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:	B02 R1
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	512ft² (Actual 512ft²)
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: 89.88 @ 44.865 (Safety Margin = 9.098)

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

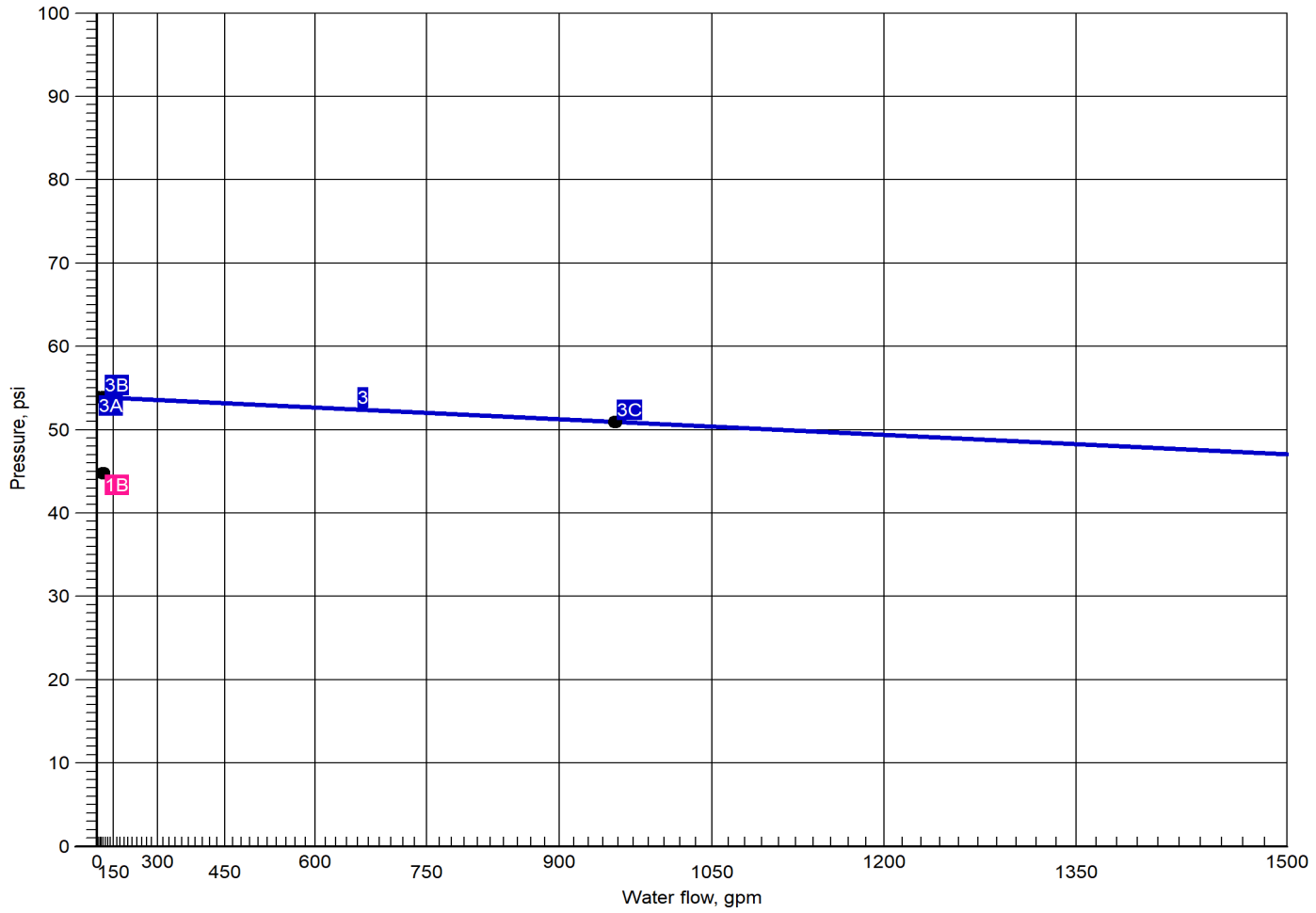
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B02 R1)

Remote Area Number: B02 R1



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 44.865 @ 89.88	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: 53.962 @ 89.88	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B02 R1)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	5	36.60	36.60	0	45.951			
Sprinkler	S18	13.68	13.00	4	11.704			
Sprinkler	S19	13.03	13.00	4	10.614			
Sprinkler	**S20**	**13.00**	**13.00**	**4.9**	**7.039**			
Sprinkler	S21	13.56	13.00	4.9	7.663			

⇨ 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.
S20	16'-10½	4.9	13.00	¾	(See Notes)	34'-7½	150	7.039	• • • • • **Route 1** • • • • •
109	9'-0		13.00	0.8740		29'-0 63'-7½	0.094407	3.412 6.005	Sprinkler, 3E(7'-0), 2T(3'-0), 2Tr(1'-0)
109	9'-0		13.56	1	(See Notes)	4'-5	150	16.455	Flow (q) from Route 3
106	9'-0		26.56	1.1010		2'-0 6'-5	0.115028	0.738	2Tr(1'-0)
106	9'-0		13.03	1	(See Notes)	8'-5½	150	17.193	Flow (q) from Route 2
100	9'-0		39.60	1.1010		2'-0 10'-5½	0.240716	2.517	2Tr(1'-0)
100	9'-0		13.68	2	(See Notes)	132'-2	150	19.711	Flow (q) from Route 4
102	4'-3		53.28	2.0030		100'-0 232'-2	0.022611	2.064 5.250	29Tr(2'-0), 2T(10'-0), 2E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	27.025	
103	3'-1½		53.28	2.0670		3'-6 4'-0	0.029315	0.474 0.117	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	27.616	
104	1'-11½		53.28	2.1570		 1'-2	0.023820	0.506 0.028	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	28.150	
105	1'-0		53.28	2.0670		15'-0 19'-0	0.029315	0.424 11.420	T(10'-0), BFP(-10.863), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-2	150	39.994	
5	-12'-8		53.28	4.0700		22'-3½ 45'-5½	0.000716	5.925 0.033	2GV(3'-2), E(15'-11), FN
5	-12'-8		36.60	4	(See Notes)	30'-7½	150	45.951	
10	-12'-8		89.88	4.0700		35'-½ 65'-7½	0.001883	0.124	GV(3'-2), T(31'-10)
10	-12'-8			8	(See Notes)	250'-6	150	46.075	
15	-12'-8		53.40	7.6800		66'-4½ 316'-10½	0.000033	0.010	2EE(11'-3), T(43'-10)
15	-12'-8		36.48	8	(See Notes)	634'-6½	150	46.085	Flow (q) from Route 5
16	-12'-8		89.88	7.6800		126'-5½ 761'-½	0.000085	0.065	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	46.150	Avl.Pressure @ Supply: 53.962
17	-9'-8		89.88	5.8600		25'-6½	0.000319	-1.301	2GV(3'-10), E(17'-10½), S
						46'-6		0.015	
			0.00					44.865	Hose Allowance At Source
17			89.88						Total(Pt) Route 1
S19	16'-6	4	13.03	¾	(See Notes)	16'-1	150	10.614	• • • • • **Route 2** • • • • • Sprinkler,
106	9'-0		13.03	0.8740		19'-0	0.094829	3.251	2E(7'-0), 2Tr(1'-0), T(3'-0)
						35'-1		3.328	
								17.193	Total(Pt) Route 2
S21	16'-10½	4.9	13.56	¾	(See Notes)	24'-8½	150	7.663	• • • • • **Route 3** • • • • • Sprinkler,
109	9'-0		13.56	0.8740		28'-0	0.102121	3.412	3E(7'-0), 2T(3'-0), Tr(1'-0)
						52'-8½		5.381	
								16.455	Total(Pt) Route 3
S18	16'-6	4	13.68	¾	(See Notes)	26'-9½	150	11.704	• • • • • **Route 4** • • • • • Sprinkler,
100	9'-0		13.68	0.8740		19'-0	0.103807	3.251	3Tr(1'-0), 3T(3'-0), E(7'-0)
						45'-9½		4.755	
								19.711	Total(Pt) Route 4
13	-12'-8		36.48	8		2'-9	150	46.084	• • • • • **Route 5** • • • • • Flow (q) from Route 6
14	-12'-8		36.48	7.6800			0.000016		
						2'-9		0.000	
14	-12'-8			8		63'-5½	150	46.084	
15	-12'-8		36.48	7.6800			0.000016		
						63'-5½		0.001	
								46.085	Total(Pt) Route 5
12	-12'-8		36.48	8	(See Notes)	293'-8½	150	46.079	• • • • • **Route 6** • • • • • Flow (q) from Route 7
13	-12'-8		36.48	7.6800		22'-6½	0.000016		2EE(11'-3)
						316'-3		0.005	
								46.084	Total(Pt) Route 6
11	-12'-8		36.48	8	(See Notes)	87'-6½	150	46.077	• • • • • **Route 7** • • • • • Flow (q) from Route 8
12	-12'-8		36.48	7.6800		22'-6½	0.000016		2EE(11'-3)
						110'-1		0.002	
								46.079	Total(Pt) Route 7

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
10	-12'-8		53.40	8		148'-9½	150	46.075	• • • • • **Route 8** • • • • • Flow (q) from Route 1
11	-12'-8		36.48	7.6800		148'-9½	0.000016	0.002	
								46.077	Total(Pt) Route 8

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:	B02 R2
Occupancy Classification:	Light Hazard
Density	0.10gpm/ft²
Area of Application:	1700ft² (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: 132.87 @ 37.598 (Safety Margin = 16.324)

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

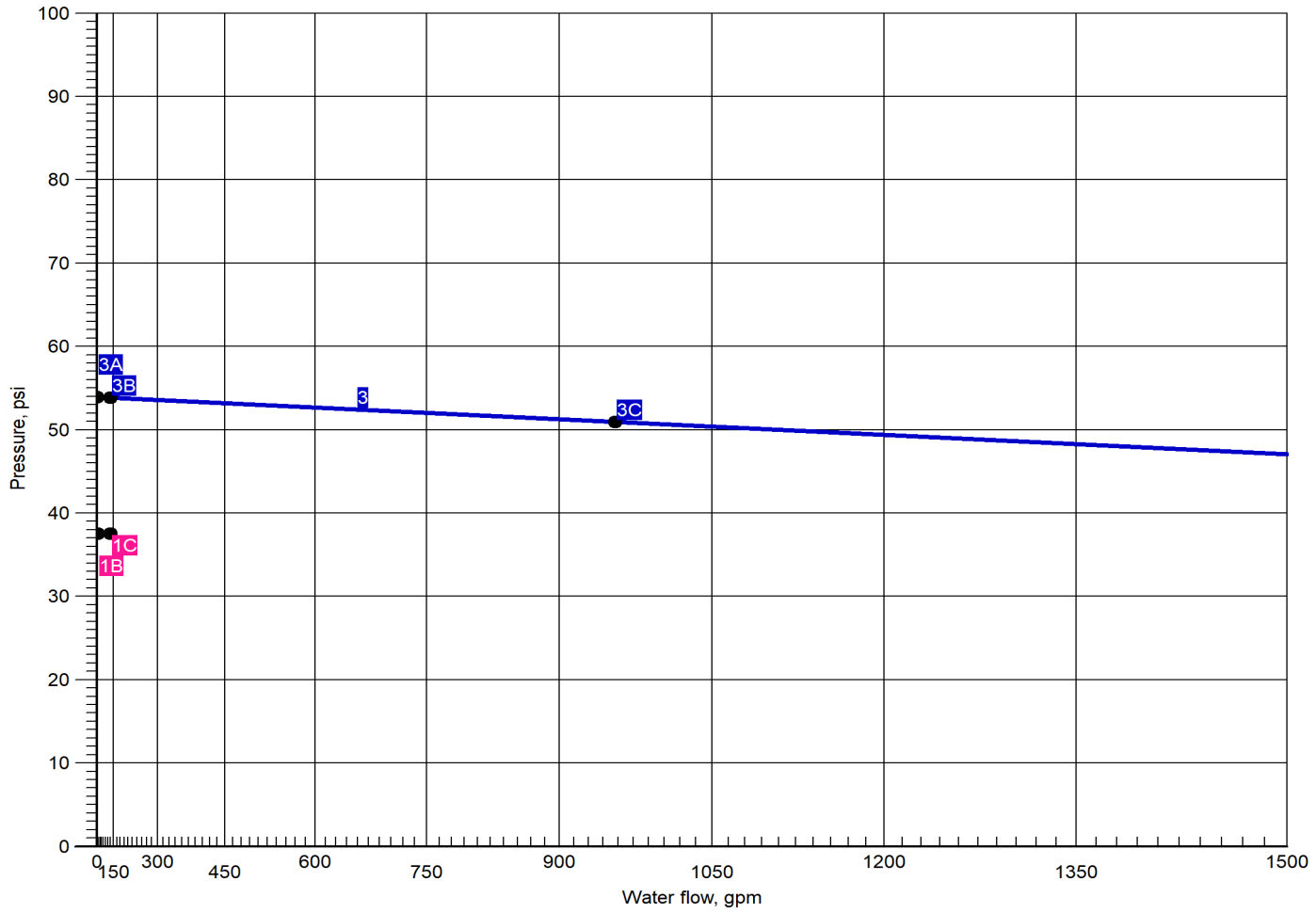
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Light Hazard (B02 R2)

Remote Area Number: B02 R2



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 37.598 @ 32.87	Available Flow @ 20 PSI: 3550.30
	1C	Required Pressure at System Demand (Including Hose Allowance at Source): 37.598 @ 132.87	
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.922 @ 132.87	
	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 (B02 R2)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Sprinkler	**S22**	**14.82**	**13.00**	**5.6**	**7.000**			
Sprinkler	S23	18.05	13.00	5.6	10.390			

Most Demanding Sprinkler Data

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.
S22	16'-6	5.6	14.82	1	(See Notes)	1'-0	100	7.000	• • • • • **Route 1** • • • • •
						3'-7	0.104671	0.027	Sprinkler,
112	16'-5		14.82	1.0490		4'-7		0.478	T(3'-7)
112	16'-5			¾	(See Notes)	32'-3	150	7.505	
						18'-0	0.120247	3.221	
113	9'-0		14.82	0.8740		50'-3		6.043	3T(3'-0), E(7'-0), 2Tr(1'-0)
113	9'-0		18.05	2	(See Notes)	109'-11	150	16.768	Flow (q) from Route 2
						92'-0	0.009251	2.064	
102	4'-3		32.87	2.0030		201'-11		1.868	25Tr(2'-0), 2T(10'-0), 2E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	20.701	
						3'-6	0.011993	0.474	
103	3'-1½		32.87	2.0670		4'-0		0.048	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	21.223	
							0.009745	0.506	
104	1'-11½		32.87	2.1570		1'-2		0.011	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	21.740	
						15'-0	0.011993	0.424	
105	1'-0		32.87	2.0670		19'-0		10.763	T(10'-0), BFP(-10.535), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-2	150	32.927	
						22'-3½	0.000293	5.925	
5	-12'-8		32.87	4.0700		45'-5½		0.013	2GV(3'-2), E(15'-11)
5	-12'-8			4	(See Notes)	30'-7½	150	38.865	
						35'-½	0.000293		
10	-12'-8		32.87	4.0700		65'-7½		0.019	GV(3'-2), T(31'-10)
10	-12'-8			8	(See Notes)	250'-6	150	38.884	
						66'-4½	0.000005		
15	-12'-8		19.53	7.6800		316'-10½		0.002	2EE(11'-3), T(43'-10)
15	-12'-8		13.34	8	(See Notes)	634'-6½	150	38.886	Flow (q) from Route 3
						126'-5½	0.000013		
16	-12'-8		32.87	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	38.896	
						25'-6½	0.000050	-1.301	Avl.Pressure @ Supply: 53.922
17	-9'-8		32.87	5.8600		46'-6		0.002	2GV(3'-10), E(17'-10½), S

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.)
			100.00					37.598	Hose Allowance At Source
17			132.87						Total(Pt) Route 1
S23	16'-6	5.6	18.05	1	(See Notes)	1'-0	100	10.390	• • • • • **Route 2** • • • • • Sprinkler,
115	16'-5		18.05	1.0490		3'-7 / 4'-7	0.150824	0.027 / 0.689	T(3'-7)
115	16'-5			¾	(See Notes)	7'-9	150	11.105	
116	9'-0		18.05	0.8740		6'-0 / 13'-9	0.173267	3.221 / 2.381	2T(3'-0)
116	9'-0			2	(See Notes)	14'-0	150	16.707	
113	9'-0		18.05	2.0030		6'-0 / 20'-0	0.003053	0.061	3Tr(2'-0)
								16.768	Total(Pt) Route 2
13	-12'-8		13.34	8		2'-9	150	38.886	• • • • • **Route 3** • • • • • Flow (q) from Route 4
14	-12'-8		13.34	7.6800		2'-9	0.000003	0.000	
14	-12'-8			8		63'-5½	150	38.886	
15	-12'-8		13.34	7.6800		63'-5½	0.000003	0.000	
								38.886	Total(Pt) Route 3
12	-12'-8		13.34	8	(See Notes)	293'-8½	150	38.885	• • • • • **Route 4** • • • • • Flow (q) from Route 5
13	-12'-8		13.34	7.6800		22'-6½ / 316'-3	0.000003	0.001	2EE(11'-3)
								38.886	Total(Pt) Route 4
11	-12'-8		13.34	8	(See Notes)	87'-6½	150	38.885	• • • • • **Route 5** • • • • • Flow (q) from Route 6
12	-12'-8		13.34	7.6800		22'-6½ / 110'-1	0.000003	0.000	2EE(11'-3)
								38.885	Total(Pt) Route 5
10	-12'-8		19.53	8		148'-9½	150	38.884	• • • • • **Route 6** • • • • • Flow (q) from Route 1
11	-12'-8		13.34	7.6800		148'-9½	0.000003	0.000	
								38.885	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		

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:	B02 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: 91.58 @ 43.977 (Safety Margin = 9.984)

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

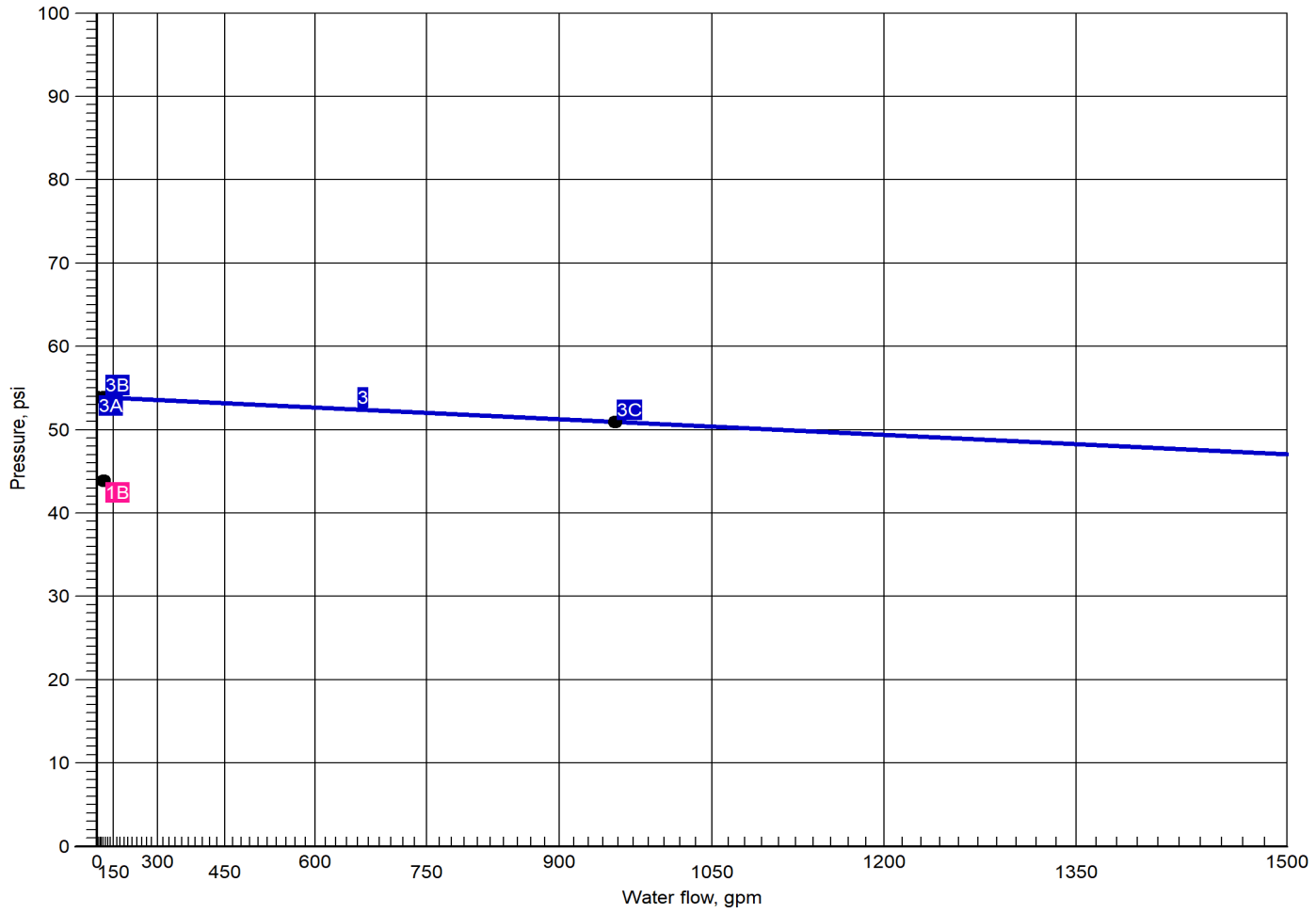
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B02 R3)

Remote Area Number: B02 R3



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 43.977 @ 91.58	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: 53.961 @ 91.58	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B02 R3)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	5	36.60	36.60	0	45.056			
Sprinkler	**S24**	**13.00**	**13.00**	**4**	**10.563**			
Sprinkler	S25	13.86	13.00	4	12.008			
Sprinkler	S26	14.05	13.00	4	12.335			
Sprinkler	S27	14.07	13.00	4.9	8.248			

Most Demanding Sprinkler Data

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.
S24	16'-6	4	13.00	¾	(See Notes)	38'-0	150	10.563	• • • • • **Route 1** • • • • •
119	9'-0		13.00	0.8740		29'-0 67'-0	0.094407	3.251 6.325	Sprinkler, 3E(7'-0), 2T(3'-0), 2Tr(1'-0)
119	9'-0		41.98	2	(See Notes)	86'-7	150	20.139	Flow (q) from Route 2
102	4'-3		54.98	2.0030		74'-0 160'-7	0.023965	2.064 3.848	16Tr(2'-0), 2T(10'-0), 2E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	26.052	
103	3'-1½		54.98	2.0670		3'-6 4'-0	0.031070	0.474 0.124	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	26.650	
104	1'-11½		54.98	2.1570		 1'-2	0.025247	0.506 0.029	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	27.186	
105	1'-0		54.98	2.0670		15'-0 19'-0	0.031070	0.424 11.487	T(10'-0), BFP(-10.897), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-2	150	39.096	
5	-12'-8		54.98	4.0700		22'-3½ 45'-5½	0.000759	5.925 0.034	2GV(3'-2), E(15'-11), FN
5	-12'-8		36.60	4	(See Notes)	30'-7½	150	45.056	
10	-12'-8		91.58	4.0700		35'-½ 65'-7½	0.001950	 0.128	GV(3'-2), T(31'-10)
10	-12'-8			8	(See Notes)	250'-6	150	45.184	
15	-12'-8		54.41	7.6800		66'-4½ 316'-10½	0.000034	 0.011	2EE(11'-3), T(43'-10)
15	-12'-8		37.17	8	(See Notes)	634'-6½	150	45.194	Flow (q) from Route 5
16	-12'-8		91.58	7.6800		126'-5½ 761'-½	0.000089	 0.067	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	45.262	Avl.Pressure @ Supply: 53.961
17	-9'-8		91.58	5.8600		25'-6½ 46'-6	0.000330	-1.301 0.015	2GV(3'-10), E(17'-10½), S
			0.00					43.977	Hose Allowance At Source
17			91.58						Total(Pt) Route 1

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.
S27	16'-10½	4.9	14.07	¾	(See Notes)	33'-2	150	8.248	• • • • • **Route 2** • • • • •
118	9'-0		14.07	0.8740		41'-0 74'-2	0.109315	3.412 8.108	Sprinkler, 5E(7'-0), 2T(3'-0)
118	9'-0		27.91	2	(See Notes)	13'-6½	150	19.768	Flow (q) from Route 3
119	9'-0		41.98	2.0030		12'-0 25'-6½	0.014549	0.371	6Tr(2'-0)
								20.139	Total(Pt) Route 2
S25	16'-6	4	13.86	¾	(See Notes)	27'-9	150	12.008	• • • • • **Route 3** • • • • •
113	9'-0		13.86	0.8740		14'-0 41'-9	0.106301	3.251 4.439	Sprinkler, 2Tr(1'-0), 4T(3'-0)
113	9'-0			2	(See Notes)	3'-9½	150	19.698	
117	9'-0		13.86	2.0030		4'-0 7'-9½	0.001873	0.015	2Tr(2'-0)
117	9'-0		14.05	2	(See Notes)	6'-0	150	19.713	Flow (q) from Route 4
118	9'-0		27.91	2.0030		2'-0 8'-0	0.006836	0.055	Tr(2'-0)
								19.768	Total(Pt) Route 3
S26	16'-6	4	14.05	¾	(See Notes)	17'-10½	150	12.335	• • • • • **Route 4** • • • • •
117	9'-0		14.05	0.8740		20'-0 37'-10½	0.108972	3.251 4.127	Sprinkler, 2E(7'-0), 3Tr(1'-0), T(3'-0)
								19.713	Total(Pt) Route 4
13	-12'-8		37.17	8		2'-9	150	45.193	• • • • • **Route 5** • • • • •
14	-12'-8		37.17	7.6800		2'-9	0.000017	0.000	Flow (q) from Route 6
14	-12'-8			8		63'-5½	150	45.193	
15	-12'-8		37.17	7.6800		63'-5½	0.000017	0.001	
								45.194	Total(Pt) Route 5
12	-12'-8		37.17	8	(See Notes)	293'-8½	150	45.188	• • • • • **Route 6** • • • • •
13	-12'-8		37.17	7.6800		22'-6½ 316'-3	0.000017	0.005	Flow (q) from Route 7 2EE(11'-3)
								45.193	Total(Pt) Route 6

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.
11	-12'-8		37.17	8	(See Notes)	87'-6½	150	45.186	• • • • • **Route 7** • • • • • Flow (q) from Route 8
12	-12'-8		37.17	7.6800		22'-6½ 110'-1	0.000017	 0.002	2EE(11'-3)
								45.188	Total(Pt) Route 7
10	-12'-8		54.41	8		148'-9½	150	45.184	• • • • • **Route 8** • • • • • Flow (q) from Route 1
11	-12'-8		37.17	7.6800		 148'-9½	0.000017	 0.002	
								45.186	Total(Pt) Route 8

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:	B02 R4
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	513ft² (Actual 513ft²)
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: 100.22 @ 45.777 (Safety Margin = 8.177)

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

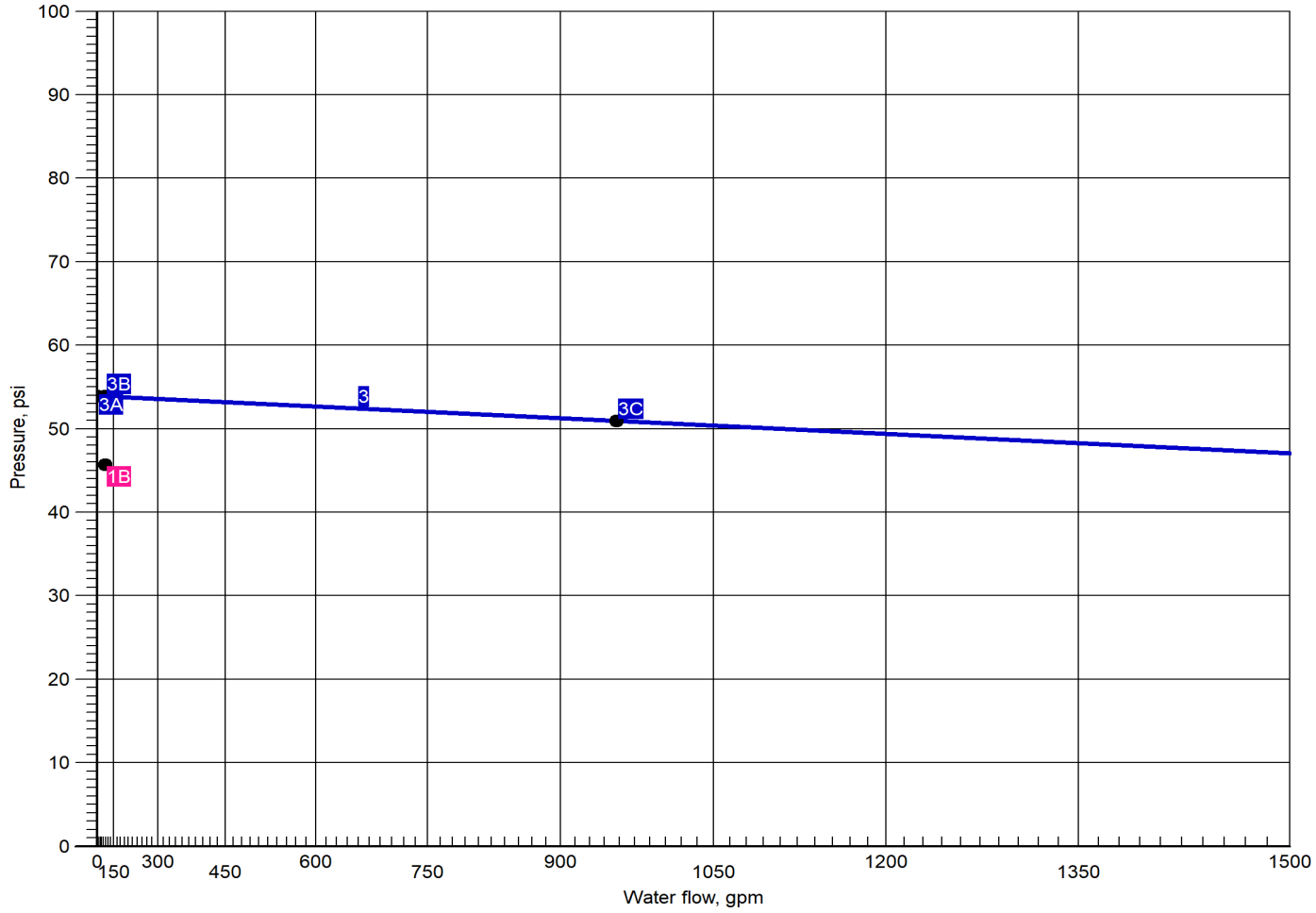
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B02 R4)

Remote Area Number: B02 R4



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 45.777 @ 100.22	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: 53.954 @ 100.22	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B02 R4)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	5	36.60	36.60	0	46.816			
Sprinkler	**S28**	**17.00**	**17.00**	**4.9**	**12.037**			
Sprinkler	S29	14.04	13.00	4.9	8.212			
Sprinkler	S30	15.86	13.00	4.9	10.471			
Sprinkler	S31	16.72	13.00	4.9	11.641			

⇨ Most Demanding Sprinkler Data

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.
S28	8'-0	4.9	17.00	¾	(See Notes)	22'-0	150	12.037	• • • • • **Route 1** • • • • •
100	9'-0		17.00	0.8740		20'-0 42'-0	0.155074	-0.434 6.513	Sprinkler, 2E(7'-0), 3Tr(1'-0), T(3'-0)
100	9'-0		46.62	2	(See Notes)	132'-2	150	18.116	Flow (q) from Route 2
102	4'-3		63.62	2.0030		100'-0 232'-2	0.031389	2.064 7.288	29Tr(2'-0), 2T(10'-0), 2E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	27.468	
103	3'-1½		63.62	2.0670		3'-6 4'-0	0.040695	0.474 0.163	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	28.105	
104	1'-11½		63.62	2.1570		 1'-2	0.033067	0.506 0.039	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	28.649	
105	1'-0		63.62	2.0670		15'-0 19'-0	0.040695	0.424 11.773	T(10'-0), BFP(-11.000), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-2	150	40.846	
5	-12'-8		63.62	4.0700		22'-3½ 45'-5½	0.000994	5.925 0.045	2GV(3'-2), E(15'-11), FN
5	-12'-8		36.60	4	(See Notes)	30'-7½	150	46.816	
10	-12'-8		100.22	4.0700		35'-½ 65'-7½	0.002303	 0.151	GV(3'-2), T(31'-10)
10	-12'-8			8	(See Notes)	250'-6	150	46.967	
15	-12'-8		59.54	7.6800		66'-4½ 316'-10½	0.000040	 0.013	2EE(11'-3), T(43'-10)
15	-12'-8		40.67	8	(See Notes)	634'-6½	150	46.980	Flow (q) from Route 5
16	-12'-8		100.22	7.6800		126'-5½ 761'-½	0.000105	 0.080	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	47.060	Avl.Pressure @ Supply: 53.954
17	-9'-8		100.22	5.8600		25'-6½ 46'-6	0.000390	-1.301 0.018	2GV(3'-10), E(17'-10½), S
			0.00					45.777	Hose Allowance At Source
17			100.22						Total(Pt) Route 1

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.
S29	8'-0	4.9	14.04	¾	(See Notes)	35'-3	150	8.212	• • • • • **Route 2** • • • • •
109	9'-0		14.04	0.8740		20'-0	0.108878	-0.434	Sprinkler,
						55'-3		6.014	2E(7'-0), 3Tr(1'-0), T(3'-0)
109	9'-0		15.86	1	(See Notes)	4'-5	150	13.793	Flow (q) from Route 3
106	9'-0		29.90	1.1010		2'-0	0.143154		2Tr(1'-0)
						6'-5		0.919	
106	9'-0		16.72	1	(See Notes)	8'-5½	150	14.711	Flow (q) from Route 4
100	9'-0		46.62	1.1010		2'-0	0.325578		2Tr(1'-0)
						10'-5½		3.405	
								18.116	Total(Pt) Route 2
S30	8'-0	4.9	15.86	¾	(See Notes)	15'-6½	150	10.471	• • • • • **Route 3** • • • • •
109	9'-0		15.86	0.8740		12'-0	0.136326	-0.434	Sprinkler,
						27'-6½		3.755	E(7'-0), 2Tr(1'-0), T(3'-0)
								13.793	Total(Pt) Route 3
S31	8'-0	4.9	16.72	¾	(See Notes)	9'-3½	150	11.641	• • • • • **Route 4** • • • • •
106	9'-0		16.72	0.8740		14'-0	0.150349	-0.434	Sprinkler,
						23'-3½		3.504	E(7'-0), 2T(3'-0), Tr(1'-0)
								14.711	Total(Pt) Route 4
13	-12'-8		40.67	8		2'-9	150	46.979	• • • • • **Route 5** • • • • •
14	-12'-8		40.67	7.6800			0.000020		Flow (q) from Route 6
						2'-9		0.000	
14	-12'-8			8		63'-5½	150	46.979	
15	-12'-8		40.67	7.6800			0.000020		
						63'-5½		0.001	
								46.980	Total(Pt) Route 5
12	-12'-8		40.67	8	(See Notes)	293'-8½	150	46.972	• • • • • **Route 6** • • • • •
13	-12'-8		40.67	7.6800		22'-6½	0.000020		Flow (q) from Route 7
						316'-3		0.006	2EE(11'-3)
								46.979	Total(Pt) Route 6
11	-12'-8		40.67	8	(See Notes)	87'-6½	150	46.970	• • • • • **Route 7** • • • • •
12	-12'-8		40.67	7.6800		22'-6½	0.000020		Flow (q) from Route 8
						110'-1		0.002	2EE(11'-3)
								46.972	Total(Pt) Route 7

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
10	-12'-8		59.54	8		148'-9½	150	46.967	• • • • • **Route 8** • • • • • Flow (q) from Route 1
11	-12'-8		40.67	7.6800		148'-9½	0.000020	0.003	
								46.970	Total(Pt) Route 8

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:	B02 R5
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	526ft² (Actual 526ft²)
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: 97.27 @ 47.908 (Safety Margin = 6.048)

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

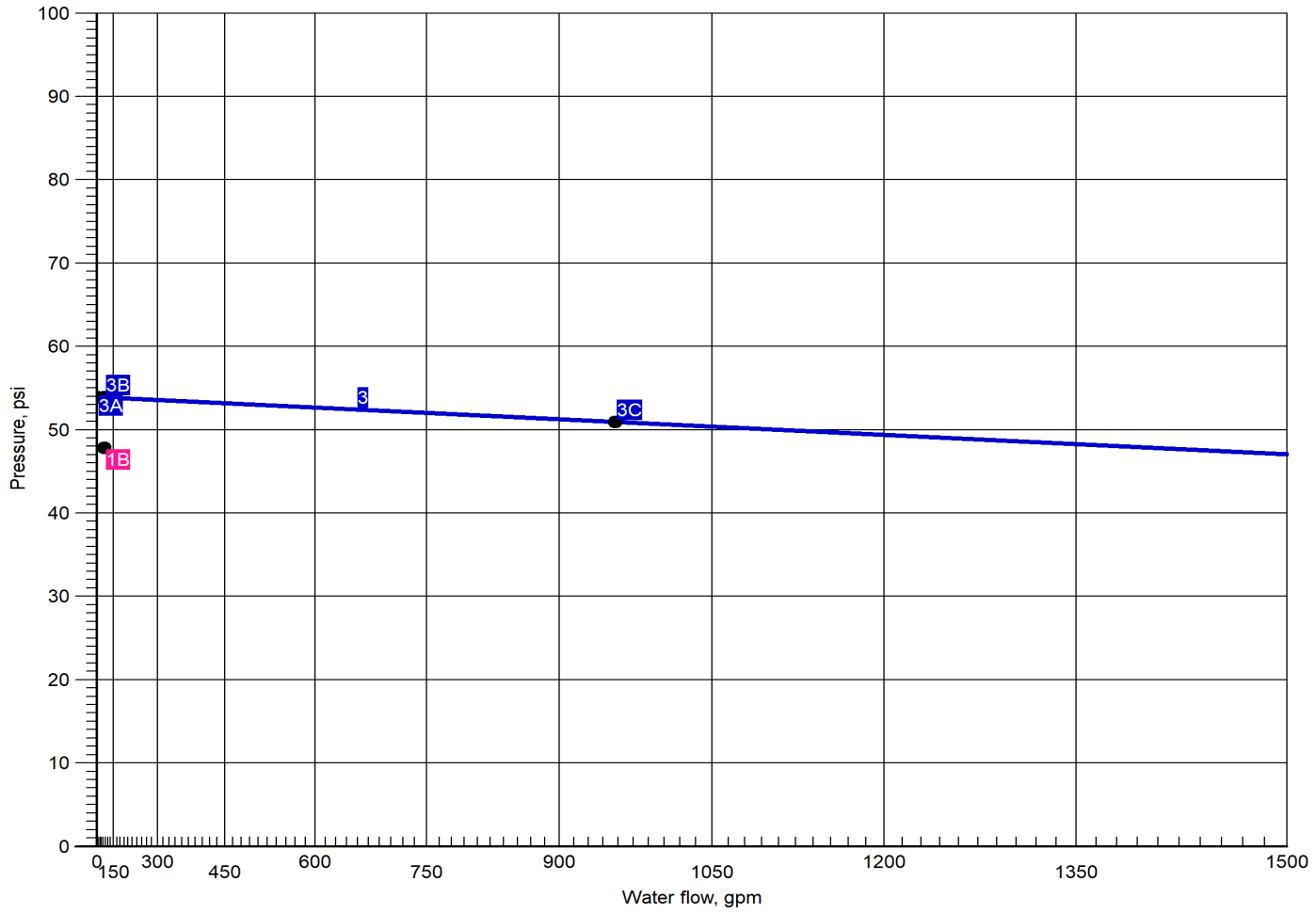
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B02 R5)

Remote Area Number: B02 R5



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 47.908 @ 97.27	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: 53.956 @ 97.27	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B02 R5)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Floating Node	5	36.60	36.60	0	48.961			
Sprinkler	**S32**	**20.00**	**20.00**	**4.9**	**16.660**			
Sprinkler	S33	19.56	17.00	4.9	15.943			
Sprinkler	S34	21.11	13.00	4.9	18.552			

⇨ 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	8'-0	4.9	20.00	¾	(See Notes)	17'-11	150	16.660	• • • • • **Route 1** • • • • •
118	9'-0		20.00	0.8740		11'-0 28'-11	0.209466	-0.434 6.057	Sprinkler, E(7'-0), Tr(1'-0), T(3'-0)
118	9'-0		40.67	2	(See Notes)	100'-1½	150	22.283	Flow (q) from Route 2
102	4'-3		60.67	2.0030		86'-0 186'-1½	0.028753	2.064 5.351	22Tr(2'-0), 2T(10'-0), 2E(11'-0)
102	4'-3			2	(See Notes)	0'-6	120	29.699	
103	3'-1½		60.67	2.0670		3'-6 4'-0	0.037277	0.474 0.149	Tr(3'-6)
103	3'-1½			2	(See Notes)	1'-2	120	30.322	
104	1'-11½		60.67	2.1570		 1'-2	0.030290	0.506 0.035	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	30.863	
105	1'-0		60.67	2.0670		15'-0 19'-0	0.037277	0.424 11.708	T(10'-0), BFP(-11.000), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	23'-2	150	42.995	
5	-12'-8		60.67	4.0700		22'-3½ 45'-5½	0.000910	5.925 0.041	2GV(3'-2), E(15'-11), FN
5	-12'-8		36.60	4	(See Notes)	30'-7½	150	48.961	
10	-12'-8		97.27	4.0700		35'-½ 65'-7½	0.002180	 0.143	GV(3'-2), T(31'-10)
10	-12'-8			8	(See Notes)	250'-6	150	49.104	
15	-12'-8		57.79	7.6800		66'-4½ 316'-10½	0.000038	 0.012	2EE(11'-3), T(43'-10)
15	-12'-8		39.48	8	(See Notes)	634'-6½	150	49.116	Flow (q) from Route 4
16	-12'-8		97.27	7.6800		126'-5½ 761'-½	0.000099	 0.075	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	49.192	Avl.Pressure @ Supply: 53.956
17	-9'-8		97.27	5.8600		25'-6½ 46'-6	0.000369	-1.301 0.017	2GV(3'-10), E(17'-10½), S
			0.00					47.908	Hose Allowance At Source
17			97.27						Total(Pt) Route 1

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.
S33	8'-0	4.9	19.56	¾	(See Notes)	21'-0	150	15.943	• • • • • **Route 2** • • • • •
113	9'-0		19.56	0.8740		12'-0	0.201113	-0.434	Sprinkler,
						33'-0		6.637	E(7'-0), 2Tr(1'-0), T(3'-0)
113	9'-0			2	(See Notes)	3'-9½	150	22.146	
117	9'-0		19.56	2.0030		4'-0	0.003543		2Tr(2'-0)
						7'-9½		0.028	
117	9'-0		21.11	2	(See Notes)	6'-0	150	22.173	Flow (q) from Route 3
118	9'-0		40.67	2.0030		2'-0	0.013720		Tr(2'-0)
						8'-0		0.110	
								22.283	Total(Pt) Route 2
S34	8'-0	4.9	21.11	¾	(See Notes)	4'-6½	150	18.552	• • • • • **Route 3** • • • • •
117	9'-0		21.11	0.8740		13'-0	0.231379	-0.434	Sprinkler,
						17'-6½		4.055	E(7'-0), 2T(3'-0)
								22.173	Total(Pt) Route 3
13	-12'-8		39.48	8		2'-9	150	49.115	• • • • • **Route 4** • • • • •
14	-12'-8		39.48	7.6800			0.000019		Flow (q) from Route 5
						2'-9		0.000	
14	-12'-8			8		63'-5½	150	49.115	
15	-12'-8		39.48	7.6800			0.000019		
						63'-5½		0.001	
								49.116	Total(Pt) Route 4
12	-12'-8		39.48	8	(See Notes)	293'-8½	150	49.109	• • • • • **Route 5** • • • • •
13	-12'-8		39.48	7.6800		22'-6½	0.000019		Flow (q) from Route 6
						316'-3		0.006	2EE(11'-3)
								49.115	Total(Pt) Route 5
11	-12'-8		39.48	8	(See Notes)	87'-6½	150	49.107	• • • • • **Route 6** • • • • •
12	-12'-8		39.48	7.6800		22'-6½	0.000019		Flow (q) from Route 7
						110'-1		0.002	2EE(11'-3)
								49.109	Total(Pt) Route 6
10	-12'-8		57.79	8		148'-9½	150	49.104	• • • • • **Route 7** • • • • •
11	-12'-8		39.48	7.6800			0.000019		Flow (q) from Route 1
						148'-9½		0.003	
								49.107	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		