

HYDRAULIC CALCULATIONS AT SPECIFIED DENSITY

THE FOLLOWING SPRINKLERS ARE OPERATING IN:

TEST AREA 1       TEST AREA 2       TEST AREA 3       REMOTE AREA

Elevation of sprinklers = Elevation above water test.

REF. PT.	K	ELEV. ft	FLOW gpm	PRESSURE psi
901	11.00	14.00	40.55	13.59
902	11.00	14.00	40.47	13.54
903	11.00	14.00	40.00	13.22
904	11.00	14.00	39.91	13.16
905	11.00	14.00	39.82	13.10
906	11.00	14.00	39.82	13.10

THE SPRINKLER SYSTEM FLOW IS 240.57 gpm

THE OUTSIDE HOSE FLOW AT REFERENCE POINT NO. 1 IS 0.00 gpm

THE INSIDE HOSE       RACK SPKLR'S.

YARD HYDT. FLOW IS 500.00 gpm

THE MINIMUM DENSITY PROVIDED BY THIS SYSTEM IS 0.400 gpm/sq. ft.

THE FOLLOWING PRESSURES & FLOWS OCCUR

---> AT REF. PT. 1 <---

STATIC PRESSURE	137.50 psi		
RESIDUAL PRESSURE	81.25 psi	AT	750.00 gpm
TOTAL SYSTEM FLOW	740.57 gpm		
AVAILABLE PRESSURE	82.55 psi	AT	740.57 gpm
OPERATING PRESSURE	58.90 psi	AT	740.57 gpm
PRESSURE REMAINING	23.65 psi		

FITTING Equivalent Length per NFPA 13 1994, 6-4.3

'-' Indicates Equivalent Length. 'T' Indicates Threaded Fitting

1=45 Elbow, 2=90 Elbow, 3='T'/Cross, 4=Butterfly Valve, 5=Gate Valve, 6=Swing Check Valve

FROM	TO	FLOW (gpm)	PIPE (ft)	FITS	EQV. (ft)	H-W C	PIPE TYPE	DIA. (in)	FRIC. (psi)	ELEV. (psi)	FROM (psi)	TO (psi)	DIFF (psi)
1	2	740.57	10.00	46	42.00	120	1	6.065	0.020	0.000	58.90	57.85	1.05
2	100	740.57	200.00	222222	40.80	120	1	4.026	0.149	0.000	57.85	21.93	35.92
100	101	240.57	14.00	462	40.80	120	1	4.026	0.019	6.067	21.93	14.85	1.01
101	110	240.57	4.00	22	13.60	120	1	4.026	0.019	0.000	14.85	14.53	0.33
110	111	120.20	9.00	0	0.00	120	1	4.026	0.005	0.000	14.53	14.47	0.06
110	901	120.37	6.00	3	10.80	120	1	2.469	0.056	0.000	14.53	13.59	0.94
111	902	120.20	6.00	3	10.80	120	1	2.469	0.056	0.000	14.47	13.54	0.93
901	903	79.82	13.00	0	0.00	120	1	2.469	0.026	0.000	13.59	13.22	0.37
902	904	79.73	13.00	0	0.00	120	1	2.469	0.026	0.000	13.54	13.16	0.37
903	905	39.82	13.00	0	0.00	120	1	2.469	0.007	0.000	13.22	13.10	0.12
904	906	39.82	13.00	0	0.00	120	1	2.469	0.007	0.000	13.16	13.10	0.06

A MAX. VELOCITY OF 18.66 ft./sec. OCCURS BETWEEN REF. PT. 2 AND 100

Sprinkler-CALC Release 7.2 Win  
By Walsh Engineering Inc.  
North Kingstown R.I. U.S.A.

H Y D R A U L I C C A L C U L A T I O N S

C O V E R S H E E T

OPCION 1 - ROCIADORES BULBO ALMACEN ACOPIO - REV A

W A T E R S U P P L Y

STATIC PRESSURE	(psi)	137.5
RESIDUAL PRESSURE	(psi)	81.25
RESIDUAL FLOW	(gpm)	750

B O O S T E R P U M P S

NUMBER OF BOOSTER PUMPS 0

S P R I N K L E R S

MAXIMUM SPACING OF SPRINKLERS	(ft)	12.14
MAXIMUM SPACING OF SPRINKLER LINES	(ft)	8.2
SPECIFIED DISCHARGE DENSITY	(gpm/sq. ft.)	.4

THIS SPRINKLER SYSTEM WILL DELIVER A DENSITY OF .4 gpm/sq. ft.  
FOR A DESIGN AREA OF 3000 SQ. FT. OF FLOOR AREA

THIS SYSTEM OPERATES AT A FLOW OF 240.57 gpm AT A PRESSURE OF 21.93 psi  
AT THE BASE OF THE RISER (REF. PT. %100)

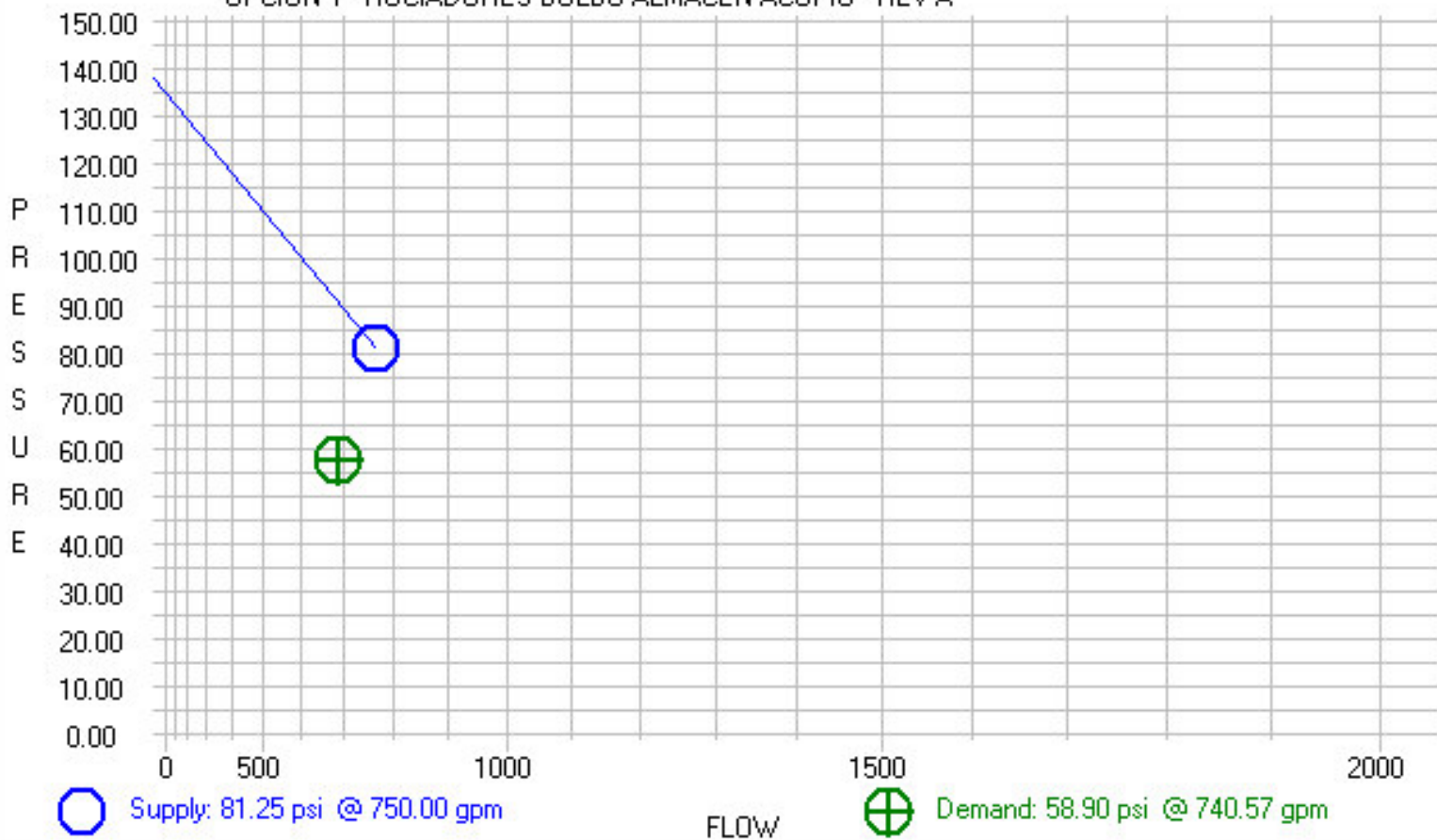
PIPES USED FOR THIS SYSTEM

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001 SCHEDULE 40

WATER SUPPLY/DEMAND GRAPH

OPCION 1 - ROCIADORES BULBO ALMACEN ACOPIO - REV A



Sprinkler-CALC 7.2 Win

HYDRAULIC CALCULATIONS AT SPECIFIED DENSITY

THE FOLLOWING SPRINKLERS ARE OPERATING IN:

TEST AREA 1       TEST AREA 2       TEST AREA 3       REMOTE AREA

Elevation of sprinklers = Elevation above water test.

REF. PT.	K	ELEV. ft	FLOW gpm	PRESSURE psi
901	8.10	14.00	30.62	14.29
902	8.10	14.00	30.56	14.23
903	8.10	14.00	30.28	13.97
904	8.10	14.00	30.22	13.92
905	8.10	14.00	30.09	13.80
906	8.10	14.00	30.04	13.75
907	8.10	14.00	30.04	13.75
908	8.10	14.00	30.00	13.72

THE SPRINKLER SYSTEM FLOW IS 241.85 gpm

THE OUTSIDE HOSE FLOW AT REFERENCE POINT NO. 1 IS 0.00 gpm

THE INSIDE HOSE       RACK SPKLR'S.

YARD HYDT. FLOW IS 250.00 gpm

THE MINIMUM DENSITY PROVIDED BY THIS SYSTEM IS 0.300 gpm/sq. ft.

THE FOLLOWING PRESSURES & FLOWS OCCUR

---> AT REF. PT. 1 <---

STATIC PRESSURE	137.50 psi		
RESIDUAL PRESSURE	81.25 psi	AT	750.00 gpm
TOTAL SYSTEM FLOW	491.85 gpm		
AVAILABLE PRESSURE	111.75 psi	AT	491.85 gpm
OPERATING PRESSURE	55.53 psi	AT	491.85 gpm
PRESSURE REMAINING	56.22 psi		

THE ABOVE RESULTS INCLUDE 10.00 psi FRICTION LOSS AT REF. PT. # 50 FOR A

BACKFLOW PREVENTER

METER

DETECTOR CHECK VALVE

OTHER DEVICE

FITTING Equivalent Length per NFPA 13 1994, 6-4.3

'-' Indicates Equivalent Length. 'T' Indicates Threaded Fitting

1=45 Elbow, 2=90 Elbow, 3='T'/Cross, 4=Butterfly Valve, 5=Gate Valve, 6=Swing Check Valve

FROM	TO	FLOW (gpm)	PIPE (ft)	FITS	EQV. (ft)	H-W C	PIPE TYPE	DIA. (in)	FRIC. (psi)	ELEV. (psi)	FROM (psi)	TO (psi)	DIFF (psi)
1	2	491.85	10.00	46	42.00	120	1	6.065	0.010	0.000	55.53	55.04	0.49
2	50	491.85	200.00	222222	40.80	120	1	4.026	0.070	0.000	55.04	38.21	16.83
50	51	491.85	17.00	462	40.80	120	1	4.026	0.070	0.000	38.21	24.17	14.04
51	100	491.85	10.00	22	13.60	120	1	4.026	0.070	0.000	24.17	22.52	1.65
100	101	241.85	14.00	462	40.80	120	1	4.026	0.019	6.067	22.52	15.42	1.03
101	110	241.85	4.00	22	13.60	120	1	4.026	0.019	0.000	15.42	15.09	0.33
110	111	120.82	10.00	0	0.00	120	1	4.026	0.005	0.000	15.09	15.03	0.06
110	901	121.03	3.44	3	10.80	120	1	2.469	0.056	0.000	15.09	14.29	0.80
111	902	120.82	3.44	3	10.80	120	1	2.469	0.056	0.000	15.03	14.23	0.80
901	903	90.41	10.00	0	0.00	120	1	2.469	0.033	0.000	14.29	13.97	0.32
902	904	90.26	10.00	0	0.00	120	1	2.469	0.033	0.000	14.23	13.92	0.31
903	905	60.13	10.00	0	0.00	120	1	2.469	0.015	0.000	13.97	13.80	0.18
904	906	60.04	10.00	0	0.00	120	1	2.469	0.015	0.000	13.92	13.75	0.17
905	907	30.04	10.00	0	0.00	120	1	2.469	0.004	0.000	13.80	13.75	0.04
906	908	30.00	10.00	0	0.00	120	1	2.469	0.004	0.000	13.75	13.72	0.03

A MAX. VELOCITY OF 12.39 ft./sec. OCCURS BETWEEN REF. PT. 51 AND 100

Sprinkler-CALC Release 7.2 Win  
By Walsh Engineering Inc.  
North Kingstown R.I. U.S.A.

H Y D R A U L I C C A L C U L A T I O N S

C O V E R S H E E T

OPCION 2 - ROCIADORES ESPUM ALMACEN ACOPIO - REV A

W A T E R S U P P L Y

STATIC PRESSURE (psi) 137.5  
RESIDUAL PRESSURE (psi) 81.25  
RESIDUAL FLOW (gpm) 750

B O O S T E R P U M P S

NUMBER OF BOOSTER PUMPS 0

S P R I N K L E R S

MAXIMUM SPACING OF SPRINKLERS (ft) 10  
MAXIMUM SPACING OF SPRINKLER LINES (ft) 10  
SPECIFIED DISCHARGE DENSITY (gpm/sq. ft.) .3

THIS SPRINKLER SYSTEM WILL DELIVER A DENSITY OF .3 gpm/sq. ft.  
FOR A DESIGN AREA OF 3000 SQ. FT. OF FLOOR AREA

THIS SYSTEM OPERATES AT A FLOW OF 241.85 gpm AT A PRESSURE OF 22.52 psi  
AT THE BASE OF THE RISER (REF. PT. %100)

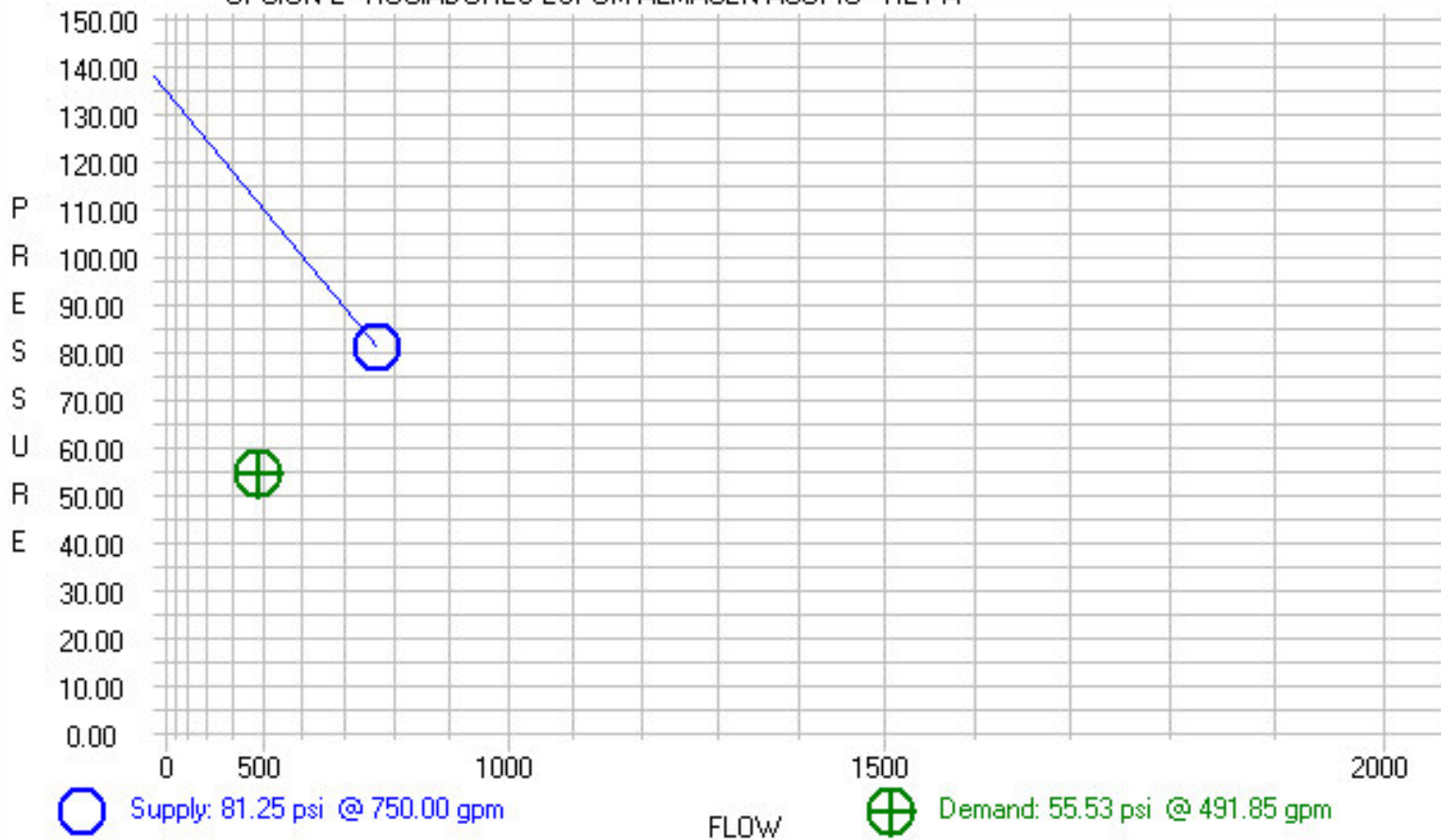
PIPES USED FOR THIS SYSTEM

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001 SCHEDULE 40

WATER SUPPLY/DEMAND GRAPH

OPCION 2 - ROCIADORES ESPUM ALMACEN ACOPIO - REV A



Sprinkler-CALC 7.2 Win



HYDRAULIC CALCULATIONS AT SPECIFIED FLOW

THE FOLLOWING SPRINKLERS ARE OPERATING IN:

TEST AREA 1       TEST AREA 2       TEST AREA 3       REMOTE AREA

Elevation of sprinklers = Elevation above water test.

REF. PT.	K	ELEV. ft	FLOW gpm	PRESSURE psi
901	4.85	14.00	42.00	74.98

THE SPRINKLER SYSTEM FLOW IS 42.00 gpm

THE OUTSIDE HOSE FLOW AT REFERENCE POINT NO. 1 IS 0.00 gpm

THE INSIDE HOSE       RACK SPKLR'S.      IS

YARD HYDT. FLOW      IS 0.00 gpm

THE FOLLOWING PRESSURES & FLOWS OCCUR

---> AT REF. PT. 1 <---

STATIC PRESSURE	137.50 psi		
RESIDUAL PRESSURE	81.25 psi	AT	750.00 gpm
TOTAL SYSTEM FLOW	42.00 gpm		
AVAILABLE PRESSURE	137.23 psi	AT	42.00 gpm
OPERATING PRESSURE	97.26 psi	AT	42.00 gpm
PRESSURE REMAINING	39.97 psi		

THE ABOVE RESULTS INCLUDE 10.00 psi FRICTION LOSS AT REF. PT. # 50 FOR A

BACKFLOW PREVENTER       METER  
 DETECTOR CHECK VALVE       OTHER DEVICE

FITTING Equivalent Length per NFPA 13 1994, 6-4.3

'-' Indicates Equivalent Length. 'T' Indicates Threaded Fitting

1=45 Elbow, 2=90 Elbow, 3='T'/Cross, 4=Butterfly Valve, 5=Gate Valve, 6=Swing Check Valve

FROM	TO	FLOW (gpm)	PIPE (ft)	FITS	EQV. (ft)	H-W C	PIPE TYPE	DIA. (in)	FRIC. (psi)	ELEV. (psi)	FROM (psi)	TO (psi)	DIFF (psi)
1	2	42.00	10.00	46	42.00	120	1	6.065	0.000	0.000	97.26	97.25	0.01
2	50	42.00	200.00	222222	40.80	120	1	4.026	0.001	0.000	97.25	97.08	0.18
50	51	42.00	17.00	462	25.30	120	1	2.469	0.008	0.000	97.08	86.74	10.34
51	100	42.00	10.00	22	5.20	120	1	1.610	0.064	0.000	86.74	85.77	0.97
100	101	42.00	14.00	462	11.60	120	1	1.610	0.064	6.067	85.77	78.08	1.63
101	102	42.00	12.00	22	5.20	120	1	1.610	0.064	0.000	78.08	76.98	1.10
102	901	42.00	21.00	2222	10.40	120	1	1.610	0.064	0.000	76.98	74.98	2.00

A MAX. VELOCITY OF 6.61 ft./sec. OCCURS BETWEEN REF. PT. 102 AND 901

Sprinkler-CALC Release 7.2 Win  
By Walsh Engineering Inc.  
North Kingstown R.I. U.S.A.

H Y D R A U L I C C A L C U L A T I O N S

C O V E R S H E E T

OPCION 3 - ALTA EXPANSION ALMACEN ACOPIO - REV A

W A T E R S U P P L Y

STATIC PRESSURE	(psi)	137.5
RESIDUAL PRESSURE	(psi)	81.25
RESIDUAL FLOW	(gpm)	750

B O O S T E R P U M P S

NUMBER OF BOOSTER PUMPS 0

S P R I N K L E R S

MINIMUM FLOW PER SPRINKLER	(gpm)	42
MINIMUM PRESSURE PER SPRINKLER	(psi)	74.98

THIS SYSTEM OPERATES AT A FLOW OF 42.00 gpm AT A PRESSURE OF 85.77 psi  
AT THE BASE OF THE RISER (REF. PT. %100)

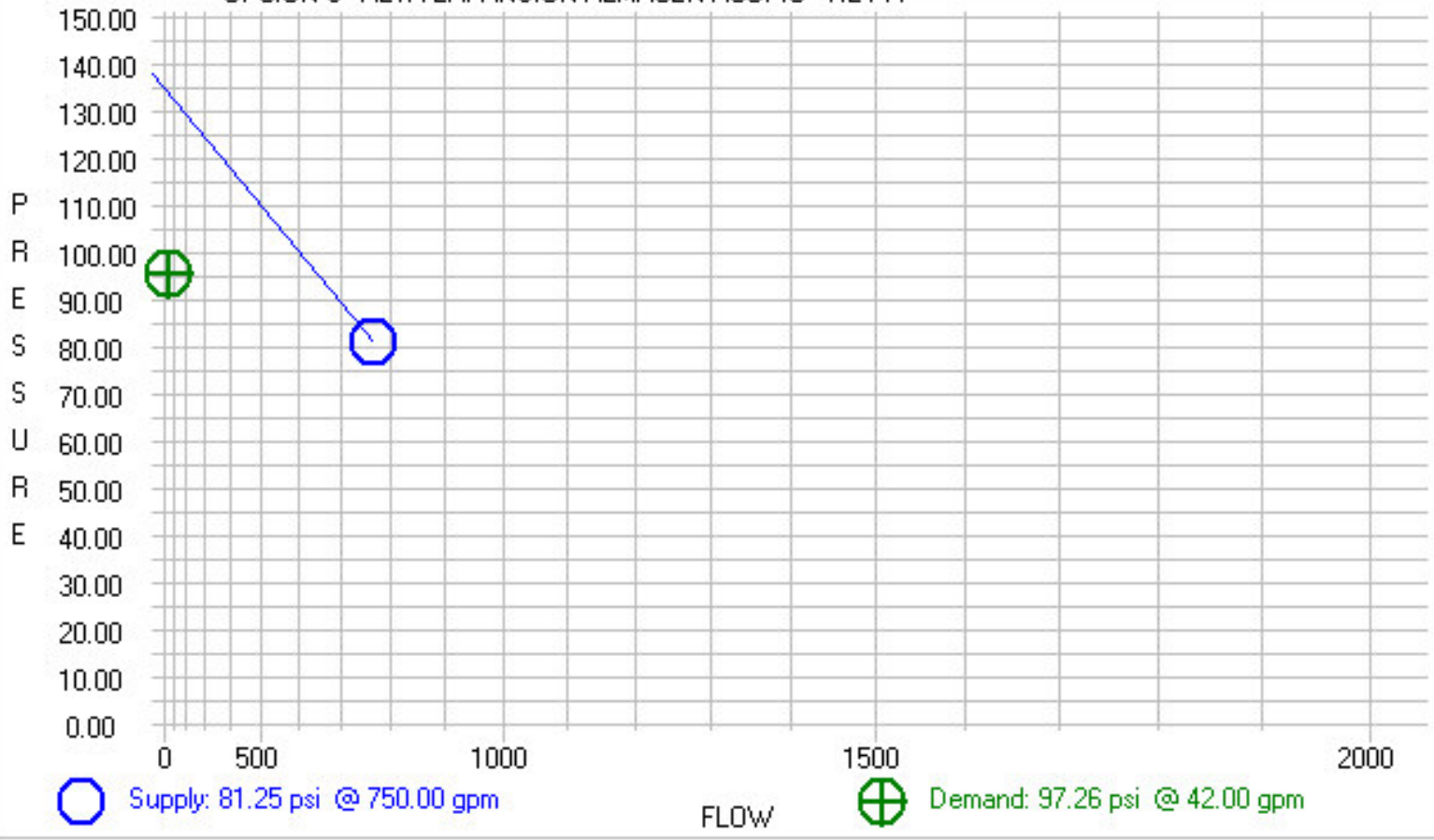
PIPES USED FOR THIS SYSTEM

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001 SCHEDULE 40

WATER SUPPLY/DEMAND GRAPH

OPCION 3 - ALTA EXPANSION ALMACEN ACOPIO - REV A



Sprinkler-CALC 7.2 Win