District of Saanich

Irrigation Specifications

Saanich Parks
May 2026

1.0 GENERAL

1.1.1 These Irrigation Specifications (hereafter referred to as “Specifications”) apply to the complete or partial installation or repair of an automatic underground irrigation system on land that is owned by and/or managed by the District of Saanich.

1.1.2 These Specifications apply to work completed by internal construction crews and external contractors, including all necessary preparatory work and all electrical, wiring and plumbing connections, and maintenance work during the warranty period.

1.1.2 When using these Specifications, also reference the District of Saanich Detail Drawings and Approved Products Listing.

1.1.3 The Contractor will ensure one hard copy of these Specifications are kept on-site during the construction process and available for review upon request by the Owner’s Representative.

1.1.4 The Contractor will submit a complete copy of the Operations and Maintenance Manual in both digital and hard copy formats to the Owner's Representative prior to the issuance of the Certificate of Substantial Performance.

1.2 DEFINITIONS

1.2.1 OWNER

1.2.1.1 Owner means the person, firm or corporation identified as such in the Instructions to Tenderers, the Agreement and other Contract Documents and includes any authorized representative of the Owner.

1.2.2 OWNER’S REPRESENTATIVE

1.2.2.1 Owner’s Representative may be either an employee of the District of Saanich or an individual or organization who has been contracted by the District of Saanich to provide the services set out herein.

1.2.2.2 Owner’s Representative will possess the required knowledge and qualifications to ensure that the testing and review protocols set out in this document are adhered to and procedural guidance is provided when required.

1.2.2.3 If the Owner’s Representative is a Parks Division employee, instructions in this document requiring participation from both the Owner’s Representative and a Parks Division representative would be satisfied with the one individual.

1.2.3 CONTRACTOR

1.2.3.1 Where the project is undertaken by external forces, Contractor refers to the awarded contractor or subcontractor under a general civil contractor.

1.2.3.2 Where the project is undertaken by employees of the District of Saanich, Contractor refers to the internal project lead and internal project team.

1.3 PROJECT CATEGORIES

1.3.1 Irrigation projects undertaken by the District of Saanich fall into three main Project Categories as set out below:

(i) New irrigation systems for boulevards and medians.
(ii) New irrigation systems for parks, municipal buildings and facilities.
(iii) Repair, renovation, and maintenance of existing systems.

1.3.2 Design requirements will vary for each of the three categories and Design instructions and associated details take precedence over these Specifications.

1.3.3 For irrigation projects installed by internal forces, the following sections will not apply unless otherwise specified by the Owner:

(i) Section 1.8
(ii) Section 1.10.2
(iii) Section 1.22
(iv) Section 4.0
(v) Section 5.0
(vi) Section 6.0

1.3.4 Irrigation installations forming part of a private property development that will become the operational and maintenance responsibility of the District of Saanich at Certificate of Acceptance, are subject to these Specifications and all formal tests and reviews contained herein.

1.4 DESIGN BUILD PROJECTS

1.4.1 For design-build projects, a minimum of 7 days before the scheduled work, the Contractor will provide to the Owner's Representative a set of professionally designed and drafted irrigation drawings for review and approval. The drawings will have the same scale as any project design plans, with a complete list of materials including quantities in a table for review and include all components, models, and materials, including but not limited to point of connection, piping, zone valves, and sprinklers.

1.5 REFERENCE STANDARDS

1.5.1 MMCD (Master Municipal Construction Standards).
This document must be referenced and interpreted simultaneously with all relevant sections of the current MMCD document including but not limited to:

Section 01 33 01 Project Record Documents
Section 03 30 53 Cast in Place Concrete
Section 31 05 17 Aggregates and Granular Materials
Section 31 22 01 Site Grading
Section 31 23 01 Excavation, Trenching and Backfilling
Section 32 91 21 Topsoil and Finish Grading

Section 32 92 19 Hydraulic Seeding
Section 32 92 20 Seeding
Section 32 92 23 Sodding
Section 32 93 01 Planting of Trees, Shrubs and Ground Covers

1.5.2 The Corporation of the District of Saanich Subdivision Bylaw 1995

1.5.3 The Corporation of the District of Saanich Tree Protection Bylaw No. 9272

1.5.4 Canadian Landscape Standard; Second Edition

1.5.5 ASTM D3350 – High-Density Polyethylene (HDPE) Pipe

1.5.6 ASTM D2241 – Poly Vinyl Chloride (PVC) Plastic Pipe (SDR-PR)

1.5.7 ASTM D2564 – Solvent Cement for PVC Pipe and Fittings

1.5.8 CSA B137.0-12 – Thermoplastic Pressure Piping

1.6 CODES AND REGULATIONS

1.6.1 All work will be installed in accordance with the requirements of local and applicable provincial and federal regulations. Any work shown on the drawings or described in the Specifications that is at variance with the regulations will be changed to comply with the requisite authority at no cost to the Owner.

1.6.2 All work will comply with WorkSafeBC (Workers' Compensation Board of British Columbia) regulations.

1.7 PERMITS AND FEES

1.7.1 Obtain all permits and licenses applicable to the work to and include the costs for such permits and licenses in the tender price.

1.7.2 Provide the Owner’s Representative with signed and approved copies of all required permits, including but not limited to:

(i) Backflow Test Report
(ii) Technical Safety BC Electrical Contractor Authorization and Declaration of Compliance Electrical Inspection Request Form

1.8 QUALITY ASSURANCE

1.8.1 The Contractor shall:

(i) Have a minimum of five (5) years of commercial irrigation installation experience
(ii) Maintain in good standing all necessary insurances
(iii) Provide to the owner a minimum of two (2) references from similar-sized projects
(iv) Have qualified personnel to perform the scope of work put forth.

(v) Have Electrical and Safety Certifications.

1.8.2 The Contractor will provide the Owner with a written warranty covering materials and workmanship for a minimum of one (1) year from the date of substantial completion.

1.8.3 The Contractor will provide warranty maintenance on the system for a minimum of one (1) year from Substantial Performance including, but not limited to, spring start-up, adjustments, maintenance operations as required, and winterization.

1.8.4 All electrical components or products specified or used in the construction of the proposed irrigation system must be CSA-approved and installed in accordance with all local, provincial, and national electrical codes.

1.8.5 If the design involves High-Density Polyethylene Pipe (HDPE), the Contractor will be certified in High-Density Polyethylene Fusion Welding as certified by the *British Columbia Institute of Technology* or an approved equivalent.

1.8.6 All materials to be new and without flaws.

1.8.7 All materials installed must be compatible with existing components and other materials specified for the project.

1.8.8 The Contractor will attend a pre-construction meeting with the Owner's Representative and a District of Saanich Parks Division representative.

1.9 OPERATION AND MAINTENANCE MANUAL

1.9.1 The Contractor will provide an operation and maintenance manual and maintenance tools to include:

(i) Parts sheets on materials installed.
(ii) Operating and maintenance instructions for major equipment installed.
(iii) Copies of the Backflow Test Report and the Electrical Permit.
(iv) Product warranty documentation for all installed irrigation components. Date the commencement of the warranty period from the date of Substantial Performance.
(v) Contractor warranty statement for all materials and installation for one year from the date of Substantial Performance.
(vi) Two (2) sets of tools required for adjusting all sprinklers installed and one quick coupler key and matching hose swivel for each quick coupler installed.

1.10 SCHEDULING AND SITE CONDITIONS

1.10.1 The Contractor will verify the location of all underground utilities and services before commencement of the work.

1.10.2 The Contractor will consult with the Owner's Representative prior to construction, if adjustments to the design are deemed necessary to suit existing site conditions and grades before commencement of the work.

1.10.3 The Contractor will ensure the sequencing of irrigation work is carried out in coordination with the work of other trades.

1.10.4 The Contractor will ensure security fencing to a minimum height of 5' exists around the entire project site; to be removed no sooner than the award of Substantial Completion.

1.10.5 The Contractor will ensure that sleeving and conduits are installed to minimize disruptions.

1.10.6 Where a) existing plant material or b)where managed turf on a play field is to be salvaged and maintained during construction and then reinstalled on the field, the Contractor will ensure that temporary irrigation is available and applied to meet plant material requirements.

1.11 SUBSTITUTIONS

1.11.1 Where materials are specified by brand name and model number, such specifications will be deemed to facilitate a description of the materials and material quality and will establish a standard for performance and quality against which proposed substitutes will be evaluated.

1.11.2 Substitution requests will only be considered when submitted in writing with sufficient descriptive literature and product samples to permit product comparison.

1.11.3 All product substitutions will be of equal or greater performance, value, and water efficiency than the original materials. Alternate materials will match the specified materials in performance, flow, and pressure loss so as not to compromise the intent of the design.

1.11.4 The written approval of the Owner's Representative is required for the use of materials that are different from those shown on the approved design. Any alternate materials installed without prior approval from the Owner's Representative will be removed and replaced with approved materials at the Contractor's expense.

1.11.5 Shop Drawings are required for any aspects of the irrigation system not included in the Construction Drawings. This includes but is not limited to:

(i) Approved revisions to the irrigation system design.
(ii) Installation detail drawings for proposed new or proposed substitute irrigation components not addressed in existing drawings.

1.11.6 Shop drawings to be submitted to the Owner's representative for review, comment and approval or rejection.

1.12 IRRIGATION RECORD DRAWINGS

1.12.1 The Contractor will maintain accurate, scaled records of installed system components on a marked-up Construction Drawing daily. The marked-up Construction Drawing will be on-site and made available to the Owner's representative upon request.

1.12.2 The Contractor will prepare AutoCAD project As-built showing the as-installed locations of irrigation system components, including but not limited to sprinklers, valves, points of connection, grounding points, controllers, valve boxes, wire splice boxes, mainlines, lateral lines, sleeving and conduit. The As-built will identify each zone numerically, and include an irrigation schedule with precipitation rates and USGPM for each zone.

1.12.3 The Contractor will provide the project As-built drawing within 14 days of the Substantial Completion review. As-built drawing submission will include one (1) full-sized printed copy, one (1) 11" x 17" printed copy on rip-proof and waterproof paper, and one (1) portable memory stick with the .dwg and pdf. As-built dwg will be in AutoCAD 2010 or newer format.

1.12.4 As-built dwg must adhere to the following requirements:
- (i) Individual components and zones are on separate layers
- (ii) All entities remain intact and are not exploded
- (iii) Standard georeferencing system is used

1.13 FORMAL TESTS AND REVIEWS

1.13.1 DISTRICT OF SAANICH REVIEW AND TESTING MILESTONES

Review or Test Description	Stage of Irrigation Project Construction
Design package review	0%
Site layout and permit reviews	0%
First project review Include: HDPE strap test (if applicable)	50%
Second project review Include: Vault Drainage Test (if applicable) Open Trench Review Tree Irrigation Review Mainline Pressure and Leak Test	75%
Substantial Completion Review Include: System Coverage and Operation Test Site Remediation Review Backflow Prevention Test results submitted	100%

1.13.2 System installation field reviews will be held regularly.

1.13.3 The Contractor will conduct the following tests and reviews in the presence of the Owner's representative and additional participants as noted, unless the Owner's representative is a Parks Division employee.

Review or Test Description	Additional Participants
Site layout review	Parks Division Employee
HDPE strap test	
Vault drainage test	
Open trench review	
Substantial Completion Review	Parks Division Employee
Certificate of Acceptance Review	Parks Division Employee

1.13.4 The Contractor will keep work uncovered and accessible until successful completion of review or test.

1.13.5 The Owner's representative will provide the results of all system tests and reviews to the Owner and the Contractor within one week of the review/test date.

1.13.6 The Contractor will conduct a backflow prevention assembly test as a BC Water Works Association standard using qualified personnel and provide test results to the Owner's representative at Substantial Completion Review.

1.14 SITE LAYOUT REVIEW

1.14.1 The Contractor will layout and stake the locations of the irrigation system components per the Contract Drawings for review by the Owner's Representative. Components will include but are not limited to: Kiosk/Controller Cabinet, Connection to Water Supply Point, Site Isolation Valve, Point of Connection Components (within valve boxes or vault), Manual and Automatic Valves, Sprinklers, Thrust Blocks & Quick Couplers.

1.14.2 Site Layout Review will confirm
- (i) Layout is within the project boundary and property lines.
- (ii) Service and utility line minimum clearances are upheld.

1.14.3 Where construction may impact tree roots, a tree permit must be obtained per The Corporation of the District of Saanich Tree Protection Bylaw #9272 and provided to the Owner's Representative prior to construction.

1.14.4 Required sleeving and/or electrical conduit installations will be reviewed to ensure that a) approved product(s) has been installed and b) the electrical conduit and/or sleeving has been installed in accordance with the approved drawing.

1.15 HDPE STRAP TEST (if applicable)

1.15.1 Upon visual or tactile review by the Owner's Representative, any inconsistent bead in height or width may be subject to removal and repair at the Contractor's sole expense.

1.15.2 Cut fusion weld from pipe, allowing 200mm (8") on either side of the weld to work with.

1.15.3 Cut pipe lengthwise through fusion weld to create a strap 25mm (1") wide.

1.15.4 Bend the strap back on itself.

1.15.5 If the fusion weld does not break, then the weld is acceptable, and no further testing of similar welds is required.

1.15.6 If the weld breaks, repeat the test on another fusion weld, chosen by the Owner's Representative. If the second fusion weld fails, then all welds become suspect, and the HDPE pipe cannot be installed until the reason for the fusion joint failures is determined.

1.16 VAULT DRAINAGE TEST (if applicable)

1.16.1 Conduct a vault drainage test once the water supply has been installed within the vault and before installation of the backflow prevention device.

1.16.2 Plug the vault drain and fill the vault with water to a depth of 300mm (12").

1.16.3 Remove Plug.
Test is passed if the vault drains in 1 hour or less.

1.17 OPEN TRENCH REVIEWS

1.17.1 Open trench reviews will be conducted throughout the construction schedule to look at mainline, lateral lines, wire paths, ground plates and other installed irrigation equipment.

1.17.2 The Contractor will ensure that a minimum of 50% of installed piping is available for Open Trench Review prior to backfilling

1.17.3 Reviews will verify the depth, bedding, joining procedures, splices, workmanship, and clearances are in accordance with the Specifications and Construction Documents.

1.17.4 The Contractor will rectify any issues that are not in accordance with the Specifications and Construction Documents.

1.18 TREE IRRIGATION REVIEW

1.18.1 Perform layout review and testing of tree irrigation zones:
(i) Operate zones to ensure devices are operating correctly.

(ii) Visually conduct layout field review before backfilling materials.

1.18.2 The Contractor will rectify any issues that are not in accordance with the Specifications and Construction Documents.

1.19 PRESSURE AND LEAK TEST

1.19.1 Perform a pressure test to identify potential leaks and ensure the entire system can operate at design pressure.

1.19.2 Fill the mainline with water and expel all air from the pipe. Maintain water in pipe at operating pressure for:
(i) 24 hours for PVC mainline
(ii) 3 hours for HDPE pipe

1.19.3 Visually review mainline and fittings for leaks.

1.19.4 Record beginning water pressure.

1.19.5 A passed test is less than 5% difference after time allotment per 1.19.2 has elapsed.

1.19.5 If the test results are a fail, make repairs as necessary and repeat test until passing result is achieved.

1.20 SYSTEM COVERAGE AND OPERATION TEST

1.20.1 Conduct coverage and operation test after installation of the complete irrigation system and before issuance of Certificate of Substantial Performance:
(i) Sprinkler spacing does not exceed distances shown on Construction Drawings.
(ii) Sprinklers, valve boxes, vaults and trenches are at the specified elevation relevant to finished grade and not subject to settlement or lifting.
(iii) Controller can be programmed manually on site and where applicable, remotely via the Owner's central control system with 100% communication verified.
(iv) Controller is programmed to Construction Drawings irrigation schedule
(v) Where applicable, controller responds to flow sensor.
(vi) Operating pressure is within design parameters.
(vii) Performance meets design parameters

1.21 SITE REMEDIATION REVIEW

1.21.1 Inspect all plant material impacted by the installation of the irrigation components to ensure all are healthy and in acceptable growing condition.

1.21.2 Inspect all remediated turf areas and ensure that all impacted areas are healthy and in acceptable growing condition.

1.21.3 Inspect all other site infrastructure and assets which have been impacted by the project and ensure they have been restored or replaced to condition prior to construction. Contractor responsible for all related costs.

1.22 MEASUREMENT FOR PAYMENT

1.22.1 Supply and installation of the irrigation point of connection will be measured as a lump sum. The work includes, but is not limited to: Permits and fees, water meter, master valve, flow sensor, backflow prevention assembly, valve boxes, vaults and lids, fittings, pipe, excavation, trenching, sleeves, backfill, and restoration, as well as all incidentals necessary for the proper installation of a complete water service to the irrigation system.

1.22.2 Supply and installation of the irrigation system will be measured as a lump sum. The work includes, but is not limited to: Permits and fees, supply, installation, testing, programming, adjustment of irrigation system controller, electrical conduits, controller cabinets, controller base, valve boxes, fittings, wire, excavation, trenching, backfill, restoration, and all incidentals necessary for the proper installation and operation of a complete irrigation control system.

1.22.3 Supply and installation of the field irrigation system will be measured as a lump sum. The work includes, but is not limited to: Supply, installation, testing and adjustment of irrigation pipe, sleeves, conduit, zone valves, drip zone kits, electrical wire, isolation valves, pressure regulators, swing joint assemblies, sprinklers, bubblers, emitters, dripline, root watering systems, air relief valves, flush valves, fittings, valve boxes, excavation, backfill, restoration, all incidentals necessary for the proper installation and operation of a complete irrigation system.

1.22.4 Payment for record drawings and operating manual will be measured as a lump sum.

2.0 PRODUCTS

2.1 VAULT AND LID (if applicable)

2.1.1 Vault per Approved Products List and District of Saanich Detail Drawing # IR-3.

2.1.2 Lid must fit installed vault and have recessed hinges and locking hardware.

2.1.3 Vault drain to be perforated Schedule 40 PVC Pipe; 100mm (4”) diameter.

2.2 BACKFLOW PREVENTION ASSEMBLY

2.2.1 Per Approved Products List

2.3 WATER SERVICE AND METER

2.3.1 Unless already installed or otherwise required by the water utility having jurisdiction over the site, provide and install a metered water service, including but not limited to:
(i) Permit

(ii) Approved water meter
(iii) Installation in accordance with water utility requirements.

2.4 FLOW SENSOR (if applicable)

2.4.1 Per Approved Product List.

2.4.2 Acceptable wire for the flow sensor will be shielded, direct burial communication cable per Approved Products List.

2.5 MASTER VALVE (if applicable)

2.5.1 Per Approved Products List.

2.5.2 Size in accordance with valve manufacturer's recommendations for design flow.

2.6 PRESSURE REDUCING VALVE

2.6.1 Per Approved Products List.

2.7 IRRIGATION CONTROLLER

2.7.1 Per Approved Products List.

2.8 CONTROLLER CABINET

2.8.1 Per Approved Products List.

2.9 CONTROLLER TO DECODER COMMUNICATION

2.9.1 Wiring as Per Approved List.

2.9.2 Field Decoders in single or multi-valve configurations pre-addressed.

2.10 WIRE AND WIRE CONNECTORS

2.10.1 Control wire from irrigation controller to electric zone valve to be CSA approved, minimum #14-gauge, direct burial, type TWU-40 wire. Control wire to be any colour other than white, blue, purple, or red.

2.10.2 Common wire from irrigation controller to electric zone valve to be CSA approved, minimum #12-gauge direct burial, type TWU-40 wire. The common wire is to be white in colour

2.10.3 Where a Master Valve is installed, the wire from the controller to the valve to be CSA approved, minimum #14-gauge direct burial, type TWU-40 wire. Wire to be red in colour.

2.10.4 Spare control wire to be CSA approved, minimum #14-gauge, direct burial, type TWU-40 wire. Wire to be blue in colour.

2.10.5 Wire connectors per Approved Products List.

2.11 GROUNDING AND BONDING

2.11.1 Ground assembly consists of CSA and BC Electrical Code endorsed products per the irrigation controller manufacturer's recommendations for grounding.

2.11.2 Grounding to be included within the electrical permit application.

2.12 ELECTRICAL CONDUIT

2.12.1 Will be rigid PVC/DB2 pipe per applicable local and provincial codes.

2.13 POLYVINYL CHLORIDE (PVC) PIPE

2.13.1 Conform to CSA B137.3-93.

2.13.2 New, solvent weldable with belled ends, continually and permanently marked showing manufacturer's name, material, size, and pressure rating.

2.13.3 PVC pipe to be as follows:
(i) All mainline pipes to be Schedule 40 PVC.
(ii) All lateral pipes to be Class 200 PVC.
(iii) Bell and spigot gasket joint pipe to be specified on Construction Drawings where approved.

2.14 LOW DENSITY POLYETHYLENE PIPE

2.14.1 New CSA LDPE Series 75 or 50 psi poly drip tubing in new condition, extruded from virgin materials, continually and permanently marked showing manufacturer's name, material, size, and pressure rating.

2.15 HIGH DENSITY POLYETHYLENE PIPE

2.15.1 New CSA Approved, extruded from virgin materials, continually and permanently marked showing manufacturer's name, materials, size, and pressure rating.

2.15.2 Material to be listed by the Canadian Standards Association (CSA) and Plastic Pipe Institute (PPI) as a PE-3408 resin with a hydrostatic design basis (HDB) of 11.0MPa (1600psi) for water at 23ºC. Material to comply with ASTM D-1248 as a Type III Class C, Category 5, Grade P34 material and with ASTM D-3350 as a 345434C cell material.

2.15.3 Acceptable HDPE pipe is dependent on operating pressure and has Standard Density Ratios (SDR) as follows:
(i) Maximum pressure up to 100psi: SDR 17.0

(ii) Maximum pressure up to 160psi: SDR 11.0
(iii) Maximum pressure up to 200psi: SDR 9.0

2.16 SLEEVING

2.16.1 Sleeving will be new Schedule 40 PVC pipe unless otherwise specified on Contract Drawings.

2.16.2 Irrigation sleeve diameter to be minimum 100mm (4”) or twice the diameter pipe running through it, whichever is greater.

2.17 VALVE BOXES

2.17.1 Per Approved Products List.

2.18 WIRE SPLICE BOXES

2.18.1 Wire splice box, matching lid and extensions will be new, commercial grade and grey in colour. Wire splice box to have a locking lid with a stainless-steel bolt locking device and appropriate washers.

2.19 ELECTRIC ZONE VALVE

2.19.1 Per Approved Products List.

2.19.2 Size in accordance with the valve manufacturer’s recommendations for the design flow.

2.20 QUICK COUPLER VALVE

2.20.1 Per Approved Products List.

2.21 GATE VALVE

2.21.1 Per Approved Products List.

2.22 DRIP ZONE CONNECTION

2.22.1 Per District of Saanich Detail Drawing #IR-10 and Approved Products List.

2.23 FILTER

2.23.1 Per Approved Products List.

2.24 SWING JOINT ASSEMBLY

2.24.1 Fabricated with three (3) threaded new Schedule 40 PVC elbows and one threaded Schedule 80 PVC nipple.

2.24.2 The length of the nipple will be such a length to permit the installed sprinkler or valve to be set as specified.

2.24.3 Diameter of nipple to match inlet for valve or sprinkler shown on Construction Drawings.

2.25 SPRINKLERS – SPRAYHEAD

2.25.1 Per Approved Products List.

2.26 SPRINKLERS – ROTOR

2.26.1 Per Approved Products List.

2.27 LANDSCAPE DRIPLINE

2.27.1 Per Approved Products List.

2.28 DRIP EMITTERS

2.28.1 Per Construction Drawings.

2.29 ROOT WATERING SYSTEM

2.29.1 Per Approved Products List.

2.30 LATERAL FLUSH ASSEMBLY

2.30.1 Per Approved Products List.

2.31 AIR RELIEF VALVE

2.31.1 Per Approved Products List.

2.32 FITTINGS

2.32.1 Fittings for PVC pipe will be new Schedule 40 PVC conforming to ASTM D-2466-97 standards and of the same material as pipe. Fittings to be designed for solvent welding to PVC pipe, except where valves and risers require threaded joints.

2.32.2 Nipples to be threaded Schedule 80 PVC.

2.32.3 Fittings for dripline and drip emitters to be compatible with the specified dripline or emitter and as recommended by the manufacturer.

2.32.4 Fittings for HDPE pipe are to be butt fusion or electrofusion. Butt fusion fittings for use on HDPE pipe must meet ASTM F2206 Standard Specification. Electrofusion fittings for use on HDPE pipe must meet ASTM F1055 Standard Specification.

2.32.5 The SDR rating of HDPE fittings must match the SDR rating of the HDPE pipe specified and must be molded or fabricated by a pipe manufacturer.

2.32.6 Pipe and fittings installed within the Point of Connection valve boxes will be Schedule 80 PVC unless otherwise shown on the Construction Drawings. Transition to Schedule 40 PVC at 300mm (12”) upstream and 300mm (12”) downstream of the Point of Connection.

2.32.7 Pipe and fittings installed within the Point of Connection vault will be brass or Schedule 80 PVC unless otherwise shown on the Construction Drawings. Transition to Schedule 40 PVC at 300mm (12” upstream and 300mm (12”) downstream of the Point of Connection.

2.33 PIPE SOLVENT AND PRIMER

2.33.1 Per Approved Products List.

2.33.2 The use of wet and dry solvents and primer is prohibited.

2.34 THRUST BLOCK

2.34.1 Thrust blocks to be 20MPa at 28-day strength. Thrust blocks can be either:
(i) Poured-in-place concrete.
(ii) Pre-cast concrete block.

2.35 BACKFILL MATERIAL

2.35.1 Native excavated material to be used for backfill will be clean and free from building debris, foreign substances, stones or aggregates larger than 25mm (½”).

2.35.2 Pipe bedding sand will be pit run sand.

2.35.3 Drain rock will be 25mm (1”).

3.0 EXECUTION

3.1 EXISTING CONDITIONS

3.1.1 Report existing conditions at variance with Construction Drawings to Owner’s Representative.

3.1.2 Verify locations of underground utilities before commencing excavation and conduct work to prevent interruption and damage to utilities. Any damage occurring during projects will be made good at the Contractor’s sole expense.

3.1.3 Verify the location of all services in building walls before boring or drilling holes. Any damage occurring during project work will be made good at the Contractor’s sole expense.

3.1.4 Adjustments to the installation of the irrigation system to avoid existing conditions will be permitted with prior approval from the Owner's Representative.

3.2 EXCAVATION

3.3.1 Excavate to ensure trench depth and bedding requirements are met.

3.3.2 All excavation is unclassified. Report any material that cannot be excavated by normal mechanical means or that may affect excavation to the required depth.

3.3.3 Buried debris exposed during excavation, which may impede the proper installation and operation of the irrigation system, must be removed.

3.3 WATER SERVICE

3.3.1 Verify that provided water service meets Construction Drawings requirements.

3.3.2 Notify Owner's representative of any deviation and determine with Owner's representative a course of action before proceeding with installation.

3.3.3 Ensure connection to supplied water service meets local plumbing codes and bylaws and BC Plumbing Code.

3.4 ELECTRICAL SERVICE

3.4.1 A Certified individual carrying the necessary qualifications will obtain permits and approvals to install and operate irrigation system.

3.4.2 Confirm with electrical utility the availability, suitability and location of electrical service connection.

3.4.3 Ensure connection to supplied electrical service meets local electrical codes, bylaws and BC Electrical Code.

3.4.4 Where applicable, ensure grounding is included within the electrical permit.

3.5 VAULT AND LID (if applicable)

3.5.1 Install the vault complete with lid in the location on the Construction Drawings.

3.5.2 Support and brace components within vault using adjustable aluminum pipe stands complete with rubber gaskets per District of Saanich Detail Drawings # IR-5a and IR-5b. Quantities per size of service:

(i) 19mm (3/4"): 2 supports
(ii) 25mm (1") to 50mm (2"): 3 supports
(iii) 75mm (3") and larger: 3 supports per vault

3.5.3 Install vault drain and connect to drain pit, dry well, manhole or catch basin; refer to Detail Drawing #IR-3.

3.5.4 Drainage pit dimensions will match the depth, width and length of the vault installed.

3.6 BACKFLOW PREVENTION DEVICE

3.6.1 Backflow prevention devices will be installed by a Licensed Plumber or Certified Mechanical Contractor in accordance with BC Plumbing Code and AWWA requirements.

3.6.2 Double Check Valve Assembly (DCVA) will be installed in a lockable valve box, vault, or mechanical room with positive drainage; ensure adequate space is provided for general maintenance, servicing and removal if necessary.

3.7 IRRIGATION CONTROLLER

3.7.1 Install irrigation controller in the location shown on Construction Drawings.

3.7.2 Irrigation controller to be installed in approved wall mount cabinet or kiosk; refer to District of Saanich Detail Drawing #'s IR-1a, IR-1b and IR-2.

3.7.3 Coordinate controller installation with that of other electrical components.

3.7.4 Install controllers and wiring in accordance with local electrical codes, bylaws, and the BC Electrical Code.

3.7.5 For Central Control network controllers, install communication components according to the manufacturer's recommendations and establish communication between the controller and the Central Control network.

3.8 CONTROLLER CABINET OR KIOSK

3.8.1 For wall mount installations, refer to the manufacturer's recommendation and District of Saanich Detail Drawing #2.

3.8.2 For kiosk installations, refer to District of Saanich Detail Drawing #'s IR-1a and IR-1b.

3.8.2 Provide electrical service to the controller cabinet as shown in Construction Drawings and connect to controller.

3.8.3 Ensure all electrical work is completed by a professional holding the applicable licenses, permits and certification for the work.

3.9 HYDROMETER (if applicable)

3.9.1 Install hydrometer per manufacturer's instructions; refer to District of Saanich Detail Drawing #'s IR-5a and IR-5b.

3.9.2 Install hydrometer drain valve prior to installation. Drain valve will be provided by the District of Saanich Parks Division.

3.9.3 For conventional (non 2-wire) irrigation systems, communication wire will be PE39 cable with no splices permitted on the path from controller to hydrometer.

3.9.4 Where applicable, PE 39 cable will be installed in a separate conduit from the hydrometer to the controller.

3.9.5 For two-wire irrigation systems, communication from controller to hydrometer will be per manufacturer's Specifications.

3.10 CONTROL WIRE

3.10.1 Ensure all control wire is installed by a professional holding the necessary qualifications.

3.10.2 Bed and cover control wire in sand with a minimum 50mm (2") below and 100mm (4") above control wire. Where the control wire is in the same trench as the pipe, place the wire beside the pipe with horizontal clearance of a minimum of 50mm (2") and to the appropriate BC Electrical Code depth.

3.10.3 Bundle multiple lengths of wire in the same trench or conduit with ties at maximum 5.0m intervals

3.10.4 Install wire with 450mm (18") length of coiled slack at all changes of direction and at connections to zone valves.

3.10.5 Identify all control wires entering the controller cabinet with a permanent label or tag indicating the zone number of the valve operated by each control wire.

3.10.6 Maintain consistent wire colour through the wire splice box.

3.10.7 Identify spare control wire as 'SPARE' wire with a permanent label or tag in both the cabinet/kiosk and at the termination point per the approved Construction Drawings.

3.10.8 Install caution tape above all wire runs per District of Saanich Detail Drawing #IR-6.

3.11 GROUNDING AND BONDING (if applicable)

3.11.1 Install CSA-approved ground assembly in the location shown on Construction Drawings per manufacturer's Specifications and BC Electrical Code regulations.

3.12 SLEEVING

3.12.1 Install irrigation sleeves in locations shown on Construction Drawings.

3.12.2 Install irrigation sleeves under roadways to a minimum depth of 605mm (24”).

3.12.3 Install sleeves to extend 1.0m past the edge of the hard surface.

3.12.4 Cap sleeve until pipe is ready to be installed.

3.12.5 Bed sleeve in four (4) inches of sand around the entire pipe.

3.12.6 Bury a piece of detectable metal on top of each end of the sleeve.

3.12.7 Stake location of each end of sleeve prior to backfilling. Label the exposed end of the stake with the word “sleeve”.

3.12.8 Record the location and size of sleeving on record drawings.

3.13 ELECTRICAL CONDUIT

3.13.1 Install electrical conduit in locations shown on Construction Drawings.

3.13.2 Install electrical conduit to extend 1.0m past the edge of the hard surface.

3.13.3 Cap electrical conduit until wiring is ready to be installed.

3.13.4 Electrical conduit will be sized to minimum 50mm (2”) or twice the diameter of the wire bundle to be encased; whichever is larger.

3.13.5 Electrical conduit to be installed per BC Electrical Code requirements.

3.13.6 Stake location of each end of electrical conduit prior to backfilling. Label the exposed end of the stake with the word “conduit”.

3.13.7 Record the location and size of electrical conduit on record drawings.

3.14 VALVE BOXES

3.14.1 Except as shown otherwise on Construction Drawings, locate valve boxes in planting beds; 450mm from planting bed edges at back or end of bed. Installation location to minimize interruption to planting.

3.14.2 Do not install valve boxes in hardscapes without prior approval.

3.14.3 Install a minimum of 100mm (4”) of drain rock beneath the valve and ensure that the valve box is wrapped with landscape fabric.

3.14.4 Maintain a 50mm (2”) space between the bottom of the valve and the top of the drain rock.

3.14.5 Provide a minimum 50mm (2”) clearance between the valve box and all components within.

3.14.6 Valve box will be supported by a minimum of 4 bricks; one at each corner.

3.14.7 Valve box must not contact the irrigation pipe.

3.15 WIRE SPLICE BOXES

3.15.1 Except as shown otherwise on Construction Drawings, locate wire splice boxes in planting beds.

3.15.2 Do not install wire splice boxes in hardscapes.

3.15.3 Do not install valves in a wire splice box.

3.15.4 Wire splice box will be supported by a minimum of 4 bricks; one at each corner.

3.16 ELECTRIC ZONE VALVE

3.16.1 Install in valve box per District of Saanich Detail Drawing # IR-9.

3.16.2 Identify the electric zone valve with a permanent tag indicating the zone number of the valve.

3.16.3 Up to three (3) 25mm (1”) electric valves or two (2) 38mm (1½”) electric valves can be installed within a single valve box, maintaining a minimum of 100mm (4”) of clearance between valves.

3.16.4 One (1) 50mm (2”) valve can be installed in a 1419 valve box, or two (2) 50mm (2”) valves can be installed in a 1320 valve box. Valves larger than 50mm (2”) must be installed in individual valve boxes.

3.17 QUICK COUPLERS

3.17.1 Install in valve box per District of Saanich Detail Drawing # IR-8.

3.18 ISOLATION VALVES

3.18.1 Install in valve box per District of Saanich Detail Drawing # IR-7.

3.18.2 Where the point of connection is located within a building, install an isolation valve immediately downstream of where the pipe exits the building.

3.19 BLOW OUT ASSEMBLY

3.19.1 Install per District of Saanich Detail Drawing #’s IR-4 for Point of Connection in valve boxes and IR-5a and IR-5b for Point of Connection in vault.

3.20 DRIP ZONE CONNECTION

3.20.1 Install per District of Saanich Detail Drawing # IR-10.

3.20.2 Install in valve box to ensure minimum 50mm (2”) of clearance on all sides and above and below equipment.

3.20.3 Identify the electric zone valve with a permanent tag indicating the zone number of the valve.

3.21 FILTERS

3.21.1 Install all filters per the manufacturer’s recommendations and ensure complete access for maintenance and internal component replacement as necessary.

3.22 SPRINKLERS

3.22.1 Install per District of Saanich Detail Drawing # IR-12 and in locations as shown on Construction Drawings with nozzles as shown on Construction Drawings.

3.22.2 Where obstructions or site improvements hinder or block head-to-head coverage, advise the Owner's representative of the situation for the determination of an acceptable remedy to the situation. Do not proceed until receipt of alternate plan approval.

3.22.3 Install all sprinklers flush to the finished grade.

3.22.4 Mount the sprinkler on a swing joint assembly. Connect the swing joint to the bottom inlet of the sprinkler; side inlet connection is not acceptable.

3.22.5 Adjust arc and radius of coverage to minimize overspray onto hard surfaces.

3.23 DRIPLINE IRRIGATION

3.23.1 Install dripline irrigation in locations per Construction Drawings; refer to District of Saanich Detail Drawing # IR-11.

3.23.2 Ensure dripline irrigation is at the specified depth after placement of the remainder of growing medium.

3.23.3 Test manifold, lines, and fitting connections for leaks before placement of the growing medium over components.

3.23.4 All dripline installations must include air relief valves and flush valves per Contract Drawings and District of Saanich Detail Drawing #’s IR-15 and IR-16.

3.24 TREE DRIPLINE

3.24.1 Install Tree Dripline per District of Saanich Detail Drawing # IR-14 and in locations per Construction Drawings.

3.24.2 Place tree dripline circles on prepared surface, ensuring dripline is at the specified depth after placement of the remainder of growing medium.

3.24.4 Test manifold, lines, and fitting connections for leaks before placement of the growing medium over components.

3.24.5 All tree dripline installations must include air relief valves and flush valves per Contract Drawings and District of Saanich Detail Drawing #'s IR-15 and IR-16.

3.25 ROOT WATERING SYSTEMS (if applicable)

3.25.1 Install Root Watering System units per District of Saanich Detail Drawing # IR-13 and in locations per Construction Drawings. Use sock and pea gravel.

3.25.2 Install Root Water System devices at equidistant spacing around trees.

3.26 EMITTERS / BUBBLERS

3.26.1 Install per manufacturer's instructions in locations as shown per Construction Drawings.

3.27 AIR RELIEF VALVE

3.27.1 Install at highest point(s) in dripline zones per manufacturers' recommendations, Contract Drawings and District of Saanich Detail Drawing # IR-16.

3.28 FLUSH VALVE ASSEMBLY

3.28.1 Install in locations at the end of dripline irrigation runs and per manufacturers' recommendations, Contract Drawings and District of Saanich Detail Drawing # IR-15.

3.29 PIPE AND FITTINGS

3.29.1 Do not locate pipe closer than 300mm (12") from any hard surface or feature.

3.29.2 Where 3.30.1 is not possible, confirm approval in writing from the Owner's representative prior to construction, and hand dig trench lines.

3.29.3 Adhere to minimum and maximum burial depth and clearances for pipe per District of Saanich Detail Drawing # IR-6.

3.29.4 Install thrust blocks at all changes in direction of PVC pipe 75mm (3") in diameter or greater, and for any change in direction of gasketed pipe.

3.29.5 Allow sufficient space between fittings to facilitate future repairs. Minimum of two times the pipe diameter or 50mm (2'), whichever is greater, should be provided between fittings.

3.29.6 Follow manufacturer's instructions for handling and installation of all pipe and fittings.

3.30 THRUST BLOCK

3.30.1 Installation of all thrust blocks will follow MMCD Platinum Addition Section 33 11 01 Item 3.13 and drawing W1.

3.30.2 For thrust blocks installed in disturbed soils, increase the thrust block area by 50%.

3.30.3 Place 2 ply of 6mil polyethylene between the pipe and thrust block.

3.30.4 Allow concrete to set before backfilling the trench or pressurizing the line.

3.31 CLEAN UP AND RESTORATION

3.31.1 Remove and dispose of all waste and debris resulting from the irrigation installation from the site.

3.31.2 Restore all disturbed surfaces to original condition and repair all trench settlement.

4.0 PROJECT COMPLETION

4.1 INSTRUCTIONS TO OWNER

4.1.1 The Contractor will instruct the Owner in complete operating and maintenance procedures for the irrigation system, including start up, winterization and programming.

4.1.2 The Contractor will review Record Drawings with the Owner on site.

4.1.3 The Contractor will review the Operations and Maintenance Manual with the Owner on site.

5.0 MAINTENANCE

5.1 MAINTENANCE - GENERAL

5.1.1 The Contractor will inspect, operate, maintain and adjust the irrigation system through the Irrigation Maintenance Period until issuance of the Certificate of Acceptance.

5.1.2 The Contractor will ensure the irrigation system operates as intended, including but not limited to:

(i) Adjust irrigation schedule to ensure plant health is maintained.
(ii) Utilize season adjust in programming.
(iii) Adjust sprinklers as required to maintain approved coverage.
(iv) Monitor and clean filters.
(v) Restore softscapes and hardscapes affected by trench settlement.
(vi) Respond to Owner's Representative requests for program alterations, repairs, servicing and sprinkler adjustments within 48 hours.

5.2 MAINTENANCE - WINTERIZATION

5.2.1 During the maintenance period, the Contractor will be responsible for winterization of the irrigation system at the end of the growing season.

5.2.2 The Contractor is liable for any damage resulting from late or improper winterization.

5.2.3 The Contractor will request the presence of the Owner's Representative at least 5 days prior to the proposed winterization date.

5.2.4 Winterization includes, but is not limited to:

(i) Saturation of the soil with water to a depth of 150mm (6").
(ii) Drainage and blow-out of the entire irrigation system to manufacturer's recommendation.
(iii) Turn irrigation controller to off position.

5.3 MAINTENANCE – SPRING START UP

5.3.1 During the maintenance period, the Contractor will be responsible for spring start up of the irrigation system at the beginning of the growing season or within 10 days of request for start up from the Owner's Representative; whichever is sooner.

5.3.2 The Contractor is liable for any damage resulting from late or improper start up.

5.3.3 The Contractor will request the presence of the Owner's Representative at least 5 days prior to the proposed start up date.

5.3.4 Spring start up includes but is not limited to:
5.3.4.1 Checking and testing the irrigation system for leaks.
5.3.4.2 Cycling irrigation program through all zones to ensure function and performance meets approved parameters.
5.3.4.3 Adjusting sprinklers and emitters to match design intent.
5.3.4.4 Testing backflow prevention assembly; submitting test results to Owner's Representative.

6.0 WARRANTY

6.1 Submit a written warranty stating that any and all work showing defects in materials, workmanship or operational ability, will be repaired or replaced at no cost to the Owner for a period of one year from Substantial Performance.

6.2 Warranty will not apply to damage to materials, workmanship or operational ability that occurs after Substantial Performance by causes beyond the Contractor's control such as vandalism or misuse.

END OF SECTION

Approved Product Listing

Saanich

District of Saanich - Approved Product Listing

January 2026

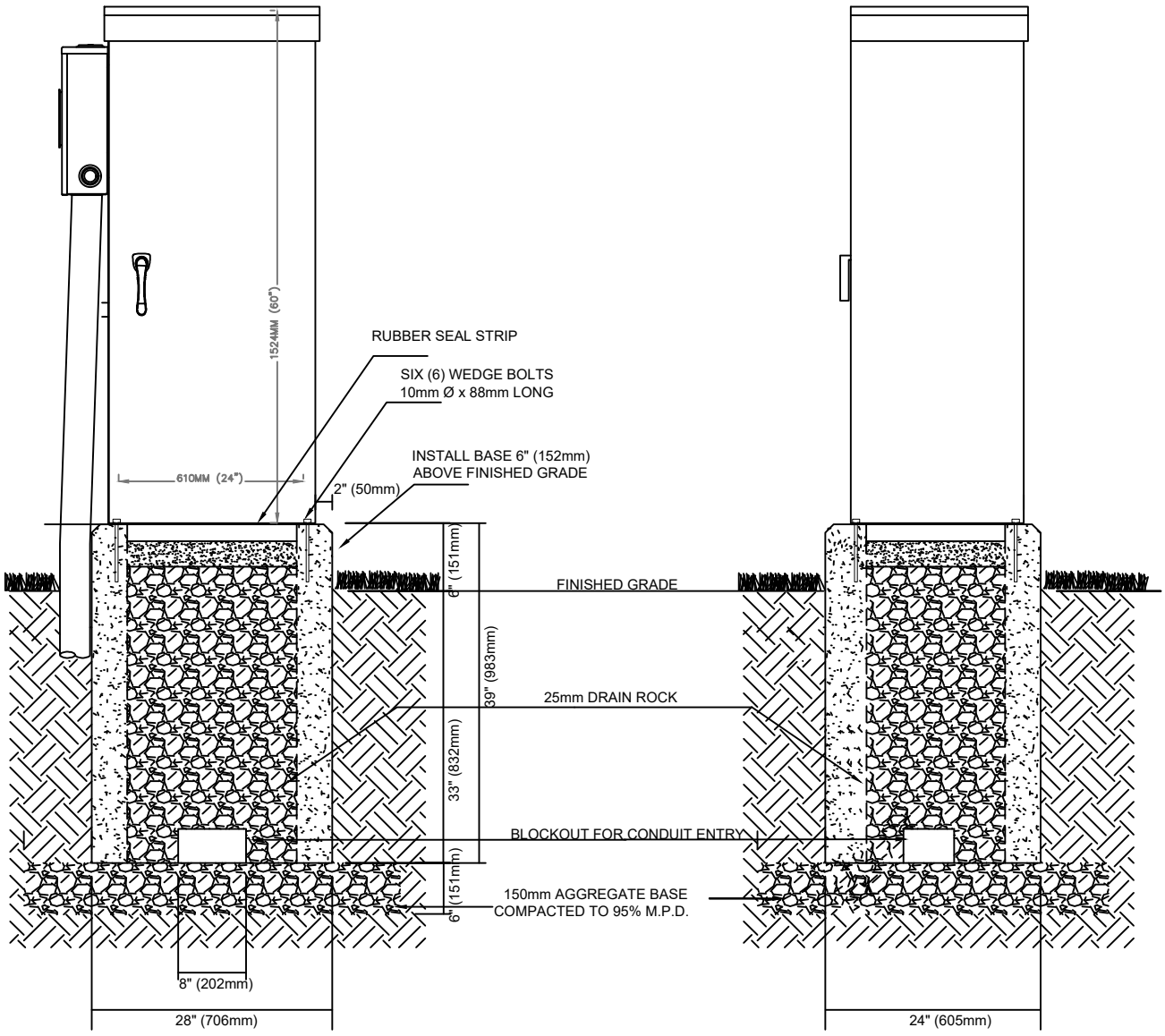
Product	Manufacturer	Make/Model	Comments/Conditions
Controller - IQ4 Central	Rain Bird	ESP LXME2P	c/w Communication Cartridge and Modules to match site station count
Controller - Stand-alone	Rain Bird	ESP-Me	c/w Modules to match site station count
Controller - Battery Operated	Rain Bird	ESP-BAT-BT	1,2,4,6 station count units are acceptable
Controller Cabinet			Stainless Steel; refer to detail drawing #IR-2
Controller Kiosk	Valid Manufacturing	DSKA602420-231094	Compatible Base option: L2017B
External Cellular Antenna	Rain Bird	IQNCCGP	4G Compatible
High Vandalism Cellular Antenna	Bingfu	4G LTE MIM Cellular Antenna	Or approved equivalent
Heater (optional)	DBK	Fgt100	Or approved equivalent
Backflow Prevention Assembly - DCVA	Watts	007 Series	Up to 2"
Backflow Prevention Assembly - DCVA	Watts	LF709-NRS4	2 1/2" Or Greater
Pressure Reducing Valve	Watts	25 AUB-Z3	
Blow-out Assembly	Rain Bird	Quick Coupler - 44RC	Install on a PVC swing joint per the manufacturer recommendation.
Field Quick Coupling Valve	Rain Bird	Quick Coupler - 5-RC	Install on a PVC swing joint per the manufacturer recommendation.
Hydrometer w/IQ Controller	Netafim (1.5")	LHM15EM11AAFMEL	Output: Red-0.1 Gal/Pulse, Green 1.0 Gal/Pulse
	Netafim (2")	LHM2EM11AAFMEL	
Electric Zone Valve	Rain Bird	PEB Series	
Filter	Rain Bird	QKCHK-100	3.0 to 20 GPM
Air Relief Valve	Rain Bird	ARV050	
Air Relief Valve for hydrometer	Watts	1" FV-4-M1 High Capacity Air Vent	Required With Netafim Hydrometer.
Gate Valve	Red & White	#280	Up to 1"
Gate Valve	Crane	D151	Up to 2"

Isoalation Valve	Mueller	A-2361	4" & larger
Sprinklers - Sprayhead	Rain Bird	1800- SAM	
Sprinklers - Sprayhead	Rain Bird	1800-PRS	
Sprinklers - Sprayhead	Rain Bird	1800-SAM PRS	Preferred Model
Sprinklers - Sprayhead	Rain Bird	RD1800 Series	
Sprinklers - Rotor	Rain Bird	3504-SAM	
Sprinklers - Rotor	Rain Bird	5004+ & 5006-SS	
Sprinklers - Rotor	Rain Bird	8005-SS	
Drip Emitter / Bubblers	Rain Bird	Xeri bugs	size(s) per drawing
Root Watering System	Rain Bird	RWS-B-C-1402	
Landscape Dripline	NDS Rain Bird	Dura Flo PC XFS-CV	On-surface dripline
Landscape Dripline	NDS Rain Bird	Dura Flo CV XFS-CV	Sub-surface dripline
Dripline Fittings	NDS Rain Bird	SMART LOC Series Series 600 Spinlock/XF	
Valve Box / Extensions	Carson Industries	LLC Specification Grade	Locking Lid With Stainless Steel Bolt And Washer.
Valve Box / Extensions	NDS Manufacturing	Pro Series	
Wire Splice Box	Carson Industries	LLC Specification Grade	Locking Lid With Stainless Steel Bolt And Washer. Grey In Color.
Wire Splice Box	NDS Manufacturing	Pro Series	
Wire Splice Connectors	3M	DBR/Y-6	2-Step Direct Bury Splice Kit
Cement	IPEX	XIRTEC 05/XIRTEC 11	
	Spears	PVC-05 / PVC-11	
Primer	IPEX	XIRTEC 7	
	Spears	Primer-70	

Detailed Drawings

District of Saanich – Detail Drawing Listing

Number	Description
IR-1a	Irrigation kiosk external
IR-1b	Irrigation kiosk internal
IR-2	Controller wall mount
IR-3	Irrigation vault
IR-4a	Irrigation Point of Connection; valve boxes, schematic
IR-4b	Irrigation Point of Connection; valve boxes, section
IR-5a	Irrigation Point of Connection; vault, schematic
IR-5b	Irrigation Point of Connection; vault, section
IR-6	Trench section
IR-7	Gate valve
IR-8	Quick coupler
IR-9	Electric zone valve
IR-10	Drip zone connection
IR-11	Dripline Irrigation
IR-12	Sprinklers; rotary and spray head
IR-13	Root watering system
IR-14	Tree dripline
IR-15	Flush valve assembly
IR-16	Air relief valve



EXTERNAL FRONT VIEW; SIDE B

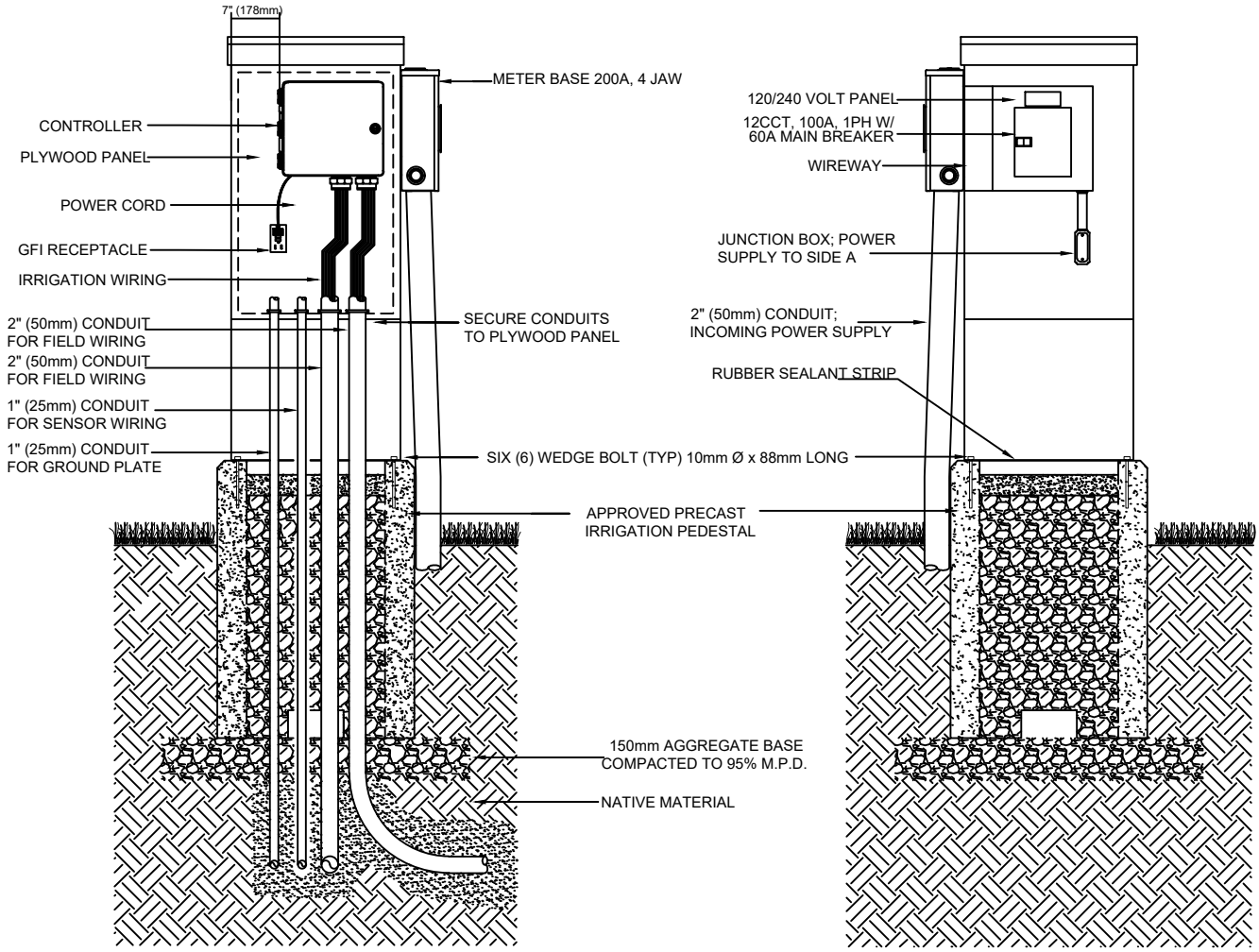
EXTERNAL SIDE VIEW; SIDE B

BASE GENERAL NOTES

PRECAST CONCRETE SHALL BE EXPOSURE CLASS AND MEET MIN COMPRESSIVE STRENGTH OF 30MPA @28d
AIR CATEGORY: 4.0% - 7.0% (EXCEPT WHERE ZERO-SLUMP CONCRETE IS USED)
AGGREGATE: CSA/CAN A23.4 MAXIMUM SIZE: 20mm
ADMIXTURES: CSA/CAN A23.4
REINFORCING: GRADE 400W CSA G30.18, 3x12 W2.5/W2.5
INSERT/EMBEDS: AS NOTED IN DRAWING DETAILS
MANUFACTURE OF PRECAST CONCRETE UNITS SHALL BE IN ACCORDANCE WITH SPECIFICATION CSA A23.4
USE LEKO PRECAST PEDESTAL L2017B OR EQUIVALENT
935Kg (2,060 LBS)

MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Irrigation Kiosk External NTS**	DETAIL # **IR-1a**



SECTION - SIDE A

SECTION - SIDE B

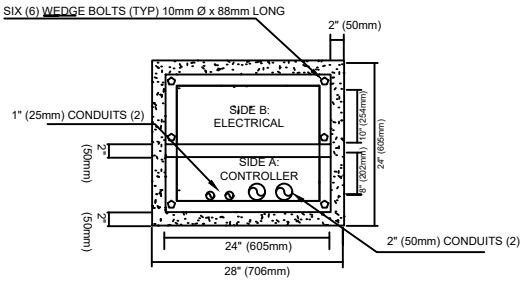
VALID MANUFACTURING ALUMINUM DOUBLE-SIDED, SINGLE-DOOR KIOSK

Features / Specifications

- Marine-grade aluminum construction
- CSA Type 3R rated
- Pad-mount design
- Slanted roof with rain gutters
- Double-roof design for solar shielding
- Padlockable stainless steel 3-point handles
- Double-sided, single-door design
- Hinged doors with pour-in-place gasket
- Hidden hinges for additional security
- Full galvanized back panels
- Removable lifting ears (when required)
- PC101 (ANSI 61) Grey powder coat finish

PART NUMBER	HEIGHT	WIDTH	DEPTH
DSKA602420	60in/1524mm	24in/610mm	20in/508mm

* Does not include door stays

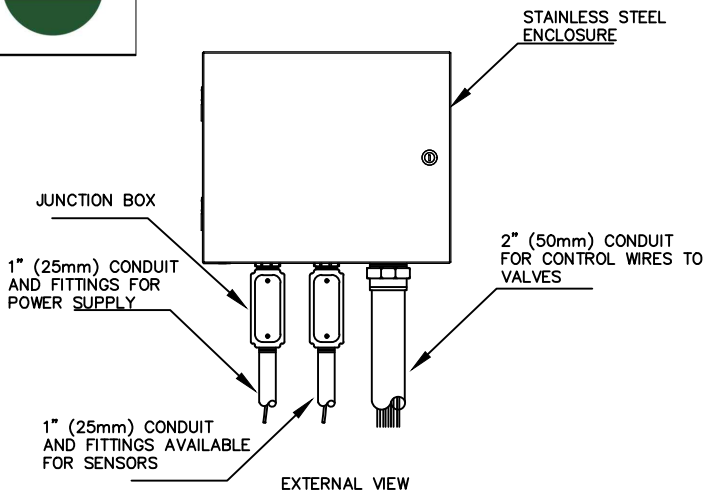


INTERNAL; PLAN VIEW

1-888-632-6477 | sales@validmfg.com | validmfg.com

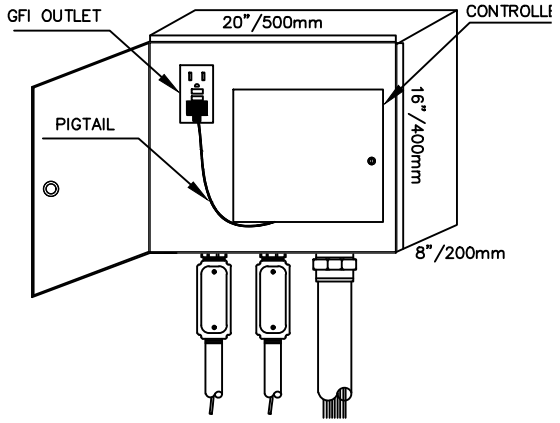
MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Irrigation Kiosk Internal NTS**	DETAIL # **IR-1b**

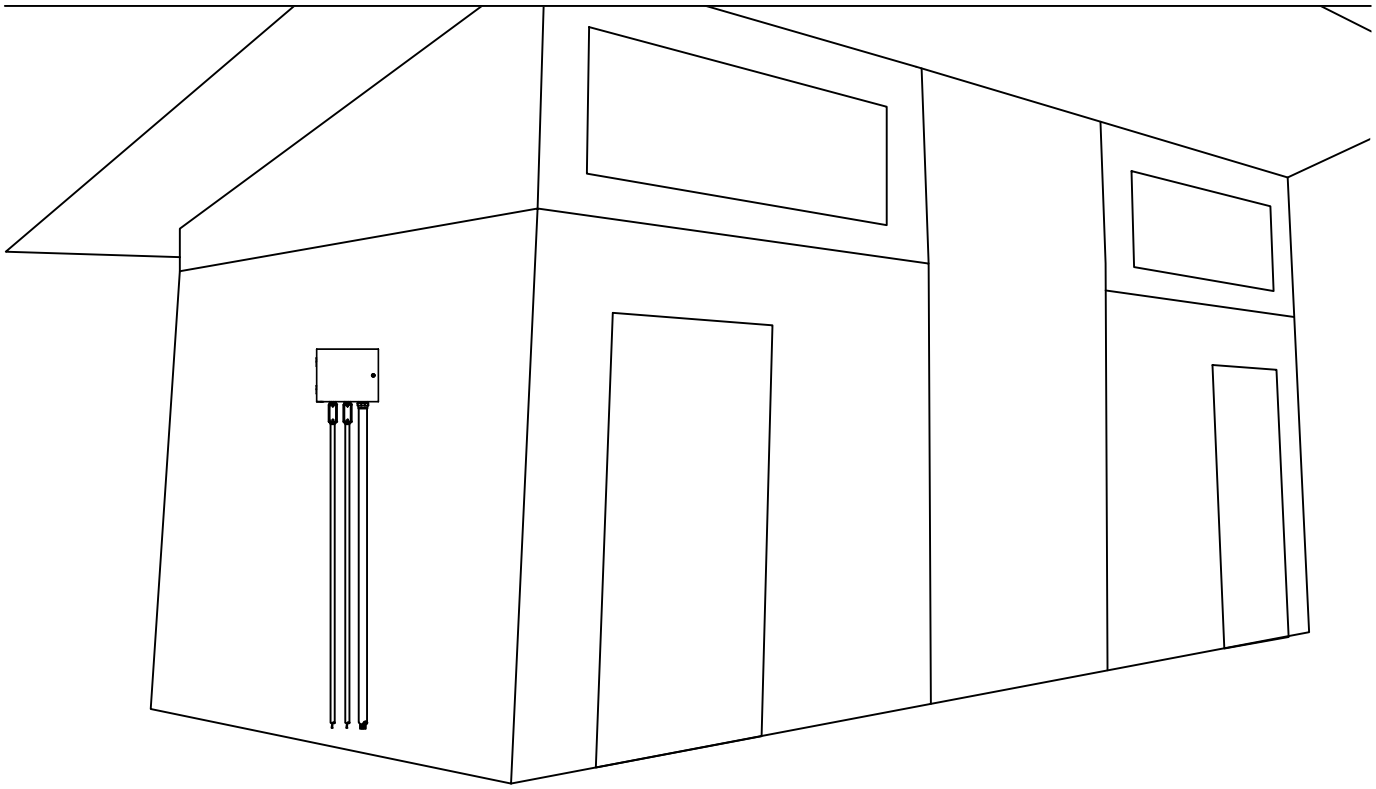


EXTERNAL VIEW

NOTES:
1. INSTALL APPROVED CONTROLLER IN APPROVED CABINET PER MANUFACTURER'S INSTRUCTIONS.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS. IF CONTROLLER IS MOUNTED INDOORS, USE POWER SUPPLY GROUND.

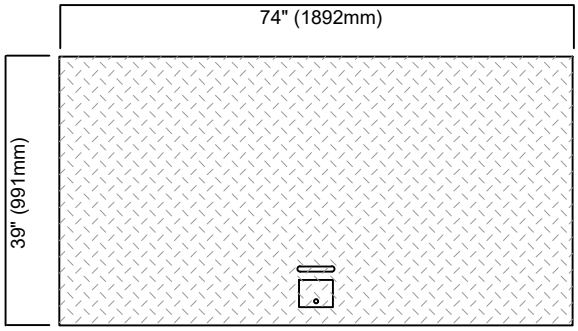


INTERNAL VIEW

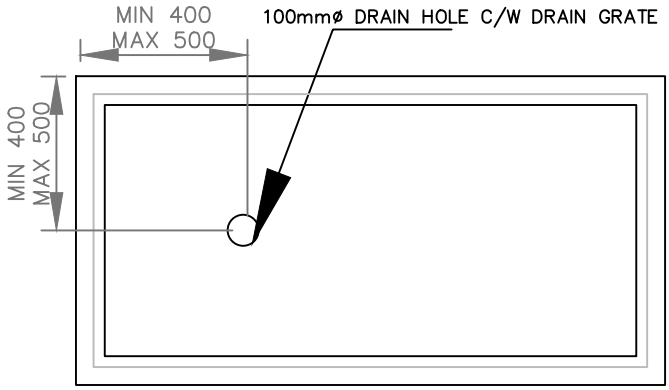


MAY 2026

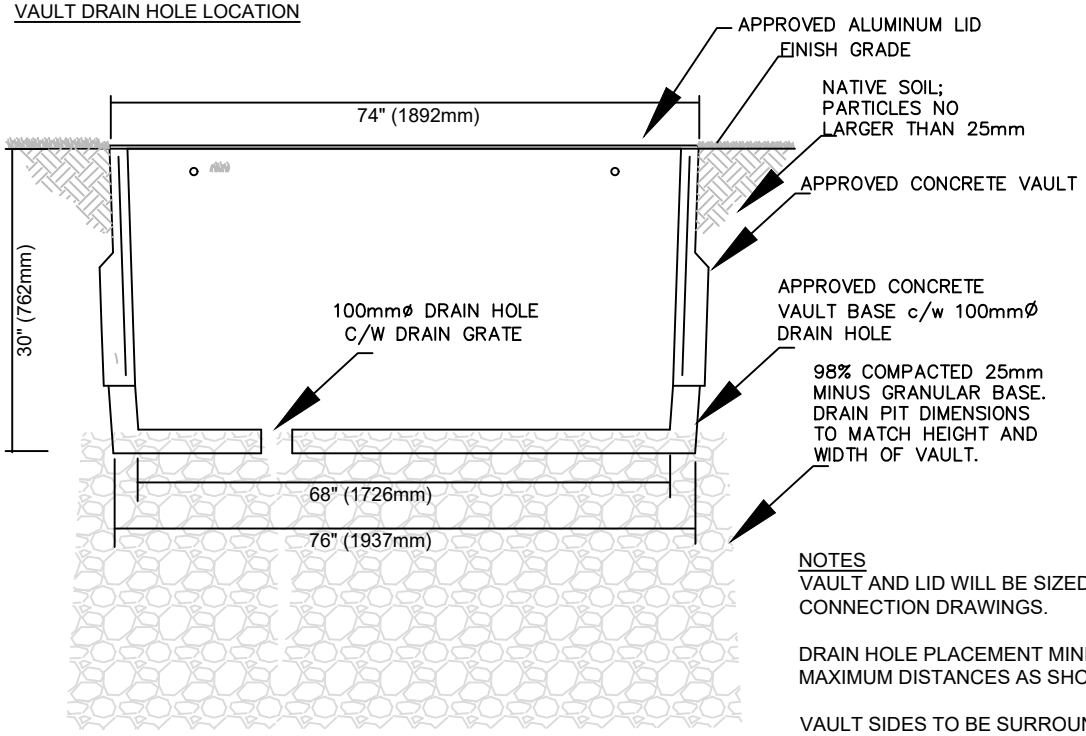
STANDARD DETAIL DRAWING	DETAIL TITLE : **Controller wall mount**	DETAIL No. : **IR-2**



LID SCHEMATIC



VAULT DRAIN HOLE LOCATION



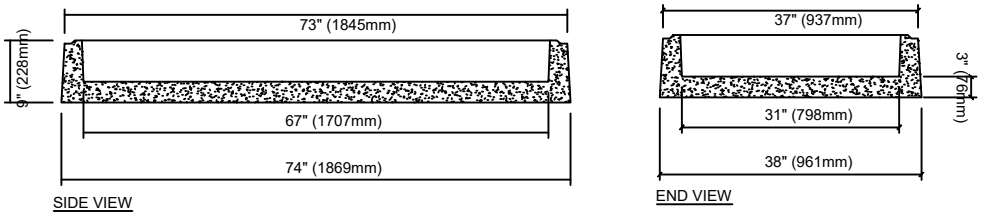
VAULT SECTION

NOTES

VAULT AND LID WILL BE SIZED AS PER POINT OF CONNECTION DRAWINGS.

DRAIN HOLE PLACEMENT MINIMUM AND MAXIMUM DISTANCES AS SHOWN.

VAULT SIDES TO BE SURROUNDED BY NATIVE SOIL W/NO PARTICLES LARGER THAN 25mm



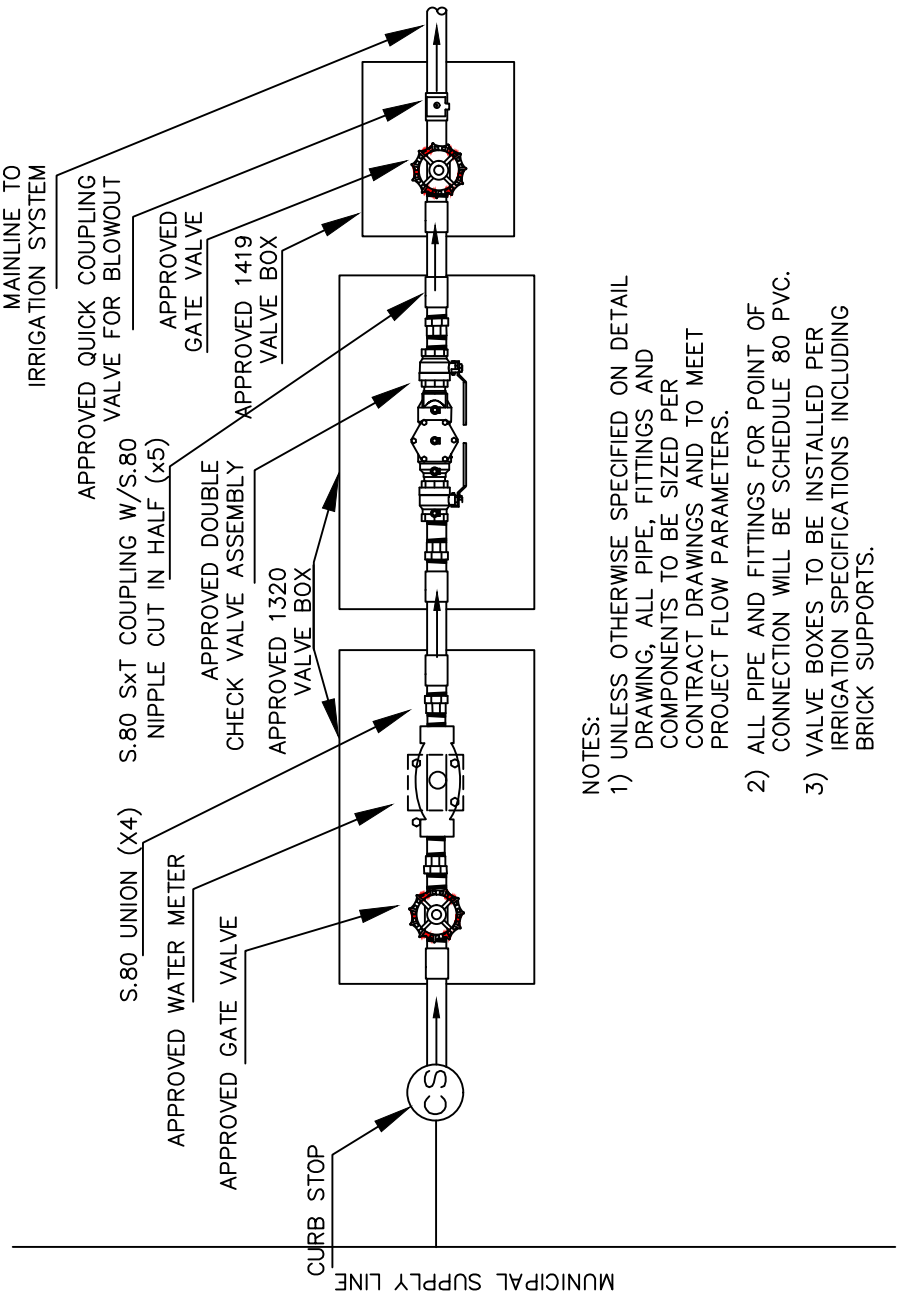
SIDE VIEW

END VIEW

VAULT BASE SECTION

MAY 2026

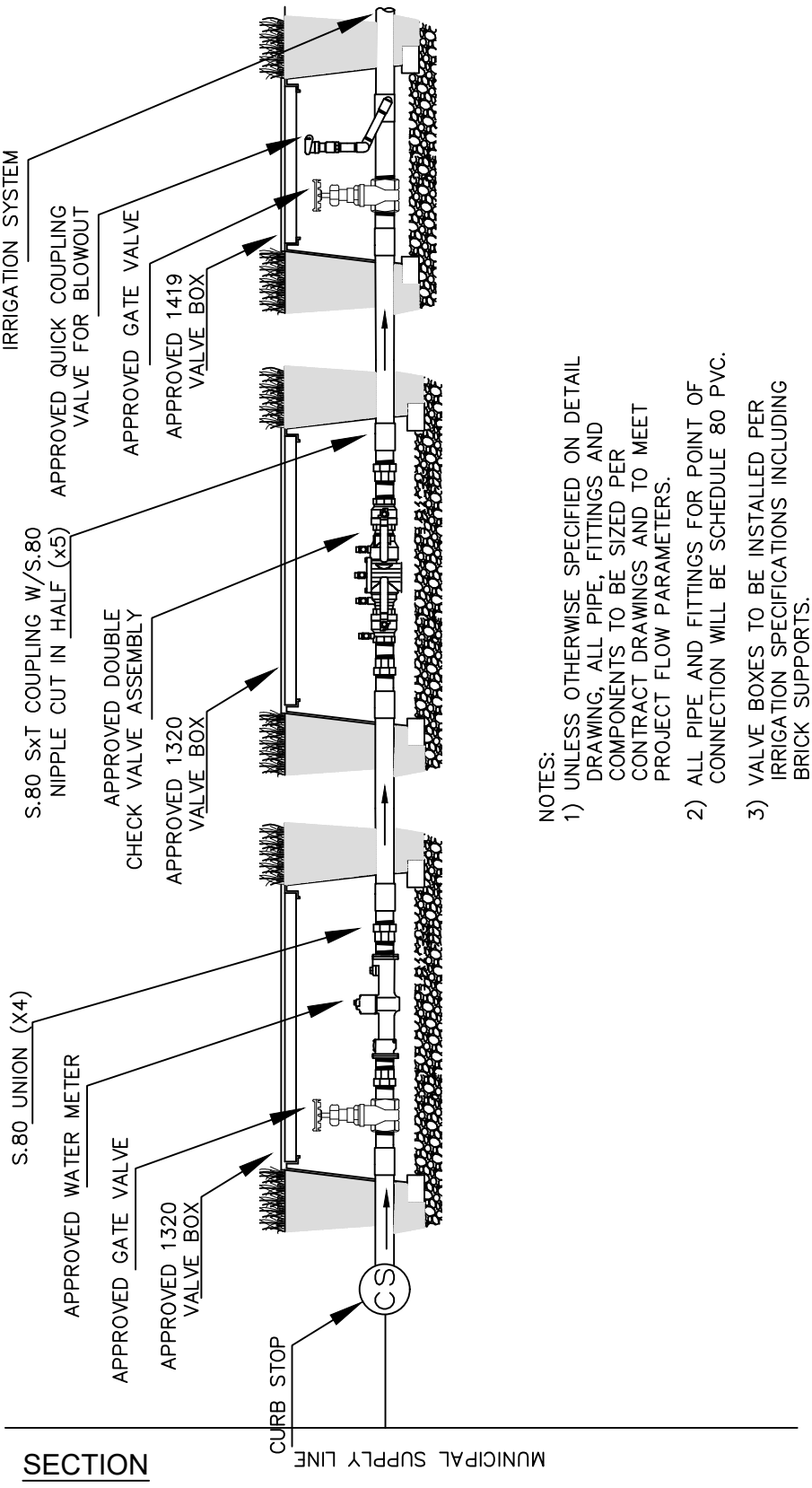
STANDARD DETAIL DRAWING	DETAIL TITLE :	**Irrigation Vault NTS**	DETAIL # **IR-3**



SCHEMATIC

MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Irrigation POC in valve boxes NTS**	DETAIL # **IR-4a**



NOTES:
1) UNLESS OTHERWISE SPECIFIED ON DETAIL DRAWING, ALL PIPE, FITTINGS AND COMPONENTS TO BE SIZED PER CONTRACT DRAWINGS AND TO MEET PROJECT FLOW PARAMETERS.
2) ALL PIPE AND FITTINGS FOR POINT OF CONNECTION WILL BE SCHEDULE 80 PVC.
3) VALVE BOXES TO BE INSTALLED PER IRRIGATION SPECIFICATIONS INCLUDING BRICK SUPPORTS.

MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	Irrigation POC in valve boxes NTS	DETAIL # IR-4b

STANDARD DETAIL DRAWING

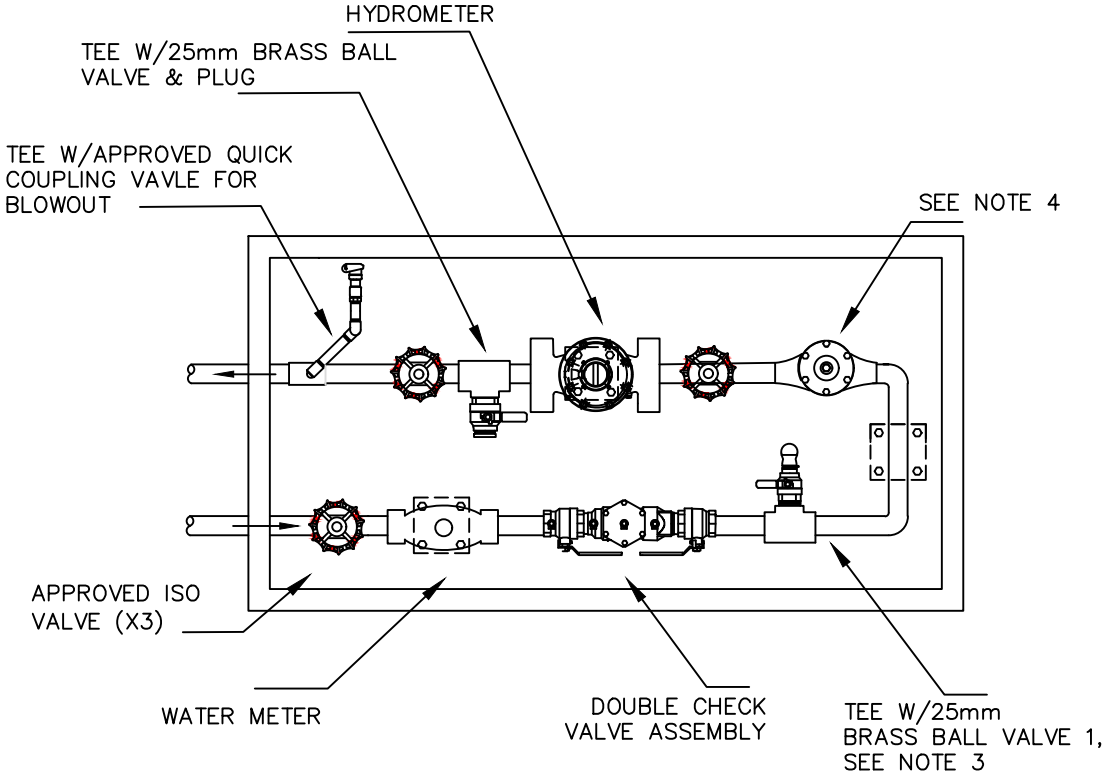
DETAIL TITLE:

Irrigation POC in vault

NTS

DETAIL #

IR-5a



NOTES:

1) UNLESS OTHERWISE SPECIFIED ON DETAIL DRAWING, ALL PIPE, FITTINGS AND COMPONENTS TO BE SIZED PER CONTRACT DRAWINGS AND TO MEET PROJECT FLOW PARAMETERS.

2) ALL PIPE AND FITTINGS INSIDE VAULT WILL BE BRASS OR S.80 WITH ONE MATERIAL CHOSEN TO BE CONSISTENT THROUGHOUT.

3) BRASS BALL VALVE SIZED TO POC PIPE. USE FOR HYDROMETER 25mmAIR RELIEF VALVE (SUPPLIED BY DISTRICT) DURING IRRIGATION SEASON.
USE FOR BLOWOUT AT END OF SEASON. RE INSTALL AIR RELIEF VALVE AT SYSTEM START UP.

4) PRESSURE REDUCING VALVE ONLY TO BE INSTALLED WITH PRIOR WRITTEN APPROVAL FROM THE DISTRICT. IF PRV IS REQUIRED, SIZE TO SUPPLY PIPE.

SCHEMATIC

MAY 2026

STANDARD DETAIL DRAWING

DETAIL TITLE:

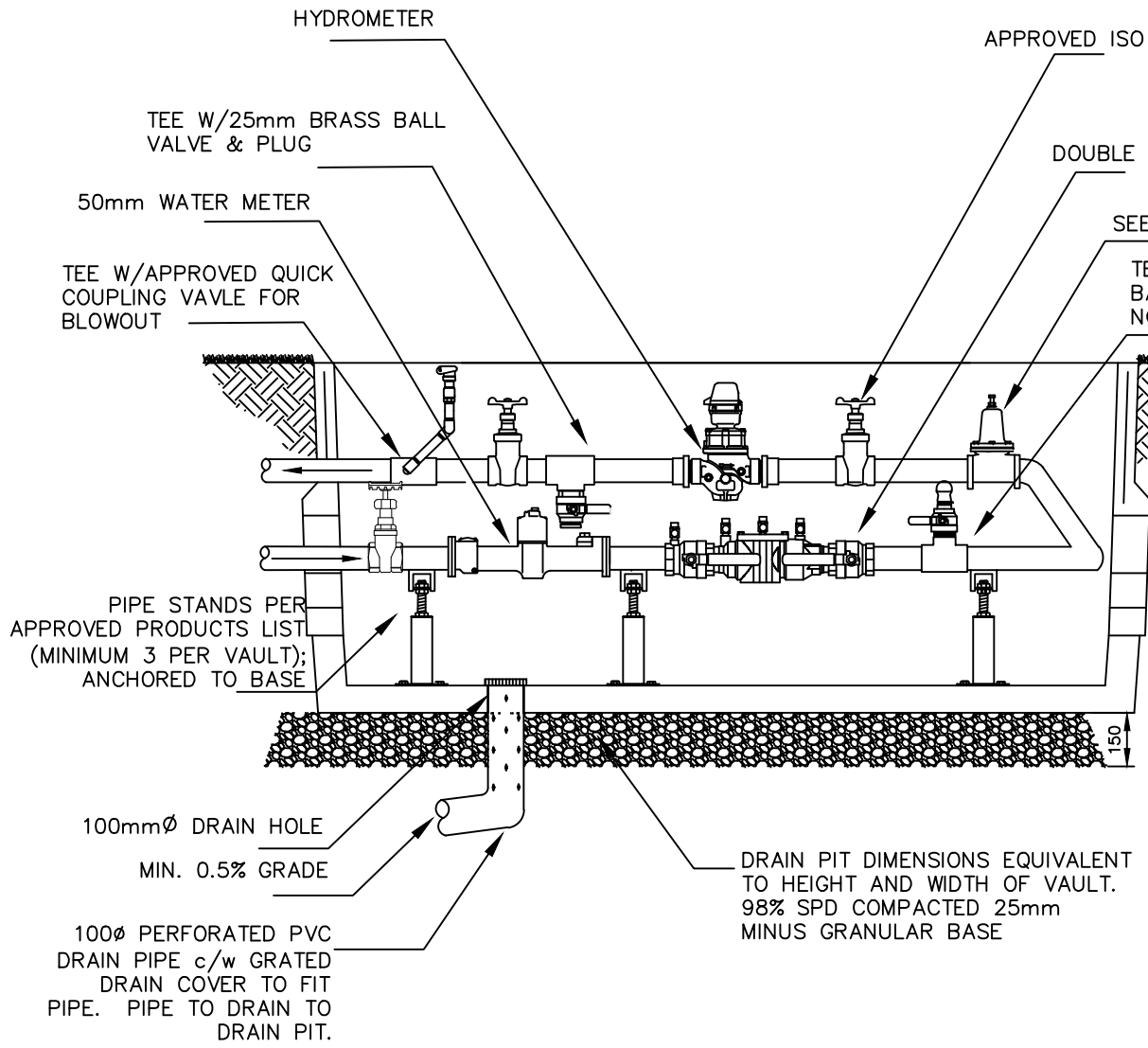
Irrigation POC in vault

NTS

DETAIL #

IR-5b

MAY 2026



SECTION

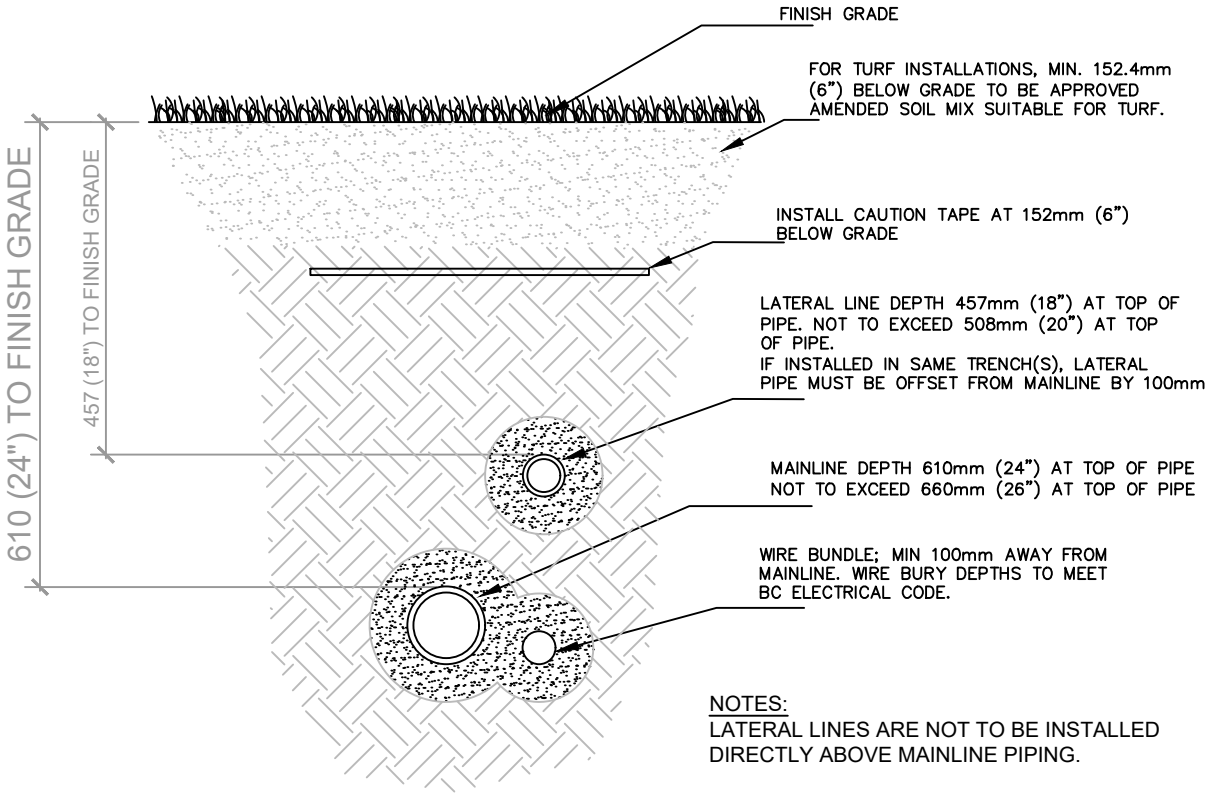
NOTES:

1) UNLESS OTHERWISE SPECIFIED ON DETAIL DRAWING, ALL PIPE, FITTINGS AND COMPONENTS TO BE SIZED PER CONTRACT DRAWINGS AND TO MEET PROJECT FLOW PARAMETERS.

2) ALL PIPE AND FITTINGS INSIDE VAULT WILL BE BRASS OR S.80 WITH ONE MATERIAL CHOSEN TO BE CONSISTENT THROUGHOUT.

3) BRASS BALL VALVE SIZED TO POC PIPE. USE FOR HYDROMETER 25mmAIR RELIEF VALVE (SUPPLIED BY DISTRICT) DURING IRRIGATION SEASON.
USE FOR BLOWOUT AT END OF SEASON. RE INSTALL AIR RELIEF VALVE AT SYSTEM START UP.

4) PRESSURE REDUCING VALVE ONLY TO BE INSTALLED WITH PRIOR WRITTEN APPROVAL FROM THE DISTRICT. IF PRV IS REQUIRED, SIZE TO SUPPLY PIPE.



NOTES:

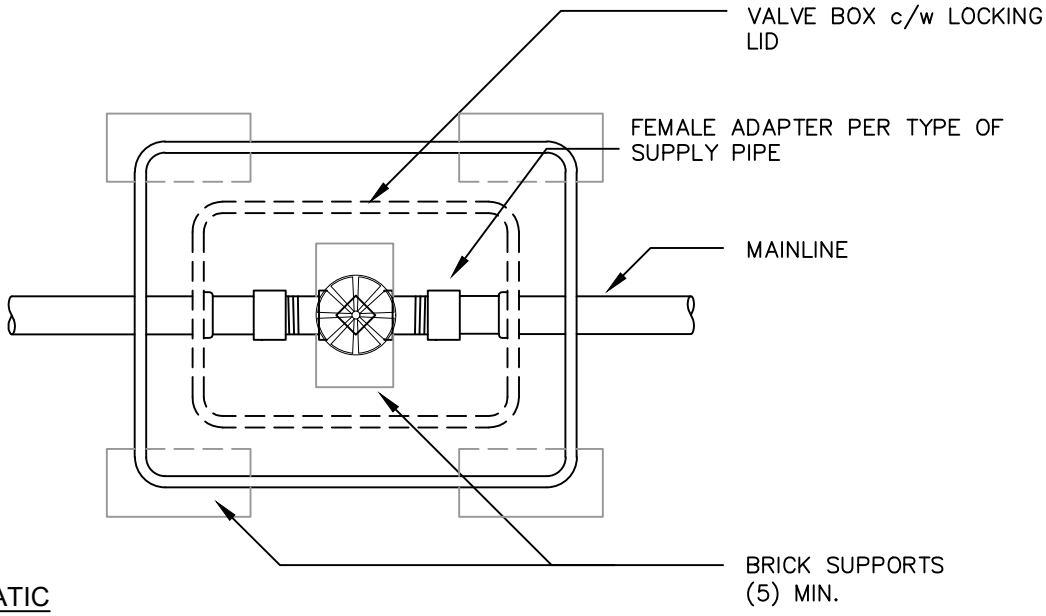
LATERAL LINES ARE NOT TO BE INSTALLED DIRECTLY ABOVE MAINLINE PIPING.

APPROVED SAND TO BE INSTALLED AROUND ALL PIPES. MIN 50mm ON SIDES AND 100mm BELOW AND ABOVE.

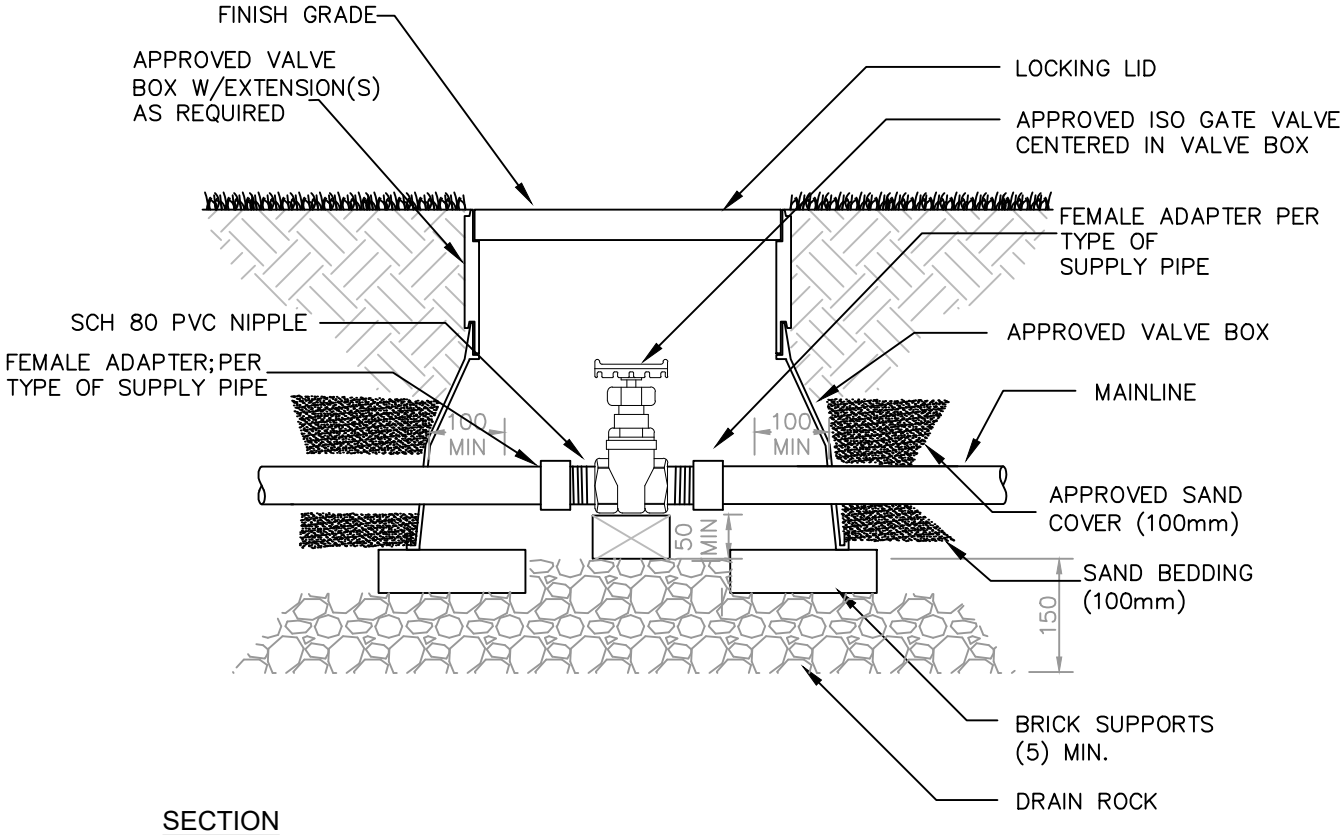
APPROVED SAND TO BE INSTALLED AROUND ALL CONDUIT; MIN 50mm ON ALL SIDES.

MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Trench Section NTS**	DETAIL # **IR-6**



SCHEMATIC

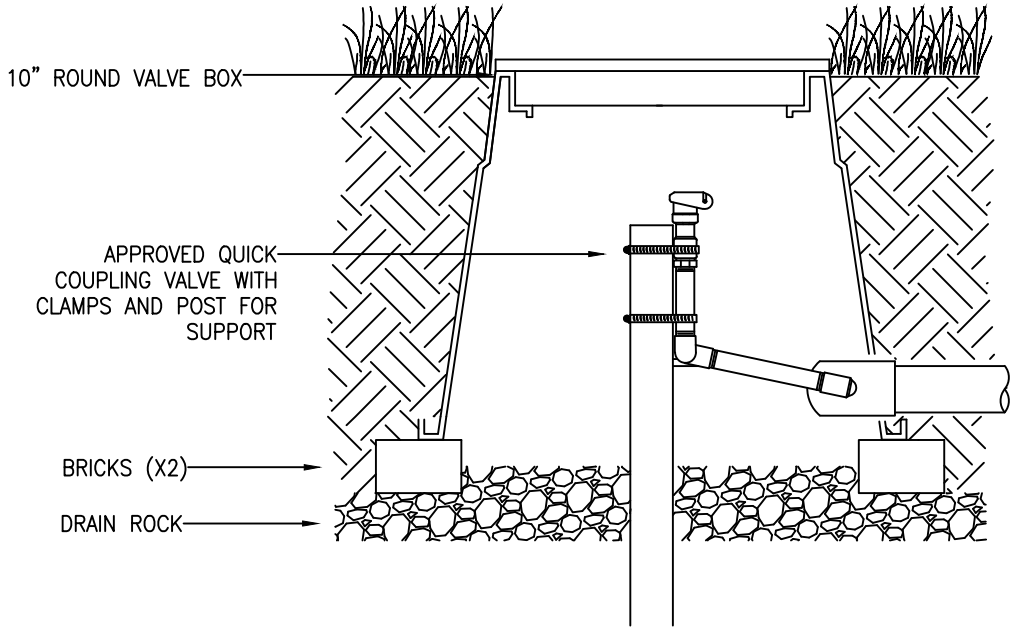


SECTION

NOTES:
REFER TO APPROVED PRODUCTS LIST FOR APPROVED ISOLATION GATE VALVES.
ISOLATION VALVES LARGER THAN 50mm REQUIRE 1324B VALVE BOXES.

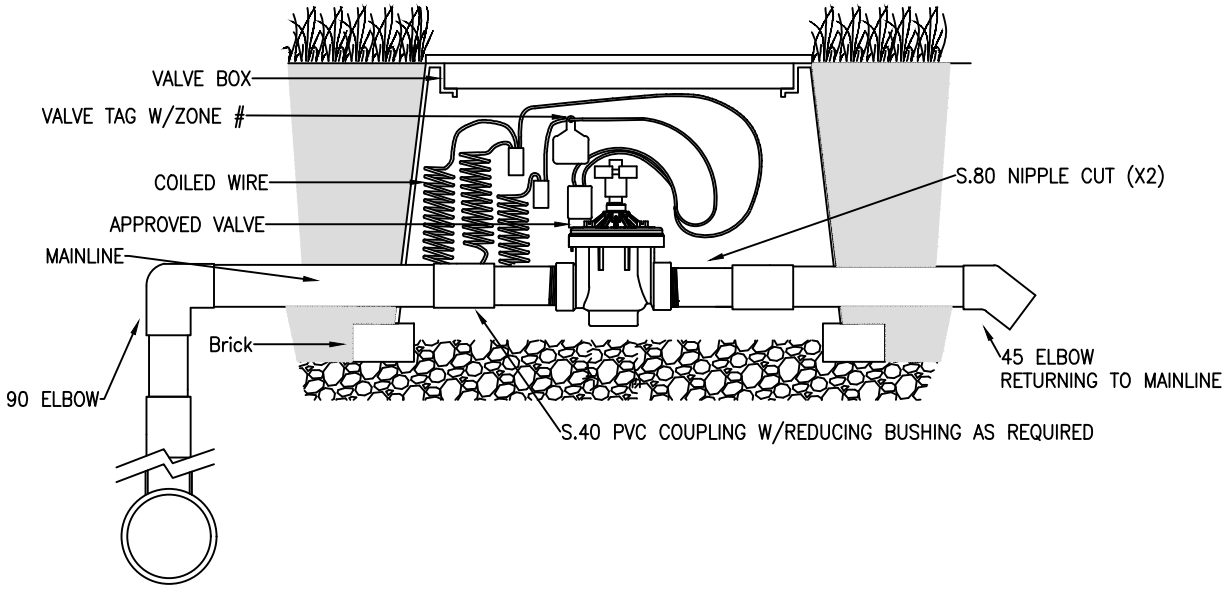
MAY 2026

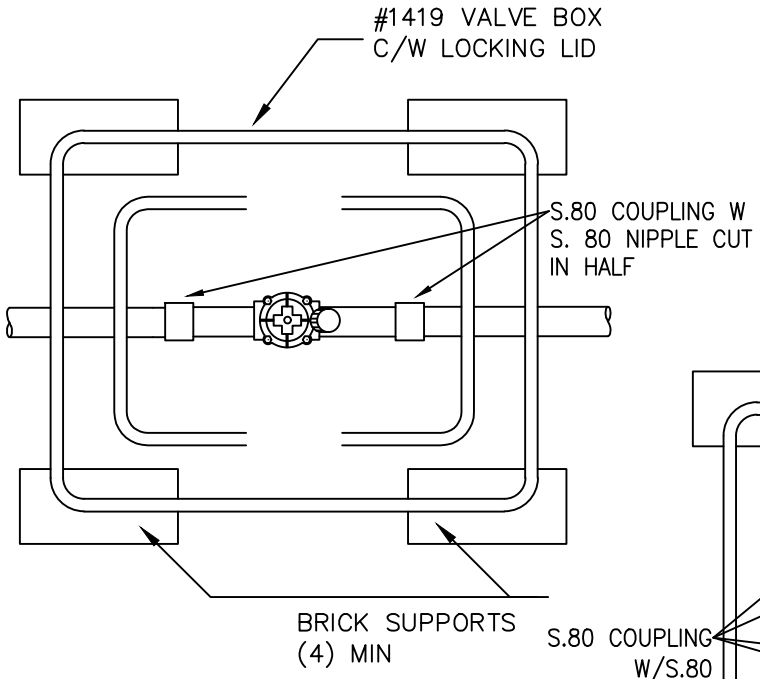
STANDARD DETAIL DRAWING	DETAIL TITLE :	Gate Valve NTS	DETAIL # IR-7



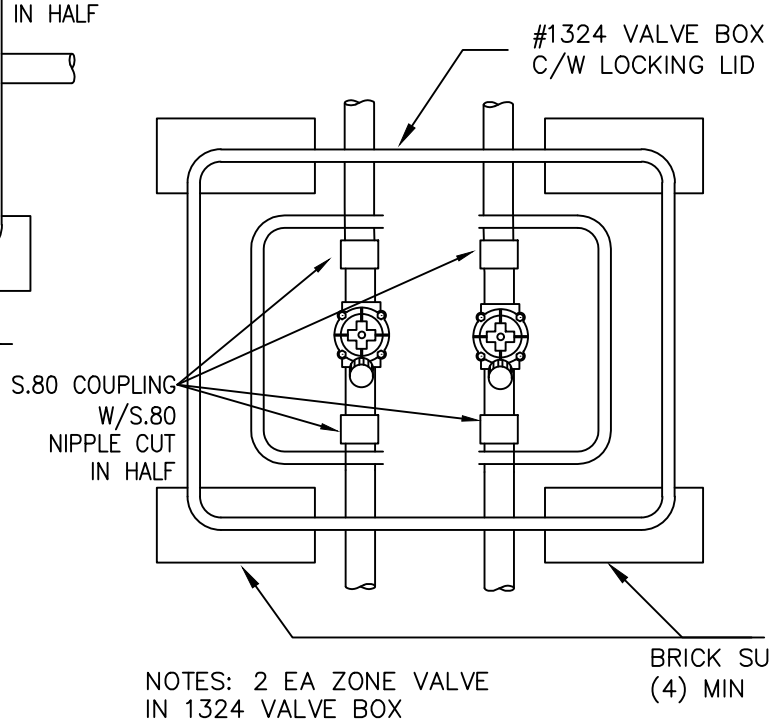
MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Quick Coupling Valve NTS**	DETAIL # **IR-8**





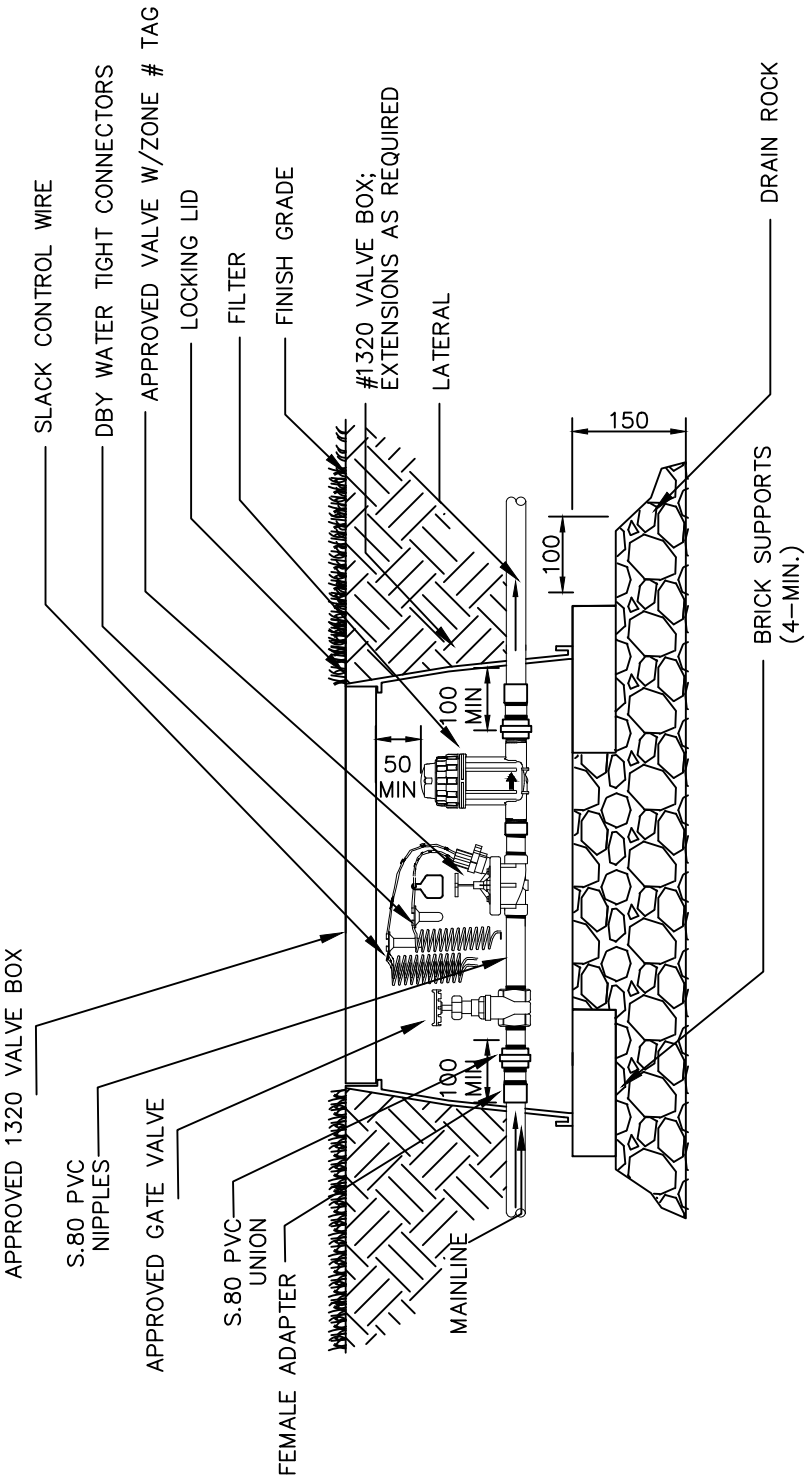
NOTES: 1 EA ZONE VALVE
IN 1419 VALVE BOX



NOTES: 2 EA ZONE VALVE
IN 1324 VALVE BOX

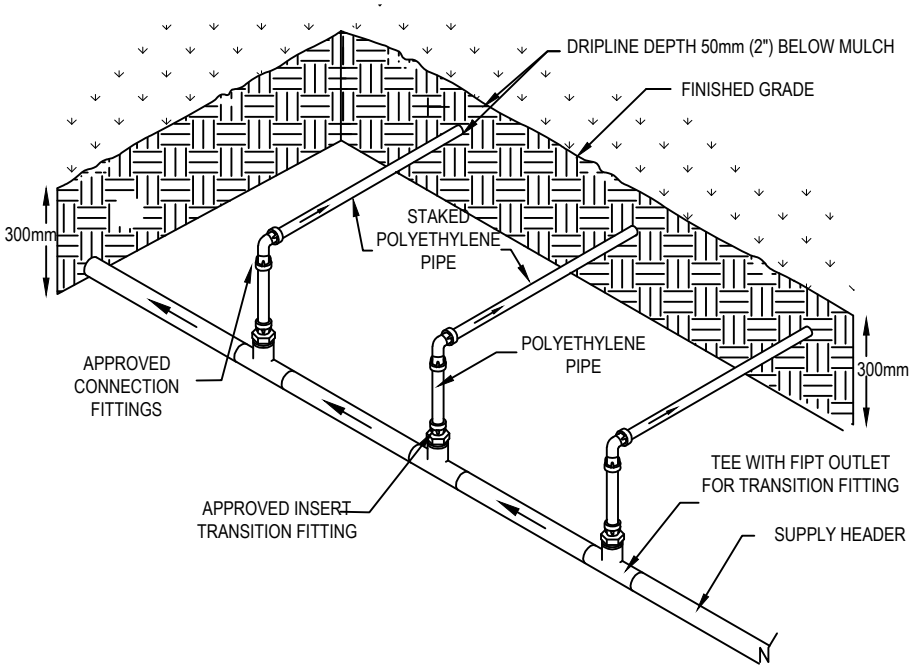
MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Electric Zone Valve NTS**	DETAIL # **IR-9**



MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE : **Drip Zone Connection NTS**	DETAIL # **IR-10**



NOTES:

1) INSTALL ALL HEADERS AND FOOTERS 100mm AWAY FROM HARDSCAPES.
2) SIZE HEADERS AND FOOTERS TO ACCOMMODATE FULL ZONE FLOW.
3) ALL FOOTERS/EXHAUST HEADERS TO BE INSTALLED W/FLUSH VALVES.
4) DRIPLINE AND POINT SOURCE EMITTER SPACING IS AS SPECIFIED ON CONTRACT DRAWINGS.
5) INSTALL APPROVED PRODUCTS PER MANUFACTURER'S INSTRUCTIONS.
6) DETAIL DOES NOT REPRESENT ALL DRIPLINE AREAS; REFER ALSO TO CONTRACT DRAWINGS.

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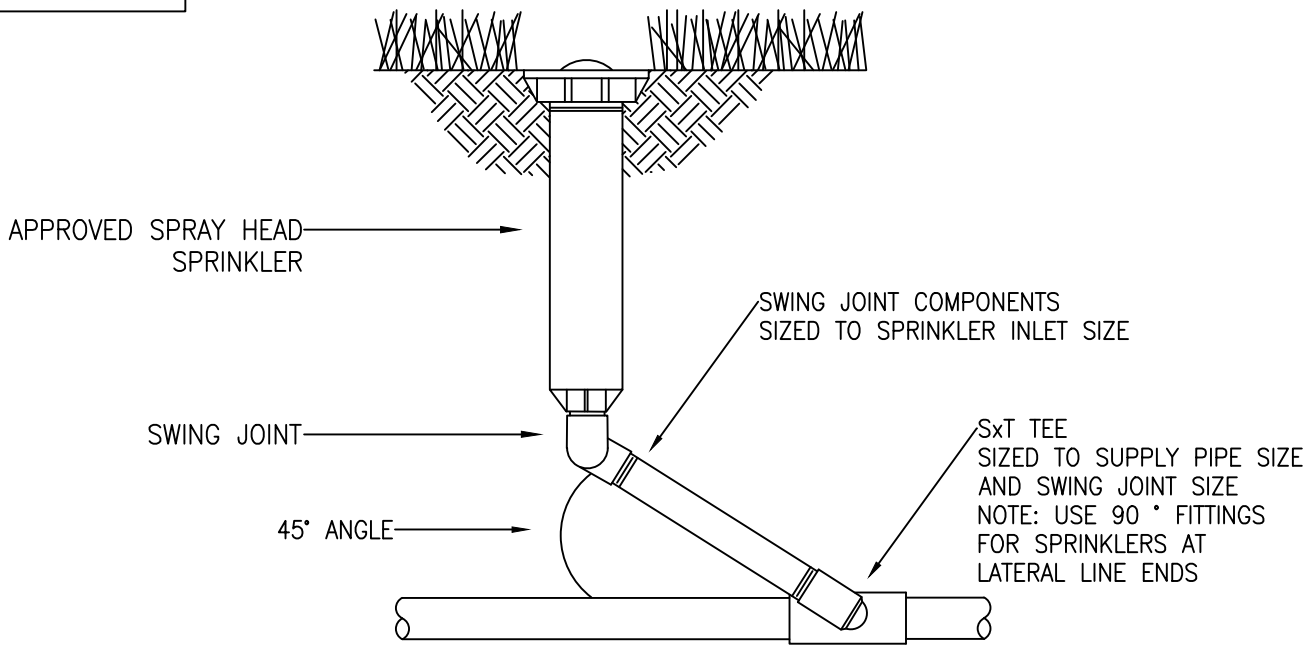
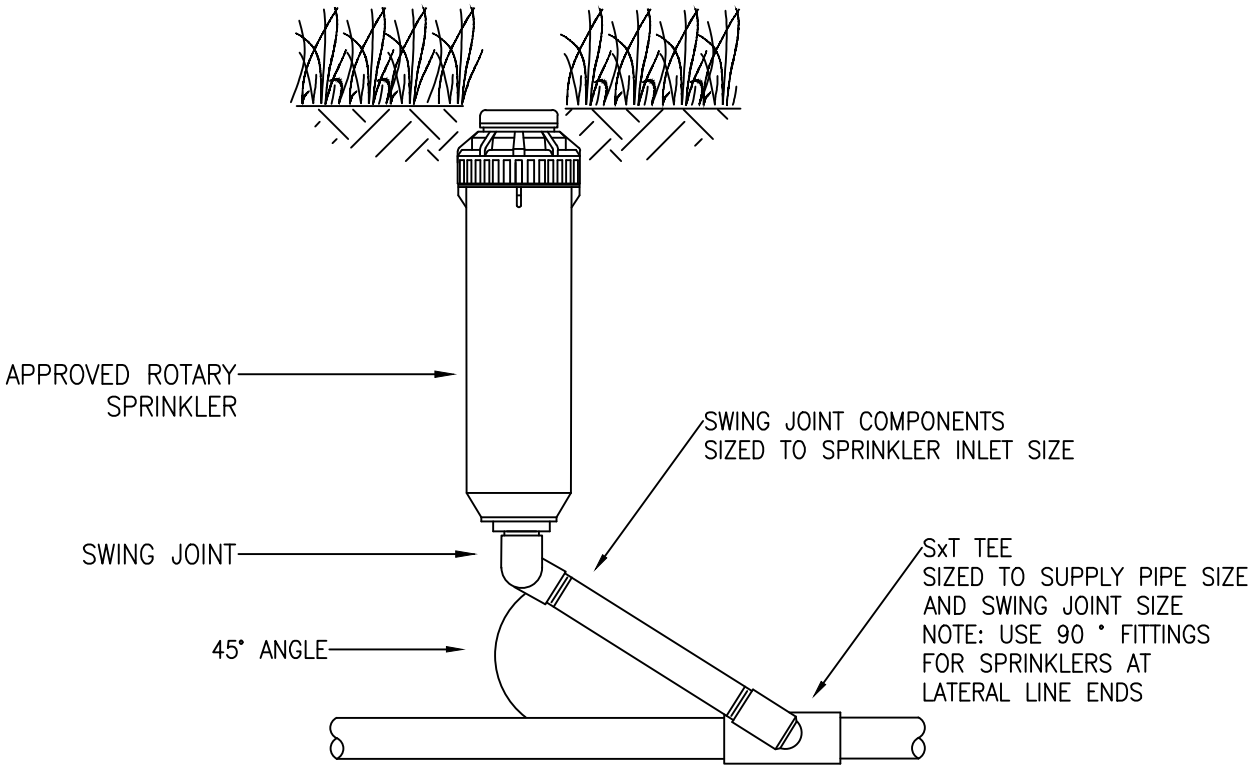
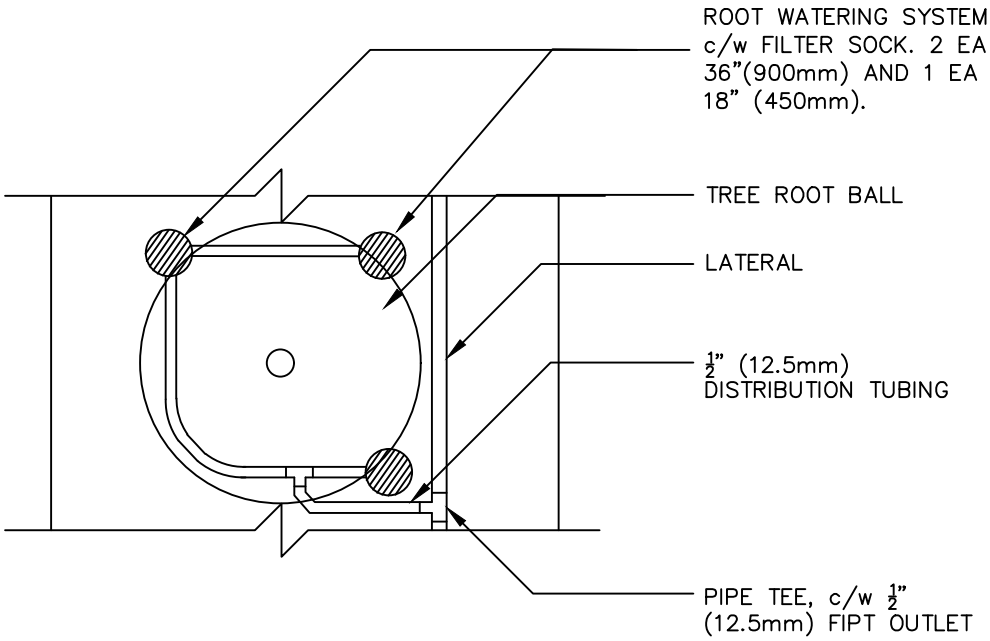
STANDARD DETAIL DRAWING	DETAIL TITLE :	**Dripline Header NTS**	DETAIL # **IR-11**



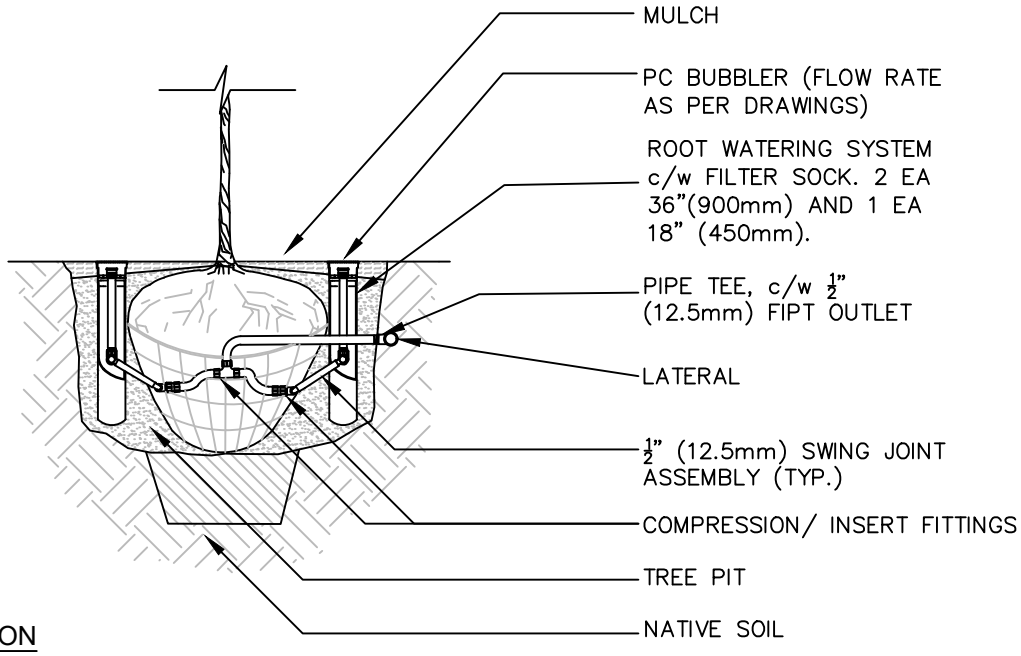


MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Sprinklers NTS**	DETAIL # **IR-12**



SCHEMATIC

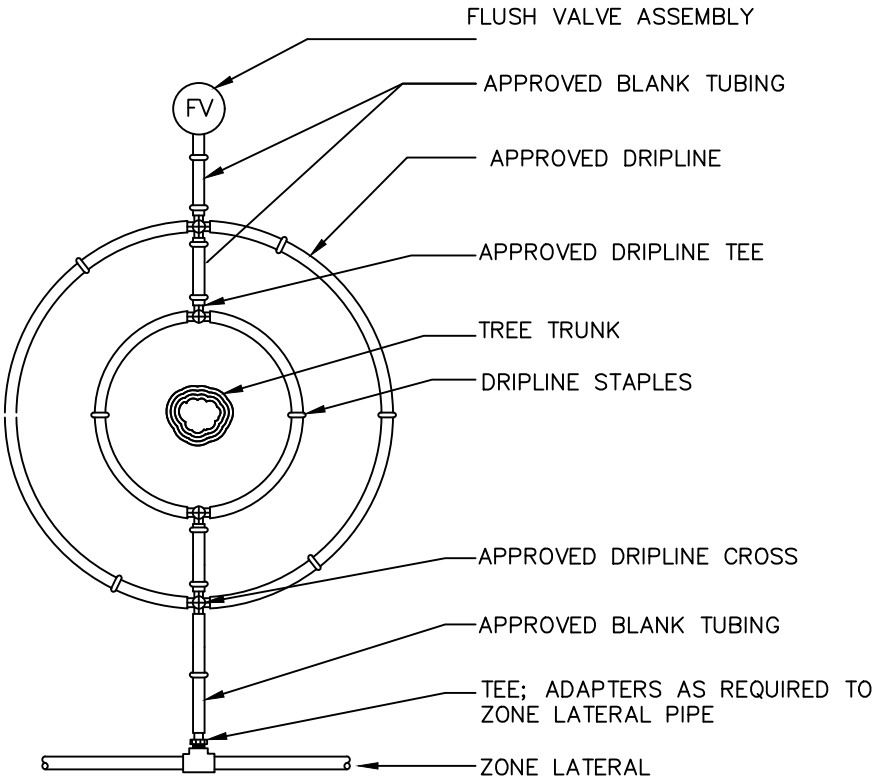


SECTION

NOTES:
INSTALL QUANTITY AS PER DESIGN
MINIMUM 2ea ROOT WATERING SYSTEM UNITS
PER NEW TREE INSTALLATION

MAY 2026

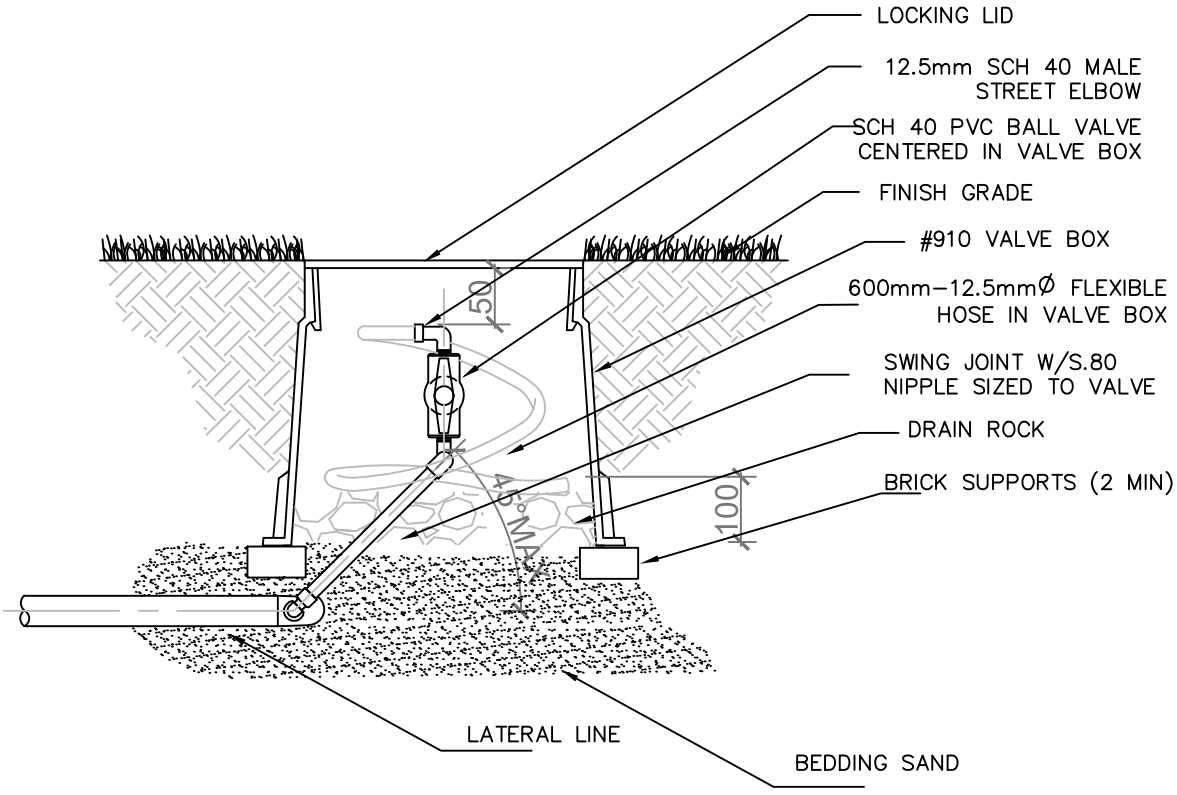
STANDARD DETAIL DRAWING	DETAIL TITLE :	**Root Watering System NTS**	DETAIL # **IR-13**



NOTES:
1. INSTALL DRIPLINE ON PREPARED SURFACE WITH MULCH TO COVER; STAPLE IN PLACE PER MANUFACTURERS RECOMMENDATIONS.
4. INSTALL DRIPLINE IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES

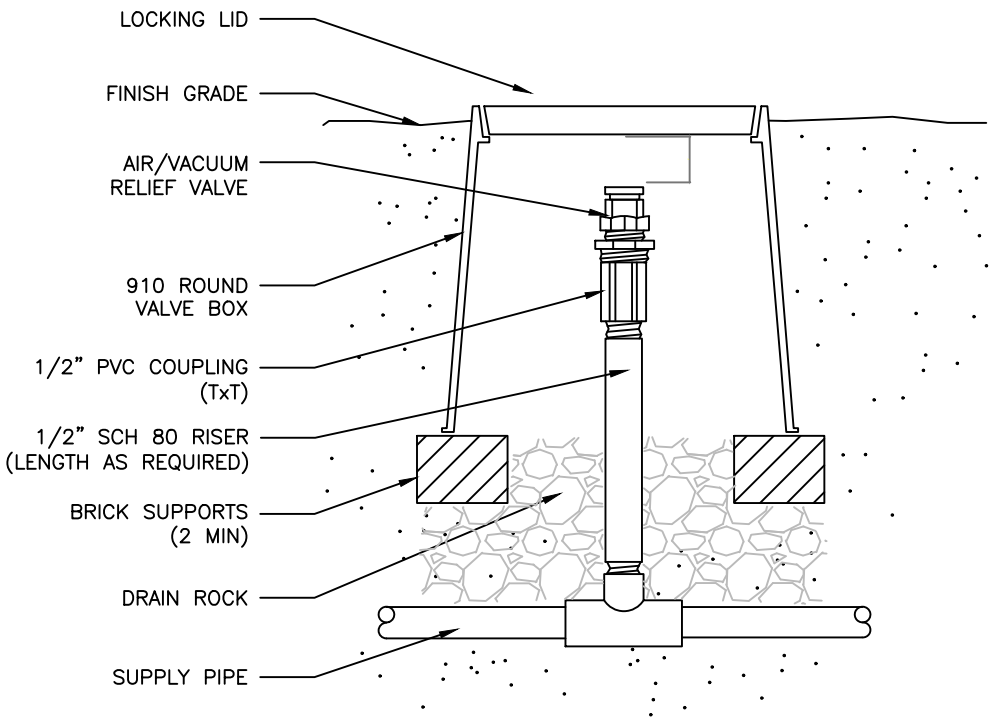
MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Tree Dripline Ring NTS**	DETAIL # **IR-14**



MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Flush Valve Assembly NTS**	DETAIL # **IR-15**



NOTES:
INSTALL AIR RELIEF VALVES AT HIGH POINTS

MAY 2026

STANDARD DETAIL DRAWING	DETAIL TITLE :	**Air Relief Valve NTS**	DETAIL # **IR-16**