

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
U01	q	0.00	1.380	lgth	10.000	Pt	16.13
to	Q	0.00	120	ftg	0.000	Pf	0.00
U02				tot	10.000	Pe	0.00
U02	q	0.00	1.380	lgth	10.000	Pt	16.13
to	Q	0.00	120	ftg	0.000	Pf	0.00
U03				tot	10.000	Pe	0.00
U03	q	0.00	1.380	lgth	8.000	Pt	16.13
to	Q	0.00	120 E T	ftg	9.000	Pf	0.00
L20				tot	17.000	Pe	0.00
U04	q	0.00	1.380	lgth	10.000	Pt	16.59
to	Q	0.00	120	ftg	0.000	Pf	0.00
U05				tot	10.000	Pe	0.00
U05	q	0.00	1.380	lgth	10.000	Pt	16.59
to	Q	0.00	120	ftg	0.000	Pf	0.00
U06				tot	10.000	Pe	0.00
U06	q	0.00	1.380	lgth	8.000	Pt	16.59
to	Q	0.00	120 E T	ftg	9.000	Pf	0.00
L21				tot	17.000	Pe	0.00
U07	q	0.00	1.380	lgth	10.000	Pt	17.19
to	Q	0.00	120	ftg	0.000	Pf	0.00
U08				tot	10.000	Pe	0.00
U08	q	0.00	1.380	lgth	10.000	Pt	17.19
to	Q	0.00	120	ftg	0.000	Pf	0.00
U09				tot	10.000	Pe	0.00
U09	q	0.00	1.380	lgth	8.000	Pt	17.19
to	Q	0.00	120 E T	ftg	9.000	Pf	0.00
L22				tot	17.000	Pe	0.00
U10	q	0.00	1.380	lgth	10.000	Pt	17.82
to	Q	0.00	120	ftg	0.000	Pf	0.00
U11				tot	10.000	Pe	0.00
U11	q	0.00	1.380	lgth	10.000	Pt	17.82
to	Q	0.00	120	ftg	0.000	Pf	0.00
U12				tot	10.000	Pe	0.00
U12	q	0.00	1.380	lgth	8.000	Pt	17.82
to	Q	0.00	120 E T	ftg	9.000	Pf	0.00
L23				tot	17.000	Pe	0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
P13 to L13	q Q	0.00 0.00	1.049 120 3E	lgth ftg tot	5.000 6.000 11.000	Pt Pf Pe	21.29 0.00 0.00
P14 to L14	q Q	0.00 0.00	1.049 120 2E T	lgth ftg tot	5.000 9.000 14.000	Pt Pf Pe	21.29 0.00 0.00
P15 to L15	q Q	0.00 0.00	1.049 120 2E T	lgth ftg tot	5.000 9.000 14.000	Pt Pf Pe	21.29 0.00 0.00
P16 to L16	q Q	0.00 0.00	1.049 120 3E	lgth ftg tot	5.000 6.000 11.000	Pt Pf Pe	22.01 0.00 0.00
P17 to L17	q Q	0.00 0.00	1.049 120 2E T	lgth ftg tot	5.000 9.000 14.000	Pt Pf Pe	22.01 0.00 0.00
P18 to L18	q Q	0.00 0.00	1.049 120 2E T	lgth ftg tot	5.000 9.000 14.000	Pt Pf Pe	22.01 0.00 0.00
L13 to L14	q Q	0.00 0.00	1.380 120	lgth ftg tot	8.000 0.000 8.000	Pt Pf Pe	19.12 0.00 0.00
L14 to L15	q Q	0.00 0.00	1.380 120	lgth ftg tot	8.000 0.000 8.000	Pt Pf Pe	19.12 0.00 0.00
L15 to L24	q Q	0.00 0.00	1.380 120 T	lgth ftg tot	9.500 6.000 15.500	Pt Pf Pe	19.12 0.00 0.00
L16 to L17	q Q	0.00 0.00	1.380 120	lgth ftg tot	8.000 0.000 8.000	Pt Pf Pe	19.84 0.00 0.00
L17 to L18	q Q	0.00 0.00	1.380 120	lgth ftg tot	8.000 0.000 8.000	Pt Pf Pe	19.84 0.00 0.00
L18 to L25	q Q	0.00 0.00	1.380 120 T	lgth ftg tot	9.500 6.000 15.500	Pt Pf Pe	19.84 0.00 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & inches Devices		Pipe Equiv. Length	Friction Loss psi/ft	Req. psi	Notes
L20 to L21	q Q	0.00 129.17	2.635 120	lgth ftg tot	10.000 0.000 10.000	0.046	Pt Pf Pe	16.89 0.46 0.00
L21 to 454	q Q	0.00 129.17	2.635 120	lgth ftg tot	4.500 0.000 4.500	0.046	Pt Pf Pe	17.35 0.21 0.00
L22 to 455	q Q	0.00 163.00	2.635 120	lgth ftg tot	4.500 0.000 4.500	0.071	Pt Pf Pe	17.95 0.32 0.00
L23 to 456	q Q	0.00 142.65	2.635 120	lgth ftg tot	9.333 0.000 9.330	0.056	Pt Pf Pe	18.58 0.52 0.00
L24 to 457	q Q	0.00 123.14	2.635 120	lgth ftg tot	14.000 0.000 14.000	0.042	Pt Pf Pe	19.12 0.59 0.00
L25 to 458	q Q	0.00 105.29	2.635 120	lgth ftg tot	1.250 0.000 1.250	0.032	Pt Pf Pe	19.84 0.04 0.00
451 to 452	q Q	0.00 49.61	2.635 120	lgth ftg tot	6.500 0.000 6.500	0.008	Pt Pf Pe	16.67 0.05 0.00
452 to 453	q Q	0.00 88.44	2.635 120	lgth ftg tot	5.000 0.000 5.000	0.023	Pt Pf Pe	16.72 0.11 0.00
453 to L20	q Q	0.00 129.17	2.635 120	lgth ftg tot	1.250 0.000 1.250	0.046	Pt Pf Pe	16.83 0.06 0.00
454 to L22	q Q	0.00 163.00	2.635 120	lgth ftg tot	5.500 0.000 5.500	0.071	Pt Pf Pe	17.56 0.39 0.00
455 to L23	q Q	0.00 142.65	2.635 120	lgth ftg tot	5.500 0.000 5.500	0.056	Pt Pf Pe	18.27 0.31 0.00
456 to L24	q Q	0.00 123.14	2.635 120	lgth ftg tot	0.666 0.000 0.670	0.042	Pt Pf Pe	19.10 0.03 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
457 to L25	q Q	0.00 105.29	2.635 120	lgth ftg tot	4.000 0.000 4.000	Pt Pf Pe	19.72 0.13 0.00
458 to 459	q Q	0.00 87.77	2.635 120	lgth ftg tot	15.750 0.000 15.750	Pt Pf Pe	19.88 0.36 0.00
459 to 460	q Q	0.00 70.71	2.635 120	lgth ftg tot	14.750 0.000 14.750	Pt Pf Pe	20.24 0.22 0.00
460 to 461	q Q	0.00 53.52	2.635 120	lgth ftg tot	5.000 0.000 5.000	Pt Pf Pe	20.46 0.05 0.00
461 to 462	q Q	0.00 36.16	2.635 120	lgth ftg tot	8.000 0.000 8.000	Pt Pf Pe	20.51 0.04 0.00
462 to 463	q Q	0.00 18.35	2.635 120	lgth ftg tot	7.500 0.000 7.500	Pt Pf Pe	20.54 0.01 0.00
L41 to 451	q Q	0.00 49.61	1.380 120 T	lgth ftg tot	12.000 6.000 18.000	Pt Pf Pe	13.36 3.31 0.00
L46 to 452	q Q	0.00 38.83	1.380 120 T	lgth ftg tot	17.500 6.000 23.500	Pt Pf Pe	13.97 2.74 0.00
L50 to 453	q Q	0.00 40.74	1.380 120 T	lgth ftg tot	12.500 6.000 18.500	Pt Pf Pe	14.47 2.36 0.00
L54 to 454	q Q	0.00 33.82	1.380 120 T	lgth ftg tot	12.500 6.000 18.500	Pt Pf Pe	15.89 1.67 0.00
455 to 405	q Q	0.00 20.34	1.380 120 2E 2T	lgth ftg tot	98.500 18.000 116.500	Pt Pf Pe	18.27 4.11 0.00
456 to 406	q Q	0.00 19.51	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	19.10 3.40 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
457 to 407	q Q	0.00 17.85	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	19.72 2.88 0.00
458 to 408	q Q	0.00 17.52	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	19.88 2.79 0.00
459 to 409	q Q	0.00 17.06	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	20.24 2.65 0.00
460 to 410	q Q	0.00 17.19	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	20.46 2.69 0.00
461 to 411	q Q	0.00 17.36	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	20.51 2.74 0.00
462 to 412	q Q	0.00 17.81	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	20.54 2.87 0.00
463 to 413	q Q	0.00 18.35	1.380 120 2T	lgth ftg tot	92.000 12.000 104.000	Pt Pf Pe	20.55 3.04 0.00
S41 to L41	5.60 q Q	20.19 20.19	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	13.00 0.79 -0.43
S42 to L42	5.60 q Q	19.67 19.67	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	12.34 0.76 -0.43
S43 to L43	5.60 q Q	19.60 19.60	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	12.25 0.75 -0.43
S44 to L44	5.60 q Q	19.65 19.65	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	12.31 0.76 -0.43
S45 to L45	5.60 q Q	20.25 20.25	1.049 120 T	lgth ftg tot	1.000 5.000 6.000	Pt Pf Pe	13.08 0.80 -0.43

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & inches Devices	Pipe Equiv. Length	Friction Loss psi/ft	Req. psi	Notes
S46 to L46	5.60 q Q	21.34 21.34	1.049 120 T	lgth ftg tot	4.500 5.000 9.500	0.147	Pt Pf Pe 14.53 1.39 -1.95
S47 to L47	5.60 q Q	21.16 21.16	1.049 120 T	lgth ftg tot	4.500 5.000 9.500	0.144	Pt Pf Pe 14.28 1.37 -1.95
S48 to L48	5.60 q Q	21.17 21.17	1.049 120 T	lgth ftg tot	4.500 5.000 9.500	0.145	Pt Pf Pe 14.30 1.37 -1.95
S49 to L49	5.60 q Q	21.58 21.58	1.049 120 T	lgth ftg tot	4.500 5.000 9.500	0.150	Pt Pf Pe 14.86 1.42 -1.95
S50 to L50	5.60 q Q	21.43 21.43	1.049 120 E T	lgth ftg tot	5.000 7.000 12.000	0.148	Pt Pf Pe 14.65 1.77 -1.95
S51 to L51	5.60 q Q	20.59 20.59	1.049 120 2E T	lgth ftg tot	6.250 9.000 15.250	0.137	Pt Pf Pe 13.52 2.09 -1.30
S52 to L52	5.60 q Q	20.59 20.59	1.049 120 2E T	lgth ftg tot	6.250 9.000 15.250	0.137	Pt Pf Pe 13.52 2.09 -1.30
S53 to L53	5.60 q Q	20.96 20.96	1.049 120 2E T	lgth ftg tot	6.250 9.000 15.250	0.142	Pt Pf Pe 14.01 2.16 -1.30
S54 to L54	5.60 q Q	21.95 21.95	1.049 120 E T	lgth ftg tot	9.000 7.000 16.000	0.155	Pt Pf Pe 15.36 2.47 -1.95
S55 to L55	5.60 q Q	21.79 21.79	1.049 120 2E T	lgth ftg tot	4.000 9.000 13.000	0.152	Pt Pf Pe 15.14 1.98 -1.30
S56 to L56	5.60 q Q	21.87 21.87	1.049 120 2E T	lgth ftg tot	4.000 9.000 13.000	0.154	Pt Pf Pe 15.26 2.00 -1.30
L42 to L41	q Q	0.00 29.42	1.380 120	lgth ftg tot	10.000 0.000 10.000	0.070	Pt Pf Pe 12.66 0.70 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
L43 to L42	q Q	0.00 9.75	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	12.57 0.09 0.00
L43 to L44	q Q	0.00 9.85	1.380 120	lgth ftg tot	7.000 0.000 7.000	Pt Pf Pe	12.57 0.06 0.00
L44 to L45	q Q	0.00 29.49	1.380 120	lgth ftg tot	11.500 0.000 11.500	Pt Pf Pe	12.63 0.81 0.00
L45 to 401	q Q	0.00 49.74	1.380 120 T	lgth ftg tot	41.500 6.000 47.500	Pt Pf Pe	13.44 8.77 0.00
L47 to L46	q Q	0.00 17.49	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	13.70 0.27 0.00
L47 to L48	q Q	0.00 3.67	1.380 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	13.70 0.01 0.00
L48 to L49	q Q	0.00 24.84	1.380 120	lgth ftg tot	12.000 0.000 12.000	Pt Pf Pe	13.72 0.61 0.00
L49 to 402	q Q	0.00 46.43	1.380 120 T	lgth ftg tot	42.500 6.000 48.500	Pt Pf Pe	14.33 7.88 0.00
L51 to L50	q Q	0.00 19.31	1.380 120	lgth ftg tot	5.000 0.000 5.000	Pt Pf Pe	14.31 0.16 0.00
L51 to L52	q Q	0.00 1.28	1.380 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	14.31 0.00 0.00
L52 to L53	q Q	0.00 21.87	1.380 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	14.31 0.57 0.00
L53 to 403	q Q	0.00 42.83	1.380 120 T	lgth ftg tot	46.500 6.000 52.500	Pt Pf Pe	14.88 7.35 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
L55 to L54	q Q	0.00 11.87	1.380 120	lgth ftg tot	5.000 0.000 5.000	Pt Pf Pe	15.82 0.07 0.00
L55 to L56	q Q	0.00 9.91	1.380 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	15.82 0.13 0.00
L56 to 404	q Q	0.00 31.78	1.380 120 2E T	lgth ftg tot	66.500 12.000 78.500	Pt Pf Pe	15.95 6.33 0.00
401 to 402	q Q	0.00 49.74	4.260 120	lgth ftg tot	6.500 0.000 6.500	Pt Pf Pe	22.21 0.00 0.00
402 to 403	q Q	0.00 96.17	4.260 120	lgth ftg tot	5.000 0.000 5.000	Pt Pf Pe	22.22 0.01 0.00
403 to 404	q Q	0.00 139.00	4.260 120	lgth ftg tot	10.000 0.000 10.000	Pt Pf Pe	22.23 0.05 0.00
404 to 405	q Q	0.00 170.79	4.260 120	lgth ftg tot	14.000 0.000 14.000	Pt Pf Pe	22.28 0.10 0.00
405 to 406	q Q	0.00 191.13	4.260 120	lgth ftg tot	12.000 0.000 12.000	Pt Pf Pe	22.39 0.11 0.00
406 to 407	q Q	0.00 210.64	4.260 120	lgth ftg tot	9.500 0.000 9.500	Pt Pf Pe	22.50 0.10 0.00
407 to 408	q Q	0.00 228.49	4.260 120	lgth ftg tot	5.250 0.000 5.250	Pt Pf Pe	22.60 0.07 0.00
408 to 409	q Q	0.00 246.01	4.260 120	lgth ftg tot	15.250 0.000 15.250	Pt Pf Pe	22.67 0.22 0.00
409 to 410	q Q	0.00 263.07	4.260 120	lgth ftg tot	15.750 0.000 15.750	Pt Pf Pe	22.89 0.26 0.00

Reference	Nozzle Type & Location	Flow in gpm	Pipe Fittings Size & Devices	Pipe Eqiv. Length	Friction Loss psi/ft	Req. psi	Notes
410	q	0.00	4.260	lgth	5.000	Pt	23.15
to	Q	280.27	120	ftg	0.000	Pf	0.09
411				tot	5.000	Pe	0.00
411	q	0.00	4.260	lgth	8.000	Pt	23.25
to	Q	297.62	120	ftg	0.000	Pf	0.17
412				tot	8.000	Pe	0.00
412	q	0.00	4.260	lgth	7.500	Pt	23.41
to	Q	315.43	120	ftg	0.000	Pf	0.17
413				tot	7.500	Pe	0.00
413	q	0.00	4.260	lgth	39.500	Pt	23.59
to	Q	333.78	120 T	ftg	26.334	Pf	1.70
M42				tot	65.830	Pe	0.00
M42	q	0.00	4.260	lgth	17.000	Pt	25.29
to	Q	333.78	120 BV T	ftg	42.135	Pf	1.53
M43				tot	59.130	Pe	0.00
M43	q	0.00	6.357	lgth	122.000	Pt	26.81
to	Q	333.78	120 6E T GV	ftg	147.109	Pf	0.99
TOR				tot	269.110	Pe	15.17
TOR	q	0.00	6.357	lgth	9.000	Pt	42.97
to	Q	333.78	120 23 T	ftg	60.720	Pf	0.26
BF2				tot	69.720	Pe	3.90
BF2	q	0.00	6.065	lgth	4.000	Pt	47.13 FDPLD =
to	Q	333.78	120	ftg	0.000	Pf	2.68 2.66
BF1			FDPLD	tot	4.000	Pe	0.00
BF1	q	0.00	6.065	lgth	2.000	Pt	49.81
to	Q	333.78	120 E	ftg	14.000	Pf	0.07
DI				tot	16.000	Pe	0.43
DI	q	0.00	8.510	lgth	85.000	Pt	50.31
to	Q	333.78	140 5E T GV	ftg	234.520	Pf	0.21
HD2				tot	319.520	Pe	2.60
HD2	Hose q	720.00	10.520	lgth	20.000	Pt	53.13
to	Q	1,053.78	140 2E	ftg	74.181	Pf	0.19
BF4				tot	94.180	Pe	-3.03
BF4	q	0.00	10.020	lgth	5.000	Pt	50.28 FDPLD =
to	Q	1,053.78	140	ftg	0.000	Pf	2.12 2.11
BF3			FDPLD	tot	5.000	Pe	0.00

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BF3		q 0.00	10.520	lgth 165.000		Pt 52.40	
to		Q 1,053.78	140 3E 2GV T	ftg 212.429	0.002	Pf 0.75	
POC	Source			tot 377.430		Pe 3.03	
		Qt 1,153.78				Pt 56.19	