



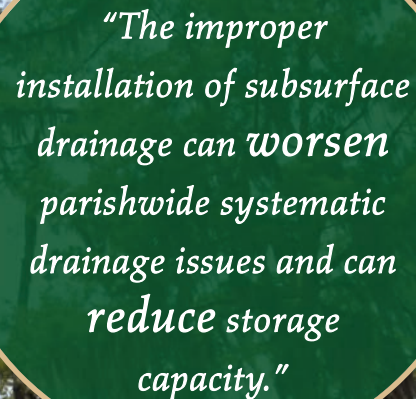
## Summary

The improper installation of subsurface drainage can worsen parishwide systematic drainage issues and reduce storage capacity.

The funds required to properly design and install a subsurface drainage system makes it a costly undertaking. Because a drainage system needs to be designed as a whole, and not just at a single residence, the design needs to encompass an entire street, if not a large area.

Additionally, the cost to maintain a closed system is higher than the cost to maintain an open ditch system. An open ditch can be redug relatively quickly and cheaply, while a culvert must be cleaned out with specialized equipment.

Finally, the parish cannot legally expend funds on subsurface drainage for aesthetic purposes as described by the attorney general of Louisiana, James D. Caldwell.



*"The improper installation of subsurface drainage can worsen parishwide systematic drainage issues and can reduce storage capacity."*



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# SUBSURFACE DRAINAGE

*An Informational Guide*



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## Implementing Subsurface Drainage

Correctly implementing subsurface drainage in an area serviced by open ditches requires more than simply installing a minimum-sized culvert.

A proper analysis is necessary to determine what effects introducing subsurface drainage will have on the surrounding area, not simply one parcel. The volume of water a ditch conveys during and following rainfall must be addressed. This requires consideration of the characteristics of not only the proposed site but upstream and downstream factors as well.

This information cannot be obtained by visiting one residence and employing sound judgment. It is possible and likely that areas miles away will be affected.

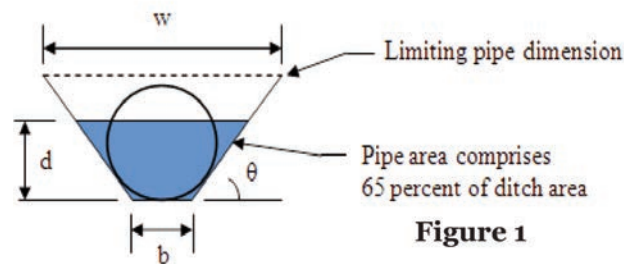
## Existing Driveway Culverts

Existing driveways throughout the parish present a problem for the installation of subsurface drainage. It is not uncommon for a driveway culvert to be inadequately sized and sloped. To correctly implement subsurface drainage, installation must meet the elevation of any existing culverts and provide for appropriate flow. These requirements can be contradictory when a system is constructed in a piecemeal fashion.



## Existing Subsurface Drainage

Subsurface drainage installed prior to 2008 has created some problems. Many of the structures are not graded properly, and some are partially or completely filled with debris, substantially damaged or continually hold water. Adding to a problematic system without addressing the existing problems will cause additional system failures.



## Available Capacity

As Figure 1 demonstrates, installation of a pipe into an existing ditch may reduce both capacity and storage of the system. This further demonstrates why a systematic approach to drainage is necessary as opposed to intermittent installation.

## Legality

The parish has obtained legal guidance stating that it may not expend funds on individual aesthetic improvements to private property. This includes the cost of hiring engineers or using parish employees to size individual culverts to replace existing drainage, as well as the actual installation of said culverts.

Unless the parish is undertaking an improvement that will result in the betterment of the parish, such as improving the drainage for an entire street or basin or rectifying a safety issue, such as a roadway that is unsafe due to steep shoulder slopes, the resident must undertake the cost to both design and install the aesthetic improvement in question.

“St. Charles Parish is prohibited from donating public funds for the engineering of subsurface drainage for the sole benefit of certain private landowners. St. Charles Parish may, however, fund these engineering costs if such an expenditure will be in the best interest of the parish as a whole and not just the private landowners who may receive an indirect benefit of the engineering services.”

*Attorney General of La., James D. Caldwell*