

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
U01 to U02	5.60 q Q	19.50 19.50	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.13 0.33 0.00
U02 to U03	5.60 q Q	19.76 39.27	1.380 120	lgth ftg tot	8.000 0.000 8.000	Pt Pf Pe	12.46 0.95 0.00
U03 to T20	5.60 q Q	20.50 59.77	1.380 120 E T	lgth ftg tot	11.000 9.000 20.000	Pt Pf Pe	13.41 5.19 0.43
U04 to U05	5.60 q Q	19.64 19.64	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.30 0.33 0.00
U05 to U06	5.60 q Q	19.90 39.54	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.63 1.21 0.00
U06 to T21	5.60 q Q	20.83 60.38	1.380 120 E T	lgth ftg tot	9.000 9.000 18.000	Pt Pf Pe	13.84 4.76 0.43
U07 to U08	5.60 q Q	19.67 19.67	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.34 0.33 0.00
U08 to U09	5.60 q Q	19.93 39.60	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.67 1.21 0.00
U09 to T22	5.60 q Q	20.86 60.47	1.380 120 E T	lgth ftg tot	9.000 9.000 18.000	Pt Pf Pe	13.88 4.77 0.43
U10 to U11	5.60 q Q	19.77 19.77	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.47 0.34 0.00
U11 to U12	5.60 q Q	20.04 39.81	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.81 1.22 0.00
U12 to T23	5.60 q Q	20.97 60.79	1.380 120 E T	lgth ftg tot	9.000 9.000 18.000	Pt Pf Pe	14.03 4.82 0.43

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & inches Devices	Pipe Equiv. Length	Friction Loss psi/ft	Req. psi	Notes
U13 to U14	5.60 q Q	19.71 19.71	1.380 120	lgth ftg tot	10.000 0.000 10.000	0.033	Pt Pf Pe 12.39 0.33 0.00
U14 to T15	5.60 q Q	19.97 39.68	1.380 120	lgth ftg tot	7.000 0.000 7.000	0.122	Pt Pf Pe 12.72 0.85 0.00
P15 to T15	5.60 q Q	20.66 20.66	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	0.138	Pt Pf Pe 13.61 0.83 -0.87
T15 to T24	q Q	0.00 60.34	1.380 120 E T	lgth ftg tot	12.500 9.000 21.500	0.264	Pt Pf Pe 13.57 5.67 0.43
T20 to 252	q Q	0.00 27.93	2.635 120	lgth ftg tot	0.333 0.000 0.330	0.003	Pt Pf Pe 19.03 0.00 0.00
T21 to 253	q Q	0.00 56.37	2.635 120	lgth ftg tot	4.333 0.000 4.330	0.010	Pt Pf Pe 19.03 0.04 0.00
T22 to 254	q Q	0.00 84.95	2.635 120	lgth ftg tot	8.333 0.000 8.330	0.021	Pt Pf Pe 19.09 0.18 0.00
T23 to 255	q Q	0.00 114.17	2.635 120	lgth ftg tot	10.750 0.000 10.750	0.037	Pt Pf Pe 19.28 0.40 0.00
T24 to 256	q Q	0.00 143.70	2.635 120	lgth ftg tot	11.000 0.000 11.000	0.056	Pt Pf Pe 19.68 0.62 0.00
T20 to 251	q Q	0.00 31.84	2.635 120	lgth ftg tot	12.750 0.000 12.750	0.003	Pt Pf Pe 19.03 0.04 0.00
T21 to 252	q Q	0.00 4.01	2.635 120	lgth ftg tot	9.666 0.000 9.670	0.000	Pt Pf Pe 19.03 0.00 0.00
253 to T22	q Q	0.00 24.48	2.635 120	lgth ftg tot	5.666 0.000 5.670	0.002	Pt Pf Pe 19.07 0.01 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
254 to T23	q Q	0.00 53.38	2.635 120	lgth ftg tot	1.666 0.000 1.670	Pt Pf Pe	19.26 0.02 0.00
255 to T24	q Q	0.00 83.36	2.635 120	lgth ftg tot	0.250 0.000 0.250	Pt Pf Pe	19.68 0.01 0.00
256 to 257	q Q	0.00 114.10	2.635 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	20.30 0.51 0.00
257 to 258	q Q	0.00 85.37	2.635 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	20.81 0.30 0.00
258 to 259	q Q	0.00 56.96	2.635 120 2E	lgth ftg tot	12.500 16.474 28.970	Pt Pf Pe	21.12 0.29 0.00
259 to 260	q Q	0.00 28.64	2.635 120	lgth ftg tot	9.000 0.000 9.000	Pt Pf Pe	21.41 0.03 0.00
251 to L21	q Q	0.00 31.84	1.380 120 T	lgth ftg tot	8.000 6.000 14.000	Pt Pf Pe	19.08 1.13 0.00
252 to L27	q Q	0.00 31.94	1.380 120 T	lgth ftg tot	11.333 6.000 17.330	Pt Pf Pe	19.03 1.41 0.00
253 to L31	q Q	0.00 31.89	1.380 120 T	lgth ftg tot	11.333 6.000 17.330	Pt Pf Pe	19.07 1.41 0.00
254 to 204	q Q	0.00 31.56	1.380 120 2T	lgth ftg tot	90.000 12.000 102.000	Pt Pf Pe	19.26 8.12 0.00
255 to 205	q Q	0.00 30.81	1.380 120 2T	lgth ftg tot	90.000 12.000 102.000	Pt Pf Pe	19.68 7.76 0.00
256 to 206	q Q	0.00 29.60	1.380 120 2T	lgth ftg tot	90.000 12.000 102.000	Pt Pf Pe	20.30 7.21 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
257 to 207	q Q	0.00 28.73	1.380 120 2T	lgth ftg tot	90.000 12.000 102.000	Pt Pf Pe	20.81 6.82 0.00
258 to 208	q Q	0.00 28.41	1.380 120 2T	lgth ftg tot	90.000 12.000 102.000	Pt Pf Pe	21.12 6.68 0.00
259 to 209	q Q	0.00 28.32	1.380 120 2T	lgth ftg tot	88.500 12.000 100.500	Pt Pf Pe	21.41 6.55 0.00
260 to 210	q Q	0.00 28.64	1.380 120 2T	lgth ftg tot	88.500 12.000 100.500	Pt Pf Pe	21.44 6.68 0.00
S21 to L21	q Q	0.00 0.00	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	20.64 0.00 0.00
S22 to L22	q Q	0.00 0.00	1.049 120 E T	lgth ftg tot	7.000 7.000 14.000	Pt Pf Pe	20.84 0.00 0.00
S23 to L23	q Q	0.00 0.00	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	21.65 0.00 0.00
S24 to L24	q Q	0.00 0.00	1.049 120 E T	lgth ftg tot	7.000 7.000 14.000	Pt Pf Pe	22.58 0.00 0.00
S25 to L25	q Q	0.00 0.00	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	22.70 0.00 0.00
S26 to L26	q Q	0.00 0.00	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	23.76 0.00 0.00
S27 to L27	q Q	0.00 0.00	1.049 120 2E T	lgth ftg tot	2.000 9.000 11.000	Pt Pf Pe	20.88 0.00 0.00
S28 to L28	q Q	0.00 0.00	1.049 120 2E T	lgth ftg tot	2.000 9.000 11.000	Pt Pf Pe	21.36 0.00 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & inches Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
S29	q	0.00	1.049	lgth	2.000	Pt	22.64
to	Q	0.00	120 2E T	ftg	9.000	Pf	0.00
L29				tot	11.000	Pe	0.00
S30	q	0.00	1.049	lgth	2.000	Pt	23.13
to	Q	0.00	120 2E T	ftg	9.000	Pf	0.00
L30				tot	11.000	Pe	0.00
S31	q	0.00	1.049	lgth	2.000	Pt	20.91
to	Q	0.00	120 2E T	ftg	9.000	Pf	0.00
L31				tot	11.000	Pe	0.00
S32	q	0.00	1.049	lgth	2.000	Pt	21.40
to	Q	0.00	120 2E T	ftg	9.000	Pf	0.00
L32				tot	11.000	Pe	0.00
S33	q	0.00	1.049	lgth	2.000	Pt	22.67
to	Q	0.00	120 2E T	ftg	9.000	Pf	0.00
L33				tot	11.000	Pe	0.00
L21	q	0.00	1.380	lgth	2.500	Pt	20.21
to	Q	31.84	120	ftg	0.000	Pf	0.20
L22				tot	2.500	Pe	0.00
L22	q	0.00	1.380	lgth	10.000	Pt	20.41
to	Q	31.84	120	ftg	0.000	Pf	0.81
L23				tot	10.000	Pe	0.00
L23	q	0.00	1.380	lgth	11.500	Pt	21.22
to	Q	31.84	120	ftg	0.000	Pf	0.93
L24				tot	11.500	Pe	0.00
L24	q	0.00	1.380	lgth	1.500	Pt	22.15
to	Q	31.84	120	ftg	0.000	Pf	0.12
L25				tot	1.500	Pe	0.00
L25	q	0.00	1.380	lgth	13.000	Pt	22.27
to	Q	31.84	120	ftg	0.000	Pf	1.05
L26				tot	13.000	Pe	0.00
L26	q	0.00	1.380	lgth	43.500	Pt	23.32
to	Q	31.84	120 T	ftg	6.000	Pf	4.00
201				tot	49.500	Pe	0.00
L27	q	0.00	1.380	lgth	6.000	Pt	20.44
to	Q	31.94	120	ftg	0.000	Pf	0.49
L28				tot	6.000	Pe	0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
L28 to L29	q Q	0.00 31.94	1.380 120	lgth ftg tot	15.666 0.000 15.670	Pt Pf Pe	20.93 1.27 0.00
L29 to L30	q Q	0.00 31.94	1.380 120	lgth ftg tot	6.000 0.000 6.000	Pt Pf Pe	22.21 0.49 0.00
L30 to 202	q Q	0.00 31.94	1.380 120 T	lgth ftg tot	51.000 6.000 57.000	Pt Pf Pe	22.69 4.64 0.00
L31 to L32	q Q	0.00 31.89	1.380 120	lgth ftg tot	6.000 0.000 6.000	Pt Pf Pe	20.48 0.49 0.00
L32 to L33	q Q	0.00 31.89	1.380 120	lgth ftg tot	15.666 0.000 15.670	Pt Pf Pe	20.97 1.27 0.00
L33 to 203	q Q	0.00 31.89	1.380 120 T	lgth ftg tot	57.000 6.000 63.000	Pt Pf Pe	22.24 5.11 0.00
201 to 202	q Q	0.00 31.84	4.260 120	lgth ftg tot	13.000 0.000 13.000	Pt Pf Pe	27.33 0.00 0.00
202 to 203	q Q	0.00 63.78	4.260 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	27.33 0.02 0.00
203 to 204	q Q	0.00 95.66	4.260 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	27.35 0.04 0.00
204 to 205	q Q	0.00 127.23	4.260 120	lgth ftg tot	12.500 0.000 12.500	Pt Pf Pe	27.38 0.05 0.00
205 to 206	q Q	0.00 158.04	4.260 120	lgth ftg tot	11.250 0.000 11.250	Pt Pf Pe	27.44 0.07 0.00
206 to 207	q Q	0.00 187.64	4.260 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	27.51 0.12 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
207 to 208	q Q	0.00 216.37	4.260 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	27.64 0.16 0.00
208 to 209	q Q	0.00 244.77	4.260 120	lgth ftg tot	11.000 0.000 11.000	Pt Pf Pe	27.80 0.16 0.00
209 to 210	q Q	0.00 273.10	4.260 120	lgth ftg tot	9.000 0.000 9.000	Pt Pf Pe	27.96 0.16 0.00
210 to M22	q Q	0.00 301.74	4.260 120 T	lgth ftg tot	40.000 26.334 66.330	Pt Pf Pe	28.12 1.42 0.00
M22 to M23	q Q	0.00 301.74	4.260 120 BV T	lgth ftg tot	17.000 42.135 59.130	Pt Pf Pe	29.54 1.27 0.00
M23 to TOR	q Q	0.00 301.74	6.357 120 6E T GV	lgth ftg tot	122.000 147.109 269.110	Pt Pf Pe	30.80 0.82 7.80
TOR to BF2	q Q	0.00 301.74	6.357 120 23 T	lgth ftg tot	9.000 60.720 69.720	Pt Pf Pe	39.43 0.21 3.90
BF2 to BF1	q Q	0.00 301.74	6.065 120 FDPLD	lgth ftg tot	4.000 0.000 4.000	Pt Pf Pe	43.54 2.80 0.00
BF1 to DI	q Q	0.00 301.74	6.065 120 E	lgth ftg tot	2.000 14.000 16.000	Pt Pf Pe	46.34 0.06 0.43
DI to HD2	q Q	0.00 301.74	8.510 140 5E T GV	lgth ftg tot	85.000 234.520 319.520	Pt Pf Pe	46.84 0.18 2.60
HD2 to BF4	Hose q Q	720.00 1,021.73	10.520 140 2E	lgth ftg tot	20.000 74.181 94.180	Pt Pf Pe	49.61 0.18 -3.03
BF4 to BF3	q Q	0.00 1,021.73	10.020 140 FDPLD	lgth ftg tot	5.000 0.000 5.000	Pt Pf Pe	46.76 2.06 0.00

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BF3	Source	q	0.00	10.520	lgth	165.000	Pt 48.81
to		Q	1,021.73	140 3E 2GV T	ftg	212.429	Pf 0.71
POC					tot	377.430	Pe 3.03
		Qt	1,271.73				Pt 52.56