

SECTION 02810 - IRRIGATION SPECIFICATIONS
PART 1 - GENERAL

- 1.01 SCOPE
- A. PROVIDE COMPLETE SPRINKLER INSTALLATION AS DETAILED AND SPECIFIED HEREIN, INCLUDING FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT FOR THE PROPER INSTALLATION. WORK INCLUDES BUT IS NOT LIMITED TO:
 1. TRENCHING AND BACKFILL.
 2. AUTOMATIC CONTROLLED SYSTEM.
 3. UPON COMPLETION OF INSTALLATION, SUPPLY DRAWINGS SHOWING DETAILS OF CONSTRUCTION INCLUDING LOCATION OF MAINLINE PIPING, MANUAL AND AUTOMATIC VALVES.
 - B. NOTE: ALL SLEEVES AS SHOWN ON PLANS WILL BE FURNISHED BY GENERAL CONTRACTOR.
- 1.02 RELATED WORK SPECIFIED ELSEWHERE
- A. SEE IRRIGATION PLANS. SEE PLANS FOR CONTROLLER, HEADS, AND VALVES.
- 1.03 APPLICABLE STANDARDS
- A. ASTM
 - B. D2464 - POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE FITTINGS THREADED, SCHEDULE 40
 - C. D2466 - POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE FITTINGS SOCKET TYPE, SCHEDULE 40
 - D. D2564 - SOLVENT CEMENTS FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE FITTINGS
 - E. STANDARD RECOMMENDED PRACTICE FOR:
 1. D2855 - MAKING SOLVENT - CEMENTED JOINTS WITH POLY (VINYL CHLORIDE) (PVC) PIPE AND FITTINGS.
- 1.04 MAINTENANCE AND GUARANTEE
- A. MATERIALS AND WORKMANSHIP SHALL BE FULLY GUARANTEED FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE.
 - B. PROVIDE MAINTENANCE OF SYSTEM, INCLUDING RAISING AND LOWERING OF HEADS TO COMPENSATE FOR LAWN GROWTH, CLEANING AND ADJUSTMENT OF HEADS, RAISING AND LOWERING OF SHRUB HEADS TO COMPENSATE FOR SHRUB GROWTH, FOR ONE (1) YEAR AFTER COMPLETION OF INSTALLATION.
 - C. GUARANTEE IS LIMITED TO REPAIR AND REPLACEMENT OF DEFECTIVE MATERIALS OR WORKMANSHIP, INCLUDING REPAIR OF BACKFILL SETTLEMENT.
- 1.05 SUBMITTALS
- A. USE OF MATERIALS DIFFERING IN QUALITY, SIZE, OR PERFORMANCE FROM THOSE SPECIFIED WILL ONLY BE ALLOWED UPON WRITTEN APPROVAL OF OWNER/LICENSED IRRIGATOR. THE DECISION WILL BE BASED ON COMPARATIVE ABILITY OF MATERIAL OR ARTICLE TO PERFORM FULLY ALL PURPOSES OF MECHANICS AND GENERAL DESIGN CONSIDERED TO BE POSSESSED BY ITEM SPECIFIED.
- BIDDERS DESIRING TO MAKE A SUBSTITUTION FOR SPECIFIED SPRINKLERS SHALL SUBMIT MANUFACTURER'S CATALOG SHEET SHOWING FULL SPECIFICATION OF EACH TYPE OF SPRINKLER PROPOSED MANUFACTURER'S CATALOG SHEET SHOWING FULL SPECIFICATION OF EACH TYPE OF SPRINKLER PROPOSED AS A SUBSTITUTE, INCLUDING DISCHARGE IN GPM MAXIMUM ALLOWABLE OPERATING PRESSURE AT SPRINKLER.
- APPROVAL OF SUBSTITUTE SPRINKLER SHALL NOT RELIEVE CONTRACTOR OF HIS RESPONSIBILITY TO DEMONSTRATE THAT FINAL INSTALLED SPRINKLER SYSTEM WILL OPERATE ACCORDING TO INTENT OF ORIGINALLY DESIGNED AND SPECIFIED SYSTEM.
- B. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO DEMONSTRATE THAT FINAL INSTALLED SPRINKLER SYSTEM WILL OPERATE ACCORDING TO INTENT OF ORIGINALLY DESIGNED AND SPECIFIED SYSTEM. IF IRRIGATION CONTRACTOR NOTES ANY PROBLEMS IN HEAD SPACING OR POTENTIAL COVERAGE, IT IS HIS RESPONSIBILITY TO NOTIFY THE LICENSED IRRIGATOR IN WRITING, BEFORE PROCEEDING WITH WORK. IRRIGATION CONTRACTOR GUARANTEES 100% COVERAGE OF ALL AREAS TO BE IRRIGATED.
- 1.06 TESTING
- A. PERFORM TESTING REQUIRED WITH OTHER TRADES, INCLUDING EARTHWORK, PAVING AND PLUMBING, TO AVOID UNNECESSARY CUTTING, PATCHING AND BORING.
- 1.07 COORDINATION
- A. COORDINATE INSTALLATION WITH OTHER TRADES, INCLUDING EARTHWORK, PAVING AND PLUMBING, TO AVOID UNNECESSARY CUTTING, PATCHING AND BORING.
- PART 2 - PRODUCTS
- 2.01 GENERAL
- A. SPRINKLER MAINS: SPRINKLER MAINS ARE THAT PORTION OF PIPING FROM WATER SOURCE TO OPERATING VALVES. THIS PORTION OF PIPING IS SUBJECT TO SURGES, BEING A CLOSED PORTION OF SPRINKLER SYSTEM. HYDRANT LINES ARE CONSIDERED A PART OF SPRINKLER MAIN.
 - B. LATERAL PIPING: LATERAL PIPING IS THAT PORTION OF PIPING FROM OPERATING VALVE TO SPRINKLER HEADS. THIS PORTION OF PIPING IS NOT SUBJECT TO SURGES, BEING AN "OPEN END" PORTION OF SPRINKLER SYSTEM.
- 2.02 POLY VINYL CHLORIDE PIPE (PVC)
- A. PVC PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH COMMERCIAL STANDARDS NOTED HEREIN.
 - B. MARKING AND IDENTIFICATION: PVC PIPE SHALL BE CONTINUOUSLY AND PERMANENTLY MARKED WITH THE FOLLOWING INFORMATION: MANUFACTURER'S NAME, PIPE SIZE, TYPE OF PIPE, AND MATERIAL, SDR NUMBER, PRODUCT STANDARD NUMBER, AND THE NSF (NATIONAL SANITATION FOUNDATION) SEAL.
 - C. PVC PIPE FITTINGS: SHALL BE OF THE SAME MATERIAL AS THE PVC PIPE SPECIFIED AND SHALL BE COMPATIBLE WITH PVC PIPE FURNISHED.
- 2.03 COPPER TUBING
- A. HARD, STRAIGHT, LENGTHS OF DOMESTIC MANUFACTURE ONLY. NO COPPER TUBE OF FOREIGN EXTRUSION OR ANY SO-CALLED IRRIGATION TUBING (THIN WALL) SHALL BE USED.
- 2.04 COPPER TUBE FITTINGS
- A. CAST BRASS OR WROUGHT COPPER, SWEAT-SOLDER TYPE.
- 2.05 WIRE
- A. TYPE UF WITH 4-64" INSULATION WHICH IS UNDERWRITER'S LABORATORY APPROVED FOR DIRECT UNDERGROUND BURIAL WHEN USED IN A NATIONAL ELECTRIC CODE CLASS II CIRCUIT (30 VOLTS AC OR LESS).
- 2.06 SCHEDULE 80 PVC NIPPLES
- A. COMPOSED OF STANDARD SCHEDULE 40 PVC FITTINGS AND PVC MEETING NOTED STANDARDS. NO CLAMPS OR WIRES MAY BE USED. NIPPLES FOR 1812 HEADS AND SHRUB RISERS TO BE NOMINAL (1/2") INCH DIAMETER BY EIGHT (8") INCHES LONG, WHERE APPLICABLE.
 - B. POLYETHYLENE NIPPLES SIX (6") INCHES LONG TO BE USED ON ALL 1804 AND 1806 POP-UP SPRAY HEADS.
- 2.07 MATERIALS - SEE IRRIGATION PLAN
- A. SPRINKLER HEADS IN LAWN AREA AS SPECIFIED ON PLAN.
 - B. PVC PIPE: CLASS 200, SPR 21
 - C. COPPER TUBING (CITY CONNECTION): TYPE "M"
 - D. ELECTRIC VALVES TO BE ALL PASTIC CONSTRUCTION AS INDICATED ON PLANS.
 - E. REFER TO DRAWING FOR BACKFLOW PREVENTION REQUIREMENTS AND FLOW VALVE. COORDINATE EXACT LOCATION WITH LANDSCAPE ARCHITECT.
- PART 3 - EXECUTION
- 3.01 INSTALLATION - GENERAL
- A. STAKING: BEFORE INSTALLATION IS STARTED, PLACE A STAKE WHERE EACH SPRINKLER IS TO BE LOCATED, IN ACCORDANCE WITH DRAWING. STAKING SHALL BE APPROVED BY THE LICENSED IRRIGATOR BEFORE PROCEEDING.
 - B. EXCAVATIONS: EXCAVATIONS ARE UNCLASSIFIED AND INCLUDE EARTH, LOOSE ROCK, ROCK OR AN COMBINATION THEREOF, IN WET OR DRY STATE. BACKFILL TRENCHES WITH MATERIAL THAT IS SUITABLE FOR COMPACTION AND CONTAINS NO LUMPS, CLODS, ROCK, DEBRIS, ETC. SPECIAL BACKFILL SPECIFICATIONS, IF FURNISHED TAKE PREFERENCE OVER THIS GENERAL SPECIFICATION.
 - C. BACKFILL: FLOOD OR HAND-TAMP TO PREVENT AFTER SETTLING. HAND RAKE TRENCHES AND ADJOINING AREA TO LEAVE GRADE IN AS GOOD OR BETTER CONDITION THAN BEFORE INSTALLATION.
 - D. PIPING LAYOUT: PIPING LAYOUT IS DIAGRAMMATIC. ROUTE PIPING AROUND TREES AND SHRUBS IN SUCH A MANNER AS TO AVOID DAMAGE PLANTINGS. DO NOT DIG WITHIN BALL OF NEWLY PLANTED TREES OR SHRUBS.
- 3.02 PIPE INSTALLATION
- A. SPRINKLER MAINS: INSTALL A FOUR (4") INCH MINIMUM TRENCH WITH A MINIMUM OF TWELVE (12") INCHES OF COVER.
 - B. LATERAL PIPING: INSTALL A FOUR (4") INCH WIDE MINIMUM TRENCH DEEP ENOUGH TO ALLOW FOR INSTALLATION OF SPRINKLER HEADS AND VALVES, BUT IN NO CASE, WITH LESS THAN EIGHT (8") INCHES OF COVER.
 - C. TRENCHING: REMOVE LUMBER, RUBBISH, AND LARGE ROCKS FROM TRENCHES. PROVIDE FIRM, UNIFORM BEARING FOR ENTIRE LENGTH OF EACH PIPE LINE TO PREVENT UNEVEN SETTLEMENT. WEDGING OR BLOCKING OF PIPE WILL NOT BE PERMITTED. REMOVE FOREIGN MATTER OR DIRT FROM INSIDE OF PIPE BEFORE WELDING, AND KEEP PIPING CLEAN BY APPROVED MEANS DURING AND AFTER LAYING OF PIPE.
- 3.03 PVC PIPE AND FITTING ASSEMBLY
- A. SOLVENT: USE ONLY SOLVENT RECOMMENDED BY MANUFACTURER TO MAKE SOLVENT-WELDED JOINTS. THOROUGHLY CLEAN PIPE AND FITTINGS OF DIRT, DUST AND MOISTURE BEFORE APPLYING SOLVENT.
 - B. PVC TO METAL CONNECTION: WORK METAL CONNECTIONS FIRST. USE A NON-HARDENING PIPE DOPE SUCH AS PERMATEX NO. 2 ON THREADED PVC ADAPTERS INTO WHICH PIPE MAY BE WELDED.
- 3.04 COPPER TUBING AND FITTING ASSEMBLY
- A. CLEAN PIPE AND FITTING THOROUGHLY AND LIGHTLY SAND PIPE CONNECTIONS TO REMOVE RESIDUE FROM PIPE. ATTACH FITTINGS TO TUBING IN AN APPROVED MANNER USING 50-50 SOFT SOLID CORE SOLDER.
- 3.05 SHRUB SPRAY HEADS (FIXED)
- A. SHRUB SPRAY HEADS: SUPPLY IN ACCORDANCE WITH MATERIALS LIST, WITH NUZZLING IN ACCORDANCE WITH DRAWINGS. DRAWINGS INDICATE SIZE OF NUZZLING AND DEGREE OF ARC. DETERMINE CORRECT DEGREE OF ARC OF NOZZLE (IF CONDITIONS WARRANT) BY AREA TO BE COVERED AND BY WIND CONDITIONS THAT MAY AFFECT COVERAGE.
 - B. HEIGHT: INSTALL HEADS ON PVC SCHEDULE 80 RISERS SUFFICIENTLY HIGH TO WATER UNDER SHRUBS AND PLANTS, OR AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- 3.06 POP-UP SPRAY HEADS
- A. SUPPLY POP-UP SPRAY HEADS IN ACCORDANCE WITH MATERIALS LIST AND PLAN. ATTACH SPRINKLER TO LATERAL PIPING WITH A MANUFACTURED SWING JOINT NOT LESS THAN THREE (3") INCHES OR MORE THAN SIX (6") INCHES LONG.
- 3.07 VALVES
- A. SUPPLY VALVES IN ACCORDANCE WITH MATERIALS LIST AND SIZED ACCORDING TO DRAWINGS. INSTALL VALVES IN A LEVEL POSITION IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. SEE PLAN FOR TYPICAL INSTALLATION OF ELECTRIC VALVE, VALVE BOX
 - B. LICENSED IRRIGATOR CONTRACTOR TO CONNECT TO 1" WATER METER AND INSTALL BACKFLOW ASSEMBLY PER DETAILS WITH MASTER VALVE.
- 3.08 WIRING
- A. SUPPLY WIRING FROM THE AUTOMATIC SPRINKLER CONTROLS TO THE VALVES. NO CONDUIT WILL BE REQUIRED FOR U.F. WIRE UNLESS OTHERWISE NOTED ON THE PLAN. WIRE SHALL BE TUCKED UNDER THE PIPING.
 - B. A SEPARATE WIRE IS REQUIRED FROM THE CONTROL TO EACH ELECTRIC VALVE. A COMMON NEUTRAL WIRE IS ALSO REQUIRED FROM EACH CONTROL TO EACH OF THE VALVES SERVED BY EACH PARTICULAR CONTROL.
 - C. BUNDLE MULTIPLE WIRES AND TAPE THEM TOGETHER AT TEN (10) FOOT INTERVALS. INSTALL TEN (10) INCH EXPANSION COIL AT NOT MORE THAN ONE HUNDRED (100) INTERVALS. MAKE SPLICES WATERPROOF.
- 3.09 AUTOMATIC SPRINKLER CONTROLS
- A. SUPPLY IN ACCORDANCE WITH IRRIGATION PLAN. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- 3.10 TESTING
- A. SPRINKLER MAINS: TEST SPRINKLER MAIN ONLY FOR A PERIOD OF TWELVE (12) TO FOURTEEN (14) HOURS UNDER NORMAL PRESSURE. IF LEAKS OCCUR, REPLACE JOINT OR JOINTS AND REPEAT TEST.
 - B. COMPLETE TESTS PRIOR TO BACKFILLING. SUFFICIENT BACKFILL MATERIAL MAY BE PLACED IN TRENCHES BETWEEN FITTINGS TO INSURE STABILITY OF LINE UNDER PRESSURE. IN EACH CASE, LEAVE FITTINGS AND COUPLINGS OPEN TO VISUAL INSPECTION FOR FULL PERIOD OF TEST.
- 3.11 FINAL ADJUSTMENT
- A. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE FINAL ADJUSTMENT OF SPRINKLER SYSTEM IN PREPARATION FOR LICENSED IRRIGATOR'S FINAL INSPECTION. COMPLETELY FLUSH SYSTEM TO REMOVE DEBRIS FROM LINES AND TURNING ON SYSTEM. CHECK SPRINKLERS FOR PROPER OPERATION AND PROPER ALIGNMENT FOR DIRECTION OF FLOW. CHECK EACH SECTION OF SPRAY HEADS FOR OPERATING PRESSURE AND BALANCE TO OTHER SECTIONS BY USE OF FLOW ADJUSTMENT AND TOP OF EACH VALVE. CHECK NUZZLING FOR PROPER COVERAGE. PREVAILING WIND CONDITIONS MAY INDICATE THAT ARCH OF ANGLE OF SPRAY SHOULD BE OTHER THAN SHOWN ON DRAWINGS. IN THIS CASE, CHANGE NOZZLES TO PROVIDE CORRECT COVERAGE.

INSTALLATION NOTES:

1. COORDINATE IRRIGATION INSTALLATION WITH PLANTING PLAN AND SITE CONDITIONS TO PROVIDE COMPLETE COVERAGE WITH MINIMUM OVER SPRAY. OVER-SPRAY ON ANY NON-PERMEABLE SURFACE IS PROHIBITED. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.
2. THE IRRIGATION CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE MANDATED IRRIGATION ORDINANCES AND CODES, AND WILL SECURE ALL REQUIRED PERMITS. L.I.C. SHALL PAY ANY ASSOCIATED FEES UNLESS OTHERWISE NOTED. ALL LOCAL CODES SHALL PREVAIL OVER ANY DISCREPANCIES HEREIN AND SHALL BE ADDRESSED BEFORE ANY CONSTRUCTION BEGINS.
3. CONFIRM MINIMUM STATIC WATER PRESSURE OF 60 PSI AT LEAST 7 DAYS BEFORE BEGINNING WORK. IF STATIC WATER PRESSURE IS OUTSIDE THE RANGE STATED ABOVE, DO NOT PROCEED UNTIL DIRECTED BY THE LICENSED IRRIGATOR.
4. LATERAL PIPE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 12 INCHES. MAINLINE PIPE AND WIRES SHALL BE INSTALLED AT A MINIMUM DEPTH OF 18 INCHES. NO MACHINE TRENCHING SHALL BE PERMITTED WITHIN EXISTING TREE ROOT ZONES. WHEN HAND - TRENCHING WITHIN EXISTING TREE ROOT ZONES, NO ROOTS LARGER THAN 1" DIAMETER SHALL BE CUT.
5. ELECTRIC POWER SHALL BE PROVIDED WITHIN FIVE FEET OF CONTROLLER LOCATION BY GENERAL CONTRACTOR. L.I.C. TO PROVIDE FINAL HARD-WIRE TO CONTROLLER.
6. 24 VOLT VALVE WIRE SHALL BE A MINIMUM OF #14 GAUGE, U.F. APPROVED FOR DIRECT BURIAL, SINGLE CONDUCTOR "IRRIGATION WIRE". WIRE SPLICES SHALL INCLUDE DBY CONNECTORS AS MANUFACTURED BY 3M COMPANY. ALL FIELD SPLICES SHALL BE LOCATED IN A ROUND VALVE BOX OF SUFFICIENT SIZE TO ALLOW INSPECTION.
7. VALVE BOXES SHALL BE INSTALLED FLUSH WITH GRADE, SUPPORTED BY BRICKS AS DETAILED, WITH 3 INCHES OF CLEAN PEA GRAVEL LOCATED BELOW THE VALVE. USE 12" x 17" RECTANGULAR VALVE BOXES WITH PURPLE LID FOR QUICK COUPLING VALVES, AND 14" X 20" RECTANGULAR BOXES FOR ELECTRIC VALVES UNLESS NOTED OTHERWISE. D.C.A., WITH UPSTREAM BALL VALVE AND WYE FILTER SHALL BE BOXED AND LOCATED ACCORDING TO LOCAL CODE. THE WYE FILTER SHALL BE INSTALLED AT A 45 DEGREE ANGLE FROM HORIZONTAL, WITH ADEQUATE CLEARANCE TO ENABLE THE REMOVAL OF THE FILTER SCREEN WITHOUT DIGGING OR THE REMOVAL OF THE GRAVEL OR THE VALVE BOX.
8. USE RIGID SCH. 80 PVC SWING JOINT ASSEMBLIES TO CONNECT ALL ROTARY HEADS AND QUICK COUPLERS.
9. ALL SPRAY HEADS SHALL BE CONNECTED WITH A SWING JOINT ASSEMBLY. ALL POP-UP ROTARY HEADS SHALL INCLUDE A RIGID SCH. 40 PVC SWING JOINT ASSEMBLY OF THE SAME SIZE AS THE HEAD INLET.
10. PROVIDE ONE QUICK COUPLER KEY WITH SWIVEL HOSE ELL FOR EVERY SIX Q.C. VALVES. (MINIMUM ONE SET).
11. CONTRACTOR IS TO CONTACT APPROPRIATE AUTHORITIES AND LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
12. THE PROPOSED LOCATIONS OF ALL ABOVE- GROUND EQUIPMENT INCLUDING BACK-FLOW PREVENTORS, CONTROLLERS AND WEATHER SENSORS SHALL BE STAKED BY THE CONTRACTOR FOR APPROVAL BY THE OWNER'S REPRESENTATIVE BEFORE THESE ITEMS ARE INSTALLED.
13. ALL HEADS SHALL BE INSTALLED A MINIMUM OF 4" FROM PAVEMENT EDGES. (6" OR GREATER WHERE REQUIRED BY LOCAL CODE) FINAL HEAD ADJUSTMENTS BY THE CONTRACTOR SHALL INCLUDE THE ADDITION OF CHECK VALVES WHERE NEEDED TO PREVENT EXCESSIVE LOW HEAD DRAINAGE. THE CONTRACTOR SHALL BUDGET FOR, AND INSTALL CHECK VALVES FOR UP 10% OF THE TOTAL NUMBER OF HEADS WHEN NEEDED, WITH NO ADDITIONAL COST TO THE OWNER.
14. ALL SLEEVES SHALL BE MARKED WITH A 3" CURB SAW CUT ON EACH SIDE OF THE PAVEMENT CROSSING. WHERE A CHANGE OF MAINLINE OR LATERAL PIPE DEPTH IS REQUIRED TO ACCOMMODATE SLEEVE DEPTHS, THE MAINLINE AND LATERAL PIPE SHALL INCLUDE 45 DEGREE ELBOW FITTINGS, NOT 90 DEGREE FITTINGS.
15. WHERE SHOWN ON THE PLANS, SELECTED TURF AREAS SHALL INCLUDE RAIN BIRD XF-SOI SERIES DRIP TUBE WITH PRE-INSTALLED 9 GPH DRIP EMITTERS EVERY 18", INSTALLED IN CENTER-FED GRIDS WITH ROWS SPACED 18" APART. INDIVIDUAL DRIP TUBE RUNS SHALL NOT EXCEED 200 L.F. SEE DRIP GRID DETAILS FOR HEADER AND EXHAUST PIPE SIZES. WHERE REQUIRED, PVC LATERAL "TRUNK" LINES SHALL BE INSTALLED 10" DEEP. DRIP TUBE SHALL BE SET 4" BELOW FINISHED SOIL GRADE. MANUAL FLUSH VALVES (1/2" PVC BALL VALVE) SHALL BE INSTALLED AT THE FARTHEST POINTS FROM THE ZONE VALVE. USE 17 MM BARBED FITTINGS FOR DRIP LINE CONNECTIONS, PRESSURE TESTING ALL CONNECTIONS BEFORE BACKFILLING. XF-SOI DRIP TUBING SHALL BE INSTALLED PERPENDICULAR TO SLOPE FACE. EACH DRIP ZONE SHALL INCLUDE ONE MAINTENANCE FLAG WHICH SHALL CONSIST OF A 12" POP-UP SPRAY HEAD AND COMPLETELY CLOSED SPRAY NOZZLE. THE POP-UP HEAD SHALL BE CONNECTED TO THE DRIP ZONE PIPE, SET FLUSH WITH GRADE, AND LOCATED AT THE FARTHEST DISTANCE FROM THE DRIP VALVE ASSEMBLY. INSTALL THE "FLAG" HEAD ADJACENT TO EDGING OR IN LOW PLANTINGS FOR EASE OF VIEWING. INSTALL RAIN BIRD AIR/VACUUM RELIEF VALVES (AR VALVE KIT) IN 6" ROUND VALVE BOX, AT THE HIGHEST ELEVATIONS OF EACH DRIP ZONE. TEMPORARY SUPPLEMENTAL OVERHEAD WATERING MAY BE REQUIRED FOR SOD ESTABLISHMENT.
16. PIPE SLEEVES MAYBE COMBINED INTO ONE SLEEVE, AS LONG AS THE SLEEVE IS TWICE THE SIZE OF THE PIPES BEING INSTALLED.
17. ALL MATERIALS ARE RECOMMENDED PER THE LICENSED IRRIGATOR, ANY CHANGES TO THE MATERIALS SHALL BE APPROVED BY THE OWNER AND MUST BE EQUAL OR GREATER THAN WHAT IS BEING SPECIFIED.



**Know what's below.
Call before you dig.**
(@ least 48 hours prior to digging)

NOTE:
All areas disturbed by construction shall be fine graded and re-established by sod. These areas shall be irrigated and maintained until permanent stand of grass is achieved with a minimum of 70% coverage. This is to include all areas to the back of curb around the property.



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REGISTRATION # F-10599 (TEXAS)

Hazel and Olive
503 North Goliad Street
Rockwall, Texas

IRRIGATION NOTES

No.	Date	Revision Description



SHEET NO.

IR-1.1

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