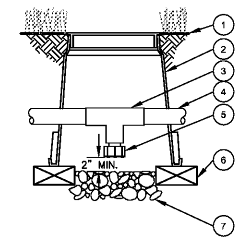
GENERAL IRRIGATION SPECIFICATIONS AND NOTES

1. THE SYSTEM SHALL BE DESIGNED TO PROVIDE 100% COVERAGE. ANY CHANGES MADE IN THE LAYOUT DUE TO FIELD CONDITIONS SHALL BE IN ACCORDANCE WITH THESE STANDARDS.
2. VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS-CONTRACTOR SHALL FIELD VERIFY.
3. CONTRACTOR TO FIELD VERIFY ALL POINT OF CONNECTION SOURCE INFORMATION INCLUDING PSI AND GPM PRIOR TO CONSTRUCTION.
4. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON-SITE.
5. IRRIGATION DESIGN IS SCHEMATIC ONLY. FULL AND COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE OWNER'S REPRESENTATIVE.
6. CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN FOR PLANTER BED AND TREE LOCATIONS TO ENSURE ALL PLANT MATERIAL IS COVERED BY 100% HEAD-TO-HEAD IRRIGATION.
7. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT.
8. IRRIGATION CONTRACTOR TO PROVIDE POWER SUPPLY TO ELECTRIC CONTROLLERS.
9. IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE JURISDICTION.
10. IRRIGATION SYSTEM SHALL NOT BE INSTALLED THROUGH PRESERVED PLANT COMMUNITIES OR WITHIN WETLANDS OR THEIR ASSOCIATED BUFFERS.
11. LOCATE ALL IRRIGATION LINES WITHIN LANDSCAPED AREAS WHENEVER POSSIBLE. ALL LINES UNDER PAVEMENT MUST BE SLEEVED. ALL VALVES SHALL BE LOCATED WITHIN LANDSCAPED AREAS, AS SPECIFIED.
12. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
13. CONTRACTOR TO COORDINATE LOCATION OF ALL METERS AND BACKFLOW ASSEMBLIES WITH PROJECT OWNER.
14. THE IRRIGATION CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE FOR SLEEVING AND DIRECTIONAL BORES.
15. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF THE SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS. ALL SLEEVES ON PLAN FOR WALL PENETRATIONS AND UNDER SIDEWALKS SHALL BE SIZED TWO PIPE SIZES GREATER THAN THE PIPE IT CARRIES.
16. ALL PRESSURIZED MAINLINES AND LATERALS UNDER PAVEMENT SHALL BE WITHIN SLEEVES AS NOTED. WHERE ELECTRIC OR HYDRAULIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
17. SLEEVES UNDER EXISTING PAVEMENT MUST BE DIRECTIONAL BORE. OPEN CUT IS NOT AN OPTION.
18. NUMBER THE TOP OF ALL VALVE BOX LIDS WITH MINIMUM 1" HEIGHT BLACK LETTERS TO CORRESPOND TO AUTOMATIC AND GATE VALVE DESIGNATIONS. ALL HOSE BIBB VALVE BOXES SHALL BE LABELED IN A SIMILAR MANNER WITH THE DESIGNATION "HB". LETTER OUTSIDE OF TIME CLOCK CABINETS TO CORRESPOND WITH IRRIGATION CLOCK PROGRAM DESIGNATION.
19. THE IRRIGATION CONTRACTOR SHALL INSTALL A COLOR CODED METAL DETECTABLE MARKING TAPE WHICH CLEARLY NOTES: "CAUTION: IRRIGATION LINE BURIED BELOW." THE TAPE SHALL BE INSTALLED THE FULL LENGTH OF THE IRRIGATION MAINLINE.
20. ALL VALVES, SPLICES WITHIN CONTROL LINES, AND QUICK COUPLERS SHALL BE LOCATED WITHIN NDS VALVE BOXES AS FOLLOWS:
    -RECTANGULAR 12"X17" HEAVY DUTY BOX. (PURPLE COVER FOR REUSE TO BE PROVIDED WHERE APPROPRIATE).
21. ALL UNSIZED PIPE SHALL BE 3/4" UNLESS OTHERWISE NOTED ON PLAN. SEE LATERAL PIPE SIZING REQUIREMENTS.
22. ALL IRRIGATION HEADS/DRIP TUBING SHALL BE LOCATED ONE (1) FOOT FROM BACK OF CURB WHEN NEXT TO A ROADWAY. (THIS SHALL NOT INCLUDE PARKING AREAS OR DRIVE AISLES).
23. LOCATE ALL VALVES IN PLANTING BEDS WITH A MINIMUM OF 3'-0" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. PIPE SIZES ON EITHER SIDE OF SECTION VALVES CONNECTING MAINLINE TO SECTION LATERAL SHALL BE ONE (1) PIPE SIZE LARGER THAN VALVE SIZE. WHERE MAINLINES RUN PARALLEL TO PAVEMENT OR CURBING, THE MAINLINE SHALL BE OFFSET 2'-0" FROM THE EDGE OF PAVEMENT OR CURB.
24. IRRIGATION ZONES SHALL BE SEPARATED FOR HIGH AND LOW WATER USE REQUIREMENTS AND OPERATED ON DIFFERENT WATERING CYCLES. BUBBLERS, DRIPLINE, AND SPRAY HEADS SHALL BE SEPARATED ON DIFFERENT VALVES. AT NO TIME SHALL MULTIPLE IRRIGATION HEAD TYPES BE LOCATED ON THE SAME VALVE.
25. ALL DRIP ZONES SHALL BE INSTALLED WITH A FLUSH VALVE AND AIR RELIEF VALVE. IN THE EVENT THAT A DRIP ZONE HAS MORE THAN ONE HIGH OR LOW POINT, MORE THAN ONE AIR RELIEF VALVE OR FLUSH VALVE WILL BE REQUIRED FOR THAT ZONE. DRIPLINE SHALL PROVIDE 0.9 GPH EMITTERS, 18" O.C. WITH 18" LINE SPACING AT A MINIMUM.
26. IRRIGATION CONTRACTOR TO COORDINATE WITH OWNER FOR FINAL CONTROLLER AND RAIN SENSOR LOCATIONS. THE CONTROLLER SHALL BE PLACED IN A LOCKING CABINET APPROPRIATE FOR ITS LOCATION. (INDOOR VS. OUTDOOR USE)
27. LOCATE THE AUTOMATIC RAIN SENSOR SHUTOFF DEVICE IN AN AREA THAT IS UNOBSTRUCTED BY TREES, ROOF OVERHANGS, OR ANY OTHER OVERHEAD OBJECT. THE SENSOR SHALL NOT BE PLACED WITHIN THE SPRAY ZONE OF ANY SPRINKLER HEAD, INCLUDING OFF-SITE IRRIGATION. CONTRACTOR SHALL LOCATE SENSOR WITHIN CLOSE PROXIMITY TO THE IRRIGATION CONTROLLER.
28. CONTRACTOR SHALL PERFORM HYDRO-TESTING OF MAIN LINES.

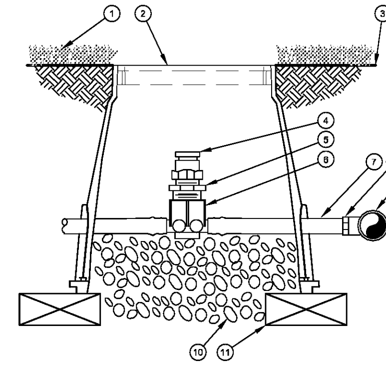
    HYDRO-TESTING TO BE PERFORMED AS LISTED:

    THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE FORTY-EIGHT (48) HOURS IN ADVANCE OF TESTING. PRIOR TO BACKFILLING, CONTRACTOR SHALL FILL PIPING WITH WATER, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE, TAKING CARE TO PURGE THE AIR FROM IT. A SMALL, HIGH PRESSURE PUMP OR OTHER MEANS OF MAINTAINING A CONTINUOUS WATER SUPPLY SHALL BE CONNECTED TO THE PIPING AND SET SO AS TO MAINTAIN 125 PSI FOR TWO (2) HOURS WITHOUT INTERRUPTION. CONTRACTOR SHALL MAKE ANY NECESSARY CORRECTIONS AND RETEST THE SYSTEM UNTIL THE OWNER'S REPRESENTATIVE IS SATISFIED THAT THE SYSTEM IS REASONABLY SOUND.
29. ALL WIRING FOR CONNECTION OF THE VALVES TO THE CONTROLLER SHALL FOLLOW MANUFACTURERS SPECIFICATIONS. IF REQUIRED, ALL WIRING FOR A TWO WIRE PATH SHALL BE WITH RED/BLUE TWISTED PAIR 14 AWG. ELECTRIC CONTROL LINES FROM THE DECODER TO THE SOLENOID VALVES SHALL BE TWISTED PAIR 18 AWG. ALL DECODERS SHALL BE GROUNDED EVERY 1,000 L.F. OR EVERY 10 DEVICES. ALL WIRE SHALL BE FURNISHED IN MINIMUM 2,500' REELS AND SPLICING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE DONE IN ACCORDANCE WITH EXISTING CODES. SPLICING SHALL BE IN VALVE BOXES OR CONTROLLERS ONLY. IRRIGATION SYSTEM CONTROL SHALL BE TWO WIRE PATH. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S REQUIREMENTS FOR THIS INSTALLATION. TWO WIRE SYSTEM SHALL HAVE 2-WAY COMMUNICATIONS FIELD PROGRAMMABILITY, STATION SPECIFICATIONS AND INTEGRATED SURGE PROTECTION.
30. ALL CONTROL WIRE SHALL BE INSTALLED IN A 1 $\frac{1}{2}$" ELECTRICAL CONDUIT.
31. CONTRACTOR TO MINIMIZE IRRIGATION OVERTHROW TO IMPERVIOUS AND NATURAL AREAS THROUGH FIELD ADJUSTMENTS TO INDIVIDUAL HEADS.
32. ALL UNIMPROVED AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR.
33. INSTALL ALL BACKFLOW PREVENTION DEVICES AND ALL PIPING BETWEEN THE POINT OF CONNECTION AND THE BACKFLOW PREVENTER AS PER LOCAL CODES. FINAL LOCATION SHALL BE DETERMINED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.



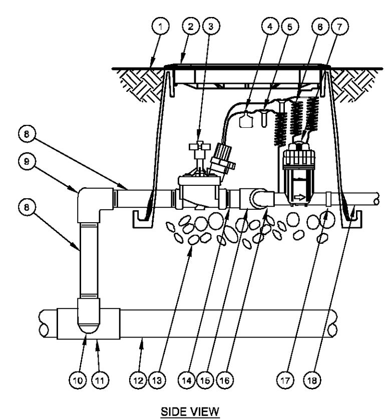
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. PVC SCH 40 TEE
4. PVC LATERAL PIPE
5. FILTERED DRAIN VALVE:
6. BRICK (1 OF 2)
7. 6-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

Drain Valve
SECTION — NTS

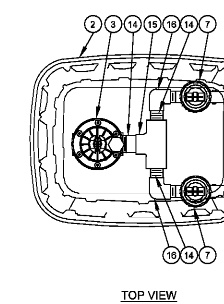


1. TURF GRASS
2. SUBTERRANEAN EMITTER BOX
3. FINISH GRADE
4. ½" AIR RELIEF VALVE: TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
5. ½" X ¾" PVC REDUCER BUSHING
6. BARB X FEMALE THREAD CONNECTOR
7. ½" BLANK DRIPLINE TUBING
8. BARB X MALE THREAD CONNECTOR
9. PVC TEE CONNECTED TO PVC HEADER PIPE
10. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL
11. BRICK (1 OF 2)

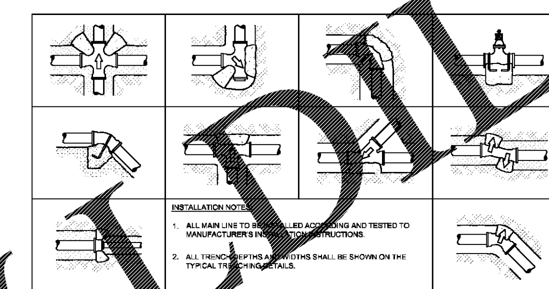
Air Relief Valve in Dripline
SECTION



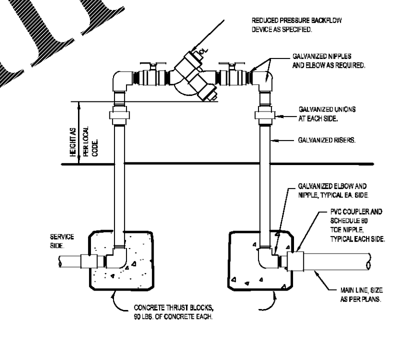
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER
3. REMOTE CONTROL VALVE
4. ID TAG
5. WATERPROOF CONNECTION
6. 30-INCH LINEAR LENGTH OF WIRE, COILED
7. PRESSURE REGULATING QUICK CHECK BASKET FILTER
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 ELL
10. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
11. PVC SCH 40 TEE OR ELL
12. MAINLINE PIPE
13. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
14. PVC SCH 80 NIPPLE, CLOSE
15. PVC SCH 40 TEE
16. PVC SCH 40 ELL
17. PVC SCH 40 FEMALE ADAPTOR
18. LATERAL PIPE



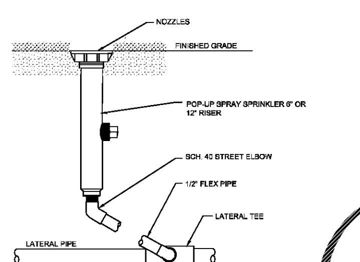
Drip Zone Valve Kit



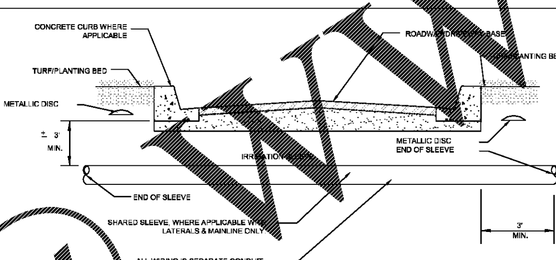
Typical Thrust Block
SECTION — NTS



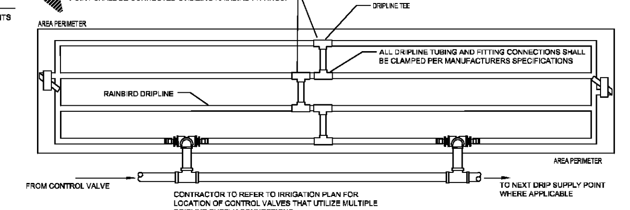
Typical Backflow Device
SECTION — NTS



Typical Spray/Rotory Head
SECTION — NTS

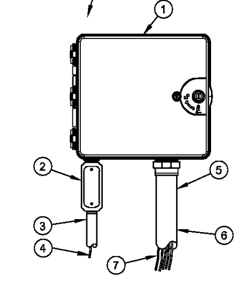


Typical Sleeving
SECTION — NTS



NOTE:
1. DRIP TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 16 INCHES.
2. DRIP TUBING TO BE INSTALLED IN A GRID PATTERN. DRIP TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.

Typical Dripline
SECTION — NTS



1. IRRIGATION CONTROLLER: 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 STATION WIRES
6. MASTER VALVE AND REMOTE CONTROL VALVE WIRES
7. FLOW SENSOR WIRE (PE 39, 89 OR 54) TO FLOW SENSOR

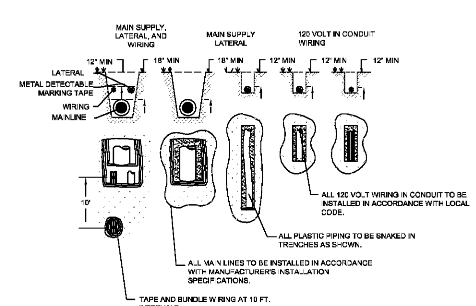
NOTES:
1. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
2. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

Typical Controller
SECTION — NTS

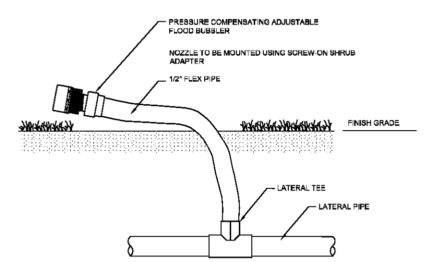
LATERAL PIPE SIZING REQUIREMENTS

FLOW RANGE	MINIMUM PIPE SIZE
1 TO 10 GPM	3/4"
11 TO 20 GPM	1"
21 TO 30 GPM	1-1/4"
31 TO 40 GPM	1-1/2"
41 TO 60 GPM	2"
51 TO 90 GPM	2-1/2"
91 TO 100 GPM	3"

PIPE SIZES ILLUSTRATED IN THE ABOVE CHART ARE MINIMUM ACCEPTABLE SIZES. CONTRACTOR SHALL FIELD SIZE ALL LATERAL PIPING TO KEEP ALL FRICTION LOSS VELOCITIES BELOW 5.0 FPS.



Typical Trenching
SECTION — NTS



Typical Bubbler
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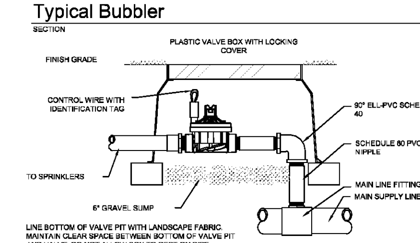
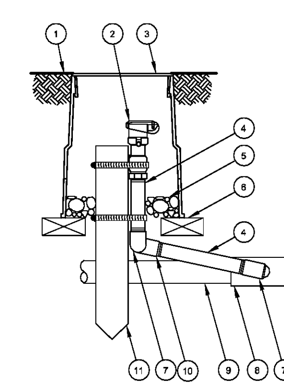


Typical Control Valve
SECTION — NTS



1. FINISH GRADE/TOP OF MULCH
2. QUICK-COUPLING VALVE:
3. VALVE BOX WITH COVER:
4. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
5. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
6. BRICK (1 OF 2)
7. PVC SCH 40 STREET ELL
8. PVC SCH 40 TEE OR ELL
9. PVC MAINLINE PIPE
10. PVC SCH 40 ELL
11. 2" x 2" REDWOOD STAKE WITH STAINLESS STEEL GEAR CLAMPS OR EQUIVALENT SUPPORT SYSTEM

NOTE:

FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

Typical Quick Coupler
SECTION — NTS

No.	REVISIONS	DATE	BY

Kimley»Horn

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REGISTERED LANDSCAPE ARCHITECT CHRISTOPHER D. CIANFAGLIONE LA6667207 STATE OF FLORIDA

DATE: 6/28/2018

KHA PROJECT	148299000
DATE	JUNE 2018
SCALE	AS SHOWN
DESIGNED BY	KHA
DRAWN BY	KHA
CHECKED BY	CDC

IRRIGATION NOTES AND DETAILS

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