



May 19, 2022

Ms. Paulette McDaniel
Safeguard Fire Protection
4091 Ilex Circle South
Palm Beach Gardens, FL 33410

Email: adminsw@safeguardfp.com

Dear Paulette,

Re: Hydrant Flow Test @ Lintree Medical – 15455 Collier Blvd.

Flow Hydrant Tag # (67-073)– Static Residual Hydrant Tag # (67-071)

The North Collier Fire Control and Rescue District has conducted a flow test at the above location per Engineers site plan submitted. This also will serve as an invoice and receipt in the amount of \$100.00 to cover the cost of the flow test (Credit #25629).

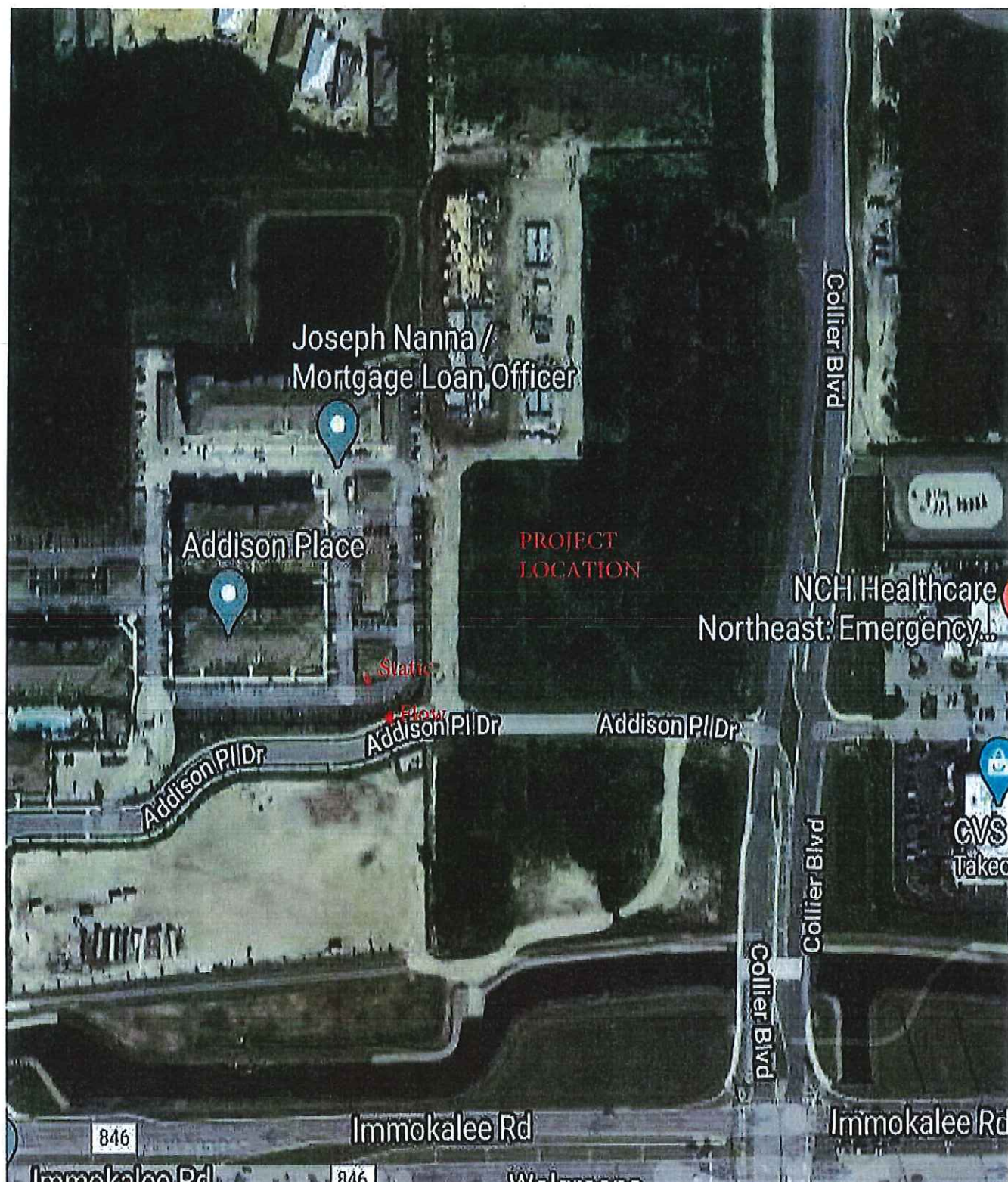
Static:	75	Residual:	62
Total Flow GPM:	1,928	Pitot:	33 x2 Ports
Flow @ 20 PSI GPM:	4,201	Time:	5-18-22 @ 3:15 PM

If you have any questions, please do not hesitate to contact me @ (239) 597-9227.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Coxwell".

Michael Coxwell
Assistance Chief of Life Safety & Fire Prevention
North Collier Fire Control & Rescue District



PLEASE INCLUDE PLOT PLAN WITH FLOW
LETTER WHEN SUBMITTING TO THE FIRE
CODE OFFICIALS.

Hydraulic Calculations

for

Project Name: LINTREE MEDICAL CENTER

Location: , NAPLES, FL.,

Drawing Name: LINTREE FIRE SPRINKLER PLAN CORR-1.cad

Calculation Date: 8/18/2022

Design

Remote Area Number: 1
Remote Area Location: OPEN LEASE AREA
Occupancy Classification: Light Hazard

Density 0.10gpm/ft²
Area of Application: 1500ft² (Actual 1408ft²)
Coverage per Sprinkler: 225ft²
Type of sprinklers calculated: Upright
No. of sprinklers calculated: 7
No. of nozzles calculated: 0

In-rack Demand: N/A gpm at Node: N/A
Hose Streams: 0.0 gpm at Node: 1 Type: Allowance at Source
100.00 at Node: 21 Type: Hydrant

Total Water Required (including Hose Streams where applicable):

From Water Supply at Node 1: 268.80 @ 52.218

(Safety Margin = 14.977)

Type of System: AUTOMATIC WET

Volume of Dry/PreAction/Antifreeze/OtherAgent N/A

for Node: 1 Date: 5-18-2022

Location: 15455 Collier Blvd.

Source: North Collier Fire Control & Rescue District

Name of Contractor: SAFEGUARD FIRE PROTECTION

Address: 4091 ILEX CIR. S., PALM BEACH GARDENS, FL. 33410

Phone Number: 239-258-9551

Name of designer: Oscar A. Ramon

Authority Having Jurisdiction: COLLIER COUNTY

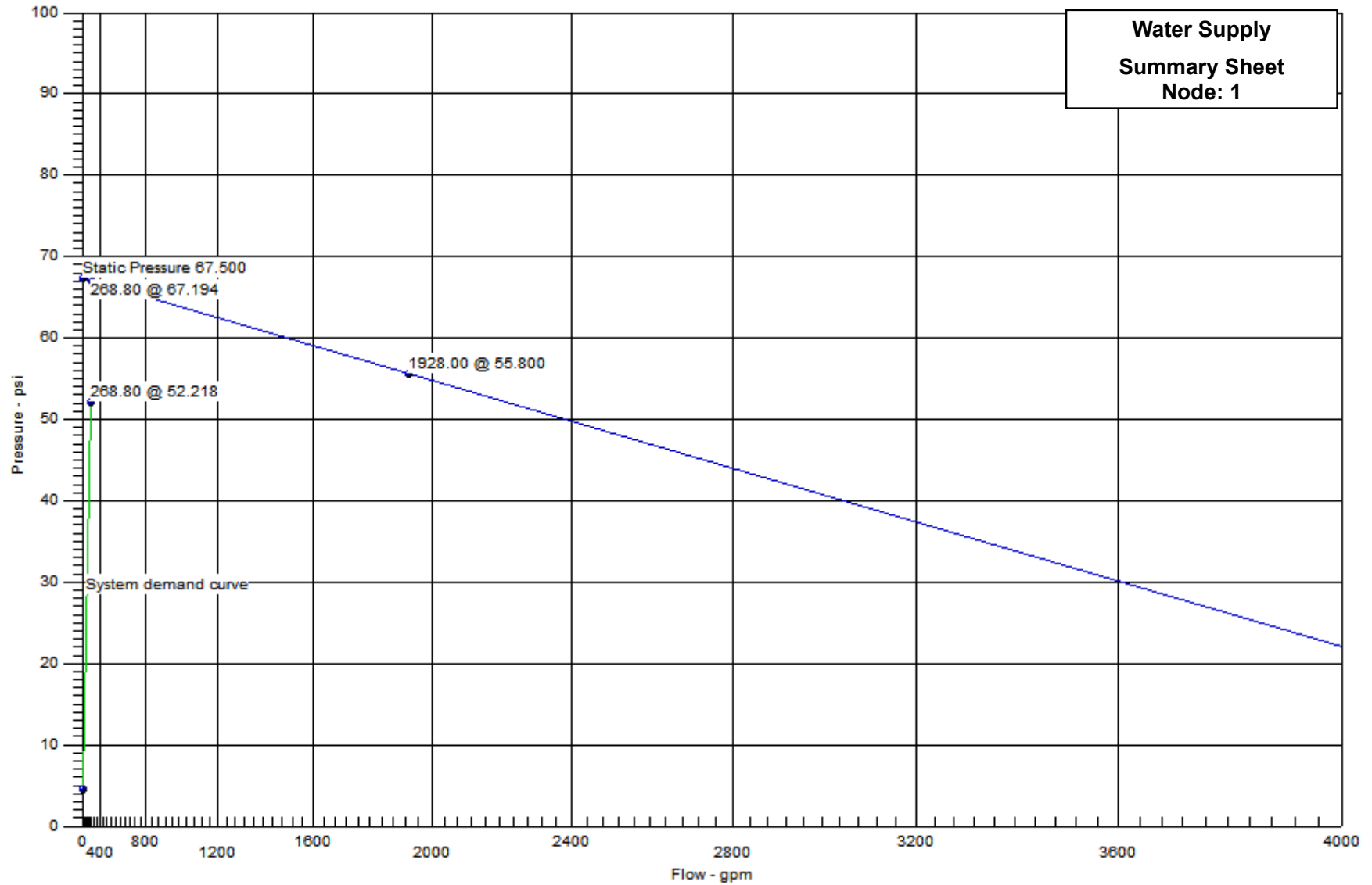
Notes:

Hydraulic Graph

Job Name: LINTREE MEDICAL CENTER
Remote Area Number: 1

N 1.85

Date: 8/18/2022





Summary Of Outflowing Devices

Job Number: 00022

Report Description: Light Hazard (1)

Device		Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)	Density (gpm/ft ²)	Coverage (Foot)
Hydrant	21	100.00	100.00	0	47.456		
⇒ Sprinkler	405	22.50	22.50	5.6	16.143	0.10gpm/ft ²	225ft ²
Sprinkler	406	22.53	22.50	5.6	16.179	0.10gpm/ft ²	225ft ²
Sprinkler	407	29.83	22.50	5.6	28.373	0.13gpm/ft ²	225ft ²
Sprinkler	419	22.85	22.50	5.6	16.652	0.10gpm/ft ²	225ft ²
Sprinkler	420	22.88	22.50	5.6	16.689	0.10gpm/ft ²	225ft ²
Sprinkler	433	24.09	22.50	5.6	18.512	0.11gpm/ft ²	225ft ²
Sprinkler	434	24.12	22.50	5.6	18.553	0.11gpm/ft ²	225ft ²

⇒ Most Demanding Sprinkler Data

Supply Analysis

Node	Name	Static (psi)	Residual (psi) @	Flow (gpm)	Available (psi) @	Total Demand (gpm)	Required Pressure (psi)
1	Water Supply	67.500	55.800	1928.00	67.194	268.80	52.218

Node Analysis

Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
1	3'-0	Supply	52.218	268.80	
21	3'-0	Hydrant	47.456	100.00	
405	14'-0	Sprinkler	16.143	22.50	Density: 0.10gpm/ft ² Coverage: 225ft ²
406	14'-0	Sprinkler	16.179	22.53	Density: 0.10gpm/ft ² Coverage: 225ft ²
407	14'-0	Sprinkler	28.373	29.83	Density: 0.13gpm/ft ² Coverage: 225ft ²
419	14'-0	Sprinkler	16.652	22.85	Density: 0.10gpm/ft ² Coverage: 225ft ²
420	14'-0	Sprinkler	16.689	22.88	Density: 0.10gpm/ft ² Coverage: 225ft ²
433	14'-0	Sprinkler	18.512	24.09	Density: 0.11gpm/ft ² Coverage: 225ft ²
434	14'-0	Sprinkler	18.553	24.12	Density: 0.11gpm/ft ² Coverage: 225ft ²
9	-3'-0		49.982		
20	-3'-0		50.063		
22	-3'-0		50.067		
23	-3'-0		50.072		
25	-3'-0		50.134		
26	3'-0		47.546		
28	-3'-0		54.627		
29	3'-0		52.013		
34	-3'-0		54.807		
35	-3'-0		54.668		

Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
36	-3'-0		54.721		
43	0'-10	Supply	48.310		
129	13'-4		33.043		
132	13'-4		33.114		
135	13'-4		33.359		
377	1'-0		48.237		
387	13'-4		42.603		

Pipe Information									
Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
Node 2	Elev 2 (Foot)		Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Fitting (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe)	
						Total (Foot)		Friction(Pf)	
405	14'-0	5.6	22.50	1¼	(See Notes)	14'-9½	120	16.143	Route 1..... Sprinkler
419	14'-0		22.50	1.4420		14'-9½	0.034358	0.509	
419	14'-0	5.6	22.85	1¼	(See Notes)	14'-9½	120	16.652	Sprinkler
433	14'-0		45.35	1.4420		14'-9½	0.125658	1.860	
433	14'-0	5.6	24.09	1¼	(See Notes)	36'-8	120	18.512	Sprinkler, T(7'-5), PO(7'-5)
129	13'-4		69.45	1.4420		14'-10½	0.276403	0.289	
						51'-6½		14.242	
129	13'-4			3		13'-6½	120	33.043	
132	13'-4		69.45	3.2600		13'-6½	0.005204	0.070	
132	13'-4		69.52	3		13'-1	120	33.114	Flow (q) from Route 2
135	13'-4		138.97	3.2600		13'-1	0.018780	0.245	
135	13'-4		29.83	3	(See Notes)	227'-11	120	33.359	Flow (q) from Route 3 8E(9'-5), 2T(20'-2)
387	13'-4		168.80	3.2600		115'-7	0.026910		
						343'-6		9.244	
387	13'-4			4	(See Notes)	11'-0½	120	42.603	2f(-0.000), CV(28'-11½)
377	1'-0		168.80	4.2600		28'-11½	0.007312	5.342	
						40'-0½		0.293	
377	1'-0			6	(See Notes)	0'-0	140	48.237	BASR
43	0'-10		168.80	6.2800		0'-0	0.000831	0.072	
								0.000	
43	0'-10			6	(See Notes)	4'-0	140	48.310	LtE(14'-2)
9	-3'-0		168.80	6.2800		14'-2	0.000831	1.658	
						18'-2		0.015	
9	-3'-0			6	(See Notes)	54'-5½	150	49.982	PIV(4'-7½), T(46'-2½)
23	-3'-0		168.80	6.0900		50'-10	0.000849		
						105'-4		0.089	
23	-3'-0		100.00	8	(See Notes)	76'-11	150	50.072	Flow (q) from Route 4 2LtE(19'-7½)
25	-3'-0		268.80	7.9800		39'-3	0.000538		
						116'-1½		0.063	

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
Node 2	Elev 2 (Foot)		Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Fitting (Foot) Total (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe) Friction(Pf)	Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
25	-3'-0			8	(See Notes)	6'-0	140	50.134	LtE(22'-0½)
26	3'-0		268.80	8.3900		22'-0½	0.000479	-2.601	
						28'-0½		0.013	
26	3'-0			6	(See Notes)	6'-10	140	47.546	BFP(-4.469), LtE(14'-2)
29	3'-0		268.80	6.2800		14'-2	0.001964	-0.000	
						21'-0		4.466	
29	3'-0			8	(See Notes)	6'-0	140	52.013	LtE(22'-0½)
28	-3'-0		268.80	8.3900		22'-0½	0.000479	2.601	
						28'-0½		0.013	
28	-3'-0			8	(See Notes)	17'-11	150	54.627	GV(6'-0½), T(52'-10)
35	-3'-0		268.80	7.9800		58'-10	0.000538		
						76'-9		0.041	
35	-3'-0			10	(See Notes)	196'-6	150	54.668	T(67'-5)
36	-3'-0		268.80	9.7900		67'-5	0.000199		
						263'-11½		0.053	
36	-3'-0			6	(See Notes)	10'-6	150	54.721	2LtE(13'-10½), GV(4'-7½)
34	-3'-0		268.80	6.0900		32'-4	0.002008		
						42'-10		0.086	
34	-3'-0			6	(See Notes)	6'-0	140	54.807	Water Supply
1	3'-0		268.80	6.2800			0.001964	-2.601	
						6'-0		0.012	
			0.00					52.218	Hose Allowance At Source
1			268.80						Total(Pt) Route 1
406	14'-0	5.6	22.53	1¼	(See Notes)	14'-9½	120	16.179	 Route 2
420	14'-0		22.53	1.4420		14'-9½	0.034429	0.510	Sprinkler
420	14'-0	5.6	22.88	1¼	(See Notes)	14'-9½	120	16.689	Sprinkler
434	14'-0		45.40	1.4420		14'-9½	0.125918	1.864	
434	14'-0	5.6	24.12	1¼	(See Notes)	36'-8	120	18.553	Sprinkler, T(7'-5), PO(7'-5)
132	13'-4		69.52	1.4420		14'-10½	0.276973	0.289	
						51'-6½		14.271	
								33.114	Total(Pt) Route 2

Pipe Information									
Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
	Node 2		Elev 2 (Foot)	Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe)	
407		14'-0	5.6					29.83	
135	13'-4		29.83	1.4420	14'-10½	0.057887	0.289	T(7'-5), PO(7'-5)	
					81'-1½		4.697		
								33.359	Total(Pt) Route 3
21	3'-0		100.00	6	(See Notes)	6'-0	140	47.456	***** Route 4 ***** LtE(14'-2)
20	-3'-0		100.00	6.2800		14'-2	0.000315	2.601	
						20'-2		0.006	
20	-3'-0			6		12'-10	150	50.063	
22	-3'-0		100.00	6.0900			0.000322	0.000	
						12'-10		0.004	
22	-3'-0			8		50'-4	150	50.067	
23	-3'-0		100.00	7.9800			0.000086		
						50'-4		0.004	
								50.072	Total(Pt) Route 4

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

C Value Multiplier

$$\left(\frac{\text{Actual Inside Diameter}}{\text{Schedule 40 Steel Pipe Inside Diameter}} \right)^{4.87} = \text{Factor}$$

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV	Alarm Valve	AngV	Angle Valve	b	Bushing
BaIV	Ball Valve	BFP	Backflow Preventer	BV	Butterfly Valve
C	Cross Flow Turn 90°	cplg	Coupling	Cr	Cross Run
CV	Check Valve	DelV	Deluge Valve	DPV	Dry Pipe Valve
E	90° Elbow	EE	45° Elbow	Ee1	11¼° Elbow
Ee2	22½° Elbow	f	Flow Device	fd	Flex Drop
FDC	Fire Department Connection	fE	90° FireLock(TM) Elbow	fEE	45° FireLock(TM) Elbow
flg	Flange	FN	Floating Node	fT	FireLock(TM) Tee
g	Gauge	GloV	Globe Valve	GV	Gate Valve
Ho	Hose	Hose	Hose	HV	Hose Valve
Hyd	Hydrant	LtE	Long Turn Elbow	mecT	Mechanical Tee
Noz	Nozzle	P1	Pump In	P2	Pump Out
PIV	Post Indicating Valve	PO	Pipe Outlet	PrV	Pressure Relief Valve
PRV	Pressure Reducing Valve	red	Reducer/Adapter	S	Supply
sCV	Swing Check Valve	SFx	Seismic Flex	Spr	Sprinkler
St	Strainer	T	Tee Flow Turn 90°	Tr	Tee Run
U	Union	WirF	Wirsbo	WMV	Water Meter Valve
Z	Cap				