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:	B05 R1
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	509ft² (Actual 509ft²)
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: 54.68 @ 45.854 (Safety Margin = 8.131)

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

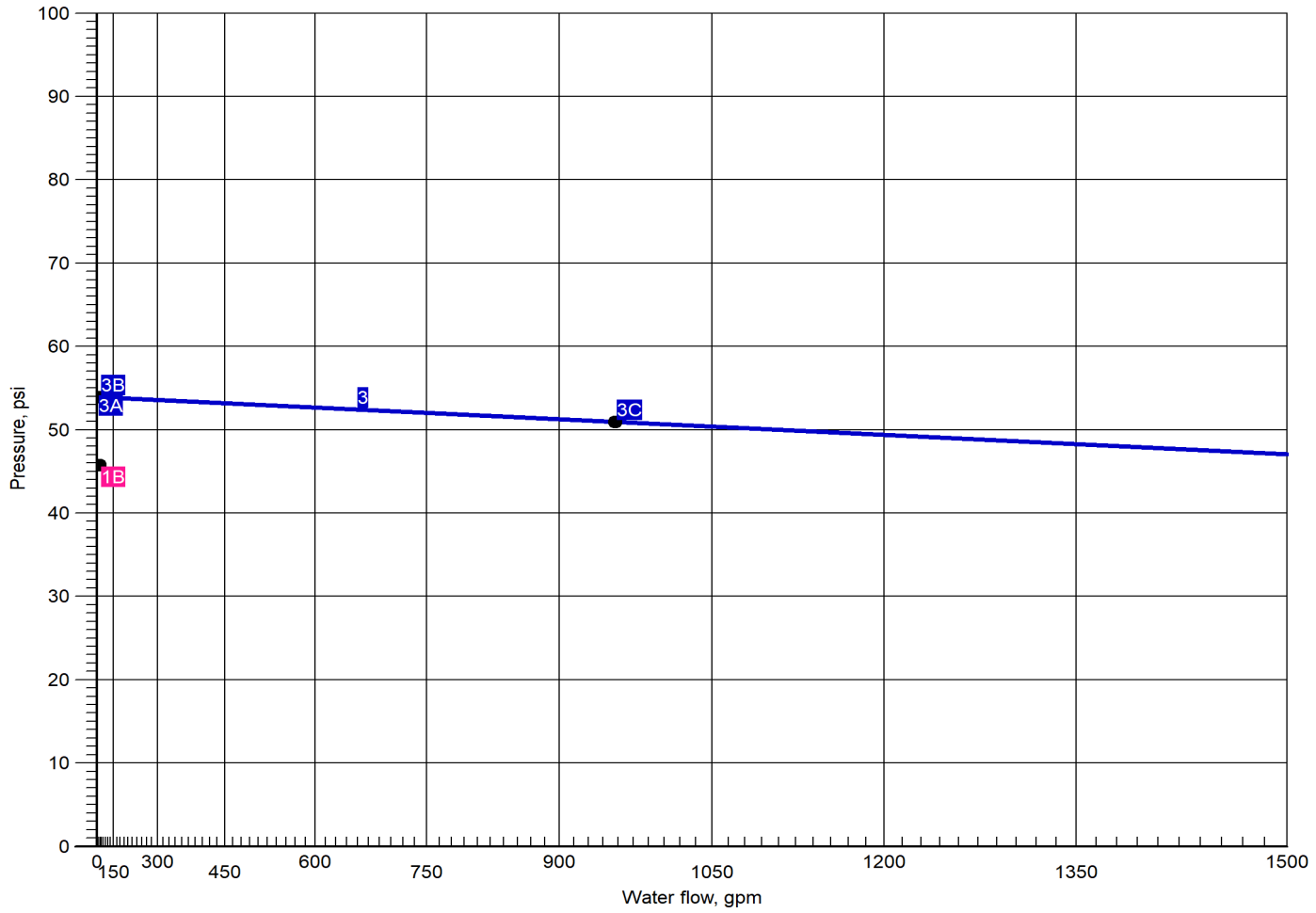
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B05 R1)

Remote Area Number: B05 R1



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 45.854 @ 54.68	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: 53.985 @ 54.68	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B05 R1)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Sprinkler	**S18**	**13.00**	**13.00**	**4**	**10.563**			
Sprinkler	S19	13.46	12.00	4	11.325			
Sprinkler	S20	13.79	13.00	4.9	7.920			
Sprinkler	S21	14.43	13.00	4.9	8.668			

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,
100	18'-6		13.00	0.8740		19'-0 45'-9½	0.094407	3.251 4.325	3Tr(1'-0), 3T(3'-0), E(7'-0)
100	18'-6		14.17	2	(See Notes)	175'-5½	150	18.139	Flow (q) from Route 4
101	9'-0		27.17	2.0030		136'-0 311'-5½	0.006506	4.119 2.026	41Tr(2'-0), 2cplg(1'-0), 3T(10'-0), 2E(11'-0)
101	9'-0		27.50	2	(See Notes)	36'-1½	150	24.284	Flow (q) from Route 2
102	3'-10½		54.68	2.0030		41'-6 77'-7½	0.023721	2.222 1.841	2Tr(2'-0), 3E(11'-0), cplg(1'-0), Tr(3'-6)
102	3'-10½			2		0'-6	120	28.348	
103	3'-1½		54.68	2.0670		 0'-6	0.030753	0.316 0.015	
103	3'-1½			2	(See Notes)	1'-2	120	28.679	
104	1'-11½		54.68	2.1570		 1'-2	0.024989	0.506 0.029	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	29.214	
105	1'-0		54.68	2.0670		15'-0 19'-0	0.030753	0.424 11.475	T(10'-0), BFP(-10.891), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	54'-0	150	41.113	
13	-12'-8		54.68	4.0700		57'-4 111'-4	0.000751	5.925 0.084	3GV(3'-2), E(15'-11), T(31'-10)
13	-12'-8			8		2'-9	150	47.121	
14	-12'-8		43.91	7.6800		 2'-9	0.000023	 0.000	
14	-12'-8			8		63'-5½	150	47.121	
15	-12'-8		43.91	7.6800		 63'-5½	0.000023	 0.001	
15	-12'-8		10.77	8	(See Notes)	634'-6½	150	47.123	Flow (q) from Route 5
16	-12'-8		54.68	7.6800		126'-5½ 761'-½	0.000034	 0.026	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	47.148	Avl.Pressure @ Supply: 53.985
17	-9'-8		54.68	5.8600		25'-6½ 46'-6	0.000127	-1.301 0.006	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.
			0.00					45.854	Hose Allowance At Source
17			54.68						Total(Pt) Route 1
S20	26'-4½	4.9	13.79	¾	(See Notes)	29'-7	150	7.920	• • • • • **Route 2** • • • • • Sprinkler,
108	18'-6		13.79	0.8740		35'-0 64'-7	0.105295	3.412 6.799	4E(7'-0), 2T(3'-0), Tr(1'-0)
108	18'-6		13.71	2	(See Notes)	193'-9	150	18.131	Flow (q) from Route 3
101	9'-0		27.50	2.0030		112'-0 305'-9	0.006654	4.119 2.034	3T(10'-0), 2E(11'-0), 30Tr(2'-0)
								24.284	Total(Pt) Route 2
S21	26'-4½	4.9	14.43	¾	(See Notes)	24'-8½	150	8.668	• • • • • **Route 3** • • • • • Sprinkler,
110	18'-6		14.43	0.8740		28'-0 52'-8½	0.114456	3.412 6.031	3E(7'-0), 2T(3'-0), Tr(1'-0)
110	18'-6			2	(See Notes)	7'-1	150	18.111	
108	18'-6		13.71	2.0030		4'-0 11'-1	0.001836	-0.000 0.020	2Tr(2'-0)
								18.131	Total(Pt) Route 3
S19	26'-0	4	13.46	¾	(See Notes)	16'-1	150	11.325	• • • • • **Route 4** • • • • • Sprinkler,
106	18'-6		13.46	0.8740		19'-0 35'-1	0.100694	3.251 3.534	2E(7'-0), 2Tr(1'-0), T(3'-0)
106	18'-6		0.71	2	(See Notes)	8'-5½	150	18.111	Flow (q) from Route 8
100	18'-6		14.17	2.0030		6'-0 14'-5½	0.001952	0.028	3Tr(2'-0)
								18.139	Total(Pt) Route 4
11	-12'-8		10.77	8		148'-9½	150	47.122	• • • • • **Route 5** • • • • • Flow (q) from Route 6
10	-12'-8		10.77	7.6800		148'-9½	0.000002	0.000	
10	-12'-8			8	(See Notes)	250'-6	150	47.122	
15	-12'-8		10.77	7.6800		66'-4½ 316'-10½	0.000002	0.001	2EE(11'-3), T(43'-10)
								47.123	Total(Pt) Route 5

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.
12	-12'-8		10.77	8	(See Notes)	87'-6½	150	47.122	• • • • • **Route 6** • • • • • Flow (q) from Route 7
						22'-6½	0.000002		
11	-12'-8		10.77	7.6800		110'-1		0.000	2EE(11'-3)
								47.122	Total(Pt) Route 6
13	-12'-8		43.91	8	(See Notes)	293'-8½	150	47.121	• • • • • **Route 7** • • • • • Flow (q) from Route 1
						22'-6½	0.000002		
12	-12'-8		10.77	7.6800		316'-3		0.001	2EE(11'-3)
								47.122	Total(Pt) Route 7
110	18'-6		13.71	2	(See Notes)	4'-5	150	18.111	• • • • • **Route 8** • • • • • Flow (q) from Route 3
						6'-0	0.000008		
106	18'-6		0.71	2.0030		10'-5		0.000	3Tr(2'-0)
								18.111	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:	B05 R2
Occupancy Classification:	Light Hazard
Density	0.10gpm/ft²
Area of Application:	171ft² (Actual 171ft²)
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: 132.92 @ 41.356 (Safety Margin = 12.566)

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

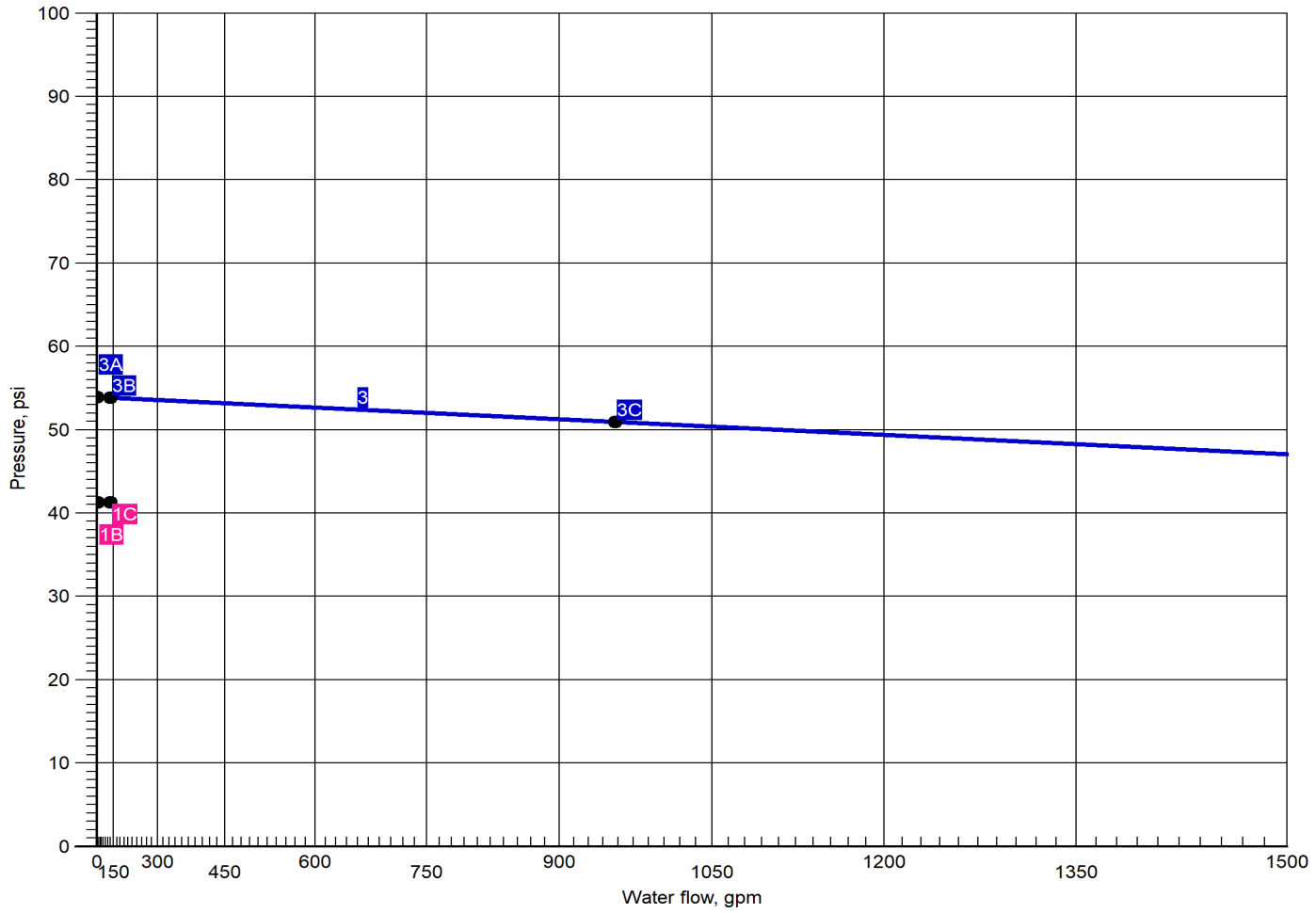
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Light Hazard (B05 R2)

Remote Area Number: B05 R2



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 41.356 @ 32.92	Available Flow @ 20 PSI: 3550.30
	1C	Required Pressure at System Demand (Including Hose Allowance at Source): 41.356 @ 132.92	
3	3A	Available Static Pressure at Supply at Node 17: 54.000	
	3B	Available Residual Pressure at System Demand: 53.922 @ 132.92	
	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 (B05 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	18.10	14.82	5.6	10.450			

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	26'-0	5.6	14.82	1	(See Notes)	1'-0	100	7.000	• • • • • **Route 1** • • • • • Sprinkler,
112	25'-11		14.82	1.0490		3'-7 4'-7	0.104671	0.027 0.478	T(3'-7)
112	25'-11			¾	(See Notes)	32'-5	150	7.505	
113	18'-6		14.82	0.8740		18'-0 50'-5	0.120247	3.221 6.065	3T(3'-0), E(7'-0), 2Tr(1'-0)
113	18'-6		2.63	2	(See Notes)	153'-2½	150	16.791	Flow (q) from Route 2
101	9'-0		17.45	2.0030		128'-0 281'-2½	0.002867	4.119 0.806	37Tr(2'-0), 2cplg(1'-0), 3T(10'-0), 2E(11'-0)
101	9'-0		15.47	2	(See Notes)	36'-1½	150	21.715	Flow (q) from Route 3
102	3'-10½		32.92	2.0030		41'-6 77'-7½	0.009278	2.222 0.720	2Tr(2'-0), 3E(11'-0), cplg(1'-0), Tr(3'-6)
102	3'-10½			2		0'-6	120	24.658	
103	3'-1½		32.92	2.0670		 0'-6	0.012029	0.316 0.006	
103	3'-1½			2	(See Notes)	1'-2	120	24.980	
104	1'-11½		32.92	2.1570		 1'-2	0.009774	0.506 0.011	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	25.497	
105	1'-0		32.92	2.0670		15'-0 19'-0	0.012029	0.424 10.764	T(10'-0), BFP(-10.536), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	54'-0	150	36.686	
13	-12'-8		32.92	4.0700		57'-4 111'-4	0.000294	5.925 0.033	3GV(3'-2), E(15'-11), T(31'-10)
13	-12'-8			8		2'-9	150	42.643	
14	-12'-8		26.44	7.6800		 2'-9	0.000009	 0.000	
14	-12'-8			8		63'-5½	150	42.643	
15	-12'-8		26.44	7.6800		 63'-5½	0.000009	 0.001	
15	-12'-8		6.48	8	(See Notes)	634'-6½	150	42.644	Flow (q) from Route 4
16	-12'-8		32.92	7.6800		126'-5½ 761'-½	0.000013	 0.010	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	42.654	Avl.Pressure @ Supply: 53.922
17	-9'-8		32.92	5.8600		25'-6½	0.000050	-1.301	2GV(3'-10), E(17'-10½), S
						46'-6		0.002	
			100.00					41.356	Hose Allowance At Source
17			132.92						Total(Pt) Route 1
S23	26'-0	5.6	18.10	1	(See Notes)	1'-0	100	10.450	• • • • • **Route 2** • • • • • Sprinkler,
115	25'-11		18.10	1.0490		3'-7	0.151636	0.027	T(3'-7)
						4'-7		0.692	
115	25'-11			¾	(See Notes)	7'-9	150	11.170	2T(3'-0)
116	18'-6		18.10	0.8740		6'-0	0.174201	3.221	
						13'-9		2.398	
116	18'-6			2	(See Notes)	13'-11½	150	16.789	3Tr(2'-0)
113	18'-6		2.63	2.0030		6'-0	0.000087		
						19'-11½		0.002	
								16.791	Total(Pt) Route 2
116	18'-6		2.63	2	(See Notes)	222'-0	150	16.789	• • • • • **Route 3** • • • • • Flow (q) from Route 2
101	9'-0		15.47	2.0030		130'-0	0.002295	4.119	39Tr(2'-0), 3T(10'-0), 2E(11'-0)
						352'-0		0.808	
								21.715	Total(Pt) Route 3
11	-12'-8		6.48	8		148'-9½	150	42.644	• • • • • **Route 4** • • • • • Flow (q) from Route 5
10	-12'-8		6.48	7.6800			0.000001		
						148'-9½		0.000	
10	-12'-8			8	(See Notes)	250'-6	150	42.644	2EE(11'-3), T(43'-10)
15	-12'-8		6.48	7.6800		66'-4½	0.000001		
						316'-10½		0.000	
								42.644	Total(Pt) Route 4
12	-12'-8		6.48	8	(See Notes)	87'-6½	150	42.644	• • • • • **Route 5** • • • • • Flow (q) from Route 6
11	-12'-8		6.48	7.6800		22'-6½	0.000001		2EE(11'-3)
						110'-1		0.000	
								42.644	Total(Pt) Route 5

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 / Total	C Factor / Pf Friction Loss Per Unit (psi)	Total(Pt) / Elev(Pe) / Friction(Pf)	Notes
13	-12'-8		26.44	8	(See Notes)	293'-8½	150	42.643	• • • • • **Route 6** • • • • • Flow (q) from Route 1
						22'-6½	0.000001		
12	-12'-8		6.48	7.6800		316'-3		0.000	2EE(11'-3)
								42.644	Total(Pt) Route 6

Fitting/Device (Equivalent Length)
Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.

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:	B05 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: 52.36 @ 45.032 (Safety Margin = 8.955)

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

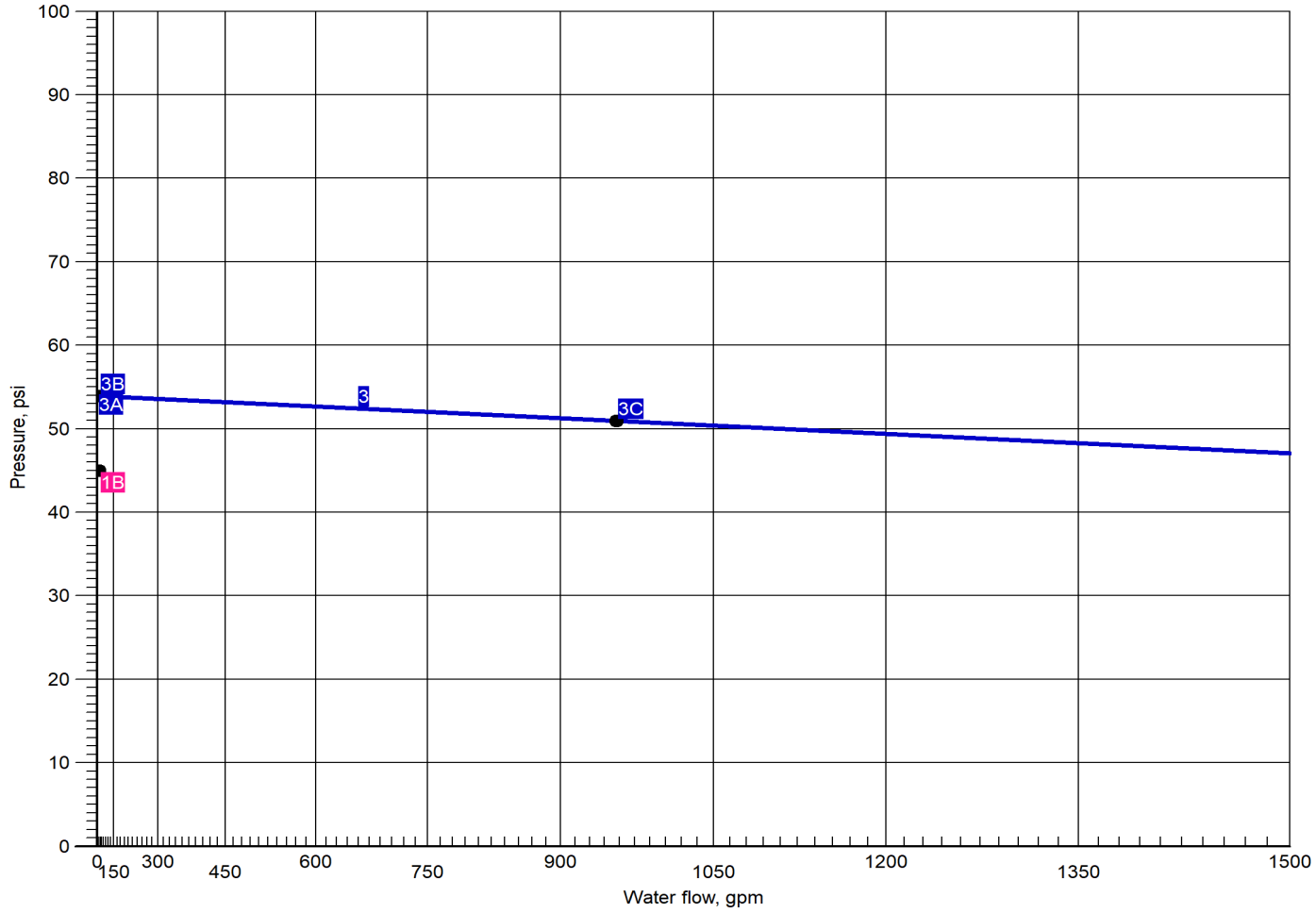
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B05 R3)

Remote Area Number: B05 R3



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 45.032 @ 52.36	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: 53.986 @ 52.36	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B05 R3)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Sprinkler	S24	12.48	12.00	4	9.730			
Sprinkler	**S25**	**13.00**	**13.00**	**4**	**10.563**			
Sprinkler	S26	13.17	12.00	4	10.837			
Sprinkler	S27	13.72	13.00	4.9	7.837			

⇨ 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.
S25	26'-0	4	13.00	¾	(See Notes)	27'-9½	150	10.563	• • • • • **Route 1** • • • • •
113	18'-6		13.00	0.8740		14'-0 41'-9½	0.094407	3.251 3.944	Sprinkler, 2Tr(1'-0), 4T(3'-0)
113	18'-6		10.36	2	(See Notes)	235'-11½	150	17.758	Flow (q) from Route 8
101	9'-0		23.36	2.0030		136'-0 371'-11½	0.004917	4.119 1.829	42Tr(2'-0), 3T(10'-0), 2E(11'-0)
101	9'-0		29.01	2	(See Notes)	36'-1½	150	23.705	Flow (q) from Route 2
102	3'-10½		52.36	2.0030		41'-6 77'-7½	0.021896	2.222 1.700	2Tr(2'-0), 3E(11'-0), cplg(1'-0), Tr(3'-6)
102	3'-10½			2		0'-6	120	27.627	
103	3'-1½		52.36	2.0670		 0'-6	0.028388	0.316 0.014	
103	3'-1½			2	(See Notes)	1'-2	120	27.958	
104	1'-11½		52.36	2.1570		 1'-2	0.023067	0.506 0.027	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	28.490	
105	1'-0		52.36	2.0670		15'-0 19'-0	0.028388	0.424 11.385	T(10'-0), BFP(-10.846), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	54'-0	150	40.299	
13	-12'-8		52.36	4.0700		57'-4 111'-4	0.000693	5.925 0.077	3GV(3'-2), E(15'-11), T(31'-10)
13	-12'-8			8		2'-9	150	46.301	
14	-12'-8		42.05	7.6800		 2'-9	0.000021	 0.000	
14	-12'-8			8		63'-5½	150	46.301	
15	-12'-8		42.05	7.6800		 63'-5½	0.000021	 0.001	
15	-12'-8		10.31	8	(See Notes)	634'-6½	150	46.303	Flow (q) from Route 5
16	-12'-8		52.36	7.6800		126'-5½ 761'-½	0.000031	 0.024	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	46.327	Avl.Pressure @ Supply: 53.986
17	-9'-8		52.36	5.8600		25'-6½ 46'-6	0.000117	-1.301 0.005	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.
			0.00					45.032	Hose Allowance At Source
17			52.36						Total(Pt) Route 1
S24	26'-0	4	12.48	¾	(See Notes)	22'-6½	150	9.730	• • • • • **Route 2** • • • • • Sprinkler,
114	18'-6		12.48	0.8740		26'-0 / 48'-6½	0.087500	3.251 / 4.249	3E(7'-0), T(3'-0), 2Tr(1'-0)
114	18'-6			1	(See Notes)	15'-5½	150	17.230	
111	18'-6		12.48	1.1010		5'-0 / 20'-5½	0.028423	0.000 / 0.581	T(5'-0)
111	18'-6		16.53	2	(See Notes)	129'-10½	150	17.811	Flow (q) from Route 3
101	9'-0		29.01	2.0030		112'-0 / 241'-10½	0.007342	4.119 / 1.776	29Tr(2'-0), 2cplg(1'-0), 3T(10'-0), 2E(11'-0)
								23.705	Total(Pt) Route 2
S27	26'-4½	4.9	13.72	¾	(See Notes)	17'-8½	150	7.837	• • • • • **Route 3** • • • • • Sprinkler,
107	18'-6		13.72	0.8740		38'-0 / 55'-8½	0.104273	3.412 / 5.809	5E(7'-0), T(3'-0)
107	18'-6			1	(See Notes)	15'-5½	150	17.058	
109	18'-6		13.72	1.1010		5'-0 / 20'-5½	0.033871	0.000 / 0.692	T(5'-0)
109	18'-6		2.81	2	(See Notes)	13'-6	150	17.750	Flow (q) from Route 4
111	18'-6		16.53	2.0030		10'-0 / 23'-6	0.002594	/ 0.061	5Tr(2'-0)
								17.811	Total(Pt) Route 3
S26	26'-0	4	13.17	¾	(See Notes)	17'-10½	150	10.837	• • • • • **Route 4** • • • • • Sprinkler,
117	18'-6		13.17	0.8740		20'-0 / 37'-10½	0.096673	3.251 / 3.661	2E(7'-0), 3Tr(1'-0), T(3'-0)
117	18'-6			2	(See Notes)	6'-½	150	17.749	
109	18'-6		2.81	2.0030		2'-0 / 8'-½	0.000098	0.000 / 0.001	Tr(2'-0)
								17.750	Total(Pt) Route 4
11	-12'-8		10.31	8		148'-9½	150	46.302	• • • • • **Route 5** • • • • • Flow (q) from Route 6
10	-12'-8		10.31	7.6800		/ 148'-9½	0.000002	/ 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.
10	-12'-8			8	(See Notes)	250'-6	150	46.302	
						66'-4½	0.000002		
15	-12'-8		10.31	7.6800		316'-10½		0.000	2EE(11'-3), T(43'-10)
								46.303	Total(Pt) Route 5
12	-12'-8		10.31	8	(See Notes)	87'-6½	150	46.302	• • • • • **Route 6** • • • • • Flow (q) from Route 7
						22'-6½	0.000002		
11	-12'-8		10.31	7.6800		110'-1		0.000	2EE(11'-3)
								46.302	Total(Pt) Route 6
13	-12'-8		42.05	8	(See Notes)	293'-8½	150	46.301	• • • • • **Route 7** • • • • • Flow (q) from Route 1
						22'-6½	0.000002		
12	-12'-8		10.31	7.6800		316'-3		0.000	2EE(11'-3)
								46.302	Total(Pt) Route 7
117	18'-6		2.81	2	(See Notes)	3'-9½	150	17.749	• • • • • **Route 8** • • • • • Flow (q) from Route 4
						4'-0	0.001092		
113	18'-6		10.36	2.0030		7'-9½		0.009	2Tr(2'-0)
								17.758	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:	B05 R4
Occupancy Classification:	Residential
Density	0.05gpm/ft²
Area of Application:	508ft² (Actual 508ft²)
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: 70.14 @ 48.643 (Safety Margin = 5.333)

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

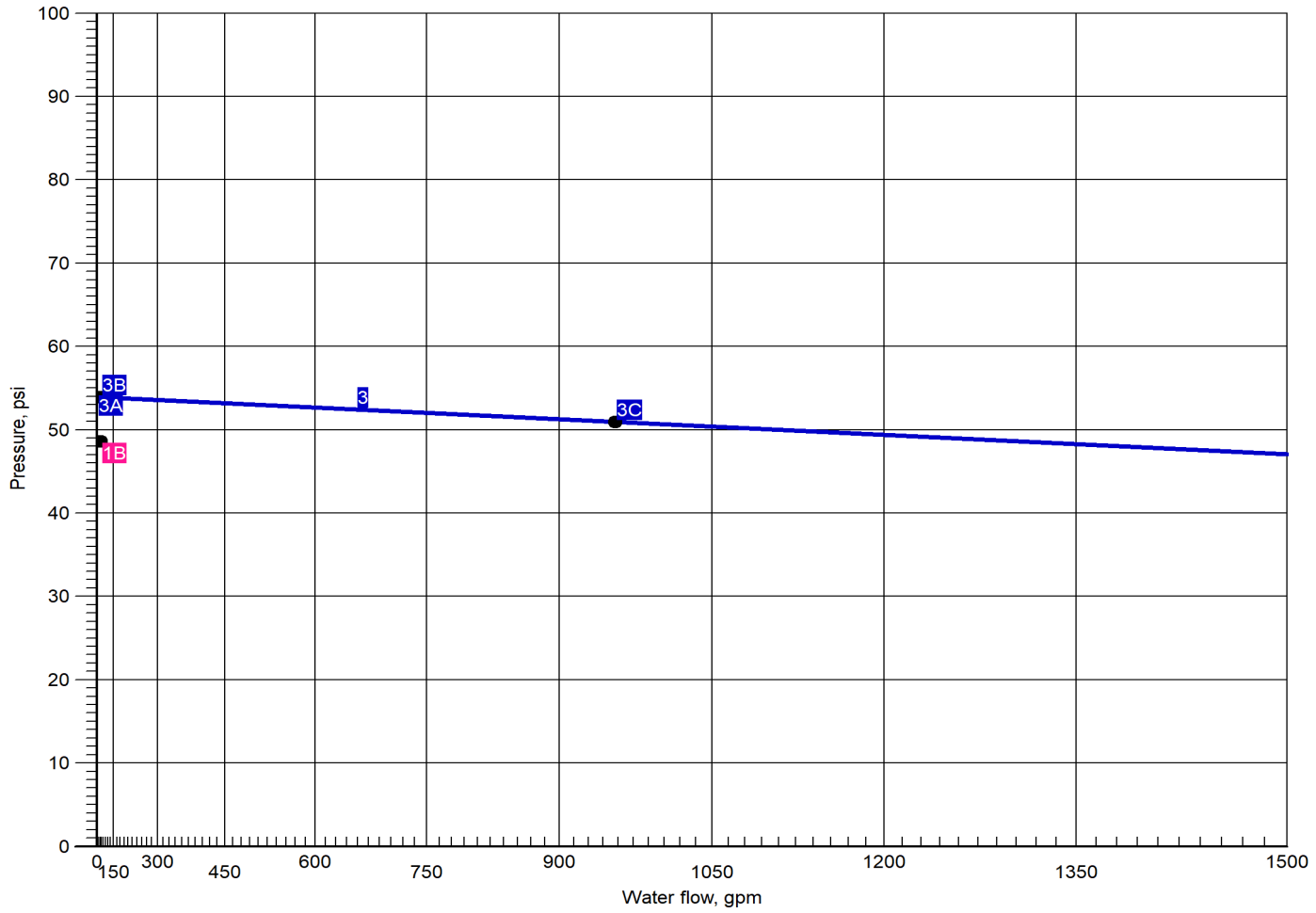
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B05 R4)

Remote Area Number: B05 R4



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 48.643 @ 70.14	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: 53.976 @ 70.14	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B05 R4)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Sprinkler	**S28**	**17.00**	**17.00**	**4.9**	**12.037**			
Sprinkler	S29	16.48	13.00	4.9	11.318			
Sprinkler	S30	18.13	13.00	4.9	13.694			
Sprinkler	S31	18.52	13.00	4.9	14.287			

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	17'-6	4.9	17.00	¾	(See Notes)	22'-0	150	12.037	• • • • • Route 1 • • • • • Sprinkler,
100	18'-6		17.00	0.8740		20'-0 42'-0	0.155074	-0.434 6.513	2E(7'-0), 3Tr(1'-0), T(3'-0)
100	18'-6		17.87	2	(See Notes)	175'-5½	150	18.116	Flow (q) from Route 8
101	9'-0		34.87	2.0030		136'-0 311'-5½	0.010323	4.119 3.215	41Tr(2'-0), 2cplg(1'-0), 3T(10'-0), 2E(11'-0)
101	9'-0		35.26	2	(See Notes)	36'-1½	150	25.450	Flow (q) from Route 2
102	3'-10½		70.14	2.0030		41'-6 77'-7½	0.037601	2.222 2.919	2Tr(2'-0), 3E(11'-0), cplg(1'-0), Tr(3'-6)
102	3'-10½			2		0'-6	120	30.591	
103	3'-1½		70.14	2.0670		0'-6	0.048748	0.316 0.024	
103	3'-1½			2	(See Notes)	1'-2	120	30.931	
104	1'-11½		70.14	2.1570		1'-2	0.039611	0.506 0.046	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	31.483	
105	1'-0		70.14	2.0670		15'-0 19'-0	0.048748	0.424 11.926	T(10'-0), BFP(-11.000), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	54'-0	150	43.833	
13	-12'-8		70.14	4.0700		57'-4 111'-4	0.001190	5.925 0.133	3GV(3'-2), E(15'-11), T(31'-10)
13	-12'-8			8		2'-9	150	49.890	
14	-12'-8		56.33	7.6800		2'-9	0.000036	0.000	
14	-12'-8			8		63'-5½	150	49.891	
15	-12'-8		56.33	7.6800		63'-5½	0.000036	0.002	
15	-12'-8		13.81	8	(See Notes)	634'-6½	150	49.893	Flow (q) from Route 5
16	-12'-8		70.14	7.6800		126'-5½ 761'-½	0.000054	0.041	3EE(11'-3), GV(5'-0), 2T(43'-10)
16	-12'-8			6	Supply (See Notes)	20'-11½	150	49.934	Avl.Pressure @ Supply: 53.976
17	-9'-8		70.14	5.8600		25'-6½ 46'-6	0.000202	-1.301 0.009	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.
			0.00					48.643	Hose Allowance At Source
17			70.14						Total(Pt) Route 1
S29	17'-6	4.9	16.48	¾	(See Notes)	30'-4	150	11.318	• • • • • **Route 2** • • • • • Sprinkler,
108	18'-6		16.48	0.8740		19'-0 / 49'-4	0.146487	-0.434 / 7.225	2E(7'-0), 2Tr(1'-0), T(3'-0)
108	18'-6		18.78	2	(See Notes)	193'-9	150	18.109	Flow (q) from Route 3
101	9'-0		35.26	2.0030		112'-0 / 305'-9	0.010538	4.119 / 3.222	3T(10'-0), 2E(11'-0), 30Tr(2'-0)
								25.450	Total(Pt) Route 2
S30	17'-6	4.9	18.13	¾	(See Notes)	15'-6½	150	13.694	• • • • • **Route 3** • • • • • Sprinkler,
110	18'-6		18.13	0.8740		12'-0 / 27'-6½	0.174729	-0.434 / 4.812	E(7'-0), 2Tr(1'-0), T(3'-0)
110	18'-6		0.65	2	(See Notes)	7'-1	150	18.073	Flow (q) from Route 4
108	18'-6		18.78	2.0030		4'-0 / 11'-1	0.003285	-0.000 / 0.036	2Tr(2'-0)
								18.109	Total(Pt) Route 3
S31	17'-6	4.9	18.52	¾	(See Notes)	9'-2½	150	14.287	• • • • • **Route 4** • • • • • Sprinkler,
106	18'-6		18.52	0.8740		14'-0 / 23'-2½	0.181710	-0.434 / 4.220	E(7'-0), 2T(3'-0), Tr(1'-0)
106	18'-6			2	(See Notes)	4'-5	150	18.073	
110	18'-6		0.65	2.0030		6'-0 / 10'-5	0.000006	/ 0.000	3Tr(2'-0)
								18.073	Total(Pt) Route 4
11	-12'-8		13.81	8		148'-9½	150	49.892	• • • • • **Route 5** • • • • • Flow (q) from Route 6
10	-12'-8		13.81	7.6800		148'-9½	0.000003	/ 0.000	
10	-12'-8			8	(See Notes)	250'-6	150	49.892	
15	-12'-8		13.81	7.6800		66'-4½ / 316'-10½	0.000003	/ 0.001	2EE(11'-3), T(43'-10)
								49.893	Total(Pt) Route 5

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.
12	-12'-8		13.81	8	(See Notes)	87'-6½	150	49.891	• • • • • **Route 6** • • • • •
						22'-6½	0.000003		Flow (q) from Route 7
11	-12'-8		13.81	7.6800		110'-1		0.000	2EE(11'-3)
								49.892	Total(Pt) Route 6
13	-12'-8		56.33	8	(See Notes)	293'-8½	150	49.890	• • • • • **Route 7** • • • • •
						22'-6½	0.000003		Flow (q) from Route 1
12	-12'-8		13.81	7.6800		316'-3		0.001	2EE(11'-3)
								49.891	Total(Pt) Route 7
106	18'-6		0.65	2	(See Notes)	8'-5½	150	18.073	• • • • • **Route 8** • • • • •
						6'-0	0.002998		Flow (q) from Route 4
100	18'-6		17.87	2.0030		14'-5½		0.043	3Tr(2'-0)
								18.116	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:	B05 R05
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: 58.45 @ 48.235 (Safety Margin = 5.748)

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

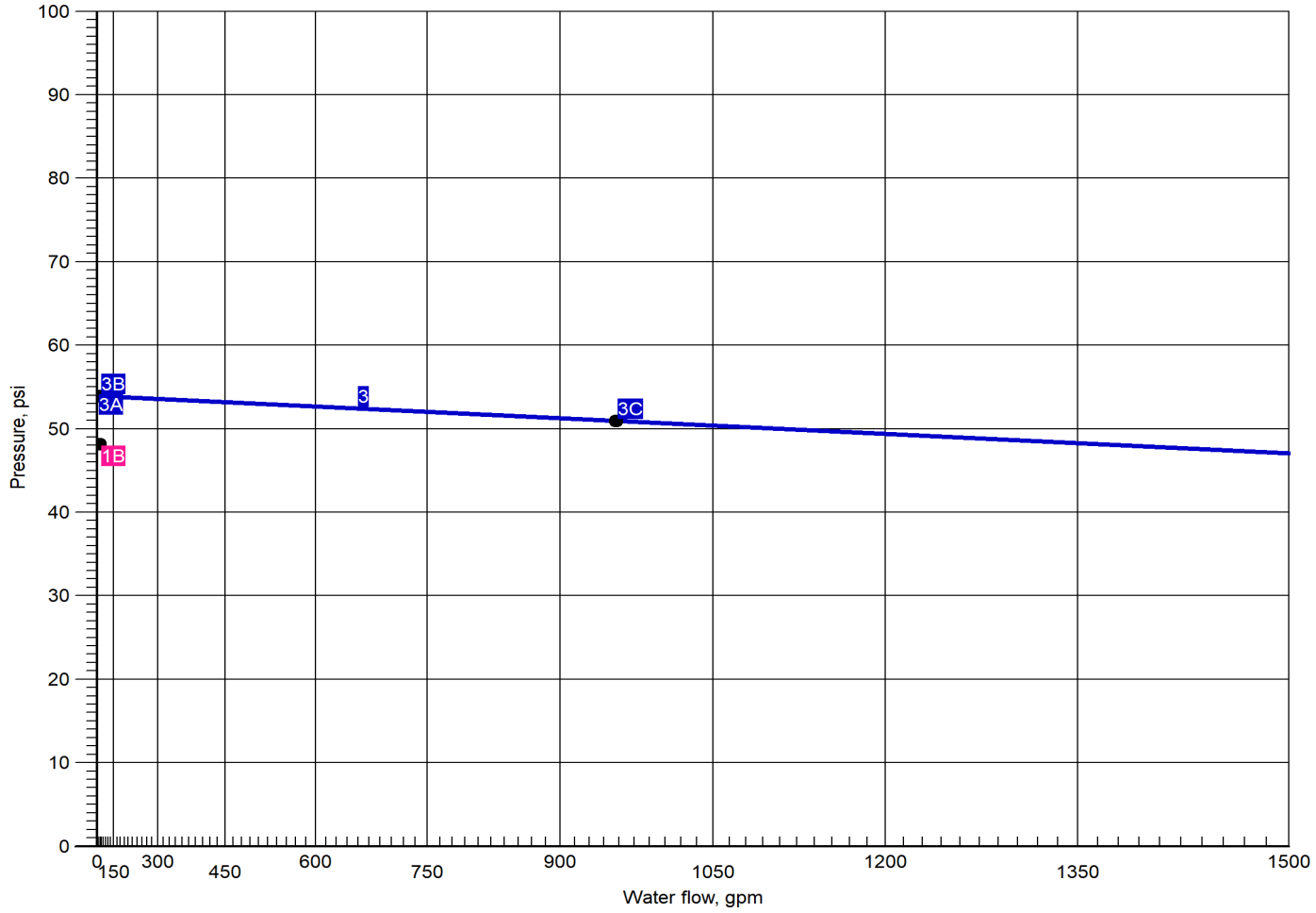
1 System Demand
3 Available Water Supply

Job Name: MAYNARD CROSSING APARTMENTS

Job Number: 1450D

Report Description: Residential (B05 R05)

Remote Area Number: B05 R05



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B	Required Pressure at System Demand: 48.235 @ 58.45	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: 53.983 @ 58.45	
	3C	Available Residual Pressure & Flow at Supply at Node 17: 51.000 @ 957.00	

Summary Of Outflowing Devices

Job Number: 1450D
Report Description: Residential (B05 R05)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
Sprinkler	**S32**	**20.00**	**20.00**	**4.9**	**16.660**			
Sprinkler	S33	18.50	17.00	4.9	14.255			
Sprinkler	S34	19.95	13.00	4.9	16.579			

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.
S32	17'-6	4.9	20.00	¾	(See Notes)	2'-5½	150	16.660	• • • • • **Route 1** • • • • •
107	18'-6		20.00	0.8740		8'-0 10'-5½	0.209466	-0.434 2.195	Sprinkler, E(7'-0), Tr(1'-0)
107	18'-6			1	(See Notes)	15'-5½	150	18.421	
109	18'-6		20.00	1.1010		5'-0 20'-5½	0.068041	0.000 1.391	T(5'-0)
109	18'-6		11.87	2	(See Notes)	143'-4½	150	19.812	Flow (q) from Route 3
101	9'-0		31.87	2.0030		122'-0 265'-4½	0.008736	4.119 2.318	34Tr(2'-0), 2cplg(1'-0), 3T(10'-0), 2E(11'-0)
101	9'-0		26.59	2	(See Notes)	36'-1½	150	26.249	Flow (q) from Route 2
102	3'-10½		58.45	2.0030		41'-6 77'-7½	0.026839	2.222 2.083	2Tr(2'-0), 3E(11'-0), cplg(1'-0), Tr(3'-6)
102	3'-10½			2		0'-6	120	30.554	
103	3'-1½		58.45	2.0670		 0'-6	0.034796	0.316 0.017	
103	3'-1½			2	(See Notes)	1'-2	120	30.888	
104	1'-11½		58.45	2.1570		 1'-2	0.028274	0.506 0.033	f(-0.000), f
104	1'-11½			2	(See Notes)	4'-0	120	31.427	
105	1'-0		58.45	2.0670		15'-0 19'-0	0.034796	0.424 11.628	T(10'-0), BFP(-10.967), E(5'-0), Gauge 1
105	1'-0			4	(See Notes)	54'-0	150	43.479	
13	-12'-8		58.45	4.0700		57'-4 111'-4	0.000850	5.925 0.095	3GV(3'-2), E(15'-11), T(31'-10)
13	-12'-8			8		2'-9	150	49.498	
14	-12'-8		46.94	7.6800		 2'-9	0.000026	 0.000	
14	-12'-8			8		63'-5½	150	49.498	
15	-12'-8		46.94	7.6800		 63'-5½	0.000026	 0.002	
15	-12'-8		11.51	8	(See Notes)	634'-6½	150	49.500	Flow (q) from Route 4
16	-12'-8		58.45	7.6800		126'-5½ 761'-½	0.000039	 0.029	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	49.529	Avl.Pressure @ Supply: 53.983
17	-9'-8		58.45	5.8600		25'-6½	0.000144	-1.301	2GV(3'-10), E(17'-10½), S
						46'-6		0.007	
			0.00					48.235	Hose Allowance At Source
17			58.45						Total(Pt) Route 1
S33	17'-6	4.9	18.50	¾	(See Notes)	21'-0	150	14.255	• • • • • **Route 2** • • • • • Sprinkler,
113	18'-6		18.50	0.8740		12'-0	0.181341	-0.434	E(7'-0), 2Tr(1'-0), T(3'-0)
						33'-0		5.984	
113	18'-6		8.09	2	(See Notes)	235'-11½	150	19.806	Flow (q) from Route 7
101	9'-0		26.59	2.0030		136'-0	0.006249	4.119	42Tr(2'-0), 3T(10'-0), 2E(11'-0)
						371'-11½		2.324	
								26.249	Total(Pt) Route 2
S34	17'-6	4.9	19.95	¾	(See Notes)	4'-6½	150	16.579	• • • • • **Route 3** • • • • • Sprinkler,
117	18'-6		19.95	0.8740		13'-0	0.208529	-0.434	E(7'-0), 2T(3'-0)
						17'-6½		3.655	
117	18'-6			2	(See Notes)	6'-½	150	19.800	
109	18'-6		11.87	2.0030		2'-0	0.001405	0.000	Tr(2'-0)
						8'-½		0.011	
								19.812	Total(Pt) Route 3
11	-12'-8		11.51	8		148'-9½	150	49.499	• • • • • **Route 4** • • • • • Flow (q) from Route 5
10	-12'-8		11.51	7.6800			0.000002		
						148'-9½		0.000	
10	-12'-8			8	(See Notes)	250'-6	150	49.499	
15	-12'-8		11.51	7.6800		66'-4½	0.000002		2EE(11'-3), T(43'-10)
						316'-10½		0.001	
								49.500	Total(Pt) Route 4
12	-12'-8		11.51	8	(See Notes)	87'-6½	150	49.499	• • • • • **Route 5** • • • • • Flow (q) from Route 6
11	-12'-8		11.51	7.6800		22'-6½	0.000002		2EE(11'-3)
						110'-1		0.000	
								49.499	Total(Pt) Route 5

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 / Total	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		46.94	8	(See Notes)	293'-8½	150	49.498	• • • • • **Route 6** • • • • • Flow (q) from Route 1
						22'-6½	0.000002		
12	-12'-8		11.51	7.6800		316'-3		0.001	2EE(11'-3)
								49.499	Total(Pt) Route 6
117	18'-6		11.87	2	(See Notes)	3'-9½	150	19.800	• • • • • **Route 7** • • • • • Flow (q) from Route 3
						4'-0	0.000691		
113	18'-6		8.09	2.0030		7'-9½		0.005	2Tr(2'-0)
								19.806	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		