

Job Name : The Village at Discovery - Lot 1

Address : 221 NE Alura Way - Lee's summit, MO

Date : 7/28/2025

Sprinkler Contractor : Goal Fire Protection, LLC

Area Info :

Calculation Summary :

<u>Area #1</u> : 2 nd Floor
<u>Area #2</u> : 1 st Floor

Water Supply :

Flow Test :

Date : 6-3-2025

Static : 115 PSI

Residual : 70 PSI

Flow : 1501 GPM

Elevation : Same as 1st F.F.

Location of Flow Test : 8" Looped City Main

Source of Flow Test : Goal Fire Protection

Notes :



WATER FLOW TEST REPORT



Property Name: Discovery Park

City, State: Lee's Summit, MO

Conducted by: Wyatt Porter

HYDRANT # & LOCATION Ramp

DATE: 6/3/2025

WITNESS BY N/A

DAY OR WEEK:

TIME OF DAY: 8:30

WEATHER: Cloudy

WATER SUPPLIED BY:

PURPOSE OF TEST: Annual Inspection & Flow Rate

DATA

FLOW HYDRANT(S)

	A1	A2	A3
SIZE OPENING:	2.5	0	0
COEFFICIENT:	0.9	0	0
PITOT READING:	80	0	0
GPM:	1501	0	0

TOTAL FLOW DURING TEST: 1501 GPM

STATIC READING: 115 PSI

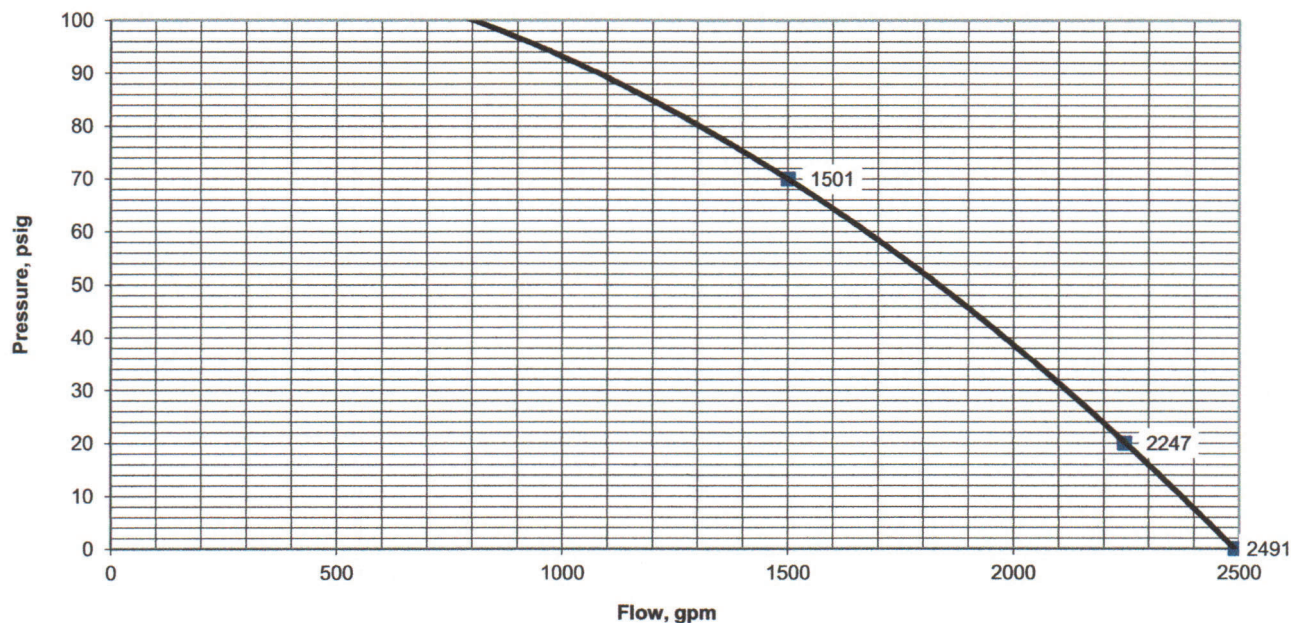
RESIDUAL: 70 PSI

RESULTS: AT 20 PSI RESIDUAL 2247 GPM

AT 0 PSI 2491 GPM

ESTIMATED CONSUMPTION: 1501 GAL.

REMARKS: Coefficient Per NFPA 291 (Smooth & Rounded Hydrant Butt = 0.90) (Square & Sharp Hydrant Butt = 0.80)
(Square Butt Projecting Into Hydrant Barrell 0.70) (Smooth & Rounded Hydrant Butt **FM GLOBAL** = 0.80)



Job Name : **The Village at Discovery - Lot 1**

Address : **221 NE Alura Way - Lee's summit, MO**

Date : **7/28/2025**

Sprinkler Contractor : **Goal Fire Protection, LLC**

Area Info : **Area #1 - 2nd Floor**

Area Design : **Per NFPA-13, 2016**

System Type : **Wet System**

Design Criteria :

Density: **0.20** gpm/sq. ft. Operating Area: **1500** sq. ft.

Max. Area Per Sprinkler: **130** Total Sprinklers Operating: **12** Sprinkler K Factor: **5.6**

Outside Hose Allowance: **250**

Calculation Summary :

GPM Required : 320.04	PSI Required : 91.53	@ Base of Riser
GPM Required : 570.04	PSI Required : 92.29	@ Connection to City Main

Area Safety Margin: **15.1** PSI **14** %

Notes :

Water Supply Curve

The Village at Discovery - Lot 1 - Area #1

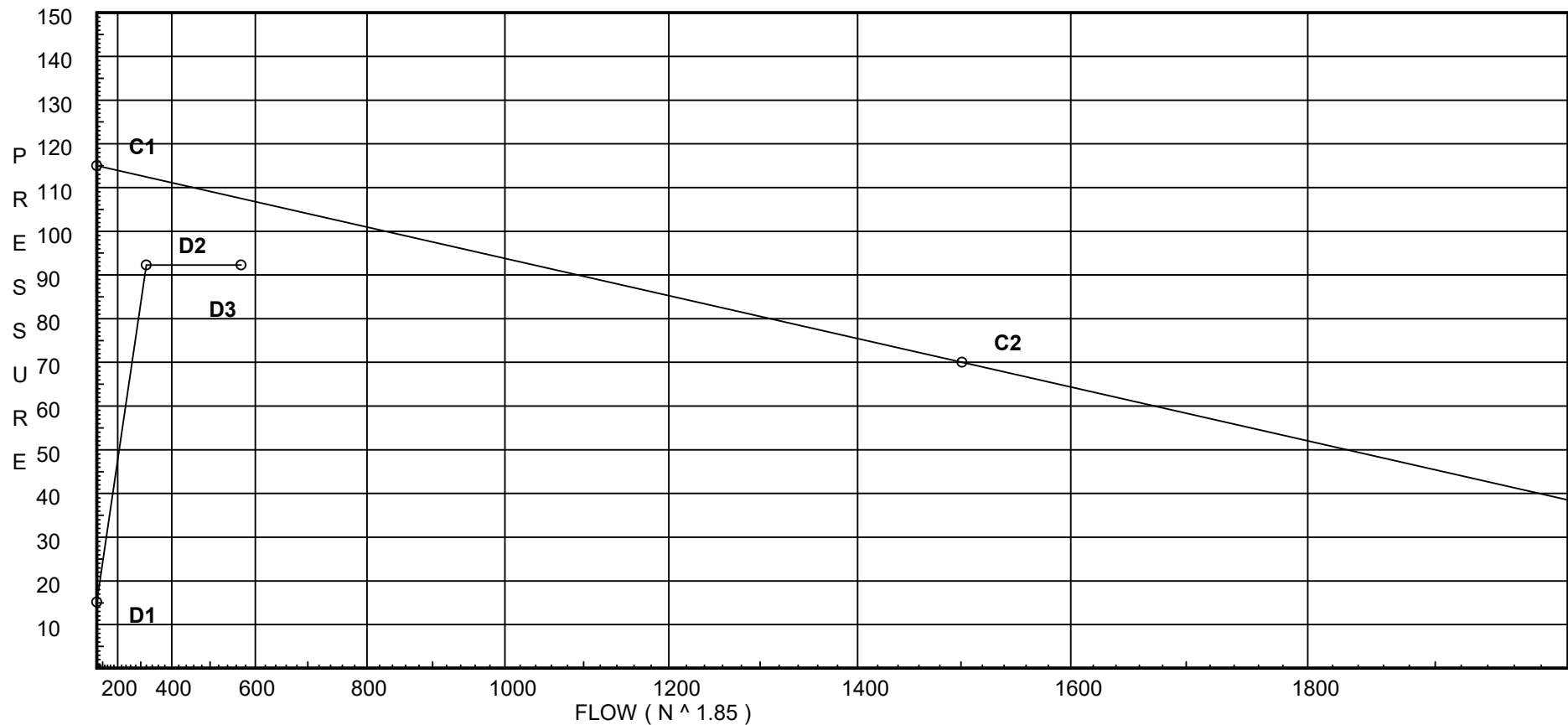
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City Water Supply:

C1 - Static Pressure : 115
C2 - Residual Pressure: 70
C2 - Residual Flow : 1501

Demand:

D1 - Elevation : 15.171
D2 - System Flow : 320.038
D2 - System Pressure : 92.299
Hose (Demand) : 250
D3 - System Demand : 570.038
Safety Margin : 15.196



Fittings Used Summary

The Village at Discovery - Lot 1 - Area #1

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

The Village at Discovery - Lot 1 - Area #1

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	115.0	70	1501.0	107.495	570.04	92.299

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>	
SP03	36.03	5.6	21.56	26.0	0.2	130
EQ03	35.03		23.26			
SP01	35.5	5.6	21.56	26.0	0.2	130
EQ01	34.5		23.26			
SP02	35.76	5.6	21.56	26.0	0.2	130
EQ02	34.76		23.26			
AA1	35.03		28.65			
H101	35.03	5.39	23.78	26.29	K=K @ EQ03	
H102	35.03	5.39	23.32	26.04	K=K @ EQ03	
H103	35.03	5.39	23.26	26.0	K=K @ EQ03	
H104	35.03	5.39	23.31	26.03	K=K @ EQ03	
H105	35.03	5.39	23.7	26.25	K=K @ EQ03	
AA2	34.76		28.94			
H106	34.76	5.39	24.01	26.42	K=K @ EQ02	
H107	34.76	5.39	23.55	26.16	K=K @ EQ02	
H108	34.76	5.39	23.48	26.13	K=K @ EQ02	
H109	34.76	5.39	23.53	26.15	K=K @ EQ02	
H110	34.76	5.39	23.93	26.37	K=K @ EQ02	
AA3	34.5		29.64			
H111	34.5	5.39	29.12	29.09	K=K @ EQ01	
H112	34.5	5.39	29.16	29.11	K=K @ EQ01	
AA4	34.23		30.56			
AA5	33.98		31.16			
AA6	33.71		31.58			
A1	35.03		33.05			
A2	34.76		33.33			
A3	34.5		34.02			
A4	34.23		35.12			
A5	33.98		36.46			
A6	33.71		52.08			
A7	33.71		55.62			
A8	15.0		67.02			
B4	15.0		70.38			
B5	15.0		73.73			
TOR	15.0		79.22			
UG	1.0		91.54			
HOSE	1.0		91.86	250.0		
TEST	0.0		92.3			

Final Calculations : Hazen-Williams

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The Village at Discovery - Lot 1 - Area #1

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
SP03 to EQ03	36.03 35.03	5.60	26.00 26.0	1 1.049	T 5.0	1.000 5.000 6.000	120 0.2115	21.556 0.433 1.269		Vel = 9.65	
EQ03			0.0 26.00					23.258		K Factor = 5.39	
SP01 to EQ01	35.5 34.5	5.60	26.00 26.0	1 1.049	T 5.0	1.000 5.000 6.000	120 0.2115	21.556 0.433 1.269		Vel = 9.65	
EQ01			0.0 26.00					23.258		K Factor = 5.39	
SP02 to EQ02	35.76 34.76	5.60	26.00 26.0	1 1.049	T 5.0	1.000 5.000 6.000	120 0.2115	21.556 0.433 1.269		Vel = 9.65	
EQ02			0.0 26.00					23.258		K Factor = 5.39	
AA1 to H101	35.03 35.03		-65.80 -65.8	1.5 1.682	T 9.9	31.270 9.900 41.170	120 -0.1182	28.647 0.0 -4.866		Vel = 9.50	
H101 to H102	35.03 35.03	5.39	26.29 -39.51	1.5 1.682		10.000 10.000	120 -0.0460	23.781 0.0 -0.460		K = K @ EQ03 Vel = 5.70	
H102 to H103	35.03 35.03	5.39	26.04 -13.47	1.5 1.682		10.000 10.000	120 -0.0063	23.321 0.0 -0.063		K = K @ EQ03 Vel = 1.94	
H103 to H104	35.03 35.03	5.39	26.00 12.53	1.5 1.682		9.000 9.000	120 0.0054	23.258 0.0 0.049		K = K @ EQ03 Vel = 1.81	
H104 to H105	35.03 35.03	5.39	26.02 38.55	1.5 1.682		9.000 9.000	120 0.0440	23.307 0.0 0.396		K = K @ EQ03 Vel = 5.57	
H105 to A1	35.03 35.03	5.39	26.25 64.8	1.5 1.682	T 9.9	71.440 9.900 81.340	120 0.1149	23.703 0.0 9.346		K = K @ EQ03 Vel = 9.36	
A1			0.0 64.80					33.049		K Factor = 11.27	
AA2 to H106	34.76 34.76		-66.21 -66.21	1.5 1.682	T 9.9	31.270 9.900 41.170	120 -0.1196	28.936 0.0 -4.922		Vel = 9.56	
H106 to H107	34.76 34.76	5.39	26.42 -39.79	1.5 1.682		10.000 10.000	120 -0.0467	24.014 0.0 -0.467		K = K @ EQ02 Vel = 5.75	
H107 to H108	34.76 34.76	5.39	26.16 -13.63	1.5 1.682		10.000 10.000	120 -0.0064	23.547 0.0 -0.064		K = K @ EQ02 Vel = 1.97	
H108 to H109	34.76 34.76	5.39	26.12 12.49	1.5 1.682		9.000 9.000	120 0.0054	23.483 0.0 0.049		K = K @ EQ02 Vel = 1.80	
H109 to H110	34.76 34.76	5.39	26.16 38.65	1.5 1.682		9.000 9.000	120 0.0442	23.532 0.0 0.398		K = K @ EQ02 Vel = 5.58	

Final Calculations : Hazen-Williams

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The Village at Discovery - Lot 1 - Area #1

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
H110 to A2	34.76 34.76	5.39	26.37 65.02	1.5 1.682	T	9.9	71.440 9.900 81.340	120 0.1156	23.930 0.0 9.403		K = K @ EQ02	
A2			0.0 65.02						33.333		K Factor = 11.26	
AA3 to H111	34.5 34.5		-19.42 -19.42	1.5 1.682	T	9.9	31.770 9.900 41.670	120 -0.0124	29.639 0.0 -0.515		Vel = 2.80	
H111 to H112	34.5 34.5	5.39	29.10 9.68	1.5 1.682			9.500 9.500	120 0.0034	29.124 0.0 0.032		K = K @ EQ01	
H112 to A3	34.5 34.5	5.39	29.11 38.79	1.5 1.682	T	9.9	99.450 9.900 109.350	120 0.0445	29.156 0.0 4.862		K = K @ EQ01	
A3			0.0 38.79						34.018		K Factor = 6.65	
AA4 to A4	34.23 34.23		30.43 30.43	1.5 1.682	2T	19.799	140.720 19.799 160.519	120 0.0284	30.563 0.0 4.556		Vel = 4.39	
A4			0.0 30.43						35.119		K Factor = 5.13	
AA5 to A5	33.98 33.98		33.02 33.02	1.5 1.682	2T	19.799	140.710 19.799 160.509	120 0.0330	31.163 0.0 5.299		Vel = 4.77	
A5			0.0 33.02						36.462		K Factor = 5.47	
AA6 to A6	33.71 33.71		87.97 87.97	1.5 1.682	2T 2E	19.799 9.9	71.700 29.699 101.399	120 0.2023	31.575 0.0 20.510		Vel = 12.70	
A6			0.0 87.97						52.085		K Factor = 12.19	
AA1 to AA2	35.03 34.76		65.80 65.8	2.5 2.635			13.000 13.000	120 0.0132	28.647 0.117 0.172		Vel = 3.87	
AA2 to AA3	34.76 34.5		66.21 132.01	2.5 2.635			12.250 12.250	120 0.0482	28.936 0.113 0.590		Vel = 7.77	
AA3 to AA4	34.5 34.23		19.42 151.43	2.5 2.635			13.000 13.000	120 0.0621	29.639 0.117 0.807		Vel = 8.91	
AA4 to AA5	34.23 33.98		-30.43 121.0	2.5 2.635			12.000 12.000	120 0.0410	30.563 0.108 0.492		Vel = 7.12	
AA5 to AA6	33.98 33.71		-33.03 87.97	2.5 2.635			13.000 13.000	120 0.0227	31.163 0.117 0.295		Vel = 5.18	
			0.0									

Final Calculations : Hazen-Williams

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The Village at Discovery - Lot 1 - Area #1

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
AA6			87.97						31.575		K Factor = 15.66	
A1 to A2	35.03 34.76		64.80 64.8	2.5 2.635			13.000 13.000	120 0.0128	33.049 0.117 0.167		Vel = 3.81	
A2 to A3	34.76 34.5		65.02 129.82	2.5 2.635			12.250 12.250	120 0.0467	33.333 0.113 0.572		Vel = 7.64	
A3 to A4	34.5 34.23		38.79 168.61	2.5 2.635			13.000 13.000	120 0.0757	34.018 0.117 0.984		Vel = 9.92	
A4 to A5	34.23 33.98		30.43 199.04	2.5 2.635			12.000 12.000	120 0.1029	35.119 0.108 1.235		Vel = 11.71	
A5 to A6	33.98 33.71		33.02 232.06	2.5 2.635	2E	16.474	96.940 16.474 113.414	120 0.1367	36.462 0.117 15.506		Vel = 13.65	
A6 to A7	33.71 33.71		87.98 320.04	2.5 2.635	E	8.237	6.040 8.237 14.277	120 0.2478	52.085 0.0 3.538		Vel = 18.83	
A7 to A8	33.71 15		0.0 320.04	3 3.26	2E	18.815	18.710 18.815 37.525	120 0.0879	55.623 8.103 3.298		Vel = 12.30	
A8 to B4	15 15		0.0 320.04	3 3.26	T	20.159	18.000 20.159 38.159	120 0.0879	67.024 0.0 3.353		Vel = 12.30	
B4 to B5	15 15		0.0 320.04	3 3.26			38.150 38.150	120 0.0879	70.377 0.0 3.353		Vel = 12.30	
B5 to TOR	15 15		0.0 320.04	3 3.26	T E	20.159 9.408	32.860 29.567 62.427	120 0.0879	73.730 0.0 5.486		Vel = 12.30	
TOR			0.0 320.04						79.216		K Factor = 35.96	
TOR to UG	15 1		320.04	3 3.26	E Zcb	9.408 0.0	14.000 9.408 23.408	120 0.0879	79.216 10.264 2.057		** Fixed Loss = 4.2 Vel = 12.30	
UG to HOSE	1 1		0.0 320.04	6 6.16	G E T	4.304 20.084 43.037	40.000 67.425 107.425	140 0.0030	91.537 0.0 0.320		Vel = 3.45	
HOSE to TEST	1 0	H250	250.00	6			1.000	140	91.857 0.433		Vel = 6.14	
TEST			0.0 570.04						92.299		K Factor = 59.33	

Job Name : **The Village at Discovery - Lot 1**

Address : **221 NE Alura Way - Lee's summit, MO**

Date : **7/28/2025**

Sprinkler Contractor : **Goal Fire Protection, LLC**

Area Info : **Area #2 - 1st Floor**

Area Design : **Per NFPA-13, 2016**

System Type : **Wet System**

Design Criteria :

Density: **0.20** gpm/sq. ft. Operating Area: **1500** sq. ft.

Max. Area Per Sprinkler: **130** Total Sprinklers Operating: **12** Sprinkler K Factor: **5.6**

Outside Hose Allowance: **250**

Calculation Summary :

GPM Required : 333.13	PSI Required : 72.75	@ Base of Riser
GPM Required : 583.13	PSI Required : 73.54	@ Connection to City Main

Area Safety Margin: **33.6** PSI **31** %

Notes :

Water Supply Curve

The Village at Discovery - Lot 1 - Area #2

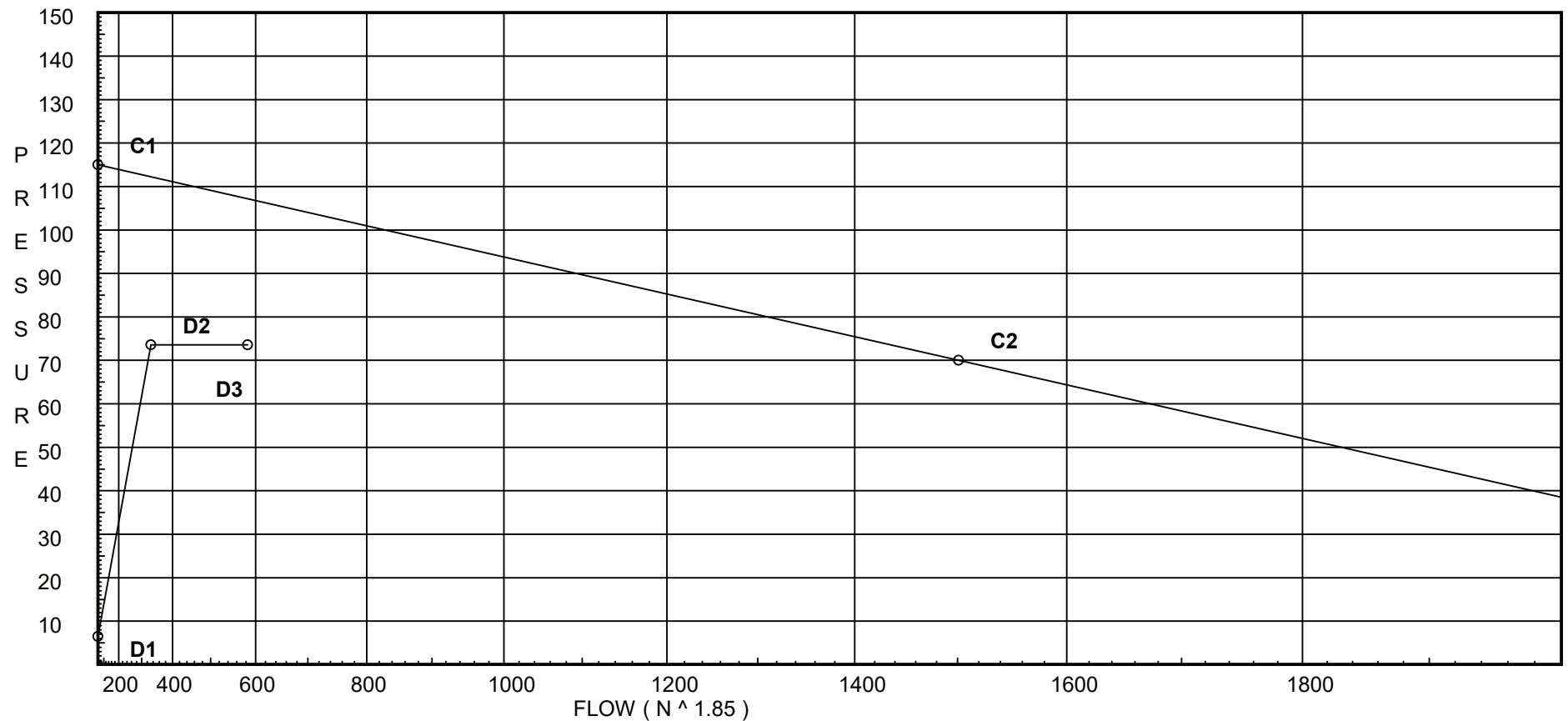
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City Water Supply:

C1 - Static Pressure : 115
C2 - Residual Pressure: 70
C2 - Residual Flow : 1501

Demand:

D1 - Elevation : 6.496
D2 - System Flow : 333.134
D2 - System Pressure : 73.545
Hose (Demand) : 250
D3 - System Demand : 583.134
Safety Margin : 33.628



Fittings Used Summary

The Village at Discovery - Lot 1 - Area #2

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Zcb	Colt C200 Vert Butt	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Flow Summary - NFPA

The Village at Discovery - Lot 1 - Area #2

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SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	115.0	70	1501.0	107.173	583.13	73.545

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>	
SP01	17.0	5.6	21.56	26.0	0.2	130
EQ01	15.0		23.9			
H201	15.0	5.32	23.9	26.0	K=K @ EQ01	
H202	15.0	5.32	24.49	26.32	K=K @ EQ01	
H203	15.0	5.32	26.49	27.37	K=K @ EQ01	
H204	15.0	5.32	32.5	30.32	K=K @ EQ01	
H205	15.0	5.32	24.15	26.13	K=K @ EQ01	
H206	15.0	5.32	24.74	26.45	K=K @ EQ01	
H207	15.0	5.32	26.76	27.51	K=K @ EQ01	
H208	15.0	5.32	32.83	30.47	K=K @ EQ01	
H209	15.0	5.32	25.04	26.61	K=K @ EQ01	
H210	15.0	5.32	25.65	26.93	K=K @ EQ01	
H211	15.0	5.32	27.74	28.01	K=K @ EQ01	
H212	15.0	5.32	34.01	31.01	K=K @ EQ01	
B1	15.0		33.06			
B2	15.0		33.39			
B3	15.0		34.6			
B4	15.0		50.63			
B5	15.0		54.24			
TOR	15.0		60.15			
UG	1.0		72.76			
HOSE	1.0		73.1	250.0		
TEST	0.0		73.55			

Final Calculations : Hazen-Williams

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The Village at Discovery - Lot 1 - Area #2

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
SP01 to EQ01	17 15	5.60	26.00 26.0	1 1.049	T 5.0	2.000 5.000 7.000	120 0.2114	21.556 0.866 1.480		Vel = 9.65	
EQ01			0.0 26.00					23.902		K Factor = 5.32	
H201 to H202	15 15	5.32	26.00 26.0	1.25 1.442		13.000 13.000	120 0.0449	23.902 0.0 0.584		K = K @ EQ01 Vel = 5.11	
H202 to H203	15 15	5.32	26.32 52.32	1.25 1.442		12.250 12.250	120 0.1637	24.486 0.0 2.005		K = K @ EQ01 Vel = 10.28	
H203 to B1	15 15	5.32	27.37 79.69	1.25 1.442	T 7.432	11.000 7.432 18.432	120 0.3565	26.491 0.0 6.571		K = K @ EQ01 Vel = 15.66	
B1			0.0 79.69					33.062		K Factor = 13.86	
H204 to B1	15 15	5.32	30.32 30.32	1.25 1.442	T 7.432	2.000 7.432 9.432	120 0.0597	32.499 0.0 0.563		K = K @ EQ01 Vel = 5.96	
B1			0.0 30.32					33.062		K Factor = 5.27	
H205 to H206	15 15	5.32	26.13 26.13	1.25 1.442		13.000 13.000	120 0.0453	24.148 0.0 0.589		K = K @ EQ01 Vel = 5.13	
H206 to H207	15 15	5.32	26.45 52.58	1.25 1.442		12.250 12.250	120 0.1652	24.737 0.0 2.024		K = K @ EQ01 Vel = 10.33	
H207 to B2	15 15	5.32	27.51 80.09	1.25 1.442	T 7.432	11.000 7.432 18.432	120 0.3599	26.761 0.0 6.633		K = K @ EQ01 Vel = 15.73	
B2			0.0 80.09					33.394		K Factor = 13.86	
H208 to B2	15 15	5.32	30.47 30.47	1.25 1.442	T 7.432	2.000 7.432 9.432	120 0.0602	32.826 0.0 0.568		K = K @ EQ01 Vel = 5.99	
B2			0.0 30.47					33.394		K Factor = 5.27	
H209 to H210	15 15	5.32	26.61 26.61	1.25 1.442		13.000 13.000	120 0.0468	25.038 0.0 0.609		K = K @ EQ01 Vel = 5.23	
H210 to H211	15 15	5.32	26.93 53.54	1.25 1.442		12.250 12.250	120 0.1708	25.647 0.0 2.092		K = K @ EQ01 Vel = 10.52	
H211 to B3	15 15	5.32	28.01 81.55	1.25 1.442	T 7.432	11.000 7.432 18.432	120 0.3721	27.739 0.0 6.859		K = K @ EQ01 Vel = 16.02	
B3			0.0 81.55					34.598		K Factor = 13.86	

Final Calculations : Hazen-Williams

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The Village at Discovery - Lot 1 - Area #2

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
H212 to B3	15 15	5.32	31.01 31.01	1.25 1.442	T	7.432	2.000 7.432 9.432	120	34.011 0.0		K = K @ EQ01	
			0.0						0.587		Vel = 6.09	
B3			31.01						34.598		K Factor = 5.27	
B1 to B2	15 15		110.00 110.0	2.5 2.635			9.670 9.670	120	33.062 0.0		Vel = 6.47	
B2 to B3	15 15		110.57 220.57	2.5 2.635			9.670 9.670	120	33.394 0.0		Vel = 12.98	
B3 to B4	15 15		112.56 333.13	2.5 2.635			60.070 60.070	120	34.598 0.0		Vel = 19.60	
B4 to B5	15 15		0.0 333.13	3 3.26			38.150 38.150	120	50.628 0.0		Vel = 12.80	
B5 to TOR	15 15		0.0 333.13	3 3.26	T E	20.159 9.408	32.860 29.567 62.427	120	54.239 0.0		Vel = 12.80	
TOR			0.0 333.13						60.148		K Factor = 42.95	
TOR to UG	15 1		333.13 333.13	3 3.26	E Zcb	9.408 0.0	14.000 9.408 23.408	120	60.148 10.395 2.215		** Fixed Loss = 4.331 Vel = 12.80	
UG to HOSE	1 1		0.0 333.13	6 6.16	G E T	4.304 20.084 43.037	40.000 67.425 107.425	140	72.758 0.0 0.345		Vel = 3.59	
HOSE to TEST	1 0	H250	250.00 583.13	6 6.16			1.000 1.000	140	73.103 0.433 0.009		Vel = 6.28	
TEST			0.0 583.13						73.545		K Factor = 68.00	