



Underground Stormwater Basin Inspection

Cracking Basins Create Risk of Sinkholes and Pavement Failure

PROBLEM

VDOT Bristol District had 4 underground stormwater management detention basins comprised of large pipes along Route 23 in Norton, VA. Joint separation and cracking prevented optimal function and put the district at risk for sinkholes, blockages, and pavement and slope failures.

SOLUTION

VDOT Bristol District engaged PILLAR to perform inspections and purchase specialized confined space equipment on its behalf. Our experienced professionals were certified in confined space entry and familiar with underground pipe storage chambers. They entered and inspected each structure, mapped and documented all problems, and generated recommendations and repair methods that were delivered in a final report.

APPROACH

PILLAR performed structural inspections and as-built mapping of the VDOT Bristol District's underground stormwater management basins located along Route 23 bypass in Norton, VA. The work required a confined space entry permit for every structure, personnel trained in confined space rescue, confined space protocols, and compliance with "Confined Space Training 29 CFR 1926." PILLAR also provided a safe work environment relating to falling objects.

PILLAR also purchased, used, and then turned over the confined space entry equipment to VDOT upon completion of the sections. The equipment included:

- Four gas meter Draeger X am 2500 selected for ease of use, reliability, robust features, and local SWVA vendor training and support
- Protective cage for placement around an open manhole
- Rescue tripod, winch, harness, fall protection assembly—Elk River 05611 Economy EZE-Man Confined space system
- Extra harness for second-person buddy system entry
- Confined Space Fan Kit—Axial Confined Space Fan Kit, 1/3 HP, 115VAC Voltage Air Systems International

Our trained and certified experts used the safety equipment along with safety protocols to enter the basins and complete a visual inspection and to map each structure's features including piping from springs, and weirs. They took photo documentation of the basin condition and drew up pertinent notes and comments. Finally, PILLAR drew up a final report that described the condition of the four stormwater basins, including findings from the visual inspection, photos, as-built diagrams, recommended repairs, and repair plans.