BLOCK 1170 LOT 5 ADDRESS (SITE) _____ PERMIT NO. 1638-92 Update

RECEIVED
AUG 14 1992

CONSTRUCTION PERMIT APPLICATION

Applicant Completes: Sections I, II, III (optional), IV, VI and VII

DIV. OF INSPECTION

I. IDENTIFICATION

1. Proposed Work-site at: Rte 70 & 88
2. Name of Owner in Fee: Price Club Tel. (____) _____
   Address _____ (street) (municipality) (zip code)
3. Ownership in Fee: Public _____ Private _____
4. Principal Contractor: ~~Seacoast Builders~~ A.J. Carnegie, Inc. Tel. (908) 899-3930
   Address ~~Freehold, N.J.~~ No. Brunswick, N.J. 08902
   License No. OR, if new home, Builder Reg. No. _____ Exp. Date _____
   Federal Emp. No. 22-1999436 Social Security No. _____
5. Architect or Engineer _____ Tel. (____) _____
   Address _____
6. Responsible Person In Charge of Work A.J. Carnegie Tel. (908) 899-3930

4/W w/contract 8/14/92 bc

Sprinkler Syst Fire

II. PROPOSED WORK

	Est. Cost
1. ☐ Minor Work (single trade)	
2. ☐ Small Job ($5,000 and no prior approvals)	
3. ☐ New Building	
4. ☐ Addition	
5. ☐ Alteration	
6. ☒ Fire Protection	165,000
7. ☐ Plumbing	
8. ☐ Electrical	
9. ☐ Asbestos Abatement	
10. ☐ Demolition	
TOTAL COSTS	

OPTIONAL (for office use only)

Plans Rec'd By	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Resubmission Dates Rejection	Re-viewer
JC	8/14/92				11/20/92 JC		

III. DO YOU WANT: (optional) 1. ☐ Partial Releases 2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$		
2. Electrical			
3. Plumbing			
4. Fire Protection		911 -	
5. Other Sprinkler			
6. Subtotal	$		
7. Less 20% for State Plan Review			
8. Subtotal Other	$	10 -	
9. DCA Training Fee			
10. Subtotal	$		
11. Cert. of Occupancy			
12. Other Plan		15	
13. TOTAL	$	936	

VI. BUILDING/SITE CHARACTERISTICS

	(office use only)
1. Number of Stories	
2. Height of Structure ____ ft.	
3. Area—Largest Floor ____ sq. ft.	
4. Building Area—All Floors ____ sq. ft.	
5. Volume of Structure ____ cu. ft.	
6. Construction Classification	
7. Total Land Area Disturbed ____ sq. ft.	
8. Flood Hazard Zone	
9. Base Flood Elevation ____ ft.	
10. Wetlands yes ____ sq. ft. / no	
11. Fire Grading	
12. Max. Live Load	
13. Max. Occupancy Load	

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL
1. ☐ Hotels (R-1)
2. ☐ Multi-Family (R-2)
3. ☐ Two-Family (R-3) BOCA
4. ☐ Two-Family (R-4) CABO
5. ☐ One-Family (R-3) BOCA
6. ☐ One-Family (R-4) CABO

No of dwelling units:
Before Construction ____
After Construction ____
Net gain or loss ____

B. NON-RESIDENTIAL
1. State Specific Use:
2. Use Group:
3. Change in Use Group, Indicate Former:

LDS BR 10413077

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

A. ( ) I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

B. ( )I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(e)1.vii:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

C. ( ) I further certify that I will perform or supervise the following work:
C.1. ( ) Building C.2. ( ) Fire Protection
I further certify that I will perform the following work:
C.3. ( ) Electrical C.4. ( ) Plumbing

D. ( )I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION

(to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:32-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

( ) Check if contractor.

Agent Name _____

Address _____

_____

Telephone (____) _____

Signature _____ Date _____

OFFICE DATE RECEIVED: _____

VIII. PRIOR APPROVALS CHECKLIST (office use only)	LOCAL APPROVAL		COUNTY APPROVAL		REGIONAL APPROVAL		STATE APPROVAL		COMMENTS
	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	
☐ Planning Board							X	X	
☐ Zoning Board			X	X	X	X	X	X	
☐ Sewer Authority							X	X	
☐ Water Authority							X	X	
☐ Fire Department					X	X	X	X	
☐ Police Department			X	X	X	X	X	X	
☐ Health Department					X	X			
☐ Soil Conservation							X	X	
☐ N.J. Dept. of Community Affairs	X	X	X	X	X	X			
☐ N.J. Department of Transportation	X	X	X	X	X	X			
☐ N.J. Dept. of Environmental Protect.	X	X	X	X	X	X			
☐ Utility Dig No.			X	X	X	X	X	X	
☐ Other									
☐									
☐									

IX. SUBCODES AND SPECIAL REGULATIONS APPLICABLE (office use only—optional)

Name of Code & Edition		Name of Code & Edition		
Building		Energy		Other
Electrical		Barrier Free		
Plumbing		Flood Hazard		
Fire Protection		As Built Elevation Cert.		
Mechanical		Other		

X. CERTIFICATES ISSUED (office use only)

			DATE EXPIRED
☐ Temporary Certificate of Occupancy	No. _____	_____	_____
☐ Temporary Certificate of Occupancy	No. _____	_____	_____
☐ Continued Certificate of Occupancy	No. _____	_____	
☐ Certificate of Occupancy	No. _____	_____	
☐ Certificate of Approval	No. _____	_____	

PERMIT UPDATE

Date Update Issued 8/25/92
Control #
Permit #
Date Permit Issued 1638-92

IDENTIFICATION Block 1170 Lot 5, 6, 6.01 & 6.02
Work Site Location Rt 70 & 88
Owner in Fee The Bruce Co.
Address
Tele. ( )

Contractor
Address Seacoast Fire Sprinkler Corp.
Tele. ( )
Lic. No. or Bldrs. Reg. No.
Federal Emp. No. 162R##
or Social Security No. BLOCK 0.00

is hereby granted permission to perform the following work:

[ ] BUILDING [ ] PLUMBING [ ] Other
[ ] ELECTRICAL [X] FIRE PROTECTION

DESCRIPTION OF WORK:

Sprinkler Syst

Estimated Cost of Work $

CONSTRUCTION OFFICIAL

PAYMENTS (Office Use Only)		
	1170 #	
Building	LOT	0.00
Plumbing	LOT	0.00
	J #	
Electrical	FIRE	71.00
Fire Protection 911	BUILDING	0.00
Other Sprinkler 10	TREES	15.00
Other	TOTAL	76.00
DCA Training Fee	CHECK	76.00
Cert. of Occ.	CHANGE	0.00
Other Fees 15		
Total 08/26/92		92.00
Check No. 736		
Cash		
Collected By:		

U.C.C. Form F-190A

1 WHITE—INSPECTOR COPY 2 CANARY—OFFICE COPY 3 PINK—OFFICE COPY 4 GOLD—APPLICANT COPY

GS AURORA PUMP
A UNIT OF GENERAL SIGNAL

Submittal Data For FIRE PUMPS

NO. OF PRINTS	
10	For Approval
	Final
	Reproducible

SALES OFFICE: New Jersey **PO#:** _____

Factory Order #: _____ **Service:** _____

Job: Price Club

Engineer: _____

Contractor: A.J. Carnegie

Sold To: _____ **PO#:** _____

Reference: Main Fire Pump

PUMP

Number of Units 1 — Pump only ☐

Model 5-481-11C — Rotation: RH ☐ LH ☐

Size 5X6X11C

GPM 1000 — Connections:

TDH 209' (125psi) ☐ Threaded

RPM _____ ☒ Flanged

☒ 125#

☐ 250#

Construction:

☐ Standard Fitted

☒ Bronze Fitted

☐ _____

Lubrication:

Case _____ ☒ Grease

Imp. _____ ☐ Oil

Shaft _____

Sleeve _____ Stuffing Box:

Case Ring _____ ☒ Packing

Imp. Ring _____ ☐ Lantern Ring

MOTOR

HP: 100

Phase: 3

Hertz: 60

Volts: 460

RPM: 3560

Frame: 365TS

Enclosure:

☒ ODP

☐ TEFC

☐ X Proof

☐ Vertical

☒ Horizontal

☐ Part Winding

☐ Hi Efficiency

☒ Aurora To Furnish

☐ Others To Furnish

☒ Factory Choice

Mfg: _____

OPTIONS

Base:

☐ Steel Drip Rim

☒ Steel Form

☐ Fabricated Steel

☐ Cast Iron Ring Type

Coupling:

Mfg: Lovejoy

Size: _____

☐ Spacer

☒ Guard

Test:

☒ Certified Performance

☐ Wit. Certified Performance

☐ Hydro

☐ _____

NOTE: Motor not mounted at factory on vertical units.

SPECIAL REQUIREMENTS

_____

_____

_____

_____

CERTIFIED PRINT: Section: 912 Page: 407 Curve Number: PC-123056

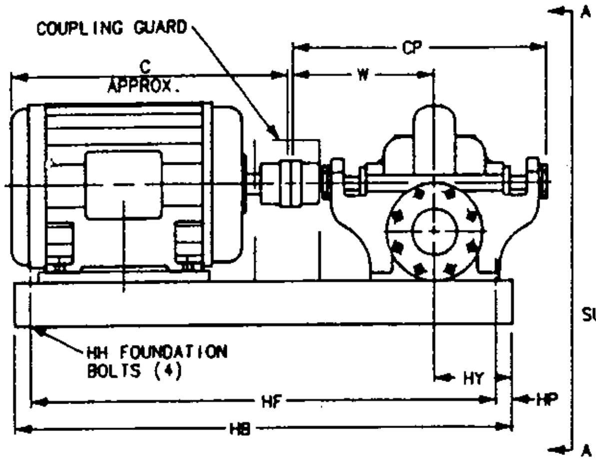
Special: _____ Maintenance Sent: _____

By: B Casey Date: 8/10/92 Office: NJO

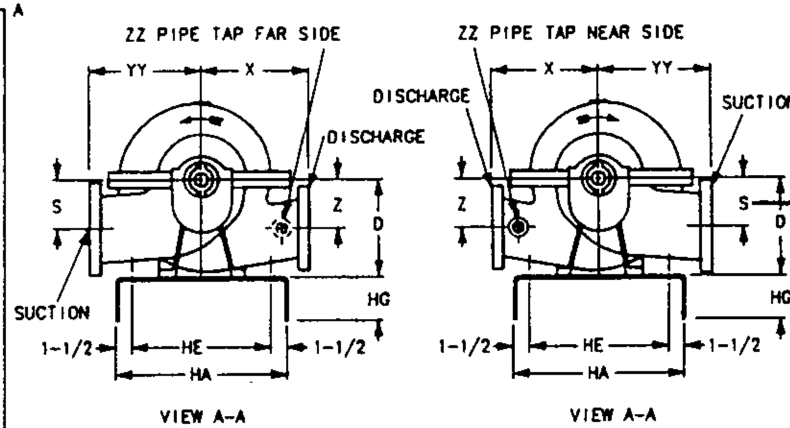
This order will not be processed for manufacturing until approval is received. Prints are not to scale and are certified correct only for this order. All orders are subject to acceptance at Aurora Pump, North Aurora, Illinois.

40195(10-90)

AURORA MODEL 481 PUMPS
ON STANDARD STEEL BASE



RIGHT HAND ROTATION



LEFT HAND ROTATION

BASE	HA	HB	HE	HG	HH	HF	HP
5	12	36	8	3	1/2	17	20
7	13	42	10	4	5/8	17	24
9	15	44	12	3-3/8	5/8	18	24
10	16	44	15	4	5/8	42	1
11	16	48	15	4	5/8	46	1
12	16	54	15	4	5/8	52	1
13	16	60	16	4	5/8	36	24
14	16	65	15	4	5/8	40	24
15	22	60	19	4	5/8	56	1
16	22	72	19	4	5/8	70	1
17	22	84	19	4	5/8	82	1

NOTES
1. All dimensions are in inches.
2. Dimensions may vary ± 3/8".
3. Not for construction purposes unless certified.
4. Coupling gap may vary 1/8" to 2-1/16".
5. Conduit box is shown in approximate location. Dimensions are not specified as they vary with each motor manufacturer.
6. Suction and discharge flanges are American Standard flat face.

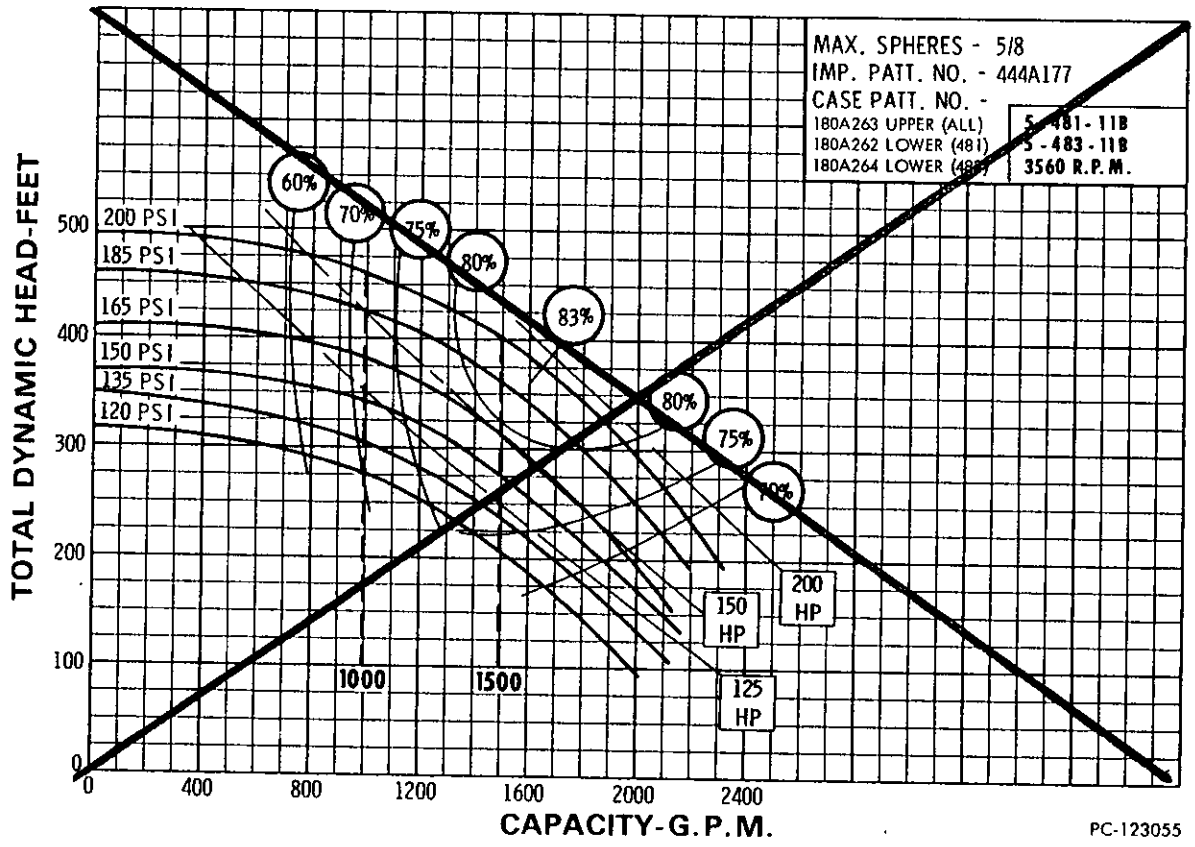
* D is 10-1/2" when using frames 324TS - 365TS.
** D is 12 when using frames 404TS - 445TS.

☐ STANDARD 125# SUCTION AND DISCHARGE FLANGES ☐ OPTIONAL 125# SUCTION FLANGE, 250# DISCHARGE FLANGE ☐ OPTIONAL 250# SUCTION AND DISCHARGE FLANGES

PUMP SIZE DISCH	MODEL	CASE BORE	SUCTION	POWER SERIES	D	S	W	X	Z	CP	HY	YY	ZZ
2-1/2	481	10	3	2	8	4	13-1/2	9-3/4	4	24	5	10	3/4
3	481	10	4		9 *	4-1/2	13-1/2	10	4-1/2	24	5	11	
4	481	11	5	3	10	5	14-1/2	11-1/4	5	26	6	12-3/4	
4	481	16	6		11	6-1/2	14-1/2	13	6-1/2	26	6	14	
5	481	11	6	4	11 **	5-1/2	16	11-1/4	5-1/2	28-1/2	6	13-1/4	
5	481	15	6		12-1/2	6-1/4	16	13-1/4	6-1/4	28-1/2	6	15	
5	481	17	6		12-1/2	6-1/4	16	14	6-1/4	28-1/2	6	15	
6	481	11	8		12-1/2	6-1/4	16	11-3/4	6-1/4	28-1/2	6	14-1/2	1-1/4
6	481	15	8	5	13-1/2	6-3/4	18	14-1/4	6-3/4	32	7	16-3/4	
6	481	18	8		14-3/4	8	18	16	8	32	7	18	
6	481	20	8		14-3/4	8	18	15-3/4	8	32	7	18	
8	481	12	10		14-3/4	8	18	17	9	32	7	17-3/4	
8	481	17	10		14-3/4	8	18	17	8	32	7	17-3/4	2
8	481	21	10	6B	17-1/2	9-1/2	21-7/8	18	8-1/2	38	11	21	1-1/4
10	481	15	10		25	13-1/2	21-7/8	17	13-1/2	38	11	20	
10	481	18	12		25	13-1/2	21-7/8	18	13-1/2	38	11	22	2

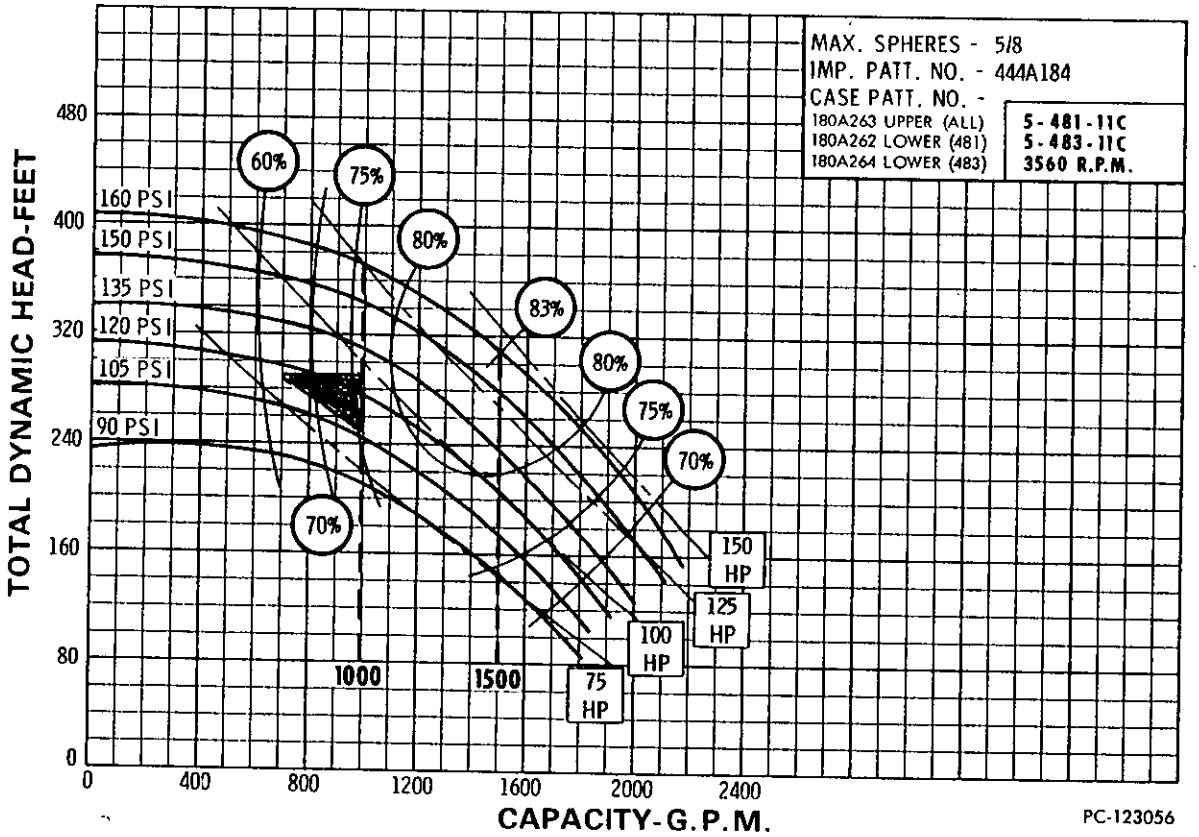
DISCH	MODEL	CASE BORE	MOTOR FRAME	215T	254T	256T	284TS	284T	286TS	286T	324TS	324T	326TS	326T	364TS	364T	365TS	365T	404TS	404T	405TS	405T	444TS	444T	445TS	445T
			C APPROX	18	21	23	22	24	24	25	25	26	26	28	29	29	28	30	30	33	32	35	34	38	36	40
2-1/2	481	10	BASE	5	7	7	9	-	9	-	10	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-
3	481	10	BASE	5	7	7	9	-	9	-	10	10	10	-	11	-	11	-	-	-	-	-	-	-	-	-
4	481	11	BASE	5	7	9	9	9	11	11	11	11	11	-	11	-	11	-	15	15	15	-	-	-	-	-
4	481	16	BASE		7	9		9		11		11		11	11		11		15		15					
5	481	11	BASE	7	9	10		11		11	11	11	11	12	12	-	12	12	15	-	15	-	15	-	15	-
5	481	15	BASE	7	9	10		11		11	11	11	12	12	12	12	12	12	15	-	15	-	15	-	15	
5	481	17	BASE	7	9	10		11		11	11	11	12	12	12	12	12	12	15	-	15	-	15	-	15	-
6	481	11	BASE	7	9	10		11		11	11	11	12	12	12	12	12	12	15	-	15	-	15	-	15	-
6	481	15	BASE		-	11		12		12		12		12	12	12	12	-	15	-	15	-	16	-	16	-
6	481	18	BASE		10	11		12		12		12		12	12	12	13	13	15	15	15	15	16	16	16	16
6	481	20	BASE		10	11		12		12		12		12	12	12	13	13	15	15	15	15	16	16	16	16
8	481	12	BASE		10	11		12		12		12		12	12	12	13	13	15	15	15	15	16	16	16	16
8	481	17	BASE		10	11		12		12		12		12	12	12	13	13	15	15	15	15	16	16	16	16
8	481	21	BASE															14		16		16	16	16	16	16
10	481	15	BASE													14	13	14		16		16	16	16	16	17
10	481	18	BASE															14		16		16	16	16	16	17

GS AURORA PUMP
A UNIT OF GENERAL SIGNAL
800 AIRPORT ROAD NORTH AURORA, ILLINOIS 60542



PC-123055

120 TO 200 P.S.I.



PC-123056

90 TO 160 P.S.I.

AURORA PUMP
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FIRE PUMP ACCESSORIES LIST

- [x] ECCENTRIC SUCTION REDUCER
  - SIZE 8X6
  - [x] 125#
  - [ ] 250#
- [x] CONCENTRIC DISCHARGE INCREASER
  - SIZE 5X6
  - [x] 125#
  - [ ] 250#
- [ ] OUTSIDE HOSE MANIFOLD
  - SIZE 8"
  - [x] 125#
  - [ ] 250#
- [x] HOSE VALVE 2-1/2" W/CAPS AND CHAINS
- [ ] TEE (REDUCING)
  - SIZE _____
  - [ ] 125#
  - [ ] 250#
- [ ] BALL DRIP VALVE
  - SIZE _____
- [x] SUCTION AND DISCHARGE GAUGES, SIZE 1/4 NPT
- [x] AIR RELEASE VALVE
  - SIZE 1/2"
- [x] MAIN RELIEF VALVE
  - SIZE 4X4
  - [ ] KUNKLE
  - [x] CLAYTON
  - [x] 125#
  - [ ] 250#
- [x] CASING RELIEF VALVE, SIZE 3/4 NPT
- [x] WASTE CONE
  - SIZE _____
  - [ ] OPEN
  - [x] ENCLOSED
- [ ] SPLASH SHIELD
  - [ ] HORIZONTAL
  - [ ] VERTICAL
- [ ] FLOW METER
- [ ] PRESSURE RECORDER

800 AIRPORT ROAD . NORTH AURORA, ILLINOIS 60542 . PHONE: 312-859-7000

AURORA PUMP
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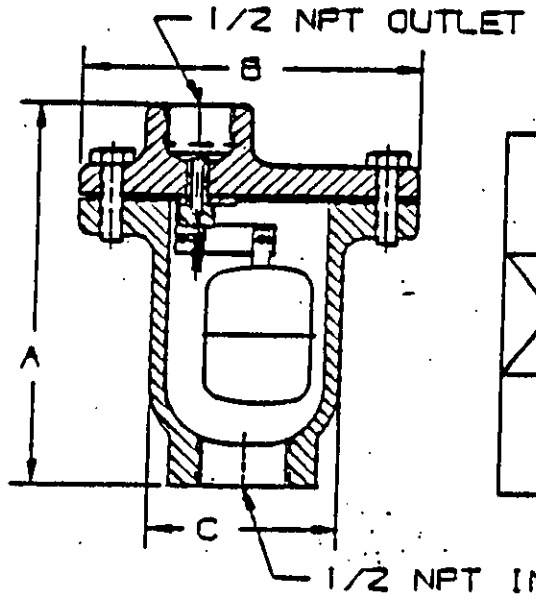
800 AIRPORT ROAD, NORTH AURORA, ILLINOIS 60542

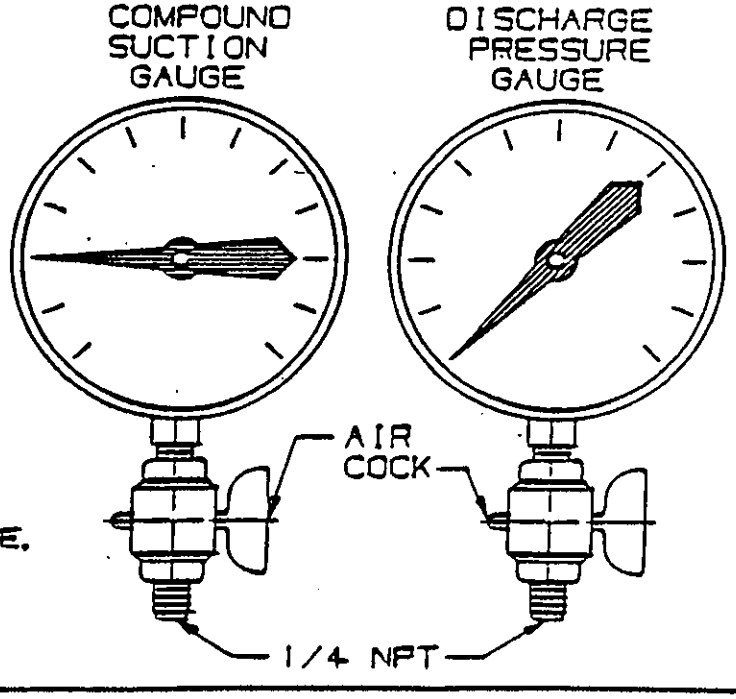
FLOAT OPERATED AIR RELEASE VALVE



	PRESSURE RATING	A	B	C
X	UP TO 175 PSI	$5\frac{7}{8}$	$3\frac{3}{4}$	$2\frac{1}{2}$
	UP TO 300 PSI	$6\frac{11}{16}$	$5\frac{5}{8}$	$4\frac{1}{4}$

SUCTION & DISCHARGE GAUGES

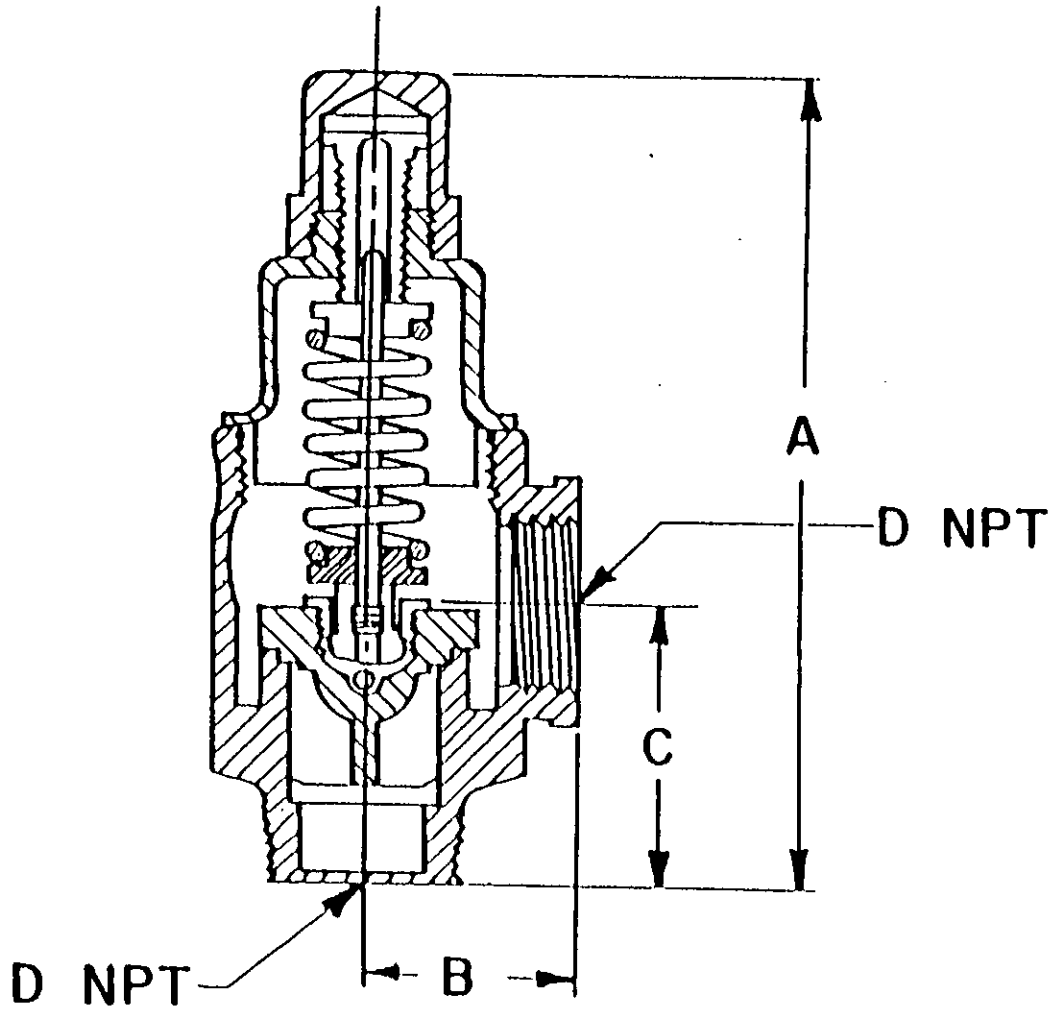
	SUCTION GAUGE
X	30"-0-150 PSI
	30"-0-300 PSI
	DISCHARGE GAUGE
X	0-300 PSI
	0-600 PSI



ACCURACY: 2% OVER CENTER THIRD OF RANGE. 3% OVER REMAINING TWO-THIRDS OF RANGE.

AURORA PUMP
A UNIT OF GENERAL SIGNAL
ENGINEERING DEPT.
NORTH AURORA, ILLINOIS· 60542

RELIEF VALVE



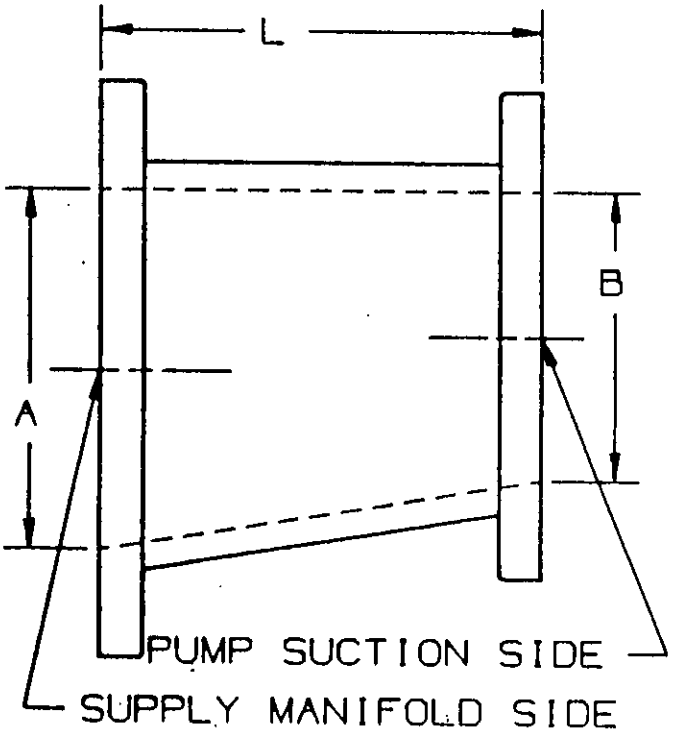
SIZE	A	B	C	D
1/2	6	1 5/8	2	1/2
3/4	6	1 5/8	2	3/4
1	6 7/8	1 7/8	2 1/4	1

AURORA PUMP
A UNIT OF GENERAL SIGNAL
800 AIRPORT ROAD, NORTH AURORA, ILLINOIS 60542

ECCENTRIC SUCTION REDUCER

125# ☒
250# ☐

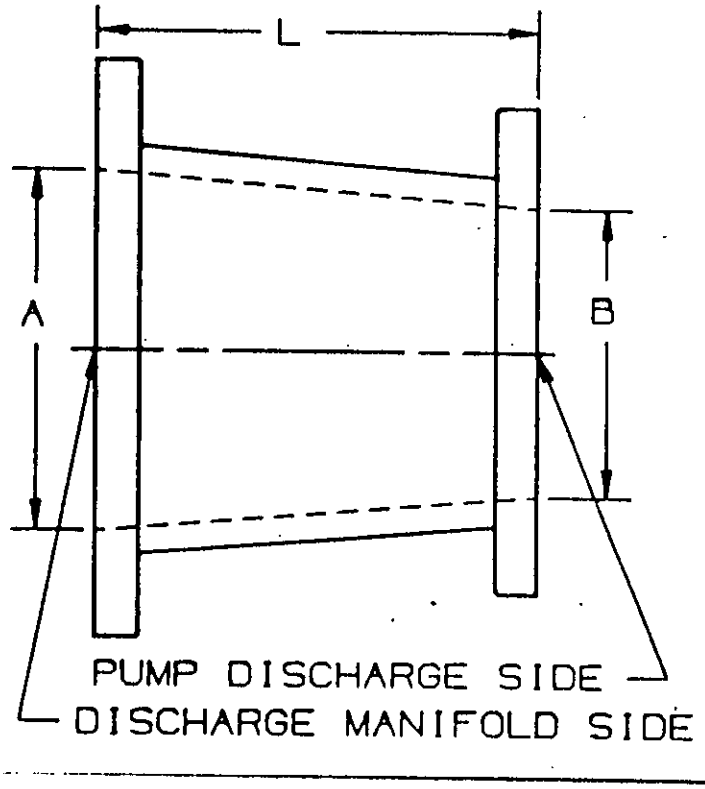
	A	B	L
	4	3	7
	5	4	8
	6	5	9
☒	8	6	11
	10	8	12
	14	12	16



CONCENTRIC DISCHARGE INCREASER

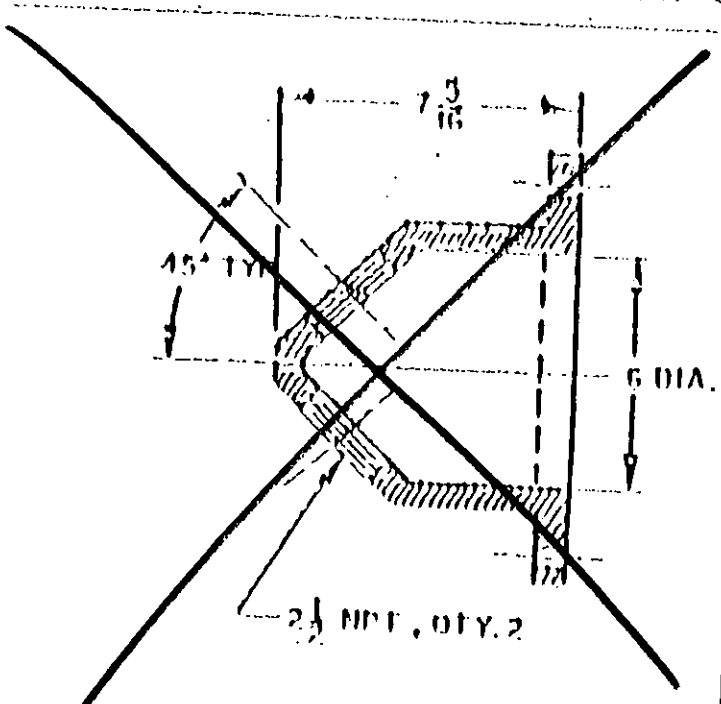
125# ☒
250# ☐

	A	B	L
	3	2-1/2	7
	5	3	8
	5	4	8
	6	4	9
☒	6	5	9
	8	5	11
	8	6	11
	10	6	12
	10	8	12
	12	10	14

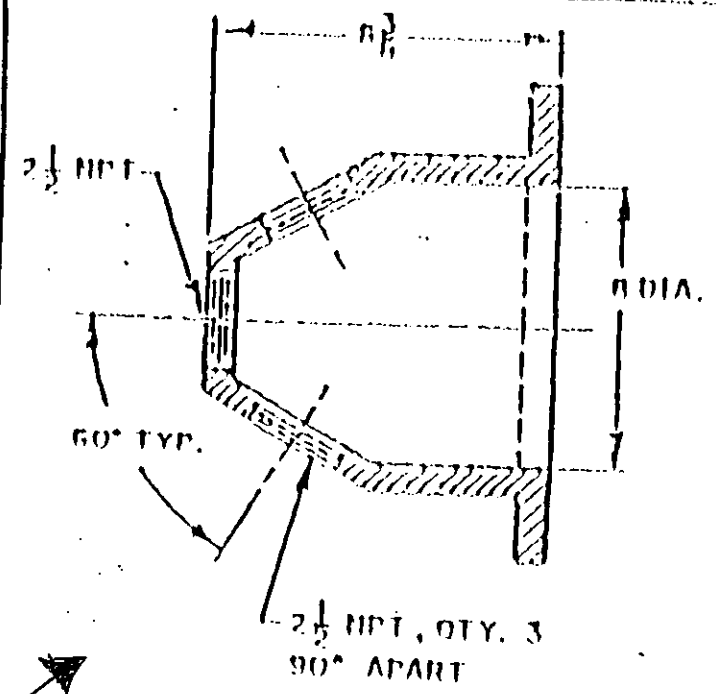


A UNIT OF GENERAL SIGNAL
ENGINEERING DEPT.
NORTH AURORA, ILLINOIS 60542

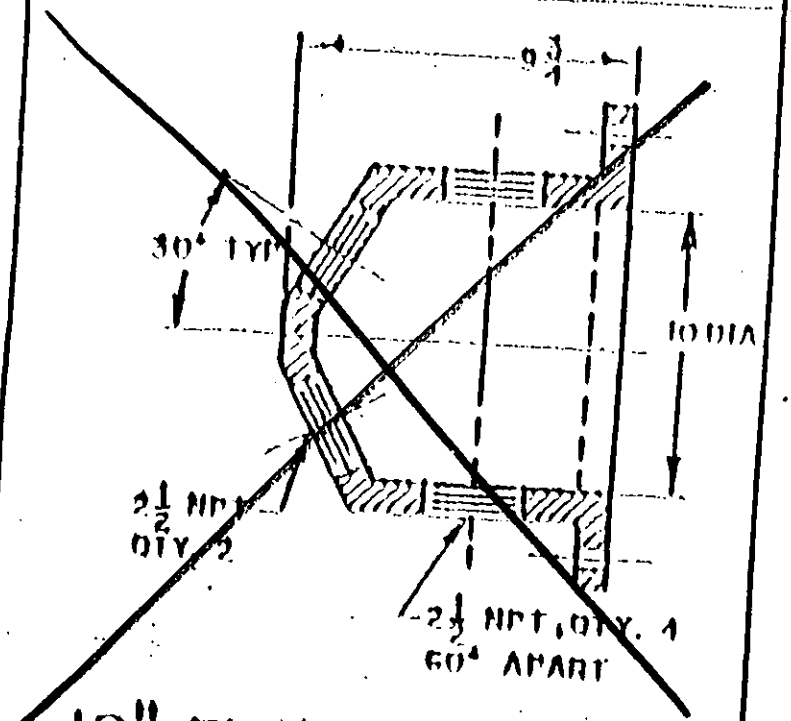
OUTSIDE HOSE MANIFOLD 125#☐ 250#☐



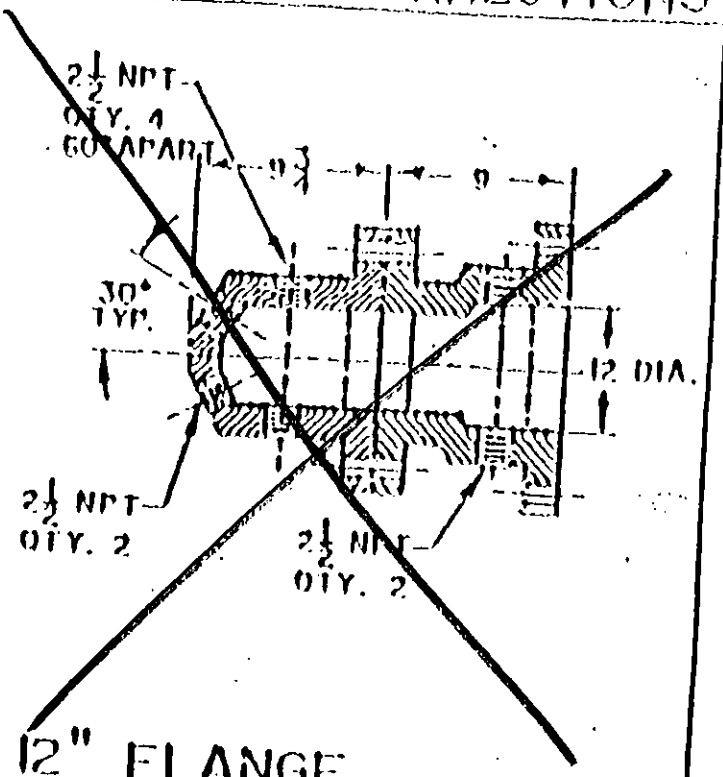
6" FLANGE
2 VALVE CONNECTIONS



8" FLANGE
4 VALVE CONNECTIONS



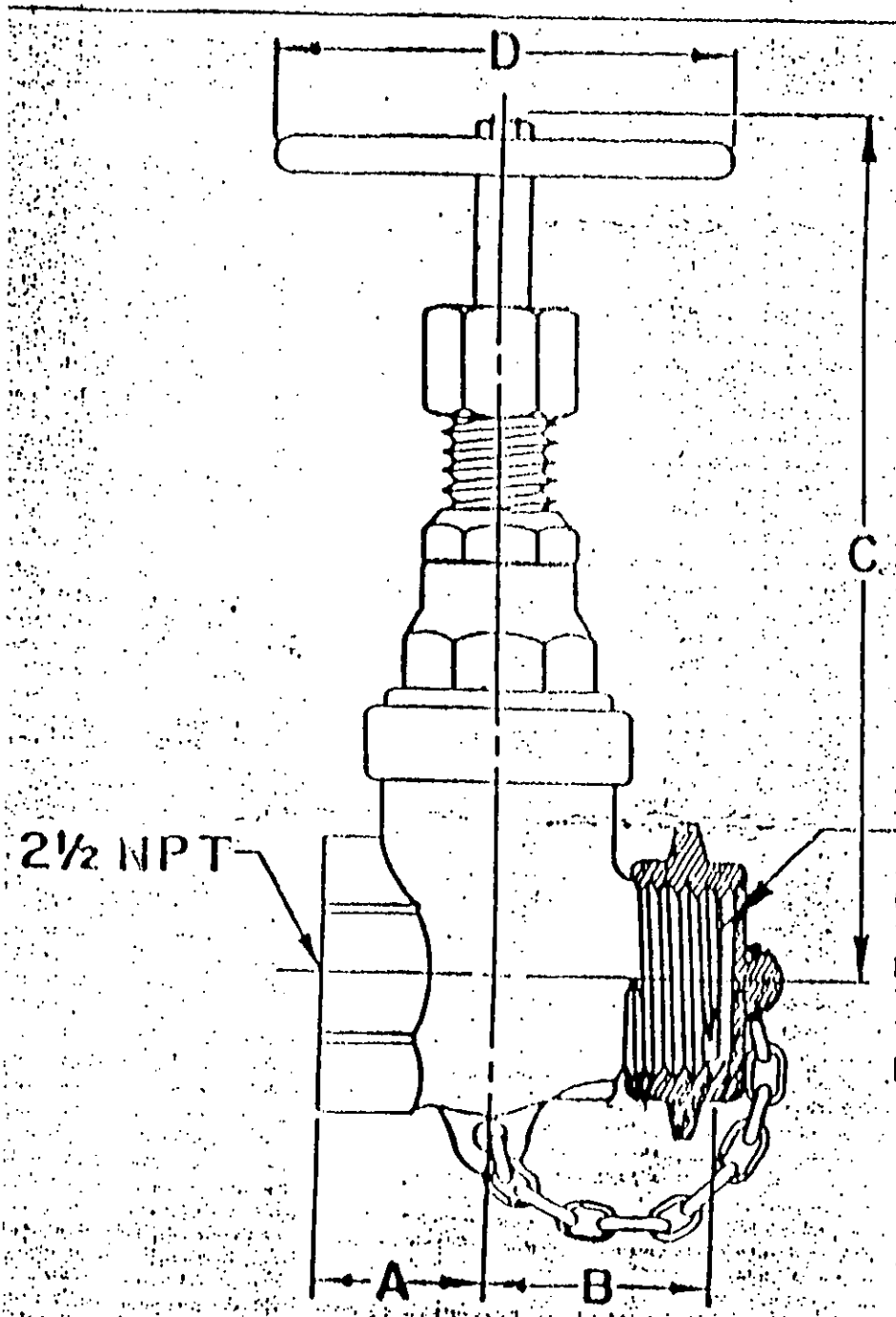
10" FLANGE
6 VALVE CONNECTIONS



12" FLANGE
8 VALVE CONNECTIONS

AURORA PUMP
A UNIT OF GENERAL SIGNAL
ENGINEERING DEPT.
NORTH AURORA, ILLINOIS 60542

HOSE VALVES WITH CAPS & CHAINS

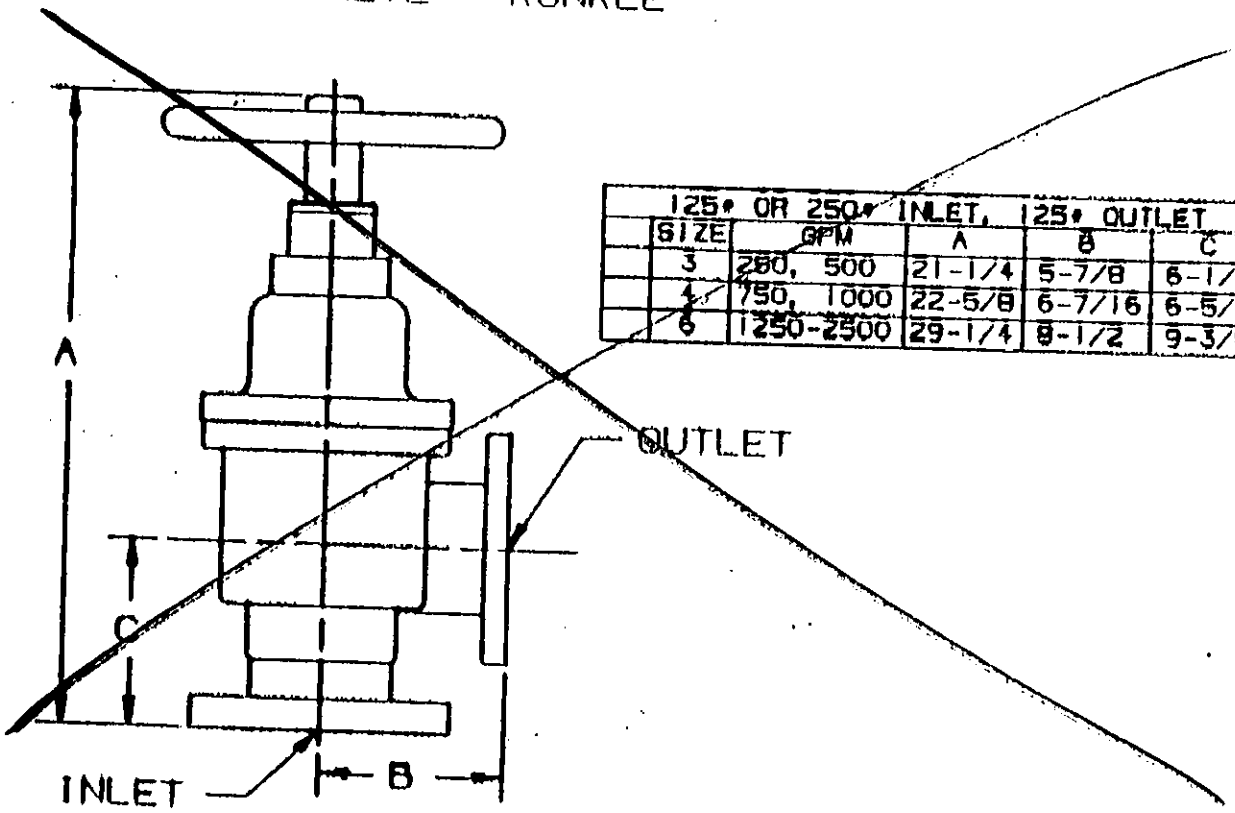


PSI.RTG	A	B	C	D
175	2 1/4	2 7/8	10 1/4	6
300	2 5/16	2 5/8	11	6

NOTE: ALL DIM. ARE BY VENDOR STD.

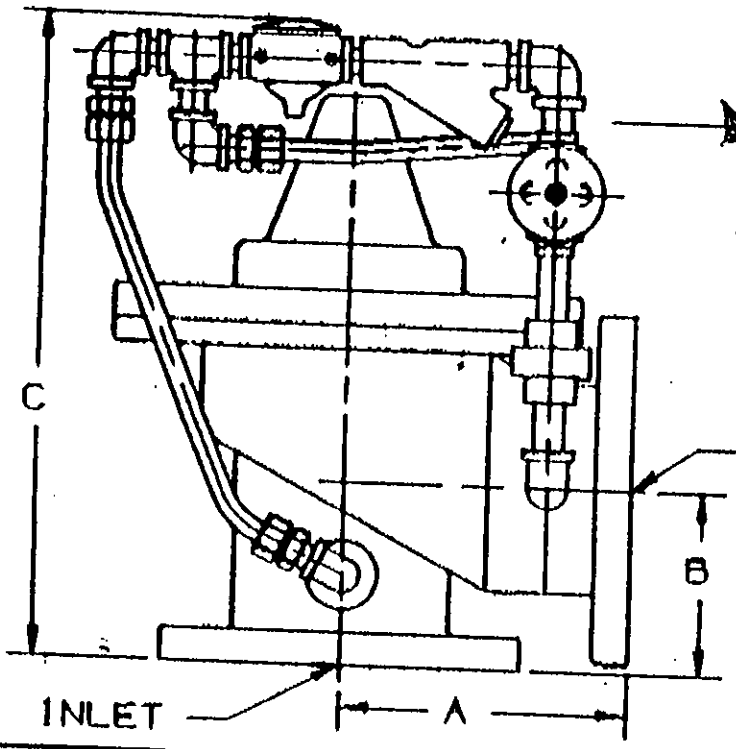
AURORA PUMP
A UNIT OF GENERAL SIGNAL
800 AIRPORT ROAD, NORTH AURORA, ILLINOIS 60542

MAIN RELIEF VALVE - KUNKLE



125# OR 250# INLET, 125# OUTLET				
SIZE	GPM	A	B	C
3	250, 500	21-1/4	5-7/8	6-1/8
4	750, 1000	22-5/8	6-7/16	6-5/8
6	1250-2500	29-1/4	8-1/2	9-3/8

MAIN RELIEF VALVE - CLA-VAL



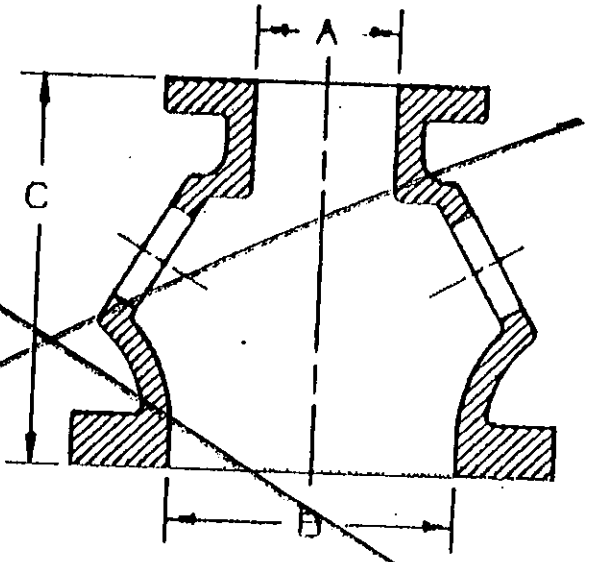
125# INLET, 125# OUTLET				
SIZE	GPM	A	B	C
3	250, 500	6	4	15-3/4
4	750, 1000	7-1/2	5-1/16	17-7/16
6	1250-2500	10	6	20-1/2
8	3000-4000	12-3/4	8	24-1/4

250# INLET, 125# OUTLET				
SIZE	GPM	A	B	C
3	250, 500	8-1/2	4-3/8	16-3/8
4	750, 1000	9-7/8	5-1/16	17-1/4
6	1250-2500	10-1/2	6-1/2	19
8	3000-4000	13-1/4	8-1/2	24-1/4

GS AURORA PUMP
A UNIT OF GENERAL SIGNAL
800 AIRPORT ROAD, NORTH AURORA, ILLINOIS 60542

OPEN WASTE CONE

GPM	A	B	C
250	3	5	10
500			
750	4	8	11
1000			
1250	6	10	14
1500			
2000			
2500			
3000	8	14	16
3500			
4000			

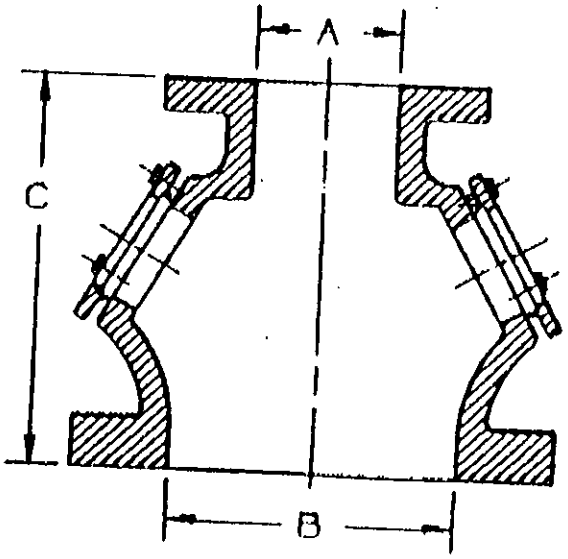


NOTES

1. FLANGES A & B ARE ASA 125# RATING.
2. WASTE CONES FOR 250 THROUGH 2500 GPM SYSTEMS ARE CAST IRON.
3. WASTE CONES FOR 3000 THROUGH 4000 GPM SYSTEMS ARE FABRICATED STEEL.

ENCLOSED WASTE CONE

GPM	A	B	C
250	3	5	10
500			
750	4	8	11
1000			
1250	6	10	14
1500			
2000			
2500			
3000	8	14	16
3500			
4000			



NOTES

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2. WASTE CONES FOR 250 THROUGH 2500 GPM SYSTEMS ARE CAST IRON.
3. WASTE CONES FOR 3000 THROUGH 4000 GPM SYSTEMS ARE FABRICATED STEEL.

AURORA PUMP
A UNIT OF GENERAL SIGNAL

FIRE PUMP CONTROLLER

- [X] CLARK [ ] MASTER [ ] FIRETROL [ ] METRON [ ] FURNAS
- [X] COMBINATION MANUAL-AUTOMATIC
- [ ] PRIMARY RESISTOR TYPE
- [ ] PART WINDING TYPE
- [ ] LIMITED SERVICE TYPE
  - [ ] WITH RUNNING PERIOD TIMER
  - [ ] WITHOUT RUNNING PERIOD TIMER
- [X] WYE-DELTA START
  - [X] OPEN TRANSITION
  - [ ] CLOSED TRANSITION

30,000 AMPS C.B. INTERRUPT CAPACITY

0-300 P.S.I. RANGE PRESSURE SWITCH

50 P.S.I. SUCTION PRESSURE

FOR 100 H.P., 3500 R.P.M., 3 PHASE, 60 HZ., 460 V. MOTOR

SPECIAL OPTIONS:

_____

_____

733 [illegible] ROAD NORTH AURORA, ILLINOIS 60542 PHONE 312 897-7200

Joslyn Clark JC

Fire Pump Controller

Wye-Delta Open
Type C10690

Wye-Delta Type-Open Transition

UL FM

GENERAL

Joslyn Clark Fire Pump Controllers, fully comply with the National Fire Protection Association Standard NFPA-20, are listed by Underwriters' Laboratories, Inc. and are approved by Factory Mutual.

Wye-Delta type reduced-current starting is selected to meet local power utility limitations on inrush current or to minimize the size of a stand-by engine generator.

Bulletin C10690 are open transition starters in which the motor circuit is opened during the transition from start to run. Under a normal automatic start mode, the start contactors close connecting the motor to the line in a wye connection. After approximately 3 second time delay the start contactors open and the run contactor closes reconnecting the motor in a Delta connection.

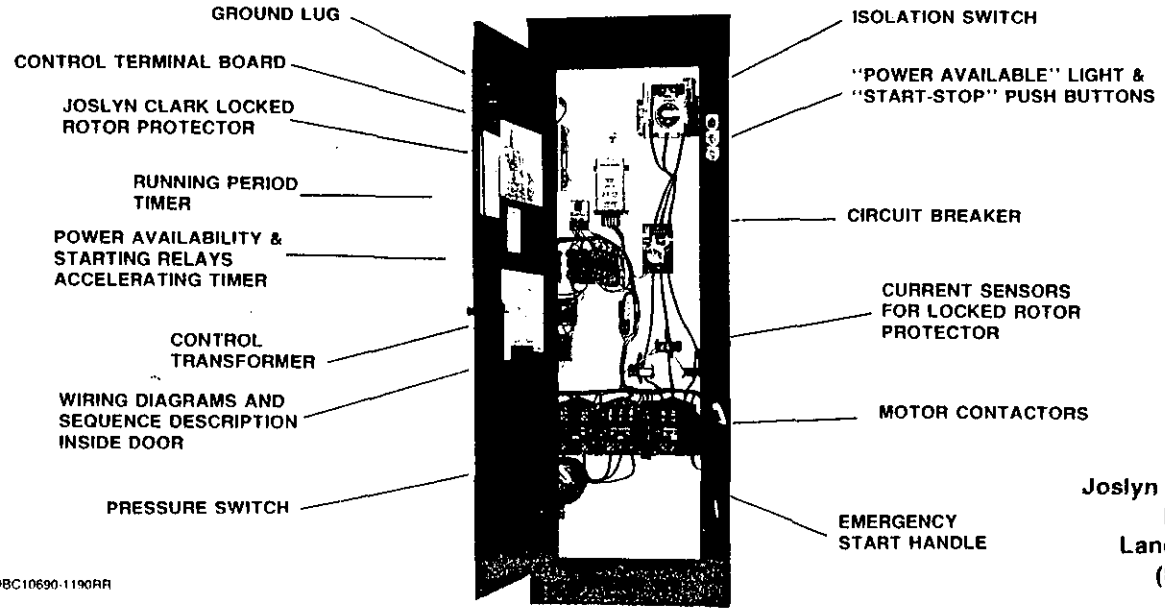
Starting line current is 33.3% of across-the-line starting inrush (approximately 200% rated motor full load amperes) and starting torque is approximately 33.3% of normal starting torque.

STANDARD EQUIPMENT & PERFORMANCE

- Automatic start responsive to water pressure, with Running Period Timer. Terminal board jumper provided for manual stop operation.
- Deluge valve start or start from other fire protection equipment control having a normally closed contact which opens to start.
- Emergency start, by simply lifting the mechanical start handle. (Will energize delta contactors only)
- Choice of circuit breaker interrupting capacity ratings.
- Joslyn Clark Controls Locked Rotor Protector for drive motor protection. Factory set for the horsepower ordered. No field adjustment.
- Contacts for remote alarm of:
  1. Controller in "pump running" condition.
  2. Loss of line power in any phase.
  3. Phase reversal.
- Heavy gauge formed steel, NEMA 2 enclosure with top drip hood.
- Neutral grounding lug - "Suitable for use as service equipment".
- Voltage surge protection.

LISTED MODIFICATIONS

- Sequence start, addition of independent Sequence Timer.
- Lockout for low suction or for dual engine drive.
- Automatic transfer switch, modification "T"



Joslyn Clark Controls, INC
P.O. Box 945
Lancaster, SC 29720
(803) 286-8491

DBC10690-1190RR

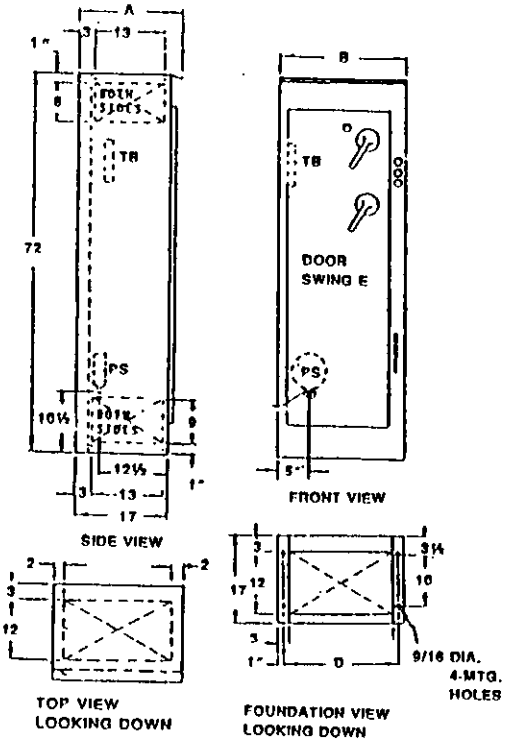
Joslyn Clark — Fire Pump Controller

Wye-Delta Open
Type C10690

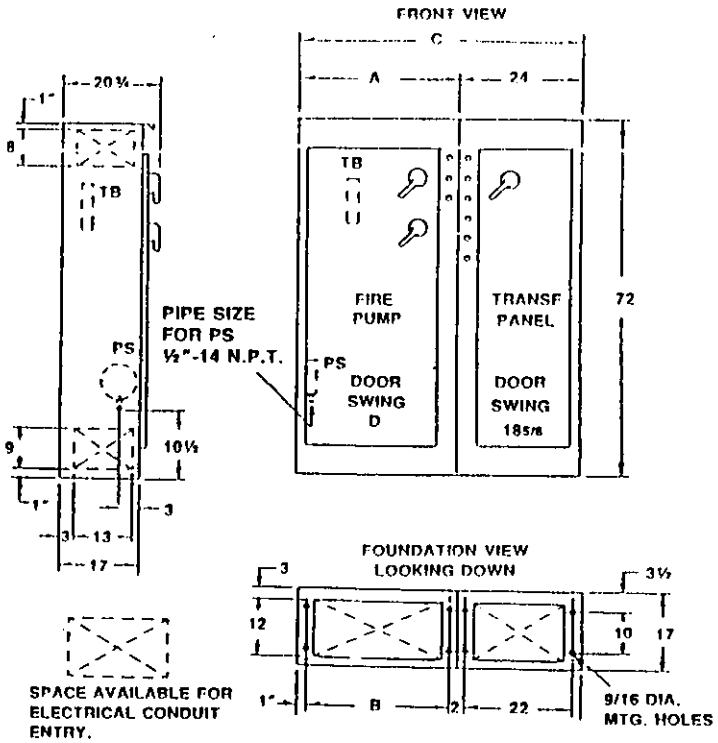
Wye-Delta Type-Open Transition

UL FM

ENCLOSURE A



ENCLOSURE B



DWG "B"

WYE DELTA CONTROLLER Motor Connections A10-10680-4	TYPE CIR. BKR. (See Table 1)	HORSEPOWER RANGE 200-208V	220-240V	440-480V	550-600V	380/50HZ	DIM. INCHES [2] A	B	C	D	E	ENC. STYLE
WITHOUT TRANSFER SWITCH												
SCHEMATIC DIAGRAM **A10-10690-1**	B&C	15-75	15-100	15-200	[1]15-200	15-150	19	24	—	22	18½	A
FIELD CONNECTIONS **A10-10680-2**	B&C	100-150	125-200	250-450	[1]250-500	200-350	19	39	—	37	33½	A
OPERATING INFORMATION **B10-10600-1**	D	75-150	100-200	200-400	—	150-350	19	39	—	37	33½	A
WITH TRANSFER SWITCH												
SCHEMATIC DIAGRAM **A10-10690-1T**	B&C	15-75	15-100	15-200	—	15-150	24	22	48	—	18½	B
FIELD CONNECTIONS **A10-10680-2T**	B&C	100-150	125-200	250-450		200-350	39	37	63	—	33½	B
OPERATING INFORMATION **B10-10600-1T**	D	75-200	100-250	200-400	—	150-350	39	37	63	—	33½	B

NOTE:
[1]For 550-600V Controllers "C" Type Circuit Breakers are available from 15 through 125 Hp only.
[2]Dimensions are for Type 2, 3R & 12 enclosures.

JOB: Price club

MOTOR HORSEPOWER 100

LINE VOLTAGE / PHASE / FREQUENCY

460 / 3 / 60

CONTROLLER WITHSTAND RATING

30,000 SYMMETRICAL AMPERES

TABLE 1
CONTROLLER WITHSTAND RATING
CIRCUIT BREAKER INTERRUPTING CAPACITY SYMMETRICAL AMPERES

C.B. DESIGNATION	200-208V	220-240V	440-480V	550-600V	380/50HZ
B	42K	42K	30K	22K	30K
C	100K	100K	100K	100K	100K
D	150K	150K	150K	150K	150K

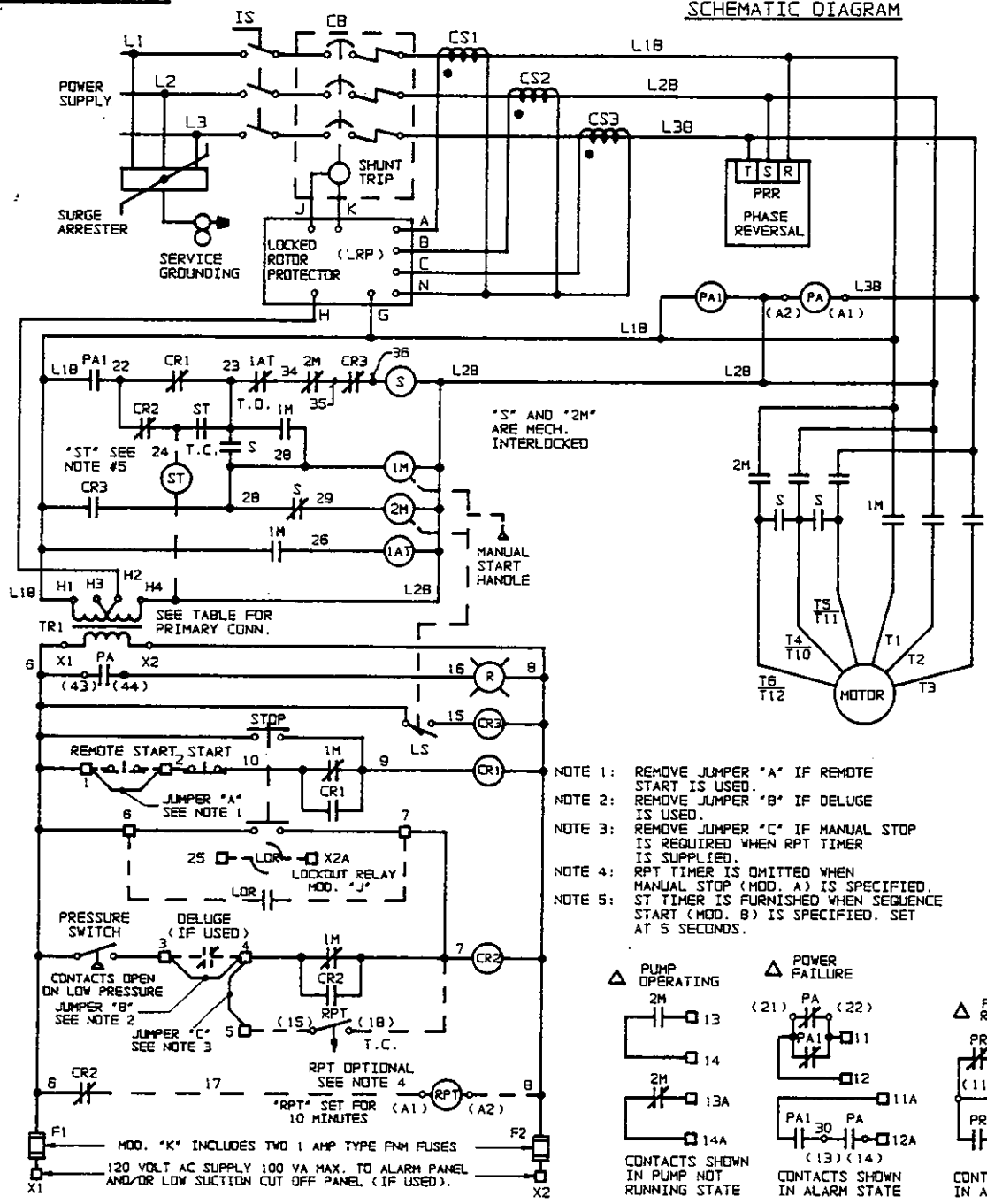
Joslyn Clark Controls, INC.
P.O. Box 945
Lancaster, SC 29720
(803) 286-8491

A10-10690-1

SUITABLE FOR USE AS SERVICE EQUIPMENT

SCHEMATIC DIAGRAM

REVISIONS
RELEASED PER ECN 5434. JMO
12/14/90 REVISED RPT CIRCUIT. ECN 5627. JMO



NOTE 1: REMOVE JUMPER "A" IF REMOTE START IS USED.

NOTE 2: REMOVE JUMPER "B" IF DELUGE IS USED.

NOTE 3: REMOVE JUMPER "C" IF MANUAL STOP IS REQUIRED WHEN RPT TIMER IS SUPPLIED.

NOTE 4: RPT TIMER IS OMITTED WHEN MANUAL STOP (MOD. A) IS SPECIFIED.

NOTE 5: ST TIMER IS FURNISHED WHEN SEQUENCE START (MOD. B) IS SPECIFIED. SET AT 5 SECONDS.

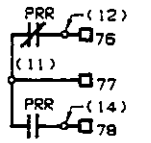
△ PUMP OPERATING

CONTACTS SHOWN IN PUMP NOT RUNNING STATE

△ POWER FAILURE

CONTACTS SHOWN IN ALARM STATE

△ PHASE REVERSAL



CONTACTS SHOWN IN ALARM STATE

□ FIELD TERMINAL BOARD CONNECTIONS

△ TO ALARM CIRCUIT (IF USED) 240 VOLTS, 5 AMP AC MAX.

○ INTERNAL DEVICE TERMINAL IDENTIFICATION

( ) TERMINAL NUMBER ON DEVICE

REFER TO 810-10600-1 FOR OPERATING INSTRUCTIONS.

CONTROL TRANSFORMER PRIMARY CONNECTIONS

LINE VOLTAGE	CONNECT L1B TO	CONNECT L2B TO	CONNECT JUMPER
200 - 208	H1	H2	- - - -
220 - 240	H1	H2	H1 TO H3 H2 TO H4
380 440 - 480	H1	H4	H2 TO H3
550 - 600	H1	H3	- - - -

SEE TABLE FOR PRIMARY CONN.

TITLE BUL. C10690 FIRE PUMP CONTROLLER
WYE-DELTA OPEN TRANSITION STARTING.

MADE BY MLS APP'D BY EPK
DATE 08/17/90

JOSLYN CLARK CONTROLS, INC.
LANCASTER, S.C. 29721-0945

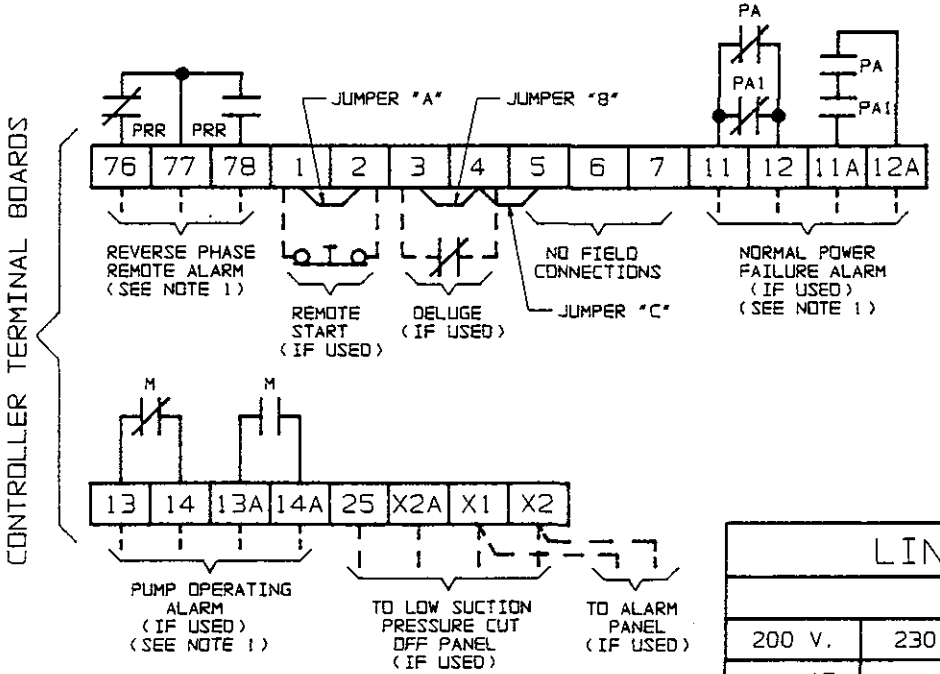
A10-10690-1
SHEET 1 OF 1 SHEET

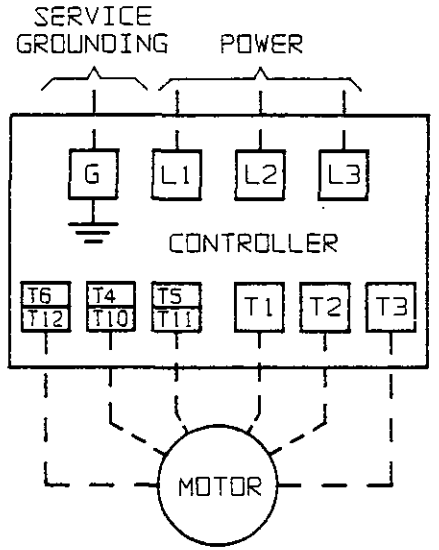
A10-10680-2

REVISIONS

RELEASED PER ECN 5434. JMD

FIELD CONNECTIONS





WATER PRESSURE CONNECTION 1/2" NPT

LINE TERMINAL LUG SIZE PER PHASE

HORSE POWER					
200 V.	230 V.	380 V.	460 V.	575 V.	LUG SIZE - CU
15	15	15-30	15-40	15-50	(1) #14-2 AWG
20-25	20-30	40-50	50-60	60-75	(1) #14-1/0 AWG
30-50	40-60	60-100	75-125	100-125	(1) #6 AWG-250 MCM
60	75	125	150	150-200	(1) #6 AWG-350 MCM
75-150	100-200	150-350	200-400	250-500	(2) 3/0-500 MCM
---	---	---	450	---	(2) 1AWG-500 MCM

MOTOR TERMINAL LUG SIZE PER LEAD

15-50	15-50	15-75	15-100	15-125	(1) #8-2/0 AWG
60-75	60-100	100-150	125-200	150-200	(1) #6 AWG-250 MCM
100-150	125-200	200-350	250-450	250-500	(1) #4 AWG-500 MCM

NOTE: THERE ARE (6) MOTOR LEADS. EACH MOTOR LEAD CARRIES 0.578 x FLA.

FOR POWER WIRE SIZING REFER TO THE NATIONAL ELECTRICAL CODE, NFPA 70.

JUMPER NOTES

JUMPER A - REMOVE IF REMOTE START IS USED.
JUMPER B - REMOVE IF DELUGE IS USED.
JUMPER C - REMOVE IF MANUAL STOP IS REQUIRED WHEN RPT TIMER IS SUPPLIED.
NOTE 1: ALL ALARM CONTACTS SHOWN IN ALARM STATE AND RATED 5A 240 VOLTS.

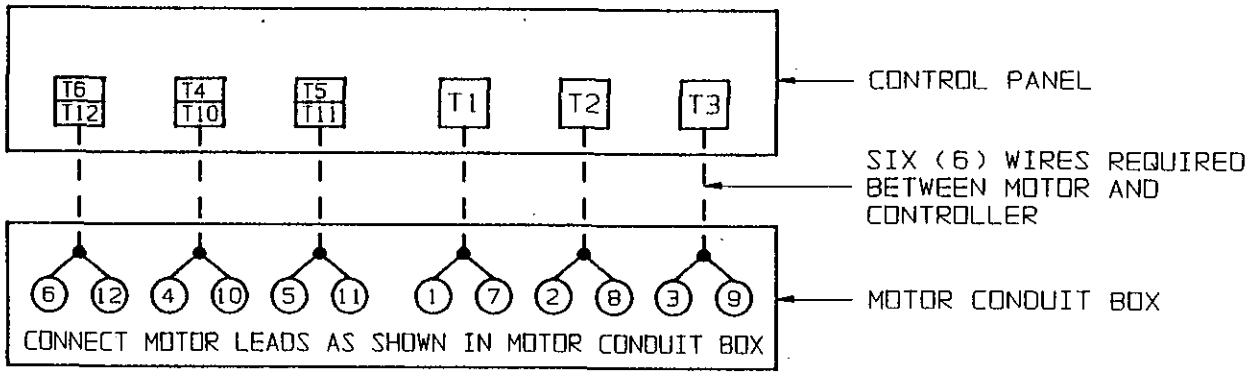
TITLE BUL. 10680 & 10690 FIRE PUMP CONTROL
WYE-DELTA STARTING OPEN OR CLOSED TRANSITION

MADE BY MLS
APP'D BY EFK
DATE 09-5-90

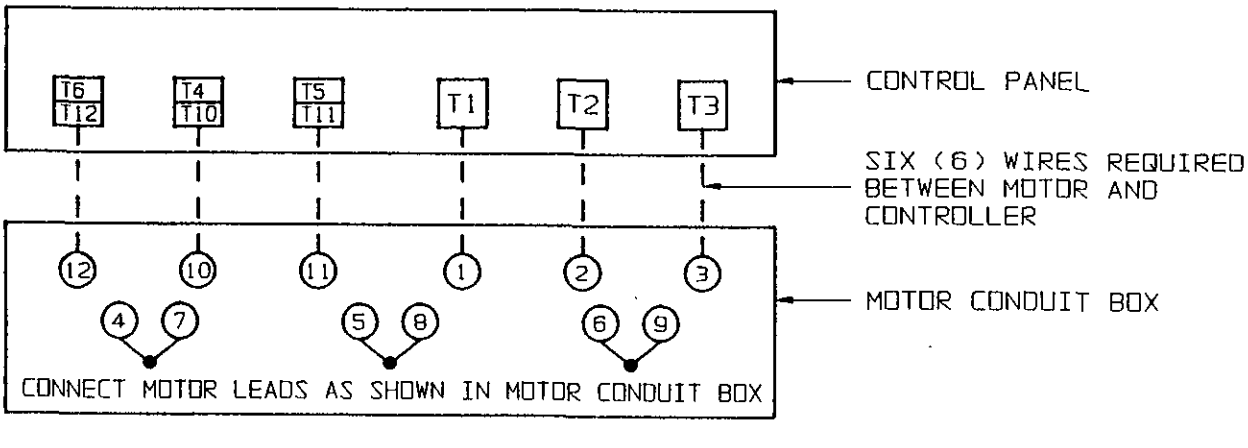
JOSLYN CLARK CONTROLS, INC.
LANCASTER, S.C. 29721-0945

A10-10680-2
SHEET 1 OF 1 SHEET

MOTOR CONNECTIONS
WYE-DELTA CONTROLLERS
FOR DUAL VOLTAGE WYE-DELTA MOTORS



For dual voltage Wye-Delta motors connected to operate on the lower of the two voltages 200 for 200/400V rated motors or 230 for 230/460V rated motors.



For dual voltage Wye-Delta motors connected to operate on the higher of the two voltages. 460 for 230/460V rated motors or 380 for 200/400V rated motors.

Notes:
1. Three (3) lead and nine (9) lead motors cannot be used for Wye-Delta starting.
2. Twelve (12) lead part winding motors cannot be used for Wye-Delta starting at 230V.

WARNING

This drawing is for general information only. Refer to motor connection diagram for motor manufacture's specific wiring arrangement. Joslyn Clark Controls, Inc. assumes no liability for incorrect wiring of the motor to the controller.

A10-10680-4

REVISIONS	
RELEASED PER ECN 5434. JMD	
11/8/90 ADDED DUAL VOL. TO HEADING & WARNING. ECN 5496. JMD	

A10-10680-4
SHEET 1 OF 1 SHEET

JOSLYN CLARK CONTROLS, INC.
LANCASTER, S.C. 29721-0945

MADE BY MLS
APP'D BY EFK
DATE 06-25-90

TITLE BUL. 10680 & 10690 FIRE PUMP CONTROL WITH OR WITHOUT AUTOMATIC TRANSFER SWITCH - WYE-DELTA STARTING OPEN OR CLOSED TRANSITION

AURORA PUMP

JOCKEY PUMP CONTROLLER

[X] CLARK [ ] MASTER [ ] FIRETROL

[ ] WITH RUNNING PERIOD TIMER

[X] WITHOUT RUNNING PERIOD TIMER

[ ] WITH CONTROL TRANSFORMER

[X] WITHOUT CONTROL TRANSFORMER

_____ P.S.I. RANGE PRESSURE SWITCH
2 HP 3500 RPM 3 PHASE, 60hz, 460 V. MOTOR

ALARM PANEL

[ ] TYPE A

[ ] TYPE B

[ ] TYPE D

FIRE PUMP P.O. #_____
JOCKEY PUMP P.O. #_____

BY:_____
DATE:_____

NEW JERSEY BRANCH
433 N. MIDLAND AVE.
SADDLE BROOK, N.J. 07662
FAX: 201-791-3003

PHONE: 201-791-0200
NYC: 212-736-4146

JOSLYN CLARK CONTROLS, INC.

December, 1986 BULLETIN 10661

JOCKEY PUMP CONTROLLERS-TYPE HPJ

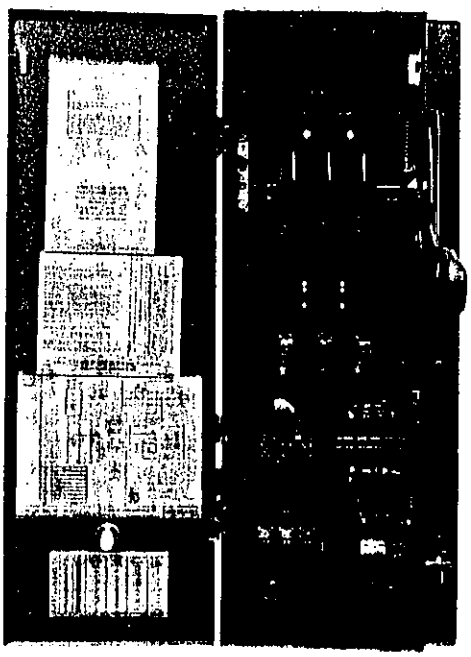
Across The Line - Full Voltage - Automatic Type

DESCRIPTION

JOSLYN CLARK™ Type **HPJ** Jockey Pump Controllers are *Listed* by Underwriters Laboratories, Inc. in compliance with Standard UL-508 and meet NEMA Industrial Control Standards. These controllers are fusible switch combination, across the line, full voltage, automatic type in a TYPE 1 wall mounting enclosure.

STANDARD EQUPMENT

- Full Voltage, Across The Line
- Suitable for application on 600 Volt maximum circuits capable of delivering 150,000 Amperes RMS symmetrical when equipped with Type J or Type R fuses.
- Fusible Disconnect Switch Combination
- Disconnect switch external operator mechanically interlocked with enclosure door and *equipped* for padlocking in "off" position.
- Pressure switch externally mounted to minimize electrical parts exposure to water and provide easy installation.
- Independent "high" (stop) and "low" (start) adjustment points on pressure switch; sealable for tamper-resistance.
- Automatic start, manual electric start and stop from front-mounted "Hand-Off-Auto" selector switch.
- **JOSLYN CLARK™** Type **HP** NEMA rated magnetic motor starter with built-in overload protection-adjustable ±15% of heater element rating.
- TYPE 1 formed steel wall mounting enclosure. UL listed for withstand ratings up to 150,000 Amperes RMS symmetrical on 600 Volt circuits when equipped with Type J or Type R fuses.



Disconnect Switch

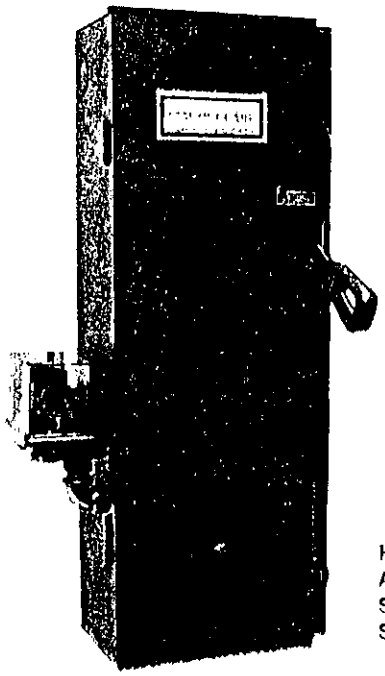
Fuse Clips

Control Transformer

Type HP Starter

Running Period Timer

Wall Mounting TYPE 1 Enclosure



Pressure Switch

Disconnect Switch External Operator

Hand-Off-Automatic Selector Switch

LISTED MODIFICATIONS

- Neutral Grounding Lug to make controller "Suitable for use as Service Equipment" - SUSE
- Class R rejection fuse clips
- Running Period Timer (recommended to prevent excessive cycling)
- Control Transformer for 120 volt control voltage
- Pressure Switch Range: 6-232 psi (standard)
  12-464 psi (optional)
  58-870 psi (optional)
- "Motor Running" red pilot light
- Auxiliary contacts on motor starter

FUSING DATA

LINE VOLTS	FUSE CLIP MAX. RATING AMPS	FUSE CLIP MAX. RATING VOLTS	THREE PHASE MAX. H.P. NON-TIME DELAY	THREE PHASE MAX. H.P. DUAL ELEMENT	SINGLE PHASE MAX. H.P. NON-TIME DELAY	SINGLE PHASE MAX. H.P. DUAL ELEMENT
115-120	30 60	250 250	— —	— —	½ 1½	1½ 3
200-208	30 60	250 250	3 7½	5 10	— —	— —
220-240	30 60	250 250	3 7½	7½ 15	1½ 3	3 7½
380	30 60	600 600	5 10	10 25	— —	— —
440-480	30 60	600 600	7½ 15	15 25	— —	— —
550-600	30 60	600 600	7½ 20	15 25	— —	— —

JOSLYN CLARK CONTROLS, INC.

December, 1986 BULLETIN 10661

JOCKEY PUMP CONTROLLERS - TYPE HPJ

Across The Line - Full Voltage - Automatic Type

INSTALLATION and MAINTENANCE INFORMATION

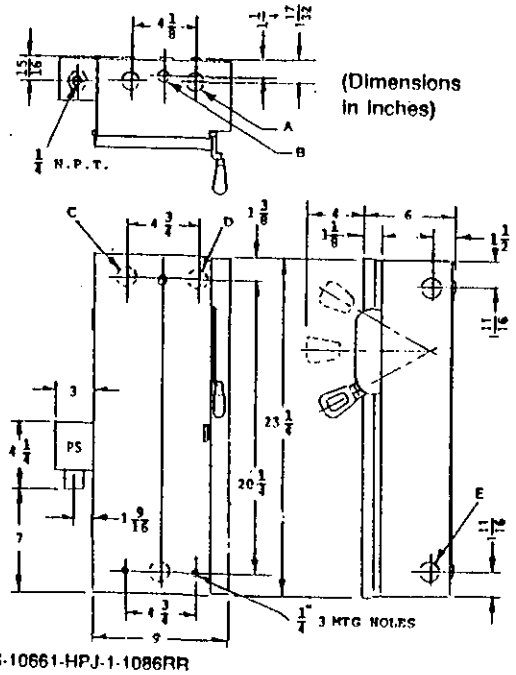
REPLACEMENT PARTS

DESCRIPTION - ALL CONTROLLERS	PART NO.
Neutral Grounding Lug Kit for "Suitable for Use as Service Equipment" — SUSE	HD1-35N
Auxiliary Contacts for mounting on Disconnect Switch S.P.D.T.	HD1-1P
Auxiliary Contacts for mounting on Disconnect Switch D.P.D.T.	HD1-2P
Conversion Kit to add Class R rejection feature to Class H fuse clips 30 Amp, 250 Volt	KTMR-332
Conversion Kit to add Class R rejection feature to Class H fuse clips 30 Amp, 600 Volt and 60A, 250 Volt	KTMR-336
Conversion Kit to add Class R rejection feature to Class H fuse clips 60 Amp, 600 Volt	KTMR-366
Fuse Clip Kit, includes six (6) fuse clips and mounting hardware for Class H or J fuses and conversion kit to add Class R rejection feature to Class H clips 30 Amp, 250 Volt	KTMC-332
Fuse Clip Kit, includes six (6) fuse clips and mounting hardware for Class H or J fuses and conversion kit to add Class R rejection feature to Class H clips 30 Amp, 600 Volt and 60 Amp. 250 Volt	KTMC-336
Fuse Clip Kit, includes six (6) fuse clips and mounting hardware for Class H or J fuses and conversion kit to add Class R rejection feature to Class H clips 60 Amp, 600 Volt	KTMC-366
Replacement lower fuse base	KTMC-036
HAND-OFF-AUTO selector switch - operator contacts	080-SMBN
HAND-OFF-AUTO selector switch - operator contacts	080-BF11V

DESCRIPTION - ALL CONTROLLERS		PART NO.
Pressure Switch, 6-232 psi (STANDARD code 3)		A22-354468
Pressure Switch, 12-464 psi (optional, code 4)		A22-354574
Pressure Switch, 58-870 psi (optional, code5)		A22-354558
Starter ("M") - Three Phase ["Catalog Number Suffix, below, required to complete Part No.]	Size 00	HP02U03-*
	Size 0	HP05U03-*
	Size 1	HP10U03-*
	Size 2	HP25U03-*
Starter ("M") - Single Phase ["Catalog Number Suffix, below, required to complete Part No. 7	Size 00	HP02U02-*
	Size 0	HP02U02-*
	Size 1	HP10U02-*
	Size 2	HP25U02-*
Starter ("M") Replacement Overload Relay, 3 Ø		KHP31-15
		KHP31-14
Starter ("M") Main Contact Kit, Sizes 00-1		KHP31-1
Size 2		KHP32-1
Starter ("M") Extra Auxiliary Contact	1-N.O. or N.C.	KHP-1
	2-N.O. or N.C.	KHP-2

DESCRIPTION	Line Voltage/Part Number					
	115-120V, 50/60 Hz	200-208V, 60Hz	220-240V, 50/60 Hz	440-480V, 60 Hz	550-600V, 60 Hz	380V, 50 Hz
CONTROLLERS WITHOUT CONTROL TRANSFORMER						
*Starter ("M") Catalog Number Suffix	-76	-26	-26	-46	-56	-36
Starter ("M") Coil	KTB174-1	KTB174-2	KTB174-2	KTB174-5	KTB714-6	KTB174-7
Running Period Timer - RPT	713UP-76	713UP-86	713UP-26	713UP-46	713UP-56	713UP-35
Motor Running Red Pilot Light - Power Supply Unit - Red Lens	080-AT110V 080-LSFR	080-AT220V 080-LSFR	080-AT220V 080-LSFR	080-AT480V 080-LSFR	080AT600V 080-LSFR	080-AT380V 080-LSFR
CONTROLLERS WITH CONTROL TRANSFORMER						
Control Transformer, 120V sec. (Units without RPT) (Units with RPT)	N.A. N.A.	KTR67-42 KTR67-16	KTR67-1 KTR67-2	KTR67-1 KTR67-2	KTR67-43 KTR67-12	KTR67-37 KTR67-37
*Starter ("M") Catalog Number Suffix	-76					
Starter ("M") Coil	KTB174-1					
Running Period Timer - RPT	P6T-00-76					
Motor Running Red Pilot Light - Power Supply Unit - Red Lens	080-AT110V 080-LSFR					

NEMA 1 WALL MOUNTING ENCLOSURE



A -KO'S FOR ¾ - 1 - 1¼" CONDUIT (2) TOP & BOTTOM ENDS

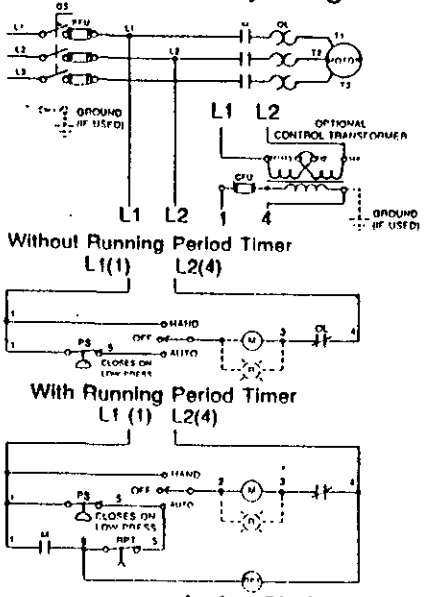
B -KO'S FOR ½ & ¾" CONDUIT TOP & BOTTOM ENDS

C -KO'S FOR ¾ & 1 " CONDUIT IN REAR, TOP & BOTTOM

D -KO'S FOR ½ - ¾" - CONDUIT IN REAR TOP ONLY

E -KO'S FOR ¾ & 1 CONDUIT. THIS SIDE BOTTOM ONLY, OPPOSITE SIDE TOP AND BOTTOM

Elementary Diagram

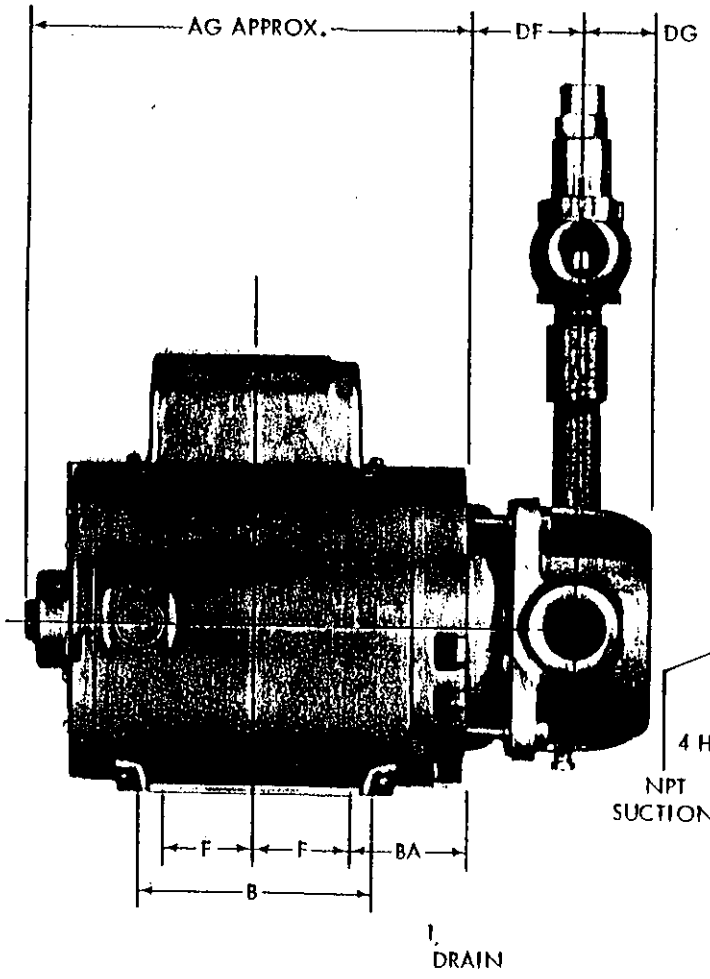


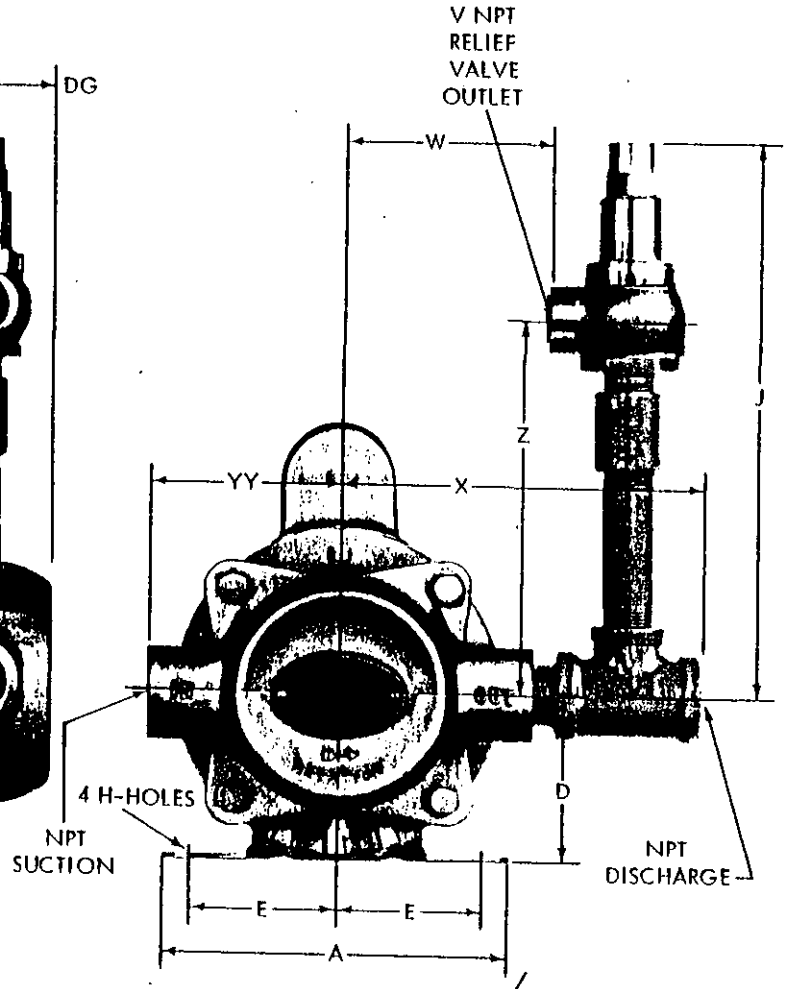
PS-10661-HPJ-1-1086RR

Joslyn Clark Controls, INC.
P.O. Box 945
Lancaster, SC 29720
(803) 286-8491

DATED **JULY 1986**

SUPERSEDES PAGE 202
DATED OCTOBER 1983





MODEL	SUCTION	DISCH.	DF	DG
934	1	1	2	1-11/16
935	2	1-1/2	2-1/4	2-1/4

HP	RPM	FRAME
1/2-1-1/2	3500	56
1/2-1-1/2	1750	56
3	3500	145T
5	3500	182T
7-1/2	3500	184T
10	3500	213T

FRAME	A	B	D	E	F	H	AG	BA
56	6-3/4	4	3-1/2	2-7/16	1-1/2	11/32 SLOT	11	2-9/16
145T	7	6	3-1/2	2-3/4	2-1/2	11/32 SLOT	11	2-7/8
182T	9	6-1/2	4-1/2	3-3/4	2-1/4	13/32	11	3-5/8
184T	9	7-1/2	4-1/2	3-3/4	2-3/4	13/32	12	3-5/8
213T	9-1/2	8	5-1/4	4-1/4	2-3/4	7/16	14	4-1/2

NOTES:
1. ALL DIMENSIONS IN INCHES.
2. NOT FOR CONSTRUCTION PURPOSES UNLESS CERTIFIED.
3. CAPACITOR WHEN FURNISHED NORMALLY APPEARS ON TOP OF MOTOR. DIMENSIONS ARE NOT SPECIFIED AS THEY VARY WITH EACH MOTOR MANUFACTURER.
4. DIMENSIONS MAY VARY ± 1/4".

PUMP	MODEL	934		935					
	SIZE	A04	D04	F05	G05	H05	I05	J05	K05

MODEL	V	J	YY	W	X	Z
934	1/2	10-15/16	3-3/4	3-3/16	6-3/8	7-3/4
	1-1/4	12-1/8		3-1/4	7-1/8	7-1/2
935	1/2	11-1/4	4-1/2	4-5/16	7-5/8	8-1/16
	3/4	13-3/16		4-7/16	7-7/8	10
	1-1/4	12-3/8		4-7/16	8-1/2	7-3/4

G.P.M.	P.S.I.	RELIEF VALVE SIZE INCHES
2.5	45-100	1/2
5	45-130	1/2
	135-215	1/2
7.5	45-130	1/2
	135-210	1/2
10	45-130	1/2
	~~135-205~~	1/2
15	45-130	1/2
	135-170	1/2
20	70-130	1/2
	135-155	1/2
25	80-130	3/4
	135	3/4
30	105-155	3/4
35	105-155	3/4
40	105-155	1
45	105-155	1

GS AURORA PUMP
A UNIT OF GENERAL SIGNAL
800 AIRPORT ROAD NORTH AURORA, ILLINOIS 60542

A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Auto Center

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard .30 gpm/sf over 3000 sf _____

AREA OF SPRINKLER OPERATION: 3000
DENSITY: .30
AREA PER SPRINKLER: 99.7
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside) 500
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL: A SIZE:17/32TEMP:165 K: 8.1

CALCULATION SUMMARY

GPM REQUIRED: 1449 PSI REQUIRED: 65.7
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03235 CAFE August 3, 1992

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 38
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

AUTO CENTER SYSTEM CALCULATED TO PRODUCE .30/3000 PLUS 500 GPM HOSE. 17/32"ORIF. K=8.1 SPRINKLERS.

PROJECT NAME: PRICE CLUB AUTO CENTER PROJECT NUMBER: AJC

AUTO CENTER

----------UNITS TABLE----------
LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .300 GPM/SQ.FT. OVER MOST REMOTE 3000. SQ.FT.

THE SYSTEM HAS 13 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------
STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

----------SPRINKLER ASSIGNMENT TO MAIN OR LOOP NODES----------
S1 = 8.10 K-FACTOR SPRINKLER ASSIGNED TO COVER 112.5 SQ.FT.
----- AT NODES: 56 57 58 69 70 71 72 73 74 75 76 82 83 84 85 86 87 88 89 95 96 97 98 99 100 101 102

----------FITTING TABLE----------
S = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L3 = 3 LONG TURN 90 DEGREE ELBOWS
L6 = 6 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF T2
18 = COMBINATION OF GV CV LE
19 = COMBINATION OF TF GV AV
20 = COMBINATION OF L3
21 = COMBINATION OF L6 TF

MAIN AND LOOP PIPES

	PIPE CONFIG	H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<1449.3>
0																		
	1	120.	8.00		.0		.0			.00	.00	8.2490	65.78	1449.3	8.70			500.0
	2	120.	8.00	18	10.0	28.0	38.0	2.0	.87	.27	1.14	8.2490	64.64	949.3	5.70			
	3	120.	6.00	19	4.0	78.0	82.0	4.0	1.73	2.08	3.82	6.3570	60.82	949.3	9.60			
L1	4	120.	6.00	20	305.0	27.0	332.0	15.0	6.49	8.44	14.93	6.3570	45.89	949.3	9.60			
	LOOP 1																	
	5																	
	6	120.	2.00	S	2.0	10.0	12.0	2.0	.87	.25	1.12	2.1570	44.77	50.1	4.40			
	7	120.	2.00	17	209.0	20.0	229.0			4.87	4.87	2.1570	39.91	50.1	4.40			

	8	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.25	-.61	2.1570	40.52	50.1	4.40
L2 <	9	120.	4.00		11.6		11.6			.01	.01	4.2600	40.51	50.1	1.13
	10	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.24	.62	2.1570	39.89	-48.8	4.28
	11	120.	2.00	17	209.0	20.0	229.0			-4.65	-4.63	2.1570	44.52	-48.8	4.28
L2 >	12	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.24	-1.11	2.1570	45.63	-48.8	4.28
4<	(13)	120.	6.00		11.6		11.6			-.27	-.27	6.3570	45.89	-899.2	9.09

LOOP 2

9>															
L3 <	14	120.	4.00		11.6		11.6			.03	.03	4.2600	40.48	98.9	2.23
	15	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.63	2.1570	39.84	-47.7	4.19
	16	120.	2.00	17	209.0	20.0	229.0			-4.44	-4.44	2.1570	44.29	-47.7	4.19
L3 >	17	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.10	2.1570	45.39	-47.7	4.19
12<	(18)	120.	6.00		11.6		11.6			-.24	-.24	6.3570	45.63	-850.4	8.60

LOOP 3

14>															
L4 <	19	120.	4.00		11.6		11.6			.07	.07	4.2600	40.41	146.5	3.30
	20	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.64	2.1570	39.77	-46.9	4.12
	21	120.	2.00	17	209.0	20.0	229.0			-4.31	-4.31	2.1570	44.08	-46.9	4.12
L4 >	22	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.09	2.1570	45.17	-46.9	4.12
17<	(23)	120.	6.00		11.6		11.6			-.22	-.22	6.3570	45.39	-802.8	8.11

LOOP 4

19>															
L5 <	24	120.	4.00		11.6		11.6			.11	.11	4.2600	40.30	193.4	4.35
	25	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.66	-46.4	4.08
	26	120.	2.00	17	209.0	20.0	229.0			-4.23	-4.23	2.1570	43.89	-46.4	4.08
L5 >	27	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.98	-46.4	4.08
22<	(28)	120.	6.00		11.6		11.6			-.19	-.19	6.3570	45.17	-755.9	7.64

LOOP 5

24>															
L6 <	29	120.	4.00		11.6		11.6			.16	.16	4.2600	40.14	239.9	5.40
	30	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.50	-46.4	4.07
	31	120.	2.00	17	209.0	20.0	229.0			-4.22	-4.22	2.1570	43.72	-46.4	4.07
L6 >	32	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.80	-46.4	4.07
27<	(33)	120.	6.00		11.6		11.6			-.17	-.17	6.3570	44.98	-709.4	7.17

LOOP 6

29>															
L7 <	34	120.	4.00		11.6		11.6			.23	.23	4.2600	39.92	286.3	6.44
	35	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.27	-46.8	4.11
	36	120.	2.00	17	209.0	20.0	229.0			-4.29	-4.29	2.1570	43.56	-46.8	4.11
L7 >	37	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.65	-46.8	4.11
32<	(38)	120.	6.00		11.6		11.6			-.15	-.15	6.3570	44.80	-663.0	6.70

LOOP 7

34>															
L8 <	39	120.	4.00		11.6		11.6			.30	.30	4.2600	39.62	333.0	7.50
	40	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.63	2.1570	38.98	-47.7	4.18
	41	120.	2.00	17	209.0	20.0	229.0			-4.44	-4.44	2.1570	43.42	-47.7	4.18
L8 >	42	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.10	2.1570	44.52	-47.7	4.18
37<	(43)	120.	6.00		11.6		11.6			-.13	-.13	6.3570	44.65	-616.3	6.23

LOOP 8

39>															
L9 <	44	120.	4.00		11.6		11.6			.38	.38	4.2600	39.24	380.7	8.57
	45	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.25	.62	2.1570	38.61	-49.0	4.31
	46	120.	2.00	17	209.0	20.0	229.0			-4.68	-4.68	2.1570	43.30	-49.0	4.31
L9 >	47	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.25	-1.11	2.1570	44.41	-49.0	4.31
42<	(48)	120.	6.00		11.6		11.6			-.11	-.11	6.3570	44.52	-568.6	5.75

LOOP 9

44>															
L10<	49	120.	4.00		11.6		11.6			.48	.48	4.2600	38.76	429.8	9.67
	50	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.26	.60	2.1570	38.15	-51.0	4.48
	51	120.	2.00	17	209.0	20.0	229.0			-5.03	-5.03	2.1570	43.18	-51.0	4.48

L10>=	52	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.26	-1.13	2.1570	44.20	-50.9	4.47				
47<=	(53)	120.	6.00		11.6		11.6			-.10	-.10	6.3570	44.30	-519.3	5.25				
								LOOP 10											
49>=																			
L11<=	54	120.	4.00	21	150.0	56.0	206.0			10.43	10.43	4.2600	28.22	480.5	10.82				
	55	120.	1.50	5	2.0	8.0	10.0	2.0	.87	1.04	1.91	1.6820	26.31	61.6	8.89				
S1	*56	120.	1.50		.0		.0			.00	.00	1.6820	26.31	61.6	8.89	.53	25.78	41.1	
S1	*57	120.	1.50		9.7		9.7			.13	.13	1.6820	26.18	20.4	2.95	.00	26.18	41.4	
S1	*58	120.	1.50		9.7		9.7			-.14	-.14	1.6820	26.31	-21.0	3.03	.54	25.77	41.1	
	59	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	27.34	-62.1	8.97				
	60	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	28.38	-62.1	8.97				
	61	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	29.41	-62.1	8.97				
	62	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	30.44	-62.1	8.97				
	63	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	31.47	-62.1	8.97				
	64	120.	1.50	5	9.1	8.0	17.1			-1.82	-1.82	1.6820	33.29	-62.1	8.97				
L11>=	65	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-1.06	-1.93	1.6820	35.21	-62.1	8.97				
52<=	(66)	120.	4.00	20	168.0	18.0	186.0			-8.99	-8.99	4.2600	44.20	-468.4	10.54				
								LOOP 11											
54>=																			
L12<=	67	120.	4.00		10.0		10.0			.39	.39	4.2600	27.83	419.0	9.43				
	68	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.78	5.65	1.6820	22.18	140.1	20.23				
S1	*69	120.	1.50		.0		.0			.00	.00	1.6820	22.18	140.1	20.23	2.75	19.42	35.7	
S1	*70	120.	1.50		9.7		9.7			2.69	2.69	1.6820	19.48	104.4	15.07	1.53	17.96	34.3	
S1	*71	120.	1.50		9.7		9.7			1.29	1.29	1.6820	18.20	70.1	10.12	.69	17.51	33.9	
S1	*72	120.	1.50		9.7		9.7			.38	.38	1.6820	17.82	36.2	5.22	.18	17.63	34.0	
S1	*73	120.	1.50		9.7		9.7			.00	.00	1.6820	17.82	2.2	.31	.00	17.82	34.2	
S1	*74	120.	1.50		9.7		9.7			-.30	-.30	1.6820	18.12	-32.0	4.63	.61	17.51	33.9	
S1	*75	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.27	-65.9	9.52	1.41	17.86	34.2	
S1	*76	120.	1.50		9.7		9.7			-2.49	-2.49	1.6820	21.76	-100.2	14.46	2.58	19.18	35.5	
	77	120.	1.50	5	9.1	8.0	17.1			-7.71	-7.71	1.6820	29.47	-135.6	19.59				
L12>=	78	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.51	-5.37	1.6820	34.84	-135.6	19.59				
65<=	(79)	120.	4.00		10.0		10.0			-.37	-.37	4.2600	35.21	-406.2	9.14				
								LOOP 12											
67>=																			
L13<=	80	120.	4.00		10.0		10.0			.19	.19	4.2600	27.64	278.9	6.28				
	81	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.75	5.61	1.6820	22.03	139.5	20.14				
S1	*82	120.	1.50		.0		.0			.00	.00	1.6820	22.03	139.5	20.14	2.73	19.30	35.6	
S1	*83	120.	1.50		9.7		9.7			2.67	2.67	1.6820	19.36	103.9	15.01	1.52	17.84	34.2	
S1	*84	120.	1.50		9.7		9.7			1.28	1.28	1.6820	18.08	69.7	10.07	.68	17.40	33.8	
S1	*85	120.	1.50		9.7		9.7			.37	.37	1.6820	17.71	35.9	5.19	.18	17.52	33.9	
S1	*86	120.	1.50		9.7		9.7			.00	.00	1.6820	17.70	2.0	.29	.00	17.70	34.1	
S1	*87	120.	1.50		9.7		9.7			-.30	-.30	1.6820	18.01	-32.1	4.63	.61	17.40	33.8	
S1	*88	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.15	-65.8	9.51	1.40	17.75	34.1	
S1	*89	120.	1.50		9.7		9.7			-2.49	-2.49	1.6820	21.64	-100.0	14.43	2.57	19.07	35.4	
	90	120.	1.50	5	9.1	8.0	17.1			-7.67	-7.67	1.6820	29.31	-135.3	19.54				
L13>=	91	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.49	-5.35	1.6820	34.67	-135.3	19.54				
78<=	(92)	120.	4.00		10.0		10.0			-.18	-.18	4.2600	34.84	-270.6	6.09				
								LOOP 13											
80>=																			
	93	120.	4.00		10.0		10.0			.05	.05	4.2600	27.59	139.4	3.14				
	94	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.74	5.60	1.6820	21.99	139.4	20.12				
S1	*95	120.	1.50		.0		.0			.00	.00	1.6820	21.99	139.4	20.12	2.72	19.26	35.5	
S1	*96	120.	1.50		9.7		9.7			2.66	2.66	1.6820	19.32	103.8	14.99	1.51	17.81	34.2	
S1	*97	120.	1.50		9.7		9.7			1.27	1.27	1.6820	18.05	69.6	10.05	.68	17.37	33.8	
S1	*98	120.	1.50		9.7		9.7			.37	.37	1.6820	17.67	35.9	5.18	.18	17.49	33.9	
S1	*99	120.	1.50		9.7		9.7			.00	.00	1.6820	17.67	2.0	.29	.00	17.67	34.1	
S1	*100	120.	1.50		9.7		9.7			-.30	-.30	1.6820	17.98	-32.1	4.63	.61	17.37	33.8	
S1	*101	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.12	-65.8	9.50	1.40	17.72	34.1	
S1	*102	120.	1.50		9.7		9.7			-2.48	-2.48	1.6820	21.61	-99.9	14.43	2.57	19.04	35.3	
	103	120.	1.50	5	9.1	8.0	17.1			-7.67	-7.67	1.6820	29.27	-135.3	19.53				

104	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.48	-5.35	1.6820	34.62	-135.3 19.53
(105)	120.	4.00		10.0		10.0			-.05	-.05	4.2600	34.67	-135.3 3.04

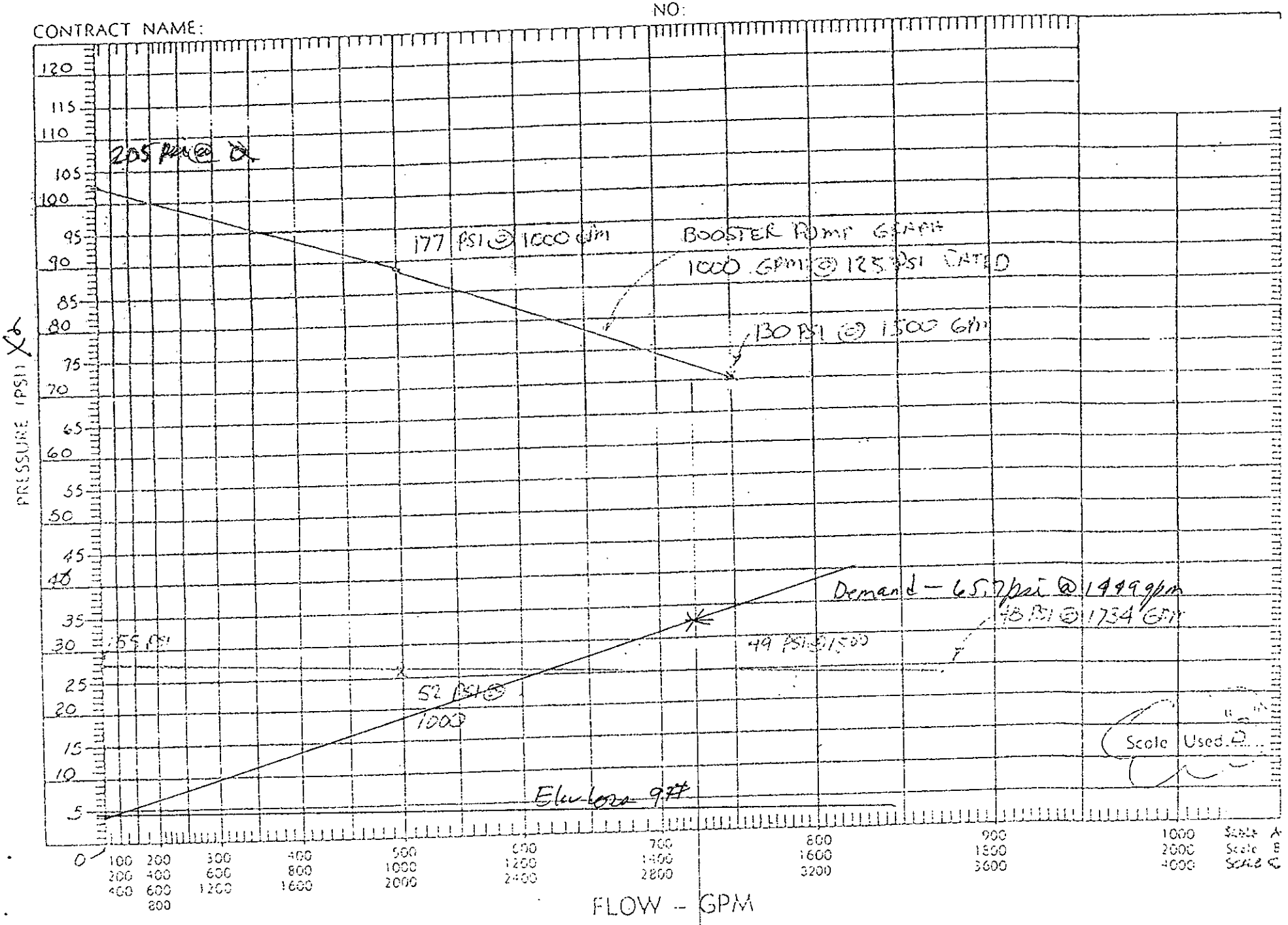
136.4 PSI PRESSURE AVAILABLE AND 65.7 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1448.9 GPM
900.0 GPM MINIMUM DESIGN FLOW REQUIREMENT
500.0 GPM REQUIRED ADDITIONAL FLOW 1867.6 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Auto Center

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Auto Center

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard .30 gpm/sf over 3000 sf _____

AREA OF SPRINKLER OPERATION: 3000
DENSITY: .30
AREA PER SPRINKLER: 99.7
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside) 500
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL: A SIZE:17/32TEMP:165 K: 8.1

CALCULATION SUMMARY

GPM REQUIRED: 1449 PSI REQUIRED: 65.7
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03235 August 3, 1992

CAFE

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

AUTO CENTER SYSTEM CALCULATED TO PRODUCE .30/3000 PLUS 500 GPM HOSE. 17/32"OREF. K=8.1 SPRINKLERS.

PROJECT NAME: PRICE CLUB AUTO CENTER PROJECT NUMBER: AJC

AUTO CENTER

----------UNITS TABLE----------
LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .300 GPM/SQ.FT. OVER MOST REMOTE 3000. SQ.FT.

THE SYSTEM HAS 13 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------
STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

----------SPRINKLER ASSIGNMENT TO MAIN OR LOOP NODES----------
S1 = 8.10 K-FACTOR SPRINKLER ASSIGNED TO COVER 112.5 SQ.FT.
----- AT NODES: 56 57 58 69 70 71 72 73 74 75 76 82 83 84 85 86 87 88 89 95 96 97 98 99 100 101 102

----------FITTING TABLE----------
5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L3 = 3 LONG TURN 90 DEGREE ELBOWS
L6 = 6 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF T2
18 = COMBINATION OF GV CV LE
19 = COMBINATION OF TF GV AV
20 = COMBINATION OF L3
21 = COMBINATION OF L6 TF

MAIN AND LOOP PIPES

PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<1449.3>
0>																		
	1	120.	8.00		.0		.0			.00	.00	8.2490	65.78	1449.3	8.70			500.0
	2	120.	8.00	18	10.0	28.0	38.0	2.0	.87	.27	1.14	8.2490	64.64	949.3	5.70			
	3	120.	6.00	19	4.0	78.0	82.0	4.0	1.73	2.08	3.82	6.3570	60.82	949.3	9.60			
L1 >	4	120.	6.00	20	305.0	27.0	332.0	15.0	6.49	8.44	14.93	6.3570	45.89	949.3	9.60			
	LOOP 1																	
	5																	
	6	120.	2.00	5	2.0	10.0	12.0	2.0	.87	.25	1.12	2.1570	44.77	50.1	4.40			
	7	120.	2.00	17	209.0	20.0	229.0			4.87	4.87	2.1570	39.91	50.1	4.40			

	8	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	.25	-.61	2.1570	40.52	50.1	4.40
L2 <	9	120.	4.00		11.6		11.6			.01	.01	4.2600	40.51	50.1	1.13
	10	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.24	.62	2.1570	39.89	-48.8	4.28
	11	120.	2.00	17	209.0	20.0	229.0			-4.63	-4.63	2.1570	44.52	-48.8	4.28
L2 >	12	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.24	-1.11	2.1570	45.63	-48.8	4.28
4<	(13)	120.	6.00		11.6		11.6			-.27	-.27	6.3570	45.89	-899.2	9.09

LOOP 2

9>																
L3 <	14	120.	4.00		11.6		11.6			.03	.03	4.2600	40.48	98.9	2.23
	15	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.63	2.1570	39.84	-47.7	4.19
	16	120.	2.00	17	209.0	20.0	229.0			-4.44	-4.44	2.1570	44.29	-47.7	4.19
L3 >	17	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.10	2.1570	45.39	-47.7	4.19
12<	(18)	120.	6.00		11.6		11.6			-.24	-.24	6.3570	45.63	-850.4	8.60

LOOP 3

14>																
L4 <	19	120.	4.00		11.6		11.6			.07	.07	4.2600	40.41	146.5	3.30
	20	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.64	2.1570	39.77	-46.9	4.12
	21	120.	2.00	17	209.0	20.0	229.0			-4.31	-4.31	2.1570	44.08	-46.9	4.12
L4 >	22	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.09	2.1570	45.17	-46.9	4.12
17<	(23)	120.	6.00		11.6		11.6			-.22	-.22	6.3570	45.39	-802.8	8.11

LOOP 4

19>																
L5 <	24	120.	4.00		11.6		11.6			.11	.11	4.2600	40.30	193.4	4.35
	25	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.66	-46.4	4.08
	26	120.	2.00	17	209.0	20.0	229.0			-4.23	-4.23	2.1570	43.89	-46.4	4.08
L5 >	27	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.98	-46.4	4.08
22<	(28)	120.	6.00		11.6		11.6			-.19	-.19	6.3570	45.17	-755.9	7.64

LOOP 5

24>																
L6 <	29	120.	4.00		11.6		11.6			.16	.16	4.2600	40.14	239.9	5.40
	30	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.50	-46.4	4.07
	31	120.	2.00	17	209.0	20.0	229.0			-4.22	-4.22	2.1570	43.72	-46.4	4.07
L6 >	32	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.80	-46.4	4.07
27<	(33)	120.	6.00		11.6		11.6			-.17	-.17	6.3570	44.98	-709.4	7.17

LOOP 6

29>																
L7 <	34	120.	4.00		11.6		11.6			.23	.23	4.2600	39.92	286.3	6.44
	35	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.27	-46.8	4.11
	36	120.	2.00	17	209.0	20.0	229.0			-4.29	-4.29	2.1570	43.56	-46.8	4.11
L7 >	37	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.65	-46.8	4.11
32<	(38)	120.	6.00		11.6		11.6			-.15	-.15	6.3570	44.80	-663.0	6.70

LOOP 7

34>																
L8 <	39	120.	4.00		11.6		11.6			.30	.30	4.2600	39.62	333.0	7.50
	40	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.63	2.1570	38.98	-47.7	4.18
	41	120.	2.00	17	209.0	20.0	229.0			-4.44	-4.44	2.1570	43.42	-47.7	4.18
L8 >	42	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.10	2.1570	44.52	-47.7	4.18
37<	(43)	120.	6.00		11.6		11.6			-.13	-.13	6.3570	44.65	-616.3	6.23

LOOP 8

39>																
L9 <	44	120.	4.00		11.6		11.6			.38	.38	4.2600	39.24	380.7	8.57
	45	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.25	.62	2.1570	38.61	-49.0	4.31
	46	120.	2.00	17	209.0	20.0	229.0			-4.68	-4.68	2.1570	43.30	-49.0	4.31
L9 >	47	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.25	-1.11	2.1570	44.41	-49.0	4.31
42<	(48)	120.	6.00		11.6		11.6			-.11	-.11	6.3570	44.52	-568.6	5.75

LOOP 9

44>																
L10 <	49	120.	4.00		11.6		11.6			.48	.48	4.2600	38.76	429.8	9.67
	50	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.26	.60	2.1570	38.15	-51.0	4.48
	51	120.	2.00	17	209.0	20.0	229.0			-5.03	-5.03	2.1570	43.18	-51.0	4.48

L10>	52	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.26	-1.13	2.1570	44.20	-50.9	4.47					
47<	(53)	120.	6.00		11.6		11.6			-.10	-.10	6.3570	44.30	-519.3	5.25					
									LOOP 10											
49>																				
L11<	54	120.	4.00	21	150.0	56.0	206.0			10.43	10.43	4.2600	28.22	480.5	10.82					
	55	120.	1.50	5	2.0	8.0	10.0	2.0	.87	1.04	1.91	1.6820	26.31	61.6	8.89					
S1	*56	120.	1.50		.0		.0			.00	.00	1.6820	26.31	61.6	8.89	.53	25.78	41.1		
S1	*57	120.	1.50		9.7		9.7			.13	.13	1.6820	26.18	20.4	2.95	.00	26.18	41.4		
S1	*58	120.	1.50		9.7		9.7			-.14	-.14	1.6820	26.31	-21.0	3.03	.54	25.77	41.1		
	59	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	27.34	-62.1	8.97					
	60	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	28.38	-62.1	8.97					
	61	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	29.41	-62.1	8.97					
	62	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	30.44	-62.1	8.97					
	63	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	31.47	-62.1	8.97					
	64	120.	1.50	5	9.1	8.0	17.1			-1.82	-1.82	1.6820	33.29	-62.1	8.97					
L11>	65	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-1.06	-1.93	1.6820	35.21	-62.1	8.97					
52<	(66)	120.	4.00	20	168.0	18.0	186.0			-8.99	-8.99	4.2600	44.20	-468.4	10.54					
									LOOP 11											
54>																				
L12<	67	120.	4.00		10.0		10.0			.39	.39	4.2600	27.83	419.0	9.43					
	68	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.78	5.65	1.6820	22.18	140.1	20.23					
S1	*69	120.	1.50		.0		.0			.00	.00	1.6820	22.18	140.1	20.23	2.75	19.42	35.7		
S1	*70	120.	1.50		9.7		9.7			2.69	2.69	1.6820	19.48	104.4	15.07	1.53	17.96	34.3		
S1	*71	120.	1.50		9.7		9.7			1.29	1.29	1.6820	18.20	70.1	10.12	.69	17.51	33.9		
S1	*72	120.	1.50		9.7		9.7			.38	.38	1.6820	17.82	36.2	5.22	.18	17.63	34.0		
S1	*73	120.	1.50		9.7		9.7			.00	.00	1.6820	17.82	2.2	.31	.00	17.82	34.2		
S1	*74	120.	1.50		9.7		9.7			-.30	-.30	1.6820	18.12	-32.0	4.63	.61	17.51	33.9		
S1	*75	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.27	-65.9	9.52	1.41	17.86	34.2		
S1	*76	120.	1.50		9.7		9.7			-2.49	-2.49	1.6820	21.76	-100.2	14.46	2.58	19.18	35.5		
	77	120.	1.50	5	9.1	8.0	17.1			-7.71	-7.71	1.6820	29.47	-135.6	19.59					
L12>	78	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.51	-5.37	1.6820	34.84	-135.6	19.59					
65<	(79)	120.	4.00		10.0		10.0			-.37	-.37	4.2600	35.21	-406.2	9.14					
									LOOP 12											
67>																				
L13<	80	120.	4.00		10.0		10.0			.19	.19	4.2600	27.64	278.9	6.28					
	81	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.75	5.61	1.6820	22.03	139.5	20.14					
S1	*82	120.	1.50		.0		.0			.00	.00	1.6820	22.03	139.5	20.14	2.73	19.30	35.6		
S1	*83	120.	1.50		9.7		9.7			2.67	2.67	1.6820	19.36	103.9	15.01	1.52	17.84	34.2		
S1	*84	120.	1.50		9.7		9.7			1.28	1.28	1.6820	18.08	69.7	10.07	.68	17.40	33.8		
S1	*85	120.	1.50		9.7		9.7			.37	.37	1.6820	17.71	35.9	5.19	.18	17.52	33.9		
S1	*86	120.	1.50		9.7		9.7			.00	.00	1.6820	17.70	2.0	.29	.00	17.70	34.1		
S1	*87	120.	1.50		9.7		9.7			-.30	-.30	1.6820	18.01	-32.1	4.63	.61	17.40	33.8		
S1	*88	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.15	-65.8	9.51	1.40	17.75	34.1		
S1	*89	120.	1.50		9.7		9.7			-2.49	-2.49	1.6820	21.64	-100.0	14.43	2.57	19.07	35.4		
	90	120.	1.50	5	9.1	8.0	17.1			-7.67	-7.67	1.6820	29.31	-135.3	19.54					
L13>	91	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.49	-5.35	1.6820	34.67	-135.3	19.54					
78<	(92)	120.	4.00		10.0		10.0			-.18	-.18	4.2600	34.84	-270.6	6.09					
									LOOP 13											
80>																				
	93	120.	4.00		10.0		10.0			.05	.05	4.2600	27.59	139.4	3.14					
	94	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.74	5.60	1.6820	21.99	139.4	20.12					
S1	*95	120.	1.50		.0		.0			.00	.00	1.6820	21.99	139.4	20.12	2.72	19.26	35.5		
S1	*96	120.	1.50		9.7		9.7			2.66	2.66	1.6820	19.32	103.8	14.99	1.51	17.81	34.2		
S1	*97	120.	1.50		9.7		9.7			1.27	1.27	1.6820	18.05	69.6	10.05	.68	17.37	33.8		
S1	*98	120.	1.50		9.7		9.7			.37	.37	1.6820	17.67	35.9	5.18	.18	17.49	33.9		
S1	*99	120.	1.50		9.7		9.7			.00	.00	1.6820	17.67	2.0	.29	.00	17.67	34.1		
S1	*100	120.	1.50		9.7		9.7			-.30	-.30	1.6820	17.98	-32.1	4.63	.61	17.37	33.8		
S1	*101	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.12	-65.8	9.50	1.40	17.72	34.1		
S1	*102	120.	1.50		9.7		9.7			-2.48	-2.48	1.6820	21.61	-99.9	14.43	2.57	19.04	35.3		
	103	120.	1.50	5	9.1	8.0	17.1			-7.67	-7.67	1.6820	29.27	-135.3	19.53					

	104	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.48	-5.35	1.6820	34.62	-135.3 19.53
	(105)	120.	4.00		10.0		10.0			-.05	-.05	4.2600	34.67	-135.3 3.04

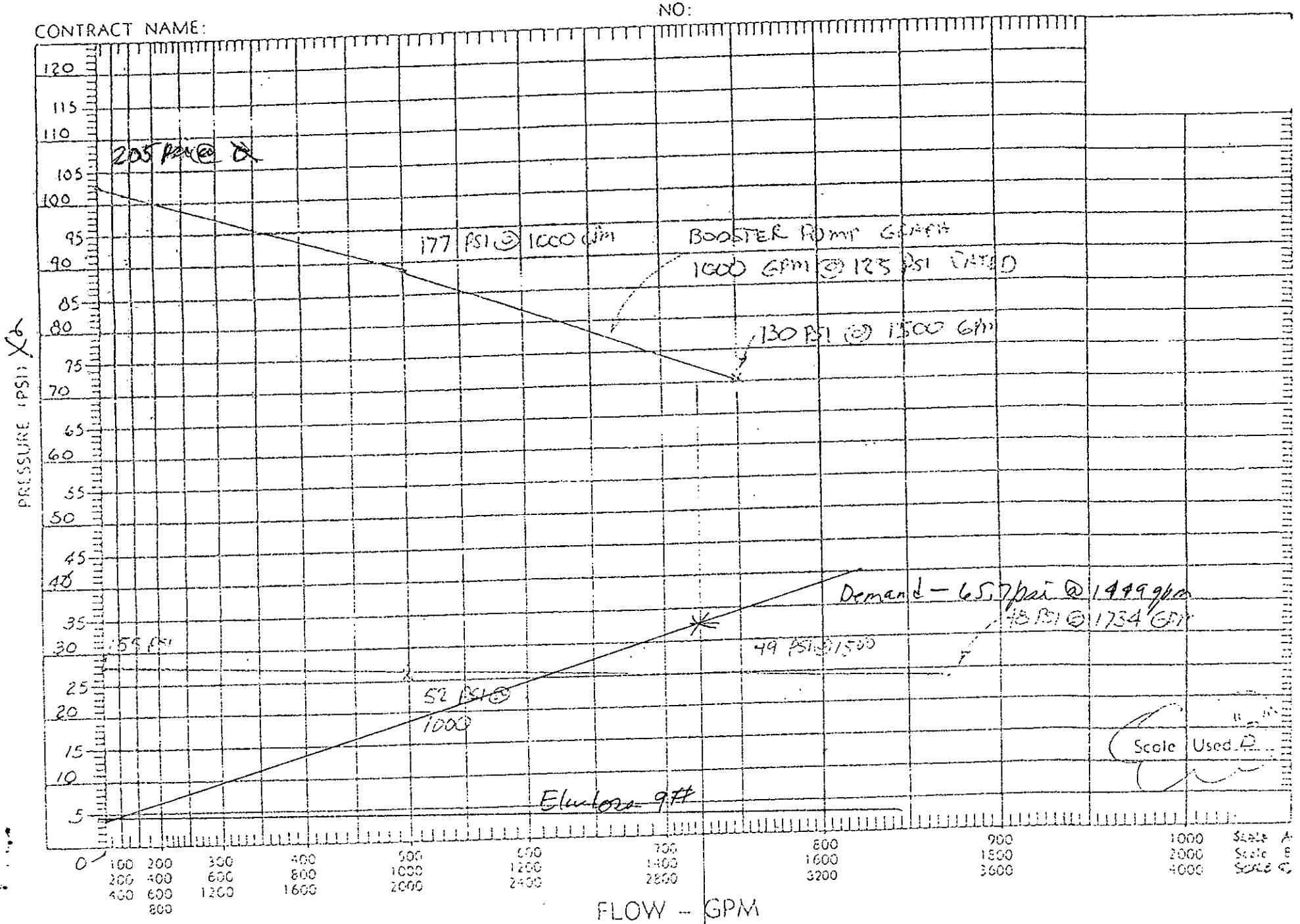
135.4 PSI PRESSURE AVAILABLE AND 65.7 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1448.9 GPM
900.0 GPM MINIMUM DESIGN FLOW REQUIREMENT
500.0 GPM REQUIRED ADDITIONAL FLOW 1867.6 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Auto Center

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Auto Center

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard .30 gpm/sf over 3000 sf _____

AREA OF SPRINKLER OPERATION: 3000
DENSITY: .30
AREA PER SPRINKLER: 99.7
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside) 500
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL: A SIZE:17/32TEMP:165 K: 8.1

CALCULATION SUMMARY

GPM REQUIRED: 1449 PSI REQUIRED: 65.7
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03235

CAFE

HYDRAULIC SYSTEM DESIGN REPORT

August 3, 1992

PRICE CLUB
RT.# 39
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

AUTO CENTER SYSTEM CALCULATED TO PRODUCE .30/3000 PLUS 500 GPM HOSE. 17/32"ORIF. K=8.1 SPRINKLERS.

PROJECT NAME: PRICE CLUB AUTO CENTER

PROJECT NUMBER: AJC

AUTO CENTER

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .300 GPM/SQ.FT. OVER MOST REMOTE 3000. SQ.FT.

THE SYSTEM HAS 13 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI — 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

----------SPRINKLER ASSIGNMENT TO MAIN OR LOOP NODES----------

S1 = 8.10 K-FACTOR SPRINKLER ASSIGNED TO COVER 112.5 SQ.FT.
----- AT NODES: 56 57 58 69 70 71 72 73 74 75 76 82 83 84 85 86 87 88 89 95 96 97 98 99 100 101 102

----------FITTING TABLE----------

5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L3 = 3 LONG TURN 90 DEGREE ELBOWS
L6 = 6 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF T2
18 = COMBINATION OF GV CV LE
19 = COMBINATION OF TF GV AV
20 = COMBINATION OF L3
21 = COMBINATION OF L6 TF

MAIN AND LOOP PIPES

	PIPE CONFIG	H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<1449.3>
0																		
	1	120	8.00		.0		.0			.00	.00	8.2490	65.78	1449.3	8.70			500.0
	2	120.	8.00	18	10.0	28.0	38.0	2.0	.87	.27	1.14	8.2490	64.64	949.3	5.70			
	3	120.	6.00	19	4.0	78.0	82.0	4.0	1.73	2.08	3.82	6.3570	60.82	949.3	9.60			
L1	4	120.	6.00	20	305.0	27.0	332.0	15.0	6.49	8.44	14.93	6.3570	45.89	949.3	9.60			
	LOOP 1																	
	5																	
	6	120.	2.00	5	2.0	10.0	12.0	2.0	.87	.25	1.12	2.1570	44.77	50.1	4.40			
	7	120.	2.00	17	209.0	20.0	229.0			4.87	4.87	2.1570	39.91	50.1	4.40			

	8	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	.25	-.61	2.1570	40.52	50.1	4.40
L2	9	120.	4.00		11.6		11.6			.01	.01	4.2600	40.51	50.1	1.13
	10	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.24	.62	2.1570	39.89	-48.8	4.28
	11	120.	2.00	17	209.0	20.0	229.0			-4.63	-4.63	2.1570	44.52	-48.8	4.28
L2	12	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.24	-1.11	2.1570	45.63	-48.8	4.28
4	(13)	120.	6.00		11.6		11.6			-.27	-.27	6.3570	45.89	-899.2	9.09
								LOOP 2							
9															
L3	14	120.	4.00		11.6		11.6			.03	.03	4.2600	40.48	98.9	2.23
	15	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.63	2.1570	39.84	-47.7	4.19
	16	120.	2.00	17	209.0	20.0	229.0			-4.44	-4.44	2.1570	44.29	-47.7	4.19
L3	17	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.10	2.1570	45.39	-47.7	4.19
12	(18)	120.	6.00		11.6		11.6			-.24	-.24	6.3570	45.63	-850.4	8.60
								LOOP 3							
14															
L4	19	120.	4.00		11.6		11.6			.07	.07	4.2600	40.41	146.5	3.30
	20	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.64	2.1570	39.77	-46.9	4.12
	21	120.	2.00	17	209.0	20.0	229.0			-4.31	-4.31	2.1570	44.08	-46.9	4.12
L4	22	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.09	2.1570	45.17	-46.9	4.12
17	(23)	120.	6.00		11.6		11.6			-.22	-.22	6.3570	45.39	-802.8	8.11
								LOOP 4							
19															
L5	24	120.	4.00		11.6		11.6			.11	.11	4.2600	40.30	193.4	4.35
	25	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.66	-46.4	4.08
	26	120.	2.00	17	209.0	20.0	229.0			-4.23	-4.23	2.1570	43.89	-46.4	4.08
L5	27	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.98	-46.4	4.08
22	(28)	120.	6.00		11.6		11.6			-.19	-.19	6.3570	45.17	-755.9	7.64
								LOOP 5							
24															
L6	29	120.	4.00		11.6		11.6			.16	.16	4.2600	40.14	239.9	5.40
	30	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.50	-46.4	4.07
	31	120.	2.00	17	209.0	20.0	229.0			-4.22	-4.22	2.1570	43.72	-46.4	4.07
L6	32	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.80	-46.4	4.07
27	(33)	120.	6.00		11.6		11.6			-.17	-.17	6.3570	44.98	-709.4	7.17
								LOOP 6							
29															
L7	34	120.	4.00		11.6		11.6			.23	.23	4.2600	39.92	286.3	6.44
	35	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.22	.64	2.1570	39.27	-46.8	4.11
	36	120.	2.00	17	209.0	20.0	229.0			-4.29	-4.29	2.1570	43.56	-46.8	4.11
L7	37	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.22	-1.09	2.1570	44.65	-46.8	4.11
32	(38)	120.	6.00		11.6		11.6			-.15	-.15	6.3570	44.80	-663.0	6.70
								LOOP 7							
34															
L8	39	120.	4.00		11.6		11.6			.30	.30	4.2600	39.62	333.0	7.50
	40	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.23	.63	2.1570	38.98	-47.7	4.18
	41	120.	2.00	17	209.0	20.0	229.0			-4.44	-4.44	2.1570	43.42	-47.7	4.18
L8	42	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.23	-1.10	2.1570	44.52	-47.7	4.18
37	(43)	120.	6.00		11.6		11.6			-.13	-.13	6.3570	44.65	-616.3	6.23
								LOOP 8							
39															
L9	44	120.	4.00		11.6		11.6			.38	.38	4.2600	39.24	380.7	8.57
	45	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.25	.62	2.1570	38.61	-49.0	4.31
	46	120.	2.00	17	209.0	20.0	229.0			-4.68	-4.68	2.1570	43.30	-49.0	4.31
L9	47	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.25	-1.11	2.1570	44.41	-49.0	4.31
42	(48)	120.	6.00		11.6		11.6			-.11	-.11	6.3570	44.52	-568.6	5.75
								LOOP 9							
44															
L10	49	120.	4.00		11.6		11.6			.48	.48	4.2600	38.76	429.8	9.67
	50	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.26	.60	2.1570	38.15	-51.0	4.48
	51	120.	2.00	17	209.0	20.0	229.0			-5.03	-5.03	2.1570	43.18	-51.0	4.48

L10>	52	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.26	-1.13	2.1570	44.20	-50.9	4.47					
47<	(53)	120.	6.00		11.6		11.6			-.10	-.10	6.3570	44.30	-519.3	5.25					
									LOOP 10											
49>																				
L11<	54	120.	4.00	21	150.0	56.0	206.0			10.43	10.43	4.2600	28.22	480.5	10.82					
	55	120.	1.50	5	2.0	8.0	10.0	2.0	.87	1.04	1.91	1.6820	26.31	61.6	8.89					
S1	* 56	120.	1.50		.0		.0			.00	.00	1.6820	26.31	61.6	8.89	.53	25.78	41.1		
S1	* 57	120.	1.50		9.7		9.7			.13	.13	1.6820	26.18	20.4	2.95	.00	26.18	41.4		
S1	* 58	120.	1.50		9.7		9.7			-.14	-.14	1.6820	26.31	-21.0	3.03	.54	25.77	41.1		
	59	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	27.34	-62.1	8.97					
	60	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	28.38	-62.1	8.97					
	61	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	29.41	-62.1	8.97					
	62	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	30.44	-62.1	8.97					
	63	120.	1.50		9.7		9.7			-1.03	-1.03	1.6820	31.47	-62.1	8.97					
	64	120.	1.50	5	9.1	8.0	17.1			-1.82	-1.82	1.6820	33.29	-62.1	8.97					
L11>	65	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-1.06	-1.93	1.6820	35.21	-62.1	8.97					
52<	(66)	120.	4.00	20	168.0	18.0	186.0			-8.99	-8.99	4.2600	44.20	-468.4	10.54					
									LOOP 11											
54>																				
L12<	67	120.	4.00		10.0		10.0			.39	.39	4.2600	27.83	419.0	9.43					
	68	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.78	5.65	1.6820	22.18	140.1	20.23					
S1	* 69	120.	1.50		.0		.0			.00	.00	1.6820	22.18	140.1	20.23	2.75	19.42	35.7		
S1	* 70	120.	1.50		9.7		9.7			2.69	2.69	1.6820	19.48	104.4	15.07	1.53	17.96	34.3		
S1	* 71	120.	1.50		9.7		9.7			1.29	1.29	1.6820	18.20	70.1	10.12	.69	17.51	33.9		
S1	* 72	120.	1.50		9.7		9.7			.38	.38	1.6820	17.82	36.2	5.22	.18	17.63	34.0		
S1	* 73	120.	1.50		9.7		9.7			.00	.00	1.6820	17.82	2.2	.31	.00	17.82	34.2		
S1	* 74	120.	1.50		9.7		9.7			-.30	-.30	1.6820	18.12	-32.0	4.63	.61	17.51	33.9		
S1	* 75	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.27	-65.9	9.52	1.41	17.86	34.2		
S1	* 76	120.	1.50		9.7		9.7			-2.49	-2.49	1.6820	21.76	-100.2	14.46	2.58	19.18	35.5		
	77	120.	1.50	5	9.1	8.0	17.1			-7.71	-7.71	1.6820	29.47	-135.6	19.59					
L12>	78	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.51	-5.37	1.6820	34.84	-135.6	19.59					
65<	(79)	120.	4.00		10.0		10.0			-.37	-.37	4.2600	35.21	-406.2	9.14					
									LOOP 12											
67>																				
L13<	80	120.	4.00		10.0		10.0			.19	.19	4.2600	27.64	278.9	6.28					
	81	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.75	5.61	1.6820	22.03	139.5	20.14					
S1	* 82	120.	1.50		.0		.0			.00	.00	1.6820	22.03	139.5	20.14	2.73	19.30	35.6		
S1	* 83	120.	1.50		9.7		9.7			2.67	2.67	1.6820	19.36	103.9	15.01	1.52	17.84	34.2		
S1	* 84	120.	1.50		9.7		9.7			1.28	1.28	1.6820	18.08	69.7	10.07	.68	17.40	33.8		
S1	* 85	120.	1.50		9.7		9.7			.37	.37	1.6820	17.71	35.9	5.19	.18	17.52	33.9		
S1	* 86	120.	1.50		9.7		9.7			.00	.00	1.6820	17.70	2.0	.29	.00	17.70	34.1		
S1	* 87	120.	1.50		9.7		9.7			-.30	-.30	1.6820	18.01	-32.1	4.63	.61	17.40	33.8		
S1	* 88	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.15	-65.8	9.51	1.40	17.75	34.1		
S1	* 89	120.	1.50		9.7		9.7			-2.49	-2.49	1.6820	21.64	-100.0	14.43	2.57	19.07	35.4		
	90	120.	1.50	5	9.1	8.0	17.1			-7.67	-7.67	1.6820	29.31	-135.3	19.54					
L13>	91	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.49	-5.35	1.6820	34.67	-135.3	19.54					
78<	(92)	120.	4.00		10.0		10.0			-.18	-.18	4.2600	34.84	-270.6	6.09					
									LOOP 13											
80>																				
	93	120.	4.00		10.0		10.0			.05	.05	4.2600	27.59	139.4	3.14					
	94	120.	1.50	5	2.0	8.0	10.0	2.0	.87	4.74	5.60	1.6820	21.99	139.4	20.12					
S1	* 95	120.	1.50		.0		.0			.00	.00	1.6820	21.99	139.4	20.12	2.72	19.26	35.5		
S1	* 96	120.	1.50		9.7		9.7			2.66	2.66	1.6820	19.32	103.8	14.99	1.51	17.81	34.2		
S1	* 97	120.	1.50		9.7		9.7			1.27	1.27	1.6820	18.05	69.6	10.05	.68	17.37	33.8		
S1	* 98	120.	1.50		9.7		9.7			.37	.37	1.6820	17.67	35.9	5.18	.18	17.49	33.9		
S1	* 99	120.	1.50		9.7		9.7			.00	.00	1.6820	17.67	2.0	.29	.00	17.67	34.1		
S1	*100	120.	1.50		9.7		9.7			-.30	-.30	1.6820	17.98	-32.1	4.63	.61	17.37	33.8		
S1	*101	120.	1.50		9.7		9.7			-1.15	-1.15	1.6820	19.12	-65.8	9.50	1.40	17.72	34.1		
S1	*102	120.	1.50		9.7		9.7			-2.48	-2.48	1.6820	21.61	-99.9	14.43	2.57	19.04	35.3		
	103	120.	1.50	5	9.1	8.0	17.1			-7.67	-7.67	1.6820	29.27	-135.3	19.53					

104	120.	1.50	5	2.0	8.0	10.0	-2.0	-.87	-4.48	-5.35	1.6820	34.62	-135.3 19.53
(105)	120.	4.00		10.0		10.0			-.05	-.05	4.2600	34.67	-135.3 3.04

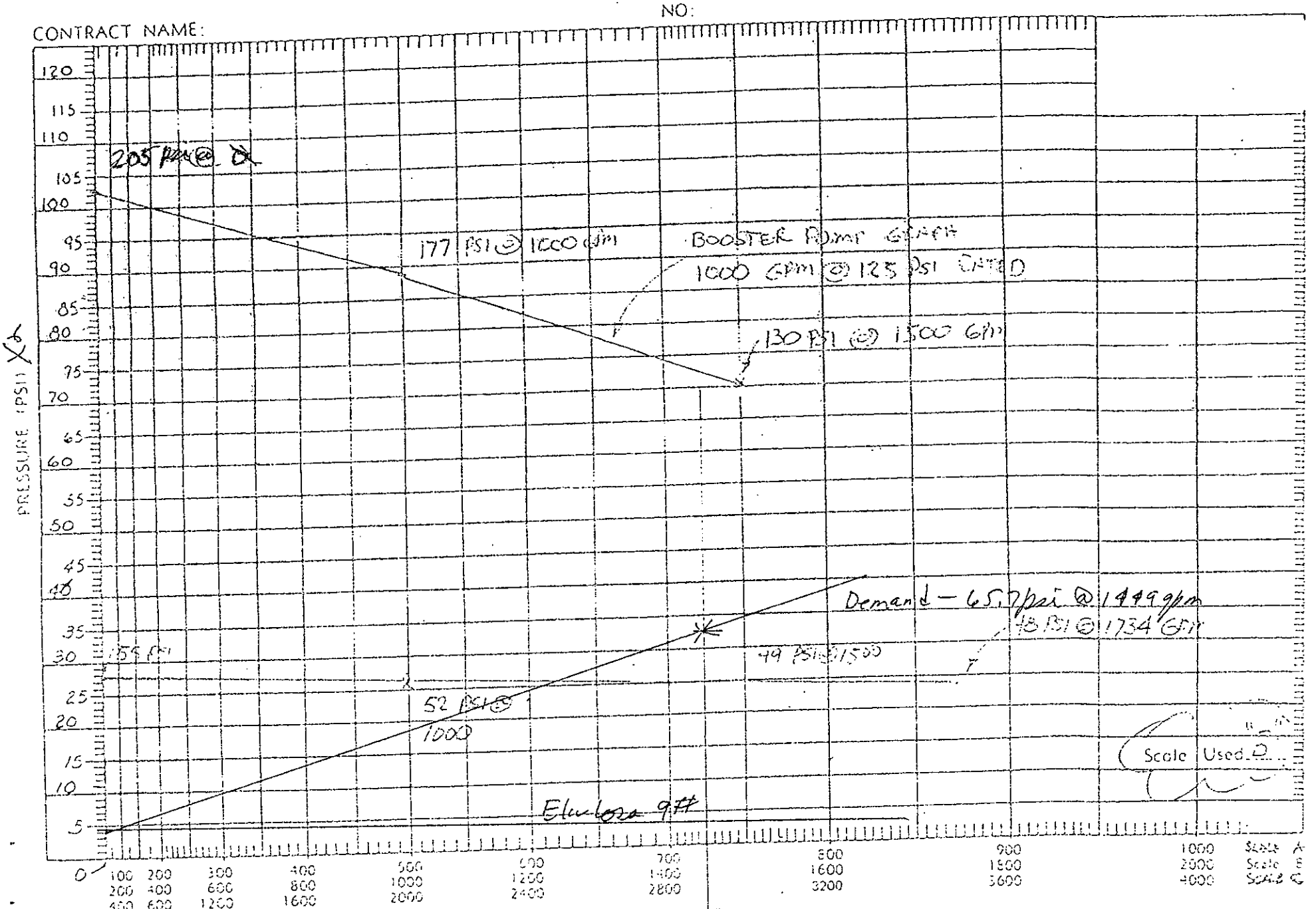
136.4 PSI PRESSURE AVAILABLE AND 65.7 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1448.9 GPM
900.0 GPM MINIMUM DESIGN FLOW REQUIREMENT
500.0 GPM REQUIRED ADDITIONAL FLOW 1867.6 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Auto Center

CONTRACT NAME:

NO:



BRICK TOWNSHIP

Plan Review Class Date By

Zoning

Plumbing

Building 8/14/92 E

Fire

Energy

Electrical

A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Warehouse - Outflow only

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) Outflow @ most remote for canopy & racks

AREA OF SPRINKLER OPERATION:
DENSITY:
AREA PER SPRINKLER:
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside)
RACK SPRINKLER ALLOWANCE:

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: MODEL: SIZE: TEMP: K:

CALCULATION SUMMARY

GPM REQUIRED: PSI REQUIRED:
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03243 — CAFE — January 1, 1980

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.

PROJECT NAME: PRICE CLUB GRID SUPPLY TO REAR PROJECT NUMBER: AJC

OUTFLOW

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

THE SYSTEM HAS 9 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

----------FITTING TABLE----------

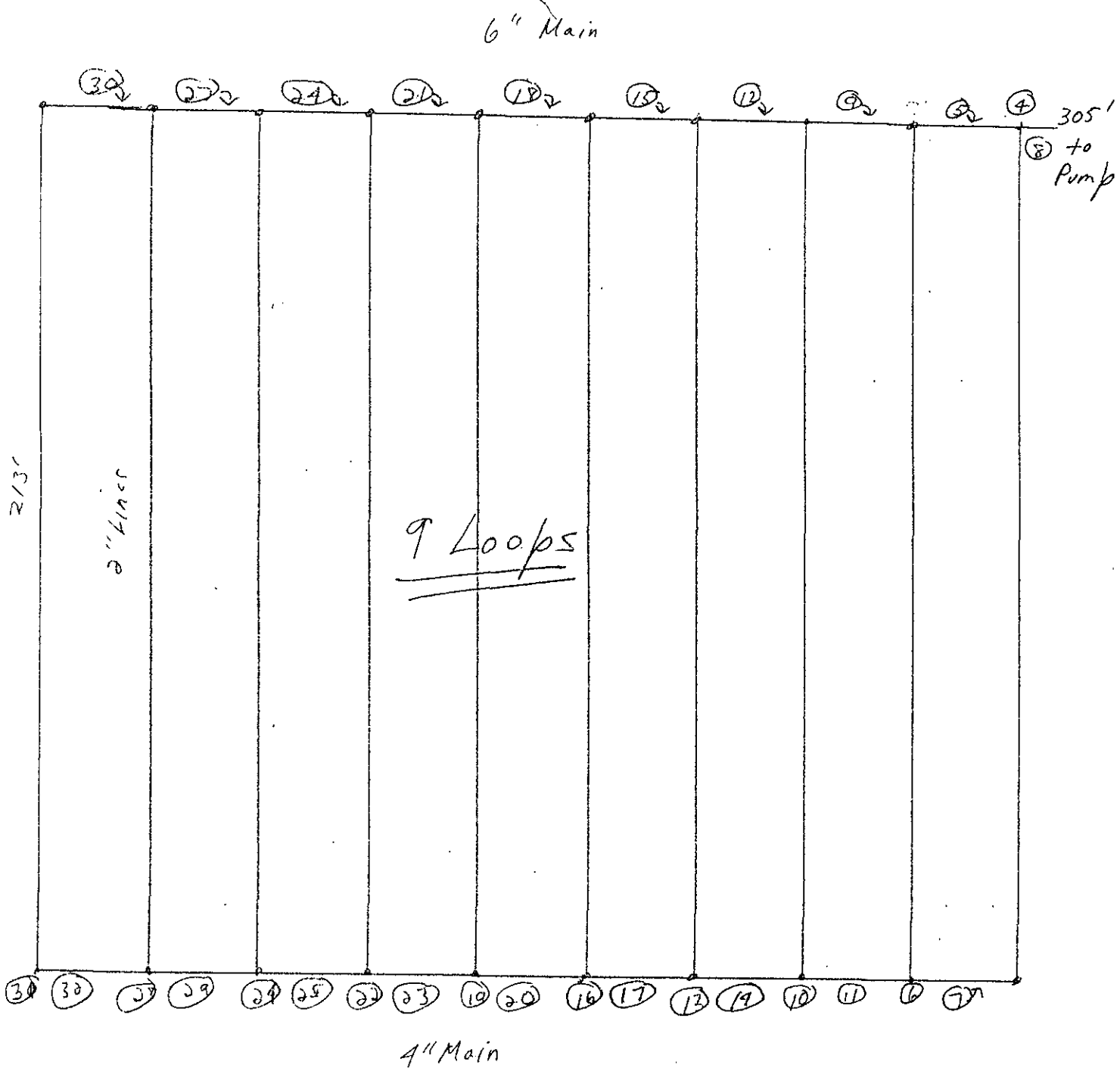
T2 = 2 TURNING FLOW TEE FITTINGS
L3 = 3 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF GV CV LE
18 = COMBINATION OF TF GV AV
19 = COMBINATION OF L3
20 = COMBINATION OF T2

MAIN AND LOOP PIPES

PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<1000.0>
0>																		
	1	120.	8.00		.0		.0			.00	.00	8.2490	177.00	1000.0	6.00			500.0
	2	120.	8.00	17	10.0	28.0	38.0	2.0	.87	.08	.95	8.2490	176.05	500.0	3.00			
	3	120.	6.00	18	4.0	78.0	82.0	4.0	1.73	.64	2.37	6.3570	173.68	500.0	5.05			
L1 >	4	120.	6.00	19	305.0	27.0	332.0	17.0	7.36	2.58	9.94	6.3570	163.75	500.0	5.05			
	LOOP 1																	
L2 <	5	120.	6.00		11.6		11.6			.07	.07	6.3570	163.67	451.8	4.57			
L2 >	6	120.	2.00	20	213.0	20.0	233.0			4.54	4.54	2.1570	159.13	47.8	4.20			
	7	120.	4.00		11.6		11.6			-.01	-.01	4.2600	159.14	-48.2	1.08			
4<	(8)	120.	2.00	20	213.0	20.0	233.0			-4.61	-4.61	2.1570	163.75	-48.2	4.23			
	LOOP 2																	
5>																		
L3 <	9	120.	6.00		11.6		11.6			.06	.06	6.3570	163.61	404.0	4.08			
L3 >	10	120.	2.00	20	213.0	20.0	233.0			4.51	4.51	2.1570	159.10	47.6	4.18			
6<	(11)	120.	4.00		11.6		11.6			-.03	-.03	4.2600	159.13	-96.0	2.16			
	LOOP 3																	
3>																		
L4 <	12	120.	6.00		11.6		11.6			.05	.05	6.3570	163.56	356.4	3.60			
L4 >	13	120.	2.00	20	213.0	20.0	233.0			4.53	4.53	2.1570	159.03	47.7	4.19			

10<	(14)	120.	4.00		11.6		11.6			-.06	-.06	4.2600	159.10	-143.6	3.23	
								LOOP 4								
12>																
L5 <	15	120.	6.00		11.6		11.6			.04	.04	6.3570	163.52	308.6	3.12	
L5 >	16	120.	2.00	20	213.0	20.0	233.0			4.60	4.60	2.1570	158.93	48.1	4.22	
13<	(17)	120.	4.00		11.6		11.6			-.11	-.11	4.2600	159.03	-191.4	4.31	
								LOOP 5								
15>																
L6 <	18	120.	6.00		11.6		11.6			.03	.03	6.3570	163.50	260.5	2.63	
L6 >	19	120.	2.00	20	213.0	20.0	233.0			4.73	4.73	2.1570	158.77	48.9	4.29	
16<	(20)	120.	4.00		11.6		11.6			-.16	-.16	4.2600	158.93	-239.5	5.39	
								LOOP 6								
18>																
L7 <	21	120.	6.00		11.6		11.6			.02	.02	6.3570	163.48	211.6	2.14	
L7 >	22	120.	2.00	20	213.0	20.0	233.0			4.94	4.94	2.1570	158.54	50.0	4.39	
19<	(23)	120.	4.00		11.6		11.6			-.23	-.23	4.2600	158.77	-288.4	6.49	
								LOOP 7								
21>																
L8 <	24	120.	6.00		11.6		11.6			.01	.01	6.3570	163.47	161.6	1.63	
L8 >	25	120.	2.00	20	213.0	20.0	233.0			5.24	5.24	2.1570	158.23	51.6	4.53	
22<	(26)	120.	4.00		11.6		11.6			-.31	-.31	4.2600	158.54	-338.4	7.62	
								LOOP 8								
24>																
L9 <	27	120.	6.00		11.6		11.6			.01	.01	6.3570	163.46	110.0	1.11	
L9 >	28	120.	2.00	20	213.0	20.0	233.0			5.63	5.63	2.1570	157.83	53.7	4.72	
25<	(29)	120.	4.00		11.6		11.6			-.40	-.40	4.2600	158.23	-390.0	8.78	
								LOOP 9								
27>																
	30	120.	6.00		11.6		11.6			.00	.00	6.3570	163.46	56.3	.57	
	31	120.	2.00	20	213.0	20.0	233.0			6.14	6.14	2.1570	157.32	56.3	4.94	500.0
28<	(32)	120.	4.00		11.6		11.6			-.51	-.51	4.2600	157.83	-443.7	9.99	

177.0 PSI PRESSURE AVAILABLE AND 177.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1000.0 GPM



Loop Nos. for Outflow for Rack System + Canopy

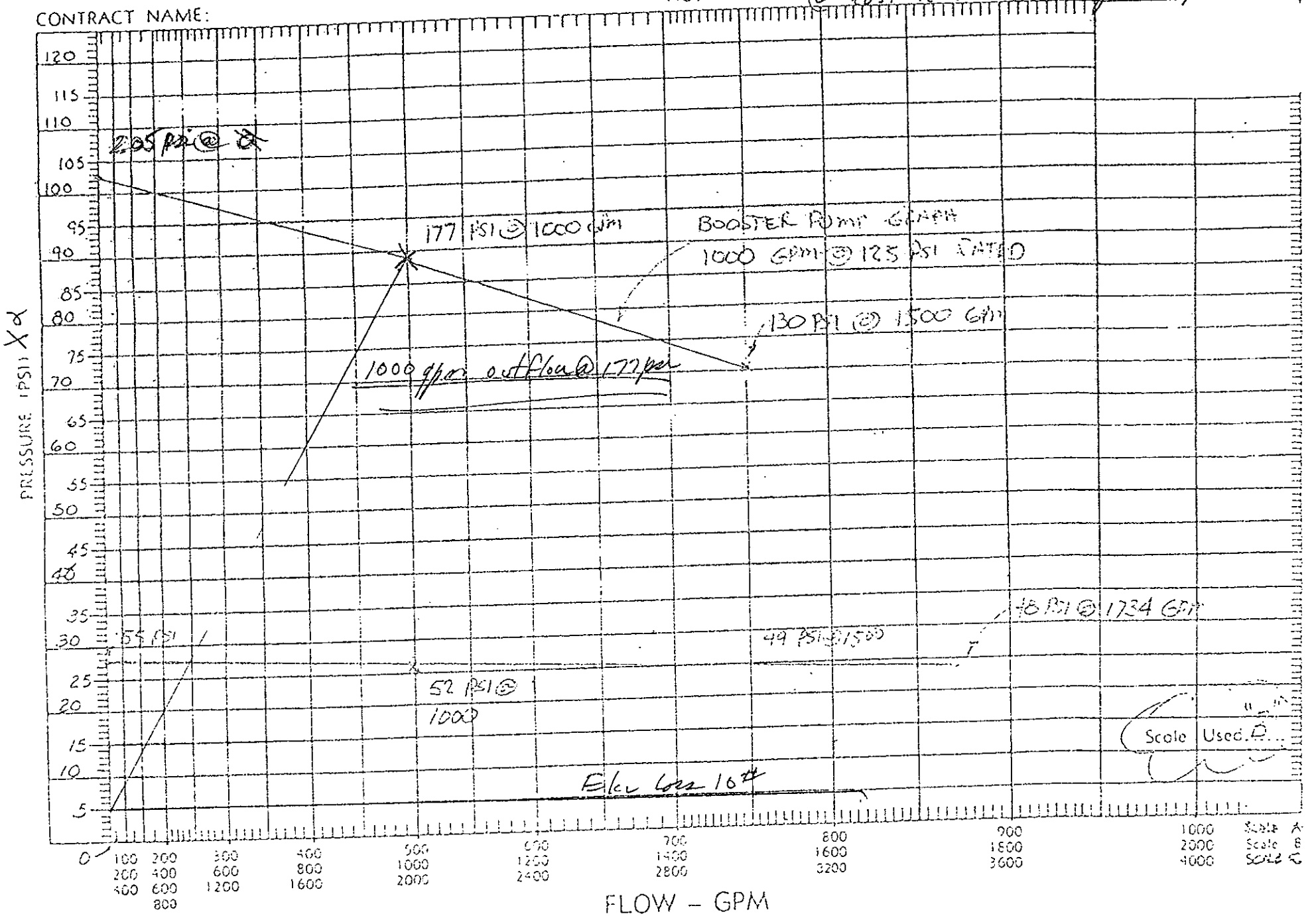
Assumes Most hydraulically remote area of building — So. West Corner of System #3 Grid — to give flow for each system —

PRICE CLUB

Price Club
Outflow for Canopy + Rack
@ Most Remote Area of Bldg - N.W. Corner

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Warehouse - Outflow only

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) Outflow @ most remote for canopy & racks

AREA OF SPRINKLER OPERATION:
DENSITY:
AREA PER SPRINKLER:
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside)
RACK SPRINKLER ALLOWANCE:

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: MODEL: SIZE: TEMP: K:

CALCULATION SUMMARY

GPM REQUIRED: PSI REQUIRED:
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03243 January 1, 1980

CAFE

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 68
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.

PROJECT NAME: PRICE CLUB GRID SUPPLY TO REAR PROJECT NUMBER: AJC

----------UNITS TABLE----------
LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

THE SYSTEM HAS 9 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------
STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

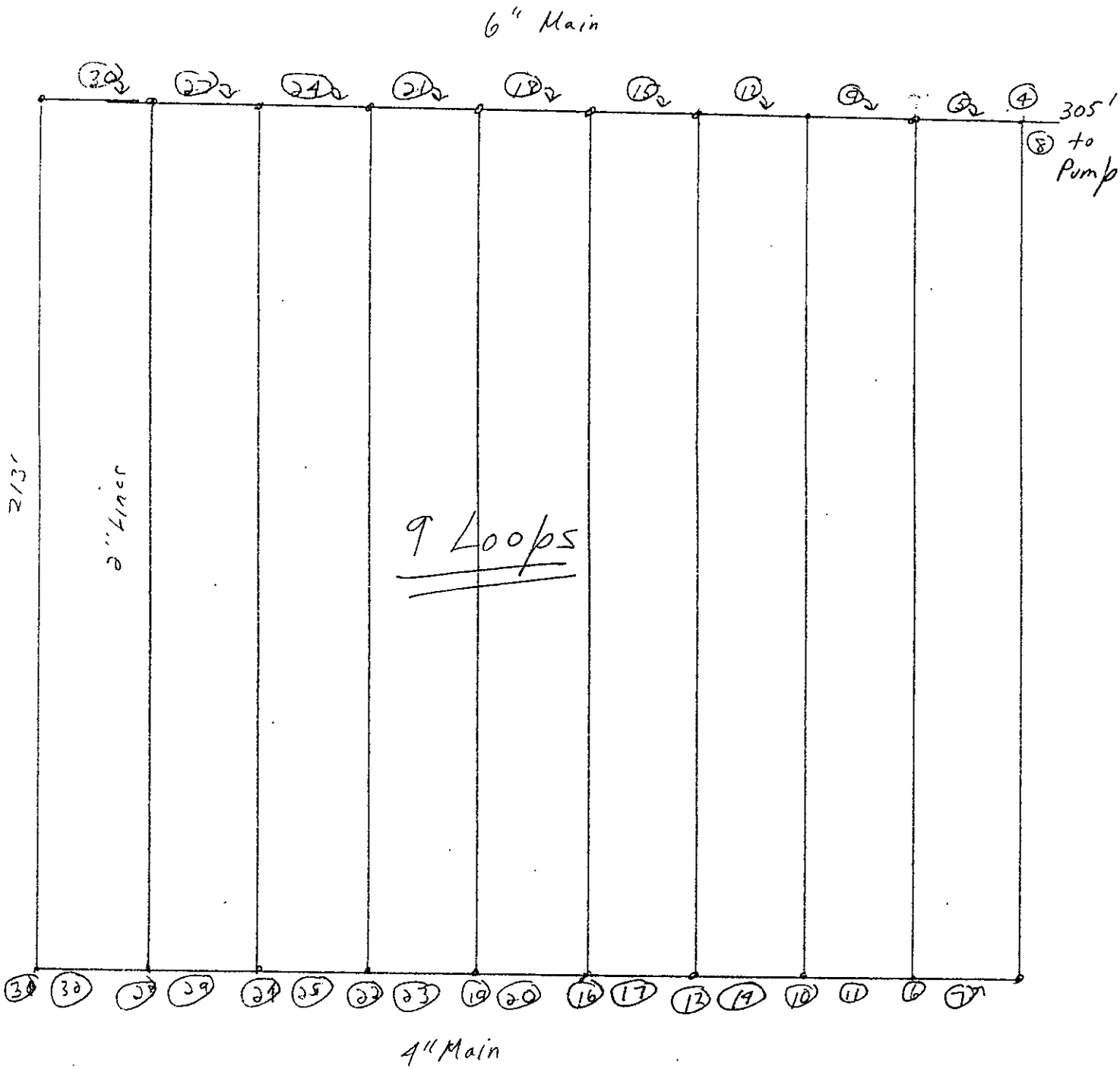
----------FITTING TABLE----------
T2 = 2 TURNING FLOW TEE FITTINGS
L3 = 3 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF GV CV LE
18 = COMBINATION OF TF GV AV
19 = COMBINATION OF L3
20 = COMBINATION OF T2

MAIN AND LOOP PIPES

	PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																			<1000.0>
0>																			
		1	120.	8.00		.0		.0			.00	.00	8.2490	177.00	1000.0	6.00			500.0
		2	120.	8.00	17	10.0	28.0	38.0	2.0	.87	.08	.95	8.2490	176.05	500.0	3.00			
		3	120.	6.00	18	4.0	78.0	82.0	4.0	1.73	.64	2.37	6.3570	173.68	500.0	5.05			
L1 >		4	120.	6.00	19	305.0	27.0	332.0	17.0	7.36	2.58	9.94	6.3570	163.75	500.0	5.05			
	LOOP 1																		
L2 <		5	120.	6.00		11.6		11.6			.07	.07	6.3570	163.67	451.8	4.57			
L2 >		6	120.	2.00	20	213.0	20.0	233.0			4.54	4.54	2.1570	159.13	47.8	4.20			
		7	120.	4.00		11.6		11.6			-.01	-.01	4.2600	159.14	-48.2	1.08			
4<		(8)	120.	2.00	20	213.0	20.0	233.0			-4.61	-4.61	2.1570	163.75	-48.2	4.23			
	LOOP 2																		
5>																			
L3 <		9	120.	6.00		11.6		11.6			.06	.06	6.3570	163.61	404.0	4.08			
L3 >		10	120.	2.00	20	213.0	20.0	233.0			4.51	4.51	2.1570	159.10	47.6	4.18			
6<		(11)	120.	4.00		11.6		11.6			-.03	-.03	4.2600	159.13	-96.0	2.16			
	LOOP 3																		
9>																			
L4 <		12	120.	6.00		11.6		11.6			.05	.05	6.3570	163.56	356.4	3.60			
L4 >		13	120.	2.00	20	213.0	20.0	233.0			4.53	4.53	2.1570	159.03	47.7	4.19			

10	(14)	120.	4.00		11.6		11.6		-.06	-.06	4.2600	159.10	-143.6	3.23	
							LOOP	4							
12															
L5	15	120.	6.00		11.6		11.6		.04	.04	6.3570	163.52	308.6	3.12	
L5	16	120.	2.00	20	213.0	20.0	233.0		4.60	4.60	2.1570	158.93	48.1	4.22	
13	(17)	120.	4.00		11.6		11.6		-.11	-.11	4.2600	159.03	-191.4	4.31	
							LOOP	5							
15															
L6	18	120.	6.00		11.6		11.6		.03	.03	6.3570	163.50	260.5	2.63	
L6	19	120.	2.00	20	213.0	20.0	233.0		4.73	4.73	2.1570	158.77	48.9	4.29	
16	(20)	120.	4.00		11.6		11.6		-.16	-.16	4.2600	158.93	-239.5	5.39	
							LOOP	6							
19															
L7	21	120.	6.00		11.6		11.6		.02	.02	6.3570	163.48	211.6	2.14	
L7	22	120.	2.00	20	213.0	20.0	233.0		4.94	4.94	2.1570	158.54	50.0	4.39	
19	(23)	120.	4.00		11.6		11.6		-.23	-.23	4.2600	158.77	-288.4	6.49	
							LOOP	7							
21															
L8	24	120.	6.00		11.6		11.6		.01	.01	6.3570	163.47	161.6	1.63	
L8	25	120.	2.00	20	213.0	20.0	233.0		5.24	5.24	2.1570	158.23	51.6	4.53	
22	(26)	120.	4.00		11.6		11.6		-.31	-.31	4.2600	158.54	-338.4	7.62	
							LOOP	8							
24															
L9	27	120.	6.00		11.6		11.6		.01	.01	6.3570	163.46	110.0	1.11	
L9	28	120.	2.00	20	213.0	20.0	233.0		5.63	5.63	2.1570	157.83	53.7	4.72	
25	(29)	120.	4.00		11.6		11.6		-.40	-.40	4.2600	158.23	-390.0	8.78	
							LOOP	9							
27															
	30	120.	6.00		11.6		11.6		.00	.00	6.3570	163.46	56.3	.57	
	31	120.	2.00	20	213.0	20.0	233.0		6.14	6.14	2.1570	157.32	56.3	4.94	500.0
28	(32)	120.	4.00		11.6		11.6		-.51	-.51	4.2600	157.83	-443.7	9.99	

177.0 PSI PRESSURE AVAILABLE AND 177.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1000.0 GPM



Loop Nos. for Outflow for Rack System + Canopy

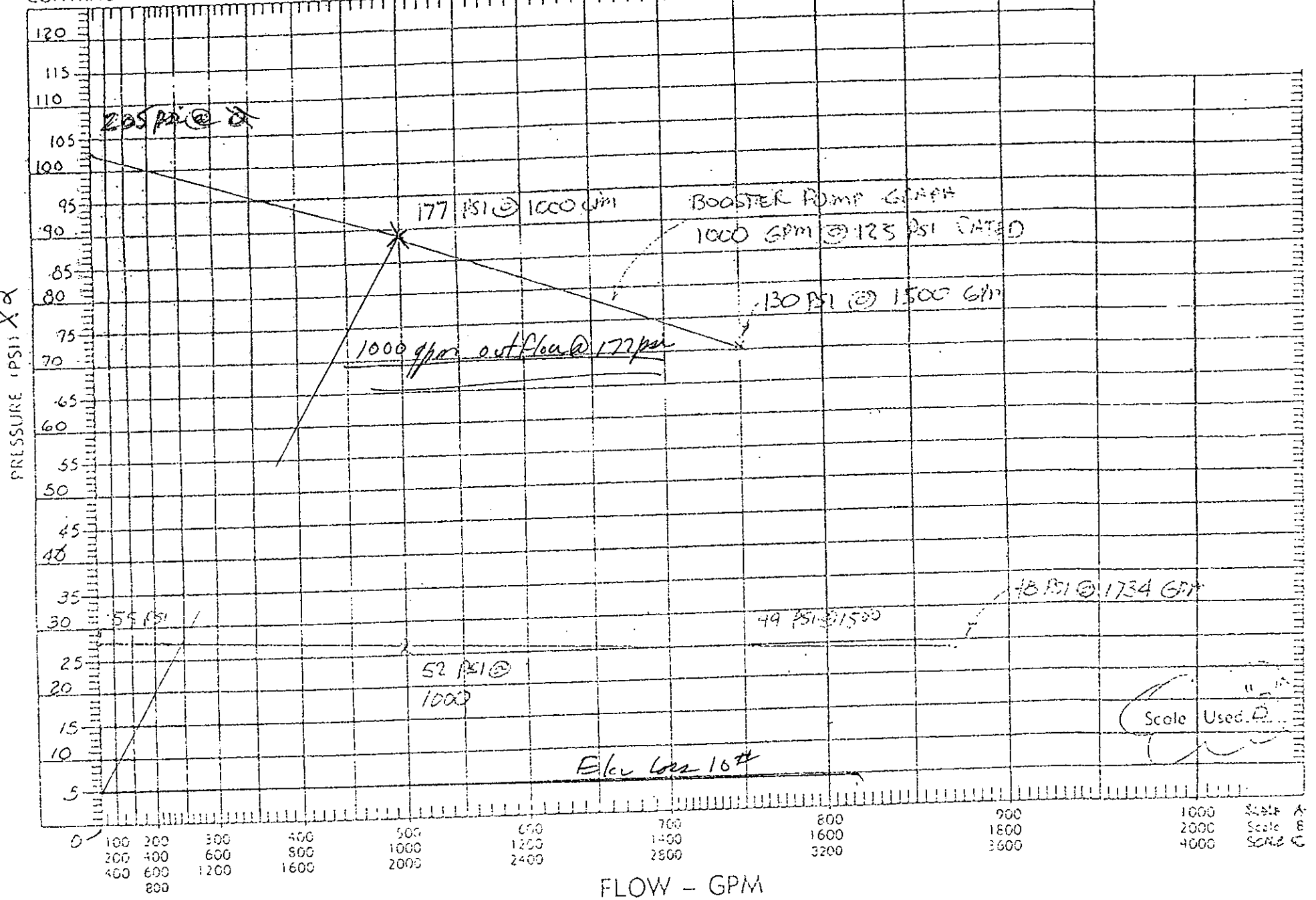
Assumes Most hydraulically remote area of building — So. West Corner of System #3 Grid — to give flow for each system —

PRICE CLUB

Price Club
Outflow for Canopy + Rack
@ Most Remote Area of Bldg - N.W. Corner

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Warehouse - Outflow only

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) Outflow @ most remote for canopy & racks

AREA OF SPRINKLER OPERATION:
DENSITY:
AREA PER SPRINKLER:
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside)
RACK SPRINKLER ALLOWANCE:

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: MODEL: SIZE: TEMP: K:

CALCULATION SUMMARY

GPM REQUIRED: PSI REQUIRED:
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03243 CAFE January 1, 1980

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
PRINCTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.

PROJECT NAME: PRICE CLUB GRID SUPPLY TO REAR PROJECT NUMBER: AJC

OUTFLOW

----------UNITS TABLE----------
LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

THE SYSTEM HAS 9 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------
STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

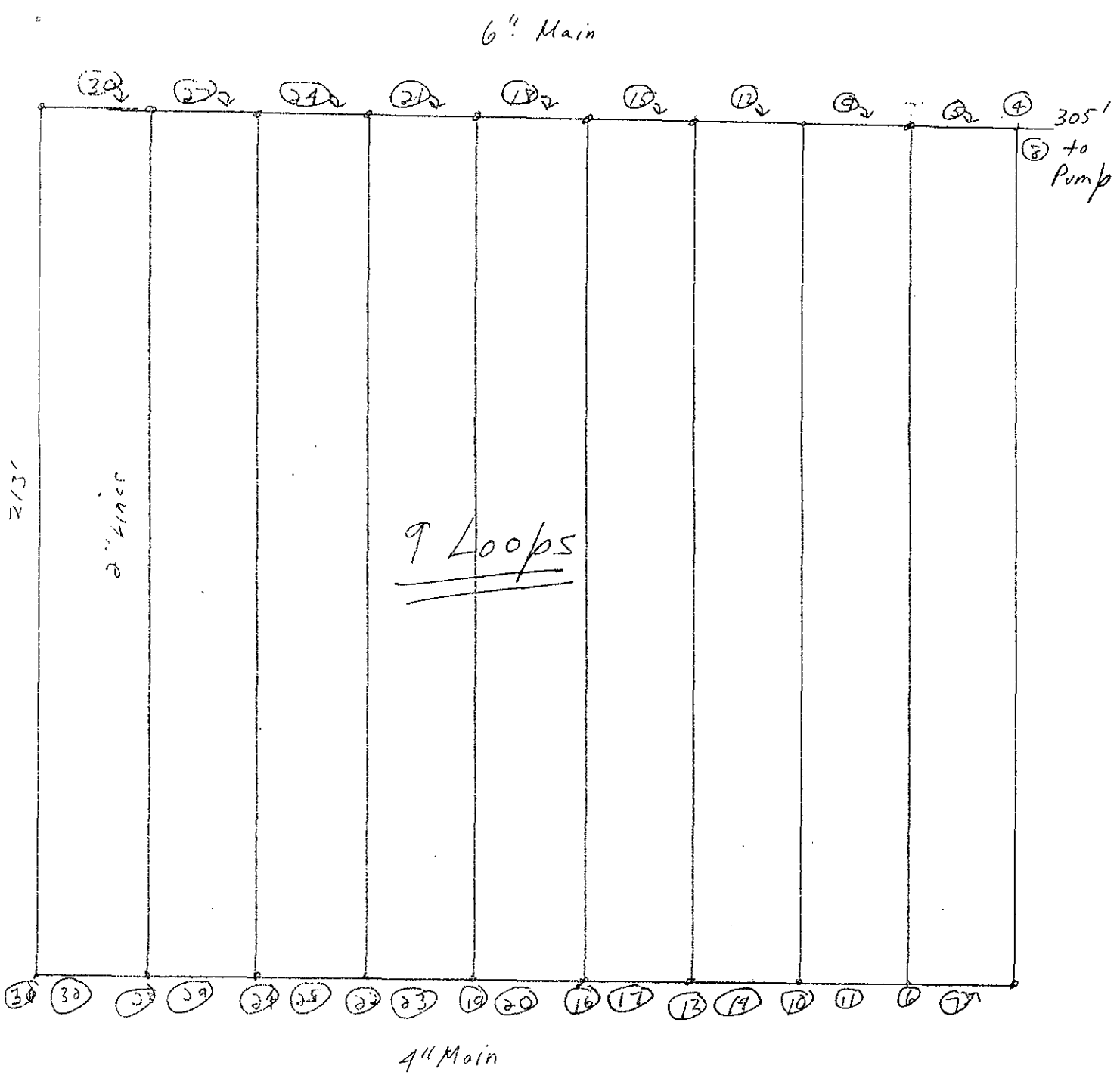
----------FITTING TABLE----------
T2 = 2 TURNING FLOW TEE FITTINGS
L3 = 3 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF GV CV LE
18 = COMBINATION OF TF GV AV
19 = COMBINATION OF L3
20 = COMBINATION OF T2

MAIN AND LOOP PIPES

	PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																			<1000.0>
0																			
		1	120.	8.00		.0		.0			.00	.00	8.2490	177.00	1000.0	6.00			500.0
		2	120.	8.00	17	10.0	28.0	38.0	2.0	.87	.08	.95	8.2490	176.05	500.0	3.00			
		3	120.	6.00	18	4.0	78.0	82.0	4.0	1.73	.64	2.37	6.3570	173.68	500.0	5.05			
L1		4	120.	6.00	19	305.0	27.0	332.0	17.0	7.36	2.58	9.94	6.3570	163.75	500.0	5.05			
	LOOP 1																		
L2		5	120.	6.00		11.6		11.6			.07	.07	6.3570	163.67	451.8	4.57			
12		6	120.	2.00	20	213.0	20.0	233.0			4.54	4.54	2.1570	159.13	47.8	4.20			
		7	120.	4.00		11.6		11.6			-.01	-.01	4.2600	159.14	-48.2	1.08			
4		(8)	120.	2.00	20	213.0	20.0	233.0			-4.61	-4.61	2.1570	163.75	-48.2	4.23			
	LOOP 2																		
5																			
L3		9	120.	6.00		11.6		11.6			.06	.06	6.3570	163.61	404.0	4.08			
L3		10	120.	2.00	20	213.0	20.0	233.0			4.51	4.51	2.1570	159.10	47.6	4.18			
6		(11)	120.	4.00		11.6		11.6			-.03	-.03	4.2600	159.13	-96.0	2.16			
	LOOP 3																		
7																			
L4		12	120.	6.00		11.6		11.6			.05	.05	6.3570	163.56	356.4	3.60			
L4		13	120.	2.00	20	213.0	20.0	233.0			4.53	4.53	2.1570	159.03	47.7	4.19			

10	(14)	120.	4.00		11.6		11.6		-.06	-.06	4.2600	159.10	-143.6	3.23	
								LOOP 4							
12															
L5	15	120.	6.00		11.6		11.6		.04	.04	6.3570	163.52	308.6	3.12	
L5	16	120.	2.00	20	213.0	20.0	233.0		4.60	4.60	2.1570	158.93	48.1	4.22	
13	(17)	120.	4.00		11.6		11.6		-.11	-.11	4.2600	159.03	-191.4	4.31	
								LOOP 5							
15															
L6	18	120.	6.00		11.6		11.6		.03	.03	6.3570	163.50	260.5	2.63	
L6	19	120.	2.00	20	213.0	20.0	233.0		4.73	4.73	2.1570	158.77	48.9	4.29	
16	(20)	120.	4.00		11.6		11.6		-.16	-.16	4.2600	158.93	-239.5	5.39	
								LOOP 6							
18															
L7	21	120.	6.00		11.6		11.6		.02	.02	6.3570	163.48	211.6	2.14	
L7	22	120.	2.00	20	213.0	20.0	233.0		4.94	4.94	2.1570	158.54	50.9	4.39	
19	(23)	120.	4.00		11.6		11.6		-.23	-.23	4.2600	158.77	-288.4	6.49	
								LOOP 7							
21															
L8	24	120.	6.00		11.6		11.6		.01	.01	6.3570	163.47	161.6	1.63	
L8	25	120.	2.00	20	213.0	20.0	233.0		5.24	5.24	2.1570	158.23	51.6	4.53	
22	(26)	120.	4.00		11.6		11.6		-.31	-.31	4.2600	158.54	-338.4	7.62	
								LOOP 8							
24															
L9	27	120.	6.00		11.6		11.6		.01	.01	6.3570	163.46	110.0	1.11	
L9	28	120.	2.00	20	213.0	20.0	233.0		5.63	5.63	2.1570	157.83	53.7	4.72	
25	(29)	120.	4.00		11.6		11.6		-.40	-.40	4.2600	158.23	-390.0	8.78	
								LOOP 9							
27															
	30	120.	6.00		11.6		11.6		.00	.00	6.3570	163.46	56.3	.57	
	31	120.	2.00	20	213.0	20.0	233.0		6.14	6.14	2.1570	157.32	56.3	4.94	500.0
28	(32)	120.	4.00		11.6		11.6		-.51	-.51	4.2600	157.83	-443.7	9.99	

177.0 PSI PRESSURE AVAILABLE AND 177.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1000.0 GPM



Loop Nos. for Outflow for Rack System + Canopy

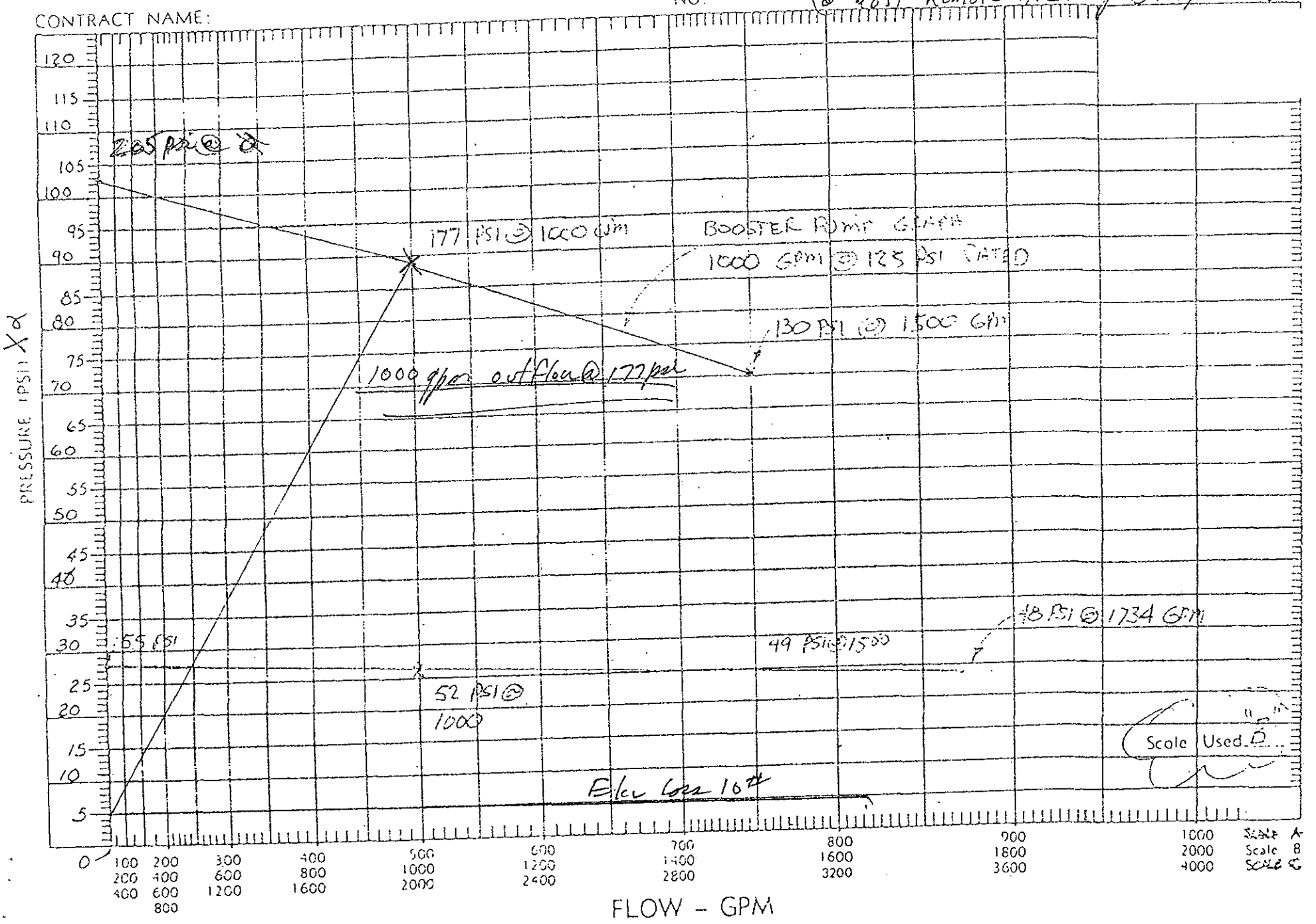
Assumes Most hydraulically remote area of building — So, West Corner of System #3 Grid — to give flow for each system —

PRICE CLUB

Price Club
Outflow for Canopy + Rade
@ Most Remote Area of Bldg - N.W. Corn

CONTRACT NAME:

NO:



BRICK TOWNSHIP

Plan Review	Class	Date	By
Zoning			
Plumbing			
Building			
Fire		8/14/92	
Energy			
Electrical			

A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Canopy System

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard .19gpm/sf over 1950 sf

AREA OF SPRINKLER OPERATION: 1950
DENSITY: .19
AREA PER SPRINKLER: 127.5
HOSE ALLOWANCE GPM: (inside) > 250
HOSE ALLOWANCE GPM: (outside)
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:__ DRY:_x_ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL: A SIZE:1/2 TEMP:165 K: 5.7

CALCULATION SUMMARY

GPM REQUIRED: 584.4 PSI REQUIRED: 87
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03251

CAFE

August 4, 1992

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.
CANOPY DRY-PIPE SYSTEM CALCULATED TO PRODUCE .19/1950 USING 17/32", K=8.1 SPRK. C=120 FOR GALV. PIPE

PROJECT NAME: PRICE CLUB CANOPY SYST.

PROJECT NUMBER: AJC

CANOPY SYST

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .190 GPM/SQ.FT. OVER MOST REMOTE 1950. SQ.FT.

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 157.0 PSI FLOWING 500.0 GPM

LINE B1	PIPE LGT	FIT COMB	FIT E LGT	TOTAL LGT	PIPE DIAM	ELEV CHANGE	H&W COEF	AREA COVER	K FACTOR	PIPE ID	ELEV PRES	FRIC PRES	NORMAL PRES	VEL PRES	TOTAL PRES	HEAD FLOW	PIPE FLOW	VEL
5	9.00			9.00	1.50		120.	127.5	8.10	1.610		.49	22.78	.00	22.78	38.66	38.66	6.09
6	9.00			9.00	1.50		120.	127.5	8.10	1.610		1.76	22.28	.99	23.27	38.23	76.89	12.12
7	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.13	24.19	.84	25.02	39.84	116.73	11.16
8	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.95	24.64	1.52	26.15	40.20	156.93	15.00
9	9.00			9.00	2.00		120.	127.5	8.10	2.067		2.99	25.69	2.41	28.10	41.05	197.98	18.93
10	2.00	5	10.00	12.00	2.00		120.	127.5	8.10	2.067		5.72	27.53	3.56	31.09	42.50	240.48	22.99
11	.01	5	15.00	15.01	3.00		120.	.0	.00	3.260		4.02	36.80	.00	36.80		584.37	22.46
12	7.00	5	12.00	19.00	2.50		120.	127.5	8.10	2.635		5.38	28.67	2.75	31.43	43.37	343.88	20.23
13	9.00			9.00	2.50		120.	127.5	8.10	2.635		1.98	27.34	2.10	29.44	42.35	300.51	17.68
14	9.00	19	30.00	39.00	2.50		120.	127.5	8.10	2.635		6.49	21.39	1.55	22.95	37.47	258.16	15.19
15	9.00			9.00	2.00		120.	127.5	8.10	2.067		3.66	16.29	3.00	19.29	32.70	220.69	21.10
16	9.00			9.00	2.00		120.	127.5	8.10	2.067		2.72	14.40	2.17	16.57	30.73	188.00	17.97
17	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.95	13.10	1.52	14.62	29.31	157.26	15.04
18	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.33	12.28	1.01	13.28	28.38	127.95	12.23
19	9.00	19	20.00	29.00	2.00		120.	127.5	8.10	2.067		2.70	9.97	.61	10.58	25.58	99.57	9.52
20	9.00			9.00	2.00		120.	127.5	8.10	2.067		.46	9.76	.34	10.10	25.30	74.00	7.07
21	9.00			9.00	1.50		120.	127.5	8.10	1.610		.75	8.94	.40	9.34	24.23	48.69	7.67
22	9.00			9.00	1.50		120.	127.5	8.10	1.610		.21	9.13	.00	9.13	24.47	24.47	3.86

40.82 PSI PRESSURE REQUIRED FLOWING 584.4 GPM 411.82 GPM = MIN REQUIRED FLOW 41.9% EXCESS FLOW

----------LINE ASSIGNMENT TO MAIN NODES----------

LINE B1 JOINS AT NODE: 4

----------FITTING TABLE----------

5 = LE = 1 LONG TURN 90 DEGREE ELBOW
5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L4 = 4 LONG TURN 90 DEGREE ELBOWS

B1 =10 45 DEGREE ELBOWS
17 = COMBINATION OF T2 L4
18 = COMBINATION OF GV DV
19 = COMBINATION OF B1

MAIN PIPES

	PIPE CONFIG	H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<584.4>
0																		
	1	120.	3.00		.0		.0			.00	.00	3.2600	87.01	584.4	22.46			
	2	120.	3.00	17	44.0	50.0	94.0	-19.0	-8.23	25.16	16.94	3.2600	70.07	584.4	22.46			
	3	120.	3.00	18	.0	60.0	60.0	2.0	.87	16.06	16.93	3.2600	53.14	584.4	22.46			
B1	4	120.	3.00	3	20.0	5.0	25.0	13.0	5.63	6.69	12.32	3.2600	40.82	584.4	22.46	.00	40.82	584.4

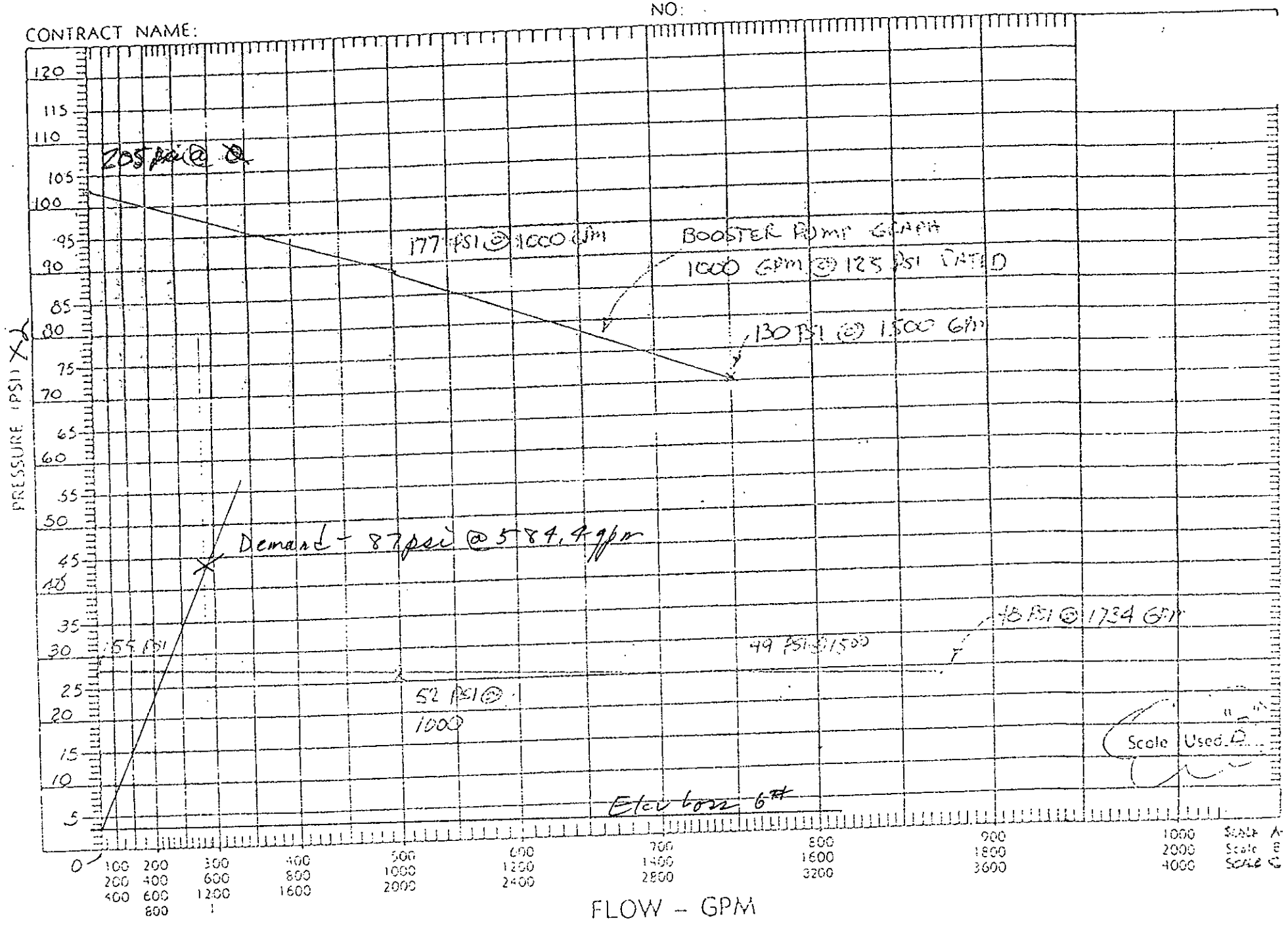
141.0 PSI PRESSURE AVAILABLE AND 87.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 584.4 GPM
370.5 GPM MINIMUM DESIGN FLOW REQUIREMENT
.0 GPM *REQUIRED ADDITIONAL FLOW* 743.7 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Canopy System

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Canopy System

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard .19gpm/sf over 1950 sf

AREA OF SPRINKLER OPERATION: 1950
DENSITY: .19
AREA PER SPRINKLER: 127.5
HOSE ALLOWANCE GPM: (inside) > 250
HOSE ALLOWANCE GPM: (outside)
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:__ DRY:_x_ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL: A SIZE:1/2 TEMP:165 K: 5.7

CALCULATION SUMMARY

GPM REQUIRED: 584.4 PSI REQUIRED: 87
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

Serial Number 1012122 Run Number 03251

CAFE

August 4, 1992

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 38
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.
CANOPY DRY-PIPE SYSTEM CALCULATED TO PRODUCE .19/1950 USING 17/32", K=8.1 SPRK. C-120 FOR GALV. PIPE

PROJECT NAME: PRICE CLUB CANOPY SYST.

PROJECT NUMBER: AJC

CANOPY SYSTEM

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .190 GPM/SQ.FT. OVER MOST REMOTE 1950. SQ.FT.

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 157.0 PSI FLOWING 500.0 GPM

LINE BI	PIPE LGT	FIT COMB	FIT E LGT	TOTAL LGT	PIPE DIAM	ELEV CHANGE	H&W COEF	AREA COVER	K FACTOR	PIPE ID	ELEV PRES	FRIC PRES	NORMAL PRES	VEL PRES	TOTAL PRES	HEAD FLOW	PIPE FLOW	VEL
5	9.00			9.00	1.50		120.	127.5	8.10	1.610		.49	22.78	.00	22.78	38.66	38.66	6.09
6	9.00			9.00	1.50		120.	127.5	8.10	1.610		1.76	22.28	.99	23.27	38.23	76.89	12.12
7	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.13	24.19	.84	25.02	39.84	116.73	11.16
8	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.95	24.64	1.52	26.15	40.20	156.93	15.00
9	9.00			9.00	2.00		120.	127.5	8.10	2.067		2.99	25.69	2.41	28.10	41.05	197.98	18.93
10	2.00	5	10.00	12.00	2.00		120.	127.5	8.10	2.067		5.72	27.53	3.56	31.09	42.50	240.48	22.99
11	.01	5	15.00	15.01	3.00		120.	.0	.00	3.260		4.02	36.80	.00	36.80		584.37	22.46
12	7.00	5	12.00	19.00	2.50		120.	127.5	8.10	2.635		5.38	28.67	2.75	31.43	43.37	343.88	20.23
13	9.00			9.00	2.50		120.	127.5	8.10	2.635		1.98	27.34	2.10	29.44	42.35	300.51	17.68
14	9.00	19	30.00	39.00	2.50		120.	127.5	8.10	2.635		6.49	21.39	1.55	22.95	37.47	258.16	15.19
15	9.00			9.00	2.00		120.	127.5	8.10	2.067		3.66	16.29	3.00	19.29	32.70	220.69	21.10
16	9.00			9.00	2.00		120.	127.5	8.10	2.067		2.72	14.40	2.17	16.57	30.73	188.00	17.97
17	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.95	13.10	1.52	14.62	29.31	157.26	15.04
18	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.33	12.28	1.01	13.28	28.38	127.95	12.23
19	9.00	19	20.00	29.00	2.00		120.	127.5	8.10	2.067		2.70	9.97	.61	10.58	25.58	99.57	9.52
20	9.00			9.00	2.00		120.	127.5	8.10	2.067		.48	9.76	.34	10.10	25.30	74.00	7.07
21	9.00			9.00	1.50		120.	127.5	8.10	1.610		.75	8.94	.40	9.34	24.23	48.69	7.67
22	9.00			9.00	1.50		120.	127.5	8.10	1.610		.21	9.13	.00	9.13	24.47	24.47	3.86

40.82 PSI PRESSURE REQUIRED FLOWING 584.4 GPM 411.82 GPM = MIN REQUIRED FLOW 41.9% EXCESS FLOW

----------LINE ASSIGNMENT TO MAIN NODES----------

LINE BI JOINS AT NODE: 4

----------FITTING TABLE----------

3 = LE = 1 LONG TURN 90 DEGREE ELBOW
5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L4 = 4 LONG TURN 90 DEGREE ELBOWS

B1 =10 45 DEGREE ELBOWS
17 = COMBINATION OF T2 L4
18 = COMBINATION OF GV OV
19 = COMBINATION OF B1

MAIN PIPES

PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<584.4>
0>																		
	1	120.	3.00		.0		.0			.00	.00	3.2600	87.01	584.4	22.46			
	2	120.	3.00	17	44.0	50.0	94.0	-19.0	-8.23	25.16	16.94	3.2600	70.07	584.4	22.46			
	3	120.	3.00	18	.0	60.0	60.0	2.0	.87	16.06	16.93	3.2600	53.14	584.4	22.46			
B1	4	120.	3.00	3	20.0	5.0	25.0	13.0	5.63	6.69	12.32	3.2600	40.82	584.4	22.46	.00	40.82	584.4

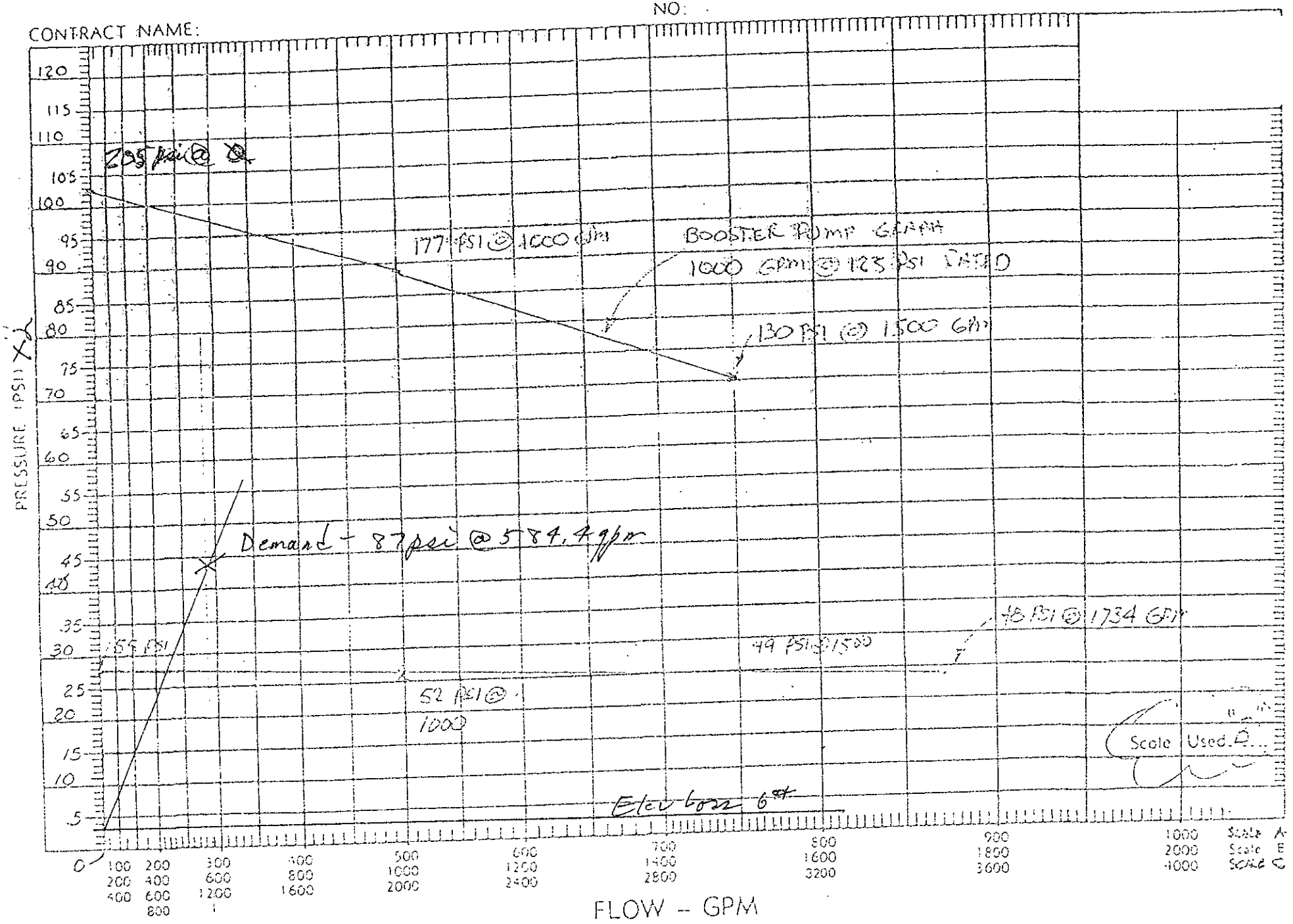
141.0 PSI PRESSURE AVAILABLE AND 87.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 584.4 GPM
370.5 GPM MINIMUM DESIGN FLOW REQUIREMENT
.0 GPM REQUIRED ADDITIONAL FLOW 743.7 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Canopy System

NO:

CONTRACT NAME:



BRICK TOWNSHIP

Plan Review Class Date By

Zoning

Plumbing

Building

Fire 8/14/92

Energy

Electrical

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FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Roof - Sales Area

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard EFSR Heads .99 gpm/sf over 1200

AREA OF SPRINKLER OPERATION: 1200
DENSITY: .99
AREA PER SPRINKLER: 100
HOSE ALLOWANCE GPM: (inside) > 250
HOSE ALLOWANCE GPM: (outside) >
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: ASCO MODEL: K1 SIZE:17/32TEMP:165 K: 14

CALCULATION SUMMARY

GPM REQUIRED: 1445.2 PSI REQUIRED: 120
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

Serial Number 1012122 Run Number 03259 August 4, 1992

CAFE

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

ROOF SPRINKLER SYSTEM CALCULATED TO FLOW (12) ESFR SPRINKLERS, (4)EACH ON (3)MOST REMOTE LINES AT MIN. 50 PSI EACH. K=14.0
250 GPM HOSE ALLOWANCE AT PUMP.

PROJECT NAME: PRICE CLUB ROOF ESFR SYSTEM #1(MOST REMOTE)

PROJECT NUMBER: AJC

ESFR System

----------UNITS TABLE----------
LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .990 GPM/SQ.FT. OVER MOST REMOTE 1200. SQ.FT.

THE SYSTEM HAS 9 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------
STATIC PRESSURE : 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
150.00 PSI FLOWING 1500.0 GPM

----------SPRINKLER ASSIGNMENT TO MAIN OR LOOP NODES----------
S1 : 14.00 K-FACTOR SPRINKLER ASSIGNED TO COVER 100.0 SQ.FT.
----- AT NODES: 41 42 43 44 50 51 52 53 59 60 61 62

----------FITTING TABLE----------
5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L4 = 4 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF T2
18 = COMBINATION OF GV CV LE
19 = COMBINATION OF TF GV AV
20 = COMBINATION OF L4

MAIN AND LOOP PIPES

PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<1445.2>
0>																		
	1	120.	8.00		.0		.0			.00	.00	8.2490	119.96	1445.2	8.68			
	2	120.	8.00	18	10.0	28.0	38.0			.59	.59	8.2490	119.37	1445.2	8.68			250.0
	3	120.	6.00	19	6.0	78.0	84.0	6.0	2.60	3.27	5.87	6.3570	113.50	1195.2	12.08			
L1 >	4	120.	6.00	20	305.0	36.0	341.0	17.0	7.36	13.27	20.63	6.3570	92.88	1195.2	12.08			
LOOP 1																		
	5																	
	6	120.	2.00	5	2.0	10.0	12.0	2.0	.87	.71	1.58	2.1570	91.30	87.2	7.66			
	7	120.	2.00	17	209.0	20.0	229.0			13.57	13.57	2.1570	77.73	87.2	7.66			
	8	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	.71	-.15	2.1570	77.88	87.2	7.66			
L2 <	9	120.	4.00		10.0		10.0			.02	.02	4.2600	77.86	87.2	1.96			

	10	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.70	.17	2.1570	77.69	-86.2	7.57				
	11	120.	2.00	17	209.0	20.0	229.0			-13.29	-13.29	2.1570	90.98	-86.2	7.57				
L2	12	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.70	-1.56	2.1570	92.54	-86.2	7.57				
4	(13)	120.	6.00		10.0		10.0			-.34	-.34	6.3570	92.88	-1107.9	11.20				
	LOOP 2																		
9																			
L3	14	120.	4.00		10.0		10.0			.08	.08	4.2600	77.78	173.4	3.90				
	15	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.69	.18	2.1570	77.60	-85.5	7.51				
	16	120.	2.00	17	209.0	20.0	229.0			-13.09	-13.09	2.1570	90.70	-85.5	7.51				
L3	17	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.69	-1.55	2.1570	92.25	-85.5	7.51				
12	(18)	120.	6.00		10.0		10.0			-.29	-.29	6.3570	92.54	-1021.7	10.33				
	LOOP 3																		
14																			
L4	19	120.	4.00		10.0		10.0			.16	.16	4.2600	77.62	258.9	5.83				
	20	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.68	.18	2.1570	77.44	-85.3	7.48				
	21	120.	2.00	17	209.0	20.0	229.0			-13.01	-13.01	2.1570	90.45	-85.3	7.48				
L4	22	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.68	-1.55	2.1570	92.00	-85.3	7.48				
17	(23)	120.	6.00		10.0		10.0			-.25	-.25	6.3570	92.25	-936.2	9.46				
	LOOP 4																		
19																			
L5	24	120.	4.00		10.0		10.0			.27	.27	4.2600	77.35	344.2	7.75				
	25	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.69	.18	2.1570	77.17	-85.5	7.50				
	26	120.	2.00	17	209.0	20.0	229.0			-13.07	-13.07	2.1570	90.24	-85.5	7.50				
L5	27	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.69	-1.55	2.1570	91.79	-85.5	7.50				
22	(28)	120.	6.00		10.0		10.0			-.21	-.21	6.3570	92.00	-851.0	8.60				
	LOOP 5																		
24																			
L6	29	120.	4.00		10.0		10.0			.41	.41	4.2600	76.94	429.7	9.67				
	30	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.70	.17	2.1570	76.77	-86.2	7.57				
	31	120.	2.00	17	209.0	20.0	229.0			-13.29	-13.29	2.1570	90.06	-86.2	7.57				
L6	32	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.70	-1.56	2.1570	91.62	-86.2	7.57				
27	(33)	120.	6.00		10.0		10.0			-.17	-.17	6.3570	91.79	-765.5	7.74				
	LOOP 6																		
29																			
L7	34	120.	4.00		10.0		10.0			.58	.58	4.2600	76.36	515.9	11.61				
	35	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.72	.15	2.1570	76.21	-87.6	7.69				
	36	120.	2.00	17	209.0	20.0	229.0			-13.69	-13.69	2.1570	89.90	-87.6	7.69				
L7	37	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.72	-1.58	2.1570	91.49	-87.6	7.69				
32	(38)	120.	6.00		10.0		10.0			-.14	-.14	6.3570	91.62	-679.3	6.87				
	LOOP 7																		
34																			
L8	39	120.	4.00		10.0		10.0			.77	.77	4.2600	75.59	603.5	13.58				
	40	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.36	4.23	2.1570	71.36	201.9	17.72				
S1	* 41	120.	2.00	5	58.0	10.0	68.0			19.04	19.04	2.1570	52.32	201.9	17.72	2.11	50.20	99.2	
S1	* 42	120.	2.00		10.0		10.0			.80	.80	2.1570	51.52	102.7	9.02	.55	50.97	99.9	
S1	* 43	120.	2.00		10.0		10.0			.00	.00	2.1570	51.51	2.7	.24	.00	51.51	100.5	
S1	* 44	120.	2.00		10.0		10.0			-.73	-.73	2.1570	52.25	-97.8	8.58	2.01	50.23	99.2	
	45	120.	2.00	5	121.0	10.0	131.0			-35.06	-35.06	2.1570	87.30	-197.0	17.29				
L8	46	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.21	-4.08	2.1570	91.38	-197.0	17.29				
37	(47)	120.	6.00		10.0		10.0			-.11	-.11	6.3570	91.49	-591.6	5.98				
	LOOP 8																		
39																			
L9	48	120.	4.00		10.0		10.0			.36	.36	4.2600	75.22	401.6	9.04				
	49	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.33	4.20	2.1570	71.03	200.9	17.64				
S1	* 50	120.	2.00	5	58.0	10.0	68.0			18.88	18.88	2.1570	52.15	200.9	17.64	2.09	50.05	99.0	
S1	* 51	120.	2.00		10.0		10.0			.79	.79	2.1570	51.36	101.9	8.95	.54	50.82	99.8	
S1	* 52	120.	2.00		10.0		10.0			.00	.00	2.1570	51.36	2.1	.18	.00	51.36	100.3	
S1	* 53	120.	2.00		10.0		10.0			-.74	-.74	2.1570	52.09	-98.2	8.63	2.02	50.08	99.1	
	54	120.	2.00	5	121.0	10.0	131.0			-35.15	-35.15	2.1570	87.24	-197.3	17.32				
L9	55	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.22	-4.09	2.1570	91.33	-197.3	17.32				

46	(56)	120.	6.00		10.0		10.0			-.05	-.05	6.3570	91.38	-394.7	3.99			
	LOOP 9																	
48																		
	57	120.	4.00		10.0		10.0			.10	.10	4.2600	75.12	200.7	4.52			
	58	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.32	4.19	2.1570	70.93	200.7	17.62			
S1	* 59	120.	2.00	5	58.0	10.0	68.0			18.84	18.84	2.1570	52.09	200.7	17.62	2.09	50.01	99.0
S1	* 60	120.	2.00		10.0		10.0			.79	.79	2.1570	51.31	101.7	8.93	.54	50.77	99.8
S1	* 61	120.	2.00		10.0		10.0			.00	.00	2.1570	51.31	1.9	.17	.00	51.31	100.3
S1	* 62	120.	2.00		10.0		10.0			-.74	-.74	2.1570	52.05	-98.3	8.63	2.02	50.03	99.0
	63	120.	2.00	5	121.0	10.0	131.0			-35.18	-35.18	2.1570	87.23	-197.4	17.33			
	64	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.22	-4.09	2.1570	91.32	-197.4	17.33			
55	(65)	120.	6.00		10.0		10.0			-.01	-.01	6.3570	91.33	-197.4	1.99			

136.8 PSI PRESSURE AVAILABLE AND 120.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1445.2 GPM

1188.0 GPM MINIMUM DESIGN FLOW REQUIREMENT

250.0 GPM REQUIRED ADDITIONAL FLOW   1526.5 GPM MAXIMUM FLOW

TRACK   111.00 FT.   (FORWARD POSITION)   68.00 FT.   TRACK

120.24 PSI FLOWING 1445.06 GPM REQUIRED

FRONT TRACK   131.00 FT.   (BACK POSITION)   48.00 FT.   BACK TRACK

120.20 PSI FLOWING 1445.27 GPM REQUIRED

FRONT TRACK   121.00 FT.   (MOST REMOTE POSITION)   58.00 FT.   BACK TRACK

120.30 PSI FLOWING 1444.91 GPM REQUIRED

136.87 PSI FLOWING 1444.91 GPM AVAILABLE

MAIN PIPE DIAMETERS = 8.00 8.00 6.00 6.00
GRID FRONT TRACK DIAMETER = 6.00
GRID BACK TRACK DIAMETER = 4.00
CROSS TIE RISER DIAMETER = 2.00
GRID CROSS TIE DIAMETER = 2.00
SPRINKLER K-FACTOR = 14.0000

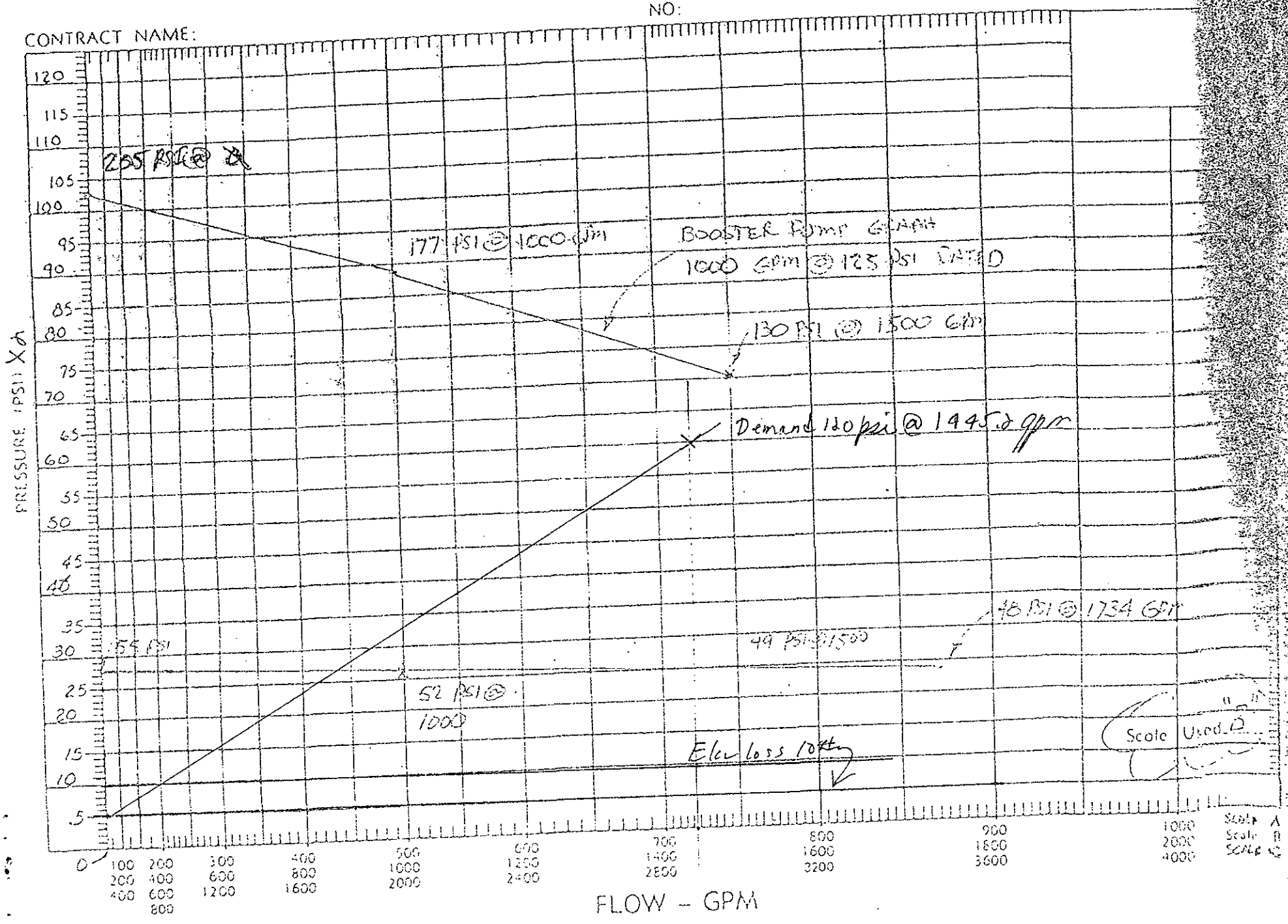
Proceed to prepare data for FULL GRID (Y/N) ?

PRICE CLUB

Price Club
Roof EFSR System

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Roof - Sales Area

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard EFSR Heads .99 gpm/sf over 1200

AREA OF SPRINKLER OPERATION: 1200
DENSITY: .99
AREA PER SPRINKLER: 100
HOSE ALLOWANCE GPM: (inside) > 250
HOSE ALLOWANCE GPM: (outside) >
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: ASCO MODEL: K1 SIZE:17/32TEMP:165 K: 14

CALCULATION SUMMARY

GPM REQUIRED: 1445.2 PSI REQUIRED: 120
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

Serial Number 1012122 Run Number 03259

CAFE

August 4, 1992

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

ROOF SPRINKLER SYSTEM CALCULATED TO FLOW (12) ESFR SPRINKLERS, (4)EACH ON (3)MOST REMOTE LINES AT MIN. 50 PSI EACH. K=14.0
250 GPM HOSE ALLOWANCE AT PUMP.

PROJECT NAME: PRICE CLUB ROOF ESFR SYSTEM #1(MOST REMOTE)

PROJECT NUMBER: AJC

ESFR System

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .990 GPM/SQ.FT. OVER MOST REMOTE 1200. SQ.FT.

THE SYSTEM HAS 9 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

----------SPRINKLER ASSIGNMENT TO MAIN OR LOOP NODES----------

S1 = 14.00 K-FACTOR SPRINKLER ASSIGNED TO COVER 100.0 SQ.FT.
----- AT NODES: 41 42 43 44 50 51 52 53 59 60 61 62

----------FITTING TABLE----------

5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L4 = 4 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF T2
18 = COMBINATION OF GV CV LE
19 = COMBINATION OF TF GV AV
20 = COMBINATION OF L4

MAIN AND LOOP PIPES

	PIPE CONFIG	H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID.	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<1445.2>
0>																		
	1	120.	8.00		.0		.0			.00	.00	8.2490	119.96	1445.2	8.68			
	2	120.	8.00	18	10.0	28.0	38.0			.59	.59	8.2490	119.37	1445.2	8.68			250.0
	3	120.	6.00	19	6.0	78.0	84.0	6.0	2.60	3.27	5.87	6.3570	113.50	1195.2	12.08			
L1 >	4	120.	6.00	20	305.0	36.0	341.0	17.0	7.36	13.27	20.63	6.3570	92.88	1195.2	12.08			
	LOOP 1																	
	5																	
	6	120.	2.00	5	2.0	10.0	12.0	2.0	.87	.71	1.58	2.1570	91.30	87.2	7.66			
	7	120.	2.00	17	209.0	20.0	229.0			13.57	13.57	2.1570	77.73	87.2	7.66			
	8	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	.71	-.15	2.1570	77.88	87.2	7.66			
L2 <	9	120.	4.00		10.0		10.0			.02	.02	4.2600	77.86	87.2	1.96			

	10	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.70	.17	2.1570	77.69	-86.2	7.57				
	11	120.	2.00	17	209.0	20.0	229.0			-13.29	-13.29	2.1570	90.98	-86.2	7.57				
L2	12	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.70	-1.56	2.1570	92.54	-86.2	7.57				
4	(13)	120.	6.00		10.0		10.0			-.34	-.34	6.3570	92.88	-1107.9	11.20				
	LOOP 2																		
9																			
L3	14	120.	4.00		10.0		10.0			.08	.08	4.2600	77.78	173.4	3.90				
	15	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.69	.18	2.1570	77.60	-85.5	7.51				
	16	120.	2.00	17	209.0	20.0	229.0			-13.09	-13.09	2.1570	90.70	-85.5	7.51				
L3	17	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.69	-1.55	2.1570	92.25	-85.5	7.51				
12	(18)	120.	6.00		10.0		10.0			-.29	-.29	6.3570	92.54	-1021.7	10.33				
	LOOP 3																		
14																			
L4	19	120.	4.00		10.0		10.0			.16	.16	4.2600	77.62	258.9	5.83				
	20	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.68	.18	2.1570	77.44	-85.3	7.48				
	21	120.	2.00	17	209.0	20.0	229.0			-13.01	-13.01	2.1570	90.45	-85.3	7.48				
L4	22	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.68	-1.55	2.1570	92.00	-85.3	7.48				
17	(23)	120.	6.00		10.0		10.0			-.25	-.25	6.3570	92.25	-936.2	9.46				
	LOOP 4																		
19																			
L5	24	120.	4.00		10.0		10.0			.27	.27	4.2600	77.35	344.2	7.75				
	25	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.69	.18	2.1570	77.17	-85.5	7.50				
	26	120.	2.00	17	209.0	20.0	229.0			-13.07	-13.07	2.1570	90.24	-85.5	7.50				
L5	27	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.69	-1.55	2.1570	91.79	-85.5	7.50				
22	(28)	120.	6.00		10.0		10.0			-.21	-.21	6.3570	92.00	-851.0	8.60				
	LOOP 5																		
24																			
L6	29	120.	4.00		10.0		10.0			.41	.41	4.2600	76.94	429.7	9.67				
	30	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.70	.17	2.1570	76.77	-86.2	7.57				
	31	120.	2.00	17	209.0	20.0	229.0			-13.29	-13.29	2.1570	90.06	-86.2	7.57				
L6	32	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.70	-1.56	2.1570	91.62	-86.2	7.57				
27	(33)	120.	6.00		10.0		10.0			-.17	-.17	6.3570	91.79	-765.5	7.74				
	LOOP 6																		
29																			
L7	34	120.	4.00		10.0		10.0			.58	.58	4.2600	76.36	515.9	11.61				
	35	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.72	.15	2.1570	76.21	-87.6	7.69				
	36	120.	2.00	17	209.0	20.0	229.0			-13.69	-13.69	2.1570	89.90	-87.6	7.69				
L7	37	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.72	-1.58	2.1570	91.49	-87.6	7.69				
32	(38)	120.	6.00		10.0		10.0			-.14	-.14	6.3570	91.62	-679.3	6.87				
	LOOP 7																		
34																			
L8	39	120.	4.00		10.0		10.0			.77	.77	4.2600	75.59	603.5	13.58				
	40	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.36	4.23	2.1570	71.36	201.9	17.72				
S1	*41	120.	2.00	5	58.0	10.0	68.0			19.04	19.04	2.1570	52.32	201.9	17.72	2.11	50.20	99.2	
S1	*42	120.	2.00		10.0		10.0			.80	.80	2.1570	51.52	102.7	9.02	.55	50.97	99.9	
S1	*43	120.	2.00		10.0		10.0			.00	.00	2.1570	51.51	2.7	.24	.00	51.51	100.5	
S1	*44	120.	2.00		10.0		10.0			-.73	-.73	2.1570	52.25	-97.8	8.58	2.01	50.23	99.2	
	45	120.	2.00	5	121.0	10.0	131.0			-35.06	-35.06	2.1570	87.30	-197.0	17.29				
L8	46	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.21	-4.08	2.1570	91.38	-197.0	17.29				
37	(47)	120.	6.00		10.0		10.0			-.11	-.11	6.3570	91.49	-591.6	5.98				
	LOOP 8																		
39																			
L9	48	120.	4.00		10.0		10.0			.36	.36	4.2600	75.22	401.6	9.04				
	49	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.33	4.20	2.1570	71.03	200.9	17.64				
S1	*50	120.	2.00	5	58.0	10.0	68.0			18.88	18.88	2.1570	52.15	200.9	17.64	2.09	50.05	99.0	
S1	*51	120.	2.00		10.0		10.0			.79	.79	2.1570	51.36	101.9	8.95	.54	50.82	99.8	
S1	*52	120.	2.00		10.0		10.0			.00	.00	2.1570	51.36	2.1	.18	.00	51.36	100.3	
S1	*53	120.	2.00		10.0		10.0			-.74	-.74	2.1570	52.09	-98.2	8.63	2.02	50.08	99.1	
	54	120.	2.00	5	121.0	10.0	131.0			-35.15	-35.15	2.1570	87.24	-197.3	17.32				
L9	55	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.22	-4.09	2.1570	91.33	-197.3	17.32				

	46<=	(56)	120.	6.00		10.0		10.0			-.05	-.05	6.3570	91.38	-394.7	3.99			

LOOP 9

	48>=																		
		57	120.	4.00		10.0		10.0			.10	.10	4.2600	75.12	200.7	4.52			
		58	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.32	4.19	2.1570	70.93	200.7	17.62			
S1	*	59	120.	2.00	5	58.0	10.0	68.0			18.84	18.84	2.1570	52.09	200.7	17.62	2.09	50.01	99.0
S1	>*	60	120.	2.00		10.0		10.0			.79	.79	2.1570	51.31	101.7	8.93	.54	50.77	99.8
S1	>*	61	120.	2.00		10.0		10.0			.00	.00	2.1570	51.31	1.9	.17	.00	51.31	100.3
S1	>*	62	120.	2.00		10.0		10.0			-.74	-.74	2.1570	52.05	-98.3	8.63	2.02	50.03	99.0
		63	120.	2.00	5	121.0	10.0	131.0			-35.18	-35.18	2.1570	87.23	-197.4	17.33			
		64	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.22	-4.09	2.1570	91.32	-197.4	17.33			
	55<=	(65)	120.	6.00		10.0		10.0			-.01	-.01	6.3570	91.33	-197.4	1.99			

136.8 PSI PRESSURE AVAILABLE AND 120.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1445.2 GPM
1188.0 GPM MINIMUM DESIGN FLOW REQUIREMENT
250.0 GPM REQUIRED ADDITIONAL FLOW 1526.5 GPM MAXIMUM FLOW

TRACK 111.00 FT. (FORWARD POSITION) 68.00 FT. TRACK

120.24 PSI FLOWING 1445.06 GPM REQUIRED

FRONT TRACK 131.00 FT. (BACK POSITION) 48.00 FT. BACK TRACK

120.20 PSI FLOWING 1445.27 GPM REQUIRED

FRONT TRACK 121.00 FT. (MOST REMOTE POSITION) 58.00 FT. BACK TRACK

120.30 PSI FLOWING 1444.91 GPM REQUIRED

136.87 PSI FLOWING 1444.91 GPM AVAILABLE

MAIN PIPE DIAMETERS = 8.00 8.00 6.00 6.00
GRID FRONT TRACK DIAMETER = 6.00
GRID BACK TRACK DIAMETER = 4.00
CROSS TIE RISER DIAMETER = 2.00
GRID CROSS TIE DIAMETER = 2.00
SPRINKLER K-FACTOR = 14.0000

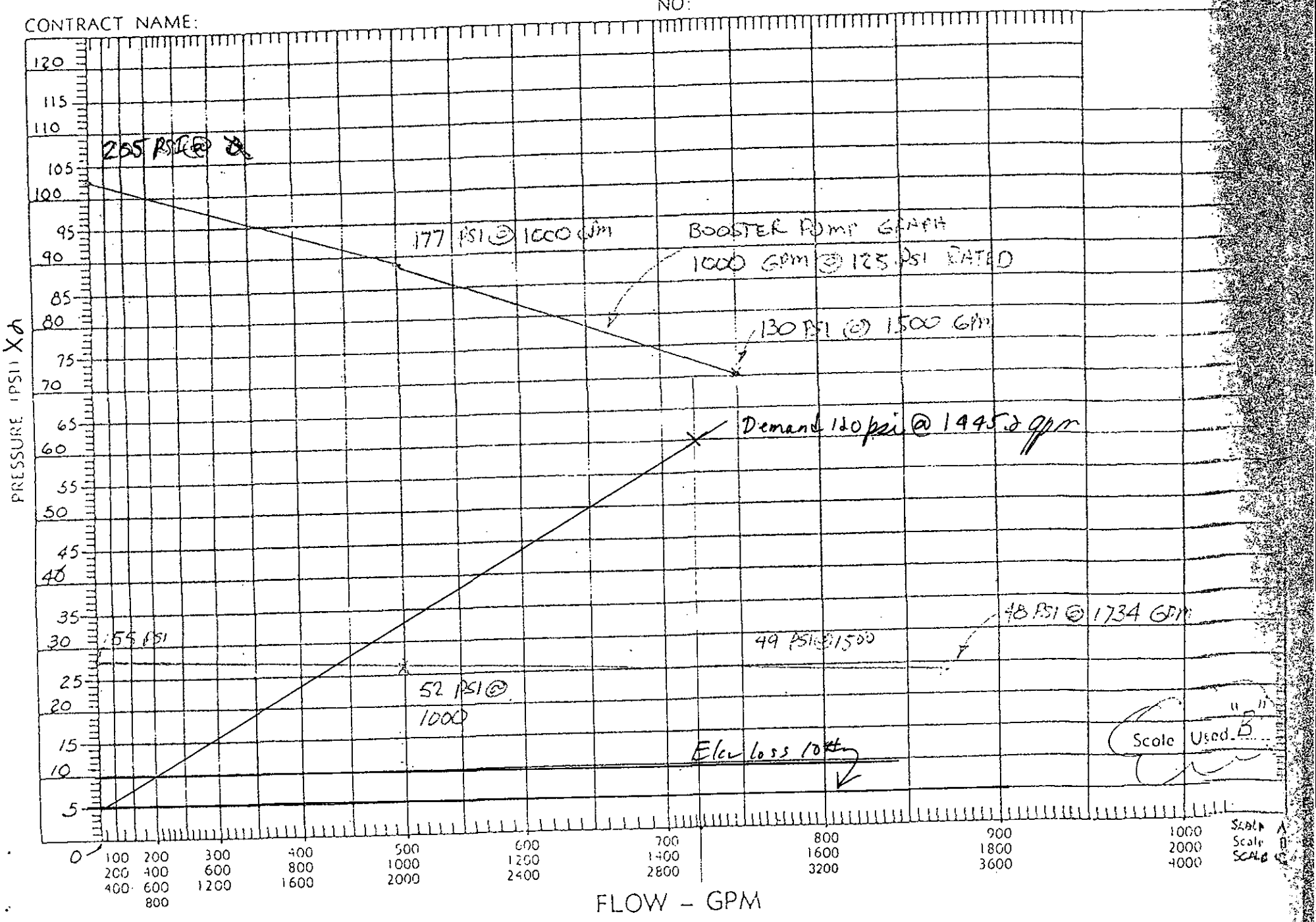
Proceed to prepare data for FULL GRID (Y/N) ?

PRICE CLUB

Price Club
Roof EFSR System

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Roof - Sales Area

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard EFSR Heads .99 gpm/sf over 1200

AREA OF SPRINKLER OPERATION: 1200
DENSITY: .99
AREA PER SPRINKLER: 100
HOSE ALLOWANCE GPM: (inside) > 250
HOSE ALLOWANCE GPM: (outside) >
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: ASCO MODEL: K1 SIZE:17/32TEMP:165 K: 14

CALCULATION SUMMARY

GPM REQUIRED: 1445.2 PSI REQUIRED: 120
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03259 August 4, 1992

CAFE

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

ROOF SPRINKLER SYSTEM CALCULATED TO FLOW (12) ESFR SPRINKLERS, (4)EACH ON (3)MOST REMOTE LINES AT MIN. 50 PSI EACH. K:14.0 250 GPM HOSE ALLOWANCE AT PUMP.

PROJECT NAME: PRICE CLUB ROOF ESFR SYSTEM #1(MOST REMOTE)

PROJECT NUMBER: AJC

EFSR System

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .990 GPM/SQ.FT. OVER MOST REMOTE 1200. SQ.FT.

THE SYSTEM HAS 9 LOOPS

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0 ----------

STATIC PRESSURE = 205.0 PSI 177.0 PSI FLOWING 1000.0 GPM
130.00 PSI FLOWING 1500.0 GPM

----------SPRINKLER ASSIGNMENT TO MAIN OR LOOP NODES----------

S1 = 14.00 K-FACTOR SPRINKLER ASSIGNED TO COVER 100.0 SQ.FT.
----- AT NODES: 41 42 43 44 50 51 52 53 59 60 61 62

----------FITTING TABLE----------

5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L4 = 4 LONG TURN 90 DEGREE ELBOWS
17 = COMBINATION OF T2
18 = COMBINATION OF GV CV LE
19 = COMBINATION OF TF GV AV
20 = COMBINATION OF L4

MAIN AND LOOP PIPES

	PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																			(1445.2)
0>																			
		1	120.	8.00		.0		.0			.00	.00	8.2490	119.96	1445.2	8.68			
		2	120.	8.00	18	10.0	28.0	38.0			.59	.59	8.2490	119.37	1445.2	8.68			250.0
		3	120.	6.00	19	6.0	78.0	84.0	6.0	2.60	3.27	5.87	6.3570	113.50	1195.2	12.08			
L1 >		4	120.	6.00	20	305.0	36.0	341.0	17.0	7.36	13.27	20.63	6.3570	92.88	1195.2	12.08			
									LOOP 1										
		5																	
		6	120.	2.00	5	2.0	10.0	12.0	2.0	.87	.71	1.58	2.1570	91.30	87.2	7.66			
		7	120.	2.00	17	209.0	20.0	229.0			13.57	13.57	2.1570	77.73	87.2	7.66			
		8	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	.71	-.15	2.1570	77.88	87.2	7.66			
L2 <		9	120.	4.00		10.0		10.0			.02	.02	4.2600	77.86	87.2	1.96			

	10	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.70	.17	2.1570	77.69	-86.2	7.57					
	11	120.	2.00	17	209.0	20.0	229.0			-13.29	-13.29	2.1570	90.98	-86.2	7.57					
L2	12	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.70	-1.56	2.1570	92.54	-86.2	7.57					
4	(13)	120.	6.00		10.0		10.0			-.34	-.34	6.3570	92.88	-1107.9	11.20					
	LOOP 2																			
9																				
L3	14	120.	4.00		10.0		10.0			.08	.08	4.2600	77.78	173.4	3.90					
	15	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.69	.18	2.1570	77.60	-85.5	7.51					
	16	120.	2.00	17	209.0	20.0	229.0			-13.09	-13.09	2.1570	90.70	-85.5	7.51					
L3	17	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.69	-1.55	2.1570	92.25	-85.5	7.51					
12	(18)	120.	6.00		10.0		10.0			-.29	-.29	6.3570	92.54	-1021.7	10.33					
	LOOP 3																			
14																				
L4	19	120.	4.00		10.0		10.0			.16	.16	4.2600	77.62	258.9	5.83					
	20	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.68	.18	2.1570	77.44	-85.3	7.48					
	21	120.	2.00	17	209.0	20.0	229.0			-13.01	-13.01	2.1570	90.45	-85.3	7.48					
L4	22	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.68	-1.55	2.1570	92.00	-85.3	7.48					
17	(23)	120.	6.00		10.0		10.0			-.25	-.25	6.3570	92.25	-936.2	9.46					
	LOOP 4																			
19																				
L5	24	120.	4.00		10.0		10.0			.27	.27	4.2600	77.35	344.2	7.75					
	25	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.69	.18	2.1570	77.17	-85.5	7.50					
	26	120.	2.00	17	209.0	20.0	229.0			-13.07	-13.07	2.1570	90.24	-85.5	7.50					
L5	27	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.69	-1.55	2.1570	91.79	-85.5	7.50					
22	(28)	120.	6.00		10.0		10.0			-.21	-.21	6.3570	92.00	-851.0	8.60					
	LOOP 5																			
24																				
L6	29	120.	4.00		10.0		10.0			.41	.41	4.2600	76.94	429.7	9.67					
	30	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.70	.17	2.1570	76.77	-86.2	7.57					
	31	120.	2.00	17	209.0	20.0	229.0			-13.29	-13.29	2.1570	90.06	-86.2	7.57					
L6	32	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.70	-1.56	2.1570	91.62	-86.2	7.57					
27	(33)	120.	6.00		10.0		10.0			-.17	-.17	6.3570	91.79	-765.5	7.74					
	LOOP 6																			
29																				
L7	34	120.	4.00		10.0		10.0			.58	.58	4.2600	76.36	515.9	11.61					
	35	120.	2.00	5	2.0	10.0	12.0	2.0	.87	-.72	.15	2.1570	76.21	-87.6	7.69					
	36	120.	2.00	17	209.0	20.0	229.0			-13.69	-13.69	2.1570	89.90	-87.6	7.69					
L7	37	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-.72	-1.58	2.1570	91.49	-87.6	7.69					
32	(38)	120.	6.00		10.0		10.0			-.14	-.14	6.3570	91.62	-679.3	6.87					
	LOOP 7																			
34																				
L8	39	120.	4.00		10.0		10.0			.77	.77	4.2600	75.59	603.5	13.58					
	40	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.36	4.23	2.1570	71.36	201.9	17.72					
S1	* 41	120.	2.00	5	58.0	10.0	68.0			19.04	19.04	2.1570	52.32	201.9	17.72	2.11	50.20	99.2		
S1	* 42	120.	2.00		10.0		10.0			.80	.80	2.1570	51.52	102.7	9.02	.55	50.97	99.9		
S1	* 43	120.	2.00		10.0		10.0			.00	.00	2.1570	51.51	2.7	.24	.00	51.51	100.5		
S1	* 44	120.	2.00		10.0		10.0			-.73	-.73	2.1570	52.25	-97.8	8.58	2.01	50.23	99.2		
	45	120.	2.00	5	121.0	10.0	131.0			-35.06	-35.06	2.1570	87.30	-197.0	17.29					
L8	46	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.21	-4.08	2.1570	91.38	-197.0	17.29					
37	(47)	120.	6.00		10.0		10.0			-.11	-.11	6.3570	91.49	-591.6	5.98					
	LOOP 8																			
39																				
L9	48	120.	4.00		10.0		10.0			.36	.36	4.2600	75.22	401.6	9.04					
	49	120.	2.00	5	2.0	10.0	12.0	2.0	.87	3.33	4.20	2.1570	71.03	200.9	17.64					
S1	* 50	120.	2.00	5	58.0	10.0	68.0			18.88	18.88	2.1570	52.15	200.9	17.64	2.09	50.05	99.0		
S1	* 51	120.	2.00		10.0		10.0			.79	.79	2.1570	51.36	101.9	8.95	.54	50.82	99.8		
S1	* 52	120.	2.00		10.0		10.0			.00	.00	2.1570	51.36	2.1	.18	.00	51.36	100.3		
S1	* 53	120.	2.00		10.0		10.0			-.74	-.74	2.1570	52.09	-98.2	8.63	2.02	50.08	99.1		
	54	120.	2.00	5	121.0	10.0	131.0			-35.15	-35.15	2.1570	87.24	-197.3	17.32					
L9	55	120.	2.00	5	2.0	10.0	12.0	-2.0	-.87	-3.22	-4.09	2.1570	91.33	-197.3	17.32					

46	(56)	120.	6.00		10.0		10.0			-.05	-.05	6.3570	91.38	-394.7	3.99			
							LOOP 9											
48																		
	57	120.	4.00		10.0		10.0			.10	.10	4.2600	75.12	200.7	4.52			
	58	120.	2.00	S	2.0	10.0	12.0	2.0	.87	3.32	4.19	2.1570	70.93	200.7	17.62			
S1	* 59	120.	2.00	S	58.0	10.0	68.0			18.84	18.84	2.1570	52.09	200.7	17.62	2.09	50.01	99.0
S1	* 60	120.	2.00		10.0		10.0			.79	.79	2.1570	51.31	101.7	8.93	.54	50.77	99.8
S1	* 61	120.	2.00		10.0		10.0			.00	.00	2.1570	51.31	1.9	.17	.00	51.31	100.3
S1	* 62	120.	2.00		10.0		10.0			-.74	-.74	2.1570	52.05	-98.3	8.63	2.02	50.03	99.0
	63	120.	2.00	S	121.0	10.0	131.0			-35.18	-35.18	2.1570	87.23	-197.4	17.33			
	64	120.	2.00	S	2.0	10.0	12.0	-2.0	-.87	-3.22	-4.09	2.1570	91.32	-197.4	17.33			
55	(65)	120.	6.00		10.0		10.0			-.01	-.01	6.3570	91.33	-197.4	1.99			

136.8 PSI PRESSURE AVAILABLE AND 120.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 1445.2 GPM
1188.0 GPM MINIMUM DESIGN FLOW REQUIREMENT
750.0 GPM REQUIRED ADDITIONAL FLOW 1526.5 GPM MAXIMUM FLOW

TRACK 111.00 FT. (FORWARD POSITION) 68.00 FT. TRACK

120.24 PSI FLOWING 1445.06 GPM REQUIRED

FRONT TRACK 131.00 FT. (BACK POSITION) 48.00 FT. BACK TRACK

120.20 PSI FLOWING 1445.27 GPM REQUIRED

FRONT TRACK 121.00 FT. (MOST REMOTE POSITION) 58.00 FT. BACK TRACK

120.30 PSI FLOWING 1444.91 GPM REQUIRED

136.87 PSI FLOWING 1444.91 GPM AVAILABLE

MAIN PIPE DIAMETERS = 8.00 8.00 6.00 6.00
GRID FRONT TRACK DIAMETER = 6.00
GRID BACK TRACK DIAMETER = 4.00
CROSS TIE RISER DIAMETER = 2.00
GRID CROSS TIE DIAMETER = 2.00
SPRINKLER K-FACTOR = 14.0000

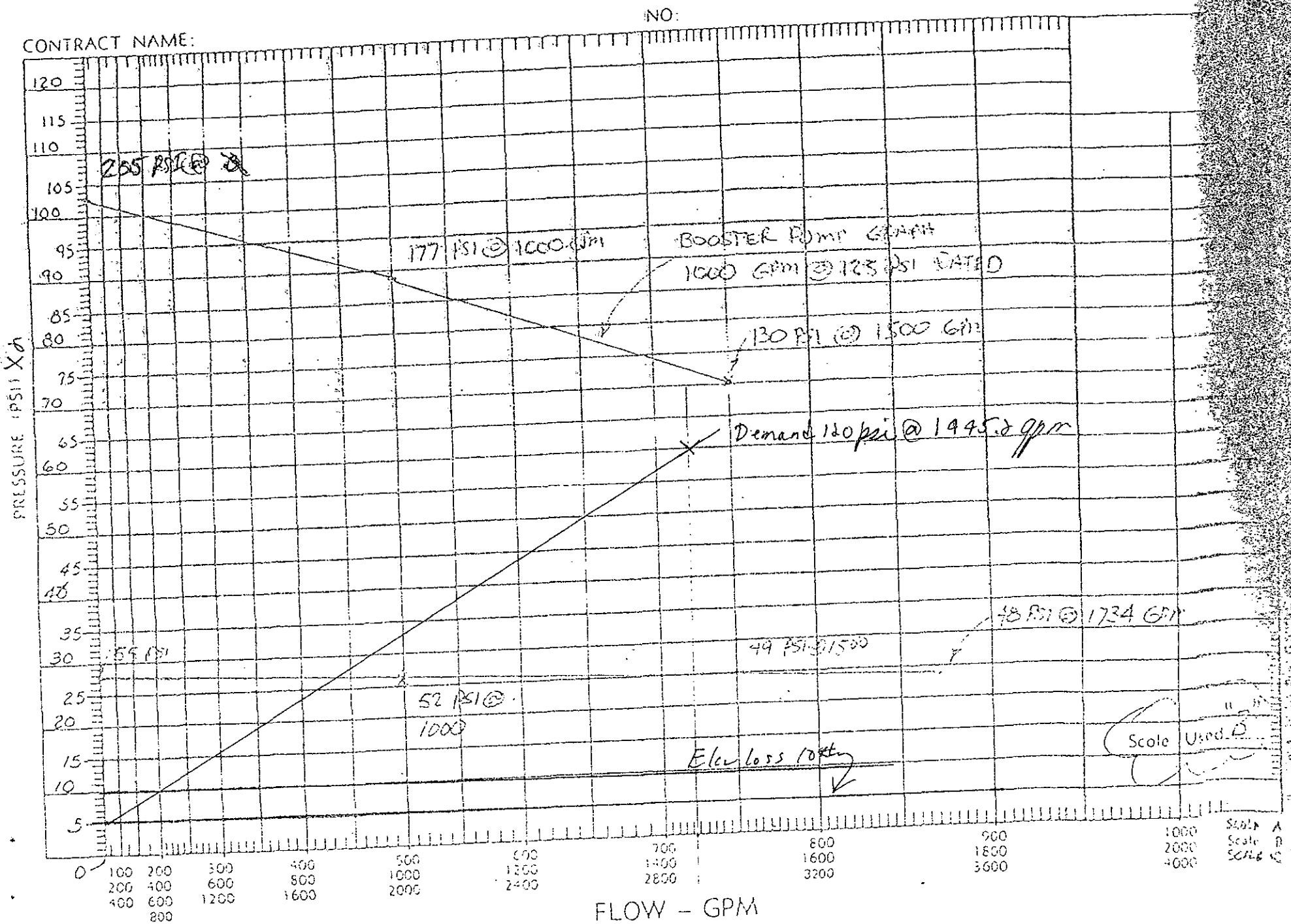
Proceed to prepare data for FULL GRID (Y/N) ?

PRICE CLUB

Price Club
Roof EFSR System

CONTRACT NAME:

NO:



BRICK TOWNSHIP

Plan Review Class Date By

Zoning

Plumbing

Building

Fire 8/14/92

Energy

Electrical

A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Rack System

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard 6 heads flowing 50psi at end hd

AREA OF SPRINKLER OPERATION: 600
DENSITY: .572
AREA PER SPRINKLER: 100
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside) 7500
RACK SPRINKLER ALLOWANCE:

SYSTEM TYPE

WET: _x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL:A-Rack SIZE:17/32TEMP:165 K: 8.1

CALCULATION SUMMARY

GPM REQUIRED: 362 PSI REQUIRED: 121.6
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03257

CAFE

August 5, 1992

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
AT.# 58
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.
IN-RACK SPRINKLER SYSTEM CALCULATED TO PRODUCE 50 PSI AT END HEAD FOR (3)HEADS ON (2)REMOTE LINES. 17/32"OREF. SPRINKLERS. K=8.1

PROJECT NAME: PRICE CLUB STORAGE RACK

PROJECT NUMBER: AJC

IN-RACK

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .572 GPM/SQ.FT. OVER MOST REMOTE 600. SQ.FT.

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 157.0 PSI FLOWING 500.0 GPM

LINE 81		PIPE LGT	FIT COMB	FIT E LGT	TOTAL LGT	PIPE DIAM	ELEV CHANGE	H&W COEF	AREA COVER	K FACTOR	PIPE ID	ELEV PRES	FRIC PRES	NORMAL PRES	VEL PRES	TOTAL PRES	HEAD FLOW	PIPE FLOW	VEL
	5	4.00	18	12.00	16.00	1.25		120.	100.0	8.10	1.380		4.61	60.97	.00	60.97	63.25	63.25	13.57
	6	.01			.01	2.50		120.	.0	.00	2.635		.00	65.58	.00	65.58		179.44	10.56
	7	1.00	18	12.00	13.00	1.25		120.	100.0	8.10	1.380		11.53	49.87	4.18	54.05	57.20	116.19	24.92
	8	4.00			4.00	1.25		120.	100.0	8.10	1.380		1.01	53.04	.00	53.04	58.99	58.99	12.65

65.58 PSI PRESSURE REQUIRED FLOWING 179.4 GPM — 171.60 GPM = MIN REQUIRED FLOW 4.6% EXCESS FLOW

----------LINE ASSIGNMENT TO MAIN NODES----------

LINE 81 JOINS AT NODES: 3 4

----------FITTING TABLE----------

5 = TF = 1 TURNING FLOW TEE FITTING
E2 = 2 STANDARD 90 DEGREE ELBOWS
T2 = 2 TURNING FLOW TEE FITTINGS
17 = COMBINATION OF T2 GV
18 = COMBINATION OF TF E2

MAIN PIPES

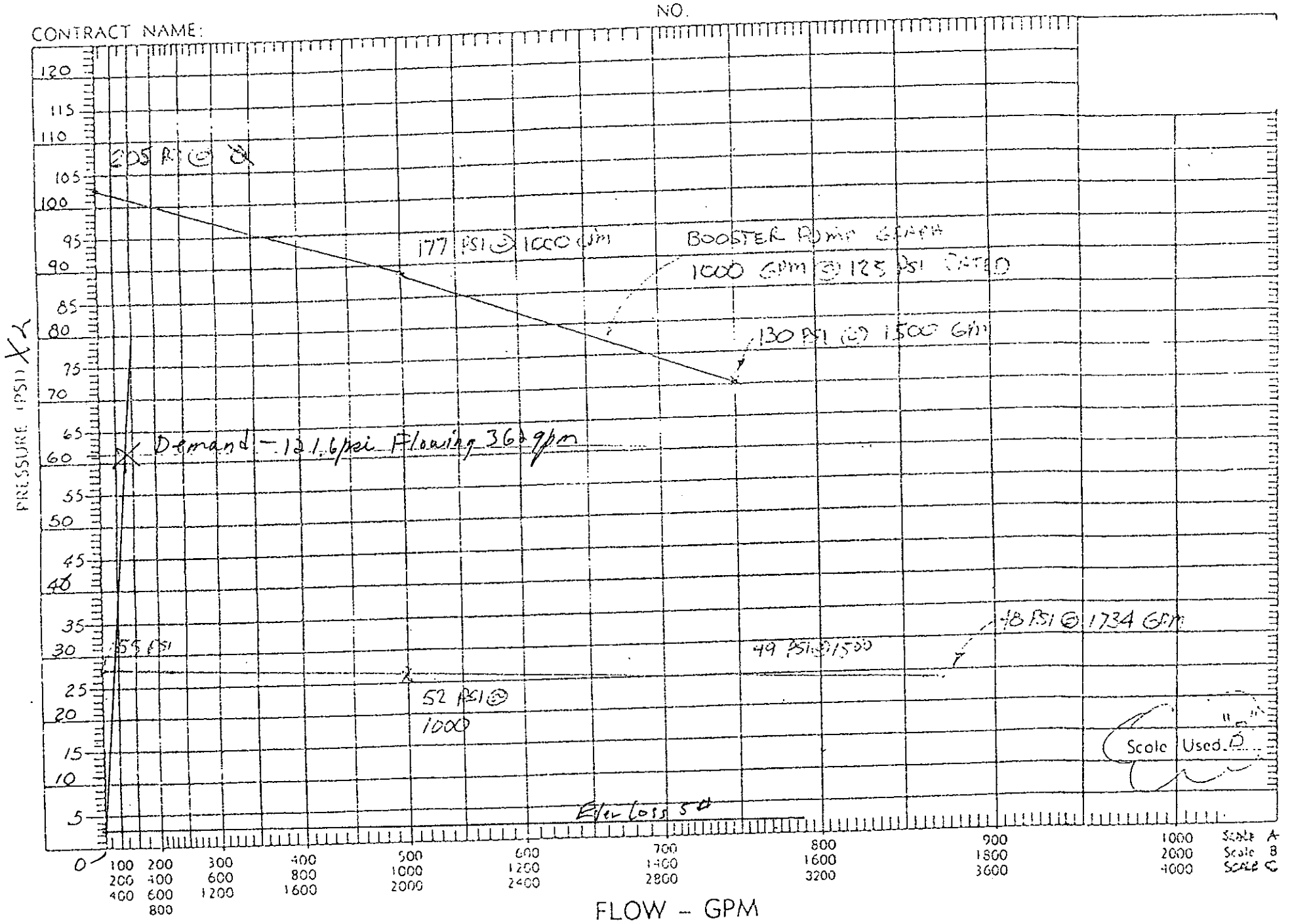
	PIPE CONFIG	H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<361.6>
	1	120.	4.00		.0		.0	21.0	9.09	.00	9.09	4.2600	114.48	361.6	8.14			
	2	120.	2.50	17	50.0	25.0	75.0	-6.0	-2.60	23.30	20.70	2.6350	93.79	361.6	21.28			
81	3	120.	2.50	5	69.0	12.0	81.0			25.16	25.16	2.6350	68.63	361.6	21.28	3.05	65.58	179.4

81	4	120.	2.50	12.0	12.0	1.05	1.05	2.6350	67.58	182.2	10.72	.00	67.58	182.2

178.6 PSI PRESSURE AVAILABLE AND 123.6 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 361.6 GPM
343.2 GPM MINIMUM DESIGN FLOW REQUIREMENT
.0 GPM REQUIRED ADDITIONAL FLOW 434.8 GPM MAXIMUM FLOW

PRICE [illegible]

Price Club
Rack System



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Rack System

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard 6 heads flowing 50psi at end hd

AREA OF SPRINKLER OPERATION: 600
DENSITY: .57
AREA PER SPRINKLER: 100
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside) 7500
RACK SPRINKLER ALLOWANCE:

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL:A-Rack SIZE:17/32TEMP:165 K: 8.1

CALCULATION SUMMARY

GPM REQUIRED: 362 PSI REQUIRED: 121.6
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03257

CAFE

August 5, 1992

HYDRAULIC SYSTEM DESIGN REPORT

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.
IN-RACK SPRINKLER SYSTEM CALCULATED TO PRODUCE 50 PSI AT END HEAD FOR (3)HEADS ON (2)REMOTE LINES. 17/32"OREF. SPRINKLERS. K=8.1

PROJECT NAME: PRICE CLUB STORAGE RACK

PROJECT NUMBER: AJC

TH-RACK

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

DENCITY REQUIREMENT: .572 GPM/SQ.FT. OVER MOST REMOTE 600. SQ.FT.

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 157.0 PSI FLOWING 500.0 GPM

LINE 81	PIPE LGT	FIT COMB	FIT E LGT	TOTAL LGT	PIPE DIAM	ELEV CHANGE	H&W COEF	AREA COVER	K FACTOR	PIPE ID	ELEV PRES	FRIC PRES	NORMAL PRES	VEL PRES	TOTAL PRES	HEAD FLOW	PIPE FLOW	VEL
5	4.00	18	12.00	16.00	1.25		120.	100.0	8.10	1.380		4.61	60.97	.00	60.97	63.25	63.25	13.57
6	.01			.01	2.50		120.	.0	.00	2.635		.00	65.58	.00	65.58		179.44	10.56
7	1.00	18	12.00	13.00	1.25		120.	100.0	8.10	1.380		11.53	49.87	4.18	54.05	57.20	116.19	24.92
9	4.00			4.00	1.25		120.	100.0	8.10	1.380		1.01	53.04	.00	53.04	58.99	58.99	12.65

65.58 PSI PRESSURE REQUIRED FLOWING 179.4 GPM 171.60 GPM = MIN REQUIRED FLOW 4.6% EXCESS FLOW

----------LINE ASSIGNMENT TO MAIN NODES----------

LINE 81 JOINS AT NODES: 3 4

----------FITTING TABLE----------

5 = TF = 1 TURNING FLOW TEE FITTING
E2 = 2 STANDARD 90 DEGREE ELBOWS
T2 = 2 TURNING FLOW TEE FITTINGS
17 = COMBINATION OF T2 GV
18 = COMBINATION OF TF E2

MAIN PIPES

	PIPE CONFIG	H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<361.6>
0																		
	1	120.	4.00		.0		.0	21.0	9.09	.00	9.09	4.2600	114.48	361.6	8.14			
	2	120.	2.50	17	50.0	25.0	75.0	-6.0	-2.60	23.30	20.70	2.6350	93.79	361.6	21.28			
B1	3	120.	2.50	5	69.0	12.0	81.0			25.16	25.16	2.6350	68.63	361.6	21.28	3.05	65.58	179.4

81	4	120.	2.50	12.0	12.0		1.05	1.05	276350	67.58	182.2	10.72	.00	67.58	182.2

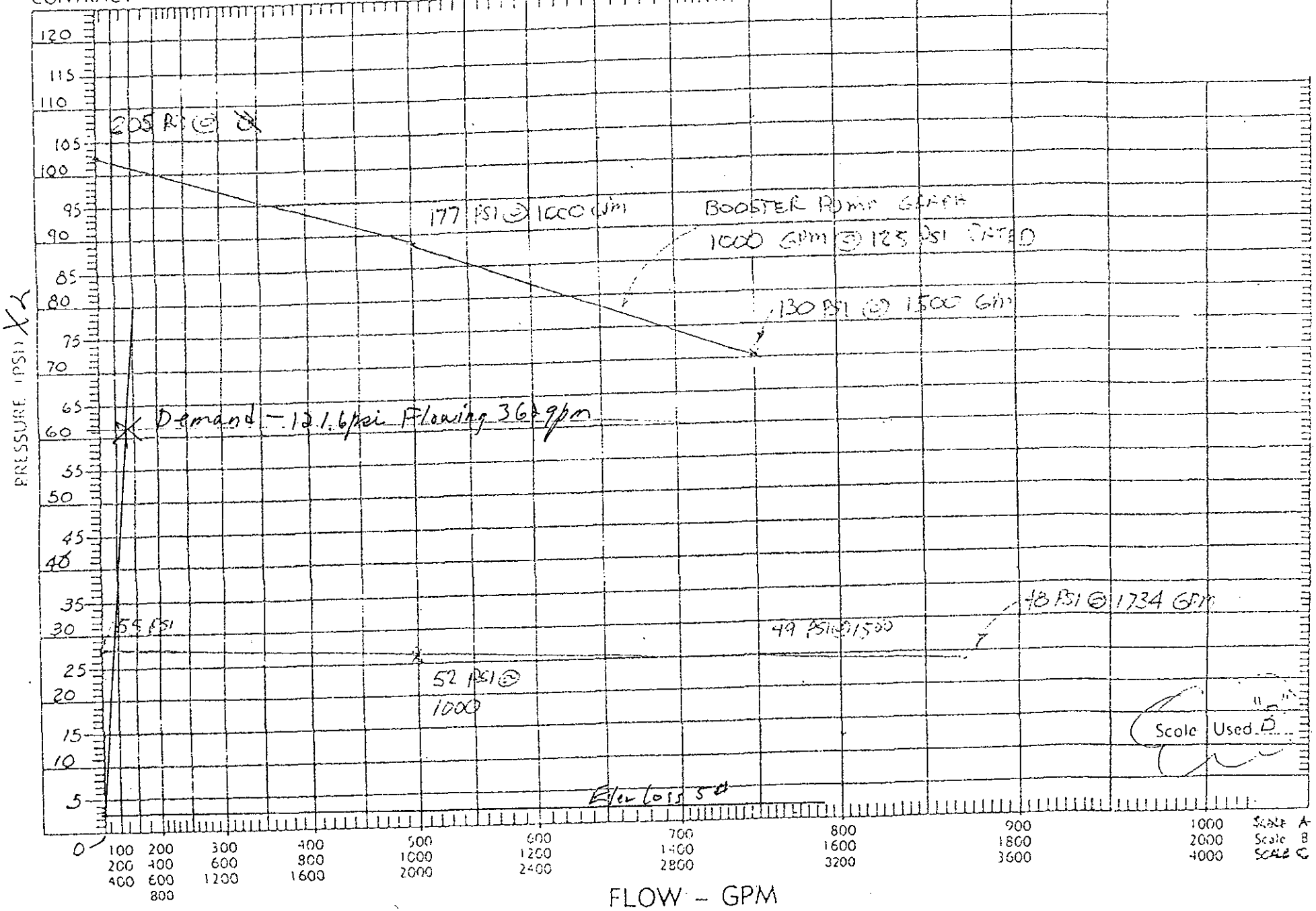
178.6 PSI PRESSURE AVAILABLE AND 123.6 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 361.6 GPM
343.2 GPM MINIMUM DESIGN FLOW REQUIREMENT
.0 GPM REQUIRED ADDITIONAL FLOW 434.8 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Rack System

CONTRACT NAME:

NO:



A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Rack System

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard 6 heads flowing 50psi at end hd

AREA OF SPRINKLER OPERATION: 600
DENSITY: .52
AREA PER SPRINKLER: 100
HOSE ALLOWANCE GPM: (inside)
HOSE ALLOWANCE GPM: (outside) 500
RACK SPRINKLER ALLOWANCE:

SYSTEM TYPE

WET:_x_ DRY:___ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL:A-Rack SIZE:17/32TEMP:165 K: 8.1

CALCULATION SUMMARY

GPM REQUIRED: 362 PSI REQUIRED: 121.6
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03257

CAFE
HYDRAULIC SYSTEM DESIGN REPORT

August 5, 1992

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.
IN-RACK SPRINKLER SYSTEM CALCULATED TO PRODUCE 50 PSI AT END HEAD FOR (3)HEADS ON (2)REMOTE LINES. 17/32"OREF. SPRINKLERS. K=8.1

PROJECT NAME: PRICE CLUB STORAGE RACK

PROJECT NUMBER: AJC

TH-RACK

----------UNITS TABLE----------

LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .572 GPM/SQ.FT. OVER MOST REMOTE 600. SQ.FT.

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------

STATIC PRESSURE = 205.0 PSI 157.0 PSI FLOWING 500.0 GPM

LINE / BI	PIPE LGT	FIT COMB	FIT E LGT	TOTAL LGT	PIPE DIAM	ELEV CHANGE	H&W COEF	AREA COVER	K FACTOR	PIPE ID	ELEV PRES	FRIC PRES	NORMAL PRES	VEL PRES	TOTAL PRES	HEAD FLOW	PIPE FLOW	VEL
5	4.00	18	12.00	16.00	1.25		120.	100.0	8.10	1.380		4.61	60.97	.00	60.97	63.25	63.25	13.57
6	.01			.01	2.50		120.	.0	.00	2.635		.00	65.58	.00	65.58		179.44	10.56
7	1.00	18	12.00	13.00	1.25		120.	100.0	8.10	1.380		11.53	49.87	4.18	54.05	57.20	116.19	24.92
8	4.00			4.00	1.25		120.	100.0	8.10	1.380		1.01	53.04	.00	53.04	58.99	58.99	12.65

65.58 PSI PRESSURE REQUIRED FLOWING 179.4 GPM 171.60 GPM = MIN REQUIRED FLOW 4.6% EXCESS FLOW

----------LINE ASSIGNMENT TO MAIN NODES----------

LINE BI JOINS AT NODES: 3 4

----------FITTING TABLE----------

5 = TF = 1 TURNING FLOW TEE FITTING
E2 = 2 STANDARD 90 DEGREE ELBOWS
T2 = 2 TURNING FLOW TEE FITTINGS
17 = COMBINATION OF T2 GV
18 = COMBINATION OF TF E2

MAIN PIPES

PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																		<361.6>
0>																		
	1	120.	4.00		.0		.0	21.0	9.09	.00	9.09	4.2600	114.48	361.6	8.14			
	2	120.	2.50	17	50.0	25.0	75.0	-6.0	-2.60	23.30	20.70	2.6350	93.79	361.6	21.28			
BI	>* 3	120.	2.50	5	69.0	12.0	81.0			25.16	25.16	2.6350	68.63	361.6	21.28	3.05	65.58	179.4

81	4	120.	2.50	12.0	12.0		1.05	1.05	2.6350	67.58	182.2	10.72	.00	67.58	182.2

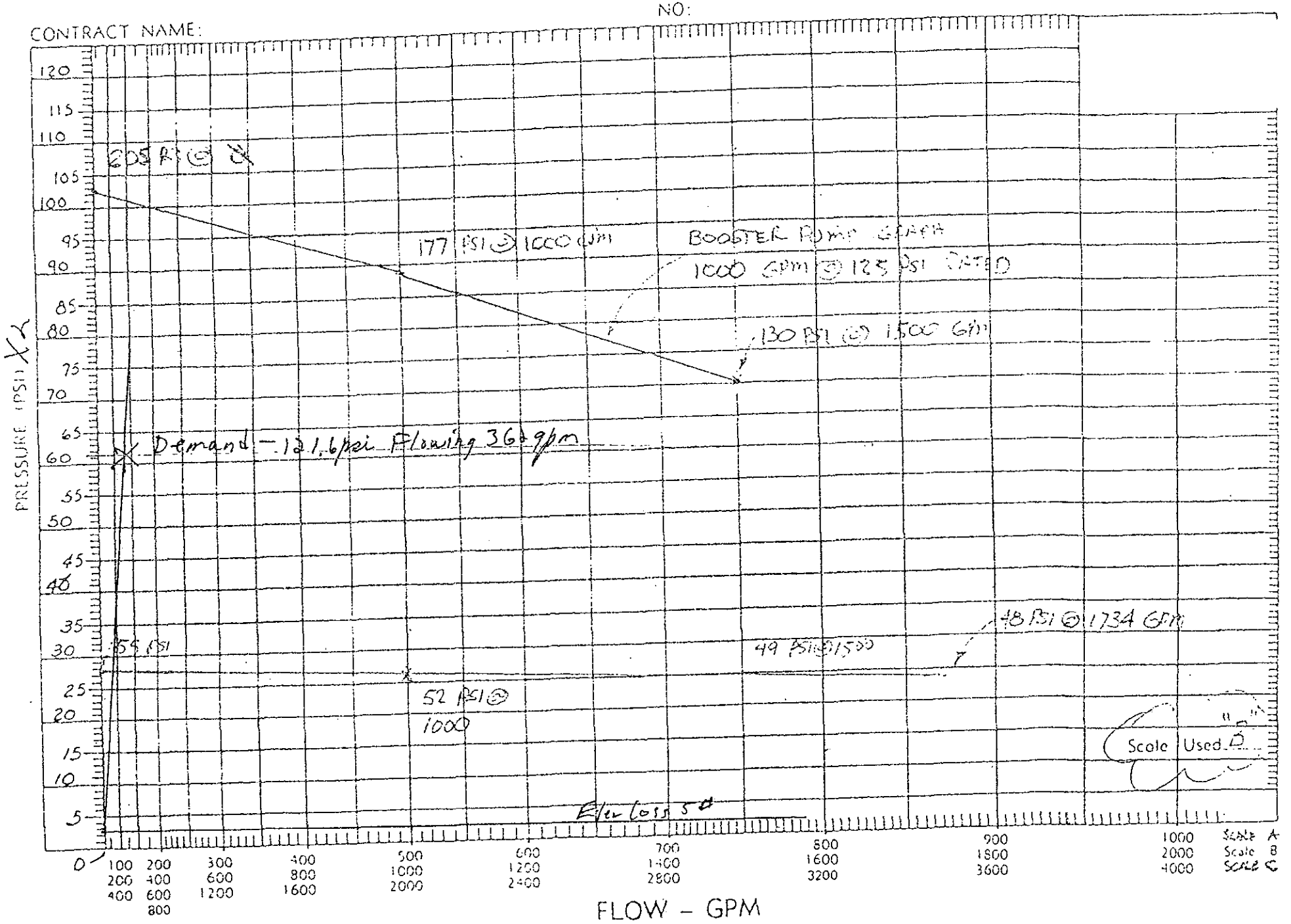
178.6 PSI PRESSURE AVAILABLE AND 123.6 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 361.6 GPM
343.2 GPM MINIMUM DESIGN FLOW REQUIREMENT
.0 GPM REQUIRED ADDITIONAL FLOW 434.8 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Rack System

CONTRACT NAME:

NO:



BRICK TOWNSHIP

Plan Review	Class	Date	By
Zoning			
Plumbing			
Building			
Fire		8/14/92	
Energy			
Electrical			

A.J. CARNEGIE, INC.
1600 Jersey Avenue
Automatic Fire Protection Systems
Box 3024
North Brunswick, N.J. 08902

908-249-3930
FAX 908-246-3631

HYDRAULIC DESIGN INFORMATION SHEET

DATE: August 7, 1992
NAME: Price Club
LOCATION: Brick Township
CONSTRUCTION: Non-combustible
OCCUPANCY: Canopy System

SYSTEM DESIGN

NFPA #13:
LIGHT HAZ.:___ ORD.HAZ.GROUP: #1___ #2___ #3___ EX.HAZ.:___

NFPA #231:
NFPA #231C:___ FIGURE:_____ CURVE:_____

OTHER: (specify) FM Standard .19gpm/sf over 1950 sf

AREA OF SPRINKLER OPERATION: 1950
DENSITY: .19
AREA PER SPRINKLER: 127.5
HOSE ALLOWANCE GPM: (inside) > 250
HOSE ALLOWANCE GPM: (outside)
RACK SPRINKLER ALLOWANCE: -0-

SYSTEM TYPE

WET:__ DRY:_x_ DELUGE:___ PRE - ACTION:___

SPRINKLER OR NOZZLE

MAKE: Central MODEL: A SIZE:1/2 TEMP:165 K: 5.7

CALCULATION SUMMARY

GPM REQUIRED: 584.4 PSI REQUIRED: 87
"C" FACTOR USED: OVERHEAD: 120 UNDERGROUND: 140

WATER SUPPLY

WATER FLOW TEST
DATE:
STATIC PSI: 55
RESIDUAL PSI: 48
GPM FLOWING: 1734
ELEVATION: same

LOCATION: Route 70 & 88
SOURCE: Water Department

PUMP DATA
RATED CAPACITY: 1000
AT PSI: 125lbs
ELEVATION: same

Serial Number 1012122 Run Number 03251

CAFE
HYDRAULIC SYSTEM DESIGN REPORT

August 4, 1992

PRICE CLUB
RT.# 88
BRICKTOWN, N.J.

A.J.CARNEGIE, INC.
P.O. BOX 3024
NORTH BRUNSWICK, N.J.

Design Engineer
A.J.C., INC.

GRID SYSTEM USED AS SUPPLY MAIN TO 500 GPM OUTFLOW AT REAR OF GRID FOR CALCULATION OF SYSTEMS OFF REAR GRID CROSS-MAIN. 500 GPM HOSE ALLOWANCE AT PUMP.
CANOPY DRY-PIPE SYSTEM CALCULATED TO PRODUCE .19/1950 USING 17/32", K=8.1 SPRK. C-120 FOR GALV. PIPE

PROJECT NAME: PRICE CLUB CANOPY SYST.

PROJECT NUMBER: AJC

(Canopy syst)

----------UNITS TABLE----------
LENGTHS AND ELEVATIONS IN FEET — PIPE DIAMETERS IN INCHES
PRESSURES IN POUNDS PER SQUARE INCH — VOLUMES IN U.S. GALLONS
FLOWS IN U.S. GALLONS PER MINUTE — VELOCITIES IN FEET PER SECOND

DENSITY REQUIREMENT: .190 GPM/SQ.FT. OVER MOST REMOTE 1950. SQ.FT.

----------WATER SUPPLY WS1 ASSIGNED AT NODE 0----------
STATIC PRESSURE = 205.0 PSI — 157.0 PSI FLOWING 500.0 GPM

LINE 81	PIPE LGT	FIT COMB	FIT $ LGT	TOTAL LGT	PIPE DIAM	ELEV CHANGE	H&W COEF	AREA COVER	K FACTOR	PIPE ID	ELEV PRES	FRIC PRES	NORMAL PRES	VEL PRES	TOTAL PRES	HEAD FLOW	PIPE FLOW	VEL
5	9.00			9.00	1.50		120.	127.5	8.10	1.610		.49	22.78	.00	22.78	38.66	38.66	6.09
6	9.00			9.00	1.50		120.	127.5	8.10	1.610		1.76	22.28	.99	23.27	38.23	76.89	12.12
7	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.13	24.19	.84	25.02	39.84	116.73	11.16
8	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.95	24.64	1.52	26.15	40.20	156.93	15.00
9	9.00			9.00	2.00		120.	127.5	8.10	2.067		2.99	25.69	2.41	28.10	41.05	197.98	18.93
10	2.00	5	10.00	12.00	2.00		120.	127.5	8.10	2.067		5.72	27.53	3.56	31.09	42.50	240.48	22.99
11	.01	5	15.00	15.01	3.00		120.	.0	.00	3.260		4.02	36.80	.00	36.80		584.37	22.46
12	7.00	5	12.00	19.00	2.50		120.	127.5	8.10	2.635		5.38	28.67	2.75	31.43	43.37	343.88	20.23
13	9.00			9.00	2.50		120.	127.5	8.10	2.635		1.98	27.34	2.10	29.44	42.35	300.51	17.68
14	9.00	19	30.00	39.00	2.50		120.	127.5	8.10	2.635		6.49	21.39	1.55	22.95	37.47	258.16	15.19
15	9.00			9.00	2.00		120.	127.5	8.10	2.067		3.66	16.29	3.00	19.29	32.70	220.69	21.10
16	9.00			9.00	2.00		120.	127.5	8.10	2.067		2.72	14.40	2.17	16.57	30.73	188.00	17.97
17	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.95	13.10	1.52	14.62	29.31	157.26	15.04
18	9.00			9.00	2.00		120.	127.5	8.10	2.067		1.33	12.28	1.01	13.28	28.38	127.95	12.23
19	9.00	19	20.00	29.00	2.00		120.	127.5	8.10	2.067		2.70	9.97	.61	10.58	25.58	99.57	9.52
20	9.00			9.00	2.00		120.	127.5	8.10	2.067		.48	9.76	.34	10.10	25.30	74.00	7.07
21	9.00			9.00	1.50		120.	127.5	8.10	1.610		.75	8.94	.40	9.34	24.23	48.69	7.67
22	9.00			9.00	1.50		120.	127.5	8.10	1.610		.21	9.13	.00	9.13	24.47	24.47	3.86

40.82 PSI PRESSURE REQUIRED FLOWING 584.4 GPM — 411.82 GPM = MIN REQUIRED FLOW 41.9% EXCESS FLOW

----------LINE ASSIGNMENT TO MAIN NODES----------
LINE B1 JOINS AT NODE: 4

----------FITTING TABLE----------
3 = LE = 1 LONG TURN 90 DEGREE ELBOW
5 = TF = 1 TURNING FLOW TEE FITTING
T2 = 2 TURNING FLOW TEE FITTINGS
L4 = 4 LONG TURN 90 DEGREE ELBOWS

B1 =10 45 DEGREE ELBOWS
17 = COMBINATION OF T2 L4
18 = COMBINATION OF GV OV
19 = COMBINATION OF B1

MAIN PIPES

	PIPE CONFIG		H&W COEF	PIPE DIAM	FIT COMB	PIPE LGT	FIT E LGT	TOTAL LGT	ELEV CHANGE	ELEV PRES	FRIC PRES	PRES LOSS	PIPE ID	TOTAL PRES	PIPE FLOW	VEL	VEL PRES	NORMAL PRES	IN/OUT FLOW
WS1																			<584.4>
	0>																		
		1	120.	3.00		.0		.0			.00	.00	3.2600	87.01	584.4	22.46			
		2	120.	3.00	17	44.0	50.0	94.0	-19.0	-8.23	25.16	16.94	3.2600	70.07	584.4	22.46			
		3	120.	3.00	18	.0	60.0	60.0	2.0	.87	16.06	16.93	3.2600	53.14	584.4	22.46			
B1		4	120.	3.00	3	20.0	5.0	25.0	13.0	5.63	6.69	12.32	3.2600	40.82	584.4	22.46	.00	40.82	584.4

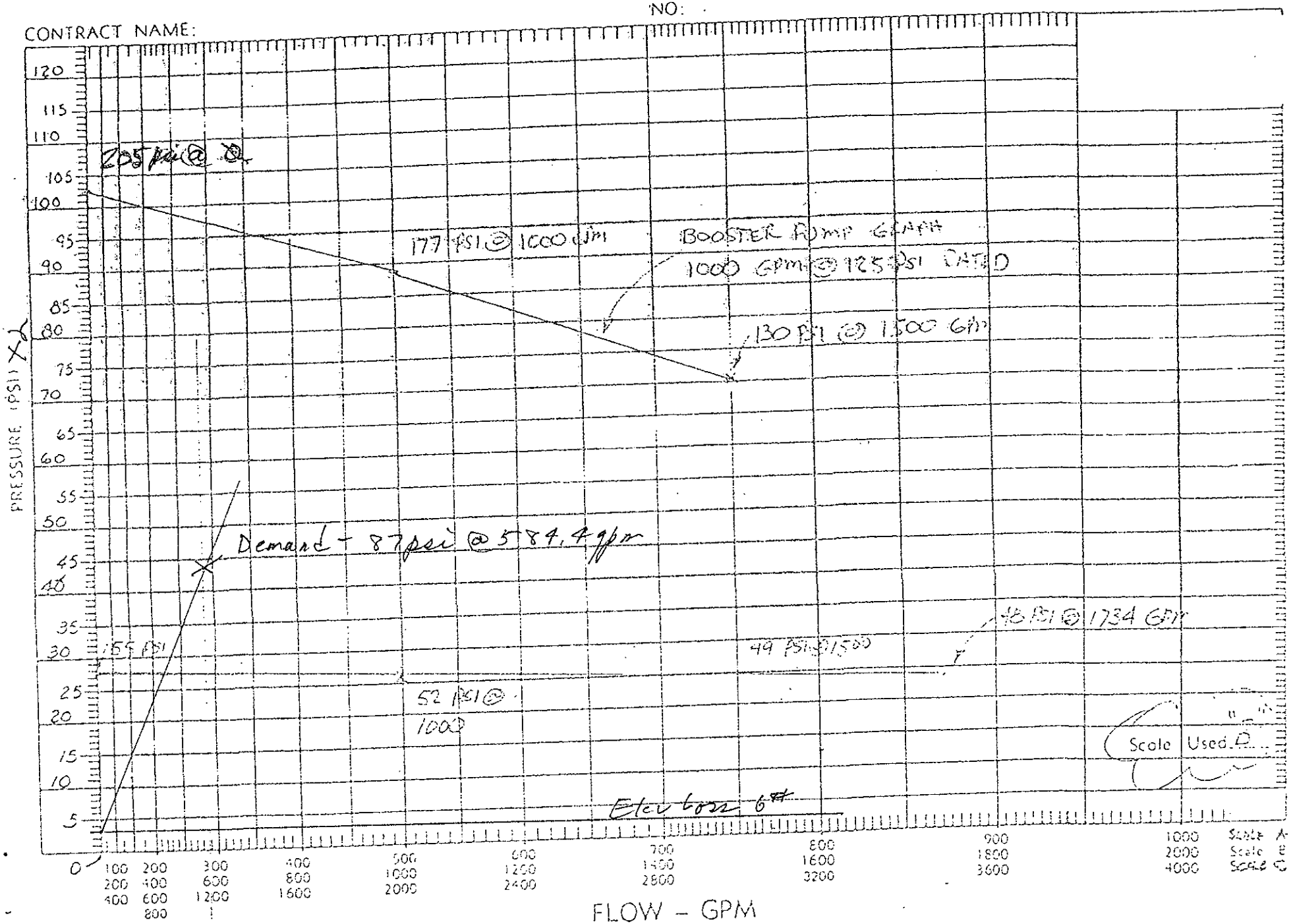
141.0 PSI PRESSURE AVAILABLE AND 87.0 PSI PRESSURE REQUIRED AT THE WATER SUPPLY WHEN FLOWING 584.4 GPM
320.5 GPM MINIMUM DESIGN FLOW REQUIREMENT
.0 GPM REQUIRED ADDITIONAL FLOW 743.7 GPM MAXIMUM FLOW

PRICE CLUB

Price Club
Canopy System

NO:

CONTRACT NAME:



The Brick Township Municipal Utilities Authority

1551 HIGHWAY 88 WEST • BRICK, NEW JERSEY 08724-2399
PHONE: (908) 458-7000 • FAX: (908) 458-7725

APPLICATION FOR AUXILIARY METER

DATE: 12-2-92

APPLICANT'S NAME The Price Club TELEPHONE #_____

MAILING ADDRESS: 46000 Manekin Plaza Sterling VA

SERVICE LOCATION: Rt. 88 - The Price

ACCOUNT#:_____ BLOCK: 1170 LOT: 5

SIZE OF EXISTING SERVICE: 2" SIZE OF EXISTING METER:____

APPLICANT'S SIGNATURE

Kathi Evan
AUTHORITY REPRESENTATIVE

At the customer's option, a separate account may be established for this usage, subject to all conditions of the rate schedule as applicable water usage.

After completing this application the following steps must be taken:

1- Obtain special device permit from the Township of Brick Plumbing Department.

2- A licensed plumber or homeowner must cut into the pipe before the existing yoke and install a second meter yoke.

3- Call Township of Brick Plumbing Dept. for inspection (477-3000).

4- Upon approval from the plumbing inspector a second meter will be installed. A copy of the completed permit will be required before the meter is installed. Contact the BTMUA for the meter installation.

5- A charge for the cost of the meter will be applied to the first billing. Bills for water only will be sent on this account quarterly.

A.J. CARNEGIE, INC.
1600 Jersey Avenue
NORTH BRUNSWICK, NEW JERSEY 08902

(201) 249-3930

LETTER OF TRANSMITTAL

DATE	JOB NO.
8/14/92	

ATTENTION: Joe Eversito

RE: Price Club

TO: Twsp of Brick
401 Chambers Bridge Rd
Brick, N.J. 08723

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☒ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☒ Hydraulic Calcs

COPIES	DATE	NO.	DESCRIPTION
3 sets			Sprinkler Shop Dwgs
3 Sets			Hydraulic Calcs - Auto Center - Whse Roof - Outflow Canopy - Racks
1 set			Fire Pump - (For your Information)

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO _____

SIGNED: _____