

**AGREEMENT FOR MAINTENANCE OF  
STORM WATER SYSTEM**

This agreement is made on December 12, 2016, by RGM Real Estate Holdings LLC, of 2750 Product Drive, Rochester Hills, MI 48309 ("Developer"), TASCOCO LLC, of 2774 Product Drive, Rochester Hills, MI 48309 ("TASCOCO"), and the City of Rochester Hills, of 1000 Rochester Hills Drive, Rochester Hills, MI 48309 (the "City").

RECITALS:

WHEREAS, Developer owns and proposes to develop the property described in attached Exhibit A; and

WHEREAS, TASCOCO owns the property contiguous and to the south of the property herein described. The Developer grants to TASCOCO the use of the Storm Water System located on the Developer's property for drainage purposes; and

WHEREAS, the proposed development will alter the natural flow of the surface and storm water drainage; and

WHEREAS, the Developer has proposed and the City has approved, a storm water drainage and detention system (the "System"), comprised of storm water detention and water quality treatment facilities and devices, storm sewer pipe, catch basins, manholes, end-sections, ditches, swales, open water courses and rip-rap, for the Property as described and depicted in the Storm Water System Plan attached as Exhibit B; and

WHEREAS, the parties will benefit from the proper operation, use and maintenance of the System and desire to enter into this agreement to provide for the same.

THEREFORE, the parties agree:

1. **Use of the System:** Components of the System, including any and all water conveyance, detention and water quality treatment facilities and devices, pumping system, storm sewer pipe, catch basins, manholes, end-sections, ditches, swales, open water courses and rip-rap, shall be used solely for the purpose of conveying, detaining and treating storm and surface drainage on the property until such time as: (i) The City may determine and notify Developer or Developer's successors, grantees or assigns, in writing, that it is no longer necessary to convey, detain or treat the storm and surface drainage; and (ii) An adequate alternative for conveying, detaining and treating storm and surface drainage has been provided which is acceptable to the City and which includes the granting of any easements to the City or third parties as may be required or necessary for the alternative drainage system.
2. **Maintenance:**
  - A. Developer shall be responsible for the proper maintenance, repair and replacement of the System and all parts thereof, as detailed in the Maintenance plan attached as Exhibit C.
  - B. Proper maintenance of the System shall include, but is not limited to:
    - i. Removing accumulated sediment, trash and debris from the detention basin and at inlet pipes.
    - ii. Managing deleterious vegetative growth.
    - iii. Maintaining storm sewer, structures, end-sections and safety features.
    - iv. Controlling the effects of erosion.
    - v. Inspection and cleaning of the water quality treatment device.
    - vi. Inspection of inlet and outlet pipes for structural integrity.
    - vii. Inspection and replacement of rip-rap at inlet pipes.
    - viii. Inspection and cleaning of the storm sewer and catch basins upstream from the detention basin.
    - ix. Inspection and replacement of stone around the outlet pipe.
    - x. Any other maintenance that is reasonable and necessary to facilitate and continue the proper operation and use of the System.

3. **Action by City:** If, at any time, Developer or Developer's successors, grantees or assigns, neglect or fail to properly maintain the System or any part thereof, the City may notify Developer or Developer's successors, grantees or assigns, and TASCOCO or TASCOCO's successors, grantees or assigns. The notice shall be in writing, and the notice shall list and describe maintenance deficiencies and a demand that they be corrected within thirty (30) days.

The notice shall further specify the date and place for a hearing to be held at least fourteen (14) days after the date of the notice before the City Council, or such other board or official to whom the City Council may delegate responsibility. At the hearing, the City Council (or other board or official) may affirm or modify the list and description of maintenance deficiencies to be corrected and, for good cause shown, may extend the time within which the deficiencies must be corrected.

Thereafter, if the maintenance deficiencies are not corrected within the time allowed, the City may undertake and make the necessary corrections, and may maintain the System for a period not to exceed one (1) year. Such maintenance of the System by the City shall not be construed to be a trespass or deemed a taking of the Property, nor shall the City's actions be deemed to vest in the public any right to enter or use the Property. Thereafter, If the City determines maintenance of the system by the City should continue beyond one year, the City shall hold, and provide advance written notice of, a further hearing at which Developer or Developer's successors, grantees or assigns, will not or cannot properly maintain the System, the City may continue to maintain the System for another year, and subject to a similar hearing and determination, in subsequent years.

In the event the City determines an emergency condition caused by or relating to the System threatens the public health, safety or general welfare, the City shall have the right to immediately and without notice enter the property and undertake appropriate corrective action.

4. **Charges:** The City shall charge to the Developer (or their respective successors-in-interest) the cost of maintenance or other corrective action in accordance with this agreement, plus a ten percent (10%) administrative fee. If not timely paid, the City may assess the charges on the City's tax roll, which charges shall be a lien on the real property of Developer and shall be collectable and enforceable in the same manner general property taxes are collected and enforced.
5. **Notice:** Any notices required under this agreement shall be sent by certified mail to the address for each party set forth below, or to such other addresses as such party may notify the other parties in writing:

To RGM Real Estate Holdings, LLC

2750 Product Drive  
Rochester Hills, MI 48309  
Attn: Richard May

To: TASCOCO, LLC

2774 Product Drive  
Rochester Hills, MI 48309  
Attn: Tom Parsons

To: City

City Clerk  
City of Rochester Hills  
1000 Rochester Hills Drive  
Rochester Hills, MI 48309

6. **Successors and Assigns:** This agreement shall bind and inure to the benefit of the parties and their respective successors, grantees and assigns. The benefits, burdens, rights, obligations and responsibilities hereunder shall run with the land and shall bind all current and future owners of the property.

7. **Recording of Agreement:** This agreement shall be recorded at the Oakland County Register of Deeds.

RGM REAL ESTATE HOLDINGS LLC  
Richard May  
By: Richard May  
Its: Member

TASCO LLC  
Thomas J. Parsons  
By: Thomas J. Parsons  
Its: Member

CITY OF ROCHESTER HILLS

By: Bryan K. Barnett, Mayor

By: Tina Barton, Clerk

STATE OF MICHIGAN  
COUNTY OF OAKLAND

This agreement was acknowledged before me on December 12, 2016, by Richard May, who is the member of RGM Real Estate Holdings LLC, a Michigan limited liability company, on behalf of the company.

LORI SMITH  
Notary Public, State of Michigan  
County of Oakland  
My Commission Expires Dec. 21, 2016  
Acting in the County of Oakland

Lori Smith  
Lori Smith, notary public  
Oakland County, Michigan  
My commission expires: 12-21-2016

STATE OF MICHIGAN  
COUNTY OF OAKLAND

This agreement was acknowledged before me on December 12, 2016, by Thomas J. Parsons, who is the member of TASCO, LLC, a Michigan limited liability company, on behalf of the company.

LORI SMITH  
Notary Public, State of Michigan  
County of Oakland  
My Commission Expires Dec. 21, 2016  
Acting in the County of Oakland

Lori Smith  
Lori Smith, notary public  
Oakland County, Michigan  
My commission expires: 12-21-2016

STATE OF MICHIGAN  
COUNTY OF OAKLAND

This agreement was acknowledged before me on \_\_\_\_\_, 2016, by Bryan K. Barnett, Mayor, and Tina Barton, Clerk, of the City of Rochester Hills, a Michigan Municipal Corporation on behalf of the corporation.

Drafted By:  
David Hurrish  
Mickalich Engineering, Inc.  
555 Hulet Dr.  
Bloomfield Hills, MI 48302

\_\_\_\_\_, notary public  
\_\_\_\_\_, County, Michigan  
My commission expires: \_\_\_\_\_

When Recorded Return to:  
Clerks Dept.  
City of Rochester Hills  
1000 Rochester Hills Drive  
Rochester Hills, MI 48309

John Starop  
Approved w/ cond. 12/27/16  
OK ARS 2/17/17

# EXHIBIT "A"

## PROPERTY DESCRIPTION

Lot 45, also the North 15 feet of Lot 46 in "Northfield Industrial Park No. 2", part of the S.W. 1/4 of Section 28, T.3N., R.11E., City of Rochester Hills, Oakland County, Michigan, as recorded in liber 183 of plats, pages 8,9 & 10, Oakland County Records. Subject to all easements and restrictions of record.

No title work was supplied by client. Therefore, not all easements of record could be shown.



5/5/16  
Mike Tawnt  
Approved

A handwritten signature in black ink, appearing to read "Stephen R. Jacobi".

CLIENT:

KEMP BUILDING &  
DEVELOPMENT COMPANY

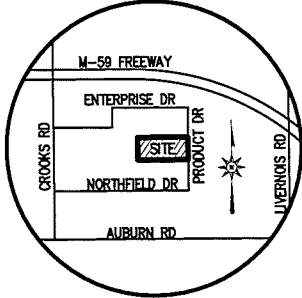
**MEI**

Mickalich Engineering, Inc.  
Civil Engineering | Land Surveying | Planning  
8405 Andersonville Rd. (248) 220-3299  
Suite F albert@mickalich.com  
Clarkston, MI 48346

DATE: 04-22-16  
SCALE: 1"=100'  
SHEET # 1 of 2  
JOB # 13-006

**LOCATION MAP**

NOT TO SCALE



**EXHIBIT "B"**



EX 10' WIDE PRIVATE EASEMENT FOR PUBLIC UTILITIES AS SHOWN ON RECORDED PLAT

LOT 46  
PARCEL ID NUMBER  
15-28-376-024  
ZONED REC-W

**LEGEND**

- OWNER MAINTENANCE RESPONSIBILITY
- PR. STORM SEWER
- EX. STORM SEWER

EXISTING BUILDING  
No. 2774

EXISTING BUILDING  
No. 2750

EX 15' WIDE PRIVATE EASEMENT FOR PUBLIC UTILITIES AND SANITARY SEWER AS SHOWN ON RECORDED PLAT

KSI SERIES  
1500

PROPOSED  
ADDITION

LOT 45

PARCEL ID NUMBER  
15-28-376-023

N 00°00'00" E  
140.00' (R & M)

N 89°24'36" E 400.00' (M)  
N 89°23'24" E 400.00' (R)

N. 15' OF LOT 46  
S 89°24'36" W 400.00' (M)  
S 89°23'24" W 400.00' (R)

S 00°00'00" E 140.00' (R & M)

PRODUCT DRIVE 70' R/W

*Mike Taut  
Approved 5/10/16*

CLIENT:

KEMP BUILDING &  
DEVELOPMENT COMPANY



**Mickalich Engineering, Inc.**

Civil Engineering | Land Surveying | Planning

8405 Andersonville Rd. (248) 220-3299  
Suite F albert@mickalich.com  
Clarkston, MI 48346

DATE: 04-22-16

SCALE: 1"=100'

SHEET # 2 of 2

JOB # 13-006

**EXHIBIT C  
OPERATIONS AND MAINTENANCE MANUAL**

**RGM TOOLING  
STORM WATER MAINTENANCE PLAN  
ROCHESTER HILLS, MICHIGAN**

**PRELIMINARY COPY**

**PROPERTY OWNER:  
RGM Tooling  
2750 PRODUCT DR  
ROCHESTER HILLS, MI 48309  
PHONE: (248) 299-1970  
CONTACT: Richard May**

**TASCO, LLC  
2774 PRODUCT DR  
ROCHESTER HILLS, MI 48309  
PHONE: (248) 852-0661  
CONTACT: Tom Parsons**

Prepared By:  
Mickalich Engineering, Inc  
555 Hulet Dr  
Bloomfield Hills, MI 48303  
Phone: (586) 246-9872  
Contact: Albert Mickalich

April 22, 2016

# OPERATION AND MAINTANENCE MANUAL

## Introduction:

This manual identifies the ownership, operation and maintenance responsibilities for all storm water management systems including the sedimentation and detention basins, underground storm sewer system, mechanical pre-treatment devices and bioswales as incorporated into and detailed on the approved Construction Plans as prepared by Mickalich Engineering, Inc. In order to comply with the local best management practices (BMP) and requirements, this manual should serve as a minimum performance standard. This manual should be retained intact and read in its entirety by all parties responsible for the operations and maintenance of the on-site BMP's.

## Owner:

Richard May  
RGM Tooling  
2750 Product Dr  
Rochester Hills, Michigan, 48309  
Phone: (248) 299-1970

Tom Parsons  
TASCO, LLC  
2774 Product Drive  
Rochester Hills, Michigan, 48309  
Phone: (248) 852-0661

## Property Information:

Lot 45, also the North 15 feet of Lot 46 in "Northfield Industrial Park No. 2", part of the S.W. 1/4 of Section 28, T.3N., R.11E., City of Rochester Hills, Oakland County, Michigan, as recorded in liber 183 of plats, pages 8,9 & 10, Oakland County Records.  
Subject to all easements and restrictions of record.

## Storm Water Maintenance Exhibit:

Exhibit "B" of the Storm Water Maintenance Agreement is the Storm Water System Plan which provides a clear presentation of all components of the storm water system. This system is subject to the long-term operation and maintenance responsibilities detailed in this manual. This system includes:

- Storm sewer pipes
- Storm sewer structures (manholes, catch basins, inlets, etc.)
- Detention Basin
- Kennedy Solutions Inc. (Model KSI Series 1500)

## Inspections:

The frequency of system inspections outlined in the manual and attached exhibits should be considered the minimum, if no events warrant additional inspections. The frequency of inspections should be fine-tuned over time as system specific conditions are better known and the rate at which certain maintenance operations need to be performed is better understood. Maintenance Inspection checklists are provided for each of the BMP's in this system. Inspections should be performed by personnel responsible for maintenance and may need to be certified for confined space entry, depending on the component being inspected. Operations of the detention basin, outlet

control structure, and pre-treatment devices may need to be inspected by a practicing civil engineer familiar with their operation.

Records of all routine inspections and any work performed on the system for maintenance, repair or replacement should be maintained by the owner and kept for a minimum of ten (10) years. A copy of all records should be provided to the City of Rochester Hills Engineering Division. The records should include this manual, all inspection sheets, approved construction plans and as-built documents, a maintenance log of work performed to the system and contact information for the system inspector, civil engineer, landscape architect, geotechnical engineer, and contractor involved with the system.

#### **Storm Water Systems Maintenance:**

Regular inspection and maintenance of BMP's are necessary if these facilities are to consistently perform up to expectations. Storm water systems are expected to perform quality and quantity control functions as long as the land use they serve exists. Failure to maintain these systems can create the following adverse impacts:

- Increased pollutants to surrounding surface water features
- Potential loss of life or property resulting from catastrophic failure of the facility
- Aesthetic or nuisance conditions, such as mosquitoes or reduced property values due to a degraded facility appearance

Most of these impacts can be avoided through proper and timely inspection and maintenance. A major concern associated with these impacts is the general public's expectations related to the quality of life provided, in part, by construction of these systems. Inadequate maintenance means the general public may have a false sense of security. The most common cause of storm water system failure is the lack of adequate and proper operation, inspection, maintenance and management.

Good design and construction can reduce subsequent maintenance needs and costs, but they cannot eliminate the need for maintenance altogether. Maintenance requires a long term commitment of time, money, personnel and equipment. Monitoring the overall performance of the storm water management system is a major aspect of any maintenance program.

The maintenance responsibilities for these systems lie with the current property owner and transfer with the property in perpetuity. If maintenance of the system is not performed, the City of Rochester Hills reserves the right to enter the property and perform all necessary work at the property owners' cost. Refer to the *Agreement for Storm Water System Maintenance* for additional details.

#### **General Maintenance Items:**

##### **Parking Lot Sweep:**

Routine sweeping of all paved surfaces provides a more attractive appearance and removes accumulations of sediment and trash that tend to migrate into storm water management systems during rainfall events. Parking lot sweeping should be performed quarterly or as necessary to limit sediment and trash build-up.

##### **Grass Mowing and Maintenance:**

Mowing requirements at a facility should be designed to the specific site conditions, grass types and seasonal variations in climate. Provisions will need to be made to reseed and reestablish grass cover in areas damaged by sediment accumulation, storm water flow, erosion or other causes. Dead turf will need to be replaced after being discovered. Inspection of the grass areas and other landscaping features should be made annually.



#### Trash and Debris Removal

Removal of trash and debris from all areas of the property should be performed monthly. Removal of these items will prevent damage to vegetated areas and eliminate their potential to inhibit the operation of any of the storm water management systems. Sediment, debris and trash that are removed and collected should be disposed of according to local, State and Federal regulations at suitable disposal and/or recycling centers.

#### **Storm Water System Maintenance Items:**

The following narratives give an overview of the maintenance requirements of the different components of the storm water system. The inspection checklists attached to this report offer a more complete listing of what should be inspected, when inspection should occur and the likely frequency of maintenance activities.

#### Storm Sewer and Structures

Catch basins, inlets, manholes and sewer pipes should be inspected to check for sediment accumulation and clogging, floatable debris, dead vegetation etc. The structures and sewers should also be observed during a wet weather event to ensure their proper operation. Accumulated sediment and debris should be removed on an annual basis or as needed based on observed conditions. Structural repairs or maintenance should occur as needed based on observed conditions such as cracks, spalling, joint failure, leakage, misalignment or settlement of structures. A civil engineer should be retained if problems are thought to exist.

#### KSI Series 1500

Refer to the attached maintenance manual from the manufacturer for all inspection and maintenance requirements for the CDS structure

#### Detention Basin Outlet Control Structure and Overflow Structure

Both the outlet control and overflow structures and connecting pipes should be inspected for sediment accumulation, floatable debris, trash and any other foreign matter that may impeded flow or restrict the devices from working properly. The stone jacket surrounding the outlet control structure should be inspected for sediment build up, and the holes at the base of the outlet control structure should be inspected to make sure they do not become blocked. The grates of the two structures should be inspected for structural integrity and build-up of debris. The outlet control system should be inspected during a wet weather event to ensure all components are functioning properly. A civil engineer should be retained if problems are thought to exist.

Maintenance will include the removal of any debris, trash or sediment from the structures and/or pipe, cleaning of the stone jacket on the outlet control structure and removal of debris from the structure grates. The stone jacket may need replacement if cleaning does not adequately remove sediment build-up.

#### Detention Basin

The inlet pipes to the basins should be inspected for structural integrity (pipes cracked, broke, spalled) and that the grates are free from debris. The area around and immediately downstream of the inlet pipes should be inspected for sediment build-up, erosion and the rip rap should be inspected for integrity and sedimentation. Maintenance of the inlet pipes would include removal of any sediment build-up and debris, repair or any replacement of any components that are in need of attention and to restore any areas that have eroded.

The basins should be inspected for healthy grass growth, side slope erosion, and excessive sedimentation in both basins. The basins should be inspected during a wet weather event to ensure all aspects of the basins are functioning correctly. A civil engineer should be retained if problems are thought to exist or if the inspection personnel are not familiar with the operating conditions of the basins.

The planted vegetation within the basins should conform to that shown on the construction plans. The vegetation should be inspected for healthy growth by a landscape architect if the inspection personnel are not familiar with the specific plantings inside the basins.

Any resident complaints regarding the basins' aesthetics or operation should be investigated during inspections and wet weather operations.

The following pages include inspection checklists for the various devices and components listed above as well as the manufacturer's manual for the pre-treatment device.



***Kennedy Solutions, Inc.***

2111 Sage Lake Road

Prescott, MI 48756

Phone: (989) 873-5280

Fax: (248) 375-8144

Email: [sales@kennedysolutionsinc.com](mailto:sales@kennedysolutionsinc.com)

***Specializing in Storm Water Management and NPDES Phase II BMP's***

**KSI  
STORM WATER TREATMENT CHAMBER**

**OPERATIONS  
AND  
MAINTENANCE  
INFORMATION**

## KSI Storm Water Treatment Chamber

### ***Introduction***

The KSI unit is an important and effective component of your storm sewer system and proper operation and maintenance is vital to its compliance with pollution control requirements.

The KSI unit is capable of capturing a wide range of organic and in-organic solids and pollutants.

### ***Operations***

The KSI unit is a non-mechanical self-operating system and will function any time there is flow in the sewer system.

### ***Inspection***

Access to the unit is achieved through two manhole access covers; they allow for the inspection and clean out of each zone of the unit. The unit should be periodically inspected to determine the amount of accumulated pollutants and to ensure that the cleanout frequency is adequate to handle the predicted pollutant load being processed by the unit.

New installations shall be inspected once a month for the first three months, then semi or annually thereafter or as conditions warrant. The visual inspection should ascertain that the unit is functioning properly and to measure the amount of solids that have accumulated in both zones. This can be done with a calibrated dipstick. This information should be recorded in a log and kept.

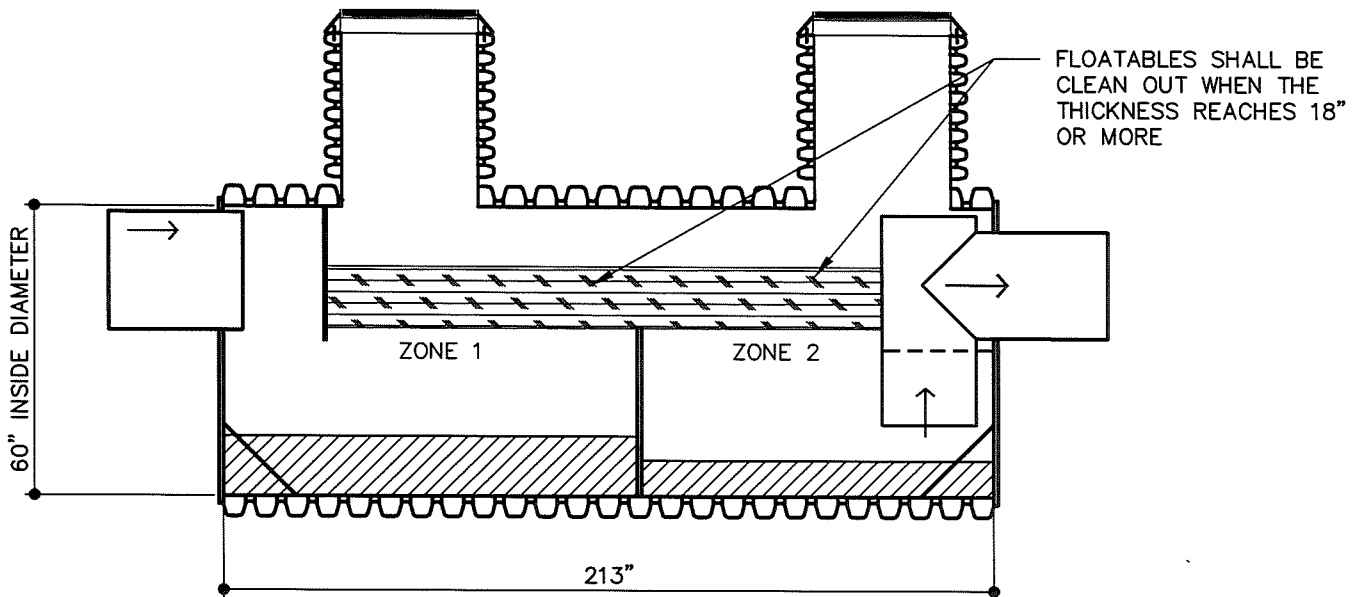
### ***Clean Out & Maintenance***

The frequency of cleaning the unit will depend upon the environment it was installed in. Cleanouts and preventative maintenance schedules will be determined based on operating experience unless precise pollutant loadings have been determined.

A vactor truck is recommended for cleanout of the unit. Disposal of material from the unit should be in accordance with the local municipality's requirements.

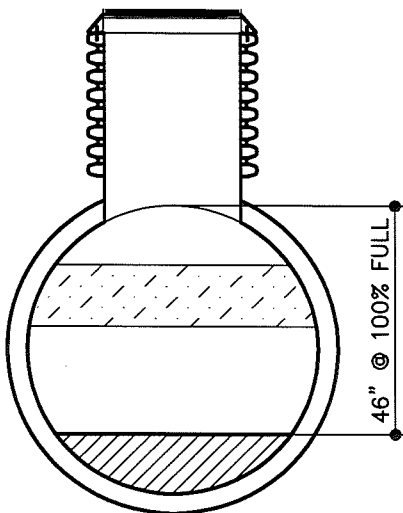
# MAINTENANCE DIAGRAM

KSI 1500 SWTC



## PROFILE

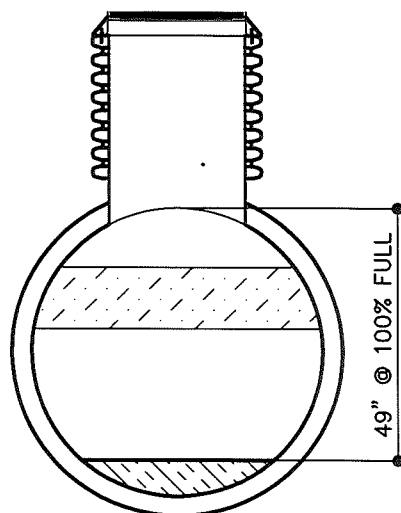
NO SCALE



## END VIEW ZONE 1

NO SCALE

ZONE 1 IS 100% FULL AT 46" FROM CROWN OF 60" DIA. CHAMBER.  
 ZONE 1 IS 50% FULL AT 52" FROM CROWN OF 60" DIA. CHAMBER.  
 ZONE 1 IS 25% FULL AT 56" FROM CROWN OF 60" CHAMBER.



## END VIEW ZONE 2

NO SCALE

ZONE 2 IS 100% FULL AT 49" FROM CROWN OF 60" DIA. CHAMBER.  
 ZONE 2 IS 50% FULL AT 55" FROM CROWN OF 60" DIA. CHAMBER.  
 ZONE 2 IS 25% FULL AT 59" FROM CROWN OF 60" CHAMBER.

DESIGN BY: AG / RK	DATE: 10-10-10	1 OF 1
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.
DRAWING NO. 1500 SWTC MAINTENANCEV1		



KENNEDY SOLUTIONS, INC.  
 2111 Sage Lake Road  
 Prescott, MI 48756  
 Ph: 800-699-4046  
 Fx: 248-375-8144

**CSI**  
**INSPECTION MAINTENANCE LOG**

OWNER: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 OWNER REPRESENTATIVE: \_\_\_\_\_  
 PHONE: \_\_\_\_\_

INSTALLATION: \_\_\_\_\_  
 MODEL: \_\_\_\_\_  
 SITE LOCATION: \_\_\_\_\_  
 INSTALLATION DATE: \_\_\_\_\_

INSPECTIONS:

INSPECTOR	DATE	ZONE 1		ZONE 2		ACTION TAKEN
		DEPTH TO SEDIMENT (INCHES)	FLOATABLES DEPTH (INCHES)	DEPTH TO SEDIMENT (INCHES)	FLOATABLES DEPTH (INCHES)	

NOTE: DEPTH IS MEASURED FROM THE CROWN OF THE TANK TO THE SEDIMENT  
 SEE MAINTENANCE DIAGRAM

# OUTLET CONTROL AND OVERFLOW STRUCTURES

DATE/TIME OF INSPECTION: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_

## OUTLET CONTROL AND OVERFLOW MAINTENANCE TASKS AND SCHEDULE

POST CONSTRUCTION MAINTENANCE ACTIVITIES	SYSTEM COMPONENTS	STRUCTURES	OUTLET PIPES	RIP RAP	GRATES	FREQUENCY	COMMENTS
<b>MONITORING/INSPECTION</b>							
INSPECT FOR SEDIMENT ACCUMULATION		X	X	X		ANNUALLY	
INSPECT FOR FLOATABLES, DEAD VEGETATION AND DEBRIS		X	X	X	X	ANNUALLY AND AFTER MAJOR EVENTS	
INSPECT FOR EROSION				X		ANNUALLY	
INSPECT ALL COMPONENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS*		X	X	X	X	ANNUALLY	
INSPECT INSIDE OF STRUCTURES AND PIPES FOR CRACKS, SPALLING, JOINT FAILURE, SETTLEMENT, SAGGING AND MISALIGNMENT		X	X			ANNUALLY	
<b>PREVENTATIVE MAINTENANCE</b>							
REMOVE ACCUMULATED SEDIMENT		X	X	X		ANNUALLY AND AS NECESSARY	
REMOVE FLOATABLES, DEAD VEGETATION AND DEBRIS		X	X	X	X	ANNUALLY AND AS NECESSARY	
REPLACE OR WASH/CLEAN STONE FILTER JACKET		X				AS NECESSARY	
<b>REMEDIAL ACTIONS</b>							
REPAIR/STABILIZE AREAS OF EROSION				X		AS NECESSARY	
STRUCTURAL REPAIRS		X	X			AS NECESSARY	
MAKE ADJUSTMENTS/REPAIRS TO ENSURE PROPER FUNCTIONING		X	X	X	X	AS NECESSARY	

\*A CIVIL ENGINEER SHOULD BE RETAINED TO OBSERVE BASIN OPERATION

## SUMMARY

INSPECTION REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OVERALL CONDITION OF FACILITY: \_\_\_\_\_

RECOMMENDED ACTIONS NEEDED: \_\_\_\_\_

DATES ANY MAINTENANCE MUST BE COMPLETED: \_\_\_\_\_

CLIENT:

**KEMP BUILDING & DEVELOPMENT COMPANY**



**Mickalich Engineering, Inc.**  
 Civil Engineering | Land Surveying | Planning  
 8405 Andersonville Rd. (248) 220-3299  
 Suite F albert@mickalich.com  
 Clarkston, MI 48346

DATE: 04-22-16  
 SCALE:  
 SHEET # 1 of 1  
 JOB # 13-006

# STORM WATER SEWER SYSTEM

DATE/TIME OF INSPECTION: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_

## STORMWATER SEWER SYSTEM MAINTENANCE TASKS AND SHCHEDULE

MAINTENANCE ACTIVITIES	SYSTEM COMPONENTS	CATCH BASINS, INLETS, AND MANHOLES	STORM SEWER PIPES	RP RAP	FREQUENCY	COMMENTS
<b>MONITORING/INSPECTION</b>						
INSPECT FOR SEDIMENT ACCUMULATION		X	X		ANNUALLY	
INSPECT FOR FLOATABLES, DEAD VEGETATION AND DEBRIS		X	X		ANNUALLY AND AFTER MAJOR EVENTS	
INSPECT FOR EROSION				X	ANNUALLY	
INSPECT ALL COMPONENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS		X	X		ANNUALLY	
INSPECT INSIDE OF STRUCTURES AND PIPES FOR CRACKS, SPALLING, JOINT FAILURE, SETTLEMENT, SAGGING AND MISALIGNMENT		X	X		ANNUALLY	
<b>PREVENTATIVE MAINTENANCE</b>						
REMOVE ACCUMULATED SEDIMENT		X	X		ANNUALLY AND AS NECESSARY	
REMOVE FLOATABLES, DEAD VEGETATION AND DEBRIS		X	X		ANNUALLY AND AS NECESSARY	
<b>REMEDIAL ACTIONS</b>						
REPAIR/STABILIZE AREAS OF EROSION				X	AS NECESSARY	
STRUCTURAL REPAIRS		X	X		AS NECESSARY	
MAKE ADJUSTMENTS/REPAIRS TO ENSURE PROPER FUNCTIONING		X	X	X	AS NECESSARY	

## SUMMARY

INSPECTION REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OVERALL CONDITION OF FACILITY: \_\_\_\_\_

RECOMMENDED ACTIONS NEEDED: \_\_\_\_\_

DATES ANY MAINTENANCE MUST BE COMPLETED: \_\_\_\_\_

CLIENT:

KEMP BUILDING &  
DEVELOPMENT COMPANY

**MEI**

Mickalich Engineering, Inc.  
Civil Engineering | Land Surveying | Planning  
8405 Andersonville Rd. (248) 220-3299  
Suite F albert@mickalich.com  
Clarkston, MI 48346

DATE: 04-22-16  
SCALE:  
SHEET # 1 of 1  
JOB # 13-006



# DETENTION BASINS

DATE/TIME OF INSPECTION: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_

## DETENTION BASINS MAINTENANCE TASKS AND SHCHEDULE

### POST CONSTRUCTION

### MAINTENANCE ACTIVITIES

MAINTENANCE ACTIVITIES	SYSTEM COMPONENTS				FREQUENCY	COMMENTS
	RIP RAP AT INLETS	OVERFLOW SPILLWAY	SIDE SLOPES & BANKS	BASINS		
<b>MONITORING/INSPECTION</b>						
INSPECT FOR SEDIMENT ACCUMULATION	X	X		X	ANNUALLY	
INSPECT FOR FLOATABLES, DEAD VEGETATION AND DEBRIS	X	X	X	X	ANNUALLY AND AFTER MAJOR EVENTS	
INSPECT FOR EROSION	X	X	X	X	ANNUALLY	
INSPECT ALL COMPONENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS*	X	X		X	ANNUALLY	
INSPECT FOR INVASIVE PLANT SPECIES			X	X	ANNUALLY	
<b>PREVENTATIVE MAINTENANCE</b>						
REMOVE ACCUMULATED SEDIMENT	X	X		X	ANNUALLY AND AS NECESSARY	
REMOVE FLOATABLES, DEAD VEGETATION AND DEBRIS	X	X	X	X	ANNUALLY AND AS NECESSARY	
PROFESSIONAL APPLICATION OF HERBICIDE FOR INVASIVE SPECIES THAT MAYBE PRESENT			X	X	ANNUALLY AND AS NECESSARY	
REPAIR EROSION AND/OR RESEED BARE AREAS	X	X	X	X	ANNUALLY AND AS NECESSARY	
<b>REMEDIAL ACTIONS</b>						
REPAIR/STABILIZE AREAS OF EROSION	X	X	X	X	AS NECESSARY	
STRUCTURAL REPAIRS	X	X		X	AS NECESSARY	
MAKE ADJUSTMENTS/REPAIRS TO ENSURE PROPER FUNCTIONING	X	X		X	AS NECESSARY	

\*A CIVIL ENGINEER SHOULD BE RETAINED TO OBSERVE BASIN OPERATION

## SUMMARY

INSPECTION REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OVERALL CONDITION OF FACILITY: \_\_\_\_\_

RECOMMENDED ACTIONS NEEDED: \_\_\_\_\_

DATES ANY MAINTENANCE MUST BE COMPLETED: \_\_\_\_\_

CLIENT:

KEMP BUILDING &  
DEVELOPMENT COMPANY



Mickalich Engineering, Inc.

Civil Engineering | Land Surveying | Planning  
8405 Andersonville Rd. (248) 220-3299  
Suite F albert@mickalich.com  
Clarkston, MI 48346

DATE: 04-22-16

SCALE:

SHEET # 1 of 1

JOB # 13-006