



August 25, 2015
File: 193804431

Attention: Nancy Greifenhagen

Village of Menomonee Falls
Engineering Department
W 156 N 8480 Pilgrim Road
Menomonee Falls, WI 53051

Dear Ms. Greifenhagen,

Reference: Carter's Crossing Pond Inspection

We have completed our inspection of Basins 1, 2, 3 and 3a at Carter's Crossing (see attached figure). Stantec completed previous inspections of these basins in 2011. At that time, calculations demonstrating that the ponds meet post-construction requirements were submitted to the Village.

We have found a few items requiring correction as described below. The following maintenance items require corrective action.

1. At Basin 1 the permanent pool has reached a depth of less than three feet and requires dredging to establish a depth that encourages settling of solids. The Wisconsin Department of Natural Resources recommends a permanent pool depth of 5 feet: 3 feet for settling of solids and 2 feet for storage of solids. Basin 1 should be dredged to a permanent pool depth of 5 feet.
2. At Basin 1 debris should be removed from the riser.
3. At Basin 1, woody vegetation within the pond footprint should be removed unless permitted by the Village.
4. At Basins 3 the outfall requires repair. Seepage is occurring causing the water level to drop below the safety shelf. The source of seepage around the structure needs to be identified and repaired to eliminate seepage and the outlet structure backfill replaced and properly compacted.
5. At Basins 3A the outfall requires repair. The pipe end section should be reset and strapped to prevent drifting.
6. At Basin 3 animal burrows were found. If left unchecked animal burrows could cause destabilization and failure of the pond bank. The owner should consult with a professional pest control expert to eradicate any burrowing animals from the pond area.



August 25, 2015
Nancy Greifenhagen
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Reference: Carter's Crossing Pond Inspection

These items have been communicated to the Owner (Carter's Crossing Home Owners Association). The Owner has been informed of the required repairs and is contacting a contractor to address these items.

Regards,

A handwritten signature in blue ink that reads "JoEllen Donovan".

JoEllen Donovan
Engineer
Phone: (262) 643-9014 ext 6014
JoEllen.Donovan@stantec.com

Attachment: Pond Inspection Reports

c. Pat Sheaffer, Carter's Crossing



Carter's Crossing Exhibit



Village of Menomonee Falls
W156 N8480 Pilgrim Road
Menomonee Falls, WI 53051-3140
Telephone: (262) 532-4200

STORMWATER MANAGEMENT FACILITIES OPERATION AND INSPECTION REPORT

Quarter Section NE1/4 Sec31 Name of Business/Subdivision Carter's Crossing
Property Tax ID Number 0121-064 & Address of Property South of Silver Spring between
0121-066 Lannon Rd and Townline Rd

Dry Pond		Location of Pond	Outlot #2 & Outlot #4
Wet Pond	X		
Other		Pond ID: <u>Basin #3</u>	

Year Pond Constructed 2004 Year of Last Certification 2011

Compliance Verification	Design	Actual	Compliant Yes	Comments (Condition of Structure)
Primary Outlet Pipe			X	Outlet Pipe Material
Opening Diameter (inches)	18"	18"	X	Modeling submitted with 2011 certification demonstrating compliance with post-construction requirements.
Upstream Invert	834	834.03	X	Outfall requires repair. At Basin 3 the source of seepage around the structure needs to be identified and repaired to eliminate seepage and the outlet structure backfill replaced and properly compacted. At Basin 3A, the pipe end section should be reset and strapped to prevent drifting.
Downstream Invert	833.80	833.68	X	
Length (feet)	44	44	X	
Slope (%)	0.5	0.8	X	Note: Because of its condition, the outlet structures are not compliant.
Secondary Outlet Pipe	(If Applicable)			Outlet Pipe Material
Opening Diameter (inches)				
Upstream Invert				
Downstream Invert				
Length (feet)				
Slope (%)				
Riser	(If Applicable)			Riser Material
Opening Diameter (inches)	36"	36"		
Elevation	835.75	836.19		
Upper Discharge Control	(If Applicable)			
Opening Diameter (inches)				
Elevation				

Compliance Verification	Design	Actual	Compliant Yes	No	Comments	
Lower Discharge Control	(If Applicable)					
Opening Diameter (inches)	6"	3.5"				
Elevation	834	834.38				
Other (Description)						
Opening Type and Size (inches)						
Elevation						
Emergency Spillway						
Elevation	838.60	837.84	X			
Length of spillway (feet)	30'	30'	X			
Embankment	Present Yes no		Comments/Maintenance Requirements			
Unauthorized Plantings, trees, or woody vegetation	X		The owner should consult with a professional pest control expert to eradicate any burrowing animals from the pond area. Note: Because of its condition, the embankment is not compliant.			
Animal burrows or slope erosion		X				
Storm Sewer Outfalls	Type & Size		Location		Comments	
Outfall 1						
Outfall 2						
Outfall 3						
Storage Properties	Design	Actual	Compliant Yes	No	Not Applicable	Equipment Used
Normal Water Elevation (Wet Ponds)	834	834.38	X			
Design High Water Elevation	838.60	837.84	X			
Area at Normal Water Elevation (Ac) (Wet Ponds)	0.962	0.817	X			
Area at Design High Water Elevation (Ac)	1.651	1.416	X			
Active Storage Available (Ac-Ft)*	5.224	3.910	X			
Lowest Elevation at Top of Embankment (If Applicable)	838.60	837.84	X			
Average Elevation at Top of Embankment (If Applicable)	839.60	840	X			
Maximum Bottom Elevation	827	826.58	X			
Average Pond Bottom Elevation	827	829	X			
Pond Bottom Area (Ac)	-	0.047	X			
Maximum Pond Depth	7	13.42	X			
Average Pond Depth	7	11	X			
Average Permanent Pool Depth (Wet Ponds)	7	5.38	X			

*To Determine Active Storage $V=H/3(A1+A2+(A1xA2)1/2)$

Wet Ponds Use H = Height of Section, $A1$ = area at normal water elevation, $A2$ = area at top section

Dry Ponds Use H = Height of Section, $A1$ = pond bottom area, $A2$ = area at top section

Sketch Outlet or Attach to Document



Attach As-built Survey to the Document for the first report submission

Inspection Firm: Stantec Consulting
Phone Number: 262-241-4466
Address: 12075 Corporate Pkwy
Suite 200
Mequon, WI 53092

Inspector Name : Scott Henkel
Inspection Date: 6/17/2015

Certifying Professional JoEllen Donovan
Name:
Phone Number: 262-643-9014

We are certifying that the above tabulated data represents the existing conditions of the pond on the date of our survey. Compliance or non-compliance with Village ordinance requirements, as well as the potential need for follow-up repair work, is indicated in the table.



Date: <u>8/25/2015</u>	Signature: <u>joellen</u>
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Village of Menomonee Falls
W156 N8480 Pilgrim Road
Menomonee Falls, WI 53051-3140
Telephone: (262) 532-4200

STORMWATER MANAGEMENT FACILITIES OPERATION AND INSPECTION REPORT

Quarter Section NE1/4 Sec31 Name of Business/Subdivision Carter's Crossing
Property Tax ID Number 0121-064 Address of Property South of Silver Spring between
Lannon Rd and Townline Rd

Dry Pond	X	Location of Pond	Outlet #2
Wet Pond			
Other		Pond ID: <u>Basin #2</u>	

Year Pond Constructed 2004 Year of Last Certification 2011

Compliance Verification	Design	Actual	Compliant Yes	Comments (Condition of Structure)
Primary Outlet Pipe				Outlet Pipe Material
Opening Diameter (inches)	8"	8"	X	Modeling submitted with 2011 certification demonstrating compliance with post-construction requirements.
Upstream Invert	839	839.08	X	
Downstream Invert	837.85	-	-	
Length (feet)	229	-	-	
Slope (%)	0.5	-	-	
Secondary Outlet Pipe	(If Applicable)			Outlet Pipe Material
Opening Diameter (inches)				
Upstream Invert				
Downstream Invert				
Length (feet)				
Slope (%)				
Riser	(If Applicable)			Riser Material
Opening Diameter (inches)				
Elevation				
Upper Discharge Control	(If Applicable)			
Opening Diameter (inches)				
Elevation				

Compliance Verification	Design	Actual	Compliant Yes No		Comments
Lower Discharge Control	(If Applicable)				
Opening Diameter (inches)					
Elevation					
Other (Description)					
Opening Type and Size (inches)					
Elevation					
Emergency Spillway					
Elevation	-	843.66	X		
Length of spillway (feet)	-	38'	X		
Embankment	Present Yes no		Comments/Maintenance Requirements		
Unauthorized Plantings, trees, or woody vegetation	X		Remove trees		
Animal burrows or slope erosion		X			
Storm Sewer Outfalls	Type & Size		Location		Comments
Outfall 1					
Outfall 2					
Outfall 3					
Storage Properties	Design	Actual	Compliant Yes No	Not Applicable	Equipment Used
Normal Water Elevation (Wet Ponds)	-	-	X		
Design High Water Elevation	842.89	843.66	X		
Area at Normal Water Elevation (Ac) (Wet Ponds)	-	-	X		
Area at Design High Water Elevation (Ac)	0.683	0.767	X		
Active Storage Available (Ac-Ft)*	1.006	1.005	X		
Lowest Elevation at Top of Embankment (If Applicable)	-	843.66	X		
Average Elevation at Top of Embankment (If Applicable)	844	844	X		
Maximum Bottom Elevation	840	839.65	X		
Average Pond Bottom Elevation	840	840	X		
Pond Bottom Area (Ac)	0.241	0.041	X		
Maximum Pond Depth	3.89	4.01	X		
Average Pond Depth	3.89	3.66	X		
Average Permanent Pool Depth (Wet Ponds)	-	-	X		

*To Determine Active Storage $V=H/3(A1+A2+(A1xA2)1/2)$

Wet Ponds Use H = Height of Section, $A1$ = area at normal water elevation, $A2$ = area at top section

Dry Ponds Use H = Height of Section, $A1$ = pond bottom area, $A2$ = area at top section

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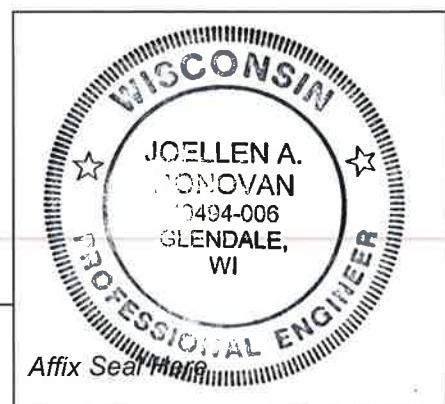
Inspection Firm: Stantec Consulting
Phone Number: 262-241-4466
Address: 12075 Corporate Pkwy
Suite 200
Mequon, WI 53092

Inspector Name: Scott Henkel
Inspection Date: 6/17/2015

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Phone Number: 262-643-9014

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Date: <u>8/25/2015</u>	Signature: <u>JoEllen Donovan</u>
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Village of Menomonee Falls
W156 N8480 Pilgrim Road
Menomonee Falls, WI 53051-3140
Telephone: (262) 532-4200

STORMWATER MANAGEMENT FACILITIES OPERATION AND INSPECTION REPORT

Quarter Section NE1/4 Sec31 Name of Business/Subdivision Carter's Crossing
Property Tax ID Number 0121-067 Address of Property South of Silver Spring between
Lannon Rd and Townline Rd

Dry Pond		Location of Pond	Outlot #5
Wet Pond	X		
Other		Pond ID: <u>Basin #1</u>	

Year Pond Constructed 2004 Year of Last Certification 2011

Compliance Verification	Design	Actual	Compliant Yes	Non-Compliant No	Comments (Condition of Structure)
Primary Outlet Pipe					Outlet Pipe Material
Opening Diameter (inches)	12" w/ 10" Opening	12"	X		Modeling submitted with 2011 certification demonstrating compliance with post-construction requirements.
Upstream Invert	840	839.93	X		
Downstream Invert	837	838.06	X		
Length (feet)	80'	61'	X		
Slope (%)	3.75	3.07	X		
Secondary Outlet Pipe	(If Applicable)				Outlet Pipe Material
Opening Diameter (inches)					
Upstream Invert					
Downstream Invert					
Length (feet)					
Slope (%)					
Riser	(If Applicable)			X	Riser Material
Opening Diameter (inches)	36"	36"	X		Remove debris accumulated on riser.
Elevation	842	842	X		Note: Because of its condition, the riser is not compliant.
Upper Discharge Control	(If Applicable)				
Opening Diameter (inches)					
Elevation					

Compliance Verification	Design	Actual	Compliant Yes No	Comments	
Lower Discharge Control	(If Applicable)				
Opening Diameter (inches)	2"	3.5"	X		
Elevation	840	839.67	X		
Other (Description)					
Opening Type and Size (inches)					
Elevation					
Emergency Spillway					
Elevation	844.6	844.21	X		
Length of spillway (feet)	20'	22'	X		
Embankment	Present Yes no		Comments/Maintenance Requirements		
Unauthorized Plantings, trees, or woody vegetation	X		Remove trees. Note: Because of its condition, the embankment is not compliant.		
Animal burrows or slope erosion		X			
Storm Sewer Outfalls	Type & Size		Location		Comments
Outfall 1					
Outfall 2					
Outfall 3					
Storage Properties	Design	Actual	Compliant Yes No	Not Applicable	Equipment Used
Normal Water Elevation (Wet Ponds)	840	839.67	X		The permanent pool has reached a depth of less than three feet and requires dredging to establish a depth that encourages settling of solids. The Wisconsin Department of Natural Resources recommends a permanent pool depth of 5 five feet: 3 feet for settling of solids and 2 feet for storage of solids. Basin 1 should be dredged to a permanent pool depth of 5 feet. Note: Because of its condition, the wet pond depth is not compliant.
Design High Water Elevation	844.6	844.21	X		
Area at Normal Water Elevation (Ac) (Wet Ponds)	0.151	0.110	X		
Area at Design High Water Elevation (Ac)	0.361	0.337	X		
Active Storage Available (Ac-Ft)*	0.827	0.705	X		
Lowest Elevation at Top of Embankment (If Applicable)	844.6	844.21	X		
Average Elevation at Top of Embankment (If Applicable)	845.6	845.6	X		
Maximum Bottom Elevation	834	836.79		X	
Average Pond Bottom Elevation	834	837.4		X	
Pond Bottom Area (Ac)	-	0.011			
Maximum Pond Depth	6'	2.88'		X	
Average Pond Depth	6'	2.27'		X	
Average Permanent Pool Depth (Wet Ponds)	6'	2.27'		X	

*To Determine Active Storage $V=H/3(A1+A2+(A1xA2)1/2)$

Wet Ponds Use H = Height of Section, $A1$ = area at normal water elevation, $A2$ = area at top section

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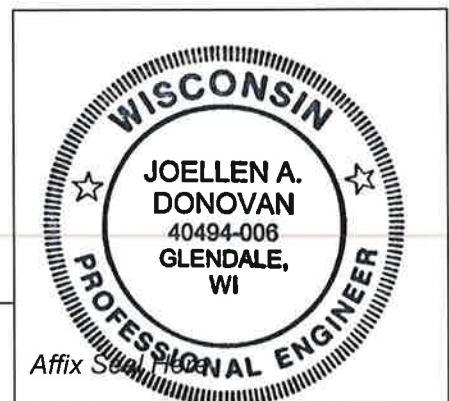
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Date: 8/25/2015

Signature: JoEllen Donovan



10-3-2012