

PROJECT TITLE:

The Gardens Townhomes  
Phase 2

CLIENT:

CDCT Gardens, LLC  
1907 East Hillsborough Avenue  
Suite 100  
Tampa, FL 33610

SHEET TITLE:

IRRIGATION PLAN

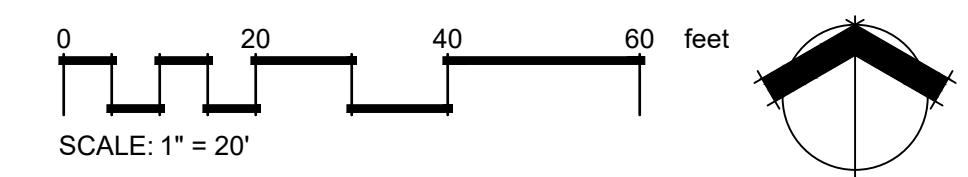
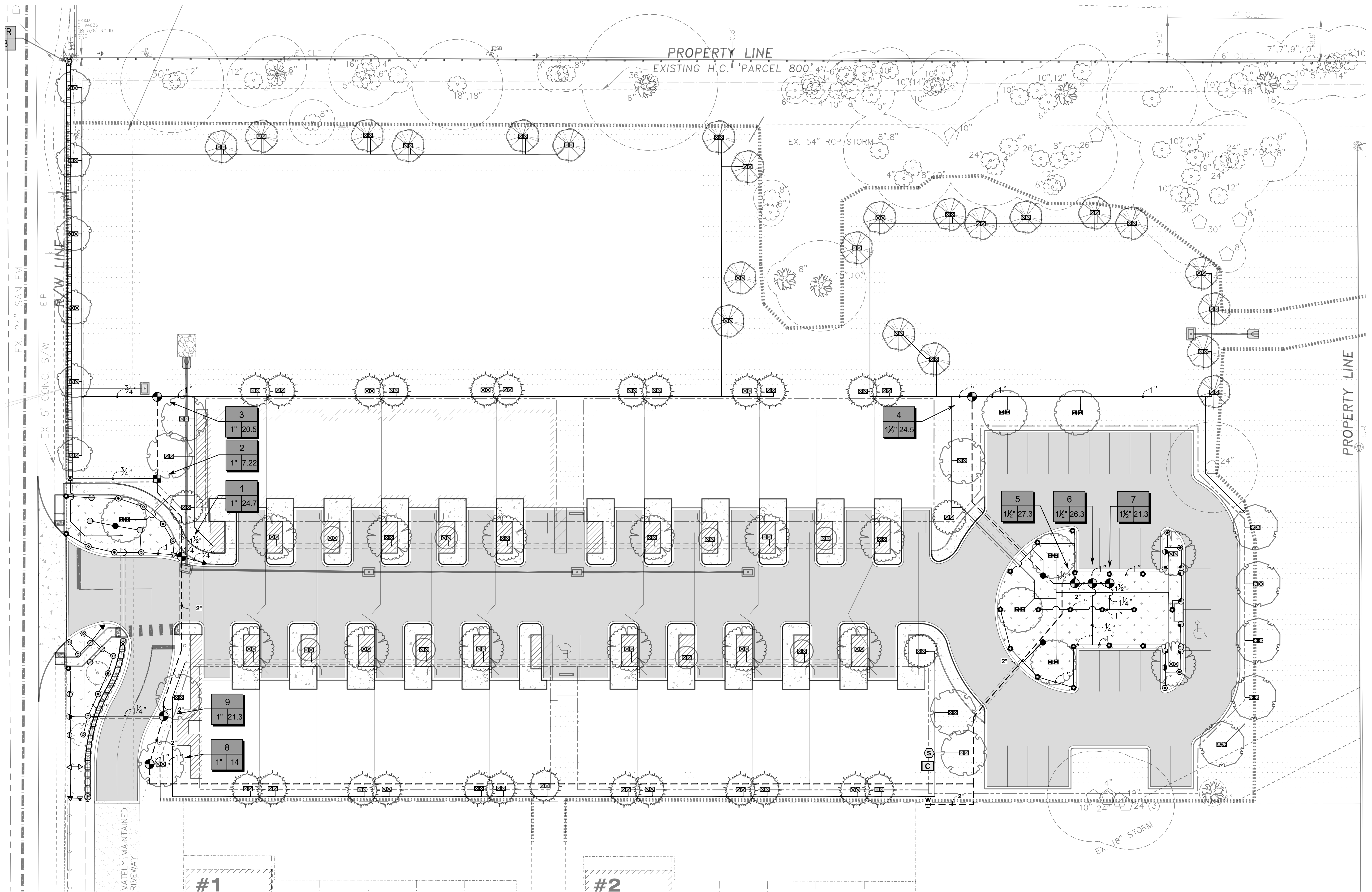
ISSUE DATE:

07/15/2023

REVISIONS:

SHEET NUMBER:

IR-1

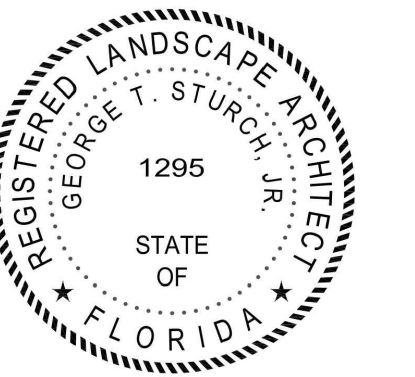


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FILE:

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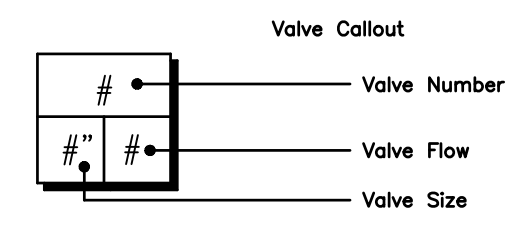
SHEET NUMBER:

IR-2

GENERAL NOTES:

- Irrigation system design requirements: See Critical Analysis on sheet IR-2. The irrigation Contractor shall verify the available GPM and PSI prior to installation of the system.
- Do not wilfully install the irrigation as shown on the drawings when it is obvious in the field that conditions exist that might not have been considered in the design process. For example: obstructions, grade differences, water levels dimensional differences, etc. Refer to the landscape plan to avoid conflicts with proposed trees or shrubs.
- Piping may sometimes be indicated as being located in unlikely areas: i.e., under buildings, outside property lines, under pavement, in lakes or ditches, etc. This is done for graphic clarity only. Whenever possible, piping is to be installed in open, green areas.
- Pipe sizes shall conform to those on the drawing. Substituting with smaller pipe sizes will not be permitted.
- If required the Irrigation Contractor shall provide the necessary Right of Way use permits.
- Mainline to be installed with a minimum of 18" depth of cover, lateral lines are to be installed with a minimum of 12" depth of cover.
- Unless otherwise indicated all sleeves are to be PVC Sch 40 and at least two (2) nominal sizes larger than the pipe to be sleeved.
- Wherever practical, install valves in mulched beds and/or out of high traffic areas. all valves, flush valves and wire splices shall be installed in Carson valve boxes as follows: Remote control valves in 12" standard rectangular box, wire splices in 10" round valve box, flush valves in 6" round valve box and drip control zone kits in Jumbo valve boxes.
- All 24 volt control wire to be UL listed 14 Gauge single strand.
- All wire connections to be King sealed wire Connectors.
- Stake drip tubing every 5' with 12" plastic stakes. Spacing between rows of drip tubing 14-16".
- All pop up sprinkler heads shall be installed level and flush to grade. Mount all sprays on 18" of flexible PVC.
- Install all heads a minimum of 12" from any structures.
- Location of all sprinkler heads shall be site adjusted to minimize water overthrow onto building surfaces and walkways. If needed use pressure regulators to prevent fogging.
- The rain shut off device shall be installed to meet local codes and/or minimum manufacturer's recommendations.
- The irrigation contractor shall prepare an AS-BUILT drawing on reproducible paper showing all main line piping, control wires and valves by showing exact measurements from hard surfaces.
- The owner will supply power to the irrigation controller.
- Any other equipment required that is not otherwise detailed or specified shall be installed as per manufacturer's recommendations and specifications.
- All heads, bubblers, valves, drip tubing, valve boxes and pipe on reclaim systems will be properly marked as such. All reclaim pipe bubblers and valve boxes will be purple in color, all electric valves will have purple tags and handles and all heads will have purple tops or purple snap on covers.
- Velocity not to exceed 5' per second.
- The irrigation contractor shall prepare an AS-BUILT drawing on reproducible paper showing all main line piping, control wires and valves by showing exact measurements from hard surfaces.**

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
	Rain Bird 1806 15 Strip Series Turf Spray 6.0in. Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2in. NPT Female Threaded Inlet.	7	30
	Rain Bird 1806 8 Series MPR Turf Spray 6.0in. Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2in. NPT Female Threaded Inlet.	3	30
	Rain Bird 1806 10 Series MPR Turf Spray 6.0in. Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2in. NPT Female Threaded Inlet.	7	30
	Rain Bird 1806 12 Series MPR Turf Spray 6.0in. Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2in. NPT Female Threaded Inlet.	6	30
	Rain Bird 1806 15 Series MPR Turf Spray 6.0in. Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2in. NPT Female Threaded Inlet.	6	30
	Rain Bird 1806 ADJ Turf Spray 6.0in. Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2in. NPT Female Threaded Inlet.	40	30
	Rain Bird 1800-1400 Flood Fixed flow rate 0.25 GPM - 2.0 GPM, full circle bubbler, 1/2in. FIPT.	194	20
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
	Rain Bird X CZ-100-LC Wide Flow Drip Control Kit, for Light Commercial Uses. 1in. PEB Valve, with 1in. Pressure Regulating 40psi Basket Filter. 0.3-20 GPM.	1	
	Pipe Transition Point above grade Pipe transition point from PVC lateral to drip tubing with riser to above grade installation.	2	
	Netafim TLFV-1 Automatic Flush Valve, with Insert Inlet	2	
	Area to Receive Dripline Rain Bird XFCV-09-12 XFCV On-Surface Landscape Dripline with a Heavy-Duty 3.5 psi Check Valve. 0.9 GPH emitters at 12" O.C. Dripline laterals spaced at 12" apart, with emitters offset for triangular pattern. Great for elevation change. Specify XF insert fittings.	481.6 l.f.	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
	Rain Bird PEB 1in., 1-1/2in., 2in. Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration.	8	
	Rain Bird ESPLXME2 12 Station Traditionally-Wired, Commercial Controller. Indoor/Outdoor, Plastic Wall-Mount Enclosure.	1	
	Rain Bird WR2-RFS Wireless Rain/Freeze Sensor.	1	
	Point of Connection Existing Well and Pump with Backflow Preventer	1	
	Irrigation Lateral Line: PVC Class 200 SDR 21	4,300 l.f.	
	Irrigation Mainline: PVC Schedule 40	794.7 l.f.	
	Pipe Sleeve: PVC Schedule 40	731.7 l.f.	



VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
1	Rain Bird PEB	1"	Turf Spray	24.7		35.4		1.98 in/h
2	Rain Bird X CZ-100-LC	1"	Area for Dripline	7.22		26.6		1.44 in/h
3	Rain Bird PEB	1"	Bubbler	20.5		27.2		1.2 in/h
4	Rain Bird PEB	1-1/2"	Bubbler	24.5		31.3		1.95 in/h
5	Rain Bird PEB	1-1/2"	Turf Spray	27.32		35.7		1.16 in/h
6	Rain Bird PEB	1-1/2"	Turf Spray	26.3		36.0		1.16 in/h
7	Rain Bird PEB	1-1/2"	Turf Spray	21.31		34.7		0.82 in/h
8	Rain Bird PEB	1"	Bubbler	14		28.3		1.18 in/h
9	Rain Bird PEB	1"	Turf Spray	21.33		35.1		2.19 in/h

WATERING SCHEDULE

NUMBER	MODEL	TYPE	PRECIP	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
1	Rain Bird PEB	Turf Spray	1.98 in/h	1	31	765.8	
2	Rain Bird X CZ-100-LC	Area for Dripline	1.44 in/h	1	42	303.0	
3	Rain Bird PEB	Bubbler	1.2 in/h	1	50	1,025	
4	Rain Bird PEB	Bubbler	1.95 in/h	1	31	759.5	
5	Rain Bird PEB	Turf Spray	1.16 in/h	1	52	1,420	
6	Rain Bird PEB	Turf Spray	1.16 in/h	1	52	1,368	
7	Rain Bird PEB	Turf Spray	0.82 in/h	1	74	1,577	
8	Rain Bird PEB	Bubbler	1.18 in/h	1	52	728	
9	Rain Bird PEB	Turf Spray	2.19 in/h	1	28	597.4	
TOTALS:						412	8,544

CRITICAL ANALYSIS

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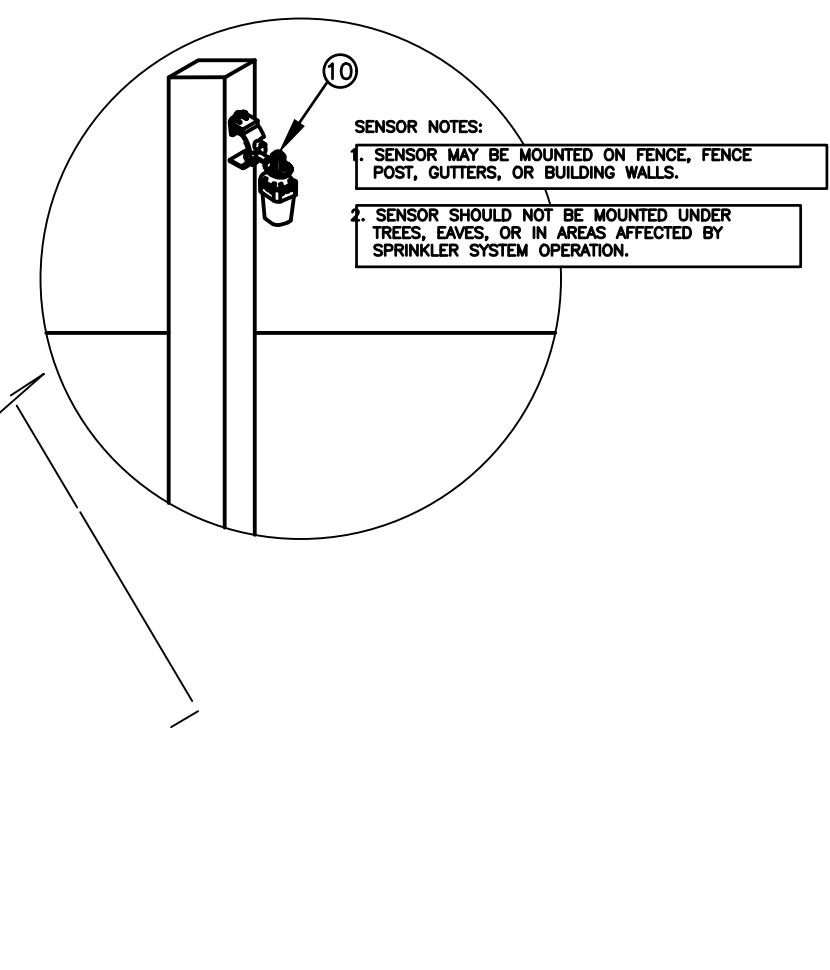
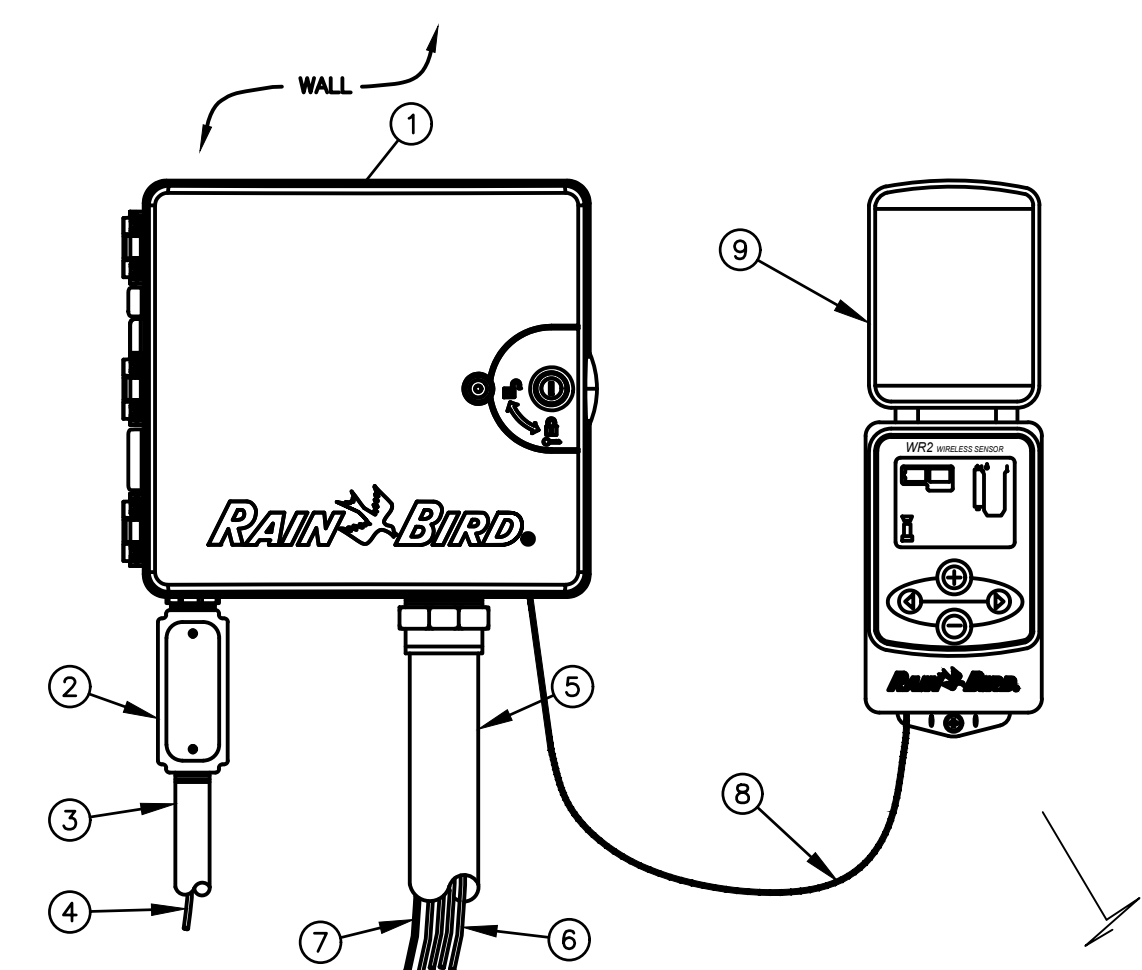
P.O.C. NUMBER: 01  
Water Source Information: Existing Well and Pump with Backflow Preventer

FLOW AVAILABLE  
Custom Max Flow: 35 GPM  
Flow Available: 35 GPM

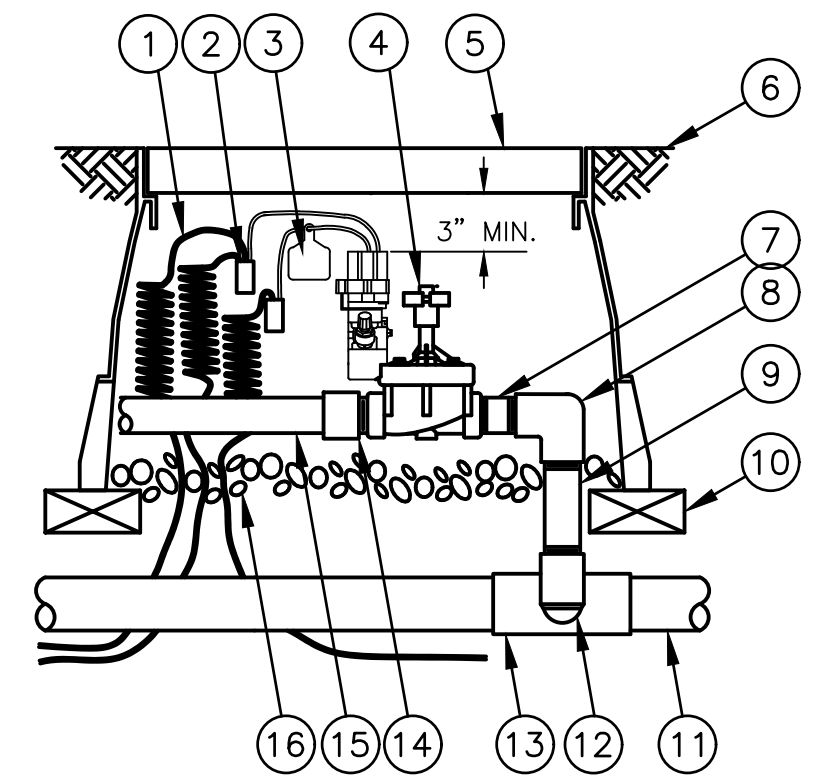
PRESSURE AVAILABLE  
Static Pressure at POC: 50 PSI  
Pressure Available: 50 PSI

DESIGN ANALYSIS  
Maximum Station Flow: 27.32 GPM  
Flow Available at POC: 35 GPM  
Residual Flow Available: 7.69 GPM

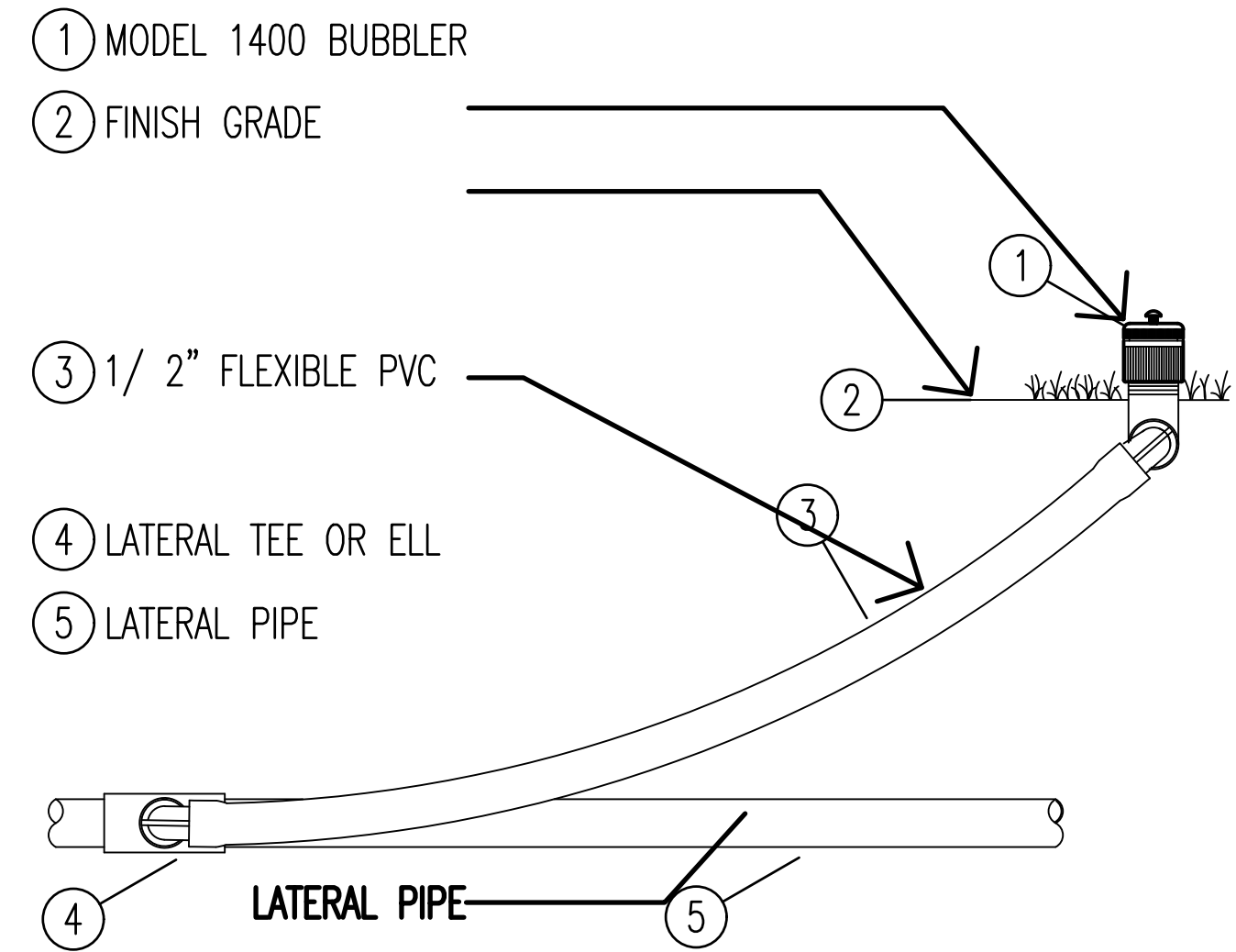
Critical Station: 1  
Design Pressure: 30 PSI  
Friction Loss: 1.11 PSI  
Fittings Loss: 0.11 PSI  
Elevation Loss: 0 PSI  
Loss through Valve: 4.17 PSI  
Pressure Req. at Critical Station: 35.4 PSI  
Loss for Fittings: 0.24 PSI  
Loss for Main Line: 2.44 PSI  
Loss for POC to Valve Elevation: 0 PSI  
Loss for Backflow: 0 PSI  
Critical Station Pressure at POC: 38.1 PSI  
Pressure Available: 50 PSI  
Residual Pressure Available: 11.9 PSI



- IRRIGATION CONTROLLER:**  
RAIN BIRD ESP-LARGE CONTROLLER WITH FLOW SMART MODULE IN PLASTIC CABINET WITH WALL MOUNT. INSTALL CONTROLLER AND CABINET ON WALL PER MANUFACTURER'S RECOMMENDATIONS.
- SENSOR NOTES:**  
1. SENSOR MAY BE MOUNTED ON FENCE, FENCE POST, GUTTERS, OR BUILDING WALLS.  
2. SENSOR SHOULD NOT BE MOUNTED UNDER TREES, SHAWLS, OR IN AREAS AFFECTED BY SPRINKLER SYSTEM OPERATION.
- 1** JUNCTION BOX  
**2** 1-INCH CONDUIT AND FITTINGS TO POWER SUPPLY  
**3** POWER SUPPLY WIRE  
**4** 2-INCH CONDUIT AND FITTINGS FOR STATION WIRES  
**5** MASTER VALVE AND REMOTE CONTROL WIRE  
**6** FLOW SENSOR (PE 39, 89 OR 54) TO FLOW SENSOR  
**7** CABLE HARNESS FOR CONTROLLER INTERFACE (30" MAXIMUM)  
**8** RAIN BIRD WR2 WIRELESS SENSOR CONTROLLER INTERFACE
1. FOR BEST PERFORMANCE, THE CONTROLLER INTERFACE SHOULD BE INSTALLED AT LEAST FIVE FEET ABOVE THE GROUND.  
 2. IT IS RECOMMENDED THAT THE CONTROLLER INTERFACE BE INSTALLED AWAY FROM SOURCES OF ELECTRICAL INTERFERENCE (SUCH AS TRANSFORMERS, GENERATORS, PUMPS, FANS, ELECTRICAL METER BOXES) AND METAL OBJECTS TO MAXIMIZE COMMUNICATION RANGE.
- 9** RAIN BIRD WR2 SENSOR



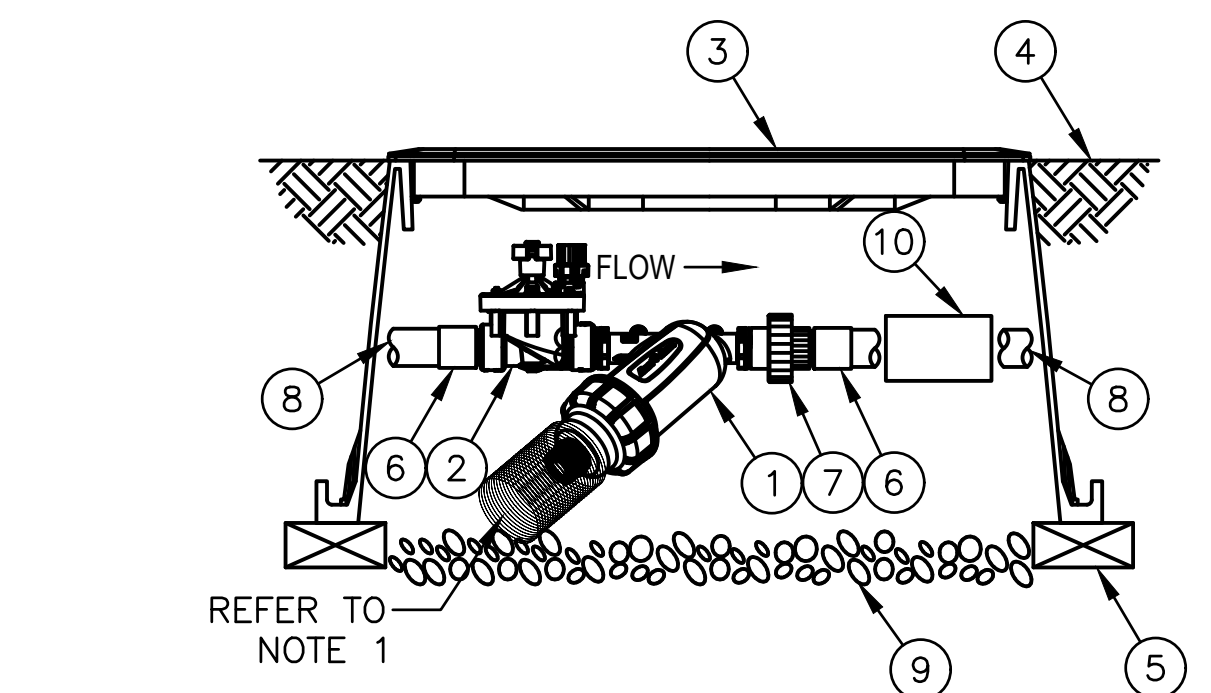
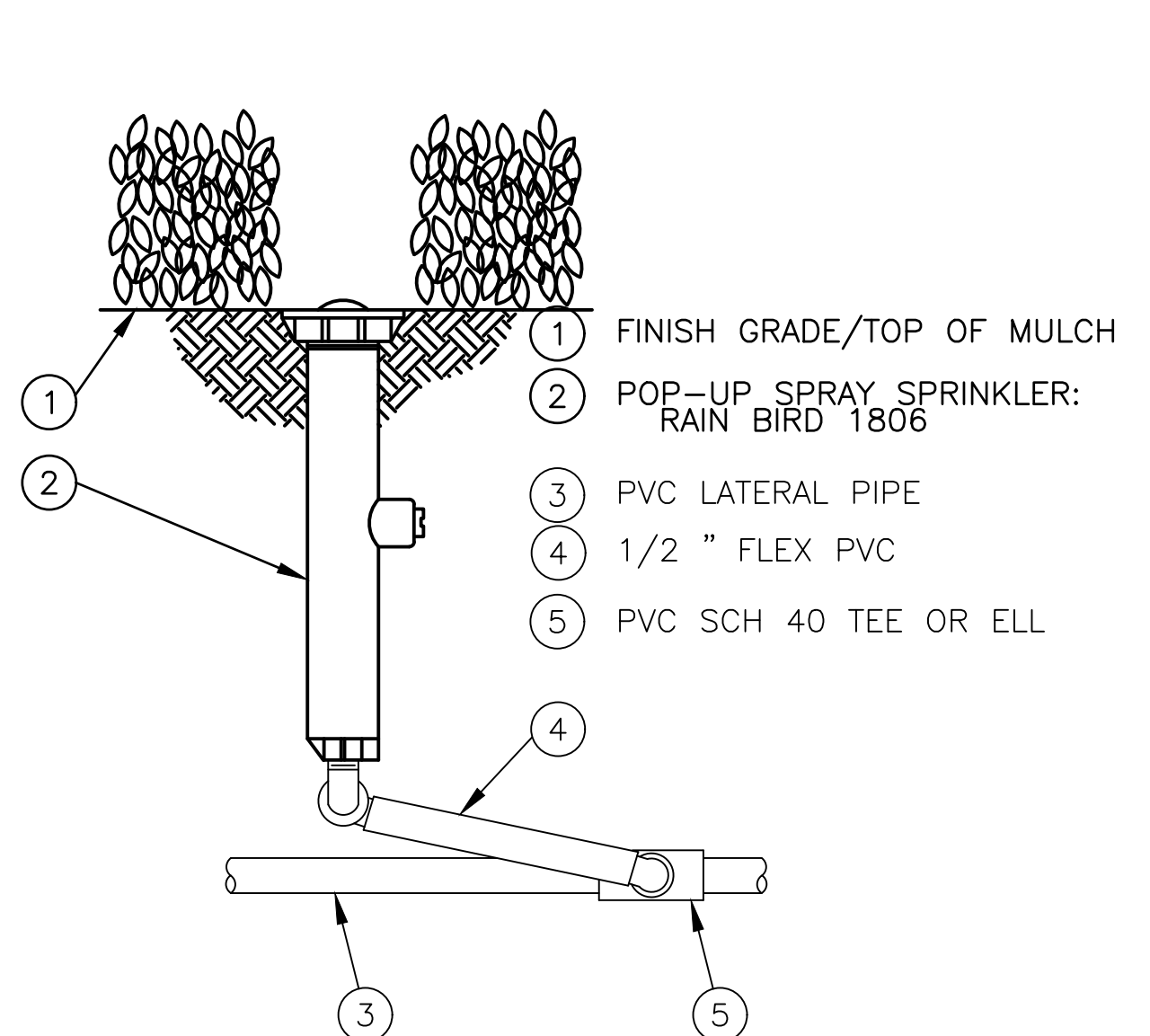
- 1** 30-INCH LINEAR LENGTH OF WIRE, COILED  
**2** WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)  
**3** ID TAG: RAIN BIRD VID SERIES  
**4** REMOTE CONTROL VALVE: RAIN BIRD PESB-PRS-D WITH NP-HAN  
**5** VALVE BOX WITH COVER: RAIN BIRD VB-STD  
**6** FINISH GRADE/TOP OF MULCH  
**7** PVC SCH 80 NIPPLE (CLOSE)  
**8** PVC SCH 40 ELL  
**9** PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)  
**10** BRICK (1 OF 4)  
**11** PVC MAINLINE PIPE  
**12** SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL  
**13** PVC SCH 40 TEE OR ELL  
**14** PVC SCH 40 MALE ADAPTER  
**15** PVC LATERAL PIPE  
**16** 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL



**1** RAINBIRD ESP WITH WIRELESS SENSOR  
1" = 1"

**2** RAINBIRD PEB  
NTS

**3** RAINBIRD 1400 BUBBLER  
NTS

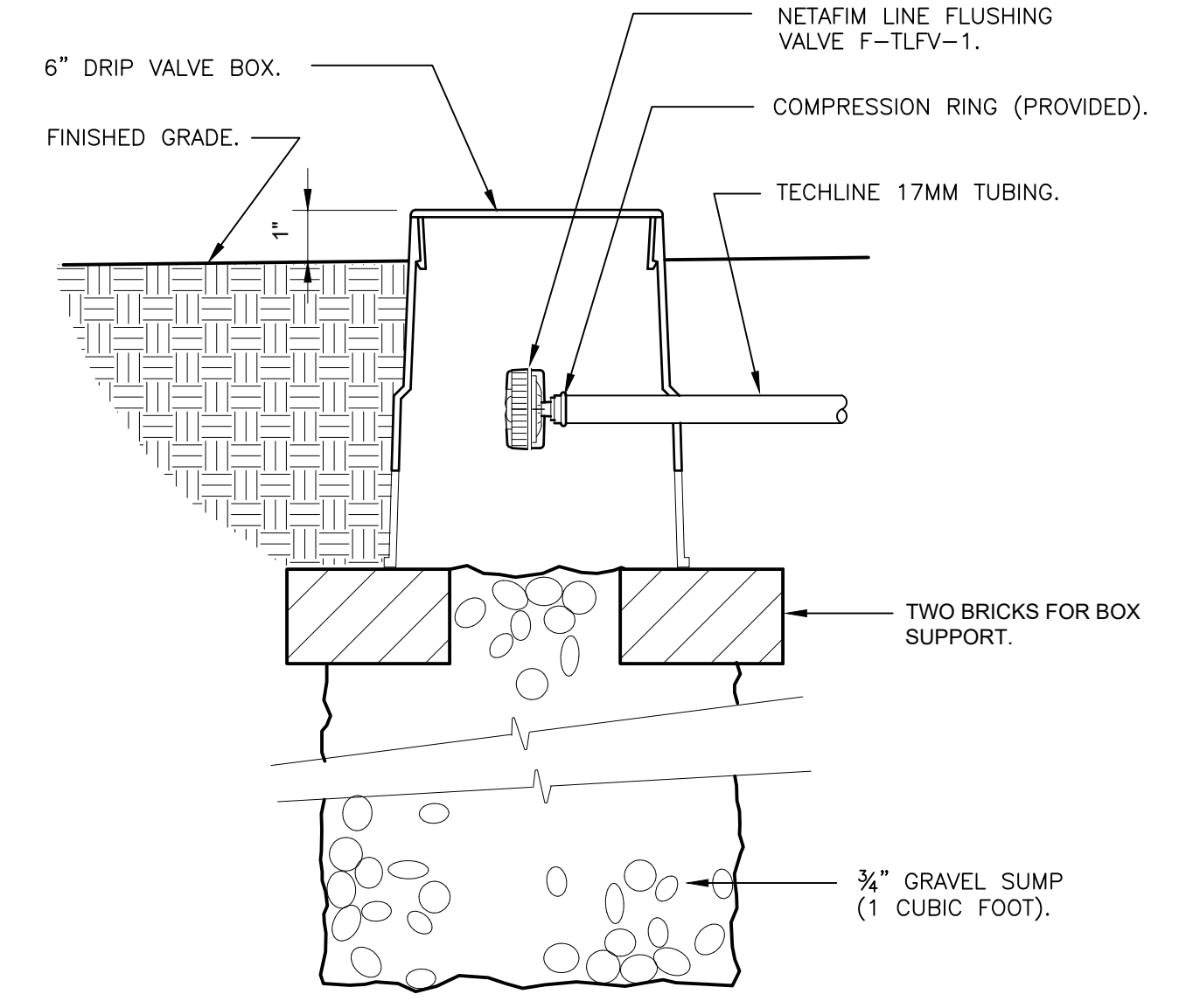


- 1** 1" RAIN BIRD LARGE CAPACITY FILTER WITH SCREEN: LCRBY100S  
**2** 1" RAIN BIRD REMOTE CONTROL VALVE  
**3** VALVE BOX WITH COVER: RAIN BIRD VB-JMB  
**4** FINISH GRADE/TOP OF MULCH  
**5** BRICK (1 OF 4)  
**6** PVC SCH 40 MALE ADAPTER  
**7** PVC SCH 40 THREADED UNION  
**8** PVC LATERAL PIPE  
**9** 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL  
**10** INLINE PRESSURE REGULATOR

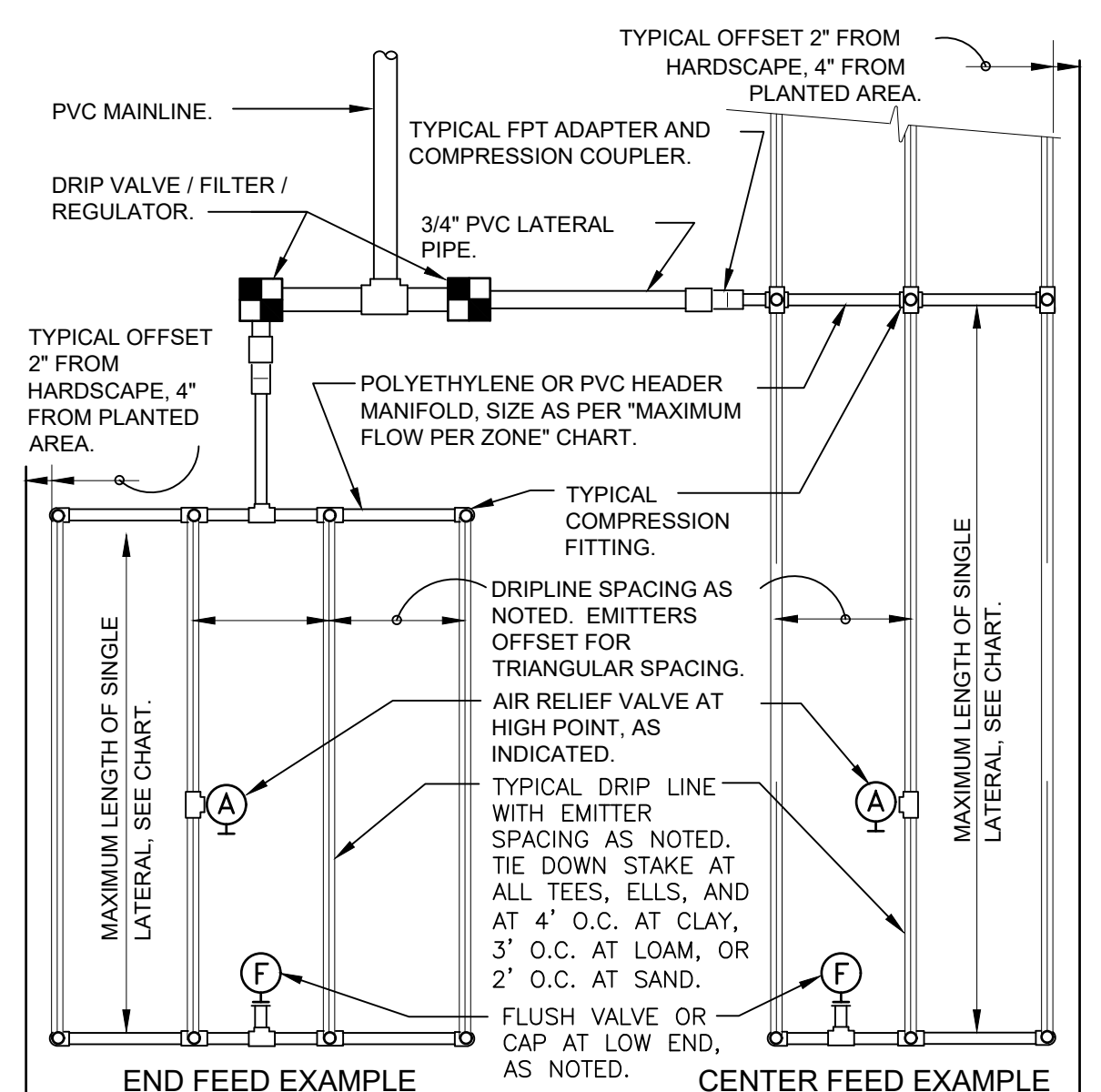
**NOTE:**  
1. FILTER ASSEMBLY TO BE INSTALLED WITH SCREEN DIRECTION FACING A 45° DOWNWARD ANGLE WITH ENOUGH SPACE TO REMOVE SCREEN FOR MAINTENANCE. SOME APPLICATIONS MAY REQUIRE RAIN BIRD VALVE BOX EXTENSIONS TO ACHIEVE ACCEPTABLE SCREEN CLEARANCE.

**4** RAINBIRD 1806  
1" = 1"

**5** DRIP KIT 1"  
NTS



**6** NETAFIM TECHLINE FLUSH VALVE  
3" = 1'-0"

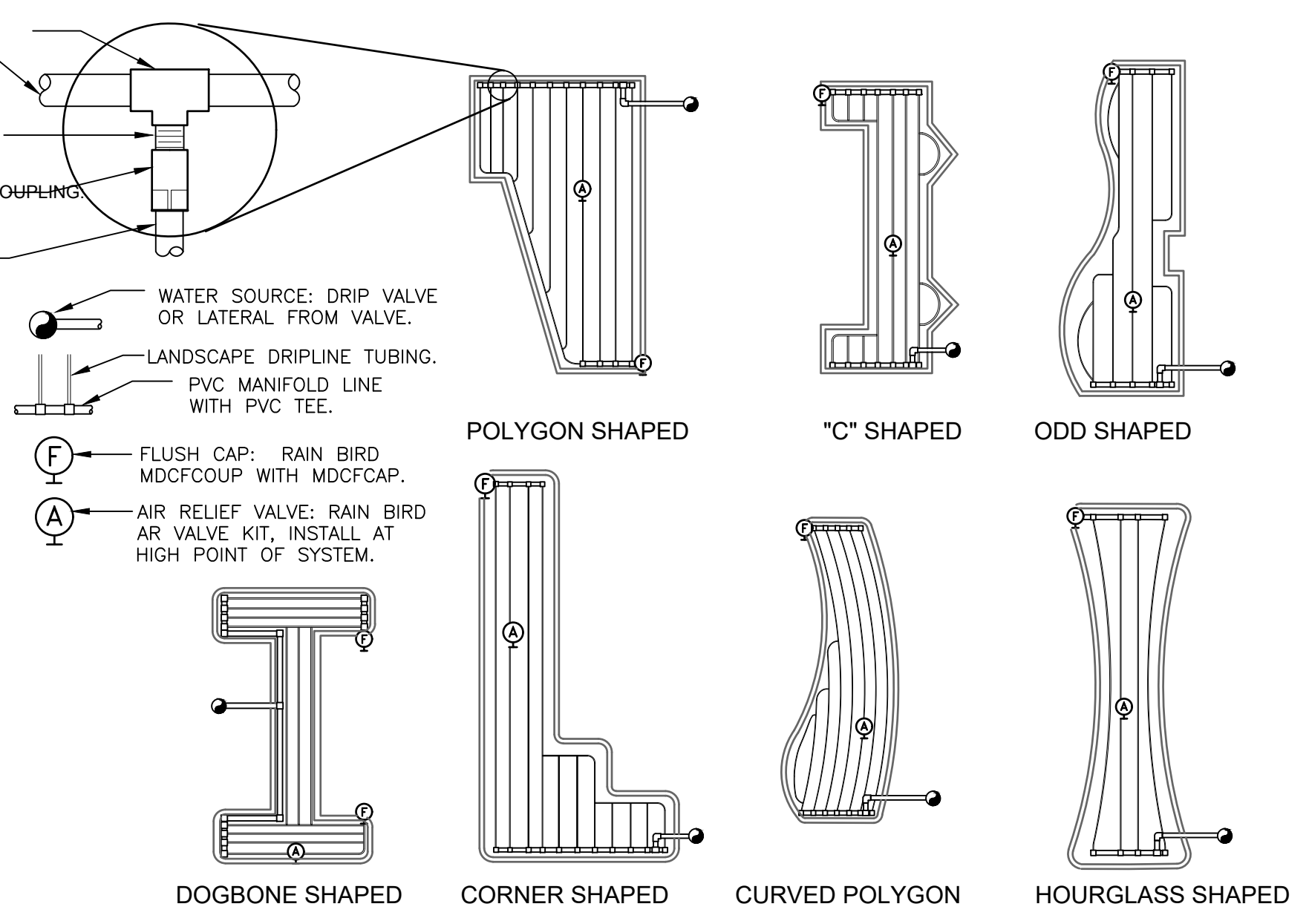


PSI	MAXIMUM LATERAL LENGTH (FEET)					
	12" SPACING		18" SPACING		24" SPACING	
	0.6	0.9	0.6	0.9	0.6	0.9
10	125	96	175	135	218	171
20	249	191	350	171	442	340
30	307	236	434	333	550	422
40	350	268	495	380	627	471
50	125	96	175	135	218	171
60	125	96	175	135	218	171

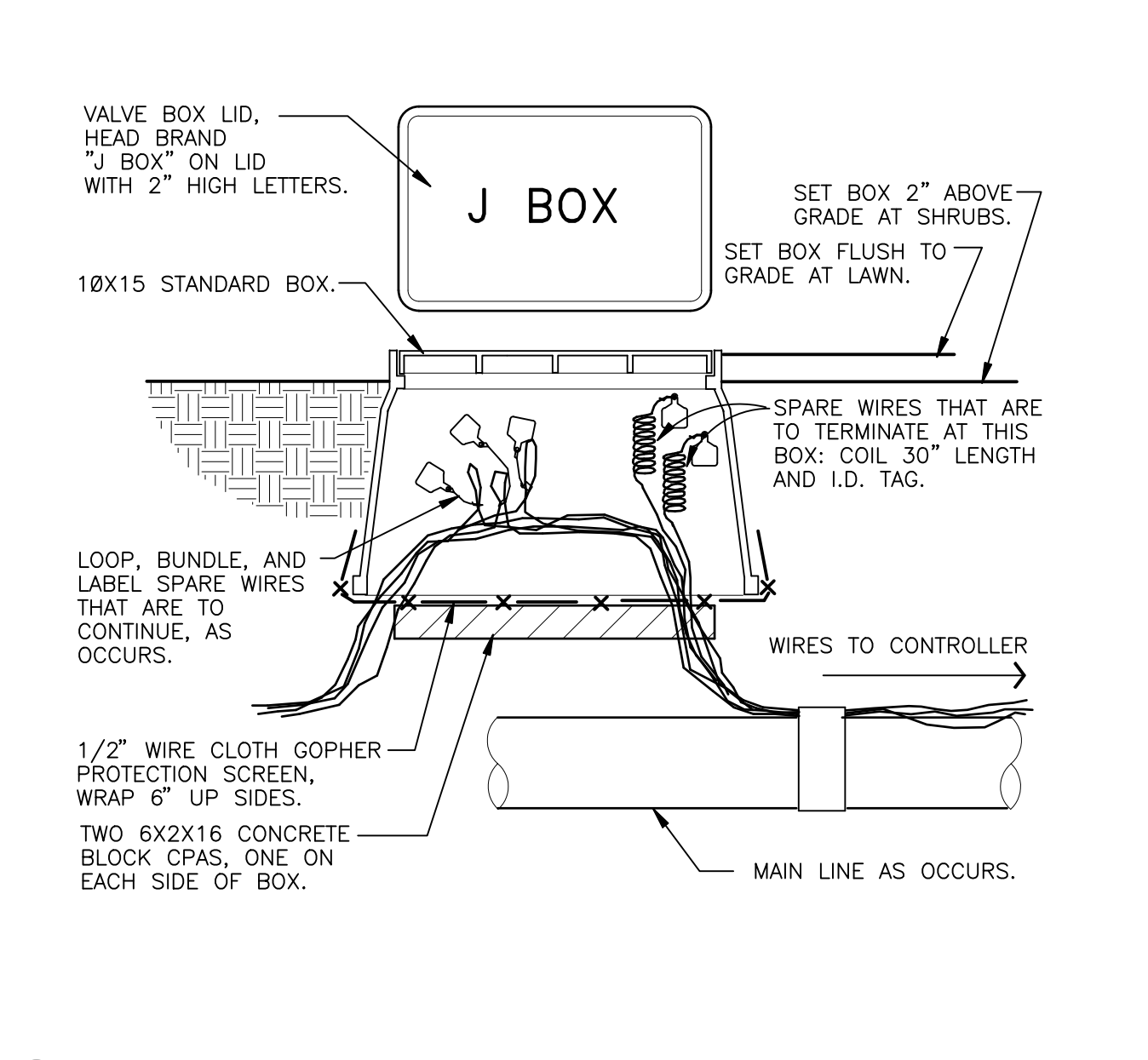
EMITTER SPACING	GRID PRECIPITATION RATES (IN/HR)		EMITTER FLOW RATE	
	12"	18"	0.6	0.9
12	12	0.96	1.44	
18	18	0.69	1.03	
24	24	0.28	0.41	

EMITTER FLOW	LATERAL FLOW PER 100 FT (GPM)			
	12" SPACING	18" SPACING	24" SPACING	
0.6 GPM	1.0 GPM	0.67 GPM	0.50 GPM	
0.9 GPM	1.5 GPM	1.0 GPM	0.75 GPM	

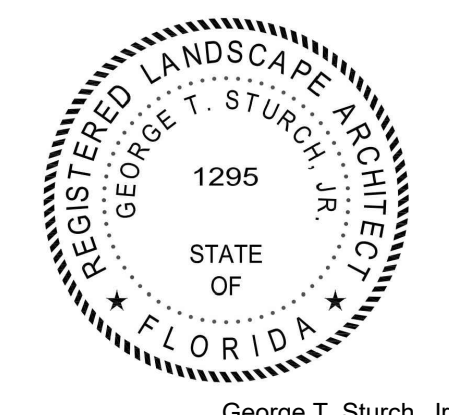
- SLOPED CONDITION NOTE:**  
 1. DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE.  
 2. INSTALL AIR RELIEF VALVE AT HIGHEST POINT.  
 3. NORMAL SPACING WITHIN THE TOP 2/3 OF SLOPE.  
 4. INSTALL DRIPLINE AT 25% GREATER SPACING AT THE BOTTOM 1/3 OF THE SLOPE.  
 5. WHEN ELEVATION CHANGE IS 10 FT OR MORE, ZONE THE BOTTOM 1/3 ON A SEPARATE VALVE.



**7** TYPICAL RAIN BIRD DRIPLINE REQUIREMENTS  
N.T.S.



**8** WIRE BUNDLE JUNCTION BOX  
1 1/2" = 1'-0"



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