ENGINEERS : MAIN STREET FIRE PROTECTION. (801) 830-3856.
ADDRESS : 9959 N Meadow Lane, Highland UT 84003.

LICENSE :
DESIGNER : Kent Johnston
DATE : 11-27-2020

FILE : C:\HYDRON59\La Caille Attic.HYD
JOB NAME : La Caille Attic
LOCATION : 9565 S Wasatch Boulevard Sandy, Utah

DESIGN DATA.

HAZARD :	LIGHT HAZARD ATTIC
DENSITY :	0.134 Sq Ft
AREA PER SPRINKLER :	112 Sq Ft
TOTAL CALCULATED AREA :	1456 Sq Ft
TOTAL SPRINKLERS CALCULATED :	13 Heads

FLOW DATA.

TOTAL SPRINKLER FLOW :	261.8 Gpm
TOTAL HOSE STREAM :	100.0 Gpm
TOTAL WATER REQUIRED :	361.8 Gpm
BASE OF RISER NODE :	RB
FLOW :	261.8 Gpm
PRESS :	50.3 Psi

AUTHORITY HAVING JURISDICTION : Draper UFA
PHONE :

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SOURCE | STATIC : 115 Psi RESIDUAL : 102 Psi FLOW : 1245 Gpm

NODE NO.	ELEVATION Feet	K-FACTOR	PRESSURE Psi	DISCHARGE Gpm
1	16.0	5.60	7.0	14.8
2	16.0	5.60	7.9	15.7
3	16.0		10.9	
4	16.0	5.60	7.9	15.7
5	16.0	5.60	7.0	14.8
6	15.0		13.2	
7	16.0	5.60	7.5	15.3
8	16.0	5.60	8.4	16.3
9	16.0		11.7	
10	16.0	5.60	8.4	16.3
11	16.0	5.60	7.5	15.3
12	15.0		14.1	
13	15.0		19.1	
14	16.0		23.3	
15	16.0	5.60	23.5	27.2
16	16.0	5.60	23.9	27.4
17	10.0		32.5	
18	10.0		35.3	
19	10.0		40.7	
20	10.0		44.4	
21	10.0		44.6	
22	10.0		44.6	
23	16.0	5.60	25.2	28.1
24	16.0	5.60	24.3	27.6
25	16.0	5.60	23.8	27.3
RT	10.0		45.4	
RB	0.0		50.3	
CONN	0.0	SOURCE	52.2	361.8

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SPRINKLERS FLOWING	:	13	Heads
AREA PER SPRINKLER	:	112	Sq Ft
MIN SPRINKLER FLOW	:	15	Gpm
REQUIRED DENSITY	:	0.134	Gpm/Sq Ft
COMPUTED DENSITY	:	0.132	Gpm/Sq Ft
TOTAL SPRINKLER FLOW	:	261.8	Gpm
INSIDE HOSE STREAM	:		Gpm
OUTSIDE HOSE STREAM	:	100	Gpm
TOTAL WATER REQUIRED	:	361.8	Gpm
TOTAL SPRINKLER PRESS	:	52.2	Psi
FIXED PRESS LOSS	:	0.0	Psi
SUPPLY PRESS AVAILABLE	:	113.7	Psi
DEMAND PRESS REQUIRED	:	52.2	Psi
PRESSURE CUSHION	:	61.5	Psi
MAXIMUM VELOCITY	:	18.6	F/S

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PIPE NO.	BEG / END	ELEV (Feet) / ELEV	FLOW Gpm	K-FACTOR / FITTING TYPE / DIAMETER	LENGTH / FTG / TOTAL	C-FACTOR / FRI-LOSS (Psi/Ft)	PRESSURE (Psi)
1	1	16.0	q= 14.8	K= 5.60 L= 14.0			Pt 7.0 Pt 7.0
			Q= 14.8	F= F= 0.0		C= 120	Pe 0.0 Pv -0.2
			Vel= 5.1	D= 1.089 TL= 14.0		0.0622	Pf 0.9 Pn 6.8
	2	16.0					Pt 7.9
2	2	16.0	q= 15.7	K= 5.60 L= 7.0			Pt 7.9 Pt 7.9
			Q= 30.5	F= T F= 6.0		C= 120	Pe 0.0 Pv -0.7
			Vel= 10.5	D= 1.089 TL= 13.0		0.2367	Pf 3.1 Pn 7.1
	3	16.0					Pt 10.9
3	4	16.0	q= 14.8	K= 5.60 L= 14.0			Pt 7.9 Pt 7.9
			Q= 14.8	F= F= 0.0		C= 120	Pe 0.0 Pv -0.2
			Vel= 5.1	D= 1.089 TL= 14.0		0.0622	Pf 0.9 Pn 7.7
	5	16.0					Pt 7.0
4	3	16.0	q= 15.7	K= 5.60 L= 7.0			Pt 10.9 Pt 10.9
			Q= 30.5	F= T F= 6.0		C= 120	Pe 0.0 Pv -0.7
			Vel= 10.5	D= 1.089 TL= 13.0		0.2367	Pf 3.1 Pn 10.2
	4	16.0					Pt 7.9
5	3	16.0	q= 0.0	K= 0.00 L= 1.0			Pt 10.9 Pt 10.9
			Q= 61.0	F= T F= 7.0		C= 120	Pe 0.4 Pv -1.0
			Vel= 12.4	D= 1.420 TL= 8.0		0.2343	Pf 1.9 Pn 9.9
	6	15.0					Pt 13.2
6	6	15.0	q= 0.0	K= 0.00 L= 8.0			Pt 13.2 Pt 13.2
			Q= 61.0	F= F= 0.0		C= 120	Pe 0.0 Pv -0.6
			Vel= 9.1	D= 1.650 TL= 8.0		0.1128	Pf 0.9 Pn 12.6
	12	15.0					Pt 14.1
7	7	16.0	q= 15.3	K= 5.60 L= 14.0			Pt 7.5 Pt 7.5
			Q= 15.3	F= F= 0.0		C= 120	Pe 0.0 Pv -0.2
			Vel= 5.3	D= 1.089 TL= 14.0		0.0663	Pf 0.9 Pn 7.3
	8	16.0					Pt 8.4
8	8	16.0	q= 16.3	K= 5.60 L= 7.0			Pt 8.4 Pt 8.4
			Q= 31.6	F= T F= 6.0		C= 120	Pe 0.0 Pv -0.8
			Vel= 10.9	D= 1.089 TL= 13.0		0.2525	Pf 3.3 Pn 7.6
	9	16.0					Pt 11.7
9	10	16.0	q= 15.3	K= 5.60 L= 14.0			Pt 8.4 Pt 8.4
			Q= 15.3	F= F= 0.0		C= 120	Pe 0.0 Pv -0.2
			Vel= 5.3	D= 1.089 TL= 14.0		0.0663	Pf 0.9 Pn 8.2
	11	16.0					Pt 7.5

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PIPE NO.	BEG / END	ELEV (Feet) / ELEV	FLOW Gpm	K-FACTOR / FITTING TYPE / DIAMETER	LENGTH FTG / TOTAL	C-FACTOR / FRI-LOSS (Psi/Ft)	PRESSURE (Psi)
10	9	16.0	q= 16.3	K= 5.60 L=	7.0		Pt 11.7 Pt 11.7
			Q= 31.6	F= T F=	6.0	C= 120	Pe 0.0 Pv -0.8
			Vel= 10.9	D= 1.089 TL=	13.0	0.2525	Pf 3.3 Pn 10.9
	10	16.0					Pt 8.4
11	9	16.0	q= 0.0	K= 0.00 L=	1.0		Pt 11.7 Pt 11.7
			Q= 63.2	F= T F=	7.0	C= 120	Pe 0.4 Pv -1.1
			Vel= 12.8	D= 1.420 TL=	8.0	0.2500	Pf 2.0 Pn 10.6
	12	15.0					Pt 14.1
12	12	15.0	q= 0.0	K= 0.00 L=	12.0		Pt 14.1 Pt 14.1
			Q= 124.2	F= F=	0.0	C= 120	Pe 0.0 Pv -2.3
			Vel= 18.6	D= 1.650 TL=	12.0	0.4201	Pf 5.0 Pn 11.8
	13	15.0					Pt 19.1
13	13	15.0	q= 0.0	K= 0.00 L=	2.0		Pt 19.1 Pt 19.1
			Q= 124.2	F= T F=	9.0	C= 120	Pe -0.4 Pv -2.3
			Vel= 18.6	D= 1.650 TL=	11.0	0.4201	Pf 4.6 Pn 16.8
	14	16.0					Pt 23.3
14	14	16.0	q= 27.2	K= 5.60 L=	7.0		Pt 23.3 Pt 23.3
			Q= 63.1	F= F=	0.0	C= 120	Pe 0.0 Pv -0.2
			Vel= 5.3	D= 2.203 TL=	7.0	0.0294	Pf 0.2 Pn 23.1
	15	16.0					Pt 23.5
15	15	16.0	q= 27.2	K= 5.60 L=	7.0		Pt 23.5 Pt 23.5
			Q= 90.2	F= F=	0.0	C= 120	Pe 0.0 Pv -0.4
			Vel= 7.6	D= 2.203 TL=	7.0	0.0570	Pf 0.4 Pn 23.1
	16	16.0					Pt 23.9
16	16	16.0	q= 27.4	K= 5.60 L=	30.0		Pt 23.9 Pt 23.9
			Q= 117.6	F= 3ET F=	35.0	C= 120	Pe 2.6 Pv -0.7
			Vel= 9.9	D= 2.203 TL=	65.0	0.0930	Pf 6.0 Pn 23.3
	17	10.0					Pt 32.5
17	17	10.0	q= 0.0	K= 0.00 L=	30.0		Pt 32.5 Pt 32.5
			Q= 117.6	F= F=	0.0	C= 120	Pe 0.0 Pv -0.7
			Vel= 9.9	D= 2.203 TL=	30.0	0.0930	Pf 2.8 Pn 31.9
	18	10.0					Pt 35.3
18	18	10.0	q= 0.0	K= 0.00 L=	30.0		Pt 35.3 Pt 35.3
			Q= 117.6	F= 2ET F=	28.0	C= 120	Pe 0.0 Pv -0.7
			Vel= 9.9	D= 2.203 TL=	58.0	0.0930	Pf 5.4 Pn 34.7
	19	10.0					Pt 40.7

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PIPE NO.	BEG / END	ELEV (Feet) / ELEV	FLOW Gpm	K-FACTOR / FITTING TYPE / DIAMETER	LENGTH FTG / TOTAL	C-FACTOR / FRI-LOSS (Psi/Ft)	PRESSURE (Psi)
19	19	10.0	q= 0.0 Q= 117.6 Vel= 6.6	K= 0.00 L= F= ET F= D= 2.703 TL=	78.0 30.0 108.0	C= 120 0.0343	Pt 40.7 Pt 40.7 Pe 0.0 Pv -0.3 Pf 3.7 Pn 40.4
	20	10.0					Pt 44.4
20	20	10.0	q= 0.0 Q= 117.6 Vel= 2.6	K= 0.00 L= F= T F= D= 4.310 TL=	25.0 29.0 54.0	C= 120 0.0035	Pt 44.4 Pt 44.4 Pe 0.0 Pv 0.0 Pf 0.2 Pn 44.4
	21	10.0					Pt 44.6
21	21	10.0	q= 0.0 Q= 144.1 Vel= 3.2	K= 0.00 L= F= F= D= 4.310 TL=	6.5 0.0 6.5	C= 120 0.0052	Pt 44.6 Pt 44.6 Pe 0.0 Pv -0.1 Pf 0.0 Pn 44.5
	22	10.0					Pt 44.6
22	22	10.0	q= 28.1 Q= 144.1 Vel= 12.1	K= 5.60 L= F= 4ET F= D= 2.203 TL=	82.5 42.0 124.5	C= 120 0.1354	Pt 44.6 Pt 44.6 Pe 2.6 Pv -1.0 Pf 16.9 Pn 43.6
	23	16.0					Pt 25.2
23	23	16.0	q= 27.6 Q= 116.0 Vel= 9.8	K= 5.60 L= F= F= D= 2.203 TL=	9.0 0.0 9.0	C= 120 0.0907	Pt 25.2 Pt 25.2 Pe 0.0 Pv -0.6 Pf 0.8 Pn 24.5
	24	16.0					Pt 24.3
24	24	16.0	q= 27.3 Q= 88.4 Vel= 7.4	K= 5.60 L= F= F= D= 2.203 TL=	10.0 0.0 10.0	C= 120 0.0548	Pt 24.3 Pt 24.3 Pe 0.0 Pv -0.4 Pf 0.5 Pn 24.0
	25	16.0					Pt 23.8
25	14	16.0	q= 27.3 Q= 61.1 Vel= 5.1	K= 5.60 L= F= T F= D= 2.203 TL=	3.5 14.0 17.5	C= 120 0.0277	Pt 23.3 Pt 23.3 Pe 0.0 Pv -0.2 Pf 0.5 Pn 23.1
	25	16.0					Pt 23.8
26	21	10.0	q= 0.0 Q= 261.7 Vel= 5.8	K= 0.00 L= F= T F= D= 4.310 TL=	20.0 29.0 49.0	C= 120 0.0155	Pt 44.6 Pt 44.6 Pe 0.0 Pv -0.2 Pf 0.8 Pn 44.4
	RT	10.0					Pt 45.4
27	RT	10.0	q= 0.0 Q= 261.7 Vel= 5.8	K= 0.00 L= F= AC F= D= 4.310 TL=	10.0 32.0 42.0	C= 120 0.0155	Pt 45.4 Pt 45.4 Pe 4.3 Pv -0.2 Pf 0.7 Pn 45.1
	RB	0.0					Pt 50.3

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PIPE NO.	BEG / END	ELEV (Feet) / ELEV	FLOW Gpm	K-FACTOR / FITTING TYPE / DIAMETER	LENGTH FTG / TOTAL	C-FACTOR / FRI-LOSS (Psi/Ft)	PRESSURE (Psi)	
	RB	0.0	q= 0.0	K= 0.00 L=	110.0		Pt 50.3	Pt 50.3
28			Q= 261.7	F= ET F=	40.0	C= 140	Pe 0.0	Pv -0.2
			Vel= 5.8	D= 4.280 TL=	150.0	0.0121	Pf 1.8	Pn 50.1
	CONN	0.0					Pt 52.2	
			Q= 361.8	<<< SOURCE >>>			Pt 52.2	

E=90-Elb T=Tee L=LgtElb C=ChkVlv B=BfyVlv G=GatVlv A=AlmChk F=45-E

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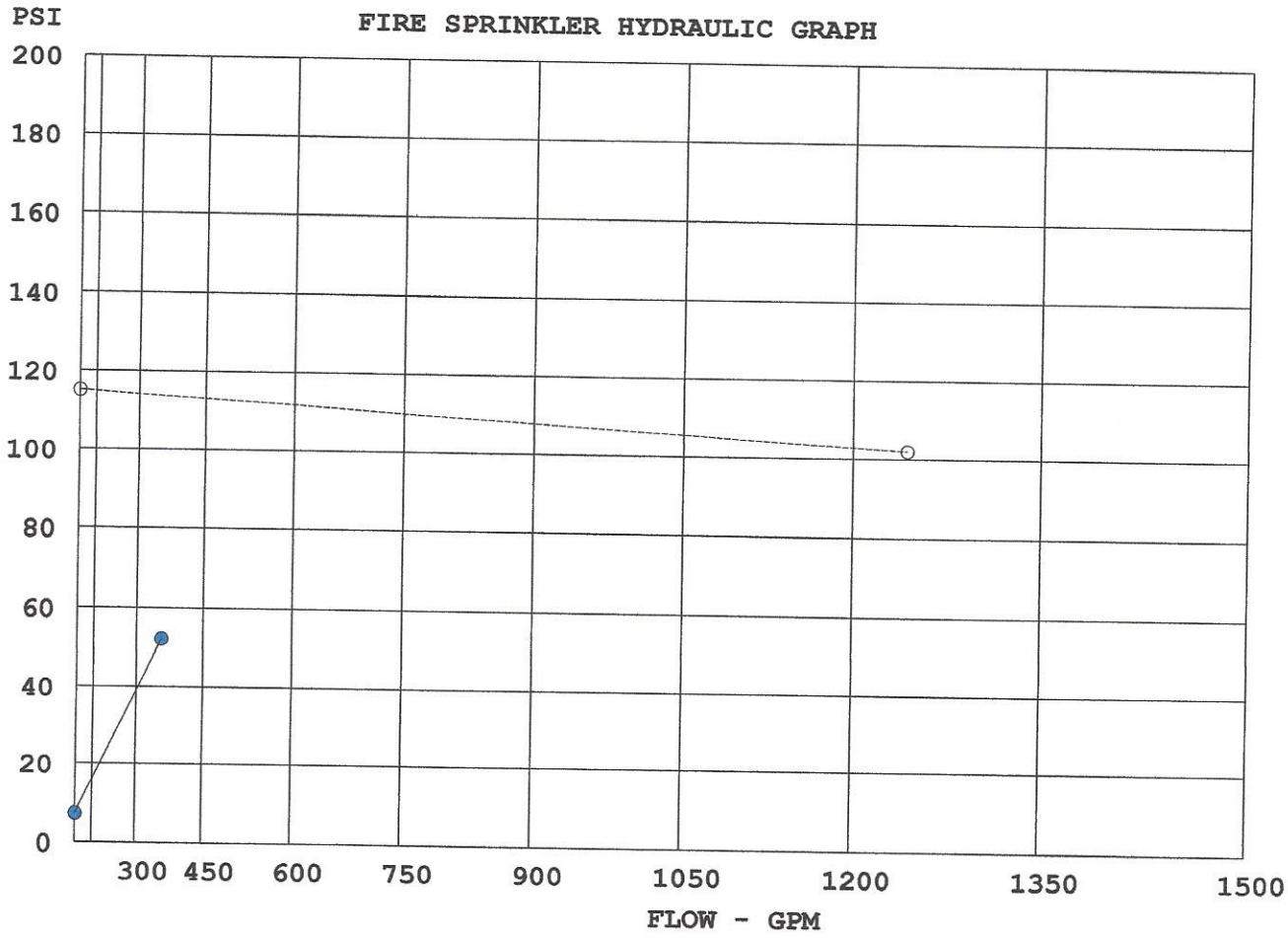
JOB : La Caille Attic



Water Supply

Static : 115 Psi
Resid : 102 Psi
Flow : 1245 Gpm

Water Demand

Avl Press : 113.7 Psi @ 362 Gpm
Req Press : 52.2 Psi @ 362 Gpm
Press Cush: 61.5 Psi

FLOW TEST DATA SHEET

CITY SANDY CITY (UNINCORPORATED) SECTION _____

NAME OF PROPERTY LA CAILLE RESTAURANT

ADDRESS 9565 SO. WASATCH BLVD. SANDY, UTAH

STATE UTAH

DATE 11/25/20

TIME 11:00 A.M.

TEMPERATURE 35° ±

TYPE OF CITY SYSTEM

GRAVITY _____

PUMPS _____

COMBINATION X

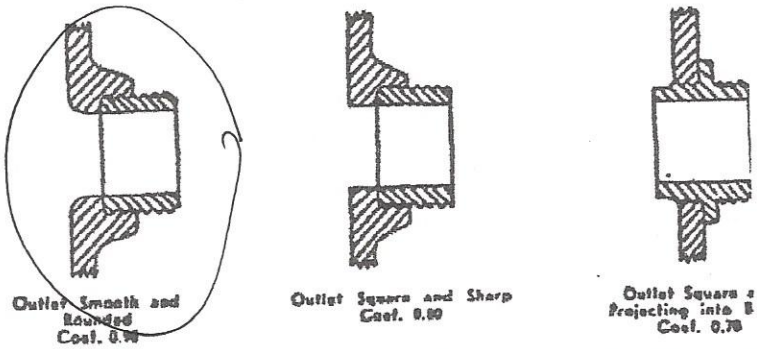


Fig. 12-12. Three general types of hydrant outlets and their coefficients of disc

NOTES:

① FLOWED HYDRANT ON PROPERTY. ② FIRE SPKR MAIN COMES OFF 6/8" MAIN BETWEEN STATIC READING AND FLOW HYD.

TEST CONDUCTED BY: KENT JOHNSTON FIRE SUPPRESSION SERVICES

WITNESSED BY: KENT JOHNSTON GERALD STREBER (SANDY F.D.)

INFO. DIST. TO: SANDY CITY FIRE DEPT. STEWART GRAY (UFA)

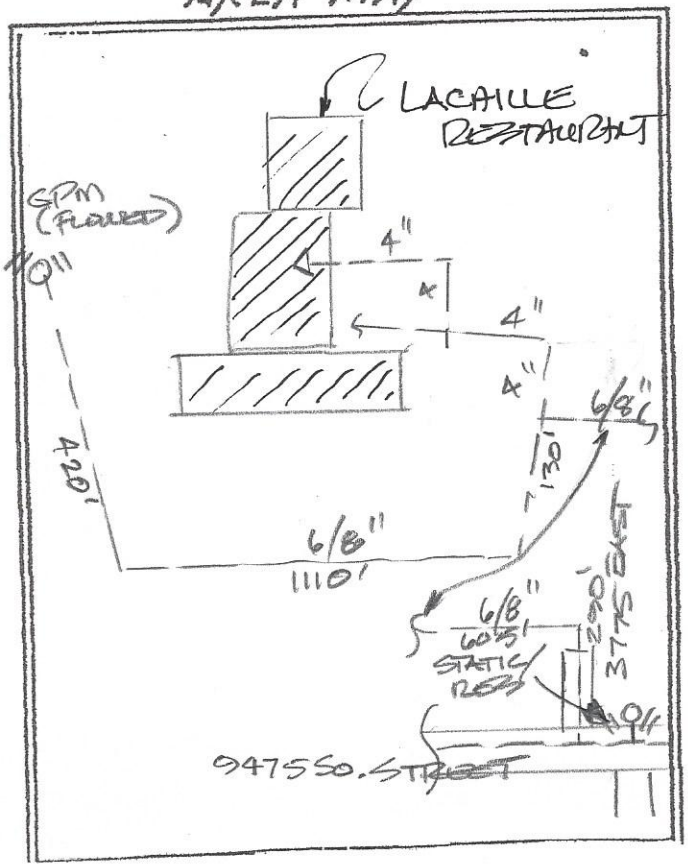
DRAPER CITY -

HAZEN WILLIAMS $29.83 \times .9 \times 6.25 \times \sqrt{55(10)} \rightarrow 1245$ GPM

$(7.42) = 1$

22

AREA MAP



OUTLET #1. SIZE 4"

	GAGE #	DIRECT P.S.I.	ADJUSTED PSI	FLOW	OUTLET COEF.	ADJUSTED FLOW
STATIC		115				
RESID.		102				
PITOT		55				1245
SUB. TOT.						

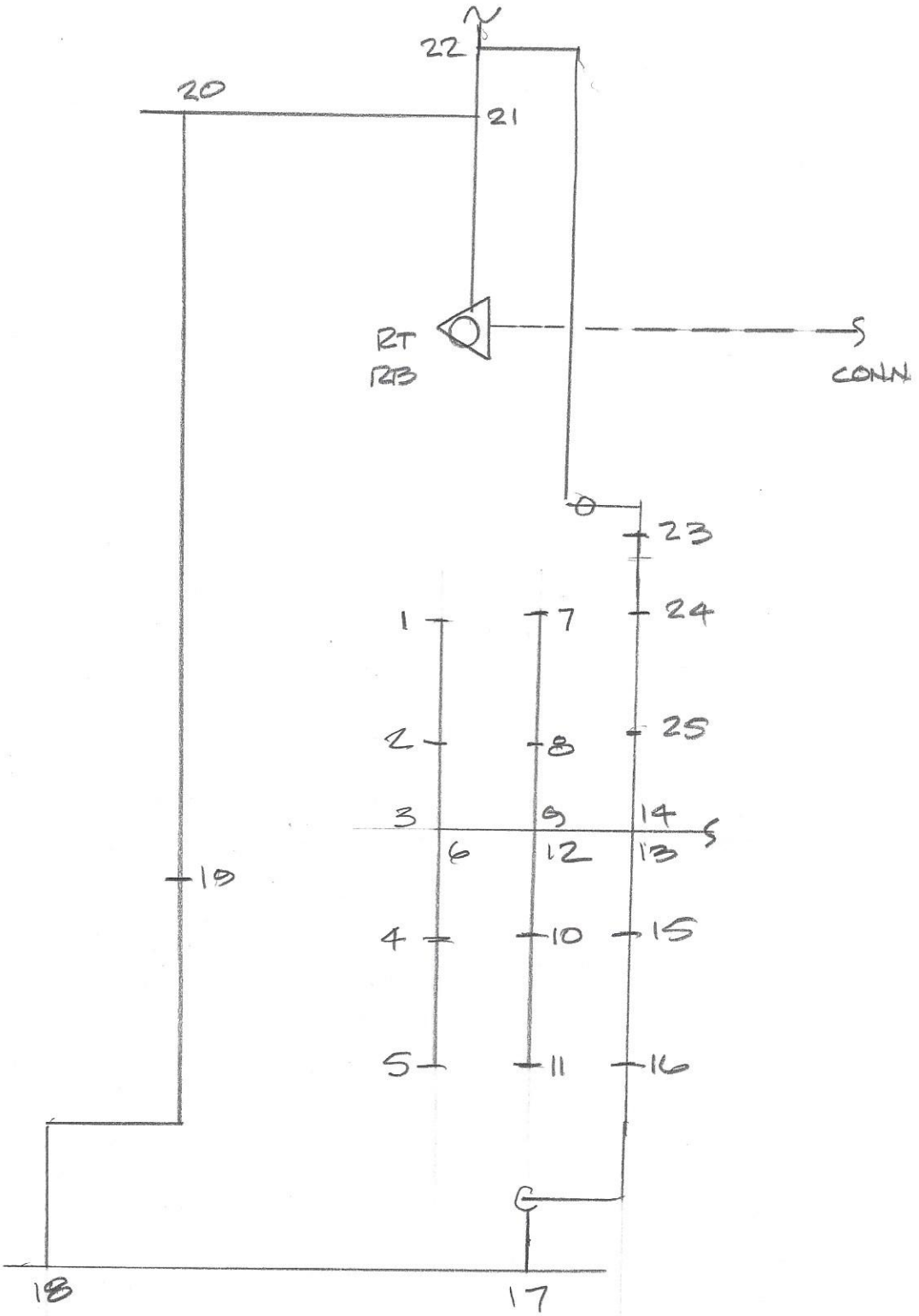
OUTLET #2 SIZE _____

	GAGE #	DIRECT P.S.I.	ADJUSTED P.S.I.	FLOW	OUTLET COEF.	ADJUSTED FLOW
STATIC						
RESID.						
PITOT						
SUB. TOT.						

ADJUSTED TOTAL>

STATIC _____

RESID



SCHEMATIC CALC. LAYOUT

N.T.S