04

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING INSPECTION

PERMIT

Please Read Application And Notes, If Any, Attached

Permit Number: 091059

This is to certify that WHITEWATER LLC /Sprinkler System, Inc

has permission to install sprinkler system connected w/ permit#091056

AT 666 BRIGHTON AVE CBL 224A A001001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lathed or otherwise closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

PERMIT ISSUED
FEB 16 2010
CITY OF PORTLAND

OTHER REQUIRED APPROVALS

Fire Dept. _____

Health Dept. _____

Appeal Board _____

Other _____ Department Name

Director - Building & Inspection Services 2/12/10

PENALTY FOR REMOVING THIS CARD

SCANNED

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	Issue Date:	CBL:
09-1059		224A A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
666 BRIGHTON AVE	WHITEWATER LLC	1601 CONGRESS ST	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Sprinkler System, Inc	P.O. Box 1285 Lewiston	2077820104
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	**Zone:**
		Sprinkler Systems	R-P

Past Use:	Proposed Use:	Permit Fee:	Cost of Work:	CEO District:
Commercial - Funeral Home connected w/ permit# 091056	Commercial - Funeral Home - install sprinkler system connected w/ permit#091056	$420.00	$40,000.00	3

FIRE DEPT: ☑ Approved ☐ Denied

*See Conditions

Signature: KG

INSPECTION: Use Group: A-3 | B | S-2 Type: 5B

Sprinkler system IBC-2003

Signature: JMB 2/12/10

Proposed Project Description:

install sprinkler system connected w/ permit#091056

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature: Date:

Permit Taken By:	Date Applied For:
Ldobson	09/23/2009

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
☐ Shoreland	☐ Variance	☑ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☐ Site Plan	☐ Approved	☐ Approved w/Conditions
Maj ☐ Minor ☐ MM ☐	☐ Denied	☐ Denied
Date: 9/25/09	Date:	Date:

PERMIT ISSUED
FEB 16 2010
CITY OF PORTLAND

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	Date Applied For:	CBL:
09-1059	09/23/2009	224A A001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
666 BRIGHTON AVE	WHITEWATER LLC	1601 CONGRESS ST	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Sprinkler System, Inc	P.O. Box 1285 Lewiston	(207) 782-0104
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
		Sprinkler Systems	

Proposed Use:	Proposed Project Description:
Commercial - Funeral Home - install sprinkler system connected w/ permit#091056	install sprinkler system connected w/ permit#091056

Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 09/25/2009

Note:

Ok to Issue: ☑

Dept: Building **Status:** Approved with Conditions **Reviewer:** Jeanine Bourke **Approval Date:** 02/12/2010

Note:

Ok to Issue: ☑

1) Sprinkler systems to be designed and installed per IBC 2003 standards Sec. 903.3.1

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Capt Keith Gautreau **Approval Date:** 02/11/2010

Note:

Ok to Issue: ☑

1) The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required.
2) Any cutting or welding and hot work taking place in a commercial building requires a separate "Hot Work Permit" from the Fire Department.
3) The sprinkler system shall be installed in accordance with NFPA 13.
4) Application requires State Fire Marshal approval.
5) System acceptance and commissioning must be co-ordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
6) Fire department connection type and location shall be approved in writing by fire prevention bureau.
7) The Fire Department will require knox locking caps on all Fire Department Connections on the exterior of the building.

Comments:

1/20/2010-Ldobson: Per Capt Keith - Need sprinkler plans spoke w/ Andrew G and he will get them asap LJD 2/4/2010 Put in hold basket after repeated attempts to collect sprinkler plans

2/8/2010-ldobson: Moved permit to Capt Desk- Received sprinkler plans from Sprinkler Systems Inc.

9/25/2009-mes: DON'T ISSUE UNIT PERMIT #09-1056 IS ISSUED -STILL UNDER SITE PLAN REVIEW

PORTLAND FIRE DEPARTMENT
Sprinkler Plan Review Request Form

$40,000

CBL #: 224 A A 1

PROJECT NAME: 660 Brighton Ave.

Fire Marshal's Permit No:

Physical Address: 660 Brighton Ave.
Portland, ME 04102

Property Owner: ATH, LLC
Mailing Address: 16 Equestrian Way
Scarborough, ME 04074

Phone No: 2073293649
Fax No:
Email:

Contractor Name: Sprinkler Systems Inc.
Address: P.O. Box 1285
Lewiston, Me 04243-1285

Phone: 775-1521
Fax No: 879-1387
Email:

Type of System: ☒ 13 ☐ 13D ☐ 13R ☐ Life Safety ☐

System Design: ☒ Wet ☐ Dry ☐ Pre-Action ☐ Deluge ☐

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SEP 24 2009
Dept. of Building Inspections
City of Portland Maine

Number and Location of Zones: One Zone

System Monitoring: ☒ Water Flow ☒ Tamper ☐ Low Air

All sprinkler plans must be reviewed and approved by the State Fire Marshal prior to submission to the Portland Fire Department.
All sprinkler systems must meet or exceed the requirements of NFPA and the Portland Fire Department Sprinkler Ordinance, Chapter 10.

Sprinkler plans, including all applicable hydraulic calculations, must be submitted.

Fire Department Use Only

Applicant: _____ Date: _____

Fire Chief: _____ Date: _____

FD HTE #: _____

Sprinkler Systems, Inc.

P.O. Box 1285
Lewiston, ME 04243-1285

Letter of Transmittal

DATE 1-21-10	JOB # 09058
ATTENTION: INSPECTIONS	
RE: HUTCHINS FUNERAL HOME 660 BRIGHTON AVENUE PORTLAND, ME	

TO: CITY OF PORTLAND
INSPECTIONS, RM 315
PORTLAND, ME

WE ARE SENDING YOU:

☑ Attached ☐ Under separate cover via_____ the following items:

☑ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications ☐ Wavier or Liens

☐ Copy of letter ☐ Change order ☐ Signed Contracts ☑ H-10 CALCS, PERMIT CHECK

COPIES	DATE	NO.	DESCRIPTION
2e	12-17-09	1-3 of 3	SPRINKLER SHOP DRAWINGS
2e	12-17-09	1-3 of 3	REDUCED (11X17) SPRINKLER SHOP DRAWINGS
2e	12-17-09	19 pgs	HYDRAULIC CALCULATIONS PACKAGE
1e	1-29-10	25037	~~265.00 PERMIT CHECK~~ ~~(224.50)~~ (TAKEN BACK) SEL
2e	1-21-10	8927	COPY OF STATE FIRE MARSHAL'S PERMIT
2e	10-22-09	1 of 1	WATER FLOW TEST MAPS
1e	2-8-10	—	PORTLAND FIRE SUPPRESSION SYSTEM PERMIT

RECEIVED
FEB - 8 2010
Dept. of Building Inspections
City of Portland Maine

THESE ARE TRANSMITTED as checked below:

☑ For your approval ☐ Approved as submitted ☐ Resubmit_____copies for approval

☑ For your use ☐ Approved as noted ☐ Submit_____copies for distribution

REMARKS:

PLEASE RETURN 1 PERMIT. PLEASE FORWARD PLANS AND CALCULATIONS TO THE FIRE DEPT.

THANK YOU,
SCOTT E GARLAND, SOT, RMS

SIGNED: _____

PMS, MGR.

Fire Suppression System Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: 660 BRIGHTON AVENUE CBL: _____

Exact location: (within structure) ENTIRE

Type of occupancy(s) (NFPA & ICC): FUNERAL PARLOR - LT. HAZARD, MERC OPD HAZ GP 1

Building owner: HUTCHINS FUNERAL HOME

Managing Supervisor: SCOTT E. GARLAND License No: 278

Supervisor phone: 775-1521 E-mail: SCOTTSSIEMAINE.OFF.COM

Installing contractor: SPRINKLER SYSTEMS INC. License No: 093

Contractor phone: 782-0104 E-mail: SAME AS above

The suppression work to be done will be: New: ☑ Renovation: ☐ Addition to existing system: ☐

This is an amendment to an existing permit: Yes: ☐ NO ☑ Permit no: _____

NFPA Standard will this system is designed to: NFPA #13 Edition: 2007

*Non-NFPA systems are not approved for use within the City of Portland.

Attach all design information and complete approved submittals as may be required by the State Fire Marshal's Office.

Contractor shall verify location and type of all FDCs shall be approved in writing by the Fire Prevention Bureau.

COST OF WORK: $24,500

PERMIT FEE: $265
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

Download a new copy of this document from www.portlandmaine.gov for every submittal. Submit all information to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire protection system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with NFPA and the Fire Department Technical Standard(s).

Applicant signature: _____ Date: 2/8/10

RECEIVED

FEB - 8 2010

Dept. of Building Inspections
City of Portland Maine

State of Maine
Department of Public Safety
Fire Sprinkler System Permit

8927

Hutchins Funeral Home

Located at: 660 Brighton Avenue
In the Town of: Portland
Occupancy/Use: Funeral Home
Type of System: NFPA 13

Permission is hereby given to:

Sprinkler Systems, Inc.
PO Box 1285
Lewiston, ME 042431285
Contractor License # **93**

according to plans submittal filed with the Licensing and Inspections Unit and are now approved.
This application form/plans are filed under log # **2100001** , and no departure from application form/plans shall be made without prior approval in writing. This permit is issued under the provisions of Title 32, Chapter 20, Section 12004-I. Nothing herein shall excuse the holder of this permit for failure to comply with local ordinances, zoning laws, or other pertinent legal restrictions. Each permit issued shall be displayed/available at the site of construction.

This permit was issued on **1/21/2010** for a fee paid of **$127.00**

This permit will expire at midnight on *Tuesday, July 20, 2010*

Anne H. Jordan
Commissioner

Fire Department Connection Location/Type per Local Fire Department

Within 30 days of the completion of a new fire sprinkler system or an addition to an existing fire sprinkler system, a fire sprinkler system contractor shall provide to the Licensing and Inspections Unit a copy of this permit signed and dated by the certified responsible managing supervisor representing that the fire sprinkler system has been installed according to specifications of the approved plan to the best of the supervisor's knowledge, information, and belief. This requirement is part of the sprinkler law, and neglect of this duty is grounds to not renew the contractor's license to do work in the State of Maine. All sprinkler licenses expire June 30th every year.

Job completed, tested and verified on date of _____

RMS for this job: Scott E. Garland

RMS Signature:_____

State of Maine
Department of Public Safety
Fire Sprinkler System Permit

8927

Hutchins Funeral Home

Located at: 660 Brighton Avenue
In the Town of: Portland
Occupancy/Use: Funeral Home
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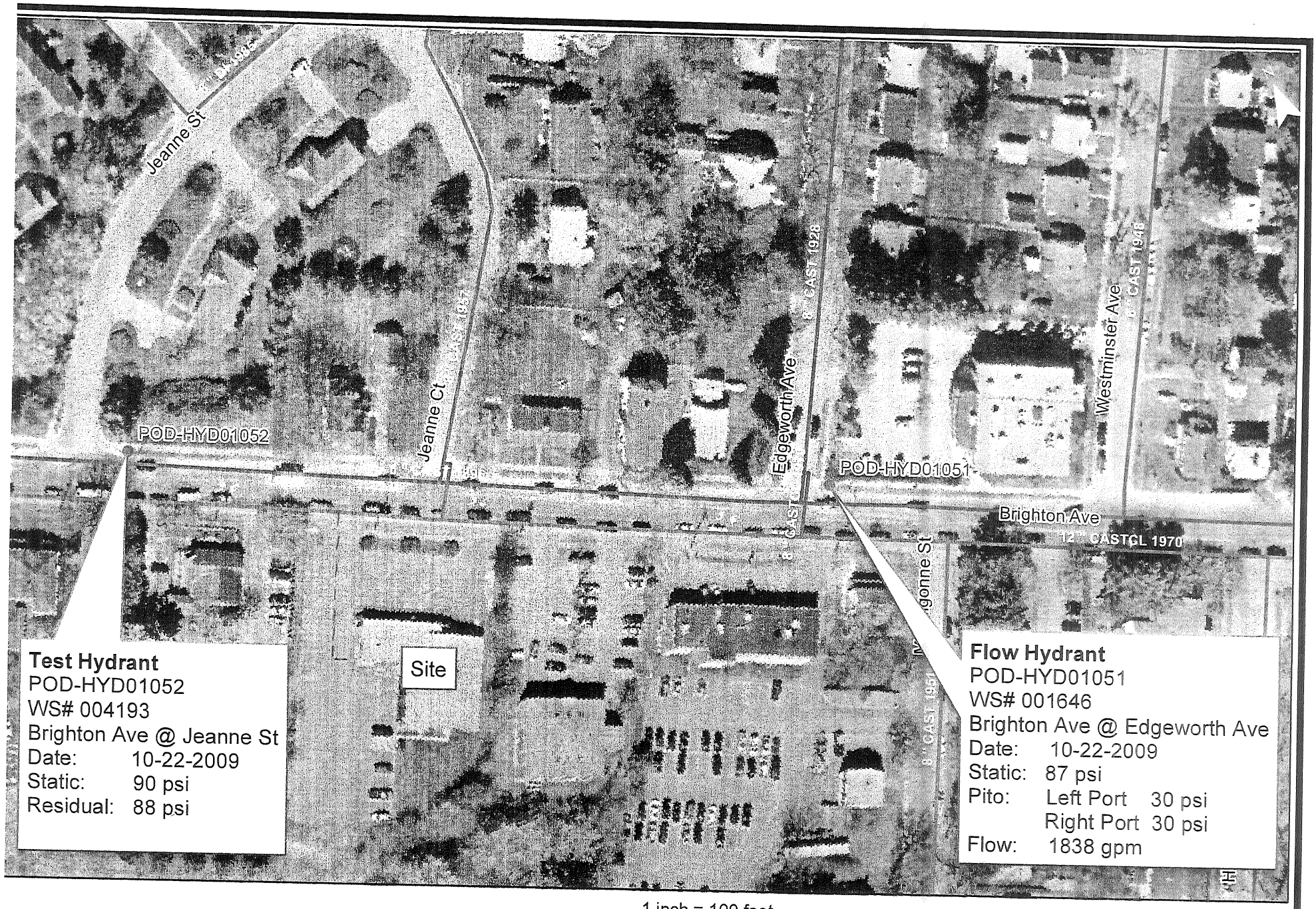
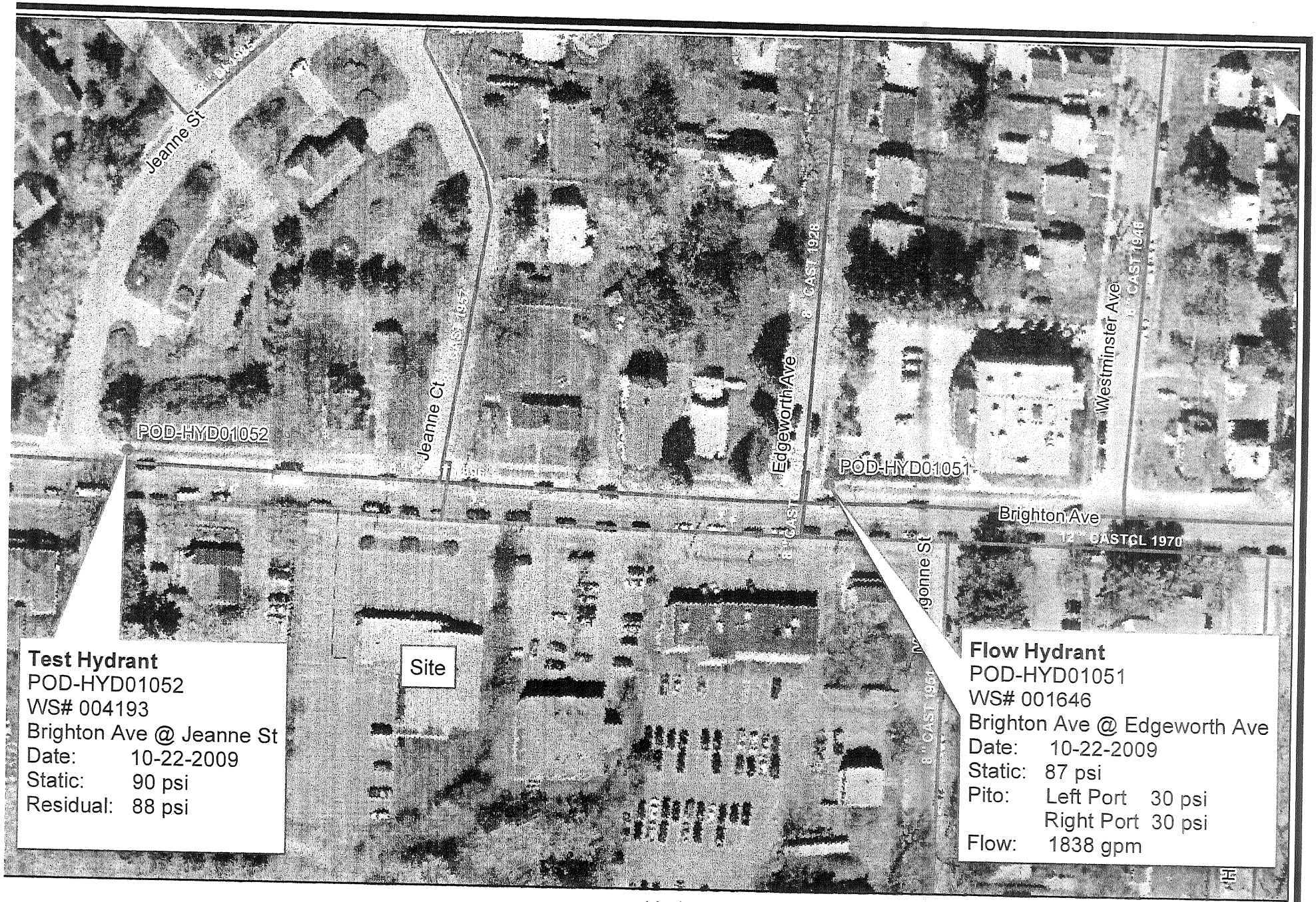
RMS Signature:_____



1 inch = 100 feet

PORTLAND WATER DISTRICT **225 Douglass Street** **Portland, ME 04104**	Drawn By: DPW Date: 10/22/2009	Scale: As Noted	**660 Brighton Avenue** **Portland**	Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.	Prepared for: Sprinkler Systems, Inc. Sheet No. 1 of 1



1 inch = 100 feet

PORTLAND WATER DISTRICT **225 Douglass Street** **Portland, ME 04104**	Drawn By: DPW Date: 10/22/2009	Scale: As Noted	**660 Brighton Avenue** **Portland**	Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.	Prepared for: Sprinkler Systems, Inc. Sheet No. 1 of 1

CITY OF PORTLAND
DEPARTMENT OF PLANNING & URBAN DEVELOPMENT

389 Congress Street
Portland, Maine 04101

INVOICE FOR PERMIT FEES

Application No: 9-1059
Applicant: WHITEWATER LLC
Project Name:
Location: 666 BRIGHTON AVE
CBL: 224A A001001
Development Type:
Invoice Date: 09/24/2009

Previous Balance	-	Payment Received	+	Current Fees	-	Current Payment	=	Total Due	Payment Due Date
$0.00		$0.00		$420.00		$325.00		$95.00	On Receipt

First Billing

Previous Balance **$0.00**

Fee Description	Qty	Fee/Deposit Charge
Building Permit Fee First $1000	1	$30.00
Building Permit Fee Add'l $1000	1	$390.00
		$420.00

Total Current Fees:	+	**$420.00**
Total Current Payments:	-	**$325.00**
Amount Due Now:		**$95.00**

Detach and remit with payment

CBL 224A A001001
Application No: 9-1059
Invoice Date: 09/24/2009
Invoice No: 35604
Total Amt Due: $95.00
Payment Amount:

Bill to: WHITEWATER LLC
1601 CONGRESS ST
PORTLAND , ME 04102

Make checks payable to the ***City of Portland,*** ATTN: Inspections, 3rd Floor, 389 Congress Street, Portland, ME 04101.

. . . Fire Protection by Computer Design

Sprinkler Systems, Inc.
2-4 Avon Street
P.O. Box 1285
Lewiston, Maine 04240
207-782-0104

Job Name	:	HUTCHINS FUNERAL HOME
Building	:	
Location	:	660 BRIGHTON AVENUE PORTLAND, ME 04103
System	:	1 OF 3
Contract	:	09058
Data File	:	HUTCHINS1.WXF

Hydraulic Design Information Sheet

Name - HUTCHINS FUNERAL HOME
Location - 660 BRIGHTON AVENUE PORTLAND, ME 04103
Building -
Contractor - HOMEWORKS BUILDERS
Calculated By - LLOYD D. AKERS, PE
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - FUNERAL HOME - LIGHT HAZARD

Date - 12-17-09

System No. - 1 OF 3
Contract No. - 09058
Drawing No. - 3 OF 3
Ceiling Height - N/A

SYSTEM DESIGN

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling

		Made By	Date
Area of Sprinkler Operation	- 7 HEAD	System Type	Sprinkler/Nozzle
Density	- .10	( ) Wet	Make TYCO-BB1
Area Per Sprinkler	- 380	(X) Dry	Model TY4180
Elevation at Highest Outlet	- 80.25	( ) Deluge	Size 3/4 X 3/4
Hose Allowance - Inside	-	( ) Preaction	K-Factor 8.0
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.200
Hose Allowance - Outside	- 100	ATTIC SPRINKLER HEADS	

Note DESIGN AREA NO.1 - ATTIC (PARLOR)

Calculation Summary: Flow Required - 370.668 Press Required - 71.30
C-Factor Used: 100 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:
Date of Test - 10-22-09
Time of Test -
Static Press - 90
Residual Press - 88
Flow - 1838
Elevation - 65.0 FT

Pump Data:
Rated Cap.-
@ Press -
Elev. -

Tank or Reservoir:
Cap. -
Elev.-

Well
Proof Flow

Location - GAUGE HYDRANT#1052 AND FLOW HYDRANT#1051 ARE LOCATED ON BRIGHTON AVENUE IN FRONT OF THE FUNERAL HOME PROPERTY.
Source of Information - PORTLAND WATER DISTRICT

COMMODITY STORAGE

Commodity
Storage Ht.
Storage Method: Solid Piled

Class Area %

Location Aisle W.
Palletized %

Rack

( ) Single Row ( ) Conven. Pallet ( ) Auto. Storage ( ) Encap.
( ) Double Row ( ) Slave Pallet ( ) Solid Shelf ( ) Non
( ) Mult. Row ( ) Open Shelf

RACK

Flue Spacing
Longitudinal

Clearance:Storage to Ceiling
Transverse

Horizontal Barriers Provided:

Fittings Used Summary

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	Generic Butterfly Valve	0	0	0	0	0	0	7	10	0	12	9	10	12	19	21	0	0	0	0	0
D	Generic Dry Pipe Valve	0	0	0	0	0	0	9.5	17	0	28	0	47	0	0	0	0	0	0	0	0
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow Thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
W	Generic Wafer Check Vlv	0	0	0	0	0	0	0	0	0	10.3	0	13.1	31.8	35.8	27.4	0	0	0	0	0

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Pressure / Flow Summary - STANDARD

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Date 12-17-09

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
TYP	0.0	8	22.6	na	38.03	0.1	380	22.6
1	80.25	K = K @ SPG	25.93	na	38.03			
2	80.25	K = K @ SPG	25.97	na	38.06			
3	80.25	K = K @ SPG	26.12	na	38.17			
4	80.25	K = K @ SPG	26.43	na	38.39			
5	80.25	K = K @ SPG	26.96	na	38.78			
6	80.25	K = K @ SPG	27.76	na	39.35			
7	80.25	K = K @ SPG	28.52	na	39.89			
A	80.25		32.54	na				
B	71.5		45.34	na				
C	61.833		54.96	na				
D	61.833		61.01	na				
D1	61.833		64.45	na				
RT	61.833		70.06	na				
RD	57.833		72.53	na				
RB	55.167		74.25	na				
X1	59.5		72.89	na				
X2	59.5		72.9	na				
X3	59.5		73.15	na				
X4	59.5		73.68	na	100.0			
TEST	65.0		71.3	na				

The maximum velocity is 15.92 and it occurs in the pipe between nodes 7 and A

Hyd. Ref. Point	Qa / Qt	Dia. "C" / Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt / Pe / Pf	Pt / Pv / Pn	******* Notes ******
TYP	38.03	1.049	1T	3.568	2.000	22.600		K Factor = 8.00
to		100		0.0	3.568	0.0		
SPG	38.03	0.5988		0.0	5.568	3.334		Vel = 14.12
	0.0							
	38.03					25.934		K Factor = 7.47
1	38.03	2.635		0.0	6.000	25.934		K Factor @ node SPG
to		100		0.0	0.0	0.0		
2	38.03	0.0067		0.0	6.000	0.040		Vel = 2.24
2	38.06	2.635		0.0	6.000	25.974		K Factor @ node SPG
to		100		0.0	0.0	0.0		
3	76.09	0.0243		0.0	6.000	0.146		Vel = 4.48
3	38.17	2.635		0.0	6.000	26.120		K Factor @ node SPG
to		100		0.0	0.0	0.0		
4	114.26	0.0517		0.0	6.000	0.310		Vel = 6.72
4	38.40	2.635		0.0	6.000	26.430		K Factor @ node SPG
to		100		0.0	0.0	0.0		
5	152.66	0.0883		0.0	6.000	0.530		Vel = 8.98
5	38.77	2.635		0.0	6.000	26.960		K Factor @ node SPG
to		100		0.0	0.0	0.0		
6	191.43	0.1342		0.0	6.000	0.805		Vel = 11.26
6	39.35	2.635		0.0	4.000	27.765		K Factor @ node SPG
to		100		0.0	0.0	0.0		
7	230.78	0.1895		0.0	4.000	0.758		Vel = 13.58
7	39.89	2.635	1T	11.758	4.000	28.523		K Factor @ node SPG
to		100		0.0	11.757	0.0		
A	270.67	0.2547		0.0	15.757	4.013		Vel = 15.92
	0.0							
	270.67					32.536		K Factor = 47.45
A	270.67	2.635	3E	17.636	17.750	32.536		
to		100		0.0	17.637	3.790		
B	270.67	0.2546		0.0	35.387	9.011		Vel = 15.92
B	0.0	2.635	1T	11.758	9.583	45.337		
to		100		0.0	11.757	4.187		
C	270.67	0.2546		0.0	21.340	5.434		Vel = 15.92
C	0.0	2.635	1T	11.758	12.000	54.958		
to		100		0.0	11.757	0.0		
D	270.67	0.2547		0.0	23.757	6.050		Vel = 15.92
D	0.0	3.26	3E	20.143	18.000	61.008		
to		100		0.0	20.143	0.0		
D1	270.67	0.0903		0.0	38.143	3.444		Vel = 10.40
D1	0.0	3.26	1E	6.714	41.000	64.452		
to		100	1T	14.388	21.101	0.0		
RT	270.67	0.0903		0.0	62.101	5.609		Vel = 10.40

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
RT	0.0	4.26	1D	26.313	3.500	70.061		
to		100		0.0	26.313	1.732		
RD	270.67	0.0246		0.0	29.813	0.732		Vel = 6.09
RD	0.0	4.26	1B	15.8	3.000	72.525		
to		120	1W	13.562	29.362	1.155		
RB	270.67	0.0175		0.0	32.362	0.567		Vel = 6.09
RB	0.0	6.16	2E	40.168	150.000	74.247		
to		140	1T	43.037	87.509	-1.877		
X1	270.67	0.0022	1G	4.304	237.509	0.519		Vel = 2.91
X1	0.0	12.34	1T	93.767	100.000	72.889		
to		140		0.0	93.767	0.0		
X2	270.67	0.0001		0.0	193.767	0.015		Vel = 0.73
X2	0.0	6.16	1E	20.084	50.000	72.904		
to		140	1T	43.037	63.121	0.0		
X3	270.67	0.0022		0.0	113.121	0.247		Vel = 2.91
X3	0.0	6.16	1T	43.037	200.000	73.151		
to		140		0.0	43.037	0.0		
X4	270.67	0.0022		0.0	243.037	0.531		Vel = 2.91
X4	100.00	6.16		0.0	0.001	73.682		Qa = 100
to		140		0.0	0.0	-2.382		
TEST	370.67	0.0		0.0	0.001	0.0		Vel = 3.99
	0.0							
	370.67					71.300		K Factor = 43.90

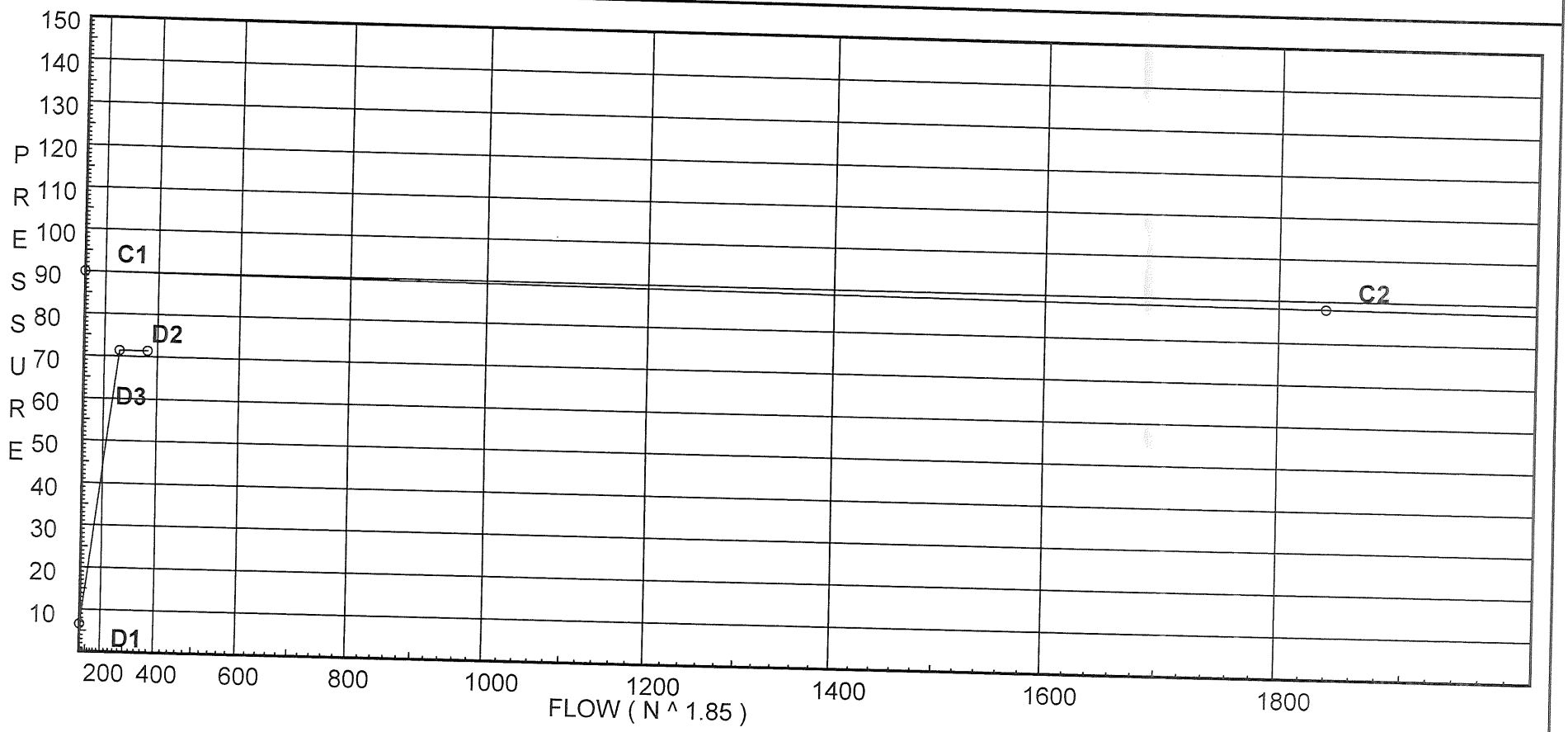
Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

City Water Supply:

C1 - Static Pressure	:	90
C2 - Residual Pressure	:	88
C2 - Residual Flow	:	1838

Demand:

D1 - Elevation	:	6.605
D2 - System Flow	:	270.668
D2 - System Pressure	:	71.300
Hose (Adj City)	:	
Hose (Demand)	:	100
D3 - System Demand	:	370.668
Safety Margin	:	18.596



. . . Fire Protection by Computer Design

Sprinkler Systems, Inc.
2-4 Avon Street
P.O. Box 1285
Lewiston, Maine 04240
207-782-0104

Job Name	:	HUTCHINS FUNERAL HOME
Building	:	
Location	:	660 BRIGHTON AVENUE PORTLAND, ME 04103
System	:	2 OF 3
Contract	:	09058
Data File	:	HUTCHINS2.WXF

Hydraulic Design Information Sheet

Name - HUTCHINS FUNERAL HOME
Location - 660 BRIGHTON AVENUE PORTLAND, ME 04103
Building -
Contractor - HOMEWORKS BUILDERS
Calculated By - LLOYD D. AKERS, PE
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - FUNERAL HOME - LIGHT HAZARD

Date - 12-17-09

System No. - 2 OF 3
Contract No. - 09058
Drawing No. - 3 OF 3
Ceiling Height - N/A

SYSTEM DESIGN

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling Made By Date

Area of Sprinkler Operation	- 7 HEAD	System Type	Sprinkler/Nozzle
Density	- .10	( ) Wet	Make TYCO-BB1
Area Per Sprinkler	- 250	(X) Dry	Model TY3180
Elevation at Highest Outlet	- 73.5	( ) Deluge	Size 1/2 X 1/2
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.212
Hose Allowance - Outside	- 100	ATTIC SPRINKLER HEADS	

Note DESIGN AREA NO. 2 - ATTIC (OFFICES)

Calculation Summary: Flow Required - 280.14 Press Required - 51.653
C-Factor Used: 100 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:
Date of Test - 10-22-09
Time of Test -
Static Press - 90
Residual Press - 88
Flow - 1838
Elevation - 65.0 FT

Pump Data:
Rated Cap.-
@ Press -
Elev. -

Tank or Reservoir:
Cap. -
Elev.-

Well
Proof Flow

Location - GAUGE HYDRANT#1052 AND FLOW HYDRANT#1051 ARE LOCATED ON BRIGHTON AVENUE IN FRONT OF THE FUNERAL HOME PROPERTY.
Source of Information - PORTLAND WATER DISTRICT

COMMODITY STORAGE RACK

Commodity
Storage Ht.
Storage Method: Solid Piled Class Area % Palletized Location Aisle W. % Rack

( ) Single Row ( ) Conven. Pallet ( ) Auto. Storage ( ) Encap.
( ) Double Row ( ) Slave Pallet ( ) Solid Shelf ( ) Non
( ) Mult. Row ( ) Open Shelf

Flue Spacing
Longitudinal
Clearance:Storage to Ceiling
Transverse

Horizontal Barriers Provided:

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
8	73.5	5.6	20.0	na	25.04	0.1	250	20.0
9	73.5	5.6	20.03	na	25.06	0.1	250	20.0
10	73.5	5.6	20.21	na	25.18	0.1	250	20.0
11	73.5	5.6	20.59	na	25.41	0.1	250	20.0
12	73.5	5.6	21.24	na	25.81	0.1	250	20.0
13	73.5	5.6	22.23	na	26.41	0.1	250	20.0
14	73.5	5.6	23.64	na	27.23	0.1	250	20.0
E	72.0		33.48	na				
F	72.0		37.07	na				
G	61.833		47.49	na				
RT	61.833		51.8	na				
RD	57.833		53.87	na				
RB	55.167		55.29	na				
X1	59.5		53.66	na				
X2	59.5		53.67	na				
X3	59.5		53.79	na				
X4	59.5		54.04	na	100.0			
TEST	65.0		51.65	na				

The maximum velocity is 15.82 and it occurs in the pipe between nodes 14 and E

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
8	25.04	2.157		0.0	4.000	20.000		K Factor = 5.60
to		100		0.0	0.0	0.0		
9	25.04	0.0082		0.0	4.000	0.033		Vel = 2.20
9	25.07	2.157		0.0	6.000	20.033		K Factor = 5.60
to		100		0.0	0.0	0.0		
10	50.11	0.0298		0.0	6.000	0.179		Vel = 4.40
10	25.17	2.157		0.0	6.000	20.212		K Factor = 5.60
to		100		0.0	0.0	0.0		
11	75.28	0.0632		0.0	6.000	0.379		Vel = 6.61
11	25.42	2.157		0.0	6.000	20.591		K Factor = 5.60
to		100		0.0	0.0	0.0		
12	100.7	0.1085		0.0	6.000	0.651		Vel = 8.84
12	25.81	2.157		0.0	6.000	21.242		K Factor = 5.60
to		100		0.0	0.0	0.0		
13	126.51	0.1652		0.0	6.000	0.991		Vel = 11.11
13	26.40	2.157		0.0	6.000	22.233		K Factor = 5.60
to		100		0.0	0.0	0.0		
14	152.91	0.2347		0.0	6.000	1.408		Vel = 13.43
14	27.23	2.157	1E	4.392	15.750	23.641		K Factor = 5.60
to		100	1T	8.783	13.174	0.650		
E	180.14	0.3178		0.0	28.924	9.192		Vel = 15.82
	0.0							
	180.14					33.483		K Factor = 31.13
E	180.14	2.157	1T	8.783	2.500	33.483		
to		100		0.0	8.783	0.0		
F	180.14	0.3178		0.0	11.283	3.586		Vel = 15.82
F	0.0	2.157	1T	8.783	10.167	37.069		
to		100		0.0	8.783	4.403		
G	180.14	0.3178		0.0	18.950	6.023		Vel = 15.82
G	0.0	2.157	1T	8.783	4.750	47.495		
to		100		0.0	8.783	0.0		
RT	180.14	0.3178		0.0	13.533	4.301		Vel = 15.82
RT	0.0	4.26	1D	26.313	3.500	51.796		
to		100		0.0	26.313	1.732		
RD	180.14	0.0116		0.0	29.813	0.345		Vel = 4.05
RD	0.0	4.26	1B	15.8	3.000	53.873		
to		120	1W	13.562	29.362	1.155		
RB	180.14	0.0082		0.0	32.362	0.266		Vel = 4.05
RB	0.0	6.16	2E	40.168	150.000	55.294		
to		140	1T	43.037	87.509	-1.877		
X1	180.14	0.0010	1G	4.304	237.509	0.245		Vel = 1.94
X1	0.0	12.34	1T	93.767	100.000	53.662		
to		140		0.0	93.767	0.0		
X2	180.14	0.0		0.0	193.767	0.007		Vel = 0.48

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
X2	0.0	6.16	1E	20.084	50.000	53.669		
to		140	1T	43.037	63.121	0.0		
X3	180.14	0.0010		0.0	113.121	0.116		Vel = 1.94
X3	0.0	6.16	1T	43.037	200.000	53.785		
to		140		0.0	43.037	0.0		
X4	180.14	0.0010		0.0	243.037	0.250		Vel = 1.94
X4	100.00	6.16		0.0	0.001	54.035		Qa = 100
to		140		0.0	0.0	-2.382		
TEST	280.14	0.0		0.0	0.001	0.0		Vel = 3.02
	0.0							
	280.14					51.653		K Factor = 38.98

Water Supply Curve (C)

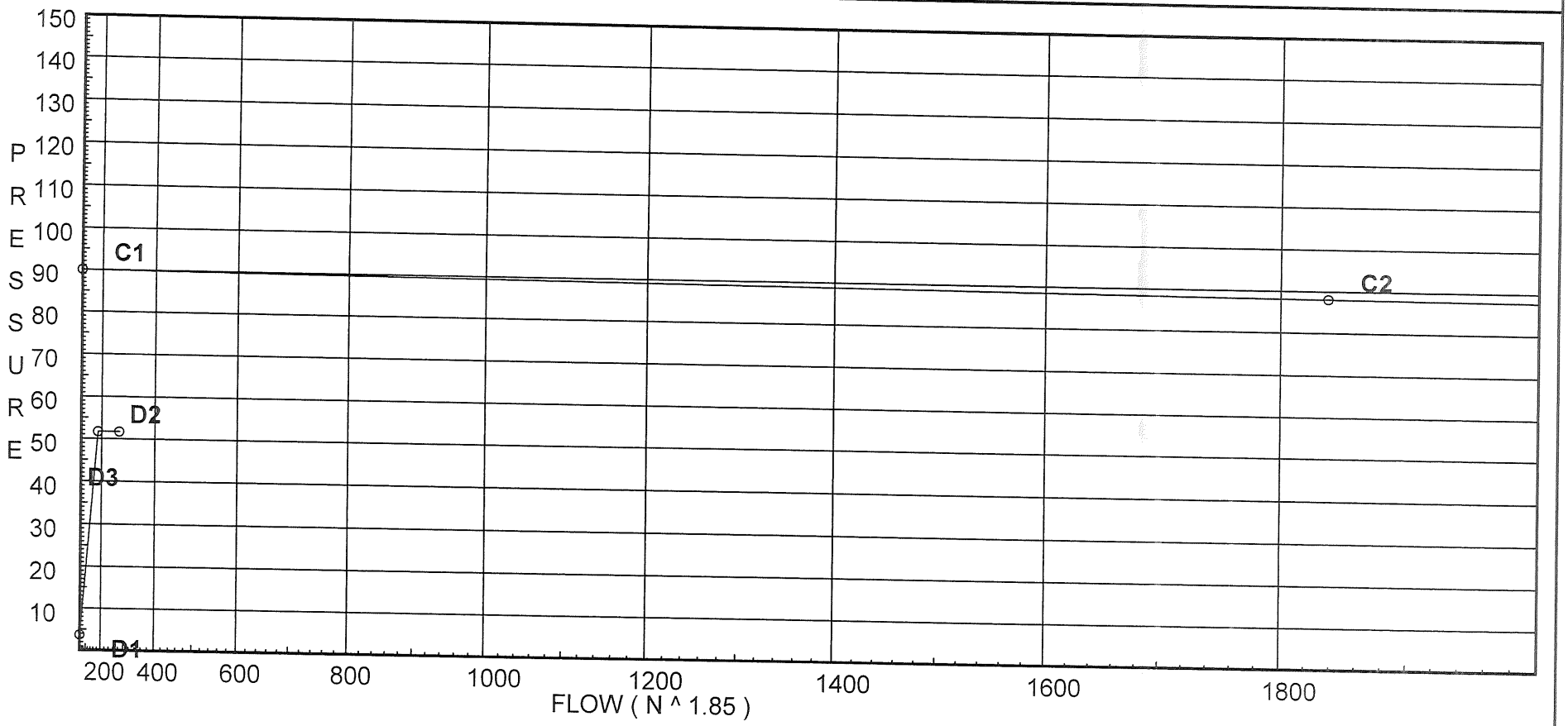
Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

City Water Supply:

C1 - Static Pressure	: 90
C2 - Residual Pressure	: 88
C2 - Residual Flow	: 1838

Demand:

D1 - Elevation	: 3.681
D2 - System Flow	: 180.14
D2 - System Pressure	: 51.653
Hose (Adj City)	:
Hose (Demand)	: 100
D3 - System Demand	: 280.14
Safety Margin	: 38.285



. . . Fire Protection by Computer Design

Sprinkler Systems, Inc.
2-4 Avon Street
P.O. Box 1285
Lewiston, Maine 04240
207-782-0104

Job Name	:	HUTCHINS FUNERAL HOME
Building	:	
Location	:	660 BRIGHTON AVENUE PORTLAND, ME 04103
System	:	3 OF 3
Contract	:	09058
Data File	:	HUTCHINS3.WXF

Hydraulic Design Information Sheet

Name - HUTCHINS FUNERAL HOME
Location - 660 BRIGHTON AVENUE PORTLAND, ME 04103
Building -
Contractor - HOMEWORKS BUILDERS
Calculated By - LLOYD D. AKERS, PE
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - FUNERAL HOME - LIGHT HAZARD

Date - 12-17-09

System No. - 3 OF 3
Contract No. - 09058
Drawing No. - 2 OF 3
Ceiling Height - N/A

SYSTEM

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling Made By Date

DESIGN

Area of Sprinkler Operation	- 1950SF	System Type	Sprinkler/Nozzle
Density	- .10	( ) Wet	Make RELIABLE
Area Per Sprinkler	- 148.2	(X) Dry	Model FIFR
Elevation at Highest Outlet	- 71.750	( ) Deluge	Size 1/2 X 1/2
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.155
Hose Allowance - Outside	- 100		

Note DESIGN AREA NO.3 - PARLORS

Calculation Summary: Flow Required - 508.665 Press Required - 77.282
C-Factor Used: 100 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:
Date of Test - 10-22-09
Time of Test -
Static Press - 90
Residual Press - 88
Flow - 1838
Elevation - 65.0 FT

Pump Data:
Rated Cap.-
@ Press -
Elev. -

Tank or Reservoir:
Cap. -
Elev.-

Well
Proof Flow

Location - GAUGE HYDRANT#1052 AND FLOW HYDRANT#1051 ARE LOCATED ON BRIGHTON AVENUE IN FRONT OF THE FUNERAL HOME PROPERTY.
Source of Information - PORTLAND WATER DISTRICT

COMM STORAGE

Commodity
Storage Ht.
Storage Method: Solid Piled Class Area % Palletized Location Aisle W. % Rack

( ) Single Row	( ) Conven. Pallet	( ) Auto. Storage	( ) Encap.
( ) Double Row	( ) Slave Pallet	( ) Solid Shelf	( ) Non
( ) Mult. Row		( ) Open Shelf	

RACK

Flue Spacing
Longitudinal
Clearance:Storage to Ceiling
Transverse

Horizontal Barriers Provided:

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
TYP	0.0	5.6	7.0	na	14.82	0.1	148.2	7.0
TYP1	0.0	5.6	7.0	na	14.82	0.1	148.2	7.0
TYP2	0.0	5.6	9.0	na	16.8	0.1	168	9.0
TYP3	0.0	5.6	9.0	na	16.8	0.1	168	9.0
TYP4	0.0	5.6	7.0	na	14.82	0.1	148.2	7.0
15	71.667	K = K @ DRO	14.77	na	20.54			
16	71.667	K = K @ DRO	16.68	na	21.84			
17	71.667	K = K @ DRO1	17.74	na	22.16			
18	71.667	K = K @ DRO1	22.77	na	25.1			
19	71.75	K = K @ DRO2	10.11	na	16.8			
20	71.75	K = K @ DRO2	11.96	na	18.27			
21	71.75	K = K @ DRO2	13.98	na	19.75			
22	73.75	K = K @ DRO3	12.11	na	18.5			
23	73.75	K = K @ DRO3	14.0	na	19.89			
24	71.5		18.05	na				
25	71.5	K = K @ DRO2	20.1	na	23.68			
26	71.5	K = K @ DRO2	15.56	na	20.84			
27	71.5	K = K @ DRO2	18.31	na	22.61			
28	71.5		21.24	na				
29	71.5	K = K @ DRO1	22.2	na	24.78			
30	71.5	K = K @ DRO2	21.01	na	24.21			
31	71.5	K = K @ DRO2	24.64	na	26.23			
32	71.5	K = K @ DRO2	24.62	na	26.21			
33	71.5	K = K @ DRO2	28.83	na	28.37			
35	71.5	K = K @ DRO4	28.53	na	28.89			
34	71.5		30.44	na				
36	61.25		42.17	na				
AA	71.25		28.29	na				
BB	71.25		28.59	na				
CC	71.25		28.98	na				
DD	61.25		48.4	na				
EE	61.25		51.22	na				
B	71.5		33.34	na				
C	61.833		45.16	na				
D	61.833		53.66	na				
D1	61.833		61.04	na				
RT	61.833		73.06	na				
RD	57.833		76.36	na				
RB	55.167		78.73	na				
X1	59.5		77.97	na				
X2	59.5		78.0	na				
X3	59.5		78.53	na				
X4	59.5		79.66	na	100.0			
TEST	65.0		77.28	na				

The maximum velocity is 19.13 and it occurs in the pipe between nodes CC and B

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
TYP	14.82	1.049	1E	1.427	1.500	7.004		K Factor = 5.60
to		100	1T	3.568	4.995	0.0		
DRO	14.82	0.1047		0.0	6.495	0.680		Vel = 5.50
	0.0							
	14.82					7.684		K Factor = 5.35
TYP1	14.82	1.049	2E	2.855	2.500	7.004		K Factor = 5.60
to		100	1T	3.568	6.423	0.0		
DRO1	14.82	0.1047		0.0	8.923	0.934		Vel = 5.50
	0.0							
	14.82					7.938		K Factor = 5.26
TYP2	16.80	1.049	2E	2.855	2.000	9.000		K Factor = 5.60
to		100	1T	3.568	6.423	0.0		
DRO2	16.8	0.1320		0.0	8.423	1.112		Vel = 6.24
	0.0							
	16.80					10.112		K Factor = 5.28
TYP3	16.80	1.049	1E	1.427	2.500	9.000		K Factor = 5.60
to		100	1T	3.568	4.995	0.0		
DRO3	16.8	0.1321		0.0	7.495	0.990		Vel = 6.24
	0.0							
	16.80					9.990		K Factor = 5.32
TYP4	14.82	1.049	1T	3.568	1.250	7.004		K Factor = 5.60
to		100		0.0	3.568	0.0		
DRO4	14.82	0.1046		0.0	4.818	0.504		Vel = 5.50
	0.0							
	14.82					7.508		K Factor = 5.41
15	20.54	1.049		0.0	10.000	14.767		K Factor @ node DRO
to		100		0.0	0.0	0.0		
16	20.54	0.1916		0.0	10.000	1.916		Vel = 7.62
16	21.84	1.38		0.0	5.500	16.683		K Factor @ node DRO
to		100		0.0	0.0	0.0		
17	42.38	0.1925		0.0	5.500	1.059		Vel = 9.09
17	22.16	1.38		0.0	12.000	17.742		K Factor @ node DRO1
to		100		0.0	0.0	0.0		
18	64.54	0.4188		0.0	12.000	5.026		Vel = 13.84
18	25.10	1.61	1T	5.71	9.000	22.768		K Factor @ node DRO1
to		100		0.0	5.710	0.181		
AA	89.64	0.3631		0.0	14.710	5.341		Vel = 14.13
	0.0							
	89.64					28.290		K Factor = 16.85
19	16.80	1.049		0.0	14.000	10.112		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
20	16.8	0.1321		0.0	14.000	1.849		Vel = 6.24

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
20	18.27	1.38	1E	2.141	12.750	11.961		K Factor @ node DRO2
to		100		0.0	2.141	0.0		
21	35.07	0.1356		0.0	14.891	2.019		Vel = 7.52
21	19.75	1.38	1T	4.282	8.500	13.980		K Factor @ node DRO2
to		100		0.0	4.282	0.108		
24	54.82	0.3097		0.0	12.782	3.959		Vel = 11.76
	0.0							
	54.82					18.047		K Factor = 12.90
22	18.50	1.049		0.0	12.000	12.108		K Factor @ node DRO3
to		100		0.0	0.0	0.0		
23	18.5	0.1578		0.0	12.000	1.894		Vel = 6.87
23	19.88	1.38	1E	2.141	12.750	14.002		K Factor @ node DRO3
to		100	1T	4.282	6.423	0.974		
24	38.38	0.1602		0.0	19.173	3.071		Vel = 8.23
	0.0							
	38.38					18.047		K Factor = 9.03
24	93.21	1.61		0.0	5.250	18.047		
to		100		0.0	0.0	0.0		
25	93.21	0.3903		0.0	5.250	2.049		Vel = 14.69
25	23.68	2.157		0.0	8.000	20.096		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
28	116.89	0.1429		0.0	8.000	1.143		Vel = 10.26
	0.0							
	116.89					21.239		K Factor = 25.36
26	20.84	1.049		0.0	14.000	15.558		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
27	20.84	0.1967		0.0	14.000	2.754		Vel = 7.74
27	22.60	1.38	1T	4.282	10.250	18.312		K Factor @ node DRO2
to		100		0.0	4.282	0.0		
28	43.44	0.2014		0.0	14.532	2.927		Vel = 9.32
	0.0							
	43.44					21.239		K Factor = 9.43
28	160.34	2.157		0.0	3.750	21.239		
to		100		0.0	0.0	0.0		
29	160.34	0.2563		0.0	3.750	0.961		Vel = 14.08
29	24.78	2.157	1T	8.783	10.000	22.200		K Factor @ node DRO1
to		100		0.0	8.783	0.108		
BB	185.12	0.3342		0.0	18.783	6.278		Vel = 16.25
	0.0							
	185.12					28.586		K Factor = 34.62
30	24.21	1.049		0.0	14.000	21.007		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
31	24.21	0.2597		0.0	14.000	3.636		Vel = 8.99

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
31	26.23	1.38	1E	2.141	9.500	24.643		K Factor @ node DRO2
to		100	1T	4.282	6.423	0.108		
CC	50.44	0.2655		0.0	15.923	4.228		Vel = 10.82
	0.0							
	50.44					28.979		K Factor = 9.37
32	26.21	1.049		0.0	14.000	24.618		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
33	26.21	0.3008		0.0	14.000	4.211		Vel = 9.73
33	28.37	1.38		0.0	5.250	28.829		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
34	54.58	0.3072		0.0	5.250	1.613		Vel = 11.71
	0.0							
	54.58					30.442		K Factor = 9.89
35	28.89	1.049	1T	3.568	1.750	28.527		K Factor @ node DRO4
to		100		0.0	3.568	0.0		
34	28.89	0.3601		0.0	5.318	1.915		Vel = 10.72
34	54.58	1.61	2E	5.71	11.500	30.442		
to		100	1T	5.71	11.420	4.439		
36	83.47	0.3182		0.0	22.920	7.293		Vel = 13.15
36	0.0	1.61	1E	2.855	11.000	42.174		
to		100	1T	5.71	8.565	0.0		
DD	83.47	0.3182		0.0	19.565	6.226		Vel = 13.15
	0.0							
	83.47					48.400		K Factor = 12.00
AA	89.64	2.635		0.0	9.000	28.290		
to		100		0.0	0.0	0.0		
BB	89.64	0.0329		0.0	9.000	0.296		Vel = 5.27
BB	185.12	2.635		0.0	1.500	28.586		
to		100		0.0	0.0	0.0		
CC	274.76	0.2620		0.0	1.500	0.393		Vel = 16.17
CC	50.44	2.635	1T	11.758	0.750	28.979		
to		100		0.0	11.757	-0.108		
B	325.2	0.3576		0.0	12.507	4.472		Vel = 19.13
	0.0							
	325.20					33.343		K Factor = 56.32
DD	83.47	2.157	1T	8.783	28.000	48.400		
to		100		0.0	8.783	0.0		
EE	83.47	0.0766		0.0	36.783	2.816		Vel = 7.33
EE	0.0	2.157	1E	4.392	22.000	51.216		
to		100	1T	8.783	13.174	-0.252		
D	83.47	0.0766		0.0	35.174	2.693		Vel = 7.33

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
	0.0							
	83.47					53.657		K Factor = 11.40
B	325.20	2.635	1T	11.758	9.583	33.343		
to		100		0.0	11.757	4.187		
C	325.2	0.3576		0.0	21.340	7.632		Vel = 19.13
C	0.0	2.635	1T	11.758	12.000	45.162		
to		100		0.0	11.757	0.0		
D	325.2	0.3576		0.0	23.757	8.495		Vel = 19.13
D	83.46	3.26	3E	20.143	18.000	53.657		
to		100		0.0	20.143	0.0		
D1	408.66	0.1936		0.0	38.143	7.383		Vel = 15.71
D1	0.0	3.26	1E	6.714	41.000	61.040		
to		100	1T	14.388	21.101	0.0		
RT	408.66	0.1936		0.0	62.101	12.020		Vel = 15.71
RT	0.0	4.26	1D	26.313	3.500	73.060		
to		100		0.0	26.313	1.732		
RD	408.66	0.0526		0.0	29.813	1.568		Vel = 9.20
RD	0.0	4.26	1B	15.8	3.000	76.360		
to		120	1W	13.562	29.362	1.155		
RB	408.66	0.0375		0.0	32.362	1.215		Vel = 9.20
RB	0.0	6.16	2E	40.168	150.000	78.730		
to		140	1T	43.037	87.509	-1.877		
X1	408.66	0.0047	1G	4.304	237.509	1.112		Vel = 4.40
X1	0.0	12.34	1T	93.767	100.000	77.965		
to		140		0.0	93.767	0.0		
X2	408.66	0.0002		0.0	193.767	0.031		Vel = 1.10
X2	0.0	6.16	1E	20.084	50.000	77.996		
to		140	1T	43.037	63.121	0.0		
X3	408.66	0.0047		0.0	113.121	0.530		Vel = 4.40
X3	0.0	6.16	1T	43.037	200.000	78.526		
to		140		0.0	43.037	0.0		
X4	408.66	0.0047		0.0	243.037	1.138		Vel = 4.40
X4	100.00	6.16		0.0	0.001	79.664		Qa = 100
to		140		0.0	0.0	-2.382		
TEST	508.66	0.0		0.0	0.001	0.0		Vel = 5.48
	0.0							
	508.66					77.282		K Factor = 57.86

Water Supply Curve (C)

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

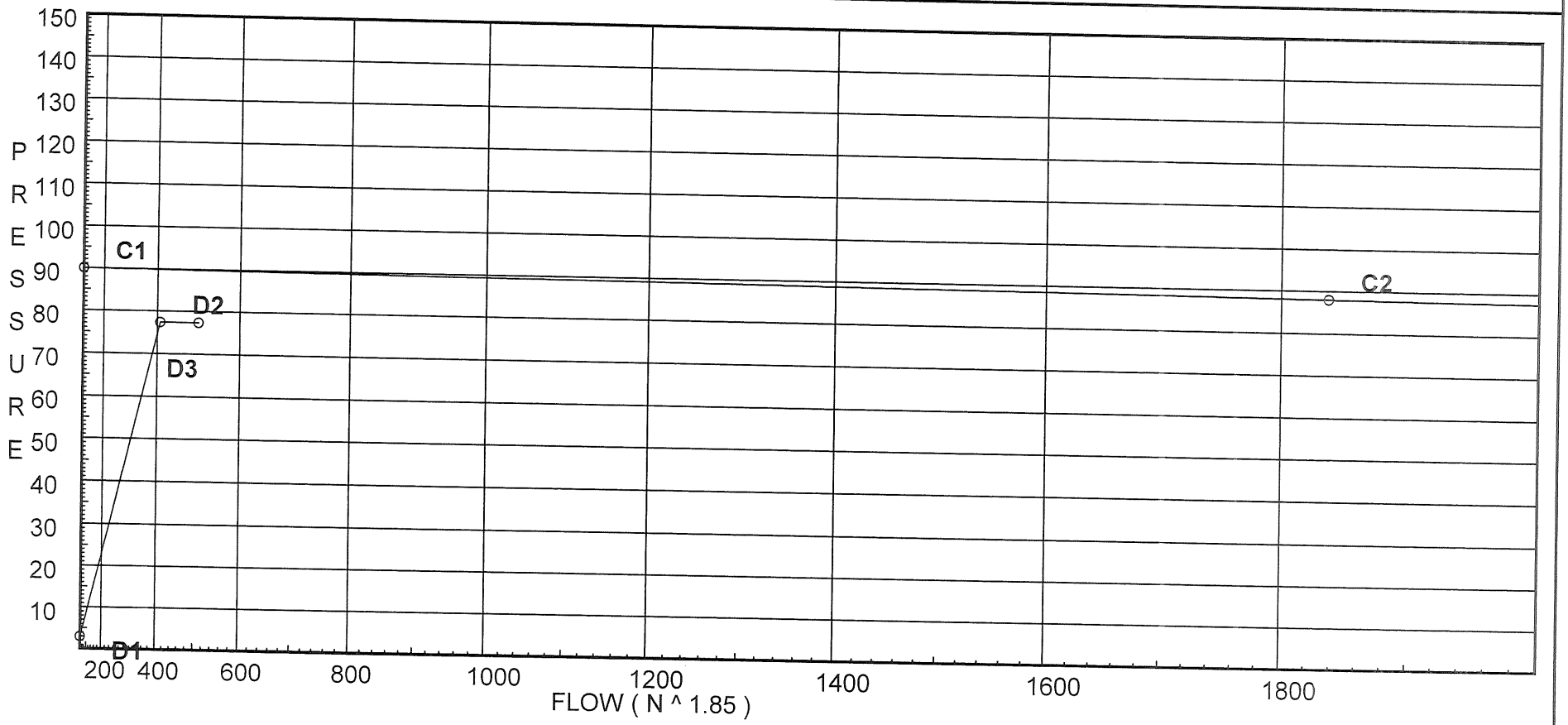
Date 12-17-09

City Water Supply:

C1 - Static Pressure	: 90
C2 - Residual Pressure	: 88
C2 - Residual Flow	: 1838

Demand:

D1 - Elevation	: 2.923
D2 - System Flow	: 408.665
D2 - System Pressure	: 77.282
Hose (Adj City)	:
Hose (Demand)	: 100
D3 - System Demand	: 508.665
Safety Margin	: 12.532



. . . Fire Protection by Computer Design

Sprinkler Systems, Inc.
2-4 Avon Street
P.O. Box 1285
Lewiston, Maine 04240
207-782-0104

Job Name	:	HUTCHINS FUNERAL HOME
Building	:	
Location	:	660 BRIGHTON AVENUE PORTLAND, ME 04103
System	:	1 OF 3
Contract	:	09058
Data File	:	HUTCHINS1.WXF

Hydraulic Design Information Sheet

Name - HUTCHINS FUNERAL HOME
Location - 660 BRIGHTON AVENUE PORTLAND, ME 04103
Building -
Contractor - HOMEWORKS BUILDERS
Calculated By - LLOYD D. AKERS, PE
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - FUNERAL HOME - LIGHT HAZARD

Date - 12-17-09

System No. - 1 OF 3
Contract No. - 09058
Drawing No. - 3 OF 3
Ceiling Height - N/A

SYSTEM

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling Made By Date

DESIGN

Area of Sprinkler Operation	- 7 HEAD	System Type	Sprinkler/Nozzle
Density	- .10	( ) Wet	Make TYCO-BB1
Area Per Sprinkler	- 380	(X) Dry	Model TY4180
Elevation at Highest Outlet	- 80.25	( ) Deluge	Size 3/4 X 3/4
Hose Allowance - Inside	-	( ) Preaction	K-Factor 8.0
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.200
Hose Allowance - Outside	- 100	ATTIC SPRINKLER HEADS	

Note DESIGN AREA NO.1 - ATTIC (PARLOR)

Calculation Summary: Flow Required - 370.668 Press Required - 71.30
C-Factor Used: 100 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:
Date of Test - 10-22-09
Time of Test -
Static Press - 90
Residual Press - 88
Flow - 1838
Elevation - 65.0 FT

Pump Data:
Rated Cap.-
@ Press -
Elev. -

Tank or Reservoir:
Cap. -
Elev.-

Well
Proof Flow

Location - GAUGE HYDRANT#1052 AND FLOW HYDRANT#1051 ARE LOCATED ON BRIGHTON AVENUE IN FRONT OF THE FUNERAL HOME PROPERTY.
Source of Information - PORTLAND WATER DISTRICT

COMMODITY STORAGE RACK

Commodity Class Location
Storage Ht. Area Aisle W.
Storage Method: Solid Piled % Palletized %

( ) Single Row	( ) Conven. Pallet	( ) Auto. Storage	( ) Encap.
( ) Double Row	( ) Slave Pallet	( ) Solid Shelf	( ) Non
( ) Mult. Row		( ) Open Shelf	

Flue Spacing
Longitudinal
Clearance: Storage to Ceiling
Transverse

Horizontal Barriers Provided:

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	Generic Butterfly Valve	0	0	0	0	0	0	7	10	0	12	9	10	12	19	21	0	0	0	0	0
D	Generic Dry Pipe Valve	0	0	0	0	0	0	9.5	17	0	28	0	47	0	0	0	0	0	0	0	0
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow Thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
W	Generic Wafer Check Vlv	0	0	0	0	0	0	0	0	0	10.3	0	13.1	31.8	35.8	27.4	0	0	0	0	0

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Pressure / Flow Summary - STANDARD

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Date 12-17-09

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
TYP	0.0	8	22.6	na	38.03	0.1	380	22.6
1	80.25	K = K @ SPG	25.93	na	38.03			
2	80.25	K = K @ SPG	25.97	na	38.06			
3	80.25	K = K @ SPG	26.12	na	38.17			
4	80.25	K = K @ SPG	26.43	na	38.39			
5	80.25	K = K @ SPG	26.96	na	38.78			
6	80.25	K = K @ SPG	27.76	na	39.35			
7	80.25	K = K @ SPG	28.52	na	39.89			
A	80.25		32.54	na				
B	71.5		45.34	na				
C	61.833		54.96	na				
D	61.833		61.01	na				
D1	61.833		64.45	na				
RT	61.833		70.06	na				
RD	57.833		72.53	na				
RB	55.167		74.25	na				
X1	59.5		72.89	na				
X2	59.5		72.9	na				
X3	59.5		73.15	na				
X4	59.5		73.68	na	100.0			
TEST	65.0		71.3	na				

The maximum velocity is 15.92 and it occurs in the pipe between nodes 7 and A

Final Calculations - Hazen-Williams

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Date 12-17-09

Hyd. Ref. Point	Qa / Qt	Dia. "C" / Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt / Pe / Pf	Pt / Pv / Pn	******* Notes ******
TYP	38.03	1.049	1T	3.568	2.000	22.600		K Factor = 8.00
to		100		0.0	3.568	0.0		
SPG	38.03	0.5988		0.0	5.568	3.334		Vel = 14.12
	0.0							
	38.03					25.934		K Factor = 7.47
1	38.03	2.635		0.0	6.000	25.934		K Factor @ node SPG
to		100		0.0	0.0	0.0		
2	38.03	0.0067		0.0	6.000	0.040		Vel = 2.24
2	38.06	2.635		0.0	6.000	25.974		K Factor @ node SPG
to		100		0.0	0.0	0.0		
3	76.09	0.0243		0.0	6.000	0.146		Vel = 4.48
3	38.17	2.635		0.0	6.000	26.120		K Factor @ node SPG
to		100		0.0	0.0	0.0		
4	114.26	0.0517		0.0	6.000	0.310		Vel = 6.72
4	38.40	2.635		0.0	6.000	26.430		K Factor @ node SPG
to		100		0.0	0.0	0.0		
5	152.66	0.0883		0.0	6.000	0.530		Vel = 8.98
5	38.77	2.635		0.0	6.000	26.960		K Factor @ node SPG
to		100		0.0	0.0	0.0		
6	191.43	0.1342		0.0	6.000	0.805		Vel = 11.26
6	39.35	2.635		0.0	4.000	27.765		K Factor @ node SPG
to		100		0.0	0.0	0.0		
7	230.78	0.1895		0.0	4.000	0.758		Vel = 13.58
7	39.89	2.635	1T	11.758	4.000	28.523		K Factor @ node SPG
to		100		0.0	11.757	0.0		
A	270.67	0.2547		0.0	15.757	4.013		Vel = 15.92
	0.0							
	270.67					32.536		K Factor = 47.45
A	270.67	2.635	3E	17.636	17.750	32.536		
to		100		0.0	17.637	3.790		
B	270.67	0.2546		0.0	35.387	9.011		Vel = 15.92
B	0.0	2.635	1T	11.758	9.583	45.337		
to		100		0.0	11.757	4.187		
C	270.67	0.2546		0.0	21.340	5.434		Vel = 15.92
C	0.0	2.635	1T	11.758	12.000	54.958		
to		100		0.0	11.757	0.0		
D	270.67	0.2547		0.0	23.757	6.050		Vel = 15.92
D	0.0	3.26	3E	20.143	18.000	61.008		
to		100		0.0	20.143	0.0		
D1	270.67	0.0903		0.0	38.143	3.444		Vel = 10.40
D1	0.0	3.26	1E	6.714	41.000	64.452		
to		100	1T	14.388	21.101	0.0		
RT	270.67	0.0903		0.0	62.101	5.609		Vel = 10.40

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
RT	0.0	4.26	1D	26.313	3.500	70.061		
to		100		0.0	26.313	1.732		
RD	270.67	0.0246		0.0	29.813	0.732		Vel = 6.09
RD	0.0	4.26	1B	15.8	3.000	72.525		
to		120	1W	13.562	29.362	1.155		
RB	270.67	0.0175		0.0	32.362	0.567		Vel = 6.09
RB	0.0	6.16	2E	40.168	150.000	74.247		
to		140	1T	43.037	87.509	-1.877		
X1	270.67	0.0022	1G	4.304	237.509	0.519		Vel = 2.91
X1	0.0	12.34	1T	93.767	100.000	72.889		
to		140		0.0	93.767	0.0		
X2	270.67	0.0001		0.0	193.767	0.015		Vel = 0.73
X2	0.0	6.16	1E	20.084	50.000	72.904		
to		140	1T	43.037	63.121	0.0		
X3	270.67	0.0022		0.0	113.121	0.247		Vel = 2.91
X3	0.0	6.16	1T	43.037	200.000	73.151		
to		140		0.0	43.037	0.0		
X4	270.67	0.0022		0.0	243.037	0.531		Vel = 2.91
X4	100.00	6.16		0.0	0.001	73.682		Qa = 100
to		140		0.0	0.0	-2.382		
TEST	370.67	0.0		0.0	0.001	0.0		Vel = 3.99
	0.0							
	370.67					71.300		K Factor = 43.90

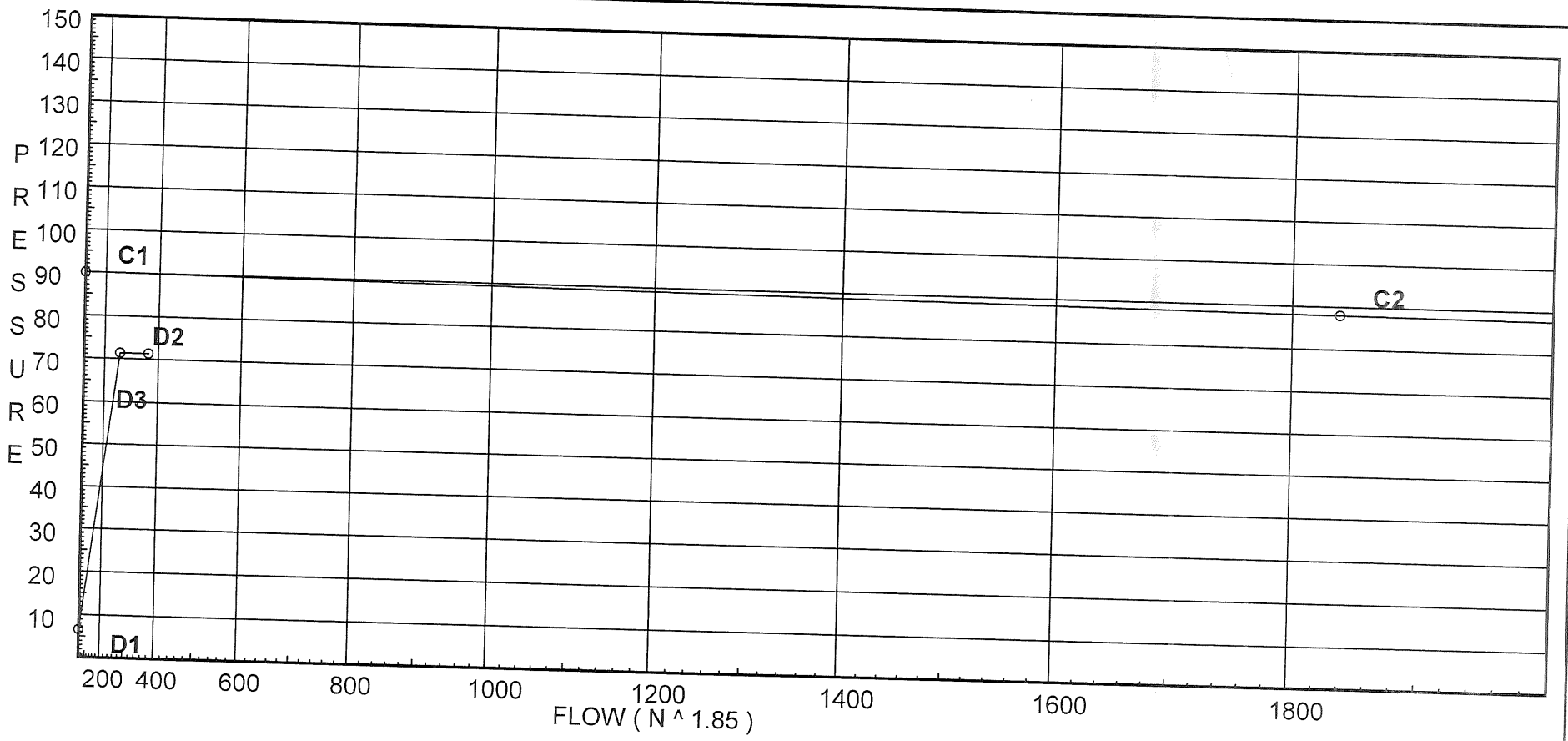
Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

City Water Supply:

C1 - Static Pressure	:	90
C2 - Residual Pressure	:	88
C2 - Residual Flow	:	1838

Demand:

D1 - Elevation	:	6.605
D2 - System Flow	:	270.668
D2 - System Pressure	:	71.300
Hose (Adj City)	:	
Hose (Demand)	:	100
D3 - System Demand	:	370.668
Safety Margin	:	18.596



. . . Fire Protection by Computer Design

Sprinkler Systems, Inc.
2-4 Avon Street
P.O. Box 1285
Lewiston, Maine 04240
207-782-0104

Job Name	:	HUTCHINS FUNERAL HOME
Building	:	
Location	:	660 BRIGHTON AVENUE PORTLAND, ME 04103
System	:	2 OF 3
Contract	:	09058
Data File	:	HUTCHINS2.WXF

Hydraulic Design Information Sheet

Name - HUTCHINS FUNERAL HOME
Location - 660 BRIGHTON AVENUE PORTLAND, ME 04103
Building -
Contractor - HOMEWORKS BUILDERS
Calculated By - LLOYD D. AKERS, PE
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - FUNERAL HOME - LIGHT HAZARD

Date - 12-17-09

System No. - 2 OF 3
Contract No. - 09058
Drawing No. - 3 OF 3
Ceiling Height - N/A

SYSTEM

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling Made By Date

DESIGN

Area of Sprinkler Operation	- 7 HEAD	System Type	Sprinkler/Nozzle
Density	- .10	( ) Wet	Make TYCO-BB1
Area Per Sprinkler	- 250	(X) Dry	Model TY3180
Elevation at Highest Outlet	- 73.5	( ) Deluge	Size 1/2 X 1/2
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.212
Hose Allowance - Outside	- 100	ATTIC SPRINKLER HEADS	

Note DESIGN AREA NO. 2 - ATTIC (OFFICES)

Calculation Summary: Flow Required - 280.14 Press Required - 51.653
C-Factor Used: 100 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:
Date of Test - 10-22-09
Time of Test -
Static Press - 90
Residual Press - 88
Flow - 1838
Elevation - 65.0 FT

Pump Data:
Rated Cap.-
@ Press -
Elev. -

Tank or Reservoir:
Cap. -
Elev.-

Well
Proof Flow

Location - GAUGE HYDRANT#1052 AND FLOW HYDRANT#1051 ARE LOCATED ON BRIGHTON AVENUE IN FRONT OF THE FUNERAL HOME PROPERTY.
Source of Information - PORTLAND WATER DISTRICT

COMM STORAGE

Commodity
Storage Ht.
Storage Method: Solid Piled Class Area % Palletized Location Aisle W. % Rack

RACK

( ) Single Row ( ) Conven. Pallet ( ) Auto. Storage ( ) Encap.
( ) Double Row ( ) Slave Pallet ( ) Solid Shelf ( ) Non
( ) Mult. Row ( ) Open Shelf

Flue Spacing
Longitudinal
Clearance:Storage to Ceiling
Transverse

Horizontal Barriers Provided:

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
8	73.5	5.6	20.0	na	25.04	0.1	250	20.0
9	73.5	5.6	20.03	na	25.06	0.1	250	20.0
10	73.5	5.6	20.21	na	25.18	0.1	250	20.0
11	73.5	5.6	20.59	na	25.41	0.1	250	20.0
12	73.5	5.6	21.24	na	25.81	0.1	250	20.0
13	73.5	5.6	22.23	na	26.41	0.1	250	20.0
14	73.5	5.6	23.64	na	27.23	0.1	250	20.0
E	72.0		33.48	na				
F	72.0		37.07	na				
G	61.833		47.49	na				
RT	61.833		51.8	na				
RD	57.833		53.87	na				
RB	55.167		55.29	na				
X1	59.5		53.66	na				
X2	59.5		53.67	na				
X3	59.5		53.79	na				
X4	59.5		54.04	na	100.0			
TEST	65.0		51.65	na				

The maximum velocity is 15.82 and it occurs in the pipe between nodes 14 and E

Hyd. Ref. Point	Qa / Qt	Dia. / "C" / Pf/Ft	Fitting or Eqv.	Ln.	Pipe / Ftng's / Total	Pt / Pe / Pf	Pt / Pv / Pn	******* Notes ******
8	25.04	2.157		0.0	4.000	20.000		K Factor = 5.60
to		100		0.0	0.0	0.0		
9	25.04	0.0082		0.0	4.000	0.033		Vel = 2.20
9	25.07	2.157		0.0	6.000	20.033		K Factor = 5.60
to		100		0.0	0.0	0.0		
10	50.11	0.0298		0.0	6.000	0.179		Vel = 4.40
10	25.17	2.157		0.0	6.000	20.212		K Factor = 5.60
to		100		0.0	0.0	0.0		
11	75.28	0.0632		0.0	6.000	0.379		Vel = 6.61
11	25.42	2.157		0.0	6.000	20.591		K Factor = 5.60
to		100		0.0	0.0	0.0		
12	100.7	0.1085		0.0	6.000	0.651		Vel = 8.84
12	25.81	2.157		0.0	6.000	21.242		K Factor = 5.60
to		100		0.0	0.0	0.0		
13	126.51	0.1652		0.0	6.000	0.991		Vel = 11.11
13	26.40	2.157		0.0	6.000	22.233		K Factor = 5.60
to		100		0.0	0.0	0.0		
14	152.91	0.2347		0.0	6.000	1.408		Vel = 13.43
14	27.23	2.157	1E	4.392	15.750	23.641		K Factor = 5.60
to		100	1T	8.783	13.174	0.650		
E	180.14	0.3178		0.0	28.924	9.192		Vel = 15.82
	0.0							
	180.14					33.483		K Factor = 31.13
E	180.14	2.157	1T	8.783	2.500	33.483		
to		100		0.0	8.783	0.0		
F	180.14	0.3178		0.0	11.283	3.586		Vel = 15.82
F	0.0	2.157	1T	8.783	10.167	37.069		
to		100		0.0	8.783	4.403		
G	180.14	0.3178		0.0	18.950	6.023		Vel = 15.82
G	0.0	2.157	1T	8.783	4.750	47.495		
to		100		0.0	8.783	0.0		
RT	180.14	0.3178		0.0	13.533	4.301		Vel = 15.82
RT	0.0	4.26	1D	26.313	3.500	51.796		
to		100		0.0	26.313	1.732		
RD	180.14	0.0116		0.0	29.813	0.345		Vel = 4.05
RD	0.0	4.26	1B	15.8	3.000	53.873		
to		120	1W	13.562	29.362	1.155		
RB	180.14	0.0082		0.0	32.362	0.266		Vel = 4.05
RB	0.0	6.16	2E	40.168	150.000	55.294		
to		140	1T	43.037	87.509	-1.877		
X1	180.14	0.0010	1G	4.304	237.509	0.245		Vel = 1.94
X1	0.0	12.34	1T	93.767	100.000	53.662		
to		140		0.0	93.767	0.0		
X2	180.14	0.0		0.0	193.767	0.007		Vel = 0.48

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
X2	0.0	6.16	1E	20.084	50.000	53.669		
to		140	1T	43.037	63.121	0.0		
X3	180.14	0.0010		0.0	113.121	0.116		Vel = 1.94
X3	0.0	6.16	1T	43.037	200.000	53.785		
to		140		0.0	43.037	0.0		
X4	180.14	0.0010		0.0	243.037	0.250		Vel = 1.94
X4	100.00	6.16		0.0	0.001	54.035		Qa = 100
to		140		0.0	0.0	-2.382		
TEST	280.14	0.0		0.0	0.001	0.0		Vel = 3.02
	0.0							
	280.14					51.653		K Factor = 38.98

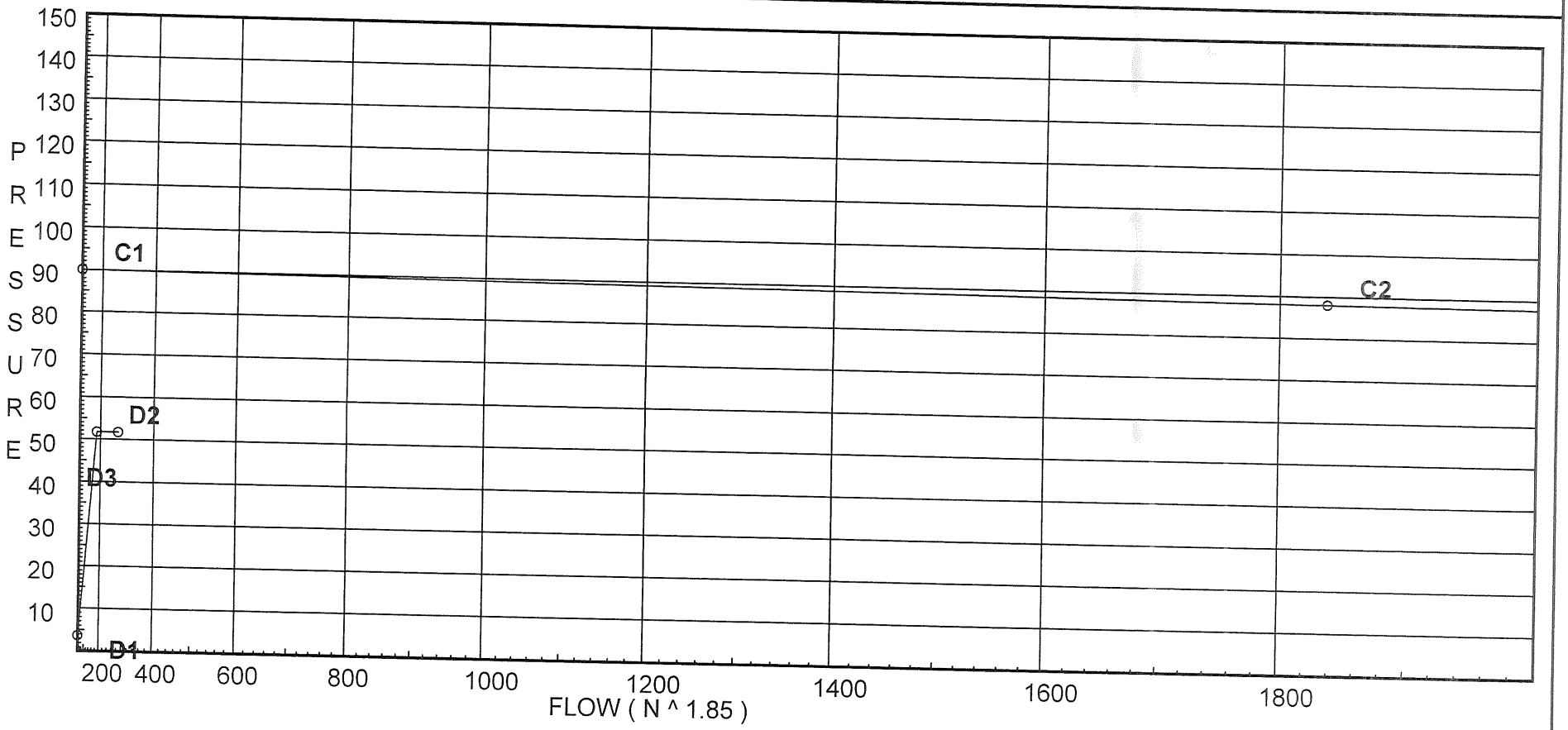
Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

City Water Supply:

C1 - Static Pressure	: 90
C2 - Residual Pressure:	88
C2 - Residual Flow	: 1838

Demand:

D1 - Elevation	: 3.681
D2 - System Flow	: 180.14
D2 - System Pressure	: 51.653
Hose (Adj City)	:
Hose (Demand)	: 100
D3 - System Demand	: 280.14
Safety Margin	: 38.285



. . . Fire Protection by Computer Design

Sprinkler Systems, Inc.
2-4 Avon Street
P.O. Box 1285
Lewiston, Maine 04240
207-782-0104

Job Name	:	HUTCHINS FUNERAL HOME
Building	:	
Location	:	660 BRIGHTON AVENUE PORTLAND, ME 04103
System	:	3 OF 3
Contract	:	09058
Data File	:	HUTCHINS3.WXF

Hydraulic Design Information Sheet

Name - HUTCHINS FUNERAL HOME
Location - 660 BRIGHTON AVENUE PORTLAND, ME 04103
Building -
Contractor - HOMEWORKS BUILDERS
Calculated By - LLOYD D. AKERS, PE
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - FUNERAL HOME - LIGHT HAZARD

Date - 12-17-09

System No. - 3 OF 3
Contract No. - 09058
Drawing No. - 2 OF 3
Ceiling Height - N/A

SYSTEM

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other
Specific Ruling Made By Date

DESIGN

Area of Sprinkler Operation	- 1950SF	System Type	Sprinkler/Nozzle
Density	- .10	( ) Wet	Make RELIABLE
Area Per Sprinkler	- 148.2	(X) Dry	Model FIFR
Elevation at Highest Outlet	- 71.750	( ) Deluge	Size 1/2 X 1/2
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.155
Hose Allowance - Outside	- 100		

Note DESIGN AREA NO.3 - PARLORS

Calculation Summary: Flow Required - 508.665 Press Required - 77.282
C-Factor Used: 100 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:
Date of Test - 10-22-09
Time of Test -
Static Press - 90
Residual Press - 88
Flow - 1838
Elevation - 65.0 FT

Pump Data:
Rated Cap.-
@ Press -
Elev. -

Tank or Reservoir:
Cap. -
Elev.-

Well
Proof Flow

Location - GAUGE HYDRANT#1052 AND FLOW HYDRANT#1051 ARE LOCATED ON BRIGHTON AVENUE IN FRONT OF THE FUNERAL HOME PROPERTY.
Source of Information - PORTLAND WATER DISTRICT

COMMODITY STORAGE

Commodity
Storage Ht.
Storage Method: Solid Piled Class Area % Palletized Location Aisle W. % Rack

( ) Single Row ( ) Conven. Pallet ( ) Auto. Storage ( ) Encap.
( ) Double Row ( ) Slave Pallet ( ) Solid Shelf ( ) Non
( ) Mult. Row ( ) Open Shelf

Flue Spacing
Longitudinal
Clearance:Storage to Ceiling
Transverse

Horizontal Barriers Provided:

Sprinkler Systems, Inc.
HUTCHINS FUNERAL HOME

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
TYP	0.0	5.6	7.0	na	14.82	0.1	148.2	7.0
TYP1	0.0	5.6	7.0	na	14.82	0.1	148.2	7.0
TYP2	0.0	5.6	9.0	na	16.8	0.1	168	9.0
TYP3	0.0	5.6	9.0	na	16.8	0.1	168	9.0
TYP4	0.0	5.6	7.0	na	14.82	0.1	148.2	7.0
15	71.667	K = K @ DRO	14.77	na	20.54			
16	71.667	K = K @ DRO	16.68	na	21.84			
17	71.667	K = K @ DRO1	17.74	na	22.16			
18	71.667	K = K @ DRO1	22.77	na	25.1			
19	71.75	K = K @ DRO2	10.11	na	16.8			
20	71.75	K = K @ DRO2	11.96	na	18.27			
21	71.75	K = K @ DRO2	13.98	na	19.75			
22	73.75	K = K @ DRO3	12.11	na	18.5			
23	73.75	K = K @ DRO3	14.0	na	19.89			
24	71.5		18.05	na				
25	71.5	K = K @ DRO2	20.1	na	23.68			
26	71.5	K = K @ DRO2	15.56	na	20.84			
27	71.5	K = K @ DRO2	18.31	na	22.61			
28	71.5		21.24	na				
29	71.5	K = K @ DRO1	22.2	na	24.78			
30	71.5	K = K @ DRO2	21.01	na	24.21			
31	71.5	K = K @ DRO2	24.64	na	26.23			
32	71.5	K = K @ DRO2	24.62	na	26.21			
33	71.5	K = K @ DRO2	28.83	na	28.37			
35	71.5	K = K @ DRO4	28.53	na	28.89			
34	71.5		30.44	na				
36	61.25		42.17	na				
AA	71.25		28.29	na				
BB	71.25		28.59	na				
CC	71.25		28.98	na				
DD	61.25		48.4	na				
EE	61.25		51.22	na				
B	71.5		33.34	na				
C	61.833		45.16	na				
D	61.833		53.66	na				
D1	61.833		61.04	na				
RT	61.833		73.06	na				
RD	57.833		76.36	na				
RB	55.167		78.73	na				
X1	59.5		77.97	na				
X2	59.5		78.0	na				
X3	59.5		78.53	na				
X4	59.5		79.66	na	100.0			
TEST	65.0		77.28	na				

The maximum velocity is 19.13 and it occurs in the pipe between nodes CC and B

Hyd. Ref. Point	Qa / Qt	Dia. / "C" / Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt / Pe / Pf	Pt / Pv / Pn	******* Notes ******
TYP	14.82	1.049	1E	1.427	1.500	7.004		K Factor = 5.60
to		100	1T	3.568	4.995	0.0		
DRO	14.82	0.1047		0.0	6.495	0.680		Vel = 5.50
	0.0							
	14.82					7.684		K Factor = 5.35
TYP1	14.82	1.049	2E	2.855	2.500	7.004		K Factor = 5.60
to		100	1T	3.568	6.423	0.0		
DRO1	14.82	0.1047		0.0	8.923	0.934		Vel = 5.50
	0.0							
	14.82					7.938		K Factor = 5.26
TYP2	16.80	1.049	2E	2.855	2.000	9.000		K Factor = 5.60
to		100	1T	3.568	6.423	0.0		
DRO2	16.8	0.1320		0.0	8.423	1.112		Vel = 6.24
	0.0							
	16.80					10.112		K Factor = 5.28
TYP3	16.80	1.049	1E	1.427	2.500	9.000		K Factor = 5.60
to		100	1T	3.568	4.995	0.0		
DRO3	16.8	0.1321		0.0	7.495	0.990		Vel = 6.24
	0.0							
	16.80					9.990		K Factor = 5.32
TYP4	14.82	1.049	1T	3.568	1.250	7.004		K Factor = 5.60
to		100		0.0	3.568	0.0		
DRO4	14.82	0.1046		0.0	4.818	0.504		Vel = 5.50
	0.0							
	14.82					7.508		K Factor = 5.41
15	20.54	1.049		0.0	10.000	14.767		K Factor @ node DRO
to		100		0.0	0.0	0.0		
16	20.54	0.1916		0.0	10.000	1.916		Vel = 7.62
16	21.84	1.38		0.0	5.500	16.683		K Factor @ node DRO
to		100		0.0	0.0	0.0		
17	42.38	0.1925		0.0	5.500	1.059		Vel = 9.09
17	22.16	1.38		0.0	12.000	17.742		K Factor @ node DRO1
to		100		0.0	0.0	0.0		
18	64.54	0.4188		0.0	12.000	5.026		Vel = 13.84
18	25.10	1.61	1T	5.71	9.000	22.768		K Factor @ node DRO1
to		100		0.0	5.710	0.181		
AA	89.64	0.3631		0.0	14.710	5.341		Vel = 14.13
	0.0							
	89.64					28.290		K Factor = 16.85
19	16.80	1.049		0.0	14.000	10.112		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
20	16.8	0.1321		0.0	14.000	1.849		Vel = 6.24

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
20	18.27	1.38	1E	2.141	12.750	11.961		K Factor @ node DRO2
to		100		0.0	2.141	0.0		
21	35.07	0.1356		0.0	14.891	2.019		Vel = 7.52
21	19.75	1.38	1T	4.282	8.500	13.980		K Factor @ node DRO2
to		100		0.0	4.282	0.108		
24	54.82	0.3097		0.0	12.782	3.959		Vel = 11.76
	0.0							
	54.82					18.047		K Factor = 12.90
22	18.50	1.049		0.0	12.000	12.108		K Factor @ node DRO3
to		100		0.0	0.0	0.0		
23	18.5	0.1578		0.0	12.000	1.894		Vel = 6.87
23	19.88	1.38	1E	2.141	12.750	14.002		K Factor @ node DRO3
to		100	1T	4.282	6.423	0.974		
24	38.38	0.1602		0.0	19.173	3.071		Vel = 8.23
	0.0							
	38.38					18.047		K Factor = 9.03
24	93.21	1.61		0.0	5.250	18.047		
to		100		0.0	0.0	0.0		
25	93.21	0.3903		0.0	5.250	2.049		Vel = 14.69
25	23.68	2.157		0.0	8.000	20.096		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
28	116.89	0.1429		0.0	8.000	1.143		Vel = 10.26
	0.0							
	116.89					21.239		K Factor = 25.36
26	20.84	1.049		0.0	14.000	15.558		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
27	20.84	0.1967		0.0	14.000	2.754		Vel = 7.74
27	22.60	1.38	1T	4.282	10.250	18.312		K Factor @ node DRO2
to		100		0.0	4.282	0.0		
28	43.44	0.2014		0.0	14.532	2.927		Vel = 9.32
	0.0							
	43.44					21.239		K Factor = 9.43
28	160.34	2.157		0.0	3.750	21.239		
to		100		0.0	0.0	0.0		
29	160.34	0.2563		0.0	3.750	0.961		Vel = 14.08
29	24.78	2.157	1T	8.783	10.000	22.200		K Factor @ node DRO1
to		100		0.0	8.783	0.108		
BB	185.12	0.3342		0.0	18.783	6.278		Vel = 16.25
	0.0							
	185.12					28.586		K Factor = 34.62
30	24.21	1.049		0.0	14.000	21.007		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
31	24.21	0.2597		0.0	14.000	3.636		Vel = 8.99

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt / Pe / Pf	Pt / Pv / Pn	******* Notes ******
31	26.23	1.38	1E	2.141	9.500	24.643		K Factor @ node DRO2
to		100	1T	4.282	6.423	0.108		
CC	50.44	0.2655		0.0	15.923	4.228		Vel = 10.82
	0.0							
	50.44					28.979		K Factor = 9.37
32	26.21	1.049		0.0	14.000	24.618		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
33	26.21	0.3008		0.0	14.000	4.211		Vel = 9.73
33	28.37	1.38		0.0	5.250	28.829		K Factor @ node DRO2
to		100		0.0	0.0	0.0		
34	54.58	0.3072		0.0	5.250	1.613		Vel = 11.71
	0.0							
	54.58					30.442		K Factor = 9.89
35	28.89	1.049	1T	3.568	1.750	28.527		K Factor @ node DRO4
to		100		0.0	3.568	0.0		
34	28.89	0.3601		0.0	5.318	1.915		Vel = 10.72
34	54.58	1.61	2E	5.71	11.500	30.442		
to		100	1T	5.71	11.420	4.439		
36	83.47	0.3182		0.0	22.920	7.293		Vel = 13.15
36	0.0	1.61	1E	2.855	11.000	42.174		
to		100	1T	5.71	8.565	0.0		
DD	83.47	0.3182		0.0	19.565	6.226		Vel = 13.15
	0.0							
	83.47					48.400		K Factor = 12.00
AA	89.64	2.635		0.0	9.000	28.290		
to		100		0.0	0.0	0.0		
BB	89.64	0.0329		0.0	9.000	0.296		Vel = 5.27
BB	185.12	2.635		0.0	1.500	28.586		
to		100		0.0	0.0	0.0		
CC	274.76	0.2620		0.0	1.500	0.393		Vel = 16.17
CC	50.44	2.635	1T	11.758	0.750	28.979		
to		100		0.0	11.757	-0.108		
B	325.2	0.3576		0.0	12.507	4.472		Vel = 19.13
	0.0							
	325.20					33.343		K Factor = 56.32
DD	83.47	2.157	1T	8.783	28.000	48.400		
to		100		0.0	8.783	0.0		
EE	83.47	0.0766		0.0	36.783	2.816		Vel = 7.33
EE	0.0	2.157	1E	4.392	22.000	51.216		
to		100	1T	8.783	13.174	-0.252		
D	83.47	0.0766		0.0	35.174	2.693		Vel = 7.33

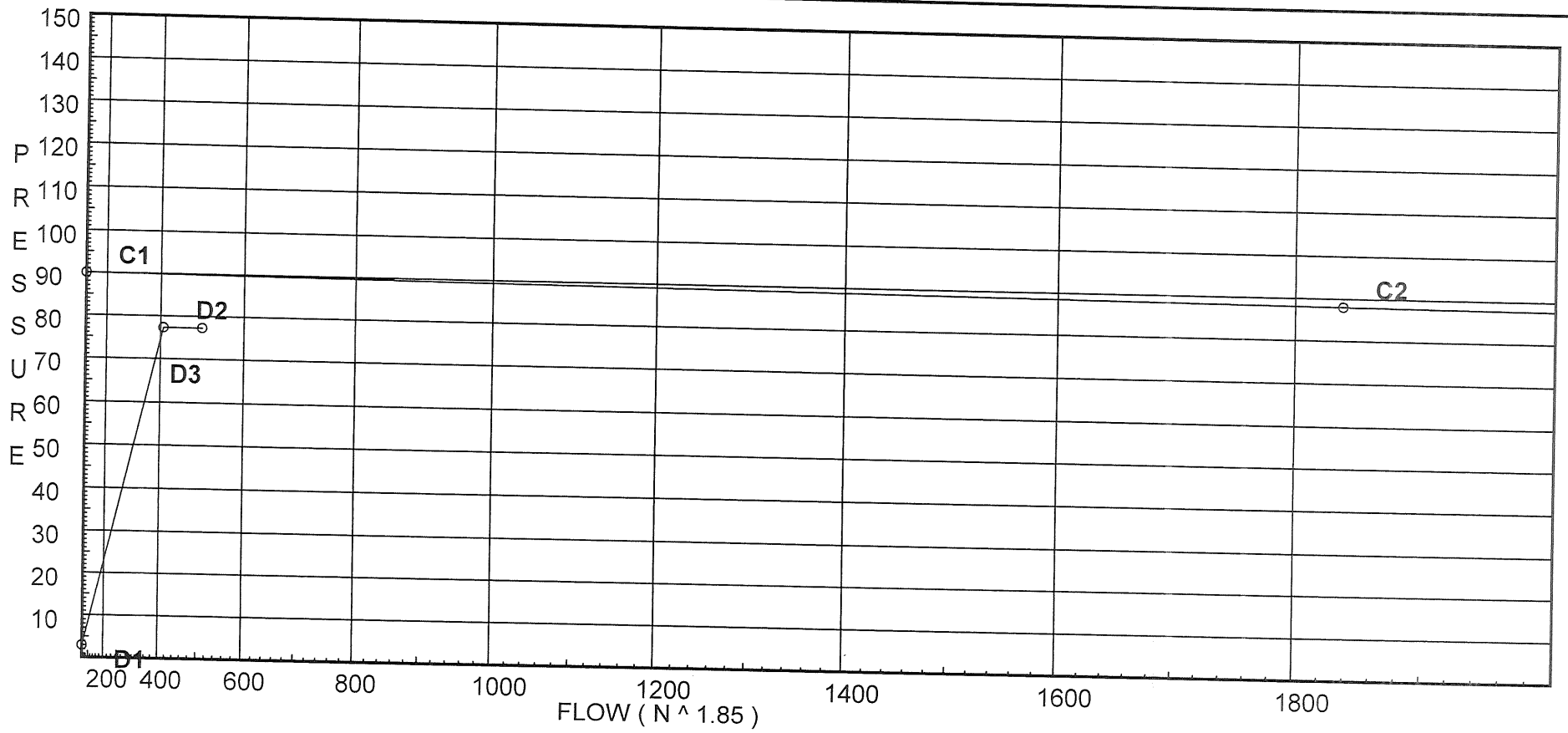
Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
	0.0						
	83.47				53.657		K Factor = 11.40
B	325.20	2.635	1T 11.758	9.583	33.343		
to		100	0.0	11.757	4.187		
C	325.2	0.3576	0.0	21.340	7.632		Vel = 19.13
C	0.0	2.635	1T 11.758	12.000	45.162		
to		100	0.0	11.757	0.0		
D	325.2	0.3576	0.0	23.757	8.495		Vel = 19.13
D	83.46	3.26	3E 20.143	18.000	53.657		
to		100	0.0	20.143	0.0		
D1	408.66	0.1936	0.0	38.143	7.383		Vel = 15.71
D1	0.0	3.26	1E 6.714	41.000	61.040		
to		100	1T 14.388	21.101	0.0		
RT	408.66	0.1936	0.0	62.101	12.020		Vel = 15.71
RT	0.0	4.26	1D 26.313	3.500	73.060		
to		100	0.0	26.313	1.732		
RD	408.66	0.0526	0.0	29.813	1.568		Vel = 9.20
RD	0.0	4.26	1B 15.8	3.000	76.360		
to		120	1W 13.562	29.362	1.155		
RB	408.66	0.0375	0.0	32.362	1.215		Vel = 9.20
RB	0.0	6.16	2E 40.168	150.000	78.730		
to		140	1T 43.037	87.509	-1.877		
X1	408.66	0.0047	1G 4.304	237.509	1.112		Vel = 4.40
X1	0.0	12.34	1T 93.767	100.000	77.965		
to		140	0.0	93.767	0.0		
X2	408.66	0.0002	0.0	193.767	0.031		Vel = 1.10
X2	0.0	6.16	1E 20.084	50.000	77.996		
to		140	1T 43.037	63.121	0.0		
X3	408.66	0.0047	0.0	113.121	0.530		Vel = 4.40
X3	0.0	6.16	1T 43.037	200.000	78.526		
to		140	0.0	43.037	0.0		
X4	408.66	0.0047	0.0	243.037	1.138		Vel = 4.40
X4	100.00	6.16	0.0	0.001	79.664		Qa = 100
to		140	0.0	0.0	-2.382		
TEST	508.66	0.0	0.0	0.001	0.0		Vel = 5.48
	0.0						
	508.66				77.282		K Factor = 57.86

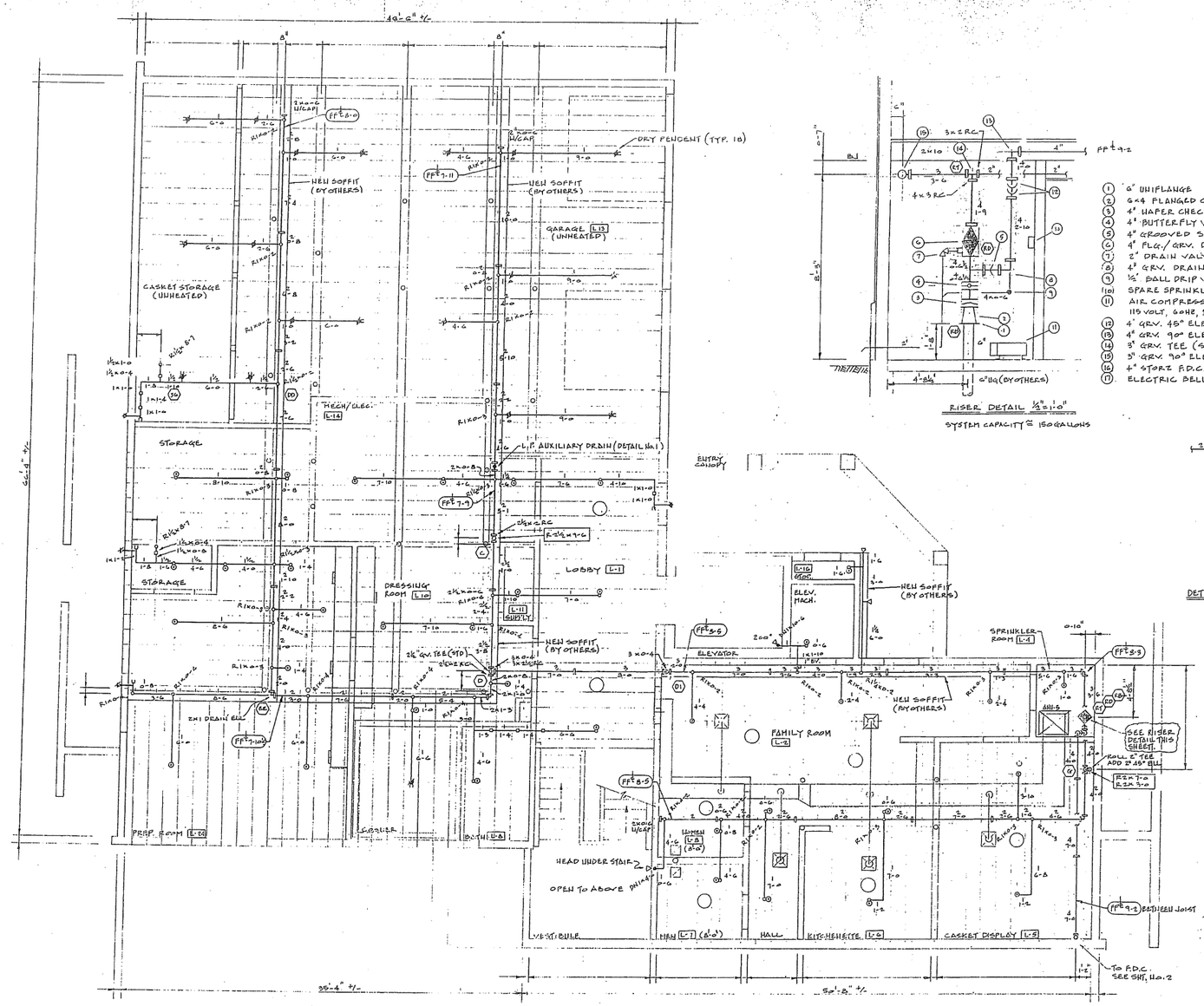
City Water Supply:

C1 - Static Pressure	: 90
C2 - Residual Pressure	: 88
C2 - Residual Flow	: 1838

Demand:

D1 - Elevation	: 2.923
D2 - System Flow	: 408.665
D2 - System Pressure	: 77.282
Hose (Adj City)	:
Hose (Demand)	: 100
D3 - System Demand	: 508.665
Safety Margin	: 12.532

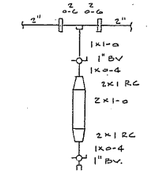




LOWER LEVEL FLOOR PLAN 1/4"=1'-0" (4375 SF)
CEILINGS AT 8'-9 1/2"

RISER DETAIL 1/2"=1'-0"
SYSTEM CAPACITY ≅ 150 GALLONS

1. 6" UNIFLANGE
2. 6x4 FLANGED CONCENTRIC REDUCER
3. 4" WAFER CHECK VALVE
4. 4" BUTTERFLY VALVE WITH TAMPER SWITCH
5. 4" GROOVED SWING CHECK VALVE
6. 4" FLG./GRV. DRY PIPE VALVE, MODEL "D"
7. 2" DRAIN VALVE
8. 4" GRV. DRAIN ELBOW (H/ 1/2 NPT. OUTLET)
9. 1/2" BALL DRIP VALVE
10. SPARE SPRINKLER HEAD CABINET
11. AIR COMPRESSOR 1/3 HP, 180 GALLON 115 VOLT, 60HZ, 1 PHASE, 8.2 AMPS.
12. 4" GRV. 45° ELBOW
13. 4" GRV. 90° ELBOW (FIRELOCK)
14. 3" GRV. TEE (STANDARD)
15. 3" GRV. 90° ELBOW (FIRELOCK)
16. 4" STORZ F.D.C. (H/WALL PLATE)
17. ELECTRIC BELL



DETAIL No.1- AUXILIARY DRAIN

GENERAL NOTES:

1. DESIGN BASIS: HYDRAULICALLY CALCULATED 2007 NFPA 13 DRY PIPE SYSTEM (SEE HYDRAULIC DATA STAMPS)
2. OCCUPANCY: FUNERAL HOME LIGHT HAZARD
   PARLORS, OFFICES, LOBBY — LIGHT HAZARD .10 DENSITY 225 SF/HD
   PREP., RESTROOMS, RECEPT. — LIGHT HAZARD .10 DENSITY 225 SF/HD
   ATTIC (WITH ATTIC HEADS) — LIGHT HAZARD .10 DENSITY
   STORAGE, MECH./ELECT. — ORDINARY GR. .15 DENSITY 130 SF/HD
3. PIPING TO BE TESTED @ 200 PSI, FOR NOT LESS THAN 2 HOURS.
4. PIPE 1" THRU 1 1/2" TO BE SCH. 40 STEEL WITH CAST IRON THREADED FITTINGS.
5. PIPE 2" & LARGER TO BE THINWALL STEEL WITH GROOVED FITTINGS.
6. PIPE & HANGERLINE DIMENSIONS TO BE CUT LENGTHS FOR FABRICATION AND INSTALLATION.
7. OWNER TO PROVIDE ADEQUATE HEATING TO PREVENT FREEZING OF WET PORTION OF SPRINKLER PIPING, MINIMUM 40°F.
8. SYMBOLS:
   - PIPE COUPLINGS
   - HYDRAULIC DATA REFERENCE POINTS
   - FF℄ FINISHED FLOOR ELEVATION TO ℄ OF PIPE
   - BJ℄ BOTTOM OF JOIST TO ℄ OF PIPE
   - TBC℄ TOP OF BOTTOM CHORD OF TRUSS TO ℄ OF PIPE

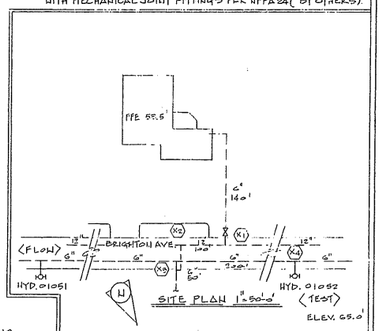
ARCHITECT: DLL ASSOCIATES/ARCHITECTS
198 MAIN STREET SUITE-C
LEWISTON, ME 04240 (207-344-6611)

OWNER: HUTCHINS FUNERAL HOME

WATER SUPPLY: PORTLAND WATER DISTRICT (207-774-5961)
TEST DATE - 10-22-09
TEST HYDRANT - No. 01052
FLOW HYDRANT - No. 01051
STATIC PRESSURE - 90 PSI
RESIDUAL PRESSURE - 88 PSI
FLOW RATE, GPM - 1838 GPM

RECEIVED
FEB - 8 2010
Dept. of Building Inspections
City of Portland Maine

ALL UNDERGROUND PIPE BURIAL AT 5'-6" MIN. CLASS 52 CLDI WITH MECHANICAL JOINT FITTINGS PER NFPA 24 (BY OTHERS).



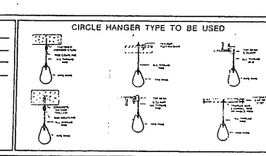
SITE PLAN 1"=50'-0"

MOST HYDRAULICALLY REMOTE DESIGN AREA No. 3

HYDRAULIC DESIGN CRITERIA	
Density	.10
Remote Area	1950 SF
K Factor 5.6	Head Size 1/2x1/2
Hose Allowance	100 GPM
Water Supply	
Static	90
Residual	38
Water Flowing	1838
Size of Supply	6" & 12"

LIGHT HAZARD
1. Type of Hazard ORD. HZ. I
2. Deflector Distance 1" TO 6"
3. Pipe Type Used SCH. 40/THL
4. Sprinkler Area 13,100 SF
5. Type of Construction COMBUSTIBLE
6. Maximum Spacing Allowed 15x15 = 225 S.F.
7. PIPE SIZING METHOD; PIPE SCHEDULE ☐ HYDRAULICALLY CALCULATED ☒
8. ALL HANGERS AND LOCATIONS TO BE IN ACCORDANCE WITH N.F.P.A. PAMPHLET NO. 13
9. HIGH DEGREE TEMPERATURE SPRINKLER HEADS TO BE INSTALLED IN ACCORDANCE WITH N.F.P.A. PAMPHLET NO. 13

CIRCLE HANGER TYPE TO BE USED



HANGERS	
Symbol	Description
—/—	1/8" SUPER SANITY
	3/8" ALLTHREAD ROD
	PIPE FINGS

ABBREVIATIONS	
B	Bottom of Beam
D	Bottom of Deck
P	Center of Pipe
HV	Hose Valve
N.C.	Nipple and Cap
N.D.	Nipple and Drain
N.T.S.	Not to Scale
O.B.J.	Open Bar Joists
F.R.V.	Fire Riser Valve
F.H.	Fire Hydrant
S.P.	Sprinkler
T.O.S.	Top of Beam
T.O.P.	Top of Pipe
T.O.S.	Top of Steel
U.O.N.	Unless Otherwise Noted
℄	Centerline
N.A.S.	No Automatic Sprinklers
O.T.A.	Open To Above

CONTRACT RESPONSIBILITIES		
ITEM	FPC	OTHER
STREET CONN		
U.G. MAIN		
EXCAVATION		
FLUSHING		
WIRING		
PAINTING		
TAMPER SWITCHES		
FLOW SWITCHES		
CUT & PATCHING		

SPRINKLER HEAD LEGEND

SYMBOL	MAKE	MODEL	FINISH	TYPE	TEMP.	N.P.T.	ORIFICE	K-FACTOR	TOTAL
DOJ	TYCO	FDI	TY4156	BRASS	ATTIC	200°	3/8	3/4	5.0	12-15
DOJ(R)	TYCO	FDI	TY3156	BRASS	ATTIC	212	1/2	1/2	5.6	3-3
ø	RELIABLE	F3AR	WHITE	SQ. RESP.	155	1	1/2	5.0	16-16
⊙	RELIABLE	F1FR	WHITE	SQ. RESPND	155	1/2	1/2	5.6	32-32
—◁	RELIABLE	F1FR	WHITE	SQ. H.S.U.	155	1/2	1/2	5.6	3-3
—⊣	RELIABLE	F1FR	CHROME	DRY PEND.	155	1	1/2	5.6	5-5
—◁ 1/2"	RELIABLE	F1FR	BRASS	SQ. H.S.U.	200°	1/2	1/2	5.6	1-1
○	RELIABLE	F1FR	WHITE	SQ. RESP.	155°	1/2	1/2	5.6	2-2

TOTAL-187

SUBMITTALS		
SENT TO	DATE SENT	DATE RECEIVED
ISO ☐		
FM ☐		
LM ☐		
IRI ☐		
LA ☐		
STATE FIRE ☒		
LOCAL FIRE ☒		
LOCAL WATER ☐		
GEN. CONTR. ☒		
☐		

LICENSE # 393 PERMIT #
R.M.S. # 284

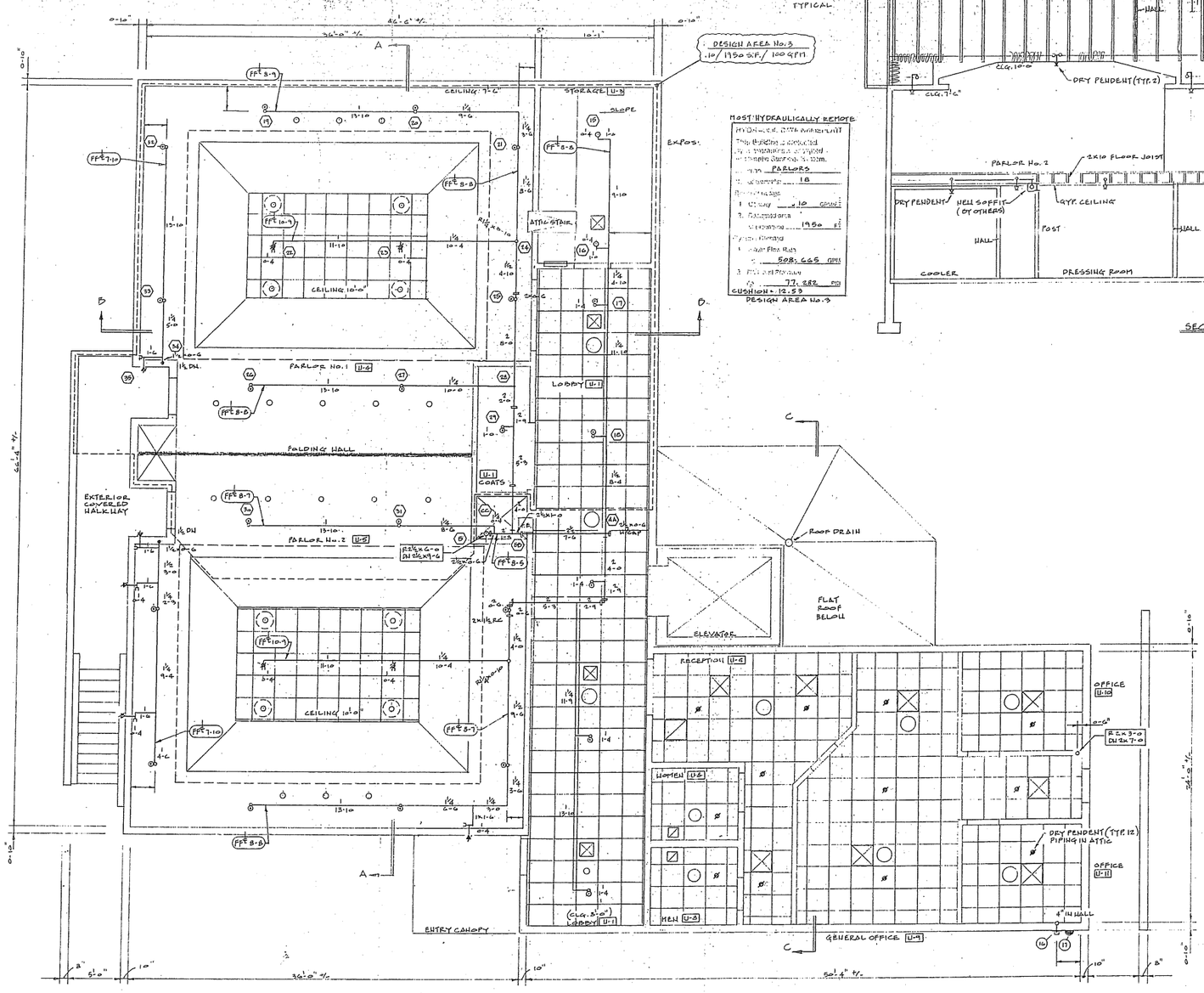
SPRINKLER SYSTEMS INC.
P.O. BOX 1285
LEWISTON, MAINE
04240

HUTCHINS FUNERAL HOME
660 BRIGHTON AVENUE
PORTLAND, MAINE 04103

CONTRACT WITH HOMESWORKS BUILDERS

SYSTEM TYPE		REVISIONS		
WET ☐	NO.	DATE	DESCRIPTION	
DRY ☒				
DELUGE ☐				
PREACTION ☐				
ME. LIFE ☐				
☐				

SCALE	1/4"=1'-0"
DRAWN BY	LDA
CHECKED BY	SEG
DATE	12-17-09
TOTAL SPKRS ON JOB	127
SHEET #	1 OF 3
JOB #	09058

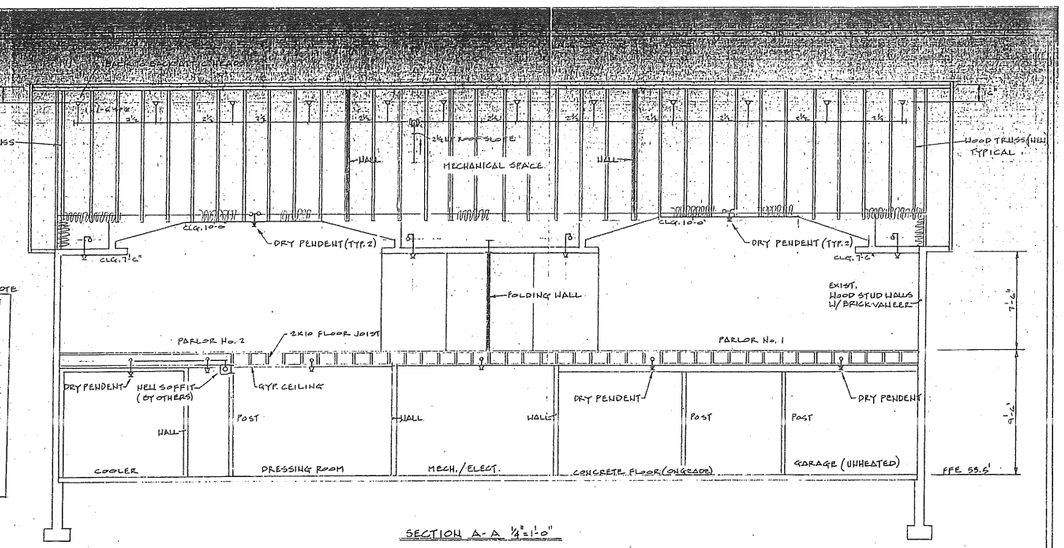


UPPER LEVEL FLOOR PLAN 1/4"=1'-0" (4970 SF)

CEILINGS AS SHOWN FFE = 63.0'

5 / 1997	1 x 1/2 OR DRY HORZ. SIDEWALL RELIABLE F5OR K=5.6 (WHITE)
16 / 1995	1 x 1/2 OR DRY RECESSED PENDENT RELIABLE F5OR K=5.6 WHITE
22 / 1995	1/2 x 1/2 OR RECESSED PENDENT RELIABLE F1FR K=5.6 WHITE
2 / 1995	1/2 x 1/2 OR UPRIGHT BRASS RELIABLE F1FR K=5.6

TOTAL 45 SPRINKLER HEADS THIS DRAWING



SECTION A-A 1/4"=1'-0"

LICENSE # 2973 PERMIT #
R.M.S. # 2284

SPRINKLER SYSTEMS INC.

P.O. BOX 1285
LEWISTON MAINE
04240

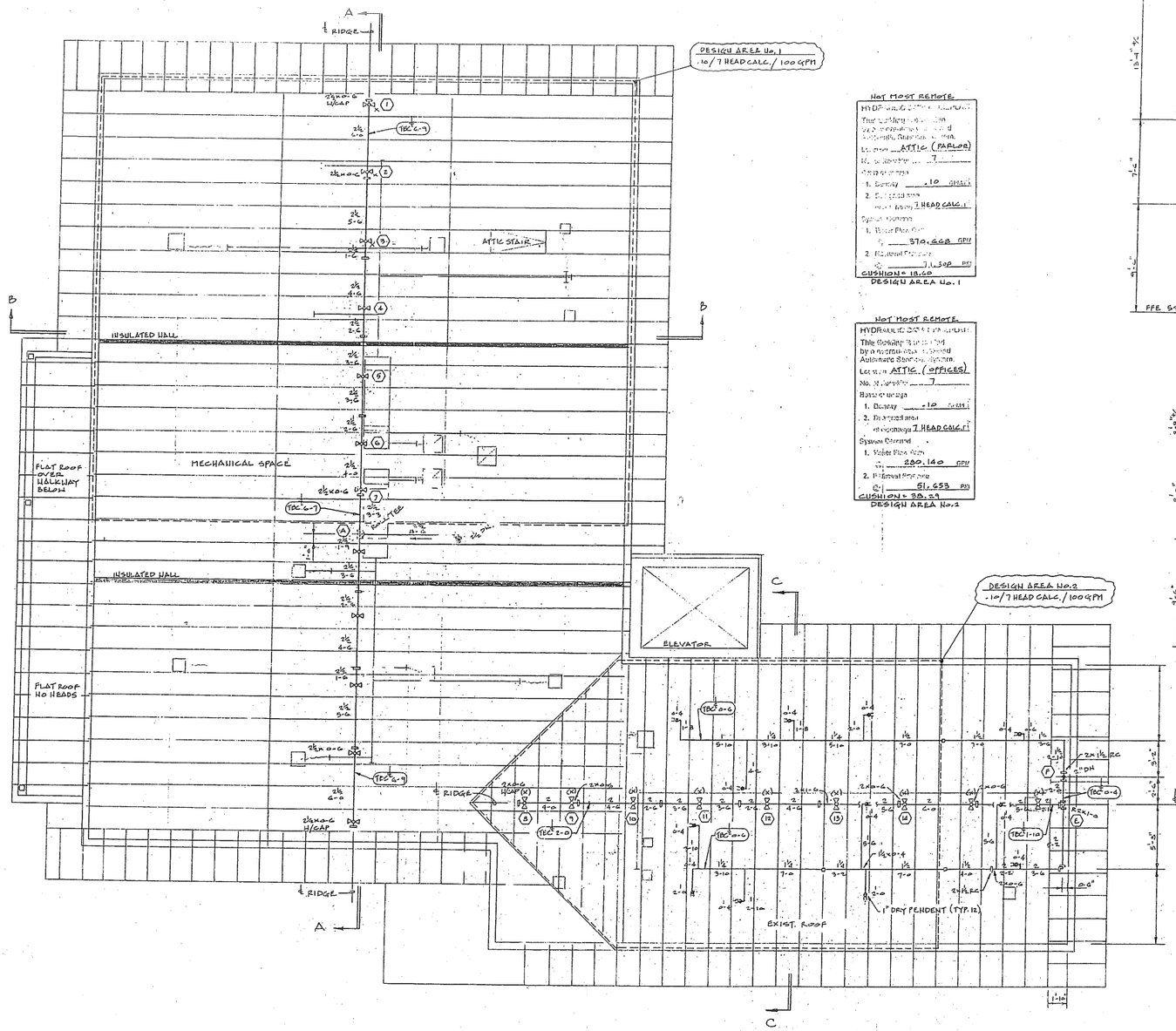
HUTCHINS FUNERAL HOME
660 BRIGHTON AVENUE
PORTLAND, MAINE 04103

CONTRACT WITH HOMEWORKS BUILDERS

SYSTEM TYPE	
WET	☐
DRY	☒
DELUGE	☐
PREACTION	☐
ME LIFE	☐
	☐

REVISIONS		
NO.	DATE	DESCRIPTION

SCALE	1/4"=1'-0"
DRAWN BY	LDA.
CHECKED BY	SEG
DATE	12-17-09
TOTAL SPKRS ON JOB	127
SHEET #	2 of 3
JOB #	09058



ROOF PLAN 1/4" = 1'-0" (4575 S.F.)

NOT MOST REMOTE

HYDRAULIC CALCULATION SUMMARY

This calculation is based on a hydraulically designed Automatic Sprinkler System.

Location ATTIC (PARLOR)

No. of Sprinklers 7

Basic Criteria

1. Density .10 GPM/SQ.FT.
2. Designed area 1 HEAD CALC.

System Demand

1. Water Flow Rate 570.668 GPM
2. Residual Pressure 71.308 PSI

CUSHION = 18.60

DESIGN AREA No. 1

NOT MOST REMOTE

HYDRAULIC CALCULATION SUMMARY

This calculation is based on a hydraulically designed Automatic Sprinkler System.

Location ATTIC (OFFICES)

No. of Sprinklers 7

Basic Criteria

1. Density .10 GPM/SQ.FT.
2. Designed area 1 HEAD CALC.

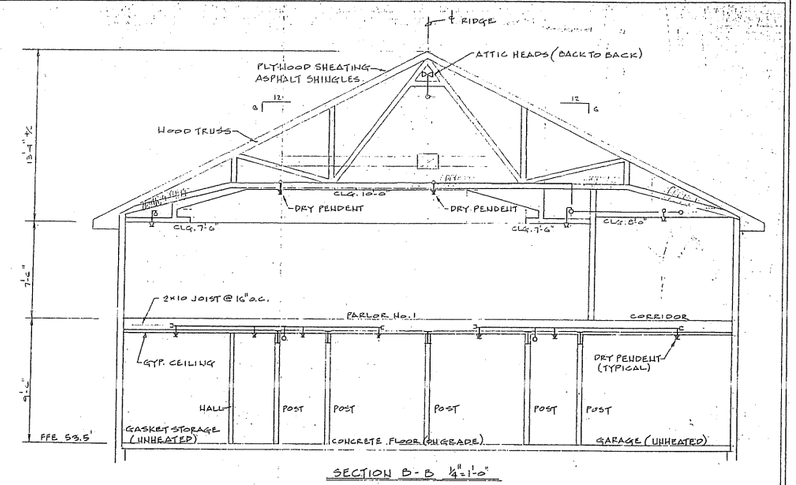
System Demand

1. Water Flow Rate 280.140 GPM
2. Residual Pressure C-1 51.653 PSI

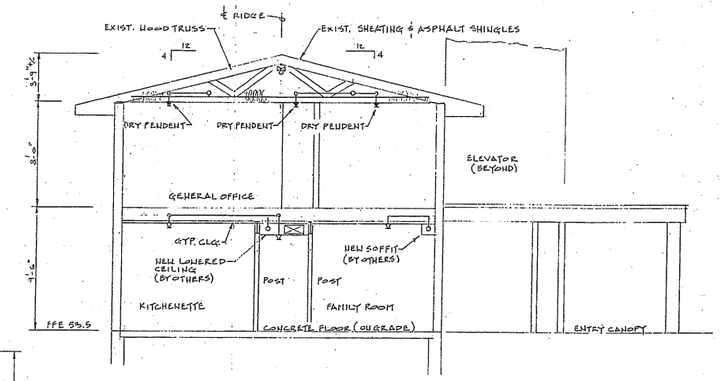
CUSHION = 30.53

DESIGN AREA No. 2

DOG	12/200	1/2 x 3/4 BACK TO BACK ATTIC HEADS (BB1) TYCO TY4130 K=8.0 (BRASS)
(X) DOG	9/215	1/2 x 1/2 BACK TO BACK ATTIC HEADS (BB1) TYCO TY3130 K=5.6 (BRASS)



SECTION B-B 1/4" = 1'-0"



SECTION C-C 1/4" = 1'-0"

LICENSE # 075 PERMIT #
R.M.S. # 284

SPRINKLER SYSTEMS INC.
P.O. BOX 1285
LEWISTON MAINE
04240

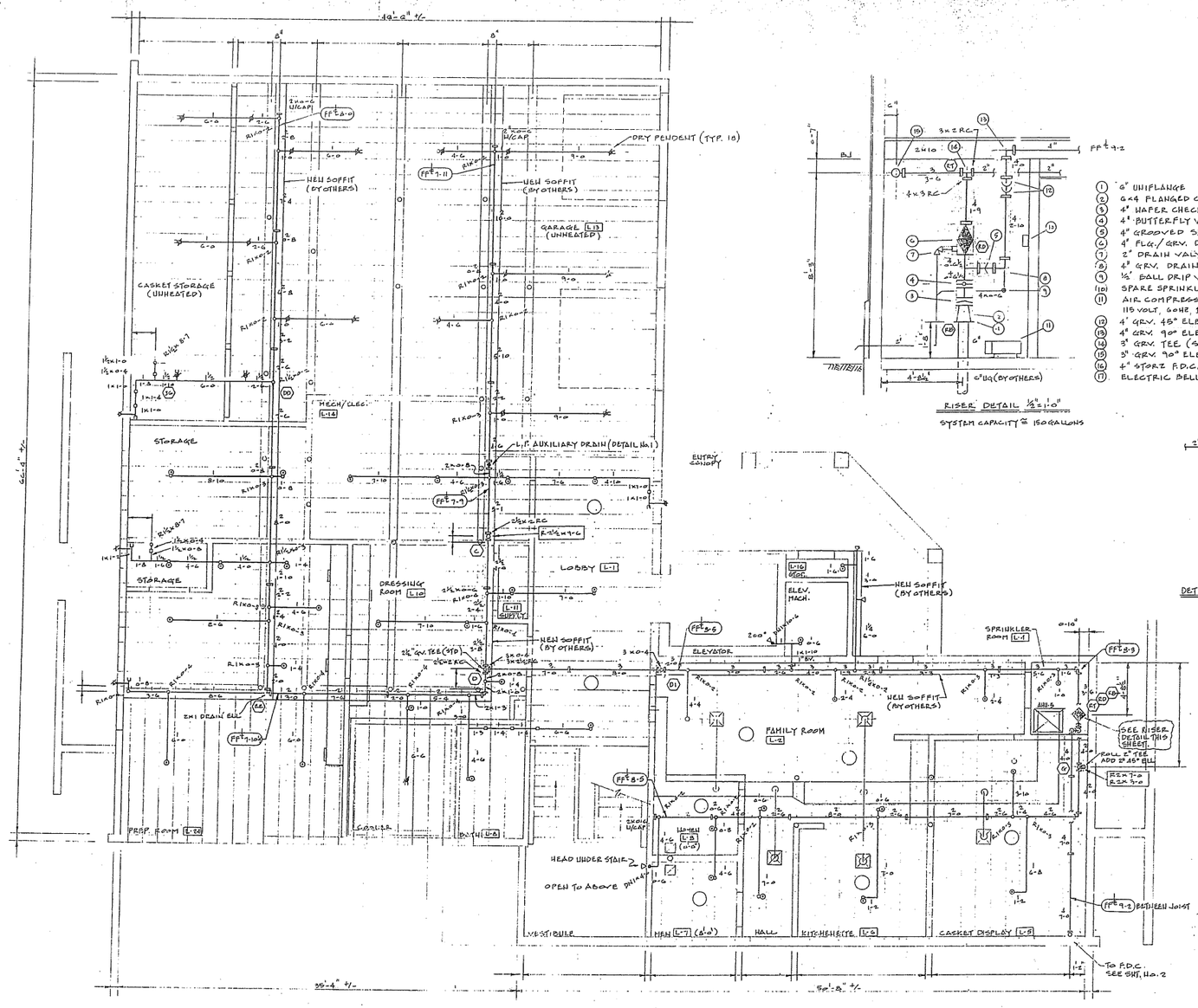
HUTCHINS FUNERAL HOME
660 BRIGHTON AVENUE
PORTLAND, MAINE. 04103

CONTRACT WITH HOMEWORKS BUILDERS

SYSTEM TYPE	
WET	☐
DRY	☒
DELUGE	☐
PREACTION	☐
NFPA LIFE	☐
	☐

REVISIONS		
NO.	DATE	DESCRIPTION

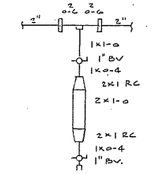
SCALE	1/4" = 1'-0"
DRAWN BY	LDA
CHECKED BY	SEG
DATE	12-17-07
TOTAL SPKRS ON JOB	127
SHEET #	3 of 3
JOB #	07055



LOWER LEVEL FLOOR PLAN 1/4"=1'-0" (4375 SF)
CEILINGS AT 8'-9 1/2"

RISER DETAIL 1/2"=1'-0"
SYSTEM CAPACITY ≅ 150 GALLONS

1. 6" UNIFLANGE
2. 6x4 FLANGED CONCENTRIC REDUCER
3. 4" WAFER CHECK VALVE
4. 4" BUTTERFLY VALVE WITH TAMPER SWITCH
5. 4" GROOVED SWING CHECK VALVE
6. 4" FLG/GRV. DRY PIPE VALVE, MODEL "D"
7. 2" DRAIN VALVE
8. 2" GRV. DRAIN ELBOW (H/ 1/2 NPT. OUTLET)
9. 1/2" BALL DRIP VALVE
10. SPARE SPRINKLER HEAD CABINET
11. AIR COMPRESSOR 1/3 HP, 180 GALLON 115 VOLT, 60HZ, 1 PHASE, 8.2 AMPS.
12. 4" GRV. 45° ELBOW
13. 4" GRV. 90° ELBOW (FIRELOCK)
14. 3" GRV. TEE (STANDARD)
15. 3" GRV. 90° ELBOW (FIRELOCK)
16. 4" STORZ F.D.C. (W/WALL PLATE)
17. ELECTRIC BELL



DETAIL No.1- AUXILIARY DRAIN

GENERAL NOTES:

1. DESIGN BASIS: HYDRAULICALLY CALCULATED 2007 NFPA 13 DRY PIPE SYSTEM (SEE HYDRAULIC DATA STAMPS)
2. OCCUPANCY: FUNERAL HOME LIGHT HAZARD
   PARLORS, OFFICES, LOBBY — LIGHT HAZARD .10 DENSITY 225 SF/HD
   PREP, RESTROOMS, RECEPT. — LIGHT HAZARD .10 DENSITY 225 SF/HD
   ATTIC (WITH ATTIC HEADS) — LIGHT HAZARD .10 DENSITY
   STORAGE, MECH./ELECT. — ORDINARY GP. .15 DENSITY 130 SF/HD
3. PIPING TO BE TESTED @ 200 PSI, FOR NOT LESS THAN 2 HOURS.
4. PIPE 1" THRU 1 1/2" TO BE SCH. 40 STEEL WITH CAST IRON THREADED FITTINGS.
5. PIPE 2" & LARGER TO BE THINWALL STEEL WITH GROOVED FITTINGS.
6. PIPE & HANGERLINE DIMENSIONS TO BE CUT LENGTHS FOR FABRICATION AND INSTALLATION.
7. OWNER TO PROVIDE ADEQUATE HEATING TO PREVENT FREEZING OF WET PORTION OF SPRINKLER PIPING, MINIMUM 40°F.
8. SYMBOLS:
   - PIPE COUPLINGS
   - HYDRAULIC DATA REFERENCE POINTS
   - FF℄ FINISHED FLOOR ELEVATION TO ℄ OF PIPE
   - BJ℄ BOTTOM OF JOIST TO ℄ OF PIPE
   - TBC℄ TOP OF BOTTOM CHORD OF TRUSS TO ℄ OF PIPE

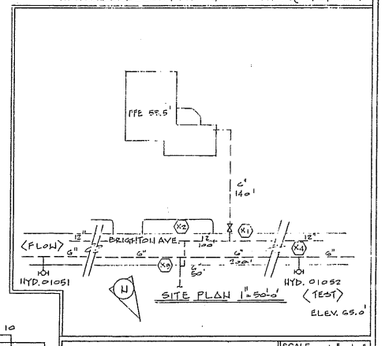
ARCHITECT: DLL ASSOCIATES/ARCHITECTS
198 MAIN STREET SUITE-C
LEWISTON, ME 04240 (207-344-6611)

OWNER: HUTCHINS FUNERAL HOME

WATER SUPPLY: PORTLAND WATER DISTRICT (207-774-5961)
TEST DATE - 10-22-09
TEST HYDRANT - No. 01052
FLOW HYDRANT - No. 01051
STATIC PRESSURE - 90 PSI
RESIDUAL PRESSURE - 38 PSI
FLOW RATE, GPM - 1830 GPM

RECEIVED
FEB - 8 2010
Dept. of Building Inspections
City of Portland Maine

ALL UNDERGROUND PIPE BURIAL AT 5'-0" MIN. CLASS 52 CLDI WITH MECHANICAL JOINT FITTINGS PER NFPA 24 (BY OTHERS)



SITE PLAN 1"=50'-0"

MOST HYDRAULICALLY REMOTE DESIGN AREA No. 3

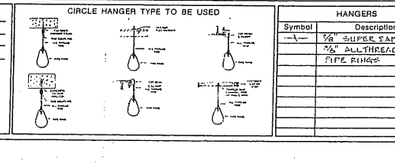
HYDRAULIC DESIGN CRITERIA

Density .10
Remote Area 1950 SF
K Factor 5.6 Head Size 1/2"x1/2"
Hose Allowance 100 GPM
Water Supply
Static 90
Residual 38
Water Flowing 1838
Size of Supply 6" 10'

LIGHT HAZARD

1. Type of Hazard SEE SP. 1
2. Deflector Distance 1" TO 6"
3. Pipe Type Used SCH. 40/TH
4. Sprinkler Area 130 SF
5. Type of Construction COMBUSTIBLE
6. Maximum Spacing Allowed 15x15 = 225 S.F.
7. PIPE SIZING METHOD; PIPE SCHEDULE ☐ HYDRAULICALLY CALCULATED ☒
8. ALL HANGERS AND LOCATIONS TO BE IN ACCORDANCE WITH N F P A PAMPHLET NO. 13
9. HIGH DEGREE TEMPERATURE SPRINKLER HEADS TO BE INSTALLED IN ACCORDANCE WITH N F P A PAMPHLET NO. 13

CIRCLE HANGER TYPE TO BE USED



HANGERS

Symbol	Description
	5/8" SUPER TANTY
	5/8" ALLTHREAD ROD FIRE FLINGS

ABBREVIATIONS

B	Bottom of Beam
D	Bottom of Deck
DP	Bottom of Pipe
HV	Hose Valve
H & C	Nipple and Cap
H & S	Hose and Stretch
NTS	Not to Scale
OBJ	Open End Joists
PRV	Pressure Reg Valve
RM	Roof Monitor
SP	Sheetrock
TOB	Top of Beam
TOP	Top of Pipe
TOS	Top of Steel
UON	Unless Otherwise Noted
℄	Centerline
AAS	All Automatic Sprinklers
OTA	Down To Above

CONTRACT RESPONSIBILITIES

ITEM	FPC	OTHERS
STREET CONN		
MAIN		
EXCAVATION		
FLUSHING		
WIRING		
PAINTING		
TAMPER SWITCHES		
FLOW SWITCHES		
CUT & PATCHING		

SPRINKLER HEAD LEGEND

SYMBOL	MAKE	MODEL	FINISH	TYPE	TEMP.	N.P.T.	ORIFICE	K-FACTOR	TOTAL
DOG	TYCO	FRI	TY 4130	BRASS	ATTIC	200°	3/8	3/4	8.0	12/12
DOG (C)	TYCO	FRI	TY 3130	BRASS	ATTIC	212	1/2	1/2	5.6	9/9
	RELIABLE	F5QR	WHITE	DOR PEND.	LSS	1	1/2	5.6	16/16
	RELIABLE	F1FR	WHITE	DOR RECESSED	LSS	1/2	1/2	5.6	22/22
	RELIABLE	F1FR	WHITE	DOR H.S.U.	LSS	1/2	1/2	5.6	3/3
	RELIABLE	F1FR	CHROME	DOR H.S.U.	LSS	1	1/2	5.6	5/5
	RELIABLE	F1FR	BRASS	DOR H.S.U.	200°	1/2	1/2	5.6	1/1
	RELIABLE	F1FR	WHITE	DOR TFR	155°	1/2	1/2	5.6	2/2

TOTAL - 127

SUBMITTALS

SENT TO	DATE SENT	DATE RECEIVED
ISO		
FM		
LM		
IRI		
LA		
STATE FIRE		
LOCAL FIRE		
LOCAL WATER		
GEN. CONTR.		

LICENSE # 093 R.M.S. # 284 — PERMIT #

SPRINKLER SYSTEMS INC.
P.O. BOX 1285
LEWISTON MAINE
04240

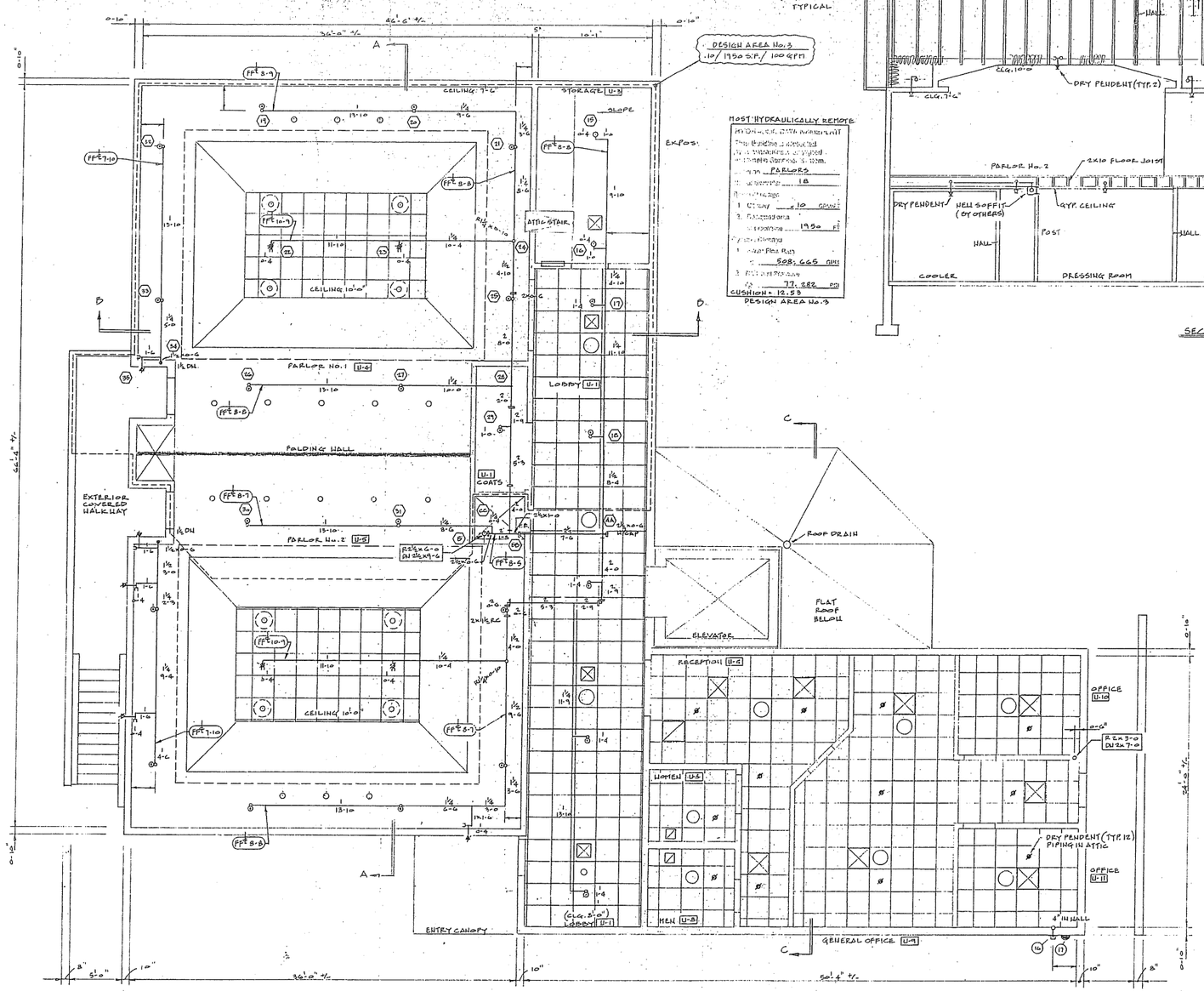
HUTCHINS FUNERAL HOME
660 BRIGHTON AVENUE
PORTLAND, MAINE 04103

CONTRACT WITH HOMEWORKS BUILDERS

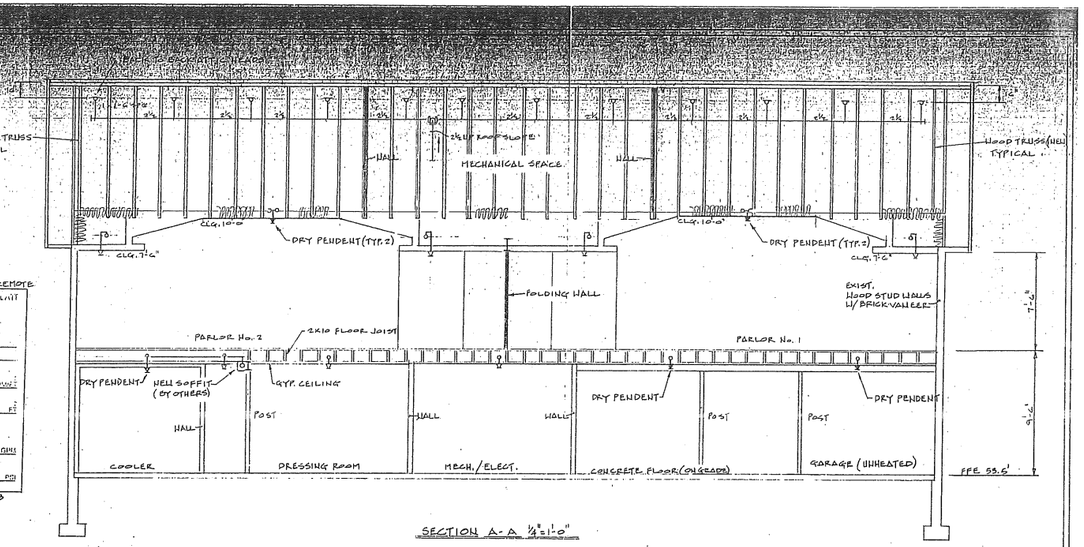
SYSTEM TYPE	
WET	☐
DRY	☒
DELUGE	☐
PREACTION	☐
ME. LIFE	☐

REVISIONS		
NO.	DATE	DESCRIPTION

SCALE	1/4"=1'-0"
DRAWN BY	LDA
CHECKED BY	SEG
DATE	12-17-09
TOTAL SPKRS ON JOB	127
SHEET #	1 OF 3
JOB #	09058



UPPER LEVEL FLOOR PLAN 1/4"=1'-0" (4970 SF)
CEILINGS AS SHOWN FFE = 63.0'



SECTION A-A 1/4"=1'-0"

→	5 / 155°	1 x 1/2 OR DRY HORZ. SIDEWALL RELIABLE F30R K=5.6 (WHITE)
ø	16 / 155°	1 x 1/2 OR DRY RECESSED PENDENT RELIABLE F30R K=5.6 WHITE
⊙	22 / 155°	1/2 x 1/2 OR RECESSED PENDENT RELIABLE F1FR K=5.6 WHITE
○	2 / 155°	1/2 x 1/2 OR UPRIGHT BRASS RELIABLE F1FR K=5.6

TOTAL 45 SPRINKLER HEADS THIS DRAWING

LICENSE # 0795 PERMIT #
A.M.S. # 284

SPRINKLER SYSTEMS INC.
P.O. BOX 1285
LEWISTON MAINE
04240

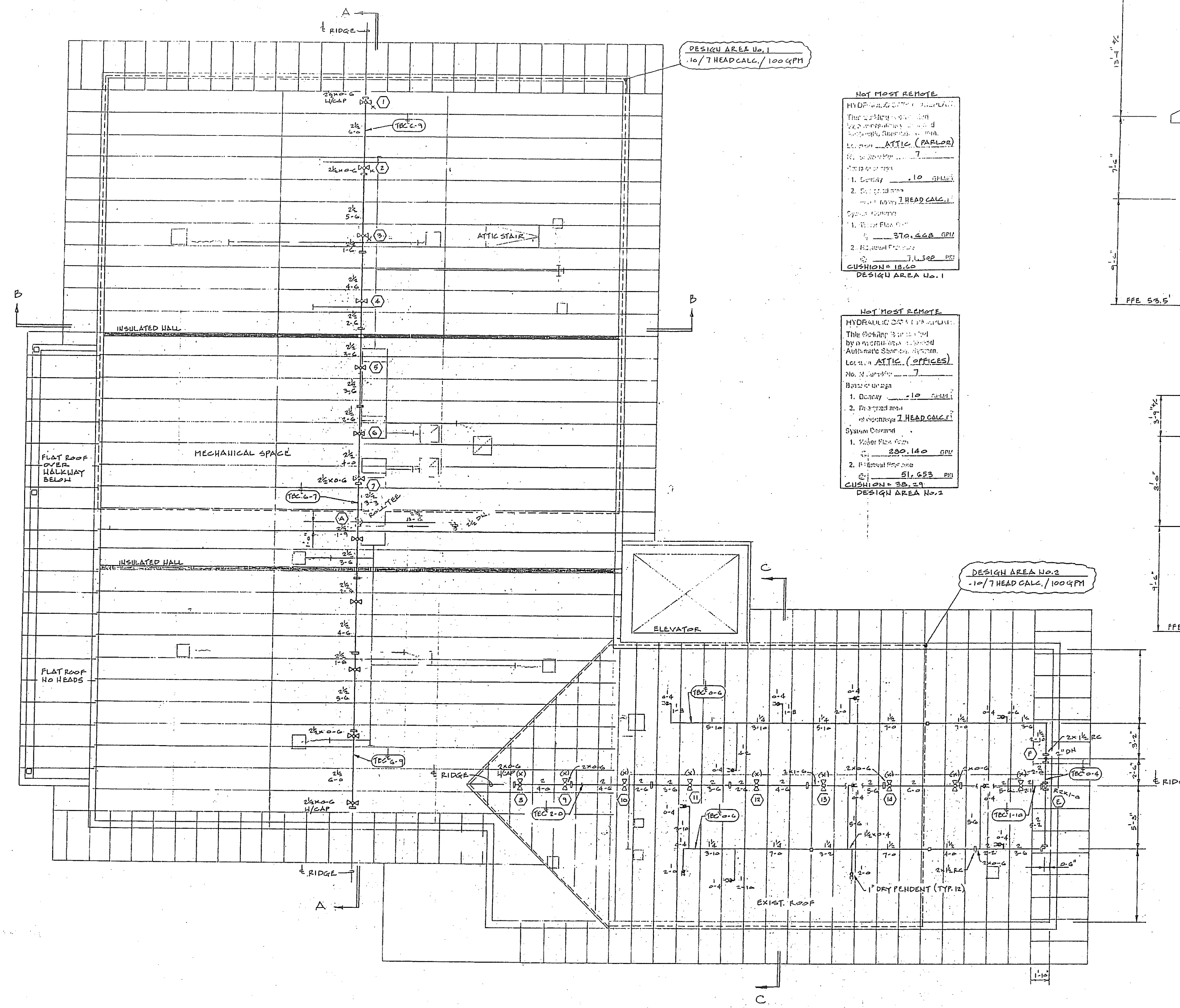
HUTCHINS FUNERAL HOME
660 BRIGHTON AVENUE
PORTLAND, MAINE 04103

CONTRACT WITH HOMEWORKS BUILDERS

SYSTEM TYPE	
WET	☐
DRY	■
DELUGE	☐
PREACTION	☐
ME. LIFE	☐
	☐

REVISIONS		
NO.	DATE	DESCRIPTION

SCALE	1/4" = 1'-0"
DRAWN BY	LDA
CHECKED BY	SEG
DATE	12-17-09
TOTAL SPKRS ON JOB	127
SHEET #	2 of 3
JOB #	09058



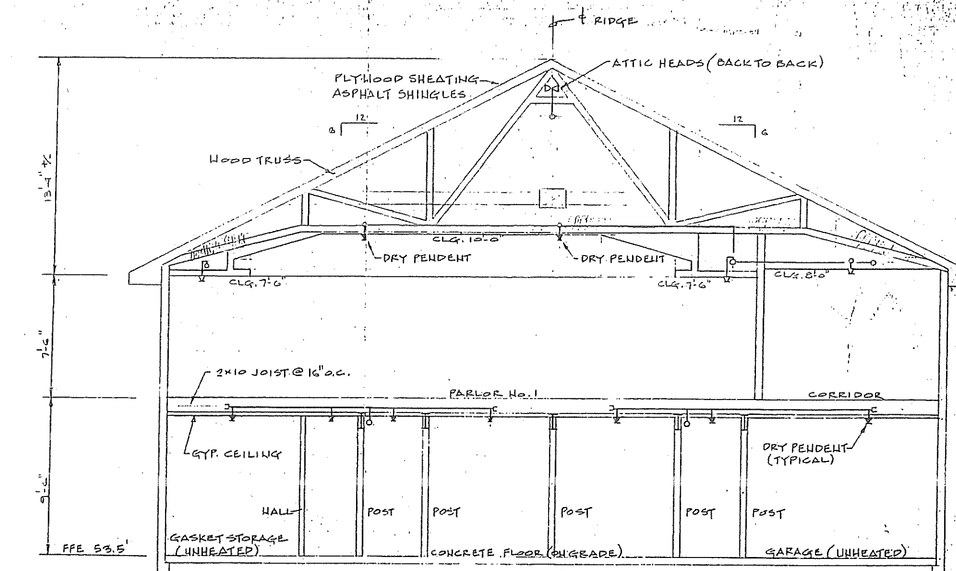
ROOF PLAN 1/4" = 1'-0" (4375 S.F.)

12/200° — 3/4 x 3/4 BACK TO BACK ATTIC HEADS (BB-1) TYCO TY4180 K=8.0 (BRASS)

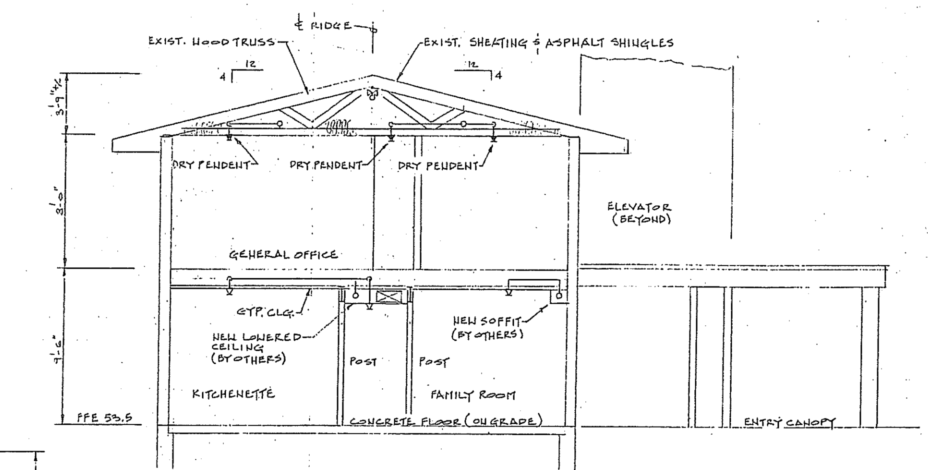
(x) 9/212° — 1/2 x 1/2 BACK TO BACK ATTIC HEADS (BB1) TYCO TY3130 K=5.6 (BRASS)

NOT MOST REMOTE
HYDRAULIC DATA NAMEPLATE
Location: ATTIC (PARLOR)
No. of Sprinklers: 7
1. Density: .10 GPM/FT²
2. Designed area of discharge: 7 HEAD CALC.
1. Water Flow Rate: 370.668 GPM
2. Residual Pressure: 71.508 PSI
CUSHION = 18.60
DESIGN AREA No. 1

NOT MOST REMOTE
HYDRAULIC DATA NAMEPLATE
This Building is protected by a hydraulically designed Automatic Sprinkler System.
Location: ATTIC (OFFICES)
No. of Sprinklers: 7
Basis of design
1. Density: .10 GPM/FT²
2. Designed area of discharge: 7 HEAD CALC.
System Demand
1. Water Flow Rate: 280.140 GPM
2. Residual Pressure: 51.653 PSI
CUSHION = 38.29
DESIGN AREA No. 2



SECTION B-B 1/4" = 1'-0"



SECTION C-C 1/4" = 1'-0"

LICENSE # 093 PERMIT #
R.M.S. # 284

SPRINKLER SYSTEMS INC.
P.O. BOX 1285
LEWISTON MAINE
04240

HUTCHINS FUNERAL HOME
660 BRIGHTON AVENUE
PORTLAND, MAINE 04103

CONTRACT WITH HOMEWORKS BUILDERS

SYSTEM TYPE		NO.	DATE	DESCRIPTION
WET	☐			
DRY	☒			
DELUGE	☐			
PREACTION	☐			
ME. LIFE	☐			
	☐			

SCALE 1/4" = 1'-0"
DRAWN BY LDA
CHECKED BY SEG
DATE 12-17-09
TOTAL SPKRS ON JOB 127
SHEET # 3 OF 3
JOB # 09058