



OPERATING AND MAINTENANCE MANUAL

For:

Kroger Store J-979

Marketplace

**970 North Morton Street
Mallory Parkway and US 31
Johnson County, Franklin, Indiana**

Project #W14-0460

Prepared For:

**The Kroger Company
5960 Castleway West Drive
Indianapolis, Indiana 46256
317-579-8393**

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Certified By: Andrew T. Miller, P.E.

Date:

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Revised:

Prepared For:
Operation and Maintenance Manual
Kroger Store J-979
Franklin, IN
Project #W14.0460

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PROJECT NARRATIVE



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Project Narrative

The Kroger Company is proposing to develop a Marketplace on a 11.3± acre tract of undeveloped land located approximately 0.1 miles west of the intersection of Mallory Parkway and US31 being situated north of Mallory Parkway. **Refer to Figure 1.1.**

The proposed development is on a site at a Latitude of N 39° 29' 20" and Longitude W 86° 04' 00", falling within Franklin Township. The site is generally located in the Northeast Quarter of Section 15, Township 12 North, and Range 4 East, Johnson County Indiana.

Kroger will use utilize a Wet Detention Basin to meet the Water Quality requirements as described in the Drainage Standards. Said basin is a shared detention basin and is located at the north end of 22.1 acres of undeveloped land north of Mallory Parkway. Said basin will provide Water Quality for the entire Kroger site and all future developments on the 22.1 acres.

The stormwater infrastructure will consist of storm pipe, catch basins, and wet detention basin. **Refer to included Figures.**

BMP Owner Contact Information:

The Kroger Company
5960 Castleway West Drive
Indianapolis, IN 46256

DEFINITIONS

Definitions

Best Management Practice (BMP):

Best Management Practices; refer to structural or non-structural measures designed for the benefit of water quality and quantity.

Urban stormwater runoff contains many types and forms of pollutants. When compared to stormwater run-off from pre-developed conditions, high concentrations and some contaminants that are not naturally present in surface runoff from undeveloped local lands are found. Runoff from undeveloped watersheds contains metals, nutrients, sediment particles, oxygen-demanding compounds, and other constituents. Once developed, constituent loads increase because surface runoff volumes increase and the sources of many of these pollutants also increase. Supplemental applications of compounds, such as fertilizers, also tend to increase the availability of some pollutants to stormwater runoff.

Runoff water quality in urban areas can be extremely detrimental to local habitat. Paved surfaces and standing water bodies for stormwater management control elevate the temperature of water entering streams. Chemicals in standing water and ponds are oxidized, resulting in depressed levels of dissolved oxygen. Increased runoff volumes and rates create scour and deposition damage to instream habitat. Activities in urbanized areas, such as vehicular traffic, deposit pollutants such as heavy metals and oil & grease on paved surfaces where they easily wash off into the streams.

BMP Owner:

The owner of the BMP, typically the property owner. The BMP owner may also be the lessee of the property in the case of long-term leases of commercial and industrial zoned properties. The lessee is considered the bmp owner only if the lease specifically states that construction by the lessee must meet applicable local codes and regulations.

Wet Detention Basin:

A Wet Detention Pond is a facility, which removes sediment, biochemical oxygen demand (BOD), organic nutrients, and trace metals from stormwater runoff. This is accomplished by slowing down stormwater using an in-line permanent pool or pond affection settling pollutants. The wet pond is similar to a dry pond, except that a permanent volume of water is incorporated into the design. The drainage area should be such that as adequate base flow is maintained in the pond. Biological processes occurring in the permanent pond pool aid in reducing the amount of soluble nutrients present in the water such as nitrate and ortho-phosphorus.

Stormwater Infrastructure:

Storm water infrastructure and structures refers to structural or non-structural measures designed for the benefit of storm water conveyance. Storm water is the rainfall/ snowmelt that flows over our yards, streets, parking lots, and buildings and either enters the storm drain system or runs directly into a lake or stream.

Owners of storm water infrastructure and structures are typically the property owner. The storm water infrastructure owner may also be the lessee of the property in the case of long-term leases of commercial and industrial zoned properties. The lessee is considered the owner only if the lease specifically states that construction by the lessee must meet applicable local codes and regulations

Catch basins:

Catch basin/inlet cleaning and repair has traditionally been performed to respond to localized flooding problems in streets. Catch basins are inlets at the curb with a small trap (usually six inches to one foot deep) below the sewer pipe. These devices help to clean storm water because particles in street runoff settle into the trap before the water enters the storm sewers. Catch basins require regular cleaning of the sediment trap to be. The inlets do not trap sediments and don't need cleaning unless they are plugged. Cleaning for either catch basins or inlets can be done by hand (e.g., with a clamshell or shovel) or with a vacuum truck.

Conveyance Storm Pipes:

A good rule of thumb is to conduct inspection of storm drain inlets, ditches, channels, ponds and other treatment facilities at least once a year, prior to the beginning of the rainy season. Complete inspections early enough so that repairs can be made during dry weather. Catch basins should be inspected at least once every six months. Some storm water treatment devices, such as oil/water separators, may require more frequent inspection. For these, check the manufacturer's specification or other design guidance handbooks. Sewer pipes and culverts should be inspected every three to five years, or in response to a reported problem. Most agencies inspect their sewer pipes six inches or larger with a TV camera, and pipes 36 inches or larger with a walk-through inspection. All other parts of the system are inspected visually.

Look for excessive silt build-up, erosion, unusual algal growth, cracked or collapsed pipes, misaligned joints, and other signs of problems such as a sheen on the water surface, discolored water, or an unpleasant odor. Check with product manufacturers or storm water handbooks for advice on what to look for when inspecting more sophisticated treatment devices such as flow splitters and diverters. When a problem is noted, take steps to correct the problem, or route this information immediately to the appropriate individual(s) in your organization who can respond. If needed, develop a good response plan to ensure quick follow-up in the future.

Inspections

Routine inspections are the responsibility of the BMP owner. Maintenance is also the responsibility of the owner. The BMP owner shall be financially responsible for any maintenance or repairs required by the City or its representatives during the City's inspections. The approval maintenance plan and inspection forms provided with this manual should be used as guidance for performing maintenance activities. Completed inspection forms must be maintained by the BMP owner and produced upon request by the City. The City must be notified of any changes in BMP ownership, major repairs or BMP failure in writing within 30 days. The letter should be addressed to:

City of Franklin MS-4
796 South State Street
Franklin, IN 46131

The City and/or its representatives have the right to enter the property to inspect BMPs. In the event that the City finds a BMP in need of maintenance or repair, the City will notify the BMP owner of the necessary maintenance or repairs and give the landowner a timeframe for completing the maintenance or repairs. If the maintenance or repairs are not completed within the designated timeframe, the City shall perform the maintenance or repairs and bill the landowner for the actual costs for the work.

Inspection & Maintenance Activities

Refer to the checklist provided with this manual for operation, maintenance and inspection of BMP and storm water infrastructure. The checklist is for the use of the BMP owner in performing routine inspections. The City will perform annual inspections of BMPs, using similar checklist. The BMP owner must maintain and update the BMP operations and maintenance plan. At a minimum, the operations and maintenance plan must include, but is not limited to:

1. Visual inspect and removal of debris from inlet and outlet structures
2. Removal of woody vegetation from the embankments

BMP owners must routinely inspect BMPs to verify that all BMP components are functioning as designed and are not in danger of failing. All BMPs need maintenance to function as water quality and quantity enhancements. Maintenance can range from dredging sediment out of the treatment area to mowing grass.

The BMP owner agrees to the maintenance and inspection programs attached with this manual. Inspections must be documented on the inspection forms included in this Operation and Maintenance Manual.



A self-monitoring program by the project site owner is required during construction and during a maintenance schedule of any project described. A trained individual employed or retained by the project site owner shall prepare and maintain a written evaluation of the project site by the end of the next business day following each measurable Inspection.

Inspection during construction should be after a storm event and at a minimum, one (1) time a week.

Inspection during the maintenance schedule must routinely inspect all storm water infrastructures to verify that all components are functioning as designed and are not in danger of failing. They should be inspected a minimum of an annual basis or upon observed failure.

OWNER ACKNOWLEDGEMENT



Owner Acknowledgment

This Operation and Maintenance Manual is submitted to the City of Franklin with the intent to insure the longevity and adequate functioning of the Wet Detention Basin, and storm sewer infrastructure owned by The Kroger Company. By submitting this Operation and Maintenance Manual to the City of Franklin’s Office with plans to construct said BMP features, the BMP owner noted above agrees to follow and abide by the inspection schedule and maintenance activities listed in this manual. The BMP owner noted above is responsible for any additional maintenance and/or repair activities to maintain the function and longevity of the BMP(s).

Owner Signature:

Date

Printed

STATE OF INDIANA)
)
COUNTY OF) SS:

BEFORE ME, the undersigned, a Notary Public in and for said County and State, personally appeared _____ Owners,/Agent, subscribed and sworn before me this _____ day of _____, _____.

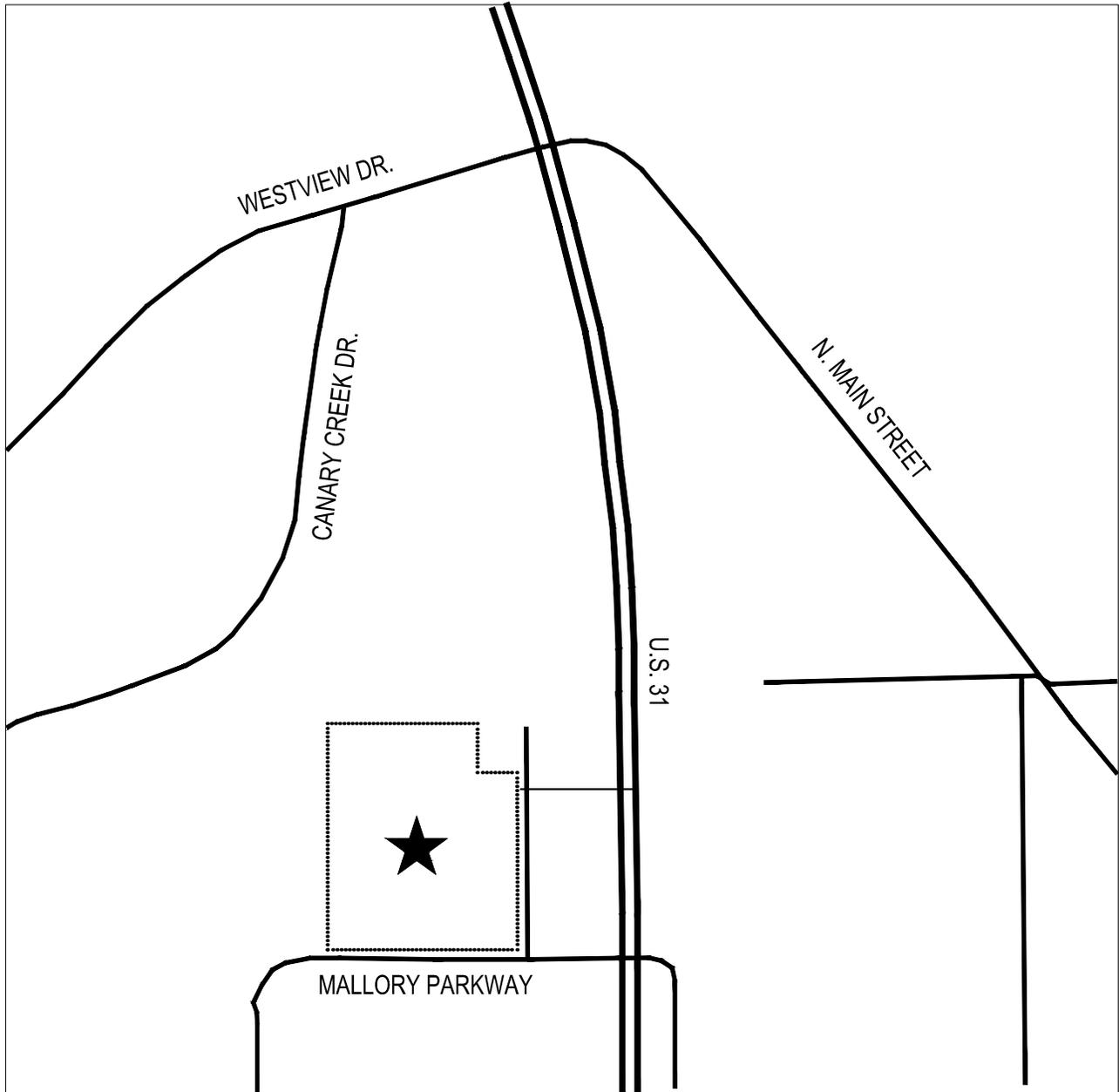
County of Residence

Signature

Commission Expiration Date

Printed Name

LOCATION MAPS



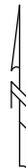
★ PROJECT LOCATION

KROGER - FRANKLIN, IN



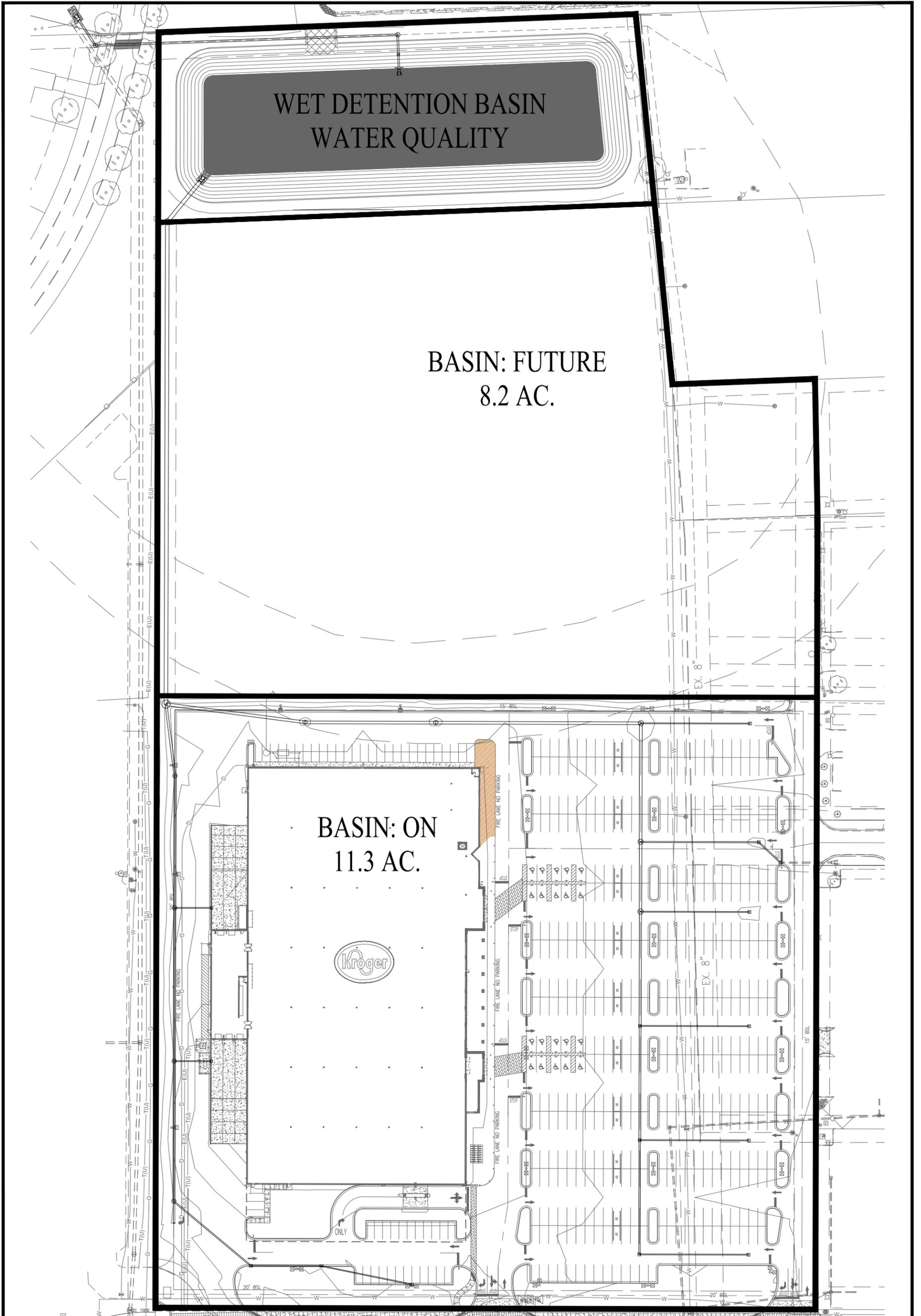
10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611

FIGURE 1.1



LOCATION MAP

Date: February 12, 2015



KROGER - FRANKLIN, IN

WATER QUALITY BASIN MAP



10505 N. College Avenue
Indianapolis, Indiana 46280
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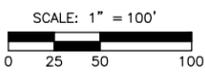
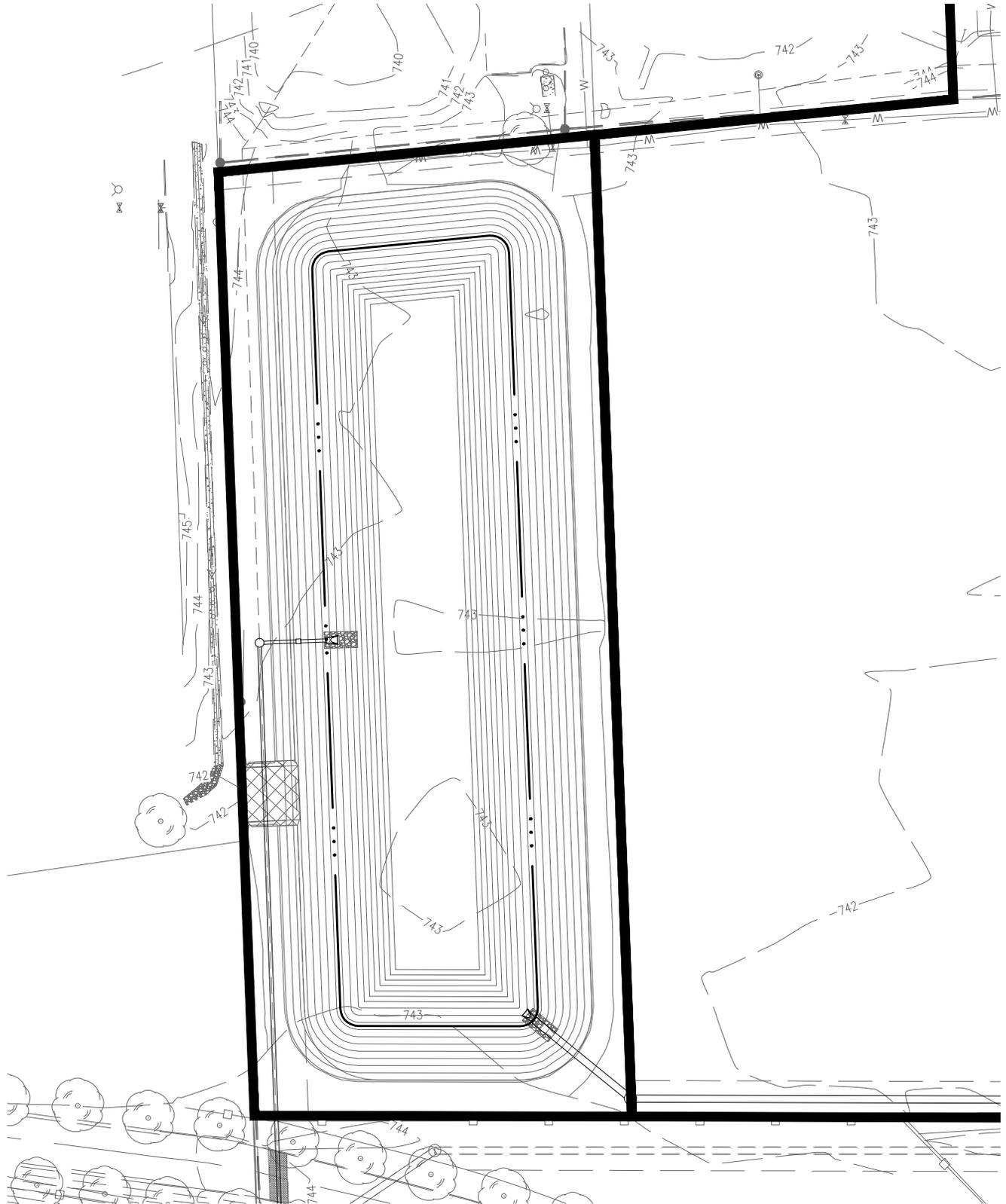


FIGURE 5.1

Date: February 12, 2015

CHECKLISTS AND MAINTENANCE ACTIVITIES

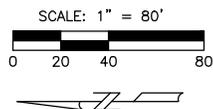


KROGER - FRANKLIN, IN

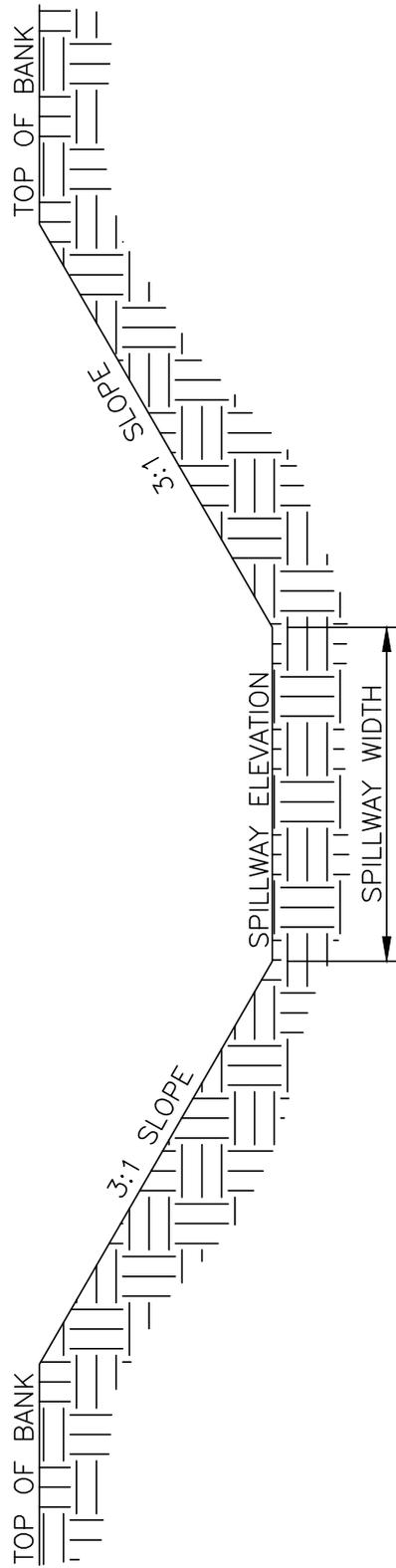
DETENTION EXHIBIT



10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611



Date: February 12, 2015



LAKE DESIGNATION: 'POND 1'	TOP OF BANK ELEV.: 843.50	100YR ELEV.: 840.87	SPILLWAY ELEV.: 842.00	SPILLWAY WIDTH: 30'
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EMERGENCY SPILLWAY TYPICAL SECTION

Inspection and Maintenance Checklist Wetponds

Site Name:	
Owner Name:	
Owner Address:	
Owner Phone Number:	
Emergency Phone Number:	
Location:	
Date:	
Time:	
Inspector:	
Change in ownership since last inspection?	Y OR N

Maintenance Item	Maintenance (1 or 2)*	Maintenance is needed:	Comments
Water Level		First cell is empty, doesn't hold water.	
Trash and Debris		Trash and debris > 5cf per 1,000 sf (one standard size garbage can	
Inlet/Outlet Pipe		Inlet/Outlet pipe clogged with sediment and/or debris material.	
Sediment Accumulation in Pond Bottom/Dredging		Accumulated sediment reached 8' below normal pool elevation. (N.P. 881.0', Pond Bottom 870.0).	
Water Level		Accumulated sediment reached 8' below normal pool elevation. (N.P. 881.0', Pond Bottom 870.0).	
Oil Sheen on Water		Prevalent and visible oil sheen.	
Erosion		Erosion of the pond's side slopes and/or scouring of the pond bottom, that exceeds 6-inches, or where continued erosion is prevalent.	
Settlement of Pond Dike/Berm		Any part of these components that has settled 4-inches or lower than the design elevation, or inspector determines dike/berm is unsound.	
Internal Berm		Berm dividing cells should be level.	
Overflow Spillway		Rock is missing and soil is exposed at top of spillway or outside slope.	
Debris Barriers (e.g., Trash Racks)			
Trash and Debris		Trash or debris that is plugging more than 20% of the openings in the barrier.	
Damaged/Missing Bars		Bars are bent out of shape more than three inches	
		Bars are missing or entire barrier missing.	
		Bars are loose and rust is causing 50% deterioration to any part of barrier.	
Inlet/Outlet Pipe		Debris barrier missing or not attached to pipe.	
Fencing			
Missing or Broken Parts		Any defect in the fence that permits easy entry into a facility.	
Erosion		Erosion more than 4 inches high and 12-18 inches wide permitting an opening under a fence.	
Damaged Parts		Damage to gate/fence, posts out of plumb, or rails bent more than 6 inches.	
Deteriorating Paint or Protective Coating		Part or parts that have a rusting or scaling condition that has affected structural adequacy.	
Gates			

Damaged or missing member		Missing gate or locking devices, broken or missing hinges, out of plum more than 6 inches and more than 1 foot out of design alignment, or missing stretcher bar, stretcher bands, and ties.	
Misc.			
Vegetation		Vegetation that reduces free movement of water through the ditches	
Erosion Damage to Slopes and Channel Bottom		Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion	
		Any erosion observed on a compacted berm embankment	

*Maintenance: Enter 1 if maintenance is needed and include WO#. Enter 2 if maintenance was performed same day.

Inspection and Maintenance Checklist Catch Basins, Manholes, and Inlets

Site Name:	
Owner Name:	
Owner Address:	
Owner Phone Number:	
Emergency Phone Number:	
Location:	
Date:	
Time:	
Inspector:	
Change in ownership since last inspection?	Y OR N

Maintenance Item	Maintenance (1 or 2)*	Maintenance is needed:	Comments
Trash & Debris		Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%	
		Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	
Sediment		Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	
Structure Damage to Frame and/or Top Slab		Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch (Intent is to make sure no material is running into basin).	
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	
Fractures or Cracks in Basin Walls/Bottom		Maintenance person judges that structure is unsound.	
		Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	
Settlement/Misalignment		If failure of basin has created a safety, function, or design problem.	
Vegetation		Vegetation growing across and blocking more than 10% of the basin opening.	
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	
Contaminants and Pollution		Any evidence of oil, gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency).	

Catch Basin Cover		Cover is missing or only partially in place. Any open catch basin requires maintenance.	
		Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	
		One maintenance person cannot remove lid after applying normal lifting pressure (Intent is to keep cover from sealing off access to maintenance).	
Ladder		Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	
Metal Grates		Trash and debris that is blocking more than 20% of grate surface inletting capacity.	

*Maintenance: Enter 1 if maintenance is need and include WO#. Enter 2 if maintenance was performed same day.

Inspection and Maintenance Checklist Conveyance Stormwater Pipe

Site Name:	
Owner Name:	
Owner Address:	
Owner Phone Number:	
Emergency Phone Number:	
Location:	
Date:	
Time:	
Inspector:	
Change in ownership since last inspection?	Y OR N

Maintenance Item	Maintenance (1 or 2)*	Maintenance is needed:	Comments
Sediment & Debris		Accumulated sediment exceeds buildup 1/4" of the pipe diameter up to maximum of 6"	
Vegetation		Vegetation that reduces free movement of water through the pipes	
Damaged Pipe		Protective coating is damaged; rust is causing more than 50% deterioration to any part of the pipe	
		Any dent that decreases the cross section area of pipe by more than 20% or puncture that impacts performance	

*Maintenance: Enter 1 if maintenance is need and include WO#. Enter 2 if maintenance was performed same day.