

GENERAL NOTES

1. The contractor shall become familiar with the project site prior to bidding the work. The contractor shall field verify all existing conditions and location of proposed improvements prior to initiating any construction.
2. Location of all utilities and base information is approximate. contractor shall verify all underground utilities and obstructions prior to initiating work. Contractor shall be responsible for repair or replacement of any damage to existing elements above or below ground to its original condition and to the satisfaction of the owner's representative.
3. The owner's representative shall have the right, at any stage of the operations, to reject any and all work and material which, in his opinion, do not meet with the requirements of these plans and specifications.
4. Contractor shall verify all grades, dimensions, and existing conditions on the job site prior to start of construction and/or fabrication. Contractor shall notify owner's representative of any variations from the dimensions and conditions shown on these drawings.
5. Report any discrepancies between the construction drawings and field conditions to the owner's representative.
6. The contractor shall provide all necessary safety measures during construction operations to protect the public according to all applicable codes and recognized local practices.
7. The contractor shall coordinate access and staging areas with the owner's representative. The contractor shall maintain all existing erosion and sedimentation control measures during construction. Provide additional measures as necessary to minimize adverse impacts in accordance with all applicable federal, state, and local codes.
8. No substitutions shall be made without written consent of the owner's representative. During the course of this work, excess waste material shall be removed daily from the site.
9. The contractor shall be responsible for scheduling and coordination of work with other trades and the owner's representative.
10. The contractor shall notify all necessary utility companies 48 hrs minimum prior to digging for field verification of all underground utilities. Utility locating shall be scheduled by the contractor with owner's representative present.
11. Utilities to be located by flagging only; painting of hardscape areas is prohibited. Contractor shall be responsible for notifying utility locating companies of this requirement.
12. All existing site roads, parking lots, curbs, utilities, sewers, and other elements to remain shall be fully protected from any damage unless otherwise noted.
13. Not all items shown on this sheet appear in the construction documents. Contractor is responsible for obtaining ALL permits related to construction including, but not limited to: Building, Landscape, Irrigation and Right-Of-Way utilization permits.

DEMOLITION NOTES

1. All base information provided by owner. contractor shall field verify all information prior to beginning work.
2. Contractor shall notify all pertinent utility companies 48 hours minimum prior to digging for verification of all underground utilities. Plans are prepared according to the best information available at the time of preparing these documents.
3. The contractor shall become completely familiar with existing site conditions prior to beginning installation. All existing site improvements, paving, landscape, lighting, and other site elements to remain shall be protected from damage unless otherwise noted.
4. The contractor shall report any discrepancies between the construction drawings and actual field conditions to the owner's representative immediately.
5. The contractor shall coordinate all work with related contractors and with the general construction of the project in order to not impede the progress of work of others or the contractor's own work.
6. Contractor shall coordinate access and staging area with the owner.
7. Report and document all existing damage of existing site features and elements to the owner prior to beginning work. Contractor shall be responsible for all subsequent damage.
8. Contractor shall protect, by whatever means necessary, the existing site features and elements to remain. All damaged items shall be replaced or repaired at no additional cost to the owner. Notify owner immediately if any damages occur.
9. Contractor shall provide all necessary safety measures that may be required during the construction process to protect the public and owner at all times as per all applicable codes and recognized local practices.
10. Contractor shall refer to the hardscape, fencing, landscape and irrigation plans and details for complete instructions.
11. Coordinate all irrigation demolition with the irrigation contractor and irrigation plans/details typical.
12. Contractor shall protect all existing plant materials indicated on the plans to remain. All plant material indicated to remain damaged by the contractor shall be replaced by the contractor at no additional cost to the owner with same size, quality, and type of plant material.
13. Contractor shall be responsible for all erosion control and protection measures as may be required by locally approved means. contractor shall follow all local governing codes and requirements.
14. Contractor shall clean the work areas at the end of each working day. Construction rubbish and debris shall be collected and deposited off-site daily. All materials and equipment stored on-site shall be kept in an organized manner daily.
15. Contractor shall layout all demolition lines and verify layout with the owner's representative prior to beginning any construction work.
16. The contractor shall comply with FL 77-153 regarding notification of existing gas & oil pipeline company owners and shall notify Sunshine State One Call of Florida (SSOCOF) at 1-800-432-4770 prior to excavating. Evidence of such notice shall be furnished to the owner prior to excavation.

LANDSCAPE NOTES

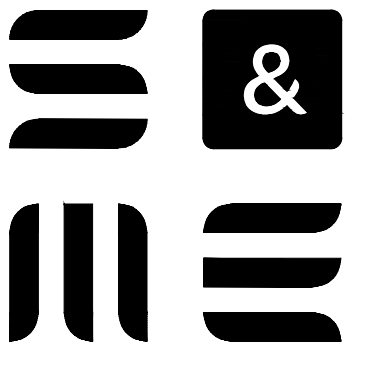
1. The contractor shall review plans to become thoroughly familiar with surface and subsurface utilities.
2. The plant quantities shown on the landscape contract documents are for the convenience of the contractor. The contractor is responsible for verifying all quantities and reporting any discrepancies to the landscape architect for clarification prior to contract award and commencement of work.
3. All installation of plant material shall comply with applicable jurisdictional codes. The contractor is responsible for obtaining all permits associated with this work.
4. Prior to planting installation, the contractor shall confirm the availability of all the specified plant materials. Submit dated photographs of all tree material and specimen material as to the owner's representative for review.
5. All plant material sizes specified are minimum sizes. container size shall be increased if necessary to provide overall plant size specified.
6. If plant material does not comply with the requirements as specified herein, the owner's representative reserves the right to reject such plants and require the contractor to replace rejected work and continue specified maintenance until re-inspected and found to be acceptable.
7. The contractor shall provide an approved planting soil mixture for all plant material. see specifications for requirements.
8. The contractor shall be responsible for stability and plumb condition of all trees and shrubs, and shall be legally liable for any damage caused by instability of any plant materials. staking of trees or shrubs shall be done in accordance with plans and specifications.
9. The contractor shall insure adequate vertical drainage in all plant beds and planters. If inadequate vertical drainage is encountered, the contractor shall submit recommendations for providing adequate drainage to the owner's representative.
10. Peg sod on slopes greater than 3:1.
11. Contractor shall protect existing vegetation to remain as shown on drawings or by means approved by the owner's representative.
12. Contractor to clean, prune, and shape edges of existing vegetation as directed by owner's representative. Create smooth bed lines around existing vegetation.
13. The contractor shall bear all costs of testing of soils, amendments, etc. associated with the work. See specifications for additional testing requirements.
14. Contractor shall field-adjust location of plant material prior to initiating installation for the review and approval of the owner's representative.
15. All plant material shall be in full and strict accordance with Florida No. 1 grade, according to the "Grades and Standards for Nursery Plants" published by the Florida Department of Agriculture and Consumer Services.
16. All planting beds shall be top-dressed with a 3" layer of mulch as specified.
17. Contractor shall coordinate all planting work with irrigation work. contractor shall be responsible for all hand watering as required to supplement irrigation watering and rainfall.
18. Contractor shall be responsible for hand watering in all planting areas, regardless of the status of existing or proposed irrigation.
19. Contractor shall re-grade all areas disturbed by plant removal, relocation, and/or installation work.
20. Contractor shall replace (by equal size and quality) any and all existing plant material disturbed or damaged by plant removal, relocation, and/or installation work.
21. Maintenance shall begin after each plant has been installed and shall continue until the project has been deemed substantially complete. maintenance includes watering, pruning, weeding, mulching, replacements of sick or dead plants, and any other care necessary for the proper growth of the plant material.
22. Upon completion of all landscaping, an inspection for substantial completion of the work shall be held. The contractor shall notify the owner's representative for scheduling the inspection at least seven (7) days prior to the anticipated inspection date.
23. Contractor shall submit written guarantee of survivability of all plant material for a period of one year from date of substantial completion.
24. Contractor must review and accept, approve all graded areas prior to the commencement of planting.
25. Trees adjacent to buildings should be planted at least the diameter of the tree canopy or a min. of 10'-0" (whichever is greater) away from the building wall.
26. Contractor is responsible for the repair of any existing lawn areas or planting areas disturbed during the construction process.

TREE PROTECTION AND PRESERVATION NOTES

1. Protect designated existing trees scheduled to remain against:
 - Unnecessary cutting, breaking, or skinning of roots
 - Skinning and bruising of bark
 - Smothering of trees by stockpiling construction or excavation materials within protection barrier
2. Protection barriers (tree barricades) shall be plainly visible and shall create a continuous boundary around trees or vegetation clusters in order to prevent encroachment within the barricade.
3. For all trees to be preserved, see Tree Protection and Barricade Elevation detail.
4. No grade changes shall be made within the protective barrier zones without prior approval.
5. The method of protection is to make certain that 50% of the area under the canopy dripline remains undisturbed (no grade change or root cut) and there shall be no disturbance to the root plate.
6. General contractor shall be responsible for the replacement and mitigation costs of trees damaged beyond repair that have been identified as protected and preserved. If trees are harmed through lack of protection or through negligence on the part of the contractor, the contractor shall bear the burden of the cost of repair or replacement.
7. Root pruning shall be done by or under supervision of an ISA certified arborist, and meet or exceed ANSI A300 or approved tree care industry standards. A certified arborist must be onsite during the entirety of root pruning.
8. No root pruning shall be done within a distance of 3x the diameter the tree unless authorized by the arborist.
9. No more than 30% of the trees roots may be pruned.
10. A pruning trench shall be cleared in a way that exposes the roots while leaving them intact. Use hand tools or an air knife. Limits of trench to be determined by the arborist.
11. All roots outside of the protective barricade to be removed during the development shall be severed clean using a sharp tool to provide a clean cut. Roots shall be left with clean smooth ends and no ragged edges and a two-inch layer of mulch shall be applied over the surface of exposed roots during development within one hour of damage or exposure.
12. After pruning, tree roots shall be covered and kept moist. Fill pruning trench with topsoil and water daily for a period determined by the arborist.

HARDSCAPE NOTES

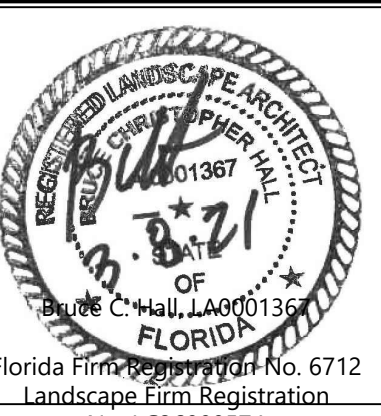
1. All dimensions are taken from center of wall, face of curb and/or centerline of roads at 90 degree angles, unless otherwise noted on plan. The dimensions are shown for approximate line and all radii and curves are to have continuous and smooth transitions without abrupt changes or bends.
2. All forms and alignment of paving, pilasters and walls shall be inspected and approved by the owner's representative prior to pouring (give a min. of 48 hrs. notice).
3. For site grading and drainage, see civil engineer's plans
4. Contractor shall verify location of all surface and subsurface utilities prior to construction.
5. These notes shall be used in conjunction with the plans and any discrepancies shall be brought to the attention of the owner's representative.
6. Contractor must check all dimensions, framing conditions and site conditions before starting work. Owner's representative shall be notified immediately of any discrepancies or possible deficiencies.
7. Do not willfully install or construct items as shown on the drawings whic it is obvious in the field that unknown obstructions, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the owner's representative. In the event this notification is not performed, the contractor shall assume full responsibility for all revisions necessary.
8. Conditions not specifically shown shall be constructed similar to the details for the respective materials.
9. The drawings and specifications represent the finished structure. All bracing, temporary supports, shoring, etc. is the sole responsibility of the contractor. Observation visits to the job site by the owner's representative do no include inspection of construction methods and for safety conditions at the work site. These visits shall not be construed as continuous and detailed inspections.
10. Contractor shall refer to soils engineer's report for percentages of compaction required for all concrete flatwork and footings.
11. All construction and workmanship shall conform to the current uniform and Florida Building Code.
12. All concrete walks shall not exceed a slope of 1:20, and cross slopes on all concrete sidewalks shall not exceed 2%. If the sidewalk does exceed this slope, ADA compliant handicap ramps will be required.
13. All handicap ramps shall not exceed a 1:12 slope and shall meet all ADA requirements for landings and handrails.
14. Site furnishings shall be installed per manufacturer's recommendations, or as recommended in the drawings. Details provided in the drawings for anchoring and furnishings are provided for intent only. It shall be the contractor's responsibility to coordinate with the manufacturer & submit anchoring details for approval by owner's representative prior to installation.
15. The contractor shall stake and layout all improvements using the geometric data provided. It is the contractor's responsibility to completely stake and check the alignment both vertical and horizontal, and to insure adequate positioning prior to the installation of any improvement. The contractor shall notify the owner immediately in writing if any discrepancies are found and not proceed with the work until directed.
16. Refer to civil engineer's drawings for roadway pavement grading, curb information, all site drainage/grading information and handicap ramp detailing
17. Unless otherwise expressly approved in writing by the owner all control joints shall be hand tooled. Saw cutting will not be acceptable.



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**FIRE STATION
 No. 109 PARK**
 LAKE COUNTY, FLORIDA

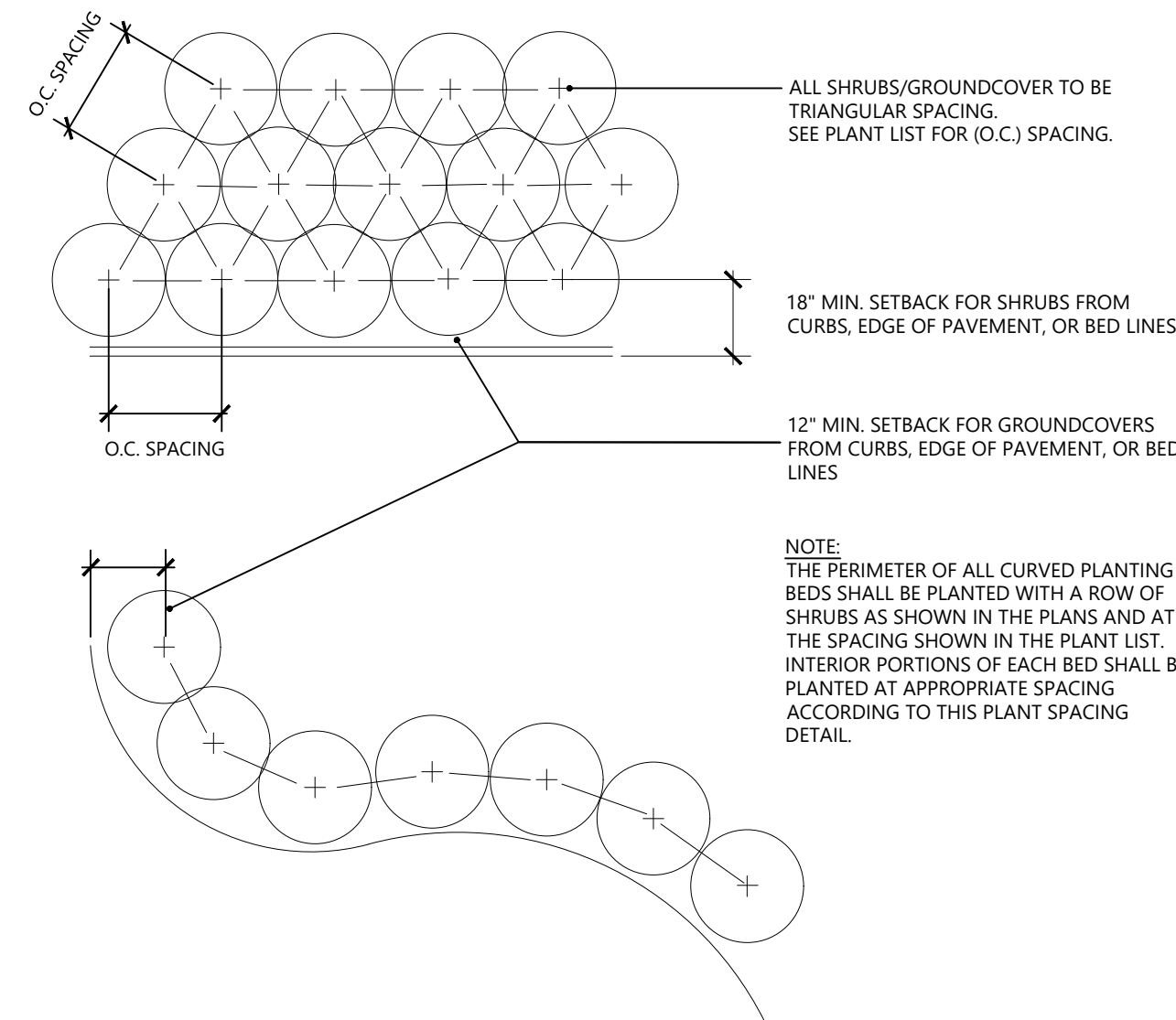


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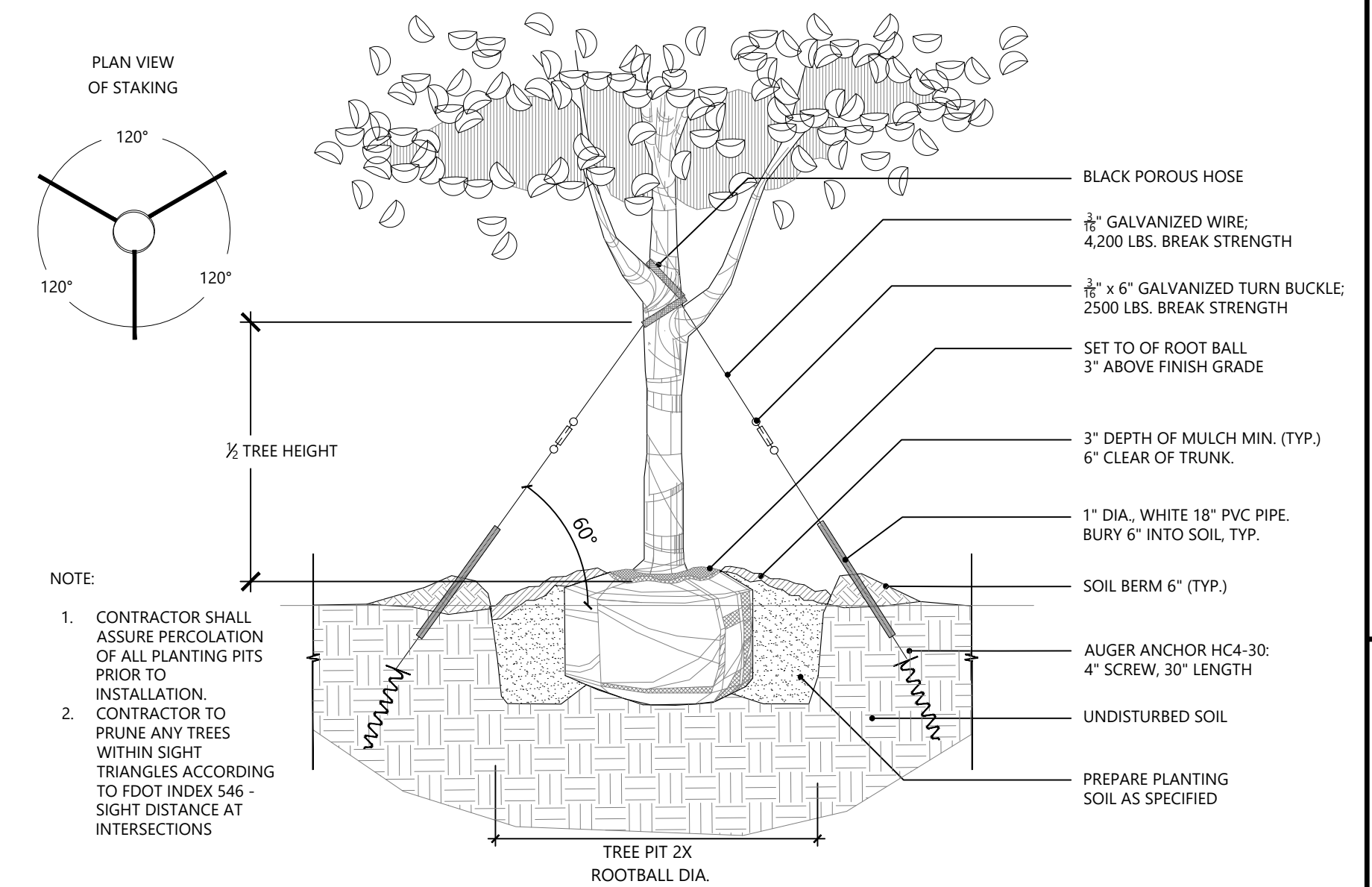
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DRAWING NUMBER
L0.1

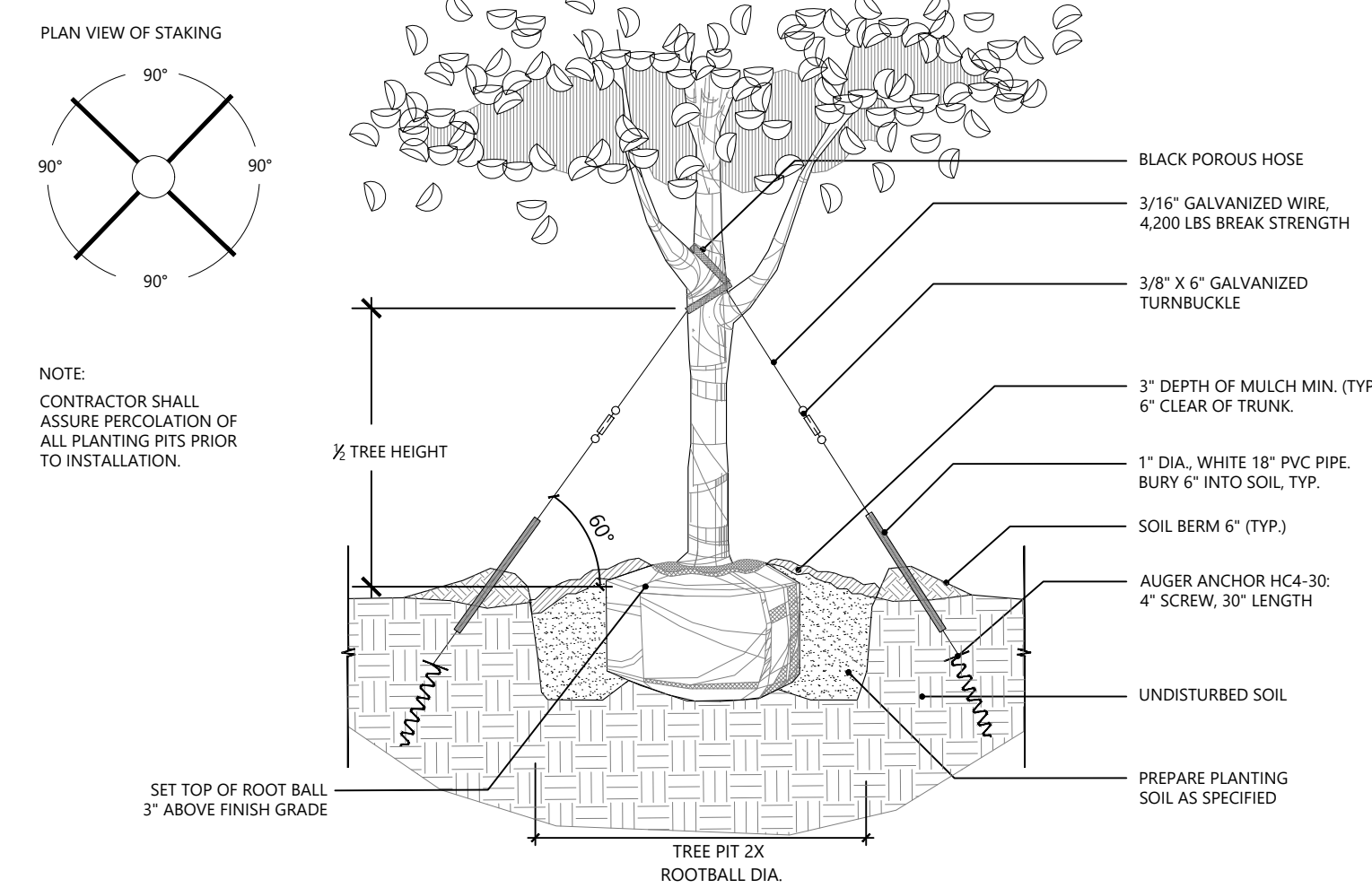
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LANDSCAPE NOTES



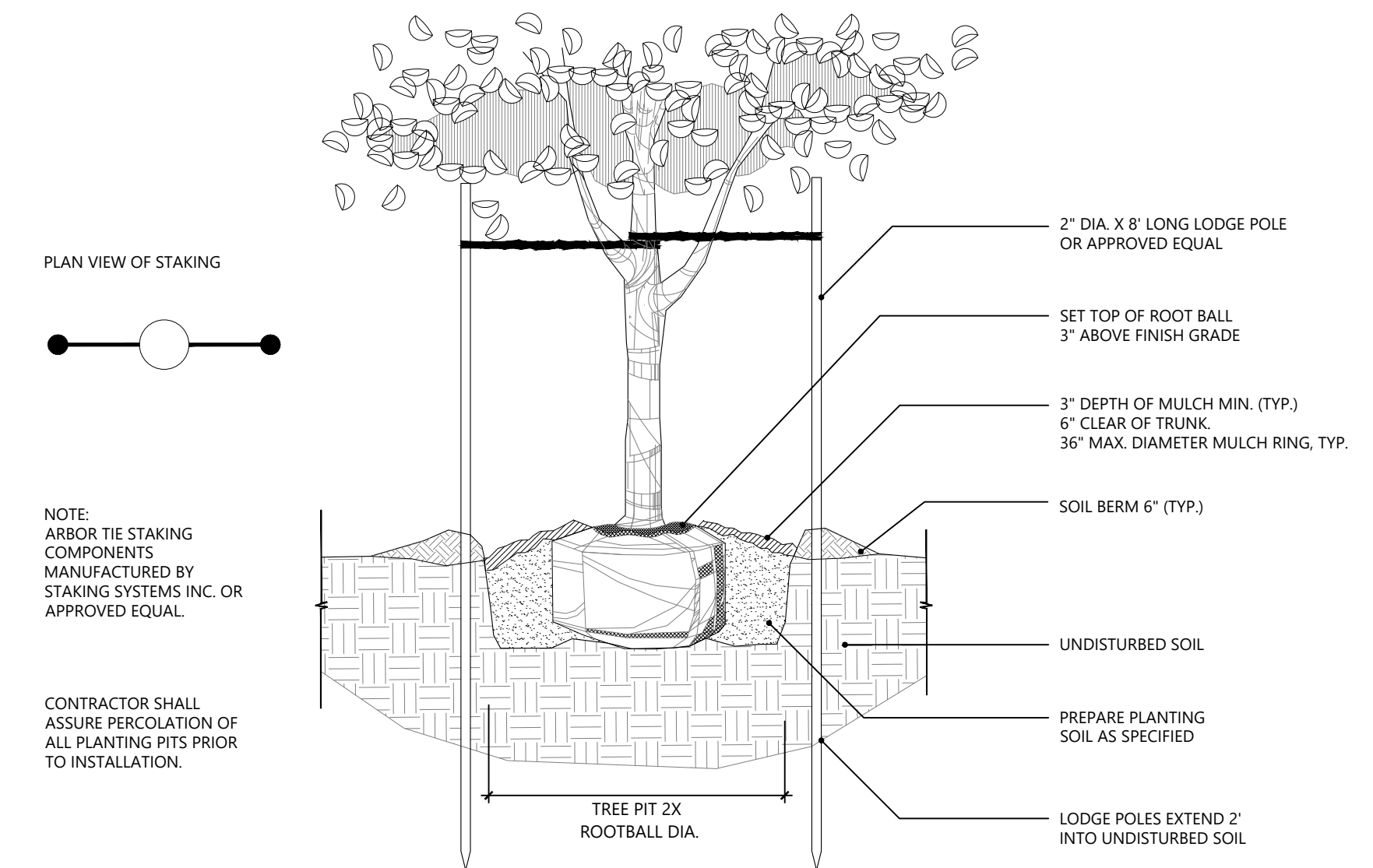
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SCALE: NTS



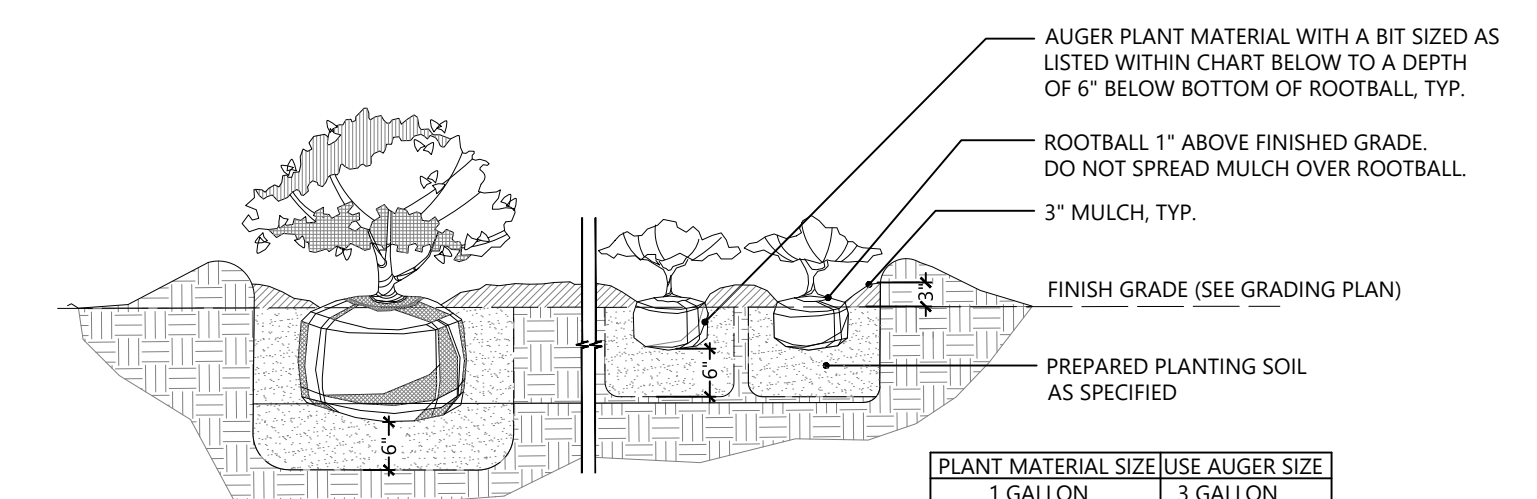
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SCALE: NTS



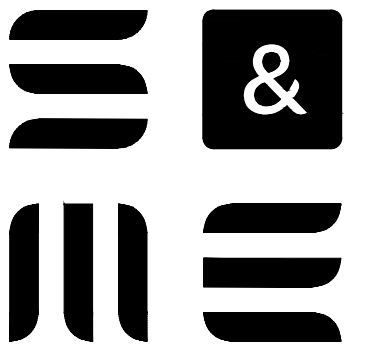
5 TREE PLANTING MORE THAN 7" CAL.
SCALE: NTS



2 TREE PLANTING LESS THAN 3" CAL.
SCALE: NTS



3 SHRUB AND GROUNDCOVER PLANTING
SCALE: NTS



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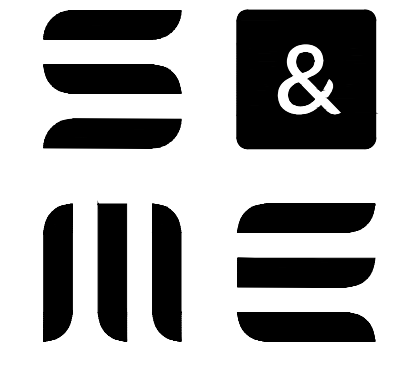
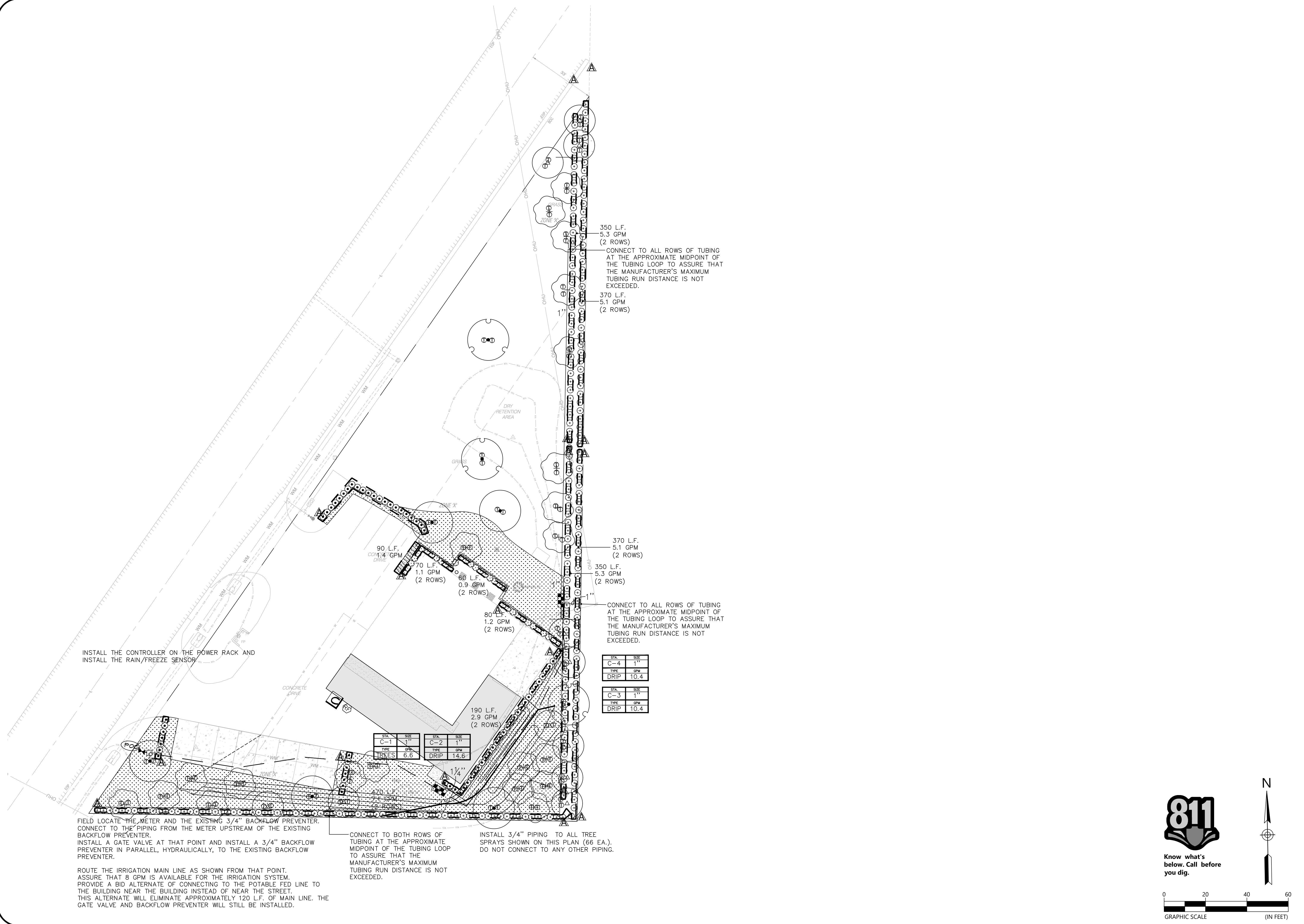


Florida Firm Registration No. 6712
Landscape Firm Registration
No. LC26000574

NO.	DATE	DESCRIPTION	BY	CHK	APV

PROJECT NUMBER
5271-20-083

DRAWING NUMBER
L2.0
DRAWING NAME
LANDSCAPE
SCHEDULE &
DETAILS



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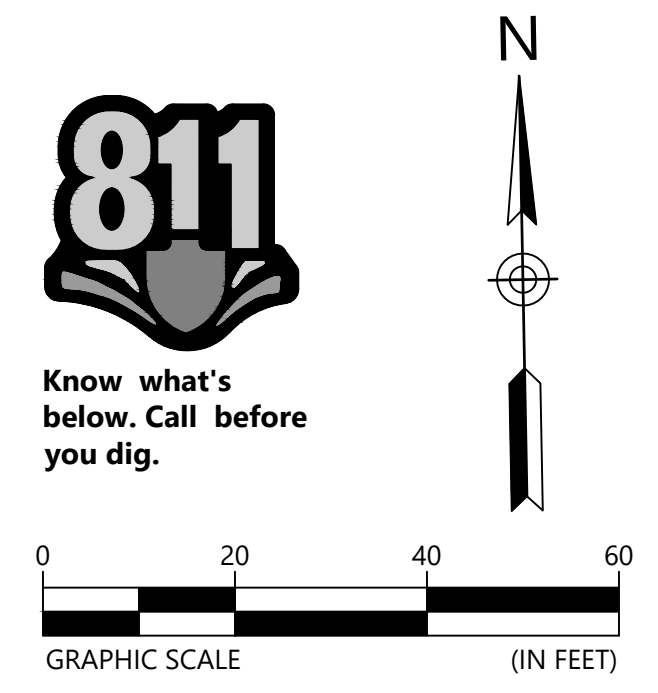


NO.	DATE	DESCRIPTION	BY	CHK	APV

PROJECT NUMBER
5271-20-083

DRAWING NUMBER
IR1.0

DRAWING NAME
IRRIGATION PLAN



SPECIFICATIONS - IRRIGATION, SECTION 328400

PART 1 - GENERAL

- 1.1 DESCRIPTION
 - A. FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND TRANSPORTATION, UNLESS OTHERWISE SPECIFIED, NECESSARY TO PROVIDE AN AUTOMATIC IRRIGATION SYSTEM FOR LANDSCAPE PLANT MATERIALS AND TURF AND MULCH AREAS.
- 1.2 APPLICABLE STANDARDS
 - A. AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS S376.1, "DESIGN, INSTALLATION AND PERFORMANCE OF UNDERGROUND, THERMOPLASTIC IRRIGATION PIPELINES."
 - B. ASTM D2774, "UNDERGROUND INSTALLATION OF THERMOPLASTIC PRESSURE PIPING."
 - C. ASTM D1785, POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE, SCHEDULES 40, 80, AND 120.
 - D. ASTM D2241 POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE (SDR-PR).
- 1.3 SUBSTITUTIONS
 - A. WHEREVER BRAND NAMES ARE USED IN THESE SPECIFICATIONS, USE ONLY THE BRAND SPECIFIED. MAKE NO SUBSTITUTIONS AS A PART OF THIS BID PACKAGE.

PART 2 - MATERIALS

- 2.1 PIPE
 - A. FURNISH ALL UNDERGROUND PIPING AS PVC EXCEPT FOR THE FLEXIBLE POLYETHYLENE (POLY PIPE) PIPING THAT IS TO BE USED BETWEEN THE LATERALS AND SPRINKLER HEADS. ALL PVC PIPE SHALL BE CL 200 (SDR 21) PVC OR BETTER. INSTALL ALL PIPE AS PURPLE PIPE TO DENOTE REUSE WATER.
 - B. SIZE EACH SLEEVE AT LEAST TWICE (2X) THE SIZE OF THE PIPE BEING ROUTED THROUGH IT. INSTALL EACH CONTROL WIRE SLEEVE OF SUFFICIENT SIZE FOR THE REQUIRED NUMBER OF WIRES BEING ROUTED THROUGH IT UNDER THE AREA SPECIFIED. CONSULT WITH THE OWNER OR OWNER'S REPRESENTATIVE FOR THE LOCATION, DEPTH, NUMBER AND SIZE OF ANY AVAILABLE EXISTING SLEEVES.
 - C. INSTALL ALL ABOVE GROUND PIPE AS D.I.P. OR GALVANIZED PIPE.
 - D. INSTALL ALL MAIN LINE AS CL 200 GASKETED PVC PIPE.
 - E. INSTALL ALL ZONE PIPING AS CL 200 OR BETTER SOLVENT WELD PVC.
- 2.2 PIPE FITTINGS
 - A. FOR ALL PVC PIPE, USE SCHEDULE 40, SOLVENT WELD FITTINGS, MANUFACTURED FROM PVC 12454-B COMPOUND AND TESTED IN ACCORDANCE WITH ASTM D2466, EXCEPT FOR THREADED FITTINGS. FOR THREADED APPLICATIONS, USE SCHEDULE 80 FITTINGS MANUFACTURED FROM PVC 12454-B COMPOUND AND TESTED IN ACCORDANCE WITH ASTM D2467.
 - B. CONNECT ALL SWING JOINTS OR "POLY PIPE" SWING ASSEMBLIES TO THE IRRIGATION PIPELINE WITH A SCHEDULE 80 TEE, AS DESCRIBED ABOVE.
 - C. DO NOT USE MALE ADAPTERS FOR ANY APPLICATIONS. INSTEAD, USE ONE HALF OF A SCHEDULE 80 NIPPLE GLUED INTO A SCHEDULE 40 COUPLER.
 - D. CONNECT ANY PVC PIPING TO GALVANIZED PIPING USING A TOE NIPPLE.

- 2.3 SOLVENT CEMENT AND PRIMER
 - A. USE A MEDIUM OR HEAVY BODY GRAY SOLVENT CEMENT MANUFACTURED IN ACCORDANCE WITH ASTM D2564 AND PRIMER MANUFACTURED IN ACCORDANCE WITH ASTM F656.
- 2.4 SPRINKLERS
 - A. INSTALL RAIN BIRD 1804-SAM SERIES SPRINKLERS WITH APPROPRIATE NOZZLES FOR ALL SUPPLEMENTAL TREE IRRIGATION APPLICATIONS.

2.5 ELECTRIC VALVES
USE ELECTRIC VALVES PER THE LEGEND FOR ALL APPLICATIONS.

- 2.6 CONTROLLER
 - A. USE A CONTROLLER WITH A MATCHING BRAND RAIN/FREEZE SENSOR FOR THIS SYSTEM PER LEGEND

- 2.7 WIRE
 - A. USE #14/1 U.F. WIRE APPROVED FOR DIRECT BURIAL UNDERGROUND FOR ALL 24 VAC APPLICATIONS.
 - B. USE RED #14 AWG WIRE FOR ALL VALVE POWER WIRES OF A STANDARD WIRED SYSTEM.
 - C. USE WHITE #14 AWG WIRE FOR VALVE COMMON WIRES OF A STANDARD WIRED SYSTEM.
 - D. USE 5/8" OR LARGER COPPER GROUND RODS, COPPER GROUNDING PLATES, CADWELD "ONE SHOT" CONNECTORS AND #6 OR LARGER BARE COPPER WIRE FOR ALL GROUNDING APPLICATIONS FOR THIS SYSTEM.
 - E. INSTALL GROUNDING AT THE CONTROLLER.

- 2.8 VALVE BOXES
 - A. USE RAIN BIRD VALVE BOXES FOR ALL APPLICATIONS.

2.9 POINT OF CONNECTION
CONNECT TO ASOURCE AT THE LOCATION SHOWN ON THE PLANS AS THE POC FOR THIS SYSTEM. ASSURE THAT SUFFICIENT GALLONAGE AS NOTED ON THE PLANS IS AVAILABLE FOR THE IRRIGATION SYSTEM, INCLUDING THIS AND ANY OTHER PARTS, WITH ALL PARTS OF THE SYSTEM CAPABLE OF WATERING WITHIN THE REGULATED TIME.

- 2.10 SPLICING MATERIALS
 - A. USE 3M DBY SPLICE KITS FOR ALL UNDERGROUND WIRE SPLICING APPLICATIONS.

- 2.11 MATERIAL QUANTITIES
 - A. VERIFY ALL MATERIAL QUANTITIES BEFORE BIDDING.
- 2.12 DRIP TUBING
 - A. INSTALL RAIN BIRD XFSP (NOT XFD) .9 GPH, 12" O.C. DRIP TUBING AND RAIN BIRD FITTINGS FOR ALL DRIP APPLICATIONS.
 - B. INSTALL RAIN BIRD OPERINDS FOR ALL DRIP INDICATOR APPLICATIONS.
 - C. INSTALL RAIN BIRD ARV050 AIR RELIEF VALVES FOR ALL DRIP AIR RELIEF VALVE APPLICATIONS.
 - D. INSTALL A 1 GALLON AUTOMATIC LINE FLUSHING VALVE AT EACH AIR RELIEF VALVE LOCATION.
 - E. INSTALL ALL TUBING IN ACCORDANCE WITH THE MANUFACTURER'S APPLICATION RECOMMENDATIONS AND MANUALS, AND IN ACCORDANCE WITH THE DRAWINGS AND DETAILS FOR THIS SYSTEM.
- 2.13 TESTING MATERIALS
 - A. PROVIDE ALL MATERIALS NECESSARY FOR THE TESTING OF THE SYSTEM, INCLUDING PUMPS, GENERATORS, HOSES, PIPING, FITTINGS, ETC.
 - B. ASSURE THAT ALL ITEMS FOR TESTING ARE IN A SAFE AND ACCEPTABLE OPERATING CONDITION.

PART 3 - EXECUTION

- 3.1 GENERAL
 - A. INSTALL PVC PIPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. REVIEW CONSTRUCTION PLANS WITH THE OWNER OR OWNER'S REPRESENTATIVE BEFORE ANY WORK BEGINS. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT/OWNER PRIOR TO INSTALLATION IF THERE IS ANY DOUBT AS TO HEAD LINE OR ZONE PLACEMENT.
 - B. INSPECT THE CONSTRUCTION SITE BEFORE ANY WORK BEGINS AND FLAG LOCATIONS OF MAINLINE PIPE, SLEEVES, HEADS AND VALVES FOR REVIEW BY THE LANDSCAPE ARCHITECT/OWNER. FLAGS SHALL BE CLEARLY MARKED OR COLORED TO DESIGNATE THE TYPE OF EQUIPMENT TO BE INSTALLED AT THAT POINT. INSTALLATION SHALL NOT COMMENCE UNTIL THE STAKING/FLAGGING HAS BEEN APPROVED.
 - C. COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO PROVIDE FOR CORRECT APPLICATION OF WATER TO THE PLANT MATERIAL.
- 3.2 PIPE TRENCH CONSTRUCTION
 - A. PROVIDE FOR A MINIMUM DEPTH OF COVER OF 18" FOR ALL MAINLINE PIPE AND 12" OF COVER FOR ALL ZONE PIPE AS MEASURED FROM FINISHED GRADE.
 - B. PROVIDE THE MINIMUM DEPTH OF COVER, AS SPECIFIED ABOVE, OVER THE TOP OF THE PIPE BEFORE THE TRENCH IS WHEEL-LOADED.
- 3.3 BACK FILL
 - A. PROVIDE INITIAL BACK FILL MATERIAL THAT IS FINE-GRAINED MATERIAL FREE FROM COMPACTED EARTH GREATER THAN TWO INCHES IN DIAMETER, ROCKS, OR STONES.
 - B. TAMP THE BACK FILL IN LAYERS NOT TO EXCEED SIX INCHES. LIFT AND COMPACT FIRMLY AROUND THE PIPE AND UP TO AT LEAST SIX INCHES ABOVE THE TOP OF THE PIPE. SUFFICIENTLY MOISTEN THE BACK FILL TO PERMIT THOROUGH COMPACTION UNDER AND ON EACH SIDE OF THE PIPE TO PROVIDE SUPPORT FREE FROM VOIDS. AVOID DEFORMING, DISPLACING, OR DAMAGING PIPE DURING THIS PHASE OF THE OPERATION. ASSURE THAT WHEN FINISHED, THE SOIL COMPACTION EQUALS THE ORIGINAL CONDITION.
- 3.4 FITTING AND PIPE CONNECTIONS
 - A. SQUARE CUT, CLEAN AND PRIME ALL JOINTS BEFORE CEMENTING.
 - B. FULLY ENGAGE ALL JOINTS WHILE CEMENTING.
 - C. PVC FITTINGS: MAKE ALL SOLVENT WELD JOINTS IN ACCORDANCE WITH ASTM D2855. PRIME ALL FITTINGS WITH PURPLE PRIMER BEFORE MAKING SOLVENT WELD CONNECTIONS. ALLOW SOLVENT WELDED JOINTS AT LEAST ONE (1) HOUR TO SET UP BEFORE MOVING OR HANDLING. DO NOT PERMIT WATER IN THE PIPE FOR AT LEAST TWENTY-FOUR HOURS AFTER MAKING A SOLVENT WELD ON THAT PIPE UNLESS RECOMMENDED OTHERWISE BY THE SOLVENT CEMENT MANUFACTURER. SEAL ALL THREADED PVC FITTINGS WITH LIQUID TEFLON EXCEPT SPRINKLER HEADS, ELECTRIC VALVE CONNECTIONS AND SWING JOINTS. INSTALL ALL OF THESE EXCEPTIONS USING ONE INCH TEFLON TAPE.
- 3.5 FLUSHING PIPELINES
 - A. FLUSH ALL PIPELINES BEFORE SPRINKLERS ARE INSTALLED.
 - B. MAINTAIN A MINIMUM PIPE VELOCITY OF THREE FEET PER SECOND AND FLUSH FOR A MINIMUM TIME OF: T = 2L/3 WHERE T = TIME IN SECONDS & L = PIPE LENGTH IN FEET FROM INLET POINT TO MOST DISTANT POINT IN PIPELINE.
- 3.6 INSTALLING ELECTRIC VALVE CONTROL WIRING
 - A. INSTALL WIRING IN THE SAME TRENCH AND ALONG THE SAME ROUTE AS, AND UNDERNEATH THE MAINLINE EXCEPT IN LOCATIONS WHERE THE WIRE WILL PASS UNDER PAVING. AT THOSE LOCATIONS INSTALL THE WIRE INSIDE OF A PVC SLEEVE. INSTALL CONTROL WIRING THROUGH WALLS, FLOORS, AND SLABS IN PVC SLEEVES.
 - B. USE A CONTINUOUS WIRE BETWEEN THE CONTROLLER AND VALVE. MAKE AN EXPANSION LOOP OF A MINIMUM 12 INCHES DIAMETER AT EACH WIRE CONNECTION.
 - C. ATTACH PERMANENT MARKINGS AT EACH END OF EACH WIRE NEAR THE VALVE TO IDENTIFY IT BY VALVE NUMBER.
 - D. INSTALL 2 SPARE WIRES FROM THE CONTROLLER TO THE FARTHEST VALVE LOCATION.

- 3.7 AUTOMATIC CONTROLLER INSTALLATION
 - A. LOCATION - VERIFY LOCATION WITH OWNER OR OWNER'S REPRESENTATIVE BEFORE INSTALLATION.
 - B. VERIFY THAT SUFFICIENT SLEEVING EXISTS TO ALLOW ROUTING OF THE VALVE WIRING FROM THE CONTROLLER TO EACH VALVE.

- 3.8 VALVE INSTALLATION
 - A. INSTALL ALL AUTOMATIC ZONE VALVES AND BALL VALVES IN VALVE BOXES. NUMBER EACH ZONE VALVE BOX ON THE UNDERSIDE AND TOPSIDE OF EACH VALVE BOX COVER WITH BLACK WATERPROOF MARKER FOR REFERENCE.
 - B. INSTALL ANY MAIN LINE ISOLATION VALVES IN VALVE BOXES.

- 3.9 INSTALLATION OF SPRAY HEADS
 - A. INSTALLATION SCHEDULE - INSTALL SPRAY HEADS AFTER THE SPRINKLER BODY ASSEMBLIES HAVE BEEN CLEANLY FLUSHED.
 - B. ORIENTATION - INSTALL POP-UP UNITS IN A PLUMB POSITION AND FIELD ADJUST SPRINKLER HEADS TO OBTAIN COMPLETE COVERAGE OF IRRIGATED AREA WITH MINIMUM OVER SPRAY ONTO PAVED SURFACES. HEADS ARE TO BE LOCATED ON A MAXIMUM SPACING OF 55% OF THE SPRINKLER COVERAGE DISTANCE AND CLOSER WHERE INDICATED. ADJUST NOZZLE DISTANCE AS NEEDED TO COVER PLANT MATERIALS AND MINIMIZE OVER SPRAY ON STRUCTURES AND PAVEMENT. ALIGN POP-UP SPRAY HEADS IN A VERTICAL ORIENTATION AS SHOWN IN THE DETAILS. ADJUST AS NECESSARY TO PROVIDE THE BEST COVERAGE IN SLOPED AREAS.

- 3.10 TESTING
 - A. PRESSURE TEST THE SYSTEM MAIN LINE BEFORE APPRECIABLY BACKFILLING.
 - B. PRESSURE TEST THE SYSTEM MAIN LINE, IN THE PRESENCE OF THE OWNER OR OWNER'S REPRESENTATIVE, FOR A PERIOD OF NO LESS THAN FOUR HOURS, CONTINUOUSLY, AT A PRESSURE OF NO LESS THAN 100 PSI WITH NO LEAKS. ASSURE THAT ANY TESTS OF THE SYSTEM MAIN LINE MEET THE LAKE COUNTY PLUMBING CODES. IF LEAKAGE OCCURS, REMEDY THE LEAKAGE PROBLEM AND RETEST. REPEAT THIS PROCESS AS MANY TIMES AS NECESSARY UNTIL A SUCCESSFUL TEST IS PERFORMED.

- 3.11 INSPECTIONS
 - A. THE FOLLOWING INSPECTIONS ARE REQUIRED. NOTIFY OWNER OR OWNER'S REPRESENTATIVE IN ADVANCE THAT EACH ITEM IS READY FOR INSPECTION.
 - INSPECTION OF FLAGGED UNDERGROUND MAINLINE PIPING, SLEEVES, SPRINKLER AND VALVE LOCATIONS PRIOR TO BEGINNING CONSTRUCTION - NOTIFY 48 HOURS IN ADVANCE.
 - SPRINKLER COVERAGE TEST - NOTIFY 48 HOURS IN ADVANCE.
 - FINAL INSPECTION - NOTIFY 48 HOURS IN ADVANCE.

- 3.12 TESTING
 - A. COVERAGE TESTS - CONDUCT SPRINKLER COVERAGE TESTS UNDER NORMAL OPERATING PRESSURE CONDITIONS BEFORE ANY GROUND COVER OR TURF IS PLANTED. CORRECT AND FIELD ADJUST SPRINKLER ORIENTATION TO PROVIDE UNIFORM PRECIPITATION OVER THE IRRIGATED AREA AND MINIMIZE OVER SPRAY ONTO PAVED SURFACES AND BUILDINGS.

- 3.13 WARRANTY
 - A. THE CONTRACTOR SHALL ISSUE TO THE OWNER OR OWNER'S REPRESENTATIVE A CERTIFICATE OF WARRANTY OF THE IRRIGATION SYSTEM FOR A PERIOD OF NOT LESS THAN ONE YEAR ON ALL SPRINKLERS, VALVES, THE CONTROLLER, AND HIS LABOR.

- 3.14 DRAWING OF RECORD
 - A. THE CONTRACTOR SHALL SUPPLY TO THE OWNER A DRAFTED, SCALED, REPRODUCIBLE PLAN SHOWING ALL CHANGES MADE TO THE EXISTING IRRIGATION SYSTEM AND ALL NEWLY INSTALLED COMPONENTS INCLUDING ALL SPRINKLERS, INCLUDING BODY TYPES AND NOZZLES, PIPE, INCLUDING SIZES AND THE ENDS OF SLEEVING LOCATIONS AS MEASURED FROM AT LEAST TWO FIXED OBJECTS, CONTROLLER, AND WIRE ROUTING. THIS PLAN MAY BE AN ADAPTATION OF THE IRRIGATION DESIGN WITH ANY CHANGES DRAFTED ON THIS PLAN. THE DRAWING SHALL ALSO PROVIDE A MINIMUM OF TWO (2) DIMENSIONS TAKEN FROM FIXED OBJECTS TO EACH AUTOMATIC VALVE, MANUAL CONTROL VALVE AND QUICK COUPLING VALVE.

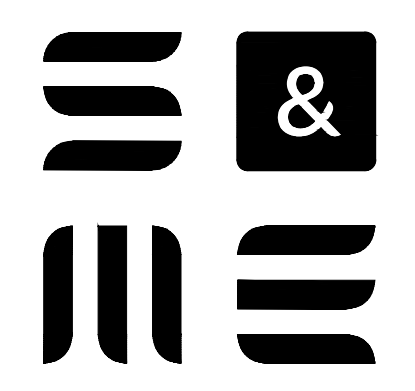
- 3.15 ADDITIONAL SUBMITTALS
 - A. SUPPLY TO THE OWNER ALL INSTRUCTION SHEETS AND PARTS LISTS COVERING ALL OPERATING AND ELECTRICAL-RELATED EQUIPMENT, BOUND IN ONE FOLDER. FURNISH THE OWNER WITH ANY KEYS FOR LOCKABLE ITEMS ON THIS SYSTEM.

- 3.16 RAIN GAUGE
 - A. ASSURE THAT THE CONTROLLER IS INTERFACED WITH A RAIN/FREEZE SWITCH WHICH WILL SHUT THE SYSTEM OFF IN CASE OF RAIN OR FREEZING TEMPERATURES.

- 3.17 MISCELLANEOUS
 - A. ANY IRRIGATION ITEMS NORMALLY INSTALLED IN LANDSCAPE AREAS THAT ARE SHOWN OUTSIDE OF LANDSCAPE AREAS OR OUTSIDE OF THE PROPERTY LINES ARE SHOWN AS SUCH FOR GRAPHIC CLARITY ONLY. INSTALL THESE ITEMS INSIDE OF PROPERTY LINES AND IN LANDSCAPE AREAS. CONTACT THE OWNER OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION IF IN ANY DOUBT OF HEAD, LINE OR ZONE PLACEMENT.
 - B. ASSURE THAT THE SYSTEM PROVIDES 100% COVERAGE OF ALL LANDSCAPED AREAS. REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT BEFORE COMMENCING WITH THE INSTALLATION.
 - C. ALL APPLICABLE CODES SHALL TAKE PRECEDENCE OVER THESE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL APPLICABLE CODES.
 - D. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR FIELD CHANGES.
 - E. FIELD ADJUST NOZZLE SELECTION LOCATIONS AND PLUMB OF SPRINKLERS TO PROVIDE PROPER COVERAGE.
 - F. ADJUST ALL VALVE FLOW CONTROL KNOBS AND PRESSURE REGULATORS TO PROVIDE PROPER COVERAGE AND TO REDUCE FOGGING OF SPRINKLERS.
 - G. PROVIDE CUT SHEET SUBMITTALS OF ALL ITEMS SHOWN ON THE PLANS, DETAILS AND STATED IN THE SPECIFICATIONS FOR APPROVAL BEFORE CONSTRUCTION BEGINS.

--- END OF SECTION ---

LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK - CALL SUNSHINE STATE ONE CALL



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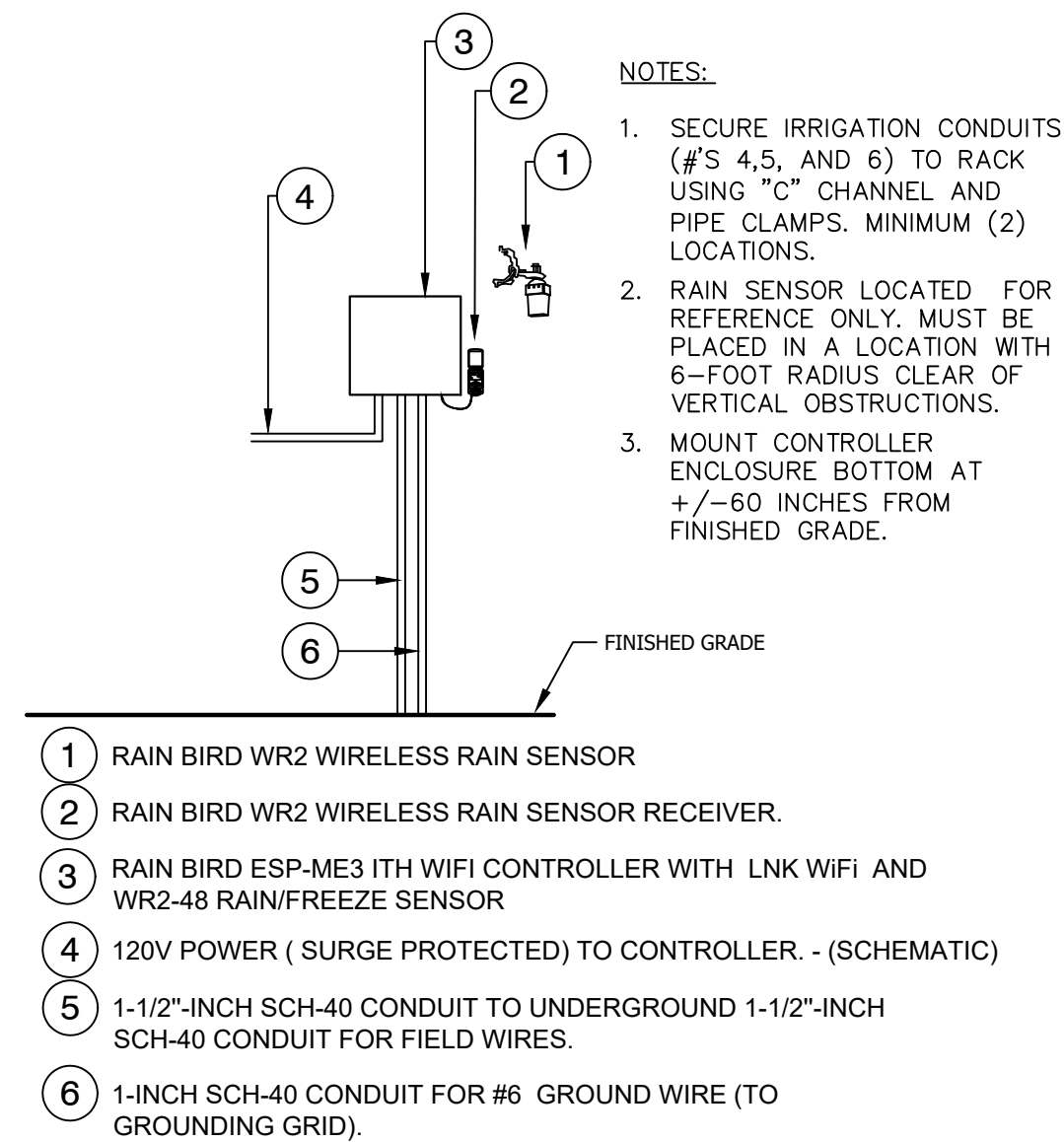
Florida Firm Registration No. 6712
Landscape Firm Registration
No. LC26000574

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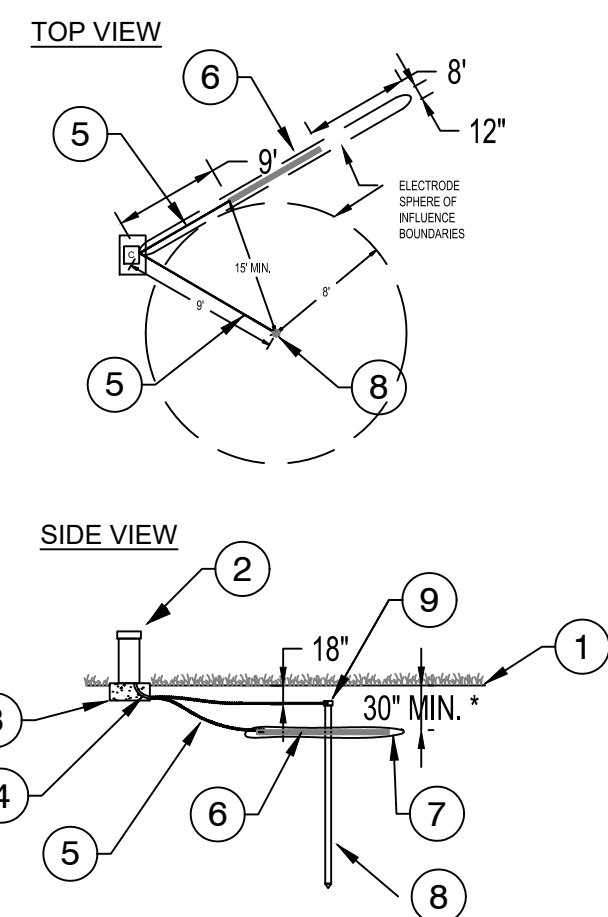
DRAWING NUMBER
IR1.1

DRAWING NAME
IRRIGATION SPECIFICATIONS



1 RAIN BIRD ESP-ME3 4-STATION WALL MOUNT CONTROLLER WITH LNK-WIFI AND WR2-48 SENSOR N.T.S.

- 1 FINISH GRADE
- 2 CONTROLLER
- 3 CONCRETE PAD
- 4 1.5" SCH-40 PVC SWEEP ELL
- 5 6 AWG SOLID BARE COPPER WIRES. CONNECTED DIRECTLY TO CONTROLLER GRD BAR.
- 6 COPPER GROUND PLATE (4"x96"x.0625") WITH MINIMUM 50 LB GROUND ENHANCEMENT MATERIAL (PAIGE).
- 7 SPHERE OF INFLUENCE.
- 8 5/8" x 8" COPPER CLAD GROUND ROD.
- 9 CADWELD CONNECTION.

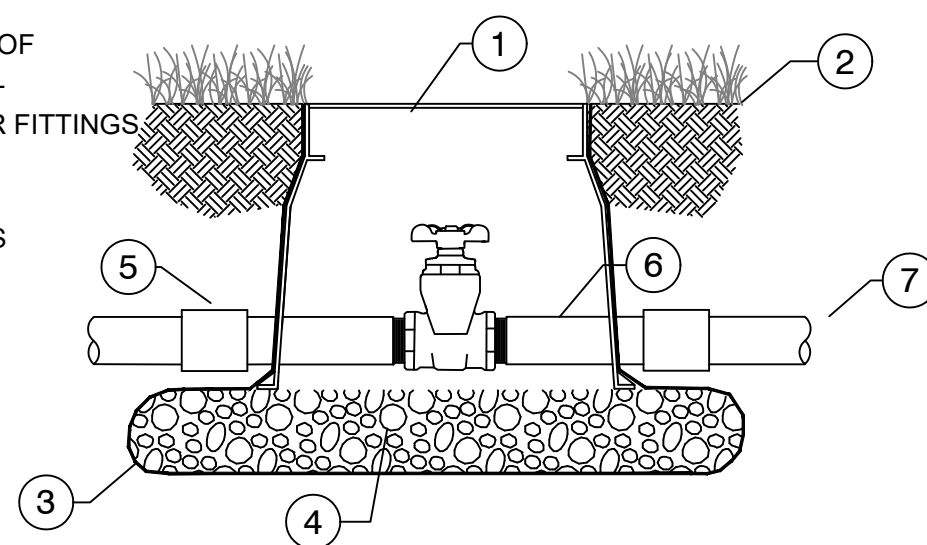


NOTE:

1. DO NOT INSTALL ANY OTHER WIRE OR CABLE WITHIN THE SPHERE OF INFLUENCE.
2. INSTALL GROUNDING PLATE MINIMUM 30" BELOW FINISHED GRADE, OR BELOW FROSTLINE, WHICHEVER IS DEEPER.
3. MEGGAR TEST GROUNDING GRID, MINIMUM 10 OHMS OR LESS REQUIRED. CONTRACTOR TO PROVIDE ON HIS LETTER HEAD, TIME, DATE, AND TEST RESULT. SUBMIT A COPY TO OWNER OR OWNERS REP. PRIOR TO FINAL WALK THROUGH

2 CONTROLLER GROUNDING DETAIL N.T.S.

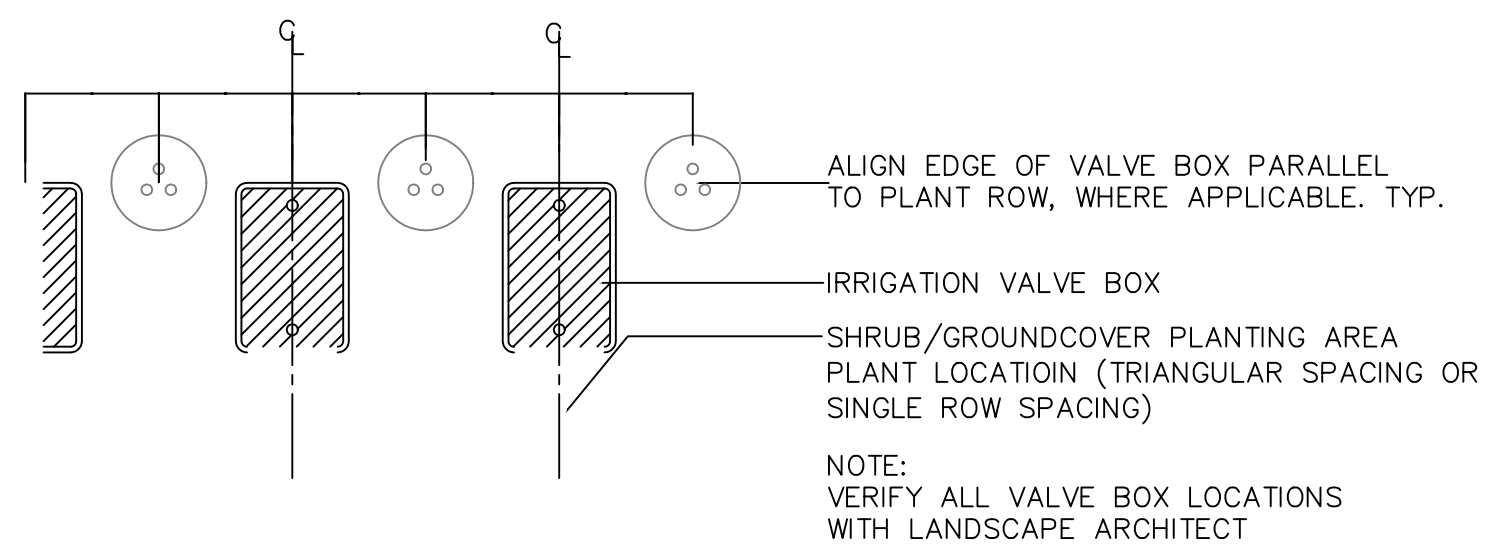
- 1 RAIN BIRD VB-10RND VALVE BOX SET FLUSH WITH FINISHED GRADE.
- 2 FINISHED GRADE
- 3 FILTER FABRIC
- 4 6-INCH THICK LAYER OF WASHED 3/4" GRAVEL
- 5 SCH-80 COUPLING OR FITTINGS TO FILTER OR VALVE
- 6 SCH-80 NIPPLE
- 7 MAINLINE, SEE PLANS FOR TYPE AND SIZE.



NOTES:

1. ADD VALVE BOX EXTENSIONS AS NECESSARY.
2. SEAL VALVE BOX SIDE WALL OPENINGS PRIOR TO BACK FILLING. COMPACT SOIL TO 95% DENSITY.
3. USE TEFLON TAPE ON ALL TREADED FITTINGS.
4. FOR 1" GATE VALVE.

3 NIBCO 1" T-113 VALVE INSTALLATION DETAIL N.T.S.



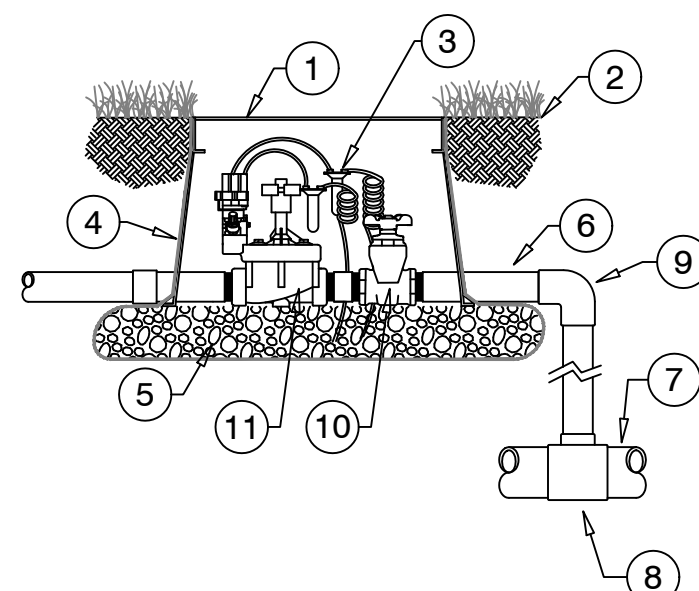
4 TYPICAL VALVE BOX GROUPING N.T.S.

CONVENTIONAL WIRING APPLICATION

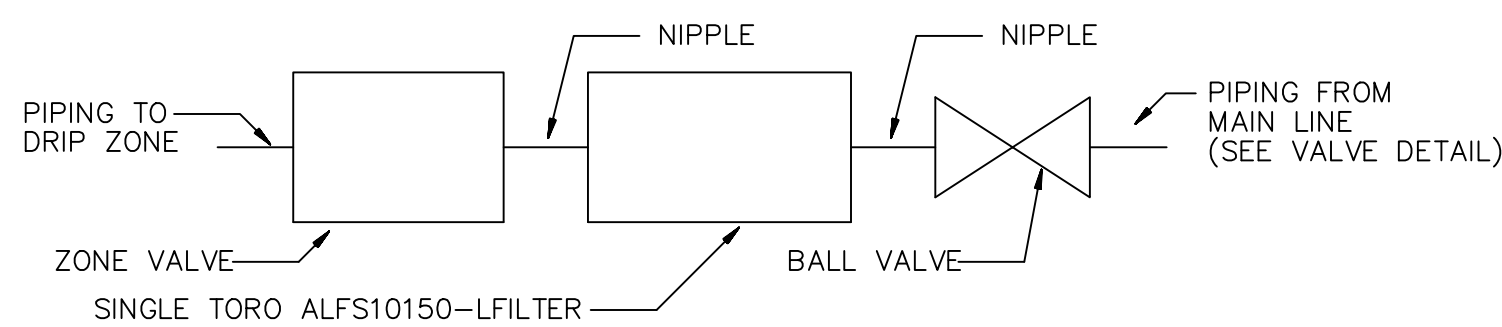
- 1 RAIN BIRD VB-STD VALVE BOX WITH LID FLUSH WITH FINISHED GRADE
- 2 FINISHED GRADE
- 3 RAIN BIRD WC20 WIRE SPLICE KIT (1) OF (2) OR 3M DBY KIT
- 4 FILTER FABRIC
- 5 6-INCH THICK LAYER OF WASHED 3/4" GRAVEL
- 6 SCH-80 NIPPLES (1) OF (4), LENGTH AS REQUIRED.
- 7 MAINLINE, SEE PLANS FOR TYPE.
- 8 MAINLINE FITTING, SEE SPECIFICATIONS FOR TYPE.
- 9 SCH-80 FITTING.
- 10 1" NIBCO T-113 GATE VALVE.
- 11 RAIN BIRD PESB-R VALVE.

NOTES:

1. COIL MINIMUM 30" ADDITIONAL WIRE IN VALVE BOX.
2. SEAL VALVE BOX SIDE WALL OPENINGS PRIOR TO BACK FILLING. COMPACT SOIL TO 95% DENSITY.
3. USE TEFLON TAPE ON ALL TREADED FITTINGS.
4. FLUSH MAINLINE PRIOR TO INSTALLING VALVES.
5. ALL VALVE BOXES SHALL BE MARKED WITH THE CHRISTY I.D. TAGS OR SUBSTITUTION ACCEPTABLE TO OWNER. SEE "VALVE W/ FILTER SCHEMATIC" DETAIL FOR FILTRATION INSTALLATION INFORMATION FOR DRIP ZONES.



5 RAIN BIRD 100-PESB-PRS-D N.T.S.

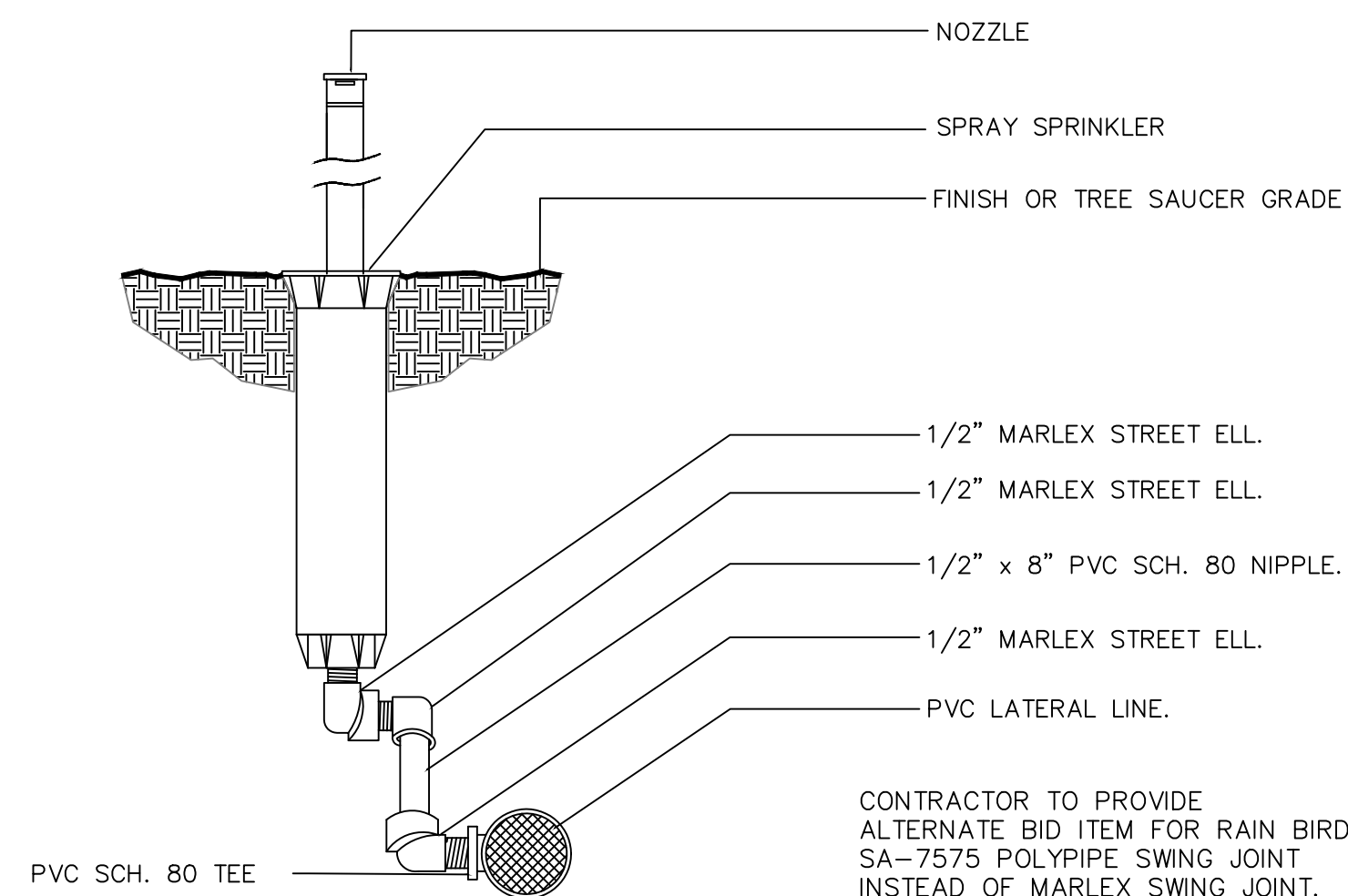


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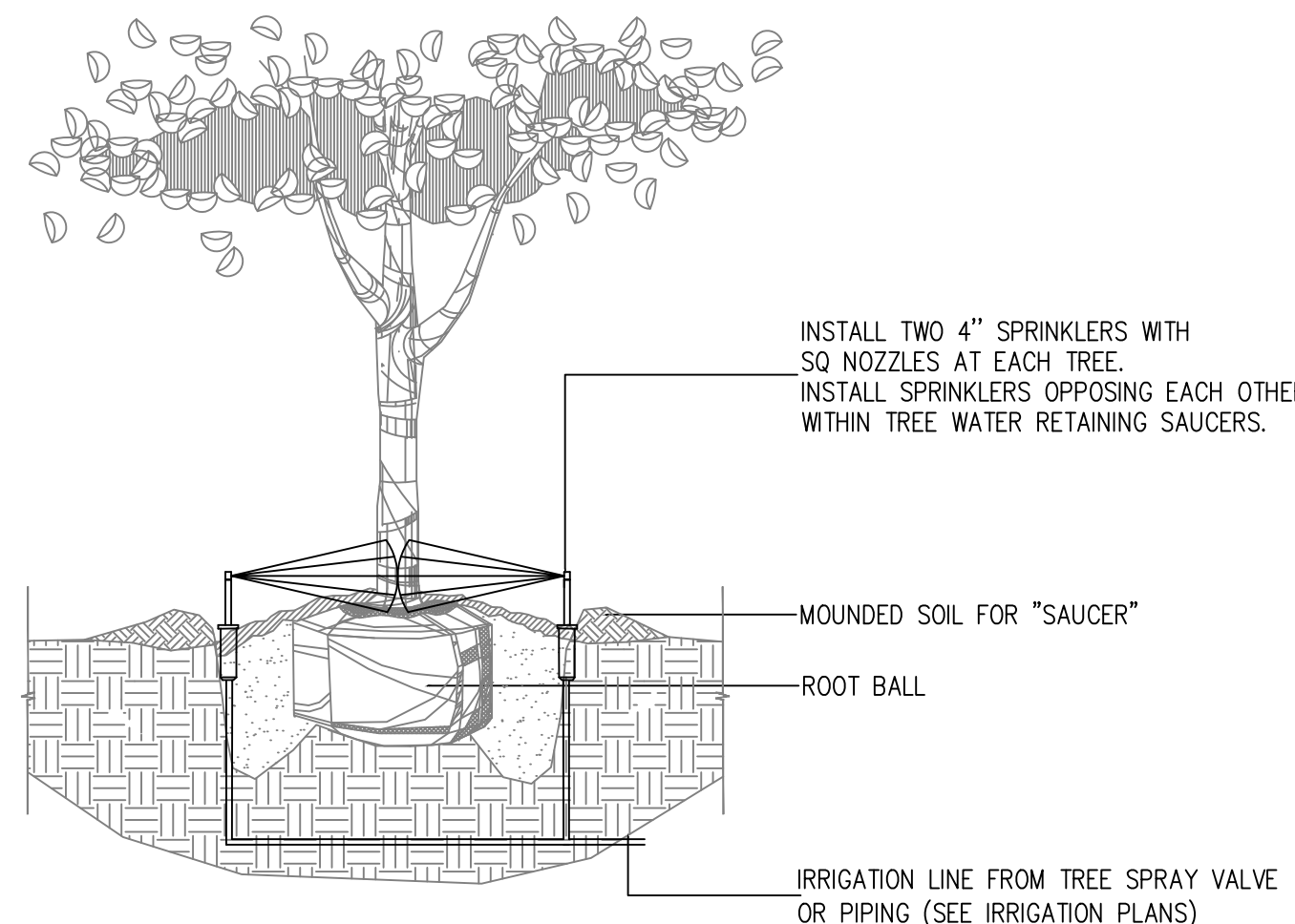
1. INSTALL A SEPARATE VALVE BOX FOR EACH VALVE AND FILTER.
2. (3) JUMBO VALVE BOXES

INSTALL THE FILTER IN ORIENTATION THAT ALLOWS REMOVAL OF CAP FOR FLUSHING

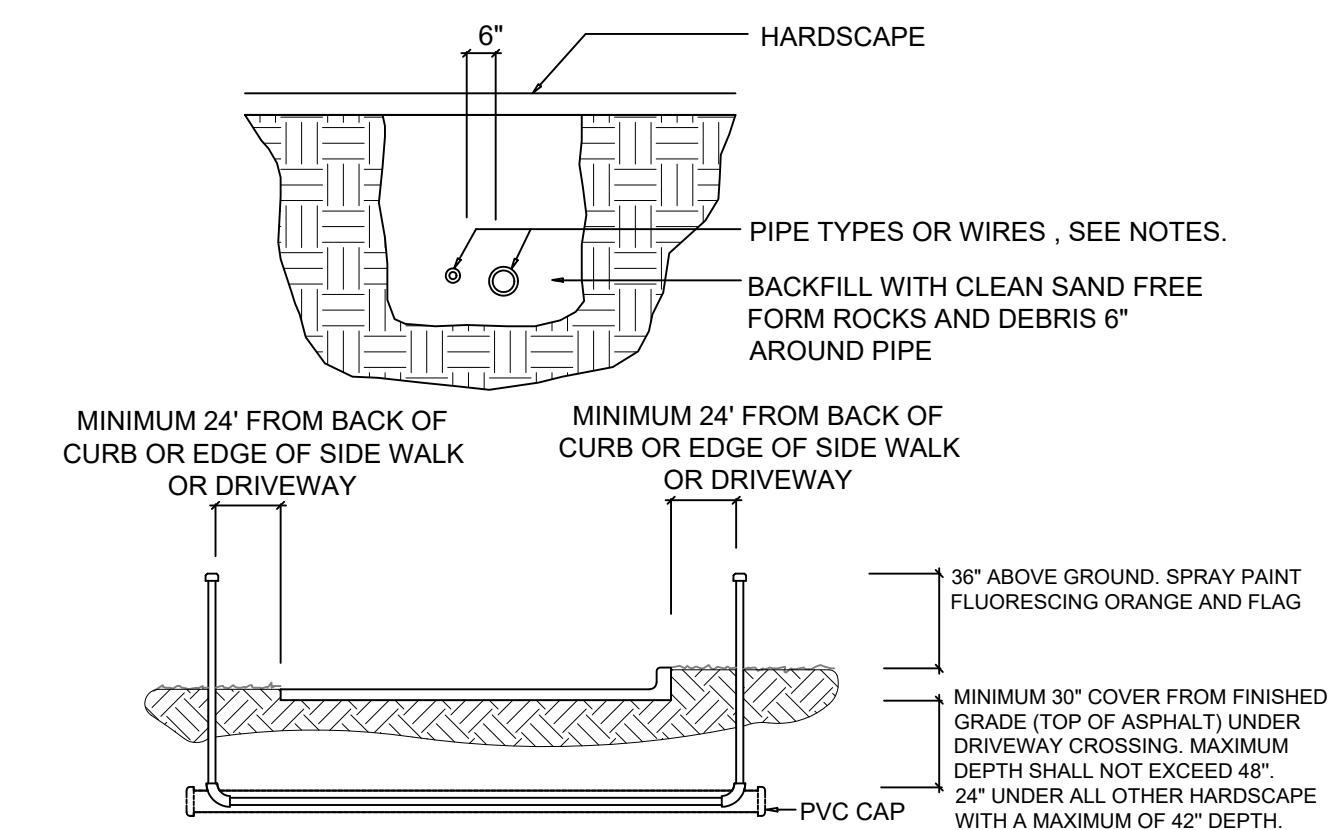
6 VALVE W/ FILTER SCHEMATIC (DRIP ZONE) N.T.S.



7 SPRAY HEAD AT GRADE N.T.S.



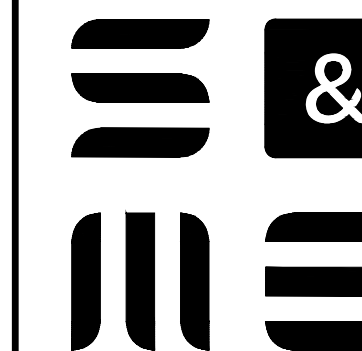
8 TREE SPRINKLER LOCATIONS N.T.S.



NOTE:

1. ALL SLEEVING TO BE SCH-40.
2. SLEEVING TO BE AT LEAST TWO PIPE SIZES LARGER THAN OF CARRYING PIPE. ONLY ONE PIPE PER SLEEVE.
3. WIRING TO BE INSTALLED IN SEPARATE SLEEVE IF APPLICABLE.
4. ALL JOINTS TO BE SOLVENT WELD.
5. WHERE THERE IS MORE THAN ONE SLEEVE IN TRENCH, EXTEND THE SMALLER SLEEVE TO 42" ABOVE FINISHED GRADE.
6. WHEN MULTIPLE PIPES ARE LAID IN THE SAME TRENCH, MAINTAIN MINIMUM LATERAL 6" SEPARATION BETWEEN JOINTS.
7. MECHANICALLY TAMP TO 95% PROCTOR.

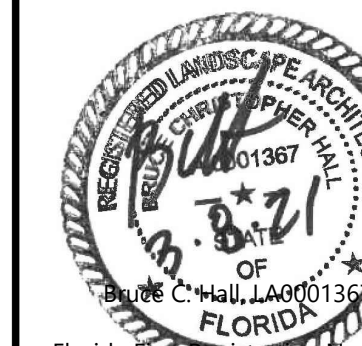
9 SLEEVING N.T.S.



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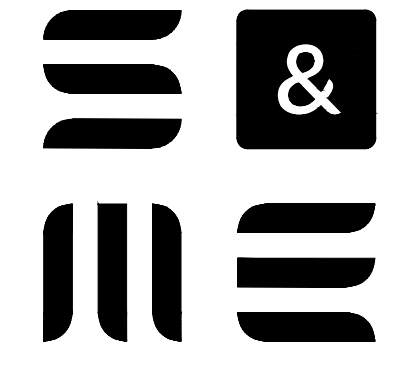
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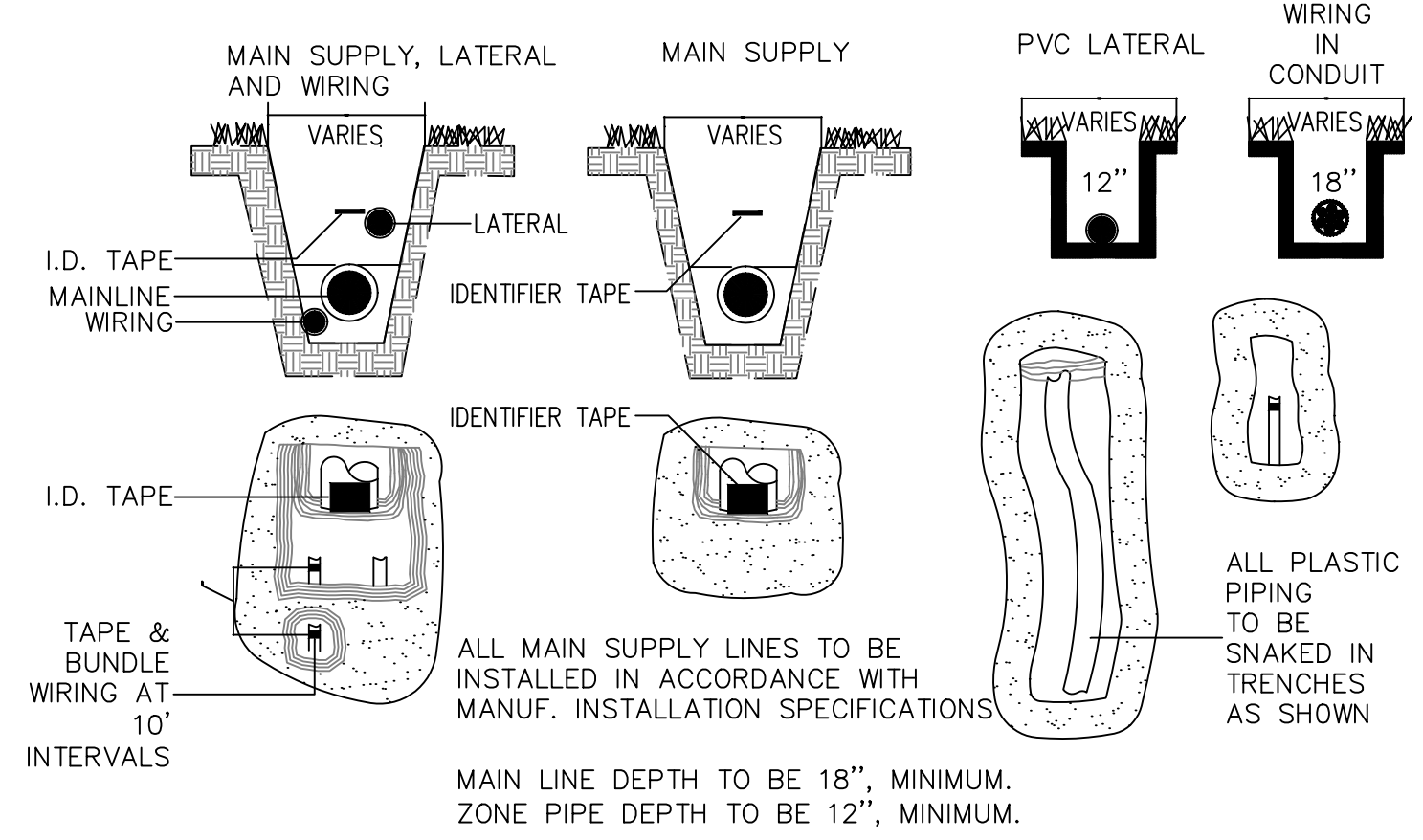
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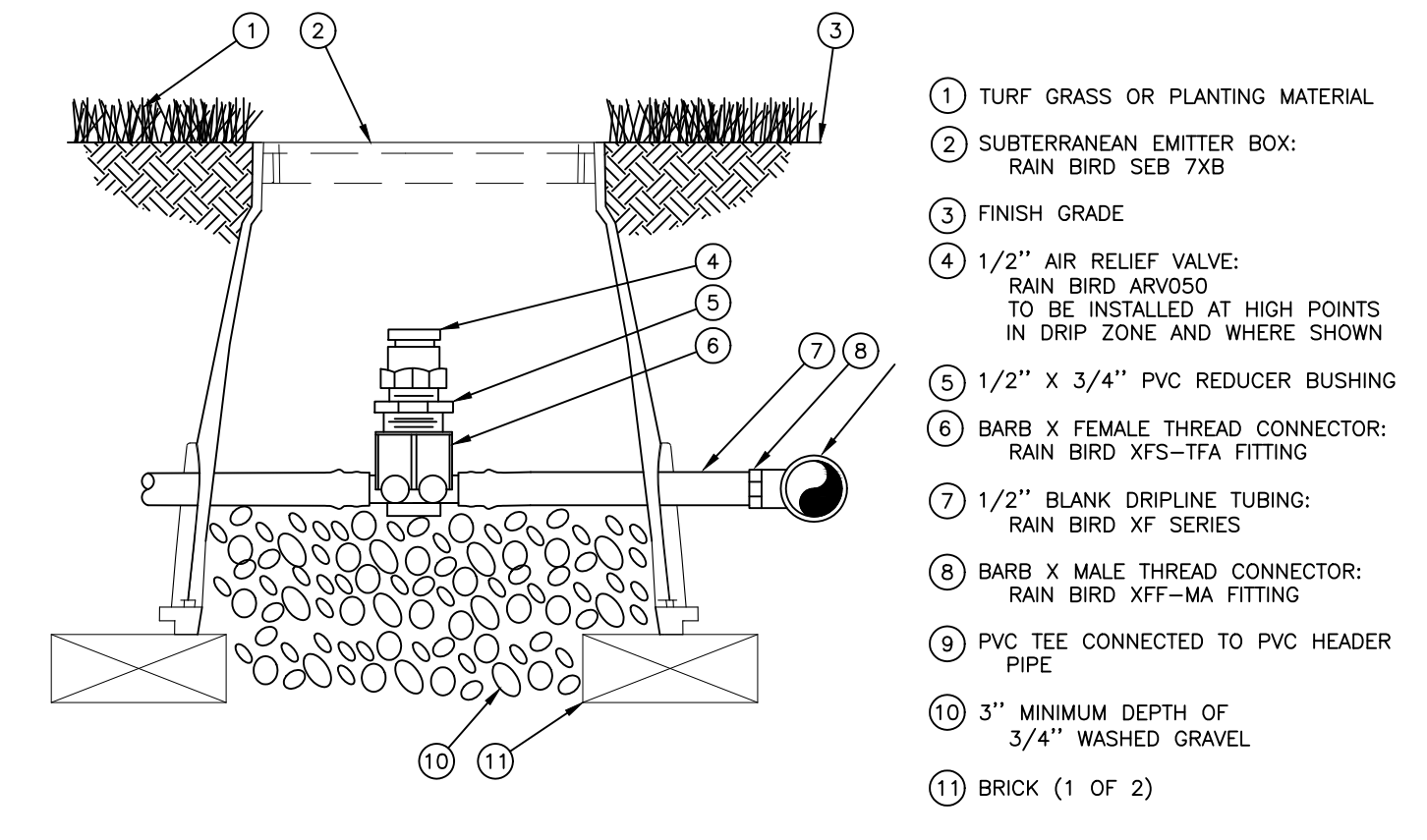
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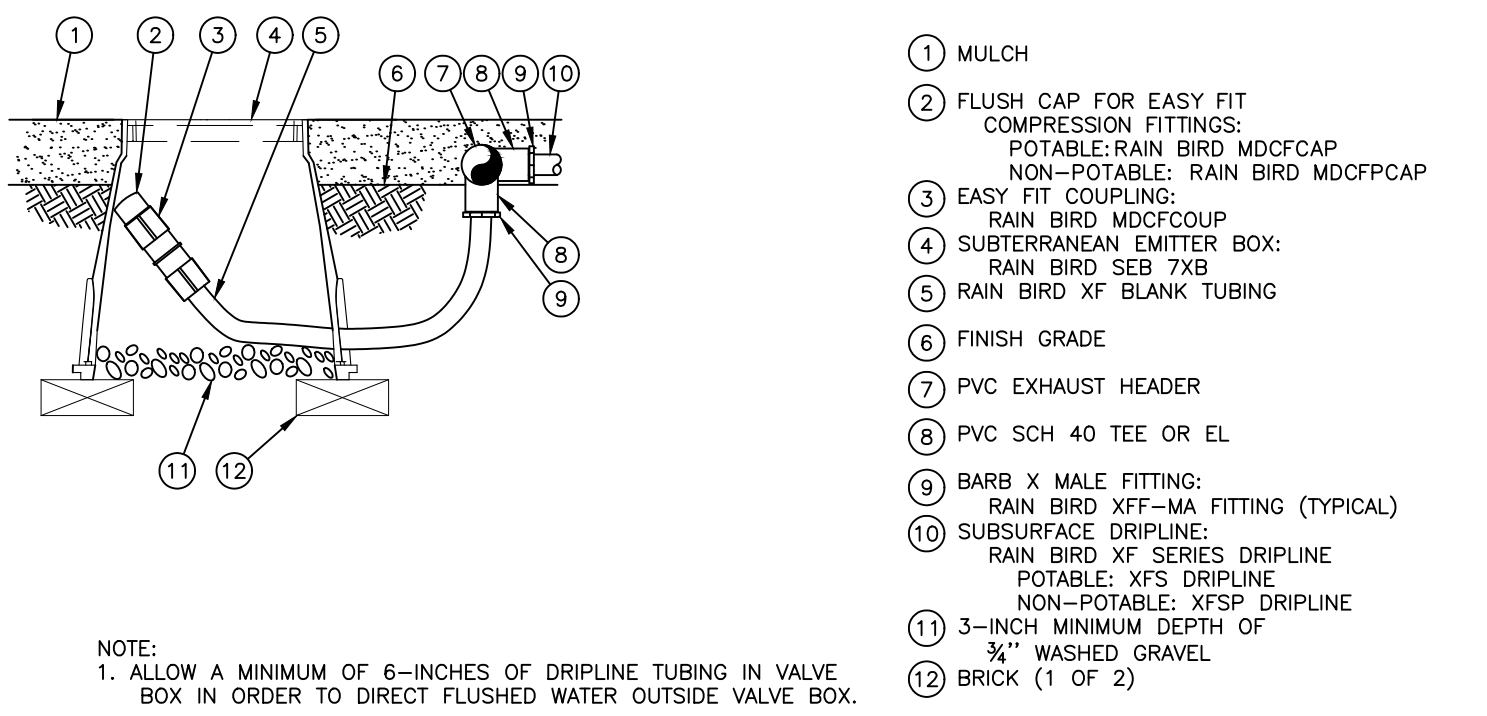
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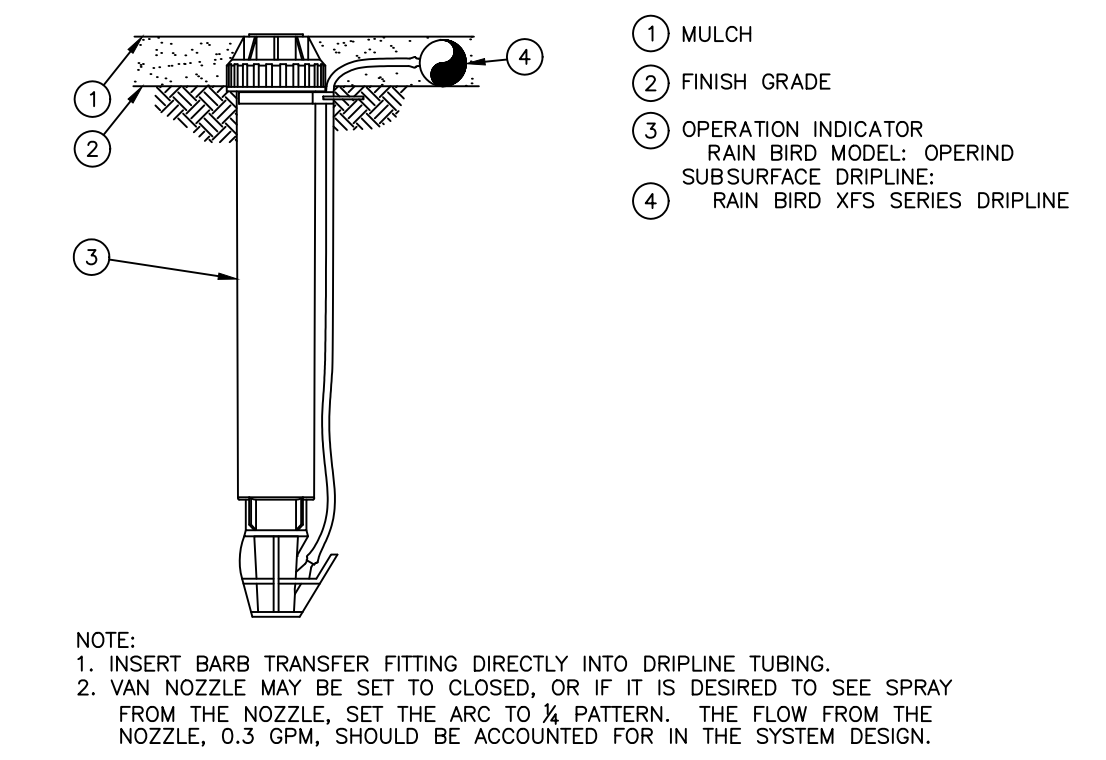
1 PIPE AND WIRE TRENCH CONFIGURATION
N.T.S.



**4 XFS SUBSURFACE DRIPLINE
1/2" AIR RELIEF VALVE IN XFS DRIPLINE**
N.T.S.



**2 XFS SUBSURFACE DRIPLINE FLUSH POINT
WITH EASY FIT COMPRESSION FITTINGS**
N.T.S.

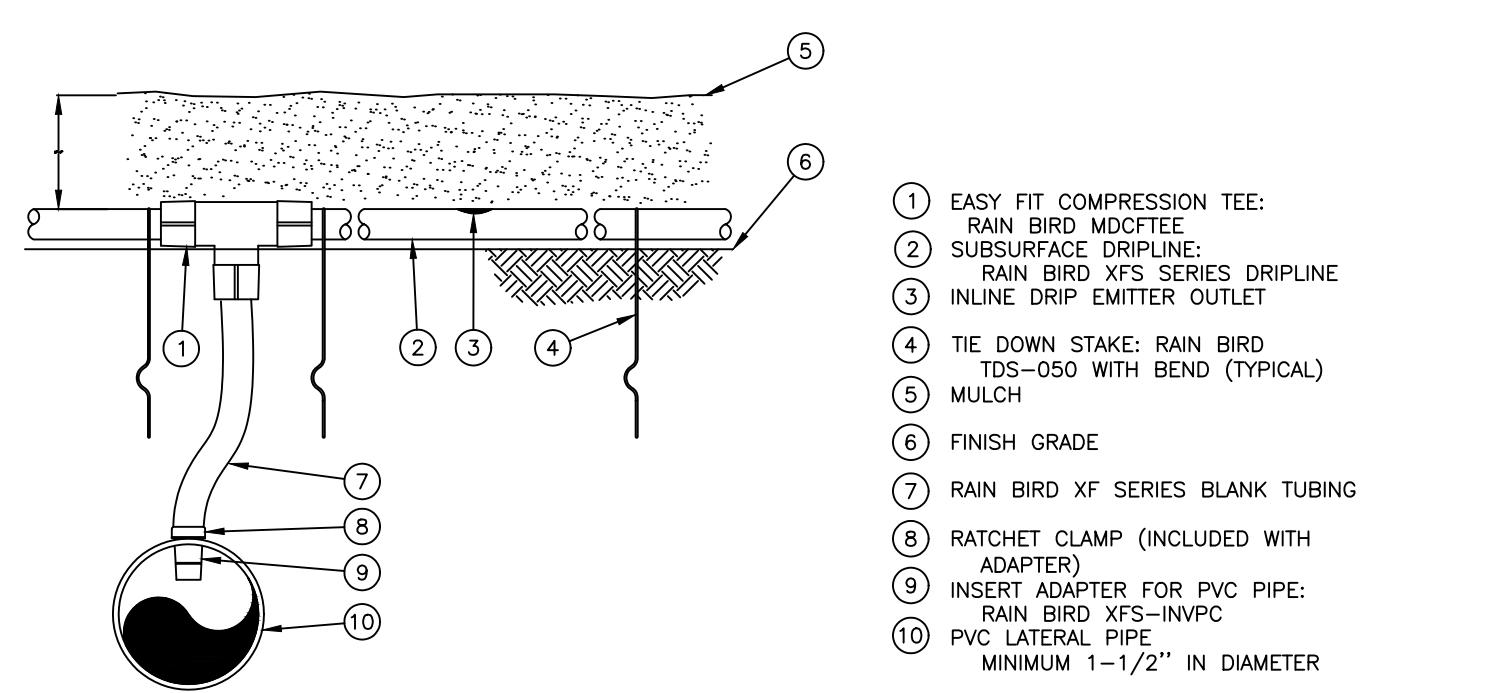


**5 XFS ON-SURFACE DRIPLINE
OPERATION INDICATOR**
N.T.S.

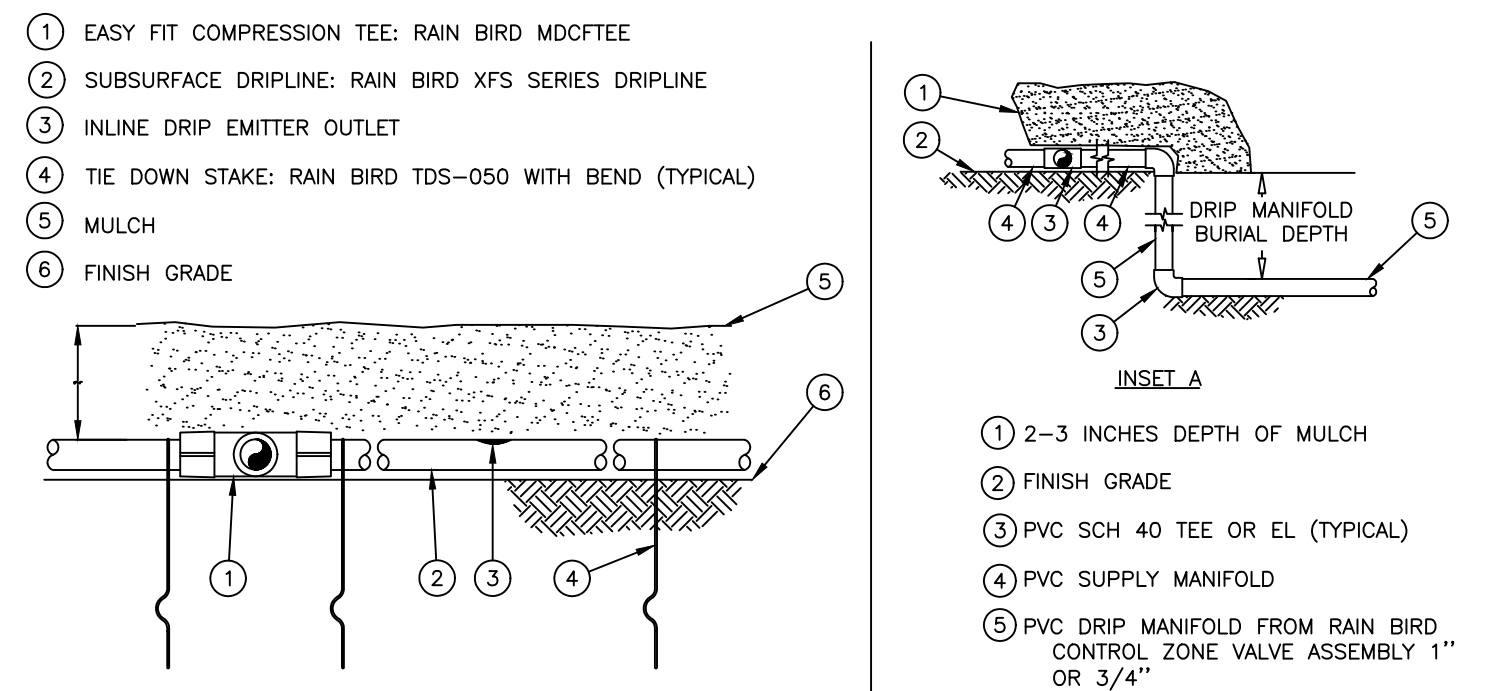
XFS DRIPLINE MAXIMUM LATERAL LENGTHS (FEET)

PSI	.9 GPH
15	155
20	169
30	230
40	255
50	285
60	290

7 XFS SUBSURFACE DRIPLINE MAXIMUM LENGTHS
N.T.S.



**3 XFS SUBSURFACE DRIPLINE INSERT ADAPTER
FOR 1 1/2" OR LARGER PVC**
N.T.S.



6 XFS SUBSURFACE DRIPLINE AT GRADE
N.T.S.

DETAIL NOTES:

IN LIEU OF ANY FLUSHING CAPS AS SHOWN OR NOTED ON THE DETAILS, INSTALL AUTOMATIC DRIPLINE FLUSHING VALVES THAT WILL FLUSH APPROXIMATELY ONE GALLON OF IRRIGATION WATER AT THE BEGINNING OF EACH IRRIGATION CYCLE, AT THE SUPPLY MANIFOLD, AT THE FAR ENDS OF THE DRIP TUBING AND AT EVERY 7 GPM INTERVAL OR PART THEREOF OF DRIP TUBING.

IN ADDITION TO THE LOCATIONS NOTED ON THE DETAILS, INSTALL A LINE FLUSHING VALVE, A DRIP AIR RELIEF VALVE AND A RAIN BIRD "OPERIND" AT THE SUPPLY MANIFOLD, AT THE FAR ENDS OF THE DRIP TUBING AND AT EVERY 7 GPM INTERVAL OR PART THEREOF OF DRIP TUBING.

INSTALL LANDSCAPE STAPLES EVERY 2-4 FEET OF DRIP TUBING TO STABILIZE THE TUBING.

INSTALL A FILTER UPSTREAM OF THE DRIP ZONE VALVE. INSTALL FILTRATION RATED FOR AT LEAST 125 PERCENT OF THE DRIP ZONE GALLONAGE STATED ON THE PLANS AND THE DRIP ZONE GALLONAGE INSTALLED.

INSTALL THE FILTER IN AN ORIENTATION THAT ALLOWS THE MAINTENANCE PERSONNEL EASY ACCESS TO THE FILTER FOR FLUSHING AND SUPPLY THE OWNER WITH ALL ITEMS NECESSARY FOR FLUSHING THE FILTERS, INCLUDING ANY SHUT-OFF VALVES AND HOSES.

DO NOT INSTALL RAIN BIRD XFD TUBING FOR ANY APPLICATIONS, ABOVE OR UNDER GROUND. INSTALL XFS TUBING FOR ALL APPLICATIONS.

8 DETAIL VARIATION NOTES
N.T.S.

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**IRRIGATION
DETAILS**

