

BICALURO ASSOCIATES P.C.
207 YELLOWKNIFE ROAD
MORGANVILLE, NJ 07751

HYDRAULIC CALCULATIONS FOR
180-28 WEXFORD TERRACE
JAMAICA, NY 11432



DRAWING NUMBER:SP-100 DATE: DEC 20, 2017

-DESIGN DATA-

REMOTE AREA NUMBER:REMOTE REMOTE AREA LOCATION:3RD FLOOR

OCCUPANCY CLASSIFICATION:LIGHT HAZARD

DENSITY:0.1 gpm/sq. ft.

AREA OF APPLICATION: 282 sq. ft.

COVERAGE PER SPRINKLER:225 sq. ft.

TYPE OF SPRINKLERS CALCULATED:RFC 43

NUMBER OF SPRINKLERS CALCULATED: 4

TYPE OF SYSTEM:WET

*VOLUME OF DRY OR PREACTION SYSTEM:

*DETAILS:

WATER SUPPLY

Source: NYC WATER MAIN Test Date: 12/11/2017 Test By:DEP

Location: 180-28 WEXFORD TERRACE

Static: 36.8 psi Residual: 78 psi Flow: 500.0 gpm

Source Elevation Relative to Finished Flow Level: ft.

INSTALLING CONTRACTOR

Name:

Address:

Phone:

Certification number:

NAME OF DESIGNER:LUCIAN NICOLESCU, PE

AUTHORITY HAVING JURISDICTION:

NOTES:

Calculations performed by HASS under license # 49102009
granted by HRS SYSTEMS, INC.

(Notes continue after pipe calculations results.)

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DEPT BLDGS Job No. 440458568



Scan Code ESHS9258375

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

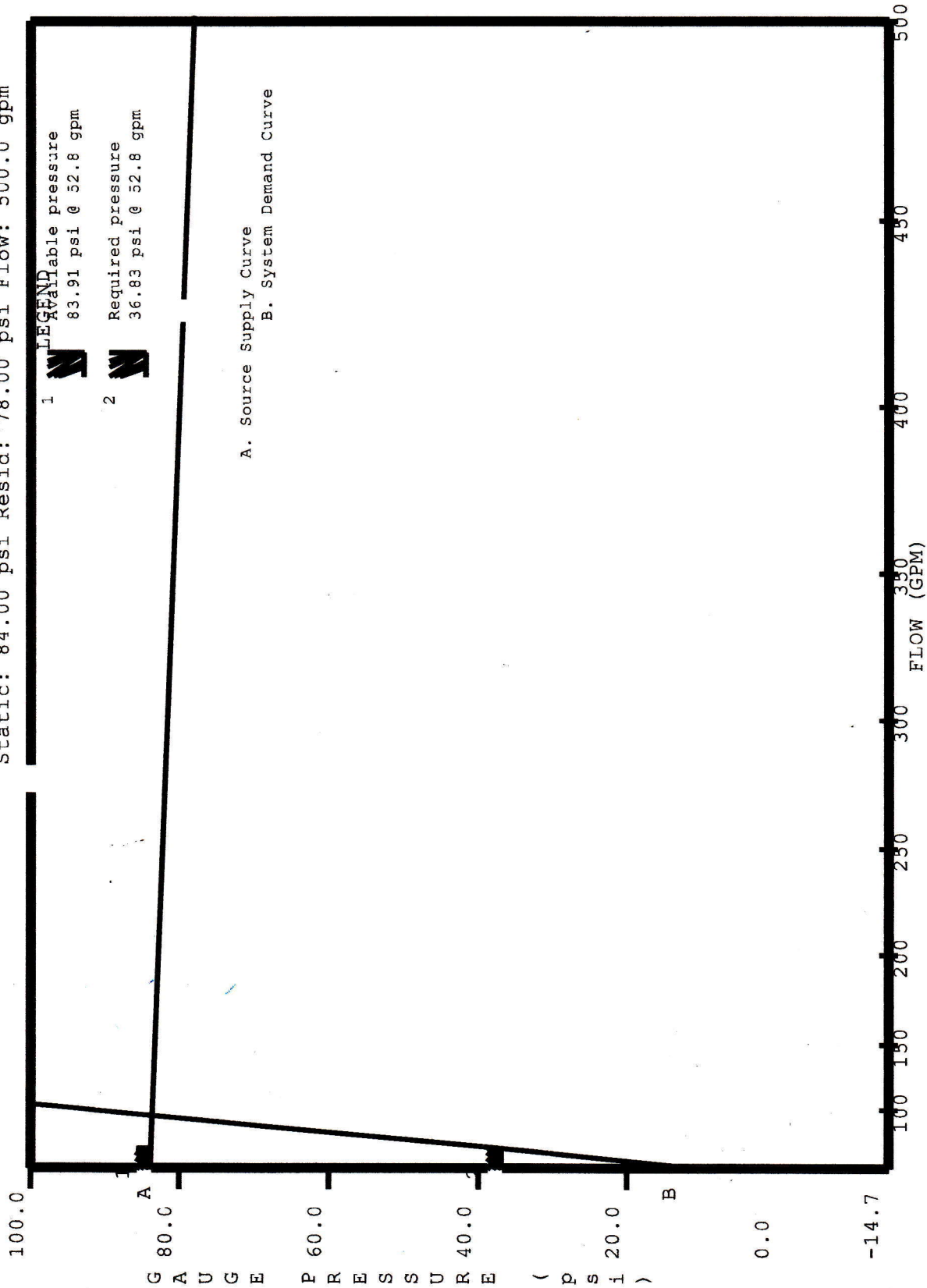
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DATE: 12/20/2017 0-28 WEXFORD TERRACE\CALCS\HYDRAULIC CALCS\18028WT-HC.SDF

JOB TITLE: 18028WT-HC

WATER SUPPLY ANALYSIS

Static: 84.00 psi Resid: 78.00 psi Flow: 500.0 gpm



Note: (1) Dashed Lines indicate extrapolated values from Test Results

(2) On Site pressures are based on hose stream deduction at the source

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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JOB TITLE: 18028WT-HC

NFPA WATER SUPPLY DATA

SOURCE NODE TAG	STATIC PRESS. (PSI)	RESID. PRESS. (PSI)	FLOW @ (GPM)	AVAIL. PRESS. (PSI)	TOTAL @ DEMAND (GPM)	REQ'D PRESS. (PSI)
1	84.0	78.0	500.0	83.9	52.8	36.8

AGGREGATE FLOW ANALYSIS:

TOTAL FLOW AT SOURCE	52.8 GPM
TOTAL HOSE STREAM ALLOWANCE AT SOURCE	0.0 GPM
OTHER HOSE STREAM ALLOWANCES	0.0 GPM
TOTAL DISCHARGE FROM ACTIVE SPRINKLERS	52.8 GPM

NODE ANALYSIS DATA

NODE TAG	ELEVATION (FT)	NODE TYPE	PRESSURE (PSI)	DISCHARGE (GPM)	NOTES
2	79.1	- - - -	36.7	- - -	
3	79.1	- - - -	24.7	- - -	
4	83.1	- - - -	22.9	- - -	
5	104.4	- - - -	13.6	- - -	
6	104.4	- - - -	12.7	- - -	
7	105.0	- - - -	10.2	- - -	
8	104.0	K= 4.30	9.4	13.2	
9	105.0	- - - -	10.1	- - -	
10	104.0	K= 4.30	9.9	13.5	
11	105.0	- - - -	9.4	- - -	
12	104.0	K= 4.30	9.3	13.1	
13	104.0	K= 4.30	9.1	13.0	
1	79.1	SOURCE	36.8	52.8	

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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DATE: 12/20/2017-28 WEXFORD TERRACE\CALCS\HYDRAULIC CALCS\18028WT-HC.SDF

JOB TITLE: 18028WT-HC

NFPA3 PIPE DATA

Pipe Tag	K-fac	Add Fl	Add Fl To	Fit:	L	C	(Pt)	Note	
To Node	El (ft)	PT	(q)	Node/	Nom ID	Eq.Ln.	F		(Pe)
Frm Node	El (ft)	PT	Tot. (Q)	Disch	Act ID	(ft.)	T		(Pf)
							Pf/ft.		
Pipe: 1		0.0	0.0				50.00	120	36.7
2	79.1	36.7	52.8	3	4.000	2E:20.0	22.00		0.0
1	79.1	36.8	52.8		4.026	G: 2.0	72.00	0.001	0.1
Pipe: 2			0.0			Fixed Pressure Loss Device			
3	79.1	24.7	52.8	4		12.0 psi,	52.8 gpm		
2	79.1	36.7	52.8						
Pipe: 3		0.0	0.0				75.00	120	22.9
4	83.1	22.9	52.8	5	4.000	5E:50.0	70.00		1.7
3	79.1	24.7	52.8		4.026	T:20.0	145.00	0.001	0.2
Pipe: 4		0.0	0.0				25.00	120	13.6
5	104.4	13.6	52.8	6	4.000	----	0.00		9.2
4	83.1	22.9	52.8		4.026		25.00	0.001	0.0
Pipe: 5		0.0	0.0			ETCG	3.00	120	12.7
6	104.4	12.7	52.8	7	2.000		27.00		0.0
5	104.4	13.6	52.8		2.067		30.00	0.029	0.9
Pipe: 6		0.0	39.6	9			65.00	120	10.2
7	105.0	10.2	13.2	8	2.000	E: 5.0	15.00		0.3
6	104.4	12.7	52.8		2.067	T:10.0	80.00	0.029	2.3
Pipe: 7		4.30	13.2	Disch			10.00	120	9.4
8	104.0	9.4	0.0		1.000	2E: 4.0	9.00		-0.4
7	105.0	10.2	13.2		1.049	T: 5.0	19.00	0.060	1.1
Pipe: 8		0.0	26.1	11			1.50	120	10.1
9	105.0	10.1	13.5	10	1.500	----	0.00		0.0
7	105.0	10.2	39.6		1.610		1.50	0.057	0.1
Pipe: 9		4.30	13.5	Disch			1.00	120	9.9
10	104.0	9.9	0.0		1.000	2E: 4.0	9.00		-0.4
9	105.0	10.1	13.5		1.049	T: 5.0	10.00	0.063	0.6
Pipe: 10		0.0	13.0	13			3.00	120	9.4
11	105.0	9.4	13.1	12	1.000	----	0.00		0.0
9	105.0	10.1	26.1		1.049		3.00	0.213	0.6
Pipe: 11		4.30	13.1	Disch			2.00	120	9.3
12	104.0	9.3	0.0		1.000	E: 2.0	7.00		-0.4
11	105.0	9.4	13.1		1.049	T: 5.0	9.00	0.060	0.5

SPRINKLER SYSTEM HYDRAULIC ANALYSIS

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DATE: 12/20/2017-28 WEXFORD TERRACE\CALCS\HYDRAULIC CALCS\18028WT-HC.SDF

JOB TITLE: 18028WT-HC

Pipe Tag	K-fac	Add Fl	Add Fl To	Fit:	L	C	(Pt)	Note	
To Node	El (ft)	PT	(q)	Node/	Nom ID	Eq.Ln.	F	(Pe)	
Frm Node	El (ft)	PT	Tot.(Q)	Disch	Act ID	(ft.)	T	Pf/ft. (Pf)	
Pipe: 12	4.30	13.0	Disch				6.00	120	9.1
13	104.0	9.1	0.0		1.000	E: 2.0	7.00		-0.4
11	105.0	9.4	13.0		1.049	T: 5.0	13.00	0.058	0.8

NOTES (HASS):

(1) Calculations were performed by the HASS 8.7 computer program in accordance with NFPA13 (2017) under license no. 49102009 granted by
HRS Systems, Inc.
208 Southside Square
Petersburg, TN 37144
(931) 659-9760

(2) The system has been calculated to provide an average imbalance at each node of 0.007 gpm and a maximum imbalance at any node of 0.079 gpm.

(3) Total pressure at each node is used in balancing the system. Maximum water velocity is 9.7 ft/sec at pipe 10.

(4) Items listed in bold print on the cover sheet

are automatically transferred from the calculation report.

(5) Available pressure at source node 1 under full flow conditions is 83.62 psi with a flow of 111.95 gpm.

(6) PIPE FITTINGS TABLE

Pipe Table Name: STANDARD.PIP