

MAINTENANCE MANUAL

CAMBRIDGE KNOLL FIRST ADDITION

Stormwater Facilities

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A&C Project No. 97-133

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MAINTENANCE MANUAL

GENERAL

Cambridge Knoll First Addition stormwater facilities are composed of a detention pond, retention pond and stormwater collection pipes. They are to be maintained by a Homeowners' Association. The purpose of this manual is to outline the maintenance requirements to insure their proper operation. Problems should be addressed immediately.

The northwest pond is a retention pond. It is designed to contain a 100-year storm event's runoff. The overflow pipe is sized to allow another 100-year storm event to flow into the ditch along State Road 395.

The west pond is a detention pond. This pond discharges the stormwater runoff into the ditch of State Road 395 at a rate equal to the pre-development runoff rate. This rate is achieved by means of a flow restriction orifice. The bottom of the pond is large enough to contain the 2-year storm event. The overflow in the restriction structure is designed to discharge a 100-year storm event.

The stormwater collection pipes are located in County R.O.W. They collect and convey the stormwater runoff to the drainage ponds. This facility is sized to convey the runoff of a 50-year storm event.

Northwest Retention and West Detention Ponds

These ponds should be inspected for damage at the beginning of the rainy season and after each significant storm. Attention should be paid to the following items:

1. Embankment
 - A. Is there significant erosion?
 - B. Are the pipe ends open and unobstructed?
2. Outlet Works
 - A. Is there debris clogging grates or pipes?
 - B. Is there significant erosion?
3. Emergency Spillway
 - A. Is there significant erosion?
 - B. Is there debris clogging the overflow pipe?

The ponds will collect sediment deposits over time. The depth of the sediment should be monitored. The sediment accumulation could be significant until the subdivision has been re-stabilized with vegetation. Sediment accumulation in these ponds will decrease the storage. The bottom of the northwest retention pond should be 12 inches below the invert of the overflow pipe. The west detention pond should have 12 inches between the pipe inverts and the bottom of the pond. Pipe invert is the term used for bottom of the pipe interior.

The sediment deposits can be removed during the dry season or when the pond bottom is stable. A rubber tire backhoe-loader can easily remove the sediment accumulation. Extra care should be taken to prevent damage to the PVC liner in the dike of the west detention pond.

Debris and trash removal and regular mowing of the grass and weeds around the ponds should be done as needed or at least four times a year.

Stormwater Collection Pipes

The pipes, manholes, and catch basins should be inspected on a routine basis to ensure that they are not clogged and are functioning properly. These facilities should be cleaned as often as needed. A sewer jet flusher service will be needed to clean the pipes properly. The catch basins have a 2 foot sump that should be cleaned out as needed. Prolonged neglect of the maintenance will greatly increase the cost of cleaning.

Maintenance Checklist

<i>Item</i>	<i>Significant Storm</i>	<i>Quarterly</i>	<i>Annual</i>
Detention/Retention Ponds	x		x
Sediment Removal			x
Stormwater Collection	x		x
General Housekeeping		x	

Annual Funds Required for Maintenance and Repair

Sediment removal from ponds - Backhoe @ \$200 per hour for 4 hours = \$800

Weed mowing in pond areas - 4 times a year @ \$60 = \$240

Pipe jetting - \$140 per hour for 8 hours = \$1,120

Facility repair fund - assumptions are present value is \$4,000, interest and inflation rates are 6%, & a 20 year life = \$350