,000	30.5	30.5	J-29		1,182	1,182	1,182	0
J284	0.1	43.3	2,500	40.5	38.2	J-8212	P405	6,747	10,087	6,747	0
J-3	4.7	111.9	1,000	93.3	38.2	J-8212	P-10000	1,567	2,424	1,567	0
J30	4.7	72.7	2,500	59.9	37.0	J-8212		4,478	4,415	4,415	0
J-30	4.7	88.5	1,000	69.3	37.6	J-8212		2,139	1,896	1,896	0
J-31	4.7	46.6	1,000	38.1	36.9	22		2,324	2,329	2,324	0
J32	4.7	105.2	1,000	95.7	38.2	J-8212	P-88	2,614	3,171	2,614	0
J-32	4.7	47.2	1,000	40.0	37.6	22		2,907	2,916	2,907	0
J-33	4.7	115.3	1,000	98.6	37.6	J-8212	P-72	1,567	2,342	1,567	0
J34	4.7	103.0	2,500	76.6	38.2	J-8212	P37	3,747	4,391	3,747	0
J-34	4.7	101.3	1,000	92.6	38.2	J-8212	P-75	3,212	3,194	3,194	0
J-35	4.7	101.7	1,000	95.9	38.2	J-8212	P-78	5,076	3,888	3,888	0
J36	4.7	110.0	2,500	82.3	38.2	J-8212	P39	4,003	4,540	4,003	0
J-36	4.7	100.8	1,000	83.3	36.9	J-8212	P-82	1,567	2,831	1,567	0
J-37	4.7	73.2	1,000	70.1	37.6	J-8212	17	2,686	4,021	2,686	0
J38	4.7	94.4	1,000	84.1	38.2	J-8212	P41	1,567	3,198	1,567	0
J-38	4.7	74.5	1,000	71.8	37.6	J-8212	P-85	2,967	4,128	2,967	0
J-39	4.7	116.0	1,000	107.5	38.2	J-8212	P437	3,402	3,296	3,296	0
J-4	4.7	80.1	1,000	78.8	37.6	J-8212		4,847	4,593	4,593	0
J40	4.7	98.7	1,000	91.1	38.2	J-8212	P43	2,448	4,054	2,448	0
J44	4.7	105.2	2,500	64.9	38.2	J-8212	P-9376	3,780	3,605	3,605	0
J46	4.7	94.3	2,500	43.8	38.2	J-8212	P51	3,122	3,132	3,122	0
J48	4.7	74.6	2,500	38.2	31.1	J-8663	P53	1,567	3,351	1,567	933
J52	4.7	53.8	2,500	42.6	38.1	J-8212	P59	3,607	5,208	3,607	0
J-6	4.7	74.5	1,000	72.0	37.6	J-8212	P-49	3,577	4,212	3,577	0
J64	4.7	85.9	1,000	75.3	38.2	J-8212	P291	1,562	2,615	1,562	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J66	4.7	76.8	1,000	58.0	38.2	J-8212	P75	1,567	1,862	1,567	0
J-7	4.7	74.0	1,000	70.0	37.6	J-8212	21	2,962	3,742	2,962	0
J72	4.7	68.0	1,000	51.7	38.1	J-8663	P83	1,524	1,590	1,524	0
J-8002	4.7	54.1	1,000	42.7	37.9	J-8212	-VCIPLPOU	2,955	4,447	2,955	0
J-8003	4.7	60.6	1,000	49.0	37.5	J-8212	P-74	3,777	4,232	3,777	0
J-8004	4.7	72.7	2,500	60.0	37.0	J-8212		4,487	4,399	4,399	0
J-8008	4.7	80.6	2,500	67.3	37.1	J-8212	P-9341	3,773	4,566	3,773	0
J-8101	4.7	121.8	2,500	111.6	38.2	J-8212	P-9002	3,506	8,411	3,506	0
J-8102	4.7	121.8	2,500	86.5	38.2	J-8212	P-9003	1,567	4,576	1,567	933
J-8103	4.7	121.8	2,500	94.3	38.2	J-8212	P-9004	1,562	5,311	1,562	938
J-8104	4.7	118.4	1,000	116.2	38.2	J-8212	P-7037	7,413	8,411	7,413	0
J-8105	4.7	122.2	1,000	118.2	38.2	J-8212	P-9321	3,470	5,021	3,470	0
J-8106	4.7	126.9	2,750	102.2	38.2	J-8212	P-9007	4,721	4,862	4,721	0
J-8107	4.7	126.9	1,000	115.1	38.2	J-8212	P-9009	1,557	3,555	1,557	0
J-8108	4.7	126.9	1,000	112.8	38.2	J-8212	P-9011	1,567	3,184	1,567	0
J-8109	4.7	126.9	1,000	111.1	38.2	J-8212	P-9012	1,567	2,955	1,567	0
J-8110	4.7	125.1	2,500	101.2	38.2	J-8212	P-9010	5,430	4,402	4,402	0
J-8111	4.7	111.7	2,500	87.2	38.2	J-8212		5,528	4,289	4,289	0
J-8112	4.7	126.0	2,500	87.3	38.2	J-8212	P437	3,676	3,600	3,600	0
J-8113	4.7	113.4	2,500	84.2	38.2	J-8212	P-9016	4,633	4,276	4,276	0
J-8114	4.7	126.8	2,500	98.2	38.2	J-8212	P-9018	4,287	4,471	4,287	0
J-8115	4.7	110.8	2,500	83.1	38.2	J-8212		5,083	4,067	4,067	0
J-8116	4.7	108.2	1,000	102.2	38.2	J-8212		5,209	3,947	3,947	0
J-8117	4.7	105.2	1,000	99.5	38.2	J-8212	P-9021	4,812	3,842	3,842	0
J-8118	4.7	113.4	1,000	108.0	38.2	J-8212	P-9023	4,611	3,997	3,997	0
J-8119	4.7	122.1	1,000	117.1	38.2	J-8212	P-9008	4,330	4,244	4,244	0
J-8120	4.7	123.4	1,000	108.8	38.2	J-8212	P-9025	1,567	3,039	1,567	0
J-8121	4.7	116.0	1,000	102.7	38.2	J-8212	P-9024	1,567	3,096	1,567	0
J-8122	4.7	108.2	2,500	81.0	38.2	J-8212	P-9022	3,454	3,562	3,454	0
J-8123	4.7	98.7	2,500	51.1	38.2	J-8212	P-9026	2,439	3,342	2,439	61
J-8124	4.7	100.4	2,500	58.9	38.2	J-8212		3,687	3,630	3,630	0
J-8125	4.7	96.1	2,500	53.0	38.2	J-8212		3,490	3,493	3,490	0
J-8126	4.7	111.9	1,000	108.7	38.2	J-8212	P-9029	5,645	5,532	5,532	0
J-8127	4.7	111.9	1,000	108.7	38.2	J-8212	P-9029	4,386	5,480	4,386	0
J-8128	4.7	111.9	1,000	107.8	38.2	J-8212	P-9031	3,058	4,880	3,058	0
J-8129	4.7	116.2	2,500	90.4	36.6	J82	P-9033	3,498	4,165	3,498	0
J-8130	4.7	118.4	2,500	90.5	35.7	J82	P-9034	5,155	3,983	3,983	0
J-8131	4.7	120.5	2,500	91.0	34.8	J82	P-9037	3,523	3,832	3,523	0
J-8132	4.7	72.9	1,000	64.6	38.2	J-8212	P-9039	2,339	2,287	2,287	0
J-8133	4.7	71.6	1,000	65.7	38.2	J-8212	P-9329	2,263	3,678	2,263	0
J-8134	4.7	75.5	1,000	72.0	38.2	J-8212	P-9042	3,067	5,561	3,067	0
J-8135	4.7	59.9	1,000	57.1	38.2	J-8212	P65	3,362	5,916	3,362	0
J-8136	4.7	59.9	2,500	49.2	38.1	J-8212	P65	3,176	5,949	3,176	0
J-8137	4.7	50.8	2,500	25.9	25.9	J-8137	P-9047	2,036	2,845	2,036	464
J-8138	4.7	57.7	2,500	40.3	38.2	J-8212	P-9047	3,206	4,054	3,206	0
J-8139	4.7	66.0	1,000	63.0	38.2	J-8212	P-9044	3,880	5,687	3,880	0
J-8140	4.7	72.9	1,000	70.1	38.2	J-8212	P-9053	3,181	6,563	3,181	0
J-8141	4.7	66.8	1,000	62.8	38.2	J-8212	P-9050	3,010	4,428	3,010	0
J-8142	4.7	68.5	2,500	43.9	29.0	J-8663	P-9055	2,923	3,365	2,923	0
J-8143	4.7	74.6	2,500	50.4	31.1	J-8663	P-9058	2,130	3,844	2,130	370
J-8145	4.7	68.5	1,000	59.4	38.2	J-8212	P-9056	1,494	2,994	1,494	0
J-8146	4.7	67.6	1,000	55.9	38.2	J-8212	P-9059	1,497	2,139	1,497	0
J-8149	4.7	64.1	1,000	43.1	32.2	J-8663		1,533	1,307	1,307	0
J-8151	4.7	69.7	1,000	45.4	38.1	J-8663		1,513	1,514	1,513	0
J-8155	4.7	101.7	1,000	95.9	38.2	J-8212		5,125	4,280	4,280	0
J-8157	4.7	78.3	1,000	67.7	38.2	J-8212	P-76	2,637	2,713	2,637	0
J-8158	4.7	124.7	2,500	87.1	38.2	J-8212	P-79	4,005	3,699	3,699	0
J-8160	4.7	126.0	1,000	88.4	38.2	J-8212	P-9078	1,723	1,777	1,723	0
J-8161	4.7	94.4	1,000	83.9	38.2	J-8212	P35	2,514	3,013	2,514	0
J-8162	4.7	125.6	1,000	109.1	38.2	J-8212	P-9079	1,983	2,856	1,983	0
J-8166	4.7	51.3	2,500	15.1	15.1	J-8166	P-9048	1,304	2,310	1,304	1,196
J82	4.7	51.2	1,000	38.8	38.2	J-8212	P95	1,567	1,691	1,567	0
J-8203	4.7	60.3	1,000	49.0	37.8	J-8212	P-9520	1,634	4,269	1,634	0
J-8204	4.7	60.3	1,000	49.4	37.8	J-8212	P-9097	3,639	4,694	3,639	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8206	4.7	86.6	2,500	52.4	37.0	J-8212	P-9098	2,957	3,637	2,957	0
J-8207	4.7	84.9	2,500	58.4	37.0	J-8212	P321	3,201	3,964	3,201	0
J-8208	4.7	83.6	2,500	58.0	37.0	J-8212		3,978	3,981	3,978	0
J-8209	4.7	83.6	2,500	64.8	37.0	J-8212		4,338	4,341	4,338	0
J-8210	4.7	84.0	2,500	60.7	37.0	J-8212	P-9105	3,366	4,107	3,366	0
J-8212	4.7	38.2	2,500	24.0	24.0	J-8212		2,908	2,917	2,908	0
J-8213	4.7	39.9	2,500	24.9	24.2	J-8212		2,963	2,939	2,939	0
J-8214	4.7	79.2	1,000	67.0	36.9	J-8212	P-9113	2,223	3,414	2,223	0
J-8215	4.7	66.1	1,000	54.8	37.3	J-8212	P-9117	2,443	3,545	2,443	0
J-8216	4.7	57.5	1,000	45.8	37.3	J-8212		3,305	3,311	3,305	0
J-8217	4.7	92.2	2,500	-1,602.1	-1,604.3	J116	P-9099	387	444	387	2,113
J-8220	4.7	78.7	1,000	66.2	35.7	J-8212	P-9123	1,507	2,356	1,507	0
J-8222	4.7	76.5	1,000	56.9	36.4	J-8212	P-9122	2,119	2,515	2,119	0
J-8223	4.7	85.6	1,000	63.1	36.4	J-8212	P-9124	1,538	2,366	1,538	0
J-8224	4.7	96.4	1,000	70.4	36.4	J-8212	P-9127	1,684	2,263	1,684	0
J-8225	4.7	96.9	1,000	63.9	36.4	J-8212	P-9129	1,567	1,843	1,567	0
J-8226	4.7	113.3	1,000	76.6	36.4	J-8212	P-36	1,562	1,906	1,562	0
J-8227	4.7	117.2	1,000	73.7	36.4	J-8212	P-9132	1,567	1,718	1,567	0
J-8228	4.7	98.6	1,000	67.4	36.4	J-8212	P-9131	1,821	1,955	1,821	0
J-8229	4.7	68.3	1,000	51.6	36.4	J-8212	P-9134	2,626	2,784	2,626	0
J-8230	4.7	66.1	1,000	48.4	36.5	J-8212	P-9133	2,021	2,535	2,021	0
J-8231	4.7	56.6	1,000	43.4	36.5	J-8212	P29	1,753	2,779	1,753	0
J-8232	4.7	57.4	1,000	37.0	31.9	J-9512	P-9136	1,192	1,754	1,192	0
J-8233	4.7	56.9	1,000	35.2	30.7	J-9512	P-9137	1,291	1,581	1,291	0
J-8234	4.7	55.2	1,000	32.2	29.1	J-9512	P-9138	1,449	1,445	1,445	0
J-8235	4.7	58.2	1,000	30.1	30.1	J-8235		1,302	1,302	1,302	0
J-8236	4.7	95.6	1,000	69.0	37.3	J-8212	P-9141	1,567	2,025	1,567	0
J-8237	4.7	86.9	1,000	66.0	37.3	J-8212	P-9116	1,562	2,313	1,562	0
J-8240	4.7	65.5	1,000	47.7	36.9	J-8212		2,720	2,597	2,597	0
J-8241	4.7	70.3	1,000	52.0	36.9	J-8212		2,768	2,371	2,371	0
J-8242	4.7	55.1	1,000	36.8	36.8	J-8242		2,252	2,255	2,252	0
J-8243	4.7	55.1	1,000	38.1	37.0	J-8212	9001D	1,643	2,532	1,643	0
J-8244	4.7	76.8	1,000	58.1	36.9	J-8212	P-9146	2,505	2,630	2,505	0
J-8245	4.7	81.1	1,000	62.0	36.9	J-8212		2,886	2,692	2,692	0
J-8246	4.7	72.4	1,000	48.0	36.9	J-8212	P-9148	1,567	2,002	1,567	0
J-8247	4.7	69.8	1,000	52.3	36.9	J-8212		2,890	2,721	2,721	0
J-8248	4.7	76.8	1,000	58.4	36.8	J-8212	P-9150	2,587	2,905	2,587	0
J-8249	4.7	81.1	1,000	58.4	36.8	J-8212	P-9151	1,567	2,331	1,567	0
J-8253	4.7	84.9	1,000	77.9	37.6	J-8212	P-9104	2,448	3,302	2,448	0
J-8256	4.7	93.5	1,000	80.0	37.6	J-8212	P383	1,762	2,422	1,762	0
J-8257	4.7	87.5	1,000	77.5	37.6	J-8212	P-7046	1,808	2,752	1,808	0
J-8258	4.7	90.1	1,000	77.8	37.6	J-8212	P-9164	2,159	2,543	2,159	0
J-8259	4.7	94.4	1,000	71.5	37.6	J-8212	P-9163	1,171	1,867	1,171	0
J-8262	4.7	54.2	1,000	42.6	37.8	22	P-7042	2,077	2,294	2,077	0
J-8263	4.7	50.2	1,000	37.7	37.3	J-8665		1,816	1,818	1,816	0
J-8264	4.7	50.2	1,000	34.8	34.8	J-8264		1,533	1,533	1,533	0
J-8266	4.7	61.5	1,000	52.0	37.6	22		3,493	2,750	2,750	0
J-8267	4.7	61.0	1,000	51.4	37.6	22		3,422	2,453	2,453	0
J-8268	4.7	55.9	1,000	44.5	37.6	22	P-9345	2,327	2,114	2,114	0
J-8269	4.7	74.0	1,000	64.3	37.6	22		4,172	2,653	2,653	0
J-8270	4.7	74.8	1,000	64.7	37.6	22		3,963	2,657	2,657	0
J-8271	4.7	70.6	1,000	61.0	37.6	22		4,088	2,740	2,740	0
J-8272	4.7	65.0	1,000	55.5	37.6	22	P-9173	3,696	2,841	2,841	0
J-8273	4.7	71.5	1,000	61.1	37.6	22		3,645	2,780	2,780	0
J-8275	4.7	67.6	1,000	57.5	37.6	22	P417	1,853	2,844	1,853	0
J-8276	4.7	59.9	1,000	50.7	37.6	22	39	1,567	2,996	1,567	0
J-8277	4.7	76.2	1,000	66.1	37.6	22	P-9184	3,907	2,748	2,748	0
J-8278	4.7	78.8	1,000	68.7	37.6	22		4,192	2,700	2,700	0
J-8279	4.7	82.2	1,000	71.1	37.6	22	P-9191	3,090	2,713	2,713	0
J-8280	4.7	85.7	1,000	72.8	37.6	22	P-9192	2,283	2,732	2,283	0
J-8281	4.7	84.4	1,000	70.9	37.6	22		3,101	2,739	2,739	0
J-8282	4.7	89.1	1,000	75.2	37.6	22	P-9194	3,095	2,753	2,753	0
J-8283	4.7	89.1	1,000	74.5	37.6	22	P423	1,562	2,753	1,562	0
J-8284	4.7	86.5	1,000	72.0	37.6	22	P-9521	1,567	2,758	1,567	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8285	4.7	75.3	1,000	63.4	37.6	22	P415	1,716	2,777	1,716	0
J-8286	4.7	86.1	1,000	72.3	37.6	22	P-9187	2,870	2,758	2,758	0
J-8287	4.7	87.8	1,000	73.1	37.6	22	P-7040	2,867	2,738	2,738	0
J-8288	4.7	96.1	1,000	81.3	37.6	22	P-9203	3,107	2,737	2,737	0
J-8289	4.7	90.0	1,000	76.2	37.6	22		3,200	2,736	2,736	0
J-8291	4.7	115.5	1,000	96.4	37.6	22	P-9205	1,562	2,709	1,562	0
J-8299	4.7	95.8	1,000	82.9	37.6	J-8212	P-9431	2,374	2,353	2,353	0
J-8301	4.7	80.6	1,000	79.5	37.6	J-8212		4,902	4,629	4,629	0
J-8302	4.7	79.7	2,500	68.4	37.0	J-8212		4,779	4,501	4,501	0
J-8304	4.7	76.6	1,000	68.9	37.6	J-8212	P163	1,567	2,951	1,567	0
J-8306	4.7	82.7	1,000	80.5	37.6	J-8212	P393	3,808	4,324	3,808	0
J-8308	4.7	75.3	1,000	72.6	37.6	J-8212	P-48	2,542	4,161	2,542	0
J-8309	4.7	79.5	1,000	62.9	37.6	J-8212	P-9222	1,711	1,975	1,711	0
J-8310	4.7	74.0	1,000	70.3	37.6	J-8212	P165	2,785	3,919	2,785	0
J-8311	4.7	73.9	1,000	57.4	37.6	J-8212		1,874	1,875	1,874	0
J-8312	4.7	82.6	1,000	65.9	37.6	J-8212		2,035	1,925	1,925	0
J-8313	4.7	93.4	1,000	71.7	37.6	J-8212	P-9228	1,567	1,920	1,567	0
J-8314	4.7	86.9	1,000	67.4	37.6	J-8212		1,941	1,867	1,867	0
J-8315	4.7	82.6	1,000	57.4	37.6	J-8212	P-9230	1,567	1,609	1,567	0
J-8316	4.7	93.4	1,000	71.2	37.6	J-8212	P-40	1,567	1,890	1,567	0
J-8317	4.7	76.1	1,000	46.3	37.6	J-8212		1,417	1,417	1,417	0
J-8318	4.7	78.4	2,500	67.1	37.0	J-8212		4,747	4,459	4,459	0
J-8319	4.7	77.5	2,750	64.3	37.0	J-8212		4,702	4,451	4,451	0
J-8320	4.7	77.5	2,500	65.8	37.0	J-8212		4,689	4,442	4,442	0
J-8321	4.7	72.7	2,500	58.8	37.0	J-8212	P-9237	4,154	4,398	4,154	0
J-8322	4.7	69.7	2,500	55.6	37.0	J-8212		4,310	4,314	4,310	0
J-8323	4.7	71.0	2,500	57.8	37.0	J-8212		4,409	4,341	4,341	0
J-8324	4.7	73.1	2,500	58.2	37.0	J-8212		4,341	4,262	4,262	0
J-8325	4.7	72.7	2,500	54.7	37.0	J-8212		4,142	4,146	4,142	0
J-8326	4.7	75.3	2,500	59.5	37.0	J-8212		4,339	4,329	4,329	0
J-8330	4.7	82.6	1,000	71.2	37.6	J-8212	P-7023	1,515	2,169	1,515	0
J-8331	4.7	97.3	1,000	80.5	37.6	J-8212	P-9249	1,524	1,725	1,524	0
J-8332	4.7	110.8	1,000	86.6	37.6	J-8212	P-9251	1,534	1,839	1,534	0
J-8333	4.7	93.4	1,000	64.8	37.6	J-8212	P-9253	1,567	1,665	1,567	0
J-8334	4.7	128.9	1,000	88.8	37.6	J-8212	P-9254	1,557	1,532	1,532	0
J-8335	4.7	81.8	3,375	58.8	36.9	J-8212	P441	3,975	4,502	3,975	0
J-8336	4.7	81.0	2,500	64.1	37.0	J-8212	P-9257	3,468	4,395	3,468	0
J-8337	4.7	82.7	2,500	65.5	37.0	J-8212	P-9260	3,610	4,410	3,610	0
J-8338	4.7	85.8	2,500	70.7	37.1	J-8212	P-9261	3,014	4,523	3,014	0
J-8339	4.7	84.9	2,500	70.6	37.0	J-8212	P439	4,453	4,528	4,453	0
J-8340	4.7	84.1	2,500	72.6	37.1	J-8212	P-9263	4,647	4,613	4,613	0
J-8341	4.7	82.8	2,500	72.3	37.1	J-8212		4,890	4,612	4,612	0
J-8342	4.7	82.8	2,500	73.0	37.1	J-8212		4,935	4,613	4,613	0
J-8343	4.7	73.7	2,500	60.6	37.2	J-8212		4,422	4,413	4,413	0
J-8344	4.7	84.9	1,000	79.9	37.6	J-8212	P-9262	1,557	3,977	1,557	0
J-8345	4.7	87.1	1,000	78.6	37.6	J-8212	P-9269	1,562	3,082	1,562	0
J-8346	4.7	71.6	2,500	58.4	37.2	J-8212		4,359	4,360	4,359	0
J-8347	4.7	80.7	2,500	60.9	37.2	J-8212	P-9271	2,724	4,174	2,724	0
J-8348	4.7	85.0	2,500	62.3	37.2	J-8212	P-9273	3,525	4,109	3,525	0
J-8349	4.7	71.1	2,500	58.0	37.2	J-8212		4,354	4,312	4,312	0
J-8350	4.7	76.3	2,500	63.8	37.2	J-8212	P-9274	4,131	4,349	4,131	0
J-8351	4.7	80.7	2,500	69.2	37.2	J-8212		4,718	4,474	4,474	0
J-8352	4.7	80.7	2,500	68.0	37.2	J-8212	P-9277	3,711	4,568	3,711	0
J-8353	4.7	84.6	2,500	74.2	37.2	J-8212	P-9279	2,780	4,593	2,780	0
J-8354	4.7	85.0	1,000	80.9	37.6	J-8212		5,217	4,535	4,535	0
J-8356	4.7	90.6	1,000	85.8	37.6	J-8212	P-9404	2,542	4,171	2,542	0
J-8357	4.7	72.1	1,000	67.0	37.6	J-8212	P319	2,333	4,066	2,333	0
J-8358	4.7	76.4	2,500	66.4	37.2	J-8212		4,710	4,495	4,495	0
J-8359	4.7	66.6	2,500	55.7	37.2	J-8212		4,358	4,346	4,346	0
J-8360	4.7	63.4	1,000	57.2	37.6	J-8212	P-9285	2,973	3,587	2,973	0
J-8361	4.7	64.2	1,000	58.4	37.6	J-8212	P-9425	2,405	3,840	2,405	0
J-8363	4.7	65.5	2,500	53.9	37.3	J-8212	P-9407	3,960	4,295	3,960	0
J-8364	4.7	65.5	2,500	32.1	32.1	J-8364	P-9291	2,021	3,043	2,021	479
J-8365	4.7	66.8	2,500	6.1	6.1	J-8365	P-9293	1,512	2,141	1,512	988

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8366	4.7	67.7	2,500	3.5	3.5	J-8366	P-9295	1,690	2,094	1,690	810
J-8367	4.7	69.4	2,500	46.0	37.3	J-8212	P-9292	2,502	3,686	2,502	0
J-8368	4.7	72.1	2,500	33.7	33.7	J-8368	P-9296	2,812	3,022	2,812	0
J-8369	4.7	64.3	2,500	49.3	37.2	J-8212		4,007	4,011	4,007	0
J-8370	4.7	72.0	1,000	60.4	37.6	J-8212	P-9297	1,217	2,548	1,217	0
J-8371	4.7	75.1	1,000	57.9	37.6	J-8212	P-9299	1,841	1,919	1,841	0
J-8372	4.7	70.3	1,000	51.2	37.6	J-8212		1,784	1,785	1,784	0
J-8373	4.7	76.4	1,000	56.8	37.6	J-8212		1,882	1,880	1,880	0
J-8374	4.7	59.8	1,000	44.1	37.6	J-8212		1,763	1,755	1,755	0
J-8375	4.7	80.1	2,500	62.8	37.0	J-8212	P193	4,329	4,304	4,304	0
J-8376	4.7	73.6	2,500	58.8	37.0	J-8212		4,369	4,323	4,323	0
J-8378	4.7	78.3	2,500	61.2	37.0	J-8212		4,323	4,280	4,280	0
J-8379	4.7	145.4	1,000	97.6	37.6	J-8212	P-9256	1,567	1,532	1,532	0
J-8380	4.7	108.6	1,000	63.3	37.6	J-8212		1,440	1,440	1,440	0
J-8381	4.7	78.5	2,500	59.1	37.2	J-8212	P-9268	2,621	4,143	2,621	0
J-8383	4.7	67.7	2,500	53.9	37.2	J-8212		4,226	4,230	4,226	0
J-8384	4.7	80.7	2,500	63.6	37.2	J-8212	P-9336	2,881	4,326	2,881	0
J-8387	4.7	86.2	1,000	84.1	37.6	J-8212	P-9330	4,249	4,658	4,249	0
J-8388	4.7	80.1	1,000	79.0	37.6	J-8212		4,876	4,616	4,616	0
J-8389	4.7	80.6	1,000	78.8	37.6	J-8212	P-9309	4,065	4,518	4,065	0
J-8390	4.7	80.6	1,000	80.0	37.6	J-8212		4,855	4,672	4,672	0
J-8392	4.7	78.4	1,000	69.8	37.6	J-8212	P-9347	1,742	2,600	1,742	0
J-8394	4.7	59.8	1,000	43.4	37.6	J-8212	P-9362	1,342	1,710	1,342	0
J-8396	4.7	73.5	2,500	34.3	34.3	J-8396	P-9363	2,911	3,025	2,911	0
J84	4.7	79.4	1,000	69.9	38.2	J-8212	P-7041	2,582	1,980	1,980	0
J-8401	4.7	64.2	1,000	35.0	35.0	J-8401	P-9304	1,216	1,265	1,216	0
J-8403	4.7	72.0	1,000	35.2	35.2	J-8403	P-9306	1,131	1,215	1,131	0
J-8404	4.7	93.7	1,000	69.0	37.6	J-8212	P-66	1,142	1,639	1,142	0
J-8408	4.7	89.3	1,000	84.9	37.6	J-8212	P-9419	2,208	4,379	2,208	0
J-8409	4.7	65.5	2,500	56.2	37.3	J-8212	P-9410	3,844	4,467	3,844	0
J-8410	4.7	66.8	1,000	62.5	37.6	J-8212		4,761	4,599	4,599	0
J-8415	4.7	78.5	1,000	74.3	37.6	J-8212		5,055	4,554	4,554	0
J-8417	4.7	68.5	1,000	48.1	37.6	J-8212	P313	872	1,645	872	128
J-8419	0.0	65.9	1,000	61.5	37.6	J-8212		4,743	4,626	4,626	0
J-8420	4.7	76.3	1,000	38.4	37.6	J-8212	P-9426	881	1,251	881	119
J-8423	4.7	90.6	1,000	84.7	37.6	J-8212	25	1,833	3,948	1,833	0
J-8424	4.7	94.4	2,500	61.8	35.8	J-8426	P-9435	3,501	3,174	3,174	0
J-8425	4.7	77.0	2,500	35.9	29.2	J-8426	P-9441	2,098	2,828	2,098	402
J-8426	4.7	68.4	2,500	21.7	21.7	J-8426		2,555	2,557	2,555	0
J-8427	4.7	85.7	2,500	38.9	24.5	J-8426	P-9440	2,956	2,648	2,648	0
J-8428	4.7	77.0	2,500	18.9	18.9	J-8428	P-9439	1,567	2,477	1,567	933
J-8429	4.7	92.2	2,500	57.0	33.2	J-8426	P-9436	3,506	3,024	3,024	0
J-8601	4.7	96.1	2,500	53.0	38.2	J-8212		3,490	3,493	3,490	0
J-8605	4.7	90.0	2,500	60.8	38.2	J-8212		4,232	4,238	4,232	0
J-8606	4.7	121.8	1,000	118.5	38.2	J-8212	P-9320	3,416	5,783	3,416	0
J-8608	4.7	76.8	1,000	55.7	36.8	J-8212	P-9126	1,780	2,357	1,780	0
J-8609	4.7	123.1	2,500	92.8	35.9	J82	P-9325	2,353	4,016	2,353	147
J-8610	4.7	122.7	1,000	110.1	38.2	J-8212	P-9038	1,073	3,282	1,073	0
J-8611	4.7	124.7	1,000	92.9	38.2	J-8212	P-9327	1,395	1,945	1,395	0
J-8612	4.7	121.7	2,500	86.9	38.2	J-8212	P-9015	3,602	3,876	3,602	0
J-8613	4.7	64.2	1,000	59.4	38.2	J-8212	P61	2,859	3,572	2,859	0
J-8614	4.7	73.0	2,500	66.9	38.2	J-8212	P-7036	8,603	9,594	8,603	0
J-8616	4.7	77.3	2,500	70.4	38.2	J-8212	P-9331	9,052	8,919	8,919	0
J-8622	4.7	91.7	1,000	76.0	37.6	22	P-9202	2,542	2,737	2,542	0
J-8623	4.7	79.6	1,000	65.3	37.6	22		2,749	2,735	2,735	0
J-8624	4.7	63.5	1,000	53.4	37.6	22		3,396	2,638	2,638	0
J-8627	4.7	44.1	1,000	38.4	38.1	J-8212		2,778	2,786	2,778	0
J-8628	4.7	72.0	1,000	60.5	37.6	22	9003D	2,865	4,317	2,865	0
J-8629	4.7	48.8	1,000	36.7	36.7	J-8629		1,890	1,893	1,890	0
J-8630	4.7	50.8	1,000	37.7	37.6	22	P-9350	1,878	2,025	1,878	0
J-8634	4.7	109.9	1,000	88.0	37.6	22	P-9354	1,567	2,436	1,567	0
J-8635	4.7	92.6	1,000	74.5	37.6	22	P-9355	1,831	2,492	1,831	0
J-8636	4.7	80.5	1,000	69.9	37.6	22	43	3,613	2,680	2,680	0
J-8637	4.7	57.9	1,000	39.4	36.7	J-8629		1,552	1,552	1,552	0

Node ID	Static Demand (gpm)	Static Pressure (psi)	Required Fire-Flow (gpm) ⁽¹⁾	Residual Pressure at Required FF (psi)	Min. System Pressure at Required FF (psi)	Critical Node	Critical Pipe ⁽²⁾	Available Flow with Velocity Limitations (gpm) ⁽³⁾	Available Flow with Pressure Limitations (gpm) ⁽⁴⁾	Total Available Flow (gpm) ⁽⁵⁾	Fire Flow Deficit (gpm)
J-8638	4.7	51.3	2,500	40.0	38.0	J-8212	P-9357	3,541	4,810	3,541	0
J-8651	4.7	69.2	1,000	54.8	37.6	J-8212	P-9250	1,567	1,946	1,567	0
J-8652	4.7	66.6	1,000	39.6	37.6	J-8212		1,363	1,363	1,363	0
J-8661	4.7	63.9	1,000	43.3	36.6	J-8212	P-9135	1,395	1,980	1,395	0
J-8662	4.7	60.5	1,000	53.8	35.5	J-8212	23	2,065	2,698	2,065	0
J-8664	4.7	45.1	1,000	36.4	35.3	J-8212	P-9112	1,567	1,765	1,567	0
J-8665	4.7	47.6	1,000	36.5	36.5	J-8665		1,920	1,922	1,920	0
J-8666	4.7	77.1	1,000	-40.8	-40.8	J-8666	P-9063	479	675	479	521
J-8667	4.7	85.5	2,500	64.1	33.5	J-8663	P-9333	1,929	4,741	1,929	571
J-8669	4.7	100.8	2,500	59.8	38.2	J-8212		3,726	3,589	3,589	0
J88	4.7	107.3	1,000	88.8	37.6	22	P99	2,154	2,708	2,154	0
J-9	4.7	75.3	1,000	72.7	37.6	J-8212	P-14	3,110	4,181	3,110	0
J90	4.7	107.8	1,000	91.9	37.6	22	P101	2,911	2,980	2,911	0
J94	4.7	83.9	1,000	72.2	37.6	22	P103	2,734	2,695	2,695	0
J-94	4.7	59.0	1,000	38.7	37.6	J-8212		1,463	1,464	1,463	0
J-9504	4.7	68.8	2,500	46.6	37.0	J-8212	P-21	2,392	3,764	2,392	108
J-9505	4.7	73.9	2,500	63.3	37.2	J-8212		4,583	4,413	4,413	0
J-9507	4.7	93.4	1,000	71.1	37.6	J-8212	P-39	1,557	1,898	1,557	0
J-9508	4.7	82.0	1,000	63.4	36.8	J-8212	P-7029	2,799	2,861	2,799	0
J-9509	4.7	80.3	1,000	58.9	36.7	J-8212	P-7030	1,733	2,178	1,733	0
J-9510	4.7	92.7	1,000	87.2	37.6	J-8212	P-52	1,562	3,534	1,562	0
J-9511	4.7	89.3	1,000	79.8	37.6	J-8212	P-7033	1,567	2,761	1,567	0
J-9512	4.7	50.8	1,000	27.1	27.1	J-9512		1,294	1,295	1,294	0
J-9513	4.7	107.4	2,500	77.4	38.2	J-8212	P-7038	3,487	3,562	3,487	0
J-9514	4.7	111.7	2,500	80.6	38.2	J-8212	P-7039	3,525	4,067	3,525	0
J-9516	4.7	90.2	1,000	80.3	38.2	J-8212	P-9037	2,059	2,063	2,059	0
J-9517	4.7	90.1	1,000	79.8	37.6	J-8212	P-7044	1,567	2,788	1,567	0
J-9518	4.7	92.2	2,500	62.8	37.0	J-8212	45	3,245	3,928	3,245	0
J-9519	4.7	85.7	3,500	39.1	36.7	J-8212		4,006	4,010	4,006	0
J-9520	0.0	85.7	2,500	58.3	37.0	J-8212		3,925	4,073	3,925	0
J-9521	0.0	84.9	2,500	57.9	37.0	J-8212		3,927	4,101	3,927	0

(1) Based on City zoning or building specific calculations by the Fire Marshal
 (2) Pipe in which velocities exceed 10 feet/second
 (3) Available flow to node if velocities do not exceed 10 ft/s
 (4) Available flow to node if system pressures are above 20 psi
 (5) Available flow considering both velocity and pressure limitations

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)		
10	7.8	300	428.5	55.7		
12	7.8	45	321.4	119.8		
14	7.8	345	514.6	73.5	Minimum Pressure of Demand Nodes	42 psi
16	7.8	282	433.7	65.8	Maximum Pressure of Demand Nodes	145 psi
18	7.8	290	433.7	62.3	Average Pressure of Demand Nodes	84 psi
20	7.8	288	432.9	62.8		
22	7.8	315	431.1	50.3		
24	7.8	313	430.8	51.1		
26	7.8	320	514.6	84.3		
28	7.8	321	514.6	83.9		
J-1	7.8	345	514.7	73.5		
J10	7.8	100	400.0	129.9		
J-10	7.8	30	321.8	126.5		
J102	7.8	278	431.7	66.6		
J104	7.8	240	431.7	83.1		
J106	7.8	308	514.5	89.5		
J108	7.8	318	514.6	85.2		
J-11	7.8	350	514.2	71.1		
J110	7.8	321	514.6	83.9		
J112	7.8	320	514.6	84.3		
J114	7.8	297	443.9	63.6		
J116	7.8	308	514.1	89.3		
J118	7.8	318	514.6	85.2		
J-12	7.8	348	514.2	72.0		
J120	7.8	321	514.7	83.9		
J122	7.8	364	514.3	65.1		
J124	7.8	313	514.4	87.3		
J126	7.8	235	422.9	81.4		
J128	7.8	243	423.0	78.0		
J-13	7.8	348	514.2	72.0		
J130	7.8	250	423.0	75.0		
J132	7.8	225	423.0	85.8		
J134	7.8	230	423.0	83.6		
J136	7.8	235	423.0	81.5		
J138	7.8	280.5	513.9	101.1		
J14	7.8	20	321.8	130.8		
J-14	7.8	346	514.2	72.9		
J140	7.8	280.5	423.0	61.7		
J142	7.8	300	513.8	92.7		
J144	7.8	300	513.9	92.7		
J146	7.8	320	513.9	84.0		
J148	7.8	345	513.9	73.2		
J-15	0.0	290	323.9	14.7		
J150	7.8	342	514.2	74.6		
J152	7.8	338	514.2	76.3		
J154	7.8	345	514.2	73.3		
J156	7.8	347	514.2	72.5		
J158	7.8	343	514.2	74.2		
J16	7.8	170	432.8	113.9		
J-16	7.8	347	514.2	72.5		
J160	7.8	342	514.2	74.6		
J162	7.8	341	514.2	75.0		
J164	7.8	332	514.6	79.1		
J166	7.8	347	514.6	72.6		
J168	7.8	342	514.2	74.6		
J-17	7.8	347	514.2	72.5		
J170	7.8	345	514.2	73.3		
J172	7.8	342	514.2	74.6		
J174	7.8	340	514.2	75.5		
J176	7.8	345	514.2	73.3		
J178	7.8	345	514.2	73.3		
J18	7.8	213	432.9	95.3		
J-18	7.8	347	514.2	72.5		

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J180	7.8	340	514.2	75.5
J182	7.8	340	514.2	75.5
J184	7.8	340	514.2	75.5
J186	7.8	332	514.2	78.9
J188	7.8	348	514.2	72.0
J-19	7.8	165	423.9	112.2
J190	7.8	285	514.2	99.3
J192	7.8	250	513.7	114.3
J194	7.8	255	513.7	112.1
J196	7.8	295	513.7	94.8
J198	7.8	378	514.1	59.0
J-2	7.8	345	514.7	73.5
J20	7.8	280	423.7	62.3
J200	7.8	192	322.2	56.4
J202	7.8	218	433.2	93.2
J204	7.8	250	433.6	79.6
J206	7.8	290	438.5	64.3
J208	7.8	238	423.4	80.4
J-21	7.8	305	513.9	90.5
J212	0.0	50	57.0	3.0
J214	0.0	50	320.7	117.3
J216	7.8	186	400.0	92.7
J218	7.8	194	400.0	89.2
J22	7.8	250	423.7	75.3
J-22	7.8	260	423.1	70.7
J220	7.8	200	400.0	86.6
J222	7.8	210	400.0	82.3
J226	0.0	364	514.4	65.2
J228	7.8	200	432.9	100.9
J-23	7.8	342	514.0	74.5
J230	7.8	346	514.2	72.9
J232	7.8	348	514.2	72.0
J234	7.8	200	400.0	86.6
J236	7.8	110	321.9	91.8
J238	7.8	70	321.9	109.1
J24	7.8	285	515.1	99.7
J-24	7.8	343	514.6	74.4
J240	7.8	60	321.9	113.5
J242	7.8	210	400.0	82.3
J244	7.8	204	400.0	84.9
J246	7.8	280	425.3	62.9
J248	7.8	180	432.8	109.6
J-25	7.8	300	515.4	93.3
J250	7.8	318	514.6	85.2
J254	7.8	345	514.2	73.3
J26	7.8	278	424.3	63.4
J-26	0.0	364	425.9	26.8
J262	7.8	46	320.7	119.0
J264	7.8	307	428.4	52.6
J266	7.8	312	428.4	50.4
J268	7.8	300	428.4	55.6
J-27	7.8	152	321.6	73.5
J270	7.8	323	514.7	83.1
J272	7.8	330	513.9	79.7
J274	7.8	337	513.9	76.7
J276	7.8	335	513.9	77.5
J28	7.8	256	423.0	72.4
J-28	7.8	375	514.1	60.3
J280	0.0	278	424.4	63.4
J282	0.0	285	515.4	99.8
J284	0.0	209	323.5	49.6
J286	0.0	248	323.7	32.8
J288	0.0	246	433.2	81.1

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-29	7.8	375	514.1	60.3
J290	0.0	264	433.4	73.4
J296	0.0	323	427.6	45.3
J298	0.0	0	321.8	139.4
J-3	7.8	50	321.8	117.8
J30	7.8	348	514.3	72.0
J-30	7.8	312	514.2	87.6
J300	0.0	0	321.8	139.4
J302	0.0	0	321.8	139.4
J304	0.0	325	514.3	82.0
J306	0.0	333	514.3	78.6
J-31	7.8	310	432.2	52.9
J32	7.8	65	320.7	110.8
J-32	7.8	306	430.7	54.0
J-33	7.8	250	514.2	114.5
J34	7.8	70	320.7	108.6
J-34	7.8	74	320.7	106.9
J-35	7.8	73	320.7	107.3
J36	7.8	54	320.7	115.6
J-36	7.8	195	442.4	107.2
J-37	7.8	347	514.7	72.7
J38	7.8	90	320.7	100.0
J-38	7.8	344	514.8	74.0
J-39	7.8	40	320.7	121.6
J-4	7.8	331	514.7	79.6
J40	7.8	80	320.7	104.3
J42	7.8	80	317.5	102.9
J44	7.8	65	320.7	110.8
J46	7.8	90	320.7	99.9
J48	7.8	136	321.8	80.5
J-5	0.0	349	428.3	34.4
J50	7.8	194	433.0	103.5
J52	7.8	184	322.0	59.8
J54	7.8	142	321.8	77.9
J56	7.8	156	321.5	71.7
J58	7.8	105	321.0	93.6
J-6	7.8	344	514.6	73.9
J60	7.8	118	320.6	87.8
J62	7.8	142	320.6	77.4
J64	7.8	110	321.9	91.8
J66	7.8	131	321.9	82.7
J68	7.8	135	320.7	80.4
J-7	7.8	345	514.6	73.5
J70	7.8	100	320.0	95.3
J72	7.8	151	321.3	73.8
J74	7.8	140	321.3	78.6
J76	7.8	140	320.8	78.3
J78	7.8	20	317.4	128.9
J80	7.8	20	316.3	128.4
J-8000	0.0	350	426.6	33.2
J-8001	0.0	350	568.2	94.6
J-8002	7.8	304	442.7	60.1
J-8003	7.8	294	447.9	66.7
J-8004	7.8	348	514.3	72.0
J-8008	7.8	330	514.3	79.9
J-8101	7.8	27	321.8	127.8
J-8102	7.8	27	321.8	127.8
J-8103	7.8	27	321.8	127.8
J-8104	7.8	35	321.9	124.3
J-8105	7.8	26	321.1	127.9
J-8106	7.8	15	320.9	132.6
J-8107	7.8	15	320.9	132.6
J-8108	7.8	15	320.9	132.6

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8109	7.8	15	320.9	132.6
J-8110	7.8	19	320.8	130.8
J-8111	7.8	50	320.8	117.3
J-8112	7.8	17	320.7	131.6
J-8113	7.8	46	320.7	119.0
J-8114	7.8	15	320.7	132.5
J-8115	7.8	52	320.7	116.4
J-8116	7.8	58	320.7	113.8
J-8117	7.8	65	320.7	110.8
J-8118	7.8	46	320.8	119.1
J-8119	7.8	26	320.9	127.8
J-8120	7.8	23	320.9	129.1
J-8121	7.8	40	320.8	121.7
J-8122	7.8	58	320.7	113.8
J-8123	7.8	80	320.6	104.3
J-8124	7.8	76	320.6	106.0
J-8125	7.8	86	320.6	101.7
J-8126	7.8	50	321.9	117.8
J-8127	7.8	50	321.9	117.8
J-8128	7.8	50	321.8	117.8
J-8129	7.8	40	321.8	122.1
J-8130	7.8	35	321.8	124.3
J-8131	7.8	30	321.8	126.4
J-8132	7.8	140	321.8	78.8
J-8133	7.8	143	321.9	77.5
J-8134	7.8	134	321.9	81.4
J-8135	7.8	170	322.0	65.9
J-8136	7.8	170	322.0	65.9
J-8137	7.8	191	322.1	56.8
J-8138	7.8	175	322.0	63.7
J-8139	7.8	156	322.0	71.9
J-8140	7.8	140	322.0	78.9
J-8141	7.8	154	322.0	72.8
J-8142	7.8	150	321.7	74.4
J-8143	7.8	136	321.8	80.5
J-8145	7.8	150	321.6	74.3
J-8146	7.8	152	321.5	73.4
J-8147	7.8	110	321.3	91.6
J-8148	7.8	151	321.4	73.8
J-8149	7.8	160	321.4	69.9
J-8151	7.8	147	321.3	75.5
J-8152	7.8	131	320.7	82.2
J-8153	7.8	126	320.7	84.4
J-8155	7.8	73	320.8	107.4
J-8157	7.8	127	320.7	83.9
J-8158	7.8	20	320.7	130.3
J-8159	7.8	20	313.8	127.3
J-8160	7.8	17	321.0	131.7
J-8161	7.8	90	320.7	100.0
J-8162	7.8	18	320.7	131.2
J-8163	7.8	18	315.4	128.9
J-8166	7.8	190	322.3	57.3
J82	7.8	190	321.8	57.1
J-8200	7.8	190	433.0	105.3
J-8201	7.8	209	433.2	97.1
J-8202	7.8	248	433.8	80.5
J-8203	7.8	290	443.1	66.3
J-8204	7.8	290	443.1	66.3
J-8206	7.8	316	514.6	86.1
J-8207	7.8	320	514.6	84.3
J-8208	7.8	323	514.6	83.0
J-8209	7.8	323	514.7	83.1
J-8210	7.8	322	514.6	83.5

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8211	7.8	330	428.3	42.6
J-8212	7.8	321	428.3	46.5
J-8213	7.8	317	428.4	48.3
J-8214	7.8	245	442.4	85.6
J-8215	7.8	278	444.8	72.3
J-8216	7.8	298	444.8	63.6
J-8217	7.8	303	514.3	91.6
J-8219	7.8	195	442.3	107.2
J-8220	7.8	229	428.9	86.6
J-8221	7.8	202	428.9	98.3
J-8222	7.8	231	424.0	83.6
J-8223	7.8	210	424.0	92.7
J-8224	7.8	185	423.9	103.5
J-8225	7.8	184	423.9	104.0
J-8226	7.8	146	423.9	120.4
J-8227	7.8	137	423.9	124.3
J-8228	7.8	180	423.9	105.7
J-8229	7.8	250	424.0	75.4
J-8230	7.8	255	423.9	73.2
J-8231	7.8	277	424.4	63.9
J-8232	7.8	275	423.8	64.5
J-8233	7.8	276	423.7	64.0
J-8234	7.8	280	423.6	62.2
J-8235	7.8	273	423.7	65.3
J-8236	7.8	210	444.8	101.8
J-8237	7.8	230	444.8	93.1
J-8240	7.8	256	423.0	72.4
J-8241	7.8	245	423.0	77.1
J-8242	7.8	280	423.0	62.0
J-8243	7.8	280	423.0	61.9
J-8244	7.8	230	423.0	83.6
J-8245	7.8	220	423.0	87.9
J-8246	7.8	240	423.0	79.3
J-8247	7.8	246	423.0	76.7
J-8248	7.8	230	423.1	83.7
J-8249	7.8	220	423.1	88.0
J-8250	0.0	307	426.2	51.7
J-8253	7.8	320	514.6	84.3
J-8256	7.8	300	514.5	93.0
J-8257	7.8	314	514.6	86.9
J-8258	7.8	308	514.6	89.5
J-8259	7.8	298	514.5	93.8
J-8262	7.8	297	435.9	60.2
J-8263	7.8	304	433.2	56.0
J-8264	7.8	304	433.2	56.0
J-8266	7.8	278	433.4	67.3
J-8267	7.8	279	433.2	66.8
J-8268	7.8	290	432.7	61.8
J-8269	7.8	249	433.1	79.8
J-8270	7.8	247	433.0	80.6
J-8271	7.8	257	433.3	76.4
J-8272	7.8	270	433.4	70.8
J-8273	7.8	255	433.2	77.2
J-8275	7.8	264	433.4	73.4
J-8276	7.8	282	433.7	65.8
J-8277	7.8	244	433.2	82.0
J-8278	7.8	238	433.1	84.5
J-8279	7.8	230	433.0	88.0
J-8280	7.8	222	432.9	91.4
J-8281	7.8	225	432.9	90.1
J-8282	7.8	214	432.9	94.9
J-8283	7.8	214	432.9	94.9
J-8284	7.8	220	432.9	92.3

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8285	7.8	246	433.2	81.1
J-8286	7.8	221	432.9	91.8
J-8287	7.8	217	432.9	93.5
J-8288	7.8	198	432.9	101.8
J-8289	7.8	212	432.9	95.7
J-8290	7.8	171	432.8	113.5
J-8291	7.8	153	432.8	121.3
J-8298	0.0	290	321.2	13.5
J-8299	7.8	295	514.2	95.0
J-8301	7.8	330	514.9	80.1
J-8302	7.8	332	514.4	79.0
J-8304	7.8	339	514.2	75.9
J-8305	0.0	349	516.2	72.4
J-8306	7.8	325	515.1	82.4
J-8308	7.8	342	514.5	74.7
J-8309	7.8	332	514.0	78.9
J-8310	7.8	345	514.3	73.4
J-8311	7.8	345	513.9	73.2
J-8312	7.8	325	513.9	81.9
J-8313	7.8	300	513.9	92.7
J-8314	7.8	315	513.9	86.2
J-8315	7.8	325	513.9	81.9
J-8316	7.8	300	513.9	92.7
J-8317	7.8	340	513.9	75.4
J-8318	7.8	335	514.3	77.7
J-8319	7.8	337	514.3	76.8
J-8320	7.8	337	514.3	76.8
J-8321	7.8	348	514.3	72.0
J-8322	7.8	355	514.2	69.0
J-8323	7.8	352	514.2	70.3
J-8324	7.8	347	514.2	72.4
J-8325	7.8	348	514.2	72.0
J-8326	7.8	342	514.2	74.6
J-8330	7.8	325	513.9	81.9
J-8331	7.8	291	513.8	96.6
J-8332	7.8	260	513.7	109.9
J-8333	7.8	300	513.7	92.6
J-8334	7.8	218	513.7	128.1
J-8335	7.8	327	514.3	81.2
J-8336	7.8	329	514.3	80.3
J-8337	7.8	325	514.3	82.0
J-8338	7.8	318	514.3	85.1
J-8339	7.8	320	514.3	84.2
J-8340	7.8	322	514.3	83.3
J-8341	7.8	325	514.4	82.1
J-8342	7.8	325	514.4	82.1
J-8343	7.8	346	514.4	73.0
J-8344	7.8	320	514.3	84.2
J-8345	7.8	315	514.3	86.4
J-8346	7.8	351	514.4	70.8
J-8347	7.8	330	514.4	79.9
J-8348	7.8	320	514.4	84.2
J-8349	7.8	352	514.4	70.4
J-8350	7.8	340	514.4	75.6
J-8351	7.8	330	514.4	79.9
J-8352	7.8	330	514.4	79.9
J-8353	7.8	321	514.4	83.8
J-8354	7.8	320	514.4	84.2
J-8356	7.8	307	514.4	89.9
J-8357	7.8	350	514.5	71.3
J-8358	7.8	340	514.6	75.6
J-8359	7.8	363	514.8	65.8
J-8360	7.8	370	514.6	62.7

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8361	7.8	368	514.5	63.5
J-8363	7.8	365	514.4	64.7
J-8364	7.8	365	514.4	64.7
J-8365	7.8	362	514.4	66.0
J-8366	7.8	360	514.4	66.9
J-8367	7.8	356	514.4	68.6
J-8368	7.8	350	514.4	71.3
J-8369	7.8	369	515.5	63.5
J-8370	7.8	350	514.3	71.2
J-8371	7.8	343	514.2	74.2
J-8372	7.8	354	514.2	69.4
J-8373	7.8	340	514.2	75.5
J-8374	7.8	378	514.2	59.0
J-8375	7.8	331	514.2	79.4
J-8376	7.8	346	514.2	72.9
J-8378	7.8	335	514.2	77.6
J-8379	7.8	180	513.7	144.6
J-8380	7.8	265	513.7	107.8
J-8381	7.8	335	514.4	77.7
J-8382	7.8	322	514.3	83.3
J-8383	7.8	360	514.4	66.9
J-8384	7.8	330	514.4	79.9
J-8386	7.8	350	514.6	71.3
J-8387	7.8	317	514.8	85.7
J-8388	7.8	331	514.9	79.7
J-8389	7.8	330	515.1	80.2
J-8390	7.8	330	515.6	80.4
J-8391	7.8	336	515.7	77.9
J-8392	7.8	335	515.5	78.2
J-8394	7.8	378	514.2	59.0
J-8396	7.8	347	514.7	72.7
J84	7.8	125	321.8	85.3
J-8401	7.8	368	514.1	63.3
J-8402	7.8	366	514.1	64.2
J-8403	7.8	350	514.1	71.1
J-8404	7.8	300	514.2	92.8
J-8408	7.8	310	514.4	88.6
J-8409	7.8	365	514.4	64.7
J-8410	7.8	362	514.4	66.0
J-8412	0.0	332	426.1	40.8
J-8413	0.0	362	426.1	27.8
J-8415	7.8	335	514.4	77.7
J-8417	7.8	358	514.3	67.7
J-8419	0.0	364	514.4	65.2
J-8420	7.8	340	514.3	75.5
J-8421	0.0	364	425.9	26.8
J-8422	0.0	364	575.9	91.8
J-8423	7.8	307	514.4	89.9
J-8424	7.8	90	320.7	100.0
J-8425	7.8	130	320.7	82.6
J-8426	7.8	150	320.7	74.0
J-8427	7.8	110	320.7	91.3
J-8428	7.8	130	320.7	82.6
J-8429	7.8	95	320.7	97.8
J86	7.8	123	432.8	134.3
J-8601	7.8	86	320.6	101.7
J-8602	7.8	80	318.0	103.1
J-8605	7.8	100	320.7	95.6
J-8606	7.8	27	321.4	127.6
J-8608	7.8	230	423.2	83.7
J-8609	7.8	24	321.8	129.0
J-8610	7.8	25	321.7	128.6
J-8611	7.8	20	320.8	130.3

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
J-8612	7.8	27	320.7	127.3
J-8613	7.8	160	321.9	70.2
J-8614	7.8	140	322.4	79.0
J-8616	7.8	130	322.1	83.2
J-8622	7.8	208	432.9	97.4
J-8623	7.8	236	432.9	85.3
J-8624	7.8	273	433.0	69.3
J-8627	7.8	312	430.2	51.2
J-8628	7.8	250	431.2	78.5
J-8629	7.8	306	432.5	54.8
J-8630	7.8	300	431.7	57.1
J-8634	7.8	166	432.9	115.7
J-8635	7.8	206	432.9	98.3
J-8636	7.8	234	433.1	86.3
J-8637	7.8	285	432.5	63.9
J-8638	7.8	190	322.2	57.3
J-8651	7.8	356	513.9	68.4
J-8652	7.8	362	513.8	65.8
J-8661	7.8	260	423.7	70.9
J-8662	7.8	270	428.6	68.7
J-8663	7.8	185	321.3	59.1
J-8664	7.8	305	428.4	53.5
J-8665	7.8	310	433.2	53.4
J-8666	7.8	130	321.4	82.9
J-8667	7.8	111	321.9	91.4
J-8669	7.8	75	320.7	106.4
J88	7.8	172	432.8	113.0
J-9	7.8	342	514.7	74.8
J90	7.8	171	432.8	113.5
J94	7.8	226	433.0	89.7
J-94	7.8	380	514.1	58.1
J-9504	7.8	357	514.1	68.1
J-9505	7.8	346	514.7	73.1
J-9507	7.8	300	513.9	92.7
J-9508	7.8	218	423.2	88.9
J-9509	7.8	222	423.4	87.3
J-9510	7.8	302	515.4	92.5
J-9511	7.8	310	515.4	89.0
J-9512	7.8	290	423.4	57.8
J-9513	7.8	60	320.7	113.0
J-9514	7.8	50	320.7	117.3
J-9516	7.8	100	321.8	96.1
J-9517	7.8	308	514.6	89.5
J-9518	7.8	303	514.6	91.7
J-9519	7.8	318	514.6	85.2
J-9520	0.0	318	514.6	85.2
J-9521	0.0	320	514.6	84.3