

**STORMWATER MANAGEMENT  
DESIGN REPORT  
FOR  
CARRIAGE HILL  
SECTION 7**

**LIBERTY TOWNSHIP  
BUTLER COUNTY, OHIO**

**July 11, 2013**

**MSP # 04476.01**

**PREPARED BY  
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**CARRIAGE HILL, SECTION 7  
LIBERTY TOWNSHIP, BUTLER COUNTY  
SUMMARY FOR  
STORMWATER DESIGN AND ANALYSIS  
July 11, 2013**

The proposed storm water management system for Carriage Hill Section 7 and future development is located on the east side of 747 at the intersection of Willow Ridge Court.

The storm water management system consists of two storm water retention / detention ponds. The system was evaluated utilizing the TR55 method and the watershed modeling program "Pondpack version 5.21" by Haestead Methods.

55.9 acres on site including future development and 83 acres off site runoff is considered in the report of which 131 acres will be managed by storm water controls and is divided into two subareas. 8 acres will bypass the two retention /detention ponds.

The pre-development and post-development runoff curve numbers are 66 and 79 respectively yielding a 155% increase in runoff volume corresponding to a 25 year critical storm frequency.

Pre-development and offsite flow hydrographs were combined in order to determine the allowable flow release rates. Post-development Ponds 71 & 72 detention and bypass discharge flow hydrographs were combined and compared to the allowable rates as noted in the following table.

<u>Freq.(yr.)</u>	<u>Allowable (cfs)</u>	<u>Pond Routing and Bypass (cfs)</u>
1	31.6	22.2
10	69.1	50.9
25	82.4	66.9
50	153.4	84.8
100	181.7	97.3

The two ponds will serve the subject area for OEPA Water Quality. The total volume available is 48,000.

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