

... **Fire Protection by Computer Design**

EASTERN FIRE PROTECTION
170 KITTY HAWK AVE
LEW/AUB IND PARK
AUBURN, MAINE 04210
207-784-1508

Job Name : 593 WASHINGTON AVE
Drawing : BASEMENT
Location : PORTLAND, MAINE
Remote Area : WET
Contract : 1-05652-SPN
Data File : WASH AVE BSMT CALC.WXF

Water Supply Curve C

EASTERN FIRE PROTECTION
593 WASHINGTON AVE

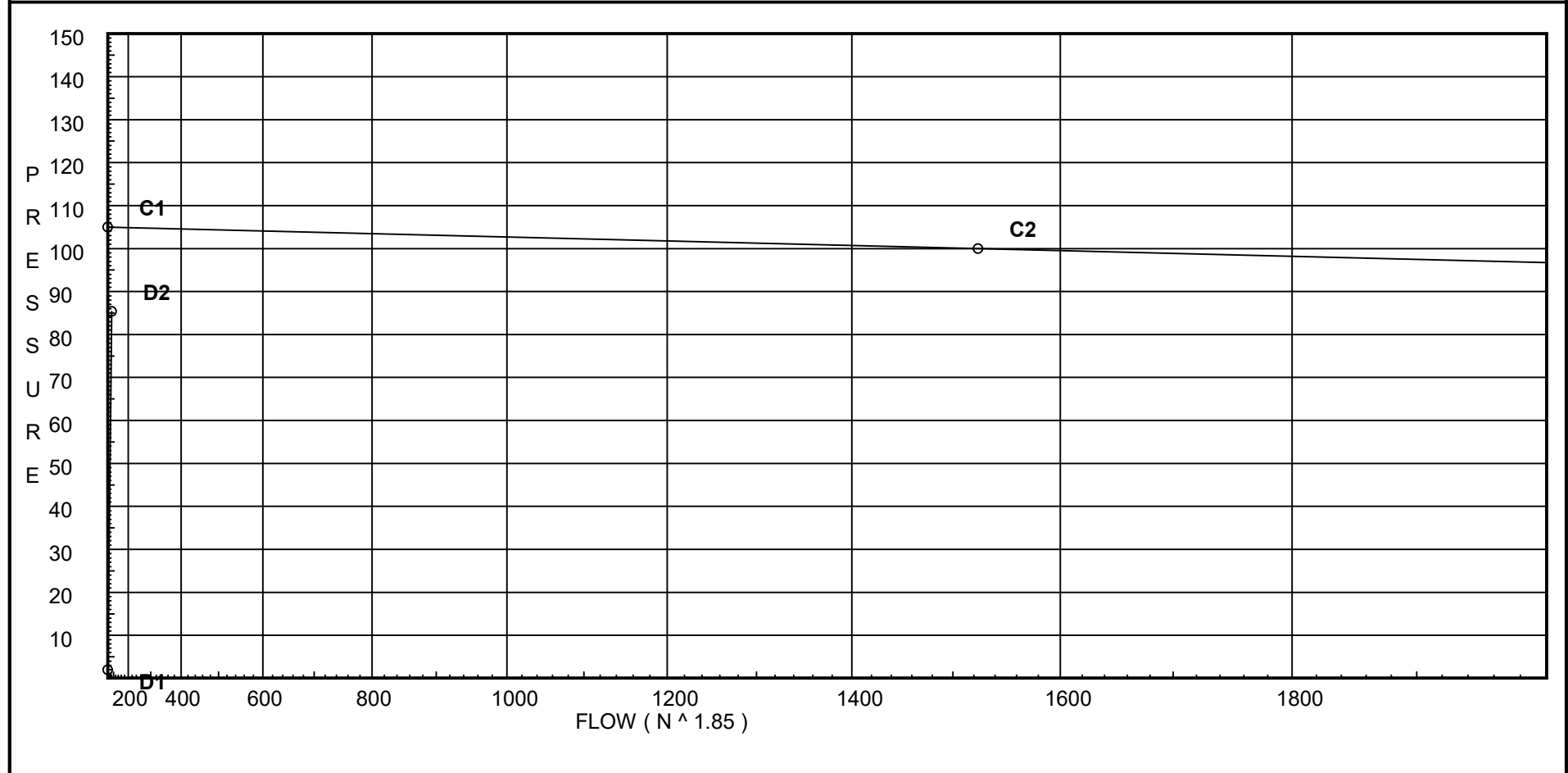
Page 1
Date 8/28/2017

City Water Supply:

C1 - Static Pressure : 105
C2 - Residual Pressure: 100
C2 - Residual Flow : 1524

Demand:

D1 - Elevation : 1.949
D2 - System Flow : 82.381
D2 - System Pressure : 85.378
Hose (Demand) : _____
D3 - System Demand : 82.381
Safety Margin : 19.599



Fittings Used Summary

EASTERN FIRE PROTECTION
593 WASHINGTON AVE

Page 2
Date 8/28/2017

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

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.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	105.0	100	1524.0	104.977	82.38	85.378

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
10	98.666	5.6	12.13	19.5	
11	98.666	5.6	13.18	20.33	
13	98.666	5.6	13.7	20.73	
14	98.666	5.6	15.18	21.82	
12	98.666		26.39		
15	98.666		31.68		
TOR	98.666		67.17		
BFP	97.166		70.5		
UDG	94.166		81.15		
TEST	94.166		85.38		

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION
593 WASHINGTON AVE

Page 4
Date 8/28/2017

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	*****
10 to 11	98.666 98.666	5.60	19.50 19.5	1 1.049		0.0 0.0	8.500 0.0	120	12.125 0.0			
						0.0	8.500	0.1242	1.056		Vel = 7.24	
11 to 12	98.666 98.666	5.60	20.33 39.83	1 1.049	T	5.0 0.0	23.375 5.000	120	13.181 0.0			
						0.0	28.375	0.4654	13.207		Vel = 14.79	
12			0.0 39.83						26.388		K Factor = 7.75	
13 to 14	98.666 98.666	5.60	20.73 20.73	1 1.049	E	2.0 0.0	8.625 2.000	120	13.704 0.0			
						0.0	10.625	0.1391	1.478		Vel = 7.70	
14 to 15	98.666 98.666	5.60	21.82 42.55	1 1.049	T	5.0 0.0	26.375 5.000	120	15.182 0.0			
						0.0	31.375	0.5259	16.501		Vel = 15.80	
15			0.0 42.55						31.683		K Factor = 7.56	
12 to 15	98.666 98.666		39.83 39.83	1 1.049		0.0 0.0	11.375 0.0	120	26.388 0.0			
						0.0	11.375	0.4655	5.295		Vel = 14.79	
15 to TOR	98.666 98.666		42.55 82.38	1 1.049	E T	2.0 5.0	12.875 7.000	120	31.683 0.0			
						0.0	19.875	1.7855	35.486		Vel = 30.58	
TOR to BFP	98.666 97.166		0.0 82.38	1 1.049		0.0 0.0	1.500 0.0	120	67.169 0.650			
						0.0	1.500	1.7853	2.678		Vel = 30.58	
BFP to UDG	97.166 94.166		0.0 82.38	1 1.049		0.0 0.0	3.000 0.0	120	70.497 5.299			** Fixed Loss = 4
						0.0	3.000	1.7857	5.357		Vel = 30.58	
UDG to TEST	94.166 94.166		0.0 82.38	2 1.985	E T G	6.204 12.407 1.241	60.000 19.851 79.851	150	81.153 0.0 4.225			Vel = 8.54
TEST			0.0 82.38						85.378		K Factor = 8.92	