UVU Grounds – Specifications and Standards

Controllers/Electrical

- WeatherTrak ET Pro 3, OptiFlow XR Main Campus, LC for residential.
- Wall mount or stainless-steel pedestals as per plans or specifications given on project
- Installation of controller must meet Rain Bird installation guidelines including surge suppression for 110 power.
- Electrical runs will be in 1" conduit with pull boxes no more than 100 ‘apart.
- Grounding grid as per Rain Bird specifications must also be included at controller location.
- Controller pads will be a minimum of 28" x 28" x 4" thick with a minimum of three conduit sweeps entering through the base of the pad. One for power appropriately sized and two for control and WeatherTrak wiring appropriately sized.
- One pull box must be installed outside next to controller pad to accommodate connections and grounding before entering controller.
- All wiring must meet current National Electrical Code.

Spray Heads/Rotors

- Spray heads in lawn areas shall be Rain Bird 1804 prs series type
- Spray heads in shrub areas shall be Rain Bird 1812 prs series type
- Rotors in lawn areas will be Hunter I-20 or I-25 gear driven heads as directed by plans or specifications of project
- Spacing on all heads shall a be minimum of head x head coverage
- Funny pipe connections allowed on all heads that do not exceed rated flows of funny pipe (8 gpm)
- Lateral Swing Joints on all 1" or larger inlets on heads must use O-ring premanufactured swings joints only. (Spears Joint Riser Assemblies or equivalent)
- Drip allowed in some circumstances after consultation with Manager of Irrigation

Valves/Boxes/Manifold

- Valves shall be Rain Bird PESB electric remote control scrubber valves 1", 1 1/2" or 2"
- 2" valves not to exceed 50 gpm
- 1 1/2" valves not to exceed 32 gpm
- 1" valves not to exceed 14 gpm
- One Appropriate size isolation valve in all valve boxes, gate valves or ball valves (example: 2" valves require 2"isolation)
- No more than 2 valves in any valve box
- Manifolds will be slip x threaded tee connections or slip x slip with toe nipples only.
- Sch 80 fittings only on manifolds.
- Valve boxes shall be standard or jumbo boxes only, extension boxes can be used only to meet appropriate elevation when needed and approved by UVU Grounds Director.

Wiring

- All control wires shall be 14 ga. Wire (red - hot, white-common, blue- spare)
- Spare wire must be run through all valve boxes to the farthest point or points from the controller
- All wire must travel with main lines whenever possible and be always taped in a bundle.
- Wire must travel under hard surfaces in its own sleeve and not with any pipe. Sleeve must be sized as two times wire bundle diameter minimum.
- All wiring that is done on WeatherTrak system wiring will be Super Serviseal closures or equivalent there will be no exceptions. (Equivalent must be approved by Manager of Irrigation prior to use)
- All field wiring will be done with waterproof 3m type connections on all splices at valves and in field. Wire connections must always be in valve boxes or pull boxes no exceptions.
- All connections on WeatherTrak ground and grounding grid will be done with a Cadweld grounding “one shot” ground rod connecters used with #6 bare copper wire connections to and from controller.

Piping/Fittings

- PVC pipe shall be sch 40 on 3/4" through 2" pressure rated pipe
- PVC pipe 2 1/2" and up to 6" shall be gasket pressure rated pipe class 200 or CV 90 pvc
- All fittings on 2 1/2" pipe or larger will have cast iron type fittings. No glued fittings on any pipe over 2"!
- Mega-lug mechanical restraints on all M J type fittings
- Glue shall be 711 medium base glue and used with p-70 primer. Contractor must be glue certified.
- Pipe smaller than 2" will be sch 40 glued or threaded fittings only

Thrust Blocks

- Thrust blocks will be used on all fittings over 2" no exceptions.
- Thrust blocks must be of a size to handle high pressure situations as campus pressures are over 100 psi.

Main/Laterals

- Main lines shall be buried a minimum of 24" to the top of pipe in a rock and debris free trench
- Lateral lines shall be buried a minimum of 12" to the top of pipe in a rock and debris free trench
- 2" nut type isolation gate valve on any connection point off the 6", 4", 3” mains
- All main lines will be pressure checked at a minimum of 150 psi for a period of no less than 24 Hours. Line cannot lose no more than 1 lb. in 24hrs.

Sleeves/Check Valves/Quick Couplers

- Sleeves must be used anywhere that pipe travels under concrete or asphalt. They must be sized at least 3 times the diameter of pipe passing through sleeve up to 12" sleeves.

- 1" Rain Bird quick couplers to be installed as noted on plans inside 10" round minimum valve box or larger. They must have purple covers on all covers for non-potable water.
- Reduced pressure back flow systems (RPZ) check valves when needed are the only accepted back flow device allowed on UVU properties. These must be installed on an appropriate cement pads and with Hot Box stainless steel enclosures installed over check valves.
- Check valves must have isolation valves on both sides of valve for maintenance and testing purposes.
- Risers must place valve a minimum of 14" above pad and must be of rigid materials (galvanized or ductile iron).

Backfill and Topsoil

- Topsoil shall be imported rock and debris free soil with a minimum of 10% organic material.
- Sand based field soils will be washed sand, free from rock and debris. It will have a maximum of 6% organic.
- Sand based fields will have a minimum of at least 12" of 1" gravel placed evenly on the sub grade before sand can be placed.
- Sand will be at a depth of 12" minimum.
- Soil PH levels will be 6.7-7.2 and the soil will be 40% sand, 35% silts, and 25% clays plus or minus 5% in each category.
- Contractor is responsible to provide soil testing results from an independent source for results and certifications.

Drainage

- Drainage system shall be engineered for proper drainage as per project needs and specifications.
- The minimum drainage pipe shall be at least 4" diameter perforated PVC with cloth covers sock. (NDS or ADS type PVC)
- King automatic drains (1/2") are required on lateral lines as needed for proper drainage.
- Manual drains shall be 3/4" Muller stop and waste valve on all main lines and points of connections as needed for proper drainage with a 2" pvc sleeve and 6" round box for cover over sleeve
- All lateral drains will have a gravel sump of at least 12" x 12" x 12" around drain
- All main line drains will have 18" x 18" x18" gravel sump or larger around drain no exceptions

Trees/Shrubs

- Trees in ball and burlap must have <u>all</u> basket cage removed and at least 50% burlap removed from tree.
- Trees in buckets must have the bucket removed from tree completely and soil scarified around root ball.
- Shrubs must be removed from bucket, scarified, and placed in hole.
- Holes for trees and shrubs must be equivalent to two times the diameter of root ball of plant or tree.

- A preparation of 30% mulch and 70% clean soil must be filled into hole around plant or tree and compacted to stabilize plant or tree.
- Staking is necessary on trees 2" or larger.
- All trees and shrubs will have a minimum of 3" bark placed around a 24” min. tree ring and all shrub beds.

Disclosure

All changes must be approved before proceeding with any work related to project. There will be no recourse action after change if no approval was given in writing prior to doing work. UVU grounds department will inspect all pipe, head, and valve layout before allowing any burial of system. This also includes controller locations as well as isolation valves and the complete WeatherTrak installation. UVU grounds will also inspect and approve the use of landscape soils, plants, trees and any other materials used in the landscape project. Landscape layout and installation must be approved before work performed. Contractor is responsible for soil testing and all certifications.

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