

BLOCK 87 **RECEIVED** LOT 8 ADDRESS (SITE) Rt 70 & CHAMBERLAIN PERMIT NO. 1803-96

DIV. OF INSPECTION



CONSTRUCTION PERMIT APPLICATION

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

I. IDENTIFICATION

1. Proposed Work-site at: RT. 70 + CHAMBERS BRIDGE RD., BRICK
2. Name of Owner in Fee: BARNES + NOBLE Tel. (212) 633-3300
- Address 122 5TH AVE. NY, NY 10011
street municipality zip code
3. Ownership in Fee: Public _____ Private X
4. Principal Contractor: FOUR STAR FLOOR PROT. Tel. (609) 205-0045
- Address 593 OVERBROOK RD., VINELAND, N.J.
- License No. OR, if new home, Builder Reg. No. _____ Exp. Date _____
- Federal Emp. No. 22-3305648 Social Security No. _____
5. Architect or Engineer _____ Tel. () _____
- Address _____
6. Responsible Person in Charge of Work SAL MARINO Tel. (609) 691-5482

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$		
2. Electrical			
3. Plumbing			
4. Fire Protection		585-	
5. Elevator Devices			
6. Subtotal	\$		
7. Less 20% for State Plan Review			
8. Subtotal	\$		
9. DCA Training Fee		25-	
10. Subtotal	\$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$	610-	

VI. BUILDING/SITE CHARACTERISTICS

1. Number of Stories _____
2. Height of Structure _____ ft.
3. Area—Largest Floor _____ sq. ft.
4. New Building Area _____ sq. ft.
5. Volume of New 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. Max. Live Load _____
12. Max. Occupancy Load _____

II. PROPOSED WORK

1. ☐ Minor work
(single trade)
2. ☐ Small Job (\$5,000
and no prior approvals)
3. ☐ New Building
4. ☐ Addition
5. ☐ Alteration
6. ☒ Fire Protection
7. ☐ Plumbing
8. ☐ Electrical
9. ☐ Elevator Devices
10. ☐ Asbestos Abatement
11. ☐ Demolition
- TOTAL COSTS**

Est Cost

OPTIONAL (for office use only)[illegible]

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 _____

B. NON-RESIDENTIAL

1. State Specific Use:
BOOK STORE

3. Change in Use Group.
Indicate Former:

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

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	
☐ Zoning Officer									
☐ Planning Board									
☐ Zoning Board									
☐ Sewer Authority									
☐ Water Authority									
☐ Fire Department									
☐ Police Department									
☐ Health Department									
☐ Soil Conservation									
☐ N.J. Dept. of Community Affairs									
☐ N.J. Department of Transportation									
☐ N.J. Dept. of Environmental Protect.									
☐ Utility Dig No.									
☐									
☐									

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

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

X. CERTIFICATES ISSUED (office use only)	DATE ISSUED	DATE EXPIRED	DATE REISSUED	DATE EXPIRED
☐ Temporary Certificate of Occupancy	No. _____	_____	_____	_____
☐ Temporary Certificate of Compliance	No. _____	_____	_____	_____
☐ Continued Certificate of Occupancy	No. _____	_____	_____	_____
☐ Certificate of Compliance	No. _____	_____	_____	_____
☐ Certificate of Occupancy	No. _____	_____	_____	_____
☐ Certificate of Approval	No. _____	_____	_____	_____



CONSTRUCTION PERMIT

Date Issued 7-17-96
Control #
Permit # 1805-96

IDENTIFICATION Block 1671 Lot 8
Work Site Location Pt. 704 Chambersbridge Rd. Four Star Fire Protect.
Owner in Fee Baines & Noble
Address 122 5th Ave.
Tele. () New York, N.Y.
Contractor Address _____
Tele. () _____
Lic. No. or Bldrs. Reg. No. _____ Exp. Date _____
Federal Emp. No. _____
or Social Security No. _____

Is hereby granted permission to perform the following work:

☐ BUILDING ☐ PLUMBING ☐ OTHER _____
☐ ELECTRICAL ☒ FIRE PROTECTION

DESCRIPTION OF WORK:

fire sprinklers

NOTE: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$ 31,000.

U.C.C. Form F-170A

CONSTRUCTION OFFICIAL

1 WHITE - OFFICE 2 CANARY - TAX ASSESSOR 3 PINK - JACKET 4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building _____
Plumbing _____
Electrical _____
Fire Protection 585.-
Other _____
Other _____
DCA Training Fee 25.-
Cert. of Occ. _____
Other _____
Total 610.-
Check No. 1704
Cash _____
Collected By: _____



**SUBRULE
TECHNICAL SECTION**



Date Issued
Control #
Permit #

1-11
1805-96

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block: 671 Lot: 8
Work Site Location: BARNES + NOBLE BEICK PLAZA
RT 90 + CHAMBERS ROAD RD. 13800 RD, N.Y.
Owner in Fee: BARNES + NOBLE BOOK STORES
Address: 182 5th Ave. 10011
Tel: (212) 633-3300
Contractor: FOUR STAR FIRE PROTECTION INC.
Address: 593 OLEA ROAD ROXB
Tel: (609) 205-0045
Lic. No.:
Federal Emp. No. 82-3305648 or Social Security No.:

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present _____ Proposed _____
Constr. Class: Present _____ Proposed _____
Heating Systems: [] New [] Existing
Type: [] Gas [] Oil [] Electrical [] Solar
Location: _____
Total Est. Cost of Fire Prot. Work \$ 31,000- [] Other _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW:	INSPECTIONS:
[] No Plans Required	Type: _____
Joint Plan Review Required:	Suppression Test _____
[] Bldg. [] Plumb.	Fire Alarm Test _____
[] Elec. [] Elevator	Smoke Test _____
[] Fire Plans Approved	Med. Test _____
Date: _____	TCO _____
Approved by: _____	Other: <u>OK Temp Co. for 60 days</u>
SUBCODE APPROVAL:	Other: _____
[] CO [] CCO [] CA	Other: <u>the Smith had in apt on 08/11/96</u>
Date: _____	
Approved by: _____	

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Signature of Applicant
SIGNATURE

D. TECHNICAL SITE DATA

Description of Work	
Water Supply Source	<u>CITY MAIN</u>
Method of Valve Supervision	<u>TAMPER SWITCH</u>
Local Alarm Supervision	<u>Flow Switch</u>
Central Supervision	<u>N/A</u>
Proprietary Supervision	<u>N/A</u>
Flammable Liquid Storage Tanks	() Capacity _____ Fuel _____
Combustible Liquid Storage Tanks	() Capacity _____ Fuel _____
L.P.G. Storage Tanks	() Capacity _____ Fuel _____
L.N.G. Storage Tanks	() Capacity _____ Fuel _____

Wet Sprinkler Heads	Number <u>435</u>
Dry Sprinkler Heads	<u>1</u>
TOTAL	<u>435</u>

Smoke Detectors	<u>N/A</u>
Heat Detectors	<u>N/A</u>
TOTAL	<u>N/A</u>

Stand Pipes	<u>N/A</u>
Kitchen Hood Exhaust Systems	<u>N/A</u>

Pre-Engineered Systems	<u>N/A</u>
CO ₂ Suppression	<u>N/A</u>
Halon Suppression	<u>N/A</u>
Foam Suppression	<u>N/A</u>
Dry Chemical	<u>N/A</u>
Wet Chemical	<u>N/A</u>

Gas or Oil Fired Appliance	<u>N/A</u>
OTHER	<u>N/A</u>

Paid [] Check # _____	Administrative Surcharge \$ _____
	Minimum Fee \$ _____
	DCA Training Fee \$ _____
Collected by: _____	TOTAL FEE \$ <u>585-</u>

Armstrong

Fabrique en les Etats Unies de Americs por:
 Fabricated in the U.S.A. - Units per:

Leicester, PA 17044

RS407 - Type XLD

Underwriters Laboratories Inc.®



CLASSIFIED
 ACOUSTICAL MATERIAL



CONTENTS NOT OVER 80 SQ. FT. (FROM B. 1) Issue No. 80-5669

SURFACE BURNING CHARACTERISTICS*

FLAME SPREAD

25

SMOKE DEVELOPED

10

* ALSO CLASSIFIED AS TO SURFACE BURNING CHARACTERISTICS IN ACCORDANCE WITH THE STANDARD CANULCS 102M

LA6671 II Rev 0694

Approved by the Board of Standards and Appeals

2767C^L

Second Look® II

WHITE

24 in x 48 in x 3/4 in (nominal)
 (610 mm x 1219 mm x 19 mm) (nominal)

BLANCO

80 sq ft (7.4 m²)

BLANC

10 pieces
 10 piezas
 10 pièces



15/16"

24 mm

02 AUC. QC

=====

CALCULATED BY: SHIELD FIRE PROTECTION INC.,
235 RIVER AVE., LAKEWOOD, NJ 08701

MAIL-IN CALCULATION
PLANS BY OTHERS

PROJECT: BARNES & NOBLE
LOCATION: BRICK PLAZA
RT. 70 & CHAMBERSBRIDGE ROAD
BRICK, NEW JERSEY

DATE: 07-08-96
FILE: RA0006
SYS.# ONE
AREA: 22606 SQ.FT

=====

OCCUPANCY/HAZARD: ORDINARY HAZARD GROUP II

N.F.P.A.STANDARD: 13

SYSTEM TYPE: WET

DENSITY / AREA: .20 gpm/sq.ft. over 1500 sq.ft. area.

AREA/SPRINKLER: 120 sq.ft./sp. used 130 sq.ft. allowed.

SPRINKLER DATA: 1/2" inch orifice 5.6 k-factor 165 degree

SPKR'S FLOWING: 13 heads. HOSE: 250 gpm allowance.

SUMMARY | END SPRINKLER REQUIREMENT = 24.0 gpm @ 18.4 psi
OF FLOW | DISCHARGE FROM FLOWING SPRINKLERS: 316.6 gpm
----- W/HOSE: 566.6 gpm. W/RACK: N/A gpm.

FLOW & (at base of riser) | (at source connection)
PRESS: 316.6 gpm @ 41.7 psi | 566.6 gpm @ 48.3 psi

SUPPLY DATA | LOCATION:

CITY WATER: STATIC: 65 psi; RESIDUAL: 58 psi; FLOW: 1211 gpm.
FIRE PUMP - RATING: N/A gpm at N/A psi
FIRE PUMP - CURVE : N/A psi(120%); N/A psi(65%); N/A gpm(150%)
COMBINED - STATIC: N/A psi; RESIDUAL: N/A psi; FLOW: N/A

PIPE | C-FACTOR: ABOVEGROUND = 120 ; UNDERGROUND = 140
DATA: | SCHEDULE: LINES: 40 MAINS: 10

CONTRACTOR: FOUR STAR FIRE PROTECTION

LAYOUT BY: J.P.R.

REVIEW BY:

COMMENTS:

RACKS: COMMODITY CLASS: N/A STORAGE HGT. N/A FT.; NO.OF SPK: N/A
----- FIG.NO.(231-C): N/A CURVE: N/A ; SPK/LEVEL: N/A
RACK DEMAND: N/A gpm @ N/A psi @ ref. pt. N/A NO.OF LEV: N/A

PLANS SUBMITTED WITH CALCULATION PREPARED BY
OTHERS. SHIELD FIRE PROT.INC. NOT LIABLE FOR
SYSTEM "PLAN" DESIGN, SUBMISSION OR ACCEPTANCE

P.E. SEAL:

CALCULATIONS BY: HASS COMPUTER PROGRAM
HRS SYTEMS ,INC., ATLANTA, GA. (LIC.#327L117)

N.J.#

DATE SEALED:

=====

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 1
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL DEMAND (GPM)	REQ'D PRESS. (PSI)
44	65.0	58.0	1211.0	63.3	566.6	48.3

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	566.6 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	250.0 GPM
OTHER HOSE STREAM ALLOWANCES	0.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	316.6 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
1	13.0	- - - -	28.6	- - -
2	22.0	K= 5.60	18.6	24.2
3	22.0	K= 5.60	18.4	24.0
4	22.0	K= 5.60	18.4	24.0
5	22.0	K= 5.60	18.7	24.2
6	13.0	- - - -	27.4	- - -
7	13.0	- - - -	28.6	- - -
8	22.0	K= 5.60	18.6	24.2
9	22.0	K= 5.60	18.4	24.0
10	22.0	K= 5.60	18.4	24.0
11	22.0	K= 5.60	18.7	24.2
12	13.0	- - - -	27.4	- - -
13	13.0	- - - -	28.7	- - -
14	22.0	K= 5.60	18.7	24.2
15	22.0	K= 5.60	18.5	24.1
16	22.0	K= 5.60	18.5	24.1
17	22.0	K= 5.60	18.8	24.3
18	13.0	- - - -	27.5	- - -
19	13.0	- - - -	28.8	- - -
20	22.0	K= 5.60	23.7	27.2
21	13.0	- - - -	27.8	- - -
22	13.0	- - - -	29.0	- - -
23	13.0	- - - -	28.1	- - -
24	13.0	- - - -	29.5	- - -
25	13.0	- - - -	28.3	- - -
26	13.0	- - - -	29.9	- - -
27	13.0	- - - -	28.5	- - -
28	13.0	- - - -	30.3	- - -
29	13.0	- - - -	28.7	- - -
30	13.0	- - - -	30.8	- - -
31	13.0	- - - -	28.8	- - -
32	13.0	- - - -	31.4	- - -
33	13.0	- - - -	28.9	- - -
34	13.0	- - - -	32.1	- - -

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 2
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
35	13.0	- - - -	29.0	- - -
36	13.0	- - - -	32.9	- - -
37	13.0	- - - -	29.0	- - -
38	13.0	- - - -	33.7	- - -
39	13.0	- - - -	29.0	- - -
40	2.0	- - - -	41.7	- - -
41	1.5	- - - -	41.9	- - -
42	1.5	- - - -	43.9	- - -
43	0.5	- - - -	44.5	- - -
44	0.0	SOURCE	48.3	316.6

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 3
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA

PIPE TAG		ELEV. (FT)	NOZ. (K)	PT (PSI)	DISC. (GPM)	Q(GPM) DIA(IN) LENGTH		PRESS. SUM. (PSI)	
END						VEL(FPS)	HW(C)		
NODES						F.L./FT	(FT)		
Pipe: 1									
1		13.0	0.0	28.6	0.0	46.8	1.610 PL 62.00	PF	6.1
2		22.0	5.6	18.6	24.2	7.4	120 FTG 2ET	PE	-3.9
							0.078 TL 78.00	PV	0.4
Pipe: 2									
2		22.0	5.6	18.6	24.2	22.6	1.610 PL 12.00	PF	0.2
3		22.0	5.6	18.6	24.2	3.6	120 FTG ----	PE	0.0
		22.0	5.6	18.4	24.0		0.020 TL 12.00	PV	0.1
Pipe: 3									
3		22.0	5.6	18.4	24.0	-1.4	1.610 PL 12.00	PF	0.0
4		22.0	5.6	18.4	24.0	0.2	120 FTG ----	PE	0.0
							0.000 TL 12.00	PV	0.0
Pipe: 4									
4		22.0	5.6	18.4	24.0	-25.4	1.610 PL 12.00	PF	0.3
5		22.0	5.6	18.4	24.0	4.0	120 FTG ----	PE	0.0
		22.0	5.6	18.7	24.2		0.025 TL 12.00	PV	0.1
Pipe: 5									
5		22.0	5.6	18.7	24.2	-49.6	1.610 PL 40.00	PF	4.9
6		13.0	0.0	27.4	0.0	7.8	120 FTG 2ET	PE	3.9
							0.087 TL 56.00	PV	0.4
Pipe: 6									
7		13.0	0.0	28.6	0.0	46.8	3.260 PL 8.00	PF	0.0
1		13.0	0.0	28.6	0.0	1.8	120 FTG ----	PE	0.0
							0.003 TL 8.00	PV	0.0
Pipe: 7									
7		13.0	0.0	28.6	0.0	46.8	1.610 PL 62.00	PF	6.1
8		22.0	5.6	18.6	24.2	7.4	120 FTG 2ET	PE	-3.9
							0.078 TL 78.00	PV	0.4
Pipe: 8									
8		22.0	5.6	18.6	24.2	22.6	1.610 PL 12.00	PF	0.2
9		22.0	5.6	18.6	24.2	3.6	120 FTG ----	PE	0.0
							0.020 TL 12.00	PV	0.1
Pipe: 9									
9		22.0	5.6	18.4	24.0	-1.4	1.610 PL 12.00	PF	0.0
10		22.0	5.6	18.4	24.0	0.2	120 FTG ----	PE	0.0
							0.000 TL 12.00	PV	0.0
Pipe: 10									
10		22.0	5.6	18.4	24.0	-25.4	1.610 PL 12.00	PF	0.3
11		22.0	5.6	18.4	24.0	4.0	120 FTG ----	PE	0.0
		22.0	5.6	18.7	24.2		0.025 TL 12.00	PV	0.1
Pipe: 11									
11		22.0	5.6	18.7	24.2	-49.6	1.610 PL 40.00	PF	4.9
12		13.0	0.0	27.4	0.0	7.8	120 FTG 2ET	PE	3.9
							0.087 TL 56.00	PV	0.4
Pipe: 12									
12		13.0	0.0	27.4	0.0	49.6	3.260 PL 6.00	PF	0.0
6		13.0	0.0	27.4	0.0	1.9	120 FTG ----	PE	0.0
							0.003 TL 6.00	PV	0.0
Pipe: 13									
13		13.0	0.0	28.7	0.0	93.5	3.260 PL 13.00	PF	0.1
7		13.0	0.0	28.6	0.0	3.6	120 FTG ----	PE	0.0
							0.009 TL 13.00	PV	0.1

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 4
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	F.L./FT	(FT)	SUM.
									(PSI)
Pipe: 14					46.9	1.610	PL	62.00	PF 6.1
13	13.0	0.0	28.7	0.0	7.4	120	FTG	2ET	PE -3.9
14	22.0	5.6	18.7	24.2		0.078	TL	78.00	PV 0.4
Pipe: 15					22.7	1.610	PL	12.00	PF 0.2
14	22.0	5.6	18.7	24.2	3.6	120	FTG	----	PE 0.0
15	22.0	5.6	18.5	24.1		0.020	TL	12.00	PV 0.1
Pipe: 16					-1.4	1.610	PL	12.00	PF 0.0
15	22.0	5.6	18.5	24.1	0.2	120	FTG	----	PE 0.0
16	22.0	5.6	18.5	24.1		0.000	TL	12.00	PV 0.0
Pipe: 17					-25.4	1.610	PL	12.00	PF 0.3
16	22.0	5.6	18.5	24.1	4.0	120	FTG	----	PE 0.0
17	22.0	5.6	18.8	24.3		0.025	TL	12.00	PV 0.1
Pipe: 18					-49.7	1.610	PL	40.00	PF 4.9
17	22.0	5.6	18.8	24.3	7.8	120	FTG	2ET	PE 3.9
18	13.0	0.0	27.5	0.0		0.087	TL	56.00	PV 0.4
Pipe: 19					99.2	3.260	PL	10.00	PF 0.1
18	13.0	0.0	27.5	0.0	3.8	120	FTG	----	PE 0.0
12	13.0	0.0	27.4	0.0		0.010	TL	10.00	PV 0.1
Pipe: 20					140.4	3.260	PL	7.00	PF 0.1
19	13.0	0.0	28.8	0.0	5.4	120	FTG	----	PE 0.0
13	13.0	0.0	28.7	0.0		0.019	TL	7.00	PV 0.2
Pipe: 21					20.3	1.610	PL	62.00	PF 1.3
19	13.0	0.0	28.8	0.0	3.2	120	FTG	2ET	PE -3.9
20	22.0	5.6	23.7	27.2		0.017	TL	78.00	PV 0.1
Pipe: 22					-7.0	1.610	PL	76.00	PF 0.2
20	22.0	5.6	23.7	27.2	1.1	120	FTG	6ET	PE 3.9
21	13.0	0.0	27.8	0.0		0.002	TL	108.00	PV 0.0
Pipe: 23					148.9	3.260	PL	12.00	PF 0.3
21	13.0	0.0	27.8	0.0	5.7	120	FTG	----	PE 0.0
18	13.0	0.0	27.5	0.0		0.021	TL	12.00	PV 0.2
Pipe: 24					160.7	3.260	PL	6.00	PF 0.1
22	13.0	0.0	29.0	0.0	6.2	120	FTG	----	PE 0.0
19	13.0	0.0	28.8	0.0		0.025	TL	6.00	PV 0.3
Pipe: 25					10.4	1.610	PL	144.00	PF 0.9
22	13.0	0.0	29.0	0.0	1.6	120	FTG	5E3T	PE 0.0
23	13.0	0.0	28.1	0.0		0.005	TL	188.00	PV 0.0
Pipe: 26					155.9	3.260	PL	12.00	PF 0.3
23	13.0	0.0	28.1	0.0	6.0	120	FTG	----	PE 0.0
21	13.0	0.0	27.8	0.0		0.023	TL	12.00	PV 0.2

Page 5
RA0006.SDF

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.
PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.	
NODES		(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.	
							F.L./FT		(PSI)	
	Pipe: 27					171.1	3.260	PL 18.00	PF	0.5
24		13.0	0.0	29.5	0.0	6.6	120	FTG ----	PE	0.0
22		13.0	0.0	29.0	0.0		0.028	TL 18.00	PV	0.3
	Pipe: 28					12.6	1.610	PL 138.00	PF	1.2
24		13.0	0.0	29.5	0.0	2.0	120	FTG 4E2T	PE	0.0
25		13.0	0.0	28.3	0.0		0.007	TL 170.00	PV	0.0
	Pipe: 29					145.5	3.260	PL 12.00	PF	0.2
25		13.0	0.0	28.3	0.0	5.6	120	FTG ----	PE	0.0
23		13.0	0.0	28.1	0.0		0.020	TL 12.00	PV	0.2
	Pipe: 30					183.7	3.260	PL 12.00	PF	0.4
26		13.0	0.0	29.9	0.0	7.1	120	FTG ----	PE	0.0
24		13.0	0.0	29.5	0.0		0.031	TL 12.00	PV	0.3
	Pipe: 31					13.5	1.610	PL 138.00	PF	1.3
26		13.0	0.0	29.9	0.0	2.1	120	FTG 4E2T	PE	0.0
27		13.0	0.0	28.5	0.0		0.008	TL 170.00	PV	0.0
	Pipe: 32					132.9	3.260	PL 12.00	PF	0.2
27		13.0	0.0	28.5	0.0	5.1	120	FTG ----	PE	0.0
25		13.0	0.0	28.3	0.0		0.017	TL 12.00	PV	0.2
	Pipe: 33					197.3	3.260	PL 12.00	PF	0.4
28		13.0	0.0	30.3	0.0	7.6	120	FTG ----	PE	0.0
26		13.0	0.0	29.9	0.0		0.036	TL 12.00	PV	0.4
	Pipe: 34					14.9	1.610	PL 138.00	PF	1.6
28		13.0	0.0	30.3	0.0	2.3	120	FTG 4E2T	PE	0.0
29		13.0	0.0	28.7	0.0		0.009	TL 170.00	PV	0.0
	Pipe: 35					119.3	3.260	PL 12.00	PF	0.2
29		13.0	0.0	28.7	0.0	4.6	120	FTG ----	PE	0.0
27		13.0	0.0	28.5	0.0		0.014	TL 12.00	PV	0.1
	Pipe: 36					212.2	3.260	PL 12.00	PF	0.5
30		13.0	0.0	30.8	0.0	8.2	120	FTG ----	PE	0.0
28		13.0	0.0	30.3	0.0		0.041	TL 12.00	PV	0.4
	Pipe: 37					16.6	1.610	PL 138.00	PF	2.0
30		13.0	0.0	30.8	0.0	2.6	120	FTG 4E2T	PE	0.0
31		13.0	0.0	28.8	0.0		0.011	TL 170.00	PV	0.0
	Pipe: 38					104.4	3.260	PL 12.00	PF	0.1
31		13.0	0.0	28.8	0.0	4.0	120	FTG ----	PE	0.0
29		13.0	0.0	28.7	0.0		0.011	TL 12.00	PV	0.1
	Pipe: 39					228.8	3.260	PL 13.00	PF	0.6
32		13.0	0.0	31.4	0.0	8.8	120	FTG ----	PE	0.0
30		13.0	0.0	30.8	0.0		0.047	TL 13.00	PV	0.5

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 6
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.	
						F.L./FT		(PSI)	
	Pipe: 40				18.4	1.610	PL 134.00	PF 2.5	
32	13.0	0.0	31.4	0.0	2.9	120	FTG 7E2T	PE 0.0	
33	13.0	0.0	28.9	0.0		0.014	TL 178.00	PV 0.1	
	Pipe: 41				87.8	3.260	PL 12.00	PF 0.1	
33	13.0	0.0	28.9	0.0	3.4	120	FTG ----	PE 0.0	
31	13.0	0.0	28.8	0.0		0.008	TL 12.00	PV 0.1	
	Pipe: 42				247.3	3.260	PL 13.00	PF 0.7	
34	13.0	0.0	32.1	0.0	9.5	120	FTG ----	PE 0.0	
32	13.0	0.0	31.4	0.0		0.055	TL 13.00	PV 0.6	
	Pipe: 43				19.8	1.610	PL 149.00	PF 3.1	
34	13.0	0.0	32.1	0.0	3.1	120	FTG 4E4T	PE 0.0	
35	13.0	0.0	29.0	0.0		0.016	TL 197.00	PV 0.1	
	Pipe: 44				69.3	3.260	PL 13.00	PF 0.1	
35	13.0	0.0	29.0	0.0	2.7	120	FTG ----	PE 0.0	
33	13.0	0.0	28.9	0.0		0.005	TL 13.00	PV 0.0	
	Pipe: 45				267.0	3.260	PL 12.00	PF 0.8	
36	13.0	0.0	32.9	0.0	10.3	120	FTG ----	PE 0.0	
34	13.0	0.0	32.1	0.0		0.063	TL 12.00	PV 0.7	
	Pipe: 46				23.1	1.610	PL 143.00	PF 3.8	
36	13.0	0.0	32.9	0.0	3.6	120	FTG 4E3T	PE 0.0	
37	13.0	0.0	29.0	0.0		0.021	TL 183.00	PV 0.1	
	Pipe: 47				49.6	3.260	PL 8.00	PF 0.0	
37	13.0	0.0	29.0	0.0	1.9	120	FTG ----	PE 0.0	
35	13.0	0.0	29.0	0.0		0.003	TL 8.00	PV 0.0	
	Pipe: 48				290.1	3.260	PL 12.00	PF 0.9	
38	13.0	0.0	33.7	0.0	11.2	120	FTG ----	PE 0.0	
36	13.0	0.0	32.9	0.0		0.073	TL 12.00	PV 0.8	
	Pipe: 49				26.5	1.610	PL 137.00	PF 4.7	
38	13.0	0.0	33.7	0.0	4.2	120	FTG 5E2T	PE 0.0	
39	13.0	0.0	29.0	0.0		0.027	TL 173.00	PV 0.1	
	Pipe: 50				26.5	3.260	PL 20.00	PF 0.0	
39	13.0	0.0	29.0	0.0	1.0	120	FTG ----	PE 0.0	
37	13.0	0.0	29.0	0.0		0.001	TL 20.00	PV 0.0	
	Pipe: 51				-316.6	4.026	PL 20.00	PF 3.2	
38	13.0	0.0	33.7	0.0	8.0	120	FTG 3ETCB	PE 4.8	
40	2.0	0.0	41.7	0.0		0.031	TL 104.00	PV 0.4	
	Pipe: 52				-316.6	6.065	PL 1.00	PF 0.0	
40	2.0	0.0	41.7	0.0	3.5	120	FTG G	PE 0.2	
41	1.5	0.0	41.9	0.0		0.004	TL 4.00	PV 0.1	

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 7
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.	
						F.L./FT		(PSI)	
Pipe: 53						FIXED PRESSURE LOSS DEVICE			
42	1.5	0.0	43.9	0.0	2.0 psi, 316.6 gpm				
41	1.5	0.0	41.9	0.0					
Pipe: 54						-316.6	6.065 PL	1.00 PF	0.1
42	1.5	0.0	43.9	0.0	3.5	120 FTG	EG	PE	0.4
43	0.5	0.0	44.5	0.0		0.004 TL	18.00	PV	0.1
Pipe: 55						-316.6	6.400 PL	1245.00 PF	3.6
43	0.5	0.0	44.5	0.0	3.2	140 FTG	8ETG	PE	0.2
44	0.0	SRCE	48.3	(N/A)		0.002 TL	1494.00	PV	0.1

NOTES:

(1) Calculations were performed by the HASS 6.1.0 computer program under license no. 327L117 granted by HRS Systems, Inc. 2193 Ranchwood Dr., N.E. Atlanta, GA 30345

(2) The system has been balanced to provide an average imbalance at each node of 0.004 gpm and a maximum imbalance at any node of 0.151 gpm.

(3) Velocity pressures are printed for information only, and are not used in balancing the system. Maximum water velocity is 11.2 ft/sec at pipe 48.

(4) a. System remote area HAS been proven or 'peaked'.

b. Minimum pressure at any sprinkler: 18.367 psi

c. Minimum pressure with remote area shifted one sprinkler space toward left cross main: 18.370 psi

d. Minimum pressure with remote area shifted one sprinkler space toward right cross main: 18.459 psi

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

(5) PIPE FITTINGS TABLE

Pipe Table Name: STANDARD.PIP

PAGE: A	MATERIAL: S40		HWC: 120						
Diameter	Equivalent Fitting Lengths in Feet								
(in)	E	T	L	C	B	G	A	D	
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	AlmChk	DPVlv	
1.610	6.36	12.71	4.24	14.83	12.71	2.12	21.19	21.19	
4.026	14.80	31.46	9.25	35.16	20.36	1.85	25.91	18.51	
6.065	29.36	61.17	19.58	66.07	22.02	4.89	51.38	36.70	

PAGE: B	MATERIAL: THNWL		HWC: 120					
Diameter	Equivalent Fitting Lengths in Feet							
(in)	E	T	L	C	B	G	A	D
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	AlmChk	DPVlv
3.260	9.41	20.16	6.72	21.50	13.44	1.34	17.47	13.44

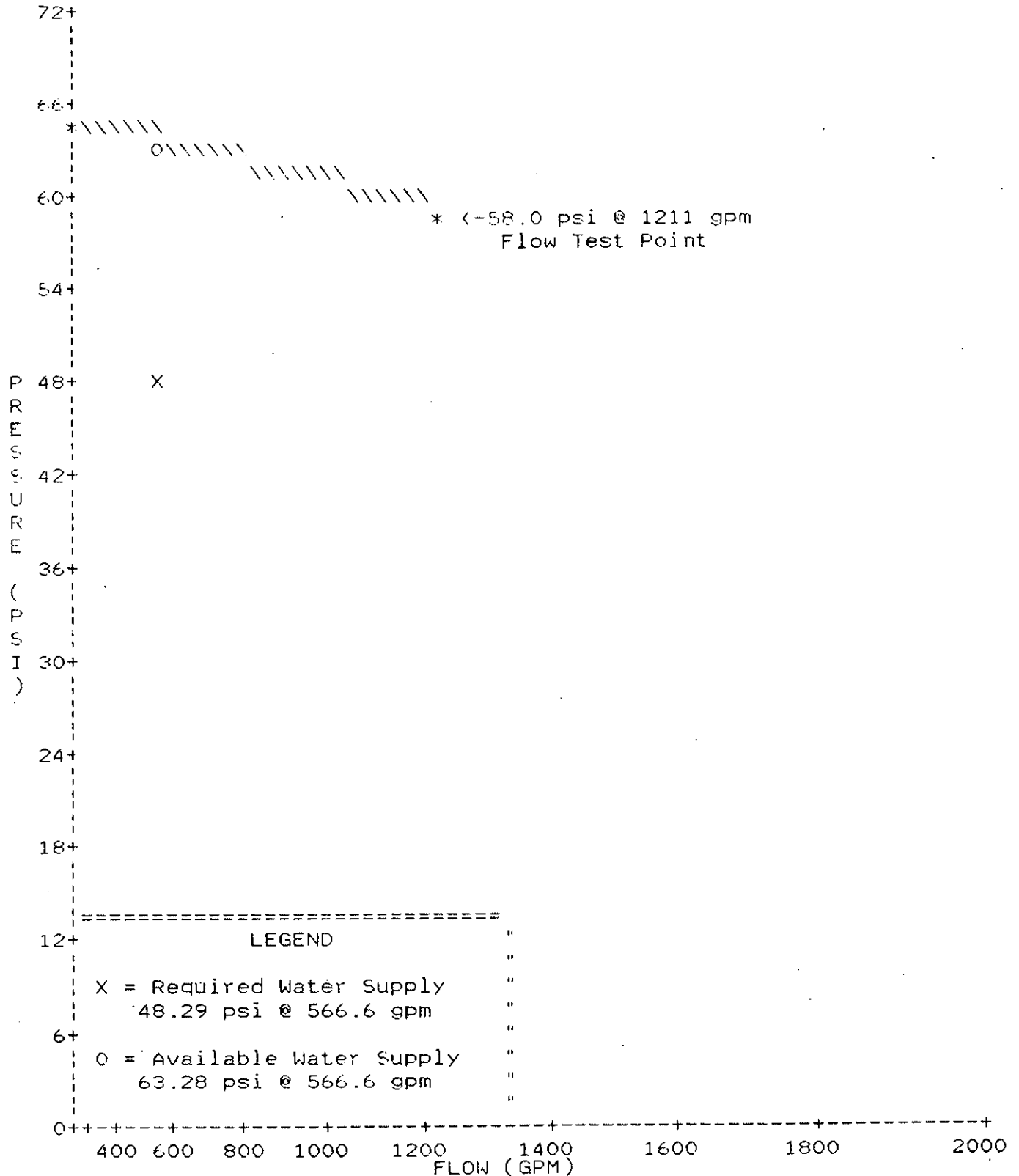
PAGE: D	MATERIAL: DIRON			HWC: 140		
Diameter	Equivalent Fitting Lengths in Feet					
(in)	E	T	L	C	B	G
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv
6.400	24.19	51.84	15.55	55.30	17.28	5.18

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 9
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.
WATER SUPPLY CURVE



SPRINKLER SYSTEM HYDRAULIC ANALYSIS

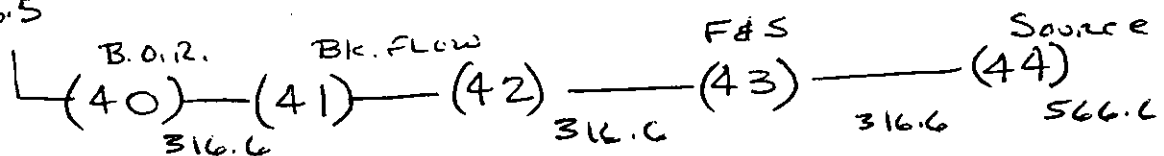
Page 10
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.
GRID FLOW DIAGRAM

[XXX] - Node Numbers

[1]	46.8	22.6	1.4	25.4	49.6	[6]
46.7						49.6
[7]	46.8	22.7	1.4	25.4	49.6	[12]
93.5						99.2
[13]	47.0	22.7	1.3	25.4	49.7	[18]
140.4						148.9
[19]	20.3	6.9				[21]
160.7						155.8
[22]		10.5				[23]
171.1						145.4
[24]		12.6				[25]
183.7						132.8
[26]		13.6				[27]
197.2						119.3
[28]		15.0				[29]
212.1						104.4
[30]		16.7				[31]
228.8						87.7
[32]		18.5				[33]
247.2						69.3
[34]		19.8				[35]
267.0						49.5
[36]		23.1				[37]
290.0						26.5
[38]		26.6				[39]
316.5						



=====

CALCULATED BY: SHIELD FIRE PROTECTION INC.,
235 RIVER AVE., LAKEWOOD, NJ 08701

MAIL-IN CALCULATION
PLANS BY OTHERS

PROJECT: BARNES & NOBLE
LOCATION: BRICK PLAZA
RT. 70 & CHAMBERSBRIDGE ROAD
BRICK, NEW JERSEY

DATE: 07-08-96
FILE: RA0006
SYS.# ONE
AREA: 22606 SQ.FT

=====

OCCUPANCY/HAZARD: ORDINARY HAZARD GROUP II

N.F.P.A. STANDARD: 13

SYSTEM TYPE: WET

DENSITY / AREA: .20 gpm/sq.ft. over 1500 sq.ft. area.

AREA/SPRINKLER: 120 sq.ft./sp. used 130 sq.ft. allowed.

SPRINKLER DATA: 1/2" inch orifice 5.6 k-factor 165 degree

SPKR'S FLOWING: 13 heads. HOSE: 250 gpm allowance.

SUMMARY | END SPRINKLER REQUIREMENT = 24.0 gpm @ 18.4 psi
OF FLOW | DISCHARGE FROM FLOWING SPRINKLERS: 316.6 gpm
----- | W/HOSE: 566.6 gpm. W/RACK: N/A gpm.

FLOW & (at base of riser) | (at source connection)
PRESS: 316.6 gpm @ 41.7 psi | 566.6 gpm @ 48.3 psi

SUPPLY DATA | LOCATION:

CITY WATER: STATIC: 65 psi; RESIDUAL: 58 psi; FLOW: 1211 gpm.
FIRE PUMP - RATING: N/A gpm at N/A psi
FIRE PUMP - CURVE : N/A psi(120%); N/A psi(65%); N/A gpm(150%)
COMBINED - STATIC: N/A psi; RESIDUAL: N/A psi; FLOW: N/A

PIPE | C-FACTOR: ABOVEGROUND = 120 ; UNDERGROUND = 140
DATA: | SCHEDULE: LINES: 40 MAINS: 10

CONTRACTOR: FOUR STAR FIRE PROTECTION

LAYOUT BY: J.P.R.

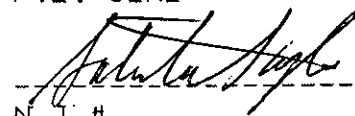
REVIEW BY:

COMMENTS:

RACKS: COMMODITY CLASS: N/A STORAGE HGT. N/A FT.; NO.OF SPK: N/A
----- FIG.NO.(231-C): N/A CURVE: N/A ; SPK/LEVEL: N/A
RACK DEMAND: N/A gpm @ N/A psi @ ref. pt. N/A NO.OF LEV: N/A

PLANS SUBMITTED WITH CALCULATION PREPARED BY
OTHERS. SHIELD FIRE PROT.INC. NOT LIABLE FOR
SYSTEM "PLAN" DESIGN, SUBMISSION OR ACCEPTANCE

P.E. SEAL:



CALCULATIONS BY: HASS COMPUTER PROGRAM
HRS SYTEMS ,INC., ATLANTA, GA. (LIC.#327L117)

N.J.#
DATE SEALED:

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 1
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. @ (PSI)	TOTAL DEMAND (GPM)	REQ'D PRESS. (PSI)
44	65.0	58.0	1211.0	63.3	566.6	48.3

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	566.6 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	250.0 GPM
OTHER HOSE STREAM ALLOWANCES	0.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	316.6 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
1	13.0	- - - -	28.6	- - -
2	22.0	K= 5.60	18.6	24.2
3	22.0	K= 5.60	18.4	24.0
4	22.0	K= 5.60	18.4	24.0
5	22.0	K= 5.60	18.7	24.2
6	13.0	- - - -	27.4	- - -
7	13.0	- - - -	28.6	- - -
8	22.0	K= 5.60	18.6	24.2
9	22.0	K= 5.60	18.4	24.0
10	22.0	K= 5.60	18.4	24.0
11	22.0	K= 5.60	18.7	24.2
12	13.0	- - - -	27.4	- - -
13	13.0	- - - -	28.7	- - -
14	22.0	K= 5.60	18.7	24.2
15	22.0	K= 5.60	18.5	24.1
16	22.0	K= 5.60	18.5	24.1
17	22.0	K= 5.60	18.8	24.3
18	13.0	- - - -	27.5	- - -
19	13.0	- - - -	28.8	- - -
20	22.0	K= 5.60	23.7	27.2
21	13.0	- - - -	27.8	- - -
22	13.0	- - - -	29.0	- - -
23	13.0	- - - -	28.1	- - -
24	13.0	- - - -	29.5	- - -
25	13.0	- - - -	28.3	- - -
26	13.0	- - - -	29.9	- - -
27	13.0	- - - -	28.5	- - -
28	13.0	- - - -	30.3	- - -
29	13.0	- - - -	28.7	- - -
30	13.0	- - - -	30.8	- - -
31	13.0	- - - -	28.8	- - -
32	13.0	- - - -	31.4	- - -
33	13.0	- - - -	28.9	- - -
34	13.0	- - - -	32.1	- - -

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 2

RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)
35	13.0	- - - -	29.0	- - -
36	13.0	- - - -	32.9	- - -
37	13.0	- - - -	29.0	- - -
38	13.0	- - - -	33.7	- - -
39	13.0	- - - -	29.0	- - -
40	2.0	- - - -	41.7	- - -
41	1.5	- - - -	41.9	- - -
42	1.5	- - - -	43.9	- - -
43	0.5	- - - -	44.5	- - -
44	0.0	SOURCE	48.3	316.6

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 3
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.	
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.		
						F.L./FT		(PSI)		
Pipe: 1										
1	13.0	0.0	28.6	0.0	46.8	1.610	PL 62.00	PF	6.1	
2	22.0	5.6	18.6	24.2	7.4	120	FTG 2ET	PE	-3.9	
						0.078	TL 78.00	PV	0.4	
Pipe: 2										
2	22.0	5.6	18.6	24.2	22.6	1.610	PL 12.00	PF	0.2	
3	22.0	5.6	18.4	24.0	3.6	120	FTG ----	PE	0.0	
						0.020	TL 12.00	PV	0.1	
Pipe: 3										
3	22.0	5.6	18.4	24.0	-1.4	1.610	PL 12.00	PF	0.0	
4	22.0	5.6	18.4	24.0	0.2	120	FTG ----	PE	0.0	
						0.000	TL 12.00	PV	0.0	
Pipe: 4										
4	22.0	5.6	18.4	24.0	-25.4	1.610	PL 12.00	PF	0.3	
5	22.0	5.6	18.7	24.2	4.0	120	FTG ----	PE	0.0	
						0.025	TL 12.00	PV	0.1	
Pipe: 5										
5	22.0	5.6	18.7	24.2	-49.6	1.610	PL 40.00	PF	4.9	
6	13.0	0.0	27.4	0.0	7.8	120	FTG 2ET	PE	3.9	
						0.087	TL 56.00	PV	0.4	
Pipe: 6										
7	13.0	0.0	28.6	0.0	46.8	3.260	PL 8.00	PF	0.0	
1	13.0	0.0	28.6	0.0	1.8	120	FTG ----	PE	0.0	
						0.003	TL 8.00	PV	0.0	
Pipe: 7										
7	13.0	0.0	28.6	0.0	46.8	1.610	PL 62.00	PF	6.1	
8	22.0	5.6	18.6	24.2	7.4	120	FTG 2ET	PE	-3.9	
						0.078	TL 78.00	PV	0.4	
Pipe: 8										
8	22.0	5.6	18.6	24.2	22.6	1.610	PL 12.00	PF	0.2	
9	22.0	5.6	18.4	24.0	3.6	120	FTG ----	PE	0.0	
						0.020	TL 12.00	PV	0.1	
Pipe: 9										
9	22.0	5.6	18.4	24.0	-1.4	1.610	PL 12.00	PF	0.0	
10	22.0	5.6	18.4	24.0	0.2	120	FTG ----	PE	0.0	
						0.000	TL 12.00	PV	0.0	
Pipe: 10										
10	22.0	5.6	18.4	24.0	-25.4	1.610	PL 12.00	PF	0.3	
11	22.0	5.6	18.7	24.2	4.0	120	FTG ----	PE	0.0	
						0.025	TL 12.00	PV	0.1	
Pipe: 11										
11	22.0	5.6	18.7	24.2	-49.6	1.610	PL 40.00	PF	4.9	
12	13.0	0.0	27.4	0.0	7.8	120	FTG 2ET	PE	3.9	
						0.087	TL 56.00	PV	0.4	
Pipe: 12										
12	13.0	0.0	27.4	0.0	49.6	3.260	PL 6.00	PF	0.0	
6	13.0	0.0	27.4	0.0	1.9	120	FTG ----	PE	0.0	
						0.003	TL 6.00	PV	0.0	
Pipe: 13										
13	13.0	0.0	28.7	0.0	93.5	3.260	PL 13.00	PF	0.1	
7	13.0	0.0	28.6	0.0	3.6	120	FTG ----	PE	0.0	
						0.009	TL 13.00	PV	0.1	

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 4
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	F.L./FT	(FT)	SUM.
									(PSI)
	Pipe: 14				46.9	1.610	PL	62.00	PF 6.1
13	13.0	0.0	28.7	0.0	7.4	120	FTG	2ET	PE -3.9
14	22.0	5.6	18.7	24.2		0.078	TL	78.00	PV 0.4
	Pipe: 15				22.7	1.610	PL	12.00	PF 0.2
14	22.0	5.6	18.7	24.2	3.6	120	FTG	----	PE 0.0
15	22.0	5.6	18.5	24.1		0.020	TL	12.00	PV 0.1
	Pipe: 16				-1.4	1.610	PL	12.00	PF 0.0
15	22.0	5.6	18.5	24.1	0.2	120	FTG	----	PE 0.0
16	22.0	5.6	18.5	24.1		0.000	TL	12.00	PV 0.0
	Pipe: 17				-25.4	1.610	PL	12.00	PF 0.3
16	22.0	5.6	18.5	24.1	4.0	120	FTG	----	PE 0.0
17	22.0	5.6	18.8	24.3		0.025	TL	12.00	PV 0.1
	Pipe: 18				-49.7	1.610	PL	40.00	PF 4.9
17	22.0	5.6	18.8	24.3	7.8	120	FTG	2ET	PE 3.9
18	13.0	0.0	27.5	0.0		0.087	TL	56.00	PV 0.4
	Pipe: 19				99.2	3.260	PL	10.00	PF 0.1
18	13.0	0.0	27.5	0.0	3.8	120	FTG	----	PE 0.0
12	13.0	0.0	27.4	0.0		0.010	TL	10.00	PV 0.1
	Pipe: 20				140.4	3.260	PL	7.00	PF 0.1
19	13.0	0.0	28.8	0.0	5.4	120	FTG	----	PE 0.0
13	13.0	0.0	28.7	0.0		0.019	TL	7.00	PV 0.2
	Pipe: 21				20.3	1.610	PL	62.00	PF 1.3
19	13.0	0.0	28.8	0.0	3.2	120	FTG	2ET	PE -3.9
20	22.0	5.6	23.7	27.2		0.017	TL	78.00	PV 0.1
	Pipe: 22				-7.0	1.610	PL	76.00	PF 0.2
20	22.0	5.6	23.7	27.2	1.1	120	FTG	6ET	PE 3.9
21	13.0	0.0	27.8	0.0		0.002	TL	108.00	PV 0.0
	Pipe: 23				148.9	3.260	PL	12.00	PF 0.3
21	13.0	0.0	27.8	0.0	5.7	120	FTG	----	PE 0.0
18	13.0	0.0	27.5	0.0		0.021	TL	12.00	PV 0.2
	Pipe: 24				160.7	3.260	PL	6.00	PF 0.1
22	13.0	0.0	29.0	0.0	6.2	120	FTG	----	PE 0.0
19	13.0	0.0	28.8	0.0		0.025	TL	6.00	PV 0.3
	Pipe: 25				10.4	1.610	PL	144.00	PF 0.9
22	13.0	0.0	29.0	0.0	1.6	120	FTG	5E3T	PE 0.0
23	13.0	0.0	28.1	0.0		0.005	TL	188.00	PV 0.0
	Pipe: 26				155.9	3.260	PL	12.00	PF 0.3
23	13.0	0.0	28.1	0.0	6.0	120	FTG	----	PE 0.0
21	13.0	0.0	27.8	0.0		0.023	TL	12.00	PV 0.2

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 5
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.	
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	F.L./FT	(FT)	SUM.	
									(PSI)	
Pipe: 27					171.1	3.260	PL	18.00	PF	0.5
24	13.0	0.0	29.5	0.0	6.6	120	FTG	----	PE	0.0
22	13.0	0.0	29.0	0.0		0.028	TL	18.00	PV	0.3
Pipe: 28					12.6	1.610	PL	138.00	PF	1.2
24	13.0	0.0	29.5	0.0	2.0	120	FTG	4E2T	PE	0.0
25	13.0	0.0	28.3	0.0		0.007	TL	170.00	PV	0.0
Pipe: 29					145.5	3.260	PL	12.00	PF	0.2
25	13.0	0.0	28.3	0.0	5.6	120	FTG	----	PE	0.0
23	13.0	0.0	28.1	0.0		0.020	TL	12.00	PV	0.2
Pipe: 30					183.7	3.260	PL	12.00	PF	0.4
26	13.0	0.0	29.9	0.0	7.1	120	FTG	----	PE	0.0
24	13.0	0.0	29.5	0.0		0.031	TL	12.00	PV	0.3
Pipe: 31					13.5	1.610	PL	138.00	PF	1.3
26	13.0	0.0	29.9	0.0	2.1	120	FTG	4E2T	PE	0.0
27	13.0	0.0	28.5	0.0		0.008	TL	170.00	PV	0.0
Pipe: 32					132.9	3.260	PL	12.00	PF	0.2
27	13.0	0.0	28.5	0.0	5.1	120	FTG	----	PE	0.0
25	13.0	0.0	28.3	0.0		0.017	TL	12.00	PV	0.2
Pipe: 33					197.3	3.260	PL	12.00	PF	0.4
28	13.0	0.0	30.3	0.0	7.6	120	FTG	----	PE	0.0
26	13.0	0.0	29.9	0.0		0.036	TL	12.00	PV	0.4
Pipe: 34					14.9	1.610	PL	138.00	PF	1.6
28	13.0	0.0	30.3	0.0	2.3	120	FTG	4E2T	PE	0.0
29	13.0	0.0	28.7	0.0		0.009	TL	170.00	PV	0.0
Pipe: 35					119.3	3.260	PL	12.00	PF	0.2
29	13.0	0.0	28.7	0.0	4.6	120	FTG	----	PE	0.0
27	13.0	0.0	28.5	0.0		0.014	TL	12.00	PV	0.1
Pipe: 36					212.2	3.260	PL	12.00	PF	0.5
30	13.0	0.0	30.8	0.0	8.2	120	FTG	----	PE	0.0
28	13.0	0.0	30.3	0.0		0.041	TL	12.00	PV	0.4
Pipe: 37					16.6	1.610	PL	138.00	PF	2.0
30	13.0	0.0	30.8	0.0	2.6	120	FTG	4E2T	PE	0.0
31	13.0	0.0	28.8	0.0		0.011	TL	170.00	PV	0.0
Pipe: 38					104.4	3.260	PL	12.00	PF	0.1
31	13.0	0.0	28.8	0.0	4.0	120	FTG	----	PE	0.0
29	13.0	0.0	28.7	0.0		0.011	TL	12.00	PV	0.1
Pipe: 39					228.8	3.260	PL	13.00	PF	0.6
32	13.0	0.0	31.4	0.0	8.8	120	FTG	----	PE	0.0
30	13.0	0.0	30.8	0.0		0.047	TL	13.00	PV	0.5

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 6
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG	END	ELEV.	NOZ.	PT	DISC.	Q(GPM)	DIA(IN)	LENGTH	PRESS.
NODES	(FT)	(K)	(PSI)	(GPM)	VEL(FPS)	HW(C)	(FT)	SUM.	
						F.L./FT		(PSI)	
Pipe: 40					18.4	1.610	PL 134.00	PF 2.5	
32	13.0	0.0	31.4	0.0	2.9	120	FTG 7E2T	PE 0.0	
33	13.0	0.0	28.9	0.0		0.014	TL 178.00	PV 0.1	
Pipe: 41					87.8	3.260	PL 12.00	PF 0.1	
33	13.0	0.0	28.9	0.0	3.4	120	FTG ----	PE 0.0	
31	13.0	0.0	28.8	0.0		0.008	TL 12.00	PV 0.1	
Pipe: 42					247.3	3.260	PL 13.00	PF 0.7	
34	13.0	0.0	32.1	0.0	9.5	120	FTG ----	PE 0.0	
32	13.0	0.0	31.4	0.0		0.055	TL 13.00	PV 0.6	
Pipe: 43					19.8	1.610	PL 149.00	PF 3.1	
34	13.0	0.0	32.1	0.0	3.1	120	FTG 4E4T	PE 0.0	
35	13.0	0.0	29.0	0.0		0.016	TL 197.00	PV 0.1	
Pipe: 44					69.3	3.260	PL 13.00	PF 0.1	
35	13.0	0.0	29.0	0.0	2.7	120	FTG ----	PE 0.0	
33	13.0	0.0	28.9	0.0		0.005	TL 13.00	PV 0.0	
Pipe: 45					267.0	3.260	PL 12.00	PF 0.8	
36	13.0	0.0	32.9	0.0	10.3	120	FTG ----	PE 0.0	
34	13.0	0.0	32.1	0.0		0.063	TL 12.00	PV 0.7	
Pipe: 46					23.1	1.610	PL 143.00	PF 3.8	
36	13.0	0.0	32.9	0.0	3.6	120	FTG 4E3T	PE 0.0	
37	13.0	0.0	29.0	0.0		0.021	TL 183.00	PV 0.1	
Pipe: 47					49.6	3.260	PL 8.00	PF 0.0	
37	13.0	0.0	29.0	0.0	1.9	120	FTG ----	PE 0.0	
35	13.0	0.0	29.0	0.0		0.003	TL 8.00	PV 0.0	
Pipe: 48					290.1	3.260	PL 12.00	PF 0.9	
38	13.0	0.0	33.7	0.0	11.2	120	FTG ----	PE 0.0	
36	13.0	0.0	32.9	0.0		0.073	TL 12.00	PV 0.8	
Pipe: 49					26.5	1.610	PL 137.00	PF 4.7	
38	13.0	0.0	33.7	0.0	4.2	120	FTG 5E2T	PE 0.0	
39	13.0	0.0	29.0	0.0		0.027	TL 173.00	PV 0.1	
Pipe: 50					26.5	3.260	PL 20.00	PF 0.0	
39	13.0	0.0	29.0	0.0	1.0	120	FTG ----	PE 0.0	
37	13.0	0.0	29.0	0.0		0.001	TL 20.00	PV 0.0	
Pipe: 51					-316.6	4.026	PL 20.00	PF 3.2	
38	13.0	0.0	33.7	0.0	8.0	120	FTG 3ETCB	PE 4.8	
40	2.0	0.0	41.7	0.0		0.031	TL 104.00	PV 0.4	
Pipe: 52					-316.6	6.065	PL 1.00	PF 0.0	
40	2.0	0.0	41.7	0.0	3.5	120	FTG G	PE 0.2	
41	1.5	0.0	41.9	0.0		0.004	TL 4.00	PV 0.1	

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

PIPE DATA (cont.)

PIPE TAG					Q(GPM)	DIA(IN)	LENGTH	PRESS.
END	ELEV.	NOZ.	PT	DISC.	VEL(FPS)	HW(C)	(FT)	SUM.
NODES	(FT)	(K)	(PSI)	(GPM)		F.L./FT		(PSI)
Pipe: 53					FIXED PRESSURE LOSS DEVICE			
42	1.5	0.0	43.9	0.0	2.0 psi, 316.6 gpm			
41	1.5	0.0	41.9	0.0				
Pipe: 54					-316.6	6.065 PL	1.00	PF 0.1
42	1.5	0.0	43.9	0.0	3.5	120 FTG	EG	PE 0.4
43	0.5	0.0	44.5	0.0		0.004 TL	18.00	PV 0.1
Pipe: 55					-316.6	6.400 PL	1245.00	PF 3.6
43	0.5	0.0	44.5	0.0	3.2	140 FTG	8ETG	PE 0.2
44	0.0	SRCE	48.3	(N/A)		0.002 TL	1494.00	PV 0.1

NOTES:

- (1) Calculations were performed by the HASS 6.1.0 computer program under license no. 327L117 granted by HRS Systems, Inc.
2193 Ranchwood Dr., N.E.
Atlanta, GA 30345
- (2) The system has been balanced to provide an average imbalance at each node of 0.004 gpm and a maximum imbalance at any node of 0.151 gpm.
- (3) Velocity pressures are printed for information only, and are not used in balancing the system. Maximum water velocity is 11.2 ft/sec at pipe 48.
- (4) a. System remote area HAS been proven or 'peaked'.
b. Minimum pressure at any sprinkler: 18.367 psi
c. Minimum pressure with remote area shifted one sprinkler space toward left cross main: 18.370 psi
d. Minimum pressure with remote area shifted one sprinkler space toward right cross main: 18.459 psi

Date: 07/08/1996

RA0006.SDF

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.

(5) PIPE FITTINGS TABLE

Pipe Table Name: STANDARD.PIP

PAGE: A	MATERIAL: S40		HWC: 120						
Diameter	Equivalent Fitting Lengths in Feet								
(in)	E	T	L	C	B	G	A	D	
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	AlmChk	DPVlv	
1.610	6.36	12.71	4.24	14.83	12.71	2.12	21.19	21.19	
4.026	14.80	31.46	9.25	35.16	20.36	1.85	25.91	18.51	
6.065	29.36	61.17	19.58	66.07	22.02	4.89	51.38	36.70	

PAGE: B		MATERIAL: THNWL		HWC: 120					
Diameter		Equivalent Fitting Lengths in Feet							
(in)		E	T	L	C	B	G	A	D
		Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv	AlmChk	DPVlv
3.260		9.41	20.16	6.72	21.50	13.44	1.34	17.47	13.44

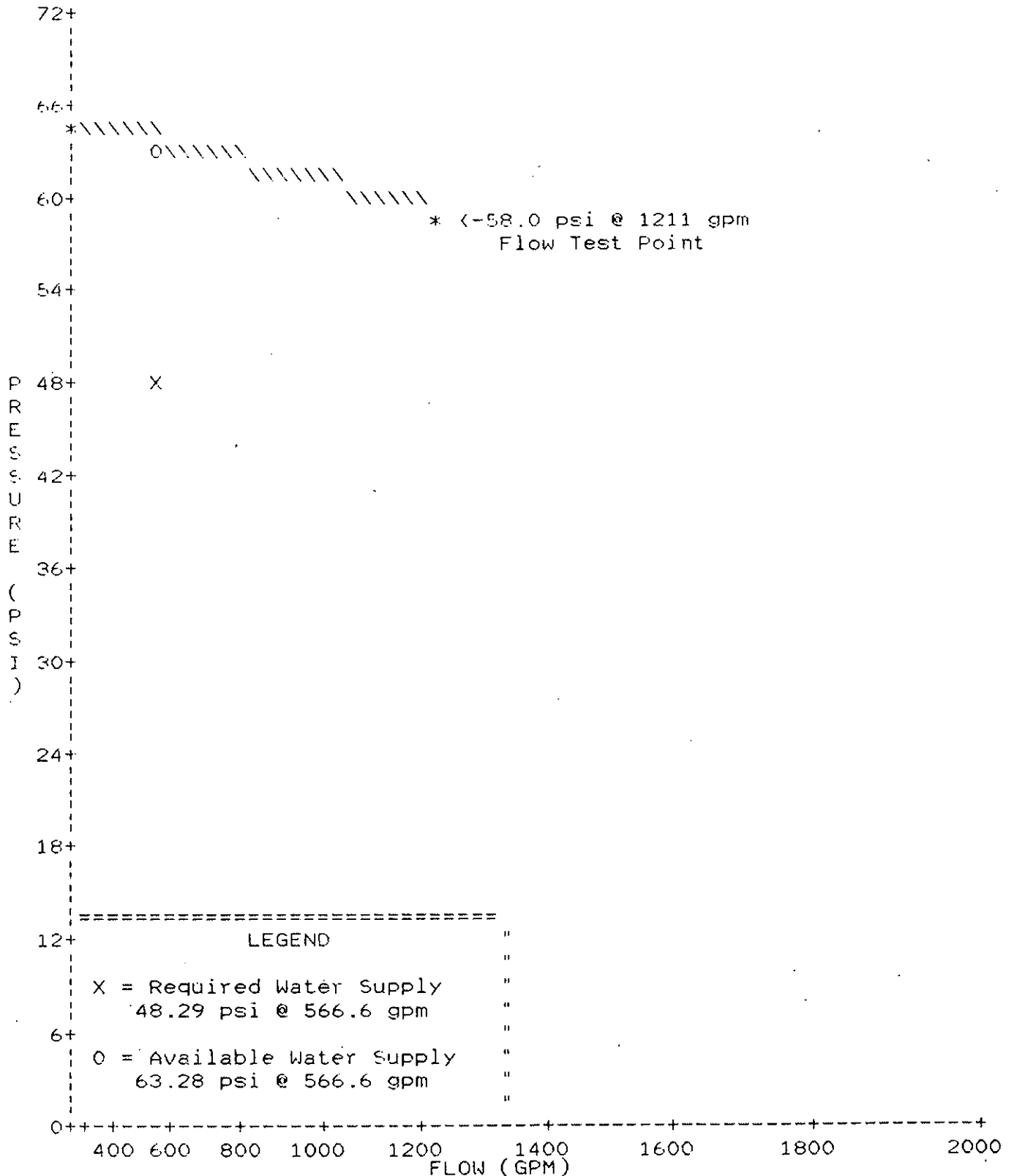
PAGE: D	MATERIAL: DIRON			HWC: 140		
Diameter	Equivalent Fitting Lengths in Feet					
(in)	E	T	L	C	B	G
	Ell	Tee	LngEll	ChkVlv	BfyVlv	GatVlv
6.400	24.19	51.84	15.55	55.30	17.28	5.18

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 9
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.
WATER SUPPLY CURVE



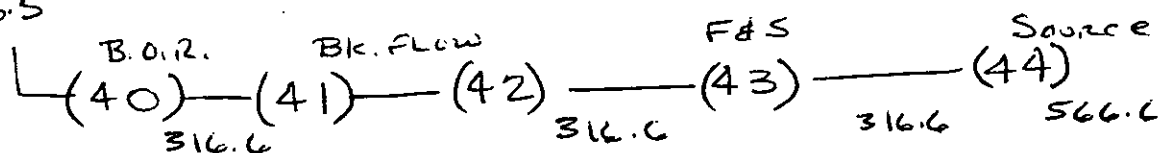
SPRINKLER SYSTEM HYDRAULIC ANALYSIS

Page 10
RA0006.SDF

Date: 07/08/1996

JOB TITLE: BARNES & NOBLE BRICK PLAZA, BRICK, N.J.
GRID FLOW DIAGRAM

[XXX] - Node Numbers					
[1]	-->--*	-->--*	-->--*	-->--*	[6]
46.8	22.6	1.4	25.4	49.6	
46.7					49.6
[7]	-->--*	-->--*	-->--*	-->--*	[12]
46.8	22.7	1.4	25.4	49.6	
93.5					99.2
[13]	-->--*	-->--*	-->--*	-->--*	[18]
47.0	22.7	1.3	25.4	49.7	
140.4					148.9
[19]	-->--*	-----			[21]
20.3	6.9				
160.7					155.8
[22]	----->-----				[23]
		10.5			
171.1					145.4
[24]	----->-----				[25]
		12.6			
183.7					132.8
[26]	----->-----				[27]
		13.6			
197.2					119.3
[28]	----->-----				[29]
		15.0			
212.1					104.4
[30]	----->-----				[31]
		16.7			
228.8					87.7
[32]	----->-----				[33]
		18.5			
247.2					69.3
[34]	----->-----				[35]
		19.8			
267.0					49.5
[36]	----->-----				[37]
		23.1			
290.0					26.5
[38]	----->-----				[39]
		26.6			
316.5					



450 East Main St.
Manasquan N.J.
08736
(908) 223-0500



593 Overbrook Rd.
Vineland, N.J.
08360
(609) 205-0045

FOUR STAR FIRE PROTECTION, INC.

CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING

PROCEDURE

Upon completion of work, inspection and tests shall be made by the contractor's representative and witnessed by an owner's representative. All defects shall be corrected and system left in service before contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared for approving authorities, owners and contractor. It is understood the owner's representative's signature in no way prejudices any claim against contractor for faulty material, poor workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME

DATE

Barnes & Noble Book Sellers - Brick Plaza

Aug. 29, 1996

PROPERTY ADDRESS

Rt. 70 & Chambers Bridge Rd., Brick Township, N.J.

PLANS

ACCEPTED BY APPROVING AUTHORITY(S) NAMES

Brick Township

ADDRESS

Chambers Bridge Road, Brick, N.J.

INSTALLATION CONFORMS TO ACCEPTED PLANS

☒ YES ☐ NO

EQUIPMENT USED IS APPROVED

☒ YES ☐ NO

IF NO, EXPLAIN DEVIATIONS

INSTRUCTIONS

HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS NEW EQUIPMENT

☐ YES ☐ NO

HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES:

1. SYSTEM COMPONENTS INSTRUCTIONS
2. CARE AND MAINTENANCE INSTRUCTIONS
3. NFPA 13A

☐ YES ☐ NO
☐ YES ☐ NO
☐ YES ☐ NO
☐ YES ☐ NO

LOCATION OF SYSTEM

SUPPLIES BLDGS.

SPRINKLERS

MAKE	MODEL	YEAR OF MANUFACTURE	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING
Central	Concealed	1996	1/2"	215	165°F
Central	Upright	1996	1/2"	226	165°F

PIPE AND FITTINGS

PIPE CONFORMS TO NFPA STANDARD

☒ YES ☐ NO

FITTINGS CONFORM TO NFPA STANDARD

☒ YES ☐ NO

IF NO, EXPLAIN

ALARM VALVE OR FLOW INDICATOR

ALARM DEVICE			MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION	
TYPE	MAKE	MODEL	MIN.	SEC.
Vane	Potter	VSR-F		50 sec.

DRY PIPE OPERATING TEST

DRY VALVE					O.O.D.				
MAKE		MODEL	SERIAL NO.		MAKE		MODEL	SERIAL NO.	
	TIME TO TRIP THRU TEST CONNECTION		WATER PRESSURE	AIR PRESSURE	TRIP POINT AIR PRESSURE	TIME WATER REACHED TEST OUTLET*		ALARM OPERATED PROPERLY	
	MIN.	SEC.	PSI	PSI	PSI	MIN.	SEC.	YES	NO
Without O.O.D.									
With O.O.D.									

IF NO, EXPLAIN

* MEASURED FROM TIME INSPECTOR'S TEST CONNECTION IS OPENED.
ISA 00-001 PRINTED IN USA

INSTALLATIONS

FAX # (609) 205-0227

INSPECTIONS

DELUGE & PREACTION VALVES	OPERATION ☐ PNEUMATIC ☐ ELECTRIC ☐ HYDRAULIC									
	PIPING SUPERVISED ☐ YES ☐ NO				DETECTING MEDIA SUPERVISED ☐ YES ☐ NO					
	DOES VALVE OPERATE FROM THE MANUAL TRIP AND/OR REMOTE CONTROL STATIONS ☐ YES ☐ NO									
	IS THERE AN ACCESSIBLE FACILITY IN EACH CIRCUIT FOR TESTING ☐ YES ☐ NO IF NO, EXPLAIN									
	MAKE	MODEL	DOES EACH CIRCUIT OPERATE SUPERVISION LOSS ALARM		DOES EACH CIRCUIT OPERATE VALVE RELEASE		MAXIMUM TIME TO OPERATE RELEASE			
			YES	NO	YES	NO	MIN.	SEC.		
TEST DESCRIPTION	HYDROSTATIC: Hydrostatic tests shall be made at not less than 200 psi (13.6 bars) for two hours or 50 psi (3.4 bars) above static pressure in excess of 150 psi (10.2 bars) for two hours. Differential dry-pipe valve clappers shall be left open during test to prevent damage. All aboveground piping leakage shall be stopped. FLUSHING: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags at outlets such as hydrants and blow-offs. Flush at flows not less than 400 GPM (1514 L/min) for 4-inch pipe, 600 GPM (2271 L/min) for 5-inch pipe, 750 GPM (2839 L/min) for 6-inch pipe, 1000 GPM (3785 L/min) for 8-inch pipe, 1500 GPM (5678 L/min) for 10-inch pipe and 2000 GPM (7570 L/min) for 12-inch pipe. When supply cannot produce stipulated flow rates, obtain maximum available. PNEUMATIC: Establish 40 psi (2.7 bars) air pressure and measure air pressure drop which shall not exceed 1-1/2 psi (0.1 bars) in 24 hours. Test pressure tanks at normal water level and air pressure and measure air pressure drop which shall not exceed 1-1/2 psi (0.1 bars) in 24 hours.									
TESTS	ALL PIPING HYDROSTATICALLY TESTED AT <u>200</u> PSI FOR <u>2</u> HRS. IF NO, STATE REASON									
	DRY PIPING PNEUMATICALLY TESTED ☐ YES ☐ NO									
	EQUIPMENT OPERATES PROPERLY ☐ YES ☐ NO									
	<table border="1"> <tr> <td>DRAM TEST</td> <td>READING OF GAGE LOCATED NEAR WATER SUPPLY TEST CONNECTION: _____ PSI</td> <td>RESIDUAL PRESSURE WITH VALVE IN TEST CONNECTION OPEN WIDE _____ PSI</td> </tr> </table> Underground mains and lead in connections to system risers flushed before connection made to sprinkler piping. VERIFIED BY COPY OF THE U FORM NO. 85B ☐ YES ☐ NO OTHER EXPLAIN FLUSHED BY INSTALLER OF UNDERGROUND SPRINKLER PIPING ☐ YES ☐ NO								DRAM TEST	READING OF GAGE LOCATED NEAR WATER SUPPLY TEST CONNECTION: _____ PSI
DRAM TEST	READING OF GAGE LOCATED NEAR WATER SUPPLY TEST CONNECTION: _____ PSI	RESIDUAL PRESSURE WITH VALVE IN TEST CONNECTION OPEN WIDE _____ PSI								
BLANK TESTING GASKETS	NUMBER USED	LOCATIONS						NUMBER REMOVED		
	none									
WELDING	WELDED PIPING ☐ YES ☒ NO									
	IF YES...									
	DO YOU CERTIFY AS THE SPRINKLER CONTRACTOR THAT WELDING PROCEDURES COMPLY WITH THE REQUIREMENTS OF AT LEAST AWS D10.9, LEVEL AR-3 ☐ YES ☐ NO									
	DO YOU CERTIFY THAT THE WELDING WAS PERFORMED BY WELDERS QUALIFIED IN COMPLIANCE WITH THE REQUIREMENTS OF AT LEAST AWS D10.9, LEVEL AR-3 ☐ YES ☐ NO									
CUTOOTS (DISCS)	DO YOU CERTIFY THAT WELDING WAS CARRIED OUT IN COMPLIANCE WITH A DOCUMENTED QUALITY CONTROL PROCEDURE TO INSURE THAT ALL DISCS ARE RETRIEVED, THAT OPENINGS IN PIPING ARE SMOOTH, THAT SLAG AND OTHER WELDING RESIDUE ARE REMOVED, AND THAT THE INTERNAL DIAMETERS OF PIPING ARE NOT PENETRATED ☐ YES ☐ NO									
	DO YOU CERTIFY THAT YOU HAVE A CONTROL FEATURE TO ENSURE THAT ALL CUTOOTS (DISCS) ARE RETRIEVED? ☒ YES ☐ NO									
HYDRAULIC DATA NAMEPLATE	NAMEPLATE PROVIDED ☒ YES ☐ NO		IF NO, EXPLAIN							
REMARKS	DATE LEFT IN SERVICE WITH ALL CONTROL VALVES OPEN: Sept. 18, 1996									
SIGNATURES	NAME OF SPRINKLER CONTRACTOR									
	FOUR STAR FIRE PROTECTION INC.									
	TESTS WITNESSED BY									
	FOR PROPERTY OWNER (SIGNED)		TITLE		DATE					
	FOR SPRINKLER CONTRACTOR (SIGNED)		TITLE		DATE					
	<i>Signature</i>		Owner		9/18/96					

ADDITIONAL EXPLANATION AND NOTES

9/18/96 Witness by Joe Edwards & Lee Suk (Bole).