



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

July 9, 2008

2008 JUL 17 AM 7:19
CITY OF ANN ARBOR
CITY CLERK
REC'D

City of Ann Arbor Clerk
P.O. Box 8647
Ann Arbor, Michigan 48107-8647

Dear Township Clerk:

SUBJECT: DEQ File Number: 08-81-0005-P
T 3S, R 6E, Section(s) 5, City of Ann Arbor, Washtenaw County

Attached is a copy of a permit application received by the Land and Water Management Division (LWMD), which is being processed as a General Permit under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

If you have any concerns or comments regarding this application, please contact Mr. James Sallee, Jackson District Office, LWMD, 301 E. Louis Glick Hwy., Jackson, Michigan 49201-1535, within 10 days from the date of this letter.

Sincerely,

Kate Lederle
Permit Consolidation Unit
Land and Water Management Division
517-373-9244

Attachment

cc: Mr. James Sallee, DEQ



AGENCY USE	Previous USACE Permit or File Number	Date Received	RECEIVED	Land and Water Management Division, MDEQ File Number	AGENCY USE	
	USACE File Number		JUN 27 2008	<i>08-81-00058</i>		Marina Operating Permit Number
	<i>Jackson - J. Sallee</i>		ENVIRONMENTAL QUALITY LAND & WATER MGMT-POU	<i>CL 105 H 36780' ECT.</i>		Fee received \$

• Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION

• Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s).

Address <i>2600 S. State Street, Ann Arbor, MI 48104</i>		Township Name(s) <i>Pittsfield</i>	Township(s) <i>3S</i>	Range(s) <i>6E</i>	Section(s) <i>5</i>
City/Village <i>Ann Arbor</i>	County(ies) <i>Washtenaw</i>	Property Tax Identification Number(s) <i>09-12-05-400-024</i>			
Name of Waterbody <i>Unnamed Tributary to Mallets Creek</i>	Project Name or Job Number <i>The Regents of The University of Michigan State Street Commuter Lot Basin Stormwater Management Basin Retrofits & Maintenance Project</i>	Subdivision/Plat <i>N/A</i>	Lot Number <i>N/A</i>	Private Claim <i>N/A</i>	
Project types (check all that apply)	<input type="checkbox"/> private <input type="checkbox"/> building addition <input checked="" type="checkbox"/> other (explain) <i>University</i>	<input checked="" type="checkbox"/> public/government <input type="checkbox"/> new building or structure	<input type="checkbox"/> industrial <input type="checkbox"/> building renovation or restoration	<input type="checkbox"/> commercial <input type="checkbox"/> river restoration	<input type="checkbox"/> multi-family <input type="checkbox"/> single-family
The proposed project is on, within, or involves (check all that apply)		<input type="checkbox"/> a legally established County Drain (date established) (M/D/Y) / / <input type="checkbox"/> a stream <input type="checkbox"/> a pond (less than 5 acres) <input type="checkbox"/> a Great Lake or Section 10 Waters <input type="checkbox"/> a natural river <input type="checkbox"/> a new marina <input type="checkbox"/> a river <input type="checkbox"/> a channel/canal <input type="checkbox"/> a designated high risk erosion area <input type="checkbox"/> a dam <input type="checkbox"/> a structure removal <input type="checkbox"/> a ditch or drain <input type="checkbox"/> an inland lake (5 acres or more) <input type="checkbox"/> a designated critical dune area <input checked="" type="checkbox"/> a wetland <input type="checkbox"/> a utility crossing <input type="checkbox"/> a floodway area <input type="checkbox"/> a 100-year floodplain <input type="checkbox"/> a designated environmental area <input checked="" type="checkbox"/> 500 feet of an existing waterbody			

2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES, AND THE CONSTRUCTION SEQUENCE AND METHODS

• Attach separate sheets, as needed, including necessary drawings, sketches, photographs, aerials, or plans.

The proposed project involves maintenance and retrofits of an existing stormwater management basin located at a University of Michigan commuter parking lot on State Street. Maintenance activities include accumulated sediment removal to re-establish original design grades and erosion control at two storm water inlets. Retrofit activities include the replacement of the existing standpipe to meet current Washtenaw County design standards. Generally, the new standpipe will match the existing structure in terms of materials, size, and footprint. The project is seeking a Part 303 general permit under categories M (Repairs to Servicable Structures) and P (Maintenance Dredging of Man-Made Stormwater and Waste Water Treatment Ponds and Lagoons). The University is conducting these maintenance and retrofit activities under its Phase I stormwater permit. The applicant held a pre-application meeting with MDEQ Jackson District representative James Sallee on February 28, 2008 (file no. 08-81-0005-P).

The overall area of wetland impact is 4,196 square feet (0.09 acre). The proposed wetland dredge volume is 233 cubic yards. The proposed wetland fill volume is 41 cubic yard. All temporarily disturbed areas will be seeded with native prairie seed mix, stormwater seed mix (below proposed permanent water elevation), or turf seed mix and appropriately mulched.

Existing wetlands to be impacted exist within a stormwater management basin that was constructed by the University of Michigan in compliance with applicable state, local, and federal laws regluating the discharge of stormwater to receiving water bodies. The stormwater management basin was constructed for the sole purpose of treating stormwater prior to discharge. Existing wetlands have incidently formed due to stormwater hydrology. Proposed vegetation establishment and existing storm water hydrology will result in the incidental creation of wetlands at least equal in area to those impacted.

All associated dewatering operations will be conducted using appropriate SESC measures. All pumped/dewatered stormwater will pass through a pump discharge filtration unit. All stormwater inlets (i.e. curb inlets/catch basins) that may be in contact with runoff containing sediments will be fitted with a temporary inlet protection device. In addition, the proposed detention basin standpipe will be protected with a temporary inlet protection device to prevent sedimentation of the receiving water body.



It is anticipated that construction will begin soon after the permit is issued and require 6 weeks to complete.

Construction will be accomplished using traditional earth moving equipment such as bulldozers, loaders, and excavators. The existing detention basin will be excavated mechanically using a tracked excavator. Sediments to be excavated will be disposed in a Type II landfill. The University of Michigan has obtained approval from a Type II landfill for disposal (authorization letter and analytical are attached). Immediately following excavation, sediments will be placed along the edge of the detention basin and allowed to dewater into the basin. They will then be loaded directly onto trucks. If necessary, sediments will be temporarily stockpiled on the parking lot over visqueen and covered with tarps.

Construction Sequence and Methods:

1. Install temporary SESC measures and maintain until permanent measures are installed.
2. Dewater basin and maintain dewatered condition throughout project.
3. Contractor shall complete the removal of the existing riser outlet structure and the installation of the proposed riser structure within a 24-hour period. Removal of the existing riser structure shall not commence if rain is forecast within 24 hours of the intended work.
4. Contractor shall excavate and grade as required.
5. Dredged sediments shall be hauled to a Type II landfill.
6. All disturbed areas shall be seeded and mulched.
7. All temporary SESC measures shall be removed once permanent measures are installed.

3 APPLICANT, AGENT/CONTRACTOR, AND PROPERTY OWNER INFORMATION

- The applicant can be either the property owner or the person or company that proposes to undertake the activity.
- If the applicant is a corporation, both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf.

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Applicant (individual or corporate name) <i>The Regents of the University of Michigan, Occupational Safety & Environmental Health-Timothy R. Cullen, Manager, Environmental Protection & Permitting</i>		Agent/Contractor (firm name and contact person) ENVIRONMENTAL QUALITY LAND & WATER MGMT-PCU	
Mailing Address <i>1239 Kipke Drive - OSEH CSSB</i>		Address	
City <i>Ann Arbor</i>	State <i>MI</i>	Zip Code <i>48109-1010</i>	
City	State	Zip Code	
Daytime Phone Number with Area Code <i>734-763-5267</i>	Cell Phone Number -	Daytime Phone Number with Area Code -	Cell Phone Number -
Fax <i>734-763-1185</i>	E-mail <i>trcullen@umich.edu</i>	Fax -	E-mail
Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If No, provide a letter signed by the property owner authorizing the agent/contractor to act on his or her behalf or a copy of easements or right-of-ways. If multiple owners, attach all property owners' names, mailing addresses, and telephone numbers. Disclose any DEQ conservation easements or other easements, deed restrictions, leases, or any other encumbrance upon the property in the project area. A copy of the land restriction must be provided.			
Property Owner's Name (If different from applicant)		Mailing Address	
Daytime Phone Number with Area Code -	Cell Phone Number -	City	State Zip Code

4 PROPOSED PROJECT PURPOSE, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use.
- Include a description of alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative construction technologies; alternative project layout and design; alternative locations; local land use regulations and infrastructure; and pertinent environmental and resource issues.
- For utility crossings, include both alternative routes and alternative construction methods.

The purpose of this project is to maintain and maximize the operational effectiveness of the existing UM State Street Commuter Lot Stormwater Management Basin. The proposed activities will maximize operational effectiveness of the stormwater management basin with storage and release of stormwater from the basin's contributing drainage area, according to current Washtenaw County Drain Commissioner standards. The University of Michigan is conducting the proposed maintenance and retrofit activities under its Phase I stormwater permit. The activities are associated with an existing stormwater management basin with existing wetlands. Therefore, the activities are dependent on the location of the existing basin and wetlands. There are no alternatives to the proposed improvements except no action; the proposed structure is the standard in stormwater management basin design and is widely used. "No action" will not allow the University to continue maintenance of its stormwater management basins under its Phase I stormwater permit.

5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site.
- Attach a copy of a map, such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction.



- Project area must be staked at the time of application submittal.

Is there an access road to the project? No Yes (If Yes, type of road, check all that apply) private public improved unimproved

Name of roads at closest main intersection *E. Eisenhower Parkway* and *S. State Street*

Directions from main intersection *Project site (2600 S. State Street) is on the west side of S. State Street and north of E. Eisenhower Parkway. Entrance to parking lot is across State Street from the Howard Cooper Car Dealership. The site is south of the University of Michigan Tennis Facility.*

Style of house or other building on site ranch 2-story cape cod bi-level cottage/cabin pole barn none other (describe) *Parking Lot*

Color *N/A* Color of adjacent property house and/or buildings *UM Tennis Facility to the north.*

House number *(2600)* Address is visible on house garage mailbox sign other (describe) *Look for the signage for the State Street Commuter Lot (in addition, site is south of the University of Michigan Tennis Facility).*

Street name *S. State Street* Fire lane number *N/A* Lot number *N/A*

How can your site be identified if there is no visible address? *Site is located south of the University of Michigan Tennis Facility and west of the Howard Cooper Car Dealership.*

Provide directions to the project site, with distances from the best and nearest visible landmark and waterbody *Travel 1/3-mile north on S. State Street from Eisenhower Parkway. Entrance to the State Street Commuter Lot is on the west (left) side. See map contained on attached plan cover sheet.*

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.)

No Yes (If Yes, list jurisdiction names.)

6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency	Type approval	Identification number	Date applied	Date approved / denied	If denied, reason for denial
<i>UM-OSEH</i>	<i>SESC</i>		<i>Pending</i>	<i>Pending</i>	

7 If a permit is issued, date activity will commence (M/D/Y) *8/1/2008 (or ASAP)*

Proposed completion date (M/D/Y) *12/1/2008*

Has any construction activity commenced or been completed in a regulated area? No Yes

If Yes, identify the portion(s) underway or completed on drawings or

attach project specifications and give completion date(s) (M/D/Y) */ /*

Were the regulated activities conducted under a MDEQ permit? No Yes

If Yes, list the MDEQ permit number

Are you aware of any unresolved violations of environmental law or litigation involving the property? No Yes (If Yes, explain)

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all adjacent and impacted property owners and the lake association or established lake board, including the contact person's name.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property Owner's Name Mailing Address State Zip Code

See attachment 1

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Name of Established Lake Board or Lake Association


and the Contact Person's name, phone number, and mailing address *N/A*

9 APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and, to the best of my knowledge, is in compliance with the State *Coastal Zone Management Program* and the *National Flood Insurance Program*. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

- All applicants must complete all of the items in Sections 1 through 9 on pages 1 and 2 of this application.
- Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.
- Your application will not be processed if the application form is not completely filled out.
- List here the application page numbers being submitted and a brief description of other attachments included with your application. *Application pages 1-7; Table 1; Attachment 1- Adjacent Property Owner List; Attachment 2- Wetland Delineation Report (including photographs of site); Attachment 3 - Sediment Disposal Authorization Letter and Sediment Testing Results; 1 set of 8.5x11 Drawings Five sets of 11x17 Drawings; and \$100 application fee (Corporate Check).*
- Submit 8.5" by 11," 8.5" by 14" or 11" by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5" x 11" paper, with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.
- A letter of authorization from the owner must be included if not signed below by the owner.



<input checked="" type="checkbox"/> Property Owner <input type="checkbox"/> Agent/Contractor <input type="checkbox"/> Corporation - Title	Printed Name <i>Timothy R. Cullen</i>	Signature 	Date (M/D/Y) <i>6/24/08</i>
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10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

- Check boxes A through N that may be applicable to your project and provide the requested information.
- If your project may affect wetlands, also complete Section 12. If your project may impact regulated *floodplains*, also complete Section 13.
- Provide an overall site plan showing existing lakes, streams, wetlands, and other water features; existing *structures*; and the location of all proposed *structures*, land change activities and *soil erosion and sedimentation control measures*. Review sample drawings for guidance in completing site-specific drawings for your project.
- Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
- On a Great Lake use IGLD 85 surveyed converted from observed still water elevation. On inland waters, NGVD 29 local datum other *NAVD88*
- Observed water elevation (ft) *873.43*, date of observation (M/D/Y) *6/6/05*

A. PROJECTS REQUIRING FILL (See All Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average fill dimensions.

(Check all that apply) floodplain fill wetland fill riprap seawall, bulkhead, or revetment bridge or culvert
 boat launch off-shore swim area beach sanding boatwell crib dock other

Fill dimensions (ft)
 Length *See Table 1 (Attached)* width *See Table 1* Total fill volume (cu yd) *41* Maximum water depth in fill area (ft) *4.21, maximum detention stage*

Type of clean fill pea stone sand gravel wood chips other *riprap*
 Will filter fabric be used under proposed fill? No Yes (If Yes, type)

Source of clean fill on-site, If on-site, show location on site plan commercial other, If other, attach description of location

Fill will extend *N/A* feet into the water from the shoreline and upland *N/A* feet out of the water. Fill volume below OHWM (cu yd) *41*

B. PROJECTS REQUIRING DREDGING OR EXCAVATION (For dredging projects see Sample Drawing 7, for excavation see other applicable Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average dredge or excavation dimensions.
- The applicant will be notified if sediment sampling is required.

(Check all that apply) floodplain excavation wetland dredge or draining seawall, bulkhead, or revetment
 navigation boat well boat launch other

Total dredge/excavation volume (cu yd) *233* Dimensions length *90* width *46.6* depth *1.5* Dredge/excavation volume below OHWM (cu yd) *233* Method and equipment for dredging *Mechanical excavator*

Has proposed dredge material been tested for contaminants? No Yes (If Yes, attach testing results) Will dredged or excavated spoils be placed on-site off-site. Attach a detailed disposal area site plan, location map. If dispose off site, provide address and letter of authorization.

Has this same area been previously dredged? No Yes (If Yes, provide date and permit number, if available) / / /
 If Yes, are you proposing to enlarge the previously dredged area No Yes

Is long-term maintenance dredging planned? No Yes (If Yes, when and how much?) *Required periodic maintenance once every 10 years*

C. PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23. Others may apply)

Riprap waterward of the <input type="checkbox"/> shoreline OR <input type="checkbox"/> ordinary high water mark	Dimensions (ft) length	width	depth	Volume(cu yd)
Riprap landward of the <input type="checkbox"/> shoreline OR <input type="checkbox"/> ordinary high water mark	Dimensions length	width	depth	Volume(cu yd)
Type of riprap <input type="checkbox"/> field stone <input type="checkbox"/> angular rock <input type="checkbox"/> other				Will filter fabric be used under proposed riprap? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, type)

D. SHORE PROTECTION PROJECTS (See Sample Drawings 2, 3, and 17)

(check all that apply) riprap - length (ft.) seawall/bulkhead - length (ft.) revetment - length (ft.) Distances of project from both property lines (ft)

E. DOCK - PIER - MOORING PILINGS (See Sample Drawing 10)

Type open pile filled crib Seasonal structure? No Yes
 Proposed structure dimensions (ft) length width Dimensions of nearest adjacent structures (ft) length width

F. BOAT WELL (No Sample Drawing available)

Type of bank stabilization wood steel concrete vinyl riprap other
 Boat well dimensions (ft) Length width depth Number of boats
 Volume of backfill behind sidewall stabilization (cu yd) Distances of boat well from adjacent property lines (ft)

G. BOAT LAUNCH (No Sample Drawing available) (check all that apply) new existing public private commercial replacement

Proposed overall boat launch dimensions (ft) length width depth Type of material concrete wood stone other
 Existing overall boat launch dimensions (ft) Length width depth Boat launch dimensions (ft) below ordinary high water mark Length width depth
 Distances of launch from both property lines (ft) Number of skid piers Skid pier dimensions (ft) width length

H. BOAT HOIST (No Sample Drawing available)

(Check all that apply) seasonal permanent cradle side lifter other located on seawall dock bottomlands

I. BOARDWALKS AND DECKS IN WETLANDS - OR - FLOODPLAINS (See Sample Drawings 5 and 6. Provide table if necessary)

(Check all that apply) boardwalk deck Boardwalk or deck is on fill piling Dimensions (ft) length width

10 Continued - PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

J. INTAKE PIPES (See Sample Drawing 16) **OUTLET PIPES** (See Sample Drawing 22)

Type headwall end section pipe other

If outlet pipe, discharge is to wetland inland lake stream, drain, or river Great Lake other

Dimensions of headwall OR end section (ft) length width depth

Number of pipes Pipe diameters and invert elevations

K. MOORING AND NAVIGATION BUOYS (No Sample Drawing available)

- Provide an overall site plan showing the distances between each buoy, distances from the shore to each buoy, and depth of water at each buoy in feet.
- Provide cross-section drawing(s) showing anchoring system(s) and dimensions.

Number of buoys Type of anchor system Purpose of buoy mooring navigation swimming

Dimensions of buoys (ft) width height

Do you own the property along the shoreline? No Yes

If No, you must provide an authorization letter from the property owner(s)

L. GROINS (No Sample Drawing available)

- Provide an overall site plan showing the distances (ft) of the outermost groins from the property lines, distances between groins, length and width of each groin, and the distance from the existing toe of the bluff to the lakeward end of the groins.
- If existing groins are located on adjacent properties, provide distances (ft) from closest neighboring groin to your property lines on the site plan. Provide cross-section views showing the length and height of each groin and the height of groin ends above the observed water level (date and time). If step down type, show the height of each section above the observed water level.

Number of groins Type of groin steel wood other

Will groin be placed on a foundation? No Yes (If Yes, dimensions of foundation (ft)) length width height

M. FENCES IN WETLANDS, STREAMS, OR FLOODPLAINS (No Sample Drawing available)

- Provide an overall site plan showing the proposed fencing through wetlands, streams, or floodplains.
- Provide drawing of fence profile showing the design, dimension, post spacing, board spacing, and distance from ground to bottom of fence (if in a floodplain).

(check all that apply) wetlands streams floodplains

Total length (ft) of fence through wetlands streams floodplains

Fence height (ft) Fence type and material

N. OTHER - e.g., structure removal, marine railway, low sand trap wall, breakwater, and structural foundations in wetlands or floodplains

11 EXPANSION OF AN EXISTING OR CONSTRUCTION OF A NEW LAKE OR POND (See Sample Drawings 4 and 15)

Which best describes your proposed waterbody use (check all that apply)

wildlife stormwater retention basin stormwater detention basin recreation wastewater basin other

Water source for lake/pond

groundwater natural springs Inland Lake or Stream stormwater runoff pump sewage other

Location Of the lake/basin/pond floodplain wetland upland

Will project involve construction of a dam, dike, outlet control structure, or spillway? No Yes (If Yes, complete Section 17)

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12 ACTIVITIES THAT MAY IMPACT WETLANDS (See Sample Drawings 8 & 9)

- For information on the MDEQ's Wetland Assessment Program, visit the LWMD website or call 517-373-1170.

(check all that apply) fill (Section 10A) dredge or excavation (Section 10B) boardwalk or deck (Section 10I) dewatering

fences (Section 10M) bridges and culverts (Section 14) draining surface water other

Has a professional wetland delineation been conducted for this parcel? No Yes (If Yes, provide a copy; if federal method was used, supply data sheets)

Applicant purchased property before OR after October 1, 1980.

Is there a recorded DEQ easement on the property? No Yes (If Yes, provide the number)

Has the MDEQ conducted a wetland assessment for this parcel? No Yes (If Yes, provide a copy)

Describe the wetland impacts, proposed use or development, and efforts to avoid/minimize impacts. Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted. *The purpose of this project is to maintain and maximize the operational effectiveness of the UM State Street Commuter Lot Stormwater Management Basin. Accumulated sediment removal and replacement of the outlet structure is necessary in order to accomplish this purpose. The proposed activities will impact 3,120 square feet (0.07-acre) of wetland, including 41 cubic yards of wetland fill and 233 cubic yards of wetland dredge. No wetland mitigation is proposed. Establishment of vegetation and existing storm water hydrology will result in the incidental creation of wetland area at least equal to the area that will be impacted.*

Is any grading or mechanized land clearing proposed? No Yes (If Yes, show locations on site plan)

Has any of the proposed grading or mechanized land clearing been completed? No Yes (If Yes, label and show locations on site plan)

- Complete the wetland dredge and wetland fill dimension information for each impacted wetland area.
- Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale. Attach at least one typical cross-section for each wetland dredge and/or fill area. Also complete Section 10A for fill and Section 10B for dredge or excavation activities.
- If dredge material will be disposed of on site, show the location on site plan in an upland area and include soil erosion and sedimentation control measures.

Wetland dredge dimensions	maximum length (ft)	maximum width (ft)	dredge area	average depth (ft)	dredge volume (cu yd)
	90	55	<input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 4,196	1.5	233
Wetland fill dimensions	maximum length (ft)	maximum width (ft)	fill area	average depth (ft)	fill volume (cu yd)
See Table 1	See Table 1	See Table 1	<input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 684	See Table 1	41



Total wetland dredge area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 4,196		Total wetland dredge volume (cu yd) 233
Total wetland fill area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 684		Total wetland fill volume (cu yd) 41
The proposed project will be serviced by <input type="checkbox"/> public sewer <input type="checkbox"/> private septic system (If septic system, show existing and new or expanded system on plans)	If septic system, has application been made to the County Health Department for a permit? <input type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, has permit been issued? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, provide a copy)

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Environmental Consulting & Technology, Inc.

University of Michigan Stormwater Management Basin Retrofits & Maintenance Project
State Street Commuter Lot Basin
2600 S. State Street
Ann Arbor, MI 48103
Parcel No.: 09-12-05-400-024

Table 1: Proposed Impacts

Wetland Fill Quantities (to supplement part 10A of Permit Application)

Material	Sheet Number Referenced	Avg. Width	Avg. Height	Avg. Length	Fill Area (sq. ft.)	Fill Volume	
		(ft)	(ft)	(ft)		(cf)	(cy)
Standpipe Backfill	1 of 3 and 2 of 3	24	4.5	24	444	679	25
Riprap Apron	1 of 3 and 2 of 3	15	1.8	12	120	220	8
Riprap Apron	1 of 3 and 2 of 3	15	1.8	12	120	220	8
TOTAL					684		41

Wetland Excavation Quantities (to supplement part 10B of Permit Application)

Material	Sheet Number Referenced	Ave. Width	Ave. Height	Ave. Length	Cut Area (sq. ft.)	Cut Volume	
		(ft)	(ft)	(ft)		(cf)	(cy)
Excavation of Deposited Sediments	1 of 3	46.6	1.5	90	4,196	6,294	233
TOTAL					4,196		233

Net (CUT)	192
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ENVIRONMENTAL QUALITY
LAND & WATER CONTROLS

UNIVERSITY OF MICHIGAN STORMWATER MANAGEMENT BASIN RETROFITS & MAINTENANCE PROJECT

STATE STREET COMMUTER LOT BASIN

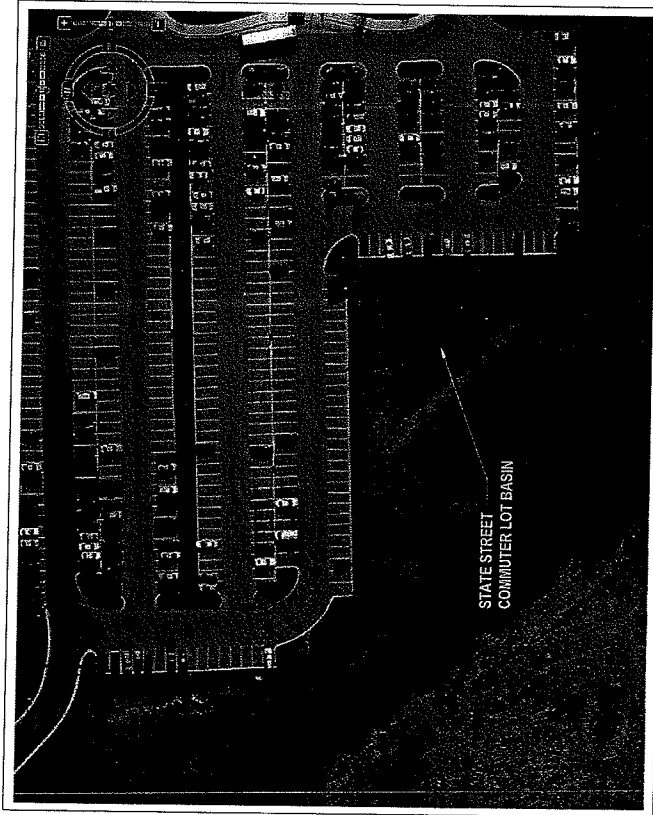


2600 S. STATE STREET
ANN ARBOR, MICHIGAN 48103
PARCEL ID: 09-12-05-400-024 (T.3S, R.6E, SECTION 5)

JUNE 2008

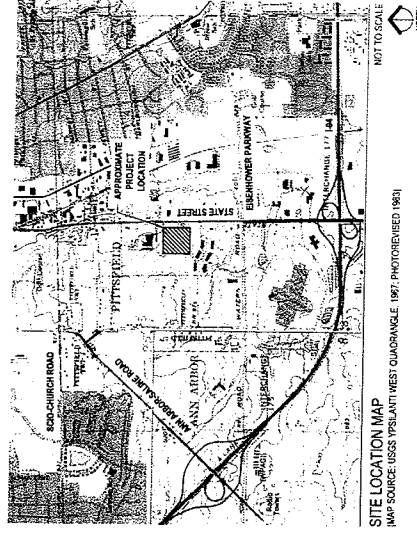
DRAWING INDEX

1. PROPOSED BASIN RETROFITS PLAN
2. CONSTRUCTION DETAILS AND SPECIFICATIONS
3. PROJECT NOTES



SITE MAP
NOT TO SCALE

IMAGE SOURCE: GOOGLE EARTH
NORTH



PREPARED BY:



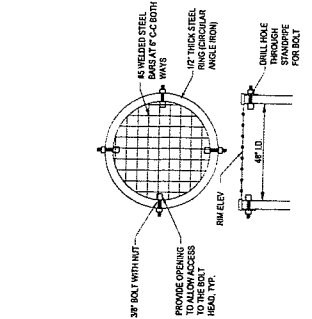
Environmental Consulting & Technology, Inc.
2200 Commonwealth Boulevard, Suite 300
Ann Arbor, Michigan 48106
Phone: 734.769.3004 Fax: 734.769.3164



PROJECT NO.	2309
DATE	5/2008
DESIGNED BY	ECT
CHECKED BY	ECT
DATE	5/2008

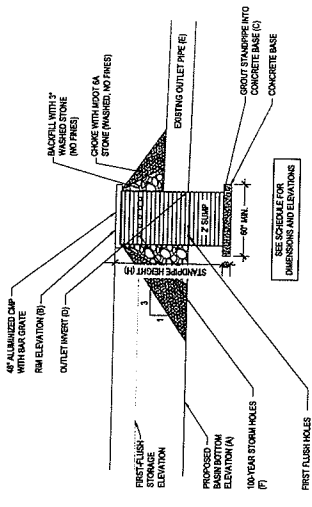
PROJECT NAME	UNIVERSITY OF MICHIGAN STORMWATER MANAGEMENT BASIN RETROFITS & MAINTENANCE PROJECT
PROJECT NUMBER	2309
PROJECT LOCATION	STATE STREET COMMUTER LOT
PROJECT DATE	5/2008

CONSTRUCTION DETAILS & SPECIFICATIONS



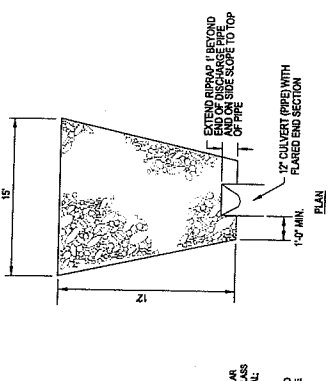
BAR GRATE FOR DETENTION BASIN STANDPIPE
 NOT TO SCALE

- NOTES:**
1. STANDPIPE PERFORATED WITH OUTLET HOLES. PLACE HOLES AND PERFORATION OF PIPE AT RESPECTIVE ELEVATIONS.
 2. EXTREME CARE MUST BE EXERCISED TO INSURE THAT THE STANDPIPE IS NOT BECOME CLOGGED WITH DEBRIS.
 3. WRAP STANDPIPE WITH TEMPORARY FILTER CLOTH AND BE REMOVED UPON COMPLETION OF PROJECT.
 4. CONTRACTOR TO PROVIDE A SILT SAVER FROM STORMWATER MANAGEMENT SYSTEMS, INC. (STORMWATER MANAGEMENT SYSTEMS, INC. IS A REGISTERED PROFESSIONAL ENGINEER AND ARCHITECT) SPECIALLY DESIGNED FOR RISER PIPES ON THE STANDPIPE.
 5. CHANGING DETENTION BASIN RIBS TO BE SPECIALLY DESIGNED FOR RISER PIPES ON THE STANDPIPE.
 6. STANDPIPE TO BE APPROXIMATELY 4 FEET ABOVE FINISH FLOOR TO ALLOW FOR THE STANDPIPE TO BE REMOVED UPON COMPLETION OF PROJECT.
 7. PRIOR TO COMPLETION OF PROJECT, ALL RISER PIPES AND STANDPIPES SHALL BE CLEANED OUT AND SILT SAVER SHALL BE DISPOSED OF WITH DEBRIS.



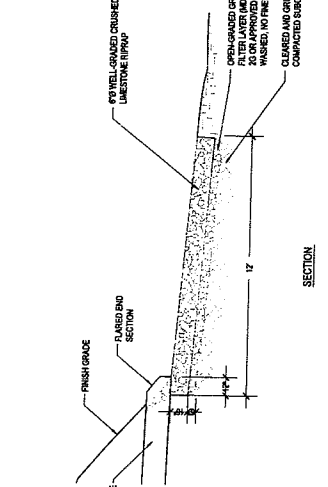
PROPOSED DETENTION BASIN STANDPIPE DETAIL
 NOT TO SCALE

Standpipe ID	Standpipe Size	Standpipe Elevation	Standpipe Invert	Standpipe Outlet Pipe	Standpipe Storm Hole	Standpipe Height
1	36"	881.5	881.5	12" PCD	8" DIA	8.5



STANDARD RIPRAP APRON DETAIL
 NOT TO SCALE

NOTE: RIPRAP APRONS SHALL BE COMPRESSED INTO FILTER LAYER WITH EXCAVATOR BUCKET.

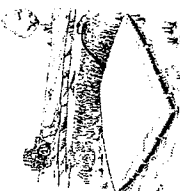


STANDARD RIPRAP APRON DETAIL
 NOT TO SCALE

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ECOLOGOBAG
 Pump Discharge Filtration Unit

ECOLOGOBAG is a patented mobile unit designed to filter stormwater runoff from parking lots, streets, and other paved areas. It is made of polypropylene and is designed to be installed in a concrete curb. The unit is designed to filter out debris, sediment, and other pollutants from the runoff. It is a cost-effective solution for stormwater management in urban areas.

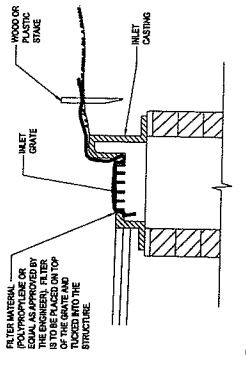
Property	Model	Unit	MARV
Capacity	ASTM D-4432	100	100
Capacity	ASTM D-4432	200	200
Capacity	ASTM D-4432	300	300
Capacity	ASTM D-4432	400	400
Capacity	ASTM D-4432	500	500
Capacity	ASTM D-4432	600	600
Capacity	ASTM D-4432	700	700
Capacity	ASTM D-4432	800	800
Capacity	ASTM D-4432	900	900
Capacity	ASTM D-4432	1000	1000

Specifications

The patented Silt-Saver Filter is constructed of polypropylene and is designed to filter out debris, sediment, and other pollutants from stormwater runoff. It is a cost-effective solution for stormwater management in urban areas. The filter is designed to be installed in a concrete curb and is made of polypropylene. It is a cost-effective solution for stormwater management in urban areas.

Weight	30 cfs / 7
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632
Frame strength	D-4632

For Product Information, Contact Your Local Distributor or Silt-Saver, Inc.
 Web: www.silt-saver.com
 Phone: (734) 761-1111 ext. 200
 Email: info@silt-saver.com



INLET FILTER DETAIL
 NOT TO SCALE



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

July 8, 2008

City of Ann Arbor Clerk
P.O. Box 8647
Ann Arbor, Michigan 48107-8647

Dear Township Clerk:

SUBJECT: DEQ File Number: 08-81-0052-P
T 2S, R 6E, Section(s) 14, City of Ann Arbor, Washtenaw County

Attached is a copy of a permit application received by the Land and Water Management Division (LWMD), which is being processed as a General Permit under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

If you have any concerns or comments regarding this application, please contact Mr. James Sallee, Jackson District Office, LWMD, 301 E. Louis Glick Hwy., Jackson, Michigan 49201-1535, within 10 days from the date of this letter.

Sincerely,

Kate Hayes
Permit Consolidation Unit
Land and Water Management Division
517-373-9244

Attachment

cc: Mr. James Sallee, DEQ

2008 JUL 17 AM 7:18
CITY OF ANN ARBOR
CITY CLERK
REC'D

Revised

AGENCY USE	Previous USACE Permit or File Number	RECEIVED Date Received JUL 02 2008 ENVIRONMENTAL QUALITY LAND & WATER MGMT-PCU	Land and Water Management Division, MDEQ File Number		AGENCY USE
	USACE File Number		08-81-0052-P		
	Jackson: James Saltee		Marina Operating Permit Number		
			Fee received \$	ck# 50530	
			\$50	ck# 50099	
			\$50	ck# 50099	

Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION

Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s).

Address Bluett Drive, between Prairie St and Georgetown Blvd.		Township Name(s)	Township(s) 2S	Range(s) 6E	Section(s) 14
City/Village Ann Arbor	County(ies) Washtenaw	Property Tax Identification Number(s) 09-09-14-300-078, 09-09-14-300-040, 09-09-14-202-017			
Name of Waterbody Thurston Pond	Project Name or Job Number JFN 050944	Subdivision/Plat	Lot Number	Private Claim	
Project types (check all that apply)		<input type="checkbox"/> private <input type="checkbox"/> building addition <input checked="" type="checkbox"/> other (explain) stormwater diversion into pond		<input checked="" type="checkbox"/> public/government <input type="checkbox"/> new building or structure	
		<input type="checkbox"/> industrial <input type="checkbox"/> building renovation or restoration		<input type="checkbox"/> commercial <input type="checkbox"/> river restoration <input type="checkbox"/> multi-family <input type="checkbox"/> single-family	
The proposed project is on, within, or involves (check all that apply)					
<input type="checkbox"/> a stream <input type="checkbox"/> a river <input type="checkbox"/> a ditch or drain <input type="checkbox"/> a floodway area		<input type="checkbox"/> a pond (less than 5 acres) <input type="checkbox"/> a channel/canal <input checked="" type="checkbox"/> an inland lake (5 acres or more) <input type="checkbox"/> a 100-year floodplain		<input type="checkbox"/> a legally established County Drain (date established _____) <input type="checkbox"/> a Great Lake or Section 10 Waters <input type="checkbox"/> a designated high risk erosion area <input type="checkbox"/> a designated critical dune area <input type="checkbox"/> a designated environmental area	
		<input type="checkbox"/> a natural river <input checked="" type="checkbox"/> a wetland <input type="checkbox"/> 500 feet of an existing waterbody		<input type="checkbox"/> a new marina <input type="checkbox"/> a structure removal <input type="checkbox"/> a utility crossing	

2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES, AND THE CONSTRUCTION SEQUENCE AND METHODS

Attach separate sheets, as needed, including necessary drawings, sketches, photographs, aerials, or plans.

see attached

3 APPLICANT, AGENT/CONTRACTOR, AND PROPERTY OWNER INFORMATION

The applicant can be either the property owner or the person or company that proposes to undertake the activity. If the applicant is a corporation, both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf.

Applicant (individual or corporate name) Ann Arbor Public Schools		Agent/Contractor (firm name and contact person) JFN New, Erin Switala	
Mailing Address 2555 S. State Street		Address 605 S. Main St, Suite 1	
City Ann Arbor	State MI	City Ann Arbor	State MI
Zip Code 48104		Zip Code 48104	
Daytime Phone Number with Area Code (734) 994-2239		Daytime Phone Number with Area Code (734) 222-9690	
Cell Phone Number		Cell Phone Number	
Fax (734) 997-0145	E-mail	Fax (734) 222-9655	E-mail eswitala@jfnnew.com

Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? No Yes
If No, provide a letter signed by the property owner authorizing the agent/contractor to act on his or her behalf or a copy of easements or right-of-ways. If multiple owners, attach all property owners' names, mailing addresses, and telephone numbers. Disclose any DEQ conservation easements or other easements, deed restrictions, leases, or any other encumbrance upon the property in the project area. A copy of the land restriction must be provided.

Property Owner's Name (If different from applicant)		Mailing Address	
Daytime Phone Number with Area Code	Cell Phone Number	City	State Zip Code

4 PROPOSED PROJECT PURPOSE, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

The purpose must include any new development or expansion of an existing land use. Include a description of alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative construction technologies; alternative project layout and design; alternative locations; local land use regulations and infrastructure; and pertinent environmental and resource issues. For utility crossings, include both alternative routes and alternative construction methods.

see attached



Revised

5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site.
Attach a copy of a map, such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction.
Project area must be staked at the time of application submittal.

Is there an access road to the project? [] No [x] Yes (If Yes, type of road, check all that apply) [] private [x] public [] improved [] unimproved
Name of roads at closest main intersection Plymouth Road and Georgetown Blvd

Directions from main intersection From Plymouth Road turn north onto Georgetown Blvd. Turn left on Bluett Drive, continue until Antietam. Proceed on ped path between two houses, next to 3106 Bluett Drive

Style of house or other building on site [] ranch [] 2-story [] cape cod [] bi-level [] cottage/cabin [] pole barn [x] none [] other (describe)

Color Color of adjacent property house and/or buildings brick/blue

House number 3106 Address is visible on [] house [x] garage [] mailbox [] sign [] other

Street name Bluett Drive Fire lane number Lot number

How can your site be identified if there is no visible address?

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Provide directions to the project site, with distances from the best and nearest visible landmark and waterbody

proceed down pedestrian pathway, between the houses at 3106 and 3902 Bluett, then turn left onto mulch pathway

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.)

[] No [] Yes (If Yes, list jurisdiction names.)

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6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency Type approval Identification number Date applied Date approved / denied If denied, reason for denial

7 If a permit is issued, date activity will commence (M/D/Y) 09/15/2008

Proposed completion date (M/D/Y) 10/15/2008

Has any construction activity commenced or been completed in a regulated area? [x] No [] Yes

If Yes, identify the portion(s) underway or completed on drawings or attach project specifications and give completion date(s) (M/D/Y)

Were the regulated activities conducted under a MDEQ permit? [] No [] Yes

If Yes, list the MDEQ permit number

Are you aware of any unresolved violations of environmental law or litigation involving the property? [x] No [] Yes (If Yes, explain)

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all adjacent and impacted property owners and the lake association or established lake board, including the contact person's name.
If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property Owner's Name Mailing Address City State Zip Code

see attached

Name of [] Established Lake Board [] or Lake Association and the Contact Person's name, phone number, and mailing address

9 APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and, to the best of my knowledge, is in compliance with the State Coastal Zone Management Program and the National Flood Insurance Program. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

- All applicants must complete all of the items in Sections 1 through 9 on pages 1 and 2 of this application.
Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.
Your application will not be processed if the application form is not completely filled out.
List here the application page numbers being submitted and a brief description of other attachments included with your application.
Submit 8.5" by 11," 8.5" by 14" or 11" by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5" x 11" paper, with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.
A letter of authorization from the owner must be included if not signed below by the owner.

[] Property Owner
[x] Agent/Contractor
[] Corporation - Title

JFNew (Erin Switala)
Printed Name

Erin N. Switala
Signature

6/27/08
Date



10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

- Check boxes A through N that may be applicable to your project and provide the requested information.
• If your project may affect wetlands, also complete Section 12. If your project may impact regulated floodplains, also complete Section 13.
• Provide an overall site plan showing existing lakes, streams, wetlands, and other water features; existing structures; and the location of all proposed structures, land change activities and soil erosion and sedimentation control measures. Review sample drawings for guidance in completing site-specific drawings for your project.
• Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
• On a Great Lake use IGLD 85 [] surveyed [] converted from observed still water elevation. On inland waters, [] NGVD 29 [] local datum [] other

A. PROJECTS REQUIRING FILL (See All Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
• Attach both plan and cross-section views to scale showing maximum and average fill dimensions.

(Check all that apply) [] floodplain fill [] wetland fill [x] riprap [] seawall, bulkhead, or revetment [] bridge or culvert
[] boat launch [] off-shore swim area [] beach sanding [] boatwell [] crib dock [] other
Fill dimensions (ft) length width maximum depth Total fill volume (cu yd) Maximum water depth in fill area (ft)
Type of clean fill [] pea stone [] sand [] gravel [] wood chips [] other
Source of clean fill [] on-site, If on-site, show location on site plan [] commercial [] other, If other, attach description of location
Fill will extend feet into the water from the shoreline and upland feet out of the water. Fill volume below OHWM (cu yd)

B. PROJECTS REQUIRING DREDGING OR EXCAVATION (For dredging projects see Sample Drawing 7, for excavation see other applicable Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
• Attach both plan and cross-section views to scale showing maximum and average dredge or excavation dimensions.
• The applicant will be notified if sediment sampling is required.

(Check all that apply) [] floodplain excavation [] wetland dredge or draining [] seawall, bulkhead, or revetment
[] navigation [] boat well [] boat launch [x] other excavate for forebay at pipe inlet to pond
Total dredge/excavation volume (cy) Dimensions 745 SF total Dredge/excavation volume Method and equipment for dredging
64 (total wetland + upland) length width depth 1-3.5 below OHWM (cu yd) 0 mini-excavator
Has proposed dredge material been tested for contaminants? Will dredged or excavated spoils be placed [x] on-site [] off-site. Attach a detailed disposal
[x] No [] Yes (If Yes, attach testing results) area site plan, location map. If dispose off site, provide address and letter of authorization.
Has this same area been previously dredged? [x] No [] Yes (If Yes, provide date and permit number, if available)
If Yes, are you proposing to enlarge the previously dredged area [] No [] Yes
Is long-term maintenance dredging planned? [x] No [] Yes (If Yes, when and how much?)

C. PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23. Others may apply)

Riprap waterward of the [] shoreline OR [] ordinary high water mark Dimensions (ft) length width depth Volume (cu yd)
Riprap landward of the [] shoreline OR [x] ordinary high water mark Dimensions (ft) length 20 width 15 depth 1.55 Volume (cu yd) 18
Type of riprap [] field stone [x] angular rock [] other Will filter fabric be used under proposed riprap? [] No [x] Yes
(If Yes, type) nonwoven geotextile

D. SHORE PROTECTION PROJECTS (See Sample Drawings 2, 3, and 17)

(check all that apply) [] riprap - length (ft.) [] seawall/bulkhead - length (ft.) [] revetment - length (ft.) Distances of project from both property lines (ft)

E. DOCK - PIER - MOORING PILINGS (See Sample Drawing 10)

Type [] open pile [] filled [] crib Seasonal structure? [] No [] Yes
Proposed structure dimensions (ft) length width Dimensions of nearest adjacent structures (ft) length

F. BOAT WELL (No Sample Drawing available)

Type of bank stabilization [] wood [] steel [] concrete [] vinyl [] riprap [] other
Boat well dimensions (ft) length width depth Number of boats
Volume of backfill behind sidewall stabilization (cu yd) Distances of boat well from adjacent property lines (ft)

G. BOAT LAUNCH (No Sample Drawing available) (check all that apply) [] new [] existing [] public [] private [] commercial [] replacement

Proposed overall boat launch dimensions (ft) length width depth Type of material [] concrete [] wood [] stone [] other
Existing overall boat launch dimensions (ft) length width depth Boat launch dimensions (ft) below ordinary high water mark length width depth
Distances of launch from both property lines (ft) Number of skid piers Skid pier dimensions (ft) width length

H. BOAT HOIST (No Sample Drawing available)

(Check all that apply) [] seasonal [] permanent [] cradle [] side lifter [] other located on [] seawall [] dock [] bottomlands

I. BOARDWALKS AND DECKS IN [] WETLANDS - OR - [] FLOODPLAINS (See Sample Drawings 5 and 6. Provide table if necessary)

(Check all that apply) [] boardwalk [] deck Boardwalk or deck is on [] fill [] piling Dimensions (ft) length width

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10 Continued - PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

J. INTAKE PIPES (See Sample Drawing 16) [X] OUTLET PIPES (See Sample Drawing 22)

Type [] headwall [] end section [X] pipe [] other
Dimensions of headwall OR end section (ft) length width depth
Number of pipes 1 Pipe diameters and invert elevations 24" proposed invert = 907.5 ft

K. MOORING AND NAVIGATION BUOYS (No Sample Drawing available)
Provide an overall site plan showing the distances between each buoy, distances from the shore to each buoy, and depth of water at each buoy in feet.
Provide cross-section drawing(s) showing anchoring system(s) and dimensions.

Number of buoys Type of anchor system Purpose of buoy [] mooring [] navigation [] swimming
Do you own the property along the shoreline? [] No [X] Yes
If No, you must provide an authorization letter from the property owner(s)

L. GROINS (No Sample Drawing available)
Provide an overall site plan showing the distances (ft) of the outermost groins from the property lines, distances between groins, length and width of each groin, and the distance from the existing toe of the bluff to the lakeward end of the groins.
If existing groins are located on adjacent properties, provide distances (ft) from closest neighboring groin to your property lines on the site plan.
Provide cross-section views showing the length and height of each groin and the height of groin ends above the observed water level (date and time). If step down type, show the height of each section above the observed water level.

Number of groins Type of groin [] steel [] wood [] other Will groin be placed on a foundation? [] No [X] Yes (If Yes, dimensions of foundation (ft)) length width height

M. FENCES IN WETLANDS, STREAMS, OR FLOODPLAINS (No Sample Drawing available)
Provide an overall site plan showing the proposed fencing through wetlands, streams, or floodplains.
Provide drawing of fence profile showing the design, dimension, post spacing, board spacing, and distance from ground to bottom of fence (if in a floodplain).

(check all that apply) [] wetlands [] streams [] floodplains Total length (ft) of fence through wetlands streams floodplains Fence height (ft) Fence type and material

N. OTHER - e.g., structure removal, marine railway, low sand trap wall, breakwater, and structural foundations in wetlands or floodplains

11 EXPANSION OF AN EXISTING OR CONSTRUCTION OF A NEW LAKE OR POND (See Sample Drawings 4 and 15)

Which best describes your proposed waterbody use (check all that apply)
[] wildlife [] stormwater retention basin [] stormwater detention basin [] recreation [] wastewater basin [] other

Water source for lake/pond [] groundwater [] natural springs [] Inland Lake or Stream [] stormwater runoff [] pump [] sewage [] other
Location Of the lake/basin/pond [] floodplain [] wetland [] upland

Will project involve construction of a dam, dike, outlet control structure, or spillway? [] No [X] Yes (If Yes, complete Section 17)

12 ACTIVITIES THAT MAY IMPACT WETLANDS (See Sample Drawings 8 & 9)

For information on the MDEQ's Wetland Assessment Program, visit the LWMD website or call 517-373-1170.
(fill Section 10A) [X] dredge or excavation (Section 10B) [] boardwalk or deck (Section 10I) [] dewatering
[] fences (Section 10M) [] bridges and culverts (Section 14) [] draining surface water [] other

Has a professional wetland delineation been conducted for this parcel? [] No [X] Yes (If Yes, provide a copy; if federal method was used, supply data sheets)
Applicant purchased property [X] before OR [] after October 1, 1980.

Is there a recorded DEQ easement on the property? [X] No [] Yes (If Yes, provide the number)

Has the MDEQ conducted a wetland assessment for this parcel? [X] No [] Yes (If Yes, provide a copy)
Describe the wetland impacts, proposed use or development, and efforts to avoid/minimize impacts. Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted.

Approximately 0.02 acres of wetland will be impacted by construction of forebay at stormwater pipe outlet. Most of the impacted area will be graded and replanted with native wetland plants. The 9 MG/yr stormwater input should raise water levels 6-9 in. creating hydrology for additional pond edge wetland.

Is any grading or mechanized land clearing proposed? [] No [X] Yes (If Yes, show locations on site plan)
Has any of the proposed grading or mechanized land clearing been completed? [X] No [] Yes (If Yes, label and show locations on site plan)

Complete the wetland dredge and wetland fill dimension information for each impacted wetland area.
Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale. Attach at least one typical cross-section for each wetland dredge and/or fill area. Also complete Section 10A for fill and Section 10B for dredge or excavation activities.
If dredge material will be disposed of on site, show the location on site plan in an upland area and include soil erosion and sedimentation control measures.

Table with 7 columns: Wetland dredge dimensions, maximum length/width, dredge area (acres/sq ft), average depth, dredge volume (cu yd). Includes rows for fill area and total volumes.

Total wetland dredge area [] acres [X] sq ft 378 sf excavation (+405 sf re-graded and re-planted)
Total wetland dredge volume (cu yd) 14
Total wetland fill area [] acres [X] sq ft 80 sf rip rap fill
Total wetland fill volume (cu yd) 5.5 (rip rap)

The proposed project will be serviced by [] public sewer [] private septic system (If septic system, show existing and new or expanded system on plans)
If septic system, has application been made to the County Health Department for a permit? [] No [X] Yes
If Yes, has permit been issued? [] No [X] Yes (If Yes, provide copy)



605 South Main St, Suite 1
Ann Arbor, Michigan 48107
Phone: 734-222-9690
Fax: 734-222-9655
Mobile: 734-255-8519

Erin Switala
Ecological Resource Specialist
eswitala@jfnew.com

Corporate Office
Walkerton, Indiana

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Grand Haven, Michigan

Ann Arbor, Michigan

Cincinnati, Ohio

Madison, Wisconsin

Native Plant Nursery:
Walkerton, Indiana

www.jfnew.com

June 27, 2008

Michigan Department of Environmental Quality
Land and Water Management Division
Permit Consolidation Unit
PO Box 30204
Lansing, Michigan 48909-7704

Re: Application Corrections for Thurston Pond
Stormwater Diversion Project, File # 08-81-0052-P

Dear Permit Reviewer,

This letter is in response to the Application Correction Request letter from MDEQ Permit Consolidation Unit dated June 23, 2008.

We have included corrections to the permit application with this letter. These corrections include: revised Section 10J of the permit application, revised Section 3 which indicates that Ann Arbor Public Schools is the sole owner of the property on which the work will take place, a signed copy of the permit application, and the additional \$50 application fee. We have also included mailing labels for the adjacent property owners, for your convenience.

If there are any additional questions or concerns with this permit application, please do not hesitate to contact me by phone at (734)222-9690, or by email at eswitala@jfnew.com.

Sincerely yours,
JF NEW

Erin Switala

cc: Randall Trent, AAPS
Larry McCarthy, Stantec

Attachments

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ENVIRONMENTAL QUALITY
LAND & WATER MGMT-PCU

MDEQ/ USACE Joint Permit Application – Thurston Pond
6/10/2008



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

June 23, 2008

Ann Arbor Public Schools
2555 South State Street
Ann Arbor, MI 48104

File Number: 08-81-0052-P
County: Washtenaw
Project Name: JFN050944

Dear Applicant:

SUBJECT: APPLICATION CORRECTION REQUEST

The Michigan Department of Environmental Quality (MDEQ), Land and Water Management Division (LWMD) has received your recently submitted Joint Permit Application. Initial review of the application has determined that it is incomplete.

In order for the LWMD staff to properly begin to process your application, a minimum amount of information must be submitted. Please refer to the checklist on the back of this form to provide the omitted or unclear information.

Additional information and/or filing fees may be required upon further review of your application. Should we not receive the requested information from you within 30 days of this correction request, we will consider your application as withdrawn, and we will close your file. Applications administered by the LWMD can be reopened within 180 days of this correction request, if all the information requested is provided. The application file will be permanently closed if all of the requested information is not provided within 180 days of this correction request. Fees are not refundable on files once a decision has been made or if an action has been taken, such as closing a file due to no or incomplete response to a correction request, posting a public notice, or conducting a site visit. A new application can be submitted after 180 days of the date of this correction request, but fees are not transferable.

If you have any questions regarding this letter or your application, please contact PCU at 517-373-9244 or e-mail at deq-lwm-pcu@michigan.gov. Send the requested information to: MDEQ, LWMD, PO Box 30204, Lansing, MI 48909. Please include your file number, (File Number), in your response. The status of your file can be tracked on-line at: <http://www.deq.state.mi.us/ciwpiis>

Permit Consolidation Unit
Land and Water Management Division
517-373-9244

cc: JFNNew

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LWMD JOINT PERMIT APPLICATION PRE-REVIEW CHECKLIST

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COPY

MDEQ File No. 08-81-0052-P Date: June 23, 2008

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Applicant Name: Ann Arbor Public Schools

The items checked below were not included or were unclear in your recent application. Return the requested information with this form and include your file number on all correspondence.

- Complete section 10 J: Outlet Pipes*
 - Refer to the application cover page or our website for basic instructions.
 - Please provide mailing labels if available for property owners listed in section 8
- Section 9 – Signature:*
 - The application must be signed and dated. If the applicant is a corporation, agent, or consultant include the title of the authorized representative.
- Letter of Authorization from landowners*
 - A letter from the legal landowner(s) authorizing the applicant to apply for the proposed project. The letter should include the signature from landowner, the project site address, and a brief project description.
- Vicinity Map:*
 - A black and white map to the proposed project location that includes ALL streets, roads, intersections, highways or crossroads to the project. Include written directions from a well-known landmark or major intersection (do not assume staff know your project location).
- Project Site Plan:*
 - Black and white overhead drawings on 8 ½ by 11 inch paper that are legible, scaled and/or with all dimensions indicated, of the proposed project are required. Please ensure the property boundaries and the existing and proposed conditions are shown in relation to the project's location. Refer to Appendix B of the application and/or our website for sample drawings.
- Section Views (cross and profile) include:*
 - Black and white cross-sectional drawings on 8 ½ by 11 inch paper that are legible, scaled and/or with all dimensions indicated, of the proposed projects are required. Include the existing and proposed conditions. Refer to Appendix B of the application and/or our website for sample drawings.
- Application Fee: The fee for this project is \$100 because it impacts a wetland. \$50 received; Please send an additional \$50.*
 - Fees typically range from \$50.00 to \$2,000, depending on the type of project. Refer to Appendix C of the application and/or visit our website to determine the appropriate fee for your project. Include your file number on the check (payable to the State of Michigan). Credit card or electronic check payment options are available. Forms may be downloaded from our website or are available by calling the Permit Consolidation Unit at 517-373-9244. In addition to the requested information above, please refer to the cover page of the application to ensure all information has been submitted. This will reduce the processing time of your application. Our website address is: www.michigan.gov/jointpermit

RETURN THIS FORM WITH ALL REQUESTED INFORMATION



Revision Rec'd 7-2-08

AGENCY USE	Previous USACE Permit or File Number	RECEIVED JUN 17 2008 ENVIRONMENTAL QUALITY LAND & WATER MGMT-PCU	Land and Water Management Division, MDEQ File Number	AGENCY USE	
	USACE File Number		08-81-0052-P		Marina Operating Permit Number
			Fee received \$ 150		CL# 5053

• Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION

• Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s).

Address Bluet Drive, between Prairie St and Georgetown Blvd.		Township Name(s)	Township(s) 2S	Range(s) 6E	Section(s) 14
City/Village Ann Arbor	County(ies) Washtenaw	Property Tax Identification Number(s) 09-09-14-300-078, 09-09-14-300-040, 09-09-14-202-017			
Name of Waterbody Thurston Pond	Project Name or Job Number JFN 050944	Subdivision/Plat	Lot Number	Private Claim	
Project types (check all that apply)					
<input type="checkbox"/> private		<input checked="" type="checkbox"/> public/government		<input type="checkbox"/> industrial	
<input type="checkbox"/> building addition		<input type="checkbox"/> new building or structure		<input type="checkbox"/> commercial	
<input checked="" type="checkbox"/> other (explain) stormwater diversion into pond		<input type="checkbox"/> building renovation or restoration		<input type="checkbox"/> river restoration	
<input type="checkbox"/> a stream		<input type="checkbox"/> a pond (less than 5 acres)		<input type="checkbox"/> a natural river	
<input type="checkbox"/> a river		<input type="checkbox"/> a channel/canal		<input type="checkbox"/> a dam	
<input type="checkbox"/> a ditch or drain		<input checked="" type="checkbox"/> an inland lake (5 acres or more)		<input checked="" type="checkbox"/> a wetland	
<input type="checkbox"/> a floodway area		<input type="checkbox"/> a 100-year floodplain		<input type="checkbox"/> a utility crossing	
<input type="checkbox"/> a legally established County Drain (date established _____)		<input type="checkbox"/> a Great Lake or Section 10 Waters		<input type="checkbox"/> a structure removal	
<input type="checkbox"/> a designated high risk erosion area		<input type="checkbox"/> a designated critical dune area		<input type="checkbox"/> a designated environmental area	
<input type="checkbox"/> 500 feet of an existing waterbody					

2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES, AND THE CONSTRUCTION SEQUENCE AND METHODS

• Attach separate sheets, as needed, including necessary drawings, sketches, photographs, aerials, or plans.

see attached

3 APPLICANT, AGENT/CONTRACTOR, AND PROPERTY OWNER INFORMATION

• The applicant can be either the property owner or the person or company that proposes to undertake the activity.
• If the applicant is a corporation, both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf.

Applicant (individual or corporate name) Ann Arbor Public Schools		Agent/Contractor (firm name and contact person) JFNw, Erin Switala	
Mailing Address 2555 S. State Street		Address 605 S. Main St, Suite 1	
City Ann Arbor	State MI	City Ann Arbor	State MI
Zip Code 48104	Daytime Phone Number with Area Code (734) 994-2239	Zip Code 48104	Daytime Phone Number with Area Code (734) 222-9690
Cell Phone Number	Fax (734) 997-0145	Cell Phone Number	Fax (734) 222-9655
E-mail		E-mail eswitala@jfnw.com	
Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes			
If No, provide a letter signed by the property owner authorizing the agent/contractor to act on his or her behalf or a copy of easements or right-of-ways. If multiple owners, attach all property owners' names, mailing addresses, and telephone numbers. Disclose any DEQ conservation easements or other easements, deed restrictions, leases, or any other encumbrance upon the property in the project area. A copy of the land restriction must be provided. see attached			
Property Owner's Name (If different from applicant)		Mailing Address	
Daytime Phone Number with Area Code	Cell Phone Number	City	State Zip Code

4 PROPOSED PROJECT PURPOSE, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

• The purpose must include any new development or expansion of an existing land use.
• Include a description of alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative construction technologies; alternative project layout and design; alternative locations; local land use regulations and infrastructure; and pertinent environmental and resource issues.
• For utility crossings, include both alternative routes and alternative construction methods.

see attached



5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site.
- Attach a copy of a map, such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction.
- Project area must be staked at the time of application submittal.

Is there an access road to the project? No Yes (If Yes, type of road, check all that apply) private public improved unimproved

Name of roads at closest main intersection Plymouth Road and Georgetown Blvd

Directions from main intersection From Plymouth Road turn north onto Georgetown Blvd. Turn left on Bluett Drive, continue until Antietam. Proceed on ped path between two houses, next to 3106 Bluett Drive

Style of house or other building on site ranch 2-story cape cod bi-level cottage/cabin pole barn none other (describe) _____

Color _____ Color of adjacent property house and/or buildings brick/blue

House number 3106 Address is visible on house garage mailbox sign other _____

Street name Bluett Drive Fire lane number _____ Lot number _____

How can your site be identified if there is no visible address? _____

Provide directions to the project site, with distances from the best and nearest visible landmark and waterbody _____

proceed down pedestrian pathway, between the houses at 3106 and 3902 Bluett, then turn left onto mulch pathway

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.)

No Yes (If Yes, list jurisdiction names.)

6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency	Type approval	Identification number	Date applied	Date approved / denied	If denied, reason for denial
--------	---------------	-----------------------	--------------	------------------------	------------------------------

7 If a permit is issued, date activity will commence (M/D/Y) 09/15/2008

Proposed completion date (M/D/Y) 10/15/2008

Has any construction activity commenced or been completed in a regulated area? No Yes

Were the regulated activities conducted under a MDEQ permit? No Yes

If Yes, identify the portion(s) underway or completed on drawings or

If Yes, list the MDEQ permit number

attach project specifications and give completion date(s) (M/D/Y)

Are you aware of any unresolved violations of environmental law or litigation involving the property? No Yes (if Yes, explain)

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all adjacent and impacted property owners and the lake association or established lake board, including the contact person's name.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property Owner's Name	Mailing Address	City	State	Zip Code
-----------------------	-----------------	------	-------	----------

see attached

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Name of Established Lake Board or Lake Association and the Contact Person's name, phone number, and mailing address

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9 APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and, to the best of my knowledge, is in compliance with the State Coastal Zone Management Program and the National Flood Insurance Program. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

- All applicants must complete all of the items in Sections 1 through 9 on pages 1 and 2 of this application.
- Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.
- Your application will not be processed if the application form is not completely filled out.
- List here the application page numbers being submitted and a brief description of other attachments included with your application.
- Submit 8.5" by 11," 8.5" by 14" or 11" by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5" x 11" paper, with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.
- A letter of authorization from the owner must be included if not signed below by the owner.

<input type="checkbox"/> Property Owner	Erin Switala	Signature	Date
<input checked="" type="checkbox"/> Agent/Contractor			
<input type="checkbox"/> Corporation - Title	Printed Name		



10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

- Check boxes A through N that may be applicable to your project and provide the requested information.
If your project may affect wetlands, also complete Section 12.
Provide an overall site plan showing existing lakes, streams, wetlands, and other water features...

A. PROJECTS REQUIRING FILL (See All Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
Attach both plan and cross-section views to scale showing maximum and average fill dimensions.

(Check all that apply) floodplain fill wetland fill riprap seawall, bulkhead, or revetment bridge or culvert
boat launch off-shore swim area beach sanding boatwell crib dock other

Fill dimensions (ft) see rip rap section 10C Total fill volume (cu yd) Maximum water depth in fill area (ft)
length width maximum depth Will filter fabric be used under proposed fill?
Type of clean fill pea stone sand gravel wood chips other No Yes (If Yes, type)

Source of clean fill on-site, If on-site, show location on site plan commercial other, If other, attach description of location

Fill will extend feet into the water from the shoreline and upland feet out of the water. Fill volume below OHWM (cu yd)

B. PROJECTS REQUIRING DREDGING OR EXCAVATION (For dredging projects see Sample Drawing 7, for excavation see other applicable Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
Attach both plan and cross-section views to scale showing maximum and average dredge or excavation dimensions.
The applicant will be notified if sediment sampling is required.

(Check all that apply) floodplain excavation wetland dredge or draining seawall, bulkhead, or revetment
navigation boat well boat launch other excavate for forebay at pipe inlet to pond

Total dredge/excavation volume (cy) 64 (total wetland + upland) Dimensions 745 SF total length width depth 1-3.5 Dredge/excavation volume below OHWM (cu yd) 0 Method and equipment for dredging mini-excavator

Has proposed dredge material been tested for contaminants? Will dredged or excavated spoils be placed on-site off-site. Attach a detailed disposal area site plan, location map. If dispose off site, provide address and letter of authorization.

Has this same area been previously dredged? No Yes (If Yes, provide date and permit number, if available)
If Yes, are you proposing to enlarge the previously dredged area No Yes

Is long-term maintenance dredging planned? No Yes (If Yes, when and how much?)

C. PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23. Others may apply)

Riprap waterward of the shoreline OR ordinary high water mark Dimensions (ft) length width depth Volume (cu yd)
Riprap landward of the shoreline OR ordinary high water mark Dimensions (ft) length 20 width 15 depth 1.55 Volume (cu yd) 18

Type of riprap field stone angular rock other Will filter fabric be used under proposed riprap? No Yes (If Yes, type) nonwoven geotextile

D. SHORE PROTECTION PROJECTS (See Sample Drawings 2, 3, and 17)

(check all that apply) riprap - length (ft.) seawall/bulkhead - length (ft.) revetment - length (ft.) Distances of project from both property lines (ft)

E. DOCK - PIER - MOORING PILINGS (See Sample Drawing 10)

Type open pile filled crib Seasonal structure? No Yes Proposed structure dimensions (ft) length width Dimensions of nearest adjacent structures (ft) length width

F. BOAT WELL (No Sample Drawing available)

Type of bank stabilization wood steel concrete vinyl riprap other ENVIRONMENTAL QUALITY LAND & WATER MGMT-PCU

Boat well dimensions (ft) length width depth Number of boats Distances of boat well from adjacent property lines (ft)

G. BOAT LAUNCH (No Sample Drawing available) (check all that apply) new existing public private commercial replacement

Proposed overall boat launch dimensions (ft) length width depth Type of material concrete wood stone other

Existing overall boat launch dimensions (ft) length width depth Boat launch dimensions (ft) below ordinary high water mark length width depth

Distances of launch from both property lines (ft) Number of skid piers Skid pier dimensions (ft) width length

H. BOAT HOIST (No Sample Drawing available)

(Check all that apply) seasonal permanent cradle side lifter other located on seawall dock bottomlands

I. BOARDWALKS AND DECKS IN WETLANDS - OR - FLOODPLAINS (See Sample Drawings 5 and 6. Provide table if necessary)

(Check all that apply) boardwalk deck Boardwalk or deck is on fill piling Dimensions (ft) length width

Revision Recd 7-2-08



10 Continued - PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE						
<input type="checkbox"/> J. INTAKE PIPES (See Sample Drawing 16) <input type="checkbox"/> OUTLET PIPES (See Sample Drawing 22)						
Type <input type="checkbox"/> headwall <input type="checkbox"/> end section <input type="checkbox"/> pipe <input type="checkbox"/> other _____			If outlet pipe, discharge is to <input type="checkbox"/> wetland <input type="checkbox"/> inland lake <input type="checkbox"/> stream, drain, or river <input type="checkbox"/> Great Lake <input type="checkbox"/> other _____			
Dimensions of headwall OR end section (ft) length _____ width _____ depth _____			Number of pipes _____	Pipe diameters and invert elevations _____		
<input type="checkbox"/> K. MOORING AND NAVIGATION BUOYS (No Sample Drawing available)						
<ul style="list-style-type: none"> Provide an overall site plan showing the distances between each buoy, distances from the shore to each buoy, and depth of water at each buoy in feet. Provide cross-section drawing(s) showing anchoring system(s) and dimensions. 						
Number of buoys _____		Type of anchor system _____		Purpose of buoy <input type="checkbox"/> mooring <input type="checkbox"/> navigation <input type="checkbox"/> swimming		
Do you own the property along the shoreline? <input type="checkbox"/> No <input type="checkbox"/> Yes If No, you must provide an authorization letter from the property owner(s)						
Dimensions of buoys (ft) width _____ height _____			ENVIRONMENTAL QUALITY			
<input type="checkbox"/> L. GROINS (No Sample Drawing available) LAND & WATER MGMT-PCU						
<ul style="list-style-type: none"> Provide an overall site plan showing the distances (ft) of the outermost groins from the property lines, distances between groins, length and width of each groin, and the distance from the existing toe of the bluff to the lakeward end of the groins. If existing groins are located on adjacent properties, provide distances (ft) from closest neighboring groin to your property lines on the site plan. Provide cross-section views showing the length and height of each groin and the height of groin ends above the observed water level (date and time). If step down type, show the height of each section above the observed water level. 						
Number of groins _____		Type of groin <input type="checkbox"/> steel <input type="checkbox"/> wood <input type="checkbox"/> other _____		Will groin be placed on a foundation? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, dimensions of foundation (ft)) length _____ width _____ height _____		
<input type="checkbox"/> M. FENCES IN WETLANDS, STREAMS, OR FLOODPLAINS (No Sample Drawing available)						
<ul style="list-style-type: none"> Provide an overall site plan showing the proposed fencing through wetlands, streams, or floodplains. Provide drawing of fence profile showing the design, dimension, post spacing, board spacing, and distance from ground to bottom of fence (if in a floodplain). 						
(check all that apply) <input type="checkbox"/> wetlands <input type="checkbox"/> streams <input type="checkbox"/> floodplains			Total length (ft) of fence through wetlands _____ streams _____ floodplains _____		Fence height (ft) _____	
<input type="checkbox"/> N. OTHER - e.g., structure removal, marine railway, low sand trap wall, breakwater, and structural foundations in wetlands or floodplains						
11 EXPANSION OF AN EXISTING OR CONSTRUCTION OF A NEW LAKE OR POND (See Sample Drawings 4 and 15)						
Which best describes your proposed waterbody use (check all that apply)						
<input type="checkbox"/> wildlife <input type="checkbox"/> stormwater retention basin <input type="checkbox"/> stormwater detention basin <input type="checkbox"/> recreation <input type="checkbox"/> wastewater basin <input type="checkbox"/> other _____						
Water source for lake/pond						
<input type="checkbox"/> groundwater <input type="checkbox"/> natural springs <input type="checkbox"/> Inland Lake or Stream <input type="checkbox"/> stormwater runoff <input type="checkbox"/> pump <input type="checkbox"/> sewage <input type="checkbox"/> other _____						
Location Of the lake/basin/pond <input type="checkbox"/> floodplain <input type="checkbox"/> wetland <input type="checkbox"/> upland						
Will project involve construction of a dam, dike, outlet control structure, or spillway? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, complete Section 17)						
12 ACTIVITIES THAT MAY IMPACT WETLANDS (See Sample Drawings 8 & 9)						
<ul style="list-style-type: none"> For information on the MDEQ's Wetland Assessment Program, visit the LWMD website or call 517-373-1170. 						
(check all that apply) <input checked="" type="checkbox"/> fill (Section 10A) <input checked="" type="checkbox"/> dredge or excavation (Section 10B) <input type="checkbox"/> boardwalk or deck (Section 10I) <input type="checkbox"/> dewatering						
<input type="checkbox"/> fences (Section 10M) <input type="checkbox"/> bridges and culverts (Section 14) <input type="checkbox"/> draining surface water <input type="checkbox"/> other _____						
Has a professional wetland delineation been conducted for this parcel? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (If Yes, provide a copy; if federal method was used, supply data sheets)				Applicant purchased property <input checked="" type="checkbox"/> before OR <input type="checkbox"/> after October 1, 1980.		
Is there a recorded DEQ easement on the property? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, provide the number _____)						
Has the MDEQ conducted a wetland assessment for this parcel? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, provide a copy)						
Describe the wetland impacts, proposed use or development, and efforts to avoid/minimize impacts. Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted.						
Approximately 0.02 acres of wetland will be impacted by construction of forebay at stormwater pipe outlet. Most of the impacted area will be graded and replanted with native wetland plants. The 9 MG/yr stormwater input should raise water levels 6-9 in. creating hydrology for additional pond edge wetland.						
Is any grading or mechanized land clearing proposed? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (If Yes, show locations on site plan)			Has any of the proposed grading or mechanized land clearing been completed? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, label and show locations on site plan)			
<ul style="list-style-type: none"> Complete the wetland dredge and wetland fill dimension information for each impacted wetland area. Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale. Attach at least one typical cross-section for each wetland dredge and/or fill area. Also complete Section 10A for fill and Section 10B for dredge or excavation activities. If dredge material will be disposed of on site, show the location on site plan in an upland area and include soil erosion and sedimentation control measures. 						
Wetland dredge dimensions		maximum length (ft) 20	maximum width (ft) 34	dredge area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 378	average depth (ft) 1	dredge volume (cu yd) 14
Wetland fill dimensions		maximum length (ft) 14	maximum width (ft) 10	fill area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 80	average depth (ft) 1.8	fill volume (cu yd) 5.5
Total wetland dredge area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 378 sf excavation (+405 sf re-graded and re-planted)				Total wetland dredge volume (cu yd) 14		
Total wetland fill area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 80 sf rip rap fill				Total wetland fill volume (cu yd) 5.5 (rip rap)		
The proposed project will be serviced by <input type="checkbox"/> public sewer <input type="checkbox"/> private septic system (If septic system, show existing and new or expanded system on plans)			If septic system, has application been made to the County Health Department for a permit? <input type="checkbox"/> No <input type="checkbox"/> Yes		If Yes, has permit been issued? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, provide copy)	

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Thurston Pond Project Description and Alternatives Analysis

ENVIRONMENTAL QUALITY
LAND & WATER MGMT-PCU

Project Description

The proposed project involves the diversion of stormwater into Thurston Pond, via the construction of a stormwater pipe off of Bluett Drive. The storm sewer pipe from Clague Middle School will be re-routed, first through an AquaSwirl concentrator (to remove sediment and associated pollutants), and then into Thurston Pond. The new inlet pipe will connect to a manhole at the intersection of Bluett Drive and Antietam Drive (see **Sheet C0.0** for site location map). The pipe will be buried underneath the existing pedestrian pathway that runs south between two houses (3092 Bluett Drive and 3106 Bluett Drive). The new inlet pipe is expected to contribute roughly 9 MG of treated runoff annually to Thurston Pond. This project is partially funded by a Clean Water Act 319 grant (MDEQ Tracking Code No: 2005-0114).

The construction of the pipe inlet forebay in Thurston Pond will impact approximately 96 square yards (SY), or approximately 0.02 acres, of wetland. The forebay will consist of a bed made up of 6-8 inch stone and a rock weir made from 12 inch rip rap. The area around and downslope of the forebay will be re-graded, planted with native plants (including wetland species), and stabilized with coir fabric erosion control blankets. The wetland impact will include 9 SY (5.5 CY) of rip rap fill, 42 SY (14 CY) of excavation, and 45 SY will be re-graded with no material removed. The 87 SY of excavated and re-graded area will be a temporary impact, as it will be re-planted with native obligate and facultative wetland species. The total disturbed area around the forebay is approximately 220 SY, however only about 43% of this is wetland impact.

In addition to the wetland impact, there will be upland impacts associated with the new stormwater pipe. Approximately 55 CY of excavation will be required for the forebay and surrounding upland re-grading, and approximately 7 CY of dirt fill will be needed to cover the stormwater pipe. A total of 18 CY of rip rap will be added to create the forebay and the stone weir.

Construction Sequence and Methods

The new 24-inch stormwater pipe will be installed via bore and jack to avoid impact on the concrete walkway and steps and the trees and fences in the adjacent yards. The boring and jacking are conducted following the excavation of a bore pit in the street. The forebay will be excavated out following the boring and jacking of the new pipe. Following excavation, a non-woven geotextile will be placed over the excavated forebay area and the stone overlaid. As feasible, material from the forebay excavation will be used to raise the pathway on the west side of the pond.

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The area will be restored, seeded and planted. The entire disturbed area will be blanketed with a straw/coconut fabric erosion control blanket. Seeding will be done prior to installation of the blanket, while plugs will be planted through the blanket. Plugs were included in the design to provide quick vegetative growth right in front of and around the spillway of the forebay, to minimize erosion problems at the pipe inlet.

Project Purpose

The overall goal of the Thurston Pond Restoration Project is to create a clear-water pond with greater habitat diversity dominated by emergent macrophytes, that circulates more water, more frequently, to the first open channel reach of Millers Creek. The proposed project will increase the stormwater flows into Thurston Pond, re-connecting the pond with a portion of its original watershed. The pond originally received runoff from much of the surrounding area and acted as the headwaters for Millers Creek. However storm sewers, built in the early 1970's for the Bromley and Orchard Hills neighborhoods, now carry most of the drainage directly to the first open-channel reach of Millers Creek, bypassing Thurston Pond. The proposed project re-directs storm sewer from Clague Middle School into Thurston Pond.

Alternatives Analysis

The original concept for the pond restoration was to bring in more stormwater to by altering the existing inlet connections off of Georgetown Street, on the northeast side of the pond. However, a topographic and bathymetric survey in conjunction with an XP-SWMM model of the pond, found that any modification to bring in more storm water through the Georgetown inlet would also increase the chances of street flooding.

Without a significant addition of stormwater to the pond, one of the original goals of the project would have been invalidated. Therefore, the new, alternate inlet location on Bluett Street was selected because it still drains approximately 45% of the watershed drained by the Georgetown location, and provides an easement for utility use.

The original design left the wood chip path intact, while the entire forebay would have been located in the wetland area. The design was altered to re-align the path, moving a portion of it to the North. This change in the wood chip path has allowed much of the forebay to be located outside of the wetland area, minimizing the length of the forebay that extends over the wetland line.

We have also chosen one alternative construction technique to minimize impacts to adjacent homeowner property, existing trees, and park pathway and fence. Instead of an open cut trench, which would have impacted almost the entire space between the houses, we are proposing to utilize a bore and jack method to install the stormwater pipe.

We believe the new pipe installation, along with raising the elevation of the berm on the west side, will tend to raise the water level of Thurston Pond. Raising the water level will also mean that there is a larger area around the pond, at an elevation now closer to a perennial water surface. This higher water level may result in an even larger wetland area at the land-water interface.

In the area where there is direct wetland impact, most of the impact will be temporary. Except for the stone in the bottom of the forebay and the rock weir, all of the other earthwork will result in re-shaping the existing wetland area, but will not result in a net loss of wetland area. The wetland impact area is actually a net cut, because all of the impacted wetland areas will be below existing grade. While there is a small amount of stone fill, even this fill will result in lower ground surface elevations than existing. The re-graded wetland areas will be re-planted with native plugs or seed mix, which will include species such as Sweet Flag, Monkey Flower, Bottlebrush Sedge, and Cardinal Flower (refer to **Planting Plan** attached for entire list). We have extended the wetland plugs to cover a small area just outside of the current wetland-upland interface in anticipation of the increased pond water level. The net restored wetland area, resulting from re-planting and possibly from increased water levels, will be 10 times larger than the impacted (stone fill) wetland area (87 SY: 9 SY).

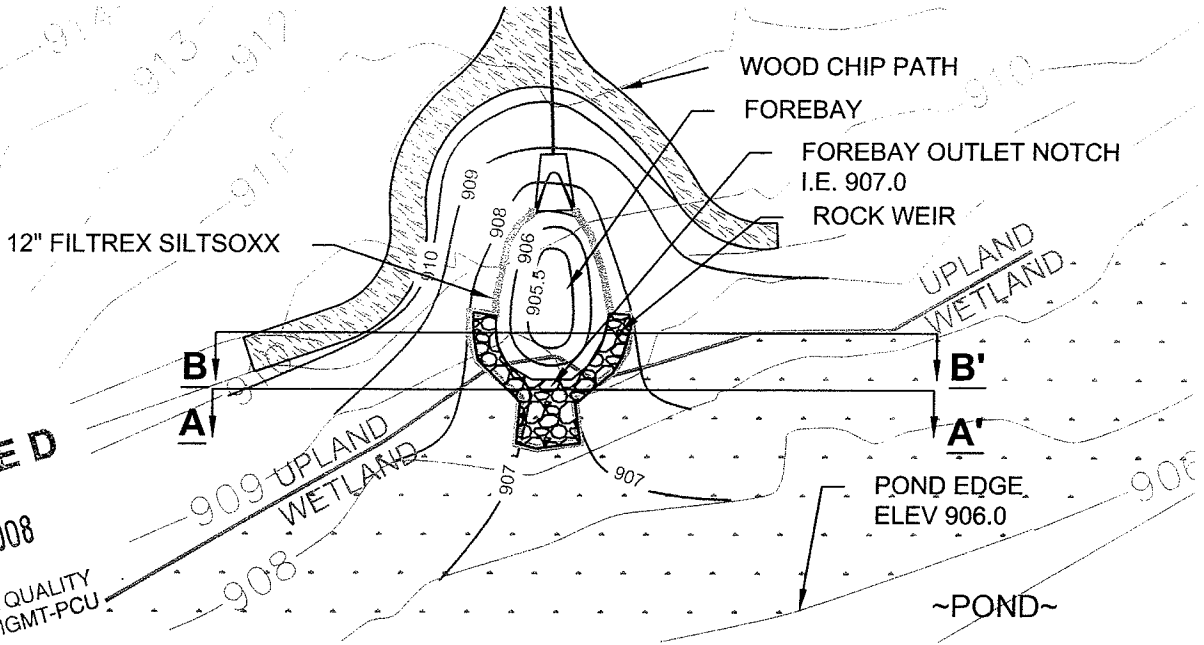
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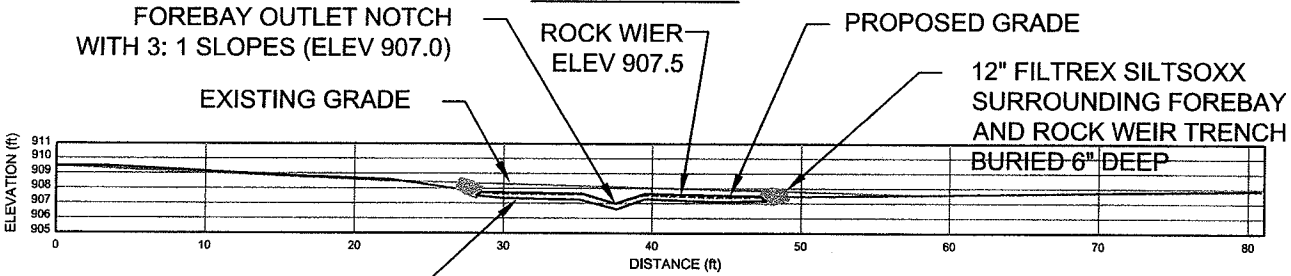
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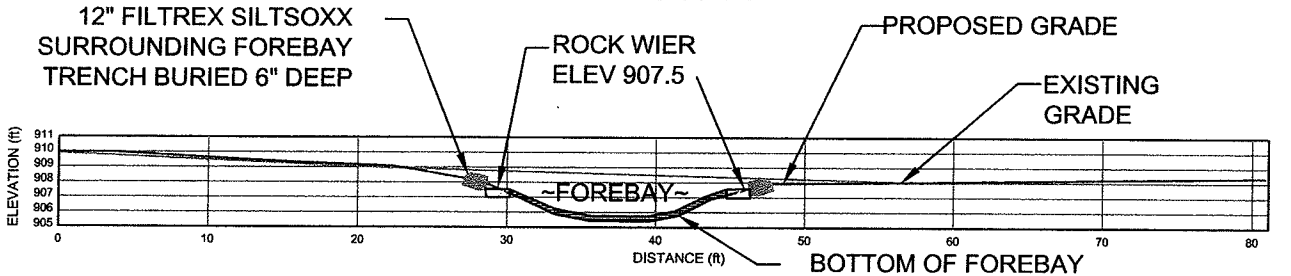
ENVIRONMENTAL QUALITY
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PLAN VIEW



SECTION A - A'
 NOT TO SCALE



SECTION B - B'
 NOT TO SCALE

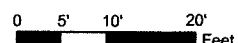
NOTES

- Wetland boundary delineated by JFNew on May 30, 2008.
- Base map provided by Stantec Consulting Michigan, Inc. dated April 7, 2008.

LEGEND

- Existing Grade
- Proposed Grade (1' contours)
- Wetland Delineation

**Figure 1: Cross-Section
 Thurston Pond
 Ann Arbor Public Services
 Ann Arbor, Michigan**



708 Roosevelt Road, Walkerton, IN 46574
 Phone 574-586-3400 / Fax 574-586-3446
 www.jfnew.com

JFNew # 050944

Location: S:\Walkerton\CAD\Chis Climate\PROJECT_in_program\GIS\THURSTONPOND\0208080606_crosssection.dwg Plotted By:Chis@line Dtlmar Plot:June 6, 2008, 11:27:44 AM

COD

ANN ARBOR PUBLIC SCHOOLS

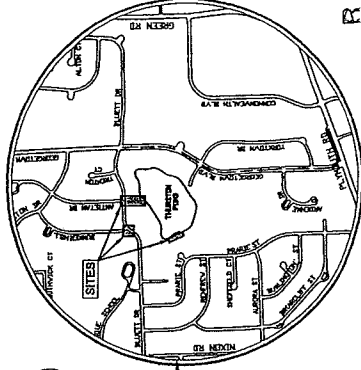
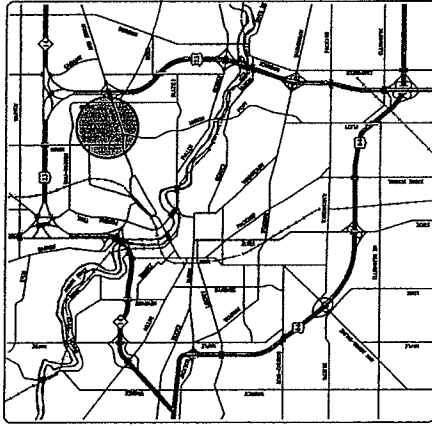
THURSTON POND STORMWATER DIVERSION

THURSTON POND STORMWATER DIVERSION, FILE NO.

PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION:	
PERMIT	ISSUING AUTHORITY
USE CHANGE PERMIT	CITY OF ANN ARBOR
EROSION/SEDIMENTATION & SEDIMENTATION CONTROL PERMIT	DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER CONTROL PERMIT	DEPARTMENT OF ENVIRONMENTAL QUALITY
NOISE PERMIT	DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMITS REQUIRED TO BE OBTAINED BY THE CITY OF ANN ARBOR OR CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION:	
PERMIT	ISSUING AUTHORITY
PERMITS FOR USE OF WATER RESOURCES	DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITS FOR USE OF WATER RESOURCES	DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITS FOR USE OF WATER RESOURCES	DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITS FOR USE OF WATER RESOURCES	DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITS FOR USE OF WATER RESOURCES	DEPARTMENT OF ENVIRONMENTAL QUALITY

STANTEC FILE NO. 2075097500



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SHEET INDEX

SHEET NO.	DRAWING NO.	TITLE
1	CO-0	COVER SHEET
2	C1-0	EXISTING CONDITIONS & SOIL EROSION CONTROL SHEET
3	C2-0	PROPOSED IMPROVEMENTS
4	C3-0	MISCELLANEOUS DETAILS I
5	C4-0	MISCELLANEOUS DETAILS II
6	C5-0	MISCELLANEOUS DETAILS III
7	SD-1	AQUA SWIRL AS-6 DETAILS
8	SD-2	AQUA SWIRL AS-8 DETAILS

THE FOLLOWING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THIS PROJECT.

PUBLIC UTILITIES	734-464-1789
ANN ARBOR WATER DEPARTMENT 410 S. WASHINGTON ANN ARBOR, MI 48106	734-464-4118
ANN ARBOR GAS DEPARTMENT 3180 E. WATSON AVE. ANN ARBOR, MI 48106	734-464-9817
ANN ARBOR CABLE TELEVISION 300 S. WALNUT BLVD. ANN ARBOR, MI 48106	734-464-4118
ANN ARBOR FIBER OPTICS 3200 PLYMOUTH ROAD ANN ARBOR, MI 48106	419-971-4528
ANN ARBOR POWER & LIGHT 2000 S. WALNUT AVE. ANN ARBOR, MI 48106	734-397-4144

THE OVERSEER OF ANY CURRENT STANDARD DETAIL DOES NOT REFLECT THE CONTRACTOR FROM THE REQUIREMENT. THE WORK IS TO BE DONE IN ACCORDANCE WITH THE CURRENT STANDARD PUBLIC SERVICE STANDARD SPECIFICATIONS AND DETAILS.

THE CONTRACTOR COVERED BY THESE PLANS SHALL OBTAIN IN THE CONSTRUCTION AND ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE.

BEFORE YOU DIG CALL MISS DUG
 800-THE-800-1-9000 (TOLL FREE)
 FOR PROTECTION OF UNDERGROUND UTILITIES AND IN COMPLIANCE WITH PUBLIC ACT 323, THE CONTRACTOR SHALL CALL 1-800-482-2711 BEFORE YOU DIG MISS DUG SURVEYORS AND INSURERS PRIOR TO ANY EXCAVATION OR OTHER WORK. MISS DUG SURVEYORS WILL PROVIDE YOU WITH A MISS DUG PLAN WHICH WILL BE INDICATED BY AN UNDERGROUND UTILITY OWNER WHO MAY NOT BE A PART OF THE "MISS DUG" ALERT SYSTEM.

LAWRENCE J. MCCARTHY, P.E., MICHIGAN NO. 42083

DATE

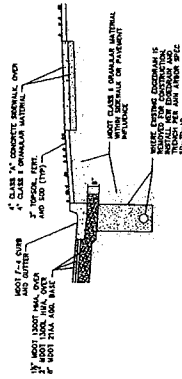
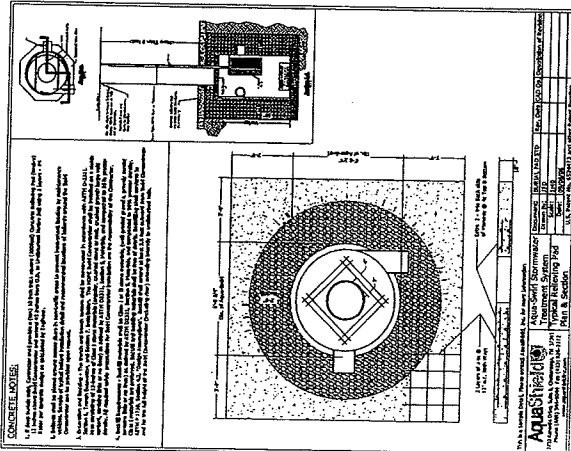
SHEET 1 OF 8

CO.0

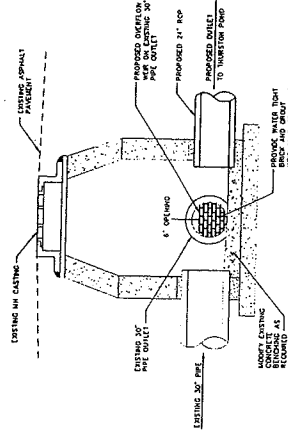
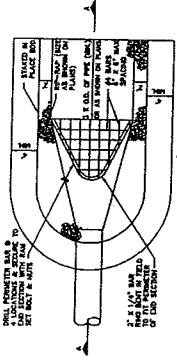
NO. _____

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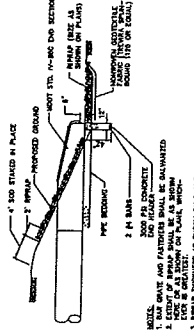
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LAND & WATER MGMT-FOU



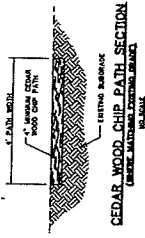
TYPICAL PAVEMENT SECTION
SCALE



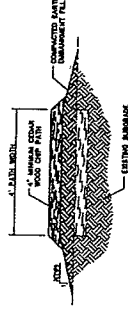
STORM MANHOLE MODIFICATIONS
PROPOSED BRICK MANHOLE
SCALE



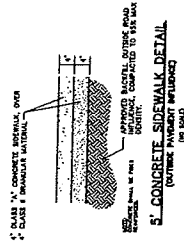
END SECTION/BAR GRADE
AND RIPRAP DETAIL
SCALE



CEDAR WOOD CHIP PATH SECTION
SCALE



CEDAR WOOD CHIP PATH SECTION
SCALE



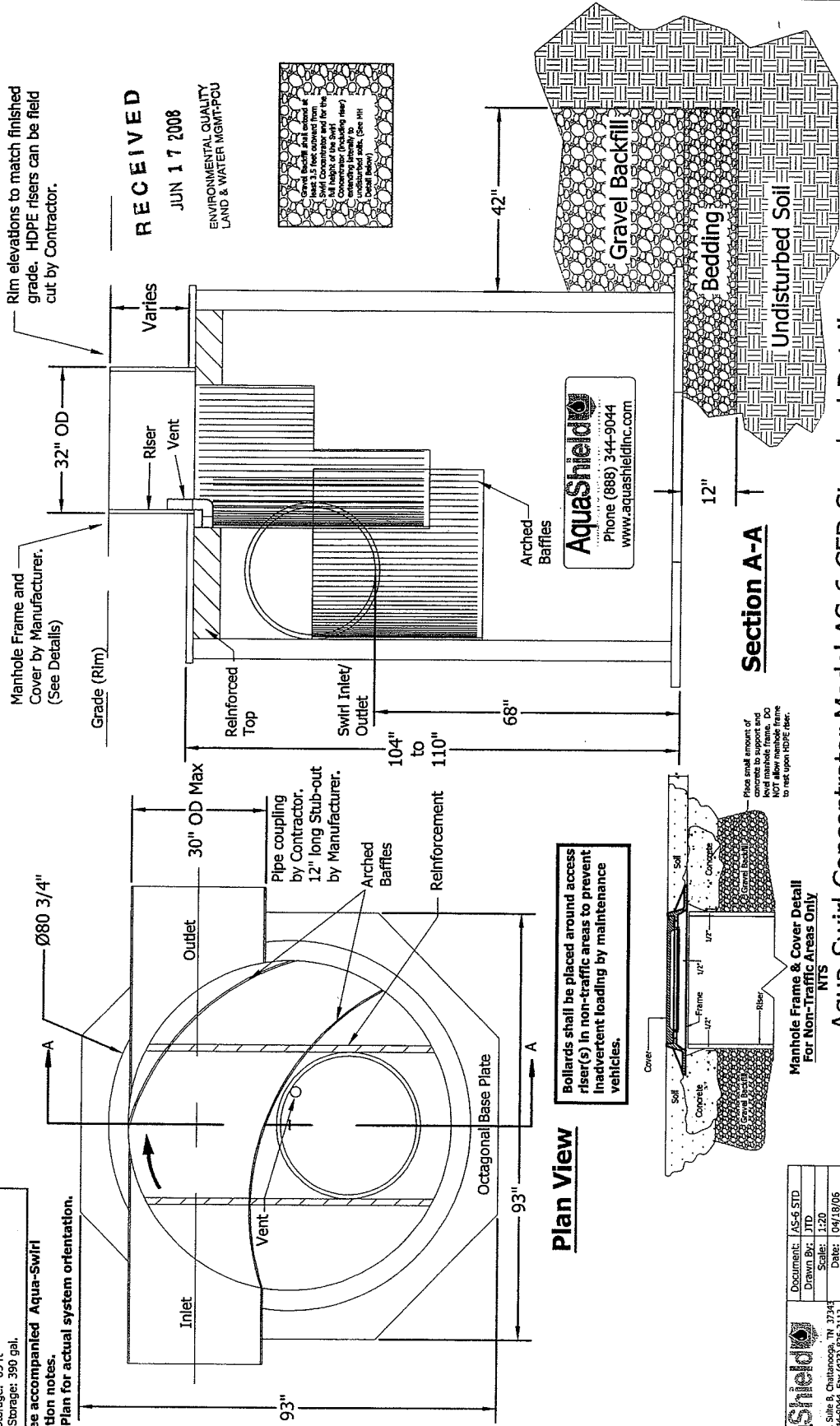
CONCRETE SIDEWALK DETAIL
SCALE

FOR MORE DETAILS
BEFORE YOU BID
CALL MISS DUG
800-465-1071
E-MAIL: MISSDUG@GMAIL.COM

PROJECT MANAGEMENT - CITY OF ANN ARBOR		SCALE	AS SHOWN
THURSTON POND STORMWATER DIVERSION		DATE	05.10
MISCELLANEOUS DETAILS		DESIGNED BY	MISS DUG
		CHECKED BY	MISS DUG
		APPROVED BY	MISS DUG
NO. 1	DESCRIPTION	DATE	CHG
1	CONCRETE SIDEWALK DETAIL	05-10-08	MD
2	END SECTION/BAR GRADE AND RIPRAP DETAIL	05-10-08	MD
3	STORM MANHOLE MODIFICATIONS	05-10-08	MD
4	TYPICAL PAVEMENT SECTION	05-10-08	MD
5	CEDAR WOOD CHIP PATH SECTION	05-10-08	MD
6	CONCRETE LEGEND	05-10-08	MD

STANDARD NOTE:

- 1. System shall be designed for the following capacities:
Peak Treatment Flow: 6.3 cfs
Sediment Storage: 65 ft³
Oil/Debris Storage: 390 gal.
- * Please see accompanied Aqua-Swirl specification notes.
- * See Site Plan for actual system orientation.



AquaShield	Document: AS-6 STD
2733 Kanasta Drive, Suite B, Canton, TN 37345	Drawn By: JTD
Phone: (888) 344-9044 Fax: (923) 825-2112	Scale: 1:20
www.aquashieldinc.com	Date: 09/19/06
	U.S. Patent No. 6,524,473 and other Patent Pending

Aqua-Swirl Concentrator Model AS-6 CFD Standard Detail

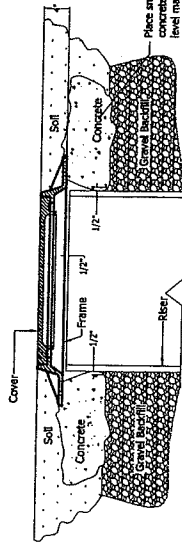
STANDARD NOTE:

- 1. System shall be designed for the following capacities:
Peak Treatment Flow: 11.2 cfs
Sediment Storage: 115 R³
Oil/Debris Storage: 710 gal.

* Please see accompanied Aqua-Swirl specification notes.

* See Site Plan for actual system orientation.

Bollards shall be placed around access riser(s) in non-traffic areas to prevent inadvertent loading by maintenance vehicles.



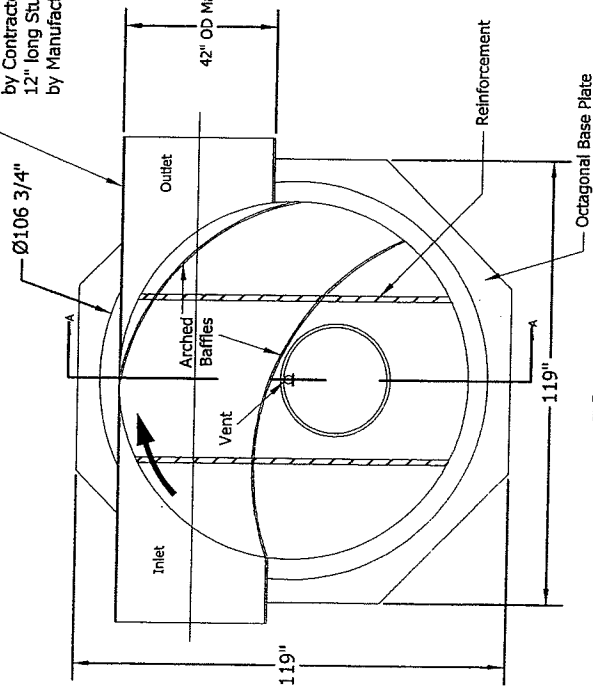
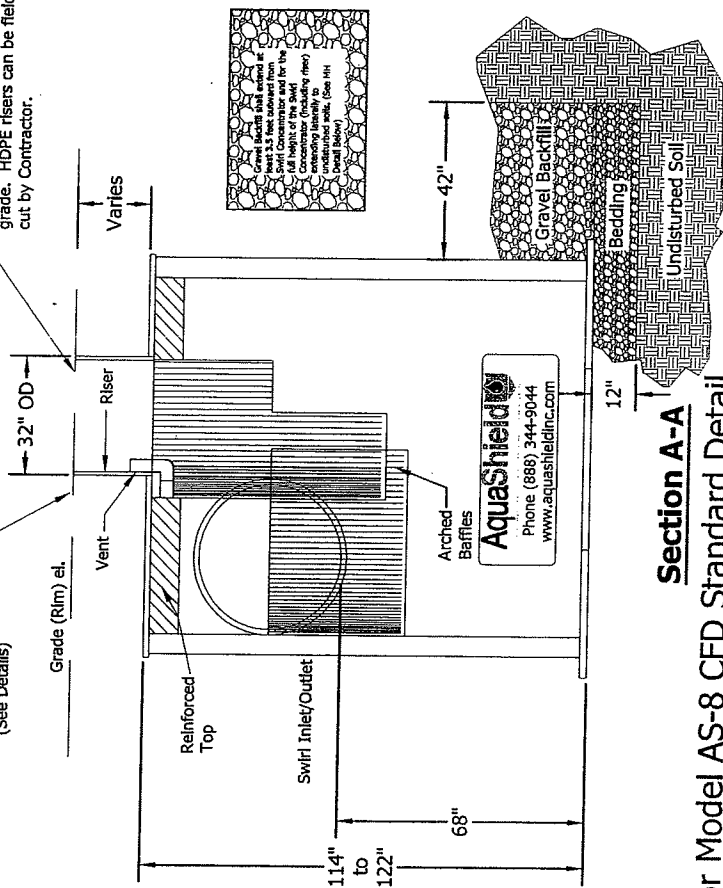
Manhole Frame & Cover Detail For Non-Traffic Areas Only NTS

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Rim elevations to match finished grade. HDPE risers can be field cut by Contractor.

Manhole Frame and Cover by Manufacturer. (See Details)

Pipe coupling by Contractor. 12" long Stub-out by Manufacturer.



Plan View

AquaShield
Phone: (888) 344-9044
www.aquashieldinc.com

AquaShield	Document: AS-8 STD
2733 Kanasta Drive, Suite 6, Chattanooga, TN 37418	Drawn By: JTD
Phone (888) 344-9044 Fax: (423) 826-4112	Scale: 1:30
www.aquashieldinc.com	Date: 09/19/06
	U.S. Patent No. 6524473 and other Patent Pending

Section A-A
Aqua-Swirl Concentrator Model AS-8 CFD Standard Detail



STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

July 9, 2008

City of Ann Arbor Clerk
P.O. Box 8647
Ann Arbor, Michigan 48107-8647

Dear Township Clerk:

SUBJECT: DEQ File Number: 08-81-0056-P
T 2S, R 6E, Section(s) 28, City of Ann Arbor, Washtenaw County

Attached is a copy of a permit application received by the Land and Water Management Division (LWMD), which is being processed as a General Permit under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

If you have any concerns or comments regarding this application, please contact Mr. James Sallee, Jackson District Office, LWMD, 301 E. Louis Glick Hwy., Jackson, Michigan 49201-1535, within 10 days from the date of this letter.

Sincerely,

Kate Lederle
Permit Consolidation Unit
Land and Water Management Division
517-373-9244

Attachment

cc: Mr. James Sallee, DEQ

2008 JUL 17 AM 7:19
CITY OF ANN ARBOR
CITY CLERK
REC'D



AGENCY USE	Previous USACE Permit or File Number	Date Received	RECEIVED JUL 03 2008 Land & Water Mgt. Div. Permit Consolidation Unit	Land and Water Management Division, MDEQ File Number	AGENCY USE
	USACE File Number			08-81-0056P	
	Jackson - J. Sallee			Marina Operating Permit Number	

• Complete all items in Sections 1 through 9 and those items in Sections 10 through 21 that apply to the project. Clear drawings and cross sections must be provided.

1 PROJECT LOCATION INFORMATION

• Refer to your property's legal description for the Township, Range, and Section information, and your property tax bill for your Property Tax Identification Number(s).

Address <i>1433 Washington Heights, Ann Arbor, Michigan</i>		Township Name(s) <i>Ann Arbor</i>	Township(s) <i>2S</i>	Range(s) <i>6E</i>	Section(s) <i>28</i>
City/Village <i>Ann Arbor</i>	County(ies) <i>Washtenaw</i>	Property Tax Identification Number(s) <i>09-09-28-101-007</i>			
Name of Waterbody <i>Huron River</i>	Project Name or Job Number <i>The Regents of The University of Michigan Hospitals & Health Centers Basin Stormwater Management Basin Retrofits & Maintenance Project</i>	Subdivision/Plat <i>N/A</i>	Lot Number <i>N/A</i>	Private Claim <i>N/A</i>	

Project types (check all that apply)

<input type="checkbox"/> private	<input checked="" type="checkbox"/> public/government	<input type="checkbox"/> industrial	<input type="checkbox"/> commercial	<input type="checkbox"/> multi-family
<input type="checkbox"/> building addition	<input type="checkbox"/> new building or structure	<input type="checkbox"/> building renovation or restoration	<input type="checkbox"/> river restoration	<input type="checkbox"/> single-family
<input checked="" type="checkbox"/> other (explain) <i>University</i>				

The proposed project is on, within, or involves (check all that apply)

<input type="checkbox"/> a stream	<input type="checkbox"/> a pond (less than 5 acres)	<input type="checkbox"/> a Great Lake or Section 10 Waters	<input type="checkbox"/> a natural river	<input type="checkbox"/> a new marina
<input type="checkbox"/> a river	<input type="checkbox"/> a channel/canal	<input type="checkbox"/> a designated high risk erosion area	<input type="checkbox"/> a dam	<input type="checkbox"/> a structure removal
<input type="checkbox"/> a ditch or drain	<input type="checkbox"/> an inland lake (5 acres or more)	<input type="checkbox"/> a designated critical dune area	<input checked="" type="checkbox"/> a wetland	<input type="checkbox"/> a utility crossing
<input type="checkbox"/> a floodway area	<input type="checkbox"/> a 100-year floodplain	<input type="checkbox"/> a designated environmental area	<input checked="" type="checkbox"/> 500 feet of an existing waterbody	

2 DESCRIBE PROPOSED PROJECT AND ASSOCIATED ACTIVITIES, AND THE CONSTRUCTION SEQUENCE AND METHODS

• Attach separate sheets, as needed, including necessary drawings, sketches, photographs, aerials, or plans.

The proposed project involves maintenance and retrofits of an existing stormwater management basin at the University of Michigan Hospitals & Health Centers. Maintenance activities include accumulated sediment removal to re-establish original design grades and erosion control at two storm water inlets. Retrofit activities include the replacement of the existing standpipe to meet current Washtenaw County design standards. Generally, the new standpipe will match the existing structure in terms of materials, size, and footprint. The project is seeking a Part 303 general permit under categories M (Repairs of Servicable Structures) and P (Maintenance Dredging of Man-Made Stormwater and Waste Water Treatment Ponds and Lagoons). The University is conducting these maintenance and retrofit activities under its Phase I stormwater permit. The applicant held a pre-application meeting with MDEQ Jackson District representative James Sallee on February 28, 2008 (file no. 08-81-0005-P).

The total wetland impact area is 7,920 square feet (0.18 acre). The wetland dredge volume is 293 cubic yards. The volume of wetland fill is 218 cubic yards. All temporarily disturbed areas will be seeded with native prairie and meadow seed mixes and appropriately mulched.

Existing wetlands to be impacted exist within a stormwater management basin that was constructed by the University of Michigan in compliance with applicable state, local, and federal laws regulating the discharge of stormwater to receiving water bodies. The stormwater management basin was constructed for the sole purpose of treating stormwater prior to discharge. Existing wetlands have incidently formed due to stormwater hydrology. Proposed vegetation establishment and existing stormwater hydrology will result in the incidental creation of wetlands at least equal in area to those impacted.

All associated dewatering operations will be conducted using appropriate SESC measures. All pumped/dewatered stormwater will pass through a pump discharge filtration unit. All stormwater inlets (i.e. curb inlets/catch basins) that may be in contact with runoff containing sediments will be fitted with a temporary inlet protection device. In addition, the proposed detention basin standpipe will be protected with a temporary inlet protection device to prevent sedimentation of the receiving tributary.

It is anticipated that construction will begin soon after the permit is issued and require 6 weeks to complete.



Construction will be accomplished using traditional earth moving equipment such as bulldozers, loaders, and excavators. The existing detention basin will be excavated mechanically using a tracked excavator. Sediments to be excavated will be disposed in a Type II landfill. The University of Michigan has obtained approval from a Type II landfill for disposal (authorization letter and analytical are attached). Immediately following excavation, sediments will be placed along the edge of the detention basin and allowed to dewater into the basin. They will then be loaded directly onto trucks. If necessary, sediments will be temporarily stockpiled on the parking lot over visqueen and covered with tarps.

Construction Sequence and Methods:

- 1. Install temporary SESC measures and maintain until permanent measures are installed.
2. Dewater basin and maintain dewatered condition throughout project.
3. Contractor shall complete the removal of the existing riser outlet structure and the installation of the proposed riser structure within a 24-hour period.
4. Contractor shall excavate and grade as required.
5. Dredged sediments shall be hauled to a Type II landfill.
6. All disturbed areas shall be seeded and mulched.
7. All temporary SESC measures shall be removed once permanent measures are installed.

3 APPLICANT, AGENT/CONTRACTOR, AND PROPERTY OWNER INFORMATION

- The applicant can be either the property owner or the person or company that proposes to undertake the activity.
If the applicant is a corporation, both the corporation and its owner must provide a written document authorizing the agent/contractor to act on their behalf.

Form with fields for Applicant (The Regents of The University of Michigan), Agent/Contractor (N/A), Mailing Address (1239 Kipke Drive), City (Ann Arbor), State (MI), Zip Code (48109-1010), and Property Owner's Name.

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4 PROPOSED PROJECT PURPOSE, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use.
Include a description of alternatives considered to avoid or minimize resource impacts.
For utility crossings, include both alternative routes and alternative construction methods.

The purpose of this project is to maintain and maximize the operational effectiveness of an existing UM Hospitals & Health Centers stormwater management basin. The proposed activities will maximize operational effectiveness of the stormwater mangement basin with storage and release of stormwater from the basin's contributing drainage area, according to current Washtenaw County Drain Commissioner standards.

5 LOCATING YOUR PROJECT SITE

- Provide the requested information listed below to help staff locate your project site.
Attach a copy of a map, such as a plat, county, or USGS topographic map, clearly showing the site location and include an arrow indicating the north direction.
Project area must be staked at the time of application submittal.



Is there an access road to the project? No Yes (If Yes, type of road, check all that apply) private public improved unimproved

Name of roads at closest main intersection *E. Medical Center Drive* and *N. Nichols Drive*

Directions from main intersection *From Fuller Road, head south on E. Medical Center Drive. Within the University of Michigan Medical Campus turn left (head north and then east) on N. Nichols Drive. The project site is directly adjacent the the University of Michigan Blue Permit Parking Lot (M29).*

Style of house or other building on site ranch 2-story cape cod bi-level cottage/cabin pole barn none other (describe) *Detention Basin is directly adjacent to the UM Survival Flight Helicopter Helipad.*

Color *N/A* Color of adjacent property house and/or buildings

House number *N/A* Address is visible on house garage mailbox sign other (describe)

Street name *N/A* Fire lane number *N/A* Lot number *N/A*

How can your site be identified if there is no visible address? *Site is located directly east of the UM Survival Flight Helicopter Helipads.*

Provide directions to the project site, with distances from the best and nearest visible landmark and waterbody *From Fuller Road, head south on E. Medical Center Drive. Within the University of Michigan Medical Campus turn left (head north and then east) on N. Nichols Drive. The project site is directly adjacent the the University of Michigan Blue Permit Parking Lot (M29). See map on attached Plan cover sheet.*

Does project cross boundaries of two or more political jurisdictions? (City/Township, Township/Township, County/County, etc.) No Yes (If Yes, list jurisdiction names.)

6 List all other federal, interstate, state, or local agency authorizations required for the proposed activity, including all approvals or denials received.

Agency	Type approval	Identification number	Date applied	Date approved / denied	If denied, reason for denial
<i>UM-OSEH</i>	<i>SESC</i>		<i>Pending</i>	<i>Pending</i>	

7 If a permit is issued, date activity will commence (M/D/Y) *8/11/2008*

Proposed completion date (M/D/Y) *12/11/2008*

Has any construction activity commenced or been completed in a regulated area? No Yes

If Yes, identify the portion(s) underway or completed on drawings or

attach project specifications and give completion date(s) (M/D/Y) */ /*

Were the regulated activities conducted under a MDEQ permit? No Yes

If Yes, list the MDEQ permit number

Are you aware of any unresolved violations of environmental law or litigation involving the property? No Yes (If Yes, explain)

8 PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all adjacent and impacted property owners and the lake association or established lake board, including the contact person's name.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property Owner's Name	Mailing Address	City	State	Zip Code
<i>See Attachment 1</i>				

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Name of Established Lake Board or Lake Association and the Contact Person's name, phone number, and mailing address *N/A*

Land & Water Mgt Permit Consolidation

9 APPLICANT'S CERTIFICATION READ CAREFULLY BEFORE SIGNING

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, that it is true and accurate, and, to the best of my knowledge, is in compliance with the State Coastal Zone Management Program and the National Flood Insurance Program. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the MDEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site and the completed project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

- All applicants must complete all of the items in Sections 1 through 9 on pages 1 and 2 of this application.
- Complete those items in Sections 10 through 21 that apply to the project. Submit only those pages where you have provided information.
- Your application will not be processed if the application form is not completely filled out.
- List here the application page numbers being submitted and a brief description of other attachments included with your application. *Application pages 1-7; Table 1; Attachment 1 - Adjacent Property Owner List; Attachment 2 - Wetland Delineation Report (including photographs of site); Attachment 3 - Sediment Disposal Authorization Letter and Sediment Testing Results; 1 set of 8.5x11 Drawings; Five sets of 11x17 Drawings; and \$100 application fee (Corporate Check)*
- Submit 8.5" by 11," 8.5" by 14" or 11" by 17" size drawings with 4 copies. The USACE requires one set of drawings on 8.5" x 11" paper, with all notations clearly legible. Larger copies may be submitted in addition to the standard size copies.
- A letter of authorization from the owner must be included if not signed below by the owner.



<input checked="" type="checkbox"/> Property Owner <input type="checkbox"/> Agent/Contractor <input type="checkbox"/> Corporation - Title	Printed Name <i>Timothy R. Cullen</i>	Signature <i>T. R. Cullen</i>	Date (M/D/Y) <i>7/01/08</i>
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10 PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

- Check boxes A through N that may be applicable to your project and provide the requested information.
- If your project may affect wetlands, also complete Section 12. If your project may impact regulated *floodplains*, also complete Section 13.
- Provide an overall site plan showing existing lakes, streams, wetlands, and other water features; existing *structures*; and the location of all proposed *structures*, land change activities and *soil erosion and sedimentation control measures*. Review sample drawings for guidance in completing site-specific drawings for your project.
- Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
- On a Great Lake use IGLD 85 surveyed converted from observed still water elevation. On inland waters, NGVD 29 local datum other *NAVD88*
- Observed water elevation (ft) +/- *760.5*, date of observation (M/D/Y) *6/6/05*

A. PROJECTS REQUIRING FILL (See All Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average fill dimensions.

(Check all that apply) floodplain fill wetland fill riprap seawall, bulkhead, or revetment bridge or culvert
 boat launch off-shore swim area beach sanding boatwell crib dock other

Fill dimensions (ft)
 Length *See Table 1 (Attached)* width *See Table 1* Total fill volume (cu yd) *218* Maximum water depth in fill area (ft) *3.2, maximum detention stage*

Type of clean fill pea stone sand gravel
 wood chips other *riprap* Will filter fabric be used under proposed fill?
 No Yes (If Yes, type)

Source of clean fill on-site, If on-site, show location on site plan commercial other, If other, attach description of location

Fill will extend *N/A* feet into the water from the *shoreline* and *upland N/A* feet out of the water. Fill volume below OHWM (cu yd) *218*

B. PROJECTS REQUIRING DREDGING OR EXCAVATION (For dredging projects see Sample Drawing 7, for excavation see other applicable Sample Drawings)

- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27.
- Attach both plan and *cross-section* views to scale showing maximum and average dredge or excavation dimensions.
- The applicant will be notified if sediment sampling is required.

(Check all that apply) floodplain excavation wetland dredge or draining seawall, bulkhead, or revetment
 navigation boat well boat launch other

Total dredge/excavation volume (cu yd) *293* Dimensions length *180* width *50* depth *1* Dredge/excavation volume below OHWM (cu yd) *293* Method and equipment for dredging *Mechanical excavator*

Has proposed dredge material been tested for contaminants?
 No Yes (If Yes, attach testing results) Will dredged or excavated spoils be placed on-site off-site. Attach a detailed disposal area site plan, location map. If dispose off site, provide address and letter of authorization.

Has this same area been previously dredged? No Yes (If Yes, provide date and permit number, if available) / / /
 If Yes, are you proposing to enlarge the previously dredged area No Yes

Is long-term maintenance dredging planned? No Yes (If Yes, when and how much?) *Periodic dredging for maintenance once every ten years*

C. PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 17, 22, and 23. Others may apply)

Riprap waterward of the shoreline OR ordinary high water mark Dimensions (ft) length *N/A* width *N/A* depth *N/A* Volume(cu yd) *N/A*

Riprap landward of the shoreline OR ordinary high water mark Dimensions length *See Table 1* width *See Table 1* depth *See Table 1* Volume(cu yd) *80*

Type of riprap field stone angular rock other Will filter fabric be used under proposed riprap? No Yes (If Yes, type)

D. SHORE PROTECTION PROJECTS (See Sample Drawings 2, 3, and 17)

(check all that apply) riprap - length (ft.) seawall/bulkhead - length (ft.) revetment - length (ft.) Distances of project from both property lines (ft)

E. DOCK - PIER - MOORING PILINGS (See Sample Drawing 10)

Type open pile filled crib Seasonal structure? No Yes
 Proposed structure dimensions (ft) length width Dimensions of nearest adjacent structures (ft) length width

F. BOAT WELL (No Sample Drawing available)

Type of bank stabilization wood steel concrete vinyl riprap other
 Boat well dimensions (ft) Length width depth Number of boats
 Volume of backfill behind sidewall stabilization (cu yd) Distances of boat well from adjacent property lines (ft)

G. BOAT LAUNCH (No Sample Drawing available) (check all that apply) new existing public private commercial replacement

Proposed overall boat launch dimensions (ft) length width depth Type of material concrete wood stone other
 Existing overall boat launch dimensions (ft) Length width depth Boat launch dimensions (ft) below ordinary high water mark Length width depth
 Distances of launch from both property lines (ft) Number of skid piers Skid pier dimensions (ft) width

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H. BOAT HOIST (No Sample Drawing available)

(Check all that apply) seasonal permanent cradle side lifter
 other located on seawall dock bottomlands

I. BOARDWALKS AND DECKS IN WETLANDS - OR - FLOODPLAINS (See Sample Drawings 5 and 6. Provide table if necessary)



<input type="checkbox"/> boardwalk <input type="checkbox"/> deck	Boardwalk or deck is on <input type="checkbox"/> fill <input type="checkbox"/> piling	Dimensions (ft) length width
--	---	------------------------------

10 Continued - PROJECTS IMPACTING WETLANDS OR FLOODPLAINS OR LOCATED ON AN INLAND LAKE OR STREAM OR A GREAT LAKE

J. INTAKE PIPES (See Sample Drawing 16) **OUTLET PIPES** (See Sample Drawing 22)

Type headwall end section pipe other

If outlet pipe, discharge is to wetland inland lake stream, drain, or river Great Lake other

Dimensions of headwall OR end section (ft) length width depth

Number of pipes

Pipe diameters and invert elevations

K. MOORING AND NAVIGATION BUOYS (No Sample Drawing available)

- Provide an overall site plan showing the distances between each buoy, distances from the shore to each buoy, and depth of water at each buoy in feet.
- Provide cross-section drawing(s) showing anchoring system(s) and dimensions.

Number of buoys

Type of anchor system

Purpose of buoy mooring navigation swimming

Dimensions of buoys (ft) width height

Do you own the property along the shoreline? No Yes

If No, you must provide an authorization letter from the property owner(s)

L. GROINS (No Sample Drawing available)

- Provide an overall site plan showing the distances (ft) of the outermost groins from the property lines, distances between groins, length and width of each groin, and the distance from the existing toe of the bluff to the lakeward end of the groins.
- If existing groins are located on adjacent properties, provide distances (ft) from closest neighboring groin to your property lines on the site plan. Provide cross-section views showing the length and height of each groin and the height of groin ends above the observed water level (date and time). If step down type, show the height of each section above the observed water level.

Number of groins

Type of groin steel wood other

Will groin be placed on a foundation? No Yes (If Yes, dimensions of foundation (ft) length width height)

M. FENCES IN WETLANDS, STREAMS, OR FLOODPLAINS (No Sample Drawing available)

- Provide an overall site plan showing the proposed fencing through wetlands, streams, or floodplains.
- Provide drawing of fence profile showing the design, dimension, post spacing, board spacing, and distance from ground to bottom of fence (if in a floodplain).

(check all that apply) wetlands streams floodplains

Total length (ft) of fence through wetlands streams floodplains

Fence height (ft)

Fence type and material

N. OTHER - e.g., structure removal, marine railway, low sand trap wall, breakwater, and structural foundations in wetlands or floodplains

11 EXPANSION OF AN EXISTING OR CONSTRUCTION OF A NEW LAKE OR POND (See Sample Drawings 4 and 15)

Which best describes your proposed waterbody use (check all that apply)

wildlife stormwater retention basin stormwater detention basin recreation wastewater basin other

Water source for lake/pond

groundwater natural springs Inland Lake or Stream stormwater runoff pump sewage other

Location Of the lake/basin/pond floodplain wetland upland

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Will project involve construction of a dam, dike, outlet control structure, or spillway? No Yes (If Yes, complete Section 17)

12 ACTIVITIES THAT MAY IMPACT WETLANDS (See Sample Drawings 8 & 9)

- For information on the MDEQ's Wetland Assessment Program, visit the LWMD website or call 517-373-1170.

(check all that apply) fill (Section 10A) dredge or excavation (Section 10B) boardwalk or deck (Section 10I) dewatering fences (Section 10M) bridges and culverts (Section 14) draining surface water other

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Has a professional wetland delineation been conducted for this parcel? No Yes (If Yes, provide a copy; if federal method was used, supply data sheets)

Applicant purchased property before OR after October 1, 1980.

Is there a recorded DEQ easement on the property? No Yes (If Yes, provide the number)

Has the MDEQ conducted a wetland assessment for this parcel? No Yes (If Yes, provide a copy)

Describe the wetland impacts, proposed use or development, and efforts to avoid/minimize impacts. Describe the wetland alternatives and provide the type and amount of mitigation proposed if more than 1/3 acre is to be impacted. *The purpose of this project is to maintain and maximize the operational effectiveness of a UM Hospitals & Health Centers stormwater management basin. Accumulated sediment removal, replacement of the outlet structure, and stabilization of inlets are necessary in order to accomplish this purpose. The proposed activities will impact 7,920 square feet (0.18 acre) of wetland, including 218 cubic yards of wetland fill and 293 cubic yards of wetland dredge. No wetland mitigation is proposed. Establishment of vegetation and existing stormwater hydrology will result in the incidental creation of wetland area at least equal to the area that will be impacted.*

Is any grading or mechanized land clearing proposed? No Yes (If Yes, show locations on site plan)

Has any of the proposed grading or mechanized land clearing been completed? No Yes (If Yes, label and show locations on site plan)

- Complete the wetland dredge and wetland fill dimension information for each impacted wetland area.
- Attach additional sheets if necessary and label the impacted wetland areas on a site plan drawn to scale. Attach at least one typical cross-section for each wetland dredge and/or fill area. Also complete Section 10A for fill and Section 10B for dredge or excavation activities.
- If dredge material will be disposed of on site, show the location on site plan in an upland area and include soil erosion and sedimentation control measures.

Wetland dredge dimensions	maximum length (ft)	maximum width (ft)	dredge area	average depth (ft)	dredge volume (cu yd)
<i>See Table 1</i>	180	50	<input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 7,920	1	293
Wetland fill dimensions	maximum length (ft)	maximum width (ft)	fill area	average depth (ft)	fill volume (cu yd)
<i>See Table 1</i>	<i>See Table 1</i>	<i>See Table 1</i>	<input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 2,800	<i>See Table 1</i>	218



Total wetland dredge area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft <i>7,920</i>		Total wetland dredge volume (cu yd) <i>293</i>
Total wetland fill area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft <i>2,800</i>		Total wetland fill volume (cu yd) <i>218</i>
The proposed project will be serviced by <input type="checkbox"/> public sewer <input type="checkbox"/> private septic system (If septic system, show existing and new or expanded system on plans)	If septic system, has application been made to the County Health Department for a permit? <input type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, has permit been issued? <input type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, provide a copy)



Environmental Consulting & Technology, Inc.

University of Michigan Stormwater Management Basin Retrofits & Maintenance Project
UM Hospital & Health Center Basin
1433 Washington Heights
Ann Arbor, MI 48103
Parcel No.: 09-09-28-101-007

Table 1: Proposed Impacts

Wetland Fill Quantities (to supplement part 10A of Permit Application)

Material	Sheet Number Referenced	Avg. Width	Avg. Height	Avg. Length	Fill Area (sq. ft.)	Fill Volume	
		(ft)	(ft)	(ft)		(cf)	(cy)
Standpipe Backfill	1 of 3 and 2 of 3	46	6.7	46	1610	3712	138
Riprap Apron	1 of 3 and 2 of 3	36	1.8	29	595	1,091	40
Riprap Apron	1 of 3 and 2 of 3	36	1.8	29	595	1,091	40
TOTAL					2,800		218

Wetland Excavation Quantities (to supplement part 10B of Permit Application)

Material	Sheet Number Referenced	Avg. Width	Avg. Height	Avg. Length	Cut Area (sq. ft.)	Cut Volume	
		(ft)	(ft)	(ft)		(cf)	(cy)
Excavation of Deposited Sediments	1 of 3	50	1	180	7,920	7,920	293
TOTAL					7,920		293

Net (CUT)	75
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UNIVERSITY OF MICHIGAN STORMWATER MANAGEMENT BASIN RETROFITS & MAINTENANCE PROJECT

UM HOSPITALS & HEALTH CENTERS BASIN



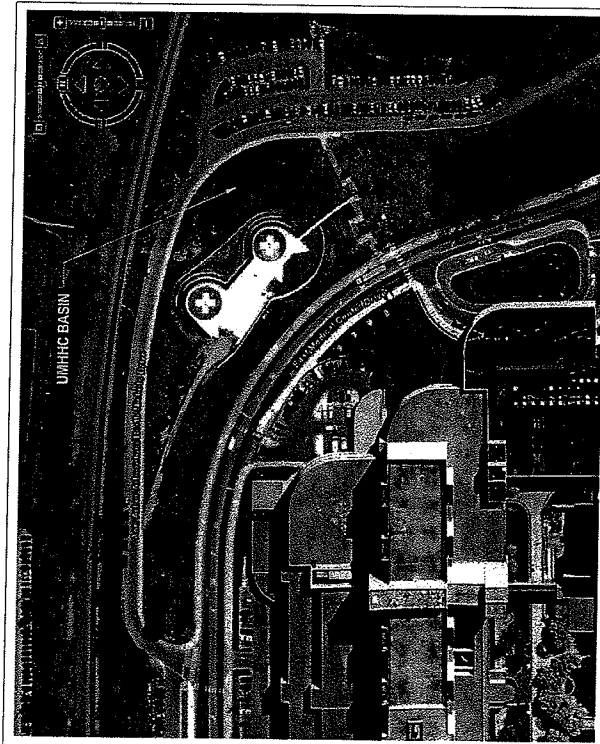
1433 WASHINGTON HEIGHTS
ANN ARBOR, MICHIGAN 48103

PARCEL ID: 09-09-28-101-007 (T.2S, R.6E, SECTION 28)

JUNE 2008

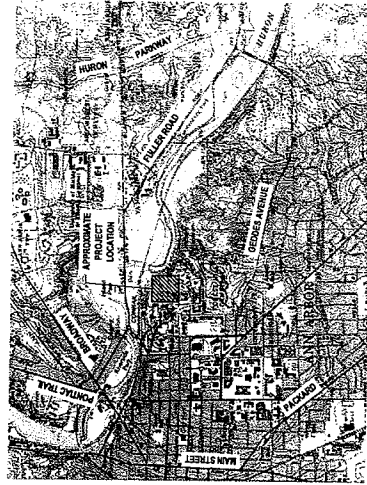
DRAWING INDEX

1. PROPOSED BASIN RETROFITS PLAN
2. CONSTRUCTION DETAILS AND SPECIFICATIONS
3. PROJECT NOTES



SITE MAP
NOT TO SCALE

IMAGE SOURCE: GOOGLE EARTH
NORTH



SITE LOCATION MAP
(MAP SOURCE: USGS ANN ARBOR EAST QUADRANGLE 1965; PHOTOGRAPHED 1963)
NOT TO SCALE
NORTH

PREPARED BY:

ECT

Environmental Consulting & Technology, Inc.
2000 North Zeeb Road
Ann Arbor, Michigan 48106
Phone: 734/761-3300 Fax: 734/763-1064

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STORMWATER MANAGEMENT
BASIN
RETROFITS & MAINTENANCE
PROJECT**

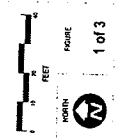
UM HOSPITALS & HEALTH CENTERS BASIN



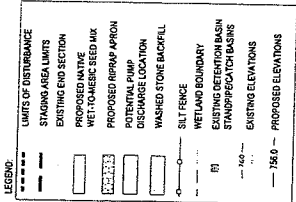
PROPOSED ELEVATION: 735.00
EXISTING ELEVATION: 735.00
PROPOSED ELEVATION: 735.00
EXISTING ELEVATION: 735.00

PROJECT NUMBER: 02-00000000
PROJECT TITLE: STORMWATER MANAGEMENT PROJECT
DATE: 02/20/07

PROPOSED BASIN RETROFITS

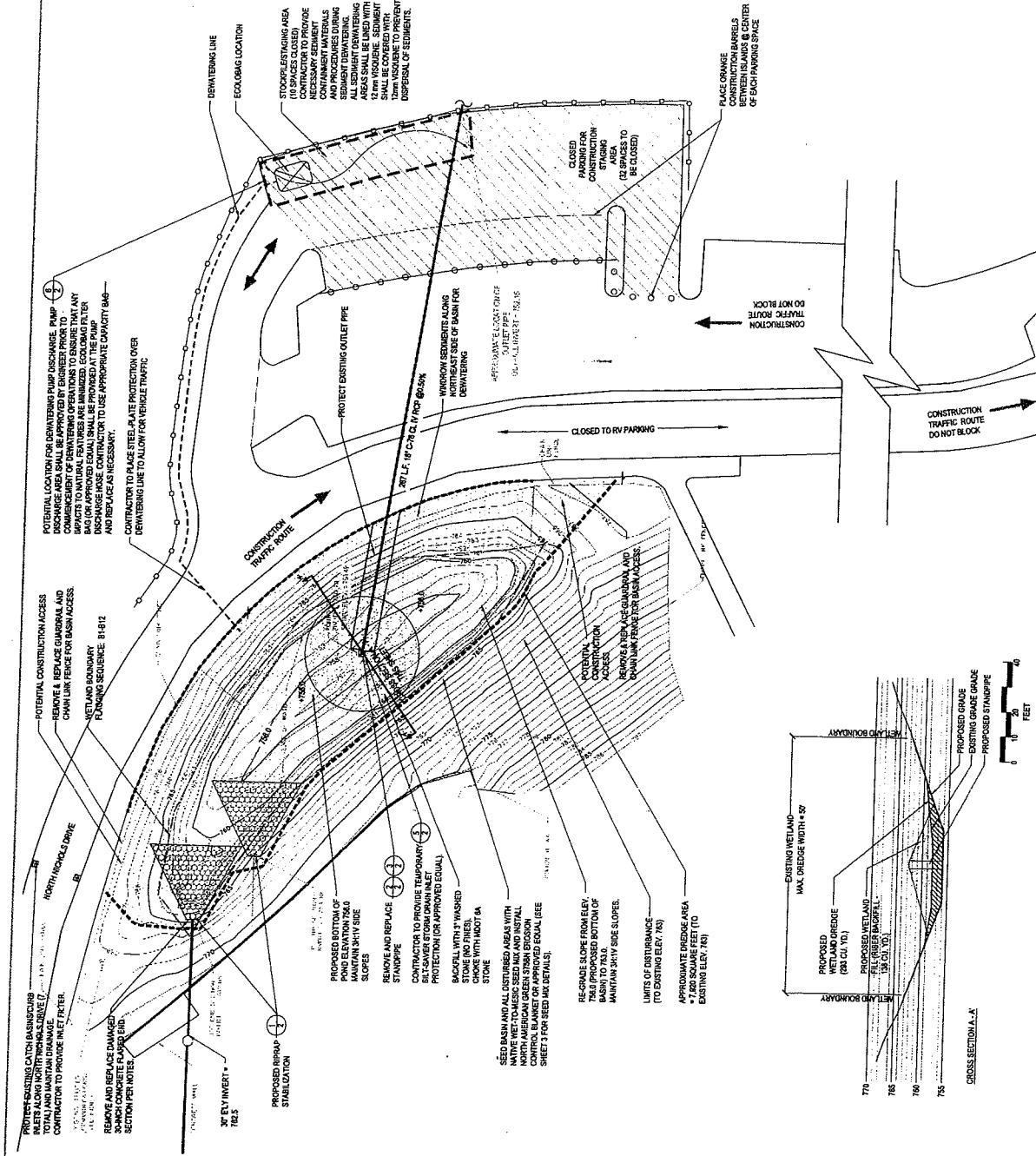


- GENERAL NOTES:**
- PROPOSED EARTH CHANGE IS LOCATED APPROXIMATELY 270 WEST OF THE HURON RIVER AND SHALL INCLUDE A 12" MINIMUM COVER TO PROTECT THE REMOVAL AND REPLACEMENT OF THE EXISTING STAMPPIPE AND THE REMOVAL OF SEDIMENT TO DESIGN ELEVATIONS AS SHOWN.
 - SOILS CONSIST OF FILLED AND INFORMATION SOURCE: UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEBER SURVEY, HTTP://WEBER.SURVEY.NRCS.USDA.GOV. ROUTE WILL BE ALLOWED WITHOUT APPROVAL BY OWNER.
 - CONTRACTOR TO REPLACE EXISTING 30" FLARED END SECTION. INTERMEDIATE SECTION SHALL BE APPLIED TO PROVIDE A THREE (3) INCH COLLAR AROUND THE CONNECTION BETWEEN THE 30" END PIPE AND THE 24" SECTION TO BE FLACED ON A 6 INCH LAYER OF 1/2" TO 3/4" BEDDING COMPACTED TO 95% OF DRY DENSITY.
 - THE SLOPE ABOVE THE NEW END SECTION SHOULD BE FILLED WITH MOST CLASS II SAND BACKFILL AND COMPACTED TO 95% OF DRY DENSITY IN 6 INCH LIFTS.
 - PROVIDE 3 INCHES OF TOPSOIL OVER COMPACTED SAND BACKFILL LAYER.
 - THE SLOPE BOTH ABOVE AND BELOW THE 30-INCH FLARED END SECTION SHALL BE GRADED TO THE APPROPRIATE SLOPE AND SUSTAINABLE VEGETATIVE COVER SHALL BE ESTABLISHED.
 - STEEL GUTTER/STAMPPIPE SHALL BE PROVIDED FOR BOTH THE 30-INCH FLARED END SECTION AND THE 24-INCH SECTION. THE GUTTER OPENINGS SHALL BE THREE (3) INCHES HORIZONTAL BY EIGHT (8) INCHES VERTICAL.
 - SEE SHEET 7 FOR CONSTRUCTION DETAILS.
 - SEE SHEET 3 FOR PROJECT NOTES.
 - DO NOT BLOCK TRAFFIC ON NORTH NICHOLS DRIVE AT ANY TIME.
 - CONTRACTOR SHALL COMPLETE THE REMOVAL OF EXISTING RISER STRUCTURE AND THE INSTALLATION OF THE PROPOSED RISER STRUCTURE WITHIN A 24-HOUR PERIOD. REMOVAL OF THE EXISTING RISER SHALL NOT COMMENCE IF RAIN IS FORECAST WITHIN 24 HOURS OF THE INTENDED WORK.
 - CONTRACTOR SHALL PROVIDE CATCH BASIN INLET FILTER AT SIGNAL (D) ON NICHOLS DRIVE WEST OF THE CONSTRUCTION ACCESS AREA ALONG NORTH NICHOLS DRIVE WEST TO THE CORNER OF EAST MEDICAL CENTER DRIVE. SEE SHEET 2 FOR INLET FILTER DETAIL.
 - CONTRACTOR SHALL PROVIDE FOR DOWNTERRAINING THE BASIN FOLLOWING STORM CREEKS IF REQUIRED TO MAINTAIN PROJECT SCHEDULE. SEE SHEET 3 FOR ADDITIONAL DOWNTERRAINING REQUIREMENTS.
 - BASIN DESIGN STORAGE VOLUME = 21,686 CUBIC FEET @ ELEVATION 742.72.
 - TOTAL SITE AREA: UNKNOWN.
 - TOTAL BASIN DRAINAGE AREA = 14.93 ACRES.
 - PROPOSED SITE DISTURBANCE = 13.1 ACRE.

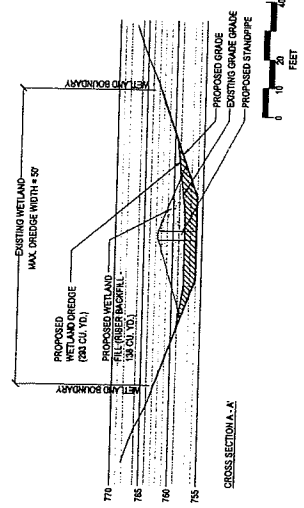


WETLAND IMPACT SUMMARY

OVERALL WETLAND AREA: 7,875.64 SQ. FT.
TOTAL AREA OF IMPACT: 1,799.86 SQ. FT.
PERCENTAGE OF IMPACT: 22.85%
VOLUME OF FILLING: 216,000 CU. YD.
NET WETLAND DEGREE: 74 CU. YD.

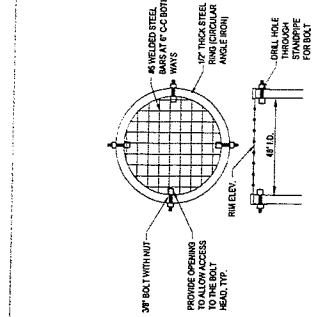


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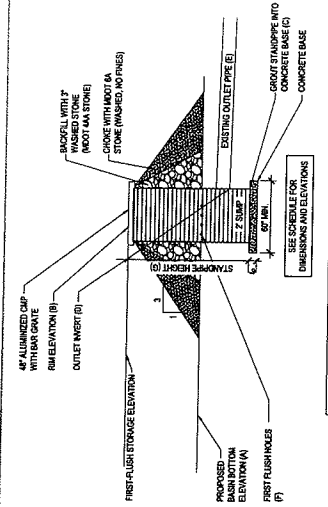
CROSS SECTION A-A'

LEGAL DESCRIPTION: PARCELS 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.



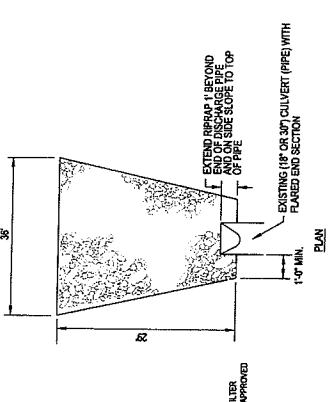
1 BAR GATE FOR DETENTION BASIN STANDPIPE
NOT TO SCALE

NOTES:
1. STANDPIPES PERFORMED WITH OUTLET HOLES. PLACE STANDPIPE ABOVE FINISH GRADE OF PIPE AT RESPECTIVE ELEVATIONS NOTED BELOW.
2. EXERCISE CARE NOT TO EXPOSE TO INSURE THAT STANDPIPES ARE PROPERLY INSTALLED AND TO BE SECURED DURING CONSTRUCTION.
3. STANDPIPES SHALL BE PROTECTED FROM COLLISION WITH TRAFFIC AND SHALL BE PROTECTED FROM COLLISION WITH OTHER STRUCTURES.
4. CONTRACTOR TO PROVIDE A 3/8\"/>



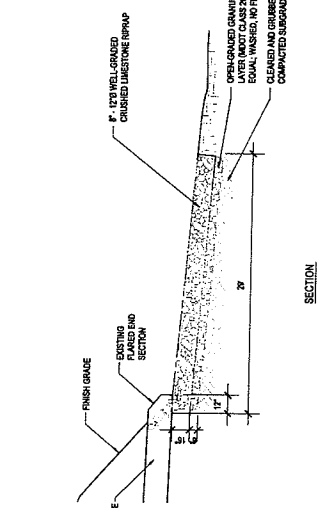
2 PROPOSED DETENTION BASIN STANDPIPE DETAIL
NOT TO SCALE

Standpipe ID	(A) Basin Bottom Elevation	(B) Standpipe Invert Elevation	(C) Standpipe Invert Elevation	(D) Existing Invert Elevation	(E) Existing Invert Elevation	(F) Standpipe Height
UMSPC	756.0	762.7	751.4	753.4	16' RCP (A) 17' Basin	11.2'



3 STANDARD RIPRAP APRON DETAIL
NOT TO SCALE

NOTE: RIPRAP APRONS SHALL BE COMPRESSED INTO FILTER LAYER WITH EXCAVATOR BUCKET.



4 INLET FILTER DETAIL
NOT TO SCALE

NOTE: RIPRAP APRONS SHALL BE COMPRESSED INTO FILTER LAYER WITH EXCAVATOR BUCKET.

ECOLOGAG
Pump Discharge Filtration Unit

ECOLOGAG is the only discharge filtration unit that can be retrofitted to existing pump discharge lines. It is designed to remove debris and other solids from the discharge line, preventing pump damage and ensuring reliable operation. The unit is made of heavy-duty stainless steel and is available in various sizes to meet your needs.

Model	Flow Rate (GPM)	Pressure (PSI)	Material
ECOLOGAG-10	10	100	304 Stainless Steel
ECOLOGAG-20	20	100	304 Stainless Steel
ECOLOGAG-30	30	100	304 Stainless Steel
ECOLOGAG-40	40	100	304 Stainless Steel
ECOLOGAG-50	50	100	304 Stainless Steel
ECOLOGAG-60	60	100	304 Stainless Steel
ECOLOGAG-70	70	100	304 Stainless Steel
ECOLOGAG-80	80	100	304 Stainless Steel
ECOLOGAG-90	90	100	304 Stainless Steel
ECOLOGAG-100	100	100	304 Stainless Steel

Specifications

The patented Silk-Saver Filter is constructed of partially recycled, high molecular weight, high-density polyethylene copolymer (HDPE), which is chemically resistant to most acids and alkalis. The filter is designed to provide constant and reliable performance under the most demanding conditions. The filter is made of heavy-duty stainless steel and is available in various sizes to meet your needs.



ECOLOGAG (PUMP DISCHARGE BAG) SPECIFICATIONS

ECOLOGAG is a pump discharge filtration unit that is designed to remove debris and other solids from the discharge line. It is made of heavy-duty stainless steel and is available in various sizes to meet your needs.

Model	Flow Rate (GPM)	Pressure (PSI)	Material
ECOLOGAG-10	10	100	304 Stainless Steel
ECOLOGAG-20	20	100	304 Stainless Steel
ECOLOGAG-30	30	100	304 Stainless Steel
ECOLOGAG-40	40	100	304 Stainless Steel
ECOLOGAG-50	50	100	304 Stainless Steel
ECOLOGAG-60	60	100	304 Stainless Steel
ECOLOGAG-70	70	100	304 Stainless Steel
ECOLOGAG-80	80	100	304 Stainless Steel
ECOLOGAG-90	90	100	304 Stainless Steel
ECOLOGAG-100	100	100	304 Stainless Steel

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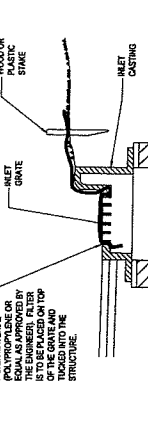
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ECOLOGAG-80	80	100	304 Stainless Steel
ECOLOGAG-90	90	100	304 Stainless Steel
ECOLOGAG-100	100	100	304 Stainless Steel

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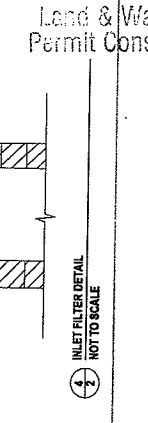
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RECEIVED
JUL 03 2008
Land & Water Mgt. Div.
Permit Consolidation Unit



Table with 4 columns: COMMON NAME, SCIENTIFIC NAME, LEAVES PER YEAR, and another column. Lists various plant species like Smooth Blue Aster, Yellow Joint Grass, etc.

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CONSTRUCTION REQUIREMENTS
1. THE CONTRACTOR SHALL SUBMIT A PRE-CONSTRUCTION MEETING WITH UNIVERSITY OFFICIALS AND THE PROJECT ENGINEER PRIOR TO THE PRE-CONSTRUCTION MEETING.

2. THE CONTRACTOR SHALL SUBMIT A DRAINAGE PLAN AND PROJECT SCHEDULE TO THE PROJECT ENGINEER PRIOR TO THE PRE-CONSTRUCTION MEETING.
3. THE CONTRACTOR SHALL MAINTAIN THROUGHOUT PROJECT.

4. THE CONTRACTOR SHALL COMPLETE THE REMOVAL OF EXISTING STRUCTURES AND THE INSTALLATION OF NEW STRUCTURES WITHIN A SHORT PERIOD. REPAIR OF THE EXISTING SEED SHALL BE COMPLETED WITHIN 24 HOURS OF THE REMOVAL WORK.
5. SEED SHALL BE APPLIED TO THE ENTIRE AREA OF THE REMOVED STRUCTURES.
6. THE CONTRACTOR SHALL MAINTAIN THROUGHOUT PROJECT.

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