

Subject: Irrigation Mainline Repair (4" and 6")

Approved:

PROCEDURE:

Irrigation Mainline Repair (4" and 6")

INTENDED AUDIENCE: LNR personnel assigned to the irrigation team.

PURPOSE: To ensure timely repair of any breaks or leaks in the main irrigation lines at the University of Central Florida.

- I. Knowledge** – Employee should be trained in mainline repairs for the irrigation system on campus.
- II. Safety** –It is the employee’s responsibility to determine if added Personal Protective Equipment (PPE) is needed and to consult with their Supervisor prior to starting the task.
PPE includes:
 - a. Safety Glasses
 - b. Work Boots
- III. Prior to Irrigation Mainline Repair**
 - a. Pick up any irrigation parts needed for truck stock from the Irrigation Store Room or Central Stores before leaving the LNR compound.
 - b. Make sure to have flags on your truck to mark any repairs needed while repairing the mainline.
 - c. Turn water off before making the mainline repair.
- IV. Pipe Preparation for the Irrigation Mainline Repair**
 - a. Dig up the area and remove all the dirt from the broken irrigation mainline and expose enough pipe to make a proper repair.
 - b. Determine the depth of the hole needed to make the mainline repair.

CAUTION: If the depth of the hole is five (5) feet or greater, the banks of the hole must be shored up to prevent the hole from collapsing.

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- c. Using a pipe saw, cut the broken or leaking part of the pipe out of the existing piping.
- d. Determine the parts and tools that are necessary for the mainline repair (e.g. megalug fittings, restraints, schedule 40 pipe, transition gaskets, saw, and wrench) and retrieve them from the irrigation truck.
- e. Using a rag and solvent, clean the existing pipe where the repair will be made.

V. Irrigation Mainline Repair

- a. Layout the required Scheduled 40 pipe and megalug fittings, transitional gaskets and restraints needed for the repair in the direction it will be installed.
- b. Measure and mark the new pipe/s to the correct length of the repair needed.
- c. Using the saw zaw, cut the new pipe to the correct length.

Note: Make sure to cut the pipe straight on the outside diameter.

- d. Insert the megalug restraint onto the new and old pipes (see Diagram a).

Diagram A
Megalug Restraint



- e. Push the gasket into the megalug fitting evenly on all sides.
- f. Install the megalug fitting into the new and old pipe to join the two pipes together.

Note: Make sure the two pipes go all the way to the stop on the megalug fitting. (See Diagram B)

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Note: Make sure the two pipes go all the way to the stop on the megalug fitting. (See Diagram B)

Diagram B Adjoined Pipes



- g. Using a wrench, tighten the top bolts (shown in diagram b as blue bolts) on the megalug restraint.

Note: Tighten each bolt in a **star pattern** slowly until megalug restraints are secure.

- h. Insert threaded end screws into the megalug restraint holes and hand tighten bolts.
- i. Repeat step V-g on the outer bolts (shown in diagram b as grey bolts) to secure the pipe to the megalug fitting.

CAUTION: If there is a change in direction fitting on the mainline (45deg or 90deg elbow, or Tee coupling) insert a thrust block behind the fitting for added support. This may prevent a future mainline break.

- j. Re-pressurize the mainline once the repair is completed to make sure that there are no leaks around the repair.

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VI. Site Clean up

- a. Ensure all removed soil is in the intended area and not on the turf or hardscape features (i.e. sidewalks, curbing, roads); rake or blow as needed.
- b. Collect all broken pipe, old fittings, and any other debris.
- c. Collect all hand tools and return to irrigation trucks.