

Storm Water Management Practice Maintenance Agreement

Document Number

Living Word Lutheran Church, 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

WAKC1374002001

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 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 sub ch. 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 _____, 2019.

Owner:

(Owners Signature)

(Owners Typed Name)

Acknowledgements

State of Wisconsin:
County of Waukesha

Personally came before me this ___ day of _____, 2019, the above named Living Word Lutheran Church 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:

Trio Engineering, LLC
4100 N. Calhoun Road, Suite 300
Brookfield, WI 53005



For Certification Stamp

City of Waukesha Common Council Approval

Dated this ___ day of _____, 2019.

Shawn N. Reilly, Mayor

Gina Kozlik, City Clerk

Acknowledgements

State of Wisconsin:
County of Waukesha

Personally came before me this ___ day of _____, 2019, 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 parcels affected by this Agreement. For a larger scale view of the referenced document, contact the Waukesha County Register of Deeds office.

Project Identifier: **Living Word Lutheran Church** Acres: **7.0428**
Date of Recording:
Map Produced By: **Trio Engineering, LLC**
4100 N. Calhoun Road, Suite 300
Brookfield, WI 53005

Legal Description:

All of Lot 1, of Certified Survey Map No. 10680, located in a part of the Northeast 1/4 and Northwest 1/4 of the Northwest 1/4 of Section 20, Town 6 North, Range 19 East, in the City of Waukesha, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

Commencing at the Northeast Corner of the Northwest 1/4 of said Section 20; thence South 88°49'20" West along the North line of said Northwest 1/4, 1103.87 feet to the Northwest corner of said Lot 1, which is on the Easterly Right-of-Way line of Donald Drive and the place of beginning of lands hereinafter described;

Thence South 66°32'02" East along the North line of said Lot 1, 299.90 feet to a point on the Northwesterly Right-of-Way line of Saylesville Road (C.T.H. "X"); thence South 29°03'37" West along said Northwesterly line, 610.18 feet to the Northeast corner of Lot 2 of said Certified Survey Map No. 10680; thence North 75°00'00" West along the North line of said Lot 2, 151.31 feet to the Northwest corner of said Lot 2; thence South 29°00'00" West along the Northwesterly line said Lot 2, 355.29 feet to the Southwest corner of said Lot 2 and the Northeasterly Right-of-Way line of West High Drive; thence North 60°56'23" West along said Northeasterly Right-of-Way Line, 39.84 feet to a point; thence Northwesterly, 85.43 feet along said Northeasterly Right-of-Way line and the arc of a curve whose center lies to the Southwest, whose radius is 530.00 feet and whose chord bears North 65°33'27" West, 85.34 feet to a point; thence Northwesterly, 80.98 feet along said Northeasterly Right-of-Way line and the arc of a curve whose center lies to the Northeast, whose radius is 220.00 feet and whose chord bears North 59°37'49" West, 80.52 feet to a point on the Easterly Right-of-Way line of Donald Drive; thence Northwesterly along said Easterly Right-of-Way line, 12.46 feet along the arc of a curve whose center lies to the Northeast, whose radius is 8.00 feet and whose chord bears North 04°28'11" West, 11.24 feet to a point; thence Northeasterly along said Easterly Right-of-Way line, 116.50 feet along the arc of a curve whose center lies to the Northwest, whose radius is 230.00 feet and whose chord bears North 25°38'06" East, 115.26 feet to a point; thence North 11°07'29" East along said Easterly Right-of-Way Line, 43.88 feet to a point; thence Northeasterly along said Easterly Right-of-Way line, 488.09 feet along the arc of a curve whose center lies to the Southeast, whose radius is 720.00 feet and whose chord bears North 30°32'43" East, 478.80 feet to a point; thence North 49°57'57" East along said Easterly Right-of-Way Line, 114.57 feet to a point; thence Northeasterly along said Easterly Right-of-Way line, 45.74 feet along the arc of a curve whose center lies to the Northwest, whose radius is 166.33 feet and whose chord bears North 42°05'17" East, 45.59 feet to a point; thence North 34°12'37" East along said Easterly Right-of-Way Line, 182.51 feet to the point of beginning of this description.

Said Parcel contains 306,774 Square Feet (or 7.0428 Acres) of land, more or less.

Exhibit A (Continued)

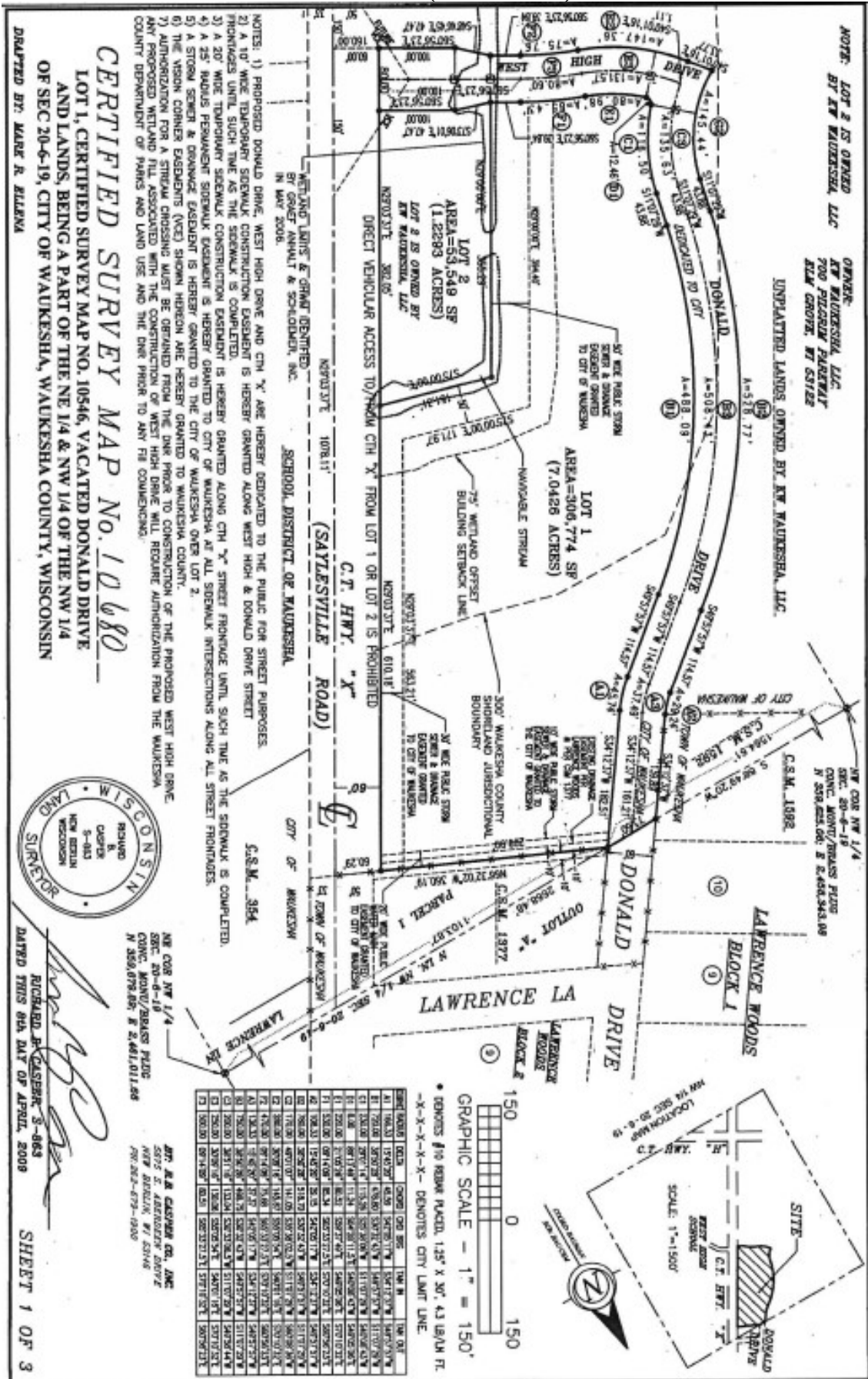


Exhibit B – Location Map

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 practice associated with this development will be a wet pond and all associated pipes, earthen berms, rock chutes and other components of this practices. All of the noted storm water management practices are located within a drainage easement at the southern end of the property.

Development Name(s):

Living Word Lutheran Church

Storm water Practices:

Wet Pond

Location of Practices:

Southeast corner of property.

Owner:

Living Word Lutheran Church; the Owner of the property, shall be responsible for the cost to repair, maintain or restore said Storm water Management Facilities and Storm water Infiltration Facilities. Said repairs, maintenance and restoration shall be performed by the Owner of this property.

Figure 1
Plan View of Storm Water Practices

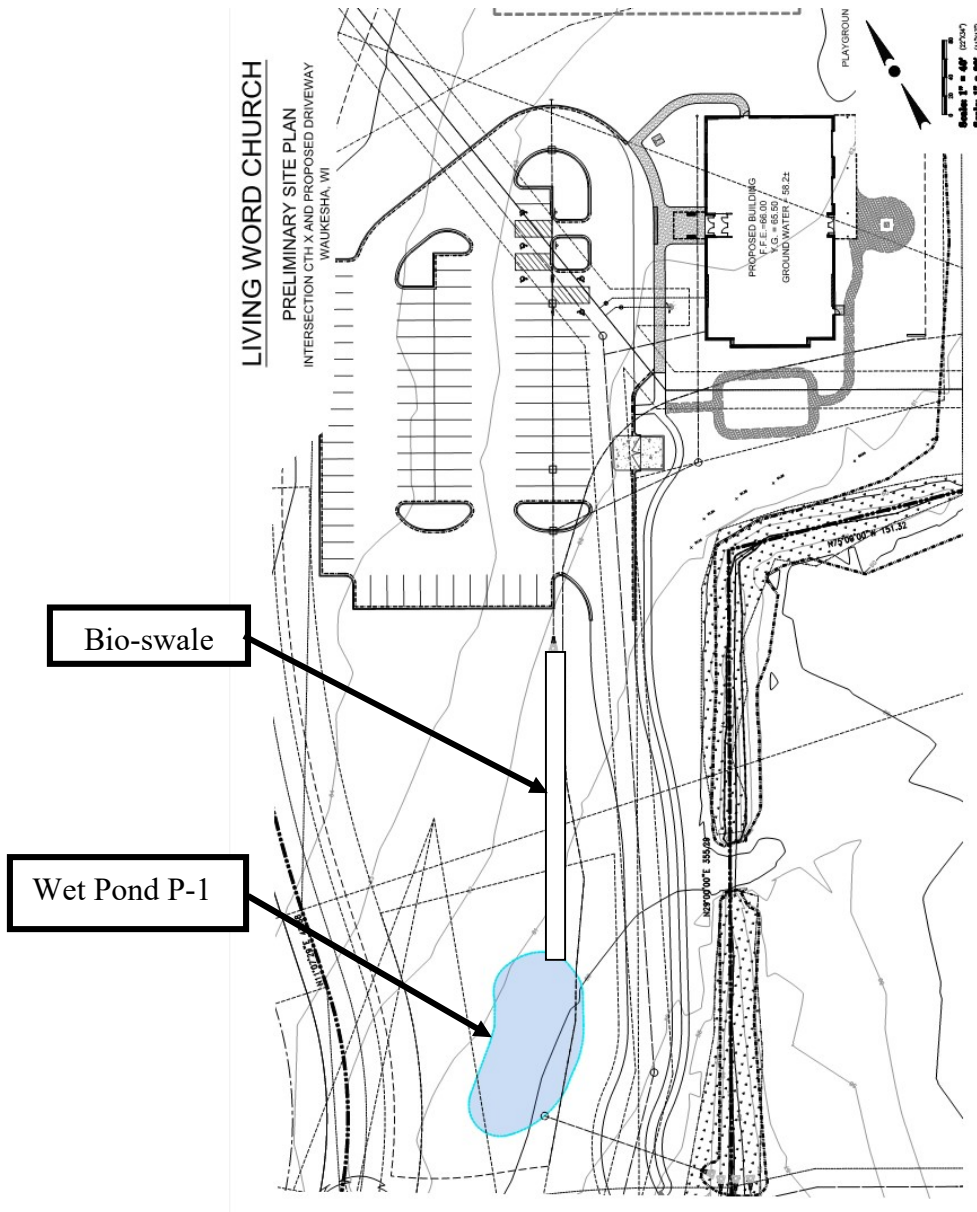


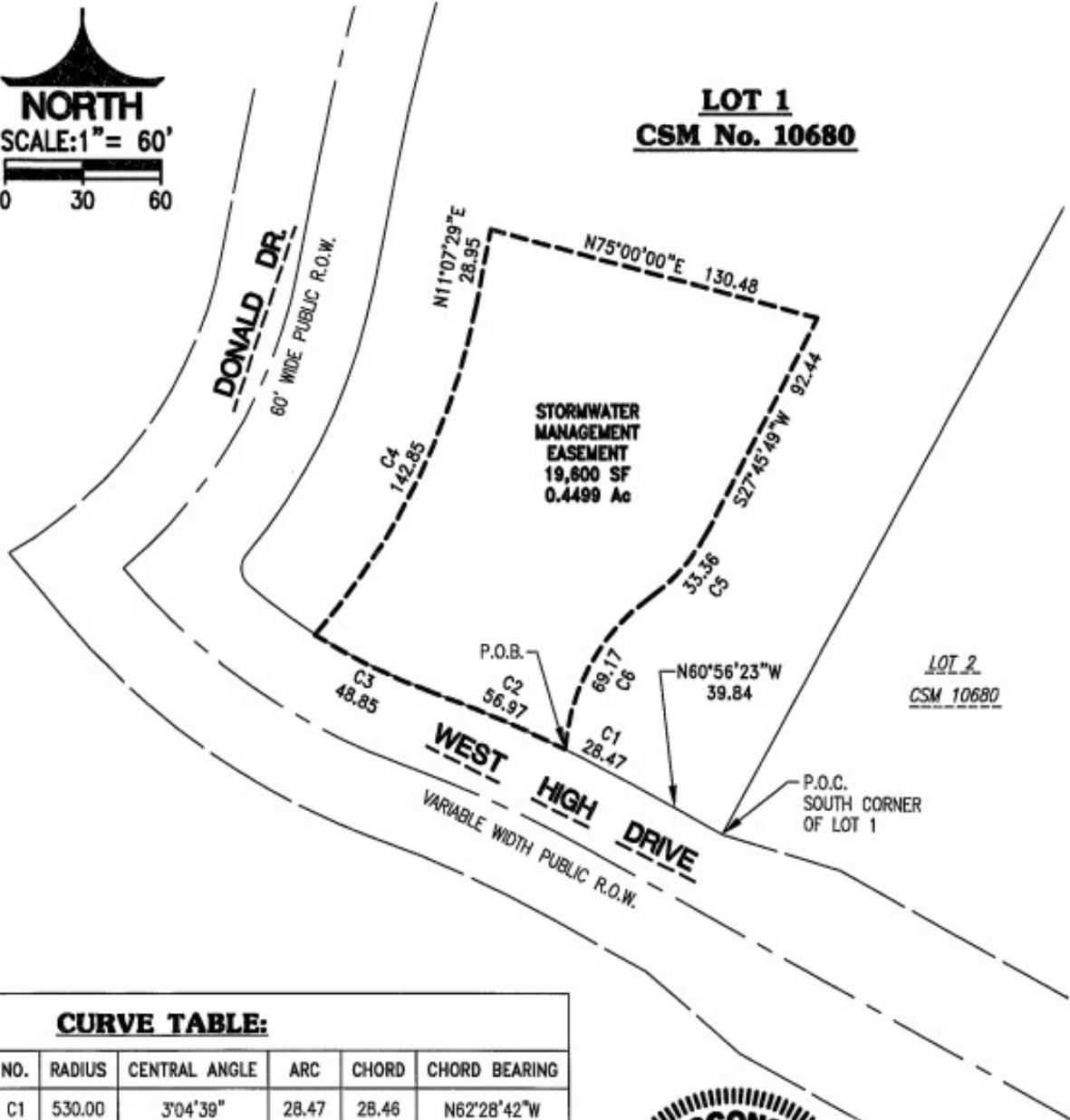
Exhibit B – Continued

EXHIBIT "B"

STORMWATER MANAGEMENT EASEMENT



LOT 1
CSM No. 10680



LOT 2
CSM 10680

CURVE TABLE:

| NO. | RADIUS | CENTRAL ANGLE | ARC | CHORD | CHORD BEARING |
|-----|--------|---------------|--------|--------|---------------|
| C1 | 530.00 | 3°04'39" | 28.47 | 28.46 | N62°28'42"W |
| C2 | 530.00 | 6°09'30" | 58.97 | 56.94 | N67°05'47"W |
| C3 | 220.00 | 12°43'24" | 48.85 | 48.75 | N63°48'50"W |
| C4 | 270.00 | 30°18'48" | 142.85 | 141.19 | N26°16'53"E |
| C5 | 71.00 | 26°55'21" | 33.36 | 33.06 | S41°13'29"W |
| C6 | 79.00 | 50°10'00" | 69.17 | 66.98 | S29°36'10"W |



THIS EXHIBIT WAS PREPARED BY DEBORAH L. JOERS, P.L.S. (S-2132) DATE: 6-25-19

Exhibit B – Continued

EXHIBIT “B” CONTINUED
STORMWATER MANAGEMENT EASEMENT

LEGAL DESCRIPTION:

A Stormwater Management Easement located on, over and across Lot 1 of Certified Survey Map No. 10680, located in a part of the Northeast 1/4 and Northwest 1/4 of the Northwest 1/4 of Section 20, Town 6 North, Range 19 East, in the City of Waukesha, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

Commencing at the South corner of said Lot 1; thence North 60°56'23" West along the Northerly Right-of-Way line of "West High Drive", 39.84 feet to a point; thence Northwesterly, 28.47 feet along said Northerly Right-of-Way line and the arc of a curve whose center lies to the Southwest, whose radius is 530.00 feet and whose chord bears North 62°28'42" West, 28.47 feet to the place of beginning of lands herein described;

Thence Northwesterly, 56.97 feet along said Northerly Right-of-Way line and the arc of a curve whose center lies to the Southwest, whose radius is 530.00 feet and whose chord bears North 67°05'47" West, 56.94 feet to a point; thence Northwesterly, 48.85 feet along said Northerly Right-of-Way line and the arc of a curve whose center lies to the Northeast, whose radius is 220.00 feet and whose chord bears North 63°48'50" West, 48.75 feet to a point; thence Northeasterly, 142.85 feet along the Southeasterly Right-of-Way line of "Donald Drive" and the arc of a curve whose center lies to the Northwest, whose radius is 270.00 feet and whose chord bears North 26°16'53" East, 141.19 feet to a point; thence North 11°07'29" East, 28.95 feet to a point; thence South 75°00'00" East, 130.48 feet to a point; thence South 27°45'49" West, 92.44 feet to a point; thence Southwesterly, 33.36 feet along the arc of a curve whose center lies to the Northwest, whose radius is 71.00 feet and whose chord bears South 41°13'29" West, 33.06 feet to a point; thence Southwesterly, 69.17 feet along the arc of a curve whose center lies to the Southeast, whose radius is 79.00 feet and whose chord bears South 29°36'10" West, 66.98 feet to the point of beginning of this description.

Said Easement contains 19,600 Square Feet (or 0.4499 Acres) of land, more or less.

Date: 6/25/2019



Deborah L. Joers, P.L.S.
Professional Land Surveyor, S-2132
TRIO ENGINEERING, LLC
4100 N. Calhoun Road, Suite 300
Brookfield, WI 53005
Phone: (262)790-1480 Fax: (262)790-1481

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. Access to the stormwater practices for maintenance vehicles is shown in Exhibit B. 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 wet detention basin (P-1) is designed to trap a minimum of 80% of the sediment in runoff and maintain pre-development downstream peak flows. The basin has a single wet cell located at the low end of a grass swale. In addition to runoff conveyance, the grass swales also allow infiltration and filtering of pollutants, especially from smaller storms. Wet pond P-1 has been designed with a permanent water depth of 5 feet deep, to promote sediment removal. To do this, the pond size, water level and outlet structures must be maintained as specified in this Agreement (see Figures 1, 2 and 3).

The basin receives runoff from a 3.68-acre drainage basin made up of a building roof, paved parking surface, sidewalks, and open space. During high rainfall or snow melt events, the water level will temporarily rise and slowly drain down to the elevation of the control structure. The water level is controlled by a low flow 3-inch orifice in a 3-foot diameter riser structure. This orifice controls the water level and causes the pond to temporarily rise during runoff events. Large storm events will first discharge through this low flow orifice and then overtop the riser structure, which contains a 15-inch outlet pipe. In extreme storm events the pond will discharge over an emergency overflow weir, which in this case is the driveway. "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 management practices described above, the following activities must be completed by Living Word Lutheran Church (or their heirs and assigns):

1. All outlet pipes must be checked annually or after significant rain events (greater than 3 inches/24-hours) to ensure there is no blockage from floating debris or ice, especially in front of the low flow pipes/orifices and the trash rack on the outlet structure risers. Any blockage must be removed immediately.
2. Grass swales 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.
3. Grass swales, inlets and outlets must be checked after heavy rains (minimum of annually in May) for signs of erosion. Any eroding areas must be repaired immediately to prevent premature sediment build-up in the downstream forebays or basin. Erosion matting is recommended for repairing grassed areas.
4. If floating algae or weed growth becomes a nuisance (decay odors, etc.), it must be removed from the basin or the forebay and deposited where it cannot drain back into the basin. Removal of the vegetation from the water reduces regrowth the following season (by harvesting the nutrients). Wetland vegetation must be maintained along the waters edge for safety and pollutant removal purposes.
5. When sediment in the basin has accumulated to an elevation of three feet below the outlet elevation, it must be removed. All removed sediment must be placed in an appropriate upland disposal site and stabilized (grass cover) to prevent sediment from washing back into the basin.
6. No grading or filling of the basin or berm other than for sediment removal is allowed, unless otherwise approved by the City.

Exhibit C (continued)

7. 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 the basin or the forebays may attract nuisance populations of geese to the property and is not necessary or recommended.
8. Any other repair or maintenance needed to ensure the continued function of the storm water practices or as ordered by the City under the provisions listed on page 1 of this Agreement.

Wet Detention Pond

I. ROUTINE MAINTENANCE

A. Mowing

1. Side slopes, embankments, and emergency spillways that are not rock lined which have been planted with turf grasses should be mowed at least three (3) times a year to prevent woody growth and control noxious weeds. Recommended mowing times are April, July and October of each year.
2. The Owner may more frequently mow areas adjacent to the entry drive, typically once every week to two weeks during a normal growing season, for aesthetic and allergy control purposes.
3. Native grasses should be mowed to a height of 6" in mid to late summer or after they have achieved a height of 1-1/2 feet during the first growing season. Further mowing in subsequent growing seasons may not be required.
4. A 6" to 8" mowing every 3 to 4 years, may suffice as a substitute management technique. The mowed area should be raked and performed in the spring.

B. Inspections

1. Inspections of the ponds shall be completed on an annual basis or after significant rainfall events.
2. The inspections should be completed during wet weather conditions to determine if the ponds are functioning properly.
3. Inspection priorities shall be as follows:
 - a. Inspect the embankments for subsidence, erosion, cracking and tree growth.
 - b. Inspect the condition of the emergency spillway and overland flow path.
 - c. Inspect the pond for accumulation of sediment.
 - d. Inspect the outlet control structure for clogs, debris and material failures.
 - e. Inspect upstream and downstream channels from an erosion perspective.
 - f. Inspect any modifications that may have been done to the ponds following their initial construction.
 - g. Inspect the side slopes of the pond for erosion, slumping, cracking or woody plant materials.
4. As-built plans shall accompany the person responsible for the pond inspections.
5. Documentation of the inspections should be completed and filed. Documentation should include as a minimum:
 - a. Inspectors name, affiliation and professional credentials if applicable.
 - b. Date, time and weather conditions.
 - c. Approximate rainfall total over a 24 hour period if applicable.
 - d. Existing embankment, outlet and inlet conveyance systems and vegetation condition.
 - e. Sediment depth at the outlet control structure (in wet forebays) and at a minimum one other location.
 - f. Identification of potential structural failures and repair needs.
 - g. Other pond conditions such as vegetation growth, algae growth and emergency spillway conditions.
 - h. Repair recommendations.

Exhibit C (continued)

- C. Debris and Litter Removal.
 - 1. Debris and litter removal from the pond surface shall be completed at least once a month.
 - 2. Particular attention should be paid to debris accumulating around the riser pipe to prevent potential clogging.
 - D. Erosion Control.
 - 1. The pond side slopes, embankments and emergency spillways may suffer from periodic slumpage and erosion.
 - 2. Corrective measures shall include regrading, filling and revegetation of the eroded or slumping areas.
 - 3. Permanent geosynthetic erosion matting (or rip rap) at the pond outlet and emergency spillways should be inspected for displacement or undermining. Repairs shall be made upon discovery.
 - E. Nuisance Control.
 - 1. Biological control of algae and mosquitoes is preferred over chemical control. Consultation with local WDNR officials is recommended prior to the introduction of any biological control.
 - 2. Maintaining the native grass perimeter will aide in the control of geese.
 - 3. Mechanical controls should be used when feasible.
- II. NON-ROUTINE MAINTENANCE
- A. Structural Repairs and Replacement.
 - 1. The outlets of the pond have been constructed utilizing concrete, PVC, or HDPE pipe and concrete materials. The estimate life of these structures is 75 to 100 years. Annual inspection of the structures will disclose any potential structural problems. If structural problems appear, repair or replace the outlet.
 - 2. Excessive or chronic drawdowns of the ponds may cause leaks or seepage through the embankments. Excessive drawdowns should be avoided and thus corrective measures for leakage and seepage can be avoided.
 - B. Sediment Removal.
 - 1. A sediment clean out cycle of 10 to 15 years is recommended. Sediment removal may be necessary prior to 10 years if there is a substantial amount of land disturbance occurring within the contributory watershed. Annual inspections shall be made to ensure that the design depth of the permanent water pool is maintained.
 - 2. It is recommended that the sediment be tested to determine if land filling is necessary. Contact the local DNR prior to sediment sampling and testing to ensure compliance with State standards and regulations.
 - 3. Surveyed depths of the sediment storage area and permanent pool elevations shall be made immediately following the construction of the ponds and recorded on the as-built plans. Annual inspections shall include measure downs to determine sediment elevations in relation to the permanent pool elevation.
- III. RESPONSIBLE PARTY & FINANCIAL FUNDING
- A. The responsible party for the operation, inspection and maintenance of the wet ponds shall be 13050 Cleveland, LLC and their heirs and assigns.
 - B. It is recommended that the 13050 Cleveland, LLC and/or their heirs and assigns establish or set aside a perpetual maintenance fund to insure that the ponds are properly inspected, maintained and repaired.

Exhibit C (continued)

- IV. ADDITIONAL CONSIDERATIONS TO IMPROVE POND WATER QUALITY AND REDUCE MAINTENANCE COSTS.
- A. General.
1. Improper disposal of yard wastes will affect the water quality of the wet ponds and may cause clogging of the outlet structure.
 2. Improper fertilizer and pesticide application will affect the water quality of the wet ponds and add to algae growth.
 3. Excess lawn watering will affect the water quality of the ponds due to increased water runoff that may contain fertilizers and pesticides.
- B. Yard Care.
1. It is recommended to consider routine yard care maintenance that is practical and environmentally sound.
 2. Refer to the U.W. Extension's "Rethinking Yard Care" for additional information.
- C. Leaves and Yard Trimmings.
1. It is recommended that leaves and yard trimmings be properly disposed of.
 2. Refer to the U.W. Extension's "Managing Leaves and Yard Trimmings" for further information.
- D. Lawn and Garden Fertilizers.
1. It is recommended to control fertilizer applications on lawn and gardens so as not to be detrimental to the water quality of the ponds.
 2. Refer to the U.W. Extension's "Lawn and Garden Fertilizers" for further information.
- E. Lawn and Garden Pesticides.
1. Lawn and garden pesticides may pollute surface and ground water.
 2. Refer to the U.W. Extension's "Lawn and Garden Pesticides" for further information.
- F. Lawn Watering.
1. Excess lawn watering will wash pollutants into the wet ponds.
 2. Refer to the U.W. Extension's "Lawn Watering" for further information.
- G. Lawn Weed Control.
1. Proper turf management will lower the amount of the chemicals that may runoff into the wet ponds during rain events.
 2. Refer to the U.W. Extension's "Lawn Weed Control" for further information.

STORM SEWER SYSTEM OPERATIONS AND MAINTENANCE

I. INSPECTION

A. Frequency

- a. Inspect catch basins, inlets and manholes at least once per year.
- b. Inspect storm sewer end sections at least twice per year and after major rainfall events.

B. Inspection

- a. Catch Basins, Inlets and Manholes

Exhibit C (continued)

- i. Inspect for sediment deposition in the bottom of structures.
 - ii. Check frames and lids for cracks and wear such as rocking lids or lids moved by traffic and for shifted frames.
 - iii. Check chimneys for cracked mortar, cracked lift rings and spalling.
 - iv. Check for leaks at joints.
 - v. Check surrounding areas for pollutants such as leaks from dumpsters, minor spills and oil dumping.
- b. Storm Sewer End sections
- i. Observe for obstructions, accumulation of sediment and trash, undermining and joint separation.
 - ii. Inspect end treatment for settlement, scour and displaced armoring.

II. STANDARD MAINTENANCE

A. Catch Basins, Inlets and Manholes

- a. Repair any deterioration threatening structural integrity immediately.
- b. Replace worn or cracked frames and lids. Frames that have shifted should be re-centered and re-set on the structure.
- c. Repair any spalled or cracked mortar. Cracked rings should be repaired or replaced.
- d. Repair leaking joints.
- e. Clean manhole and storm inlet inverts of deposited material. Catch basins should be cleaned before the sump is 40 percent full.
- f. Remove potential sources of contamination away from catch basins, inlets and manholes.

B. Storm Sewer End sections

- a. End sections should be free flowing; trash, debris and obstructions should be removed to prevent backups.
- b. End sections which have separated from the storm sewer pipe shall be reset on firm bedding and reconnected to the existing storm sewer pipe. Restrain joints if necessary.
- c. Scour areas shall be repaired immediately. Replace missing soil with clean fill and replace/install end treatment. Missing armoring will require additional stone, typically one class larger.

Exhibit C (continued)

- d. Excessive material deposited at the storm sewer outfall is indicative of: a disturbed area upstream draining to the system or a potential failure of a system component. Disturbed areas draining to the system should be stabilized immediately or diverted to drain to a BMP. Potential system failures require non-standard maintenance.

III. NON-STANDARD MAINTENANCE

- A. Non-standard maintenance includes inspection, repair or replacement of buried structures.
 - a. Televising of buried structures (pipes) should occur when excessive material is found within the system or at an outfall with no apparent source area visible at the surface, or the system experiences frequent backups.
 - b. Follow the recommendations for the repair and/or replacement of system components televised by a firm specializing in this work.

CULVERTS OPERATION AND MAINTENANCE

I. INSPECTION

- A. Culverts should be inspected twice a year and after heavy rainfall.
- B. Inspect for sediment deposition, scour at the ends of pipe, accumulations of trash and obstructions.

II. MAINTENANCE

- A. Scour areas should be repaired with clean fill and replacement of end treatment (rip rap, TRM, etc.). Scour areas with no end treatment should be stabilized with topsoil, seed and erosion control mat at a minimum.
- B. Sediment deposits, trash and obstructions should be removed from the pipe ends.
- C. Material deposited within the pipe should be promptly removed to maintain the conveyance capacity of the pipe.