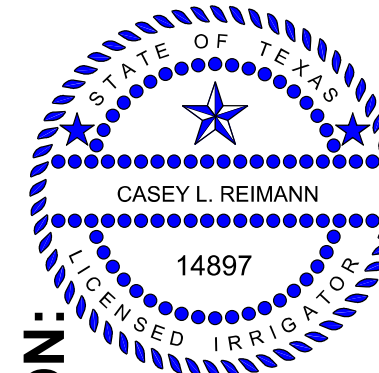




**TEXAS
IRRIGATION
DESIGN**

281 341-0499



SHEET DESCRIPTION:
IRRIGATION DESIGN

Casey Reimann
02/05/2016

PROJECT:
721 BUCKINGHAM
HOUSTON, TX 77024

REVISIONS:
REV1-02112016 CR

DATE:
02/05/2016

JOB NUMBER:
D1-02052016

DRAWN BY:
CASEY REIMANN

CHECKED BY:
CLR

SCALE:
1" = 16'

SHEET:
1 of 1

Irrigation

Quantity	Symbol	Description	Part Number	Pressure	Flow	Radius
Sprinklers						
2	10H	Rain Bird 10H - 1804	10H	30 psi	0.79 gpm	10 ft
6	10Q	Rain Bird 10Q - 1804	10Q	30 psi	0.39 gpm	10 ft
8	12H	Rain Bird 12H - 1804	12H	30 psi	1.3 gpm	12 ft
2	12Q	Rain Bird 12Q - 1804	12Q	30 psi	0.65 gpm	12 ft
13	1404	Rain Bird 1404	1404	30 psi	1 gpm	0 ft
24	15EST	Rain Bird 15EST - 1804	15EST	30 psi	0.61 gpm	15 x 4 ft
25	15SST	Rain Bird 15SST - 1804	15SST	30 psi	1.21 gpm	30 x 4 ft
2	15SST	Rain Bird 15SST - 1812	15SST	30 psi	1.21 gpm	30 x 4 ft
5	1.5	Rain Bird 5000 Series 1.5 - 5004-PL-PC	1.5	45 psi	1.54 gpm	35 ft
17	2.0	Rain Bird 5000 Series 2.0 - 5004-PL-PC	2.0	45 psi	2.07 gpm	37 ft
15	3.0	Rain Bird 5000 Series 3.0 - 5004-PL-FC	3.0	45 psi	3.09 gpm	40 ft
2	5H	Rain Bird 5H - 1804	5H	20 psi	0.16 gpm	4 ft
7	5H	Rain Bird 5H - 1812	5H	20 psi	0.16 gpm	4 ft
4	5Q	Rain Bird 5Q - 1804	5Q	30 psi	0.1 gpm	5 ft
7	5Q	Rain Bird 5Q - 1806	5Q	30 psi	0.1 gpm	5 ft
88	8H	Rain Bird 8H - 1804	8H	30 psi	0.52 gpm	8 ft
2	8H	Rain Bird 8H - 1812	8H	30 psi	0.52 gpm	8 ft
30	8Q	Rain Bird 8Q - 1804	8Q	30 psi	0.26 gpm	8 ft
4	8Q	Rain Bird 8Q - 1812	8Q	30 psi	0.26 gpm	8 ft
40	XS-360TS-SPYK	Rain Bird XS-360TS-SPYK	XS-360TS-SPYK	20 psi	0.33 gpm	5.6 ft

Meters/Pumps

1	M	2 inch meter	
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Backflow Devices

1	Febco 765 - 2"	765 - 2"
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Control Valves

12	Hunter PGV-100G-S	PGV-100G-S
4	Hunter PGV-101G-S	PGV-101G-S
2	Rain Bird XCZ-100-PRF	XCZ-100-PRF

Irrigation Accessories

1	Hunter MINI-CLIK	MINI-CLIK
1	Nibco 2" isolation valve	
1	Rain Bird ESPLXMI-20	ESPLXMI-20

Lateral Line Pipe

3243 ft	Class 200 3/4"	
290 ft	Class 200 1"	
131 ft	Class 200 1 1/4"	

Mainline Pipe

697 ft	Class 200 1 1/4"	0
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Drip Tubing

161 ft	Rain Bird XFS-09-18	XFS-09-18
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Sprinkler Zone Data

Zone #	Total Area	Total Flow	Precip Rate
1	1407.52 Sq/Ft	24.4 gpm	1.67 in/hr
2	581.24 Sq/Ft	18 gpm	2.98 in/hr
3	603.82 Sq/Ft	10.23 gpm	1.63 in/hr
4	900.27 Sq/Ft	14.56 gpm	1.56 in/hr
5	914.67 Sq/Ft	14.56 gpm	1.53 in/hr
6	820.18 Sq/Ft	9.53 gpm	1.12 in/hr
7	40.59 Sq/Ft	13 gpm	30.84 in/hr
8	1791.83 Sq/Ft	21.86 gpm	1.17 in/hr
10	1214.01 Sq/Ft	17.59 gpm	1.4 in/hr
11	7506.5 Sq/Ft	14.97 gpm	0.19 in/hr
12	8768.06 Sq/Ft	15.48 gpm	0.17 in/hr
13	13070.34 Sq/Ft	18.54 gpm	0.14 in/hr
14	13029.11 Sq/Ft	18.54 gpm	0.14 in/hr
15	5452.1 Sq/Ft	9.82 gpm	0.17 in/hr
16	6215.09 Sq/Ft	11.89 gpm	0.18 in/hr
18	28.1 Sq/Ft	2.97 gpm	10.18 in/hr

Drip Zone Data

Zone #	Total Area	Total Flow	Precip Rate
9	240.93 Sq/Ft	80.1 gph	0.53 in/hr
17	46.81 Sq/Ft	15.3 gph	0.52 in/hr

Water Source #1	
Meter Size	2 inch meter
Static Pressure	60 psi
Elevation Change	0 ft
Service Line Information	
Pipe Category	Poly 160
Pipe Size	Poly 160 2"
Length	0 ft
Velocity	5 fps
Recommendations	
Maximum Recommended Flow	52.29 gpm
Available Working Pressure	54 psi

Run Set: 1

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.612 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 1 @ 24.4 gpm

Mainline Loss	3.1 psi
Valve Loss	4.532 psi
Lateral Loss	3.145 psi
Fittings Loss	0.624 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	44.386 psi
Residual Pressure	15.614 psi

Run Set: 2

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.42 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 2 @ 18 gpm

Mainline Loss	1.86 psi
Valve Loss	2.62 psi
Lateral Loss	2.415 psi
Fittings Loss	0.427 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	40.314 psi
Residual Pressure	19.686 psi

Run Set: 3

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.227 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 3 @ 10.23 gpm

Mainline Loss	1.54 psi
Valve Loss	1.886 psi
Lateral Loss	1.621 psi
Fittings Loss	0.316 psi
Elevation	0 psi
Sprinkler Requirement	20 psi
Total Design Pressure	28.274 psi
Residual Pressure	31.726 psi

Run Set: 4

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.331 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 4 @ 14.56 gpm

Mainline Loss	2.99 psi
Valve Loss	1.626 psi
Lateral Loss	0.613 psi
Fittings Loss	0.36 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	38.56 psi
Residual Pressure	21.44 psi

Run Set: 5

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.331 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 5 @ 14.56 gpm

Mainline Loss	3.02 psi
Valve Loss	1.626 psi
Lateral Loss	0.468 psi
Fittings Loss	0.349 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	38.444 psi
Residual Pressure	22.556 psi

Run Set: 6

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.209 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 6 @ 9.62 gpm

Mainline Loss	1.1 psi
Valve Loss	1.9 psi
Lateral Loss	1.472 psi
Fittings Loss	0.256 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	37.684 psi
Residual Pressure	22.316 psi

Run Set: 7

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.291 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 7 @ 13.03 gpm

Mainline Loss	1.91 psi
Valve Loss	1.718 psi
Lateral Loss	1.157 psi
Fittings Loss	0.307 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	38.077 psi
Residual Pressure	21.923 psi

Run Set: 8

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.291 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 8 @ 13.02 gpm

Mainline Loss	1.88 psi
Valve Loss	1.719 psi
Lateral Loss	0.423 psi
Fittings Loss	0.231 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	37.315 psi
Residual Pressure	22.685 psi

Run Set: 9

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.035 psi

Mainline Components	
Backflow Loss	1.055 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 9 @ 1.76 gpm

Mainline Loss	0.05 psi
Valve Loss	0 psi
Lateral Loss	0 psi
Fittings Loss	0.005 psi
Elevation	0 psi
Sprinkler Requirement	8 psi
Total Design Pressure	9.145 psi
Residual Pressure	50.855 psi

Run Set: 10

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.24 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 10 @ 10.66 gpm

Mainline Loss	0.93 psi
Valve Loss	1.86 psi
Lateral Loss	0.518 psi
Fittings Loss	0.145 psi
Elevation	0 psi
Sprinkler Requirement	30 psi
Total Design Pressure	36.548 psi
Residual Pressure	23.452 psi

Run Set: 11

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.339 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 11 @ 14.97 gpm

Mainline Loss	1.89 psi
Valve Loss	1.86 psi
Lateral Loss	1.051 psi
Fittings Loss	0.294 psi
Elevation	0 psi
Sprinkler Requirement	45 psi
Total Design Pressure	52.879 psi
Residual Pressure	7.121 psi

Run Set: 12

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.354 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 12 @ 15.48 gpm

Mainline Loss	1.37 psi
Valve Loss	1.763 psi
Lateral Loss	2.415 psi
Fittings Loss	0.378 psi
Elevation	0 psi
Sprinkler Requirement	45 psi
Total Design Pressure	53.901 psi
Residual Pressure	6.099 psi

Run Set: 13

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.436 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 13 @ 18.54 gpm

Mainline Loss	2.75 psi
Valve Loss	2.804 psi
Lateral Loss	1.692 psi
Fittings Loss	0.445 psi
Elevation	0 psi
Sprinkler Requirement	45 psi
Total Design Pressure	55.696 psi
Residual Pressure	4.314 psi

Run Set: 14

Water Source #1	
Type	Meter
Static Pressure	60 psi
Service Line	0 psi
Meter Loss	0.436 psi

Mainline Components	
Backflow Loss	3 psi
Master Valve Loss	0 psi
Filter Loss	0 psi

Zone 14 @ 18.54 gpm

Mainline Loss	3.73 psi
Valve Loss	2.804 psi
Lateral Loss	1.962 psi
Fittings Loss	0.569 psi
Elevation	0 psi
Sprinkler Requirement	45 psi