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MEMORANDUM

TO: Village of Lac La Belle, Village Board

FROM: Mark Mickelson (Lic. Wi.)

DATE: August 7, 2019

RE: The Farm Drainage Map
SEH No. 145472 14.00

This Memorandum serves to summarize the Pre-Developed and Developed Watershed Mapping for The Farm property. The drainage in this area has been a significant concern for the residents of the 400 block during the course construction over the past year and we have directed Prestwick to provide this mapping to better understand the impacts of the course construction to this area.

Prestwick's Engineers, from Vierbicher, have produced watershed maps in the Pre-Developed (Existing) Conditions, and As-Built Conditions for comparison purposes. The Pre-Developed Map was produced from the contour mapping from the Waukesha County GIS system. The As-Built Conditions Map was prepared from a field topographic survey they completed after the rough grading was completed. The goal and requirements for this area were to ensure that the Pre-Developed Conditions drainage was maintained, or improved on the property towards the 400 block in the As-Built Conditions.

Prestwick, per the Developer's Agreement, agreed to install a storm water management pond on the State Property to the north. As discussed in previous meetings, this effort re-directed approximately 15 acres of the State property towards Saeger Rd, that previously drained south towards the west side of the 400 block. This pond construction also created a large borrow pit to the south, which prevents an additional 3 +/- acres from draining south. Additionally, a swale was installed just north of the south property line between the Farm and the State property. This swale diverts about 5.5 additional acres of drainage to the borrow pit, where it will infiltrate, instead of draining towards the pocket wetlands in the middle of the Farm property.

The analysis from Vierbicher shows four distinct watersheds draining south towards the 400 block. These watersheds were stopped at the Prestwick property line for comparison purposes, but continue on through the Village property towards the 400 block properties. The Village property has been largely undisturbed from the grading that occurred for the golf course construction. The table below summarizes the Existing vs. As-Built Watershed data from the maps.

Watershed A: Consists of the westerly most watershed on the map, with a large portion of the State property that drained down the riprap chute and then south towards the Farm and 400 block.

Watershed B: Contains a portion of the State property, Foster Circle, and the Farm that primarily drains to the pocket wetlands in the middle of the Farm. A small portion (approximately 3 acres) drains directly to the Village property on the south side of the Farm and the 400 block.

Watershed C: This is the easterly most watershed, just west of Pennsylvania St., going all the way north to Lang Rd, and drains to the large, Village owned wetlands and ultimately through a culvert on the Krott's property (434 LLB Dr.)

Watershed D: This area, in the middle of the Farm, drains southerly, to the same wetlands complex as Watershed C.

	Watershed A	Watershed B	Watershed C	Watershed D	Total
Pre-Developed	23.61 ac	22.61 ac	27.99 ac	3.11 ac	77.32 ac
As-Built	4.85 ac	18.48 ac	27.98 ac	3.04 ac	54.35 ac
Difference	(-18.76)	(-4.13)	(-0.01)	(-0.07)	(-22.97 ac)

Watershed A is greatly reduced with the installation of the State Pond and adjoining Borrow Pit area. Watershed B is reduced by the installation of the swale along the property line. The grading of the Farm for the construction of Holes #1-4 makes some minor adjustments of the drainage to the wetlands area, but as shown, is still significantly reduced. The overflow of the wetlands will be reduced, and the overflow route should be the same. The overflow elevation is noted as 860.65 under Existing Conditions and 860.79 under As-Built Conditions. A small 12-inch plastic culvert was installed for drainage under the future golf cart path and is noted on the As-Built Watershed Map. It will drain a small, approximately 1 acre area and I have directed Prestwick to install a "level spreader" on the downstream side of the pipe. This is essentially a small berm, with the top at a consistent elevation, to block the flow and spread it out over a wider area before it drains to the Village property, which is entirely wetlands in that area.

In summary, the drainage area that is tributary to the Village wetlands and ultimately the 400 block, is shown to be reduced from 77.32 acres to 54.35 acres. This reduction is primarily on the west end of the 400 block, but will ultimately be a significant improvement. There will still be drainage to the Village wetlands and the private storm sewers in this area, but with a 30 percent reduction in the size of the watershed. As of today, quite a bit of the Farm has been seeded and large portions are showing good grass growth. Hole #1 was seeded about a month ago and the grass is pretty well established. Hole #2 was seeded about a week ago and sod placed around the green, bunkers and tee boxes. Hole #3 is about one-half seeded and should be finalized very soon. The green for Hole #4 has been restored for a while now and all that remains there is seeding of the tee box areas. With continued good weather, there should be a healthy growth of grass throughout the Farm property by Labor Day weekend, greatly relieving the drainage and erosion concerns we have experienced.

Sincerely,



Mark Mickelson, P.E.


MM

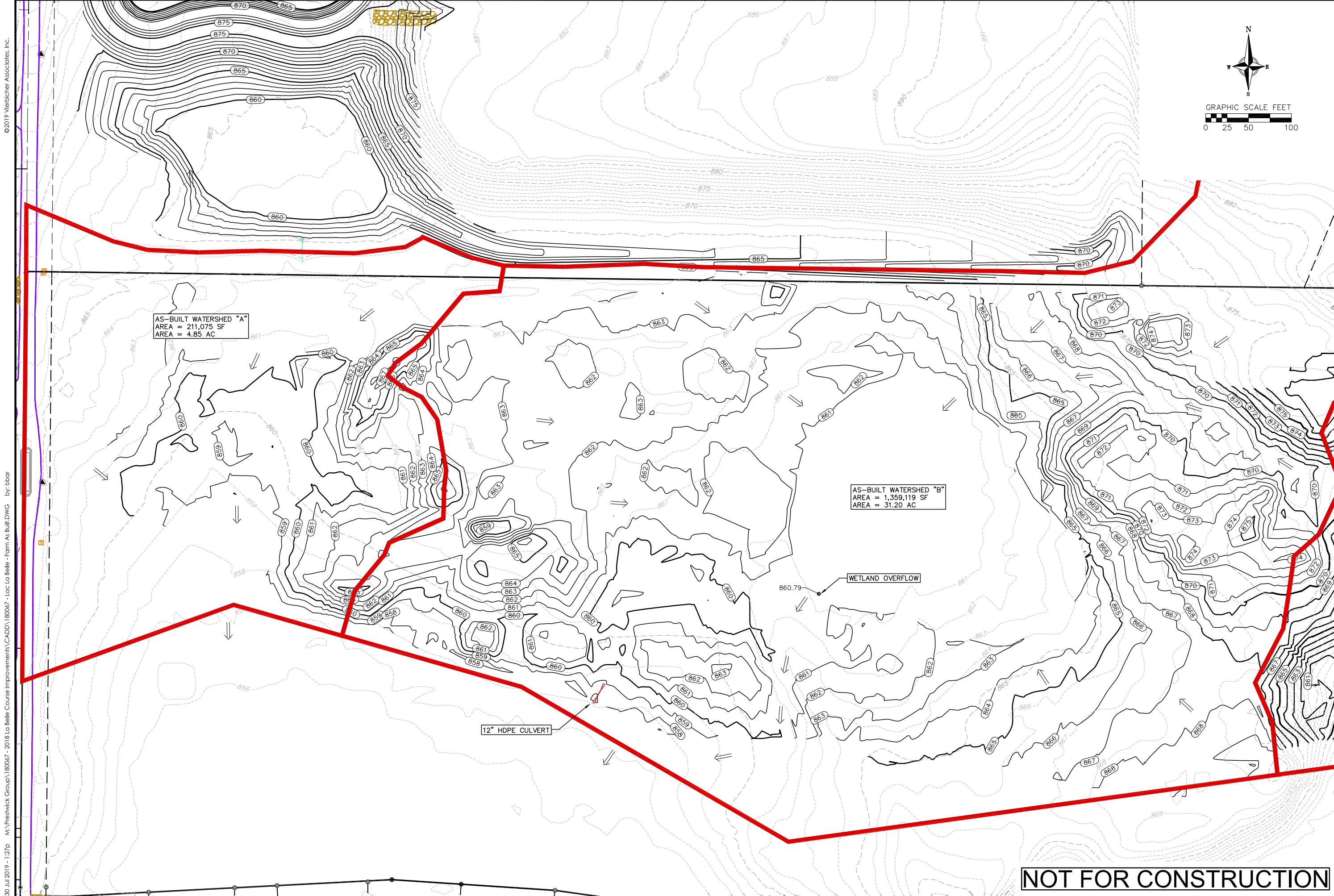
Watershed Maps

c: George Stumpf, Village Administrator
Lori Boyer, Village Clerk
Hector de la Mora, Village Attorney
Scott Nelson, Prestwick





		<h1>2 The Farm Property As-Built</h1>	
SCALE AS SHOWN		REVISIONS NO. DATE REMARKS	REVISIONS NO. DATE REMARKS
DATE 7/29/19			
DRAFTER BBAR			
CHECKED ---			
PROJECT NO. 180067			
<div>C</div> <div>2</div>		The Club at Lac La Belle Village of Lac La Belle Waukesha County, Wisconsin	





vierbicher
planners | engineers | advisors
Phone: (800) 261-3898

The Farm Property As-Built Contours
The Club at Lac La Belle
Village of Lac La Belle
Waukesha County, Wisconsin

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE

SCALE
AS SHOWN

DATE
7/29/19

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PROJECT NO.
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NOT FOR CONSTRUCTION

