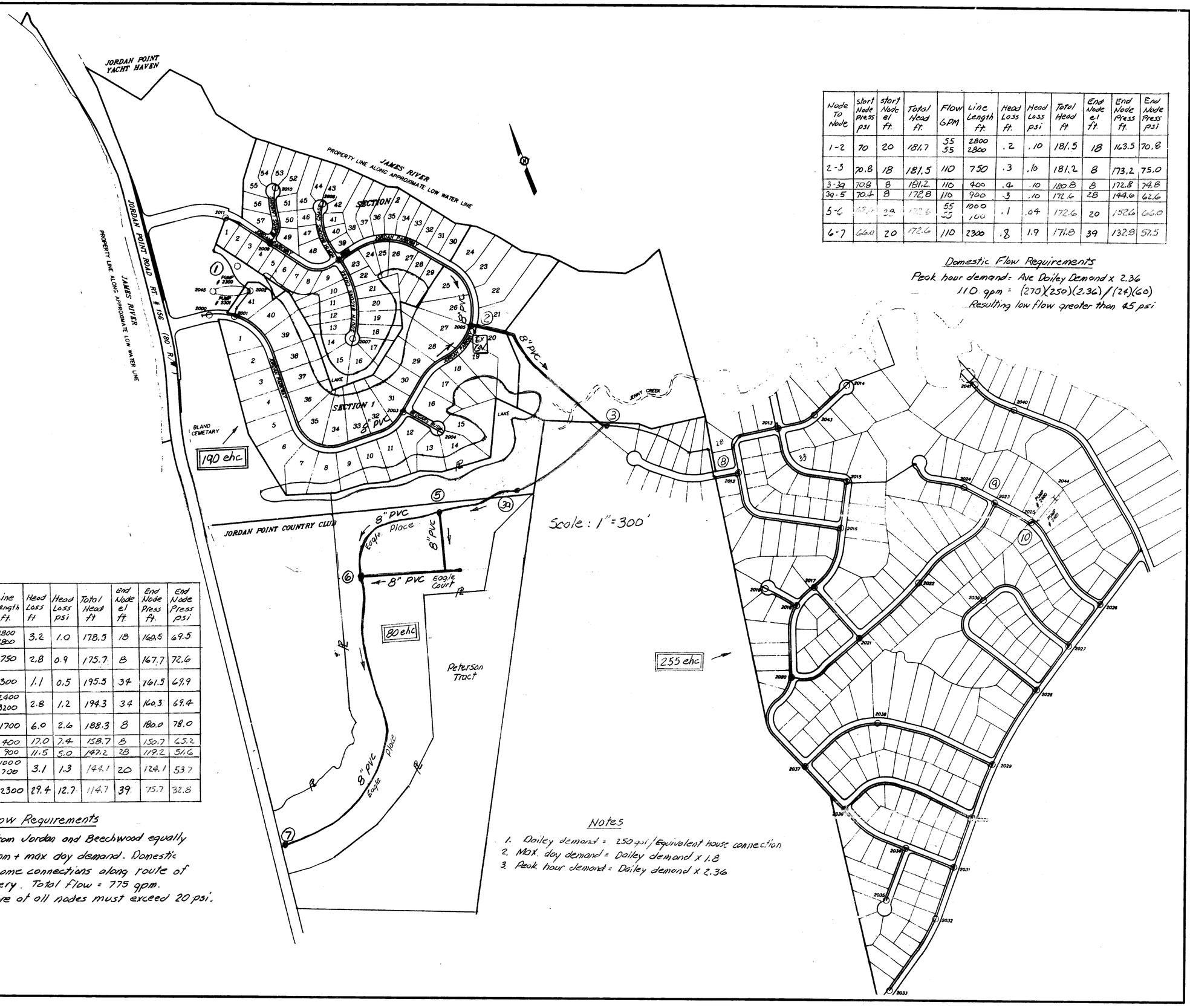

Node To Node	Start Node Press psi	Start Node el ft.	Total Head ft.	Flow GPM	Line Length ft.	Head Loss ft	Head Loss psi	Total Head ft	End Node el ft.	End Node Press ft.	End Node Press psi
1-2	70	20	181.7	203 203	2800 2800	3.2	1.0	178.5	18	160.5	69.5
2-3	69.5	18	178.5	405	750	2.8	0.9	175.7	8	167.7	72.6
10-9	60	58	196.6	395	300	1.1	0.5	195.5	34	161.5	69.9
9-8	69.9	34	195.5	198 198	2400 3200	2.8	1.2	194.3	34	160.3	69.4
8-3	69.4	34	194.3	395	1700	6.0	2.6	188.3	8	180.0	78.0
3-3a	72.6	8	175.7	775	400	17.0	7.4	158.7	8	150.7	65.2
3a-5	65.2	8	158.7	775	900	11.5	5.0	147.2	28	119.2	51.6
5-6	51.6	28	147.2	388 388	1000 700	3.1	1.3	144.1	20	124.1	53.7
6-7	53.7	20	144.1	775	2300	29.4	12.7	114.7	39	75.7	32.8

Fire Flow Requirements

1. Supply delivery from Jordan and Beechwood equally
2. Fire flow = 750 gpm + max day demand. Domestic demand from home connections along route of fire flow delivery. Total flow = 775 gpm.
3. Resulting pressure of all nodes must exceed 20 psi.
4. C factor = 120

Node To Node	Start Node Press psi	Start Node el ft.	Total Head ft.	Flow GPM	Line Length ft.	Head Loss ft	Head Loss psi	Total Head ft	End Node el ft.	End Node Press ft.	End Node Press psi
1-2	70	20	181.7	55 55	2800 2800	.2	.10	181.5	18	163.5	70.8
2-3	70.8	18	181.5	110	750	.3	.10	181.2	8	173.2	75.0
3-3a	70.8	8	181.2	110	400	.4	.10	180.8	8	172.8	74.8
3a-5	70.4	8	172.8	110	900	.3	.10	172.6	28	144.6	62.6
5-6	62.6	28	172.6	55 55	1000 700	.1	.04	172.6	20	152.6	66.0
6-7	66.0	20	172.6	110	2300	.8	1.9	171.8	39	132.8	57.5

Domestic Flow Requirements

Peak hour demand = Ave Dailey Demand x 2.36

110 gpm = (270)(250)(2.36)/(24)(60)

Resulting low flow greater than 45 psi

Notes

1. Dailey demand = 250 gpd/Equivalent house connection
2. Max. day demand = Dailey demand x 1.8
3. Peak hour demand = Dailey demand x 2.36

REVISIONS	BY
10-7-13	
12-4-13	
2-3-14	
4-24-14	

Architectural Graphics
6676 LAKESHORE DRIVE
QUINTON, VIRGINIA 23141
804-551-6944

WATERLINE CALCILATIONS
EAGLE PRESERVE
AT JORDAN ON THR JAMES

SEAL: COMMONWEALTH OF VIRGINIA — WALTER M. ALPMAN III — No. 11039 — 4/24/14 — PROFESSIONAL ENGINEER

DRAWN: PBM	CHECKED: WMA
DATE: 5-19-13	
SCALE: AS NOTED	
JOB NO.:	
SHEET C29	
OF 35 SHEETS	