

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND BUILDING PERMIT

This is to certify that SCHOOL SPURWINK

Located At 899 RIVERSIDE Street

Job ID: 2011-04-846-FAFS

CBL: 326 - -B - 004 - 002 - - - - -

has permission to Fire suppression system

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 the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

CAPT. Kirk Gauthier

Fire Prevention Officer

[Signature]
4/22/11
Code Enforcement Officer / Plan Reviewer

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY.
PENALTY FOR REMOVING THIS CARD**

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Director of Planning and Urban Development
Penny St. Louis

Job ID: 2011-04-846-FAFS

Located At: 899 RIVERSIDE

CBL: 326 - - B - 004 - 002 - - - - -

Conditions of Approval:

Fire

This permit is being approved on the basis of the plans submitted. Any deviation from the plans would require amendments and approval.

Application requires State Fire Marshal approval.

The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required.

Installation of a sprinkler or fire alarm system requires a Knox Box to be installed per city ordinance.

The sprinkler system shall be installed in accordance with NFPA 13D.

Capt. Gautreau

4/20/11

Job Summary Report
Job ID: 2011-04-846-FAFS

Report generated on Apr 21, 2011 11:18:33 AM

Job Type:	Fire Alarm / Suppression	Job Description:	899 Riverside Street	Job Year:	2011
Building Job Status Code:	Initiate Plan Review	Pin Value:	1187	Tenant Name:	
Job Application Date:		Public Building Flag:	N	Tenant Number:	
Estimated Value:	6,000	Square Footage:			
Related Parties:		SCHOOL SPURWINK		<i>Property Owner</i>	
		Eastern Fire Protection Co.,Inc - Eastern Fire Protection Co.,Inc Eastern Fire Protection Co.,Inc		<i>SPRINKLER CONTRACTOR</i>	

Job Charges

Fee Code Description	Charge Amount	Permit Charge Adjustment	Net Charge Amount	Payment Date	Receipt Number	Payment Amount	Payment Adjustment Amount	Net Payment Amount	Outstanding Balance
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Location ID: 34602

Location Details

Alternate Id	Parcel Number	Census Tract	GIS X	GIS Y	GIS Z	GIS Reference	Longitude	Latitude
S43927	326 B 004 002		M				-70.318345	43.705405

Location Type	Subdivision Code	Subdivision Sub Code	Related Persons	Address(es)
1				899 RIVERSIDE STREET WEST

Location Use Code	Variance Code	Use Zone Code	Fire Zone Code	Inside Code	Outside Code	District Code	General Location Code	Inspection Area Code	Jurisdiction Code
BENEVOLENT & CHARITABLE		NOT APPLICABLE						DISTRICT 8	RIVERSIDE

Structure Details

Structure: office building

Occupancy Type Code:

Structure Type Code	Structure Status Type	Square Footage	Estimated Value	Address
Office & Professional Buildings	0			899 RIVERSIDE STREET WEST

GG

Longitude	Latitude	GIS X	GIS Y	GIS Z	GIS Reference
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Spurwink School & Group Home

User Defined Property	Value
Alarms Commercial	1
Fixtures-Fluorescent	22
Fixtures-Incandescent	3
Number of Showers (standalone)	1

Not in Q



Water-Based Fire Suppression System Permit

task

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.

office B6

Installation address: 899 REVEREND CBL: 326 B004002

Exact location: (within structure) 2011 ADDEEDD FENT SECOND, THERD

Type of occupancy(s) (NFPA & ICC): NFPA 130 RESIDENTIAL

Building owner: SPUAWENT SQUUELOS

Managing Supervisor (RMS): WELL PLINT License No: 368

Supervisor phone: 784-1507 E-mail: FLINTW@EYAMUASTOWN.COM

Installing contractor: GRSTOWN PERD License No: 101

Contractor phone: 784-1507 E-mail: FLINTW@EYAMUASTOWN.COM

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 this system is designed to: 130 Edition: 2010

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

Download a new copy of this document from www.portlandmaine.gov/fire for every submittal. Attach all working documents and complete approved submittals as may be required by the State Fire Marshal's Office on electronic PDF's in addition to full sized plans.

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

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).

COST OF WORK: \$1 6000.00
 PERMIT FEE: \$1 90.00
 (\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

APR 20 2011

Dept. of Building Inspections
City of Portland - Maine

Applicant signature: *[Signature]* Date: 4/18/11



EASTERN FIRE PROTECTION

P.O. Box 1390
Kittyhawk Ave.
Auburn, ME 04210

PH # (207) 784-1507
FAX # (207) 782-0566

LETTER OF TRANSMITTAL

DATE	4/18/11	JOB NO.	GFSE-02
ATTENTION	KATH GAUMOUX		
RE:	SUSAN WINDMILL HOUSE 2011 ADDITION		

TO PONTIAC BUREAU INSPECTIONS
389 CONGRESS ST. ROOM 315
PONTIAC, MI 04101

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:
 Shop drawings Descriptive data Hydraulic calculations
 Copy of letter Literature _____

QUANTITY	DRAWING NO.	DATE	DESCRIPTION	STATUS
2	10P1	4/18/11	SPRINKLER SHOP DWG	C/O
2	SGRS		HYDRAULIC CALCULATION	
1			PERMIT APPLICATION	
1			PERMIT CHECK	

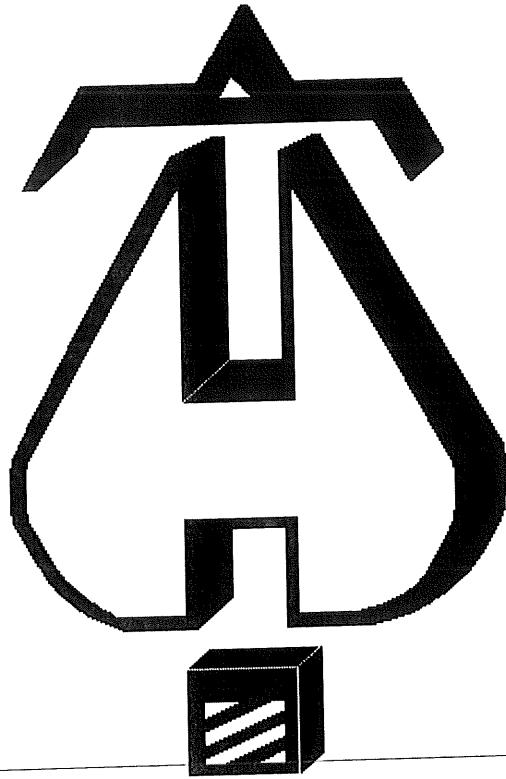
- Status code
- A. Approved
 - B. Approved as noted
 - C. Submitted for approval
 - D. Corrected & resubmitted
 - E. For your files
 - F. Refer to remarks

Please return _____ copies each indicating your approval and/or comments.

REMARKS _____

COPY TO _____ **SIGNED** *[Signature]*

If enclosures are not as noted, kindly notify us at once



... Fire Protection by Computer Design

EASTERN FIRE PROTECTION
170 KITTYHAWK AVE.
P.O. BOX 1390
AUBURN, MAINE 04211-1390
800-274-1507

Job Name :
Drawing : WOOD FRAME
Location : THIRD FLOOR
Remote Area : WET
Contract : EFSI-DW
Data File : SUE WRIGHT THIRD FLOOR PENDENTS.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - SUSAN WHITE HOUSE THIRD FLOOR PENDENTS Date - 04/14/11
 Location - THIRD FLOOR
 Building - WOOD FRAME System No. - WET
 Contractor - EASTERN FIRE SERVICES Contract No. - EFSI-DW
 Calculated By - WAF Drawing No. - 1 OF 1
 Construction: () Combustible (X) Non-Combustible Ceiling Height 7'-7"
 OCCUPANCY - DWELLING UNIT

S Type of Calculation: ()NFPA 13 Residential ()NFPA 13R (X)NFPA 13D
 Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
 S ()Other
 T ()Specific Ruling Made by Date
 E
 M Listed Flow at Start Point - 13 Gpm System Type
 Listed Pres. at Start Point - 7 Psi (X) Wet () Dry
 D MAXIMUM LISTED SPACING 16 x 16 () Deluge () PreAction
 E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
 S Additional Flow Added - 0 Gpm Make TYCO Model LF II
 I Elevation at Highest Outlet - 134.91Feet Size 1/2" K-Factor 4.9
 G Note: Temperature Rating 155
 N

Calculation Gpm Required 26.3 Psi Required 38.3 AT PUMP
 Summary C-Factor Used: Overhead 120 Underground NA

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - Rated Cap. 30 GPM Cap. 900 GALLONS
 T Time of Test - @ Psi 47.5 Elev. 102
 E Static (Psi) - Elev. 102
 R Residual (Psi) - Other Well
 Flow (Gpm) - Proof Flow Gpm
 S Elevation -

P Location: GT 15 PUMP LOCATED IN BSMT.

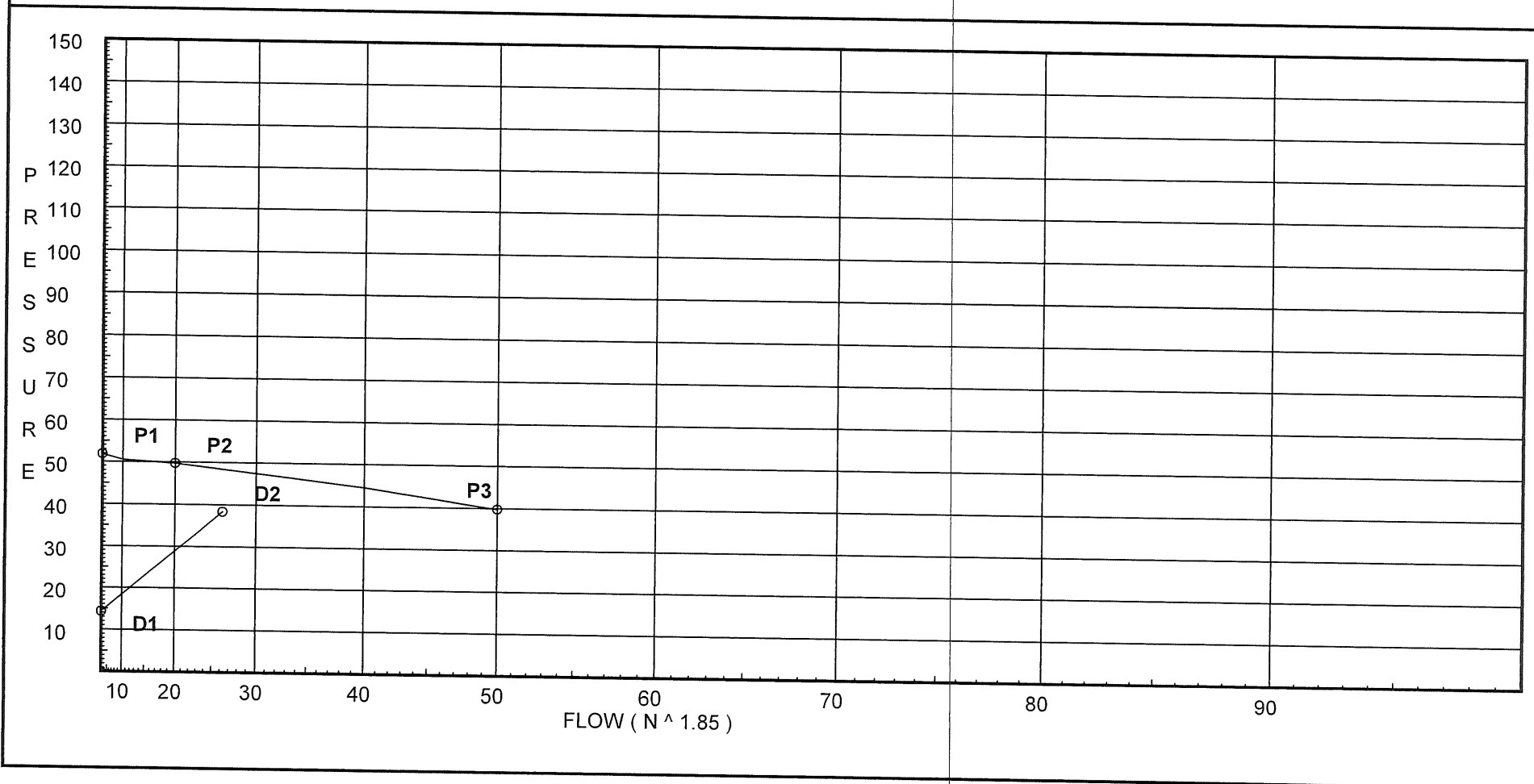
P Source of Information: GOULD DATA SHEET
 L
 Y

Pump Data:

P1 - Pump Churn Pressure : 51.8
 P2 - Pump Rated Pressure : 49.7
 P2 - Pump Rated Flow : 20
 P3 - Pump Pressure @ Max Flow : 39.8
 P3 - Pump Max Flow : 50

Demand:

D1 - Elevation : 14.253
 D2 - System Flow : 26.294
 D2 - System Pressure : 38.305
 Hose (Demand) : _____
 D3 - System Demand : 26.294
 Safety Margin : 10.097



Fittings Used Summary

EASTERN FIRE PROTECTION

Fitting Legend		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
S	NFPA 13 Swing Check Valve	4	5	5	7	9	11	14	16	19	22	27	32	45	55	65	76	87	98	109	130
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121

Units Summary

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

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
PUMP	See Information on Pump Curve				0.0	38.305

NODE ANALYSIS

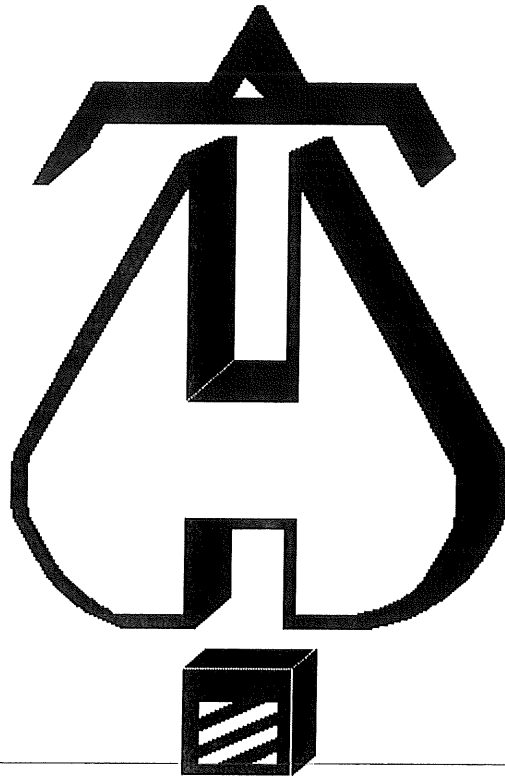
<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
D1	0.0	4.9	7.0	12.96	
1	134.91	4.74	7.47	12.96	K=K @ L1
2	134.91	4.74	7.9	13.33	K=K @ L1
4	134.91		12.63		
5	126.0		17.05		
6	126.0		17.45		
9	126.0		17.67		
10	116.92		22.29		
11	116.92		22.63		
12	107.0		28.14		
TOR	107.0		32.0		
PUMP	102.0		38.31		

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION

Page 5
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
D1 to L1	0 0	4.90	12.96 12.96	1 1.101	1E 1T	3.825 9.563 0.0	2.000 13.387 15.387	150 0.0305	7.000 0.0 0.469			Vel = 4.37
L1			0.0 12.96						7.469			K Factor = 4.74
1 to 2	134.910 134.910	4.74	12.96 12.96	1 1.101		0.0 0.0 0.0	14.000 0.0 14.000	150 0.0306	7.469 0.0 0.428			K = K @ L1 Vel = 4.37
2 to 4	134.910 134.910	4.74	13.33 26.29	1 1.101	2E 2T	7.65 19.125 0.0	15.120 26.776 41.896	150 0.1129	7.897 0.0 4.729			K = K @ L1 Vel = 8.86
4 to 5	134.910 126		0.0 26.29	1.25 1.38	1E	3.0 0.0 0.0	7.000 3.000 10.000	120 0.0567	12.626 3.859 0.567			Vel = 5.64
5 to 6	126 126		0.0 26.29	1.25 1.38		0.0 0.0 0.0	7.040 0.0 7.040	120 0.0568	17.052 0.0 0.400			Vel = 5.64
6 to 9	126 126		0.0 26.29	1.25 1.38	1E	3.0 0.0 0.0	0.870 3.000 3.870	120 0.0568	17.452 0.0 0.220			Vel = 5.64
9 to 10	126 116.920		0.0 26.29	1.25 1.38	1E	3.0 0.0 0.0	9.080 3.000 12.080	120 0.0567	17.672 3.933 0.685			Vel = 5.64
10 to 11	116.920 116.920		0.0 26.29	1.25 1.38	1E	3.0 0.0 0.0	3.000 3.000 6.000	120 0.0568	22.290 0.0 0.341			Vel = 5.64
11 to 12	116.920 107		0.0 26.29	1.25 1.38	1E 1T	3.0 6.0 0.0	12.420 9.000 21.420	120 0.0568	22.631 4.296 1.216			Vel = 5.64
12 to TOR	107 107		0.0 26.29	1.25 1.38	5E 1S 1T	15.0 7.0 6.0	40.000 28.000 68.000	120 0.0568	28.143 0.0 3.861			Vel = 5.64
TOR to PUMP	107 102		0.0 26.29	1.25 1.38	1Fsp 1S 2E	0.0 7.0 6.0	7.000 13.000 20.000	120 0.0568	32.004 5.166 1.135			* Fixed loss = 3 Vel = 5.64
PUMP			0.0 26.29						38.305			K Factor = 4.25



... Fire Protection by Computer Design

EASTERN FIRE PROTECTION
170 KITTYHAWK AVE.
P.O. BOX 1390
AUBURN, MAINE 04211-1390
800-274-1507

Job Name :
Drawing : WOOD FRAME
Location : THIRD FLOOR
Remote Area : WET
Contract : EFSI-DW
Data File : SUE WRIGHT THIRD FLOOR PENDENTS.WXF

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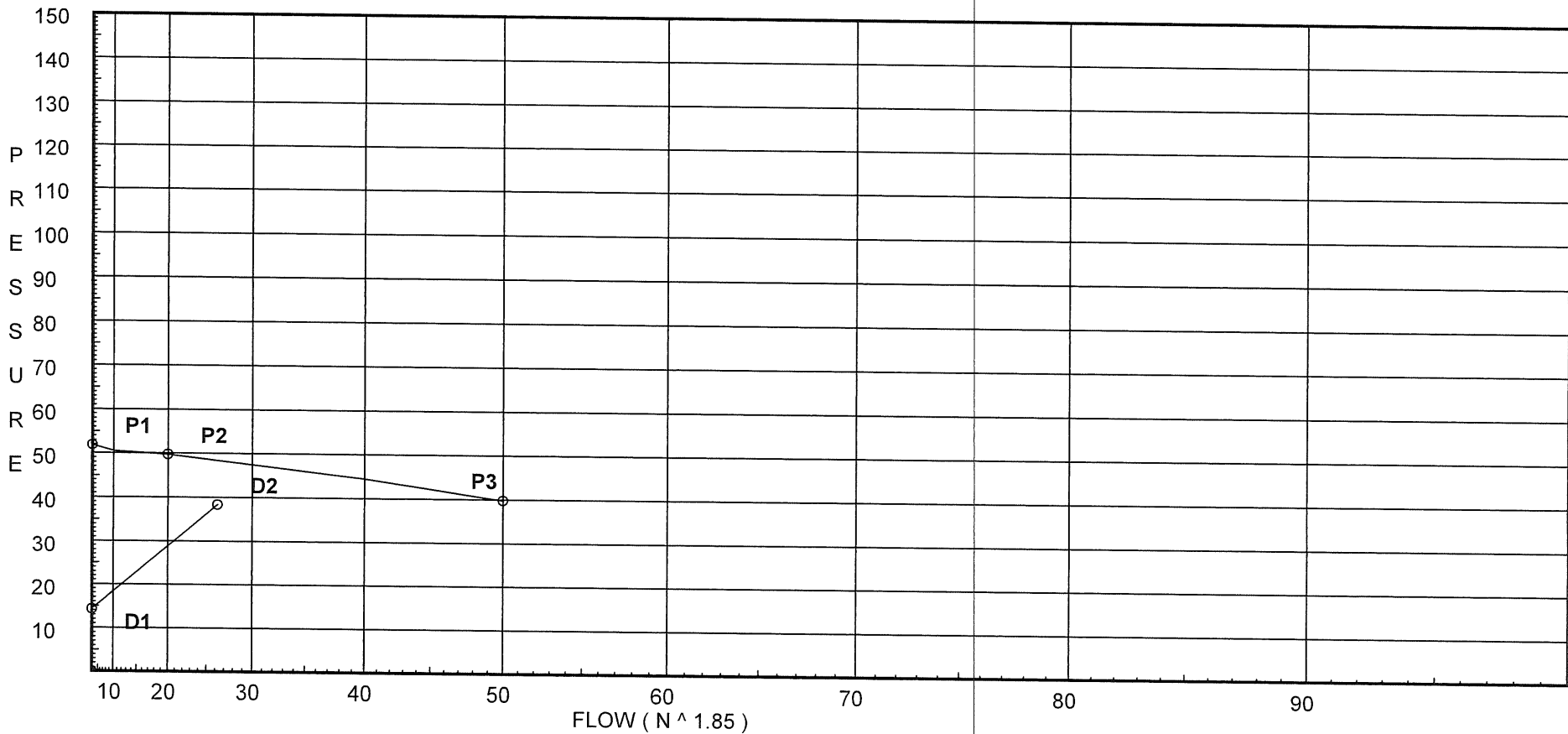
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Fittings Used Summary

EASTERN FIRE PROTECTION

Date

Fitting Legend																					
Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
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NODE ANALYSIS

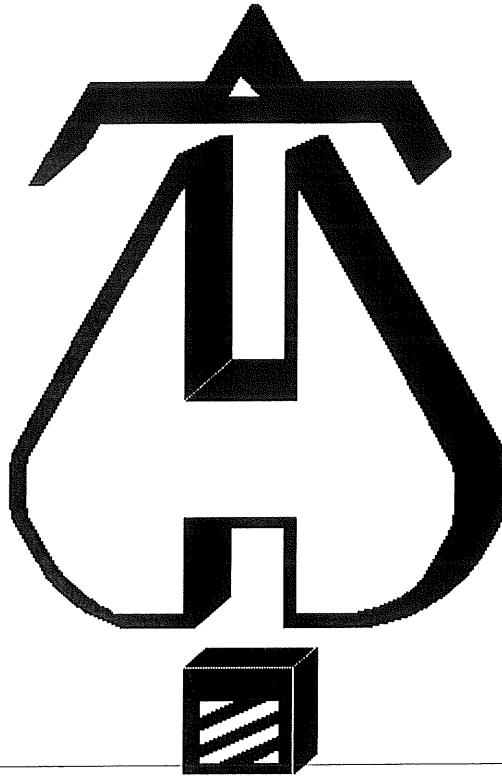
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Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION

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			0.0			0.0	15.387	0.0305	0.469	Vel =	4.37	
L1			12.96						7.469	K Factor =	4.74	
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			26.29			0.0	41.896	0.1129	4.729	Vel =	8.86	
4 to 5	134.910 126		0.0	1.25	1E	3.0 0.0	7.000 3.000	120	12.626 3.859			
			26.29	1.38		0.0	10.000	0.0567	0.567	Vel =	5.64	
5 to 6	126 126		0.0	1.25		0.0 0.0	7.040 0.0	120	17.052 0.0			
			26.29	1.38		0.0	7.040	0.0568	0.400	Vel =	5.64	
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			26.29	1.38	1T	6.0	68.000	0.0568	3.861	Vel =	5.64	
TOR to PUMP	107 102		0.0	1.25	1Fsp 1S	0.0 7.0	7.000 13.000	120	32.004 5.166	* Fixed loss = 3		
			26.29	1.38	2E	6.0	20.000	0.0568	1.135	Vel =	5.64	
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Calculated By - WAF Drawing No. - 1 OF 1
Construction: () Combustible (X) Non-Combustible Ceiling Height VARIES
OCCUPANCY - STAIRWELL

S Type of Calculation: ()NFPA 13 Residential ()NFPA 13R (X)NFPA 13D
Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
S ()Other
T ()Specific Ruling Made by Date
E
M Listed Flow at Start Point - 16 Gpm System Type
Listed Pres. at Start Point - 14.5 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 14 x 14 () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - 0 Gpm Make TYCO Model LF II
I Elevation at Highest Outlet - 133.25Feet Size 1/2" K-Factor 4.2
G Note: Temperature Rating 155
N

Calculation Gpm Required 32 Psi Required 42.5 AT PUMP
Summary C-Factor Used: Overhead 120 Underground NA

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - Rated Cap. 30 GPM Cap. 900 GALLONS
T Time of Test - @ Psi 47.5 Elev. 102
E Static (Psi) - Elev. 102
R Residual (Psi) - Other Well
Flow (Gpm) - Proof Flow Gpm
S Elevation -

P Location: GT 15 PUMP LOCATED IN BSMT.

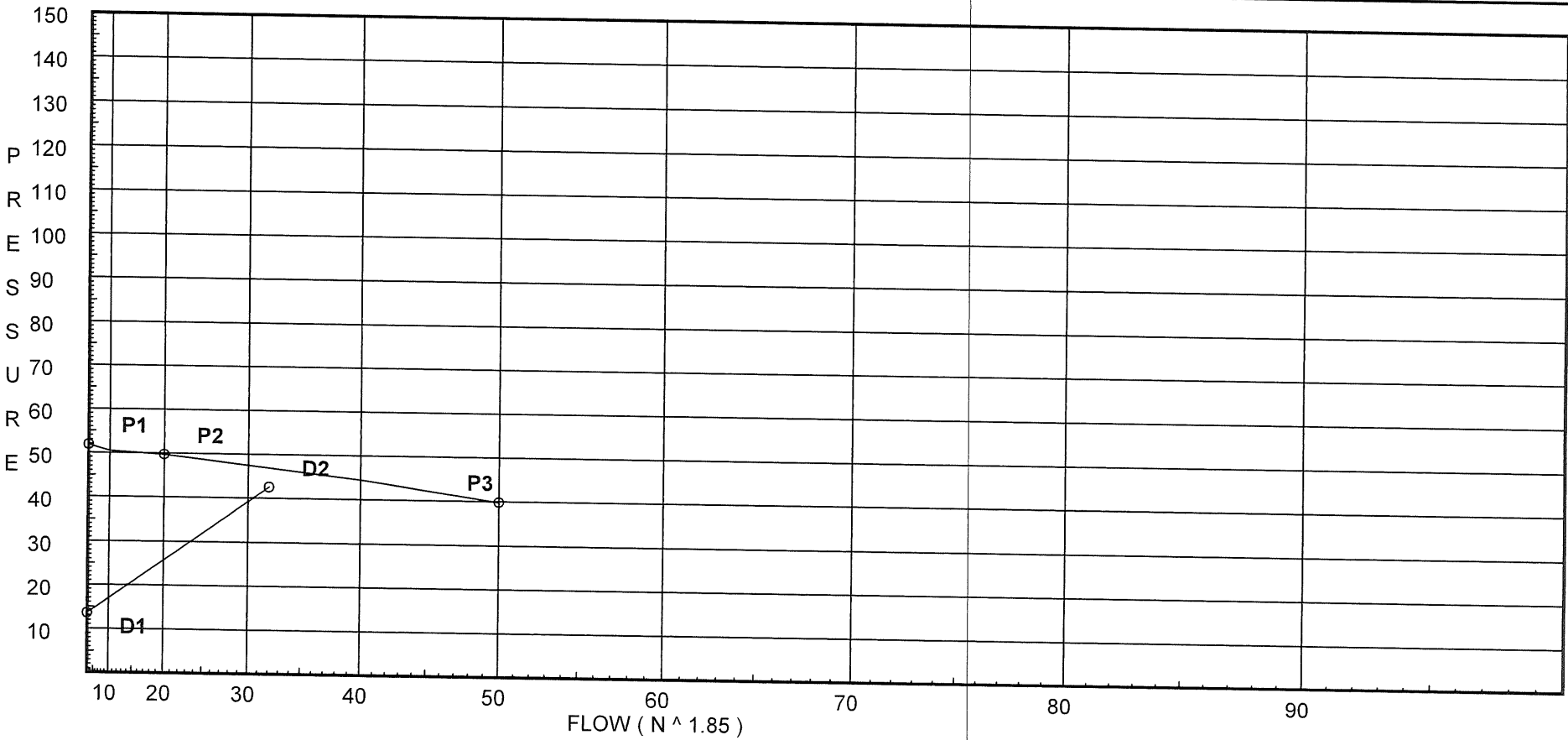
P
L Source of Information: GOULD DATA SHEET
Y

Water Supply Curve (C)

EASTERN FIRE PROTECTION
 SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Pump Data:
 P1 - Pump Churn Pressure : 51.8
 P2 - Pump Rated Pressure : 49.7
 P2 - Pump Rated Flow : 20
 P3 - Pump Pressure @ Max Flow : 39.8
 P3 - Pump Max Flow : 50

Demand:
 D1 - Elevation : 13.534
 D2 - System Flow : 32.075
 D2 - System Pressure : 42.550
 Hose (Demand) :
 D3 - System Demand : 32.075
 Safety Margin : 4.387



Fittings Used Summary

EASTERN FIRE PROTECTION
 SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Fitting Legend																							
Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24		
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61		
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																					
S	NFPA 13 Swing Check Valve	4	5	5	7	9	11	14	16	19	22	27	32	45	55	65	76	87	98	109	130		
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121		

Units Summary

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

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Flow Summary - NFPA 2007

EASTERN FIRE PROTECTION
 SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Page 4
 Date

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
PUMP	See Information on Pump Curve				0.0	42.55

NODE ANALYSIS

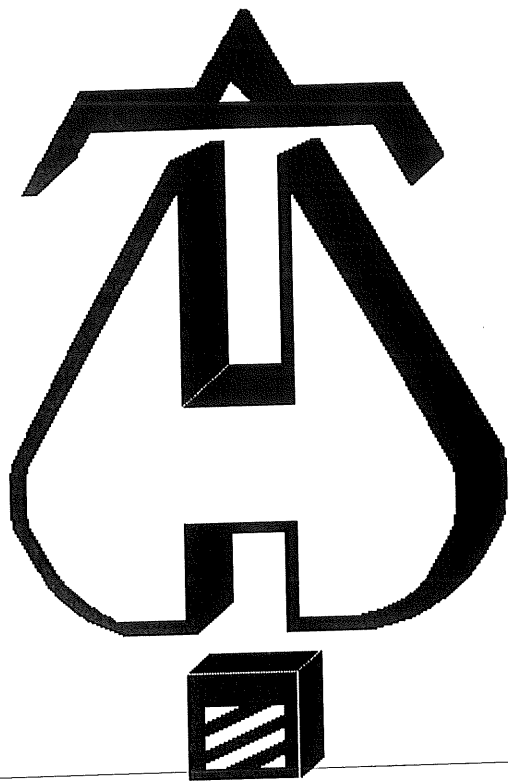
<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
3	133.25	4.2	14.66	16.08	
7	133.25	4.2	14.5	15.99	
8	133.25		15.0		
4	134.91		14.18		
5	126.0		18.22		
6	126.0		18.38		
9	126.0		18.7		
10	116.92		23.62		
11	116.92		24.12		
12	107.0		30.17		
TOR	107.0		35.74		
PUMP	102.0		42.55		

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION
 SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Page 5
 Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
3 to 4	133.250 134.910	4.20	16.08 16.08	1 1.049	1E	2.0 0.0 0.0	0.790 2.000 2.790	120 0.0867	14.661 -0.719 0.242			Vel = 5.97
4			0.0 16.08						14.184		K Factor = 4.27	
7 to 8	133.250 133.250	4.20	15.99 15.99	1 1.049	1T	5.0 0.0 0.0	0.790 5.000 5.790	120 0.0860	14.500 0.0 0.498			Vel = 5.94
8 to 6	133.250 126		0.0 15.99	1.25 1.38	1T	6.0 0.0 0.0	4.830 6.000 10.830	120 0.0226	14.998 3.140 0.245			Vel = 3.43
6			0.0 15.99						18.383		K Factor = 3.73	
4 to 5	134.910 126		16.08 16.08	1.25 1.38	1E	3.0 0.0 0.0	4.830 3.000 7.830	120 0.0229	14.184 3.859 0.179			Vel = 3.45
5 to 6	126 126		0.0 16.08	1.25 1.38		0.0 0.0 0.0	7.040 0.0 7.040	120 0.0229	18.222 0.0 0.161			Vel = 3.45
6 to 9	126 126		15.99 32.07	1.25 1.38	1E	3.0 0.0 0.0	0.870 3.000 3.870	120 0.0822	18.383 0.0 0.318			Vel = 6.88
9 to 10	126 116.920		0.0 32.07	1.25 1.38	1E	3.0 0.0 0.0	9.080 3.000 12.080	120 0.0820	18.701 3.933 0.990			Vel = 6.88
10 to 11	116.920 116.920		0.0 32.07	1.25 1.38	1E	3.0 0.0 0.0	3.000 3.000 6.000	120 0.0820	23.624 0.0 0.492			Vel = 6.88
11 to 12	116.920 107		0.0 32.07	1.25 1.38	1E 1T	3.0 6.0 0.0	12.420 9.000 21.420	120 0.0820	24.116 4.296 1.757			Vel = 6.88
12 to TOR	107 107		0.0 32.07	1.25 1.38	5E 1S 1T	15.0 7.0 6.0	40.000 28.000 68.000	120 0.0820	30.169 0.0 5.576			Vel = 6.88
TOR to PUMP	107 102		0.0 32.07	1.25 1.38	1Fsp 1S 2E	0.0 7.0 6.0	7.000 13.000 20.000	120 0.0820	35.745 5.166 1.639		* Fixed loss = 3	Vel = 6.88
PUMP			0.0 32.07						42.550		K Factor = 4.92	



... Fire Protection by Computer Design

EASTERN FIRE PROTECTION
170 KITTYHAWK AVE.
P.O. BOX 1390
AUBURN, MAINE 04211-1390
800-274-1507

Job Name : SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS
Drawing : WOOD FRAME
Location : THIRD FLOOR
Remote Area : WET
Contract : EFSI-DW
Data File : SUE WRIGHT THIRD FLOOR SIDEWALLS.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS Date - 04/14/11
 Location - THIRD FLOOR
 Building - WOOD FRAME System No. - WET
 Contractor - EASTERN FIRE SERVICES Contract No. - EFSI-DW
 Calculated By - WAF Drawing No. - 1 OF 1
 Construction: () Combustible (X) Non-Combustible Ceiling Height VARIES
 OCCUPANCY - STAIRWELL

S Type of Calculation: ()NFPA 13 Residential ()NFPA 13R (X)NFPA 13D
 Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
 S ()Other
 T ()Specific Ruling Made by Date

E Listed Flow at Start Point - 16 Gpm System Type
 M Listed Pres. at Start Point - 14.5 Psi (X) Wet () Dry
 D MAXIMUM LISTED SPACING 14 x 14 () Deluge () PreAction
 E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
 S Additional Flow Added - 0 Gpm Make TYCO Model LF II
 I Elevation at Highest Outlet - 133.25Feet Size 1/2" K-Factor 4.2
 G Note: Temperature Rating 155
 N

Calculation Summary Gpm Required 32 C-Factor Used: Psi Required 42.5 Overhead 120 AT PUMP Underground NA

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - Rated Cap. 30 GPM Cap. 900 GALLONS
 T Time of Test - @ Psi 47.5 Elev. 102
 E Static (Psi) - Elev. 102
 R Residual (Psi) - Other Well
 Flow (Gpm) - Proof Flow Gpm
 S Elevation -

P Location: GT 15 PUMP LOCATED IN BSMT.

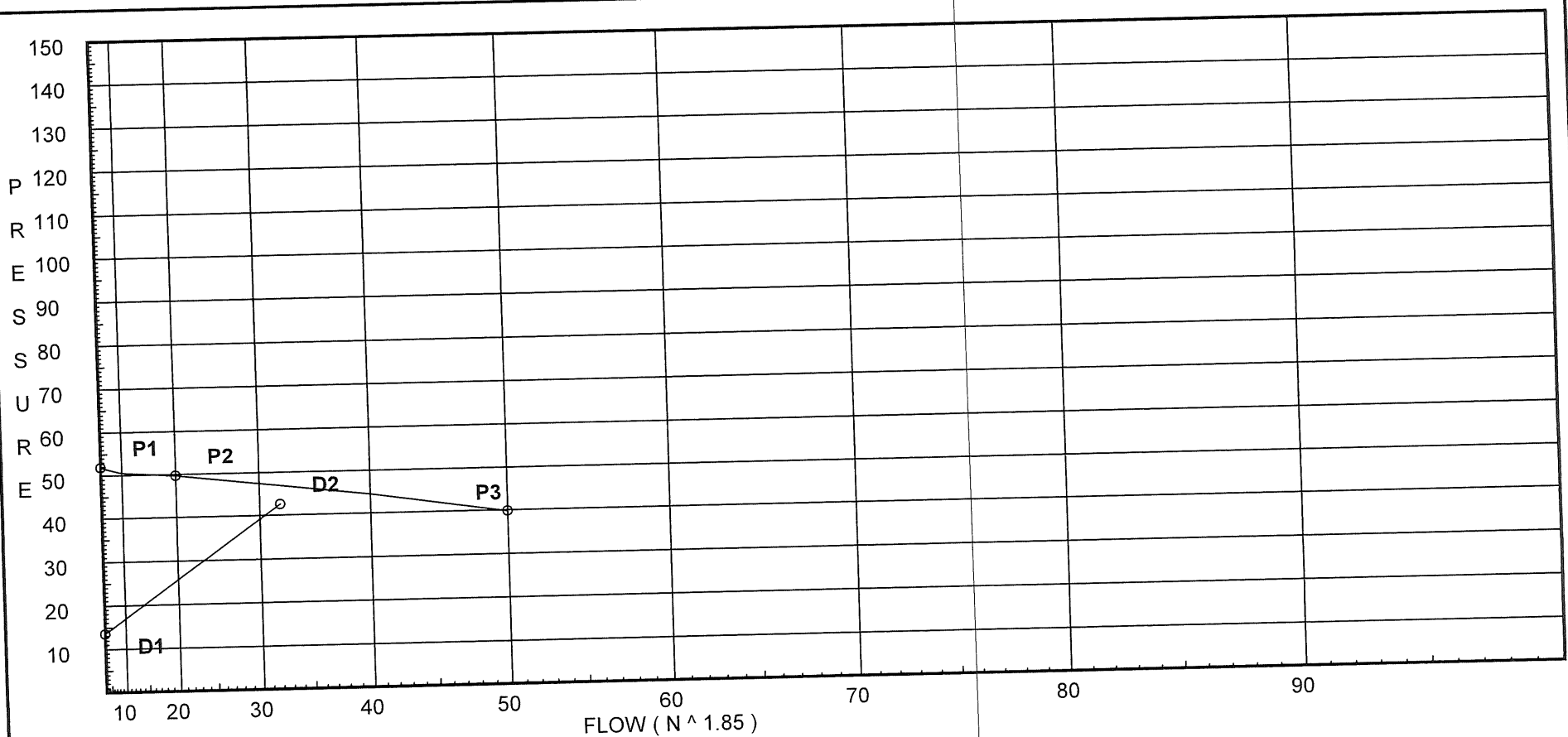
L Source of Information: GOULD DATA SHEET
 Y

Water Supply Curve (C)

EASTERN FIRE PROTECTION
SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Pump Data:
 P1 - Pump Churn Pressure : 51.8
 P2 - Pump Rated Pressure : 49.7
 P2 - Pump Rated Flow : 20
 P3 - Pump Pressure @ Max Flow : 39.8
 P3 - Pump Max Flow : 50

Demand:
 D1 - Elevation : 13.534
 D2 - System Flow : 32.075
 D2 - System Pressure : 42.550
 Hose (Demand) :
 D3 - System Demand : 32.075
 Safety Margin : 4.387



Fittings Used Summary

EASTERN FIRE PROTECTION
SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Page 3
Date

Fitting Legend		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24	
Abbrev.	Name																					
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																				
S	NFPA 13 Swing Check Valve	4	5	5	7	9	11	14	16	19	22	27	32	45	55	65	76	87	98	109	130	
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121	

Units Summary

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

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

EASTERN FIRE PROTECTION
SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
PUMP	See Information on Pump Curve				0.0	42.55

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
3	133.25	4.2	14.66	16.08	
7	133.25	4.2	14.5	15.99	
8	133.25		15.0		
4	134.91		14.18		
5	126.0		18.22		
6	126.0		18.38		
9	126.0		18.7		
10	116.92		23.62		
11	116.92		24.12		
12	107.0		30.17		
TOR	107.0		35.74		
PUMP	102.0		42.55		

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION
 SUSAN WHITE HOUSE THIRD FLOOR SIDEWALLS

Page 5
 Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
3 to 4	133.250 134.910	4.20	16.08 16.08	1 1.049	1E	2.0 0.0	0.790 2.000 2.790	120	14.661 -0.719			Vel = 5.97
4			0.0 16.08						14.184		K Factor = 4.27	
7 to 8	133.250 133.250	4.20	15.99 15.99	1 1.049	1T	5.0 0.0	0.790 5.000 5.790	120	14.500 0.0			Vel = 5.94
8 to 6	133.250 126		0.0 15.99	1.25 1.38	1T	6.0 0.0	4.830 6.000 10.830	120	14.998 3.140			Vel = 3.43
6			0.0 15.99						18.383		K Factor = 3.73	
4 to 5	134.910 126		16.08 16.08	1.25 1.38	1E	3.0 0.0	4.830 3.000 7.830	120	14.184 3.859			Vel = 3.45
5 to 6	126 126		0.0 16.08	1.25 1.38		0.0 0.0	7.040 0.0 7.040	120	18.222 0.0			Vel = 3.45
6 to 9	126 126		15.99 32.07	1.25 1.38	1E	3.0 0.0	0.870 3.000 3.870	120	18.383 0.0			Vel = 6.88
9 to 10	126 116.920		0.0 32.07	1.25 1.38	1E	3.0 0.0	9.080 3.000 12.080	120	18.701 3.933			Vel = 6.88
10 to 11	116.920 116.920		0.0 32.07	1.25 1.38	1E	3.0 0.0	3.000 3.000 6.000	120	23.624 0.0			Vel = 6.88
11 to 12	116.920 107		0.0 32.07	1.25 1.38	1E 1T	3.0 6.0	12.420 9.000 21.420	120	24.116 4.296			Vel = 6.88
12 to TOR	107 107		0.0 32.07	1.25 1.38	5E 1S 1T	15.0 7.0 6.0	40.000 28.000 68.000	120	30.169 0.0			Vel = 6.88
TOR to PUMP	107 102		0.0 32.07	1.25 1.38	1Fsp 1S 2E	0.0 7.0 6.0	7.000 13.000 20.000	120	35.745 5.166		* Fixed loss = 3	Vel = 6.88
PUMP			0.0 32.07						42.550		K Factor = 4.92	