Addendum 1 (Sample)
Storm Water Management Practice Maintenance Agreement

Document number

The purpose of this addendum is to record verified "as-built" construction details, supporting design data and permit termination documentation for the storm water management practice(s) located on Outlot __ of the _____ Subdivision, described as being all that part of the ___Quarter (___ ¼) of Section __, Township __N, Range __E (Town of _____) Waukesha County, Wisconsin. This document shall serve as an addendum to document # _____, herein referred to as the "Maintenance Agreement". This addendum includes all of the following exhibits:

Exhibit D: Design Summary – contains a summary of key engineering calculations and other data used to design the wet detention basin.
Exhibit E: As-built Survey – shows detailed "as-built" cross-section and plan view of the wet detention basin.
Exhibit F: Engineering/Construction Verification – provides verification from the project engineer that the design and construction of the wet detention basin complies with all applicable technical standards and Waukesha County ordinance requirements.
Exhibit G: Storm Water Permit Termination – provides certification by Waukesha County that the Storm Water Permit for the above noted site has been terminated.

Name and Return Address

Land Resources Division
515 W. Moreland Blvd., Rm AC 260
Waukesha, WI 53188

_____
Parcel Identification Number(s) – (PIN)

Dated this ___ day of _____, 20__.

Owner:

_____
[Owners Signature – per the Maintenance Agreement]

_____
[Owners Typed Name]

Acknowledgements

State of Wisconsin County of Waukesha

Personally came before me this ____ day of _____, 20__, the above named ___[Owners name]_____ to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____.
[Name]
Notary Public, Waukesha County, WI
My commission expires:_____.

This document was drafted by:

_____

_____
[Name and address of drafter]

For Certification Stamp

(Sample)

Exhibit D
Design Summaries for Wet Detention Basin #1

Project Identifier: Highland Preserve Subdivision **Project Size:** 40 Acres **No. of Lots:** 22
Number of Runoff Discharge Points: 1 **Watershed (ultimate discharge)**: Pewaukee Lake
Watershed Area (including off-site runoff traveling through project area): 67 acres (26 acres off-site)

Watershed Data Summary. The following table summarizes the watershed data used to determine peak flows and runoff volumes required to design wet detention basin #1.

Summary Data Elements	Subwatershed A		Subwatershed B (off-site)	
	Pre-develop	**Post-develop**	**Pre-develop**	**Post-develop**
Watershed Areas *(in acres) (see attached map)*	41 acres	41 acres	26	26
Average Watershed Slopes (%)	2-8%	2-8%	3-6%	3-6%
Land Uses *(% of each) (see attached map)*	75 ac. cropland 15 ac. brush 10 ac. woodland	110 ac. ½ ac. lots 5ac. brush 5 ac. woodlands	50% cropland 50% 1 acre lots	50% cropland 50% 1 acre lots
Runoff Curve Numbers	68 x 75ac.= 5100 30 x 25ac.= 750 *Net 5850\100 ac.* RCN = 59	70 x 110 ac.= 7700 10 x 10 ac.= 100 Net 7800\120ac RCN = 65	RCN = 68 (state standard)	RCN = 70
Conveyance Systems Types	Grass waterway	50% grass swale 50% storm sewer	100% bare channel	100% grass swale
Summary of Average Conveyance System Data	8’ bottom/4:1 ss 2’ depth/3% grade	2’ depth swale/3% 30” r/c sewer/2% (see calcs.)	15’ (w) top 1’ (d) parabolic 2% grade	2’ deep standard road ditch 2% grade
Time of Concentration *(Tc) (see attached map & worksheets)*	1.1 hrs.	.97 hrs.	.74 hrs.	.65 hrs.
25% of 2-yr 24-hr post-dev runoff volume	N/A	2.29 ac. ft.	N/A	.19 ac. ft.
1-year/24 hour Runoff Volume	N/A	(.2” x 60 ac.) 1.0 ac. ft.	N/A	(.34” x 10 ac.) .28 ac. ft.
2-yr./24 hour Peak Flow *(see attached hydrographs)*	11.2 cfs	14.3 cfs	5.1 cfs	3.2 cfs
10-yr./24 hour Peak Flow	21 cfs	32 cfs	18.4 cfs	11.3 cfs
100-yr./24 hour Peak Flow	78 cfs	91 cfs	53 cfs	21 cfs

Exhibit D (continued)

Practice Design Summary. The following table summarizes the data used to design wet detention basin #1.

Design Element	Design Data
Site assessment data: (see attached maps)	
Contributing drainage area to basin (subwatershed A & B)	70 acres
Distance to nearest private well (including off-site wells)	> 100 feet
Distance to municipal well (including off-site wells)	> 1200 feet
Wellhead protection area involved?	No
Ground slope at site of proposed basin	average 3%
Any buried or overhead utilities in the area?	No
Proposed outfall conveyance system/discharge (w/ distances)	35 ft. to CTH "U" Road ditch 1000 ft. to wetland
Any downstream roads or other structures? (describe)	Yes – 36" cmp road culvert
Floodplain, shoreland or wetlands?	No
Soil investigation data (see attached map & soil logs):	
Number of soil investigations completed	3 (in basin area)
Do elevations of test holes extend 3 ft. below proposed bottom?	Yes (see map)
Average soil texture at pond bottom elevation (USDA)	Clay loam
Distance from pond bottom to bedrock	> 5 feet
Distance from pond bottom to seasonal water table	Pond bottom 2 ft. below mottling No water observed in test holes
General basin design data (see attached detailed drawings):	
Permanent pool surface area	1.5 acres
Design permanent pool water surface elevation	elev. 900.0
Top of berm elevation (after settling) and width	elev. 905.0 / 10 feet wide
Length/width (dimensions/ratio)	445 ft. (L) x 145 ft. (W) = 3:1
Safety shelf design (length, grade, max. depth)	10 ft. @ 10% slope/1.5' deepest
Ave. water depth (minus safety shelf/sediment)	5 ft. (in center)
Sediment forebay size & depth	.16 acres (13% pool size)/5 feet
Sediment storage depth & design maintenance	2 ft. depth for forebay & pool 15 year maintenance schedule

Design Basin Inflow, Outflow & Storage Data
(see attached hydrographs and detail drawings)

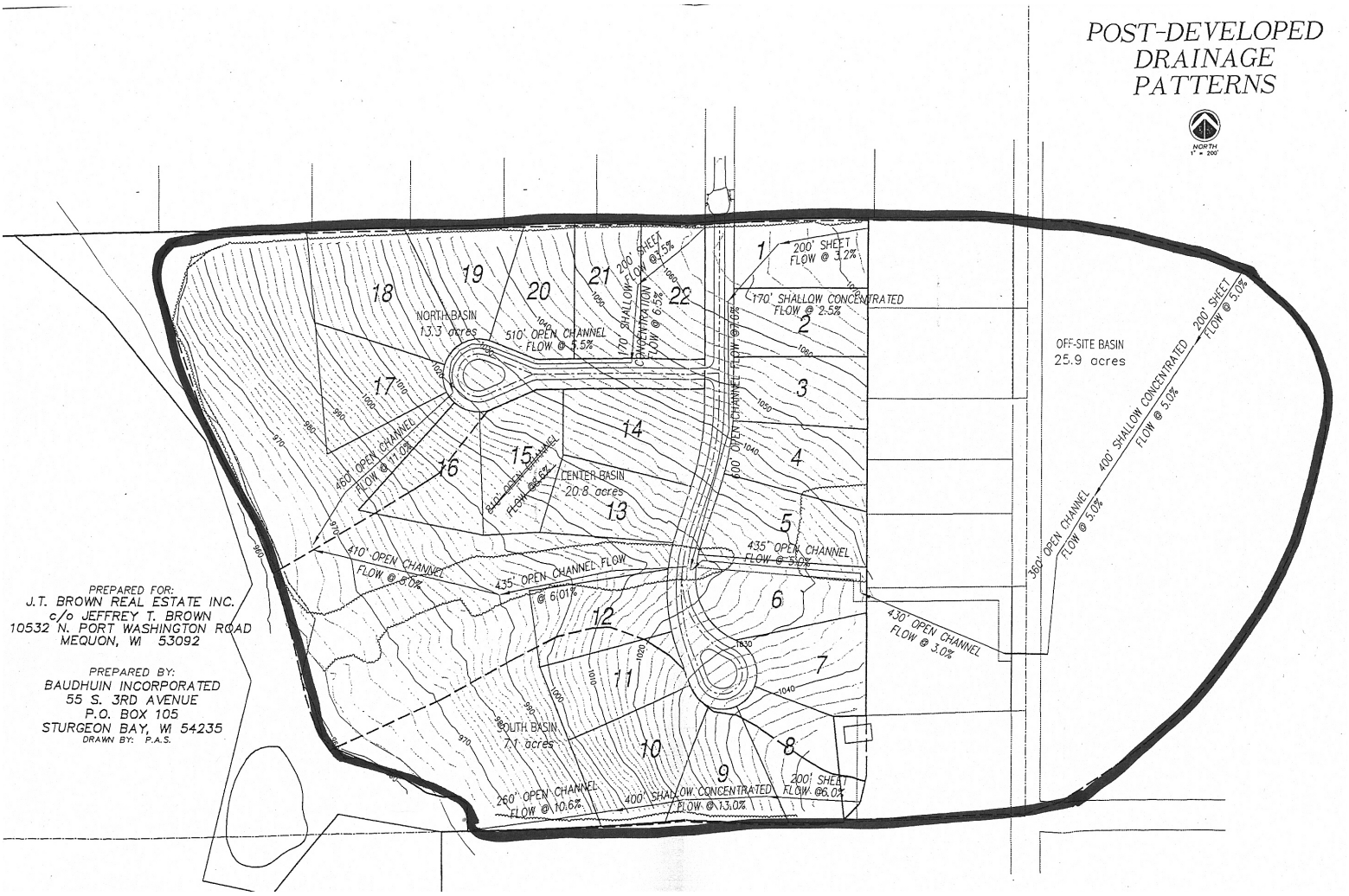
Inflow Peak/Volume	Maximum Outflow Rate	Max. Water Elevation	Storage Volume at Max. Elev. (above perm. pool)	Outflow Control Structures*
1-yr./24 hr. (volume)	.7 cfs (34 hr. drawdown)	901.3 ft.	2 acre feet	#1
24.3 cfs (Post 2-yr./24 hr. peak)	11 cfs	902.0 ft.	3.1 acre feet	#1 and #2
72 cfs (Post 10-yr./24 hr. peak)	35 cfs	903.0 ft.	4.5 acre feet	#3
171 cfs (Post 100-yr./24 hr. peak)	143 cfs	904.0 ft.	6.0 acre feet	#3 and #4

* #1 = 6 inch orifice in water level control weir plate – flow line elev. @ 900.0 (1.3 ft. max. head)
#2 = 2 foot wide rectangular weir – flow line elev. @ 901.3 (.7 ft. hydraulic head)
#3 = 30 inch diameter smooth wall pvc pipe – flow line elev. @ 900.0 (3.0 ft. max. hydraulic head)
#4 = 30 foot wide earthen/grass emergency spillway – flow line elev. @ 903.0 (1.0 ft. max. depth)

Exhibit D (continued)

Watershed Map. The watershed map shown below was used to determine the post-development data contained in this exhibit. The post-developed watershed areas are the same as the pre-development watershed areas for this project.

[Map scale must be sufficiently large enough to show necessary details, but page size should not exceed 11" x 17".]



(Sample)

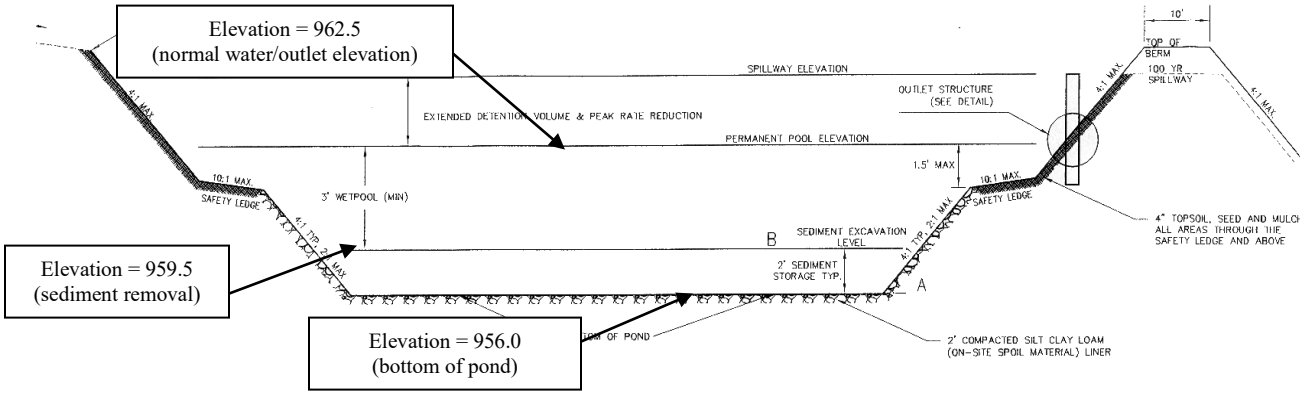
Exhibit E
As-built Survey for Wet Detention Basin #1

The wet detention basin constructed on Outlot #1 is depicted below in reduced copies of the as-built plans.

Project Identifier: **Highland Preserve Subdivision**
Storm water Practice: **Wet Detention Basin #1**
Location of Practice: **All of Outlot 1 of Highland Preserve Subdivision:**
Titleholders of Outlot 1: **Each owner of Lots 1-22 shall have equal (1/22) undividable interest in Outlot 1.**

Cross-Section A – A'

[Note: Show plan view of BMP with cross-section location clearly labeled and cross-referenced. On cross-section and plan view, clearly label all key components and elevations of the BMP. Also show outlet details. Map scale must be sufficiently large enough to show necessary details, but page size should not exceed 11" x 17".]



Outlet Structure Detail

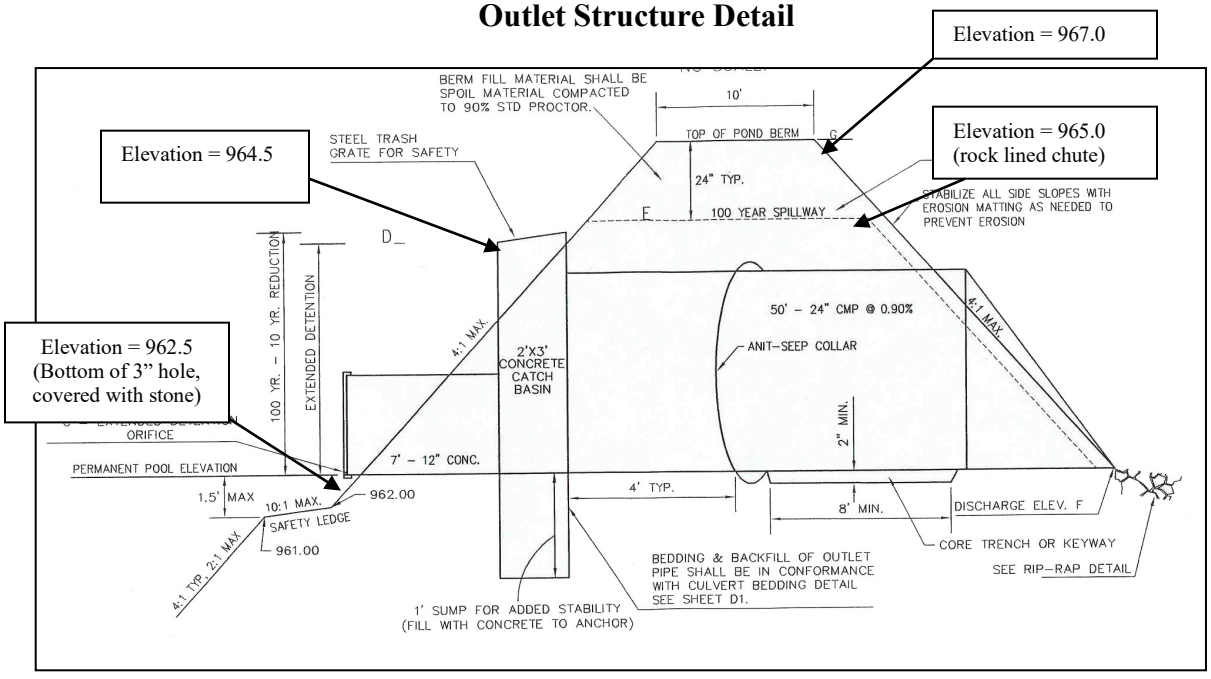


Figure 4 – Plan View

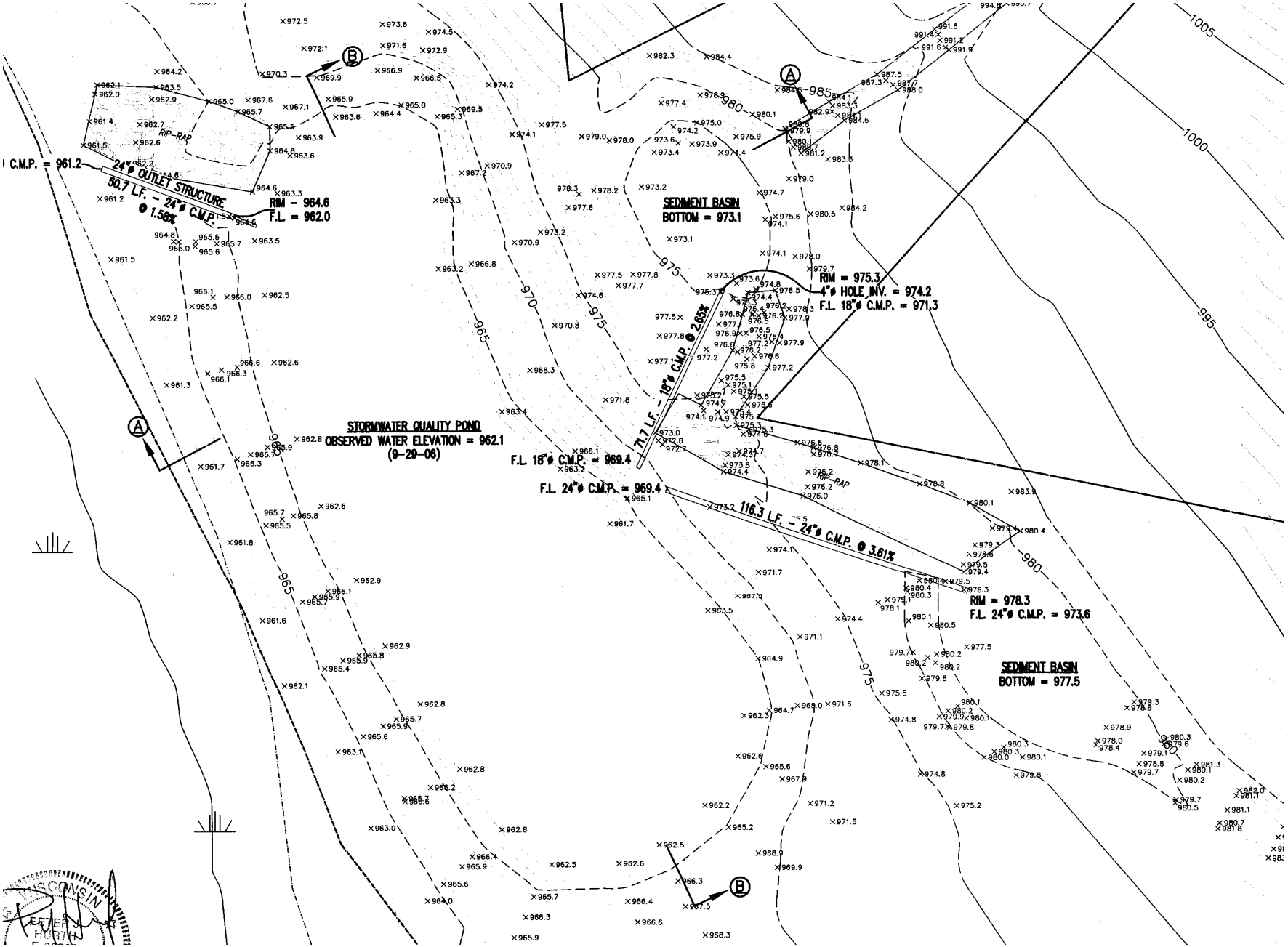


Exhibit "F"
Engineering/Construction Verification

DATE: _____

TO: Land Resources Division
Waukesha County Department of Parks and Land Use

FROM: _____[Project Engineer's Name/Company]

RE: Engineering/Construction Verification for the following project:

Project Name: _____

Section _____, Town of _____

Storm Water Permit # _____

Storm Water Management Practices: _____

_____

For the above-referenced project and storm water management practices, this correspondence shall serve as verification that: 1) all site inspections outlined in approved inspection plans have been successfully completed; and 2) the storm water management practice design data presented in Exhibit D, and the "as-built" construction documentation presented in Exhibit E comply with all applicable state and local technical standards, in accordance with the Waukesha County Storm Water Management and Erosion Control Ordinance.

[Must include one of the following two statements:]

1. Any variations from the originally approved construction plans are noted in Exhibit E. These variations are considered to be within the tolerances of standard construction techniques and do not affect the original design as presented in Exhibit D in any way.
[Note: The County may request additional documentation to support this statement depending on the extent of deviations from the approved plans.]

Or

2. Any design or construction changes from the originally approved construction plans are documented in Exhibits D and E and have been approved by Waukesha County.

[Note: If warm season and wetland planting verification is required, it may be included in this exhibit.]

(Signed P.E. stamp must be included)

(Sample)

Exhibit G
Storm Water Permit Termination

Project Identifier: Highland Preserve Subdivision

Location: All that part of the Southwest Quarter (SW ¼) of Section 4, Township 8N, Range 19E (Town of Lisbon)

Storm Water Permit Holder's Name: _____

Storm Water Permit #: _____

Chapter 14 – Article VIII of the Waukesha County Code of Ordinances ("Storm Water Ordinance") requires that all newly constructed storm water management practices be maintained by the Storm Water Permit Holder until permit termination, after which maintenance responsibilities shall be transferred to the responsible party identified on the subdivision plat [or CSM] and referenced in this Maintenance Agreement.

Upon execution below, this exhibit shall serve to certify that the Storm Water Permit Holder has satisfied all requirements of the Storm Water Ordinance and that Waukesha County has terminated the Storm Water Permit for the property covered by this Maintenance Agreement.

Dated this ___ day of _____, 20__.

Waukesha County representative:

_____
(Signature)

_____

(Typed Name and Title)

Acknowledgements

State of Wisconsin
County of Waukesha

Personally came before me this ____ day of _____, 20__, the above named ___[Owners name]_____ to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____.
[Name]
Notary Public, Waukesha County, WI
My commission expires: _____