Hydraulic Calculations

for

Project Name: MAYNARD CROSSING APARTMENTS: (1450D)

Location: , ,

Drawing Name: Maynard Crossing Apartments 1450D - FP400 Building Calculation Date: 8/6/2026

Design

Remote Area Number:	B06 R1
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	511ft² (Actual 511ft²)
Coverage per Sprinkler:	130ft²
Type of sprinklers calculated:	Pendent, Sidewall
No. of sprinklers calculated:	4
No. of nozzles calculated:	0

In-rack Demand:	N/A gpm	at Node:	N/A		
Hose Streams:	0.0 gpm	at Node:	17	Type:	Allowance at Source

Total Water Required (including Hose Streams where applicable):

From Water Supply at Node 17: 132.49 @ 46.279 (Safety Margin = 7.644)

Type of System:

Volume of Dry/PreAction/Antifreeze/OtherAgent System: N/A

Name of Contractor: MAKSON FIRE

Address: 1306 SPEEDWAY BLVD, SALISBURY, NC 28146

Phone Number: 704-636-5505

Name of designer: D.PORTER

Authority Having Jurisdiction: : HARNETT COUNTY FIRE MARSHAL

Notes:

Summary Notes:

Supply at Node 17

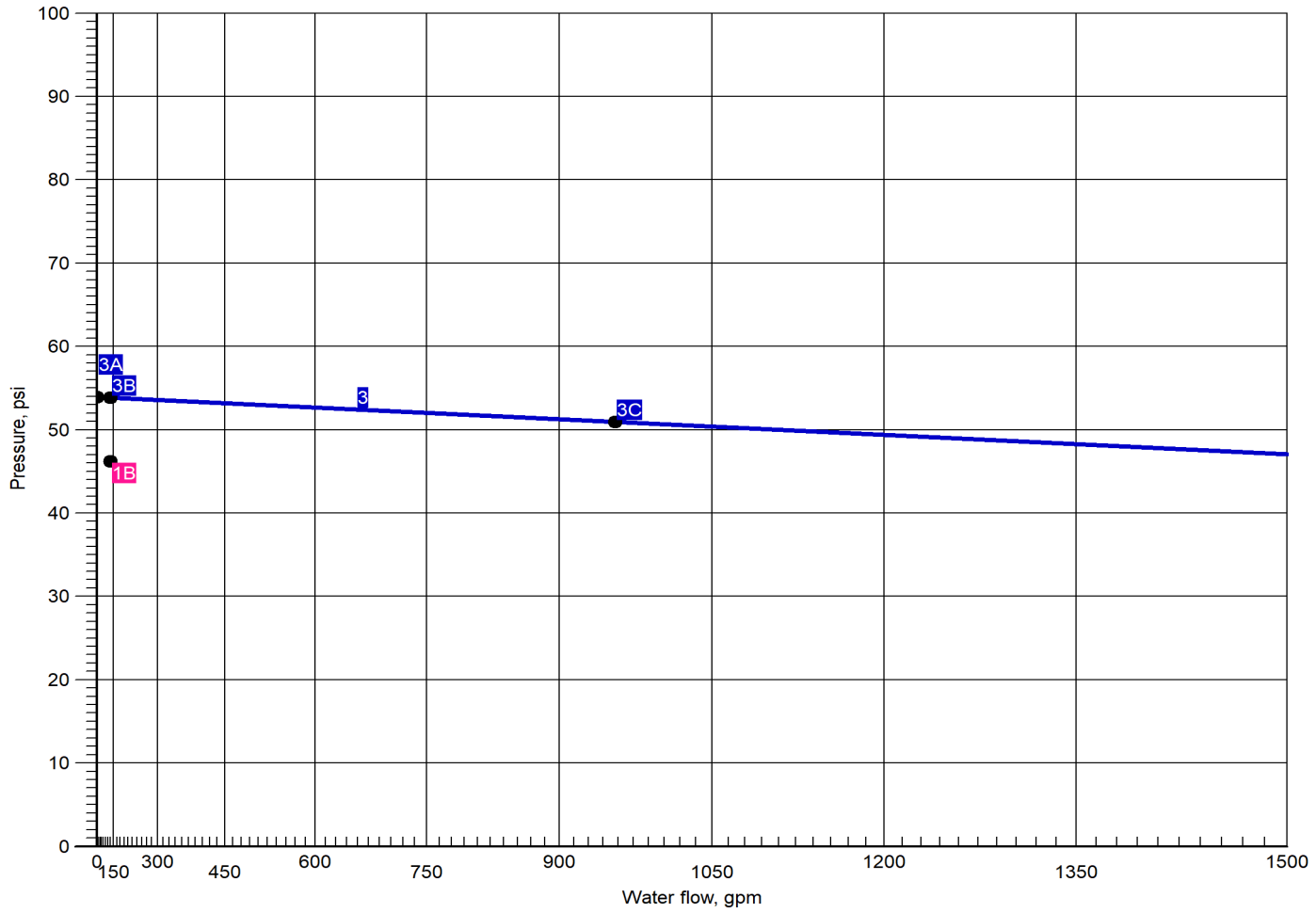
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B06 R1)

Remote Area Number: B06 R1



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 46.279 @ 132.49	Available Flow @ 20 PSI: 3550.30
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.923 @ 132.49	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B06 R1)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	9	77.70	77.70	0	47.109			
Sprinkler	**S18**	**13.00**	**13.00**	**4**	**10.563**			
Sprinkler	S19	13.50	12.00	4	11.390			
Sprinkler	S20	13.82	13.00	4.9	7.960			
Sprinkler	S21	14.47	13.00	4.9	8.717			

Most Demanding Sprinkler Data

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
S18	26'-0	4	13.00	¾	(See Notes)	26'-9½	150	10.563	• • • • • **Route 1** • • • • • Sprinkler,
112	18'-6		13.00	0.8740		20'-0 46'-9½	0.094407	3.251 4.419	4Tr(1'-0), 3T(3'-0), E(7'-0)
112	18'-6		18.20	2	(See Notes)	69'-8½	150	18.233	Flow (q) from Route 3
114	18'-6		31.20	2.0030		34'-0 103'-8½	0.008401	 0.871	17Tr(2'-0)
114	18'-6			2	(See Notes)	9'-6	150	19.104	T(10'-0)
115	9'-0		7.19	2.0030		20'-0 29'-6	0.000556	4.119 0.016	T(10'-0)
115	9'-0		23.59	2	(See Notes)	88'-6	150	23.239	Flow (q) from Route 2
116	9'-0		30.78	2.0030		42'-0 130'-6	0.008193	0.000 1.069	16Tr(2'-0), T(10'-0)
116	9'-0		24.01	2	(See Notes)	36'-1½	150	24.309	Flow (q) from Route 5
102	4'-3		54.79	2.0030		37'-0 73'-1½	0.023813	2.064 1.741	2Tr(2'-0), 3E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	28.114	
103	3'-1½		54.79	2.0670		3'-6 4'-0	0.030873	0.474 0.123	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	28.712	
104	1'-11½		54.79	2.1570		 1'-2	0.025086	0.506 0.029	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	29.247	
105	1'-0		54.79	2.0670		15'-0 19'-0	0.030873	0.424 11.479	T(10'-0), BFP(-10.893), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-4	150	41.150	
9	-12'-8		54.79	4.0700		22'-3½ 45'-7½	0.000754	5.925 0.034	2GV(3'-2), E(15'-11), FN
9	-12'-8		77.70	4	(See Notes)	42'-3½	150	47.109	
14	-12'-8		132.49	4.0700		35'-½ 77'-4	0.003861	 0.299	GV(3'-2), T(31'-10)
14	-12'-8			8		63'-5½	150	47.408	
15	-12'-8		106.91	7.6800		 63'-5½	0.000118	 0.007	

Pipe Information

Node 1 / Node 2	Elev 1 (Foot) / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes (Fitting/Device (Equivalent Length); Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.)
15	-12'-8		25.58	8	(See Notes)	634'-6½	150	47.415	Flow (q) from Route 6
						126'-5½	0.000175		
16	-12'-8		132.49	7.6800		761'-½		0.133	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	47.549	Avl.Pressure @ Supply: 53.923
						25'-6½	0.000654	-1.301	
17	-9'-8		132.49	5.8600		46'-6		0.030	2GV(3'-10), E(17'-10½), S
			0.00					46.279	Hose Allowance At Source
17			132.49						Total(Pt) Route 1
S20	26'-4½	4.9	13.82	¾	(See Notes)	29'-7	150	7.960	• • • • • **Route 2** • • • • • Sprinkler,
						35'-0	0.105789	3.412	
106	18'-6		13.82	0.8740		64'-7		6.831	4E(7'-0), 2T(3'-0), Tr(1'-0)
106	18'-6		9.77	2	(See Notes)	105'-3	150	18.203	Flow (q) from Route 7
						78'-0	0.005010	4.119	
115	9'-0		23.59	2.0030		183'-3		0.918	2T(10'-0), 2E(11'-0), 18Tr(2'-0)
								23.239	Total(Pt) Route 2
S21	26'-4½	4.9	14.47	¾	(See Notes)	24'-8½	150	8.717	• • • • • **Route 3** • • • • • Sprinkler,
						28'-0	0.115061	3.412	
109	18'-6		14.47	0.8740		52'-8½		6.063	3E(7'-0), 2T(3'-0), Tr(1'-0)
109	18'-6			2	(See Notes)	4'-5	150	18.192	
						6'-0	0.000253		
100	18'-6		4.70	2.0030		10'-5		0.003	3Tr(2'-0)
100	18'-6		13.50	2	(See Notes)	8'-5½	150	18.195	Flow (q) from Route 4
						4'-0	0.003099		
112	18'-6		18.20	2.0030		12'-5½		0.039	2Tr(2'-0)
								18.233	Total(Pt) Route 3
S19	26'-0	4	13.50	¾	(See Notes)	16'-1	150	11.390	• • • • • **Route 4** • • • • • Sprinkler,
						19'-0	0.101230	3.251	
100	18'-6		13.50	0.8740		35'-1		3.553	2E(7'-0), 2Tr(1'-0), T(3'-0)
								18.195	Total(Pt) Route 4
114	18'-6			2	(See Notes)	105'-9	150	19.104	• • • • • **Route 5** • • • • • Tr(2'-0)
						104'-0	0.005176	4.119	
116	9'-0		24.01	2.0030		209'-9		1.086	25Tr(2'-0), 3T(10'-0), 2E(11'-0)

Pipe Information

Node 1 / Node 2	Elev 1 (Foot) / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes: Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
								24.309	Total(Pt) Route 5
14	-12'-8		106.91	8		2'-9	150	47.408	• • • • • **Route 6** • • • • • Flow (q) from Route 1
13	-12'-8		25.58	7.6800		2'-9	0.000008	0.000	
13	-12'-8			8	(See Notes)	293'-8½	150	47.408	2EE(11'-3)
12	-12'-8		25.58	7.6800		22'-6½ 316'-3	0.000008	0.003	
12	-12'-8			8	(See Notes)	87'-6½	150	47.411	2EE(11'-3)
11	-12'-8		25.58	7.6800		22'-6½ 110'-1	0.000008	0.001	
11	-12'-8			8		148'-9½	150	47.412	
10	-12'-8		25.58	7.6800		148'-9½	0.000008	0.001	
10	-12'-8			8	(See Notes)	250'-6	150	47.413	2EE(11'-3), T(43'-10)
15	-12'-8		25.58	7.6800		66'-4½ 316'-10½	0.000008	0.003	
								47.415	Total(Pt) Route 6
109	18'-6		4.70	2	(See Notes)	7'-1	150	18.192	• • • • • **Route 7** • • • • • Flow (q) from Route 3
106	18'-6		9.77	2.0030		4'-0 11'-1	0.000980	0.011	2Tr(2'-0)
								18.203	Total(Pt) Route 7

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

(Actual Inside Diameter / Schedule 40 Steel Pipe Inside Diameter) 4.87 = Factor

C Value Multiplier

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV	Alarm Valve	AngV	Angle Valve	b	Bushing
BalV	Ball Valve	BFP	Backflow Preventer	BV	Butterfly Valve
C	Cross Flow Turn 90°	cplg	Coupling	Cr	Cross Run
CV	Check Valve	DelV	Deluge Valve	DPV	Dry Pipe Valve
E	90° Elbow	EE	45° Elbow	Ee1	11¼° Elbow
Ee2	22½° Elbow	f	Flow Device	fd	Flex Drop
FDC	Fire Department Connection	fE	90° FireLock(TM) Elbow	fEE	45° FireLock(TM) Elbow
flg	Flange	FN	Floating Node	fT	FireLock(TM) Tee
g	Gauge	GloV	Globe Valve	GV	Gate Valve
Ho	Hose	Hose	Hose	HV	Hose Valve
Hyd	Hydrant	LtE	Long Turn Elbow	mecT	Mechanical Tee
Noz	Nozzle	P1	Pump In	P2	Pump Out
PIV	Post Indicating Valve	PO	Pipe Outlet	PrV	Pressure Relief Valve
PRV I	Pressure Reducing Valve In	PRV C	Pressure Reducing Valve Out	red	Reducer/Adapter
S	Supply	sCV	Swing Check Valve	SFx	Seismic Flex
Spr	Sprinkler	St	Strainer	T	Tee Flow Turn 90°
Tr	Tee Run	U	Union	WirF	Wirsbo
WMV	Water Meter Valve	Z	Cap		

Hydraulic Calculations

for

Project Name: MAYNARD CROSSING APARTMENTS: (1450D)

Location: , ,

Drawing Name: Maynard Crossing Apartments 1450D - FP400 Building Calculation Date: 8/6/2026

Design

Remote Area Number:	B06 R2
Occupancy Classification:	Light Hazard
Density	0.10gpm/ft²
Area of Application:	170ft² (Actual 170ft²)
Coverage per Sprinkler:	130ft²
Type of sprinklers calculated:	Sidewall
No. of sprinklers calculated:	2
No. of nozzles calculated:	0

In-rack Demand:	N/A gpm	at Node:	N/A		
Hose Streams:	100.00	at Node:	17	Type:	Allowance at Source

Total Water Required (including Hose Streams where applicable):

From Water Supply at Node 17: 132.25 @ 40.280 (Safety Margin = 13.643)

Type of System:

Volume of Dry/PreAction/Antifreeze/OtherAgent System: N/A

Name of Contractor: MAKSON FIRE

Address: 1306 SPEEDWAY BLVD, SALISBURY, NC 28146

Phone Number: 704-636-5505

Name of designer: D.PORTER

Authority Having Jurisdiction: : HARNETT COUNTY FIRE MARSHAL

Notes:

Summary Notes:

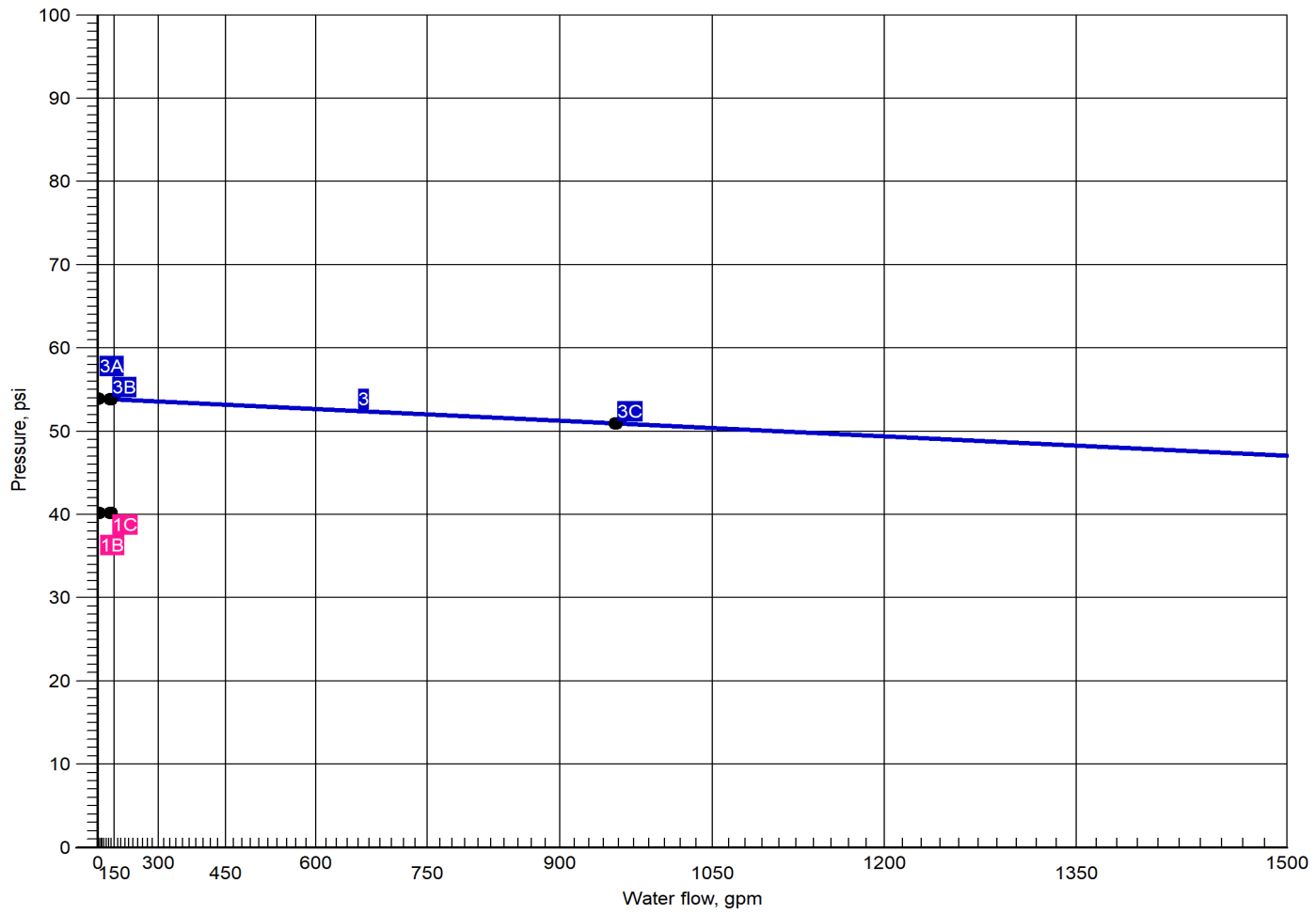
Supply at Node 17

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Light Hazard (B06 R2)

Remote Area Number: B06 R2



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 40.280 @ 32.25	Available Flow @ 20 PSI: 3550.30
	1C	Required Pressure at System Demand (Including Hose Allowance at Source): 40.280 @ 132.25	
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.923 @ 132.25	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Light Hazard (B06 R2)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Sprinkler	**S22**	**14.82**	**14.82**	**5.6**	**7.000**			
Sprinkler	S23	17.43	14.82	5.6	9.691			

Most Demanding Sprinkler Data

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
S22	26'-0	5.6	14.82	1	(See Notes)	1'-0	100	7.000	• • • • • **Route 1** • • • • •
111	25'-11		14.82	1.0490		3'-7 4'-7	0.104671	0.027 0.478	Sprinkler, T(3'-7)
111	25'-11			¾	(See Notes)	24'-4½	150	7.505	
112	18'-6		14.82	0.8740		18'-0 42'-4½	0.120247	3.221 5.095	3T(3'-0), E(7'-0), 2Tr(1'-0)
112	18'-6			2	(See Notes)	7'-11½	150	15.821	
113	18'-6		2.16	2.0030		2'-0 9'-11½	0.000060	-0.000 0.001	Tr(2'-0)
113	18'-6		17.43	2	(See Notes)	61'-9	150	15.822	Flow (q) from Route 2
114	18'-6		19.60	2.0030		32'-0 93'-9	0.003555	0.000 0.333	16Tr(2'-0)
114	18'-6			2	(See Notes)	9'-6	150	16.155	T(10'-0)
115	9'-0		5.43	2.0030		20'-0 29'-6	0.000330	4.119 0.010	T(10'-0)
115	9'-0		12.65	2	(See Notes)	88'-6	150	20.283	Flow (q) from Route 3
116	9'-0		18.08	2.0030		42'-0 130'-6	0.003061	0.000 0.400	16Tr(2'-0), T(10'-0)
116	9'-0		14.17	2	(See Notes)	36'-1½	150	20.683	Flow (q) from Route 4
102	4'-3		32.25	2.0030		37'-0 73'-1½	0.008932	2.064 0.653	2Tr(2'-0), 3E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	23.400	
103	3'-1½		32.25	2.0670		3'-6 4'-0	0.011580	0.474 0.046	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	23.921	
104	1'-11½		32.25	2.1570		 1'-2	0.009410	0.506 0.011	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	24.438	
105	1'-0		32.25	2.0670		15'-0 19'-0	0.011580	0.424 10.747	T(10'-0), BFP(-10.527), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-4	150	35.609	
9	-12'-8		32.25	4.0700		22'-3½ 45'-7½	0.000283	5.925 0.013	2GV(3'-2), E(15'-11)

Pipe Information

Node 1 / Node 2	Elev 1 (Foot) / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes (Fitting/Device (Equivalent Length); Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.)
9	-12'-8			4	(See Notes)	42'-3½	150	41.547	
						35'-½	0.000283		
14	-12'-8		32.25	4.0700		77'-4		0.022	GV(3'-2), T(31'-10)
14	-12'-8			8		63'-5½	150	41.568	
							0.000009		
15	-12'-8		26.02	7.6800		63'-5½		0.001	
15	-12'-8		6.23	8	(See Notes)	634'-6½	150	41.569	Flow (q) from Route 5
						126'-5½	0.000013		
16	-12'-8		32.25	7.6800		761'-½		0.010	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	41.579	Avl.Pressure @ Supply: 53.923
						25'-6½	0.000048	-1.301	
17	-9'-8		32.25	5.8600		46'-6		0.002	2GV(3'-10), E(17'-10½), S
			100.00					40.280	Hose Allowance At Source
17			132.25						Total(Pt) Route 1
S23	26'-0	5.6	17.43	1	(See Notes)	1'-0	100	9.691	• • • • • **Route 2** • • • • • Sprinkler,
						3'-7	0.141420	0.027	
118	25'-11		17.43	1.0490		4'-7		0.646	T(3'-7)
118	25'-11			¾	(See Notes)	7'-9	150	10.364	
						6'-0	0.162464	3.221	
113	18'-6		17.43	0.8740		13'-9		2.237	2T(3'-0)
								15.822	Total(Pt) Route 2
112	18'-6		2.16	2	(See Notes)	125'-2½	150	15.821	• • • • • **Route 3** • • • • • Flow (q) from Route 1
						92'-0	0.001582	4.119	
115	9'-0		12.65	2.0030		217'-2½		0.344	25Tr(2'-0), 2T(10'-0), 2E(11'-0)
								20.283	Total(Pt) Route 3
114	18'-6			2	(See Notes)	105'-9	150	16.155	• • • • • **Route 4** • • • • • Tr(2'-0)
						104'-0	0.001951	4.119	
116	9'-0		14.17	2.0030		209'-9		0.409	25Tr(2'-0), 3T(10'-0), 2E(11'-0)
								20.683	Total(Pt) Route 4
14	-12'-8		26.02	8		2'-9	150	41.568	• • • • • **Route 5** • • • • • Flow (q) from Route 1
							0.000001		
13	-12'-8		6.23	7.6800		2'-9		0.000	

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
13	-12'-8			8	(See Notes)	293'-8½	150	41.568	
						22'-6½	0.000001		
12	-12'-8		6.23	7.6800		316'-3		0.000	2EE(11'-3)
12	-12'-8			8	(See Notes)	87'-6½	150	41.569	
						22'-6½	0.000001		
11	-12'-8		6.23	7.6800		110'-1		0.000	2EE(11'-3)
11	-12'-8			8		148'-9½	150	41.569	
							0.000001		
10	-12'-8		6.23	7.6800		148'-9½		0.000	
10	-12'-8			8	(See Notes)	250'-6	150	41.569	
						66'-4½	0.000001		
15	-12'-8		6.23	7.6800		316'-10½		0.000	2EE(11'-3), T(43'-10)
								41.569	Total(Pt) Route 5

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

(Actual Inside Diameter / Schedule 40 Steel Pipe Inside Diameter) 4.87 = Factor

C Value Multiplier

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV	Alarm Valve	AngV	Angle Valve	b	Bushing
BalV	Ball Valve	BFP	Backflow Preventer	BV	Butterfly Valve
C	Cross Flow Turn 90°	cplg	Coupling	Cr	Cross Run
CV	Check Valve	DelV	Deluge Valve	DPV	Dry Pipe Valve
E	90° Elbow	EE	45° Elbow	Ee1	11¼° Elbow
Ee2	22½° Elbow	f	Flow Device	fd	Flex Drop
FDC	Fire Department Connection	fE	90° FireLock(TM) Elbow	fEE	45° FireLock(TM) Elbow
flg	Flange	FN	Floating Node	fT	FireLock(TM) Tee
g	Gauge	GloV	Globe Valve	GV	Gate Valve
Ho	Hose	Hose	Hose	HV	Hose Valve
Hyd	Hydrant	LtE	Long Turn Elbow	mecT	Mechanical Tee
Noz	Nozzle	P1	Pump In	P2	Pump Out
PIV	Post Indicating Valve	PO	Pipe Outlet	PrV	Pressure Relief Valve
PRV I	Pressure Reducing Valve In	PRV C	Pressure Reducing Valve Out	red	Reducer/Adapter
S	Supply	sCV	Swing Check Valve	SFx	Seismic Flex
Spr	Sprinkler	St	Strainer	T	Tee Flow Turn 90°
Tr	Tee Run	U	Union	WirF	Wirsbo
WMV	Water Meter Valve	Z	Cap		

Hydraulic Calculations

for

Project Name: MAYNARD CROSSING APARTMENTS: (1450D)

Location: , ,

Drawing Name: Maynard Crossing Apartments 1450D - FP400 Building Calculation Date: 8/6/2026

Design

Remote Area Number:	B06 R3
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	527ft² (Actual 527ft²)
Coverage per Sprinkler:	130ft²
Type of sprinklers calculated:	Pendent, Sidewall
No. of sprinklers calculated:	4
No. of nozzles calculated:	0

In-rack Demand:	N/A gpm	at Node:	N/A		
Hose Streams:	0.0 gpm	at Node:	17	Type:	Allowance at Source

Total Water Required (including Hose Streams where applicable):

From Water Supply at Node 17: 129.64 @ 45.537 (Safety Margin = 8.389)

Type of System:

Volume of Dry/PreAction/Antifreeze/OtherAgent System: N/A

Name of Contractor: MAKSON FIRE

Address: 1306 SPEEDWAY BLVD, SALISBURY, NC 28146

Phone Number: 704-636-5505

Name of designer: D.PORTER

Authority Having Jurisdiction: : HARNETT COUNTY FIRE MARSHAL

Notes:

Summary Notes:

Supply at Node 17

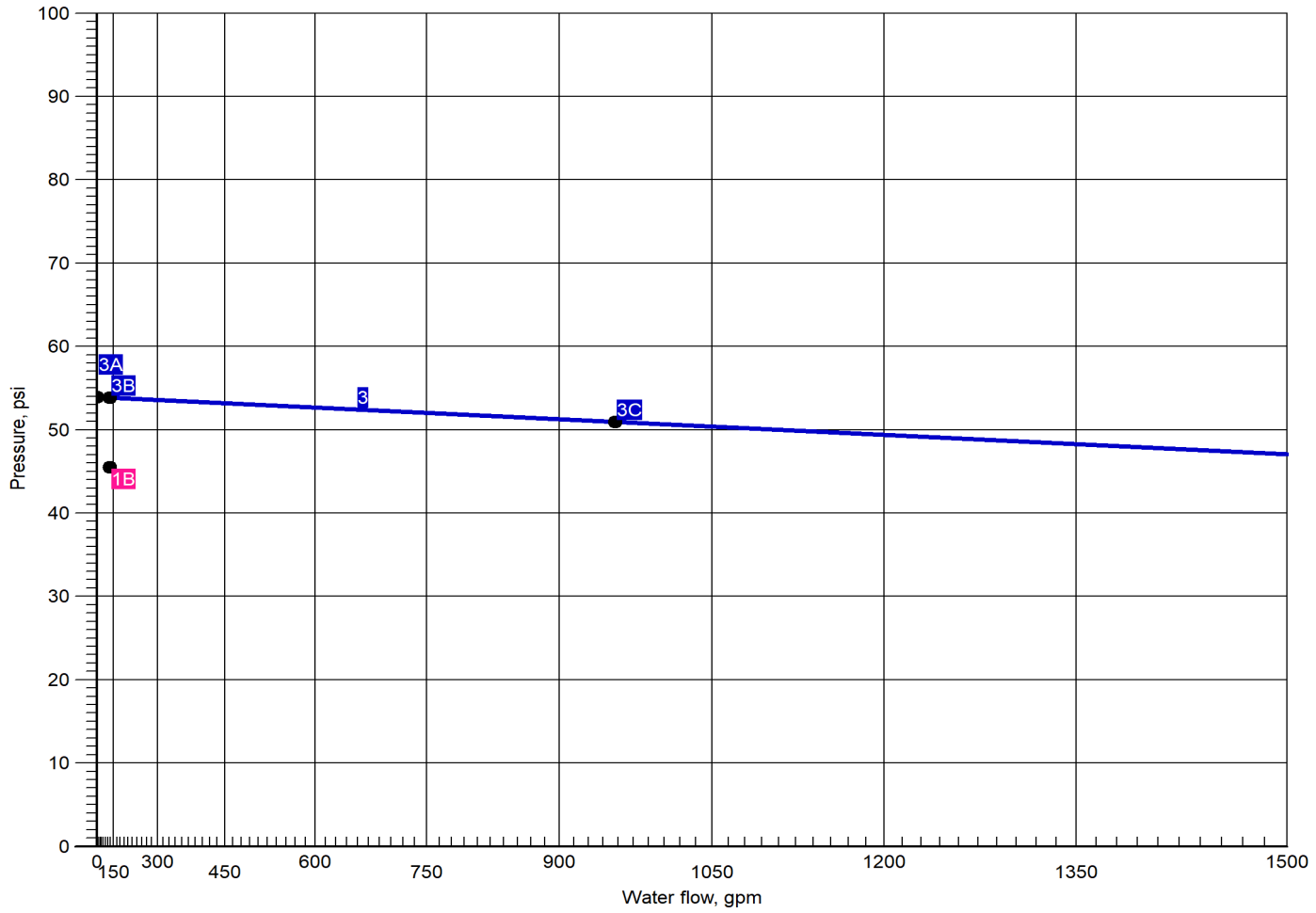
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B06 R3)

Remote Area Number: B06 R3



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 45.537 @ 129.64	Available Flow @ 20 PSI: 3550.30
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.926 @ 129.64	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B06 R3)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	9	77.70	77.70	0	46.386			
Sprinkler	**S24**	**13.00**	**13.00**	**4**	**10.563**			
Sprinkler	S25	12.25	12.00	4	9.378			
Sprinkler	S26	13.34	12.00	4	11.130			
Sprinkler	S27	13.34	13.00	4.9	7.414			

Most Demanding Sprinkler Data

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
S24	26'-0	4	13.00	¾	(See Notes)	27'-9½	150	10.563	• • • • • **Route 1** • • • • •
101	18'-6		13.00	0.8740		18'-0 45'-9½	0.094407	3.251 4.321	Sprinkler, 2Tr(1'-0), 3T(3'-0), E(7'-0)
101	18'-6		3.95	2	(See Notes)	147'-5½	150	18.135	Flow (q) from Route 7
115	9'-0		16.95	2.0030		98'-0 245'-5½	0.002719	4.119 0.667	28Tr(2'-0), 2T(10'-0), 2E(11'-0)
115	9'-0		12.02	2	(See Notes)	88'-6	150	22.921	Flow (q) from Route 2
116	9'-0		28.98	2.0030		42'-0 130'-6	0.007329	0.000 0.957	16Tr(2'-0), T(10'-0)
116	9'-0		22.96	2	(See Notes)	36'-1½	150	23.878	Flow (q) from Route 5
102	4'-3		51.94	2.0030		37'-0 73'-1½	0.021567	2.064 1.577	2Tr(2'-0), 3E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	27.519	
103	3'-1½		51.94	2.0670		3'-6 4'-0	0.027961	0.474 0.112	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	28.105	
104	1'-11½		51.94	2.1570		 1'-2	0.022720	0.506 0.027	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	28.638	
105	1'-0		51.94	2.0670		15'-0 19'-0	0.027961	0.424 11.369	T(10'-0), BFP(-10.838), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-4	150	40.430	
9	-12'-8		51.94	4.0700		22'-3½ 45'-7½	0.000683	5.925 0.031	2GV(3'-2), E(15'-11), FN
9	-12'-8		77.70	4	(See Notes)	42'-3½	150	46.386	
14	-12'-8		129.64	4.0700		35'-½ 77'-4	0.003708	 0.287	GV(3'-2), T(31'-10)
14	-12'-8			8		63'-5½	150	46.673	
15	-12'-8		104.61	7.6800		 63'-5½	0.000113	 0.007	
15	-12'-8		25.03	8	(See Notes)	634'-6½	150	46.680	Flow (q) from Route 6
16	-12'-8		129.64	7.6800		126'-5½ 761'-½	0.000168	 0.128	3EE(11'-3), GV(5'-0), 2T(43'-10)

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
16	-12'-8			6	Supply (See Notes)	20'-11½	150	46.808	Avl.Pressure @ Supply: 53.926
17	-9'-8		129.64	5.8600		25'-6½	0.000628	-1.301	2GV(3'-10), E(17'-10½), S
						46'-6		0.029	
			0.00					45.537	Hose Allowance At Source
17			129.64						Total(Pt) Route 1
S27	26'-4½	4.9	13.34	¾	(See Notes)	17'-8½	150	7.414	• • • • • **Route 2** • • • • • Sprinkler,
107	18'-6		13.34	0.8740		34'-0	0.099049	3.412	4E(7'-0), 2T(3'-0)
						51'-8½		5.122	
107	18'-6		12.25	1	(See Notes)	15'-5½	150	15.947	Flow (q) from Route 3
120	18'-6		25.59	1.1010		5'-0	0.107358	0.000	T(5'-0)
						20'-5½		2.194	
120	18'-6		9.39	2	(See Notes)	37'-7½	150	18.141	Flow (q) from Route 4
114	18'-6		34.98	2.0030		22'-0	0.010382		11Tr(2'-0)
						59'-7½		0.619	
114	18'-6			2	(See Notes)	9'-6	150	18.760	T(10'-0)
115	9'-0		12.02	2.0030		20'-0	0.001440	4.119	T(10'-0)
						29'-6		0.042	
								22.921	Total(Pt) Route 2
S25	26'-0	4	12.25	¾	(See Notes)	22'-2½	150	9.378	• • • • • **Route 3** • • • • • Sprinkler,
107	18'-6		12.25	0.8740		17'-0	0.084572	3.251	3Tr(1'-0), 2E(7'-0)
						39'-2½		3.318	
								15.947	Total(Pt) Route 3
S26	26'-0	4	13.34	¾	(See Notes)	17'-10½	150	11.130	• • • • • **Route 4** • • • • • Sprinkler,
119	18'-6		13.34	0.8740		20'-0	0.099090	3.251	2E(7'-0), 3Tr(1'-0), T(3'-0)
						37'-10½		3.753	
119	18'-6			2	(See Notes)	6'-½	150	18.134	
120	18'-6		9.39	2.0030		2'-0	0.000911		Tr(2'-0)
						8'-½		0.007	
								18.141	Total(Pt) Route 4
114	18'-6			2	(See Notes)	105'-9	150	18.760	• • • • • **Route 5** • • • • • Tr(2'-0)
116	9'-0		22.96	2.0030		104'-0	0.004763	4.119	25Tr(2'-0), 3T(10'-0), 2E(11'-0)
						209'-9		0.999	

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes: Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
								23.878	Total(Pt) Route 5
14	-12'-8		104.61	8		2'-9	150	46.673	• • • • • **Route 6** • • • • • Flow (q) from Route 1
13	-12'-8		25.03	7.6800		2'-9	0.000008	0.000	
13	-12'-8			8	(See Notes)	293'-8½	150	46.673	
12	-12'-8		25.03	7.6800		22'-6½ 316'-3	0.000008	0.003	2EE(11'-3)
12	-12'-8			8	(See Notes)	87'-6½	150	46.676	
11	-12'-8		25.03	7.6800		22'-6½ 110'-1	0.000008	0.001	2EE(11'-3)
11	-12'-8			8		148'-9½	150	46.677	
10	-12'-8		25.03	7.6800		148'-9½	0.000008	0.001	
10	-12'-8			8	(See Notes)	250'-6	150	46.678	
15	-12'-8		25.03	7.6800		66'-4½ 316'-10½	0.000008	0.003	2EE(11'-3), T(43'-10)
								46.680	Total(Pt) Route 6
119	18'-6		9.39	2	(See Notes)	3'-9½	150	18.134	• • • • • **Route 7** • • • • • Flow (q) from Route 4
101	18'-6		3.95	2.0030		4'-0 7'-9½	0.000184	-0.000 0.001	2Tr(2'-0)
								18.135	Total(Pt) Route 7

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

(Actual Inside Diameter / Schedule 40 Steel Pipe Inside Diameter) 4.87 = Factor

C Value Multiplier

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV	Alarm Valve	AngV	Angle Valve	b	Bushing
BalV	Ball Valve	BFP	Backflow Preventer	BV	Butterfly Valve
C	Cross Flow Turn 90°	cplg	Coupling	Cr	Cross Run
CV	Check Valve	DelV	Deluge Valve	DPV	Dry Pipe Valve
E	90° Elbow	EE	45° Elbow	Ee1	11¼° Elbow
Ee2	22½° Elbow	f	Flow Device	fd	Flex Drop
FDC	Fire Department Connection	fE	90° FireLock(TM) Elbow	fEE	45° FireLock(TM) Elbow
flg	Flange	FN	Floating Node	fT	FireLock(TM) Tee
g	Gauge	GloV	Globe Valve	GV	Gate Valve
Ho	Hose	Hose	Hose	HV	Hose Valve
Hyd	Hydrant	LtE	Long Turn Elbow	mecT	Mechanical Tee
Noz	Nozzle	P1	Pump In	P2	Pump Out
PIV	Post Indicating Valve	PO	Pipe Outlet	PrV	Pressure Relief Valve
PRV I	Pressure Reducing Valve In	PRV C	Pressure Reducing Valve Out	red	Reducer/Adapter
S	Supply	sCV	Swing Check Valve	SFx	Seismic Flex
Spr	Sprinkler	St	Strainer	T	Tee Flow Turn 90°
Tr	Tee Run	U	Union	WirF	Wirsbo
WMV	Water Meter Valve	Z	Cap		

Hydraulic Calculations

for

Project Name: MAYNARD CROSSING APARTMENTS: (1450D)

Location: , ,

Drawing Name: Maynard Crossing Apartments 1450D - FP400 Building Calculation Date: 8/6/2026

Design

Remote Area Number:	B06 R4
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	510ft² (Actual 510ft²)
Coverage per Sprinkler:	130ft²
Type of sprinklers calculated:	Pendent
No. of sprinklers calculated:	4
No. of nozzles calculated:	0

In-rack Demand:	N/A gpm	at Node:	N/A		
Hose Streams:	0.0 gpm	at Node:	17	Type:	Allowance at Source

Total Water Required (including Hose Streams where applicable):

From Water Supply at Node 17: 133.01 @ 39.428 (Safety Margin = 14.494)

Type of System:

Volume of Dry/PreAction/Antifreeze/OtherAgent System: N/A

Name of Contractor: MAKSON FIRE

Address: 1306 SPEEDWAY BLVD, SALISBURY, NC 28146

Phone Number: 704-636-5505

Name of designer: D.PORTER

Authority Having Jurisdiction: : HARNETT COUNTY FIRE MARSHAL

Notes:

Summary Notes:

Supply at Node 17

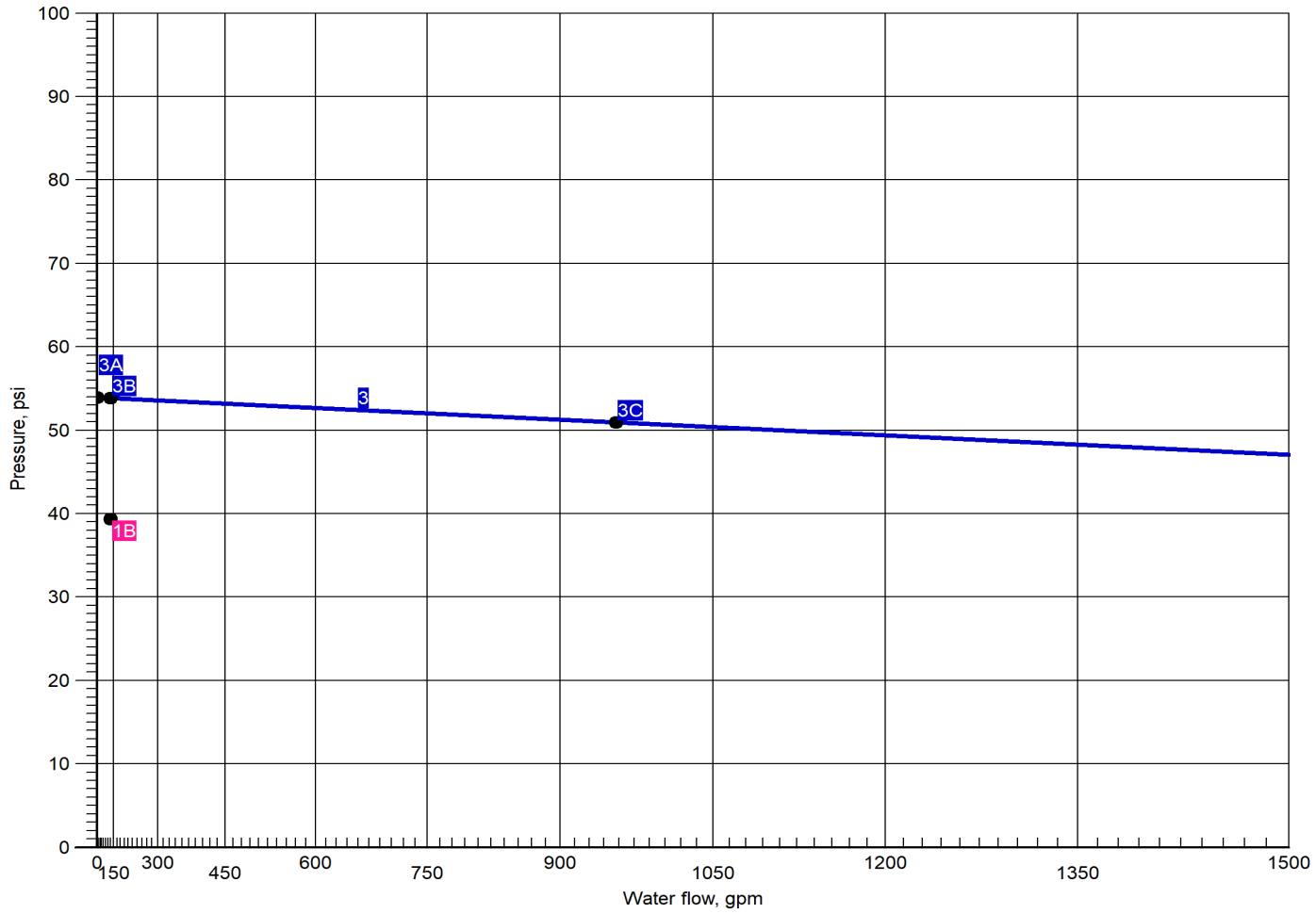
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B06 R4)

Remote Area Number: B06 R4



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 39.428 @ 133.01	Available Flow @ 20 PSI: 3550.30
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.922 @ 133.01	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B06 R4)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	9	77.70	77.70	0	40.255			
Sprinkler	S28	13.31	13.00	4.9	7.382			
Sprinkler	**S29**	**13.00**	**13.00**	**4.9**	**7.039**			
Sprinkler	S30	14.34	13.00	4.9	8.565			
Sprinkler	S31	14.66	13.00	4.9	8.947			

Most Demanding Sprinkler Data

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
S29	17'-6	4.9	13.00	¾	(See Notes)	30'-4	150	7.039	• • • • • **Route 1** • • • • •
						19'-0	0.094407	-0.434	Sprinkler,
106	18'-6		13.00	0.8740		49'-4		4.656	2E(7'-0), 2Tr(1'-0), T(3'-0)
106	18'-6		10.79	2	(See Notes)	105'-3	150	11.262	Flow (q) from Route 7
						78'-0	0.005086	4.119	
115	9'-0		23.79	2.0030		183'-3		0.932	2T(10'-0), 2E(11'-0), 18Tr(2'-0)
115	9'-0		7.28	2	(See Notes)	88'-6	150	16.312	Flow (q) from Route 2
						42'-0	0.008337	0.000	
116	9'-0		31.07	2.0030		130'-6		1.088	16Tr(2'-0), T(10'-0)
116	9'-0		24.24	2	(See Notes)	36'-1½	150	17.400	Flow (q) from Route 5
						37'-0	0.024230	2.064	
102	4'-3		55.31	2.0030		73'-1½		1.772	2Tr(2'-0), 3E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	21.236	
						3'-6	0.031414	0.474	
103	3'-1½		55.31	2.0670		4'-0		0.126	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	21.836	
							0.025526	0.506	
104	1'-11½		55.31	2.1570		1'-2		0.030	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	22.372	
						15'-0	0.031414	0.424	
105	1'-0		55.31	2.0670		19'-0		11.500	T(10'-0), BFP(-10.903), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-4	150	34.295	
						22'-3½	0.000767	5.925	
9	-12'-8		55.31	4.0700		45'-7½		0.035	2GV(3'-2), E(15'-11), FN
9	-12'-8		77.70	4	(See Notes)	42'-3½	150	40.255	
						35'-½	0.003889		
14	-12'-8		133.01	4.0700		77'-4		0.301	GV(3'-2), T(31'-10)
14	-12'-8			8		63'-5½	150	40.556	
							0.000119		
15	-12'-8		107.33	7.6800		63'-5½		0.008	
15	-12'-8		25.68	8	(See Notes)	634'-6½	150	40.563	Flow (q) from Route 6
						126'-5½	0.000177		
16	-12'-8		133.01	7.6800		761'-½		0.134	3EE(11'-3), GV(5'-0), 2T(43'-10)

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
16	-12'-8			6	Supply (See Notes)	20'-11½	150	40.698	Avl.Pressure @ Supply: 53.922
17	-9'-8		133.01	5.8600		25'-6½	0.000659	-1.301	2GV(3'-10), E(17'-10½), S
						46'-6		0.031	
			0.00					39.428	Hose Allowance At Source
17			133.01						Total(Pt) Route 1
S28	17'-6	4.9	13.31	¾	(See Notes)	23'-0	150	7.382	• • • • • **Route 2** • • • • • Sprinkler,
112	18'-6		13.31	0.8740		21'-0	0.098653	-0.434	2E(7'-0), 4Tr(1'-0), T(3'-0)
						44'-0		4.341	
112	18'-6		18.21	2	(See Notes)	69'-8½	150	11.289	Flow (q) from Route 3
114	18'-6		31.52	2.0030		34'-0	0.008563		17Tr(2'-0)
						103'-8½		0.888	
114	18'-6			2	(See Notes)	9'-6	150	12.177	T(10'-0)
115	9'-0		7.28	2.0030		20'-0	0.000569	4.119	T(10'-0)
						29'-6		0.017	
								16.312	Total(Pt) Route 2
S30	17'-6	4.9	14.34	¾	(See Notes)	15'-6½	150	8.565	• • • • • **Route 3** • • • • • Sprinkler,
109	18'-6		14.34	0.8740		12'-0	0.113194	-0.434	E(7'-0), 2Tr(1'-0), T(3'-0)
						27'-6½		3.118	
109	18'-6			2	(See Notes)	4'-5	150	11.249	
100	18'-6		3.55	2.0030		6'-0	0.000151		3Tr(2'-0)
						10'-5		0.002	
100	18'-6		14.66	2	(See Notes)	8'-5½	150	11.250	Flow (q) from Route 4
112	18'-6		18.21	2.0030		4'-0	0.003103		2Tr(2'-0)
						12'-5½		0.039	
								11.289	Total(Pt) Route 3
S31	17'-6	4.9	14.66	¾	(See Notes)	9'-2½	150	8.947	• • • • • **Route 4** • • • • • Sprinkler,
100	18'-6		14.66	0.8740		14'-0	0.117858	-0.434	E(7'-0), 2T(3'-0), Tr(1'-0)
						23'-2½		2.737	
								11.250	Total(Pt) Route 4
114	18'-6			2	(See Notes)	105'-9	150	12.177	• • • • • **Route 5** • • • • • Tr(2'-0)
116	9'-0		24.24	2.0030		104'-0	0.005267	4.119	25Tr(2'-0), 3T(10'-0), 2E(11'-0)
						209'-9		1.105	

Pipe Information

Node 1 / Node 2	Elev 1 (Foot) / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes: Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
								17.400	Total(Pt) Route 5
14	-12'-8		107.33	8		2'-9	150	40.556	• • • • • **Route 6** • • • • • Flow (q) from Route 1
13	-12'-8		25.68	7.6800		2'-9	0.000008	0.000	
13	-12'-8			8	(See Notes)	293'-8½	150	40.556	
12	-12'-8		25.68	7.6800		22'-6½ 316'-3	0.000008	0.003	2EE(11'-3)
12	-12'-8			8	(See Notes)	87'-6½	150	40.559	
11	-12'-8		25.68	7.6800		22'-6½ 110'-1	0.000008	0.001	2EE(11'-3)
11	-12'-8			8		148'-9½	150	40.560	
10	-12'-8		25.68	7.6800		148'-9½	0.000008	0.001	
10	-12'-8			8	(See Notes)	250'-6	150	40.561	
15	-12'-8		25.68	7.6800		66'-4½ 316'-10½	0.000008	0.003	2EE(11'-3), T(43'-10)
								40.563	Total(Pt) Route 6
109	18'-6		3.55	2	(See Notes)	7'-1	150	11.249	• • • • • **Route 7** • • • • • Flow (q) from Route 3
106	18'-6		10.79	2.0030		4'-0 11'-1	0.001178	0.013	2Tr(2'-0)
								11.262	Total(Pt) Route 7

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

(Actual Inside Diameter / Schedule 40 Steel Pipe Inside Diameter) 4.87 = Factor

C Value Multiplier

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV	Alarm Valve	AngV	Angle Valve	b	Bushing
BalV	Ball Valve	BFP	Backflow Preventer	BV	Butterfly Valve
C	Cross Flow Turn 90°	cplg	Coupling	Cr	Cross Run
CV	Check Valve	DelV	Deluge Valve	DPV	Dry Pipe Valve
E	90° Elbow	EE	45° Elbow	Ee1	11¼° Elbow
Ee2	22½° Elbow	f	Flow Device	fd	Flex Drop
FDC	Fire Department Connection	fE	90° FireLock(TM) Elbow	fEE	45° FireLock(TM) Elbow
flg	Flange	FN	Floating Node	fT	FireLock(TM) Tee
g	Gauge	GloV	Globe Valve	GV	Gate Valve
Ho	Hose	Hose	Hose	HV	Hose Valve
Hyd	Hydrant	LtE	Long Turn Elbow	mecT	Mechanical Tee
Noz	Nozzle	P1	Pump In	P2	Pump Out
PIV	Post Indicating Valve	PO	Pipe Outlet	PrV	Pressure Relief Valve
PRV I	Pressure Reducing Valve In	PRV C	Pressure Reducing Valve Out	red	Reducer/Adapter
S	Supply	sCV	Swing Check Valve	SFx	Seismic Flex
Spr	Sprinkler	St	Strainer	T	Tee Flow Turn 90°
Tr	Tee Run	U	Union	WirF	Wirsbo
WMV	Water Meter Valve	Z	Cap		

Hydraulic Calculations

for

Project Name: MAYNARD CROSSING APARTMENTS: (1450D)

Location: , ,

Drawing Name: Maynard Crossing Apartments 1450D - FP400 Building Calculation Date: 8/6/2026

Design

Remote Area Number:	B06 R5
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	525ft² (Actual 525ft²)
Coverage per Sprinkler:	130ft²
Type of sprinklers calculated:	Pendent
No. of sprinklers calculated:	3
No. of nozzles calculated:	0

In-rack Demand:	N/A gpm	at Node:	N/A		
Hose Streams:	0.0 gpm	at Node:	17	Type:	Allowance at Source

Total Water Required (including Hose Streams where applicable):

From Water Supply at Node 17: 135.32 @ 47.337 (Safety Margin = 6.582)

Type of System:

Volume of Dry/PreAction/Antifreeze/OtherAgent System: N/A

Name of Contractor: MAKSON FIRE

Address: 1306 SPEEDWAY BLVD, SALISBURY, NC 28146

Phone Number: 704-636-5505

Name of designer: D.PORTER

Authority Having Jurisdiction: : HARNETT COUNTY FIRE MARSHAL

Notes:

Summary Notes:

Supply at Node 17

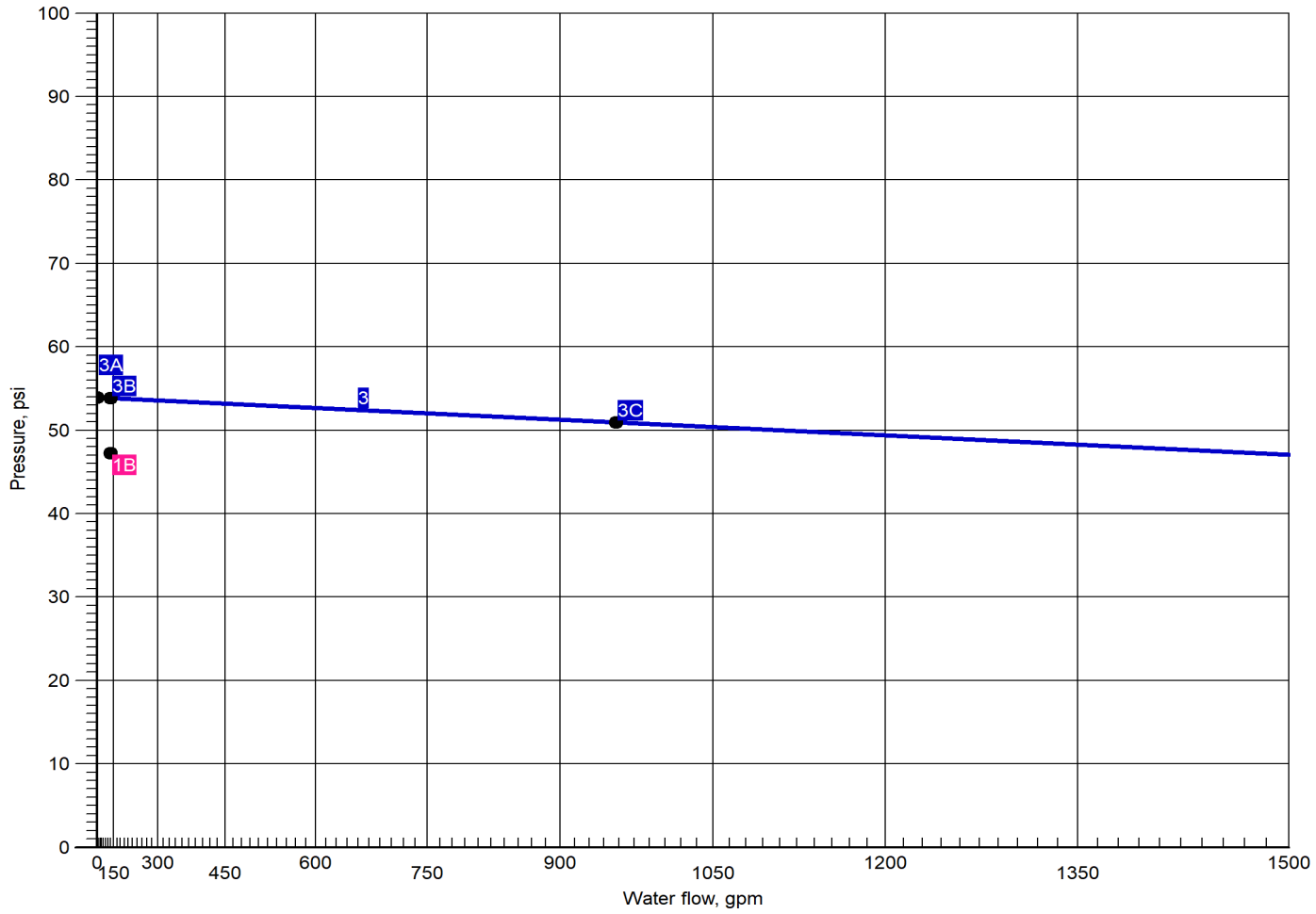
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B06 R5)

Remote Area Number: B06 R5



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 47.337 @ 135.32	Available Flow @ 20 PSI: 3550.30
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.920 @ 135.32	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B06 R5)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	9	77.70	77.70	0	48.150			
Sprinkler	**S32**	**20.00**	**20.00**	**4.9**	**16.660**			
Sprinkler	S33	18.10	17.00	4.9	13.637			
Sprinkler	S34	19.52	13.00	4.9	15.871			

⇨ Most Demanding Sprinkler Data

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
S32	17'-6	4.9	20.00	¾	(See Notes)	2'-5½	150	16.660	• • • • • **Route 1** • • • • •
						4'-0	0.209466	-0.434	Sprinkler,
107	18'-6		20.00	0.8740		6'-5½		1.357	T(3'-0), Tr(1'-0)
107	18'-6			1	(See Notes)	15'-5½	150	17.583	
						5'-0	0.068041	0.000	
120	18'-6		20.00	1.1010		20'-5½		1.391	T(5'-0)
120	18'-6		18.65	2	(See Notes)	37'-7½	150	18.974	Flow (q) from Route 3
						22'-0	0.012487		
114	18'-6		38.65	2.0030		59'-7½		0.744	11Tr(2'-0)
114	18'-6			2	(See Notes)	9'-6	150	19.718	T(10'-0)
						20'-0	0.001709	4.119	
115	9'-0		13.19	2.0030		29'-6		0.050	T(10'-0)
115	9'-0		18.96	2	(See Notes)	88'-6	150	23.887	Flow (q) from Route 2
						42'-0	0.008884	0.000	
116	9'-0		32.16	2.0030		130'-6		1.159	16Tr(2'-0), T(10'-0)
116	9'-0		25.46	2	(See Notes)	36'-1½	150	25.047	Flow (q) from Route 4
						37'-0	0.026133	2.064	
102	4'-3		57.62	2.0030		73'-1½		1.911	2Tr(2'-0), 3E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	29.022	
						3'-6	0.033881	0.474	
103	3'-1½		57.62	2.0670		4'-0		0.136	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	29.632	
							0.027530	0.506	
104	1'-11½		57.62	2.1570		1'-2		0.032	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	30.170	
						15'-0	0.033881	0.424	
105	1'-0		57.62	2.0670		19'-0		11.593	T(10'-0), BFP(-10.950), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-4	150	42.187	
						22'-3½	0.000827	5.925	
9	-12'-8		57.62	4.0700		45'-7½		0.038	2GV(3'-2), E(15'-11), FN
9	-12'-8		77.70	4	(See Notes)	42'-3½	150	48.150	
						35'-½	0.004015		
14	-12'-8		135.32	4.0700		77'-4		0.310	GV(3'-2), T(31'-10)

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
14	-12'-8			8		63'-5½	150	48.460	
15	-12'-8		109.19	7.6800		63'-5½	0.000123	0.008	
15	-12'-8		26.13	8	(See Notes)	634'-6½	150	48.468	Flow (q) from Route 5
16	-12'-8		135.32	7.6800		126'-5½ 761'-½	0.000182	0.139	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	48.606	Avl.Pressure @ Supply: 53.920
17	-9'-8		135.32	5.8600		25'-6½ 46'-6	0.000680	-1.301 0.032	2GV(3'-10), E(17'-10½), S
			0.00					47.337	Hose Allowance At Source
17			135.32						Total(Pt) Route 1
S33	17'-6	4.9	18.10	¾	(See Notes)	21'-0	150	13.637	• • • • • **Route 2** • • • • • Sprinkler,
101	18'-6		18.10	0.8740		12'-0 33'-0	0.174061	-0.434 5.744	E(7'-0), 2Tr(1'-0), T(3'-0)
101	18'-6		0.87	2	(See Notes)	147'-5½	150	18.948	Flow (q) from Route 6
115	9'-0		18.96	2.0030		98'-0 245'-5½	0.003344	4.119 0.821	28Tr(2'-0), 2T(10'-0), 2E(11'-0)
								23.887	Total(Pt) Route 2
S34	17'-6	4.9	19.52	¾	(See Notes)	4'-6½	150	15.871	• • • • • **Route 3** • • • • • Sprinkler,
119	18'-6		19.52	0.8740		13'-0 17'-6½	0.200278	-0.434 3.510	E(7'-0), 2T(3'-0)
119	18'-6			2	(See Notes)	6'-½	150	18.948	
120	18'-6		18.65	2.0030		2'-0 8'-½	0.003244	0.026	Tr(2'-0)
								18.974	Total(Pt) Route 3
114	18'-6			2	(See Notes)	105'-9	150	19.718	• • • • • **Route 4** • • • • • Tr(2'-0)
116	9'-0		25.46	2.0030		104'-0 209'-9	0.005768	4.119 1.210	25Tr(2'-0), 3T(10'-0), 2E(11'-0)
								25.047	Total(Pt) Route 4
14	-12'-8		109.19	8		2'-9	150	48.460	• • • • • **Route 5** • • • • • Flow (q) from Route 1
13	-12'-8		26.13	7.6800		2'-9	0.000009	0.000	

Pipe Information

Node 1 / Node 2	Elev 1 / Elev 2 (Foot)	K-Factor	Flow added this step (q) / Total Flow (Q)	Nominal ID / Actual ID	Fittings & Devices / Equiv. Length (Foot)	Length (Foot) / Fitting (Foot) / Total (Foot)	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
13	-12'-8			8	(See Notes)	293'-8½	150	48.460	
						22'-6½	0.000009		
12	-12'-8		26.13	7.6800		316'-3		0.003	2EE(11'-3)
12	-12'-8			8	(See Notes)	87'-6½	150	48.463	
						22'-6½	0.000009		
11	-12'-8		26.13	7.6800		110'-1		0.001	2EE(11'-3)
11	-12'-8			8		148'-9½	150	48.464	
							0.000009		
10	-12'-8		26.13	7.6800		148'-9½		0.001	
10	-12'-8			8	(See Notes)	250'-6	150	48.465	
						66'-4½	0.000009		
15	-12'-8		26.13	7.6800		316'-10½		0.003	2EE(11'-3), T(43'-10)
								48.468	Total(Pt) Route 5
119	18'-6		18.65	2	(See Notes)	3'-9½	150	18.948	• • • • • **Route 6** • • • • •
						4'-0	0.000011	-0.000	Flow (q) from Route 3
101	18'-6		0.87	2.0030		7'-9½		0.000	2Tr(2'-0)
								18.948	Total(Pt) Route 6

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

(Actual Inside Diameter / Schedule 40 Steel Pipe Inside Diameter) 4.87 = Factor

C Value Multiplier

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV	Alarm Valve	AngV	Angle Valve	b	Bushing
BalV	Ball Valve	BFP	Backflow Preventer	BV	Butterfly Valve
C	Cross Flow Turn 90°	cplg	Coupling	Cr	Cross Run
CV	Check Valve	DelV	Deluge Valve	DPV	Dry Pipe Valve
E	90° Elbow	EE	45° Elbow	Ee1	11¼° Elbow
Ee2	22½° Elbow	f	Flow Device	fd	Flex Drop
FDC	Fire Department Connection	fE	90° FireLock(TM) Elbow	fEE	45° FireLock(TM) Elbow
flg	Flange	FN	Floating Node	fT	FireLock(TM) Tee
g	Gauge	GloV	Globe Valve	GV	Gate Valve
Ho	Hose	Hose	Hose	HV	Hose Valve
Hyd	Hydrant	LtE	Long Turn Elbow	mecT	Mechanical Tee
Noz	Nozzle	P1	Pump In	P2	Pump Out
PIV	Post Indicating Valve	PO	Pipe Outlet	PrV	Pressure Relief Valve
PRV I	Pressure Reducing Valve In	PRV C	Pressure Reducing Valve Out	red	Reducer/Adapter
S	Supply	sCV	Swing Check Valve	SFx	Seismic Flex
Spr	Sprinkler	St	Strainer	T	Tee Flow Turn 90°
Tr	Tee Run	U	Union	WirF	Wirsbo
WMV	Water Meter Valve	Z	Cap		