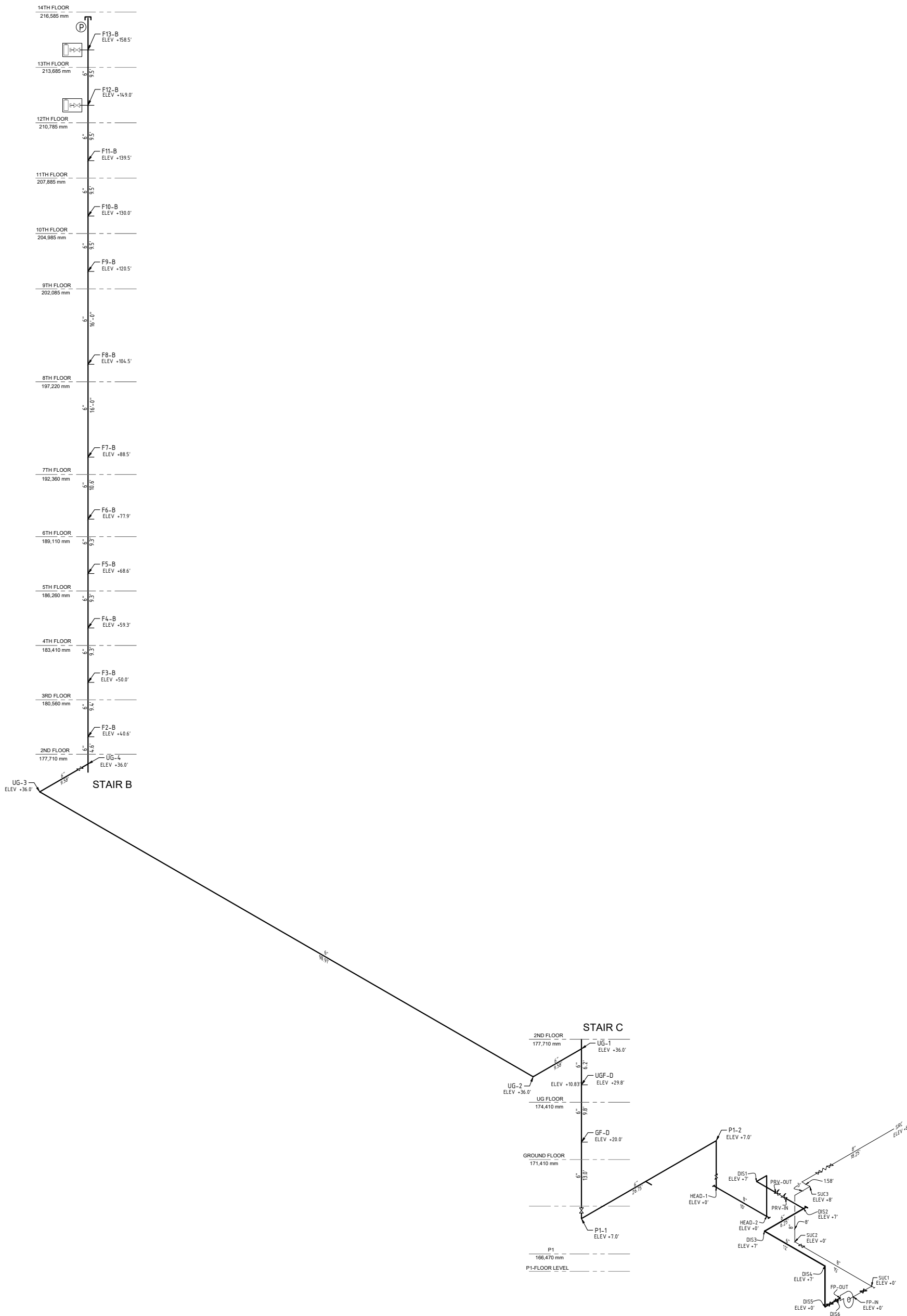


HYDRAULIC CALCULATIONS
FOR STANDPIPE SYSTEM - LP

DESIGN DATA:

Minimum Pressure : 65 PSI
Standpipe Type : Wet System
Minimum Flow per FHV : 250 GPM
Number of FHV : 02 Nos.
Location of FHV : 13th and 12th Floor, Stair B



LIFELINE FIRE PROTECTION
www.lifelinefireprotection.com
50 Casimir Court, Concord, ON
L4K 4J5
(416)850-9477

PROPOSED MIXED-USED DEVELOPMENT

ADDRESS:
775-783 Vaughan Rd & 670-680
Northcliffe Blvd, York, ON

HYDRAULIC CALCULATIONS
ISOMETRIC DIAGRAM
LOW PRESSURE ZONE

Project No.: 2127
Scale: As indicated
Date: MAY 13, 2024
Drawn by: STUDIO JCI

Drawing No.:

CALC.02

Standpipe System - LOW PRESSURE
Hydraulic Calculations
Project Name: 775 Vaughan

DESIGN DATA:

Available Pressure: 65 PSI

Minimum Flow per FHV : 250 gpm + 250 gpm

System Type: Wet

Loacation of FHV: On Mech. Room(41th Floor) and Penthouse (40th Floor)

DATE: 6/5/20245 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

DEMAND CALCULATIONS

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL @ DEMAND (GPM)	REQ'D PRESS. (PSI)
SRC	60.0	52.0	1082.0	58.1	500.0	20.0

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	500.0 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	0.0 GPM
OTHER HOSE STREAM ALLOWANCES	500.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	0.0 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
F13-B	158.5	HOSE STREAM	65.0	250.0
F12-B	149.0	HOSE STREAM	69.1	250.0
F11-B	139.5	- - - -	73.4	- - -
F10-B	130.0	- - - -	77.6	- - -
F9-B	120.5	- - - -	81.8	- - -
F8-B	104.5	- - - -	88.9	- - -
F7-B	88.5	- - - -	95.9	- - -
F6-B	77.9	- - - -	100.6	- - -
F5-B	68.6	- - - -	104.8	- - -
F4-B	59.3	- - - -	108.9	- - -
F3-B	50.0	- - - -	113.0	- - -
F2-B	40.6	- - - -	117.2	- - -
UG-1	36.0	- - - -	121.3	- - -
UG-2	36.0	- - - -	120.9	- - -
UG-3	36.0	- - - -	119.8	- - -
UG-4	36.0	- - - -	119.5	- - -
UGF-D	29.8	- - - -	124.3	- - -
GF-D	20.0	- - - -	128.7	- - -
P1-1	7.0	- - - -	134.6	- - -
P1-2	7.0	- - - -	135.0	- - -
HEAD-1	0.0	- - - -	138.4	- - -
HEAD-2	0.0	- - - -	138.5	- - -
DIS1	7.0	- - - -	135.7	- - -
PRV-IN	7.0	- - - -	137.3	- - -
PRV-OUT	7.0	- - - -	135.9	- - -
DIS2	7.0	- - - -	137.3	- - -
DIS3	7.0	- - - -	137.5	- - -
DIS4	7.0	- - - -	137.8	- - -
DIS5	0.0	- - - -	141.0	- - -
DIS6	0.0	- - - -	141.4	- - -
FP-IN	0.0	- - - -	22.9	- - -
FP-OUT	0.0	- - - -	141.4	- - -
SUC1	0.0	- - - -	22.9	- - -
SUC2	0.0	- - - -	23.0	- - -
SUC3	8.0	- - - -	19.7	- - -
SRC	8.0	SOURCE	20.0	500.0

DATE: 6/5/20245 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

PIPE DATA

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.	
	NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C) FL/FT	(FT)	SUM. (PSI)	
Pipe: 1										
F13-B		158.5	H.S.	65.0	250.0	-250.0 2.8	6.065 PL 120 FTG	9.50 ----	PF PE	0.0 4.1
F12-B		149.0	H.S.	69.1	250.0		0.003 TL	9.50	PV	
Pipe: 2										
F12-B		149.0	H.S.	69.1	250.0	-500.0 5.6	6.065 PL 120 FTG	9.50 ----	PF PE	0.1 4.1
F11-B		139.5	0.0	73.4	0.0		0.010 TL	9.50	PV	
Pipe: 3										
F11-B		139.5	0.0	73.4	0.0	-500.0 5.6	6.065 PL 120 FTG	9.50 ----	PF PE	0.1 4.1
F10-B		130.0	0.0	77.6	0.0		0.010 TL	9.50	PV	
Pipe: 5										
F10-B		130.0	0.0	77.6	0.0	-500.0 5.6	6.065 PL 120 FTG	9.50 ----	PF PE	0.1 4.1
F9-B		120.5	0.0	81.8	0.0		0.010 TL	9.50	PV	
Pipe: 6										
F9-B		120.5	0.0	81.8	0.0	-500.0 5.6	6.065 PL 120 FTG	16.00 ----	PF PE	0.2 6.9
F8-B		104.5	0.0	88.9	0.0		0.010 TL	16.00	PV	
Pipe: 7										
F8-B		104.5	0.0	88.9	0.0	-500.0 5.6	6.065 PL 120 FTG	16.00 ----	PF PE	0.2 6.9
F7-B		88.5	0.0	95.9	0.0		0.010 TL	16.00	PV	
Pipe: 8										
F7-B		88.5	0.0	95.9	0.0	-500.0 5.6	6.065 PL 120 FTG	10.60 ----	PF PE	0.1 4.6
F6-B		77.9	0.0	100.6	0.0		0.010 TL	10.60	PV	
Pipe: 9										
F6-B		77.9	0.0	100.6	0.0	-500.0 5.6	6.065 PL 120 FTG	9.30 ----	PF PE	0.1 4.0
F5-B		68.6	0.0	104.8	0.0		0.010 TL	9.30	PV	
Pipe: 10										
F5-B		68.6	0.0	104.8	0.0	-500.0 5.6	6.065 PL 120 FTG	9.30 ----	PF PE	0.1 4.0
F4-B		59.3	0.0	108.9	0.0		0.010 TL	9.30	PV	
Pipe: 11										
F4-B		59.3	0.0	108.9	0.0	-500.0 5.6	6.065 PL 120 FTG	9.30 ----	PF PE	0.1 4.0
F3-B		50.0	0.0	113.0	0.0		0.010 TL	9.30	PV	
Pipe: 12										
F3-B		50.0	0.0	113.0	0.0	-500.0 5.6	6.065 PL 120 FTG	9.40 ----	PF PE	0.1 4.1
F2-B		40.6	0.0	117.2	0.0		0.010 TL	9.40	PV	
Pipe: 13										
F2-B		40.6	0.0	117.2	0.0	-500.0 5.6	6.065 PL 120 FTG	9.40 T	PF PE	0.4 2.0
UG-4		36.0	0.0	119.5	0.0		0.010 TL	39.40	PV	
Pipe: 30										
UG-4		36.0	0.0	119.5	0.0	-500.0 5.6	6.065 PL 120 FTG	9.58 EG	PF PE	0.3 0.0
UG-3		36.0	0.0	119.8	0.0		0.010 TL	26.58	PV	
Pipe: 31										
UG-3		36.0	0.0	119.8	0.0	-500.0 5.6	6.065 PL 120 FTG	98.91 E	PF PE	1.1 0.0
UG-2		36.0	0.0	120.9	0.0		0.010 TL	112.91	PV	

DATE: 6/5/20245 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.	
NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	FL/FT	(FT)	SUM.	
									(PSI)	
Pipe: 32					-500.0	6.065	PL	9.58	PF	0.4
UG-2	36.0	0.0	120.9	0.0	5.6	120	FTG	T	PE	0.0
UG-1	36.0	0.0	121.3	0.0		0.010	TL	39.58	PV	
Pipe: 33					-500.0	6.065	PL	6.20	PF	0.4
UG-1	36.0	0.0	121.3	0.0	5.6	120	FTG	T	PE	2.7
UGF-D	29.8	0.0	124.3	0.0		0.010	TL	36.20	PV	
Pipe: 34					-500.0	6.065	PL	9.80	PF	0.1
UGF-D	29.8	0.0	124.3	0.0	5.6	120	FTG	----	PE	4.2
GF-D	20.0	0.0	128.7	0.0		0.010	TL	9.80	PV	
Pipe: 62					-500.0	6.065	PL	13.00	PF	0.3
GF-D	20.0	0.0	128.7	0.0	5.6	120	FTG	EG	PE	5.6
P1-1	7.0	0.0	134.6	0.0		0.010	TL	30.00	PV	
Pipe: 63					-500.0	6.065	PL	26.75	PF	0.4
P1-1	7.0	0.0	134.6	0.0	5.6	120	FTG	E	PE	0.0
P1-2	7.0	0.0	135.0	0.0		0.010	TL	40.75	PV	
Pipe: 63A					-500.0	6.065	PL	7.00	PF	0.4
P1-2	7.0	0.0	135.0	0.0	5.6	120	FTG	TG	PE	3.0
HEAD-1	0.0	0.0	138.4	0.0		0.010	TL	40.00	PV	
Pipe: 63B					-500.0	7.981	PL	10.00	PF	0.1
HEAD-1	0.0	0.0	138.4	0.0	3.2	120	FTG	T	PE	0.0
HEAD-2	0.0	0.0	138.5	0.0		0.003	TL	45.00	PV	
Pipe: 63C					-500.0	6.065	PL	9.00	PF	0.2
HEAD-2	0.0	0.0	138.5	0.0	5.6	120	FTG	E	PE	-3.0
DIS1	7.0	0.0	135.7	0.0		0.010	TL	23.00	PV	
Pipe: 64					500.0	6.065	PL	4.00	PF	0.2
PRV-OUT	7.0	0.0	135.9	0.0	5.6	120	FTG	E	PE	0.0
DIS1	7.0	0.0	135.7	0.0		0.010	TL	18.00	PV	
Pipe: 64A					Pressure Reducing Valve					
PRV-IN	7.0	0.0	137.3	0.0	160.0 psi,	500.0 gpm				
PRV-OUT	7.0	0.0	135.9	0.0	-1.4 psi					
Pipe: 64B					500.0	6.065	PL	5.00	PF	0.0
DIS2	7.0	0.0	137.3	0.0	5.6	120	FTG	----	PE	0.0
PRV-IN	7.0	0.0	137.3	0.0		0.010	TL	5.00	PV	
Pipe: 65					-500.0	6.065	PL	6.25	PF	0.2
DIS2	7.0	0.0	137.3	0.0	5.6	120	FTG	E	PE	0.0
DIS3	7.0	0.0	137.5	0.0		0.010	TL	20.25	PV	
Pipe: 66					-500.0	6.065	PL	12.00	PF	0.3
DIS3	7.0	0.0	137.5	0.0	5.6	120	FTG	E	PE	0.0
DIS4	7.0	0.0	137.8	0.0		0.010	TL	26.00	PV	
Pipe: 67					-500.0	6.065	PL	7.00	PF	0.2
DIS4	7.0	0.0	137.8	0.0	5.6	120	FTG	E	PE	3.0
DIS5	0.0	0.0	141.0	0.0		0.010	TL	21.00	PV	
Pipe: 68					500.0	6.065	PL	3.00	PF	0.4
DIS6	0.0	0.0	141.4	0.0	5.6	120	FTG	CG	PE	0.0
DIS5	0.0	0.0	141.0	0.0		0.010	TL	38.00	PV	

DATE: 6/5/20245 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF
 JOB TITLE: 775 Vaughan

PIPE TAG	Q (GPM)	DIA (IN)	LENGTH	PRESS.
END ELEV. NOZ. PT DISC. VEL (FPS) HW (C) (FT) SUM.				
NODES (FT) (K) (PSI) (GPM) FL/FT (PSI)				
Pipe: 69	500.0	6.065 PL	1.00	PF 0.0
FP-OUT 0.0 0.0 141.4 0.0 5.6 120 FTG ----				PE 0.0
DIS6 0.0 0.0 141.4 0.0 0.010 TL 1.00				PV
Pipe: 70	FIRE PUMP	Rating: 750.0 gpm @ 225.0 psi		
FP-IN 0.0 0.0 22.9 0.0 Avail.: 500.0 gpm @ 225.0 psi				
FP-OUT 0.0 0.0 141.4 0.0 Req'd.: 500.0 gpm @ 118.5 psi				
Pipe: 71	500.0	7.981 PL	4.00	PF 0.0
SUC1 0.0 0.0 22.9 0.0 3.2 120 FTG G				PE 0.0
FP-IN 0.0 0.0 22.9 0.0 0.003 TL 8.00				PV
Pipe: 72	-500.0	7.981 PL	15.00	PF 0.1
SUC1 0.0 0.0 22.9 0.0 3.2 120 FTG EG				PE 0.0
SUC2 0.0 0.0 23.0 0.0 0.003 TL 37.00				PV
Pipe: 73	-500.0	7.981 PL	11.00	PF 0.1
SUC2 0.0 0.0 23.0 0.0 3.2 120 FTG 2E				PE -3.5
SUC3 8.0 0.0 19.7 0.0 0.003 TL 47.00				PV
Pipe: 74	500.0	7.981 PL	19.83	PF 0.3
SRC 8.0 SRCE 20.0 (N/A) 3.2 120 FTG E2C2G				PE 0.0
SUC3 8.0 0.0 19.7 0.0 0.003 TL 135.83				PV

NOTES (HASS):

- Calculations were performed by the HASS 2023 D computer program in accordance with (2020) under license no. 65699794 granted by HRS Systems, Inc.
 208 Southside Square
 Petersburg, TN 37144
 (931) 659-9760
- The system has been calculated to provide an average imbalance at each node of 0.001 gpm and a maximum imbalance at any node of 0.015 gpm.
- Total pressure at each node is used in balancing the system. Maximum water velocity is 5.6 ft/sec at pipe 64B.
- The Minimum pump suction pressure under maximum calculated demand is 22.88 (psi)
- Items listed in bold print on the cover sheet
 are automatically transferred from the calculation report.
- Available pressure at source node SRC under full flow conditions is 58.08 psi with a flow of 500.00 gpm.
- PIPE FITTINGS TABLE

HASS Pipe Table Name: standard

DATE: 6/5/2024 5 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

PAGE: A MATERIAL: S40 HWC: 120

Diameter (in)	Equivalent Fitting Lengths in Feet								
	E Ell	T Tee	L LngEll	C ChkVlv	B BfyVlv	G GatVlv	A AlmChk	D DPVlv	N NTee

	F F45Ell								
6.065	14.00	30.00	9.00	32.00	10.00	3.00	28.00	28.00	30.00
	7.00								
7.981	18.00	35.00	13.00	45.00	12.00	4.00	31.00	31.00	35.00
	9.00								

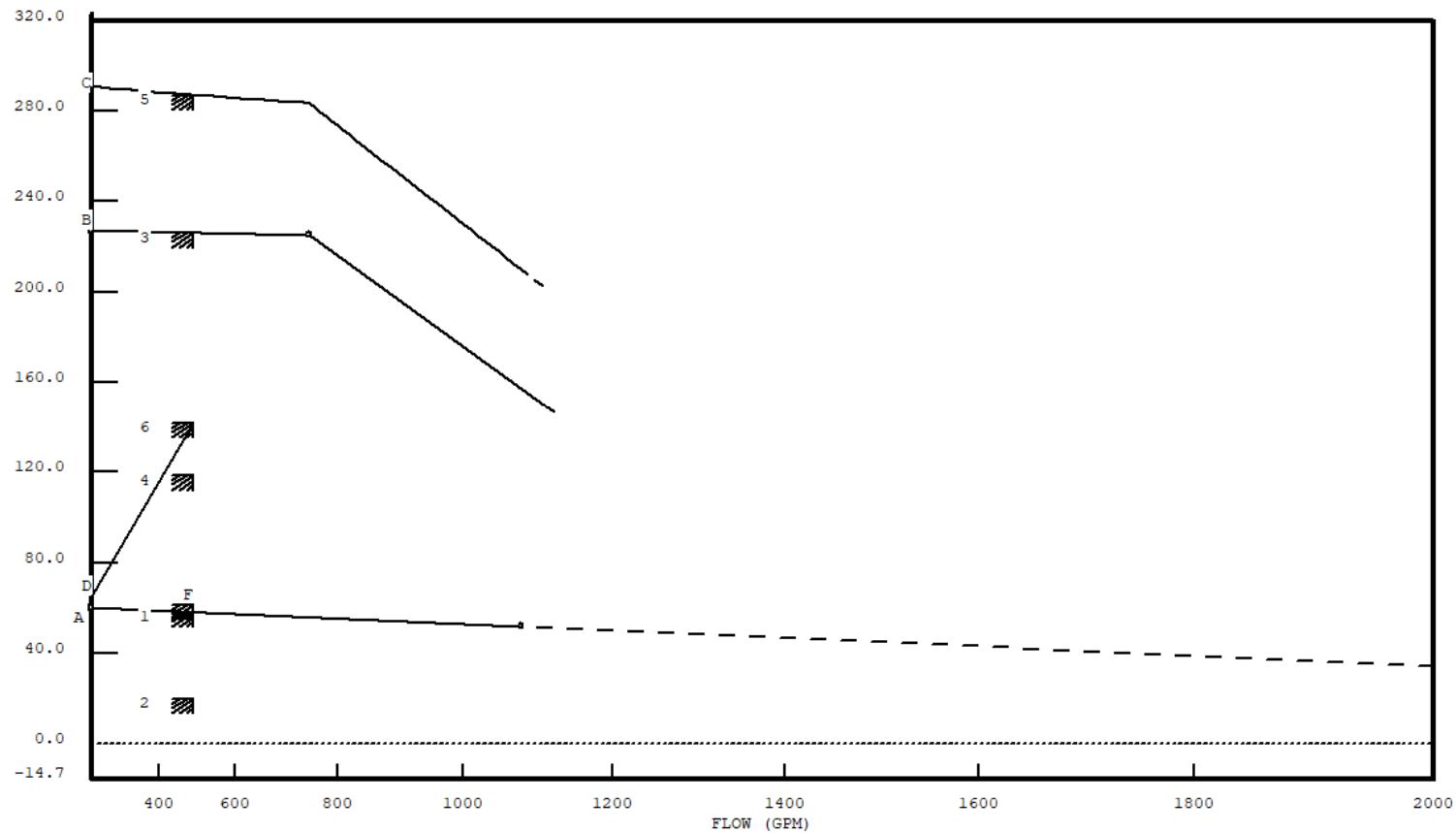
WATER SUPPLY ANALYSIS

Static: 60.00 psi Resid: 52.00 psi Flow: 1082.0 gpm

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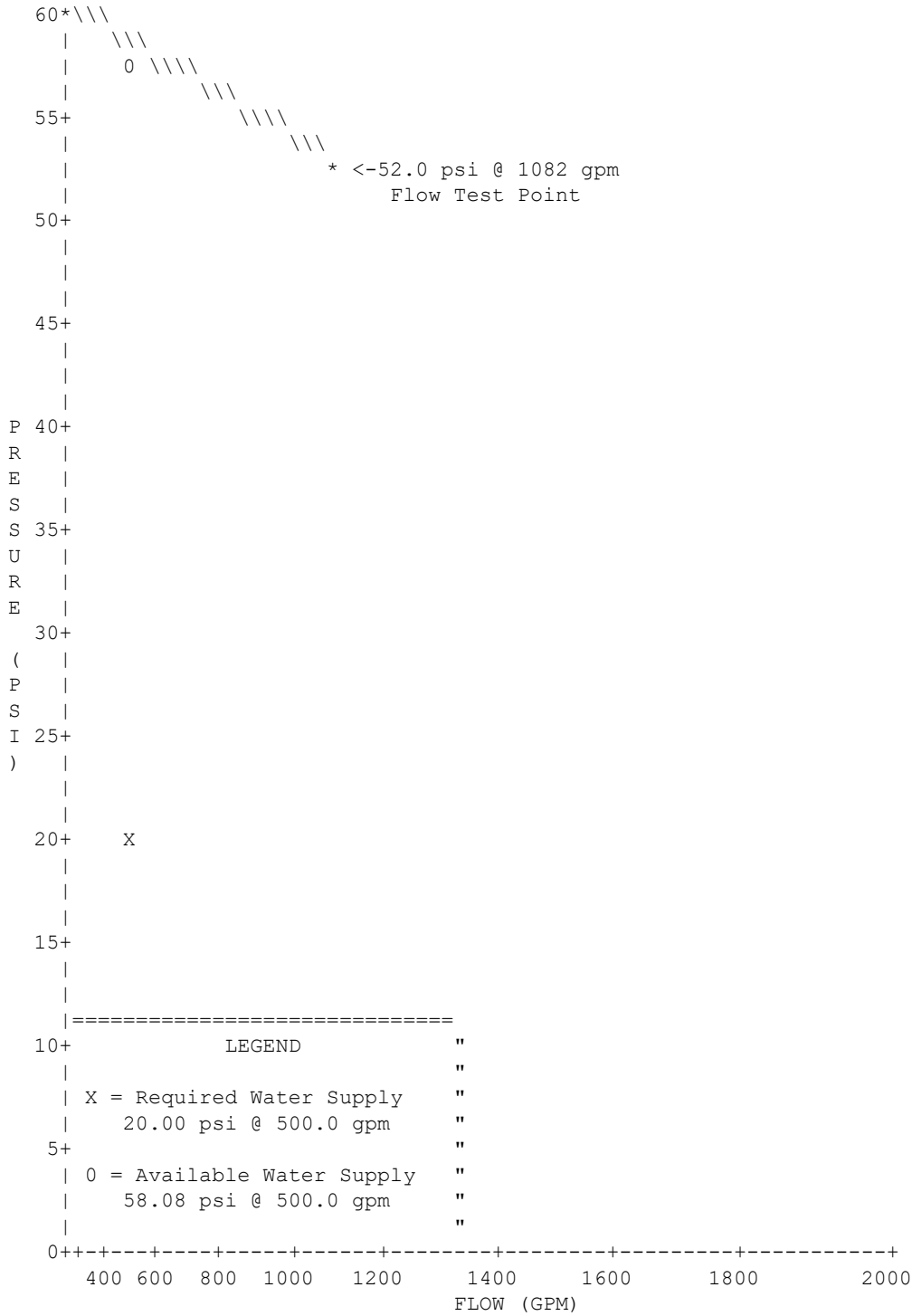


- 1 Pressure available at source
58.08 psi @ 500.0 gpm
 - 2 Pressure required at source
20.00 psi @ 500.0 gpm
 - 3 Pressure available from pump
225.75 psi @ 500.0 gpm
 - 4 Pressure required from pump
118.49 psi @ 500.0 gpm
 - 5 Total Pressure available at pump dschg.
286.71 psi @ 500.0 gpm
 - 6 Total Pressure required at pump dschg.
141.37 psi @ 500.0 gpm
- A. Source Supply Curve
B. Net Pump Supply Curve
C. Pump Discharge Curve
D. System Demand Curve
F. Available at Pump Suction

DATE: 6/5/2024 5 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

WATER SUPPLY CURVE



Standpipe System - LOW PRESSURE
Hydraulic Calculations
Project Name: 775 Vaughan

DESIGN DATA:

Available Pressure: 65 PSI

Minimum Flow per FHV : 250 gpm + 250 gpm

System Type: Wet

Loacation of FHV: On Mech. Room(41th Floor) and Penthouse (40th Floor)

DATE: 6/5/2024 5 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

SUPPLY CALCULATIONS

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL @ DEMAND (GPM)	REQ'D PRESS. (PSI)
SRC	60.0	52.0	1082.0	58.1	500.0	

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	500.0 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	0.0 GPM
OTHER HOSE STREAM ALLOWANCES	500.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	0.0 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
F13-B	158.5	HOSE STREAM	89.1	250.0
F12-B	149.0	HOSE STREAM	93.2	250.0
F11-B	139.5	- - - -	97.5	- - -
F10-B	130.0	- - - -	101.7	- - -
F9-B	120.5	- - - -	105.9	- - -
F8-B	104.5	- - - -	113.0	- - -
F7-B	88.5	- - - -	120.0	- - -
F6-B	77.9	- - - -	124.7	- - -
F5-B	68.6	- - - -	128.9	- - -
F4-B	59.3	- - - -	133.0	- - -
F3-B	50.0	- - - -	137.1	- - -
F2-B	40.6	- - - -	141.3	- - -
UG-1	36.0	- - - -	145.4	- - -
UG-2	36.0	- - - -	145.0	- - -
UG-3	36.0	- - - -	143.9	- - -
UG-4	36.0	- - - -	143.6	- - -
UGF-D	29.8	- - - -	148.4	- - -
GF-D	20.0	- - - -	152.8	- - -
P1-1	7.0	- - - -	158.7	- - -
P1-2	7.0	- - - -	159.1	- - -
HEAD-1	0.0	- - - -	162.5	- - -
HEAD-2	0.0	- - - -	162.6	- - -
DIS1	7.0	- - - -	159.8	- - -
PRV-IN	7.0	- - - -	282.6	- - -
PRV-OUT	7.0	- - - -	160.0	- - -
DIS2	7.0	- - - -	282.6	- - -
DIS3	7.0	- - - -	282.8	- - -
DIS4	7.0	- - - -	283.1	- - -
DIS5	0.0	- - - -	286.3	- - -
DIS6	0.0	- - - -	286.7	- - -
FP-IN	0.0	- - - -	61.0	- - -
FP-OUT	0.0	- - - -	286.7	- - -
SUC1	0.0	- - - -	61.0	- - -
SUC2	0.0	- - - -	61.1	- - -
SUC3	8.0	- - - -	57.7	- - -
SRC	8.0	SOURCE	58.1	500.0

DATE: 6/5/2024 5 VAUGHAN\HYDRAULIC CALC\STANPIPE SYSTEM - LOW PRESSURE.SDF

JOB TITLE: 775 Vaughan

PIPE DATA

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	VEL (FPS)	DIA (IN)	LENGTH	PRESS.	
NODES	(FT)	(K)	(PSI)	(GPM)				HW (C)	(FT)	SUM.	
								FL/FT		(PSI)	
Pipe: 1						-250.0		6.065	PL	9.50	PF
F13-B	158.5	H.S.	89.1	250.0	2.8			120	FTG	----	PE
F12-B	149.0	H.S.	93.2	250.0				0.003	TL	9.50	PV
Pipe: 2						-500.0		6.065	PL	9.50	PF
F12-B	149.0	H.S.	93.2	250.0	5.6			120	FTG	----	PE
F11-B	139.5	0.0	97.5	0.0				0.010	TL	9.50	PV
Pipe: 3						-500.0		6.065	PL	9.50	PF
F11-B	139.5	0.0	97.5	0.0	5.6			120	FTG	----	PE
F10-B	130.0	0.0	101.7	0.0				0.010	TL	9.50	PV
Pipe: 5						-500.0		6.065	PL	9.50	PF
F10-B	130.0	0.0	101.7	0.0	5.6			120	FTG	----	PE
F9-B	120.5	0.0	105.9	0.0				0.010	TL	9.50	PV
Pipe: 6						-500.0		6.065	PL	16.00	PF
F9-B	120.5	0.0	105.9	0.0	5.6			120	FTG	----	PE
F8-B	104.5	0.0	113.0	0.0				0.010	TL	16.00	PV
Pipe: 7						-500.0		6.065	PL	16.00	PF
F8-B	104.5	0.0	113.0	0.0	5.6			120	FTG	----	PE
F7-B	88.5	0.0	120.0	0.0				0.010	TL	16.00	PV
Pipe: 8						-500.0		6.065	PL	10.60	PF
F7-B	88.5	0.0	120.0	0.0	5.6			120	FTG	----	PE
F6-B	77.9	0.0	124.7	0.0				0.010	TL	10.60	PV
Pipe: 9						-500.0		6.065	PL	9.30	PF
F6-B	77.9	0.0	124.7	0.0	5.6			120	FTG	----	PE
F5-B	68.6	0.0	128.9	0.0				0.010	TL	9.30	PV
Pipe: 10						-500.0		6.065	PL	9.30	PF
F5-B	68.6	0.0	128.9	0.0	5.6			120	FTG	----	PE
F4-B	59.3	0.0	133.0	0.0				0.010	TL	9.30	PV
Pipe: 11						-500.0		6.065	PL	9.30	PF
F4-B	59.3	0.0	133.0	0.0	5.6			120	FTG	----	PE
F3-B	50.0	0.0	137.1	0.0				0.010	TL	9.30	PV
Pipe: 12						-500.0		6.065	PL	9.40	PF
F3-B	50.0	0.0	137.1	0.0	5.6			120	FTG	----	PE
F2-B	40.6	0.0	141.3	0.0				0.010	TL	9.40	PV
Pipe: 13						-500.0		6.065	PL	9.40	PF
F2-B	40.6	0.0	141.3	0.0	5.6			120	FTG	T	PE
UG-4	36.0	0.0	143.6	0.0				0.010	TL	39.40	PV
Pipe: 30						-500.0		6.065	PL	9.58	PF
UG-4	36.0	0.0	143.6	0.0	5.6			120	FTG	EG	PE
UG-3	36.0	0.0	143.9	0.0				0.010	TL	26.58	PV
Pipe: 31						-500.0		6.065	PL	98.91	PF
UG-3	36.0	0.0	143.9	0.0	5.6			120	FTG	E	PE
UG-2	36.0	0.0	145.0	0.0				0.010	TL	112.91	PV

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JOB TITLE: 775 Vaughan

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.	
NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	FL/FT	(FT)	SUM.	
									(PSI)	
Pipe: 32					-500.0	6.065	PL	9.58	PF	0.4
UG-2	36.0	0.0	145.0	0.0	5.6	120	FTG	T	PE	0.0
UG-1	36.0	0.0	145.4	0.0		0.010	TL	39.58	PV	
Pipe: 33					-500.0	6.065	PL	6.20	PF	0.4
UG-1	36.0	0.0	145.4	0.0	5.6	120	FTG	T	PE	2.7
UGF-D	29.8	0.0	148.4	0.0		0.010	TL	36.20	PV	
Pipe: 34					-500.0	6.065	PL	9.80	PF	0.1
UGF-D	29.8	0.0	148.4	0.0	5.6	120	FTG	----	PE	4.2
GF-D	20.0	0.0	152.8	0.0		0.010	TL	9.80	PV	
Pipe: 62					-500.0	6.065	PL	13.00	PF	0.3
GF-D	20.0	0.0	152.8	0.0	5.6	120	FTG	EG	PE	5.6
P1-1	7.0	0.0	158.7	0.0		0.010	TL	30.00	PV	
Pipe: 63					-500.0	6.065	PL	26.75	PF	0.4
P1-1	7.0	0.0	158.7	0.0	5.6	120	FTG	E	PE	0.0
P1-2	7.0	0.0	159.1	0.0		0.010	TL	40.75	PV	
Pipe: 63A					-500.0	6.065	PL	7.00	PF	0.4
P1-2	7.0	0.0	159.1	0.0	5.6	120	FTG	TG	PE	3.0
HEAD-1	0.0	0.0	162.5	0.0		0.010	TL	40.00	PV	
Pipe: 63B					-500.0	7.981	PL	10.00	PF	0.1
HEAD-1	0.0	0.0	162.5	0.0	3.2	120	FTG	T	PE	0.0
HEAD-2	0.0	0.0	162.6	0.0		0.003	TL	45.00	PV	
Pipe: 63C					-500.0	6.065	PL	9.00	PF	0.2
HEAD-2	0.0	0.0	162.6	0.0	5.6	120	FTG	E	PE	-3.0
DIS1	7.0	0.0	159.8	0.0		0.010	TL	23.00	PV	
Pipe: 64					500.0	6.065	PL	4.00	PF	0.2
PRV-OUT	7.0	0.0	160.0	0.0	5.6	120	FTG	E	PE	0.0
DIS1	7.0	0.0	159.8	0.0		0.010	TL	18.00	PV	
Pipe: 64A					Pressure Reducing Valve					
PRV-IN	7.0	0.0	282.6	0.0	160.0 psi,	500.0 gpm				
PRV-OUT	7.0	0.0	160.0	0.0	-122.6 psi					
Pipe: 64B					500.0	6.065	PL	5.00	PF	0.0
DIS2	7.0	0.0	282.6	0.0	5.6	120	FTG	----	PE	0.0
PRV-IN	7.0	0.0	282.6	0.0		0.010	TL	5.00	PV	
Pipe: 65					-500.0	6.065	PL	6.25	PF	0.2
DIS2	7.0	0.0	282.6	0.0	5.6	120	FTG	E	PE	0.0
DIS3	7.0	0.0	282.8	0.0		0.010	TL	20.25	PV	
Pipe: 66					-500.0	6.065	PL	12.00	PF	0.3
DIS3	7.0	0.0	282.8	0.0	5.6	120	FTG	E	PE	0.0
DIS4	7.0	0.0	283.1	0.0		0.010	TL	26.00	PV	
Pipe: 67					-500.0	6.065	PL	7.00	PF	0.2
DIS4	7.0	0.0	283.1	0.0	5.6	120	FTG	E	PE	3.0
DIS5	0.0	0.0	286.3	0.0		0.010	TL	21.00	PV	
Pipe: 68					500.0	6.065	PL	3.00	PF	0.4
DIS6	0.0	0.0	286.7	0.0	5.6	120	FTG	CG	PE	0.0
DIS5	0.0	0.0	286.3	0.0		0.010	TL	38.00	PV	

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 JOB TITLE: 775 Vaughan

PIPE TAG	Q (GPM)	DIA (IN)	LENGTH	PRESS.
END ELEV. NOZ. PT DISC. VEL (FPS) HW (C) (FT) SUM.				
NODES (FT) (K) (PSI) (GPM) FL/FT (PSI)				
Pipe: 69	500.0	6.065 PL	1.00	PF 0.0
FP-OUT 0.0 0.0 286.7 0.0 5.6 120 FTG			----	PE 0.0
DIS6 0.0 0.0 286.7 0.0 0.010 TL			1.00	PV
Pipe: 70	FIRE PUMP	Rating: 750.0 gpm @ 225.0 psi		
FP-IN 0.0 0.0 61.0 0.0	Avail.: 500.0 gpm @ 225.0 psi			
FP-OUT 0.0 0.0 286.7 0.0	Req'd.: 500.0 gpm @ 225.0 psi			
Pipe: 71	500.0	7.981 PL	4.00	PF 0.0
SUC1 0.0 0.0 61.0 0.0 3.2 120 FTG			G	PE 0.0
FP-IN 0.0 0.0 61.0 0.0	0.003 TL		8.00	PV
Pipe: 72	-500.0	7.981 PL	15.00	PF 0.1
SUC1 0.0 0.0 61.0 0.0 3.2 120 FTG			EG	PE 0.0
SUC2 0.0 0.0 61.1 0.0	0.003 TL		37.00	PV
Pipe: 73	-500.0	7.981 PL	11.00	PF 0.1
SUC2 0.0 0.0 61.1 0.0 3.2 120 FTG			2E	PE -3.5
SUC3 8.0 0.0 57.7 0.0	0.003 TL		47.00	PV
Pipe: 74	500.0	7.981 PL	19.83	PF 0.3
SRC 8.0 SRCE 58.1 (N/A) 3.2 120 FTG			E2C2G	PE 0.0
SUC3 8.0 0.0 57.7 0.0	0.003 TL		135.83	PV

NOTES (HASS):

- Calculations were performed by the HASS 2023 D computer program in accordance with (2020) under license no. 65699794 granted by HRS Systems, Inc.
 208 Southside Square
 Petersburg, TN 37144
 (931) 659-9760
- The system has been calculated to provide an average imbalance at each node of 0.001 gpm and a maximum imbalance at any node of 0.007 gpm.
- Total pressure at each node is used in balancing the system. Maximum water velocity is 5.6 ft/sec at pipe 69.
- The Minimum pump suction pressure under maximum calculated demand is 60.96 (psi)
- Items listed in bold print on the cover sheet are automatically transferred from the calculation report.
- Available pressure at source node SRC under full flow conditions is 58.08 psi with a flow of 500.00 gpm.
- PIPE FITTINGS TABLE

HASS Pipe Table Name: standard

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PAGE: A MATERIAL: S40 HWC: 120

Diameter (in)	Equivalent Fitting Lengths in Feet								
	E Ell	T Tee	L LngEll	C ChkVlv	B BfyVlv	G GatVlv	A AlmChk	D DPVlv	N NTee

	F								
	F45Ell								
6.065	14.00	30.00	9.00	32.00	10.00	3.00	28.00	28.00	30.00
	7.00								
7.981	18.00	35.00	13.00	45.00	12.00	4.00	31.00	31.00	35.00
	9.00								

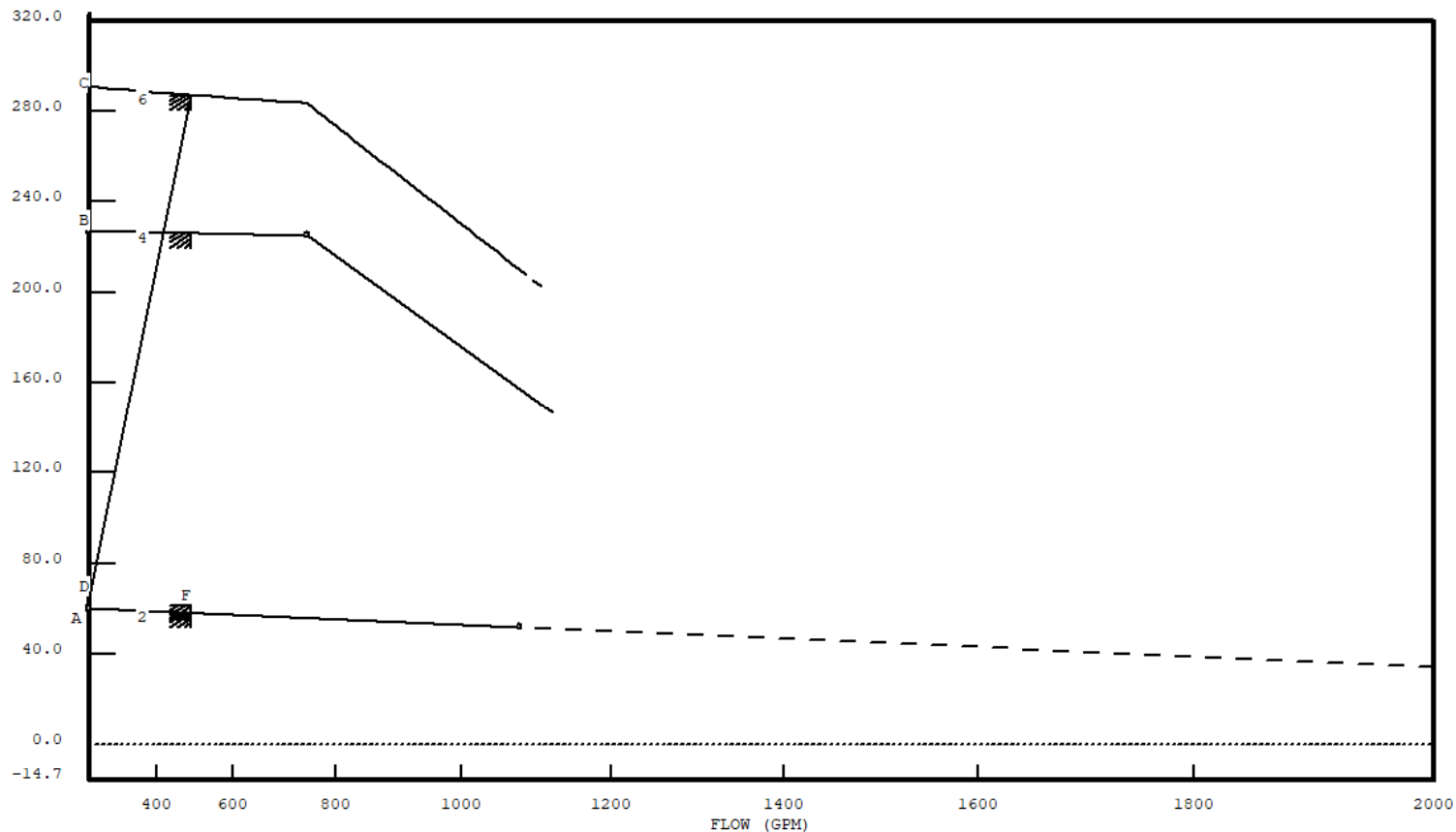
WATER SUPPLY ANALYSIS

Static: 60.00 psi Resid: 52.00 psi Flow: 1082.0 gpm

G
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- 1 Pressure available at source
58.08 psi @ 500.0 gpm
 - 2 Pressure required at source
58.08 psi @ 500.0 gpm
 - 3 Pressure available from pump
225.75 psi @ 500.0 gpm
 - 4 Pressure required from pump
225.75 psi @ 500.0 gpm
 - 5 Total Pressure available at pump dschg.
286.71 psi @ 500.0 gpm
 - 6 Total Pressure required at pump dschg.
286.71 psi @ 500.0 gpm
- A. Source Supply Curve
B. Net Pump Supply Curve
C. Pump Discharge Curve
D. System Demand Curve
F. Available at Pump Suction

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WATER SUPPLY CURVE

