LEGEND (PHASE 1)

SYMBOL	MODEL NO.	DESCRIPTION	* EST. QUANTITY
△,▲	1404	RAIN BIRD FLOOD BUBBLER	668
□ 15F	PA-8S-PRS-15F	RAIN BIRD SHRUB SPRAY	01
8Q	1806-PRS-8Q	RAIN BIRD 6" POP-UP SPRAY	01
10V	1806-PRS-10V	RAIN BIRD 6" POP-UP SPRAY	10
10Q	1806-PRS-10Q	RAIN BIRD 6" POP-UP SPRAY	11
10T	1806-PRS-10T	RAIN BIRD 6" POP-UP SPRAY	04
10H	1806-PRS-10H	RAIN BIRD 6" POP-UP SPRAY	118
10F	1806-PRS-10F	RAIN BIRD 6" POP-UP SPRAY	04
12Q	1806-PRS-12Q	RAIN BIRD 6" POP-UP SPRAY	04
12H	1806-PRS-12H	RAIN BIRD 6" POP-UP SPRAY	19
12F	1806-PRS-12F	RAIN BIRD 6" POP-UP SPRAY	08
RCS	1806-PRS-15RCS	RAIN BIRD 6" POP-UP SPRAY	07
LCS	1806-PRS-15LCS	RAIN BIRD 6" POP-UP SPRAY	08
SST	1806-PRS-15SST	RAIN BIRD 6" POP-UP SPRAY	42
15Q	1806-PRS-15Q	RAIN BIRD 6" POP-UP SPRAY	07
15T	1806-PRS-15T	RAIN BIRD 6" POP-UP SPRAY	04
15H	1806-PRS-15H	RAIN BIRD 6" POP-UP SPRAY	85
15F	1806-PRS-15F	RAIN BIRD 6" POP-UP SPRAY	19
8Q	1812-PRS-8Q	RAIN BIRD 12" POP-UP SPRAY	01
10Q	1812-PRS-10Q	RAIN BIRD 12" POP-UP SPRAY	05
10T	1812-PRS-10T	RAIN BIRD 12" POP-UP SPRAY	03
10H	1812-PRS-10H	RAIN BIRD 12" POP-UP SPRAY	49
10F	1812-PRS-10F	RAIN BIRD 12" POP-UP SPRAY	01
12F	1812-PRS-12F	RAIN BIRD 12" POP-UP SPRAY	03
RCS	1812-PRS-15RCS	RAIN BIRD 12" POP-UP SPRAY	14
LCS	1812-PRS-15LCS	RAIN BIRD 12" POP-UP SPRAY	16
SST	1812-PRS-15SST	RAIN BIRD 12" POP-UP SPRAY	12
15V	1812-PRS-15Q	RAIN BIRD 12" POP-UP SPRAY	03
15Q	1812-PRS-15Q	RAIN BIRD 12" POP-UP SPRAY	11
15H	1812-PRS-15H	RAIN BIRD 12" POP-UP SPRAY	29
15H	1812-PRS-15H	RAIN BIRD 12" POP-UP SPRAY	01
2	5004PL-PC-2.0	RAIN BIRD 4" POP-UP ROTOR	12
3	5004PL-PC-3.0	RAIN BIRD 4" POP-UP ROTOR	76
4	5004PL-PC-4.0	RAIN BIRD 4" POP-UP ROTOR	02
6	5004PL-PC-6.0	RAIN BIRD 4" POP-UP ROTOR	01
6	5004PL-FC-6.0	RAIN BIRD 4" POP-UP ROTOR	06
6	5006PL-FC-6.0	RAIN BIRD 6" POP-UP ROTOR	04
QC	#5	RAIN BIRD QC VALVE	08
NOT SHOWN	#55K	RAIN BIRD QC KEY	03
●,⊕	PGA SERIES	RAIN BIRD 24 VAC SOLENOID VALVE	
		1 1/2"	04
		2"	15
CW	ESP-LXD	RAIN BIRD DECODER CONTROLLER	01 *
NOT SHOWN	ESP-LXD-H50	RAIN BIRD EXPANSION MODULE	01 *
NOT SHOWN	FD-101 TURF	RAIN BIRD 1 STATION DECODER	19
• • • • • •	14-2UF	RAIN BIRD MAXI CABLE	1,700 LF
NOT SHOWN	LIMR-KIT	RAIN BIRD REMOTE CONTROL KIT	01
NOT SHOWN	DPU-210	RAIN BIRD DECODER PROGRAMMING UNIT	01
NOT SHOWN		RAIN BIRD WEATHER SENSOR	01
SD	270 CSD	PAIGE CABLE SWITCHING DEVICE	02
GL		GROUNDING LOCATION	04
NOT SHOWN		SCH 80 PVC PIPE	AS REQUIRED
NOT SHOWN		80 PVC PIPE	AS REQUIRED
		MAIN LINE FITTINGS	
		SCH 80 PVC	
—•••—		4" MAIN	1400 LF
—•••—		3" MAIN	200 LF
———		LATERALS	AS REQUIRED
═══		SLEEVES	AS REQUIRED
NOT SHOWN		SPRINKLER RISERS	AS REQUIRED
NOT SHOWN		PVC FITTINGS	AS REQUIRED
• • • • •		WIRE CONDUIT	1700 LF
— x —		SUCTION LINE	AS REQUIRED
→←		GATE VALVE (TO LINE SIZE)	03
ARV		AIR RELIEF VALVE	01
●,⊕,→←,⊞QC,△ARV		VALVE BOX	31
☒		PUMP STATION	01
▦		SCREENING UNIT	01
▭		STORAGE TANK	01
⊢		CAPPED STUB-OUT	AS REQUIRED

NOTES: ABOVE QUANTITIES ARE FOR COMPARISON ONLY.
CONTRACTOR SHALL VERIFY PRIOR TO SUBMITTING BID.

THE CONTROLLER AND WEATHER SENSOR SHALL BE COMPONENTS OF THE PUMP STATION.

ZONE SUMMARY CHART (PHASE 1)

STA NO.	VALVE	PHASE	SPRINKLER TYPE	VALVE SIZE	WATER DEMAND	RUN *TIME	WEEKLY USAGE
1	CW1	PHASE 1	ROTOR	1 1/2"	54 GPM	140 MIN/WK	7,560 GAL/WK
2	CW2	PHASE 1	BUBBLER	2"	84 GPM	30 MIN/WK	2,520 GAL/WK
3	CW3	PHASE 1	SPRAY	2"	75 GPM	60 MIN/WK	4,500 GAL/WK
4	CW4	PHASE 1	BUBBLER	2"	84 GPM	30 MIN/WK	2,520 GAL/WK
5	CW5	PHASE 1	BUBBLER	2"	106 GPM	30 MIN/WK	3,180 GAL/WK
6	CW6	PHASE 1	SPRAY	2"	85 GPM	60 MIN/WK	5,100 GAL/WK
7	CW7	PHASE 1	ROTOR	2"	107 GPM	140 MIN/WK	14,980 GAL/WK
8	CW8	PHASE 1	SPRAY	2"	72 GPM	60 MIN/WK	4,320 GAL/WK
9	CW9	PHASE 1	BUBBLER	2"	106 GPM	30 MIN/WK	3,180 GAL/WK
10	CW10	PHASE 1	ROTOR	2"	72 GPM	140 MIN/WK	10,080 GAL/WK
11	CW11	PHASE 1	BUBBLER	1 1/2"	54 GPM	30 MIN/WK	1,620 GAL/WK
12	CW12	PHASE 1	BUBBLER	2"	114 GPM	30 MIN/WK	3,420 GAL/WK
13	CW13	PHASE 1	ROTOR	1 1/2"	51 GPM	140 MIN/WK	7,140 GAL/WK
14	CW14	PHASE 1	SPRAY	2"	86 GPM	60 MIN/WK	5,160 GAL/WK
15	CW15	PHASE 1	SPRAY	2"	115 GPM	60 MIN/WK	6,900 GAL/WK
16	CW16	PHASE 1	BUBBLER	2"	120 GPM	30 MIN/WK	3,600 GAL/WK
17	CW17	PHASE 1	ROTOR	1 1/2"	42 GPM	140 MIN/WK	5,880 GAL/WK
18	CW18	PHASE 1	SPRAY	2"	112 GPM	60 MIN/WK	6,720 GAL/WK
19	CW19	PHASE 1	SPRAY	2"	95 GPM	60 MIN/WK	5,700 GAL/WK
20-25	SPARE						

104,080 GAL/WK

LEGEND (PHASE 2)

SYMBOL	MODEL NO.	DESCRIPTION	* EST. QUANTITY
▲X	RWS-B-C-1404	RAIN BIRD ROOT WATERING SYSTEM	104
▲,△	1404	RAIN BIRD FLOOD BUBBLER	386
10F	PA-8S-PRS-10F	RAIN BIRD SHRUB SPRAY	02
12Q	PA-8S-PRS-12Q	RAIN BIRD SHRUB SPRAY	01
12H	PA-8S-PRS-12H	RAIN BIRD SHRUB SPRAY	01
15Q	PA-8S-PRS-15Q	RAIN BIRD SHRUB SPRAY	01
15T	PA-8S-PRS-15T	RAIN BIRD SHRUB SPRAY	01
15H	PA-8S-PRS-15H	RAIN BIRD SHRUB SPRAY	02
15F	PA-8S-PRS-15F	RAIN BIRD SHRUB SPRAY	01
10F	1806-PRS-10F	RAIN BIRD 6" POP-UP SPRAY	05
12V	1806-PRS-12V	RAIN BIRD 6" POP-UP SPRAY	01
12H	1806-PRS-12H	RAIN BIRD 6" POP-UP SPRAY	01
12F	1806-PRS-12F	RAIN BIRD 6" POP-UP SPRAY	02
15Q	1806-PRS-15Q	RAIN BIRD 6" POP-UP SPRAY	02
15H	1806-PRS-15H	RAIN BIRD 6" POP-UP SPRAY	17
10V	1812-PRS-10V	RAIN BIRD 12" POP-UP SPRAY	01
10Q	1812-PRS-10Q	RAIN BIRD 12" POP-UP SPRAY	03
10T	1812-PRS-10T	RAIN BIRD 12" POP-UP SPRAY	03
10H	1812-PRS-10H	RAIN BIRD 12" POP-UP SPRAY	06
10F	1812-PRS-10F	RAIN BIRD 12" POP-UP SPRAY	02
12V	1812-PRS-12V	RAIN BIRD 12" POP-UP SPRAY	01
12T	1812-PRS-12T	RAIN BIRD 12" POP-UP SPRAY	02
12H	1812-PRS-12H	RAIN BIRD 12" POP-UP SPRAY	02
15V	1812-PRS-15V	RAIN BIRD 12" POP-UP SPRAY	01
15Q	1812-PRS-15Q	RAIN BIRD 12" POP-UP SPRAY	06
15T	1812-PRS-15T	RAIN BIRD 12" POP-UP SPRAY	03
15H	1812-PRS-15H	RAIN BIRD 12" POP-UP SPRAY	15
2	5004P-PC-2.0	RAIN BIRD 4" POP-UP ROTOR	11
2,3	5004P-PC-3.0	RAIN BIRD 4" POP-UP ROTOR	35
4	5004P-PC-4.0	RAIN BIRD 4" POP-UP ROTOR	01
6	5004P-PC-6.0	RAIN BIRD 4" POP-UP ROTOR	01
6	5004P-FC-6.0	RAIN BIRD 4" POP-UP ROTOR	09
2	5006P-PC-2.0	RAIN BIRD 6" POP-UP ROTOR	02
3	5006P-PC-3.0	RAIN BIRD 6" POP-UP ROTOR	01
10	F4-PC-10	RAIN BIRD 6504 SERIES ROTOR	05
12	F4-PC-12	RAIN BIRD 6504 SERIES ROTOR	02
16	F4-PC-16	RAIN BIRD 6504 SERIES ROTOR	35
16	F4-FC-16	RAIN BIRD 6504 SERIES ROTOR	18
QC	#5	RAIN BIRD QC VALVE	03
●,⊕	200-PGA	RAIN BIRD 24 VAC SOLENOID VALVE	17
NOT SHOWN	FD-101 TURF	RAIN BIRD 1 STATION DECODER	17
• • • • • •	14-2UF	RAIN BIRD MAXI CABLE	900 LF
SD		PAIGE CABLE SWITCHING DEVICE	01
GL		GROUNDING LOCATION	02
		SCH 80 PVC	
—•••—		4" MAIN LINE	700 LF
—•••—		3" MAIN LINE	200 LF
———		LATERALS	AS REQUIRED
═══		SLEEVES	AS REQUIRED
NOT SHOWN		SPRINKLER RISERS	AS REQUIRED
NOT SHOWN		PVC FITTINGS	AS REQUIRED
• • • • •		WIRE CONDUIT	900 LF
●,⊕,⊞QC,△SD		VALVE BOX	21

NOTES: ABOVE QUANTITIES ARE FOR COMPARISON ONLY.
CONTRACTOR SHALL VERIFY PRIOR TO SUBMITTING BID.

ZONE SUMMARY CHART (PHASE 2)

STA NO.	VALVE	PHASE	SPRINKLER TYPE	VALVE SIZE	WATER DEMAND	RUN *TIME	WEEKLY USAGE
26	CW26	PHASE 2	BUBBLER	2"	116 GPM	30 MIN/WK	3,480 GAL/WK
27	CW27	PHASE 2	ROTOR	2"	100 GPM	140 MIN/WK	14,000 GAL/WK
28	CW28	PHASE 2	PC ROTOR	2"	108 GPM	70 MIN/WK	7,560 GAL/WK
29	CW29	PHASE 2	PC ROTOR	2"	90 GPM	70 MIN/WK	6,300 GAL/WK
30	CW30	PHASE 2	FC ROTOR	2"	96 GPM	140 MIN/WK	13,440 GAL/WK
31	CW31	PHASE 2	FC ROTOR	2"	96 GPM	140 MIN/WK	13,440 GAL/WK
32	CW32	PHASE 2	PC ROTOR	2"	113 GPM	70 MIN/WK	7,910 GAL/WK
33	CW33	PHASE 2	BUBBLER	2"	100 GPM	30 MIN/WK	3,000 GAL/WK
34	CW34	PHASE 2	FC ROTOR	2"	102 GPM	140 MIN/WK	14,280 GAL/WK
35	CW35	PHASE 2	PC ROTOR	2"	116 GPM	70 MIN/WK	8,120 GAL/WK
36	CW36	PHASE 2	BUBBLER	2"	104 GPM	30 MIN/WK	3,120 GAL/WK
37	CW37	PHASE 2	BUBBLER	2"	80 GPM	30 MIN/WK	2,400 GAL/WK
38	CW38	PHASE 2	SPRAY	2"	120 GPM	60 MIN/WK	7,200 GAL/WK
39	CW39	PHASE 2	BUBBLER	2"	90 GPM	30 MIN/WK	2,700 GAL/WK
40	CW40	PHASE 2	PC ROTOR	2"	120 GPM	70 MIN/WK	8,400 GAL/WK
41	CW41	PHASE 2	PC ROTOR	2"	104 GPM	70 MIN/WK	7,280 GAL/WK
42	CW42	PHASE 2	PC ROTOR	2"	85 GPM	70 MIN/WK	5,950 GAL/WK
43-50	SPARE						

128,580 GAL/WK

LEGEND (PHASE 3)

SYMBOL	MODEL NO.	DESCRIPTION	* EST. QUANTITY
▲	1404	RAIN BIRD FLOOD BUBBLER	574
□ 15H	PA-8S-PRS-15H	RAIN BIRD SHRUB SPRAY	05
10T	1806-PRS-10T	RAIN BIRD 6" POP-UP SPRAY	04
10H	1806-PRS-10H	RAIN BIRD 6" POP-UP SPRAY	25
10F	1806-PRS-10F	RAIN BIRD 6" POP-UP SPRAY	14
12Q	1806-PRS-12Q	RAIN BIRD 6" POP-UP SPRAY	01
12T	1806-PRS-12T	RAIN BIRD 6" POP-UP SPRAY	04
12H	1806-PRS-12H	RAIN BIRD 6" POP-UP SPRAY	20
RCS	1806-PRS-15RCS	RAIN BIRD 6" POP-UP SPRAY	01
SST	1806-PRS-15SST	RAIN BIRD 6" POP-UP SPRAY	04
15Q	1806-PRS-15Q	RAIN BIRD 6" POP-UP SPRAY	06
15T	1806-PRS-15T	RAIN BIRD 6" POP-UP SPRAY	05
15H	1806-PRS-15H	RAIN BIRD 6" POP-UP SPRAY	80
15F	1806-PRS-15F	RAIN BIRD 6" POP-UP SPRAY	03
10H	1812-PRS-10H	RAIN BIRD 12" POP-UP SPRAY	03
12V	1812-PRS-12V	RAIN BIRD 12" POP-UP SPRAY	01
12Q	1812-PRS-12Q	RAIN BIRD 12" POP-UP SPRAY	06
12T	1812-PRS-12T	RAIN BIRD 12" POP-UP SPRAY	01
RCS	1812-PRS-15RCS	RAIN BIRD 12" POP-UP SPRAY	13
LCS	1812-PRS-15LCS	RAIN BIRD 12" POP-UP SPRAY	13
SST	1812-PRS-15SST	RAIN BIRD 12" POP-UP SPRAY	36
15V	1812-PRS-15V	RAIN BIRD 12" POP-UP SPRAY	01
15Q	1812-PRS-15Q	RAIN BIRD 12" POP-UP SPRAY	06
15H	1812-PRS-15H	RAIN BIRD 12" POP-UP SPRAY	16
2LA	5004PL-PC-2LA	RAIN BIRD 4" POP-UP ROTOR	03
3LA	5004PL-PC-3LA	RAIN BIRD 4" POP-UP ROTOR	03
2	5004PL-PC-2.0	RAIN BIRD 4" POP-UP ROTOR	03
3	5004PL-PC-3.0	RAIN BIRD 4" POP-UP ROTOR	89
4	5004PL-PC-4.0	RAIN BIRD 4" POP-UP ROTOR	02
6	5004PL-PC-6.0	RAIN BIRD 4" POP-UP ROTOR	56
6	5004PL-FC-6.0	RAIN BIRD 4" POP-UP ROTOR	47
2	5006PL-FC-2.0	RAIN BIRD 6" POP-UP ROTOR	03
3	5006PL-FC-3.0	RAIN BIRD 6" POP-UP ROTOR	04
QC	#5	RAIN BIRD QC VALVE	08
●,⊕	PGA SERIES	RAIN BIRD 24 VAC SOLENOID VALVE	
		1 1/2"	01
		2"	19
NOT SHOWN	FD-101 TURF	RAIN BIRD 1 STATION DECODER	20
• • • • • •	14-2UF	RAIN BIRD MAXI CABLE	2,800 LF
GL		GROUNDING LOCATION	04
		SCH 80 PVC	
—•••—		4" MAIN	2800 LF
———		LATERALS	AS REQUIRED
═══		SLEEVES	AS REQUIRED
NOT SHOWN		SPRINKLER RISERS	AS REQUIRED
NOT SHOWN		PVC FITTINGS	AS REQUIRED
• • • • •		WIRE CONDUIT	2800 LF
→←		GATE VALVE (TO LINE SIZE)	01
ARV		AIR RELIEF VALVE	01
●,⊕,→←,⊞QC,△ARV		VALVE BOX	30

NOTES: ABOVE QUANTITIES ARE FOR COMPARISON ONLY.
CONTRACTOR SHALL VERIFY PRIOR TO SUBMITTING BID.

ZONE SUMMARY CHART (PHASE 3)

STA NO.	VALVE	PHASE	SPRINKLER TYPE	VALVE SIZE	WATER DEMAND	RUN *TIME	WEEKLY USAGE
51	CW51	PHASE 3	SPRAY	2"	120 GPM	60 MIN/WK	7,200 GAL/WK
52	CW52	PHASE 3	BUBBLER	2"	102 GPM	30 MIN/WK	3,060 GAL/WK
53	CW53	PHASE 3	FC ROTOR	2"	100 GPM	140 MIN/WK	14,000 GAL/WK
54	CW54	PHASE 3	PC ROTOR	2"	120 GPM	70 MIN/WK	8,400 GAL/WK
55	CW55	PHASE 3	PC ROTOR	2"	102 GPM	70 MIN/WK	7,140 GAL/WK
56	CW56	PHASE 3	BUBBLER	2"	96 GPM	30 MIN/WK	2,880 GAL/WK
57	CW57	PHASE 3	SPRAY	2"	95 GPM	60 MIN/WK	5,700 GAL/WK
58	CW58	PHASE 3	FC ROTOR	2"	90 GPM	140 MIN/WK	12,600 GAL/WK
59	CW59	PHASE 3	BUBBLER	2"	98 GPM	30 MIN/WK	2,940 GAL/WK
60	CW60	PHASE 3	BUBBLER	2"	80 GPM	30 MIN/WK	2,400 GAL/WK
61	CW61	PHASE 3	PC ROTOR	2"	85 GPM	70 MIN/WK	5,950 GAL/WK
62	CW62	PHASE 3	FC ROTOR	2"	90 GPM	140 MIN/WK	12,600 GAL/WK
63	CW63	PHASE 3	BUBBLER	2"	88 GPM	30 MIN/WK	2,640 GAL/WK
64	CW64	PHASE 3	PC ROTOR	2"	87 GPM	70 MIN/WK	6,090 GAL/WK
65	CW65	PHASE 3	PC ROTOR	2"	72 GPM	70 MIN/WK	5,040 GAL/WK
66	CW66	PHASE 3	PC ROTOR	1 1/2"	67 GPM	70 MIN/WK	4,090 GAL/WK
67	CW67	PHASE 3	PC ROTOR	2"	86 GPM	70 MIN/WK	6,020 GAL/WK
68	CW68	PHASE 3	BUBBLER	2"	110 GPM	30 MIN/WK	3,300 GAL/WK
69	CW69	PHASE 3	SPRAY	2"	112 GPM	60 MIN/WK	6,720 GAL/WK
70	CW70	PHASE 3	ROTOR	2"	96 GPM	140 MIN/WK	13,440 GAL/WK
71-100	SPARE						

132,810 GAL/WK

TOTAL (PHASE 1,2,3) 365,470 GAL/WK

*TO APPLY 1.5 IN/WK.

ZONE SUMMARY CHART

STA NO.	VALVE	PHASE	SPRINKLER TYPE	VALVE SIZE	WATER DEMAND	RUN *TIME	WEEKLY USAGE
1	CW1	PHASE 1	SPRAY	2"	85 GPM	60 MIN/WK	5,100 GAL/WK
2	CW2	PHASE 1	BUBBLER	1 1/2"	70 GPM	30 MIN/WK	2,100 GAL/WK
3	CW3	PHASE 1	BUBBLER	1 1/2"	70 GPM	30 MIN/WK	2,100 GAL/WK
4	CW4	PHASE 1	BUBBLER	2"	94 GPM	30 MIN/WK	2,820 GAL/WK
5	CW5	PHASE 1	ROTOR	2"	76 GPM	140 MIN/WK	10,640 GAL/WK
6	CW6	PHASE 1	ROTOR	1 1/2"	60 GPM	140 MIN/WK	8,400 GAL/WK
7	CW7	PHASE 1	SPRAY	2"	107 GPM	60 MIN/WK	6,420 GAL/WK
8	CW8	PHASE 1	BUBBLER	2"	102 GPM	30 MIN/WK	3,060 GAL/WK
9	CW9	PHASE 1	ROTOR	1 1/2"	67 GPM	140 MIN/WK	9,380 GAL/WK
10	CW10	PHASE 1	BUBBLER	1 1/2"	54 GPM	30 MIN/WK	1,620 GAL/WK
11	CW11	PHASE 1	BUBBLER	2"	118 GPM	30 MIN/WK	3,540 GAL/WK
12	CW12	PHASE 1	ROTOR	1 1/2"	51 GPM	140 MIN/WK	7,140 GAL/WK
13	CW13	PHASE 1	SPRAY	2"	105 GPM	60 MIN/WK	6,300 GAL/WK
14	CW14	PHASE 1	BUBBLER	2"	120 GPM	30 MIN/WK	3,600 GAL/WK
15	CW15	PHASE 1	ROTOR	1 1/2"	40 GPM	140 MIN/WK	5,600 GAL/WK
16	CW16	PHASE 1	SPRAY	2"	112 GPM	60 MIN/WK	6,720 GAL/WK
17	CW17	PHASE 1	SPRAY	2"	95 GPM	60 MIN/WK	5,700 GAL/WK
18-20	SPARE						
21	CW21	PHASE 2	BUBBLER	2"	116 GPM	30 MIN/WK	3,480 GAL/WK
22	CW22	PHASE 2	ROTOR	2"	100 GPM	140 MIN/WK	14,000 GAL/WK
23	CW23	PHASE 2	PC ROTOR	2"	108 GPM	70 MIN/WK	7,560 GAL/WK
24	CW24	PHASE 2	PC ROTOR	2"	90 GPM	70 MIN/WK	6,300 GAL/WK
25	CW25	PHASE 2	FC ROTOR	2"	96 GPM	140 MIN/WK	13,440 GAL/WK
26	CW26	PHASE 2	FC ROTOR	2"	96 GPM	140 MIN/WK	13,440 GAL/WK
27	CW27	PHASE 2	PC ROTOR	2"	100 GPM	70 MIN/WK	7,000 GAL/WK
28	CW28	PHASE 2	FC ROTOR	2"	102 GPM	140 MIN/WK	14,280 GAL/WK
29	CW29	PHASE 2	PC ROTOR	2"	100 GPM	70 MIN/WK	7,000 GAL/WK
30	CW30	PHASE 2	BUBBLER	2"	102 GPM	30 MIN/WK	3,060 GAL/WK
31	CW31	PHASE 2	SPRAY	2"	110 GPM	60 MIN/WK	6,600 GAL/WK
32	CW32	PHASE 2	BUBBLER	2"	76 GPM	30 MIN/WK	2,280 GAL/WK
33	CW33	PHASE 2	BUBBLER	2"	90 GPM	30 MIN/WK	2,700 GAL/WK
34	CW34	PHASE 2	PC ROTOR	2"	105 GPM	70 MIN/WK	7,350 GAL/WK
35	CW35	PHASE 2	PC ROTOR	2"	104 GPM	70 MIN/WK	7,280 GAL/WK
36	CW36	PHASE 2	PC ROTOR	2"	85 GPM	70 MIN/WK	5,950 GAL/WK
37-40	SPARE						
41	CW41	PHASE 3	PC ROTOR	2"	84 GPM	70 MIN/WK	5,880 GAL/WK
42	CW42	PHASE 3	SPRAY	2"	120 GPM	60 MIN/WK	7,200 GAL/WK
43	CW43	PHASE 3	BUBBLER	2"	108 GPM	30 MIN/WK	3,240 GAL/WK
44	CW44	PHASE 3	PC ROTOR	2"	100 GPM	70 MIN/WK	7,000 GAL/WK
45	CW45	PHASE 3	PC ROTOR	2"	120 GPM	70 MIN/WK	8,400 GAL/WK
46	CW46	PHASE 3	PC ROTOR	2"	102 GPM	70 MIN/WK	7,140 GAL/WK
47	CW47	PHASE 3	BUBBLER	2"	100 GPM	30 MIN/WK	3,000 GAL/WK
48	CW48	PHASE 3	SPRAY	2"	95 GPM	60 MIN/WK	5,700 GAL/WK
49	CW49	PHASE 3	FC ROTOR	2"	90 GPM	140 MIN/WK	12,600 GAL/WK
50	CW50	PHASE 3	BUBBLER	2"	96 GPM	30 MIN/WK	2,880 GAL/WK
51	CW51	PHASE 3	BUBBLER	2"	90 GPM	30 MIN/WK	2,700 GAL/WK
52	CW52	PHASE 3	PC ROTOR	2"	93 GPM	70 MIN/WK	6,510 GAL/WK
53	CW53	PHASE 3	FC ROTOR	2"	106 GPM	140 MIN/WK	14,840 GAL/WK
54	CW54	PHASE 3	BUBBLER	2"	102 GPM	30 MIN/WK	3,000 GAL/WK
55	CW55	PHASE 3	PC ROTOR	2"	87 GPM	70 MIN/WK	6,090 GAL/WK
56	CW56	PHASE 3	SPRAY	1 1/2"	73 GPM	60 MIN/WK	4,380 GAL/WK
57	CW57	PHASE 3	PC ROTOR	1 1/2"	67 GPM	70 MIN/WK	4,690 GAL/WK
58	CW58	PHASE 3	SPRAY	2"	86 GPM	60 MIN/WK	5,160 GAL/WK
59	CW59	PHASE 3	BUBBLER	2"	118 GPM	30 MIN/WK	3,540 GAL/WK
60	CW60	PHASE 3	SPRAY	2"	112 GPM	60 MIN/WK	6,720 GAL/WK
61	CW61	PHASE 3	ROTOR	2"	96 GPM	140 MIN/WK	13,440 GAL/WK
62-100	SPARE						

346,130 GAL/WK

*TO APPLY 1.5 IN/WK ON SOD, SHRUBS, AND GROUND COVER AND 60 GAL/WK ON EACH PALM AND TREE.

ENVIRONMENTAL LAND USE CONTROLS NOTE:
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PROJECT NAME:
TRUMAN WATERFRONT PARK

PROJECT LOCATION/ADDRESS:
TRUMAN WATERFRONT PARK WEST OF FORT STREET AND THE TRUMAN ANNEX DEVELOPMENT, NORTH OF KEY WEST NAVAL BASE

SUB-CONSULTANT INFORMATION:

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SUBMITTAL DESCRIPTION / MILESTONE:

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DRAWING TITLE:
IRRIGATION LEGENDS

SHEET NO.
ID-01

IRRIGATION NOTES & SPECIFICATIONS

AUTOMATIC IRRIGATION SYSTEM	
WATER DEMAND/ZONE	REFER TO PLAN
WATER SOURCE	STORAGE TANK (CITY WATER)
PRESSURE REQUIRED	80 PSI
PUMPING CAPACITY	225 GPM @ 185 FT.HD.

GENERAL

IRRIGATION SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES, CONTRACT DRAWINGS, CONTRACT SPECIFICATIONS, AND APPENDIX "F" OF THE FLORIDA BUILDING CODE.

IRRIGATION DESIGN BASED ON "LANDSCAPE PLANS." CONTRACTOR SHALL REFER TO LANDSCAPE PLANS TO COORDINATE SPRINKLER LOCATIONS AND PIPE ROUTING WITH NEW AND EXISTING PLANT LOCATIONS.

THIS IRRIGATION PLAN SHALL BE USED AS A GUIDE ONLY. CONTRACTOR SHALL INSTALL IRRIGATION TO MATCH ON SITE CONDITIONS AND TO OVERCOME THE INHERENT INACCURACIES THAT RESULT WHEN DESIGNING FROM BASE PLANS SCALED AT 1" = 30'.

THE SOURCE SHALL BE A PRE-FABRICATED PUMP STATION DRAWING WATER FROM A CITY WATER STORAGE TANK. THE SOURCE FOR THE TANK SHALL BE A 2" CITY WATER METER.

THIS IRRIGATION HAS BEEN DESIGNED AS A TYPICAL BLOCK VALVE TYPE USING RAIN BIRD BUBBLER, SPRAY AND ROTOR SPRINKLERS, IN-LINE VALVES, AND DECODER CONTROL SYSTEM. WATER CONSERVATION EQUIPMENT SHALL BE INSTALLED.

IRRIGATION SHALL BE INSTALLED AND MAINTAINED TO MINIMIZE UNDESIRABLE OVERTHROW ONTO PAVEMENT, SIDEWALKS, AND BUILDINGS.

CONTRACTOR IS ADVISED TO STUDY THE PLANS FOR ADDITIONAL INFORMATION AND TO VISIT THE SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS.

TO ENSURE PROPER OPERATION, PUMP STATION CAPACITY, PROGRAMMING, VALVE SIZES, ZONE CAPACITIES, SPRINKLER SPACING, PIPE AND WIRE SIZES, AND INSTALLATION NOTES AND DETAILS SHALL BE FOLLOWED AS SHOWN.

PIPING

PIPE ROUTING IS SCHEMATIC ONLY AND SHALL BE ADJUSTED FOR ON SITE CONDITIONS.

PIPE SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND PIPE MANUFACTURER'S INSTRUCTIONS.

PIPE ROUTED UNDER HARDSCAPED AREAS SHALL BE SLEEVED IN SCH 80 PVC. EACH SLEEVE SHALL BE: (1) BURIED TO A MINIMUM DEPTH OF 24", (2) TWO PIPE SIZES LARGER THAN THE CARRIER PIPE, AND (3) EXTENDED 3' BEYOND HARDSCAPED AREA ON EACH END. CONTRACTOR SHALL VERIFY THE SIZE, DEPTH, AND LOCATION OF ALL EXISTING SLEEVES.

PIPE INSTALLED ABOVE GRADE AT THE PUMP STATION SHALL BE SCH 80 PVC PIPE. ALL OTHER PIPING (I.E, MAIN LINE, LATERALS, SUCTION LINE) SHALL BE SCH 80 TYPE 1120 PVC. MAIN LINE AND LATERALS MAIN LINE SHALL BE GASKET TYPE AND LATERALS SHALL BE SOLVENT WELD TYPE.

MAIN LINE DIRECTIONAL FITTINGS SHALL BE SCH 80 PVC.
LATERAL PIPE FITTINGS SHALL BE SCH 80 PVC.

ALL MAIN DIRECTIONAL FITTINGS SHALL BE RESTRAINED WITH MEG-A-LUG JOINT RESTRAINTS OR SHALL BE TRUST BLOCKED.

PIPE SIZED TO LIMIT FLOW VELOCITIES TO 5 FEET/SECOND AND TO LIMIT FRICTION LOSS IN THE PIPING NETWORK.

PIPE SHALL BE INSTALLED AT SUFFICIENT DEPTH BELOW GROUND TO PROTECT IT FROM HAZARD SUCH AS VEHICULAR TRAFFIC OR ROUTINE OCCURRENCES WHICH OCCUR IN THE NORMAL USE AND MAINTENANCE OF THE PROPERTY. DEPTHS OF COVER SHALL MEET OR EXCEED SCS CODE 430-DD. REFER TO THE APPLICABLE DETAIL FOR ADDITIONAL INFORMATION.

BACKFILL SHALL BE OF SUITABLE MATERIAL, FREE OF ROCKS, STONES, AND OTHER DEBRIS THAT WOULD DAMAGE IRRIGATION SYSTEM COMPONENTS.

GATE VALVES SHALL BE INSTALLED FOR ISOLATION. EACH GATE VALVE SHALL BE TO LINE SIZE AND INSTALLED IN A VALVE BOX. POROUS MATERIAL SHALL BE INSTALLED PER BOX TO PROMOTE DRAINAGE.

AIR RELIEF VALVES SHALL BE INSTALLED IN THE SYSTEM TO PROTECT THE PIPING NETWORK FROM EXCESSIVE PRESSURES THAT DEVELOP WHEN COMPRESSING ENTRAPPED AIR. EACH UNIT SHALL BE INSTALLED IN A VALVE BOX.

SPRINKLERS

SPRINKLER LOCATIONS ARE SCHEMATIC ONLY AND SHALL BE ADJUSTED FOR LANDSCAPING, SITE LIGHTING, PREVAILING WIND, MOUNDING, ETC., TO ENSURE PROPER COVERAGE WITH MINIMAL UNDESIRABLE OVERTHROW. A PRIME OBJECTIVE SHALL BE TO ELIMINATE OVERTHROW ONTO PAVEMENT, SIDEWALKS, AND BUILDINGS.

SPRAY HEADS SHALL BE RAIN BIRD 1800 SERIES. SIX INCH POP-UP TYPE SHALL BE INSTALLED IN AREAS LANDSCAPED WITH SOD AND MULCH, TWELVE INCH POP-UP TYPE SHALL BE INSTALLED IN AREAS LANDSCAPED WITH GROUND COVER AND LOW SHRUBS, SHRUB HEADS SHALL BE INSTALLED IN AREAS LANDSCAPED WITH TALL SHRUBS, AND BUBBLERS SHALL BE INSTALLED AT PALMS AND TREES.

POP-UP TYPE LOCATED IN SOD, MULCH, AND GROUND COVERS SHALL BE INSTALLED ON FLEXIBLE SWING JOINTS CONSISTING OF THICKWALLED POLY PIPE AND INSERT ELBOWS.

POP-UP TYPE LOCATED IN SHRUBS SHALL BE INSTALLED ON 1/2" SCH 80 PVC RISERS TO A HEIGHT SO SPRINKLERS ARE CONCEALED FROM VIEW EXCEPT DURING USE.

SHRUB TYPE AND BUBBLERS SHALL BE INSTALLED ON 1/2" SCH 80 PVC RISERS. SHRUB HEADS SHALL BE INSTALLED A STANDARD HEIGHT OF 6" ABOVE PLANTS AND SHALL BE INSTALLED WITHIN PLANTS TO BE CONCEALED FROM VIEW. BUBBLERS SHALL BE INSTALLED AT THE BASE OF TREES AND PALMS FOR LOW LEVEL WATERING. RISERS SHALL BE PAINTED FLAT BLACK TO BE LESS VISIBLE.

EACH SPRAY HEAD SHALL BE EQUIPPED WITH THE APPROPRIATE MPR SPRAY NOZZLE NOZZLE AND SHALL BE PRESSURE REGULATED TO 30 PSI.

POP-UP ROTARY HEADS SHALL BE RAIN BIRD 5000 AND FALCON SERIES WHICH SHALL BE INSTALLED ON PRE-FABRICATED PVC SWING JOINTS CONSISTING OF SCH 80 NIPPLES AND MARLEX STREET ELBOWS. POP-UP ROTORS INSTALLED IN SHRUB MASSES SHALL BE INSTALLED ON PVC SCH 80 RISERS WHICH SHALL BE STAKED TO STABILIZE.

ADJUSTMENT FEATURES OF SPRINKLERS SPECIFIED SHALL BE UTILIZED TO ENSURE PROPER COVERAGE WITH MINIMAL UNDESIRABLE OVERTHROW. LOW ANGLE, FLAT SPRAY, AND ADJUSTABLE ARC NOZZLES SHALL BE USED TO MINIMIZE OVERTHROW.

SPRINKLERS LOCATED ADJACENT TO HARDSCAPED AREAS SHALL BE INSTALLED AWAY FROM HARDSCAPED AREAS TO MINIMIZE OVERTHROW AND THE CHANCE OF DAMAGE BY VEHICLES, PEDESTRIANS, AND LAWN MAINTENANCE PERSONNEL. AS A GENERAL RULE, 6" POP-UP SPRAY HEADS SHALL BE INSTALLED IN 4", SHRUB HEADS AND 12" POP-UP SPRAY HEADS SHALL BE INSTALLED IN 12", AND ROTOR HEADS SHALL BE INSTALLED IN 6".

CONTROL SYSTEM

RAIN BIRD ESP-LX TWO WIRE ELECTRIC DECODER CONTROL SYSTEM SHALL BE INSTALLED. ONE 100 STATION CONTROLLER SHALL ACTIVATE 54 IN-LINE VALVES. SPARE STATIONS SHALL BE USED TO CONTROL FUTURE IRRIGATION.

CONTROLLER LOCATION SHALL BE APPROVED BY THE PROJECT SUPERVISOR. A 117 VAC POWER SOURCE IS REQUIRED. CONTROLLER SHALL BE A COMPONENT OF THE PUMP STATION.

CONTROLLER AND DECODERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND MANUFACTURER'S INSTRUCTIONS. PROPER GROUNDING SHALL BE ESTABLISHED.

THE TWO WIRE PATH FROM THE CONTROLLER TO VALVES/DECODERS SHALL BE RAIN BIRD DECODER CABLE. DIFFERENT COLORS SHALL BE USED TO DIFFERENTIATE WIRE PATHS. IN-LINE AND END-LINE SURGE PROTECTORS AND GROUND RODS AND PLATES SHALL BE INSTALLED AS INSTRUCTED BY RAIN BIRD AND PAIGE ELECTRIC TO INSURE PROPER GROUNDING.

PAIGE SWITCHES DEVICES SHALL BE INSTALLED ON EACH 2-WIRE PATH AT LOCATIONS WHERE WIRE CHANGES DIRECTION.

THE INTEGRITY OF ALL WIRE SPLICES ARE CRITICAL TO THE OPERATION OF THE SYSTEM. ALL SPLICES SHALL BE MADE WATERPROOF USING APPROVED METHODS.

CONTRACTOR SHALL INCLUDE ALL ACCESSORIES RECOMMENDED BY RAIN BIRD TO ENHANCE THE OPERATION OF THIS CONTROL SYSTEM. A HAND HELD REMOTE AND DECODER PROGRAMMER SHALL BE SUPPLIED TO FACILITATE MAINTENANCE. A WEATHER SENSOR SHALL BE INSTALLED TO MONITOR CLIMATIC CONDITIONS.

AUTOMATIC VALVE LOCATIONS ARE SCHEMATIC ONLY AND SHALL BE ADJUSTED FOR ON SITE CONDITIONS. EACH VALVE SHALL BE INSTALLED IN A VALVE BOX. A MINIMUM OF ONE CUBIC FOOT OF GRAVEL SHALL BE PROVIDED PER BOX TO PROMOTE DRAINAGE.

PUMP STATION

LOCATION OF PUMP STATION SHALL BE VERIFIED ON SITE.

PUMP STATION SHALL BE A PRE-FABRICATED TYPE WITH A CAPACITY OF 225 GPM @ 80 PSI.

BASIC COMPONENTS SHALL INCLUDE:

(1) TWO END SUCTION CENTRIFUGAL PUMPS EACH WITH A CAPACITY OF 225 GPM @ 184 TDH
(2) TWO 20 HP MOTORS SELECTED TO MATCH ON SITE ELECTRIC
(3) VARIABLE FREQUENCY DRIVE FOR EACH MOTOR WITH INDUSTRIAL AIR CONDITIONER FOR A NEMA 4 CONTROL PANEL.
(4) FLOW METER
(5) PRESSURE TANK
(6) WELDED ALUMINUM SKID
(7) FIBERGLASS ENCLOSURE
(8) GATE AND CHECK VALVES
(9) 120 VOLT INDEPENDENT POWER SUPPLY FOR CONTROLLER
(10) 15 HP RECHARGE PUMP WITH A CAPACITY OF 300 GPM
(11) FILTER
(12) FLOW GUARD

STATION SHALL BE MANUFACTURED BY HOOVER PUMP OR APPROVED EQUAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

STATION SHALL BE MOUNTED ON A 6" THICK CONCRETE SLAB SIZED TO ACCOMMODATE EACH STATION AND ASSOCIATE EQUIPMENT.

THE WATER SOURCE SHALL BE A BURIED STORAGE TANK WITH A CAPACITY OF 20,000 GALLONS. THIS TANK SHALL BE REPLENISHED FROM A CITY WATER SOURCE.

SUCTION LINE SHALL BE INSTALLED IN ACCORDANCE WITH PUMP STATION MANUFACTURER'S INSTRUCTIONS, AND SHALL BE PROPERLY SCREENED TO PREVENT THE INTAKE OF HARMFUL MATERIAL INTO THE SYSTEM.

PROGRAMMING

THE SYSTEM SHALL BE PROGRAMMED TO ENSURE THE CAPACITIES OF THE PIPING NETWORK AND PUMP STATION ARE NOT EXCEEDED.

VALVES SHALL BE PROGRAMMED SO WATER IS EVENLY DISTRIBUTED THROUGHOUT THE SITE.

THE SYSTEM SHALL ALSO BE PROGRAMMED TO OPERATE UNDER THE WATER RESTRICTION GUIDELINES ESTABLISHED BY LOCAL AUTHORITIES.

TIMING AND PRECIPITATION

TIMING OF EACH STATION SHALL BE SET IN THE FIELD TO MATCH LOCAL REQUIREMENTS. REFER TO ZONE SUMMARY CHART FOR RECOMMENDED RUN TIMES.

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IRRIGATION NOTES & SPECIFICATIONS

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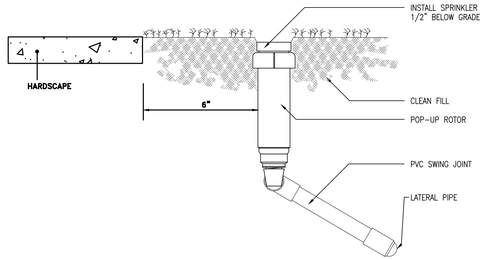
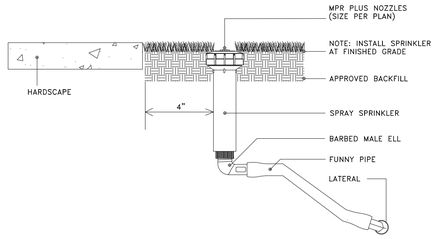
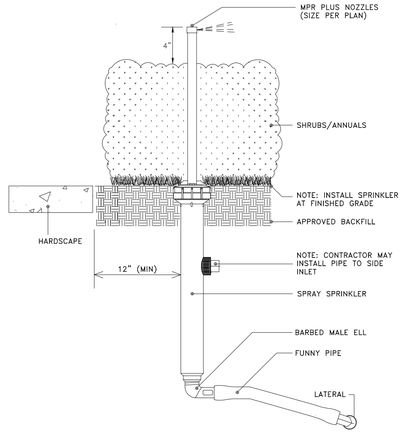


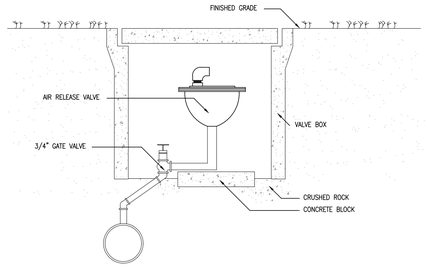
SPRINKLER DETAIL (NTS)
POP-UP ROTOR ON PVC SWING JOINT LOCATED IN SOD OR MULCH



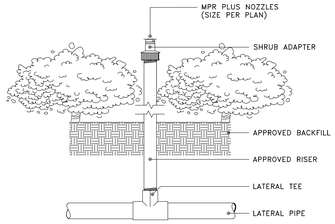
SPRINKLER DETAIL (NTS)
POP-UP SPRAY ON POLY PIPE SWING JOINT LOCATED IN SOD OR MULCH



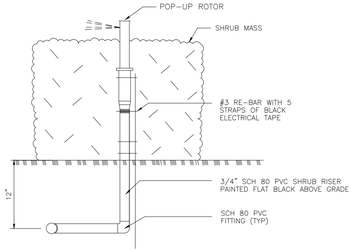
SPRINKLER DETAIL (NTS)
12" POP-UP SPRAY ON POLY PIPE SWING JOINT LOCATED IN PLANTS MAINTAINED TO A MAXIMUM HEIGHT OF 8".



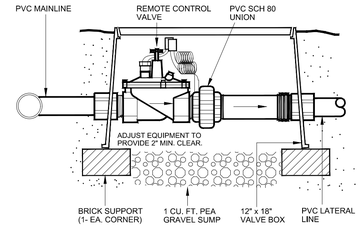
AIR RELIEF VALVE
NOT TO SCALE



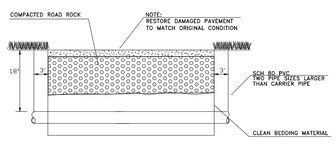
SHRUB/BUBBLER SPRINKLER
NOT TO SCALE



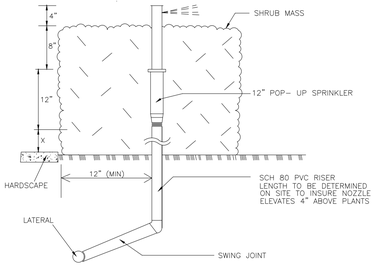
POP-UP ROTOR INSTALLATION
NOT TO SCALE



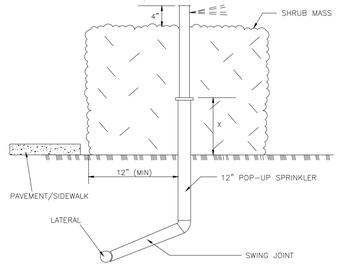
REMOTE CONTROL VALVE DETAIL
NOT TO SCALE



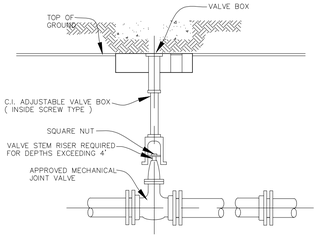
PIPE SLEEVE DETAIL
NOT TO SCALE



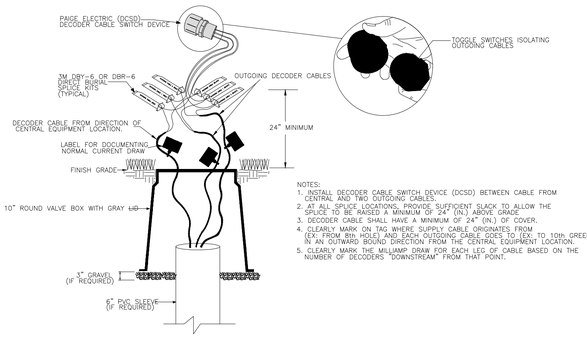
SPRINKLER DETAIL (NTS)
12" POP-UP ON PVC SWING JOINT WITH RISER LOCATED IN PLANT MASS MAINTAINED TO A MINIMUM HEIGHT OF 24".



SPRINKLER DETAIL (NTS)
12" POP-UP INSTALLED ON PVC SWING JOINT LOCATED IN PLANT MASS MAINTAINED TO A MAXIMUM HEIGHT OF 18".



GATE VALVE DETAIL
NOT TO SCALE



PAIGE ELECTRIC (DCSD)
NOT TO SCALE

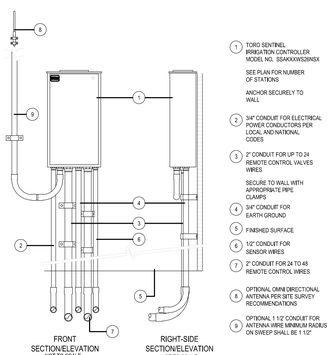
PIPE SIZE	DIMENSIONS		
	A	B	C
3/4" TO 2"	18"	12"	4"
2 1/2" AND 3"	18"	18"	4"
4" AND LARGER	24"		4"

TRENCHING DETAIL (NTS)
NON-TRAFFIC AREAS

PIPE SIZE	DIMENSIONS		
	A	B	C
1 1/2" AND 2"	24"	18"	4"
3" AND 4"	30"	24"	4"
6" AND LARGER	36"	30"	4"

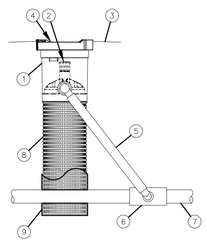
NOTE
SLEEVES SHALL BE TWICE THE DIAMETER OF THE LATERAL OR WIRE BUNDLE CARRIED

TRENCHING DETAIL (NTS)
VEHICULAR TRAFFIC AREAS



1. TORO SENTINEL IRRIGATION CONTROLLER MODEL NO.: SSAKXWS28INSX
   SEE PLAN FOR NUMBER OF STATIONS
   ANCHOR SECURELY TO WALL
2. 3/4" CONDUIT FOR ELECTRICAL POWER CONDUCTORS PER LOCAL AND NATIONAL CODES
3. 2" CONDUIT FOR UP TO 24 REMOTE CONTROL VALVES WIRES
   SECURE TO WALL WITH APPROPRIATE PIPE CLAMPS
4. 3/4" CONDUIT FOR EARTH GROUND
5. FINISHED SURFACE
6. 1/2" CONDUIT FOR SENSOR WIRES
7. 2" CONDUIT FOR 24 TO 48 REMOTE CONTROL WIRES
8. OPTIONAL OMNI DIRECTIONAL ANTENNA PER SITE SURVEY RECOMMENDATIONS
9. OPTIONAL 1 1/2" CONDUIT FOR ANTENNA WIRE MINIMUM RADIUS ON SWEEP SHALL BE 1 1/2"

WALL-MOUNT CONTROLLER
NOT TO SCALE



1
2
3 RUBBERIZED SAFETY SURFACE/FINISH GRADE
4 4" (10,2 CM) LOCKING GRATE (INCLUDED)
5 1/2" (1,3 CM) SWING ASSEMBLY: RAIN BIRD SA-125050
OR
1/2" (1,3 CM) SWING PIPE: RAIN BIRD SP SERIES WITH 1/2" (1,3 CM) MALE NPT x 0.490" BARB ELBOW: RAIN BIRD SBE-050
6 PVC SCH 80 TEE OR EL
7 PVC OR POLYETHYLENE LATERAL PIPE
8 4" (10,2 CM) WIDE X 18" (45,7 CM) LONG RIGID BASKET WEAVE CANISTER (INCLUDED)
9 OPTIONAL SOCK (RWS-SOCK) FOR SANDY SOILS

NOTES:
1. 4" (10,2 CM) GRATE IS ALSO AVAILABLE IN PURPLE (RWS-GRATE-P).
2. INSTALL PRODUCT SO THAT THE GRATE IS EVEN WITH FINISH GRADE OR TOP OF MULCH.
3. OPTIONAL SAND SOCK (RWS-SOCK) IS 34" (86,4 CM) IN LENGTH. CUT TO LENGTH NEEDED TO COVER MESH BASKET AREA.
4. WHEN INSTALLING IN EXTREMELY HARD OR CLAY SOILS, ADD 3/4" (1,9 CM) GRAVEL UNDER AND AROUND THE UNIT TO ALLOW FASTER WATER INFILTRATION AND ROOT PENETRATION.
5. ONCE RWS-M HAS BEEN INSTALLED FILL THE BASKET WITH PEA GRAVEL BEFORE LOCKING LID.

ROOT WATERING SYSTEM DETAIL
NOT TO SCALE

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DRAWN BY:
CHECKED BY:

DRAWING TITLE:
IRRIGATION DETAILS

SHEET NO.
ID-03

CITY OF KEY WEST TRUMAN PARK

SPECIFICATIONS

DUAL CENTRIFUGAL PUMP SYSTEM
PRESSURE DEMAND VFD

PURPOSE:
To provide a complete prefabricated variable frequency drive skid mounted fiberglass enclosed pressure demand centrifugal pump system from a sole source company, herein after referred to as the "manufacturer", whose primary business is the manufacture of prefabricated pump systems. The manufacturer will manufacture, flow test, install and warrant the system to meet all specified operating requirements described below and in the system detail. The system shall be a Model HC2F-20PDV-230/3-E-125,F,M,R2,T,Z as manufactured by Hoover Pumping Systems of Pompano Beach, Florida USA 954-971-7350 specified below and shown on the plan details. This specification describes the general components and minimal operating requirements and shall not be construed as a manufacturing guide or complete list of required system components and appurtenances.

The contractor shall submit seven (7) complete copies of the shop drawings to the designer for approval, prior to system order placement. The submittal shall contain cut sheets for all system components. To be considered an equal, the contractor must submit the following 12 days prior to bid opening: manufacturer brochure showing prefabricated pump systems manufacturing is the primary business of the manufacturer or division proposed to manufacture the system, written specifications, dimensioned layout detail, electrical schematic, product sheets for all main components, Underwriters Laboratory electrical control panel and "Packaged Pumping System" manufacturer's file numbers, list of 6 projects with similar operating systems with current name and phone number of person responsible for system operation, manufacturer's insurance certificate for general liability showing minimum coverage of $1 million, and written certification from the manufacturer stating the proposed system meets all requirements described in this specification, the detail and the bid documents.

If the data submitted is determined to be an equal by the designer the bidder will be notified prior to the bid date.

FIBERGLASS ENCLOSURE:
The pump station shall be protected by a fiberglass enclosure with chemical and ultraviolet resistant open mold resin with exterior finish that is uniform in color and texture, reinforced with fiberglass and stiffeners for rigidity. The enclosure shall open clear of the equipment for ease of service with the aid of gas filled struts, a stainless steel hinge and latching lockable handle. The enclosure shall be of dimensions adequate to contain the pump system mounted on the skid as shown on the system detail.

MOUNTING ASSEMBLY:
The pump station shall be mounted on a prefabricated galvanized steel structural skid. Aluminum pedestals shall be provided to mount the pump motor and control panel assemblies. The entire station shall be installed on a reinforced concrete slab sized as noted on the system detail.

PUMP AND MOTOR:
Each pump shall be a centrifugal type pump with flanged suction and discharge connections (**threaded connections are not acceptable**). A thermal sensor for pump overheat protection shall be mounted into each pump volute.

The motor specifications shall include:
-- NEMA Premium Efficiency
-- Inverter Rated (MG1 Part 31)
-- Tropicalized Windings
-- VPI Impregnated

-- EISA Compliant
-- Totally Enclosed Fan Cooled (TEFC) (IP55). **Open Drip Proof (ODP) motors are not acceptable.**
-- UL 1004 Approved
-- 1.25 Service Factor

The main motors shall be rated at 20 HP at 60 Hz.

PUMP STATION PERFORMANCE:
The required pump performance with a maximum of 12 ft. of suction lift is as follows: a) discharge pressure of 80 psi, b) maximum required flow of 200 GPM each main pump 400 GPM for system total, and c) minimum required flow of 35 GPM.

IRRIGATION PUMP CONTROL PANEL:
The control panel assembly shall be Underwriters Laboratories listed in accordance with section 508A for "enclosed industrial control panels." All control devices and electronic auto-sensory circuitry shall be housed in a self-contained weather-resistant NEMA 4 control cabinet. The control panel shall be identified with a permanent label approved by Underwriters Laboratories Inc. containing the word "LISTED", the name and / or symbol of Underwriters Laboratories Inc., a control number and the product name "Enclosed Industrial Control Panel". An electrical schematic shall be permanently mounted inside the cabinet. The control cabinet shall contain the following protection and control equipment:

Operation
This station operates as a Variable Frequency Drive (VFD) pressure demand start, reduced-flow retirement system. The station automatically maintains a constant discharge pressure from a pressure transducer input regardless of varying flow demands within the station operating range. The system is equipped with a 'Hand-Off-Auto' (H-O-A) selector switch, and a 'Reset-Normal-Override' selector switch. The self-diagnostic control panel assembly includes an 'Alarm' indicator light, and an operator interface for display of status and diagnostic messages, event lists, and operation history. The operator interface also allows for viewing of system setup parameters.

Hoover-Flow Software features include flow control of pump starts, sequencing and retirement; automatic pump alternation; Loss of Prime/No-flow protection, High Pressure protection, Pump Overheat protection; diagnostic information, flow and pressure history, service counters, elapsed run time meters, date and time stamping; Phase Loss protection, Phase Unbalance protection, Voltage monitoring and protection, operating mode meters, Service required alerts; Remote Communication Link interface; Hoover Drive control; emergency bypass operation, cooling system control, self-cleaning intake screen control; Booster bypass control; fail-safe data protection.

Pressure Demand
The main pump starts when the mainline pressure drops below the setting of the start pressure switch.

No-flow Retirement
The pump shuts off if water stops flowing for 15 seconds.

Loss of Prime Protection
If the system pressure remains below the start pressure, and there is no flow of water through the system during pump operation for 45 seconds, the pump will shut off and the 'Loss of Prime' light will turn on. The system will remain off until 'Reset'.

Thermal Protection
If the temperature at the pump volute exceeds 43C after at least 3 minutes of pump operation, the pump will shut off, and the 'Pump Overheat' light will turn on. The system will remain off until 'Reset'.

Drive Fault
In case of a drive fault, including under or over voltage, over current, heat sink thermal, and ground fault, the affected pump will shut off, the 'Alarm' light will illuminate, and the operator interface will display 'Drive Fault'. The pump will remain off until the system is 'Reset'.

Hand – Off – Auto Switch
The pump is equipped with an H-O-A selector switch that operates as follows:

Position		Function
Hand	-	Manual pump start. This position overrides all protective features and start controls.
Off	-	Pump will not run.
Auto	-	Pump will start automatically. In this position, all start controls and protective features are active.

Operator Interface
A NEMA 4X HMI (Human Machine Interface) shall be provided with status display and control of operating mode, I/O status, system pressure, system flow, pressure and flow setpoints, elapsed run times, fault timer values and presets, display brightness, clock time, alarm and event logs with date and time stamps, and diagnostic information including counters and alarm indicators.

Protection Equipment
- Front operated main power disconnect
- Motor fuses for motor and drive short circuit and ground fault protection
- Full voltage class 10 IEC motor starters for emergency bypass operation
- Metal oxide varistors (MOV) for transient voltage suppression per phase
- Fused control circuitry with blown fuse lighted indicator for each circuit

Specification
Electric service to be, in order of preference:
460V 3-Phase (A, B, C, Ground)
230V Closed-Delta 3-Phase (A, B, C, Neutral, Ground)
208V Wye 3-Phase (A, B, C, Neutral, Ground)
230V 1-Phase (A, B, Neutral, Ground)
208V 1-Phase (A, B, Neutral, Ground)
230V Open-Delta 3-Phase (A, B, C, Neutral, Ground).
Selection of 230V Open-Delta 3-Phase may require an increase in electrical equipment size to meet desired performance criteria.

PENETRATION STANDARD REQUIREMENTS:
All control panel penetrations shall be performed by a licensed electrician to minimum NEMA 4X requirements, and compliant with International Electro technical Commissions (IEC) IP56 rating under its IP code, to protect against duct ingression and against any harmful effects from water projected in powerful jets from any direction and protection against corrosion.

VARIABLE FREQUENCY DRIVES (VFD):
Each pump motor, including the jockey pump motor, is controlled by an individual dedicated Variable Frequency Drive (VFD) that is environmentally sealed against water, insects and dust infiltration. All VFD's are properly sized to match pump, motor, and site power requirements.

The Variable Frequency Drive provided for each pump motor shall have the following characteristics: 32-bit microprocessor controlled Pulse Width Modulated output, IGBT transistors, line reactors, built-in adjustable PID control, and acceleration ramp up and down, single pump VFD systems 25 hp or less NEMA 12 or NEMA 4 VFD with forced-air cooling over heat-sink

(**outside airflow over electronics not acceptable**). All other VFD system cooling is by industrial air conditioner. Variable torque control, 32 character alphanumeric English full text parameter display, single function keys, block parameter access, dual analog outputs, automatic and manual reset, opto-isolated outputs, log of last 30 events retained in memory.

SYSTEM CONTROL POWER SUPPLY PROTECTION: Combination UL listed power supply and 24 VDC industrial uninterruptible power supply (UPS), includes:
- minimum 1.3 Amp-hour rechargeable 24 VDC battery to power control electronics and modem
- signaling for charging process, operational readiness, buffer mode, and alarm messages
- temperature-compensated charging protection for battery module at high ambient temperatures
- residual ripple < 50 mVpp
- operating temperature -25°C to 70°C
- electronic protection against short-circuit and reverse feed
- integrated timeout

PRESSURE TRANSMITTER:
A 4-20mA-pressure transmitter shall provide a feedback signal to drive PID loops and for system pressure control. The transmitter shall be CE & UL recognized and built with an all stainless steel housing and pressure port, rated to NEMA 4, and able to withstand shock and vibration levels to MIL-STD-810E. The transmitter sensor element will provide a signal over 0-150 PSIG range while rated for 600-PSI overpressure minimum. Conformity error will be less than or equal to 0.50% and the transmitter shall be capable of operation from -40 to +120C.

SHUTOFF VALVE:
The shutoff valve shall be 230 psi working pressure with the following features:
- Continuous duty industrial solenoid
- Large capacity disk filter on pilot control tubing
- 220 psi polyethylene control tubing with prest-o-lock fittings
- Cast iron body and bonnet with polymer coating
- 316 Stainless steel nuts, bolts, washers, shaft and spring
- Stainless steel seat

For Irrigation controller use, the solenoid shall be energized to open by the irrigation controller master valve circuit.
For Hoover Flowguard® the solenoid shall be energized to close.

MAGNETIC FLOW METER:
A full-bore magnetic flow sensor shall be provided to control pump retirement and allow display of flow rate and total flow (**insertion type flow meters are not acceptable**). The flow sensor shall have the following characteristics: no moving parts, unobstructed bore (no pressure loss), NEMA 5/IP 67 protection, international standard traceable calibration, stainless steel 1.4301 flow tube, 316 stainless steel electrodes, overall system accuracy for flows ≥ 1.5 fps of better than +/- 0.5% of actual rate, and for flows <1.5 fps of better than +/- 0.32/v[fps] % of actual rate.

DISCHARGE PIPE MANIFOLD:
The pipe discharge manifold shall be constructed of galvanized steel pipe with galvanized roll groove fittings. A wafer type butterfly valve will be provided on headers 3" or greater and bronze ball valve on smaller headers at the pump station discharge. A 15 gallon capacity hydro pneumatic pressure tank with isolation valve and hose bib will be installed on the pump system skid inside the enclosure connected to the discharge header.

SUCTION LINE:
The minimum size suction line shall be 3" diameter or larger as required for a maximum of 5 feet per second velocity flow. If a reducing fitting is required at the pump suction an eccentric reducer shall be installed. Any above ground pipe at the pump system exposed to sunlight shall be schedule 40 galvanized steel with galvanized roll groove fittings. Suction pipe and fittings shall be galv. steel (**PVC is not acceptable**).

DISCHARGE LINE:
The discharge pipe shall be schedule 40 galvanized steel with galvanized roll groove fittings terminating with a 30" length schedule 40 PVC nipple with chamfered end for tie-in to the irrigation main. The steel 90 fitting shall be thrust blocked so no movement of the fitting will occur.

LEVEL TRANSMITTER CONTROL AND MONITORING: HOOVER FLOWGUARD
The level transmitter shall be securely mounted in the water source a minimum of 12" below the expected low water level. The transmitter cable shall be installed in 1" UL listed PVC conduit from the control panel to the transmitter support. Transmitter signal shall be compatible with Hoover Flowguard controls to allow remote monitoring of levels, elevation graphing, email alerts, and adjustment of activation and shutoff levels and scaling to local NGVD elevation data. Remote establishment of Low Level shutoff alarm, normal level reset and intermediate low level warning levels, events logged, elevation graphed and email alerts initiated through Hoover Flowguard®

IRRIGATION CONTROLLER
A Rain Bird ESP-LXD two wire model 125 station controller and rain sensor shall be mounted on the pump system. The controller shall be powered from a fuse block in the pump system control panel.

THE HOOVER FLOWGUARD
An easy to use Internet based irrigation system management tool providing real time monitoring and control that include:

-- PROACTIVE TROUBLESHOOTING TOOLS
Solve minor irrigation problems before they escalate into major landscape issues.

-- LANDSCAPE MANAGEMENT TOOL
Supplement random "wet check" expense with specifically identified irrigation repairs.
Evaluate data that can be effectively used for troubleshooting performance issues.
Field manually bypass button to override a closed Flowguard shutoff valve in two (2) hour increments each time pressed by field service personnel.
Rain sensor

-- AUTOMATED COMPLIANCE TOOLS
Daily municipal water use restrictions.
Water Management District water usage reporting
Budget water usage to assure compliance with Consumptive Water Use Permit

-- AUTOMATIC E-MAIL ALARMS & WARNINGS
Receive automatic e-mail alarms & warnings when irrigation system problems occur.
Automatic adjustable alarm shut-downs with time delay between restarts.

-- REPORTS
Daily water usage
Specific events, a comprehensive list of alarms, warnings and pump operations

-- COMMUNICATION via customer provided T1, DSL, Wi-Fi or 900 MHz radio communication line with STATIC IP ADDRESS complete with connection to the RS232 port on the Flowguard Controller. Hoover High Speed Modem and 12 MONTH Cellular Broadband service shall be provided.

-- REMOTE CONTROL access to pump control and protection features, including: sequencing and retirement controls and setup parameters.

-- DIAGNOSTIC DATA: Real time and historical graphing of flow, pressure, source water level, water salinity, booster water source pressure, rain sensor, system status and maintenance alerts, and power supply interruption.

-- WATER USE MONITORING: Set and automatically monitor Daily, Monthly, and Annual water use volumes per Water Management District Use Permit. User - set alarms and warnings, with automatic and/or manual restarts.

-- WATER USE REPORTS: Print Reports for Daily, Monthly, and Annual flow volume history. View and print reports for graphing, logs, usage, audit trails, and maintenance status.

-- SECURITY ACCESS CONTROL: Multi-user capability with User ID and password protection.

-- USER TRAINING provides new user classes, support and phone assistance to set up initial parameters such as Water Windows, budgets and other user - set functions.

WARRANTIES:
Prior to shipping, the manufacturer shall flow test the system and submit a certified report to the designer stating the system is within 1% + or – of the specified flow rate and pressure, and meets the operational requirements.

The manufacturer of the pumping station shall warrant all components for a period of one (1) year from date of manufacture.

PN13428

ENVIRONMENTAL LAND USE CONTROLS NOTE:
PRIOR TO ANY AND ALL CONSTRUCTION ACTIVITIES, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IF LOCATION OF CONSTRUCTION ACTIVITIES ARE SUBJECT TO ENVIRONMENTAL LAND USE CONTROLS (LUC). ANY AND ALL ENCOUNTERED CONTAMINATED SOIL AND OR GROUNDWATER SHALL BE HANDLED PER THE "SOIL AND GROUND WATER MANAGEMENT PLAN", DATED FEBRUARY 13, 2015 INCLUDED IN THE PROJECT MANUAL. CONTRACTOR SHALL VERIFY THAT LUC CONSTRUCTION PERMIT HAS BEEN FILED AND APPROVED FOR THIS WORK.

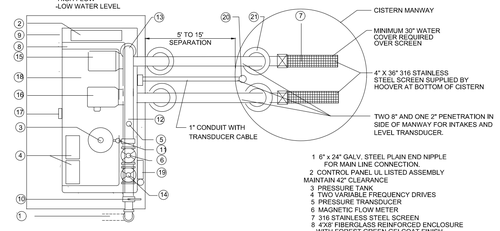
NOTE: SUCTION FITTINGS THROUGH 3" DIA. SHALL BE SCHED. 40 PVC SOLVENT. CHECK VALVES 3" AND LARGER SHALL BE SWING TYPE. 2" AND SMALLER SHALL BE POPPET STYLE. ALL SUCTION & DISCHARGE PIPE EXPOSED TO SUNLIGHT AND ADJACENT TO THE PUMP SYSTEM SHALL BE GALVANIZED STEEL. BUTTERFLY OR BALLVALVE PROVIDED AT EACH PUMP.

MAXIMUM PUMP INTAKE LIFT IS 12' AND MINIMUM 42" WATER DEPTH REQUIRED IN CISTERN FOR PUMPING.

WATER MANAGEMENT
COMMUNICATION VIA CELLULAR MODEM OR 10/100 BASE T DIRECT ETHERNET CONNECTION.
USER DEFINED INTERNET BASED CONTROL PARAMETERS USING STANDARD WEB BROWSER WITH EVENT LOGGING AND EMAIL ALERTS FOR WARNINGS AND ALARMS AS FOLLOWS:

X MAXIMUM GALLON PER MINUTE USAGE WITH ADJUSTABLE TIME DELAY AND NUMBER OF RESTART ATTEMPTS
X MINIMUM TOTAL DAILY WATER USAGE
X DAILY, MONTHLY AND ANNUAL WATER USAGE BUDGETS
X GRAPHING OF REAL TIME AND HISTORICAL FLOW, INCOMING AND DISCHARGE PRESSURE AND SYSTEM EVENTS WITH TIME AND DATE SHOWN
X LOW LEVEL TRANSDUCER
X HISTORIC WATER USAGE BY DAY AND MONTH
X STARTER OVERLOAD FAULT SHUTDOWN

SAFETY FEATURES:
-LOSS OF PRIME
-OVERHEAT
-TRANSIENT SURGE
-HIGH FLOW
-LOW WATER LEVEL



PLAN VIEW
NOT TO SCALE

1 6" x 24" GALV. STEEL PLAIN END NIPPLE FOR MAIN LINE CONNECTION.
2 CONTROL PANEL UL LISTED ASSEMBLY MAINTAIN 42" CLEARANCE
3 PRESSURE TANK
4 TWO VARIABLE FREQUENCY DRIVES
5 PRESSURE TRANSDUCER
6 MAGNETIC FLOW METER
7 316 STAINLESS STEEL SCREEN
8 4'X9' FIBERGLASS REINFORCED ENCLOSURE WITH GELCOAT FINISH
9 9' X 16' REINFORCED CONCRETE PAD (NO OPENINGS, LEVEL)
10 MAIN DISCHARGE VALVE
11 ISOLATION VALVE
12 DISCHARGE HEADER. GALV STEEL
13 ISOLATION VALVE AT EACH PUMP DISCHARGE
14 SHUTOFF VALVE CONNECTED TO HOOVER FLOWGUARD
15 PUMP # 1 20 HP (HIGH EFFICIENCY TEFC MOTOR)
16 PUMP # 2 20 HP (HIGH EFFICIENCY TEFC MOTOR)
17 LOCKABLE HANDLE
18 4'x10' GALV. STEEL SKID
19 RAIN BIRD ESP-LXD 2 WIRE 125 STATION IRRIGAITON CONTROLLER WITH RAIN SENSOR ON 6' POLE
20 LEVEL TRANSDUCER
21 6" SCHED 40 GALVANIZED STEEL DROP PIPE WITH SWING CHECK VALVE

ELECTRIC SERVICE TO BE, IN ORDER OF PREFERENCE:
460V 3-PHASE, 230V CLOSED-DELTA 3-PHASE, 208 WYE 3-PHASE, 230 OPEN-DELTA 3-PHASE.

PUMP PERFORMANCE: 100% REDUNDANT SYSTEM
200 GPM ea. @ 210 TDH 200 TOTAL GPM
80 PSI AT 10' LIFT

HOOVER MODEL: HC2F-20PDV-230/3-E-125,F,M,R2,T,Z
Pompano Beach, Florida, Tel (954) 971-7350

CONCRETE PAD REVISED 08/3/15

FILE: PN13428.dwg 04/15

KEY WEST TRUMAN PARK
PUMP SYSTEMS DETAIL
FIBERGLASS ENCLOSED DUAL CENTRIFUGAL, CISTERN SUCTION, PRESSURE DEMAND VARIABLE FREQUENCY DRIVE (VFD), HOOVER FLOWGUARD®

PUMP STATION

LOCATION OF PUMP STATION SHALL BE VERIFIED ON SITE.

PUMP STATION SHALL BE A PRE–FABRICATED TYPE WITH A CAPACITY OF 225 GPM @ 80 PSI.

BASIC COMPONENTS SHALL INCLUDE:

(1) TWO END SUCTION CENTRIFUGAL PUMPS EACH WITH A CAPACITY OF 225 GPM @ 184 TDH
(2) TWO 20 HP MOTORS SELECTED TO MATCH ON SITE ELECTRIC
(3) VARIABLE FREQUENCY DRIVE FOR EACH MOTOR WITH INDUSTRIAL AIR CONDITIONER FOR A NEMA 4 CONTROL PANEL.
(4) FLOW METER
(5) PRESSURE TANK
(6) WELDED ALUMINUM SKID
(7) FIBERGLASS ENCLOSURE
(8) GATE AND CHECK VALVES
(9) 120 VOLT INDEPENDENT POWER SUPPLY FOR CONTROLLER
(10) 15 HP RECHARGE PUMP WITH A CAPACITY OF 300 GPM
(11) FILTER
(12) FLOW GUARD

STATION SHALL BE MANUFACTURED BY HOOVER PUMP OR APPROVED EQUAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

STATION SHALL BE MOUNTED ON A 6" THICK CONCETE SLAB SIZED TO ACCOMMODATE EACH STATION AND ASSOCIATE EQUIPMENT.

THE WATER SOURCE SHALL BE A SINGLE WALL FIBERGLASS UNDERGROUND STORAGE TANK MANUFACTURED BY XERXES OR APPROVED EQUAL. THE TANK SHALL BE 10' IN DIAMETER AND 42' IN LENGTH WITH A CAPACITY OF 20,000 GALLONS. THE TANK SHALL BE REPLENISHED WITH CITY WATER AS REQUIRED. THE TANK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

SUCTION LINE SHALL BE INSTALLED IN ACCORDANCE WITH PUMP STATION MANUFACTURER'S INSTRUCTIONS, AND SHALL BE PROPERLY SCREENED TO PREVENT THE INTAKE OF HARMFUL MATERIAL INTO THE SYSTEM.

PROGRAMMING

THE SYSTEM SHALL BE PROGRAMMED TO ENSURE THE CAPACITIES OF THE PIPING NETWORK AND PUMP STATION ARE NOT EXCEEDED.

VALVES SHALL BE PROGRAMMED SO WATER IS EVENLY DISTRIBUTED THROUGHOUT THE SITE.

THE SYSTEM SHALL ALSO BE PROGRAMMED TO OPERATE UNDER THE WATER RESTRICTION GUIDELINES ESTABLISHED BY LOCAL AUTHORITIES.

TIMING AND PRECIPITATION

TIMING OF EACH STATION SHALL BE SET IN THE FIELD TO MATCH LOCAL REQUIREMENTS. REFER TO ZONE SUMMARY CHART FOR RECOMMENDED RUN TIMES.

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Miami, Florida 33133
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Fax (305) 860-3700

PREPARED FOR/OWNER:
CITY OF KEY WEST, FL
P. O. BOX 1409
3140 FLAGLER AVENUE
KEY WEST, FL 33041

PROJECT NAME:
TRUMAN WATERFRONT PARK

PROJECT LOCATION/ADDRESS:
TRUMAN WATERFRONT PARK WEST OF FORT STREET AND THE TRUMAN ANNEX DEVELOPMENT, NORTH OF KEY WEST NAVAL BASE

SUB-CONSULTANT INFORMATION:

PROFESSIONAL SEAL:

SUBMITTAL DESCRIPTION / MILESTONE:

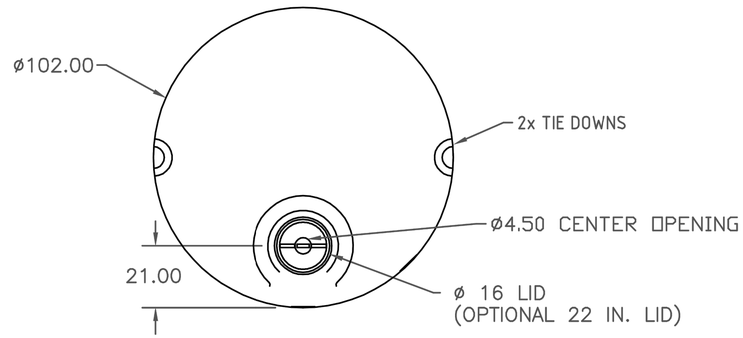
BIDDING
August 30, 2015

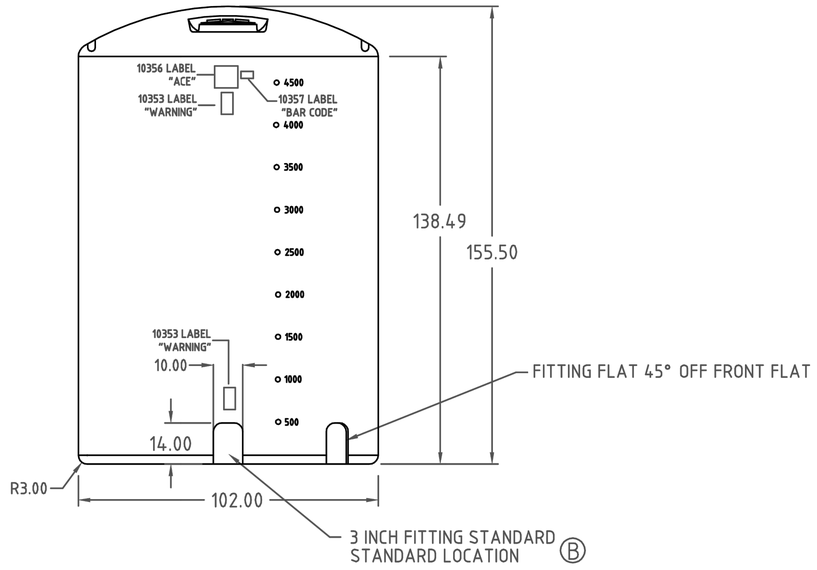
REVISIONS:

DRAWING SHEET INFORMATION
BA PROJECT NO.: 14041
SCALE: SPECIFICATIONS AND
DATE:
DRAWN BY:
CHECKED BY:

DRAWING TITLE:
PUMP SYSTEM SPECIFICATIONS AND DETAILS

SHEET NO.
ID-04





5,000 GALLON VERTICAL TANK BY DEN HARTOG INDUSTRIES, INC.
PART NUMBER VT5000-102

TANK TO HAVE 1.7 SPECIFIC GRAVITY

ENVIRONMENTAL LAND USE CONTROLS NOTE:
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PREPARED FOR/OWNER:
CITY OF KEY WEST, FL
P. O. BOX 1409
3140 FLAGLER AVENUE
KEY WEST, FL 33041

PROJECT NAME:
TRUMAN WATERFRONT PARK

PROJECT LOCATION/ADDRESS:
TRUMAN WATERFRONT PARK
WEST OF FORT STREET AND THE TRUMAN ANNEX DEVELOPMENT, NORTH OF KEY WEST NAVAL BASE

SUB-CONSULTANT INFORMATION:

PROFESSIONAL SEAL:

SUBMITTAL DESCRIPTION / MILESTONE:

BIDDING
August 30, 2015

REVISIONS:

DRAWING SHEET INFORMATION
BA PROJECT NO.: 14041
SCALE: AS NOTED
DATE:
DRAWN BY:
CHECKED BY:

DRAWING TITLE:
5,000 GALLON IRRIGATION WATER STORAGE TANK

SHEET NO.
ID-05

PART 8

SCHEDULE OF VALUES

AIA® Document G703™ – 1992

Truman Waterfront Park Phase 1A NTP1

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO: 14041

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	Mobilization	$							
	Maintenance of Traffic	$							
	Site Demolition	$							
	Excavation and Grading	$							
	Cut/Fill and Dewatering	$							
	Storm Water Pollution Prevention Plan	$							
	Roadway Curbing	$							
	Vehicular Roadways	$							
	Parking Pavement	$							
	Pavement Markings	$							
	Truncated Dome Pavers	$							
	Concrete Pavers	$							
	4" Concrete	$							
	8" Concrete	$							
	12" Ribbon Curbs	$							
	Bollard(s)	$							
	Expansion Joints	$							
	Benches, Trash and Recycle Receptacles and Bike Racks	$							
	Fencing and Railing	$							
	Panel/Pylon Signage	$							

	Tree Protection, Removal and Relocation	$							
	Canopy Trees	$							
	Ornamental Trees	$							
	Large Palms	$							
	Small Palms	$							
	Shrubs and Groundcover	$							
	Turf Grass	$							
	Irrigation	$							
	Site Electrical	$							
	Electrical Transformers, Underground Power Feeders and Branch Wiring	$							
	Lighting	$							
	Storm Drainage System	$							
	Domestic Water & Water Mains	$							
	Sanitary Sewer	$							
	Water – Fire	$							
	Regulatory Signage	$							
	General Contractor Fees: Office, Overhead, Profit, Bond and Insurance	$							
	NTP1 GRAND TOTAL	$	$	$	$	$	%	$	$
	NTP1 Deduct Alternate No.1	$							
	DEDUCT ALTERNATE TOTAL	$	$	$	$	$	%	$	$

AIA® Document G703™ – 1992

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
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APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO: 14041

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	Mobilization	$							
	Maintenance of Traffic	$							
	Site Demolition	$							
	Excavation and Grading	$							
	Cut/Fill and Dewatering	$							
	Storm Water Pollution Prevention Plan	$							
	Power Washing Concrete	$							
	Seat Wall	$							
	4" Concrete	$							
	8" Concrete	$							
	Interactive Water Feature Rubberized Surfacing	$							
	Playground Safety Surfacing	$							
	12" Ribbon Curbs	$							
	6" Landscape Curb	$							
	Bollards	$							
	Expansion Joints	$							
	Benches, Trash and Recycle Receptacles and Bike Racks	$							
	Playground Equipment	$							

	Fencing and Railing	$							
	Panel/Pylon Signage	$							
	Interactive Water Feature	$							
	Tree Protection, Removal and Relocation	$							
	Canopy Trees	$							
	Ornamental Trees	$							
	Large Palms	$							
	Small Palms	$							
	Shrubs and Groundcover	$							
	Turf Grass	$							
	Irrigation	$							
	Site Electrical	$							
	Electrical Transformers, Underground Power Feeders and Branch Wiring	$							
	Lighting	$							
	Storm Drainage System	$							
	Domestic Water & Water Mains	$							
	Sanitary Sewer	$							
	Water – Fire	$							
	Regulatory Signage	$							
	General Contractor Fees: Office, Overhead, Profit, Bond and Insurance	$							
	NTP2 GRAND TOTAL	$	$	$	$	$	%	$	$
	Restroom Allowance	$ 250,000.00							
	ALLOWANCE TOTAL	$ 250,000.00	$	$	$	$	%	$	$

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO: 14041

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	Mobilization	$							
	Maintenance of Traffic	$							
	Site Demolition	$							
	Excavation and Grading	$							
	Cut/Fill and Dewatering	$							
	Storm Water Pollution Prevention Plan	$							
	Roadway Curbing	$							
	Vehicular Roadways	$							
	Parking Pavement	$							
	Pavement Markings	$							
	Truncated Dome Pavers	$							
	4" Concrete	$							
	8" Concrete	$							
	12" Ribbon Curbs	$							
	Bollards	$							
	Expansion Joints	$							
	Benches, Trash and Recycle Receptacles, Bike Racks, Exercise Equipment	$							
	Fencing and Railing	$							
	Panel/Pylon Signage	$							

	Tree Protection, Removal and Relocation	$							
	Canopy Trees	$							
	Ornamental Trees	$							
	Large Palms	$							
	Small Palms	$							
	Shrubs and Groundcover	$							
	Turf Grass	$							
	Irrigation	$							
	Site Electrical	$							
	Electrical Transformers, Underground Power Feeders and Branch Wiring	$							
	Lighting	$							
	Storm Drainage System	$							
	Domestic Water & Water Mains	$							
	Sanitary Sewer	$							
	Water – Fire	$							
	Regulatory Signage	$							
	General Contractor Fees: Office, Overhead, Profit, Bond and Insurance	$							
	NTP3 GRAND TOTAL	$	$	$	$	$	%	$	$
	Add Alternate No. 1	$							
	Add Alternate No. 2	$							
	Add Alternate No. 3	$							
	NTP3 ALTERNATE TOTAL	$	$	$	$	$	%	$	$