City of Portland, Maine – Building or Use Permit Application 389 Congress Street, 04101, Tel: (207) 874-8703, FAX: 874-8716

Location of Construction:	Owner:	Phone:	Permit No: 951058
Owner Address:	Leasee/Buyer's Name:	Phone:	BusinessName:
Contractor Name:	Address:	Phone:	
Past Use:	Proposed Use:	COST OF WORK: $	PERMIT FEE: $
		FIRE DEPT. ☐ Approved ☐ Denied Signature:	INSPECTION: Use Group: Type: Signature:
Proposed Project Description:		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: Approved ☐ Approved with Conditions: ☐ Denied ☐ Signature: Date:	Zone: CBL: Zoning Approval:
Permit Taken By:	Date Applied For:		

PERMIT ISSUED
Permit Issued:
OCT - 6 1995
CITY OF PORTLAND

1. This permit application doesn't 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..

PERMIT ISSUED WITH REQUIREMENTS

Special Zone or Reviews:
- ☐ Shoreland
- ☐ Wetland
- ☐ Flood Zone
- ☐ Subdivision
- ☐ Site Plan maj ☐ minor ☐ mm ☐

Zoning Appeal
- ☐ Variance
- ☐ Miscellaneous
- ☐ Conditional Use
- ☐ Interpretation
- ☐ Approved
- ☐ Denied

Historic Preservation
- ☐ Not in District or Landmark
- ☐ Does Not Require Review
- ☐ Requires Review

Action:
- ☐ Appoved
- ☐ Approved with Conditions
- ☐ Denied

Date:

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 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 provisions of the code(s) applicable to such permit

SIGNATURE OF APPLICANT ADDRESS: DATE: PHONE:

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE PHONE:

CEO DISTRICT 1
WING

White–Permit Desk Green–Assessor's Canary–D.P.W. Pink–Public File Ivory Card–Inspector

SPRINKLER SYSTEMS INC.
P.O. BOX 1285 - LEWISTON, MAINE 04243-1285

(207) 782-0104

memo

LETTER

To City of Portland
Code enforcement

Date 10/4/95

Subject 511 Congress st
8th & 9th floors

— TRANSMITTAL —

2 - 1 of 1 shop Drawing
2 - Sets of 8th floor CALCS
2 - Sets of 9th floor CALCS
2 - Sets of standpipe CALCS
1 - Check for $70.00

* Permit

☐ Please reply ☐ No reply necessary

SIGNED Clayton Saucier
Clayton Saucier

BUILDING PERMIT REPORT

DATE 10/5/95

ADDRESS 511 Congress St

REASON FOR PERMIT **Sprinkler Installation**

BUILDING OWNER October Corp

CONTRACTOR Sprinkler Systems Inc

PERMIT APPLICANT Scott Gulal

APPROVED ✓ DENIED _____

CONDITIONS OF APPROVAL:

1. A 4" storz fire department connection is required.
2. Any new sprinkler construction over 6 sprinkler heads needs to have State Fire Marshall approval.
3. Any renovations of sprinkler systems over 20 sprinkler heads needs to have State Fire Marshall approval.
4. A sprinkler performance test shall be submitted to the Portland Fire Department after completion of sprinkler work.

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...FIRE PROTECTION BY COMPUTER DESIGN

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*****************************************
*     SPRINKLER SYSTEMS INC.            *
*       LEWISTON, ME  04240             *
*            207-782-0104               *
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CONTRACTOR NAME	SPRINKLER SYSTEMS INC.
LOCATION	511 CONGRESS ST. 8TH FLOOR
SYSTEM NO.	511 CONGRESS STREET, PORTLAND, MAINE
CONTRACT NO.	1
	95044

SPRINKLER SYSTEMS INC.

LEWISTON, ME 04240

207-782-0104

HYDRAULIC DESIGN INFORMATION SHEET

NAME 511 CONGRESS ST. STANDPIPE — DATE 10/04/95

LOCATION 511 CONGRESS STREET, PORTLAND, MAINE

BUILDING EXISTING — SYSTEM NO. EX.STPIPE

CONTRACTOR SPRINKLER SYSTEMS INC. — CONTRACT NO. 95044

CALCULATED BY CDS — DRAWING NO. 1-1 OF 1

CONSTRUCTION:( )COMBUSTIBLE (X)NON-COMBUSTIBLE — CEILING HEIGHT

OCCUPANCY OFFICES

SYSTEM

!( )NFPA 13 ( )LT. HAZ. ORD.HAZ.GP.( )1( )2( )3( )EX. HAZ.

!( )NFPA 231 ( )NFPA 231C FIGURE 2-2.1.1B CURVE

!(X)OTHER N.F.P.A. 14

!( )SPECIFIC RULING MADE BY DATE

DESIGN

!AREA OF SPRINKLER OPERATION 0 — SYSTEM TYPE

!DENSITY- GPM 0 — (X)WET( )DRY( )DELUGE( )PREACTION

!AREA PER SPRINKLER 0 — SPRINKLER OR NOZZLE

!HOSE ALLOWANCE GPM-INSIDE 500 — MAKE — MODEL

!HOSE ALLOWANCE GPM-OUTSIDE 0 — SIZE — K-FACTOR 0

!RACK SPRINKLER ALLOWANCE 0 — TEMPERATURE RATING

CALCULATION SUMMARY ! GPM REQUIRED 500 — PSI REQUIRED 148.94 AT BASE OF RISER

! C FACTOR USED: — OVERHEAD 120 — UNDERGROUND 140

WATER SUPPLY

!WATER FLOW TEST SEE PUMP TEST RESULTS ON PLAN 1 OF 1 — ! PUMP DATA — ! TANK OR RESERVOIR

!DATE OF TEST — ! RATED CAP 500 — ! CAP. 0

!TIME OF TEST — ! AT PSI 90 — ! ELEV. 0

!STATIC (PSI) 0 — ! ELEV 0 — !

!RESIDUAL (PSI) 0 — ! — ! WELL

!FLOW (GPM) 0 — ! — ! PROOF FLOW GPM 0

!ELEVATION PUMP DISCHARGE ! — !

!LOCATION :6" IN STREET

!SOURCE OF INFORMATION :S.S.I. AND PORTLAND WATER DISTRICT

STORAGE

!COMMODITY — CLASS — LOCATION

!STORAGE HT. — AREA — AISLE WIDTH

!STORAGE METHOD:SOLID PILED % — PALLETIZED % — RACK %

! ! ( )SINGLE ROW ( )CONVEN. PALLET ( )AUTO. STORAGE ( )ENCAP.

! R ! ( )DOUBLE ROW ( )SLAVE PALLET ( )SOLID SHELVING ( )NON-ENCAP

! A ! ( )MULTIPLE ROW ( )OPEN SHELVING

! C ! FLUE SPACING: — CLEARANCE:STORAGE TO CEILING

! K ! LONGITUDINAL TRANSVERSE

! ! HORIZONTAL BARRIERS PROVIDED:

UNITS - DIAMETER (INCH) LENGTH (FOOT) FLOW (GPM) PRESSURE (PSI)

FIRE PROTECTION--BY COMPUTER DESIGN

HYDRLC. REF. POINT	QA FLOW QT	"C" DIA. LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	500.00	2.469		0.50	65.00		QA= 500.0 PT= 65.00
HV1		C=120		31.00	0.00		VELOCITY = 33.49
	500.00	0.7765	31.00F.	31.50	24.46		
	0.00	6.065		12.00	89.46		QA= 0.0 PT= 89.46
A		C=120		0.00	0.00		VELOCITY = 5.55
	500.00	0.0097		12.00	0.12		
	0.00	6.065		12.00	89.58		QA= 0.0 PT= 89.58
B		C=120		0.00	0.00		VELOCITY = 5.55
	500.00	0.0097		12.00	0.12		
	0.00	6.065		12.00	89.70		QA= 0.0 PT= 89.70
C		C=120		0.00	0.00		VELOCITY = 5.55
	500.00	0.0097		12.00	0.12		
	0.00	6.065		12.00	89.82		QA= 0.0 PT= 89.82
D		C=120		0.00	0.00		VELOCITY = 5.55
	500.00	0.0097		12.00	0.12		
	0.00	6.065		12.00	89.94		QA= 0.0 PT= 89.94
E		C=120		0.00	0.00		VELOCITY = 5.55
	500.00	0.0097		12.00	0.12		
	0.00	6.065		12.00	90.06		QA= 0.0 PT= 90.06
F		C=120		0.00	0.00		VELOCITY = 5.55
	500.00	0.0097		12.00	0.12		
	0.00	6.065	4E14.0	24.00	90.18		QA= 0.0 PT= 90.18
G		C=120		56.00	0.00		VELOCITY = 5.55
	500.00	0.0097		80.00	0.78		
	0.00	6.065	4E14.0	26.00	90.96		QA= 0.0 PT= 90.96
H		C=120	1T30.0	86.00	0.00		VELOCITY = 5.55
	500.00	0.0097		112.00	1.09		
	0.00	6.065	2E14.0	29.00	92.05		QA= 0.0 PT= 92.05
I		C=120		28.00	0.00		VELOCITY = 5.55
	500.00	0.0097		57.00	0.56		
	0.00	6.065	1E14.0	17.00	92.61		QA= 0.0 PT= 92.61
J		C=120	1T30.0	44.00	0.00		VELOCITY = 5.55
	500.00	0.0097		61.00	0.60		
	0.00	6.065	1E14.0	5.00	93.21		QA= 0.0 PT= 93.21
K		C=120		49.00	0.00		VELOCITY = 5.55
	500.00	0.0097	35.00F.	54.00	0.53		
	0.00	3.065		0.75	93.74		QA= 0.0 PT= 93.74
100		C=120		0.00	55.00		VELOCITY = 21.73
	500.00	0.2709		0.75	0.20		PE= FOR HT. OF 126.9

**********EXISTING STANDPIPE CALC.**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	500.00				148.94		K 33= 40.970
PUMP							

SPRINKLER SYSTEMS INC.

LEWISTON, ME 04240

207-782-0104

HYDRAULIC DESIGN INFORMATION SHEET

NAME 511 CONGRESS ST. 9TH FLOOR — DATE 10/04/95

LOCATION 511 CONGRESS STREET, PORTLAND, MAINE

BUILDING EXISTING — SYSTEM NO. 1

CONTRACTOR SPRINKLER SYSTEMS INC. — CONTRACT NO. 95044

CALCULATED BY CDS — DRAWING NO. 1-1 OF 1

CONSTRUCTION:( )COMBUSTIBLE (X)NON-COMBUSTIBLE — CEILING HEIGHT

OCCUPANCY OFFICES

S	!(X)NFPA13 (X)LT.HAZ.	ORD. HAZ.GP.( )1( )2( )3( )EX.HAZ.	
Y	!( )NFPA 231 ( )NFPA 231C	FIGURE 2-2.1.1B	CURVE
S	!( )OTHER		
T	!( )SPECIFIC RULING	MADE BY	DATE
E			
M	!AREA OF SPRINKLER OPERATION 1500	SYSTEM TYPE	
	!DENSITY- GPM .1	(X)WET( )DRY( )DELUGE( )PREACTION	
D	!AREA PER SPRINKLER 225	SPRINKLER OR NOZZLE	
E	!HOSE ALLOWANCE GPM-INSIDE 0	MAKE RELIABLE	MODEL "G"
S	!HOSE ALLOWANCE GPM-OUTSIDE 100	SIZE 1/2"	K-FACTOR 5.62
I	!RACK SPRINKLER ALLOWANCE 0	TEMPERATURE RATING 165	
G	!		
N	!		

CALCULATION ! GPM REQUIRED 346.75 PSI REQUIRED 149.26 AT BASE OF RISER

SUMMARY ! C FACTOR USED: OVERHEAD 120 UNDERGROUND 140

W	!WATER FLOW TEST SEE PUMP TEST RESULTS ON PLAN 1of1	! PUMP DATA	! TANK OR RESERVOIR
A	!DATE OF TEST	! RATED CAP 500	! CAP. 0
T	!TIME OF TEST	! AT PSI 90	! ELEV. 0
E	!STATIC (PSI) 0	! ELEV 0	!
R	!RESIDUAL (PSI) 0	!	! WELL
	!FLOW (GPM) 0	!	! PROOF FLOW GPM 0
S	!ELEVATION PUMP DISCHARGE !		!
U			
P	!		
P	!LOCATION :6" IN STREET		
L	!SOURCE OF INFORMATION :S.S.I. AND PORTLAND WATER DISTRICT		
Y	!		

	!COMMODITY	CLASS	LOCATION	
C	!STORAGE HT.	AREA	AISLE WIDTH	
O	!STORAGE METHOD:SOLID PILED %	PALLETIZED %	RACK %	
M				
M	! !	( )SINGLE ROW	( )CONVEN. PALLET	( )AUTO. STORAGE	( )ENCAP.
	! R !	( )DOUBLE ROW	( )SLAVE PALLET	( )SOLID SHELVING	( )NON-ENCAP
S	! A !	( )MULTIPLE ROW		( )OPEN SHELVING	
T	! C !				
O	! K !	FLUE SPACING:		CLEARANCE:STORAGE TO CEILING	
R	! !	LONGITUDINAL	TRANSVERSE		
A	! !				
G	! !	HORIZONTAL BARRIERS PROVIDED:			
E	! !				

UNITS - DIAMETER (INCH) LENGTH (FOOT) FLOW (GPM) PRESSURE (PSI)

FIRE PROTECTION--BY COMPUTER DESIGN

********** SPRINKLER SYSTEMS INC. **********

JOB- 511 CONGRESS ST. 9TH FLOOR JOB NO 95044 DATE 10/04/95 PAGE 2

**********.10/1500+100---MOST REMOTE**********

HYDRLC. REF. POINT	QA FLOW QT	"C" DIA. LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	22.50	1.049	OE 2.0	1.00	16.03		Q=K*SQR(P):P= 16.03
TYP		C=120	1T 5.0	5.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		6.00	0.97		
	22.50				17.00		K 23= 5.460
DROP							
	22.51	1.049	OE 2.0	0.50	17.00		Q=K*SQR(P):P= 17
1-1		C=120	1T 5.0	5.00	0.00		K= 5.460 V = 8.35
	22.51	0.1619		5.50	0.89		
	22.51				17.89		K 24= 5.320
1							
	22.50	1.049	1E 2.0	2.50	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		9.50	1.54		
	22.50				17.57		K 25= 5.370
2-4							
	22.99	1.049	1E 2.0	11.00	16.74		Q=K*SQR(P):P= 16.74
2-1		C=120		2.00	0.00		K= 5.620 V = 8.53
	22.99	0.1683		13.00	2.19		
	22.51	1.049		7.50	18.93	18.93	K= 5.460 P= 17.00
2-2		C=120		0.00	0.00	1.93	VELOCITY = 16.88
	45.50	0.5953		7.50	4.47	17.00	
	25.68	1.452	2E 4.0	13.00	23.40	23.40	K= 5.460 P= 22.18
2-3		C=120		8.00	0.00	1.28	VELOCITY = 13.78
	71.18	0.2797		21.00	5.87	22.12	
	27.79	1.452	OE 4.0	15.00	29.27	29.27	K= 5.370 P= 26.79
2-4		C=120	1T 8.0	8.00	0.00	2.48	VELOCITY = 19.16
	98.97	0.5147		23.00	11.84	26.79	
	98.97				41.11		K 26= 15.440
2							
	22.50	1.049	2E 2.0	15.50	16.03		Q=K*SQR(P):P= 16.03
3-1		C=120		4.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		19.50	3.16		
	22.70	1.049		14.00	19.19	19.19	K= 5.460 P= 17.29
3-2		C=120		0.00	0.00	1.90	VELOCITY = 16.77
	45.20	0.5881		14.00	8.23	17.29	

**********.10/1500+100---MOST REMOTE**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	26.01	1.049		12.50	27.42	27.42	K= 5.460 P= 22.70
3-3		C=120		0.00	0.00	4.72	VELOCITY = 26.42
	71.21	1.3635		12.50	17.04	22.70	
	35.21	1.452	OE 4.0	1.50	44.46	44.46	K= 5.460 P= 41.59
3-4		C=120	1T 8.0	8.00	0.00	2.87	VELOCITY = 20.61
	106.42	0.5886		9.50	5.59	41.59	
	106.42				50.05		K 27= 15.040
3							
	22.50	1.049	1E 2.0	1.50	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		8.50	1.38		
	22.50				17.41		K 28= 5.390
4-1							
	22.50	1.049		12.00	17.42		Q=K*SQR(P):P= 17.42
4-1		C=120		0.00	0.00		K= 5.390 V = 8.35
	22.50	0.1618		12.00	1.94		
	22.81	1.049		12.00	19.36	19.36	K= 5.460 P= 17.45
4-2		C=120		0.00	0.00	1.91	VELOCITY = 16.81
	45.31	0.5907		12.00	7.09	17.45	
	27.36	1.452	OE 4.0	4.00	26.45	26.45	K= 5.460 P= 25.11
4-3		C=120	1T 8.0	8.00	0.00	1.34	VELOCITY = 14.07
	72.67	0.2906		12.00	3.49	25.11	
	72.67				29.94		K 29= 13.280
4							
	37.64	2.635		2.50	50.07		Q=K*SQR(P):P= 50.07
1		C=120		0.00	0.00		K= 5.320 V = 2.21
	37.64	0.0047		2.50	0.01		
	108.72	2.635	2E 6.0	13.00	50.08	50.08	K= 15.440 P= 49.58
2		C=120		12.00	0.00	0.50	VELOCITY = 8.60
	146.36	0.0582		25.00	1.46	49.58	
	106.40	2.635		8.50	51.54	51.54	K= 15.040 P= 50.05
3		C=120		0.00	0.00	1.49	VELOCITY = 14.86
	252.76	0.1601		8.50	1.36	50.05	
	93.99	2.635	OE 6.0	52.50	52.90	52.90	K= 13.280 P= 50.09
4		C=120	1T12.0	24.00	0.00	2.81	VELOCITY = 20.39
	346.75	0.2873	12.00F.	76.50	21.99	50.09	

**********.10/1500+100---MOST REMOTE**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	346.75				74.89		K 30= 40.070
6							
	346.75	2.635	1E 6.0	22.50	74.89		QA= 346.7 PT= 74.89
6		C=120		6.00	0.00		VELOCITY = 20.39
	346.75	0.2873		28.50	8.19		
	0.00	3.068	2E 7.0	12.00	83.08		QA= 0.0 PT= 83.08
7		C=120	2T15.0	46.00	0.00		VELOCITY = 15.04
	346.75	0.1369	2.00F.	58.00	7.95		
	0.00	4.026	0E10.0	5.00	91.03		QA= 0.0 PT= 91.03
8		C=120	1T20.0	24.00	0.00		VELOCITY = 8.73
	346.75	0.0364	4.00F.	29.00	1.06		
	346.75				92.09		K 31= 36.130
A							
	346.75	6.065		12.00	92.09		QA= 346.7 PT= 92.09
A		C=120		0.00	0.00		VELOCITY = 3.85
	346.75	0.0049		12.00	0.06		
	0.00	6.065		12.00	92.15		QA= 0.0 PT= 92.15
B		C=120		0.00	0.00		VELOCITY = 3.84
	346.75	0.0049		12.00	0.06		
	0.00	6.065		12.00	92.21		QA= 0.0 PT= 92.21
C		C=120		0.00	0.00		VELOCITY = 3.84
	346.75	0.0049		12.00	0.06		
	0.00	6.065		12.00	92.27		QA= 0.0 PT= 92.27
D		C=120		0.00	0.00		VELOCITY = 3.84
	346.75	0.0049		12.00	0.06		
	0.00	6.065		12.00	92.33		QA= 0.0 PT= 92.33
E		C=120		0.00	0.00		VELOCITY = 3.84
	346.75	0.0049		12.00	0.06		
	0.00	6.065		12.00	92.39		QA= 0.0 PT= 92.39
F		C=120		0.00	0.00		VELOCITY = 3.84
	346.75	0.0049		12.00	0.06		
	0.00	6.065	4E14.0	24.00	92.45		QA= 0.0 PT= 92.45
G		C=120		56.00	0.00		VELOCITY = 3.84
	346.75	0.0049		80.00	0.40		
	0.00	6.065	4E14.0	26.00	92.85		QA= 0.0 PT= 92.85
H		C=120	1T30.0	86.00	0.00		VELOCITY = 3.84
	346.75	0.0049		112.00	0.56		

**********.10/1500+100---MOST REMOTE**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	0.00	6.065	2E14.0	29.00	93.41		QA= 0.0 PT= 93.41
I		C=120		28.00	0.00		VELOCITY = 3.84
	346.75	0.0049		57.00	0.28		
	0.00	6.065	1E14.0	17.00	93.69		QA= 0.0 PT= 93.69
J		C=120	1T30.0	44.00	0.00		VELOCITY = 3.84
	346.75	0.0049		61.00	0.30		
	0.00	6.065	1E14.0	5.00	93.99		QA= 0.0 PT= 93.99
K		C=120		49.00	0.00		VELOCITY = 3.84
	346.75	0.0049	35.00F.	54.00	0.27		
	0.00	3.065		0.75	94.26		QA= 0.0 PT= 94.26
100		C=120		0.00	0.00		VELOCITY = 15.07
	346.75	0.1376		0.75	0.10		
	100.00	6.065		0.00	94.36		QA= 100.0 PT= 94.36
PUMP		C=120		0.00	55.00		VELOCITY = 4.95
	446.75	0.0079		0.00	0.00		PE= FOR HT. OF 126.9
	446.75				149.36		K 32= 36.560
HOSE							

HYDRLC. REF. POINT	QA FLOW QT	"C" DIA. LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	22.50	1.049	1E 2.0	6.00	16.03		Q=K*SQR(P):P= 16.03
5-1		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		13.00	2.10		
	22.50				18.13		K 34= 5.280
5A							
	22.50	1.049	1E 2.0	3.50	16.03		Q=K*SQR(P):P= 16.03
5-2		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		10.50	1.70		
	22.50				17.73		K 35= 5.340
5A							
	22.50	1.049	1E 2.0	6.00	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		13.00	2.10		
	22.50				18.13		K 36= 5.280
5-3							
	22.50	1.049	1E 2.0	2.00	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		9.00	1.46		
	22.50				17.49		K 37= 5.380
5-4							
	45.22	1.049		8.00	18.13		Q=K*SQR(P):P= 18.13
5A		C=120		0.00	0.00		K= 10.620 V = 16.78
	45.22	0.5886		8.00	4.71		
	24.54	1.452		6.00	22.84	22.84	K= 5.280 P= 21.61
5-3		C=120		0.00	0.00	1.23	VELOCITY = 13.51
	69.76	0.2694		6.00	1.62	21.61	
	25.33	1.452	2E 4.0	14.00	24.46	24.46	K= 5.380 P= 22.17
5-4		C=120		8.00	0.00	2.29	VELOCITY = 18.41
	95.09	0.4779		22.00	10.52	22.17	
	31.25	1.687		12.00	34.98	34.98	K= 5.460 P= 32.76
5-5		C=120		0.00	0.00	2.22	VELOCITY = 18.12
	126.34	0.3894		12.00	4.67	32.76	
	32.82	1.687	0E 4.0	4.00	39.65	39.65	K= 5.460 P= 36.13
5-6		C=120	1T 8.0	8.00	0.00	3.52	VELOCITY = 22.83
	159.16	0.5970		12.00	7.16	36.13	

**********CHECK LINE 1**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	159.16				46.81		K 38= 23.260
5							

SPRINKLER SYSTEMS INC.

LEWISTON, ME 04240

207-782-0104

HYDRAULIC DESIGN INFORMATION SHEET

NAME 511 CONGRESS ST. 8TH FLOOR — DATE 10/04/95

LOCATION 511 CONGRESS STREET, PORTLAND, MAINE

BUILDING EXISTING — SYSTEM NO. 1

CONTRACTOR SPRINKLER SYSTEMS INC. — CONTRACT NO. 95044

CALCULATED BY CDS — DRAWING NO. 1-1 OF 1

CONSTRUCTION:( )COMBUSTIBLE (X)NON-COMBUSTIBLE — CEILING HEIGHT

OCCUPANCY OFFICES

SYSTEM

(X)NFPA13 (X)LT.HAZ. ORD. HAZ.GP.( )1( )2( )3( )EX.HAZ.

( )NFPA 231 ( )NFPA 231C FIGURE 2-2.1.1B CURVE

( )OTHER

( )SPECIFIC RULING MADE BY DATE

DESIGN

AREA OF SPRINKLER OPERATION 1500

DENSITY- GPM .1

AREA PER SPRINKLER 225

HOSE ALLOWANCE GPM-INSIDE 0

HOSE ALLOWANCE GPM-OUTSIDE 100

RACK SPRINKLER ALLOWANCE 0

SYSTEM TYPE

(X)WET( )DRY( )DELUGE( )PREACTION

SPRINKLER OR NOZZLE

MAKE RELIABLE MODEL "G"

SIZE 1/2" K-FACTOR 5.62

TEMPERATURE RATING 165

CALCULATION SUMMARY

GPM REQUIRED 376.66 PSI REQUIRED 142.98 AT BASE OF RISER

C FACTOR USED: OVERHEAD 120 UNDERGROUND 140

WATER SUPPLY

WATER FLOW TEST SEE PUMP TEST RESULTS ON FLOW 1&F1

DATE OF TEST

TIME OF TEST

STATIC (PSI) 0

RESIDUAL (PSI) 0

FLOW (GPM) 0

ELEVATION PUMP DISCHARGE

PUMP DATA

RATED CAP 500

AT PSI 90

ELEV 0

TANK OR RESERVOIR

CAP. 0

ELEV. 0

WELL

PROOF FLOW GPM 0

LOCATION :6" IN STREET

SOURCE OF INFORMATION :S.S.I. AND PORTLAND WATER DISTRICT

COMMODITY STORAGE

COMMODITY — CLASS — LOCATION

STORAGE HT. — AREA — AISLE WIDTH

STORAGE METHOD:SOLID PILED % PALLETIZED % RACK %

RACK:

( )SINGLE ROW ( )CONVEN. PALLET ( )AUTO. STORAGE ( )ENCAP.

( )DOUBLE ROW ( )SLAVE PALLET ( )SOLID SHELVING ( )NON-ENCAP

( )MULTIPLE ROW ( )OPEN SHELVING

FLUE SPACING: CLEARANCE:STORAGE TO CEILING

LONGITUDINAL TRANSVERSE

HORIZONTAL BARRIERS PROVIDED:

UNITS - DIAMETER (INCH) LENGTH (FOOT) FLOW (GPM) PRESSURE (PSI)

**********AREA 1--.10/1500+100**********

HYDRLC. REF. POINT	QA FLOW QT	"C" DIA. LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	22.50	1.049	0E 2.0	1.00	16.03		Q=K*SQR(P):P= 16.03
TYP		C=120	1T 5.0	5.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		6.00	0.97		
	22.50				17.00		K 1= 5.460
DROP							
	22.57	1.049	2E 2.0	13.00	16.13		Q=K*SQR(P):P= 16.13
1-1		C=120		4.00	0.00		K= 5.620 V = 8.38
	22.57	0.1627		17.00	2.77		
	22.52	1.049		13.00	18.90	18.90	K= 5.460 P= 17.01
1-2		C=120		0.00	0.00	1.89	VELOCITY = 16.73
	45.09	0.5854		13.00	7.61	17.01	
	25.53	1.049		12.50	26.51	26.51	K= 5.460 P= 21.87
1-3		C=120		0.00	0.00	4.64	VELOCITY = 26.20
	70.62	1.3427		12.50	16.78	21.87	
	34.74	1.452	0E 4.0	27.50	43.29	43.29	K= 5.460 P= 40.48
1-4		C=120	1T 8.0	8.00	0.00	2.81	VELOCITY = 20.40
	105.36	0.5778		35.50	20.51	40.48	
	105.36				63.80		K 2= 13.190
1							
	22.57	1.049	1E 2.0	15.00	16.13		Q=K*SQR(P):P= 16.13
2-1		C=120		2.00	0.00		K= 5.620 V = 8.38
	22.57	0.1627		17.00	2.77		
	22.52	1.049		14.00	18.90	18.90	K= 5.460 P= 17.01
2-2		C=120		0.00	0.00	1.89	VELOCITY = 16.73
	45.09	0.5854		14.00	8.20	17.01	
	25.85	1.049		12.00	27.10	27.10	K= 5.460 P= 22.42
2-3		C=120		0.00	0.00	4.68	VELOCITY = 26.32
	70.94	1.3540		12.00	16.25	22.42	
	34.76	1.452	0E 4.0	27.00	43.35	43.35	K= 5.460 P= 40.52
2-4		C=120	1T 8.0	8.00	0.00	2.83	VELOCITY = 20.47
	105.70	0.5813		35.00	20.35	40.52	
	105.70				63.70		K 3= 13.240
2							
	22.50	1.049	1E 2.0	3.00	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		10.00	1.62		

**********AREA 1--.10/1500+100**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
3-2	22.50				17.65		K 4= 5.360
3-1	22.57	1.049	2E 2.0	17.00	16.13		Q=K*SQR(P):P= 16.13
		C=120		4.00	0.00		K= 5.620 V = 8.38
	22.57	0.1627		21.00	3.42		
3-2	22.52	1.049		13.00	19.55	19.55	K= 5.360 P= 17.66
		C=120		0.00	0.00	1.89	VELOCITY = 16.73
	45.09	0.5854		13.00	7.61	17.66	
3-3	25.44	1.049		14.00	27.16	27.16	K= 5.360 P= 22.53
		C=120		0.00	0.00	4.63	VELOCITY = 26.17
	70.53	1.3395		14.00	18.75	22.53	
3-4	35.82	1.452	0E 4.0	26.50	45.91	45.91	K= 5.460 P= 43.04
		C=120	1T 8.0	8.00	0.00	2.87	VELOCITY = 20.59
	106.35	0.5879		34.50	20.28	43.04	
3	106.35				66.19		K 5= 13.070
1	108.38	2.635		10.50	67.52		Q=K*SQR(P):P= 67.52
		C=120		0.00	0.00		K= 13.190 V = 6.37
	108.38	0.0334		10.50	0.35		
2	108.19	2.635		6.50	67.87	67.87	K= 13.240 P= 66.77
		C=120		0.00	0.00	1.10	VELOCITY = 12.73
	216.57	0.1203		6.50	0.78	66.77	
3	106.35	2.635		12.00	68.65	68.65	K= 13.070 P= 66.21
		C=120		0.00	0.00	2.44	VELOCITY = 18.99
	322.92	0.2519		12.00	3.02	66.21	
10	322.92				71.67		K 6= 38.140
10	322.92	2.635	2E 6.0	10.00	71.67		QA= 322.9 PT= 71.67
		C=120		12.00	0.00		VELOCITY = 18.99
	322.92	0.2519		22.00	5.54		
11	0.00	3.068	2E 7.0	35.00	77.21		QA= 0.0 PT= 77.21
		C=120	4T15.0	74.00	0.00		VELOCITY = 14.00
	322.92	0.1200		109.00	13.09		
12	0.00	4.026	0E10.0	5.00	90.30		QA= 0.0 PT= 90.30
		C=120	1T20.0	24.00	0.00		VELOCITY = 8.13
	322.92	0.0319	4.00F.	29.00	0.93		

**********AREA 1--.10/1500+100**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
B	322.92				91.23		K 7= 33.810
B	322.92	6.065		12.00	91.23		QA= 322.9 PT= 91.23
		C=120		0.00	0.00		VELOCITY = 3.58
	322.92	0.0043		12.00	0.05		
C	0.00	6.065		12.00	91.28		QA= 0.0 PT= 91.28
		C=120		0.00	0.00		VELOCITY = 3.58
	322.92	0.0043		12.00	0.05		
D	0.00	6.065		12.00	91.33		QA= 0.0 PT= 91.33
		C=120		0.00	0.00		VELOCITY = 3.58
	322.92	0.0043		12.00	0.05		
E	0.00	6.065		12.00	91.38		QA= 0.0 PT= 91.38
		C=120		0.00	0.00		VELOCITY = 3.58
	322.92	0.0043		12.00	0.05		
F	0.00	6.065		12.00	91.43		QA= 0.0 PT= 91.43
		C=120		0.00	0.00		VELOCITY = 3.58
	322.92	0.0043		12.00	0.05		
G	0.00	6.065	4E14.0	24.00	91.48		QA= 0.0 PT= 91.48
		C=120		56.00	0.00		VELOCITY = 3.58
	322.92	0.0043		80.00	0.35		
H	0.00	6.065	4E14.0	26.00	91.83		QA= 0.0 PT= 91.83
		C=120	1T30.0	86.00	0.00		VELOCITY = 3.58
	322.92	0.0043		112.00	0.49		
I	0.00	6.065	2E14.0	29.00	92.32		QA= 0.0 PT= 92.32
		C=120		28.00	0.00		VELOCITY = 3.58
	322.92	0.0043		57.00	0.25		
J	0.00	6.065	1E14.0	17.00	92.57		QA= 0.0 PT= 92.57
		C=120	1T30.0	44.00	0.00		VELOCITY = 3.58
	322.92	0.0043		61.00	0.27		
K	0.00	6.065	1E14.0	5.00	92.84		QA= 0.0 PT= 92.84
		C=120		49.00	0.00		VELOCITY = 3.58
	322.92	0.0043	35.00F.	54.00	0.23		
100	0.00	3.065		0.75	93.07		QA= 0.0 PT= 93.07
		C=120		0.00	0.00		VELOCITY = 14.03
	322.92	0.1206		0.75	0.09		
PUMP	100.00	6.065		0.00	93.16		QA= 100.0 PT= 93.16
		C=120		0.00	49.81		VELOCITY = 4.69
	422.92	0.0071		0.00	0.00		PE= FOR HT. OF 115.0

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	422.92				142.97		K 8= 35.370
HOSE							

********** SPRINKLER SYSTEMS INC. **********

JOB- 511 CONGRESS ST. 8TH FLOOR JOB NO 95044 DATE 10/04/95 PAGE 6

**********AREA 2--.10/1500+100**********

HYDRLC. REF. POINT	QA FLOW QT	"C" DIA. LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	22.50	1.049	0E 2.0	1.00	16.03		Q=K*SQR(P):P= 16.03
TYP		C=120	1T 5.0	5.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		6.00	0.97		
	22.50				17.00		K 9= 5.460
DROP							
	23.21	1.049	1E 2.0	9.00	17.05		Q=K*SQR(P):P= 17.05
4-1		C=120		2.00	0.00		K= 5.620 V = 8.61
	23.21	0.1713		11.00	1.89		
	22.51	1.049		6.00	18.94	18.94	K= 5.460 P= 17.00
4-2		C=120		0.00	0.00	1.94	VELOCITY = 16.96
	45.72	0.6007		6.00	3.60	17.00	
	23.24	1.049	0E 2.0	2.50	22.54	22.54	K= 5.460 P= 18.18
4-3		C=120	1T 5.0	5.00	0.00	4.42	VELOCITY = 25.58
	68.96	1.2849		7.50	9.64	18.12	
	68.96				32.18		K 10= 12.160
4							
	22.50	1.049	1E 2.0	4.50	16.03		Q=K*SQR(P):P= 16.03
4-4		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		11.50	1.86		
	22.50				17.89		K 11= 5.320
4							
	22.50	1.049	1E 2.0	2.50	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		9.50	1.54		
	22.50				17.57		K 12= 5.370
5-3							
	22.99	1.049	1E 2.0	11.00	16.74		Q=K*SQR(P):P= 16.74
5-1		C=120		2.00	0.00		K= 5.620 V = 8.53
	22.99	0.1683		13.00	2.19		
	22.51	1.049		6.00	18.93	18.93	K= 5.460 P= 17.00
5-2		C=120		0.00	0.00	1.93	VELOCITY = 16.88
	45.50	0.5953		6.00	3.57	17.00	
	22.88	1.049	0E 2.0	3.00	22.50	22.50	K= 5.370 P= 18.15
5-3		C=120	1T 5.0	5.00	0.00	4.35	VELOCITY = 25.37
	68.38	1.2650		8.00	10.12	18.15	

**********AREA 2--.10/1500+100**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
5	68.38				32.62		K 13= 11.970
ARM	22.50	1.049	1E 2.0	5.00	16.03		Q=K*SQR(P):P= 16.03
		C=120	2T 5.0	12.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		17.00	2.75		
6-3	22.50				18.78		K 14= 5.190
6-1	23.35	1.049	1E 2.0	11.00	17.26		Q=K*SQR(P):P= 17.26
		C=120		2.00	0.00		K= 5.620 V = 8.66
	23.35	0.1733		13.00	2.25		
6-2	22.85	1.049		6.00	19.51	19.51	K= 5.460 P= 17.52
		C=120		0.00	0.00	1.99	VELOCITY = 17.14
	46.20	0.6124		6.00	3.67	17.52	
6-3	22.50	1.049	0E 2.0	3.00	23.18	23.18	K= 5.190 P= 18.79
		C=120	1T 5.0	5.00	0.00	4.39	VELOCITY = 25.49
	68.70	1.2759		8.00	10.21	18.79	
6	68.70				33.39		K 15= 11.890
ARM	22.50	1.049	1E 2.0	3.00	16.03		Q=K*SQR(P):P= 16.03
		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		10.00	1.62		
7-2	22.50				17.65		K 16= 5.360
7-1	22.98	1.049	1E 2.0	15.00	16.72		Q=K*SQR(P):P= 16.72
		C=120		2.00	0.00		K= 5.620 V = 8.53
	22.98	0.1682		17.00	2.86		
7-2	22.52	1.049	0E 2.0	3.00	19.58	19.58	K= 5.360 P= 17.65
		C=120	1T 5.0	5.00	0.00	1.93	VELOCITY = 16.88
	45.50	0.5953		8.00	4.76	17.65	
7	45.50				24.34		K 17= 9.220
8-1	22.50	1.049	2E 2.0	17.50	16.03		Q=K*SQR(P):P= 16.03
		C=120		4.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		21.50	3.48		

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	22.90	1.049	1E 2.0	5.50	19.51	19.51	K= 5.460 P= 17.59
8-2		C=120	1T 5.0	7.00	0.00	1.92	VELOCITY = 16.84
	45.40	0.5929		12.50	7.41	17.59	
	45.40				26.92		K 18= 8.750
8							
	22.50	1.049	1E 2.0	3.00	16.03		Q=K*SQR(P):P= 16.03
ARM		C=120	1T 5.0	7.00	0.00		K= 5.620 V = 8.35
	22.50	0.1618		10.00	1.62		
	22.50				17.65		K 19= 5.360
9-1							
	101.16	2.635		10.50	33.49		Q=K*SQR(P):P= 33.49
4		C=120		0.00	0.00		K= 17.480 V = 5.95
	101.16	0.0294		10.50	0.31		
	68.89	2.635		12.00	33.80	33.80	K= 11.970 P= 33.12
5		C=120		0.00	0.00	0.68	VELOCITY = 10.00
	170.05	0.0769		12.00	0.92	33.12	
	68.71	2.635		8.00	34.72	34.72	K= 11.890 P= 33.39
6		C=120		0.00	0.00	1.33	VELOCITY = 14.04
	238.76	0.1441		8.00	1.15	33.39	
	53.66	2.635		5.00	35.87	35.87	K= 9.220 P= 33.87
7		C=120		0.00	0.00	2.00	VELOCITY = 17.19
	292.42	0.2096		5.00	1.05	33.87	
	51.14	2.635	1E 6.0	10.00	36.92	36.92	K= 8.750 P= 34.16
8		C=120		6.00	0.00	2.76	VELOCITY = 20.20
	343.56	0.2825		16.00	4.52	34.16	
	33.10	2.635	0E 6.0	45.50	41.44	41.44	K= 5.360 P= 38.13
9-1		C=120	1T12.0	24.00	0.00	3.31	VELOCITY = 22.15
	376.66	0.3349	12.00F.	69.50	23.28	38.13	
	376.66				64.72		K 20= 46.820
10							
	376.66	2.635	2E 6.0	10.00	64.72		QA= 376.6 PT= 64.72
10		C=120		12.00	0.00		VELOCITY = 22.15
	376.66	0.3349		22.00	7.37		
	0.00	3.068	2E 7.0	35.00	72.09		QA= 0.0 PT= 72.09
11		C=120	4T15.0	74.00	0.00		VELOCITY = 16.33
	376.66	0.1596		109.00	17.40		

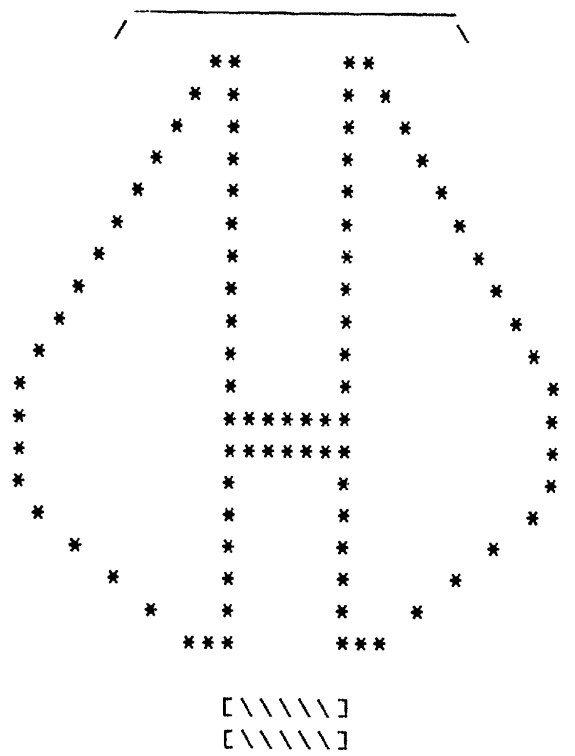
HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	0.00	4.026	0E10.0	5.00	89.49		QA= 0.0 PT= 89.49
12		C=120	1T20.0	24.00	0.00		VELOCITY = 9.48
	376.66	0.0425	4.00F.	29.00	1.23		
	376.66				90.72		K 21= 39.550
B							
	376.66	6.065		12.00	90.72		QA= 376.6 PT= 90.72
B		C=120		0.00	0.00		VELOCITY = 4.18
	376.66	0.0057		12.00	0.07		
	0.00	6.065		12.00	90.79		QA= 0.0 PT= 90.79
C		C=120		0.00	0.00		VELOCITY = 4.18
	376.66	0.0057		12.00	0.07		
	0.00	6.065		12.00	90.86		QA= 0.0 PT= 90.86
D		C=120		0.00	0.00		VELOCITY = 4.18
	376.66	0.0057		12.00	0.07		
	0.00	6.065		12.00	90.93		QA= 0.0 PT= 90.93
E		C=120		0.00	0.00		VELOCITY = 4.18
	376.66	0.0057		12.00	0.07		
	0.00	6.065		12.00	91.00		QA= 0.0 PT= 91.00
F		C=120		0.00	0.00		VELOCITY = 4.18
	376.66	0.0057		12.00	0.07		
	0.00	6.065	4E14.0	24.00	91.07		QA= 0.0 PT= 91.07
G		C=120		56.00	0.00		VELOCITY = 4.18
	376.66	0.0057		80.00	0.46		
	0.00	6.065	4E14.0	26.00	91.53		QA= 0.0 PT= 91.53
H		C=120	1T30.0	86.00	0.00		VELOCITY = 4.18
	376.66	0.0057		112.00	0.65		
	0.00	6.065	2E14.0	29.00	92.18		QA= 0.0 PT= 92.18
I		C=120		28.00	0.00		VELOCITY = 4.18
	376.66	0.0057		57.00	0.33		
	0.00	6.065	1E14.0	17.00	92.51		QA= 0.0 PT= 92.51
J		C=120	1T30.0	44.00	0.00		VELOCITY = 4.18
	376.66	0.0057		61.00	0.35		
	0.00	6.065	1E14.0	5.00	92.86		QA= 0.0 PT= 92.86
K		C=120		49.00	0.00		VELOCITY = 4.18
	376.66	0.0057	35.00F.	54.00	0.31		
	0.00	3.065		0.75	93.17		QA= 0.0 PT= 93.17
100		C=120		0.00	0.00		VELOCITY = 16.37
	376.66	0.1604		0.75	0.12		

********** SPRINKLER SYSTEMS INC. **********

JOB- 511 CONGRESS ST. 8TH FLOOR JOB NO 95044 DATE 10/04/95 PAGE 10

**********AREA 2--.10/1500+100**********

HYDRLC. REF. POINT	QA FLOW QT	DIA. "C" LOSS/F	EQUIV. FITTING LENGTHS	PIPE FTGS. TOT.	PT PE PF	PT PV PN	***** NOTES *****
	100.00	6.065		0.00	93.29		QA= 100.0 PT= 93.2
PUMP		C=120		0.00	49.81		VELOCITY = 5.29
	476.66	0.0089		0.00	0.00		PE= FOR HT. OF 115.(
	476.66				143.10		K 22= 39.850
HOSE							



- - -FIRE PROTECTION BY COMPUTER DESIGN

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*************************************
*     SPRINKLER SYSTEMS INC.        *
*       LEWISTON, ME  04240         *
*           207-782-0104            *
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*****************************************************************
* CONTRACTOR        SPRINKLER SYSTEMS INC.                      *
* NAME              511 CONGRESS ST.  STANDPIPE                 *
* LOCATION          511 CONGRESS STREET,  PORTLAND,   MAINE     *
* SYSTEM NO.        EX.STPIPE                                   *
* CONTRACT NO.      95044                                       *
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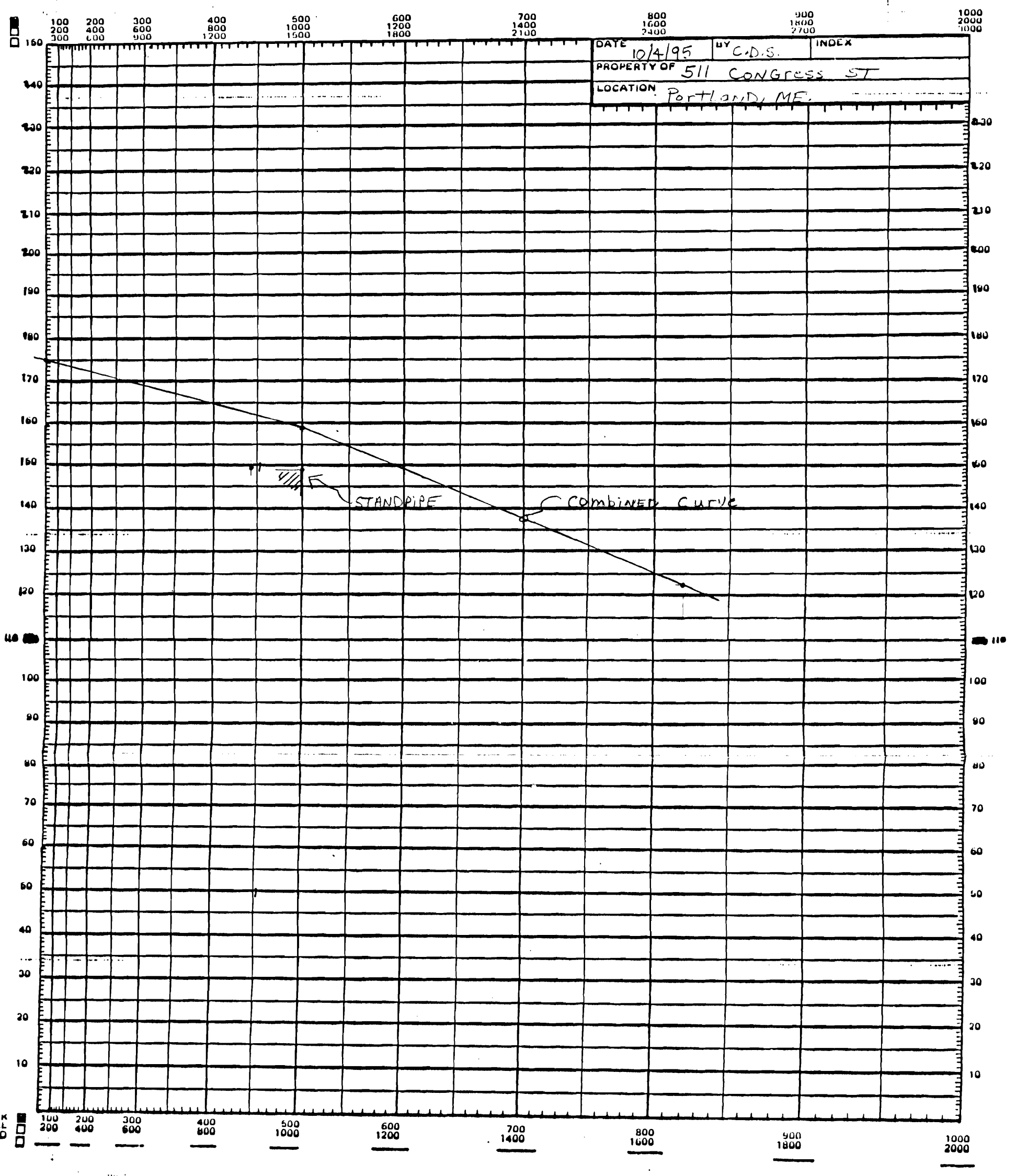
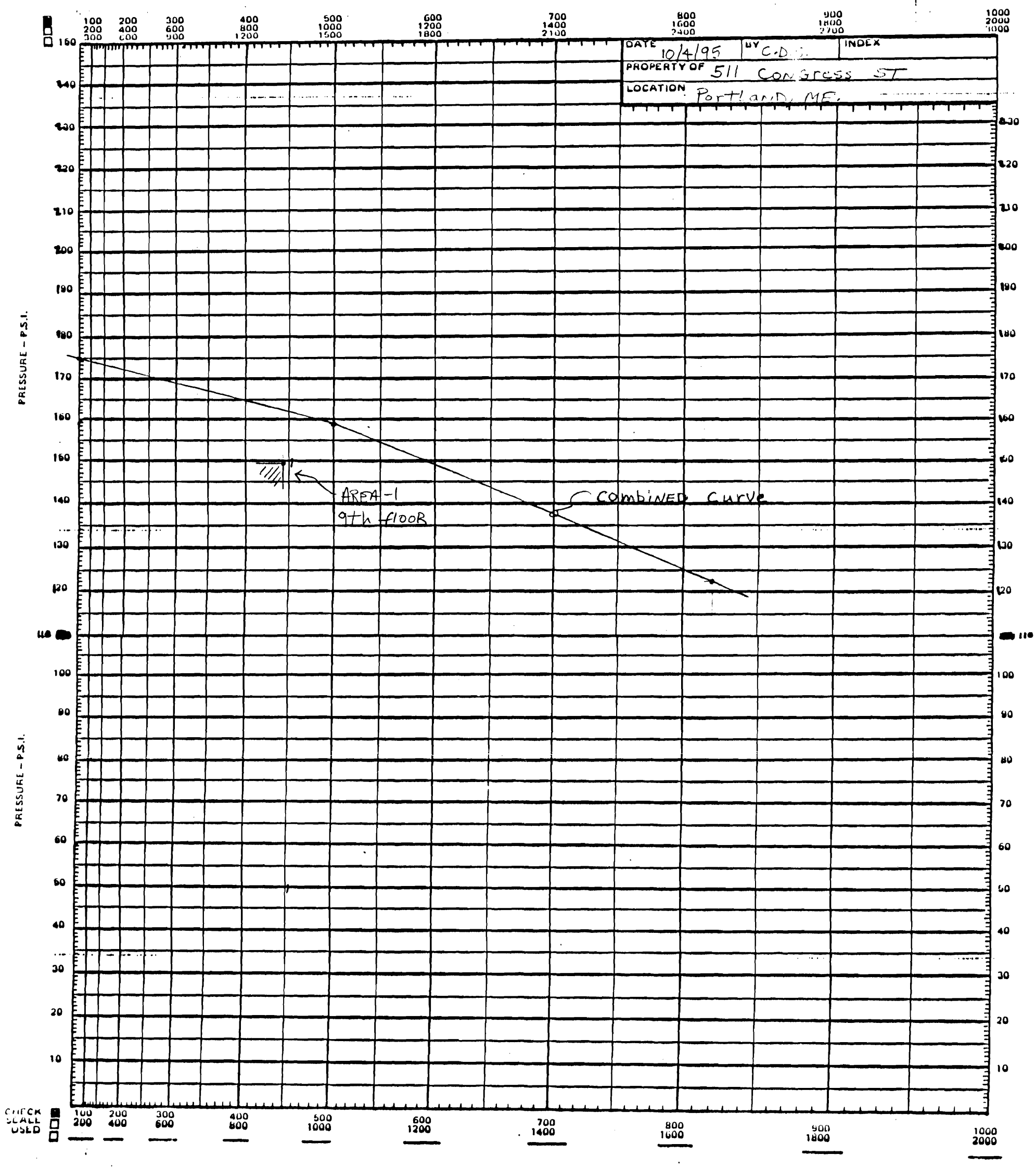
WATER SUPPLY GRAPH NO. N 1.85

Factory Mutual System



WATER SUPPLY GRAPH NO. N 1.85

Factory Mutual System



WATER SUPPLY GRAPH NO. N 1.85

Factory Mutual System