

SANDY CITY STANDARD IRRIGATION/LANDSCAPE NOTES

- IRRIGATION/LANDSCAPE NOTES (TO BE ADDED TO THE IRRIGATION/LANDSCAPE PLAN)
- MULCH: AFTER COMPLETION OF ALL PLANTING, ALL IRRIGATED NON-TURF AREAS SHALL BE COVERED WITH A MINIMUM LAYER OF FOUR (4) INCHES OF MULCH TO RETAIN WATER, INHIBIT WEED GROWTH AND MODERATE SOIL TEMPERATURE. NON-POROUS MATERIAL SHALL NOT BE PLACED UNDER THE MULCH. 4" MULCH IN ALL IRRIGATED NON-TURF AREAS. IF ROCK MULCH, MINIMUM IS 3".
 - LANDSCAPE WATER METER: A WATER METER AND BACKFLOW PREVENTION ASSEMBLY THAT ARE IN COMPLIANCE WITH STATE CODE SHALL BE INSTALLED FOR LANDSCAPE IRRIGATION SYSTEMS, AND THE LANDSCAPE WATER METER AND BACKFLOW PREVENTION ASSEMBLY SHALL BE SEPARATE FROM THE WATER METER AND BACKFLOW PREVENTION ASSEMBLY INSTALLED FOR INDOOR USES. THE SIZE OF THE METER SHALL BE DETERMINED BASED ON IRRIGATION DEMAND.
 - PRESSURE REGULATION: A PRESSURE REGULATING VALVE SHALL BE INSTALLED AND MAINTAINED BY THE CONSUMER IF THE STATIC SERVICE PRESSURE EXCEEDS 80 POUNDS PER SQUARE INCH (PSI). THE PRESSURE-REGULATING VALVE SHALL BE LOCATED BETWEEN THE LANDSCAPE WATER METER AND THE FIRST POINT OF WATER USE, OR FIRST POINT OF DIVISION IN THE PIPE, AND SHALL BE SET AT THE MANUFACTURER'S RECOMMENDED PRESSURE FOR SPRINKLERS.
 - AUTOMATIC CONTROLLER: ALL IRRIGATION SYSTEMS SHALL INCLUDE AN ELECTRIC AUTOMATIC CONTROLLER WITH MULTIPLE PROGRAM AND MULTIPLE REPEAT CYCLE CAPABILITIES AND A FLEXIBLE CALENDAR PROGRAM. ALL CONTROLLERS SHALL BE EQUIPPED WITH AN AUTOMATIC RAIN SHUT-OFF DEVICE.
 - ON SLOPES EXCEEDING 30%, THE IRRIGATION SYSTEM SHALL CONSIST OF DRIP EMITTERS, BUBBLERS, OR SPRINKLERS WITH A MAXIMUM PRECIPITATION RATE OF 0.85 INCHES PER HOUR AND ADJUSTED SPRINKLER CYCLE TO ELIMINATE RUNOFF.
 - EACH VALVE SHALL IRRIGATE A LANDSCAPE WITH SIMILAR SITE, SLOPE AND SOIL CONDITIONS AND PLANT MATERIALS WITH SIMILAR WATERING NEEDS. TURF AND NON-TURF AREAS SHALL BE IRRIGATED ON SEPARATE VALVES.
 - DRIP EMITTERS OR A BUBBLER SHALL BE PROVIDED FOR EACH TREE WHERE PRACTICABLE. BUBBLERS SHALL NOT EXCEED 1.5 GALLONS PER MINUTE PER DEVICE. BUBBLERS FOR TREES SHALL BE ON SEPARATE VALVE UNLESS SPECIFICALLY EXEMPTED BY THE SANDY CITY PUBLIC UTILITIES DEPARTMENT DUE TO THE LIMITED NUMBER OF TREES ON THE PROJECT SITE.
 - SPRINKLERS SHALL HAVE MATCHED PRECIPITATION RATE WITH EACH CONTROL VALVE CIRCUIT.
 - CHECK VALVES SHALL BE REQUIRED WHERE ELEVATION DIFFERENCES WILL CAUSE LOW-HEAD DRAINAGE. PRESSURE COMPENSATING VALVES AND SPRINKLERS SHALL BE REQUIRED WHERE A SIGNIFICANT VARIATION IN WATER PRESSURE WILL OCCUR WITHIN THE IRRIGATION SYSTEM DUE TO ELEVATION DIFFERENCES.
 - DRIP IRRIGATION LINES SHALL BE PLACED UNDERGROUND OR OTHERWISE PERMANENTLY COVERED, EXCEPT FOR DRIP EMITTERS AND WHERE APPROVED AS A TEMPORARY INSTALLATION. FILTERS AND END FLUSH VALVES SHALL BE PROVIDED AS NECESSARY.
 - IRRIGATION ZONES WITH OVERHEAD SPRAY OR STREAM SPRINKLERS SHALL BE DESIGNED TO OPERATE BETWEEN 6:00 P.M. AND 10:00 A.M. TO REDUCE WATER LOSS FROM WIND AND EVAPORATION. THIS WOULD EXCLUDE DRIP OR BUBBLER ZONES.
 - PROGRAM VALVES FOR MULTIPLE REPEAT CYCLES WHERE NECESSARY TO REDUCE RUNOFF, PARTICULARLY SLOPES AND SOILS WITH SLOW INFILTRATION RATES.
 - FOLLOWING CONSTRUCTION AND PRIOR TO RELEASE OF THE SECONDARY BOND GUARANTEE POSTED FOR THE PROJECT, A WATER USE EFFICIENCY REVIEW WILL BE CONDUCTED BY A LANDSCAPE IRRIGATION AUDITOR. THE AUDITOR SHALL BE INDEPENDENT OF THE CONTRACTOR, DESIGN FIRM, AND OWNER/DEVELOPER OF THE PROJECT. THE WATER PERFORMANCE AUDIT WILL VERIFY THAT THE IRRIGATION SYSTEM COMPLIES WITH THE MINIMUM STANDARDS REQUIRED BY SANDY CITY ORDINANCE. THE MINIMUM EFFICIENCY REQUIRED FOR THE IRRIGATION SYSTEM IS 60% FOR DISTRIBUTION EFFICIENCY FOR ALL FIXED SPRAY SYSTEMS AND 70% DISTRIBUTION EFFICIENCY FOR ALL ROTOR SYSTEMS. THE AUDITOR SHALL FURNISH A CERTIFICATE TO THE CITY, DESIGNER, INSTALLER AND OWNER/DEVELOPER CERTIFYING COMPLIANCE WITH THE MINIMUM DISTRIBUTION REQUIREMENTS. COMPLIANCE WITH THIS PROVISION IS REQUIRED BEFORE THE CITY WILL RELEASE THE BOND FOR THIS PROJECT.
 - PLANTS WHICH REQUIRE DIFFERENT AMOUNTS OF WATER SHALL BE IRRIGATED BY SEPARATE VALVES. IF ONE VALVE IS USED FOR A GIVEN AREA, ONLY PLANTERS WITH SIMILAR WATER USE SHALL BE USED IN THAT AREA. LAWN AREAS AND PLANTERS SHALL BE IRRIGATED BY SEPARATE VALVES.
 - A SEPARATE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED FOR THE IRRIGATION SYSTEM.
 - A RAIN SENSING OVERRIDING DEVICE SHALL BE UTILIZED SO THAT THE IRRIGATION SYSTEM WILL AUTOMATICALLY TURN OFF IN THE EVENT OF RAIN.
 - THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PREVENT OVERSPRAY AND WATER RUN-OFF ONTO ADJACENT PROPERTY, NON-IRRIGATED AREAS, WALKS, ROADWAYS OR STRUCTURES.
 - AN AUTOMATIC IRRIGATION SYSTEM USING POP-UP SPRINKLER HEADS SHALL BE REQUIRED FOR ALL NEW LANDSCAPES. LOW FLOW SPRINKLER HEADS SHALL BE USED WHEREVER POSSIBLE.
 - NO IRRIGATION OF WALKWAYS OR DRIVE. 20. WATER AUDIT IS REQUIRED PRIOR TO BOND BEING RELEASED. SUGGEST THE AUDIT BE DONE WITHIN 60 DAYS OF INSTALLING IRRIGATION AND LANDSCAPE. IF YOU HAVE ANY QUESTIONS WITH THESE REQUIREMENTS, PLEASE CONTACT CHALEURN "LENNIE" CHANTHAPHUANG, P.E. AT 801-568-7293

NOTE:

- DO NOT COVER WEEP HOLES WITH SAND-ASPHALT SETTING BED.
- 2 3/8" (60mm) THICK PAVERS MAY BE USED FOR PEDESTRIAN APPLICATIONS.

SAND SET CONCRETE PAVERS FOR PEDESTRIANS & VEHICLES



CANYON WALL WITH ROUGH CUT SQUARE BOULDERS

TREE LEGEND (TOTAL PLANT COUNT)

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	HYDROZONE	SPECIAL NOTES
TA	TILIA AMERICANA	AMERICAN LINDEN	3	2" CAL.	LOW	
ZS	ZELKOVA SERRATA	JAPANESE ZELKOVA	11	2" CAL.	LOW	
ZSM	ZELKOVA SERRATA 'MUSASHINO'	JAPANESE ZELKOVA 'MUSASHINO'	10	2" CAL.	LOW	
PNA	PINUS LEUCODERMIS	BOSNIAN PINE	21	2" CAL.	LOW	
MP	MALLUS IOEANSIS 'KLEHM'S IMPROVED'	BECHTEL CRABAPPLE	9	2" CAL.	LOW	
CO	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	9	2" CAL.	LOW	

SHRUBS LEGEND

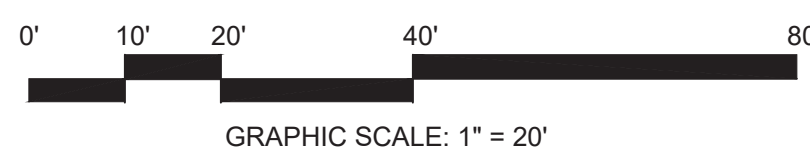
SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	HYDROZONE	SPECIAL NOTES
BTC	BERBERIS THUNBERGII 'CRIMSON PYGMY'	CRIMSON PYGMY DWARF JAPANESE BARBERRY	16	5 GAL.	LOW	
RKO	ROSA X 'KNOCK OUT'	KNOCKOUT ROSE	21	5 GAL.	LOW	

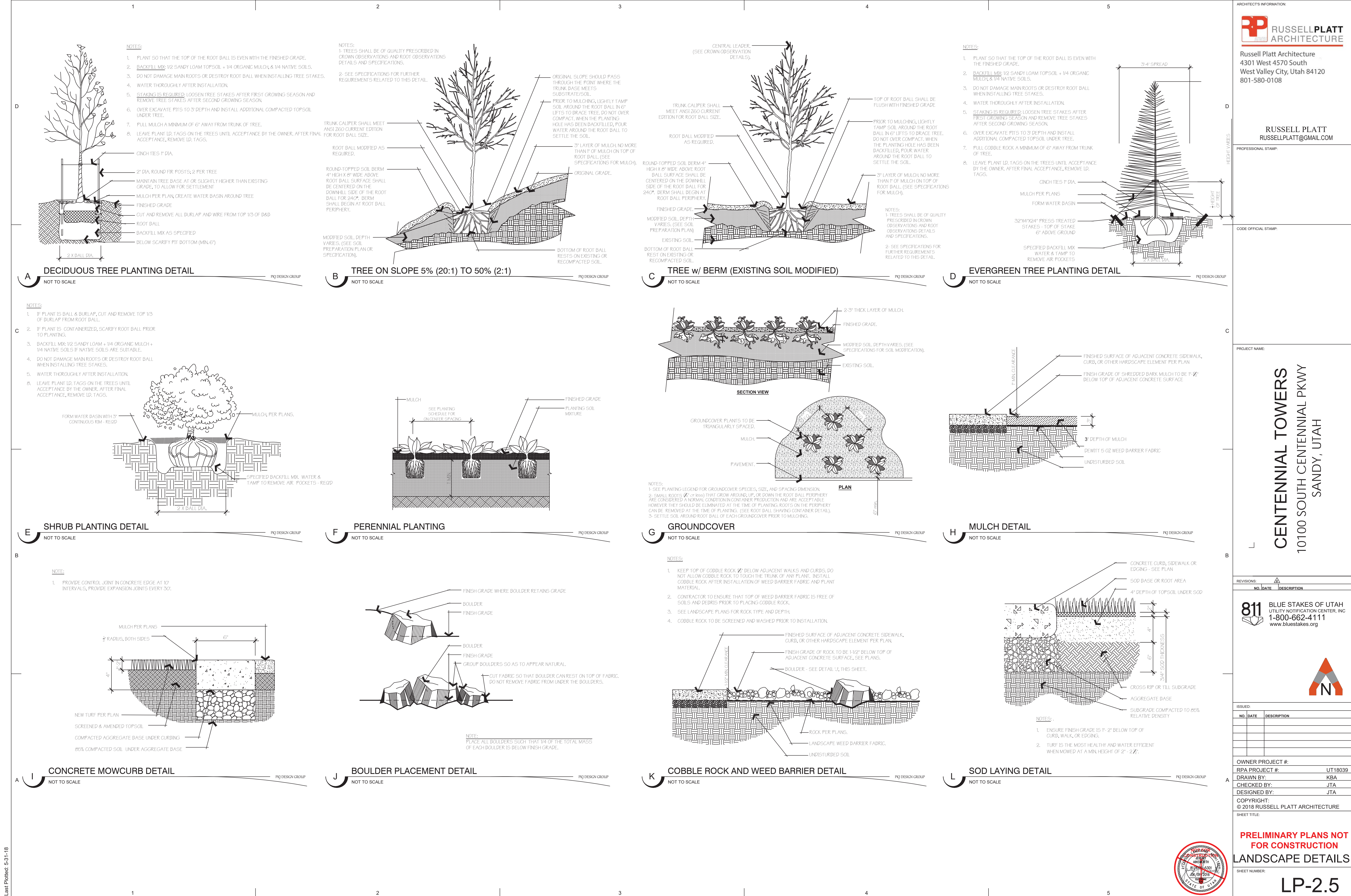
PERENNIALS / GRASSES LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	HYDROZONE	SPECIAL NOTES
HLB	HEMEROCALLIS X 'LITTLE BUSINESS'	LITTLE BUSINESS DAYLILY	14	1 GAL.	HIGH	
MS'D	MISCANTHUS SINENSIS 'DIXIELAND'	DWARF VARIEGATED MAIDEN GRASS	34	1 GAL.	LOW	
PAH	PENNISETUM APOLCUIROIDES 'HAMELN'	HAMELN DWARF FOUNTAIN	106	1 GAL.	HIGH	
HSD	HEMEROCALLIS SP. 'STELLA DE ORO'	STELLA DE ORO DAYLILY	74	1 GAL.	MODERATE	
CAF	CALAMAGROSTIS A. 'FOERSTER'	FOERSTER FEATHER GRASS	70	1 GAL.	HIGH	
CVM	COREOPSIS VERTICILLATA 'MOONBEAM'	MOONBEAM THREADLEAF	32	1 GAL.	LOW	
PVS	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	120	1 GAL.	MODERATE	

SITE MATERIALS

- LAWN AREA: 7,174 SQ. FT. LAWN AREAS SHALL BE BIOGRASS@ BIOMEADOW. FINE FESCUE BLEND SEED MIX. APPLY SEED MIX BY HYDROSEED OR DRILLING TO A PREPARED BASE OF FOUR INCHES (4") OF SANDY LOAM, COMPACTED TOP SOIL, ONCE IRRIGATION AND FINISH GRADING HAS BEEN COMPLETED. ALL LAWN AREAS SHALL BE IRRIGATED WITH 100% COVERAGE BY POP-UP SPRAY HEADS AND GEAR-DRIVEN ROTORS. ALL DECIDUOUS AND CONIFER TREES PLANTED WITHIN SOD AREAS SHALL HAVE A FOUR FOOT(4") DIAMETER TREE RING COVERED WITH CHOCOLATE BROWN SHREDDED BARK MULCH.
- PAVER STYLE AREA #1: 1,811 SQ. FT. LEHI BLOCK - THE HOLLAND - 4 X 8 PAVER IN THREE SHADES OF RED/TAN TO DELINEATE THE ADJOINING AREAS.
- PAVER STYLE AREA #2: 4,189 SQ. FT. BELGARD - CATALINA GRANA PAVER CONTEMPORARY
- PAVER STYLE AREA #3: 817 SQ. FT. BELGARD - OLD WORLD PAVER GLASSIC
- 4"-6" COBBLE ROCK AREAS: 1,767 SQ. FT.
- DECORATIVE ROCK AREAS: 7,467 SQ. FT. DECORATIVE ROCK AREAS SHALL INCLUDE THE PLANTER BEDS AS STATED ON THE PLAN. PLANTER BEDS SHALL BE CONSTRUCTED WITH TWELVE INCHES (12") OF SCREENED, SANDY LOAM TOP SOIL AND SHALL BE COMPLETELY FINISH-COVERED WITH TWO TO FOUR INCH (2"-4") TAN AND GRAY COBBLE ROCK. APPLY DECORATIVE ROCK TO A MINIMUM DEPTH OF THREE INCHES (3") OVER ENTIRE AREA. PRIOR TO INSTALLATION OF DECORATIVE ROCK, DEWITT PRO'S WEED BARRIER FABRIC SHALL BE APPLIED TO THE PLANTER BEDS, ON TOP OF FINISHED TOP SOIL GRADE. ALL TREES AND SHRUBS WITHIN DECORATIVE ROCK AREAS SHALL BE WATERED WITH POINT-SOURCE DRIP IRRIGATION.
- REVEGETATION MIX : 51,099 SQ. FT. SEE NON IRRIGATED - NATIVE REVEGETATION SEED MIX
- BENCH: 17
- SANDSTONE BOULDERS: 70
- 2'-3" BOULDER: 49
- BLACK METAL EDGING: 672 LN. FT.





ARCHITECT'S INFORMATION:

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PROFESSIONAL STAMP:

CODE OFFICIAL STAMP:

PROJECT NAME:
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 10100 SOUTH CENTENNIAL PKWY
 SANDY, UTAH

REVISIONS:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION

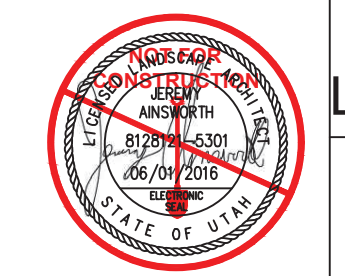
OWNER PROJECT #: UT18039
RPA PROJECT #: KBA
DRAWN BY: JTA
CHECKED BY: JTA
DESIGNED BY: JTA

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SHEET TITLE:
PRELIMINARY PLANS NOT FOR CONSTRUCTION
LANDSCAPE DETAILS

SHEET NUMBER:
LP-2.5

Last Plotted: 5/31/18



IRRIGATION SPECIFICATIONS

IRRIGATION SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

Work to be done includes all labor, materials, equipment and services required to complete the Project irrigation system as indicated on the Construction Drawings, and as specified herein. Includes but is not limited to: Furnishing and installing underground and above ground sprinkler system complete with any accessories necessary for proper function and operation of the system. All plant material on the Project shall be irrigated. Removal and disposal of any existing sprinkler system components are not to be saved, which are disturbed during the construction process. Restoration of any altered or damaged existing landscape to original state and condition.

1.2 SYSTEM DESCRIPTION

A. Design of irrigation components: Locations of irrigation components on Construction Drawings may be approximate. Piping, sleeve and/or other components shown on Construction Drawings may be shown schematically for graphic clarity and demonstration of component groupings and separations. All irrigation components shall be placed in landscaped areas, with the exception of pipe and wire in sleeve under hardscapes. Actual routing of pipe, wire or other components may be altered due to site conditions not accounted for in the design process.

B. Construction requirements: Actual placement may vary as required to achieve a minimum of 100% coverage without overspray onto hardscape, buildings or other features.

C. Layout of Irrigation Components: During layout and staking, consult with Owner Approved Representative (hereafter referred to as OAR) to verify proper placement of irrigation components and to provide Contractor recommendations for changes, where revisions may be advisable. Small or minor adjustments to system layout are permissible to avoid existing field obstructions such as utility boxes or street light poles. Contractor shall place remote control valves in groups as practical to economize on quantity of manifold isolation valves. Quick coupler valves shall be placed with manifold groups and protected by manifold isolation valves. Quick coupler valves are shown on Construction Documents in approximate locations.

1.3 DEFINITIONS

A. Water Supply: Culinary water piping and components, furnished and installed by others to provide irrigation water to this Project, including but not limited to backflow preventer, saddles, nipples, spools, shut off valves, corporation stop valves, water meters, pressure regulation valves, and piping upstream of (or prior to) the Point of Connection.

B. Point of Connection: Location where the Contractor shall tie into the water supply. May require backflow preventer, saddle, nipples, spools, isolation valves or Stop and Waste valve for landscape irrigation needs and use.

C. Main Line Piping: Pressurized piping downstream of the Point of Connection to provide water to remote control valves and quick couplers. Normally under constant pressure.

D. Lateral Line Piping: Circuit piping downstream of remote control valves to provide water to sprinkler heads, sprinkler heads, drip systems or bubblers.

1.4 REFERENCES

A. The following standards will apply to the work of this Section:

- a. ASTM-American Society for Testing and Materials
- b. IA - The Irrigation Association: Main BMP Document, Landscape Irrigation Scheduling and Water Management Document.

1.5 SUBMITTALS

A. At least thirty (30) days prior to ordering of any materials, the Contractor shall provide manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system. Submittals shall be in three ring binders or other similar bound form. Provide five copies of submittals to OAR for distribution. Place cover or index sheet indicating order in submittal document. No material shall be ordered, delivered or any work proceeded in the field, until the required submittals have been reviewed in its entirety and stamped approved. Delivered material shall match the approved samples.

B. Operation and Maintenance Manual:

- i. At least thirty (30) days prior to final inspection, the Contractor shall provide Operation and Maintenance manual to OAR, containing:
 - a. Manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system.
 - b. Parts list for each operating element of the system.
 - c. Manufacturer printed literature on operation and maintenance of operating elements of the system.
 - d. Section listing instructions for overall system operation and maintenance. Include directions for Spring Start-up and Winterization.
- ii. Project Record Copy
- iii. Maintain at project site one copy of all project documents clearly marked "Project Record Copy". Mark any deviation in material installation on construction drawings. Maintain and update drawing at least weekly. Project Record Copy to be available to OAR on demand.
- iv. Completed Project As-Built Drawings

1. Prior to final inspection, prepare and submit to OAR accurate as-built drawings

2. Show detail and dimension changes made during installation. Show significant details and dimensions that were not shown in original Construction Documents.

3. Field dimension locations of sleeve, points of connection, main line piping, wiring runs not contained in main line pipe trenches, valves and valve boxes, quick coupler valves.

4. Dimensions are to be taken from permanent constructed surfaces, features, or finished edges located at or above finished grade.

5. Controller Map: upon completion of system, place in each controller a color coded copy of the area that controller services: indicating zone number, type of plant material and location on project that zone services. Laminate map with heat shrink clear plastic.

1.6 QUALITY ASSURANCE

A. Acceptance: Do not install work of this section prior to acceptance by OAR of area to receive such work.

B. Regulatory Requirements: All work and materials shall be according to any and all rules, regulations or codes, whether they are State or Local laws and ordinances. Contract documents, drawings or specifications may not be construed or interpreted to permit work or materials not conforming to the above codes.

C. Adequate Water Supply: Water supply to this Project exists, installed by others. Connections to these supply lines shall be by this Contractor. Verify that proper connection is available to supply line and is of adequate size. Verify that secondary connection components may be installed if necessary. Perform static pressure test prior to commencement of work. Notify OAR in writing of problems encountered prior to proceeding.

D. Workmanship and Materials:

- a. It is the intent of this specification that all material herein specified and shown on the construction documents shall be of the highest quality available and meeting the requirements specified.
- b. All work shall be performed in accordance with the best standards of practice relating to the trade.

E. Contractor Qualifications:

- i. Contractor shall provide document or resume including at least the following items:
 - a. That Contractor has been installing sprinklers on commercial projects for five previous consecutive years.
 - b. Contractor is licensed to perform Landscape and Irrigation construction in the State of this Project.
 - c. Contractor is bonded for the work to be performed.
- ii. References of five projects of similar size and scope completed within the last five years. Three of the projects listed shall be local.
- iii. Listing of suppliers where materials will be obtained for use on this Project.
- iv. Project site Foreman or Supervisor has at least five consecutive years of commercial irrigation installation experience. This person shall be a current Certified Irrigation Contractor in good standing as set forth by the

Irrigation Association. This person shall be on Project site at least 75% of each working day.

vii. Evidence that Contractor currently employs workers in sufficient quantities to complete Project within time limits that are established by the Contract.

viii. All General laborers or workers on the Project shall be previously trained and familiar with sprinkler installation and have a minimum of one-year experience. Those workers performing tasks related to PVC pipe shall have certifications designated below.

DELIVERY-STORAGE-HANDLING

A. During delivery, installation and storage of materials for Project, all materials shall be protected from contamination, damage, vandalism, and prolonged exposure to sunlight. All material stored at Project site shall be neatly organized in a compact arrangement and storage shall not disrupt Project Owner or other trades on Project site. All material to be installed shall be handled by Contractor with care to avoid breakage or damage. Damaged materials attributed to Contractor shall be replaced with new at Contractor's expense.

1.8 SEQUENCING

A. Perform site survey, research utility records, contact utility location services. The Contractor shall familiarize himself with all hazards and utilities prior to work commencement. Install sleeving prior to installation of concrete, paving or other permanent site elements. Irrigation system Point of Connection components, backflow prevention and pressure regulation devices shall be installed and operational prior to all downstream components. All main lines shall be thoroughly flushed of all debris prior to installation of any sprinkler heads.

1.9 WARRANTY

A. Contractor shall provide one year Warranty. Warranty shall cover all materials, workmanship and labor. Warranty shall include filling and/or repairing depressions or replacing turf or other plantings due to settlement of irrigation trenches or irrigation system elements. Valve boxes, sprinklers or other components settles from original finish grade shall be restored to proper grade. Irrigation system shall have been adjusted to provide proper, adequate coverage of irrigated areas.

1.10 OWNER'S INSTRUCTION

A. After system is installed, inspected, and approved, instruct Owner's Representatives in complete operation and maintenance procedures. Coordinate instruction with references to previously submitted Operation and Maintenance Manual.

1.11 MAINTENANCE

A. Furnish the following items to Owner's Representative:

- a. Two quick coupler keys with hose swivels.
- b. One of each type or size of quick coupler valve and remote control valve. Five percent of total quantities used of each sprinkler and sprinkler nozzle.

B. Provide the following services:

- a. Winterize entire irrigation system installed under this contract. Winterize by "blow-out" method using compressed air. Compressor shall be capable of minimum of 175 CFM. This operation shall occur at the end of first growing season after need for plant irrigation but prior to freezing. Compressor shall be capable of evacuation system of all water pressure regulation device. Compressor shall be regulated to not more than 60 PSI. Start up system the following spring after danger of freezing has passed. Contractor shall train Owner's Representative in proper start-up and winterization procedure.

PART 2 - PRODUCTS

2.1 GENERAL NOTES

A. Contractor shall provide materials to be used on this Project. Contractor shall not remove any material purchased for this Project from the Project Site, nor mix Project materials with other Contractor owned materials. Owner retains right to purchase and provide project material.

2.2 POINT OF CONNECTION

A. The Contractor shall connect onto existing irrigation or water main line as needed for Point(s) of Connection. Contractor shall install new main line as indicated.

2.3 CONNECTION ASSEMBLY

A. Culinary water shall be used on this Project. Install backflow preventer and RPZ as needed.

2.4 CONTROL SYSTEM

A. Power supply to the irrigation controller shall be provided for by this Contractor.

B. Controller shall be as specified in the drawings. Controller shall be surge protected.

C. Installation of wall-mount controllers: Irrigation contractor shall be responsible for this task. Power configuration for wall-mount controllers shall be 120 VAC unless otherwise noted.

b. Locate Controller(s) in general location shown on Construction drawings. Coordinate power supply and breaker allocation with electrical contractor. Contractor shall be responsible for all power connections to Controllers, whether they are wall mount or pedestal mount. Contractor shall coordinate with electrical or other Project trades as needed to facilitate installation of power to controllers.

C. Wires connecting the remote control valves to the irrigation controller are single conductors, type PE. Wire construction shall incorporate a solid copper conductor and polyethylene (PE) insulation with a minimum thickness of 0.045 inches. The wires shall be UL listed for direct burial in irrigation systems and be rated at a minimum of 30 VAC. Palge Electric Co., LP specification number P7079D.

a. A minimum of 24" of additional wire shall be left at each valve, each splice box and at each controller.

b. Common wire shall be white in color, 12 gauge. Control wire shall be red in color, 14 gauge. Spare wire shall be looped within each valve box of the grouping it is to service.

D. RCV wire splicing connectors shall be 3M brand DBY or DBR. Wire splicing between controller and valves shall be avoided if at all possible. Any wire splices shall be contained within a valve box. Splices within a valve box that contains no control valves shall be stamped "WIRE SPLICE" or "WS" on box lid.

2.5 SLEEVING

A. Contractor shall be responsible to protect existing underground utilities and components. Sleeving minimum size shall be 2". Sleeving 2" through 4" in size shall be 5/40 PVC solvent weld. Sleeving 6" and larger shall be CL 200 PVC gasketed. Sleeve diameter shall be at least two times the diameter of the pipe within the sleeve. Sleeves shall be extended 6" minimum beyond walk or edge of pavement. Wire or cable shall not be installed in the same sleeve as piping, but shall be installed in separate sleeves. Sleeve ends on sleeves 4" and larger shall be capped with integral corresponding sized PVC slip cap, pressure fit, until used, to prevent contamination. Sleeves shall be installed at appropriate depths for main line pipe or lateral pipe.

2.6 MAIN LINE PIPE

A. All main line pipe 4" and larger shall be Class 200 gasketed bell end. All main line pipe 3" in size and smaller shall be Schedule 40 PVC solvent weld bell end.

- a. Maximum flows allowed through main line pipe shall be:

3/4"	8 GPM
1"	12 GPM
1-1/2"	30 GPM
2"	53 GPM
2-1/2"	75 GPM
3"	110 GPM
4"	180 GPM
- b. Main line pipe shall be buried with 24" cover

2.7 MAIN LINE FITTINGS

A. All main line fittings 3" and larger shall be gasketed ductile iron material. All ductile iron fittings having change of direction shall have proper concrete thrust block installed. All main line fittings smaller than 3" in size shall be Schedule 80 PVC.

ISOLATION VALVES

A. Isolation valves 3" and larger shall be Waterous brand model 2500 cast iron gate valve, resilient wedge, push on type, with 2" square operating nut. Place sleeve of 6" or larger pipe over top of valve vertically and then extend to grade. Place 10" round valve box over sleeve at grade.

B. Isolation valves 2-1/2" and smaller shall be Apollo brand 70 series brass ball valves, contained in a Carson Standard size valve box. Valves shall be installed with 5/80 PVC TOE Nipples on both sides of the valve. Valve shall be placed so that the handle is vertical toward the top of the valve box in the "off" position.

2.9 MANIFOLDS

A. Action Manifold fittings shall be used to create unions on both sides of each control valve, allowing the valve to be removed from the box without cutting piping. Valves shall be located in boxes with ample space surrounding them to allow access for maintenance and repair. Where practical, group remote control valves in close proximity, and protect each grouping with a manifold isolation valve as shown in details. Manifold Main Line (or Sub-Main Line) and all manifold components and isolation valves shall be at least as large as the largest diameter lateral served by the respective manifold.

2.10 REMOTE CONTROL VALVES

A. Remote control valves shall be as specified on the drawings. Remote control valves shall be located separately and individually in separate control boxes.

2.11 MANUAL CONTROL VALVES

A. Quick coupler valve shall be attached to the manifold sub-main line using a Lasco G175212 swing joint assembly with snap-lock outlet and brass stabilizer elbow. Quick coupler valve shall be placed within a Carson 10" round valve box. Top of quick coupler valve cover shall allow for complete installation of valve box lid, but also allow for insertion and operation of key. Base of quick coupler valve and top of quick coupler swing joint shall be encased in 1/2" gravel. Contractor shall not place quick coupler valves further than 200 feet apart, to allow for spot watering or supplemental irrigation of new plant material. Quick coupler valve at POC shall not be eliminated or relocated.

2.12 LATERAL LINE PIPE

A. All lateral piping shall be Schedule 40 PVC, solvent weld, and bell end. Lateral pipe shall be buried with 12-18" of cover typically. Lateral pipe shall be 1/2", 3/4", 1", 1 1/4", 1 1/2", or 2" in size as indicated on Construction Drawings.

2.13 LATERAL LINE FITTINGS

A. All lateral line fittings shall be 5/40 PVC

2.14 Spray Sprinklers

A. Spray head sprinklers shall be as specified on the drawings. Nozzles shall be as specified on the drawings.

2.15 VALVE BOXES

A. Carson valve boxes shall be used on this project. Sizes are as directed in these Specifications, detail sheets or plan sheets. Valve boxes shall be centered over the control valve or element they cover. Valve box shall be sized large enough to allow ample room for services access, removal or replacement of valve or element. Valve box shall be set to flush to finish grade of topsoil or barked areas. Contractor shall provide extensions or stack additional valve boxes as necessary to bring valve box pit to proper grade.

2.16 IMPORT BACKFILL

A. All main line pipe, lateral line pipe and other irrigation elements shall be bedded and backfilled with clean soil, free of rocks 1" and larger. Contractor shall furnish and install additional backfill material as necessary due to rocky conditions. Trenches and other elements shall be compacted and/or water settled to eliminate settling. Debris from trenching operations unusable for fill shall be removed from project and disposed of properly by Contractor.

2.17 OTHER PRODUCTS

A. Substitution of equivalent products is subject to the OAR's approval and must be designated as accepted in writing.

a. The Contractor shall provide materials to make the system complete and operational.

PART 3 - EXECUTION

3.1 PREPARATION

A. Contractor shall repair or replace work damaged by irrigation system installation. If damaged work is new, replacement or the original installer of that work shall perform repairs. The existing landscape of this Project shall remain in place. Contractor shall protect and work around existing plant material. Coordination of trench and valve locations shall be laid out the OAR prior to any excavation occurring. Plant material deemed damaged by the OAR shall be replaced with new plant material at Contractor's expense. Contractor shall not cut existing tree roots larger than 2" to install this Project. Route pipe, wire and irrigation elements around tree canopy drip line to minimize damage to tree roots. Contractor shall have no part of existing system used by other portions of site landscape without water for without water for more than 24 hours at a time.

3.2 TRENCHING AND BACKFILL

A. Pulling of pipe shall not be permitted on this project. Over excavate trenches both in width and depth. Ensure base of trench is rock or debris free to protect pipe and wire. Grade trench base to ensure flat, even support of piping. Backfill with clean soil or import material. Contractor shall backfill no less than 2" around entire pipe with clean, rock free fill. Main line piping and fittings shall not be backfilled until OAR has inspected and pipe has passed pressure testing. Perform balance of backfill operation to eliminate any settling.

3.3 SLEEVING

A. Sleeve all piping and wiring that pass under paving or hardscape features. Wiring shall be placed in separate sleeving from piping. Sleeves shall be positioned relative to structures or obstructions to allow for pipe or wire within to be removed if necessary.

3.4 GRADES AND DRAINAGE

A. Place irrigation pipe and other elements at uniform grades. Winterization shall be by evacuation with compressed air. Automatic drains shall not be installed on this Project. Manual drains shall only be installed at POC where designated on Construction Drawings.

3.5 PVC PIPE

A. Install pipe to allow for expansion and contraction as recommended by pipe manufacturer.

B. Install main line pipes with 18" of cover, lateral line pipes with 12" of cover.

C. Drawings show diagrammatic or conceptual location of piping - Contractor shall install piping to minimize change of direction, avoid placement under large trees or large shrubs, avoid placement under hardscape features.

D. Plastic pipe shall be cut squarely. Burrs shall be removed. Spigot ends of pipes 3" and larger shall be beveled.

E. Pipe shall not be glued unless ambient temperature is at least 50 degrees F. Pipe shall not be glued in rainy conditions unless properly tented. All solvent weld joints shall be assembled using IPS 711 glue and P70 primer according to manufacturer's specification, no exceptions. All workers performing glue operations shall provide evidence of certification. Glued main line pipe shall cure a minimum of 24 hours prior to being energized. Lateral lines shall cure a minimum of 2 hours prior to being energized and shall not remain under constant pressure until cured for 24 hours.

F. Appropriate thrust blocking shall be performed on fittings 3" and larger. All threaded joints shall be wrapped with Teflon tape or paste unless directed by product manufacturer or sealing by o-ring.

3.6 CONTROLLERS

A. All grounding for pedestal controllers shall be as directed by controller manufacturer and ASIC guidelines, not to exceed a resistance reading of 5 OHMS.

B. Locate controllers in protected, inconspicuous places, when possible. Coordinate location of pedestal controllers with Landscape Architect to minimize visibility.

C. Coordinate location of wall mount controllers with building or electrical Contractor to facilitate electrical service and future maintenance needs. Wall mount shall be securely fastened to surface. If exterior mounted, wall mount controllers shall have electrical service wire and field control wire in separate, appropriate sized weatherproof electrical conduit, PVC pipe shall not be used.

D. Wire under hardscape surfaces shall be placed continuously in conduit. Contractor shall be responsible to coordinate sleeving needs for conduit or sweeps elbows from exterior to interior of building.

E. Pedestal controllers shall be placed upon VIT-Strong Box Quick Pad as per manufacturer's recommendations. Controllers shall be oriented such that Owner's Representative maintenance personnel may access easily and perform field system tests efficiently.

F. Place Standard valve box at base of controller or nearby to allow for three to five feet of slack field control wire to be placed at each controller. This Contractor shall provide conduit access if needed for Electrical Contractor. Electrical supply and installation, as well as hook-up to controller shall be by this Contractor.

3.7 VALVES

A. Isolation valves, remote control valves, and quick coupler valves shall be installed according to manufacturer recommendation and Contract Specifications and Details.

B. Valve boxes shall be set over valves so that all parts of the valve can be reached for service.

C. Valve box and lid shall be set to be flush with finished grade. Only one remote control valve may be installed in a Carson 1419124 box. Place a minimum of 4" of 1/2" washed gravel beneath valve box for drainage. Bottom of remote control valve shall be a minimum of 2" above gravel.

3.8 SPRINKLER HEADS

A. No sprinkler shall be located closer than 6" to walls, fences, or buildings.

B. Heads adjacent to walks, curbs, or paths shall be located at grade and 2" away from hardscape.

C. Control valves shall be opened and fully flush lateral line pipe and swing joints prior to installation of sprinklers.

D. Spray heads shall be installed and flushed again prior to installation of nozzles.

E. Contractor shall be responsible for adjustment if necessary due to grade changes during landscape construction.

3.9 FIELD QUALITY CONTROL

A. Main line pipes shall not be backfilled or accepted until the system has been tested for 2 hours at 100 psi.

B. Main line pressure test shall include all pipe and components from the point of connection to the upstream side of remote control valves. Test shall include all manifold components under constant pressure. Piping may be tested in sections that can be isolated.

C. Contractor shall provide pressurized water pump to increase or boost pressure where existing static pressure is less than 100 psi.

D. Schedule testing with OAR 48 hours in advance for approval.

E. Leaks or defects shall promptly be repaired or rectified at the Contractors expense and retested until able to pass testing.

F. Grounding resistance at pedestal controller shall also be tested and shall not exceed 5 OHMS.

3.10 ADJUSTMENT

A. Sprinkler heads shall be adjusted to proper height when installed. Changes in grade or adjustment of head height after installation shall be considered a part of the original contract and at Contractor's expense.

B. Adjust all sprinkler heads for arc, radius, proper trim and distribution to cover all landscaped areas that are to be irrigated.

C. Adjust sprinklers so they do not water buildings, structures, or other hardscape features.

D. Adjust run times of station to meet needs of plant material the station services.

3.11 CLEANING

A. Contractor shall be responsible for cleanliness of jobsite. Work areas shall be swept cleanly and picker up daily.

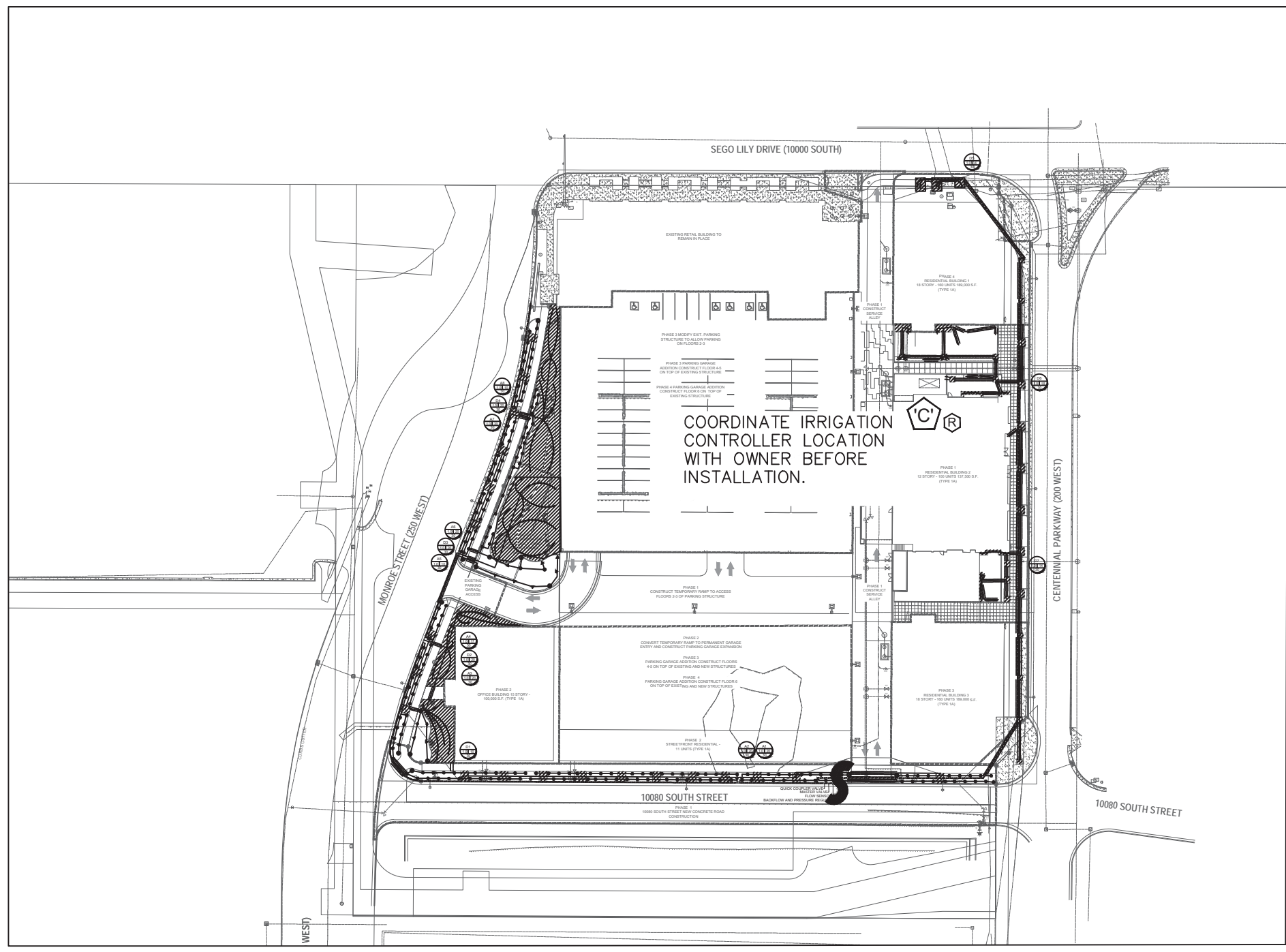
B. Open trenches or hazards shall be protected with yellow caution tape.

C. Contractor is responsible for removal and disposal offsite of trash and debris generated as a result of this Project.

D. OAR shall perform periodic as well as a final cleanliness inspection.

E. Contractor shall leave Project in at least a "broom clean" condition.

END OF SECTION



2" MAINLINE ROUTING ,CONTROLLER AND P.O.C. LOCATION OVERVIEW



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PROFESSIONAL STAMP:

CODE OFFICIAL STAMP:

PROJECT NAME:

CENTENNIAL TOWERS

10100 SOUTH CENTENNIAL PKWY
SANDY, UTAH

REVISIONS:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION

OWNER PROJECT #:

RPA PROJECT #: UT18039

DRAWN BY: KBA

CHECKED BY: JTA

DESIGNED BY: JTA

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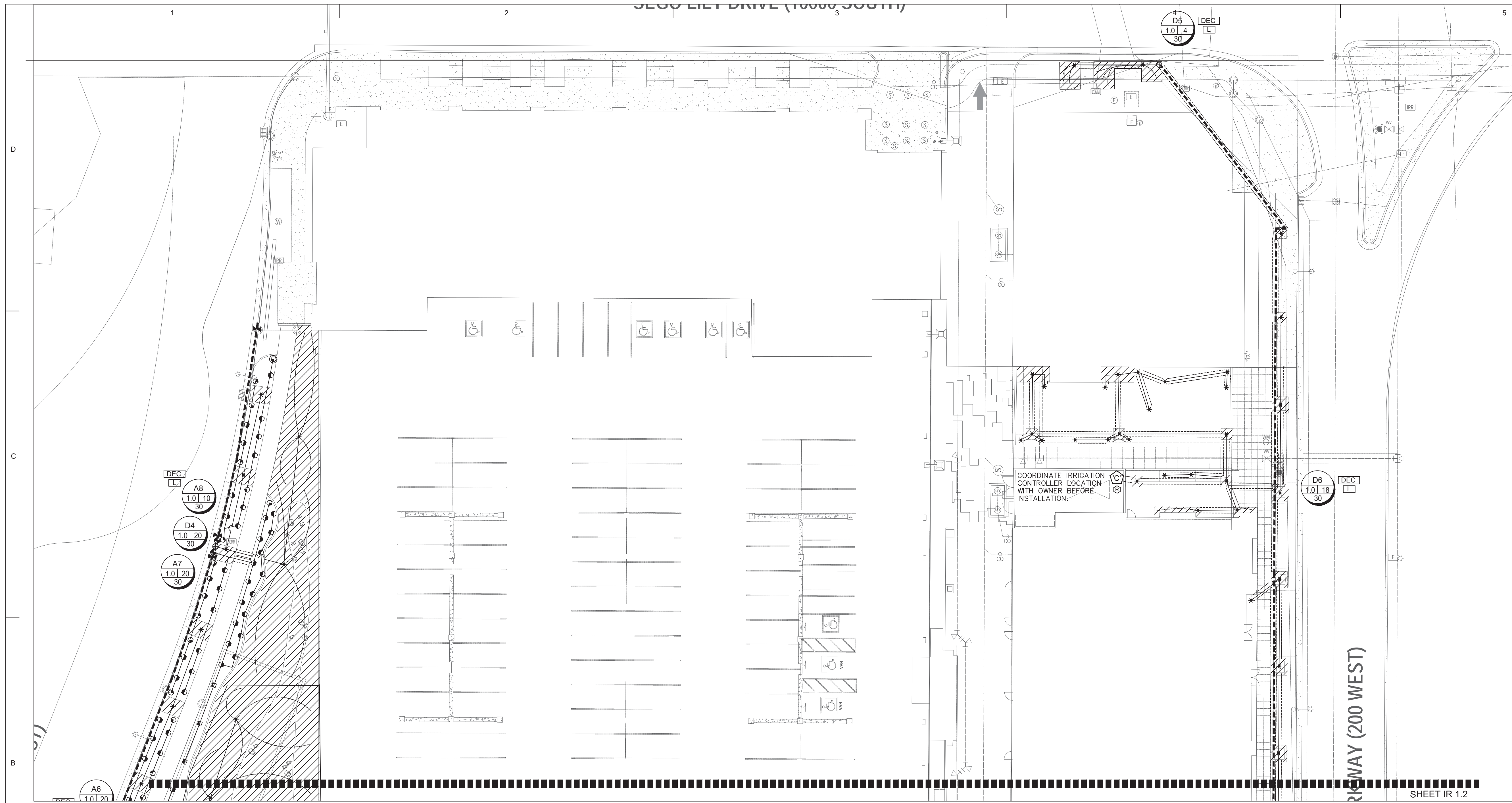
SHEET TITLE:

PRELIMINARY PLANS NOT FOR CONSTRUCTION

IRRIGATION PLAN

SHEET NUMBER

IR-1.0



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PRELIMINARY PLANS NOT FOR CONSTRUCTION
 IRRIGATION PLAN

SHEET NUMBER:
IR-1.1

IRRIGATION LEGEND

SYMBOL	MANUFACTURER-MODEL NUMBER	PAT.	RD.	PSI	GPM						QTY	REMARKS	
				Q		T		H		TT		F	
◆	RAINBIRD RD04-S-PRS POP UP SPRAY 5 SERIES	Q,T,H,F	5'	30	10	15	20	na	na	40	--	USE HE-VAN NOZZLES AS NECESSARY	
●	RAINBIRD RD04-S-PRS POP UP SPRAY 8 U-SERIES	Q,T,H,F	8'	30	26	35	52	na	na	1.05	--	USE HE-VAN NOZZLES AS NECESSARY	
○	RAINBIRD RD04-S-PRS POP UP SPRAY 10 U-SERIES	Q,T,H,F	10'	30	39	53	79	na	na	1.58	--	USE HE-VAN NOZZLES AS NECESSARY	
◇	RAINBIRD RD04-S-PRS POP UP SPRAY 12 U-SERIES	Q,T,H,TT	12'	30	65	87	130	1.74	1.95	2.60	--	USE HE-VAN NOZZLES AS NECESSARY	
▽	RAINBIRD RD04-S-PRS POP UP SPRAY 15 U-SERIES	Q,T,H,TT	15'	30	92	123	1.85	2.48	2.78	3.70	--	USE HE-VAN NOZZLES AS NECESSARY	
■	RAINBIRD RD04-S-PRS POP UP SPRAY 15 SST	SST	15'	30	1.21							--	
□	RAINBIRD RD04-S-PRS POP UP SPRAY 15 EST	EST	15'	30	.61							--	
○	USE HE-VAN NOZZLES												
Ⓢ	CONTROLLER: RAINBIRD ESP-LXD CONTROLLER WITH LMR REMOTE KIT, PLACE IN LXXM PEDISTAL, CONTRACTOR TO ADJUST LOCATION WITH OWNER PRIOR TO CONSTRUCTION.												COORDINATE WITH OWNER FOR EXACT LOCATION
DEC	VALVE DECODER (AT ALL VALVE GROUPINGS) INSTALL PER MANUFACTURER'S SPEC.												SEE DETAIL
Ⓛ	LIGHTNING ARRESTER (AT ALL VALVE GROUPINGS) INSTALL PER MANUFACTURER'S SPEC.												SEE DETAIL
Ⓜ	MASTER VALVE												SEE DETAIL
Ⓝ	FLOW SENSOR												SEE DETAIL
Ⓞ	RAINBIRD WR2-RC WIRELESS RAIN SHUT OFF DEVICE												SEE DETAIL
Ⓟ	IRRIGATION POINT OF CONNECTION AND RPZ BACKFLOW PREVENTION - CONNECT TO WATER SERVICE LINE AND METER. (SEE CIVIL PLANS) CONTRACTOR LOCATE AND VERIFY EXACT LOCATION ON SITE.												10" RND. VALVE BOX. SEE DETAIL
Ⓠ	QUICK COUPLER: RAINBIRD 44LRC INSTALL PER MANUFACTURER'S SPEC.												SEE DETAIL
Ⓡ	ISOLATION BALL VALVE - LINE SIZED INSTALL PER MANUFACTURER'S SPEC.												SEE DETAIL
Ⓢ	REMOTE CONTROL VALVE: RAINBIRD PESB-NP-PRS-D AUTOMATIC CONTROL VALVE (SIZE AS NOTED ON PLAN)												SEE DETAIL JUMBO BOX-PURPLE LID
Ⓣ	DRIP CONTROL ZONE KIT: RAINBIRD XCZ-(PER PLAN)-PRBR-COM MED FLOW (SIZE AS NOTED ON PLAN)												SEE DETAIL
Ⓤ	DRIP CONNECTION: PROVIDE DRIP IRRIGATION TO ALL TREES, SHRUBS AND PERENNIALS IN PLANTER AREAS												INSTALL FLUSH CAP. SEE DETAIL
Ⓥ	DRIP RWS-S-B-1401 (ROOT WATERING SYSTEM) PROVIDE 2 TO EACH TREE LOCATED IN THE LAWN AREAS.												SEE DETAIL
---	LOOP MAINLINE: SCHEDULE 40 PVC WITH SCHEDULE 80 FITTINGS, 2" DIAMETER 24" MIN. COVER												SEE PIPE SIZING CHART
---	LATERAL LINE: SCHEDULE 40 PVC WITH SCH. 40 FITTINGS. SEE PIPE SIZING CHART												SEE DETAIL
---	DRIP LINE: RAINBIRD XFSP-03-18-100 OR EQUIVALENT												SEE DETAIL
---	CLASS 200 SLEEVE PER PLAN												SEE DETAIL
---	NOT SHOWN												SEE DETAIL
---	NOT SHOWN												SEE DETAIL
---	NOT SHOWN												SEE DETAIL

DRIP ZONE

TYPE	PART NUMBER	EMITTER FLOW	EMITTER SPACING	ROW SPACING	RECOMMENDED ROW SPACING
XFSP DRIFLINE	XFSP-09-18	9 GPH	18"	18"	18-21 IN.
TOTAL DRIP ZONE FLOW		20 GPM	TIME TO APPLY 1/4" OF WATER		23
MAXIMUM LATERAL LENGTH OF TUBING		350 FT	REQUIRED NUMBER OF STAKES		500
TOTAL LENGTH OF ZONE DRIFLINE		2,000 FT (varies per plan)	NUMBER OF FLUSH POINTS		2
APPLICATION RATE		.64 INCH PER HOUR	SUGGESTED HEADER AND FOOTER PIPE SIZE		CLASS 200 1 1/4"

*NUMBERS MAY CHANGE DUE TO SIZE OF DRIP ZONE PER PLAN

IRRIGATION NOTES

- ALL PIPE TO BE SCHEDULE 40 PVC PIPE OR BETTER. NO POLY PIPE SHALL BE INCLUDED. FITTINGS MUST BE SCHEDULE 40 OR BETTER ON LATERAL LINES AND SCHEDULE 80 OR BETTER ON MAIN LINE. SIZE PER PLAN.
- MAIN LINES SHALL BE 24" DEEP MIN. AND LATERAL LINES 12" DEEP MIN. NO ROCK GREATER THAN 1/2" DIAMETER SHALL BE ALLOWED IN TRENCHES. TRENCHING BACKFILL MATERIAL SHALL BE COMPACTED TO PROPER FINISHED GRADE.
- CONTRACTOR SHALL HAVE ALL UTILITIES BLUE STAKED PRIOR TO DIGGING. ANY DAMAGE TO THE UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- PLACE ALL IRRIGATION IN LANDSCAPE AREAS AND ON THE PROPERTY OF THE OWNER.
- MODIFY LOCATION OF IRRIGATION COMPONENTS TO AVOID PLACING TREES, SHRUBS AND OTHER SITE ELEMENTS DIRECTLY OVER PIPE. PER PLANS. DO NOT LOCATE VALVE BOXES IN LAWN AREAS UNLESS DIRECTED TO BY LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL INSTALL A QUICK COUPLER AT POINT OF CONNECTION IN ORDER TO BLOW OUT THE SYSTEM WITH AN AIR COMPRESSOR EACH FALL FOR BIDDING AND INSTALLATION PURPOSES.
- CONTRACTOR SHALL USE ONLY COMMERCIAL GRADE IRRIGATION PRODUCTS AND IS RESPONSIBLE FOR ENSURING ACCURATE COUNTS AND QUANTITIES OF ALL IRRIGATION MATERIALS FOR BIDDING AND INSTALLATION PURPOSES.
- INSTALL DRIP IRRIGATION PER DETAILS. CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY.
- CONTRACTOR SHALL PROVIDE AND INSTALL SLEEVES FOR ALL PIPES AND WIRES UNDER PAVEMENT AND SIDEWALKS. SLEEVES SHALL BE 2 SIZES LARGER THAN PIPE INSIDE. ALL WIRE SHALL BE IN SEPARATE SLEEVES (NOT SHOWN). ALL CONTROL WIRE SHALL BE INSTALLED IN CLASS 200 PIPE. PLACE JUNCTION BOXES WHERE NECESSARY TO MINIMIZE LONG RUNS OR AT DIRECTIONAL CHANGES. COORDINATE WITH ALL TRADES.
- WATER LINES AND ELECTRICAL LINES MUST NOT SHARE CONDUITS. ALL WIRE CONNECTIONS MUST BE CONTAINED IN VALVE BOX WITH 3' OF EXTRA WIRE. WIRE TO BE CONNECTED TO MAIN LINE PIPE WHERE POSSIBLE WITH TAPE AT 25 INTERVALS. SLACK IN CONTROL WIRES REQUIRED AT EVERY CHANGE OF DIRECTION. WIRES MUST HAVE SEPARATE COLORS FOR COMMON, CONTROL AND SPARE. MINIMUM 1 SPARE WIRE FOR EVERY 5 VALVES. ALL CONTROL WIRES TO BE INSULATED 14 GAUGE COPPER. ALL SPARE WIRES MUST "HOME RUN" TO CONTROLLER AND SPARE WIRES AVAILABLE AT ALL VALVE MANIFOLDS AND CLUSTERS.
- ALL SLEEVES INSTALLED SHALL BE TAPE DUCTED TO PREVENT DIRT OR OTHER DEBRIS ENTERING PIPE. ALL SLEEVES SHALL BE IDENTIFIED BY WOOD OR PVC STAKES AND BE SPRAY PAINTED WITH MARKING PAINT. REMOVE STAKES ONCE IRRIGATION SYSTEM IS COMPLETE.
- IRRIGATION SYSTEM MUST CONTAIN CHECK VALVES TO PREVENT LOW POINT DRAINAGE.
- SPACE ALL SPRAY HEADS 2" AWAY FROM ANY HARDSCAPE.
- CONTRACTOR SHALL MATCH PRECIPITATION RATES AS MUCH AS POSSIBLE FOR ALL LANDSCAPED AREAS. OVERHEAD IRRIGATION MUST HAVE A MINIMUM DU (DISTRIBUTION UNIFORMITY) OF 60%.
- IRRIGATION CONTRACTOR SHALL PRESSURE TEST MAINLINE FOR LEAKS PRIOR TO BACKFILLING.
- ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CITY AND/OR COUNTY CODES. THE CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS.
- IRRIGATION INSTALLATION TO COMPLY WITH APPLICABLE CITY SPECIFICATIONS AND DRAWINGS.
- ACTUAL INSTALLATION OF IRRIGATION SYSTEM MAY VARY SOMEWHAT FROM PLANS. THE CONTRACTOR IS RESPONSIBLE TO MAKE ADJUSTMENTS AS NEEDED TO ENSURE PROPER COVERAGE OF ALL LANDSCAPED AREAS.
- CONTRACTOR SHALL INSTALL IRRIGATION SYSTEM WITH HEAD TO HEAD COVERAGE IN ALL TURF AREAS. USE HE-VAN NOZZLES AS NECESSARY TO PROVIDE PROPER COVERAGE AND TO KEEP WATER OFF OF BUILDINGS AND HARDSCAPES.
- POWER TO CONTROLLER TO BE PROVIDED BY OWNER. OWNER TO SPECIFY EXACT LOCATION OF CONTROLLER. INSTALL PER MANUFACTURER'S INSTRUCTIONS. CONTRACTOR SHALL INSTALL A RAIN SENSOR WITH CONTROLLER UNLESS OTHERWISE DIRECTED BY OWNER OR LANDSCAPE ARCHITECT.
- DESIGN AND INSTALL THE BACKFLOW PREVENTOR IN THE PROPER PLACE TO ENSURE THAT NO WATER IS CONTAMINATING THE SYSTEM.
- LATERAL LINES SHALL BE NO SMALLER THAN 3/4". LANDSCAPE CONTRACTOR TO ENSURE THE FOLLOWING PIPE SIZES DO NOT EXCEED THE SUGGESTED GPM LISTED BELOW:

3/4"	8 GPM
1"	12 GPM
1-1/2"	30 GPM
2"	53 GPM
2-1/2"	75 GPM
3"	110 GPM
4"	180 GPM

90 Day Establishment Period Irrigation Schedule (April, May, June)

Hydro-Zone	Type	Set	Mon	Tue	Wed	Thurs	Fri	Sat	Operating Pressure
Hydro-Zone 1	Turf	15 min	15 min	15 min	15 min	15 min	15 min	15 min	30 psi
Hydro-Zone 2	Shrubs	25 min	0	25 min	0	25 min	0	25 min	40 psi

Regular Irrigation Schedule (see Seasonal Differential Chart)

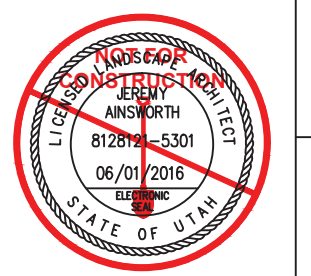
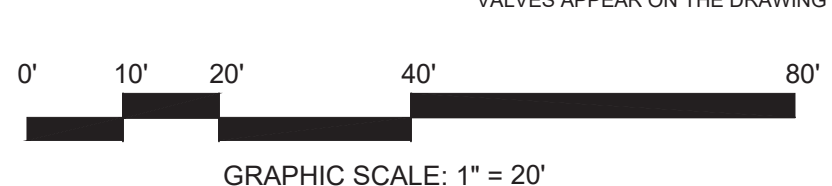
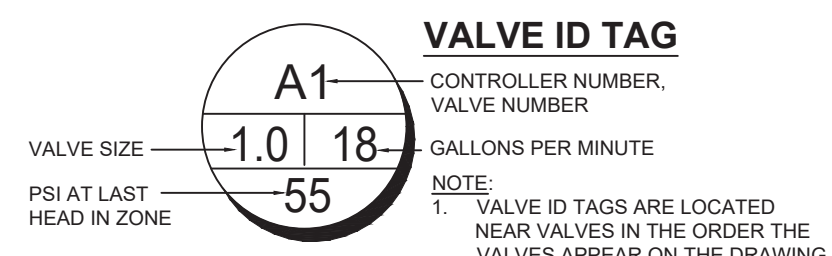
Hydro-Zone	Type	Set	Mon	Tue	Wed	Thurs	Fri	Sat	Operating Pressure
Hydro-Zone 1	Turf	15 min	15 min	15 min	15 min	15 min	15 min	15 min	30 psi
Hydro-Zone 2	Shrubs	45 min	45 min	45 min	45 min	45 min	45 min	45 min	40 psi

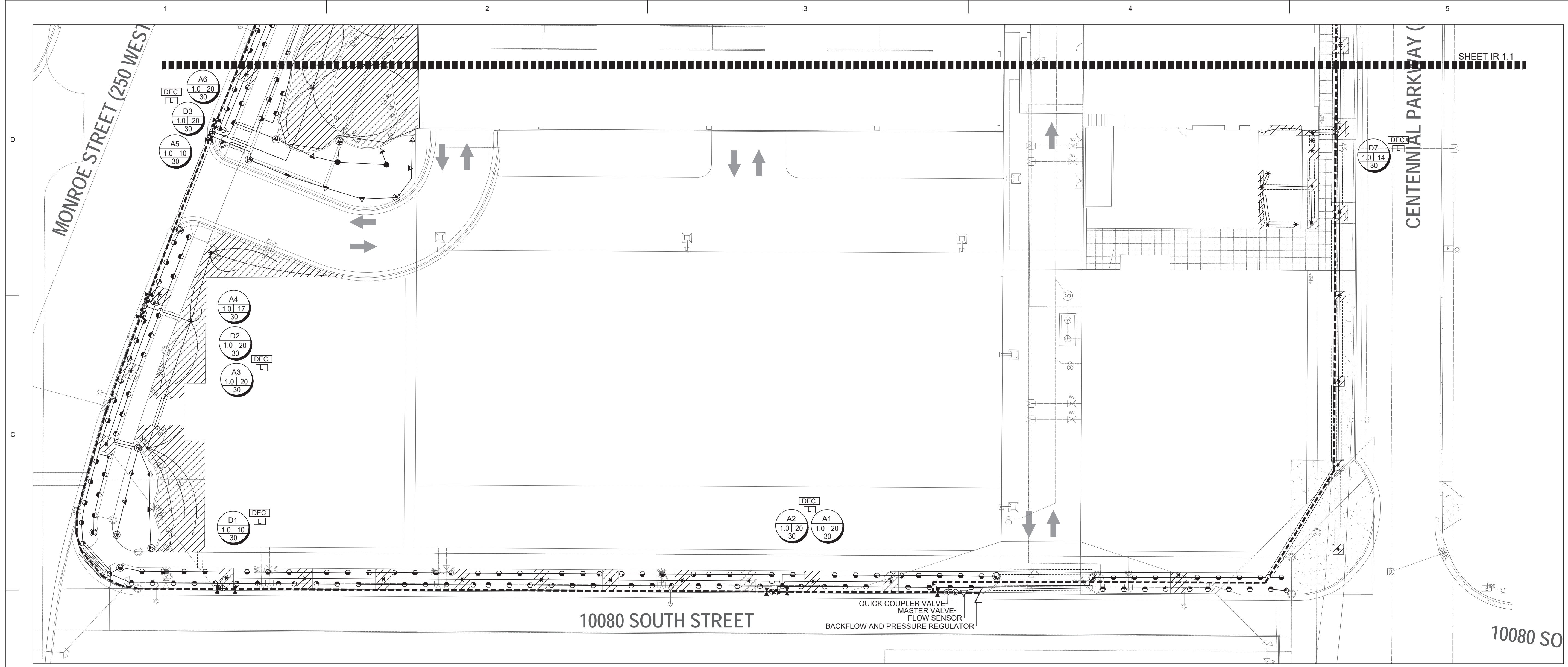
Seasonal Differential

Hydro-Zone	Type	April	May	June	July	August	Sept	October
Hydro-Zone 1 (Turf)		30 min	30 min	30 min	30 min	30 min	30 min	30 min
Hydro-Zone 2 (Shrubs)		30 min	30 min	45 min	45 min	45 min	30 min	30 min

Monthly Landscape Water Allowance

Hydro-Zone	April	May	June	July	August	Sept	October	Total Annual Water Allowance (gallons)	Total (SQ FT)	Gallons/Sq Ft Year
Hydro-Zone1 Totals	19,669.8	26,733.4	31,451.1	36,168.8	32,616.0	21,866.3	13,395.8	181,801.1	9,294.0	19.3310
Hydro-Zone2 Totals	7,373.8	10,072.7	11,850.2	13,627.8	12,288.1	8,163.5	5,047.3	88,424.2	7,078.0	9.6659
Zone 1 (Turf)	E1C1=1.0; E2C1=1.0; E3C1=1.0; E4C1=1.0; E5C1=1.0; E6C1=1.0; E7C1=1.0; E8C1=1.0; E9C1=1.0; E10C1=1.0; E11C1=1.0; E12C1=1.0									
Zone 2 (Shrubs)	E1C2=1.0; E2C2=1.0; E3C2=1.0; E4C2=1.0; E5C2=1.0; E6C2=1.0; E7C2=1.0; E8C2=1.0; E9C2=1.0; E10C2=1.0; E11C2=1.0; E12C2=1.0									





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 SANDY, UTAH

REVISIONS:

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ISSUED:

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 RPA PROJECT #: UT 18039
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PRELIMINARY PLANS NOT FOR CONSTRUCTION
IRRIGATION PLAN

SHEET NUMBER
IR-1.2

IRRIGATION LEGEND

SYMBOL	MANUFACTURER—MODEL NUMBER	PAT.	RD.	PSI	GPM							QTY	REMARKS
					Q	T	H	TT	TQ	F			
◆	RAINBIRD RD04-S-PRS POP UP SPRAY 5 SERIES	Q.T.H.F	5'	30	.10	.15	.20	na	na	.40	--	USE HE-VAN NOZZLES AS NECESSARY	
●	RAINBIRD RD04-S-PRS POP UP SPRAY 8 U-SERIES	Q.T.H.F	8'	30	.26	.35	.52	na	na	1.05	--	USE HE-VAN NOZZLES AS NECESSARY	
●	RAINBIRD RD04-S-PRS POP UP SPRAY 10 U-SERIES	Q.T.H.F	10'	30	.39	.53	.79	na	na	1.58	--	USE HE-VAN NOZZLES AS NECESSARY	
●	RAINBIRD RD04-S-PRS POP UP SPRAY 12 U-SERIES	Q.T.H.TOT	12'	30	.65	.87	1.30	1.74	1.95	2.80	--	USE HE-VAN NOZZLES AS NECESSARY	
▼	RAINBIRD RD04-S-PRS POP UP SPRAY 15 U-SERIES	Q.T.H.TT	15'	30	.92	1.23	1.85	2.48	2.78	3.70	--	USE HE-VAN NOZZLES AS NECESSARY	
▼	RAINBIRD RD04-S-PRS POP UP SPRAY 15 SST	SST	15'	30	1.21						--		
□	RAINBIRD RD04-S-PRS POP UP SPRAY 15 EST	EST	15'	30	.61						--		
○	USE HE-VAN NOZZLES										--		
⊞	CONTROLLER: RAINBIRD ESP-LXD CONTROLLER WITH LMR REMOTE KIT, PLACE IN LXMM PEDISTAL. CONTRACTOR TO ADJUST LOCATION WITH OWNER PRIOR TO CONSTRUCTION.										--	COORDINATE WITH OWNER FOR EXACT LOCATION.	
DEC	VALVE DECODER (AT ALL VALVE GROUPINGS) INSTALL PER MANUFACTURER'S SPEC.										--	SEE DETAIL	
L	LIGHTNING ARRESTER (AT ALL VALVE GROUPINGS) INSTALL PER MANUFACTURER'S SPEC.										--	SEE DETAIL	
⊞	MASTER VALVE										--	SEE DETAIL	
▽	FLOW SENSOR										--	SEE DETAIL	
⊞	RAINBIRD WRZ-RC WIRELESS RAIN SHUT OFF DEVICE										--	SEE DETAIL	
⊞	IRRIGATION POINT OF CONNECTION AND RPZ BACKFLOW PREVENTION - CONNECT TO WATER SERVICE LINE AND METER. (SEE CIVIL PLANS) CONTRACTOR LOCATE AND VERIFY EXACT LOCATION ON SITE.										--	SEE DETAIL	
⊞	QUICK COUPLER: RAINBIRD 44LRC INSTALL PER MANUFACTURER'S SPEC.										--	10" RND. VALVE BOX. SEE DETAIL	
⊞	ISOLATION BALL VALVE - LINE SIZED INSTALL PER MANUFACTURER'S SPEC.										--	SEE DETAIL	
⊞	REMOTE CONTROL VALVE: RAINBIRD PESB-NP-PRS-D AUTOMATIC CONTROL VALVE (SIZE AS NOTED ON PLAN)										--	SEE DETAIL JUMBO BOX-PURPLE LID	
⊞	DRIP CONTROL ZONE KIT: RAINBIRD X22-(PER PLAN) PRBR-COM MED FLOW (SIZE AS NOTED ON PLAN)										--	SEE DETAIL	
⊞	DRIP CONNECTION: PROVIDE DRIP IRRIGATION TO ALL TREES, SHRUBS AND PERENNIALS IN PLANTER AREAS.										--	INSTALL FLUSH CAP. SEE DETAIL	
⊞	DRIP RW-S-B-1401 (ROOT WATERING SYSTEM) PROVIDE 2 TO EACH TREE LOCATED IN THE LAWN AREAS.										--	SEE DETAIL	
---	LOOP MAINLINE: SCHEDULE 40 PVC WITH SCHEDULE 80 FITTINGS, 2" DIAMETER 24" MIN. COVER										--	SEE PIPE SIZING CHART	
---	LATERAL LINE: SCHEDULE 40 PVC WITH SCH. 40 FITTINGS. SEE PIPE SIZING CHART										--	SEE DETAIL	
---	DRIP LINE: RAINBIRD XFS-09-18-100 OR EQUIVALENT										--	SEE DETAIL	
---	CLASS 200 SLEEVE PER PLAN										--	SEE DETAIL	
---	NOT SHOWN WIRE CHASE: SIZE TO BE TWICE THE DIAMETER OF THE WIRE BUNDLE WITHIN 1/4" DIAMETER MINIMUM										--	SEE DETAIL	
---	NOT SHOWN 14 GAUGE SOLID COPPER SINGLE STRAND CONTROL WIRE. INSTALL PER MANUFACTURER'S SPEC. PROVIDE 2 WIRE LOOP SYSTEM.										--	SEE DETAIL	

DRIP ZONE

TYPE	PART NUMBER	EMITTER FLOW	EMITTER SPACING	ROW SPACING	RECOMMENDED ROW SPACING
XFS DRIPLINE	XFS-09-18	.9 GPH	18"	18"	18-21 IN.
TOTAL DRIP ZONE FLOW		20 GPM		TIME TO APPLY 1/4" OF WATER	23
MAXIMUM LATERAL LENGTH OF TUBING	350 FT			REQUIRED NUMBER OF STAKES	500
TOTAL LENGTH OF ZONE DRIPLINE	2,000 FT (varies per plan)			NUMBER OF FLUSH POINTS	2
APPLICATION RATE	.64 INCH PER HOUR			SUGGESTED HEADER AND FOOTER PIPE SIZE	CLASS 200 1 1/4"

*NUMBERS MAY CHANGE DUE TO SIZE OF DRIP ZONE PER PLAN

IRRIGATION NOTES

- ALL PIPE TO BE SCHEDULE 40 PVC PIPE OR BETTER. NO POLY PIPE SHALL BE INCLUDED. FITTINGS MUST BE SCHEDULE 40 OR BETTER ON LATERAL LINES AND SCHEDULE 80 OR BETTER ON MAIN LINE. SIZE PER PLAN.
- MAIN LINES SHALL BE 24" DEEP MIN. AND LATERAL LINES 12" DEEP MIN. NO ROCK GREATER THAN 1/2" DIAMETER SHALL BE ALLOWED IN TRENCHES. TRENCHING BACKFILL MATERIAL SHALL BE COMPACTED TO PROPER FINISHED GRADE.
- CONTRACTOR SHALL HAVE ALL UTILITIES BLUE STAKED PRIOR TO DIGGING. ANY DAMAGE TO THE UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- PLACE ALL IRRIGATION IN LANDSCAPE AREAS AND ON THE PROPERTY OF THE OWNER.
- MODIFY LOCATION OF IRRIGATION COMPONENTS TO AVOID PLACING TREES, SHRUBS AND OTHER SITE ELEMENTS DIRECTLY OVER PIPE. PER PLANS. DO NOT LOCATE VALVE BOXES IN LAWN AREAS UNLESS DIRECTED TO BY LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL INSTALL A QUICK COUPLER AT POINT OF CONNECTION IN ORDER TO BLOW OUT THE SYSTEM WITH AN AIR COMPRESSOR EACH FALL.
- CONTRACTOR SHALL USE ONLY COMMERCIAL GRADE IRRIGATION PRODUCTS AND IS RESPONSIBLE FOR ENSURING ACCURATE COUNTS AND QUANTITIES OF ALL IRRIGATION MATERIALS FOR BIDDING AND INSTALLATION PURPOSES.
- INSTALL DRIP IRRIGATION PER DETAILS. CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY.
- CONTRACTOR SHALL PROVIDE AND INSTALL SLEEVES FOR ALL PIPES AND WIRES UNDER PAVEMENT AND SIDEWALKS. SLEEVES SHALL BE 2 SIZES LARGER THAN PIPE INSIDE. ALL WIRE SHALL BE IN SEPARATE SLEEVES (NOT SHOWN). ALL CONTROL WIRE SHALL BE INSTALLED IN CLASS 200 PIPE. PLACE JUNCTION BOXES WHERE NECESSARY TO MINIMIZE LONG RUNS OR AT DIRECTIONAL CHANGES. COORDINATE WITH ALL TRADES.
- WATER LINES AND ELECTRICAL LINES MUST NOT SHARE CONDUITS. ALL WIRE CONNECTIONS MUST BE CONTAINED IN VALVE BOX WITH 3' OF EXTRA WIRE. WIRE TO BE CONNECTED TO MAIN LINE PIPE WHERE POSSIBLE WITH TAPE AT 2' INTERVALS. SLACK IN CONTROL WIRES REQUIRED AT EVERY CHANGE OF DIRECTION. WIRES MUST HAVE SEPARATE COLORS FOR COMMON CONTROL AND SPARE. MINIMUM 1 SPARE WIRE FOR EVERY 5 VALVES. ALL CONTROL WIRES TO BE INSULATED 14 GAUGE COPPER. ALL SPARE WIRES MUST 'HOME RUN' TO CONTROLLER AND SPARE WIRES AVAILABLE AT ALL VALVE MANIFOLDS AND CLUSTERS.
- ALL SLEEVES INSTALLED SHALL BE DUCT TAPED TO PREVENT DIRT OR OTHER DEBRIS ENTERING PIPE. ALL SLEEVES SHALL BE IDENTIFIED BY WOOD OR PVC STAKES AND BE SPRAY PAINTED WITH MARKING PAINT. REMOVE STAKES ONCE IRRIGATION SYSTEM IS COMPLETE.
- IRRIGATION SYSTEM MUST CONTAIN CHECK VALVES TO PREVENT LOW POINT DRAINAGE.
- SPACE ALL SPRAY HEADS 2' AWAY FROM ANY HARDSCAPE.
- CONTRACTOR SHALL MATCH PRECIPITATION RATES AS MUCH AS POSSIBLE FOR ALL LANDSCAPED AREAS. OVERHEAD IRRIGATION MUST HAVE A MINIMUM DU (DISTRIBUTION UNIFORMITY) OF 60%.
- IRRIGATION CONTRACTOR SHALL PRESSURE TEST MAINLINE FOR LEAKS PRIOR TO BACKFILLING.
- ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CITY AND/OR COUNTY CODES. THE CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS.
- IRRIGATION INSTALLATION TO COMPLY WITH APPLICABLE CITY SPECIFICATIONS AND DRAWINGS.
- ACTUAL INSTALLATION OF IRRIGATION SYSTEM MAY VARY SOMEWHAT FROM PLANS. THE CONTRACTOR IS RESPONSIBLE TO MAKE ADJUSTMENTS AS NEEDED TO ENSURE PROPER COVERAGE OF ALL LANDSCAPED AREAS.
- CONTRACTOR SHALL INSTALL IRRIGATION SYSTEM WITH HEAD TO HEAD COVERAGE IN ALL TURF AREAS. USE HE-VAN NOZZLES AS NECESSARY TO PROVIDE PROPER COVERAGE AND TO KEEP WATER OFF OF BUILDINGS AND HARDSCAPES.
- POWER TO CONTROLLER TO BE PROVIDED BY OWNER. OWNER TO SPECIFY EXACT LOCATION OF CONTROLLER. INSTALL PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL INSTALL A RAIN SENSOR WITH CONTROLLER UNLESS OTHERWISE DIRECTED BY OWNER OR LANDSCAPE ARCHITECT.
- DESIGN AND INSTALL THE BACKFLOW PREVENTOR IN THE PROPER PLACE TO ENSURE THAT NO WATER IS CONTAMINATING THE SYSTEM.
- LATERAL LINES SHALL BE NO SMALLER THAN 3/4". LANDSCAPE CONTRACTOR TO ENSURE THE FOLLOWING PIPE SIZES DO NOT EXCEED THE SUGGESTED GPM LISTED BELOW:

3/4"	8 GPM
1"	12 GPM
1-1/2"	30 GPM
2"	53 GPM
2-1/2"	75 GPM
3"	110 GPM
4"	180 GPM

90 Day Establishment Period Irrigation Schedule (April, May, June)

Hydro-Zone	Type	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Operating Pressure
Hydro-Zone 1	Turf	15 min	15 min	15 min	15 min	15 min	15 min	15 min	30 psi
Hydro-Zone 2	Shrubs	20 min	0	20 min	0	20 min	0	20 min	40 psi

Note: Begin irrigation 4:00 am, only 1 cycle per day.

Regular Irrigation Schedule (see Seasonal Differential Chart)

Hydro-Zone	Type	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Operating Pressure
Hydro-Zone 1	Turf	15 min	15 min	15 min	15 min	15 min	15 min	15 min	30 psi
Hydro-Zone 2	Shrubs	45 min	15 min	45 min	15 min	45 min	15 min	45 min	40 psi

Note: Begin irrigation 4:00 am, only 1 cycle per day.

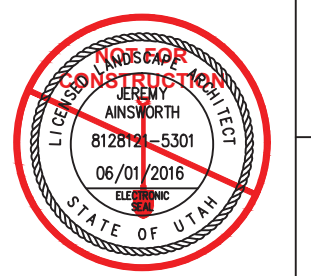
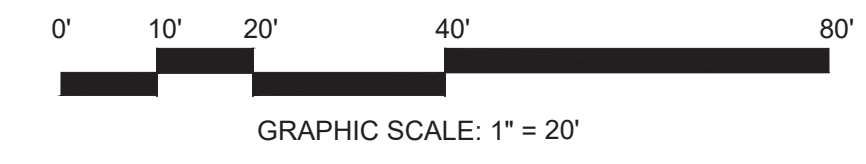
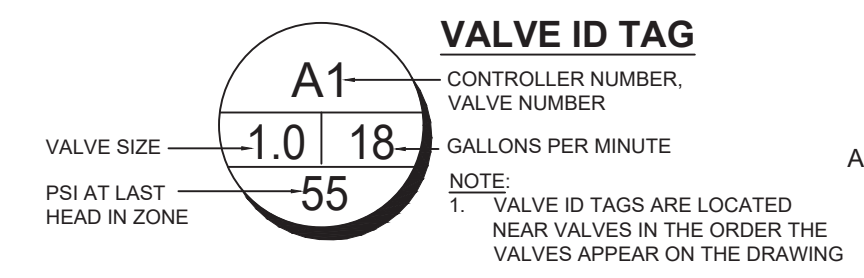
Seasonal Differential

Hydro-Zone	April	May	June	July	August	Sept	October
Hydro-Zone 1 (Turf)	10 min	10 min	15 min	15 min	15 min	10 min	10 min
Hydro-Zone 2 (Shrubs)	30 min	30 min	45 min	45 min	45 min	30 min	30 min

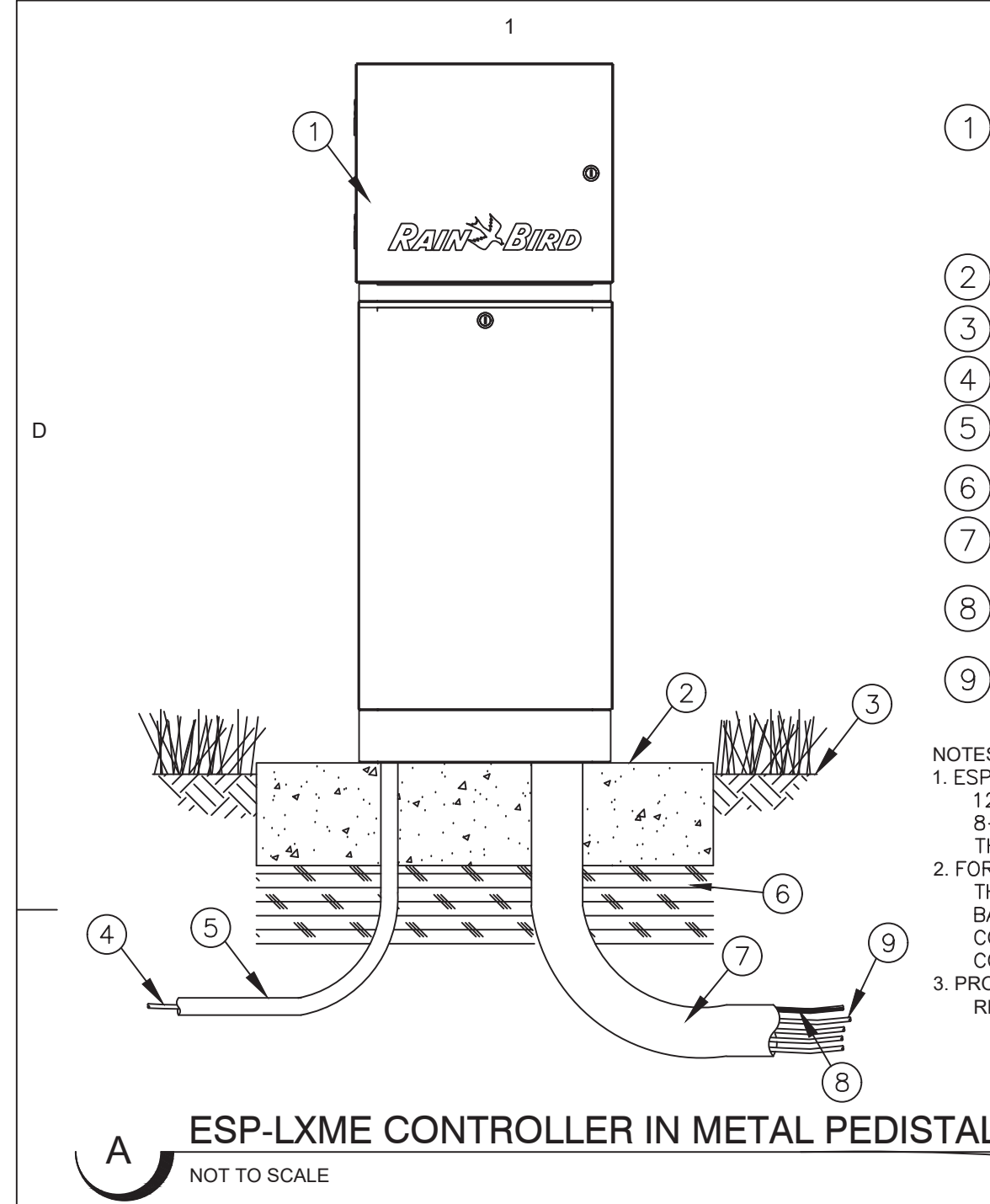
Monthly Landscape Water Allowance

	April	May	June	July	August	Sept	October	Total (SQ.FT.)	Gallons/ft. Year
Hydro-Zone1 Totals	19,699.6	26,733.4	31,461.1	36,169.8	32,616.0	21,696.3	13,396.9	181,801.1	9,384.0
Hydro-Zone2 Totals	7,972.2	10,972.7	11,980.2	13,927.6	12,928.1	8,163.4	5,047.3	68,424.5	7,979.0
Zone 1 (Turf)	ET0=0.52 (irrigated landscape area)							250,025.2	16,473.6
Zone 2 (Shrub)	ET0=0.52 (irrigated landscape area)							250,025.2	16,473.6

*calculations based on the highest water use plant which is the Japanese Barberry (We used a 5 number based on this information)



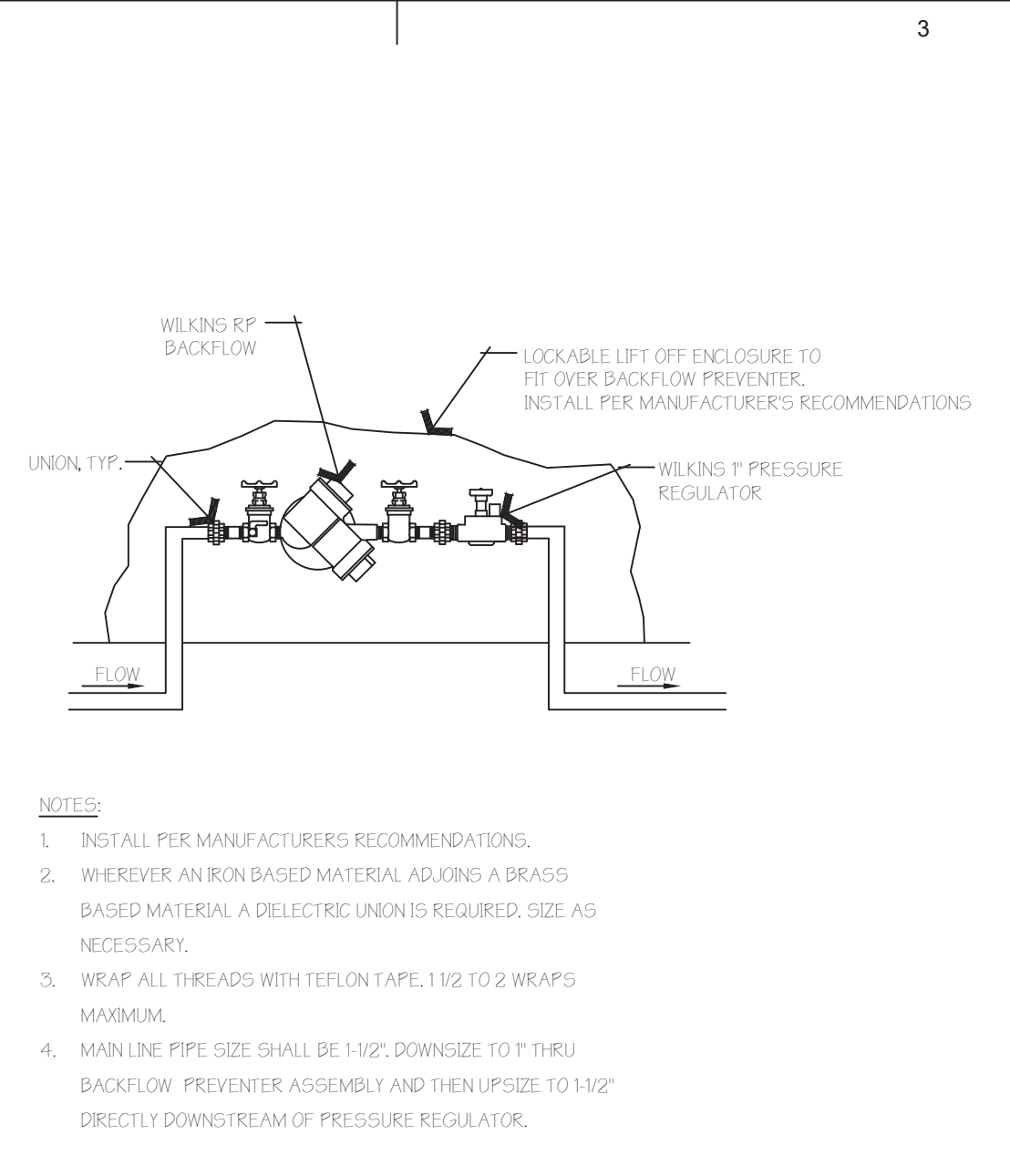
Last Plotted:



- 1 IRRIGATION CONTROLLER: RAIN BIRD ESP-LXMEF CONTROLLER WITH FLOW SMART MODULE IN LXMW METAL CABINET AND LXMMPED METAL PEDESTAL. INSTALL CONTROLLER, CABINET AND PEDESTAL PER MANUFACTURER'S RECOMMENDATIONS.
- 2 CONCRETE PAD: 6-INCH MINIMUM THICKNESS
- 3 FINISH GRADE
- 4 POWER SUPPLY WIRE
- 5 1-INCH SCH 40 PVC CONDUIT, FITTINGS AND SWEEP ELL FOR POWER SUPPLY
- 6 COMPACTED SUBGRADE
- 7 3-INCH SCH 40 PVC CONDUIT, FITTINGS AND SWEEP ELL FOR STATION WIRES
- 8 FLOW SENSOR WIRE (PE 39, 89 OR 54) TO FLOW SENSOR
- 9 MASTER VALVE AND REMOTE CONTROL VALVE WIRES

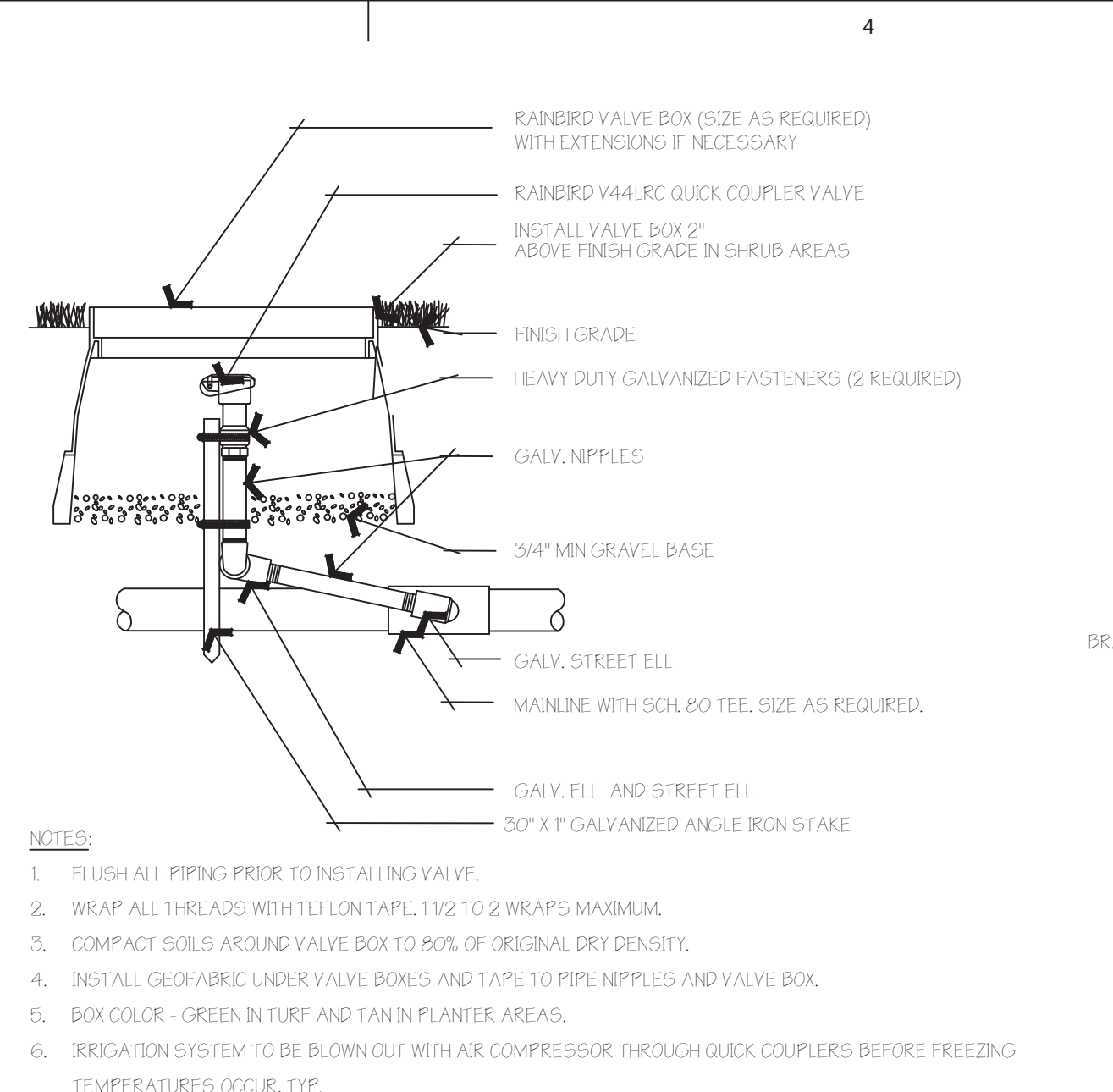
NOTES:
 1. ESP-LXMEF CONTROLLER IS AVAILABLE IN 8- OR 12-STATION BASE MODELS. ADDITIONAL MODULES IN 4-, 8- AND 12-STATION VERSIONS MAY BE ADDED TO BRING THE CONTROLLER UP TO 48 STATIONS MAXIMUM.
 2. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT THE BASE OF CONTROLLER AND TRANSITION LARGER VALVE AND COMMON WIRES FROM FIELD TO 18 AWG MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.
 3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

A ESP-LXME CONTROLLER IN METAL PEDISTAL
NOT TO SCALE



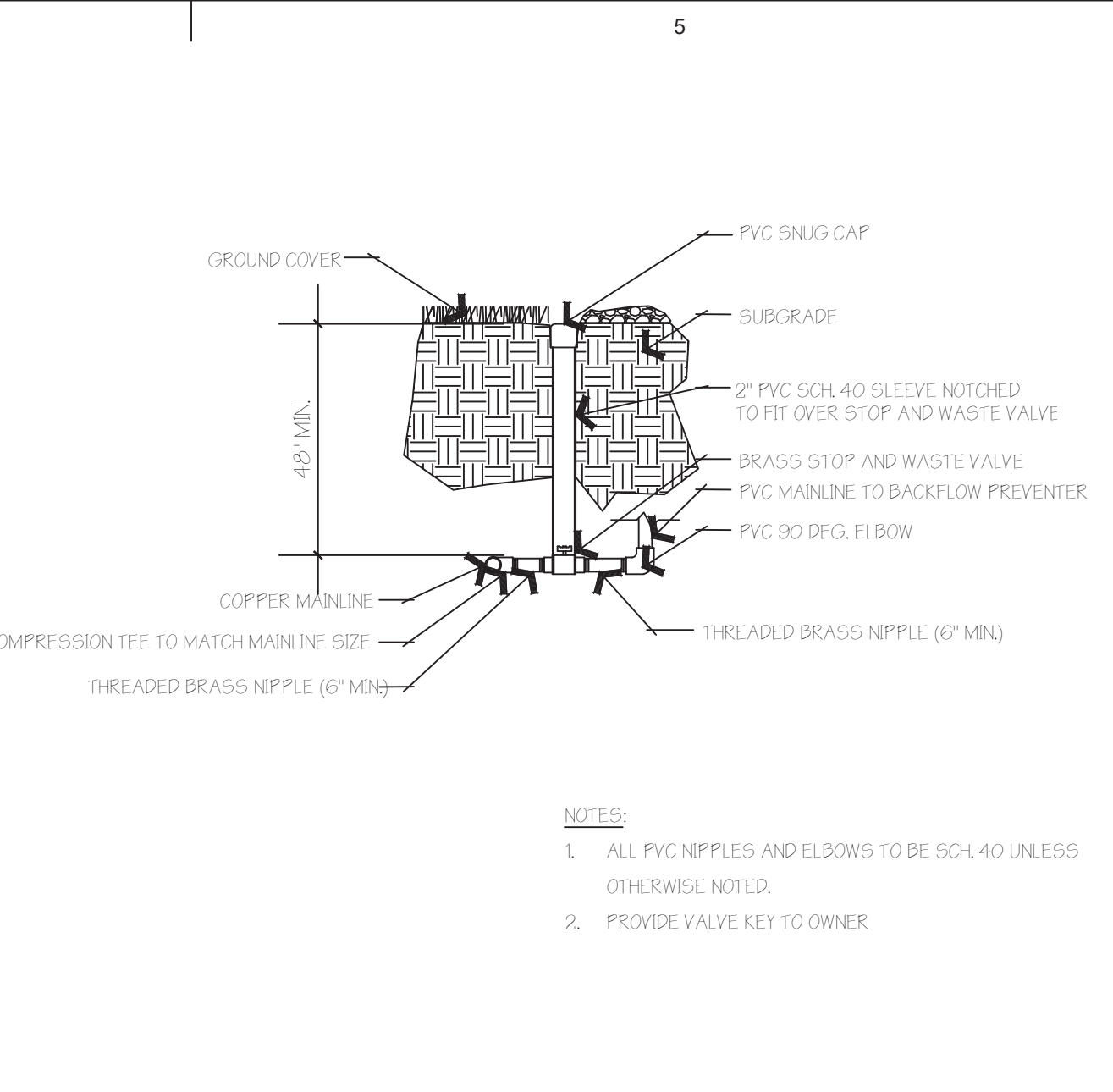
- NOTES:**
 1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 2. WHEREVER AN IRON BASED MATERIAL ADJACENT TO A BRASS BASED MATERIAL A DIELECTRIC UNION IS REQUIRED. SIZE AS NECESSARY.
 3. WRAP ALL THREADS WITH TEFLON TAPE. 1 1/2 TO 2 WRAPS MAXIMUM.
 4. MAIN LINE PIPE SIZE SHALL BE 1-1/2", DOWNSIZE TO T" THRU BACKFLOW PREVENTER ASSEMBLY AND THEN UPSIZE TO 1-1/2" DIRECTLY DOWNSTREAM OF PRESSURE REGULATOR.

B BACKFLOW DETAIL
NOT TO SCALE



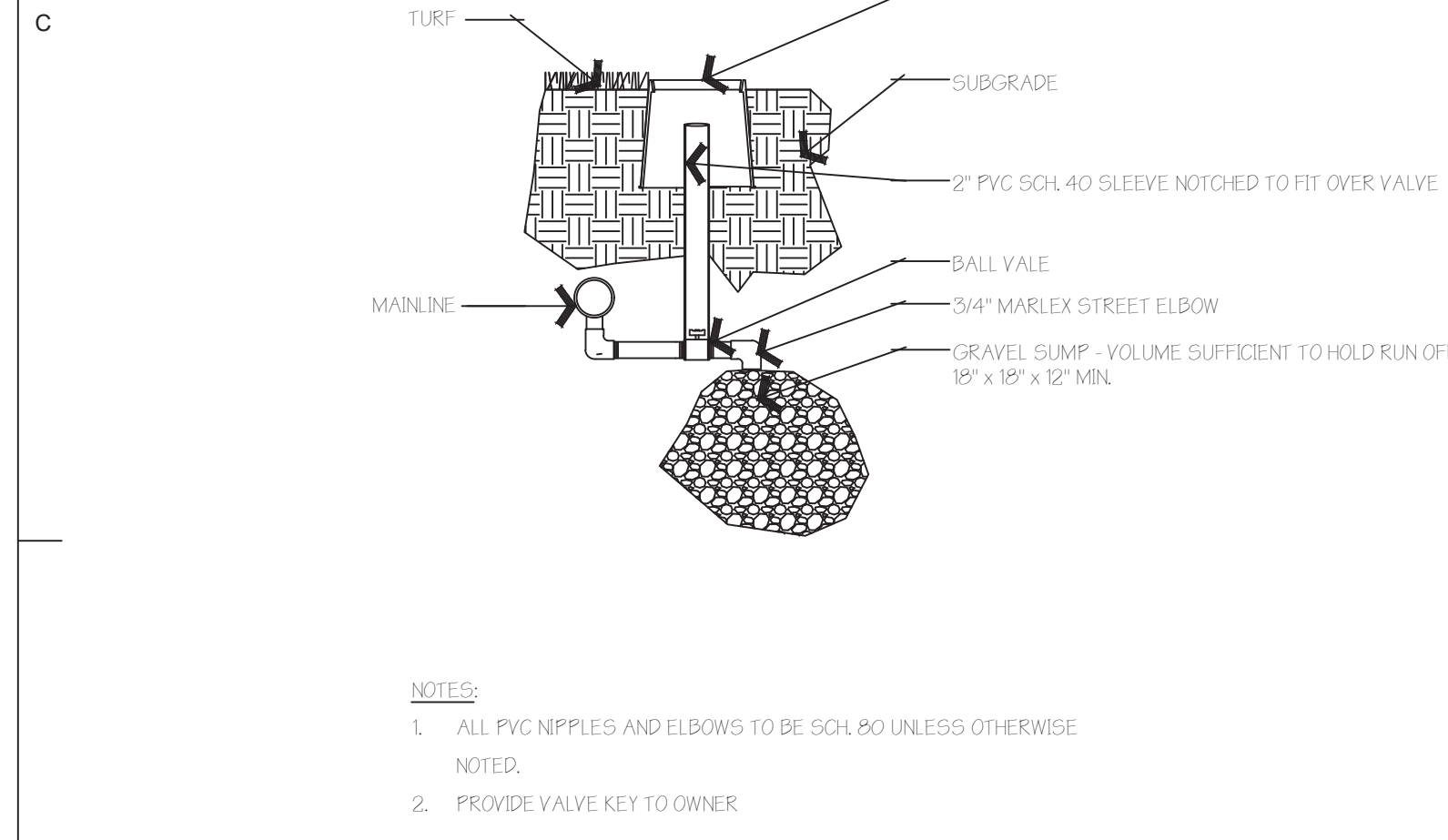
- NOTES:**
 1. FLUSH ALL PIPING PRIOR TO INSTALLING VALVE.
 2. WRAP ALL THREADS WITH TEFLON TAPE. 1 1/2 TO 2 WRAPS MAXIMUM.
 3. COMPACT SOILS AROUND VALVE BOX TO 50% OF ORIGINAL DRY DENSITY.
 4. INSTALL GEOTEXTILE UNDER VALVE BOXES AND TAPE TO PIPE NIPPLES AND VALVE BOX.
 5. BOX COLOR - GREEN IN TURF AND TAN IN PLANTER AREAS.
 6. IRRIGATION SYSTEM TO BE BLOWN OUT WITH AIR COMPRESSOR THROUGH QUICK COUPLERS BEFORE FREEZING TEMPERATURES OCCUR, TYP.

C RAINBIRD QUICK COUPLER
NOT TO SCALE



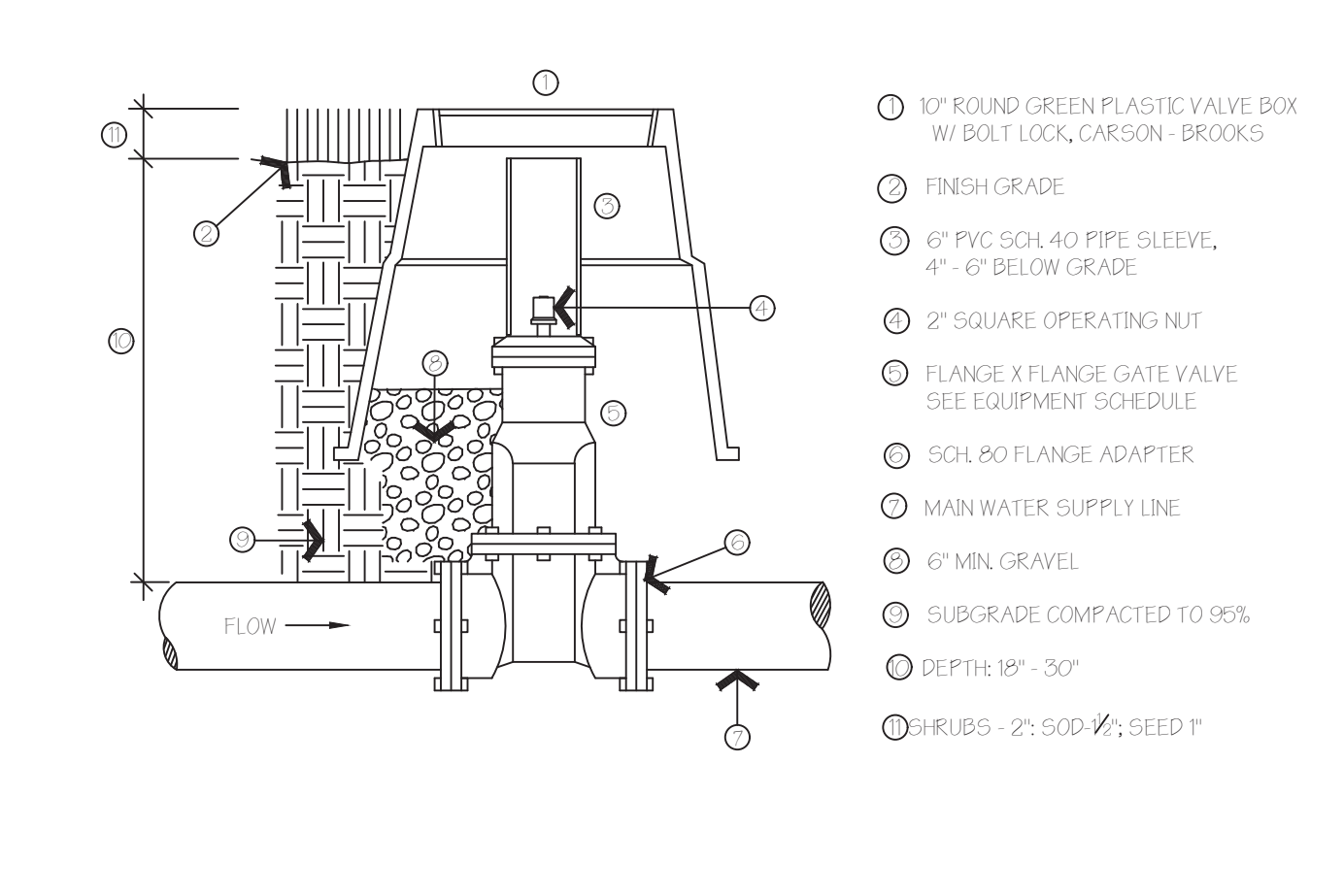
- NOTES:**
 1. ALL PVC NIPPLES AND ELBOWS TO BE SCH 40 UNLESS OTHERWISE NOTED.
 2. PROVIDE VALVE KEY TO OWNER

D STOP AND WASTE VALVE ASSEMBLY
NOT TO SCALE



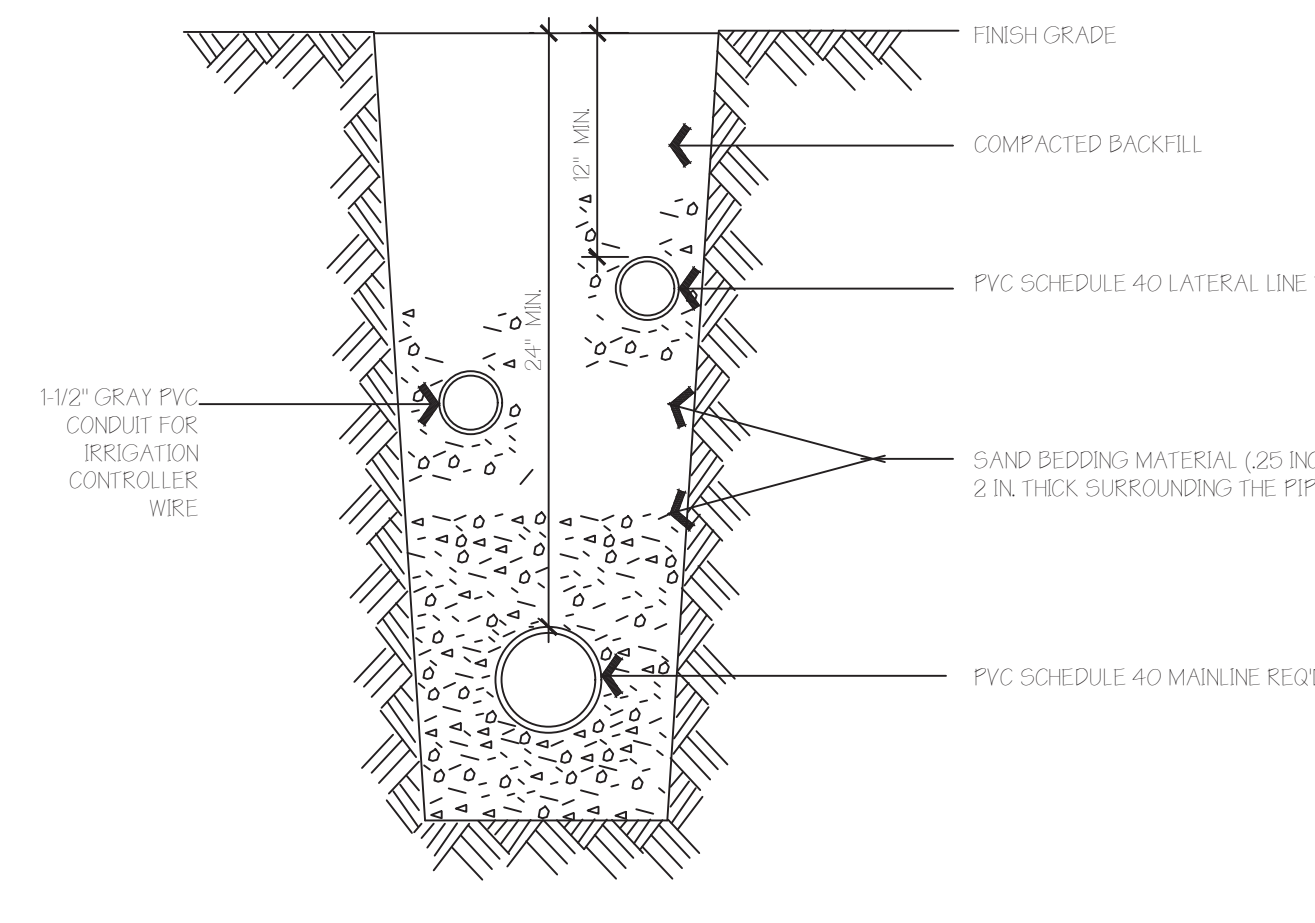
- NOTES:**
 1. ALL PVC NIPPLES AND ELBOWS TO BE SCH 40 UNLESS OTHERWISE NOTED.
 2. PROVIDE VALVE KEY TO OWNER

E MANUAL DRAIN ASSEMBLY
NOT TO SCALE

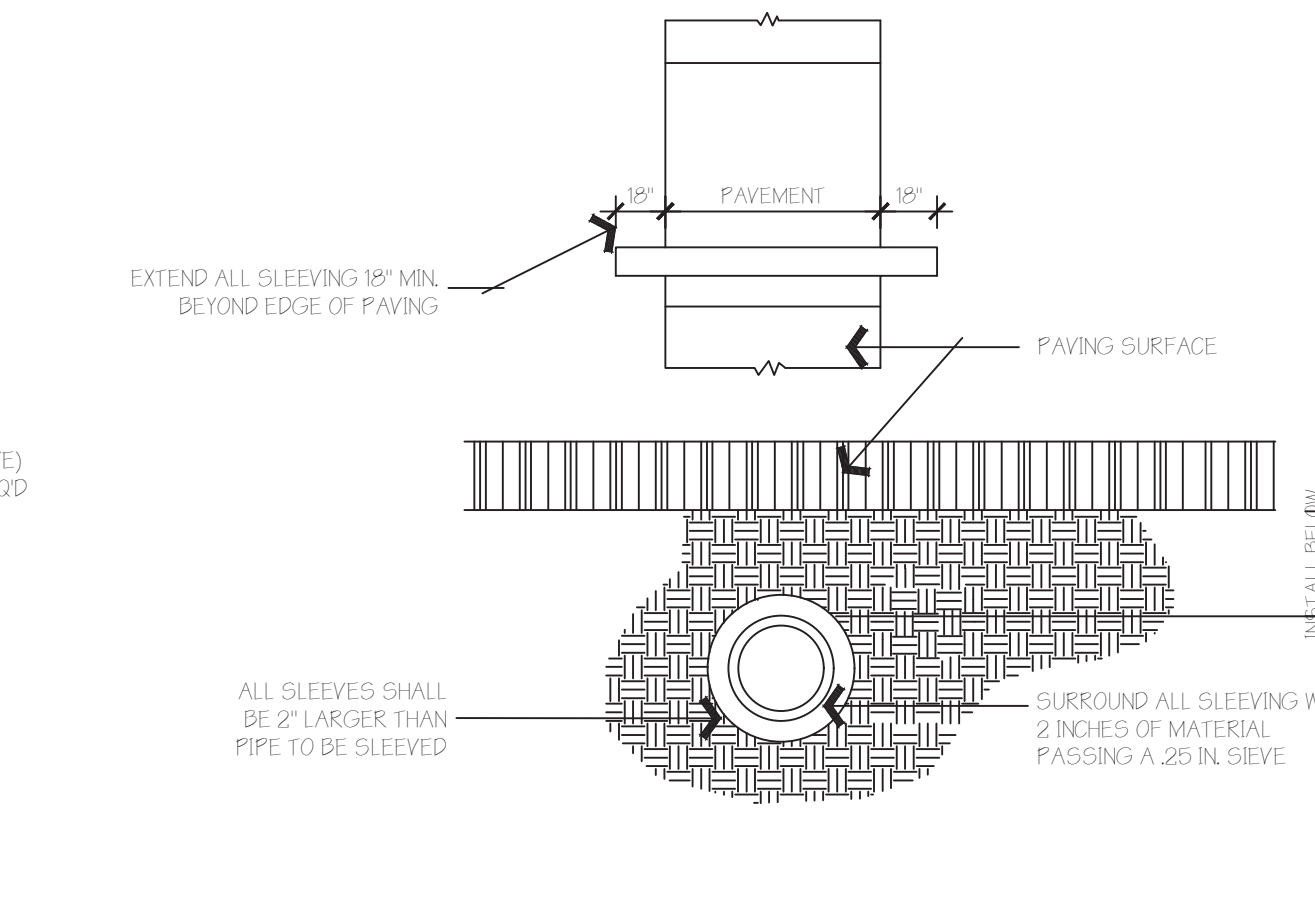


- 1 10" ROUND GREEN PLASTIC VALVE BOX W/ BOLT LOCK, CARSON - BROOKS
- 2 FINISH GRADE
- 3 6" PVC SCH 40 PIPE SLEEVE, 4" - 6" BELOW GRADE
- 4 2" SQUARE OPERATING NUT
- 5 FLANGE X FLANGE GATE VALVE SEE EQUIPMENT SCHEDULE
- 6 SCH 80 FLANGE ADAPTER
- 7 MAIN WATER SUPPLY LINE
- 8 6" MIN. GRAVEL
- 9 SUBGRADE COMPACTED TO 95%
- 10 DEPTH: 18" - 30"
- 11 3/4" RUBS - 2", 50D-7, SEED T

F GATE VALVE ASSEMBLY
NOT TO SCALE

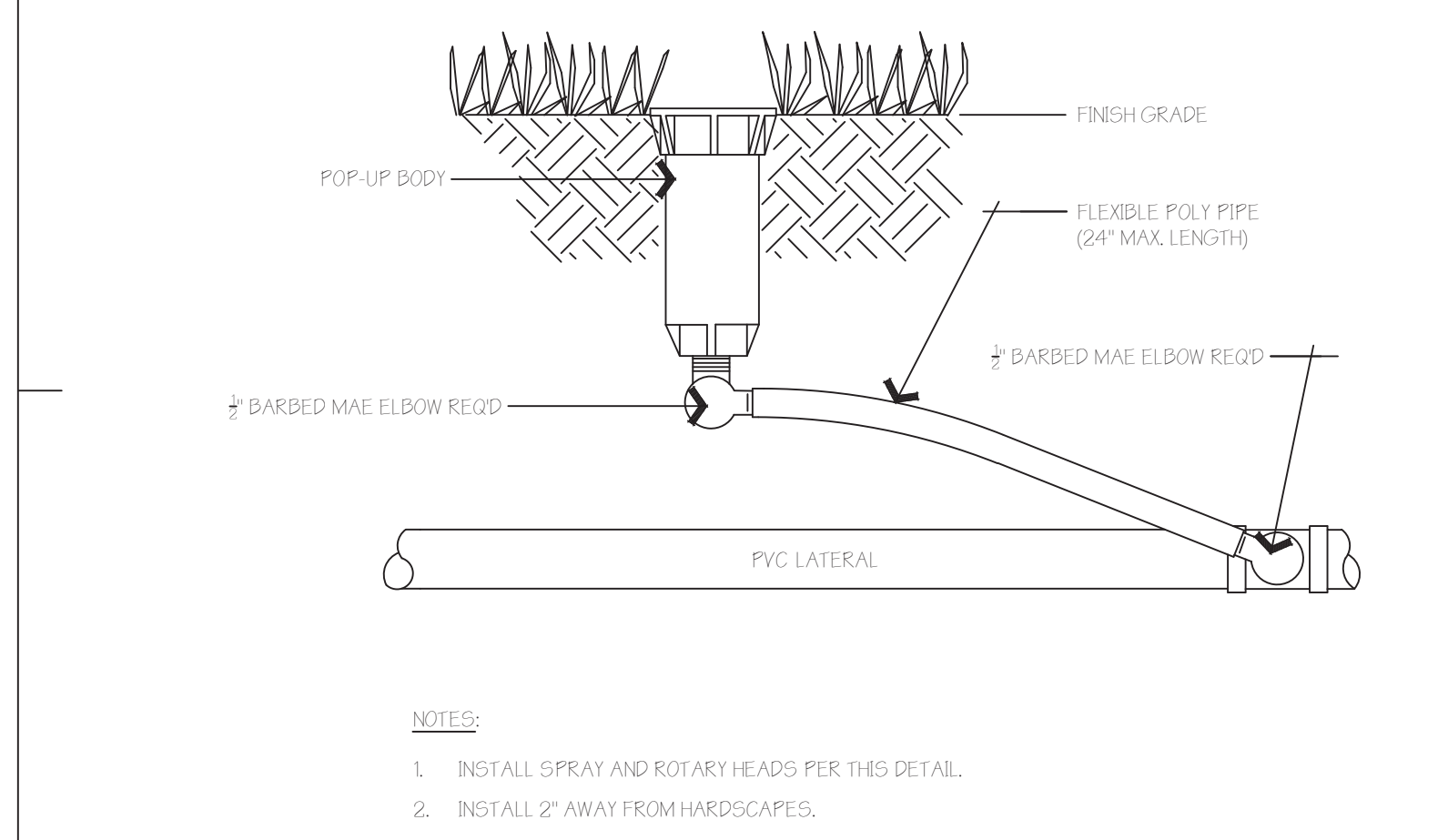


G TRENCHING DETAIL
NOT TO SCALE



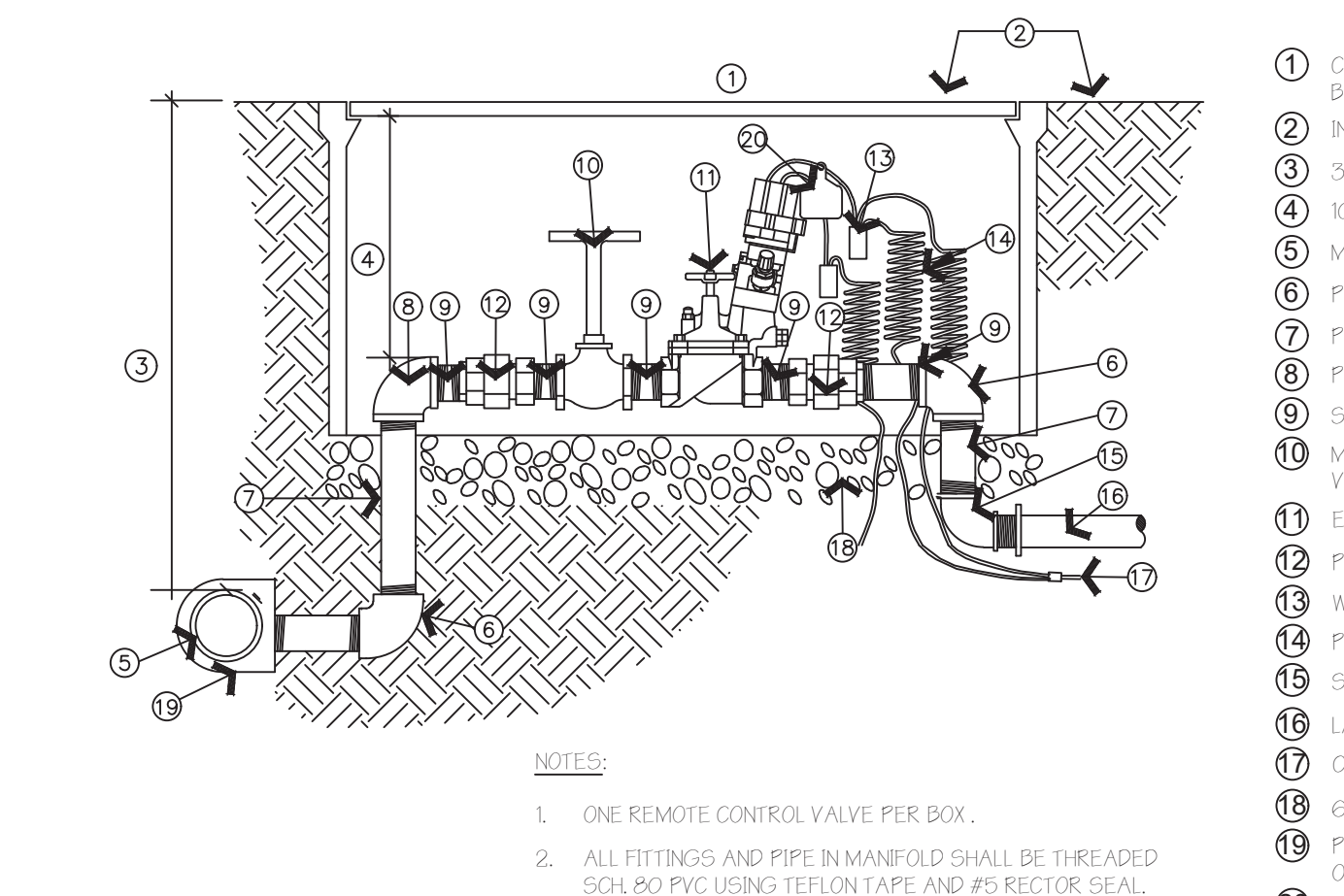
- NOTES:**
 1. ALL SLEEVES SHALL BE 2" LARGER THAN PIPE TO BE SLEEVED
 2. SURROUND ALL SLEEVING WITH 2 INCHES OF MATERIAL PASSING A 25 MESH SIEVE

H TYPICAL SLEEVING
NOT TO SCALE



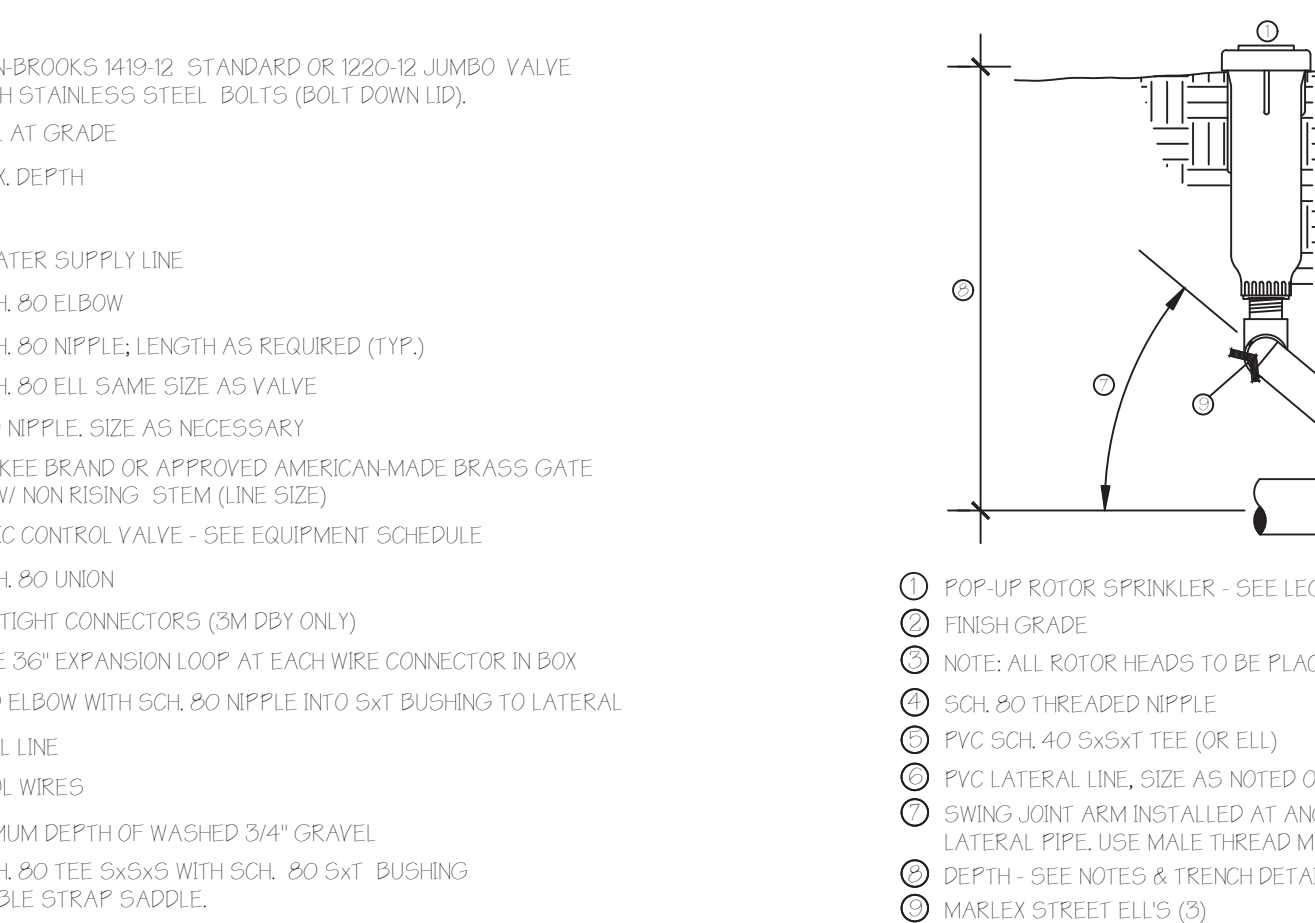
- NOTES:**
 1. INSTALL SPRAY AND ROTARY HEADS PER THIS DETAIL.
 2. INSTALL 2" AWAY FROM HARDSCAPES.

I SPRAY HEAD DETAIL
NOT TO SCALE



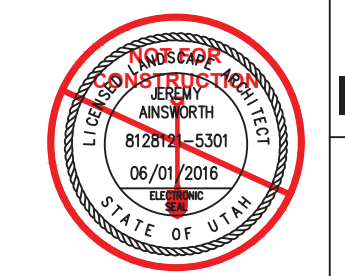
- NOTES:**
 1. ONE REMOTE CONTROL VALVE PER BOX.
 2. ALL FITTINGS AND PIPE IN MANHOLE SHALL BE THREADED SCH 80 PVC USING TEFLON TAPE AND #5 RECTOR SEAL.

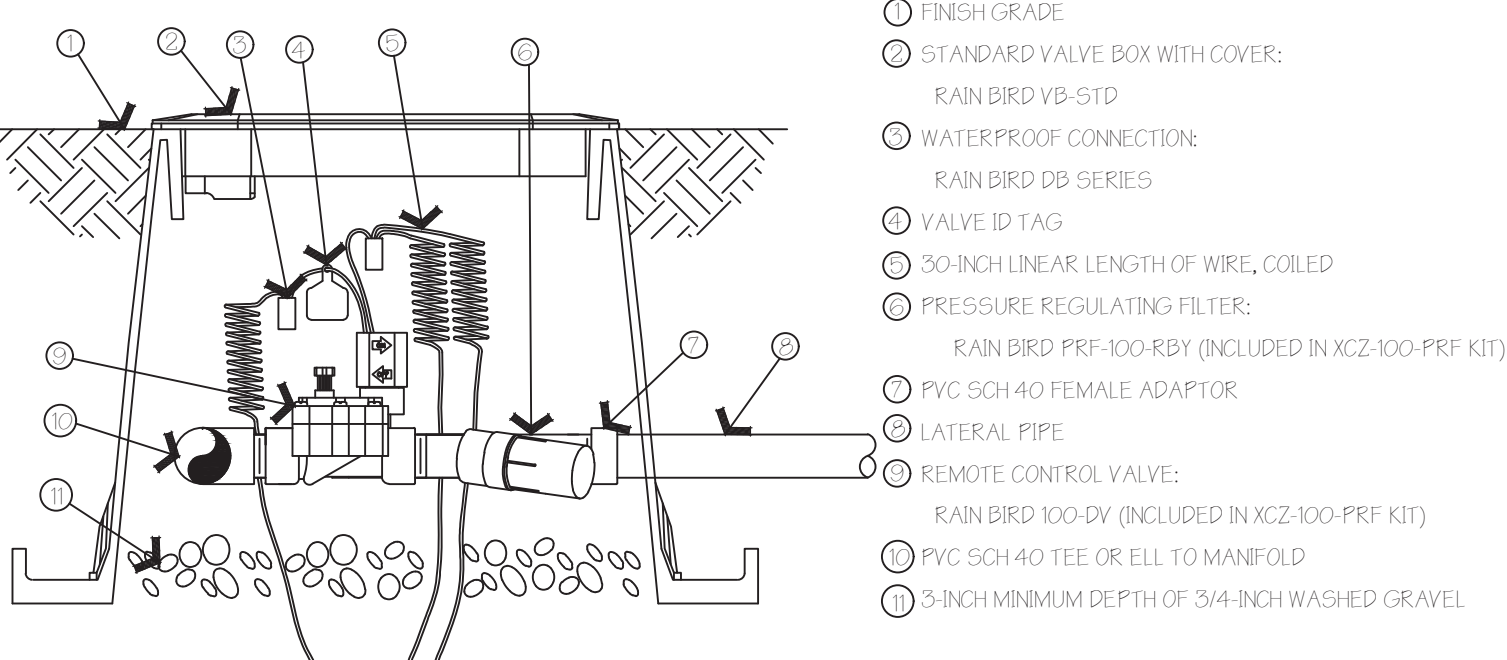
J CONTROL VALVE ASSEMBLY
NOT TO SCALE



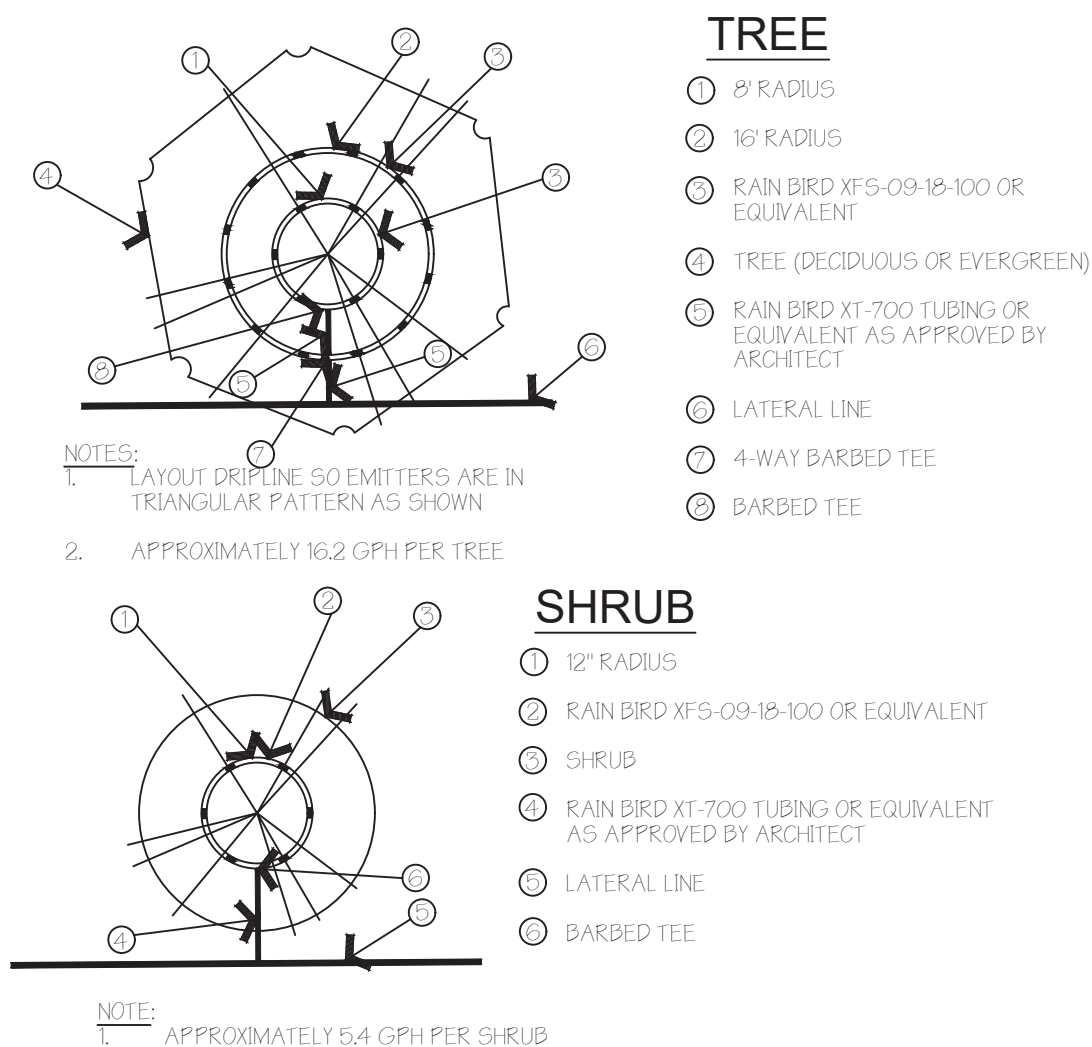
- NOTES:**
 1. POP-UP ROTOR SPRINKLER - SEE LEGEND
 2. FINISH GRADE
 3. NOTE: ALL ROTOR HEADS TO BE PLACED 2" CLEAR OF ALL HARDSCAPE SURFACES
 4. SCH 80 THREADED NIPPLE
 5. PVC SCH 40 5x5xT TEE (OR ELL)
 6. PVC LATERAL LINE, SIZE AS NOTED ON PLAN
 7. SWING JOINT ARM INSTALLED AT ANGLE BETWEEN 30 AND 45 DEG. OF LATERAL PIPE. USE MALE THREAD MODEL
 8. DEPTH - SEE NOTES & TRENCH DETAIL
 9. MARLEX STREET ELL'S (3)
 10. ID TAG: RAINBIRD VID SERIES OR APPROVED EQUAL

K POP UP ROTOR DETAIL
NOT TO SCALE

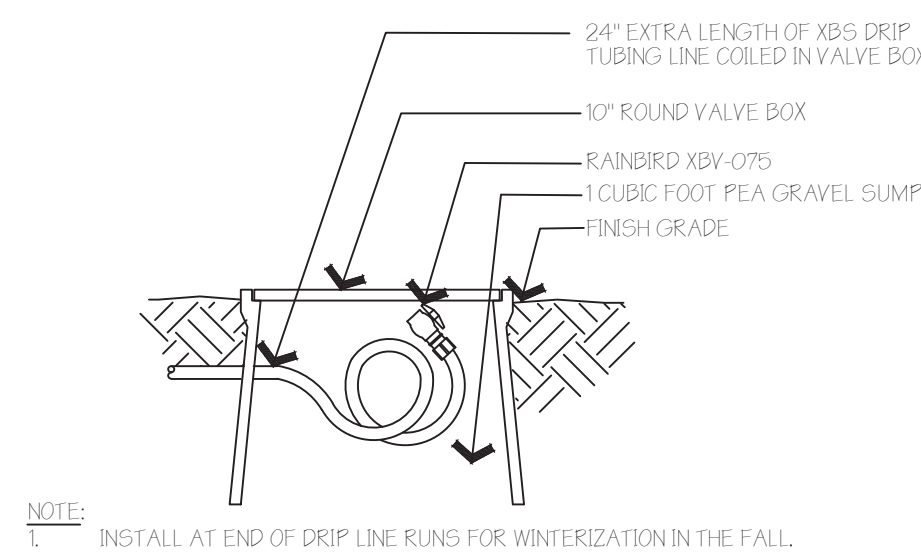




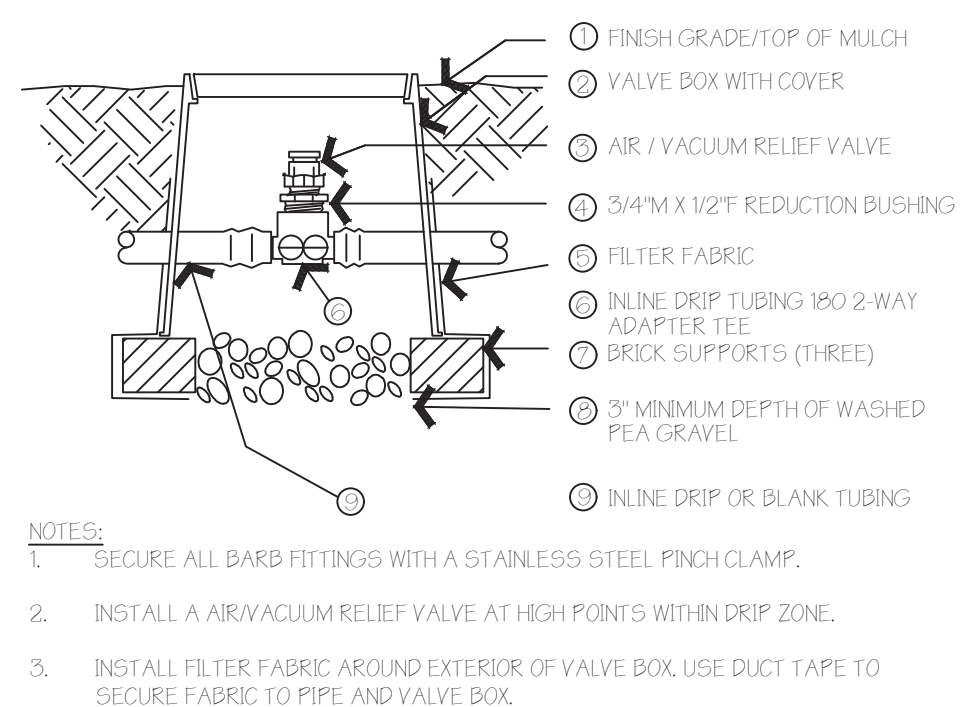
L DRIP CONTROL VALVE ASSEMBLY
NOT TO SCALE



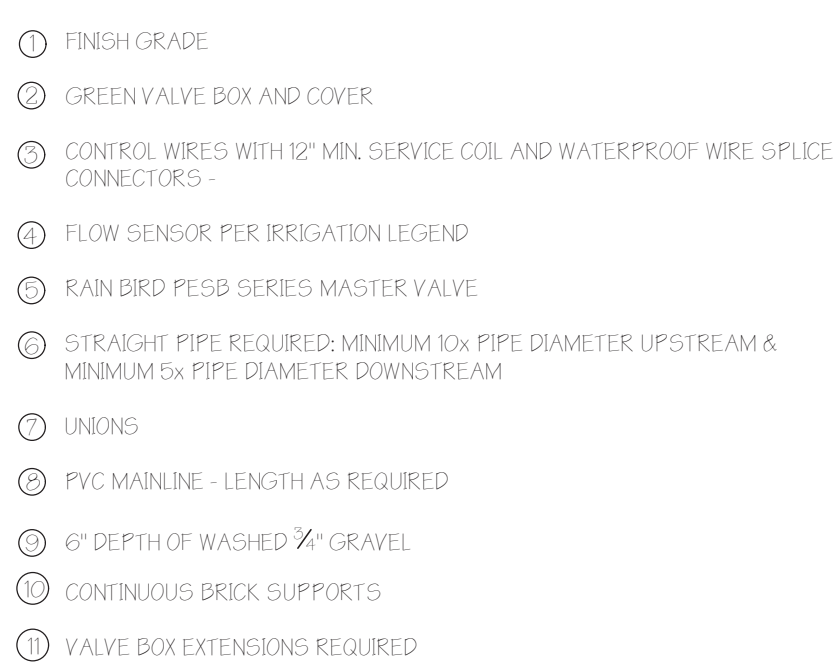
M DRIP IRRIGATION - IN LINE EMITTERS
NOT TO SCALE



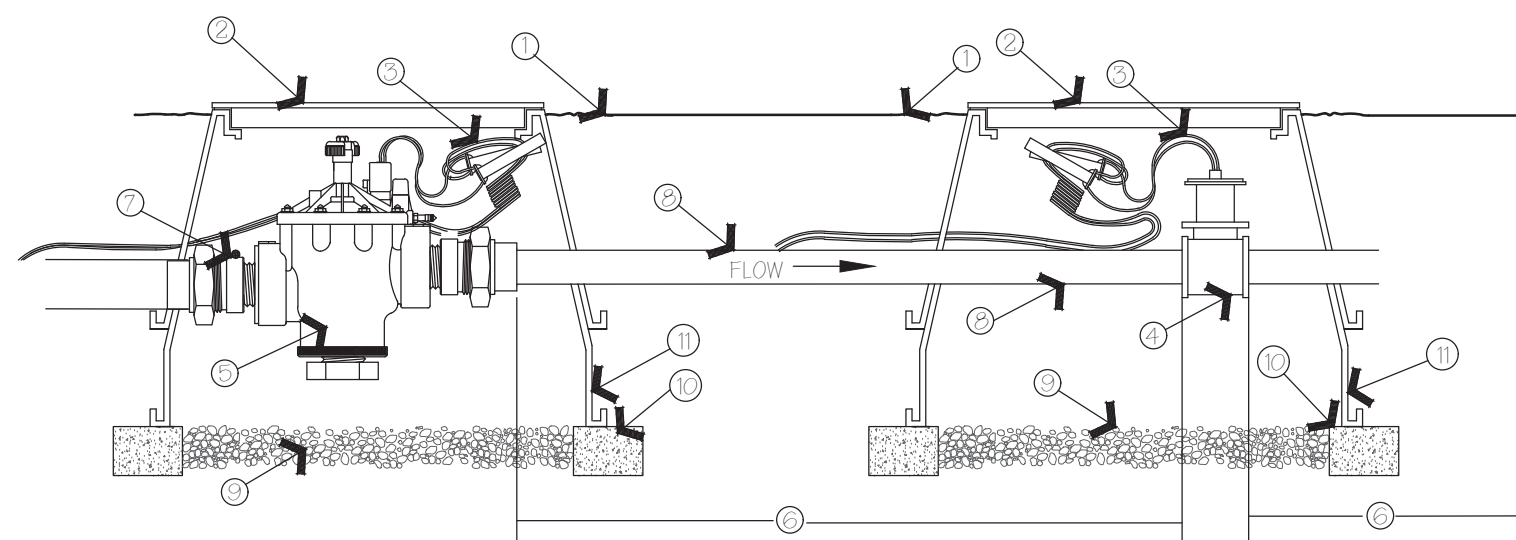
N FLUSH CAP BOX
NOT TO SCALE



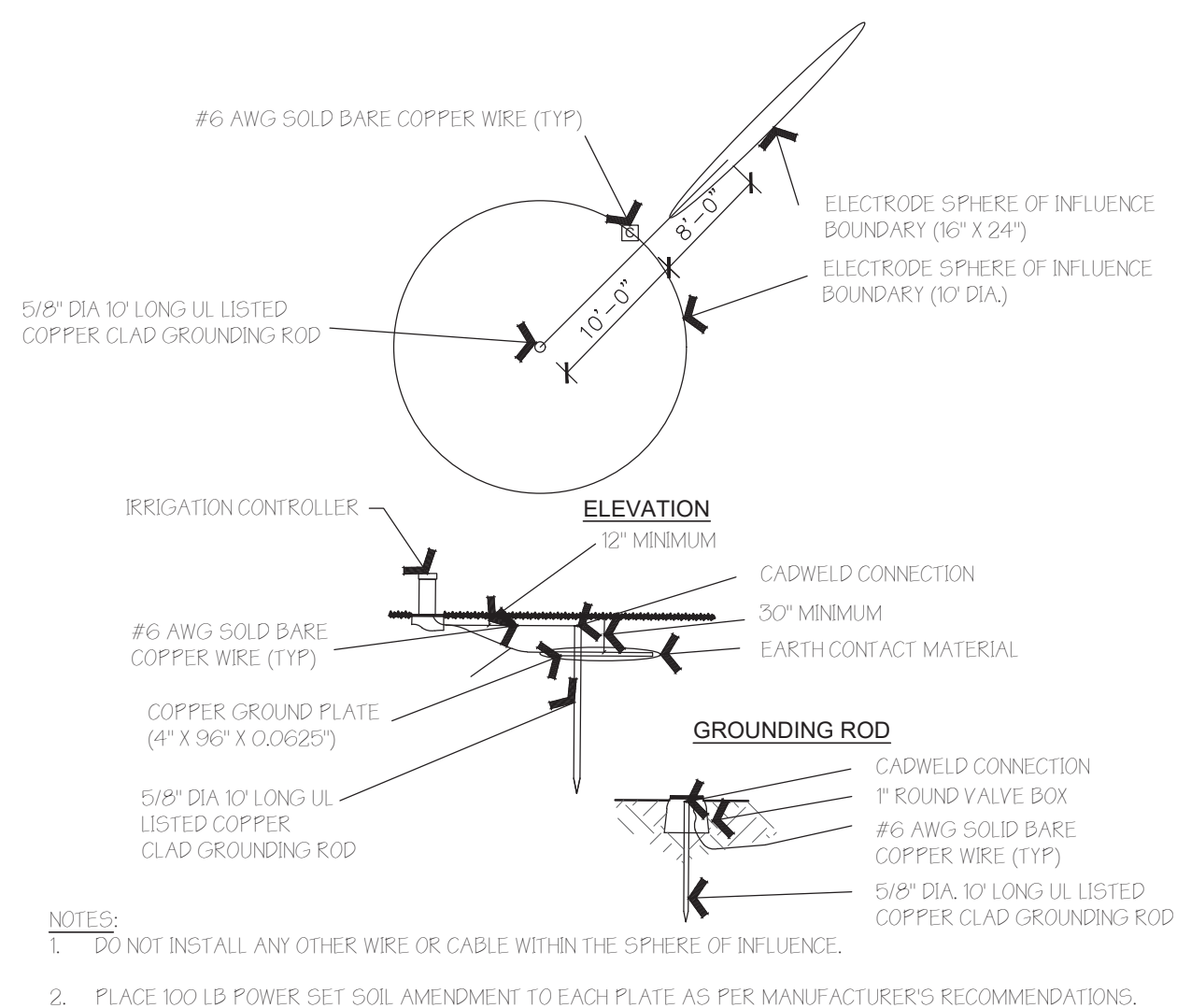
O DRIP AIR/VACUUM RELIEF VALVE ASSEMBLY
NOT TO SCALE



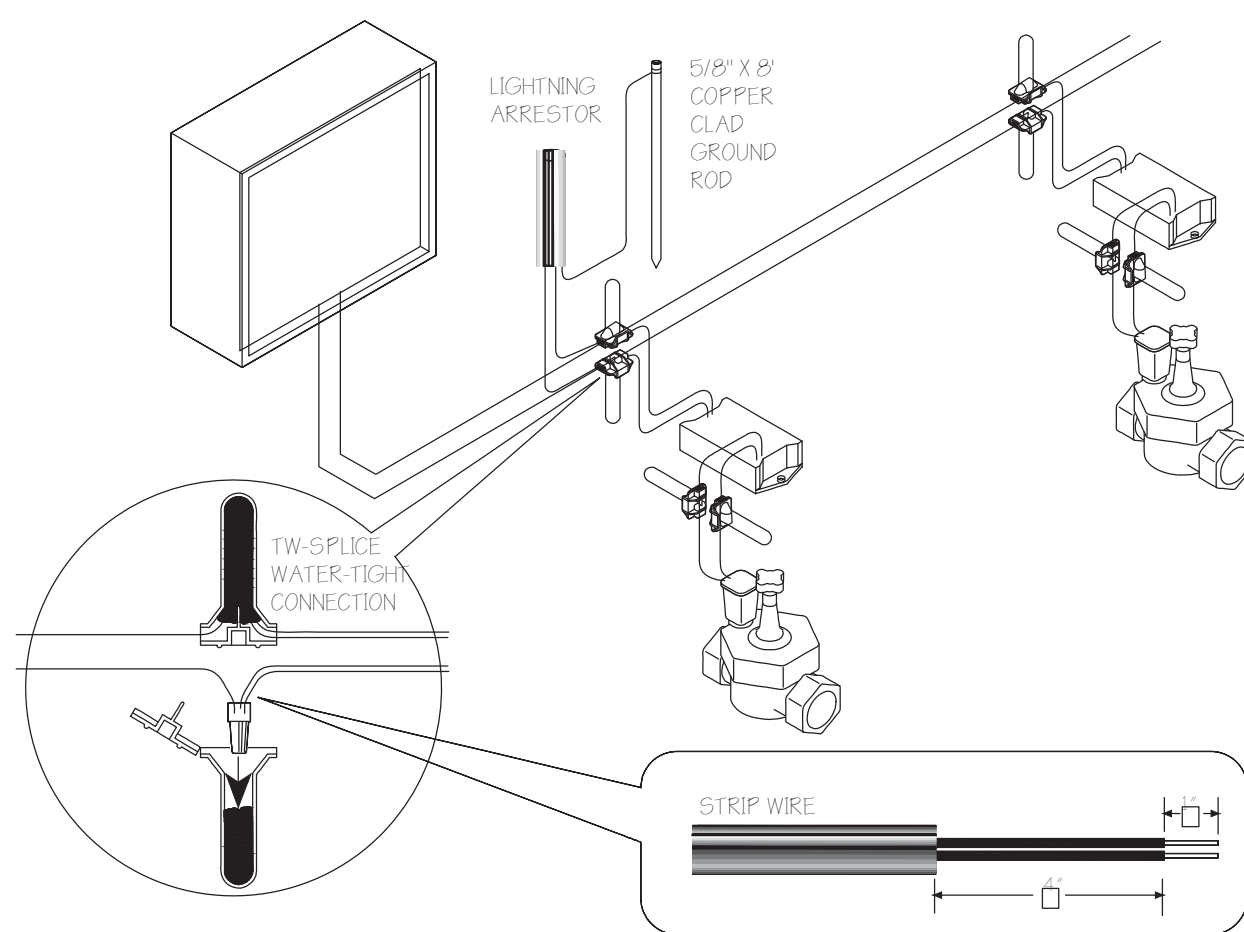
P MASTER VALVE & FLOW SENSOR
NOT TO SCALE



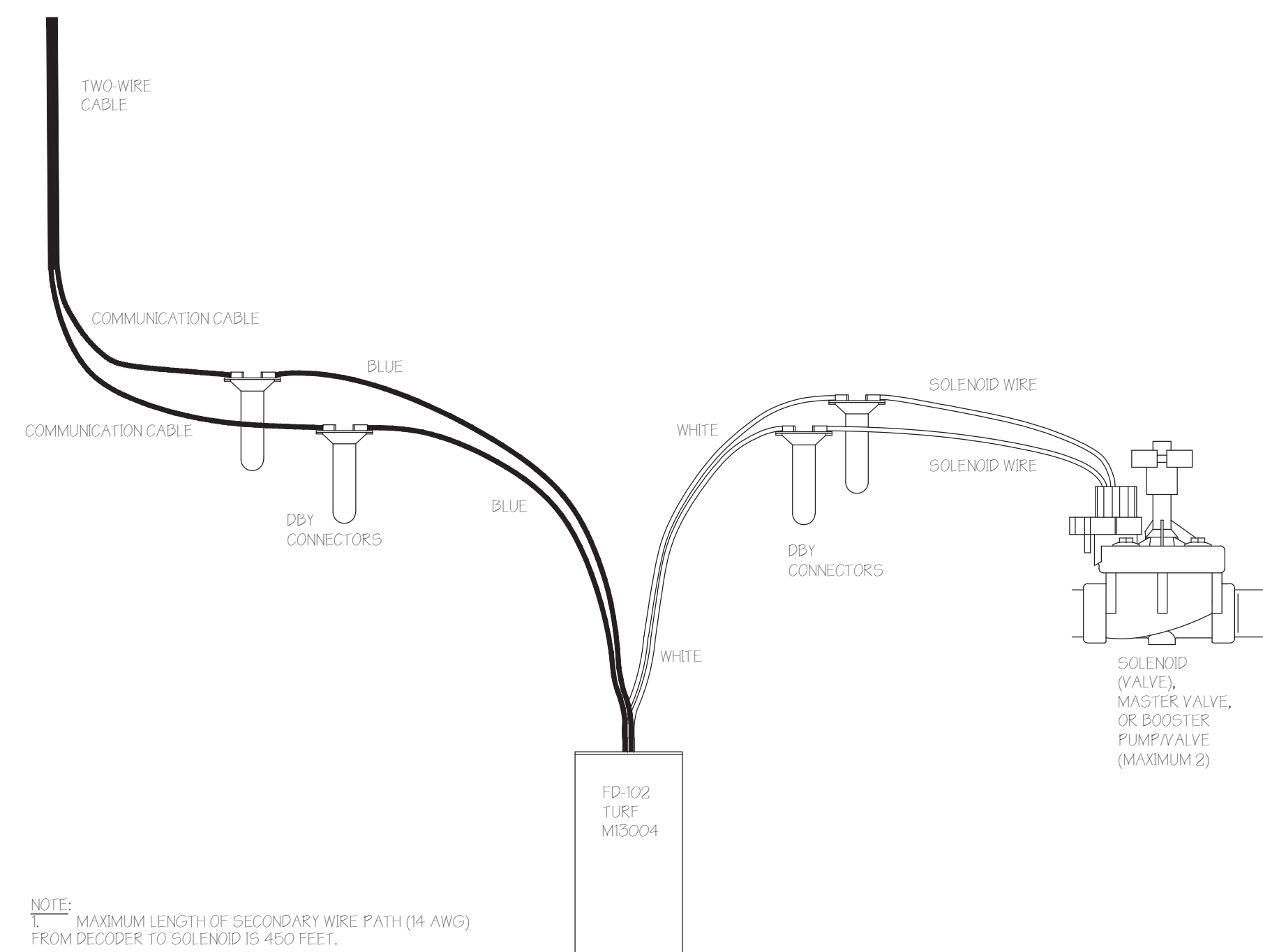
S DECODER WIRING
NOT TO SCALE



Q GROUNDING DETAIL
NOT TO SCALE



R 2-WIRE CONNECTION
NOT TO SCALE



S DECODER WIRING
NOT TO SCALE

NO.	DATE	DESCRIPTION

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IRRIGATION DETAILS

SHEET NUMBER
IR-2.6

