

## **Hydraulic Calculations For:**

**Streets of West Pryor  
Lot 13  
1020 NW Pryor Road  
Lees Summit, Missouri**

### **Hydraulic Calculated Areas**

**Area #1: SHELL SPACE TENANT G  
Area #2: EXTERIOR CANOPY**

**HYDRAULIC CALCULATIONS**  
**for**

**JOB NAME** STREETS OF WEST PRYOR LOT 13 CALCULATION

**Location** 1020 NW PRYOR ROAD LEES SUMMIT, MISSOURI

**Drawing #** FP1

**Contract #** DPC-19187-140

**Date** 03/19/2024

**DESIGN**

**Remote area #** DESIGN AREA-1

**Remote area location** SHELL SPACE TENANT G

**Occupancy classification** ORDINARY HAZARD GROUP II

**Density** 0.2 - Gpm/SqFt

**Area of application** 1500 - SqFt

**Coverage/sprinkler** 120 - SqFt

**Type of sprinkler calculated** STANDARD COVERAGE QUICK RESPONSE

**# Sprinklers calculated** 15

**In-rack demand** - GPM

**Hose streams** 250 - GPM

**Total water required (including hose streams)** 634.081 - GPM @ 56.6691 - Psi

**Type of system** WET

**Volume of system (dry or pre-action)** N/A - Gal

**WATER SUPPLY INFORMATION**

**Test date** 05/22/2023

**Location** SITE

**Source of info** AEGIS FIRE PROTECTION

**CONTRACTOR INFO** AEGIS FIRE PROTECTION, LLC

**Address** 13415 W 98TH STREET / LENEXA, KS 66215

**Phone #** 913-825-0343

**Name of designer** APEX DESIGN FP LLC

**Authority having jurisdiction** CITY OF LEES SUMMIT

**NOTES:**

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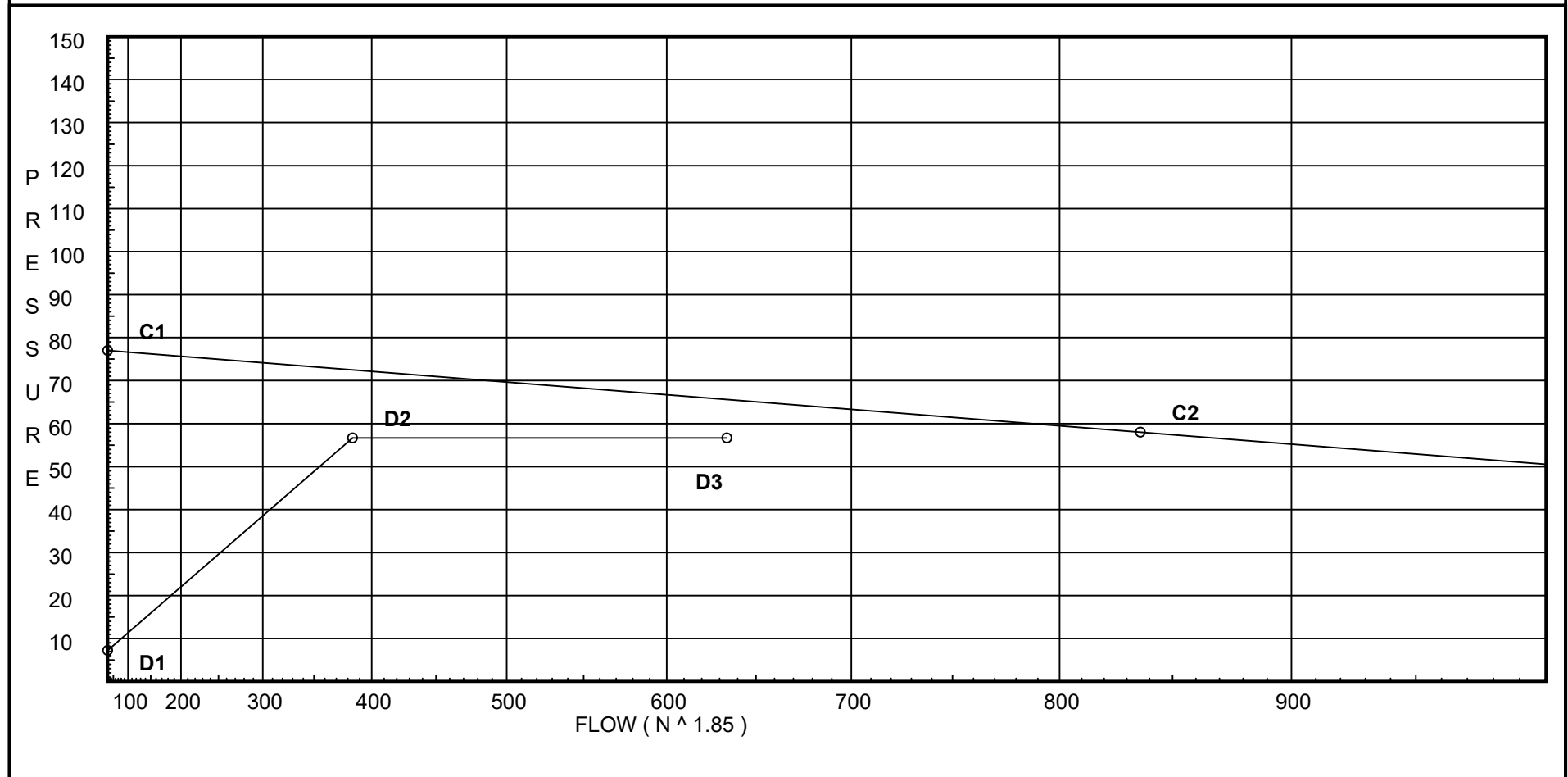
# Water Supply Curve

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CALCULATION

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City Water Supply:  
C1 - Static Pressure : 77  
C2 - Residual Pressure: 58  
C2 - Residual Flow : 836

Demand:  
D1 - Elevation : 7.220  
D2 - System Flow : 384.081  
D2 - System Pressure : 56.669  
Hose ( Demand ) : 250  
D3 - System Demand : 634.081  
Safety Margin : 8.938



# Fittings Used Summary

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CALCULATION

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## 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

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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	77.0	58	836.0	65.607	634.08	56.669

## 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	19.38	8	9.0	24.0	0.2 120
EQ01	16.67		11.58		
SP03	19.0	8	9.0	24.0	0.2 120
EQ03	16.67		11.35		
SP04	18.81	8	9.0	24.0	0.2 120
EQ04	16.67		11.23		
SP05	18.62	8	9.0	24.0	0.2 120
EQ05	16.67		11.11		
SP02	19.19	8	9.0	24.0	0.2 120
EQ02	16.67		11.46		
100	16.67	7.05	11.58	24.0	K=K @ EQ01
101	16.67		12.64		
102	16.67		12.81		
103	16.67		13.41		
104	16.67		14.72		
105	16.67		16.97		
106	16.67		38.44		
107	16.67		38.47		
108	16.67		38.66		
TOR	16.67		42.11		
BOR	1.0		55.09		
UG	-5.0		58.57		
TEST	0.0		56.67	250.0	
109	16.67	7.09	11.72	24.27	K=K @ EQ02
110	16.67	7.13	12.27	24.96	K=K @ EQ03
111	16.67	7.16	13.46	26.28	K=K @ EQ04
112	16.67	7.2	15.52	28.37	K=K @ EQ05
113	16.67	7.05	11.59	24.01	K=K @ EQ01
114	16.67		12.66		
115	16.67		12.82		
116	16.67		13.43		
117	16.67		14.73		
118	16.67		16.99		
119	16.67	7.09	11.73	24.28	K=K @ EQ02
120	16.67	7.13	12.28	24.97	K=K @ EQ03
121	16.67	7.16	13.48	26.29	K=K @ EQ04
122	16.67	7.2	15.54	28.38	K=K @ EQ05
123	16.67	7.05	11.65	24.07	K=K @ EQ01
124	16.67		12.72		
125	16.67		12.89		
126	16.67		13.5		
127	16.67		14.81		

# Flow Summary - NFPA

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CALCULATION

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## NODE ANALYSIS (cont.)

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
128	16.67		17.08		
129	16.67	7.09	11.8	24.35	K=K @ EQ02
130	16.67	7.13	12.35	25.04	K=K @ EQ03
131	16.67	7.16	13.55	26.36	K=K @ EQ04
132	16.67	7.2	15.62	28.45	K=K @ EQ05

# Final Calculations : Hazen-Williams

AEGIS FIRE PROTECTION, LLC  
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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	*****
SP01 to EQ01	19.38 16.67	8.00	24.00 24.0	1 1.049	T	5.0	2.710 5.000 7.710	120	9.000 1.174 1.406		Vel = 8.91	
EQ01			0.0 24.00						11.580		K Factor = 7.05	
SP03 to EQ03	19 16.67	8.00	24.00 24.0	1 1.049	T	5.0	2.330 5.000 7.330	120	9.000 1.009 1.337		Vel = 8.91	
EQ03			0.0 24.00						11.346		K Factor = 7.13	
SP04 to EQ04	18.81 16.67	8.00	24.00 24.0	1 1.049	T	5.0	2.140 5.000 7.140	120	9.000 0.927 1.302		Vel = 8.91	
EQ04			0.0 24.00						11.229		K Factor = 7.16	
SP05 to EQ05	18.62 16.67	8.00	24.00 24.0	1 1.049	T	5.0	1.960 5.000 6.960	120	9.000 0.845 1.269		Vel = 8.91	
EQ05			0.0 24.00						11.114		K Factor = 7.20	
SP02 to EQ02	19.19 16.67	8.00	24.00 24.0	1 1.049	T	5.0	2.520 5.000 7.520	120	9.000 1.091 1.372		Vel = 8.91	
EQ02			0.0 24.00						11.463		K Factor = 7.09	
100 to 101	16.67 16.67	7.05	24.00 24.0	1 1.049	T	5.0	0.830 5.000 5.830	120	11.580 0.0 1.062		K = K @ EQ01 Vel = 8.91	
101 to 102	16.67 16.67		0.0 24.0	1.5 1.682			9.070 9.070	120	12.642 0.0 0.166		Vel = 3.47	
102 to 103	16.67 16.67		24.27 48.27	1.5 1.682			9.070 9.070	120	12.808 0.0 0.605		Vel = 6.97	
103 to 104	16.67 16.67		24.96 73.23	1.5 1.682			9.070 9.070	120	13.413 0.0 1.306		Vel = 10.57	
104 to 105	16.67 16.67		26.28 99.51	1.5 1.682			8.870 8.870	120	14.719 0.0 2.254		Vel = 14.37	
105 to 106	16.67 16.67		28.36 127.87	1.5 1.682	T	9.9	43.220 9.900 53.120	120	16.973 0.0 21.463		Vel = 18.46	
106 to 107	16.67 16.67		0.0 127.87	4 4.26			8.330 8.330	120	38.436 0.0 0.036		Vel = 2.88	
107 to 108	16.67 16.67		127.94 255.81	4 4.26			12.000 12.000	120	38.472 0.0 0.190		Vel = 5.76	

# Final Calculations : Hazen-Williams

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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	*****
108 to TOR	16.67 16.670		128.27 384.08	4 4.26	T	26.334	76.800 26.334 103.134	120 0.0335	38.662 0.0 3.451		Vel = 8.65	
TOR to BOR	16.670 1		0.0 384.08	4 4.26	Zcb	0.0	15.667 15.667	120 0.0335	42.113 12.452 0.525		** Fixed Loss = 5.666 Vel = 8.65	
BOR to UG	1 -5		0.0 384.08	6 6.16	E 2T G	20.084 86.075 4.304	100.000 110.463 210.463	140 0.0042	55.090 2.599 0.878		Vel = 4.13	
UG to TEST	-5 0		0.0 384.08	8 8.27	E T	28.468 55.354	185.000 83.822 268.822	140 0.0010	58.567 -2.166 0.268		Vel = 2.29	
TEST			250.00 634.08						56.669		Qa = 250.00 K Factor = 84.23	
109 to 102	16.67 16.67	7.09	24.27 24.27	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1861	11.723 0.0 1.085		K = K @ EQ02 Vel = 9.01	
102			0.0 24.27						12.808		K Factor = 6.78	
110 to 103	16.67 16.67	7.13	24.96 24.96	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1961	12.270 0.0 1.143		K = K @ EQ03 Vel = 9.27	
103			0.0 24.96						13.413		K Factor = 6.82	
111 to 104	16.67 16.67	7.16	26.28 26.28	1 1.049	T	5.0	0.830 5.000 5.830	120 0.2156	13.462 0.0 1.257		K = K @ EQ04 Vel = 9.76	
104			0.0 26.28						14.719		K Factor = 6.85	
112 to 105	16.67 16.67	7.2	28.37 28.37	1 1.049	T	5.0	0.830 5.000 5.830	120 0.2484	15.525 0.0 1.448		K = K @ EQ05 Vel = 10.53	
105			0.0 28.37						16.973		K Factor = 6.89	
113 to 114	16.67 16.67	7.05	24.01 24.01	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1825	11.591 0.0 1.064		K = K @ EQ01 Vel = 8.91	
114 to 115	16.67 16.67		0.0 24.01	1.5 1.682			9.070 9.070	120 0.0183	12.655 0.0 0.166		Vel = 3.47	
115 to 116	16.67 16.67		24.29 48.3	1.5 1.682			9.070 9.070	120 0.0667	12.821 0.0 0.605		Vel = 6.97	
116 to 117	16.67 16.67		24.97 73.27	1.5 1.682			9.070 9.070	120 0.1442	13.426 0.0 1.308		Vel = 10.58	
117 to 118	16.67 16.67		26.29 99.56	1.5 1.682			8.870 8.870	120 0.2543	14.734 0.0 2.256		Vel = 14.38	



# Final Calculations : Hazen-Williams

AEGIS FIRE PROTECTION, LLC  
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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	*****
118 to 107	16.67 16.67		28.38 127.94	1.5 1.682	T	9.9	43.220 9.900 53.120	120 0.4044	16.990 0.0 21.482		Vel = 18.47	
107			0.0 127.94						38.472		K Factor = 20.63	
119 to 115	16.67 16.67	7.09	24.28 24.28	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1863	11.735 0.0 1.086		K = K @ EQ02 Vel = 9.01	
115			0.0 24.28						12.821		K Factor = 6.78	
120 to 116	16.67 16.67	7.13	24.97 24.97	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1962	12.282 0.0 1.144		K = K @ EQ03 Vel = 9.27	
116			0.0 24.97						13.426		K Factor = 6.81	
121 to 117	16.67 16.67	7.16	26.29 26.29	1 1.049	T	5.0	0.830 5.000 5.830	120 0.2158	13.476 0.0 1.258		K = K @ EQ04 Vel = 9.76	
117			0.0 26.29						14.734		K Factor = 6.85	
122 to 118	16.67 16.67	7.2	28.38 28.38	1 1.049	T	5.0	0.830 5.000 5.830	120 0.2487	15.540 0.0 1.450		K = K @ EQ05 Vel = 10.54	
118			0.0 28.38						16.990		K Factor = 6.89	
123 to 124	16.67 16.67	7.05	24.07 24.07	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1834	11.652 0.0 1.069		K = K @ EQ01 Vel = 8.94	
124 to 125	16.67 16.67		0.0 24.07	1.5 1.682			9.070 9.070	120 0.0184	12.721 0.0 0.167		Vel = 3.48	
125 to 126	16.67 16.67		24.35 48.42	1.5 1.682			9.070 9.070	120 0.0669	12.888 0.0 0.607		Vel = 6.99	
126 to 127	16.67 16.67		25.04 73.46	1.5 1.682			9.070 9.070	120 0.1450	13.495 0.0 1.315		Vel = 10.61	
127 to 128	16.67 16.67		26.36 99.82	1.5 1.682			8.870 8.870	120 0.2555	14.810 0.0 2.266		Vel = 14.41	
128 to 108	16.67 16.67		28.45 128.27	1.5 1.682	T	9.9	43.220 9.900 53.120	120 0.4064	17.076 0.0 21.586		Vel = 18.52	
108			0.0 128.27						38.662		K Factor = 20.63	
129 to 125	16.67 16.67	7.09	24.35 24.35	1 1.049	T	5.0	0.830 5.000 5.830	120 0.1873	11.796 0.0 1.092		K = K @ EQ02 Vel = 9.04	

# Final Calculations : Hazen-Williams

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CALCULATION

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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	*****
125			0.0 24.35						12.888		K Factor = 6.78	
130 to 126	16.67 16.67	7.13	25.04	1	T	5.0	0.830 5.000 5.830	120	12.346 0.0		K = K @ EQ03	
			25.04	1.049				0.1971	1.149		Vel = 9.30	
126			0.0 25.04						13.495		K Factor = 6.82	
131 to 127	16.67 16.67	7.16	26.36	1	T	5.0	0.830 5.000 5.830	120	13.545 0.0		K = K @ EQ04	
			26.36	1.049				0.2170	1.265		Vel = 9.79	
127			0.0 26.36						14.810		K Factor = 6.85	
132 to 128	16.67 16.67	7.2	28.45	1	T	5.0	0.830 5.000 5.830	120	15.620 0.0		K = K @ EQ05	
			28.45	1.049				0.2497	1.456		Vel = 10.56	
128			0.0 28.45						17.076		K Factor = 6.88	

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**HYDRAULIC CALCULATIONS**  
**for**

**JOB NAME** STREETS OF WEST PRYOR LOT 13 CALCULATION  
**Location** 1020 NW PRYOR ROAD LEES SUMMIT, MISSOURI  
**Drawing #** FP1  
**Contract #** DPC-19187-140  
**Date** 03/19/2024

**DESIGN**

**Remote area #** DESIGN AREA-1  
**Remote area location** EXTERIOR CANOPY  
**Occupancy classification** ORDINARY HAZARD GROUP I  
**Density** LISTING - Gpm/SqFt  
**Area of application** 5 EC HEADS - SqFt  
**Coverage/sprinkler** 16/20 MAX - SqFt  
**Type of sprinkler calculated** TYCO DS-3 EXTENDED COVERAGE DRY  
**# Sprinklers calculated** 5  
**In-rack demand** - GPM  
**Hose streams** 250 - GPM  
**Total water required (including hose streams)** 500.494 - GPM @ 60.2157 - Psi  
**Type of system** WET  
**Volume of system (dry or pre-action)** N/A - Gal

**WATER SUPPLY INFORMATION**

**Test date** 05/22/2023  
**Location** SITE  
**Source of info** AEGIS FIRE PROTECTION

**CONTRACTOR INFO** AEGIS FIRE PROTECTION, LLC

**Address** 13415 W 98TH STREET / LENEXA, KS 66215  
**Phone #** 913-825-0343  
**Name of designer** APEX DESIGN FP LLC  
**Authority having jurisdiction** CITY OF LEES SUMMIT

**NOTES:**

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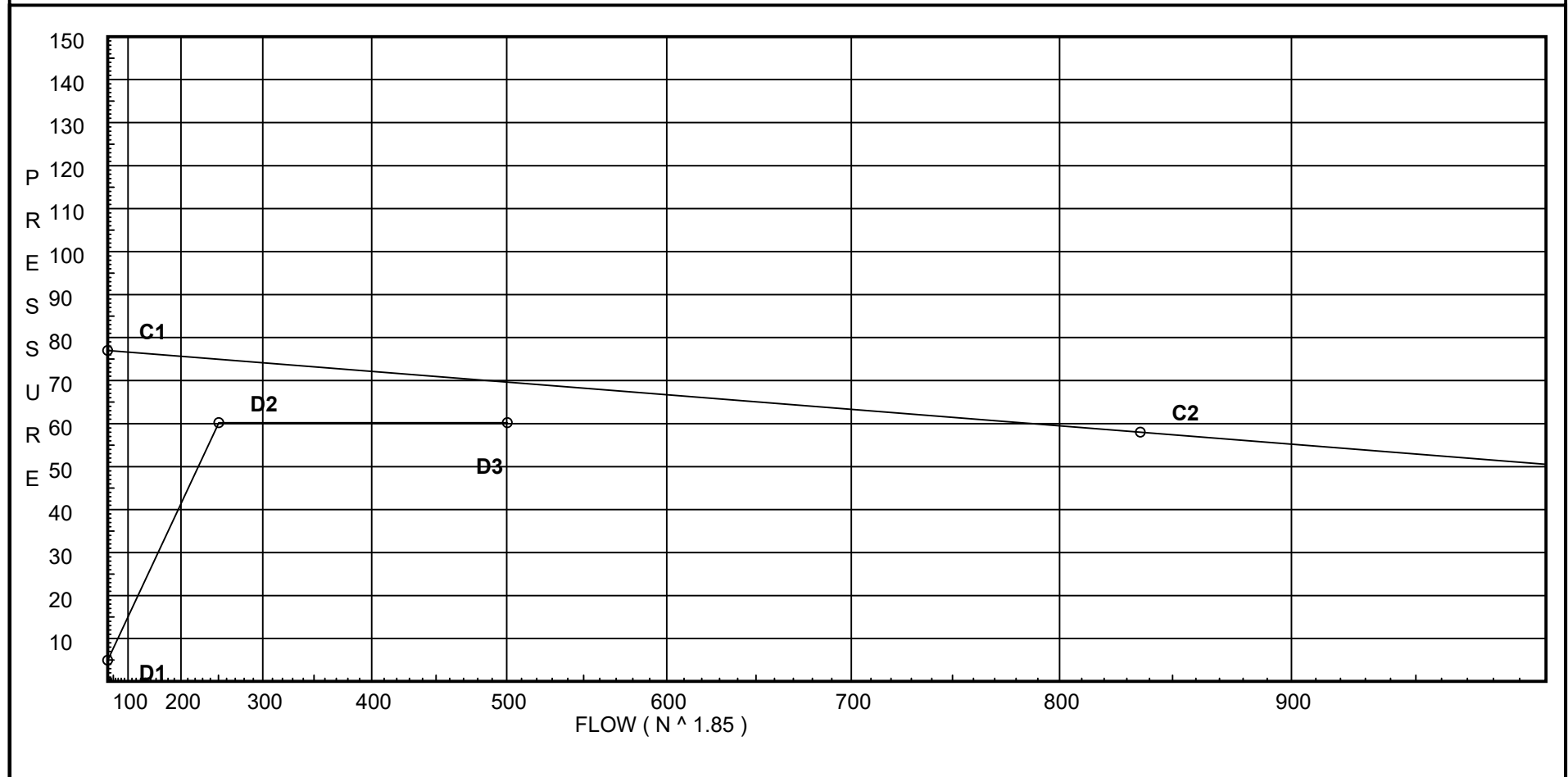
# Water Supply Curve

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CANOPY

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City Water Supply:  
C1 - Static Pressure : 77  
C2 - Residual Pressure: 58  
C2 - Residual Flow : 836

Demand:  
D1 - Elevation : 4.945  
D2 - System Flow : 250.494  
D2 - System Pressure : 60.216  
Hose ( Demand ) : 250  
D3 - System Demand : 500.494  
Safety Margin : 9.430



# Fittings Used Summary

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CANOPY

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## 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

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**SUPPLY ANALYSIS**

<b>Node at Source</b>	<b>Static Pressure</b>	<b>Residual Pressure</b>	<b>Flow</b>	<b>Available Pressure</b>	<b>Total Demand</b>	<b>Required Pressure</b>
TEST	77.0	58	836.0	69.645	500.49	60.216

**NODE ANALYSIS**

<b>Node Tag</b>	<b>Elevation</b>	<b>Node Type</b>	<b>Pressure at Node</b>	<b>Discharge at Node</b>	<b>Notes</b>
200	11.417	11.2	18.4	48.04	48
201	11.417		22.9		
202	11.417		23.17		
203	11.417		24.15		
204	11.417		26.25		
205	0.0		53.67		
106	16.67		46.46		
107	16.67		46.59		
108	16.67		46.77		
TOR	16.67		48.34		
BOR	1.0		59.26		
UG	-5.0		62.26		
TEST	0.0		60.22	250.0	
206	11.417	11.2	18.62	48.33	1.0 48
207	11.417	11.2	19.42	49.35	1.0 48
208	11.417	11.2	21.13	51.49	1.0 48
209	11.417	11.2	22.63	53.28	1.0 48
210	0.0		46.28		
101	16.67		39.33		
102	16.67		40.05		
103	16.67		40.78		
104	16.67		41.51		
105	16.67		42.22		

Final Calculations : Hazen-Williams

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CANOPY

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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	*****
200 to 201	11.417 11.417	11.20	48.04	1	T	5.0	1.833 5.000 6.833	120	18.400 0.0 4.499			Vel = 17.83
201 to 202	11.417 11.417		0.0	2			13.708	120	22.899 0.0 0.269			Vel = 4.22
202 to 203	11.417 11.417		48.33	2			13.708	120	23.168 0.0 0.978			Vel = 8.46
203 to 204	11.417 11.417		49.35	2			13.708	120	24.146 0.0 2.100			Vel = 12.79
204 to 205	11.417 0		51.49	2	4E T	24.613 12.307	46.917 36.920 83.837	120	26.246 4.945 22.483			Vel = 17.31
205 to 106	0 16.67		197.21	2.157			83.837	0.2682	22.483			Vel = 17.31
106 to 107	16.67 16.67		0.0	4			1.000	120	53.674 -7.220 0.010			Vel = 4.44
106 to 107	16.67 16.67		197.21	4.26			1.000	0.0100	0.010			Vel = 4.44
107 to 108	16.67 16.67		53.28	4			8.330	120	46.464 0.0 0.127			Vel = 5.64
107 to 108	16.67 16.67		250.49	4.26			8.330	0.0152	0.127			Vel = 5.64
108 to TOR	16.67 16.670		0.0	4	T	26.334	76.800 26.334 103.134	120	46.773 0.0 1.565			Vel = 5.64
TOR to BOR	16.670 1		250.49	4.26	Zcb	0.0	15.667	120	48.338 10.687 0.238		** Fixed Loss = 3.9	Vel = 5.64
BOR to UG	1 -5		0.0	6	E 2T G	20.084 86.075 4.304	100.000 110.463 210.463	140	59.263 2.599 0.398			Vel = 2.70
UG to TEST	-5 0		250.49	6.16	E T	28.468 55.354	185.000 83.822 268.822	140	62.260 -2.166 0.122			Vel = 1.50
TEST			250.00 500.49						60.216			Qa = 250.00 K Factor = 64.50
206 to 202	11.417 11.417	11.20	48.33	1	T	5.0	1.833 5.000 6.833	120	18.620 0.0 4.548			Vel = 17.94
202			0.0 48.33						23.168			K Factor = 10.04
207 to 203	11.417 11.417	11.20	49.35	1	T	5.0	1.833 5.000 6.833	120	19.417 0.0 4.729			Vel = 18.32
203			0.0 49.35						24.146			K Factor = 10.04

# Final Calculations : Hazen-Williams

AEGIS FIRE PROTECTION, LLC  
STREETS OF WEST PRYOR LOT 13 CANOPY

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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	*****
208 to 204	11.417 11.417	11.20	51.49 51.49	1 1.049	T	5.0	1.833 5.000 6.833	120 0.7483	21.133 0.0 5.113		Vel = 19.11	
204			0.0 51.49						26.246		K Factor = 10.05	
209 to 210	11.417 0	11.20	53.28 53.28	1 1.049	2E T	4.0 5.0	14.458 9.000 23.458	120 0.7973	22.633 4.945 18.704		Vel = 19.78	
210 to 101	0 16.67		0.0 53.28	1.5 1.682			3.333 3.333	120 0.0801	46.282 -7.220 0.267		Vel = 7.69	
101 to 102	16.67 16.67		0.0 53.28	1.5 1.682			9.070 9.070	120 0.0799	39.329 0.0 0.725		Vel = 7.69	
102 to 103	16.67 16.67		0.0 53.28	1.5 1.682			9.070 9.070	120 0.0800	40.054 0.0 0.726		Vel = 7.69	
103 to 104	16.67 16.67		0.0 53.28	1.5 1.682			9.070 9.070	120 0.0800	40.780 0.0 0.726		Vel = 7.69	
104 to 105	16.67 16.67		0.0 53.28	1.5 1.682			8.870 8.870	120 0.0799	41.506 0.0 0.709		Vel = 7.69	
105 to 106	16.67 16.67		0.0 53.28	1.5 1.682	T	9.9	43.220 9.900 53.120	120 0.0800	42.215 0.0 4.249		Vel = 7.69	
106			0.0 53.28						46.464		K Factor = 7.82	