

## Drainage District:

#41

## Repair Summary:

- Landowner reported three sinkholes/blowouts on the Main tile located in the SE¼ of Section 12, Township 88 North, Range 22 West.
- Visually inspected area and found three tile sinkholes/blowouts at 490'± west of H Avenue, 600'± west of H Avenue, and 675'± west of H Avenue. The District Trustees authorized CCTV inspection of existing main tile to determine its overall condition.
- Performed CCTV inspection on 18" VCP Main tile from sinkhole/blowout 675'± west of H Avenue. During CCTV inspection, removed 6' of collapsed 18" VCP to continue CCTV inspection. Temporarily repaired this section with 18" dual wall HPDE tile and fabric wrapped joints. Defects are tabulated in attached sheet.
- Also, performed CCTV inspection from the east side of H Avenue at the request of the landowner. Defects are tabulated in attached sheet.
- While in field, noted that the existing Main tile outlet is rusty CMP without a rodent guard. Also, there are some scrub trees near the Main tile outlet.

## Contractor Time and Materials (spent while CGA was on-site):

See attached Tabulated Contractor Time and Materials Sheet.

## Additional Actions Recommended:

The Main VCP tile is cracked for much of the extent of the CCTV inspection. It is our opinion that most of the cracked tile is not deformed enough to indicate imminent failure. However, there are 12 locations that pipe failure appears to be imminent. The first 9 are located within the first 300' of the Main tile. The remaining 3 are located further upstream in the Main tile. In addition, the Main tile outlet needs some work (i.e. rodent guard installation, rip-rap installation, and tree removal). Based on this, it is our recommendation that spot repairs on the Main tile be performed with Class IV or V RCP or polypropylene tile where collapse is imminent and repairs performed to the outlet. It is our opinion that the total construction cost of these repairs would be \$25,000 to \$30,000 (assuming that no additional tile will need replaced after the tile is uncovered). This cost is low enough that neither a hearing nor an engineer's report would be required for said repairs.

If the District Trustees wish to proceed with full replacement of the lower 300' of the Main tile, spot repairs of the Main tile at the upstream locations, and outlet repairs, it is our opinion that the total construction cost would be \$40,000 to \$49,000. This cost is also low enough that neither a hearing nor an engineer's report would be required for said repairs.

