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WATER SUPPLY DATA

AGGREGATE FLOW ANALYSIS:

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
1	19.0	- - - -	24.6	- - -
2	9.0	- - - -	29.9	- - -
3	9.0	- - - -	30.0	- - -
4	9.0	- - - -	30.4	- - -
5	9.0	- - - -	30.4	- - -
6	19.0	K= 3.90	21.3	18.0
6A	19.0	- - - -	22.8	- - -
A	9.0	- - - -	29.9	- - -
B	9.0	- - - -	29.9	- - -
C	9.0	- - - -	30.4	- - -
D	5.0	- - - -	32.4	- - -
E	4.0	- - - -	32.8	- - -
F	4.0	- - - -	35.9	- - -
G	-1.5	- - - -	38.9	- - -
H	-1.5	- - - -	40.0	- - -
I	-1.5	- - - -	50.0	- - -
J	-1.5	SOURCE	50.2	18.0

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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JOB TITLE:
PIPE DATA

ENCE

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	F.L./FT	(FT)	SUM.
									(PSI)
Pipe: 1									
1	19.0	0.0	24.6	0.0	-7.4	1.109	PL	69.25	PF 0.9
2	9.0	0.0	29.9	0.0	2.5	150	FTG	3ET	PE 4.3
						0.010	TL	89.25	PV 0.0
Pipe: 2									
1	19.0	0.0	24.6	0.0	18.0	1.109	PL	29.00	PF 1.8
6A	19.0	0.0	22.8	0.0	6.0	150	FTG	T	PE 0.0
						0.054	TL	34.00	PV 0.2
Pipe: 3									
6	19.0	3.9	21.3	18.0	-18.0	1.109	PL	12.00	PF 1.5
6A	19.0	0.0	22.8	0.0	6.0	150	FTG	2ET	PE 0.0
						0.054	TL	27.00	PV 0.2
Pipe: 4									
1	19.0	0.0	24.6	0.0	-10.6	1.109	PL	31.50	PF 0.9
A	9.0	0.0	29.9	0.0	3.5	150	FTG	2ET	PE 4.3
						0.020	TL	46.50	PV 0.1
Pipe: 5									
A	9.0	0.0	29.9	0.0	-10.6	1.400	PL	4.50	PF 0.1
B	9.0	0.0	29.9	0.0	2.2	150	FTG	T	PE 0.0
						0.007	TL	10.50	PV 0.0
Pipe: 6									
2	9.0	0.0	29.9	0.0	-7.4	1.109	PL	7.50	PF 0.1
B	9.0	0.0	29.9	0.0	2.5	150	FTG	----	PE 0.0
						0.010	TL	7.50	PV 0.0
Pipe: 7									
B	9.0	0.0	29.9	0.0	-18.0	1.400	PL	2.00	PF 0.0
3	9.0	0.0	30.0	0.0	3.8	150	FTG	----	PE 0.0
						0.017	TL	2.00	PV 0.1
Pipe: 8									
3	9.0	0.0	30.0	0.0	-18.0	1.400	PL	14.00	PF 0.4
C	9.0	0.0	30.4	0.0	3.8	150	FTG	E	PE 0.0
						0.017	TL	22.00	PV 0.1
Pipe: 9									
4	9.0	0.0	30.4	0.0	0.0	1.109	PL	9.50	PF 0.0
5	9.0	0.0	30.4	0.0	0.0	150	FTG	E	PE 0.0
						0.000	TL	14.50	PV 0.0
Pipe: 10									
5	9.0	0.0	30.4	0.0	0.0	1.109	PL	3.50	PF 0.0
C	9.0	0.0	30.4	0.0	0.0	150	FTG	T	PE 0.0
						0.000	TL	8.50	PV 0.0
Pipe: 11									
C	9.0	0.0	30.4	0.0	-18.0	1.400	PL	9.00	PF 0.3
D	5.0	0.0	32.4	0.0	3.8	150	FTG	E	PE 1.7
						0.017	TL	17.00	PV 0.1
Pipe: 12									
D	5.0	0.0	32.4	0.0	-18.0	1.291	PL	1.00	PF 0.0
E	4.0	0.0	32.8	0.0	4.4	150	FTG	----	PE 0.4
						0.026	TL	1.00	PV 0.1
Pipe: 13									
E	4.0	0.0	32.8	0.0	FIXED PRESSURE LOSS DEVICE				
F	4.0	0.0	35.9	0.0	3.1 psi, 18.0 gpm				

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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JOB TITLE:

PIPE DATA (cont'd)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	(FT)	SUM.	
						F.L./FT		(PSI)	
Pipe: 14					-18.0	1.291	PL	5.50	PF 0.6
F	4.0	0.0	35.9	0.0	4.4	150	FTG	2E	PE 2.4
G	-1.5	0.0	38.9	0.0		0.026	TL	21.50	PV 0.1
Pipe: 15					-18.0	1.291	PL	30.00	PF 1.1
G	-1.5	0.0	38.9	0.0	4.4	150	FTG	ET	PE 0.0
H	-1.5	0.0	40.0	0.0		0.026	TL	44.00	PV 0.1
Pipe: 16					FIXED PRESSURE LOSS DEVICE				
H	-1.5	0.0	40.0	0.0	10.0 psi, 18.0 gpm				
I	-1.5	0.0	50.0	0.0					
Pipe: 17					-18.0	1.291	PL	5.00	PF 0.3
I	-1.5	0.0	50.0	0.0	4.4	150	FTG	T	PE 0.0
J	-1.5	SRCE	50.2	(N/A)		0.026	TL	11.00	PV 0.1

NOTES:

(1) Calculations were performed by the HASS 5.3.0 computer program

HRS Systems, Inc.
2193 Ranchwood Dr., N.E.
Atlanta, GA 30345

(2) The system has been balanced to provide an average imbalance at each node of 0.007 gpm and a maximum imbalance at any node of 0.096 gpm.

(3) Velocity pressures are printed for information only, and are not used in balancing the system. Maximum water velocity in any pipe is 6.0 ft/sec.

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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JOB TITLE:

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PIPE FITTINGS TABLE

Pipe Table Name: CPVC.PIP

Nominal Equivalent Fitting Lengths in Feet (C=150)

Diameter

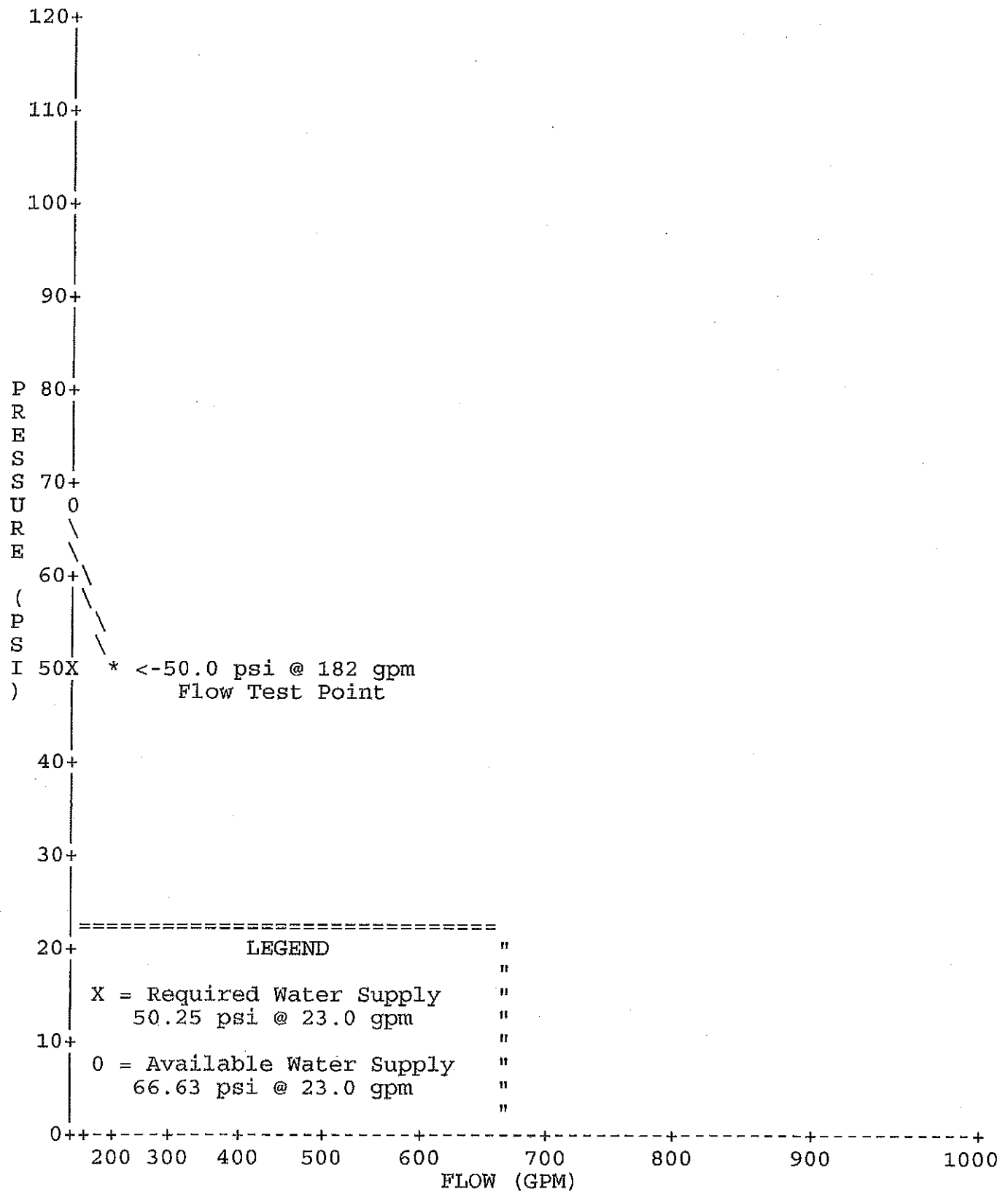
(in)	E	T	L	C	B	G	A	D
0.75	7.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00
1.00	5.00	5.00	1.00	1.00	1.00	5.00	0.00	0.00
1.25	8.00	6.00	2.00	0.00	0.00	0.00	0.00	0.00
1.50	9.00	8.00	2.00	0.00	0.00	0.00	0.00	0.00
2.00	11.00	10.00	2.00	0.00	0.00	0.00	0.00	0.00
2.50	12.00	12.00	2.00	0.00	0.00	0.00	0.00	0.00
3.00	13.00	15.00	2.00	0.00	0.00	0.00	0.00	0.00

Fitting Code Letters: E=standard ell T=tee L=long turn ell
 C=check valve B=butterfly valve G=gate valve
 A=alarm check valve D=dry pipe valve

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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JOB TITLE: .
WATER SUPPLY CURVE



SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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Date: Mar 10, 2002

JOB TITLE:

CE

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. @ (PSI)	TOTAL DEMAND (GPM)	REQ'D PRESS. (PSI)
J	67.0	50.0	182.0	66.8	17.1	33.2

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	17.1 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	5.0 GPM
OTHER HOSE STREAM ALLOWANCES	0.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	12.1 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
1	19.0	K= 3.90	9.5	12.0
2	9.0	- - - -	14.4	- - -
3	9.0	- - - -	14.4	- - -
4	9.0	- - - -	14.6	- - -
5	9.0	- - - -	14.6	- - -
A	9.0	- - - -	14.4	- - -
B	9.0	- - - -	14.4	- - -
C	9.0	- - - -	14.6	- - -
D	5.0	- - - -	16.5	- - -
E	4.0	- - - -	16.9	- - -
F	4.0	- - - -	20.0	- - -
G	-1.5	- - - -	22.7	- - -
H	-1.5	- - - -	23.2	- - -
I	-1.5	- - - -	33.1	- - -
J	-1.5	SOURCE	33.2	12.1

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 2

JOB TITLE:
PIPE DATA

PIPE TAG		ELEV. (FT)	NOZ. (K)	PT (PSI)	DISC. (GPM)	Q(GPM)	DIA(IN)	LENGTH	PRESS.		
END	NODES					VEL(FPS)	HW(C)	(FT)	SUM.		
						F.L./FT		(PSI)			
Pipe: 1						-5.6	1.109	PL	69.25	PF	0.5
1		19.0	3.9	9.5	12.0	1.8	150	FTG	3ET	PE	4.3
2		9.0	0.0	14.4	0.0		0.006	TL	89.25	PV	0.0
Pipe: 2						-6.4	1.109	PL	50.50	PF	0.6
1		19.0	3.9	9.5	12.0	2.1	150	FTG	2E2T	PE	4.3
A		9.0	0.0	14.4	0.0		0.008	TL	70.50	PV	0.0
Pipe: 3						-6.4	1.400	PL	4.50	PF	0.0
A		9.0	0.0	14.4	0.0	1.3	150	FTG	T	PE	0.0
B		9.0	0.0	14.4	0.0		0.003	TL	10.50	PV	0.0
Pipe: 4						-5.6	1.109	PL	7.50	PF	0.0
2		9.0	0.0	14.4	0.0	1.8	150	FTG	----	PE	0.0
B		9.0	0.0	14.4	0.0		0.006	TL	7.50	PV	0.0
Pipe: 5						-12.0	1.400	PL	2.00	PF	0.0
B		9.0	0.0	14.4	0.0	2.5	150	FTG	----	PE	0.0
3		9.0	0.0	14.4	0.0		0.008	TL	2.00	PV	0.0
Pipe: 6						-12.0	1.400	PL	14.00	PF	0.2
3		9.0	0.0	14.4	0.0	2.5	150	FTG	E	PE	0.0
C		9.0	0.0	14.6	0.0		0.008	TL	22.00	PV	0.0
Pipe: 7						0.0	1.109	PL	9.50	PF	0.0
4		9.0	0.0	14.6	0.0	0.0	150	FTG	E	PE	0.0
5		9.0	0.0	14.6	0.0		0.000	TL	14.50	PV	0.0
Pipe: 8						0.0	1.109	PL	3.50	PF	0.0
5		9.0	0.0	14.6	0.0	0.0	150	FTG	T	PE	0.0
C		9.0	0.0	14.6	0.0		0.000	TL	8.50	PV	0.0
Pipe: 9						-12.0	1.400	PL	9.00	PF	0.1
C		9.0	0.0	14.6	0.0	2.5	150	FTG	E	PE	1.7
D		5.0	0.0	16.5	0.0		0.008	TL	17.00	PV	0.0
Pipe: 10						-12.0	1.291	PL	1.00	PF	0.0
D		5.0	0.0	16.5	0.0	2.9	150	FTG	----	PE	0.4
E		4.0	0.0	16.9	0.0		0.012	TL	1.00	PV	0.1
Pipe: 11						FIXED PRESSURE LOSS DEVICE					
E		4.0	0.0	16.9	0.0	3.1 psi, 12.0 gpm					
F		4.0	0.0	20.0	0.0						
Pipe: 12						-12.0	1.291	PL	5.50	PF	0.3
F		4.0	0.0	20.0	0.0	2.9	150	FTG	2E	PE	2.4
G		-1.5	0.0	22.7	0.0		0.012	TL	21.50	PV	0.1
Pipe: 13						-12.0	1.291	PL	30.00	PF	0.5
G		-1.5	0.0	22.7	0.0	2.9	150	FTG	ET	PE	0.0
H		-1.5	0.0	23.2	0.0		0.012	TL	44.00	PV	0.1

JOB TITLE:

PIPE DATA (cont'd)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q (GPM)	DIA (IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL (FPS)	HW (C)	(FT)	SUM.	
						F.L./FT		(PSI)	
Pipe: 14									
H	-1.5	0.0	23.2	0.0		10.0 psi,	12.1 gpm		
I	-1.5	0.0	33.1	0.0					
Pipe: 15									
I	-1.5	0.0	33.1	0.0	-12.1	1.291 PL	5.00	PF 0.1	
J	-1.5	SRCE	33.2	(N/A)	3.0	150 FTG	T	PE 0.0	
						0.012 TL	11.00	PV 0.1	

NOTES:

(1) Calculations were performed by the HASS 5.3.0 computer program

HRS Systems, Inc.
2193 Ranchwood Dr., N.E.
Atlanta, GA 30345

(2) The system has been balanced to provide an average imbalance at each node of 0.016 gpm and a maximum imbalance at any node of 0.162 gpm.

(3) Velocity pressures are printed for information only, and are not used in balancing the system. Maximum water velocity in any pipe is 3.0 ft/sec.

JOB TITLE:
PIPE FITTINGS TABLE

Pipe Table Name: CPVC.PIP

Nominal Equivalent Fitting Lengths in Feet (C=150)
Diameter

(in)	E	T	L	C	B	G	A	D
0.75	7.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00
1.00	5.00	5.00	1.00	1.00	1.00	5.00	0.00	0.00
1.25	8.00	6.00	2.00	0.00	0.00	0.00	0.00	0.00
1.50	9.00	8.00	2.00	0.00	0.00	0.00	0.00	0.00
2.00	11.00	10.00	2.00	0.00	0.00	0.00	0.00	0.00
2.50	12.00	12.00	2.00	0.00	0.00	0.00	0.00	0.00
3.00	13.00	15.00	2.00	0.00	0.00	0.00	0.00	0.00

Fitting Code Letters: E=standard ell T=tee L=long turn ell
C=check valve B=butterfly valve G=gate valve
A=alarm check valve D=dry pipe valve

JOB TITLE:
WATER SUPPLY CURVE

