



2018 Inspection Report of Storm Water Management System

*Grand Traverse Town Center
Acme Township, Grand Traverse County
Michigan*

Prepared for
The Village at Grand Traverse LLC
C/O Jeffrey R Anderson Real Estate
3825 Edwards Road, Suite 200
Cincinnati, Ohio 45209

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1.0 Purpose and Scope

This document was prepared to transmit the results of the annual Storm Water Management System (SWMS) inspection completed by Barr Engineering (Barr) on August 20, 2018 on behalf of the Village at Grand Traverse, LLC (VGT) at the Grand Traverse Town Center (GTTC) site in Acme Township, Grand Traverse County, Michigan. A site location map is provided as Figure 1.

Annual post-construction inspections of the SWMS were outlined in the site inspection, monitoring, and maintenance plan submitted to the Township in September 2015 (Monitoring Plan).¹ The purpose of the annual SWMS inspection is to:

- Inspect swales, outflow control structures and storm water detention area for sediment accumulation;
- Inspect catch basin inlet castings, swales, outflow control structures and storm water detention areas for floatables and debris;
- Inspect swales, outflow control structures and storm water detention areas for erosion;
- Inspect storm water system components including catch basin inlet castings, swales, outflow control structures, riprap, storm water detention areas, wetlands, and emergency outflows during a wet weather event and compare to as built plans;
- Maintain records of all inspections and maintenance activities and report to VGT; and
- Maintain records of all costs for inspections, maintenance and repairs and report to VGT.

2.0 Field Activities

The SWMS at the GTTC site was inspected on August 20, 2018. Both the detention basins were discharging water to their respective swales via their outflow control structures during the inspection. The inspector observed all SWMS components including, detention areas, outflow control structures, swales, catch basin inlet castings, riprap, emergency outflows and wetlands by walking the SWMS areas. Photographs were taken to document the condition of specific areas.

¹ Inspection, Monitoring and Maintenance Plan for the Storm Water Management System, Horizon Environmental Corporation, September 2015

3.0 Results

The results of the inspection conducted in 2018 are described below. Photographs of certain areas are included in Appendix A.

Catch Basin Inlets: The catch basin inlet structures were inspected and compared to the as-built plans for the SWMS, and no discrepancies were noted. No evidence of floatables or debris was observed in the catch basins or near the catch basin inlets.

Storm Water Detention Areas: The storm water detention areas (Basin 1 and 2, and swale expansion areas) were inspected and compared to the as-built plans for the SWMS, and no discrepancies were noted. No evidence of sediment accumulation, floatables, debris or signs of erosion were observed in the storm water detention areas.

Outflow Control Structures: The outflow control structures were inspected and compared to the as-built plans for the SWMS, and no discrepancies were noted. Both Basin 1 and Basin 2 were discharging water from the ponds at the time of the inspection. No evidence of sediment accumulation, floatables, or debris were observed in the either of the basin outflow control structures or pond outlet/swale inlet structures. No evidence of erosion was observed at the pond outlet/swale inlet structures.

Emergency Outflows: The emergency outflows were inspected and compared to the as-built plans for the SWMS, and no discrepancies were noted.

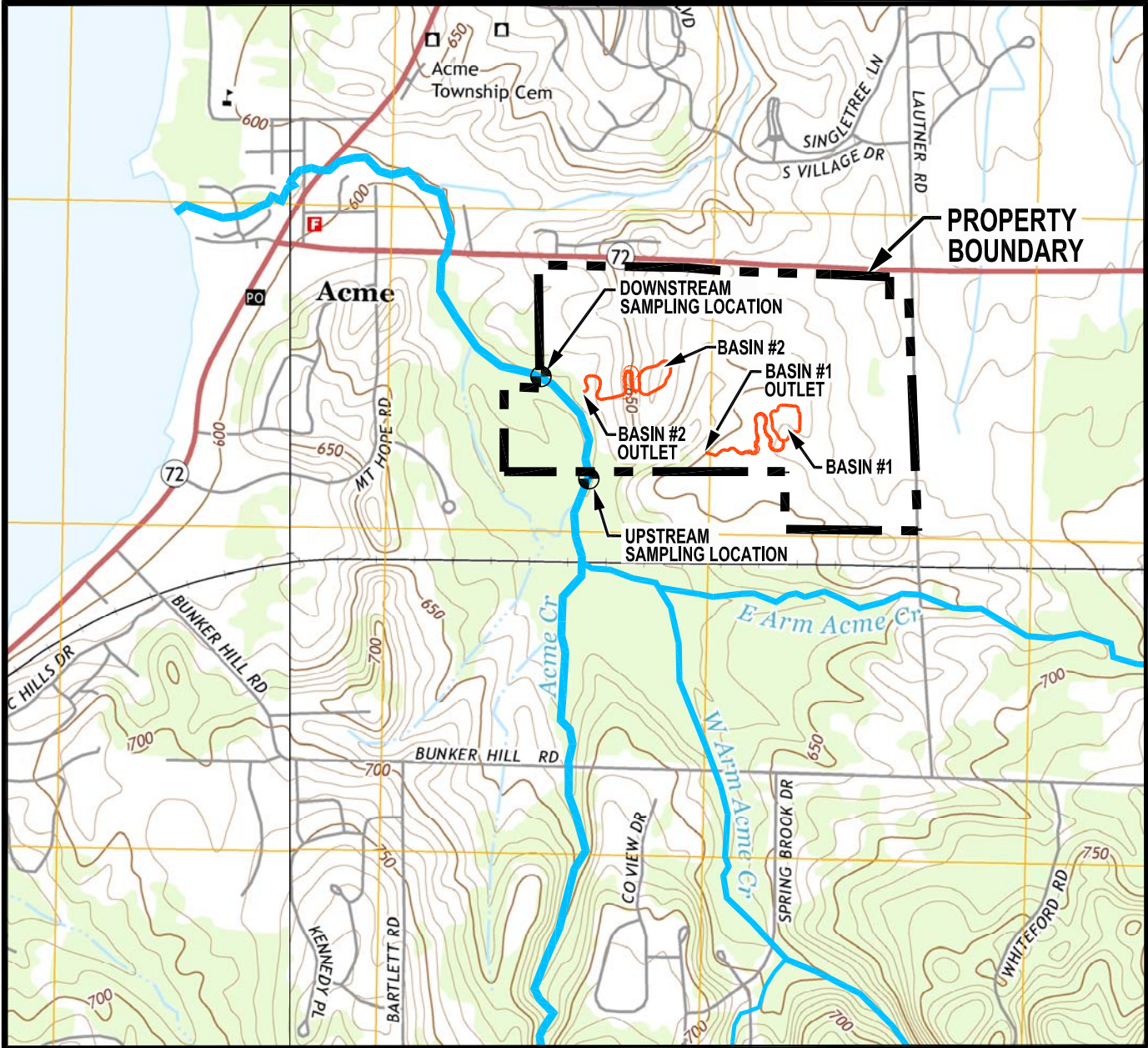
Swales: The swales were inspected and compared to the as-built plans for the SWMS, and no discrepancies were noted. The vegetation in both swales was well established and no evidence of sediment accumulation, floatables, or debris were observed in the either of the basin swales. No evidence of erosion was observed in either of the basin swales.

Riprap: The riprap (check dams and outflow aprons) associated with the SWMS were inspected and compared to the as-built plans for the SWMS, and no discrepancies were noted.

4.0 Summary of Recommendations

Based on the results of the 2018 SWMS inspection, no maintenance activities or repairs were identified. The next annual SWMS inspection will be completed in the summer of 2019.

Figures



TAKEN FROM 7.5 MINUTE SERIES TOPOGRAPHIC MAP
 TRAVERSE CITY SE AND WILLIAMSBURG 2014 QUADRANGLES
 NORTH AMERICAN VERTICAL DATUM OF 1988
 SCALE APPROX. 1" = 1600'

LEGEND:

 - CREEK SAMPLING LOCATION

Figure 1

SITE LOCATION MAP
 Village at Grand Traverse
 Acme Township, Grand
 Traverse County, Michigan



4771 50th Street SE
 Grand Rapids, MI 49512

Appendix A

Site Inspection Photographs

Appendix A Inspection Photographs

**Grand Traverse Town Center
Acme Township, Grand Traverse County, Michigan
August 20, 2018**

Photo #	Comments
1	Catch basin inlet west corridor road
2	Basin # 1 detention pond viewing south
3	Basin # 2 detention pond viewing north
4	Basin # 1 outflow control structure (exterior)
5	Basin # 1 outflow control structure (interior)
6	Basin # 2 outflow control structure (exterior)
7	Basin # 2 outflow control structure (interior)
8	Basin # 1 emergency overflow
9	Basin # 2 emergency overflow
10	Basin # 1 swale inlet structure
11	Basin # 1 swale expansion area/riprap check dam
12	Basin # 2 swale viewing north
13	Basin # 1 swale outlet
14	Basin # 2 swale outlet



Photo 1: Catch basin inlet west corridor road



Photo 2: Basin # 1 detention pond viewing south



Photo 3: Basin # 2 detention pond viewing north



Photo 4: Basin # 1 outflow control structure (exterior)

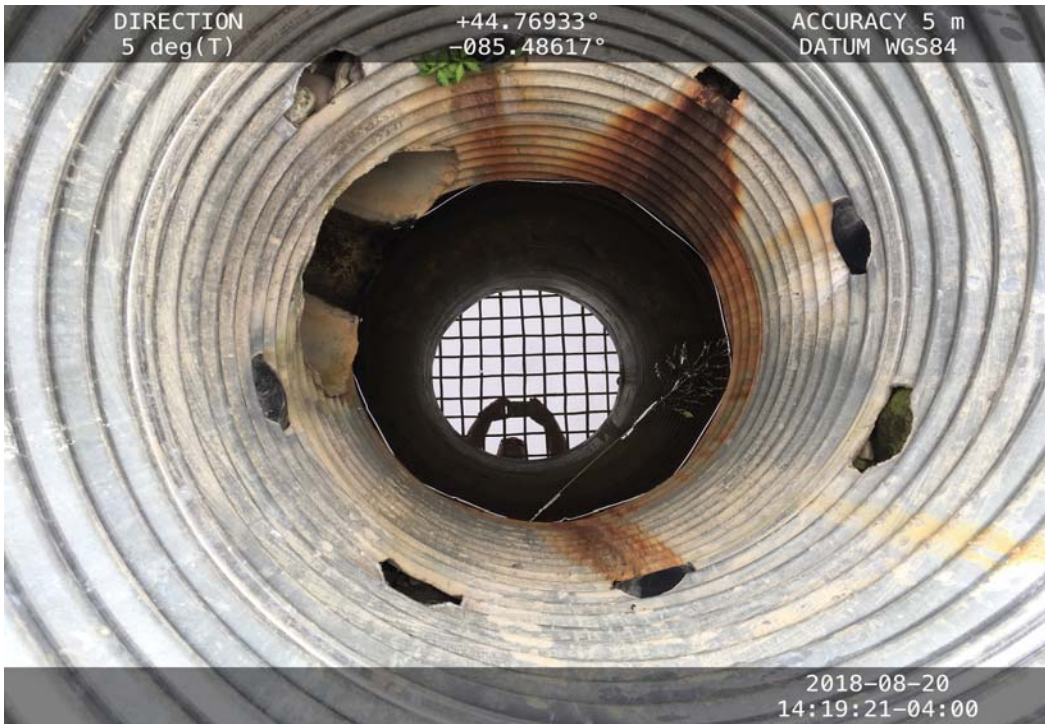


Photo 5: Basin # 1 outflow control structure (interior)



Photo 6: Basin # 2 outflow control structure (exterior)



Photo 7: Basin # 2 outflow control structure (interior)

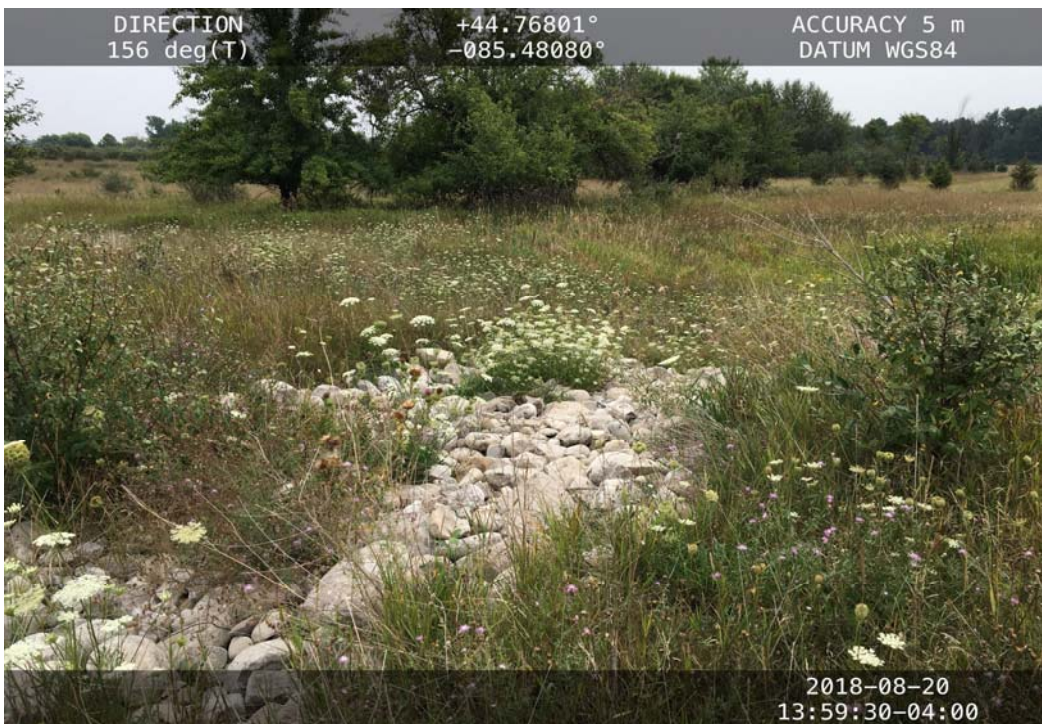


Photo 8: Basin # 1 emergency overflow



Photo 9: Basin # 2 emergency overflow



Photo 10: Basin # 1 swale inlet structure



Photo 11: Basin # 1 swale expansion area/riprap check dam



Photo 12: Basin # 2 swale viewing north



Photo 13: Basin # 1 swale outlet



Photo 14: Basin # 2 swale outlet