

TANAGER ESTATES - PHASE II DRAINAGE MAINTENANCE PROCEDURES

Bi-annual inspections should be conducted on all drainage facilities as a minimum, with optimum times being early spring and late fall. Inspections should also be conducted after a heavy rainstorm, paying close attention to curb openings, road ditches, and the grates on the dry wells.

Additional items of interest pertaining to the individual components are as follows:

A. DRY WELLS

1. Inspect structure to ensure that barrels, rings, and grates are in good condition.
2. Inspect lower portion of dry well for standing water - a strong light or mirror will be helpful for this. Water may be present in the dry well for a short period of time following a rain storm, but should disappear within a day's time or less.
3. Remove any debris on or near the dry well, i.e. sticks, paper, pieces of wood, excess silt, etc.
4. Any dry well that continues to malfunction may need to be rebuilt, and the drainage engineer should be consulted.

B. DRAINAGE SWALES AND ROAD DITCHES

1. Proper sod growth and maintenance within the swales and ditches is essential. Brown or barren areas should be reworked and re-seeded to maintain proper sod coverage.
2. Water should not pond in any swale for an extended period of time. Cattail or reed grass growth is an indication that infiltration has been reduced, and the swale bottom should be reworked and restored.
3. If any erosion is observed around curb aprons or curb ends, it should be repaired immediately. If this condition occurs repeatedly, installation of rip rap may be necessary.
4. Drainage swales should be mowed and maintained with the same frequency as a normal residential lawn. Periodic maintenance and mowing fall within the responsibilities of homeowners having swales located on their property. They should also be watchful for beginning erosion, siltation, or prolonged soggy and poorly draining swale bottoms.

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Project No. 02169
April 23, 2003

TANAGER ESTATES - PHASE II
Drainage Facility Sinking Fund

The proposed facility consists only of dry wells with associated infiltration ponds and roadside ditches. The yearly estimated maintenance costs for these facilities is \$300.00 maximum.

The current construction costs for the proposed drainage facilities is estimated to be \$15,000.00, based upon a bid received from Hattenberg Excavating, Inc. An estimate of the expected life for these facilities is 40 years, so assume that 50% of the system will require replacement or repair during that time.

To project the total annual assessment per lot to the future time when the funds are needed involves both the rate of inflation and the estimated interest rate. For this analysis, use inflation at 4% and interest at 7%. The following calculations are based on these assumptions:

| | | |
|--|----|-----------|
| Annual operation and maintenance costs | \$ | 300.00 |
| Present value of stormwater facilities | | 15,000.00 |
| Assume 50% replacement in 20 years $\frac{(PV)}{2}$ | | 7,500.00 |
| Future value in 20 years (FV), for I = 4%, n = 20, $FV = \frac{(PV)}{2}$ | | |
| F/P = \$7,500(2.1911) = | | 16,433.00 |
| Annual assessment required (A), for I = 4%, N = 20, $A = \$16,433(A/F) =$ $\$16,433(0.0244) =$ | | 401.00 |
| TOTAL ANNUAL AMOUNT NEEDED: (O&M) + A \$300 + \$401 = \$701 | | |
| PER LOT ASSESSMENT FOR 40 LOTS: (\$701)/40 = \$17.53 | | |

- Recommended beginning assessment/lot to be \$18.00/year -

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