Document Number

Storm Water Management Practice Maintenance Agreement

Waukesha RE, LLC as "Owner" of the property described below, in accordance with Chapter 32 City of Waukesha Storm Water Management and Erosion Control, agrees to install and maintain storm water management practice(s) on the subject property in accordance with approved plans and Storm Water Management Plan conditions. The owner further agrees to the terms stated in this document to ensure that the storm water management practice(s) continues serving the intended functions in perpetuity. This Agreement includes the following exhibits:

Exhibit A: Legal Description of the real estate for which this Agreement applies ("Property").
Exhibit B: Location Map(s) – shows an accurate location of each storm water management practice affected by this Agreement.
Exhibit C: Maintenance Plan – prescribes those activities that must be carried out to maintain compliance with this Agreement.

Note: After construction verification has been accepted by the City of Waukesha, for all planned storm water management practices, an addendum(s) to this agreement shall be recorded by the Owner showing design and construction details. The addendum(s) may contain several additional exhibits, including certification by City of Waukesha of Storm Water and Erosion Control Permit termination, as described below.

Name and Return Address

City of Waukesha
130 Delafield Street
Waukesha, WI 53188

Parcel Identification Number(s) – (PIN)

Through this Agreement, the Owner hereby subjects the Property to the following covenants, conditions and restrictions:

1. The Owner shall be responsible for the routine and extraordinary maintenance and repair of the storm water management practice(s) and drainage easements identified in Exhibit B until Storm Water and Erosion Control Permit termination by the City of Waukesha in accordance with Chapter 32 of the City Code of Ordinances.
2. After Storm Water and Erosion Control Permit termination under 1., the current Owner(s) shall be solely responsible for maintenance and repair of the storm water management practices and drainage easements in accordance with the maintenance plan contained in Exhibit C.
3. The Owner(s) shall, at their own cost, complete inspections of the storm water management practices at the time intervals listed in Exhibit C, and conduct the inspections by a a qualified professional, file the reports with the City of Waukesha after each inspection and complete any maintenance or repair work recommended in the report. The Owner(s) shall be liable for the failure to undertake any maintenance or repairs. After the work is completed by the Contractor, the qualified professional shall verify that the work was properly completed and submit the follow-up report to the City within 30 days.
4. In addition, and independent of the requirements under paragraph 3 above, the City of Waukesha, or its designee, is authorized to access the property as necessary to conduct inspections of the storm water management practices or drainage easements to ascertain compliance with the intent of this Agreement and the activities prescribed in Exhibit C. The City of Waukesha may require work to be done which differs from the report described in paragraph 3 above, if the City of Waukesha reasonably concludes that such work is necessary and consistent with the intent of this agreement. Upon notification by the City of Waukesha of required maintenance or repairs, the Owner(s) shall complete the specified maintenance or repairs within a reasonable time frame determined by the City of Waukesha.
5. If the Owner(s) do not complete an inspection under 3. above or required maintenance or repairs under 4. above within the specified time period, the City of Waukesha is authorized, but not required, to perform the specified inspections, maintenance or repairs. In the case of an emergency situation, as determined by the City of Waukesha, no notice shall be required prior to the City of Waukesha performing emergency maintenance or repairs. The City of Waukesha may levy the costs and expenses of such inspections, maintenance or repair related actions as a special charge against the Property and collected as such in accordance with the procedures under s. 66.0627 Wis. Stats. or subch. VII of ch. 66 Wis. Stats.

6. This Agreement shall run with the Property and be binding upon all heirs, successors and assigns. After the Owner records the addendum noted above, the City of Waukesha shall have the sole authority to modify this agreement upon a 30-day notice to the current Owner(s).

Dated this ___ day of _____, 201_.

Owner:

_____
(Owners Signature)

_____
(Owners Typed Name)

Acknowledgements

State of Wisconsin:
County of Waukesha

Personally came before me this ____ day of _____, 201_, 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:

James B. Leedom, P.E.
The Sigma Group, Inc.
1300 W. Canal Street
Milwaukee, WI 53233

For Certification Stamp

City of Waukesha Common Council Approval

Dated this ___ day of _____, 201_.

_____

Shawn N. Reilly, Mayor

_____

Gina Kozlik, City Clerk

Acknowledgements

State of Wisconsin:
County of Waukesha

Personally came before me this ____ day of _____, 201_, the above named __ _____ to me known to be the person who executed the foregoing instrument and acknowledged the same.

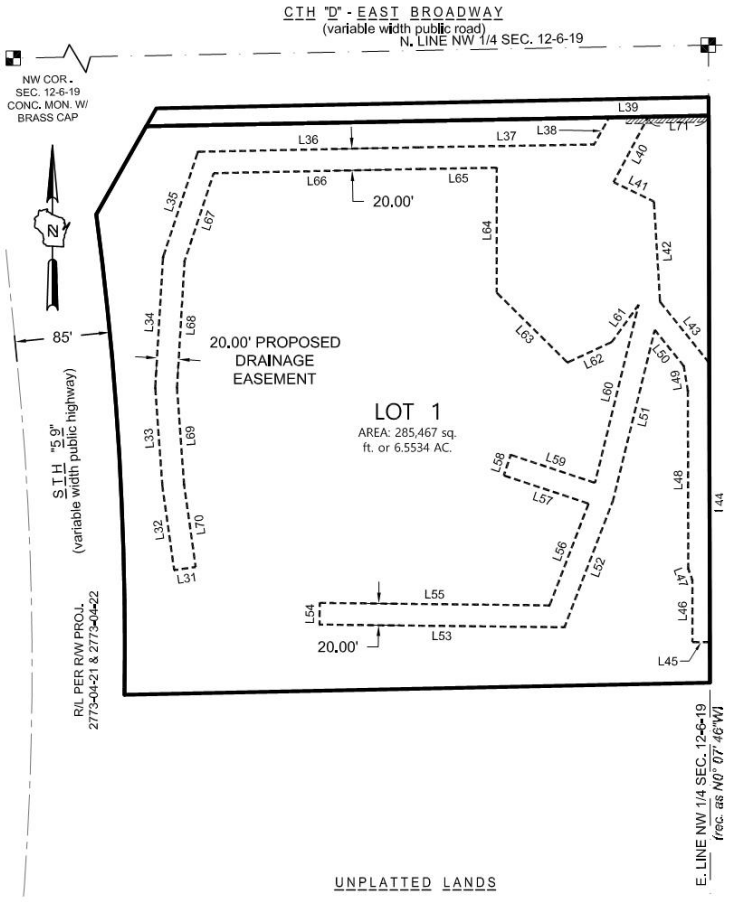
_____.
[Name]
Notary Public, Waukesha County, WI
My commission expires:_____.

Exhibit A – Legal Description

The following description and reduced copy map identifies the land parcel(s) affected by this Agreement. For a larger scale view of the referenced document, contact the Waukesha County Register of Deeds office.

Project Identifier: **Lighthouse of Waukesha** Acres**: 6.7**
Date of Recording: ???
Map Produced By: **The Sigma Group, Inc. 1300 W Canal Street; Milwaukee, WI**
Legal Description: **Lot 1 of Certified Survey Map No. ????, located in all that part of the Northwest Quarter (NW ¼) of Section 12, Township 6N, Range 19E (City of Waukesha) Waukesha County, Wisconsin.**

Drainage Easement Restrictions: Drainage easement for storm water collection, conveyance and treatment are shown on the CSM. No buildings or other structures are allowed in these areas. No grading or filling is allowed that may interrupt storm water flows in any way. See Exhibit C for specific maintenance requirements for storm water management practices within this area.



PROPOSED DRAINAGE EASEMENT FOR THE BENEFIT OF THE CITY OF WAUKESHA
see data tables on Sheet 4 of 7

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

GRAPHIC SCALE
0 100' 200'

PROJECT NUMBER 17884 DRAFTED BY B. ROZITE 9-12-18 rev. 11-28-18 Sheet 3 of 7

Exhibit B - Location Map
Storm Water Management Practices Covered by this Agreement

The storm water management practices covered by this Agreement are depicted in the reduced copy of a portion of the construction plans, as shown below. The practices include two biofiltration pretreatment basin, one surface infiltration basin, grass swale and all associated pipes, earthen berms and other components of these practices. All of the noted storm water management practices are located within a drainage easement in Lot 1 of the CSM, as noted in Exhibit A.

Project Name**:** **The Lighthouse of Waukesha**
Storm water Practices**:** **Biofiltration Pretreatment Basin/Surface Infiltration Basin**
Location of Practices**:** **Lot 1 of CSM ????**
Owners of Lot: Waukesha RE, LLC

Figure 1
Plan View of Storm Water Practices

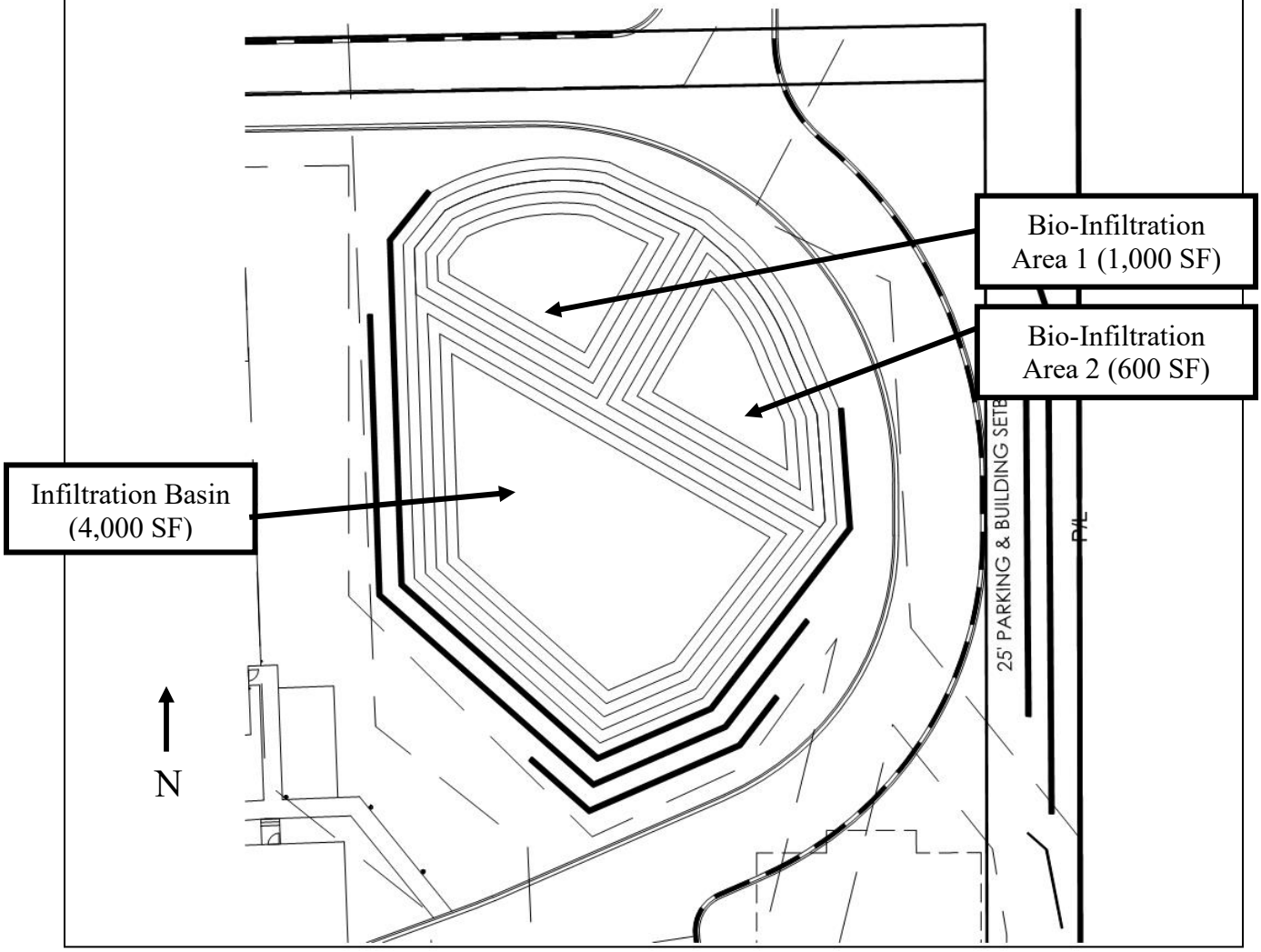


Exhibit C
Storm Water Practice Maintenance Plan

This exhibit explains the basic function of each of the storm water practices listed in Exhibit B and prescribes the minimum maintenance requirements to remain compliant with this Agreement. The maintenance activities listed below are aimed to ensure these practices continue serving their intended functions in perpetuity. The list of activities is not all inclusive, but rather indicates the minimum type of maintenance that can be expected for this particular site. Any failure of a storm water practice that is caused by a lack of maintenance will subject the Owner(s) to enforcement of the provisions listed on page 1 of this Agreement by the City of Waukesha.

System Description:
The surface infiltration basin is designed to trap 80% of sediment in runoff as compared to no controls, maintain pre-development downstream peak flows and provide infiltration of 90% of the predevelopment infiltration volume. The basin is provided with two bioinfiltration forebays to provide pretreatment of storm water prior to discharging to the infiltration basin. Storm water will be conveyed to the basins by storm sewer and by a grass swale along the eastern portion of the site. In addition to runoff conveyance, the grass swales also allow infiltration and filtering of pollutants, especially from smaller storms. The biofiltration basins are provided with two feet of engineered soil and will provide 60% TSS removal from the storm water runoff prior to being discharged into the infiltration basin. The bottom of the bioinfiltration basins are set at an elevation of 880 and have a surface area of 1,600 total square feet. A berm is provided between the biofiltration basins and the infiltration basin. The top of the berm is set at an elevation of 883. Most smaller storm events will be contained within the bioinfiltration basins where the runoff will be fully infiltrated through the engineered soil into the native subsoils. During larger storm events, runoff will fill the bioinfiltration basins and will eventually overtop the berm into the infiltration basin. The surface infiltration basin has a bottom surface area of approximately 4,000 square-feet. An outlet control structure is provided for the infiltration basin consisting of a 12" x 24" rectangular orifice set at an elevation of 880.55 and a overflow rim elevation of 882.30. The surface infiltration basin discharges to the drainage ditch along E. Broadway through the outlet control structure and a 24 inch diameter pipe.

The basins receives runoff from a 6.627-acre drainage area. During high rainfall or snow melt events, the water level will temporarily rise and slowly drain down infiltrating into subsoils. The high water level in the basin is 883.35 based on modeling for the 100-year storm event. Based on storm water modeling performed, the basin will drain down within 24 hours. "As-built" construction drawings of the basin, showing actual dimensions, elevations, outlet structures, etc. will be recorded as an addendum(s) to this agreement within 60 days after City of Waukesha accepts verification of construction from the project engineer.

Minimum Maintenance Requirements:
To ensure the proper long-term function of the storm water infiltration basin, the following activities must be completed:

1. A minimum of 70% soil cover made up of native grasses must be maintained on the basin bottom to ensure infiltration rates. Periodic burning or mowing is recommended to enhance establishment of the prairie grasses (which may take 2-3 years) and maintain the minimum native cover. To reduce competition from cool season grasses (bluegrass, fescues, quack, etc.) and other weeds:
    - For the first year, cut to a 6" height three times – once each in June, July and early August. To prevent damage to the native grasses, do not mow below a 6" height. Remove excessive accumulation of clippings to avoid smothering next year's seedlings.
    - After the first year, mowing may only be needed in early June each year to help control the spread of cool season plants. The mowing should also be raised to 10-12" to avoid damage to the warm season plants.
    - Burning may also be used to manage weeds in 2-5 years intervals. Late spring burns (mid-late May) provide maximum stimulus to warm season grasses and work well to control cool season grasses. Burn when the cool season grasses are growing and the warm season plants are just barely starting to grow to get maximum control of cool season species.
    - Any major bare areas or areas taken over by nonnative species must be reseeded. To clear area of weeds and cool season grasses, treat with an herbicide that contains glysophosphate in accordance with manufacture's instructions. Ensure a firm seedbed is prepared to a depth of 3 inches (a roller is recommended). Seeding should occur in early-mid June. Seed with Big Bluestem, Indian Grass, Little Blue Stem or Switchgrass (preferably an equal mix of all four types). A companion crop of

oats is recommended. Seed must be placed at a depth of 1/4 – 1/2" and a minimum rate of 1/4 pound per 100 square feet. If broadcast seeding by hand, drag leaf rake over soil surface after seeding. Then roll it again and cover with a light layer of mulch and staked erosion control netting to hold it in place until germination. For other planting details, see NRCS standard 342 (Critical Area Planting).

2. Invasive plant and animal species shall be managed in compliance with Wisconsin Administrative Code Chapter NR 40. This may require eradication of invasive species in some cases.
3. The basin and all components (grass swales, forebay, inlets, outlets, etc.) should be inspected after each heavy rain, but at a minimum of once per year. If the basin is not draining properly (within 72 hours), further inspection may be required by persons with expertise in storm water management and/or soils.
    - If soil testing shows that the soil surface has become crusted, sealed or compacted, some deep tillage should be performed. Deep tillage will cut through the underlying soils at a 2-3 foot depth, loosening the soil and improving infiltration rates, with minimal disturbance of the surface vegetation. Types of tillage equipment that can be used include a subsoiler or straight, narrow-shanked chisel plow.
    - If sedimentation is determined to be causing the failure, the accumulated sediment must be removed and the area reseeded in accordance with the notes above.
4. All outlet pipes, stone trenches and other flow control devices must be kept free of debris. Any blockage must be removed immediately.
5. Any eroding areas must be repaired immediately to prevent premature sediment build-up in the system. Erosion matting is recommended for repairing grassed areas.
6. Heavy equipment and vehicles must be kept off of the bottom and side slopes of infiltration basins to prevent soil compaction. Soil compaction will reduce infiltration rates and may cause failure of the basin, resulting in ponding and possible growth of wetland plants.
7. No trees are to be planted or allowed to grow on the earthen berms of the bottom of the basin. On the berms, tree root systems can reduce soil compaction and cause berm failure. On the basin bottom, trees may shade out the native grasses. The basin must be inspected annually and any woody vegetation removed.
8. Grass swales leading to the basin shall be preserved to allow free flowing of surface runoff in accordance with approved grading plans. No buildings or other structures are allowed in these areas. No grading or filling is allowed that may interrupt flows in any way.
9. When standing water is observed in 50% or more of the bioinfiltration pretreatment basin bottoms for more than 3 days after a rainfall event it is an indication that the engineered soils have become clogged. Soil maintenance to address clogging of engineered soils shall consist of the removal of sediment and the replacement of the top 2 to 3 inches of engineered soil and deep tilling with replacement/re-establishment of plants damaged during the soil maintenance activities.
10. No grading or filling of the basin or berms other than for sediment removal is allowed.
11. Periodic mowing of the grass swales will encourage rigorous grass cover and allow better inspections for erosion. Waiting until after August 1 will avoid disturbing nesting wildlife. Mowing around forebay may attract nuisance populations of geese to the property and is not necessary or recommended.
12. Any other repair or maintenance needed to ensure the continued function of the infiltration basin as ordered by the City of Waukesha under the provisions listed on page 1 of this Agreement.
13. The titleholder(s) or their designee must document all inspections as specified above. Documentation shall include as a minimum: (a) Inspectors Name, Address and Telephone Number, (b) Date of Inspections, (c) Condition Report of the Storm Water Management Practice, (d) Corrective Actions to be Taken and Time Frame for Completion, (e) Follow-up Documentation after Completion of the Maintenance Activities. All documentation is to be delivered to the attention of the City Engineer at the City of Waukesha Engineering Department on January 10th and July 10th each year.

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 1 of the Highland Preserve Subdivision, described as being all that part of the Southwest Quarter (SW ¼) of Section 4, Township 8N, Range 19E (Town of Lisbon) 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 infiltration basin.
Exhibit E: As-built Survey – shows detailed "as-built" cross-section and plan view of the bioinfiltration and infiltration basins.
Exhibit F: Engineering/Construction Verification – provides verification from the project engineer that the design and construction of the bioinfiltration and infiltration basins complies with all applicable technical standards and Waukesha County ordinance requirements.
Exhibit G: Storm Water Management & Erosion Control Permit Termination – provides certification by the City of Waukesha that the Storm Water and Erosion Control Permit for the above noted site has been terminated.

Name and Return Address

_____
Parcel Identification Number(s) – (PIN)

Dated this ___ day of _____, 201_.

Owner:

_____
[Owners Signature – per the Maintenance Agreement]

_____
[Owners Typed Name]

Acknowledgements

State of Wisconsin County of Waukesha

Personally came before me this ____ day of _____, 201_, 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

Exhibit D
Design Summaries for Infiltration Basin

Project Identifier: Lighthouse of Waukesha **Project Size:** 6.5 Acres
Number of Runoff Discharge Points: 1 **Watershed (ultimate discharge)**: Pewaukee Lake
Watershed Area (including off-site runoff traveling through project area): 7.223 acres

Watershed Data Summary. The following table summarizes the watershed data used to determine peak flows and runoff volumes required to design the infiltration basin system.

Summary Table

Summary Data Elements	Pre-develop	Total	Post-develop to pretreat 1	Post-develop to pretreat 2	Post-develop to inf basin	Post-develop undetained
Watershed Area (ac)	7.223	7.223	2.876	2.523	1.228	0.616
Average Watershed Slopes	2-8%		2-5%	2-5%	2-5%	10-33%
Land Uses	6.724 ac Green 0.499 ac Offsite		2.592 ac Res 0.283 ac Offsite	2.314 ac Res 0.209 ac Offsite	1.228 ac Res	0.616 ac Green
Runoff Curve Numbers	79		92	88	86	79
Conveyance Systems Types	Sheet flow (grass)		Storm Sewer Sheet flow	Storm Sewer Sheet flow	Bldg sewer Sheet flow	Sheet flow
Summary of Average Conveyance System Data	2-8% grass slopes		2% Sheet flow storm sewer	2% Sheet flow storm sewer	12" Building sewer to basin	10-33% Downslopes Sheet flow
Time of Concentration (min)	6.0		6.0	6.0	6.0	6.0
Peak Flow 1-year (cfs)	9.79	5.90	7.94	5.91	5.58	0.83
Peak Flow 2-year (cfs)	12.57	8.74	9.09	6.96	8.22	1.07
Peak Flow 10-year (cfs)	25.36	24.82	14.65	11.86	23.22	2.16
Peak Flow 100-year (cfs)	42.30	37.44	21.19	17.68	34.37	3.61

Exhibit D (continued)

Practice Design Summary. The following table summarizes the data used to design the infiltration basin.

Design Element	Design Data
Site assessment data: (see attached maps)	
Contributing drainage area to basin (subwatershed A & B)	7.223 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?	Yes, Storm sewer to be relocated
Proposed outfall conveyance system/discharge (w/ distances)	145 ft. to CTH "D" Road ditch
Any downstream roads or other structures? (describe)	Yes – 18" cmp road culvert
Floodplain, shoreland or wetlands?	No
Soil investigation data (see attached map & soil logs):	
Number of soil investigations completed	2 (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)	Gravely Sand
Distance from pond bottom to bedrock	> 5 feet
Distance from pond bottom to seasonal water table	Groundwater observed 8 feet below proposed bottom of basin
General basin design data (see attached detailed drawings):	
Bioinfiltration Basin Bottom area/elevation	1,600 sf / elev 880.00
Infiltration Basin Bottom area/elevation	4,000 sf / elev 880.00
Top of berm elevation	884.00
100-year water surface elevation	883.35
Drain down time	24 hrs

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

Inflow Peak	Maximum Outflow Rate	Max. Water Elevation	Storage Volume at Max. Elev.	Outflow Control Structures*
1-yr./24 hr. (volume)	5.58 cfs (24 hr. drawdown)	881.46 ft.	0.165 acre feet	#1, #2, #5
19.13 cfs (Post 2-yr./24 hr. peak)	8.22 cfs	881.81 ft.	0.213 acre feet	#1, #2, #5
31.95 cfs (Post 10-yr./24 hr. peak)	23.22 cfs	882.79 ft.	0.368 acre feet	#1, #2, #3, #5
47.25 cfs (Post 100-yr./24 hr. peak)	34.37 cfs	883.35 ft.	0.468 acre feet	#1, #2, #3, #5

* #1 = 27 inch diameter RCP pipe – Inv: 879.00 145 LF @ 0.69%
#2 = 24" W x 12" H orifice – Inv: 880.55
#3 = 36 inch top of standpipe – Inv: 882.30
#4 = 3 foot overflow weir (curb cut) – Inv: 883.70
#5 = Exfiltration

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 boundaries are the same as the pre-development watershed areas for this project.

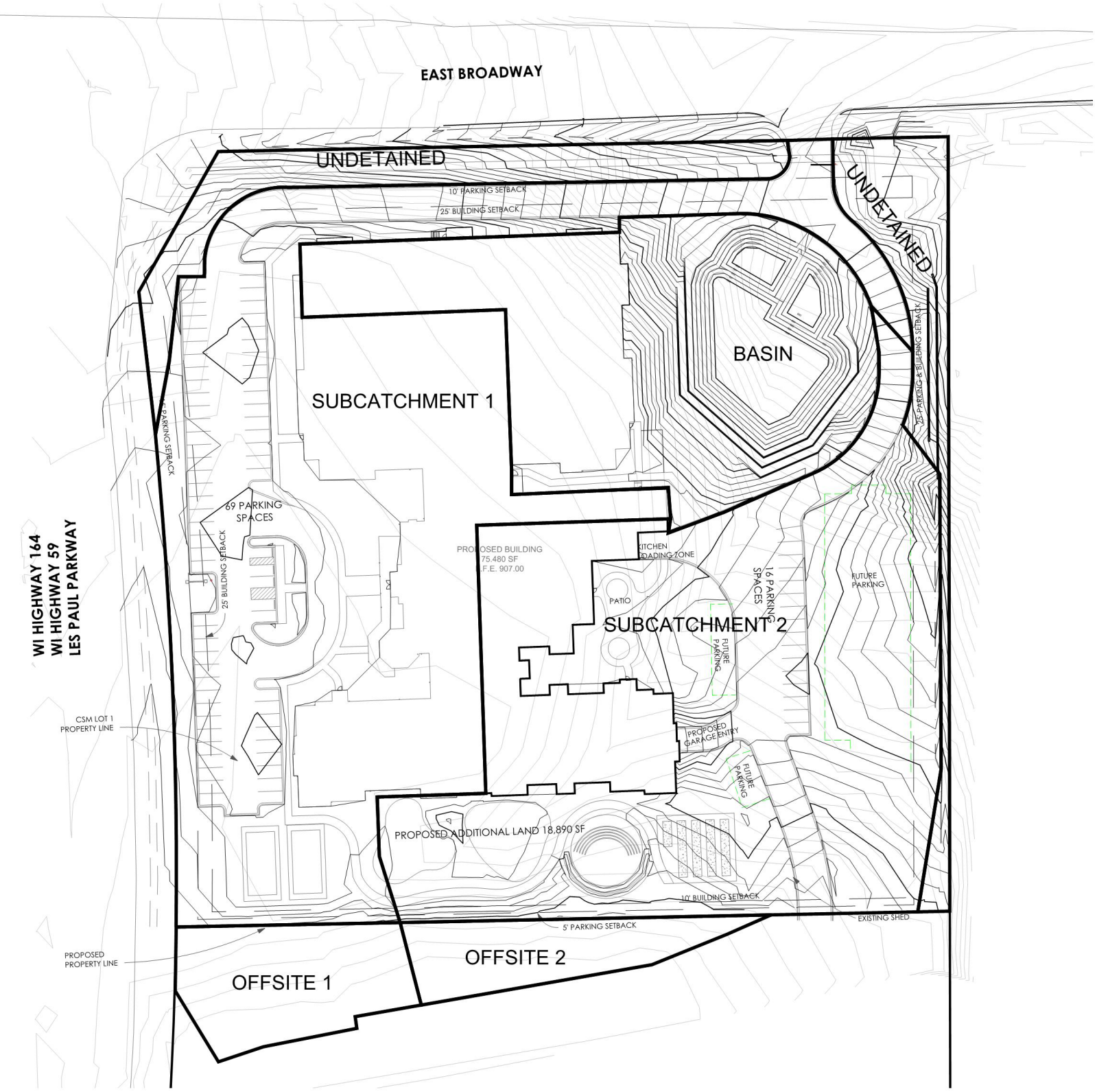


Exhibit E
As-built Survey for Bioinfiltration and Infiltration Basins

The basins depicted in Figure 1 is a reduced copy of the as-built plan.

Project Identifier**:** **Lighthouse of Waukesha**
Storm water Practice**:** **Bioinfiltration pretreatment basin/infiltration basin**
Location of Practice**:** **Lot 1 of CSM No. ????**

Exhibit E

Cross-Section A – A'

Figure 2

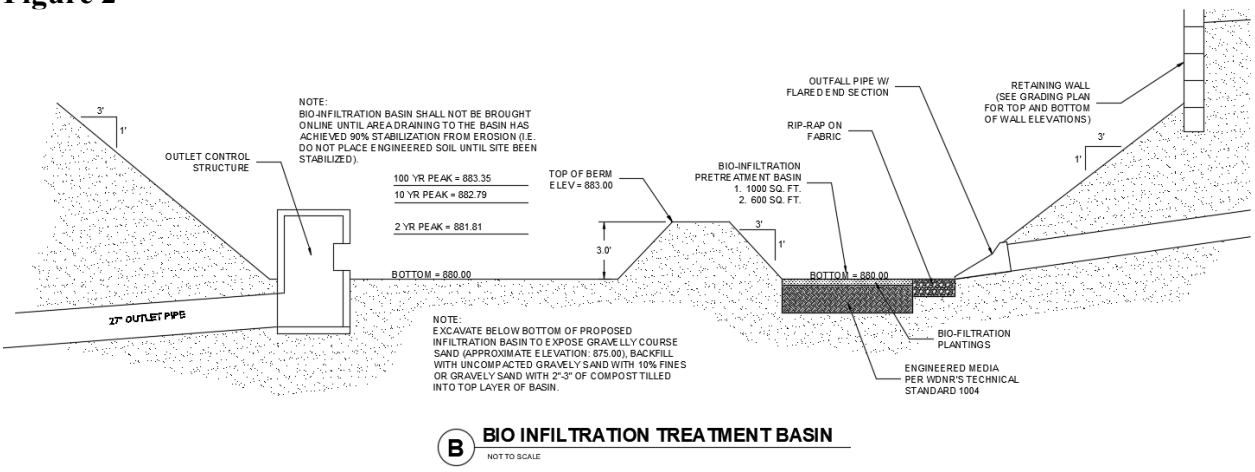


Figure 3

Outlet Structure Detail

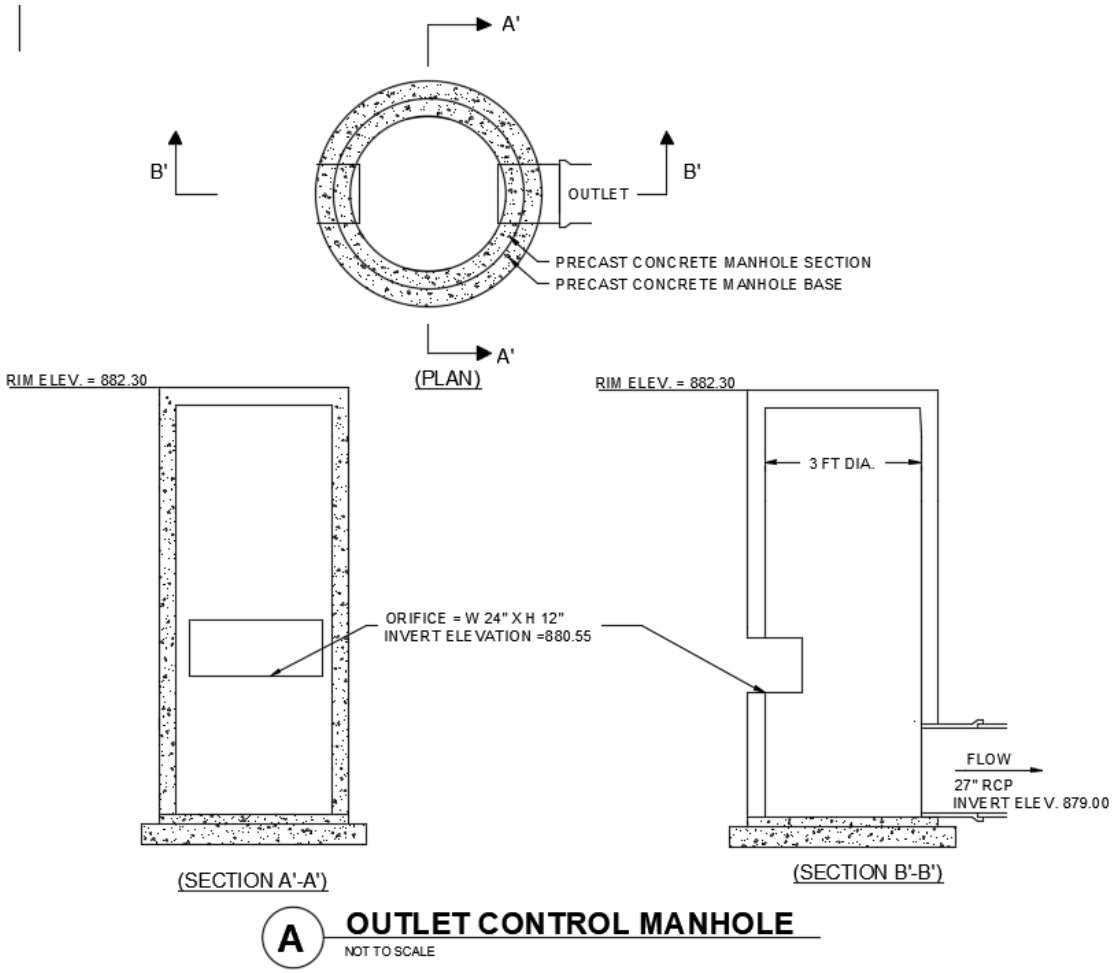


Exhibit "F"
Engineering/Construction Verification

DATE: _____

TO: City of Waukesha

FROM: _The Sigma Group, Inc._____

RE: Engineering/Construction Verification for the following project:

Project Name: __Lighthouse of Waukesha_____

Section _____, Town of _____

Storm Water Management & Erosion Control Permit # _____

Storm Water Management Practices: Bioinfiltration Pretreatment Basins and Infiltration Basin

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 City of Waukesha 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 City 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 the City of Waukesha.

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

(Signed P.E. stamp must be included)

Exhibit G
Storm Water Management and Erosion Control Permit Termination

Project Identifier: Lighthouse of Waukesha

Location: Located in all that part of the Northwest Quarter (NW ¼) of Section 12, Township 6N, Range 19E (City of Waukesha) Waukesha County, Wisconsin.

Storm Water Management and Erosion Control Permit Holder's Name: Waukesha RE, LLC_____

Storm Water Management & Erosion Control Permit #: _____

Chapter 32 – City of Waukesha Storm Water Management and Erosion Control requires that all newly constructed storm water management practices be maintained by the Storm Water and Erosion Control 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 Management and Erosion Control Ordinance and that the City of Waukesha has terminated the Storm Water Management and Erosion Control Permit for the property covered by this Maintenance Agreement.

Dated this ___ day of _____, 201_.

City of Waukesha representative:

_____
(Signature)

_____

(Typed Name and Title)

Acknowledgements

State of Wisconsin
County of Waukesha

Personally came before me this ____ day of _____, 201_, the above named ___ _____ ____ 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: _____