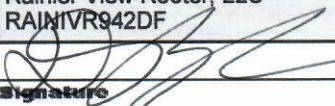


WASHINGTON STATE CERTIFICATE OF COMPETENCY FIRE PROTECTION SPRINKLER SYSTEMS	
Devon William Belknap 9316-0919-A Level 1 Rainier View Rooter, LLC RAINIVR942DF	Date
 Signature	Expires DEC 31, 22



Rainier View Plumbing & Rooter
firesprinklers@rainierviewrooter.com
13117 Canyon Rd E
Puyallup, WA 98373
253-435-1996

Job Name : Rick Simpson Duplex B - One Head Calculation (H.4)
Drawing : RESIDENTIAL
Location : 410 10th Ave. SE Puyallup WA
Remote Area : 1
Contract : 220517-08
Data File : 220517-08 Rick Simpson Duplex B.wx1

HYDRAULIC DESIGN INFORMATION SHEET

Name - Rick Simpson Duplex B Date - 05/17/2022
Location - Puyallup WA
Building - RESIDENTIAL System No. - 1
Contractor - RAINIER VIEW ROOTER Contract No. - 220517-08
Calculated By - DEVON BELKNAP Drawing No. -
Construction: (X) Combustible () Non-Combustible Ceiling Height
OCCUPANCY - RESIDENTIAL

S Type of Calculation: () NFPA 13 Residential () NFPA 13R (X) NFPA 13D
Y Number of Sprinklers Flowing: (X) 1 () 2 () 4 ()
S () Other
T () Specific Ruling Made by Date
E
M Listed Flow at Start Point - 17 Gpm System Type
Listed Pres. at Start Point - 12.03 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 18 x 18 () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - Gpm Make RELIABLE Model LL-RFC49
I Elevation at Highest Outlet - 116 Feet Size 3/8 K-Factor 4.9
G Note: Temperature Rating 155
N

Calculation Gpm Required 17 Psi Required 29.29 At Ref Pt STR
Summary C-Factor Used: Overhead 150 Underground 150

W Water Flow Test: Pump Data:
A Date of Test - Rated Cap.
T Time of Test - @ Psi
E Static (Psi) - 56 Elev.
R Residual (Psi) - 20 Other
Flow (Gpm) - 500
S Elevation - 100

P Location:
P
L Source of Information:
Y

Water Supply Curve C

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - One Head Calculation (H.4)

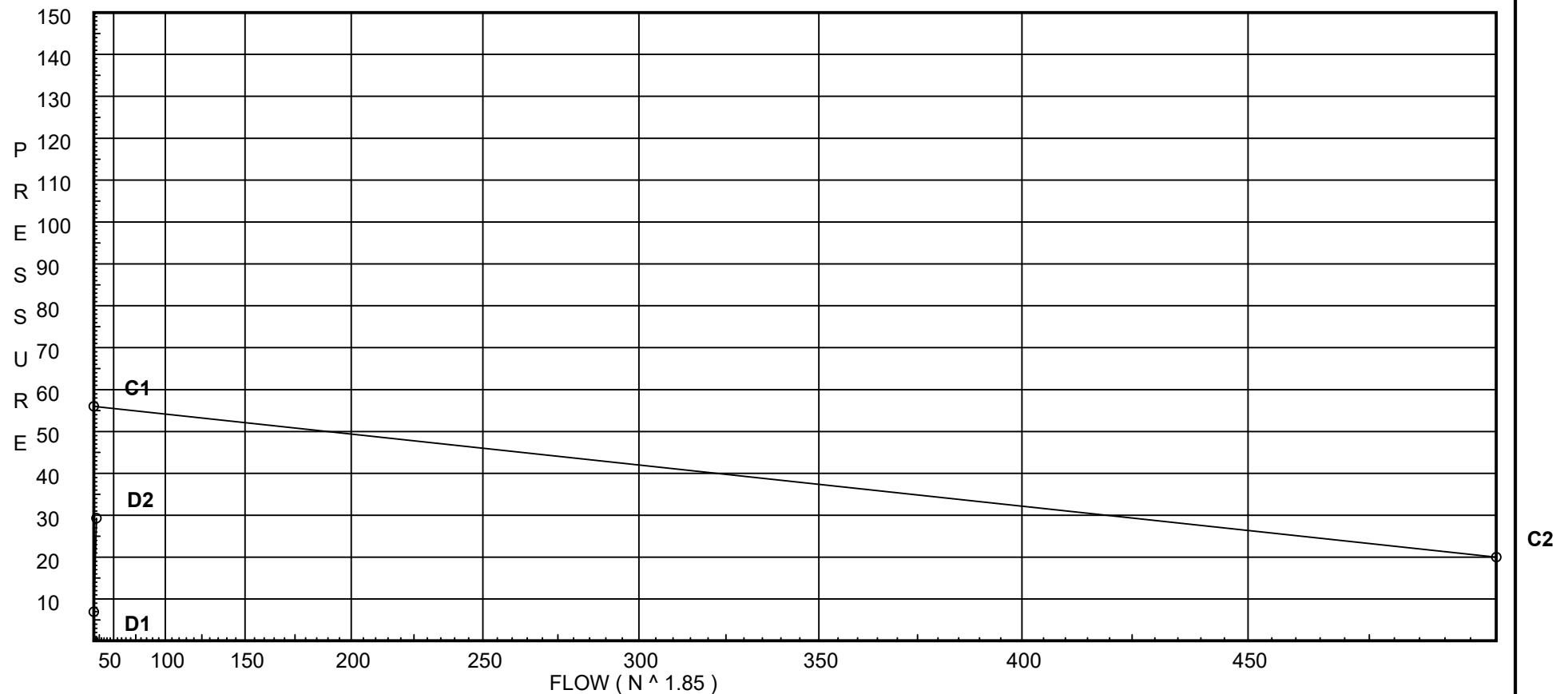
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City Water Supply:

C1 - Static Pressure : 56
C2 - Residual Pressure: 20
C2 - Residual Flow : 500

Demand:

D1 - Elevation : 6.930
D2 - System Flow : 16.995
D2 - System Pressure : 29.289
Hose (Demand) :
D3 - System Demand : 16.995
Safety Margin : 26.642



Fittings Used Summary

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - One Head Calculation (H.4)

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Date 5/17/2022

Fitting Legend

Abbrev. Name

E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	1	1	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Utb *	Aquapex Tee - Branch	2	17	14	9	12	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utr *	Aquapex Tee - Run	1	2	2	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Units Summary

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

Flow Summary - NFPA 2007

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - One Head Calculation (H.4)

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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>
STR	56.0	20	500.0	55.931	17.0	29.289

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>
H.4	116.0	4.9	12.03	17.0	
H.5	116.0		12.7		
T.22	116.0		13.11		
T.21	108.0		17.31		
H.8	108.0		17.64		
T.25	108.0		17.87		
H.12	108.0		18.17		
T.27	108.0		18.8		
S.1	104.0		20.86		
MTR	100.0		26.87		
STR	100.0		29.29		
H.1	116.0		12.44		
T.18	116.0		12.81		
T.19	116.0		13.13		
T.20	108.0		17.13		
H.3	108.0		17.18		
H.2	108.0		17.24		
H.6	116.0		13.14		
T.23	116.0		13.21		
H.10	116.0		13.26		
T.30	116.0		13.44		
T.29	108.0		17.53		
H.11	116.0		13.23		
T.26	116.0		13.26		
H.15	116.0		13.38		
T.31	116.0		13.43		
T.28	108.0		17.21		
H.14	108.0		17.31		
H.17	116.0		13.43		
H.13	116.0		13.44		
H.16	116.0		13.44		
H.7	108.0		17.15		
T.24	108.0		17.18		

Final Calculations - Hazen-Williams - 2007

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - One Head Calculation (H.4)

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
H.4 to H.5	116 116	4.90	9.02 9.02	1 0.862	Utr	2.0 0.0	11.000 2.000	150	12.030 0.0			
						0.0	13.000	0.0514	0.668	Vel =	4.96	
H.5 to T.22	116 116		0.0 9.02	1 0.862	Utr	2.0 0.0	6.000 2.000	150	12.698 0.0			
						0.0	8.000	0.0514	0.411	Vel =	4.96	
T.22 to T.21	116 108		-3.92 5.1	1 0.862	2Utb	34.0 0.0	13.000 28.000	150	13.109 3.465			
						0.0	41.000	0.0179	0.732	Vel =	2.80	
T.21 to H.8	108 108		2.51 7.61	1 0.862	Utr	2.0 0.0	7.000 2.000	150	17.306 0.0			
						0.0	9.000	0.0374	0.337	Vel =	4.18	
H.8 to T.25	108 108		0.0 7.61	1 0.862	Utr	2.0 0.0	4.000 2.000	150	17.643 0.0			
						0.0	6.000	0.0375	0.225	Vel =	4.18	
T.25 to H.12	108 108		0.0 7.61	1 0.862	Utr	2.0 0.0	6.000 2.000	150	17.868 0.0			
						0.0	8.000	0.0375	0.300	Vel =	4.18	
H.12 to T.27	108 108		0.0 7.61	1 0.862	Utb	17.0 0.0	3.000 14.000	150	18.168 0.0			
						0.0	17.000	0.0375	0.637	Vel =	4.18	
T.27 to S.1	108 104		9.39 17.0	1.5 1.244	T	3.443 0.0	8.000 3.443	150	18.805 1.732			
						0.0	11.443	0.0278	0.318	Vel =	4.49	
S.1 to MTR	104 100		0.0 17.0	1.5 1.61	2E	12.089 0.0	150.000 12.088	150	20.855 4.732		* * Fixed Loss = 3	
						0.0	162.088	0.0079	1.283	Vel =	2.68	
MTR to STR	100 100		0.0 17.0	1 0.995	E T G	2.336 5.841 1.168	20.000 9.345 29.345	150	26.870 0.0 2.419			
								0.0824		Vel =	7.01	
STR			0.0 17.00						29.289	K Factor =	3.14	
H.4 to H.1	116 116		7.97 7.97	1 0.862	Utr	2.0 0.0	8.000 2.000	150	12.030 0.0			
						0.0	10.000	0.0409	0.409	Vel =	4.38	
H.1 to T.18	116 116		0.0 7.97	1 0.862	Utr	2.0 0.0	7.000 2.000	150	12.439 0.0			
						0.0	9.000	0.0409	0.368	Vel =	4.38	
T.18 to T.19	116 116		0.0 7.97	1 0.862	Utr	2.0 0.0	6.000 2.000	150	12.807 0.0			
						0.0	8.000	0.0409	0.327	Vel =	4.38	
T.19 to T.20	116 108		-3.56 4.41	1 0.862	2Utb	34.0 0.0	11.000 28.000	150	13.134 3.465			
						0.0	39.000	0.0137	0.533	Vel =	2.42	
T.20 to H.3	108 108		-1.90 2.51	1 0.862	Utr	2.0 0.0	9.000 2.000	150	17.132 0.0			
						0.0	11.000	0.0048	0.053	Vel =	1.38	
H.3 to H.2	108 108		0.0 2.51	1 0.862	Utr	2.0 0.0	10.000 2.000	150	17.185 0.0			
						0.0	12.000	0.0048	0.058	Vel =	1.38	

Final Calculations - Hazen-Williams

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - One Head Calculation (H.4)

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv. Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
H.2 to T.21	108 108		0.0 2.51	1 0.862	Utr 0.0	2.0 2.000	150 0.0048	17.243 0.0			
			0.0			13.000		0.063	Vel =	1.38	
T.21			2.51					17.306	K Factor =	0.60	
T.22 to H.6	116 116		3.92 3.92	1 0.862	Utr 0.0	2.0 2.000	150 0.0110	13.109 0.0			
						3.000		0.033	Vel =	2.16	
H.6 to T.23	116 116		0.0 3.92	1 0.862	Utr 0.0	2.0 2.000	150 0.0110	13.142 0.0			
						6.000		0.066	Vel =	2.16	
T.23 to H.10	116 116		0.0 3.92	1 0.862	Utr 0.0	2.0 2.000	150 0.0110	13.208 0.0			
						5.000		0.055	Vel =	2.16	
H.10 to T.30	116 116		0.0 3.92	1 0.862	Utr 0.0	2.0 2.000	150 0.0110	13.263 0.0			
						16.000		0.176	Vel =	2.16	
T.30 to T.29	116 108		0.49 4.41	1 0.862	2Utb 0.0	34.0 28.000	150 0.0137	13.439 3.465			
						46.000		0.630	Vel =	2.42	
T.29 to T.27	108 108		4.98 9.39	1 0.862	Utr Utb	2.0 17.0	150 0.0553	17.534 0.0			
						23.000		1.271	Vel =	5.16	
T.27			0.0 9.39					18.805	K Factor =	2.17	
T.19 to H.11	116 116		3.56 3.56	1 0.862	Utr 0.0	2.0 2.000	150 0.0092	13.134 0.0			
						10.000		0.092	Vel =	1.96	
H.11 to T.26	116 116		0.0 3.56	1 0.862	Utr 0.0	2.0 2.000	150 0.0092	13.226 0.0			
						4.000		0.037	Vel =	1.96	
T.26 to H.15	116 116		0.0 3.56	1 0.862	Utr 0.0	2.0 13.000	150 0.0092	13.263 0.0			
						2.000		0.120	Vel =	1.96	
H.15 to T.31	116 116		0.0 3.56	1 0.862	Utr 0.0	2.0 5.000	150 0.0092	13.383 0.0			
						2.000		0.046	Vel =	1.96	
T.31 to T.28	116 108		-0.48 3.08	1 0.862	2Utb 0.0	34.0 28.000	150 0.0070	13.429 3.465			
						45.000		0.315	Vel =	1.69	
T.28 to H.14	108 108		1.89 4.97	1 0.862	Utr 0.0	2.0 6.000	150 0.0172	17.209 0.0			
						2.000		0.103	Vel =	2.73	
H.14 to T.29	108 108		0.0 4.97	1 0.862	0.0 0.0	13.000 0.0	150 0.0171	17.312 0.0			
						13.000		0.222	Vel =	2.73	
T.29			0.0 4.97					17.534	K Factor =	1.19	

Final Calculations - Hazen-Williams

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - One Head Calculation (H.4)

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Date 5/17/2022

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv. Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
T.31 to H.17	116 116		0.49 0.49	1 0.862	0.0 0.0	7.000 0.0	150 0.0001	13.429 0.001		Vel = 0.27	
H.17 to H.13	116 116		0.0 0.49	1 0.862	Utr 0.0	2.0 2.000	150 0.0003	13.430 0.006		Vel = 0.27	
H.13 to H.16	116 116		0.0 0.49	1 0.862	Utr 0.0	2.0 2.000	150 0.0002	13.436 0.002		Vel = 0.27	
H.16 to T.30	116 116		0.0 0.49	1 0.862	0.0 0.0	4.000 0.0	150 0.0002	13.438 0.001		Vel = 0.27	
T.30			0.0 0.49					13.439		K Factor = 0.13	
T.20 to H.7	108 108		1.90 1.9	1 0.862	Utr 0.0	4.000 2.000	150 0.0028	17.132 0.017		Vel = 1.04	
H.7 to T.24	108 108		0.0 1.9	1 0.862	Utr 0.0	8.000 2.000	150 0.0029	17.149 0.029		Vel = 1.04	
T.24 to T.28	108 108		0.0 1.9	1 0.862	Utr 0.0	9.000 2.000	150 0.0028	17.178 0.031		Vel = 1.04	
T.28			0.0 1.90					17.209		K Factor = 0.46	



Rainier View Plumbing & Rooter
firesprinklers@rainierviewrooter.com
13117 Canyon Rd E
Puyallup, WA 98373
253-435-1996

Job Name : Rick Simpson Duplex B - Two Head Calculation (H.17 & H.15)
Drawing : RESIDENTIAL
Location : 410 10th Ave. SE Puyallup WA
Remote Area : 1
Contract : 220517-08
Data File : 220517-08 Rick Simpson Duplex B.wx2

HYDRAULIC DESIGN INFORMATION SHEET

Name - Rick Simpson Duplex B Date - 05/17/2022
Location - Puyallup WA
Building - RESIDENTIAL System No. - 1
Contractor - RAINIER VIEW ROOTER Contract No. - 220517-08
Calculated By - DEVON BELKNAP Drawing No. -
Construction: (X) Combustible () Non-Combustible Ceiling Height
OCCUPANCY - RESIDENTIAL

S Type of Calculation: () NFPA 13 Residential () NFPA 13R (X) NFPA 13D
Y Number of Sprinklers Flowing: () 1 (X) 2 () 4 ()
S () Other
T () Specific Ruling Made by Date
E
M Listed Flow at Start Point - 13 Gpm System Type
Listed Pres. at Start Point - 7.04 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 16 x 16 () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - Gpm Make RELIABLE Model LL-RFC49
I Elevation at Highest Outlet - 116 Feet Size 3/8 K-Factor 4.9
G Note: Temperature Rating 155
N

Calculation Gpm Required 26.0373 Psi Required 31.77 At Ref Pt STR
Summary C-Factor Used: Overhead 150 Underground 150

W Water Flow Test: Pump Data:
A Date of Test - Rated Cap.
T Time of Test - @ Psi
E Static (Psi) - 56 Elev.
R Residual (Psi) - 20 Other
Flow (Gpm) - 500
S Elevation - 100

P Location:
P
L Source of Information:
Y

Water Supply Curve C

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - Two Head Calculation (H.17 & H.15)

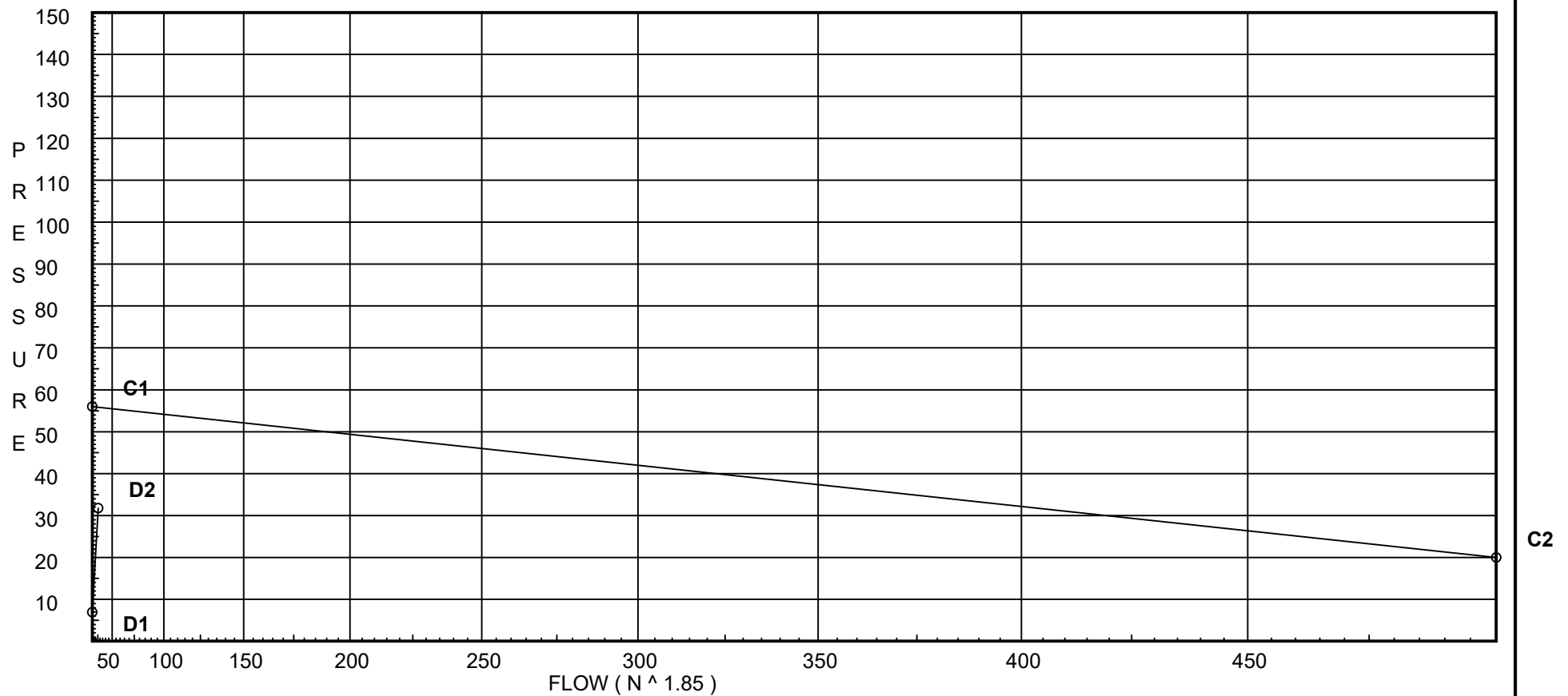
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City Water Supply:

C1 - Static Pressure : 56
C2 - Residual Pressure: 20
C2 - Residual Flow : 500

Demand:

D1 - Elevation : 6.930
D2 - System Flow : 26.037
D2 - System Pressure : 31.775
Hose (Demand) :
D3 - System Demand : 26.037
Safety Margin : 24.073



Fittings Used Summary

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - Two Head Calculation (H.17 & H.15)

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Fitting Legend

Abbrev. Name

E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	1	1	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Utb *	Aquapex Tee - Branch	2	17	14	9	12	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utr *	Aquapex Tee - Run	1	2	2	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Units Summary

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

Flow Summary - NFPA 2007

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - Two Head Calculation (H.17 & H.15)

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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>
STR	56.0	20	500.0	55.848	26.04	31.775

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>
H.17	116.0	4.9	7.04	13.0	
H.13	116.0		8.07		
H.16	116.0		8.63		
T.30	116.0		8.82		
T.29	108.0		13.52		
T.27	108.0		16.46		
S.1	104.0		18.89		
MTR	100.0		26.45		
STR	100.0		31.78		
T.31	116.0		7.14		
T.28	108.0	4.9	12.66	13.04	
H.14	108.0		12.93		
H.15	116.0		7.08		
T.26	116.0		7.74		
H.11	116.0		7.94		
T.19	116.0		8.46		
T.20	108.0		12.66		
H.3	108.0		12.88		
H.2	108.0		13.11		
T.21	108.0		13.36		
H.8	108.0	4.9	14.06	13.04	
T.25	108.0		14.52		
H.12	108.0		15.14		
T.18	116.0		8.53		
H.1	116.0		8.62		
H.4	116.0		8.72		
H.5	116.0		8.85		
T.22	116.0		8.93		
H.10	116.0		8.88		
T.23	116.0		8.9		
H.6	116.0	4.9	8.92	13.04	
T.24	108.0		12.66		
H.7	108.0		12.66		

Final Calculations - Hazen-Williams - 2007

Rainier View Plumbing & Rooter
Rick Simpson Duplex B - Two Head Calculation (H.17 & H.15)

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Date 5/17/2022

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
H.17 to H.13	116 116	4.90	8.57	1	Utr	2.0 0.0	20.000 2.000	150	7.040 0.0			
			8.57	0.862		0.0	22.000	0.0468	1.029	Vel =	4.71	
H.13 to H.16	116 116		0.0	1	Utr	2.0 0.0	10.000 2.000	150	8.069 0.0			
			8.57	0.862		0.0	12.000	0.0468	0.561	Vel =	4.71	
H.16 to T.30	116 116		0.0	1		0.0 0.0	4.000 0.0	150	8.630 0.0			
			8.57	0.862		0.0	4.000	0.0468	0.187	Vel =	4.71	
T.30 to T.29	116 108		-2.21	1	2Utb	34.0 0.0	18.000 28.000	150	8.817 3.465			
			6.36	0.862		0.0	46.000	0.0269	1.237	Vel =	3.50	
T.29 to T.27	108 108		8.41	1	Utr Utb	2.0 17.0	7.000 16.000	150	13.519 0.0			
			14.77	0.862		0.0	23.000	0.1280	2.943	Vel =	8.12	
T.27 to S.1	108 104		11.27	1.5	T	3.443 0.0	8.000 3.443	150	16.462 1.732			
			26.04	1.244		0.0	11.443	0.0612	0.700	Vel =	6.87	
S.1 to MTR	104 100		0.0	1.5	2E	12.089 0.0	150.000 12.088	150	18.894 4.732	** Fixed Loss = 3		
			26.04	1.61		0.0	162.088	0.0174	2.824	Vel =	4.10	
MTR to STR	100 100		0.0	1	E T	2.336 5.841	20.000 9.345	150	26.450 0.0			
			26.04	0.995	G	1.168	29.345	0.1815	5.325	Vel =	10.74	
STR			0.0 26.04						31.775	K Factor =	4.62	
H.17 to T.31	116 116		4.43	1		0.0 0.0	7.000 0.0	150	7.040 0.0			
			4.43	0.862		0.0	7.000	0.0137	0.096	Vel =	2.44	
T.31 to T.28	116 108		4.05	1	2Utb	34.0 0.0	17.000 28.000	150	7.136 3.465			
			8.48	0.862		0.0	45.000	0.0458	2.061	Vel =	4.66	
T.28 to H.14	108 108		-0.07	1	Utr	2.0 0.0	4.000 2.000	150	12.662 0.0			
			8.41	0.862		0.0	6.000	0.0452	0.271	Vel =	4.62	
H.14 to T.29	108 108		0.0	1		0.0 0.0	13.000 0.0	150	12.933 0.0			
			8.41	0.862		0.0	13.000	0.0451	0.586	Vel =	4.62	
T.29			0.0 8.41						13.519	K Factor =	2.29	
T.31 to H.15	116 116		-4.05	1	Utr	2.0 0.0	3.000 2.000	150	7.136 0.0			
			-4.05	0.862		0.0	5.000	-0.0116	-0.058	Vel =	2.23	
H.15 to T.26	116 116	4.90	13.03	1	Utr	2.0 0.0	11.000 2.000	150	7.078 0.0			
			8.98	0.862		0.0	13.000	0.0510	0.663	Vel =	4.94	
T.26 to H.11	116 116		0.0	1	Utr	2.0 0.0	2.000 2.000	150	7.741 0.0			
			8.98	0.862		0.0	4.000	0.0510	0.204	Vel =	4.94	

Final Calculations - Hazen-Williams

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv. Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
H.11 to T.19	116 116		0.0 8.98	1 0.862	Utr 0.0	2.0 2.000	150 0.0510	7.945 0.0			
						10.000		0.510	Vel =	4.94	
T.19 to T.20	116 108		-3.70 5.28	1 0.862	2Utb 0.0	34.0 28.000	150 0.0190	8.455 3.465			
						39.000		0.742	Vel =	2.90	
T.20 to H.3	108 108		0.06 5.34	1 0.862	Utr 0.0	2.0 2.000	150 0.0195	12.662 0.0			
						11.000		0.214	Vel =	2.94	
H.3 to H.2	108 108		0.0 5.34	1 0.862	Utr 0.0	2.0 2.000	150 0.0195	12.876 0.0			
						12.000		0.234	Vel =	2.94	
H.2 to T.21	108 108		0.0 5.34	1 0.862	Utr 0.0	2.0 2.000	150 0.0195	13.110 0.0			
						13.000		0.253	Vel =	2.94	
T.21 to H.8	108 108		5.92 11.26	1 0.862	Utr 0.0	2.0 2.000	150 0.0774	13.363 0.0			
						9.000		0.697	Vel =	6.19	
H.8 to T.25	108 108		0.0 11.26	1 0.862	Utr 0.0	2.0 2.000	150 0.0775	14.060 0.0			
						6.000		0.465	Vel =	6.19	
T.25 to H.12	108 108		0.0 11.26	1 0.862	Utr 0.0	2.0 2.000	150 0.0775	14.525 0.0			
						8.000		0.620	Vel =	6.19	
H.12 to T.27	108 108		0.0 11.26	1 0.862	Utb 0.0	17.0 14.000	150 0.0775	15.145 0.0			
						17.000		1.317	Vel =	6.19	
T.27			0.0 11.26					16.462	K Factor =	2.78	
T.19 to T.18	116 116		3.71 3.71	1 0.862	Utr 0.0	2.0 2.000	150 0.0099	8.455 0.0			
						8.000		0.079	Vel =	2.04	
T.18 to H.1	116 116		0.0 3.71	1 0.862	Utr 0.0	2.0 2.000	150 0.0099	8.534 0.0			
						9.000		0.089	Vel =	2.04	
H.1 to H.4	116 116		0.0 3.71	1 0.862	Utr 0.0	2.0 2.000	150 0.0100	8.623 0.0			
						10.000		0.100	Vel =	2.04	
H.4 to H.5	116 116		0.0 3.71	1 0.862	Utr 0.0	2.0 2.000	150 0.0099	8.723 0.0			
						13.000		0.129	Vel =	2.04	
H.5 to T.22	116 116		0.0 3.71	1 0.862	Utr 0.0	2.0 2.000	150 0.0099	8.852 0.0			
						8.000		0.079	Vel =	2.04	
T.22 to T.21	116 108		2.21 5.92	1 0.862	2Utb 0.0	34.0 28.000	150 0.0236	8.931 3.465			
						41.000		0.967	Vel =	3.25	
			0.0								

Final Calculations - Hazen-Williams

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv. Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
T.21			5.92					13.363		K Factor = 1.62	
T.30 to H.10	116 116		2.21	1	Utr 2.0 0.0	14.000 2.000 16.000	150	8.817 0.0			
H.10 to T.23	116 116		2.21	0.862	0.0	3.000 2.000 5.000	150	8.878 0.0	0.0038	0.061	Vel = 1.21
T.23 to H.6	116 116		2.21	0.862	0.0	4.000 2.000 6.000	150	8.897 0.0	0.0038	0.019	Vel = 1.21
H.6 to T.22	116 116		2.21	0.862	0.0	1.000 2.000 3.000	150	8.920 0.0	0.0037	0.023	Vel = 1.21
T.22			0.0 2.21					8.931		K Factor = 0.74	
T.28 to T.24	108 108		0.07	1	Utr 2.0 0.0	9.000 2.000 11.000	150	12.662 0.0			
T.24 to H.7	108 108		0.07	0.862	0.0	8.000 2.000 10.000	150	12.662 0.0	0	0.0	Vel = 0.04
H.7 to T.20	108 108		0.07	0.862	0.0	4.000 2.000 6.000	150	12.662 0.0	0	0.0	Vel = 0.04
T.20			0.0 0.07					12.662		K Factor = 0.02	