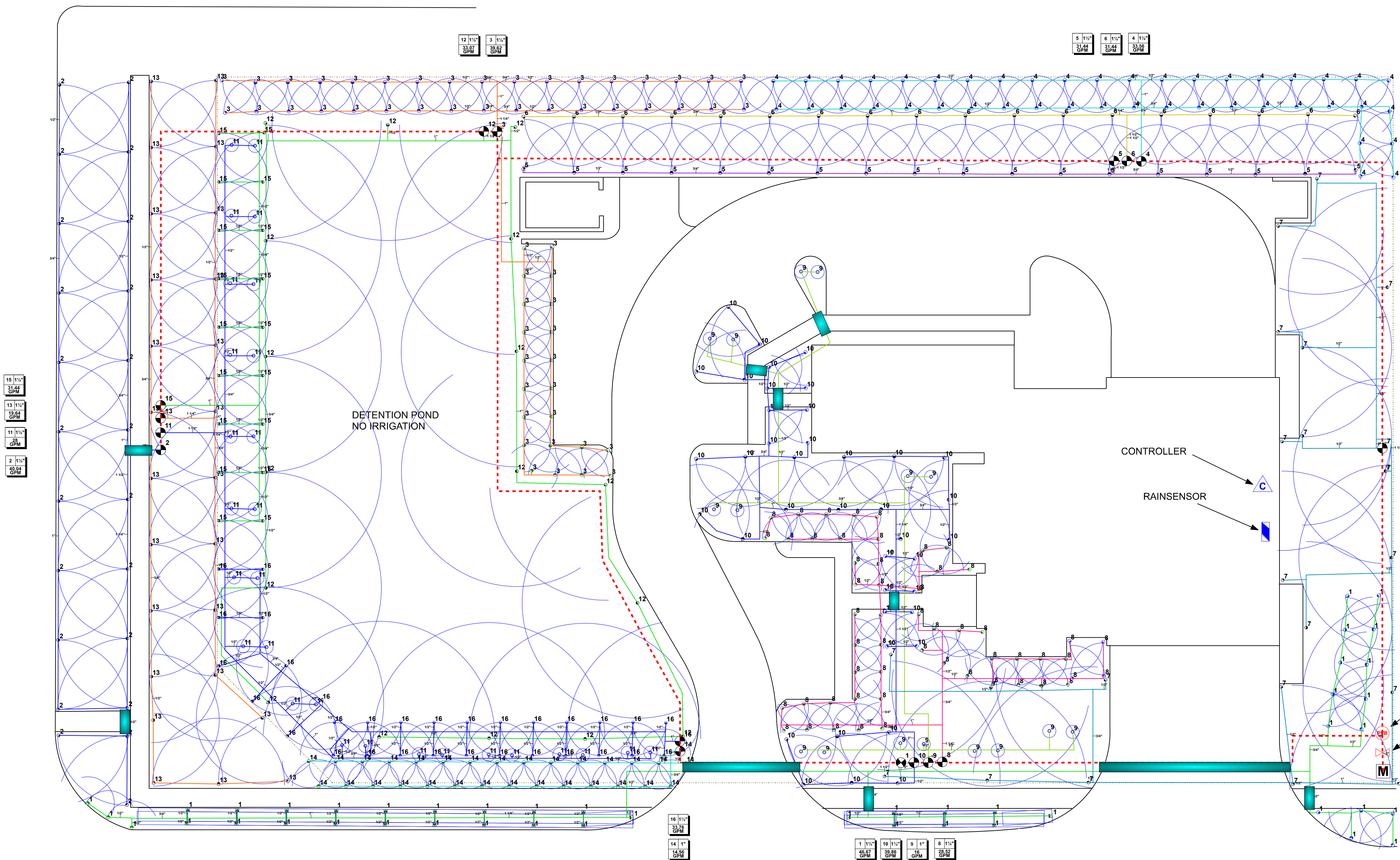




Run Set: 1	Run Set: 2	Run Set: 3	Run Set: 4	Run Set: 5	Run Set: 6	Run Set: 7	Run Set: 8	Run Set: 9	Run Set: 10	Run Set: 11	Run Set: 12	Run Set: 13	Run Set: 14
Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1
Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter
Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi
Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi
Master Valve Loss: 0.849 psi	Master Valve Loss: 1.204 psi	Master Valve Loss: 0.995 psi	Master Valve Loss: 0.922 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi	Master Valve Loss: 0.848 psi
Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components
Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi
Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi
Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi
Zone 1 @ 31.48 gpm	Zone 2 @ 40.04 gpm	Zone 3 @ 36.46 gpm	Zone 4 @ 33.56 gpm	Zone 5 @ 31.44 gpm	Zone 6 @ 31.44 gpm	Zone 7 @ 31.11 gpm	Zone 8 @ 23.4 gpm	Zone 9 @ 16 gpm	Zone 10 @ 39.86 gpm	Zone 11 @ 28 gpm	Zone 12 @ 33.07 gpm	Zone 13 @ 46.51 gpm	Zone 14 @ 14.96 gpm
Mainline Loss: 0.69 psi	Mainline Loss: 3.92 psi	Mainline Loss: 1.13 psi	Mainline Loss: 0.79 psi	Mainline Loss: 0.75 psi	Mainline Loss: 0.7 psi	Mainline Loss: 0.63 psi	Mainline Loss: 0.3 psi	Mainline Loss: 0.15 psi	Mainline Loss: 0.84 psi	Mainline Loss: 1.99 psi	Mainline Loss: 0.97 psi	Mainline Loss: 5.02 psi	Mainline Loss: 0.16 psi
Valve Loss: 6.726 psi	Valve Loss: 1.702 psi	Valve Loss: 3.535 psi	Valve Loss: 3.894 psi	Valve Loss: 3.596 psi	Valve Loss: 3.596 psi	Valve Loss: 3.529 psi	Valve Loss: 3.795 psi	Valve Loss: 4.58 psi	Valve Loss: 3.501 psi	Valve Loss: 1.5 psi	Valve Loss: 3.569 psi	Valve Loss: 2.026 psi	Valve Loss: 3 psi
Lateral Loss: 2.75 psi	Lateral Loss: 2.288 psi	Lateral Loss: 2.288 psi	Lateral Loss: 2.842 psi	Lateral Loss: 2.920 psi	Lateral Loss: 2.920 psi	Lateral Loss: 2.915 psi	Lateral Loss: 2.885 psi	Lateral Loss: 2.795 psi	Lateral Loss: 2.944 psi	Lateral Loss: 2.944 psi	Lateral Loss: 3 psi	Lateral Loss: 4.109 psi	Lateral Loss: 2.893 psi
Fittings Loss: 0.344 psi	Fittings Loss: 0.825 psi	Fittings Loss: 0.343 psi	Fittings Loss: 0.363 psi	Fittings Loss: 0.349 psi	Fittings Loss: 0.363 psi	Fittings Loss: 0.457 psi	Fittings Loss: 0.304 psi	Fittings Loss: 0.304 psi	Fittings Loss: 0.364 psi	Fittings Loss: 0.493 psi	Fittings Loss: 0.397 psi	Fittings Loss: 0.913 psi	Fittings Loss: 0.305 psi
Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi
Sprinkler Requirement: 30 psi	Sprinkler Requirement: 45 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 45 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 45 psi	Sprinkler Requirement: 45 psi	Sprinkler Requirement: 30 psi
Total Design Pressure: 43.519 psi	Total Design Pressure: 58.658 psi	Total Design Pressure: 40.46 psi	Total Design Pressure: 40.608 psi	Total Design Pressure: 40.614 psi	Total Design Pressure: 40.608 psi	Total Design Pressure: 58.611 psi	Total Design Pressure: 40.394 psi	Total Design Pressure: 40.34 psi	Total Design Pressure: 36.652 psi	Total Design Pressure: 36.652 psi	Total Design Pressure: 55.944 psi	Total Design Pressure: 58.307 psi	Total Design Pressure: 38.884 psi
Residual Pressure: 21.481 psi	Residual Pressure: 6.342 psi	Residual Pressure: 24.54 psi	Residual Pressure: 24.388 psi	Residual Pressure: 24.392 psi	Residual Pressure: 24.392 psi	Residual Pressure: 8.389 psi	Residual Pressure: 24.686 psi	Residual Pressure: 24.66 psi	Residual Pressure: 24.161 psi	Residual Pressure: 25.346 psi	Residual Pressure: 9.066 psi	Residual Pressure: 4.665 psi	Residual Pressure: 28.116 psi
Run Set: 15	Run Set: 16	Run Set: 17	Run Set: 18	Run Set: 19	Run Set: 20	Run Set: 21	Run Set: 22	Run Set: 23	Run Set: 24	Run Set: 25	Run Set: 26	Run Set: 27	Run Set: 28
Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1	Water Source #1
Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter	Type: Meter
Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi	Static Pressure: 65 psi
Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi	Service Line: 0 psi
Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi	Master Valve Loss: 0.849 psi
Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components	Mainline Components
Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi	Backflow Loss: 2.5 psi
Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi	Master Valve Loss: 0 psi
Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi	Filter Loss: 0 psi
Zone 15 @ 31.44 gpm	Zone 16 @ 33.76 gpm	Zone 17 @ 33.76 gpm	Zone 18 @ 33.76 gpm	Zone 19 @ 33.76 gpm	Zone 20 @ 33.76 gpm	Zone 21 @ 33.76 gpm	Zone 22 @ 33.76 gpm	Zone 23 @ 33.76 gpm	Zone 24 @ 33.76 gpm	Zone 25 @ 33.76 gpm	Zone 26 @ 33.76 gpm	Zone 27 @ 33.76 gpm	Zone 28 @ 33.76 gpm
Mainline Loss: 2.4 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi	Mainline Loss: 1.529 psi
Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi	Valve Loss: 5.879 psi
Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi	Lateral Loss: 0.849 psi
Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi	Fittings Loss: 0.344 psi
Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi	Elevation: 0 psi
Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi	Sprinkler Requirement: 30 psi
Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi	Total Design Pressure: 43.159 psi
Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi	Residual Pressure: 21.841 psi

The maximum velocity of the PVC water piping will not exceed 5 linear feet per second.
Plans and instruction manuals will be kept on site during the installation of the system.
Proposed watering schedule will be programmed into controller.
There will be a permanent sticker on controller.
Wiring used to connect controller is U.L. approved.
Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TCEQ) (MC-178).
PO Box 13087, Austin, Texas 78711-3087.
TCEQ's website is:
www.tceq.state.tx.us.
Backflow preventer will need to be tested yearly.

Irrigation

Quantity	Symbol	Description	Part Number	Pressure	Flow	Radius
Sprinklers						
102	●	Rain Bird 10H - 1804	10H	30 psi	0.79 gpm	10 ft
31	●	Rain Bird 10Q - 1804	10Q	30 psi	0.39 gpm	10 ft
1	●	Rain Bird 10-VAN 90 - 1804	10-VAN	30 psi	0.75 gpm	10 ft
1	●	Rain Bird 12H - 1804	12H	30 psi	1.3 gpm	12 ft
44	●	Rain Bird 1404	1404	30 psi	1 gpm	0 ft
3	●	Rain Bird 15EST - 1804	15EST	30 psi	0.61 gpm	15 x 4 ft
67	●	Rain Bird 15H - 1804	15H	30 psi	1.85 gpm	15 ft
17	●	Rain Bird 15Q - 1804	15Q	30 psi	0.92 gpm	15 ft
24	●	Rain Bird 15SST - 1804	15SST	30 psi	1.21 gpm	30 x 4 ft
2	●	Rain Bird 15-VAN 180 - 1804	15-VAN	30 psi	1.85 gpm	15 ft
7	●	Rain Bird 3500 Series 1.0 - 3504-PC	1.0	45 psi	1.06 gpm	21 ft
41	●	Rain Bird 3500 Series 2.0 - 3504-PC	2.0	45 psi	1.93 gpm	27 ft
16	●	Rain Bird 5000 Series 1.5 - 5004-PL-PC	1.5	45 psi	1.54 gpm	35 ft
22	●	Rain Bird 5000 Series 2.0 - 5004-PL-PC	2.0	45 psi	2.07 gpm	37 ft
80	●	Rain Bird 8H - 1804	8H	30 psi	0.52 gpm	8 ft
22	●	Rain Bird 8Q - 1804	8Q	30 psi	0.26 gpm	8 ft
3	●	Rain Bird 8-VAN 180 - 1804	8-VAN	30 psi	1.19 gpm	8 ft

Meters/Pumps

1	■	2 inch meter	
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Backflow Devices

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

2	■	Hunter ICV-101G	ICV-101G
14	■	Hunter ICV-151G	ICV-151G

Irrigation Accessories

1	■	Hunter MINI-CLIK	MINI-CLIK
1	■	Nibco 2" isolation valve	
1	■	Rain Bird ESP-4Mei (16 Stations)	ESP4MEI - 2 ESPSM6 Modules

Lateral Line Pipe

3821 ft	■	Class 315 1/2"	
1027 ft	■	Class 200 3/4"	
1232 ft	■	Class 200 1"	
648 ft	■	Class 200 1 1/4"	
232 ft	■	Class 200 1 1/2"	
59 ft	■	Class 200 2"	

Mainline Pipe

1099 ft	■	Schedule 40 2"	0
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Sleeving

149 ft	■	Schedule 40 4"	0
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Sprinkler Zone Data

Zone #	Total Area	Total Flow	Precip Rate
1	1872.75 Sq/Ft	43.85 gpm	2.25 in/hr
2	4380.84 Sq/Ft	40.04 gpm	0.88 in/hr
3	2419.75 Sq/Ft	36.46 gpm	1.45 in/hr
4	2203.85 Sq/Ft	33.56 gpm	1.47 in/hr
5	3636.56 Sq/Ft	31.44 gpm	0.83 in/hr
6	3626.58 Sq/Ft	31.44 gpm	0.83 in/hr
7	7637.48 Sq/Ft	37.11 gpm	0.46 in/hr
8	1673.86 Sq/Ft	23.4 gpm	1.35 in/hr
9	200.57 Sq/Ft	16 gpm	7.68 in/hr
10	3022.36 Sq/Ft	39.86 gpm	1.27 in/hr
11	561 Sq/Ft	29 gpm	7.68 in/hr
12	16242.46 Sq/Ft	33.07 gpm	0.2 in/hr
13	4758.71 Sq/Ft	46.51 gpm	0.94 in/hr
14	955.72 Sq/Ft	14.96 gpm	1.47 in/hr
15	2014.64 Sq/Ft	31.44 gpm	1.5 in/hr
16	2301.03 Sq/Ft	33.76 gpm	1.41 in/hr

Water Source #1	2 inch meter
Static Pressure	65 psi
Elevation Change	0 ft
Service Line Information	
Pipe Category	Poly 160
Pipe Size	Poly 160 2"
Length	0 ft
Velocity	5 f/s
Recommendations	
Maximum Recommended Flow	52.29 gpm
Available Working Pressure	58.5 psi



TEXAS
IRRIGATION
DESIGN

281 341-0499



SHEET DESCRIPTION:

IRRIGATION DESIGN

Casey Reimann
07/23/2015

PROJECT:
CITY OF PEARLAND
FIRESTATION
PEARLAND, TX

REVISIONS:
None

DATE:
07/23/2015

JOB NUMBER:
D1-0723/2015

DRAWN BY:
CASEY REIMANN

CHECKED BY:
CLR

SCALE:
1" = 20'

SHEET:
1 of 1

