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Date: 9/16/15

ADDENDUM #1

Bid: Irrigation Installation at Billy Gene Jackson Park

Questions/ **Answers**

Concerns / Issues:

1. Q: It has been mentioned that the main line be changed from the plan of using 2 ½” pipe to 4” pipe. This is a lot of added expense without any advantages. The design is for 60 gpm, 2 ½” or 3” is adequate enough.

A: The main line for the design is designated @ 2.5” on both the plan and in our material take-off. The flow characteristics in 2.5” SDR21 @ 60GPM reflect more than adequate volume with acceptable pressure loss. All flows are below the 5 FPS rule.

2. Q: The design/spec is for a Rain Bird 2-wire system that is required to have grounding along the wire path, the design/spec does not show this required grounding. If the grounding is not installed, Rain Bird will not warranty the controller or decoders. The 2-wire system also requires the use of the proper wire splices, which are not mentioned. If the proper splices are not installed, this will create problems.

A: While the plan does not call out the specific grounding – Our MTO reflects all required & necessary grounding per Rain Bird’s specifications. Please have any contractor who is bidding call JDL for proper guidance.

3. Q: The design/spec mentions that all rotors and popups are to be installed on swing pipe. The rotors that are specified are 1” commercial rotors requiring the use of 1” PVC swing joints.

A: While the plan does call out swing pipe in the general notes – Our MTO reflects all sprinklers be connected with Swing Joints. Please have any contractor who is bidding call us for proper guidance.

4. Q: The backflow preventor specified is a 1 ½", which is based on the design flow rate, having 4" pipe involved requires several fittings to make this reduction, this is not typical of these types of installations.

A: The backflow "preventer" specified is a 1.5" PVB – the flow characteristics for this device reflect a 5PSI loss @ 60 GPM – a larger device will only add cost to the project. The reduction will be from a 2.5" mainline – not a 4" mainline. Please have any contractor who is bidding call us for proper guidance. I have attached the spec sheet for the PVB specified for review.

I mention the above items as concerns, if a bidding contractor that understands the above, enters a bid covering these required items, then his price will be higher. If a contractor enters a bid based on what is shown, pricing will be lower but the issues mentioned will have to be addressed.

JDL provided design layout for the project and has prepared a material take-off based on the design and proper installation practices. We will be glad to assist the awarded contractor or any other interested party with materials and installation guidance if they have questions. Please feel free to direct anyone with question to me.

If there are any further questions please send them in writing to purchasing@wicomicocounty.org. The questions will then be forwarded to the persons with the expertise for answers.

Thank you,
Wicomico County Purchasing

Application

Designed for installation on irrigation water lines to protect against backsiphonage of contaminated water into the potable water supply. Assembly shall provide protection where a potential health hazard exists.

Standards Compliance

- ASSE® Listed 1020
- IAPMO® Listed
- CSA @ Certified
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California

Materials

Main valve body	Cast Bronze ASTM B584
Fasteners	Stainless Steel, 300 Series
Elastomers	Silicone (FDA approved) Buna Nitrile (FDA approved)
Polymers	Polypropylene (FDA approved) Delrin® (FDA approved)
Springs	Stainless Steel, 300 series

Features

Sizes:	1/2", 3/4", 1", 1 1/4", 1 1/2", 2"
Maximum working water pressure	150 PSI
Maximum working water temperature	110°F
Hydrostatic test pressure	300 PSI
End connections threaded	ANSI B1.20.1



Options

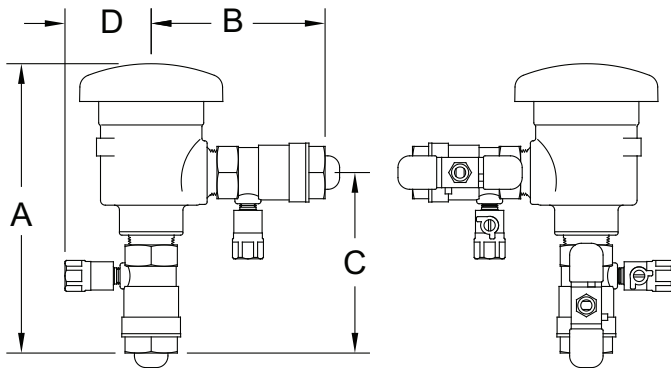
(Suffixes can be combined)

- with full port QT ball valves (standard)
- PF - with Z-Bite™ push fit connections* (1/2"-1" only)
- PR - with Z-Press™ press fit connections*

*Fittings ship in box with valve and must be threaded into valve by hand on site.

Accessories

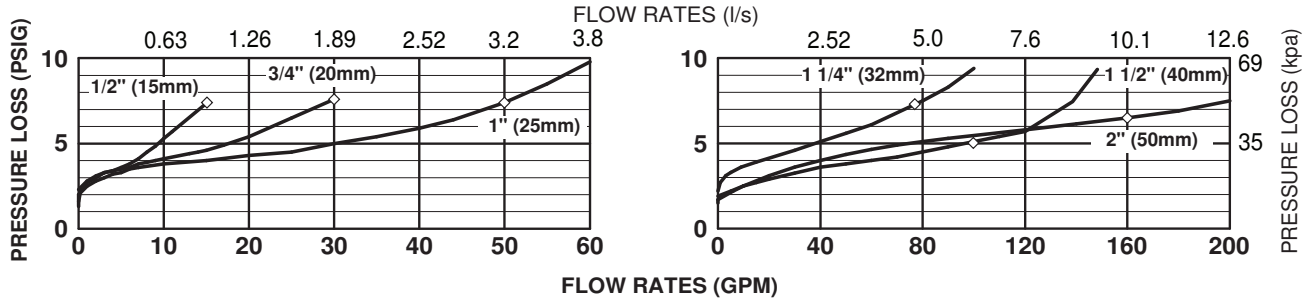
- Repair kit (complete)
- Water Hammer Arrester (Model 1250XL)
- QT-SET Quick Test Fitting Set



Dimensions & Weights (do not include pkg.)

MODEL SIZE		DIMENSIONS (approximate)								WEIGHT			
		A		B		C		D		LESS BV		WITH BV	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg	lbs.	kg
1/2	15	7 1/8	181	4 1/16	103	4 1/4	108	2 1/4	57	4	1.8	6	2.7
3/4	20	7 3/16	183	4 5/16	110	4 5/16	110	2 3/8	60	4	1.8	6	2.7
1	25	7 3/4	197	4 5/8	117	4 3/4	121	2 5/8	67	4	1.8	8	3.6
1 1/4	32	11	279	7 7/16	189	7 7/16	189	3 1/8	79	14	6.4	20	9
1 1/2	40	10 1/2	267	7	178	7	178	3 1/8	79	14	6.4	20	9
2	50	11 1/16	281	7 9/16	192	7 11/16	195	3 1/8	79	14	6.4	26	10.4

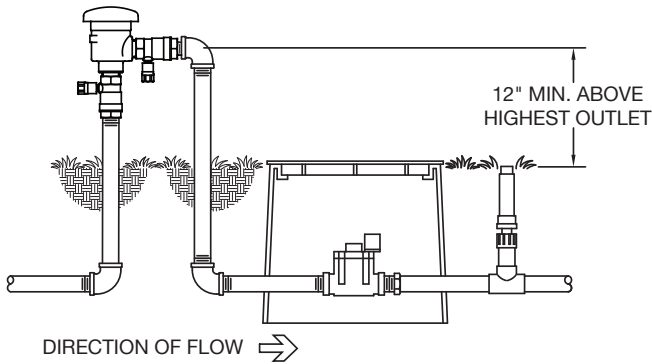
MODEL 720A 1/2", 3/4", 1", 1 1/4", 1 1/2" & 2" (STANDARD & METRIC)



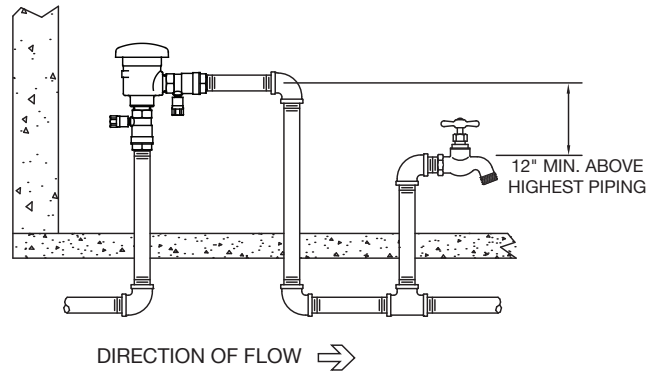
Typical Installation

Local codes shall govern installation requirements. Unless otherwise specified, the assembly shall be mounted at a minimum of 12" (305mm) above the highest piping or outlet downstream of the device. Install with adequate drain and sufficient side clearance for testing and maintenance. The installation shall be made so that no part of the unit can be submerged. A pressure vacuum breaker cannot be installed where back-pressure could occur or where spillage of water from vent could cause damage.

Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
1/8"	1	1	2	3
1/4"	2	2	3	5
3/8"	3	4	6	9
1/2"	5	7	9	14
3/4"	8	12	17	25
1"	13	20	27	40
1 1/4"	23	35	47	70
1 1/2"	32	48	63	95
2"	52	78	105	167



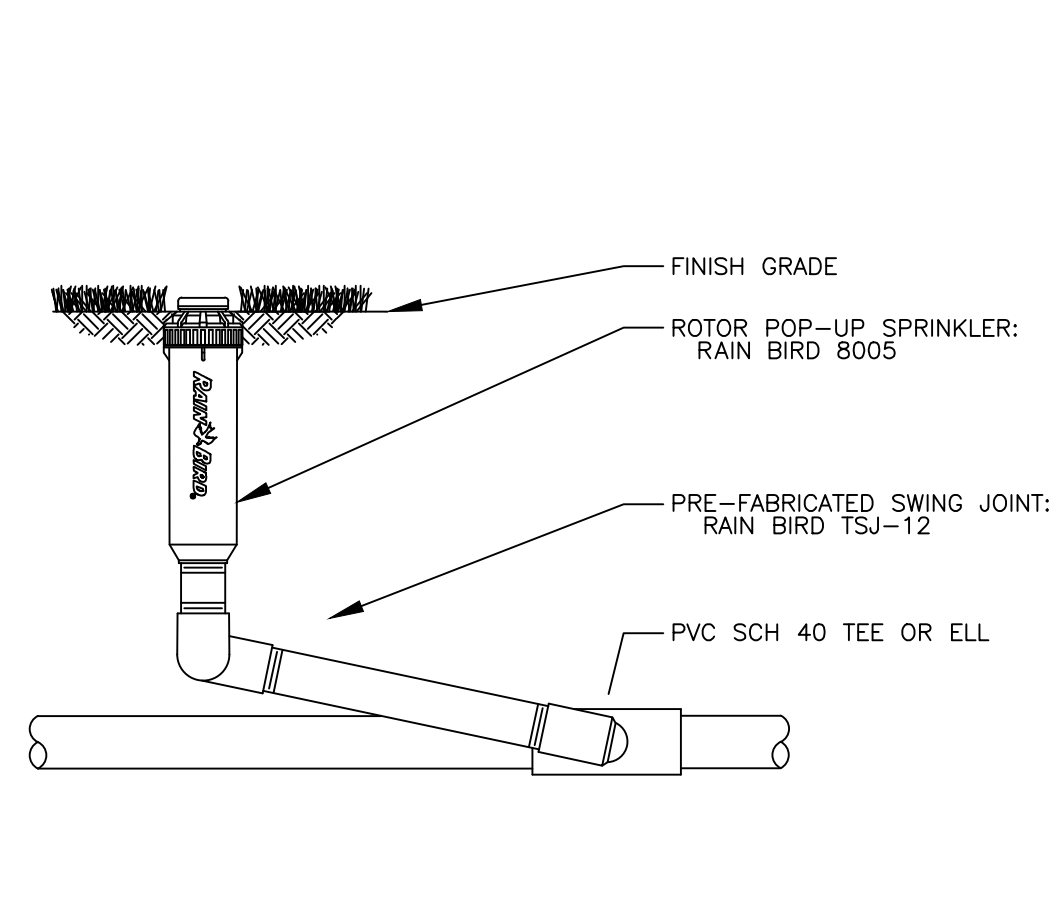
OUTDOOR INSTALLATION



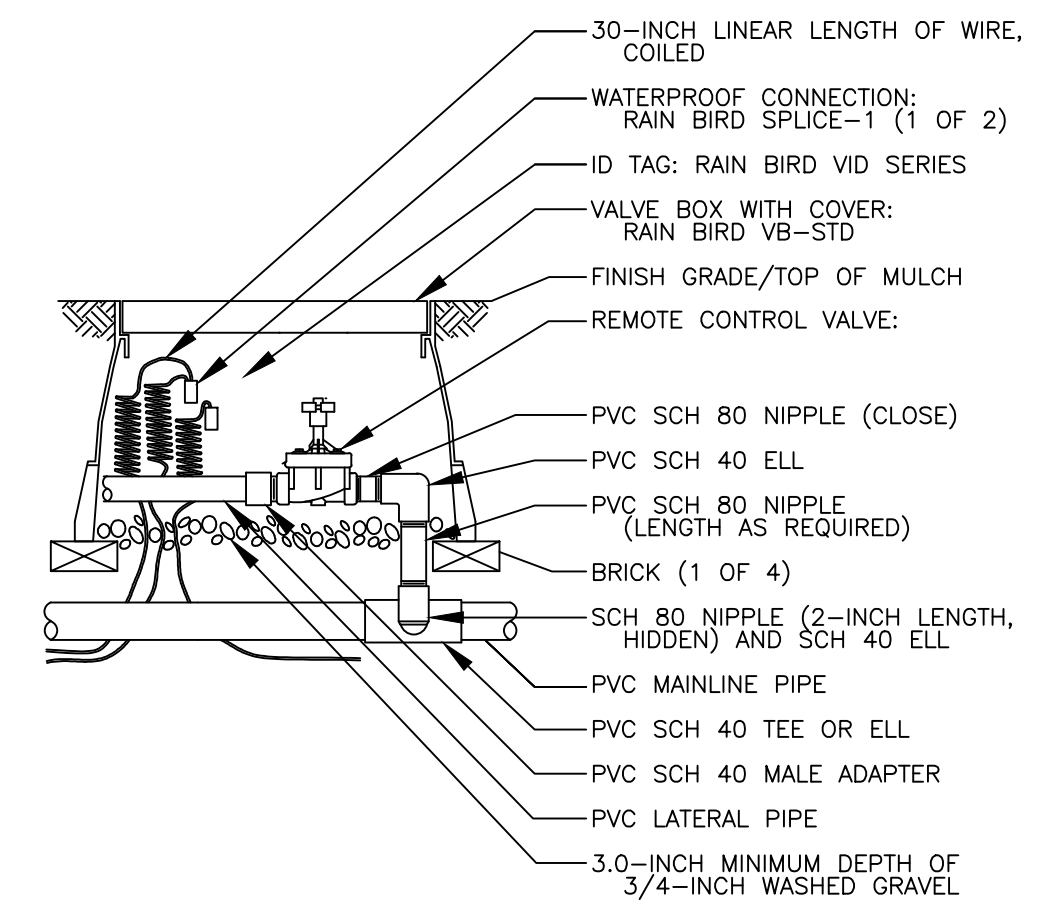
INDOOR INSTALLATION

Specifications

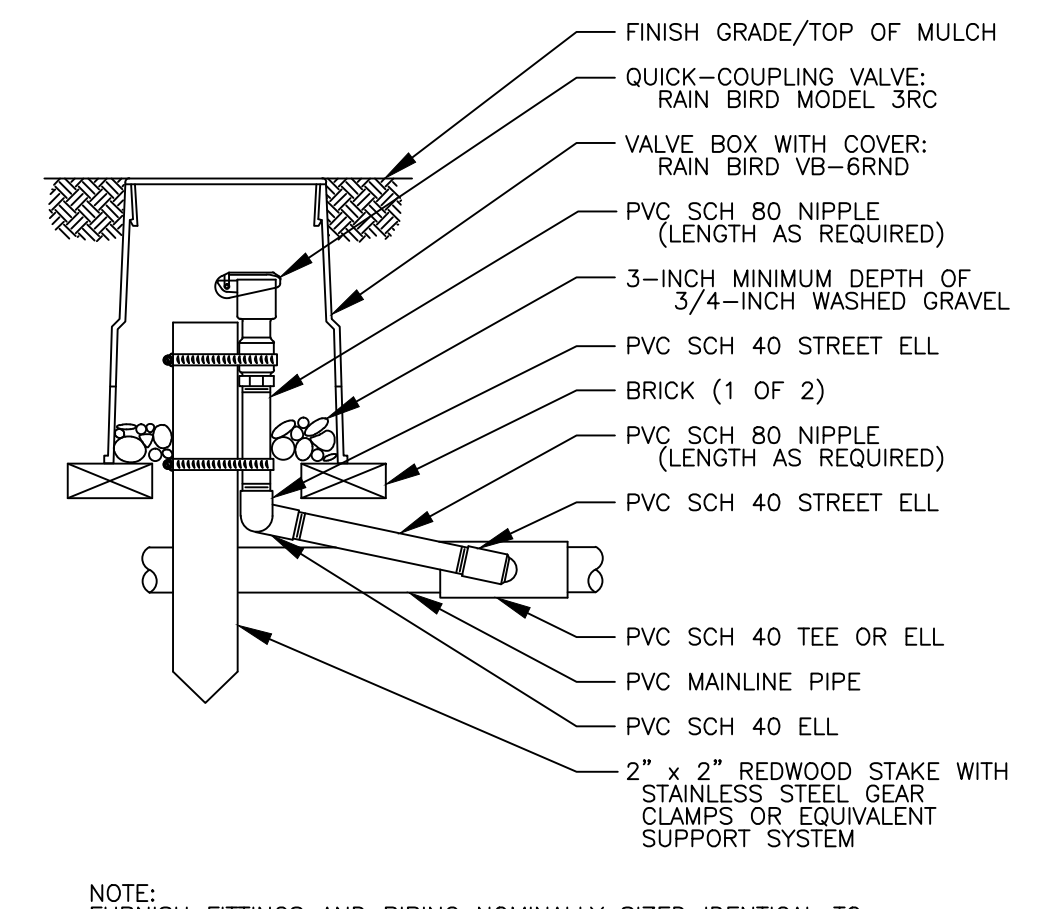
The Pressure Vacuum Breaker shall be ASSE 1020 approved, and supplied with full port ball valves. The main body and bonnet shall be bronze (ASTM B584), the loaded-air inlet shall use an silicone elastomer spring and seat disc. The entire assembly shall be accessible for maintenance and testing without removing the device from the line. The Pressure Vacuum Breaker shall be a Zurn Wilkins Model 720A.



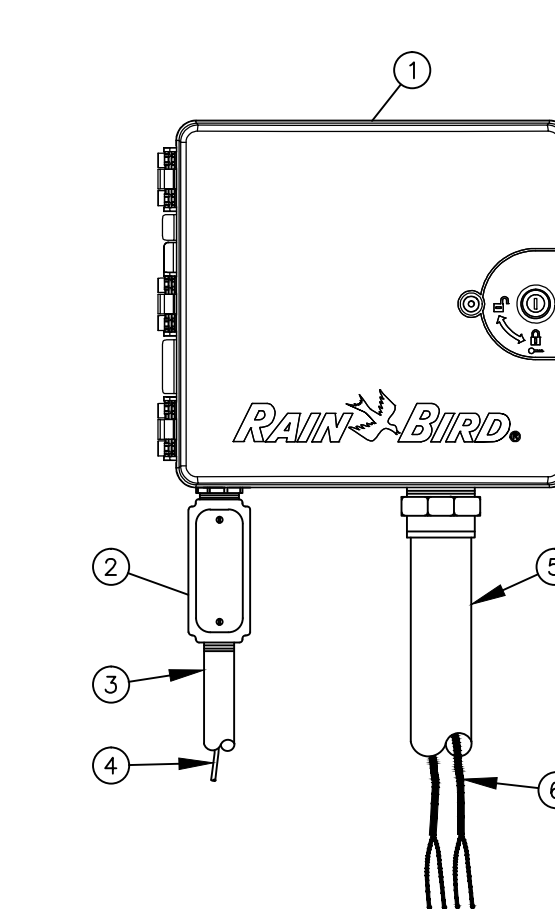
1 ROTOR PUP-UP SPRINKLER
N.T.S. 8005



2 ELECTRIC REMOTE CONTROL VALVE
N.T.S. PEB



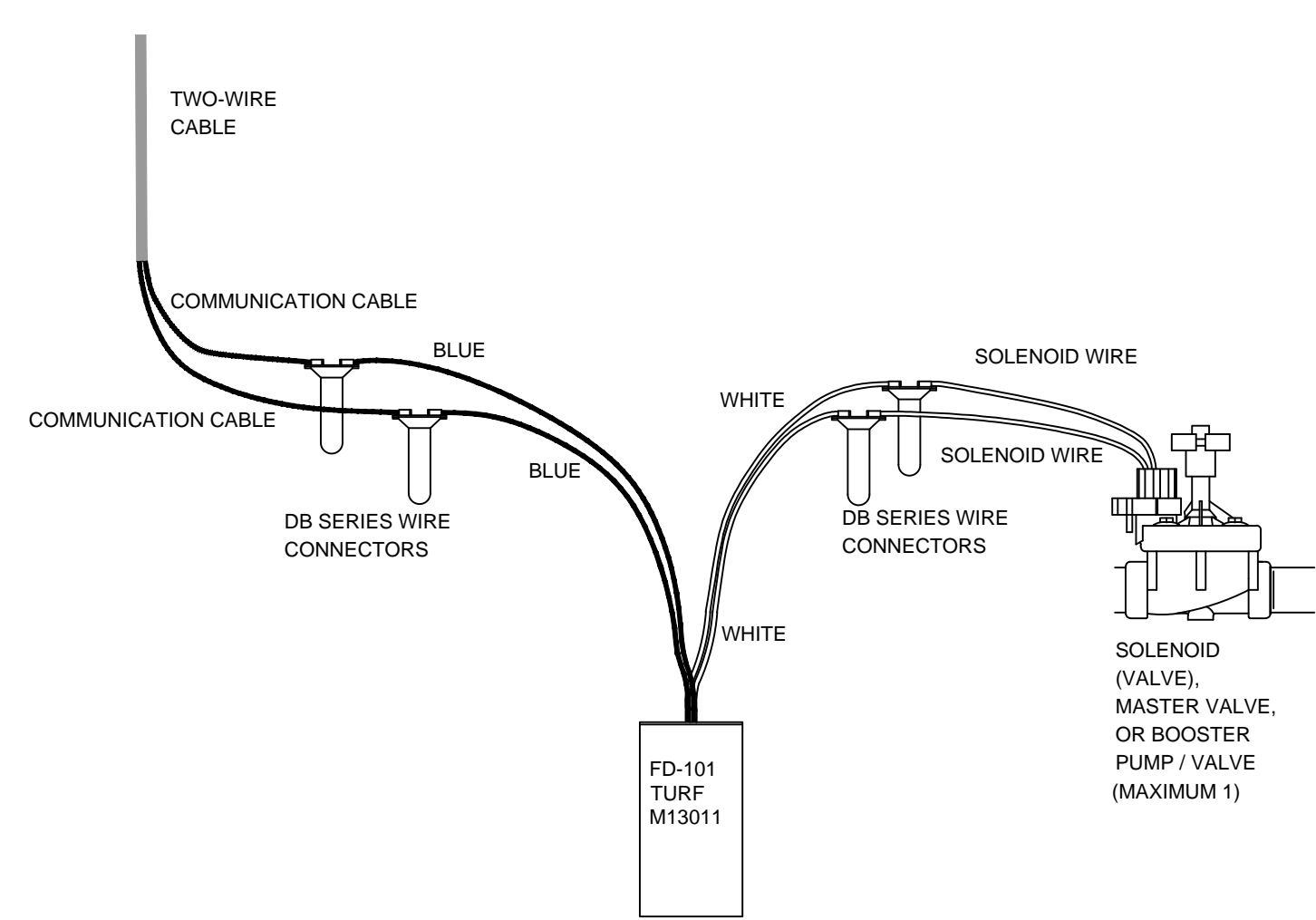
3 QUICK COUPLING VALVE
N.T.S. MODEL 3RC



4 ESP-LXD TWO-WIRE DECODER CONTROLLER
N.T.S.

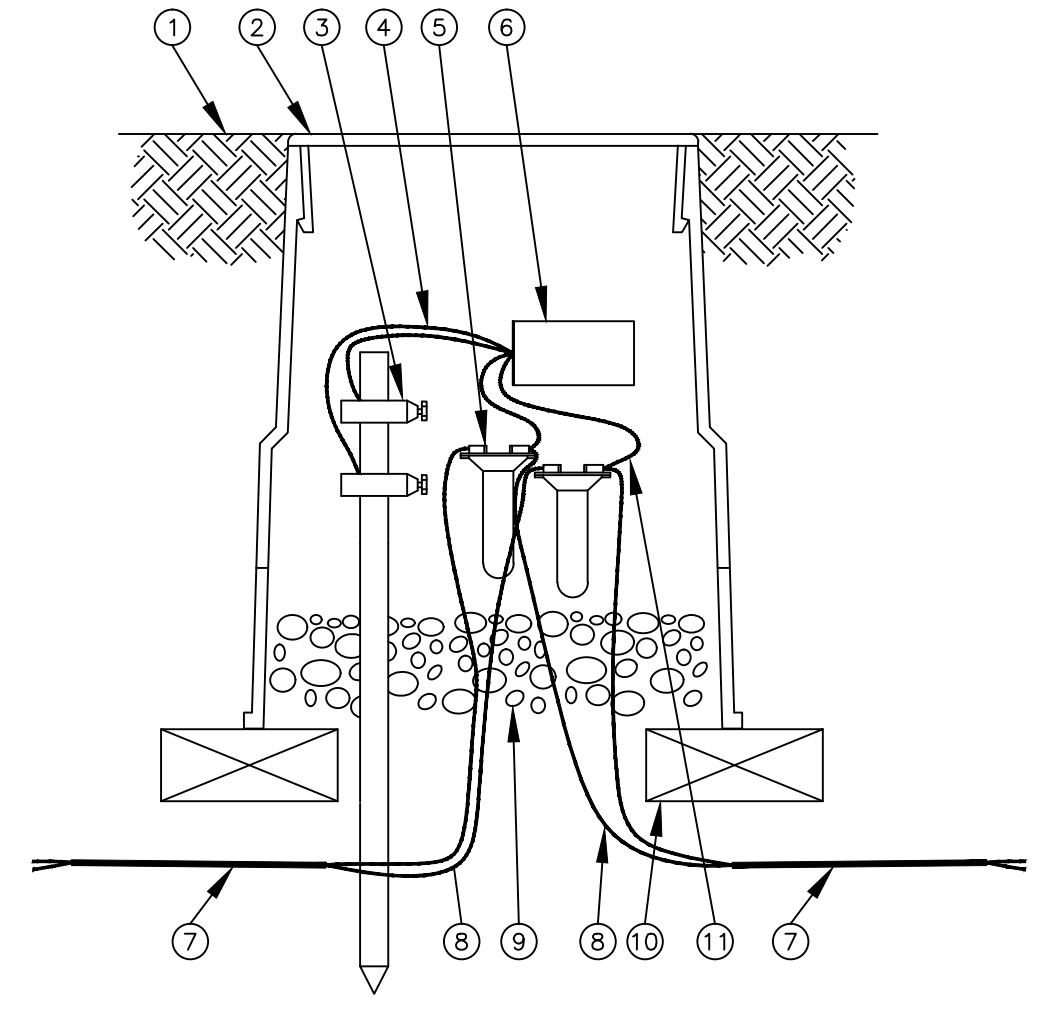
- ① TWO-WIRE DECODER CONTROLLER: RAIN BIRD ESP-LXD TWO-WIRE DECODER CONTROLLER IN PLASTIC CABINET WITH WALL MOUNT. INSTALL CONTROLLER AND CABINET ON WALL PER MANUFACTURER'S RECOMMENDATIONS.
- ② JUNCTION BOX
- ③ 1-INCH CONDUIT AND FITTINGS TO POWER SUPPLY
- ④ POWER SUPPLY WIRE
- ⑤ 2-INCH CONDUIT AND FITTINGS FOR TWO-WIRE CABLE
- ⑥ MAXICABLE TWO-WIRE PATH TO DECODERS USE A DIFFERENT CABLE JACKET COLOR FOR EACH PATH.

NOTES:
1. ESP-LXD CONTROLLER COMES WITH 50 STATIONS AVAILABLE. TWO ADDITIONAL 75 STATION ESPLXD-SUM75 MODULES MAY BE ADDED TO EXPAND THE CONTROLLER UP TO 200 TOTAL STATIONS.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.



NOTE:
1. MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM DECODER TO SOLENOID IS 450 FEET.

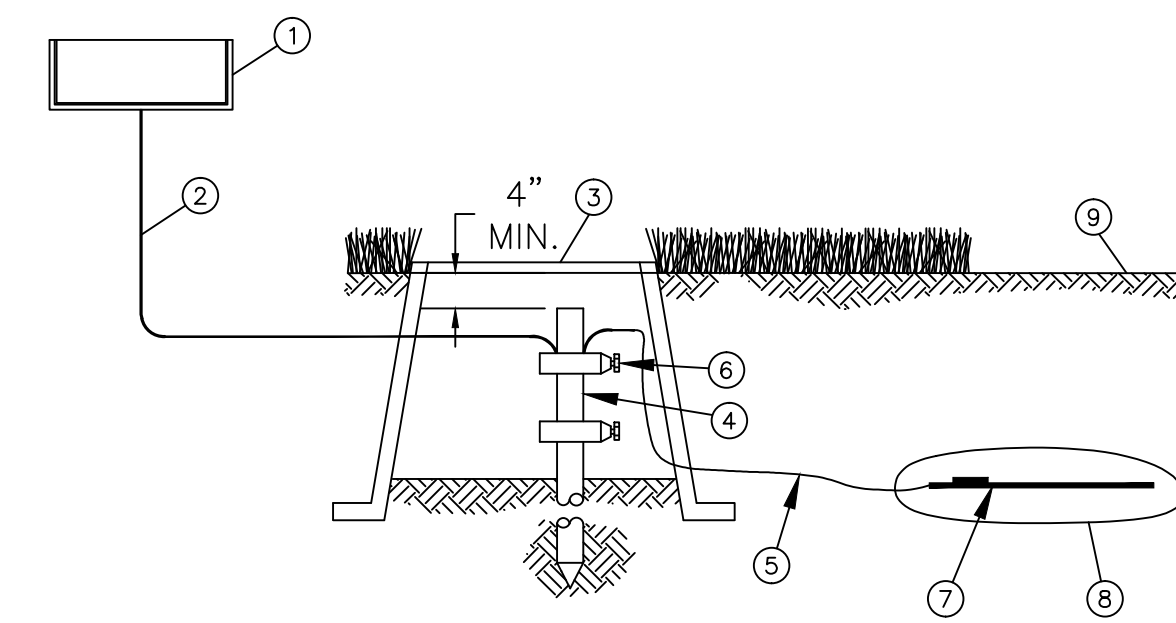
5 FD-101TURF DECODER
N.T.S. WIRING DIAGRAM



6 CONNECTING AN LDP-1TURF
N.T.S. TO 2-WIRE PATH

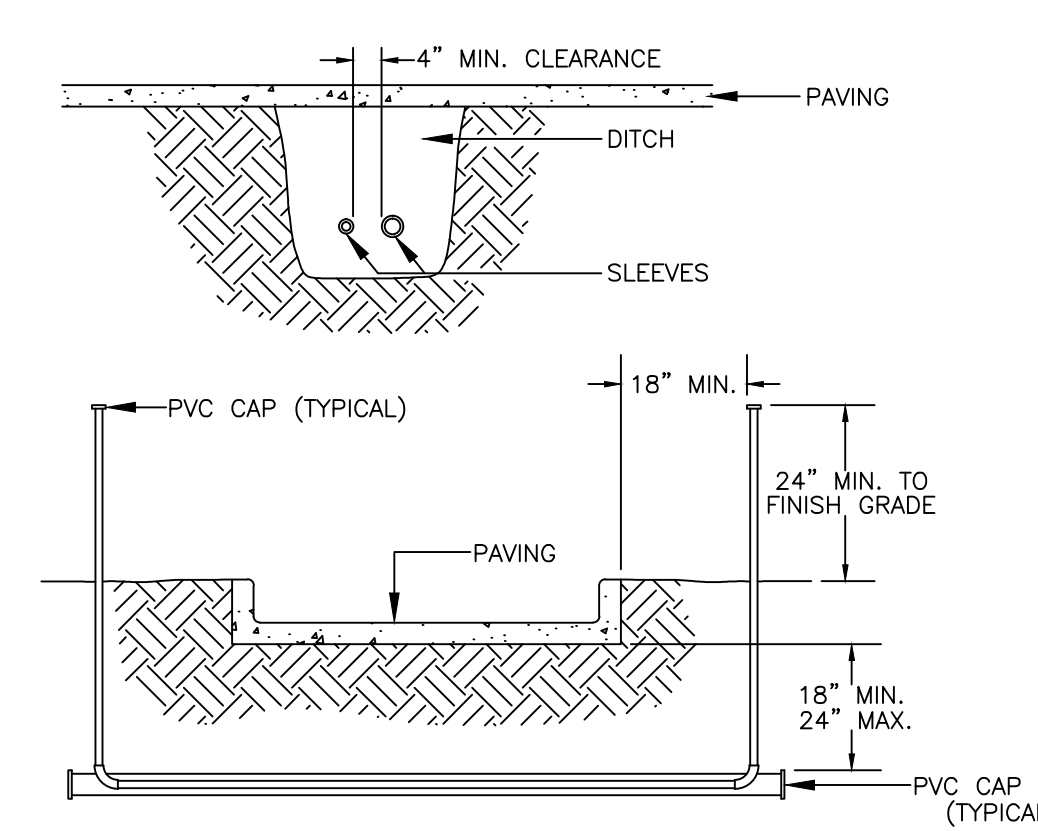
- ① FINISH GRADE OR TOP OF MULCH
- ② 10-INCH VALVE BOX WITH COVER: RAIN BIRD VB-10RND
- ③ GROUNDING ROD: 10 OHMS OR LESS
- ④ GREEN/YELLOW WIRE FROM LSP-1TURFTURF TO GROUNDING ROD BRASS CLAMPS (1 OF 2)
- ⑤ DB SERIES WIRE CONNECTOR: RAIN BIRD DBTWC25 (1 OF 2)
- ⑥ LINE SURGE PROTECTOR: RAIN BIRD LSP-1TURF M10008
- ⑦ TWO-WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)
- ⑧ COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)
- ⑨ 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- ⑩ BRICK (1 OF 2)
- ⑪ BLUE WIRE FROM LSP-1TURF TO DB SERIES WIRE CONNECTOR

NOTES:
1. LSP-1TURF SHOULD BE INSTALLED EVERY 500- FEET OR FOR EVERY EIGHT DECODERS ON TWO-WIRE PATH.
2. LSP-1TURF TO BE INSTALLED AT END OF WIRE RUN THAT TERMINATES IN THE FIELD (STAR CONFIGURATION).
3. RAIN BIRD FD-401TURF AND FD-601TURF FIELD DECODERS COME WITH LSP-1TURF'S BUILT-IN. FD-101TURF, FD-102TURF AND FD-202TURF REQUIRE SEPARATE LSP-1TURF PROTECTION.



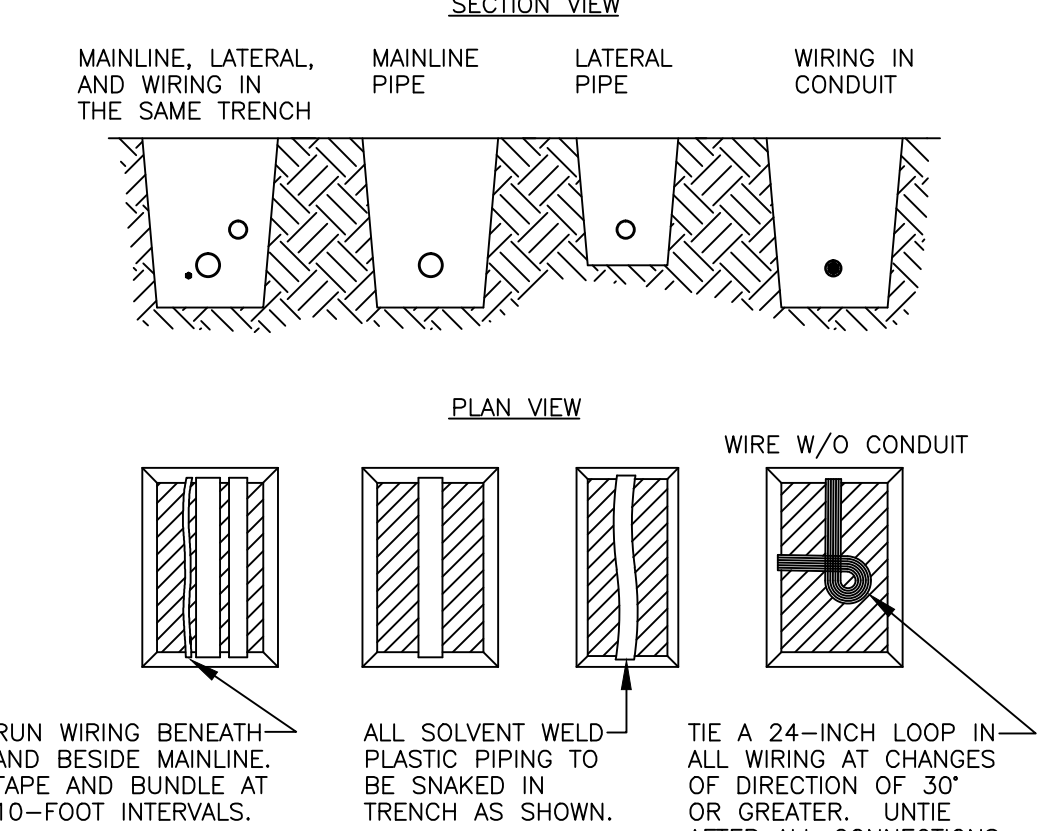
- ① RAIN BIRD CONTROLLER
- ② SOLID BARE COPPER WIRE (#10 AWG) FROM GROUNDING ROD TO CONTROLLER. MAKE WIRE AS SHORT AND STRAIGHT AS POSSIBLE.
- ③ COVER GROUNDING ROD WITH 10-INCH ROUND VALVE BOX AS SHOWN
- ④ 5/8-INCH X 10 FT COPPER CLAD GROUNDING ROD OR GROUNDING PLATE. INSTALL RODS IN SOIL IN A TRIANGULAR PATTERN SPACED A MINIMUM OF 16 FT APART FROM EACH OTHER. GROUNDING GRID TO HAVE A RESISTANCE OF TEN (10) OHMS OR LESS
- ⑤ BARE COPPER WIRE (#6 AWG MIN.) BETWEEN GROUNDING ROD AND GROUNDING PLATE
- ⑥ GROUND ROD CLAMP OR WELDS
- ⑦ COPPER GROUNDING PLATE
- ⑧ GROUND ENHANCEMENT MATERIAL (IF REQUIRED)
- ⑨ FINISH GRADE

7 CONTROLLER GROUNDING GRID
N.T.S. GROUNDING PLATE DESIGN LAYOUT



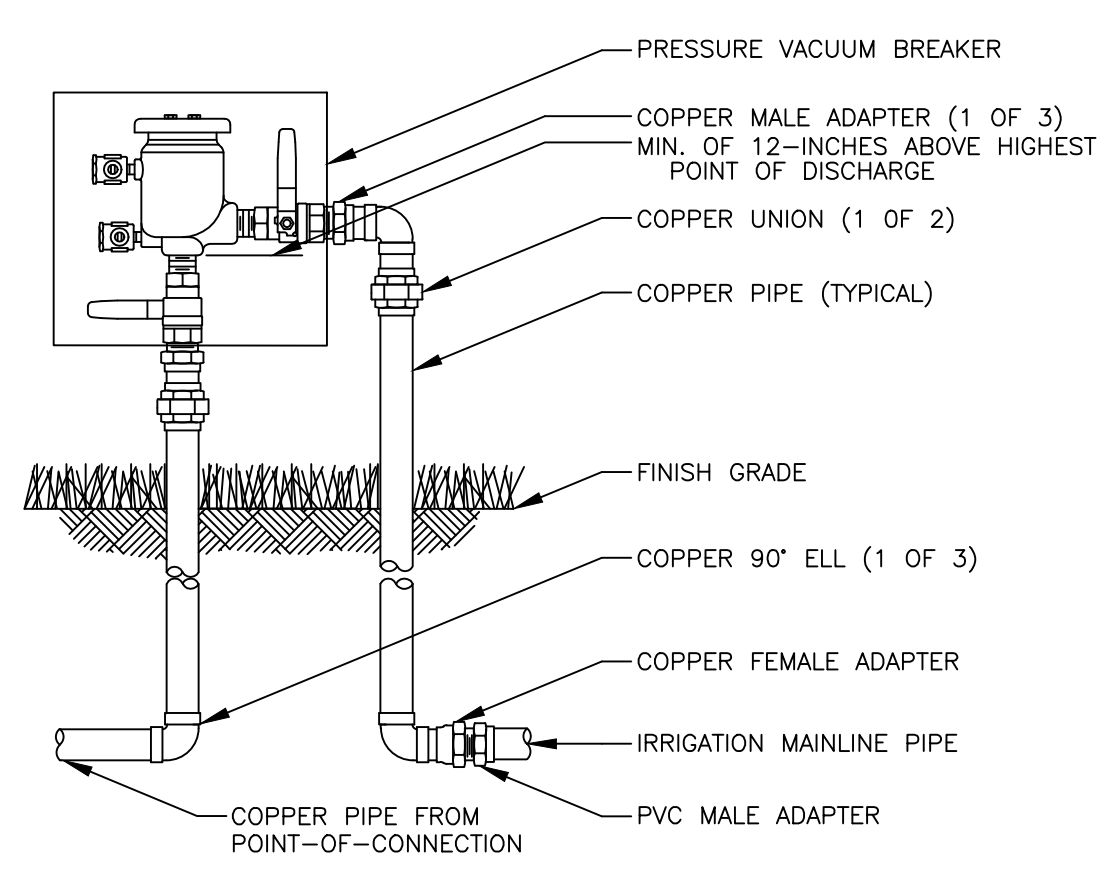
NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE CLASS 200 PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISH GRADE.
4. MECHANICALLY TAMP TO 95% PROCTOR.

8 SLEEVING
N.T.S.



NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH CLASS 200 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS.

9 PIPE & WIRE TRENCHING
N.T.S.



NOTE:
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

10 PRESSURE VACUUM BREAKER
N.T.S.

Scale: 1" = 20'-0"
Project Number: 79670
Sheet Number: IR-2

Details:
Designed by: ROB CREEGAN

Date: 09-15-2015
Issued for:

BILLY GENE JACKSON PARK
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