



CITY COUNCIL AGENDA ITEM

October 1, 2012

To: Michael W. Culpepper, Acting City Manager

From: Mark F. Miller, Director of Economic and Community Development
Steven J. Vandette, City Engineer

Subject: Private Agreement – Oak Forest Site Condominiums Phase I
Project No. 04.943.3

Background

Preliminary site plan approval for Oak Forest Site Condominiums was given by the Planning Commission on March 8, 2005. City Council approved the preliminary site plan on April 18, 2005. Since that time three extensions have been given; the last one was on January 25, 2010 (see attached timeline). The following conditions were required by City Council before approval of the Private Agreement:

- A. *All areas noted as mitigation areas on the attached plan shall be included as MDEQ regulated conservation easements, and shall be reflected on the final site condominium plan; and*
- B. *A public meeting will be held with Engineering and surrounding residents to review the final engineering plans before final site condominium plan is submitted to City Council; and*
- C. *MDEQ approval will be obtained with all necessary assessment and permit documents prior to the final site condominium plan submitted to City Council; and*
- D. *The Oakland County Water Resources Commissioner shall approve the site condominium plan prior to the final site condominium plan submittal to City Council.*

All of the above conditions have been met, the Engineering Department has reviewed the plans for this project and approval is recommended. The plans include sanitary sewer, storm sewer, detention, water main, paving, sidewalks, wetland mitigation, landscaping, and soil erosion. The Owner has provided Bank Letter of Credit and 10% cash for escrow and fees in the amount of the estimated cost of public improvements, as required.

Recommendation

Approval is recommended

cc: M. Aileen Bittner, City Clerk (Original Agreement)
Keith Francis, Interim Controller

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Oak Forest Time Line
Site Condominium Application

- 12-09-2004 Ladd's, Inc. submitted Preliminary Site Plan Review Applications for Oak Forest Site Condominium and Oak Forest South Site Condominium.
- 01-11-2005 Planning Commission tabled for study at the January 25, 2005 Special/Study Meeting and for action at the February 8, 2005 Regular Meeting.
- 01-25-2005 Planning Commission discussed the items.
- 02-08-2005 Planning Commission tabled the items to the March 8, 2005 Regular Meeting.
- 03-08-2005 Planning Commission recommended approval of Preliminary Site Plan of Oak Forest Site Condominium and Oak Forest South Site Condominium with the following conditions:

Oak Forest:

1. Submission of the landscaping information required by the Landscape Analyst in the Planning Department report dated March 3, 2005.
2. The applicant must receive appropriate permits from the MDEQ prior to dredging, filling, or completing any other improvements within a State-regulated wetland.
3. The applicant must receive appropriate permits from the Oakland County Drain Commissioner and the City of Troy prior to completing any improvements to the Fetterly Drain.
4. Clarification of ownership of proposed open space that includes the proposed wetlands mitigation areas.
5. Changing what is marked as the walking easement to a dedicated walkway.

Oak Forest South

1. Submission of the landscaping information required by the Landscape Analyst in the Planning Department report dated March 3, 2005.
 2. The applicant must receive appropriate permits from the MDEQ prior to dredging, filling, or completing any other improvements within a State-regulated wetland.
 3. The applicant must receive appropriate permits from the Oakland County Drain Commissioner and the City of Troy prior to completing any improvements to the Fetterly Drain.
- 04-18-2005 City Council approves Preliminary Site Plan of Oak Forest Site Condominium, subject to Planning Commission conditions.
- 06-05-2006 City Council approves one year extension of Preliminary Site Plan of Oak Forest Site Condominium, to April 18, 2007.
- 01-26-2009 City Council approves Preliminary Site Plan of Oak Forest Site Condominium, subject to the following conditions:

- A. All areas noted as mitigation areas on the attached plan shall be included as MDEQ regulated conservation easements, and shall be reflected on the final site condominium plan; and
- B. If feasible in the sole determination of the City Engineer, there shall be an easement granted to the City that shall provide access to City land, and that land that shall be located between Units 70 and 71; and
- C. The walkway between Units 31 and 32 on the attached preliminary site condominium plan is eliminated; and
- D. A public meeting will be held with Engineering and surrounding residents to review the final engineering plans before final site condominium plan is submitted to City Council; and
- E. MDEQ approval will be obtained with all necessary assessment and permit documents prior to the final site condominium plan submitted to City Council; and
- F. The Oakland County Water Resources Commissioner shall approve the site condominium plan prior to the final site condominium plan submittal to City Council.

01-25-2010 City Council grants extension to Preliminary Site Plan of Oak Forest Site Condominium, subject to conditions.

City Of Troy

Contract for Installation of Municipal Improvements (Private Agreement)

Project No.: **04.943.3**

Project Location: **NE 1/4 Section 11**

Resolution No:

Date of Council Approval:

This Contract, made and entered into this **8th** day of **October**, **2012** by and between the City of Troy, a Michigan Municipal Corporation of the County of Oakland, Michigan, hereinafter referred to as "City" and **Ladd's Inc.** whose address is **5877 Livernois, Troy, MI 48098** and whose telephone number is **248-828-1726** hereinafter referred to as "Owners", provides as follows:

FIRST: That the City agrees to permit the installation of **sanitary sewer, storm sewer, detention, water main, paving, sidewalks, wetland mitigation, landscaping and soil erosion** in accordance with plans prepared by **Professional Engineers Associates** whose address is **2430 Rochester Ct., Suite 100, Troy, MI 48083** and whose telephone number is **248-689-9090** and approved prior to construction by the City in accordance with City of Troy specifications.

SECOND: That the Owners agree to provide the following securities to the City prior to the start of construction, in accordance with the Detailed Summary of Required Deposits & Fees (attached hereto and incorporated herein):

Refundable escrow deposit equal to the estimated construction cost of \$ **887,934.00**. This amount will be deposited with the City in the form of (check one):

Cash	<input type="checkbox"/>
Certificate of Deposit & 10% Cash	<input type="checkbox"/>
Irrevocable Bank Letter of Credit & 10% Cash	<input checked="" type="checkbox"/>
Check	<input type="checkbox"/>
Performance Bond & 10% Cash	<input type="checkbox"/>

Refundable cash deposit in the amount of \$ **130,617.00**. This amount will be deposited with the City in the form of (check one):

Cash	<input type="checkbox"/>	Check	<input checked="" type="checkbox"/>
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Non-refundable cash fees in the amount of \$ **73,308.00**. This amount will be paid to the City in the form of (check one):

Cash	<input type="checkbox"/>	Check	<input checked="" type="checkbox"/>
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Said refundable escrow deposits shall be disbursed to the Owners after approval by the City. The City reserves the right to retain a minimum of ten (10) percent for each escrowed item until the entire site/development has received final inspection and final approval by all City departments. Refundable cash deposits shall be held until final approval has been issued. Disbursements shall be made by the City within a reasonable time, after request for refund of deposits is made by the Owners.

City Of Troy
Contract for Installation of Municipal Improvements
(Private Agreement)

THIRD: The owners shall contract for construction of said improvement with a qualified contractor. Owners, or their agents, and contractor(s) agree to arrange for a pre-construction meeting with the City Engineer prior to start of work. All municipal improvements must be completely staked in the field under the direct supervision of a registered civil engineer or registered land surveyor, in accordance with the approved plans. Revisions to approved plans required by unexpected or unknown conflicts in the field shall be made as directed by the City.

FOURTH: Owners agree that if, for any reason, the total cost of completion of such improvements shall exceed the sums detailed in Paragraph SECOND hereof, that Owners will immediately, upon notification by the City, remit such additional amounts in accordance with Paragraph SECOND hereof. In the event the total cost of completion shall be less than the sums as detailed in Paragraph SECOND hereof, City will refund to the Owners the excess funds remaining after disbursement of funds.

FIFTH: Owners agree to indemnify and save harmless City, their agents and employees, from and against all loss or expense (including costs and attorneys' fees) by reason of liability imposed by law upon the City, its agents and employees for damages because of bodily injury, including death, at any time resulting therefrom sustained by any person or persons or on account of damage to property, including work, provided such injury to persons or damage to property is due or claimed to be due to negligence of the Owner, his contractor, or subcontractors, employees or agents, Owner further agrees to obtain and convey to the City all necessary easements and/or right-of-way for such public utilities as required by the City Engineer.

City Of Troy
Contract for Installation of Municipal Improvements
(Private Agreement)

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed in duplicate on this 28TH day of SEPT, 2012.

OWNERS OAK FOREST, L.L.C.

CITY OF TROY

By:

By:



JOE A. GARRETT, MEMBER
Please Print or Type

Janice Daniels, Mayor

Please Print or Type

M. Aileen Bittner, City Clerk

STATE OF MICHIGAN, COUNTY OF OAKLAND

On this 28TH day of SEPT, A.D. 2012, before me personally appeared JOE A. GARRETT known by me to be the same person(s) who executed this instrument and who acknowledged this to be his/her/their free act and deed.



NOTARY PUBLIC, Oakland County, Michigan

JANET M PARSONS
Notary Public, State of Michigan
County of Oakland
My Commission Expires 10-14-2016
Acting in the County of Oakland

My commission expires: 10-14-16

Detailed Summary of Required Deposits & Fees
Oak Forest Site Condominiums
Phase I 30 Units - Section 11

ESCROW DEPOSITS or PERFORMANCE BOND:

Sanitary Sewers	\$169,172
Water Mains	\$157,538
Storm Sewers	\$155,366
Rear Yard Drains	\$53,348
Pavement - CONCRETE	\$213,560
Grading	\$51,333
Detention Basin	\$25,667
Monuments and Lot Corner Irons	\$1,745
Deceleration and/or Passing Lane - MAJOR ROAD	\$17,746
Sidewalks - ON SITE	\$10,500
Sidewalks - OFF SITE	\$6,960
Street Light	\$7,000
Deposit for the Repair of Damage to Existing Public Streets Used for Access	\$18,000
AL ESCROW DEPOSITS or PERFORMANCE BOND & 10% CASH (REFUNDABLE)	\$887,934

(Circle One)

CASH FEES (NON-REFUNDABLE):

Water Main Testing and Chlorination (PA2)	\$1,079
Street Name and Traffic Signs (SUB 4)	\$1,701
Maintenance of Detention Basin (20 year)	\$15,200
Soil Erosion and Sedimentation Control Permits (SUB 10)	\$2,900
Testing Services (SUB 11)	\$13,319
Engineering Review and Inspection (PA 1)	\$59,847
Less Initial Engineering Review Fee (Public & Private)(1.1%)	-\$20,738
(PA 3) TOTAL CASH FEES (NON-REFUNDABLE):	\$73,308

CASH DEPOSITS (REFUNDABLE):

Sidewalk Closures	\$972
Walkway and Split Rail Fence	\$3,700
Wetland Mitigation	\$0
Deposit for Maintenance & Cleaning of Ex. Public Streets Used for Access	\$6,000
Landscape Deposit	\$16,030
Punchlist & Restoration Deposit	\$101,915
Deposit for Repair, Replacement or Maintenance of SESC	\$2,000
(PA 3) TOTAL CASH DEPOSITS (REFUNDABLE):	\$130,617

Stormwater detention for this development will be provided by:
New Onsite Public Pond
Engineer: Professional Engineering Associates
Developer: Ladd's Inc

**MEETING WITH RESIDENTS
OAK FOREST
PROJECT NO. 04.943.3
CITY OF TROY
OAKLAND COUNTY MICHIGAN**

DATE: 2/16/12

TIME: 7:30 PM

MEETING HELD: CITY OF TROY LOWER LEVEL CONFERENCE ROOM

<u>PRESENT</u>	<u>Address</u>	<u>PHONE NUMBER</u>	<u>EMAIL</u>
Scott Finlay	City of Troy, Engineering	248-524-3386	finlaysg@troymi.gov
Steve Vandette	City of Troy, Engineering	248-524-3383	vandettesj@troymi.gov
Bill Huotari	City of Troy, Engineering	248-524-3383	huotariwj@troymi.gov
Jennifer Jusela	1877 Abbotsford Dr	586-381-1310	jennibish@yahoo.com
Tom Powell	2371, 28 Mile Rd	248-651-3955	beepapowell@gmail.com ,
Emmanuel Karagiannakis	500 Ottawa	480-313-6222	manoli480@gmail.com
Lon Ullmann	5621 Willow Grove	248-670-6875	lon-ullmann@yahoo.com
Travis Peak	5818 Willow Grove	248-804-4073	tnlpeak@msn.com
Glenn Baird	1117 Doral	248-828-0217	
Michael Brubaker	5775 John R	248-879-6420	mkbcookiemonster@yahoo.com
L.E. Lonero	5955 Endicott	248-250-6009	loneroed@yahoo.com
Ken Budry	2430 Rochester Ct	248-689-9090	kbudry@peainc.com
Kevin Nosek	2430 Rochester Ct.	248-689-9090	knosek@peainc.com
Dale Garrett	5877 Livernois, STE 103	248-828-1726	dgarrett@laddsrealestate.com

General

1. Eight (8) Residents were present.
2. Steve Vandette read Council Requirements pertaining to site plan extension approved on January 25, 2010.
 - All areas noted as mitigation areas on the attached plan shall be included as MDEQ regulated conservation easements, and shall be reflected on the final site condominium plan; and
 - A public meeting will be held with Engineering and surrounding residents to review the final engineering plans before final site condominium plan is submitted to City Council; and
 - MDEQ approval will be obtained with all necessary assessment and permit documents prior to the final site condominium plan submitted to City Council; and
 - The Oakland County Water Resources Commissioner shall approve the site condominium plan prior to the final site condominium plan submittal to City Council.
3. Development has a Storm Water Management plan that manages flow from/to site and does not adversely impact any surrounding properties, as required by Troy Development Standards.

4. Dale Garrett (Developer) – There are two phases of construction planned for Oak Forest
 - Phase I – Off John R to approximately the drain (30 lots)
 - Phase II – (46 lots)
5. Developer plans to start when frost laws off. All construction, including tree clearing will only be done within the Phase I boundaries at this time.
6. There is no road connection to Willow Grove.
7. Jennifer Jusela (Abbotsford resident) asked about tree clearing on south side of Phase I. Yes, the trees on the south side of the property will have to be cleared to allow for the construction of the Rear Yard storm sewer.
8. Kevin Nosek (Developers Engineer) – Reviewed the engineering plans and the different features of the development
 - 2.1 acres Wetland to be filled and 3.57 acres to be created to replace what was filled; as required by the MDEQ
 - Discussion of Wetland areas; static water elevation, storage elevations, overflow control structures, wetland plantings, areas are graded/shaped to encourage wetland creation.
 - MDEQ monitors The Mitigated Wetlands for five (5) years and maintains a conservation easement over them forever.
 - Wetlands will not be constructed until the start up of Phase II; which is dependent on sales of lots in Phase I
 - RYD to be installed – 12” perforated within Rear Yard Swale to address drainage concerns of abutting properties.
 - Phase I detention basin is a DRY basin; it only holds water during a rain storm.
 - Phase II basin is WET basin, the DEQ wanted this for Storm water quality enhancements.
 - a) Question regarding Wetland area near John R
 - * Stormwater to regulate wetlands will not be cut-off. There are some non regulated wetlands that will simply be filled without compensation (DEQ determination.)
 - b) Question regarding Stub Street
 - * City required providing for future connections, even if current abutting property has no desire to develop at this time.
 - c) Mitigation areas are within conservation easements and delineated with split rail fence.
 - * Grade breaks at some lots, accomplished with natural cobble stone walls.
 - Home Owner Association would be responsible to pay taxes on mitigation areas.
 - No more work on Fetterly Drain anticipated other than the future road crossings.
 - Questions from Lon Ullmann
 - a) The 40’ easement over Fetterly Drain extends to almost each edge. How will future drain maintenance be handled?
 - * Would have to use access points along drain, future road crossings
 - b) There is an area under questions as to whether or not the area is a wetland.
 - * MDEQ has an area under observation.

- * Lots 41-43 would become part of the mitigation area if the area is deemed to be regulated wetland.
 - c) DEQ citation regarding drain pipe and CB still exists on City property
 - * Dale Garrett – line in question has been removed. There are not citations.
 - d) Brick ledge elevation compared to existing ground and overall change of grade?
 - * 1' – 2' higher from house to allow for drainage front to back and into Rear Yard storm.
 - * The development overall should be net zero soil change; there may be slightly more soil leaving the site overall
 - e) Why not put RYD in front of tree buffer along property line
 - * Drainage is primary concern that the City hears from abutting properties.
 - * RYD ensures that water will not flow onto neighboring properties or onto new sites
 - * Overall property is very flat so long flat swales from back to front may cause future issues
 - f) Soil Conditions (PEAT) off Square Lake entrance are 3' – 5' deep has this been indentified and is it a concern with poor soil structure?
 - * Dale Garrett – basement excavations will be deeper than the 3' – 5' peat depth and will not affect the house structure. The city will require all the peat excavated out of road areas and replaced with class II material.
- Question from Resident regarding land ownership of 13 acres west of sub
 - a) Garrett's do not own so it's not known what may or may not happen
 - Answers to questions by various in attendance:
 - a) Start tree clearing once City Council approves
 - b) Expect to begin work this summer
 - c) Anticipated new home prices are mid to high 300's
 - d) No fence along Willow Grove, no fence along "normal" property line or detention basins
 - e) Construction access from John R only

These minutes are intended to be a summary of those items discussed. Any corrections and/or comments should be noted to the writer as soon as possible.

Respectfully submitted,

CITY OF TROY

Scott Finlay

Scott Finlay, PE
Civil Engineer

cc: All Present

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT PERMIT

ISSUED TO:

Garrett Family Limited Partnership
5877 Livernois Rd Suite 103
Troy, MI 48098

Permit No.	07-63-0048-P
Issued	January 5, 2012
Extended	
Revised	
Expires	January 5, 2017

This permit is being issued by the Department of Natural Resources and Environment (DNRE) under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and specifically:

- Part 301 Inland Lakes and Streams
- Part 315 Dam Safety
- Part 325 Great Lakes Submerged Lands
- Part 323 Shorelands Protection and Management
- Part 303 Wetlands Protection
- Part 353 Sand Dune Protection and Management
- Part 31 Floodplain/Water Resources Protection

Permission is hereby granted, based on permittee assurance of adherence to State requirements and permit conditions to:

Permitted Activity: Construct one road crossing of the Fetterley Drain by enclosing 138 linear feet within a 42 inch reinforced concrete culvert and construct a second road crossing of the Fetterley Drain by enclosing 125 linear feet within a 42 inch reinforced concrete culvert. Place approximately 5,109 cubic yards of fill within 2.15 acres of wetland and construct two storm water detention basins with one 30 inch diameter outlet pipe and one 36 inch diameter outlet pipe to discharge pre-treated storm water to the Fetterley Drain. Temporarily disturb approximately 0.33 acres of wetland in order to conduct wetland enhancement activities adjacent to wetland mitigation. All work shall be completed in accordance with the attached specifications and plans dated 12/10/07.

Water Course Affected: Fetterley Drain

Property Location: Oakland County, City of Troy, Section 11

Subdivision, Lot **Town/Range** 2N, 11E **Property Tax No.** 20-11-226-006+

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee in exercising the authority granted by this permit shall not cause unlawful pollution as defined by Part 31, Floodplain/Water Resources Protection of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the plans and the specifications submitted with the application and/or plans and specifications attached hereto.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved herein.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with Act 53 of the Public Act of 1974 and comply with each of the requirements of that act.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the DNRE within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached, preaddressed post card to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the DNRE.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific State Act, Federal Act and/or Rule under which this permit is granted.
- L. Work to be done under authority of this permit is further subject to the following special instructions and specifications:

1. All work shall be completed in accordance with plans prepared by Professional Engineering Associates, dated March 20, 2006, and last revised April 26, 2011, being sheets WP-1, WP-2, and WP-3 entitled Wetland Permit Plans. A reduced copy of these plans are attached to this permit, and a full size copy of these plans are kept on file at the MDEQ's Land and Water Management Division, Southeast Michigan District Office, 27700 Donald Court, Warren, MI 48092.
2. Authority granted by this permit does not waive any jurisdiction of the United States Army Corps of Engineers or the need for a federal permit, if required.
3. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA). To locate the Soil Erosion Program Administrator for your county visit www.deq.state.mi.us/sesca/.
4. A storm water discharge permit may be required under the Federal Clean Water Act for construction activities that disturb one or more acres of land and discharge to surface waters. For sites over five (5) acres, the permit coverage may be obtained by a Part 91, Soil Erosion and Sedimentation Control (SESC), permit and filing a "Notice of Coverage" form to the MDEQ's Water Bureau. For sites with disturbance from one acre up to five acres, storm water coverage is automatic once the SESC permit is obtained. These one to five acre sites are not required to apply for coverage, but are required to comply with storm water discharge permit requirements. Information on the storm water discharge permit is available from the Water Bureau's Storm Water Permit Program by calling 517-373-8088 or at www.michigan.gov/deqwater. Select "surface water" and then select "storm water."
5. Prior to the initiation of any permitted construction activities, a siltation barrier shall be constructed immediately downgradient of the construction site. Siltation barriers shall be specifically designed to handle the sediment type, load, water depth, and flow conditions of each construction site throughout the anticipated time of construction and unstable site conditions. The siltation barrier shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland (non-wetland, non-floodplain) site. The siltation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.
6. All raw areas resulting from the permitted construction activity shall be promptly and effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner so as to prevent erosion and any potential siltation to surface waters or wetlands.

Wetland Conditions

7. Prior to the start of construction, all non-work wetland areas shall be bounded by properly trenched filter fabric fence and orange construction fencing to prevent sediment from entering the wetland and to prohibit construction personnel from entering or performing work in these areas. Fence shall be maintained daily throughout the construction process. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site. The erosion barrier shall then be removed in its entirety and the area restored to its original configuration and cover.
8. Excess soil materials from the project shall not be deposited in wetlands or surface water without first securing a permit under Part 303, Wetlands Protection, of the NREPA or other applicable statute. Prior to the initiation of any permitted construction activity, a silt fence shall be installed along the entire route of the disturbed wetland area and maintained in good working order until permanent stabilization and revegetation of all disturbed areas has occurred. Silt fence shall be removed after re-vegetation. All excess soil material shall be placed on an upland site and seeded and mulched to prevent erosion into waters, floodplain, or wetlands.

9. All fill/backfill shall consist of clean inert material which will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be CONTAINED in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be STABILIZED with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.

Wetland Mitigation

10. Any work in regulated areas authorized by this permit is prohibited until an acceptable final mitigation plan is submitted by the permittee.

11. The permittee shall, as a primary condition of this permit, mitigate the loss of 2.15 acres of wetland, consisting of 0.57 acres of forested, and 1.58 acres of wet meadow wetland. The authorization granted by this permit is contingent upon the completion of mitigation as follows:

- a. A new 3.57 acre wetland area, consisting of 1.15 acres of forested, and 2.42 acres of wet meadow wetland, shall be created in accordance with plans approved by the MDEQ. If the permit conditions modify the mitigation plan, the permit conditions shall take precedence over the mitigation plan.
- b. The mitigation grading, planting, and introduction of hydrology **shall be constructed prior to or concurrent with initiating any other permitted activities, and shall be completed prior to expiration of this permit.**
- c. The permittee shall provide a bond or letter of credit to the MDEQ in a form identical to the financial assurance models on the MDEQ's website at www.michigan.gov/deqwetlands in the amount of \$217,500 to ensure that the replacement wetland is constructed, the conservation easement is recorded, monitoring is completed, and corrective actions are performed as required to comply with the mitigation requirements and conditions of this permit. **The financial assurance document must be provided and accepted by the MDEQ prior to final issuance of this permit.**
- d. Prior to the transfer of this permit to another person, the new person must obtain and provide a financial instrument acceptable to the MDEQ in the name of the new person and in the amount required by this permit.

Upon request of the permittee and with the submittal of adequate proofs, the MDEQ may release portions of the financial instrument in accordance with the following guidelines:

Fifty percent of the financial instrument may be released after the MDEQ concurs that the mitigation grading, planting, and proper hydrology have been established.

The remaining 50 percent of the financial instrument will be released upon all of the following:

- i. Submittal of all the required monitoring reports,
 - ii. Substantial compliance with the performance standards as outlined in this permit, and
 - iii. Final approval by the MDEQ.
- e. The permittee shall execute a conservation easement over all remaining wetlands onsite and over all mitigation wetlands as shown on the permit plans in a form identical to the conservation easement model on the MDEQ's website at www.michigan.gov/deqwetlands. The original executed conservation easement and associated exhibits must be sent to the MDEQ for review and recording a **minimum of 90 days prior to the initiation of any permitted activities**. Send to: Conservation Easement Coordinator, MDEQ, Land and Water Management Division, P.O. Box 30458, Lansing, Michigan, 48909, with a copy of the executed easement mailed to the District Office's address above.

AUG 15 2011

An acceptable executed conservation easement must be submitted to the MDEQ by the permittee a minimum of 90 days prior to commencement of any permitted work within regulated areas.

The conservation easement boundary shall be demarcated by the placement of signage along the perimeter. The signage shall be placed at an adequate frequency, visibility, and height for viewing, made of a suitable material to withstand climatic conditions, and should be replaced as needed. The signage shall include the following language:

WETLAND CONSERVATION EASEMENT
NO CONSTRUCTION OR PLACEMENT OF STRUCTURES ALLOWED.
NO MOWING, CUTTING, FILLING, DREDGING OR
APPLICATION OF CHEMICALS ALLOWED.
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Except as otherwise provided by this permit or approved in writing by the MDEQ, the following activities are prohibited in perpetuity within the mitigation area: alteration of topography, creation of paths, trails, or roads; placement of fill, dredging, or excavation; drainage of surface or groundwater; construction or placement of any structure; plowing, tilling, or cultivating the soils or vegetation; cutting, removal, or alteration of vegetation; including the planting of non-native plant species; construction of unauthorized utility or petroleum lines; storage or disposal of garbage, trash, debris, abandoned equipment; accumulation of machinery or other waste materials; use or storage of off-road vehicles; placement of billboards or signage; or the use of the wetland for the dumping of storm water (except as otherwise allowed in this permit).

To protect the wetland mitigation from encroachment, the permittee shall establish a split rail fence or similar structure approved by the MDEQ, along the conservation easement boundary as shown on the approved wetland mitigation plans before construction of the wetland mitigation is complete.

- f. The mitigation site shall not be fine graded, but shall be left in a rough grade state (allowing for the establishment of micro-topography). Any planting or seeding of the mitigation site must consist of native Michigan plant materials.
- g. It is recommended that the permittee install a water control structure that can manipulate the water levels in 2-6 inch increments. The failure to install adequate water control structures may lead to the need to regrade the entire mitigation area should the hydrology establish differently than shown on the approved mitigation plans.
- h. The permittee shall notify the MDEQ's District Office, in writing and within 20 days of completion, of each of the following items:
 - 1) final grading
 - 2) seeding and plant installation
- i. In the event the permitted activity is begun but not completed, the permittee or owner of record shall remain responsible for completion of the mitigation wetland and associated conditions, as determined by the MDEQ. Such determinations shall be based upon the extent of the disturbance to the existing wetlands.
- i. Should the mitigation wetland fail to become established after two complete growing season(s), or fail to progress satisfactorily towards a self-sustaining wetland system as required by this permit, the permittee shall:
 - i. Assess the problem and its probable causes;

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- ii. develop reasonable and necessary corrective measures as a revision to original plans;
- iii. submit proposed corrective measures to the MDEQ for confirmation and approval within 60 days of identification of the problem; and
- iv. upon MDEQ approval, implement corrective measures.

12. Additional mitigation monitoring may be required to evaluate the success of the corrective measures.

Wetland Mitigation Performance Standards

13. The following performance standards will be used to evaluate the mitigation wetland:

- a. Construction has been completed in accordance with the MDEQ's approved plans and specifications included in the permit and mitigation plan.
- b. The mitigation wetland is characterized by the presence of water at a frequency and duration sufficient to support a predominance of wetland vegetation and the wetland types specified at the end of the monitoring period.
- c. A layer of high-quality topsoil, from the A horizon of an organic or loamy surface texture soil, is placed (or exists) over the entire wetland mitigation area at a minimum thickness of six (6) inches.
- d. The mitigation wetland shall be free of oil, grease, debris, and all other contaminants.
- e. A minimum of six (6) habitat structures, consisting of at least three (3) types, have been placed per acre of mitigation wetland. At least 50 percent of each structure shall extend above the normal water level. The types of acceptable wildlife habitat structures are:
 - i. Tree stumps laid horizontally within the wetland area. Acceptable stumps shall be a minimum of 6 feet long (log and root ball combined) and 12 inches in diameter.
 - ii. Logs laid horizontally within the wetland area. Acceptable logs shall be a minimum of 10 feet long and 6 inches in diameter.
 - iii. Whole trees laid horizontally within the wetland area. Acceptable whole trees shall have all of their fine structure left intact (i.e., not trimmed down to major branches for installation), be a minimum of 20 feet long (tree and root ball), and a minimum of 12 inches in diameter at breast height (DBH).
 - iv. Snags which include whole trees left standing that are dead or dying, or live trees that will be flooded and die, or whole trees installed upright into the wetland. A variety of tree species should be used for the creation of snag habitat. Acceptable snags shall be a minimum of 20 feet tall (above the ground surface) and a minimum of 12 inches DBH. Snags should be grouped together so as to provide mutual functional support as nesting, feeding, and perching sites.
 - v. Sand mounds at least 18 inches in depth and placed so that they are surrounded by a minimum of 30 feet of water measuring at least 18 inches in depth. The sand mound shall have at least a 200 square foot area that is 18 inches above the projected high water level and oriented to receive maximum sunlight.
- f. Mean percent cover of native wetland species in the herbaceous layer at the end of the monitoring period is not less than:
 - 80 percent for forested wetland.
 - 80 percent for scrub-shrub wetland.
 - 60 percent for emergent wetland.
 - 80 percent for wet meadow wetland.

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Extensive open water and submergent vegetation areas having no emergent and/or floating vegetation shall not exceed 20 percent of the mitigation wetland area. Extensive areas of bare soil shall not exceed five percent of the mitigation wetland area. For the purposes of these performance standards, extensive refers to areas greater than 0.01 acre (436 square feet) in size.

The total percent cover of wetland species in each plot shall be averaged for plots taken in the same wetland type to obtain a mean percent cover value for each wetland type. Plots within identified extensive open water and submergent areas, bare soil areas, and areas without a predominance of wetland vegetation shall not be included in this average. Wetland species refers to species listed as facultative and wetter (FAC, FAC+, FACW-, FACW, FACW+, OBL) on the U.S. Fish and Wildlife Service's "National List of Plant Species That Occur in Wetlands" for Region 3.

- g. The mitigation wetland supports a predominance of wetland vegetation (as defined in the "MDEQ Wetland Identification Manual") in each vegetative layer, represented by a minimum number of native wetland species, at the end of the monitoring period. The minimum number of native wetland species per wetland type shall not be less than:

- 15 species within the forested wetland.
- 15 species within the scrub-shrub wetland.
- 15 species within the emergent wetland.
- 20 species within the wet meadow wetland.

The total number of native wetland plant species shall be determined by a sum of all species identified in sample plots of the same wetland type.

- h. At the end of the monitoring period, the mitigation wetland supports a minimum of:

Three hundred (300) individual surviving, established, and free-to-grow trees per acre in the forested wetland that are classified as native wetland species and consisting of at least three different plant species. Three hundred (300) individual surviving, established, and free-to-grow shrubs per acre in the scrub-shrub wetland that are classified as native wetland species and consisting of at least four different plant species. Eight (8) native wetland species of grasses, sedges, or rushes in the wet meadow wetland.

- i. The mean percent cover of invasive species including, but not limited to, *Phragmites australis* (Common Reed), *Lythrum salicaria* (Purple Loosestrife), and *Phalaris arundinacea* (Reed Canary Grass) shall in combination be limited to no more than ten (10) percent within each wetland type. Invasive species shall not dominate the vegetation in any extensive area of the mitigation wetland.

If the mean percent cover of invasive species is more than ten (10) percent within any wetland type or if there are extensive areas of the mitigation wetland in which an invasive species is one of the dominant plant species, the permittee shall submit an evaluation of the problem to the MDEQ. If the permittee determines that it is infeasible to reduce the cover of invasive species to meet the above performance standard, the permittee must submit an assessment of the problem, a control plan, and the projected percent cover that can be achieved for review by the MDEQ. Based on this information, the MDEQ may approve an alternative invasive species standard. Any alternative invasive species standard must be approved in writing by the MDEQ.

14. If the mitigation wetland does not satisfactorily meet these standards by the end of the monitoring period, or is not satisfactorily progressing during the monitoring period, the permittee will be required to take corrective actions.

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Wetland Mitigation Monitoring

15. The permittee shall monitor the wetland mitigation for a minimum of five (5) years following mitigation grading, planting, and introduction of hydrology. A monitoring report, which compiles and summarizes all data collected during the monitoring period, shall be submitted annually by the permittee. Monitoring reports shall cover the period of January 1 through December 31 and be submitted to the MDEQ prior to January 31 of the following year. The permittee shall conduct the following activities and provide the information collected in the monitoring reports:

- a. Measure inundation and saturation at all staff gauges, monitoring wells, and other stationary points shown in the mitigation plan monthly during the growing season. Hydrology data shall be measured and provided at sufficient sample points to accurately depict the water regime of each wetland type.
- b. Sample vegetation in plots located along transects shown in the mitigation plan once between July 15 and August 31. The number of sample plots necessary within each wetland type shall be determined by use of a species-area curve or other approach approved by the MDEQ. The minimum number of sample plots for each wetland type shall be no fewer than five (5). Sample plots shall be located on the sample transect at evenly spaced intervals or by another approach acceptable to the MDEQ. If additional or alternative sample transects are needed to sufficiently evaluate each wetland type, they must be approved in advance in writing by the MDEQ.

The herbaceous layer (all non-woody plants and woody plants less than 3.2 feet in height) shall be sampled using a 3.28 foot by 3.28 foot (one square meter) sample plot. The shrub and tree layer shall be sampled using a 30-foot radius sample plot. The data recorded for each herbaceous layer sample plot shall include a list of all living plant species, and an estimate of percent cover in five (5) percent intervals for each species recorded, bare soil areas, and open water relative to the total area of the plot. The number and species of surviving, established, and free-to-grow trees and surviving, established, and free-to-grow shrubs shall be recorded for each 30-foot radius plot.

Provide plot data and a list of all the plant species identified in the plots and otherwise observed during monitoring. Data for each plant species must include common name, scientific name, wetland indicator category from the U.S. Fish and Wildlife Service's "National List of Plant Species that Occur in Wetlands" for Region 3, and whether the species is considered native according to the Michigan Floristic Quality Assessment (Michigan Department of Natural Resources, 2001). Nomenclature shall follow Voss (1972, 1985, and 1996) or Gleason and Cronquist (1991).

The locations of sample transects and plots shall be identified in the monitoring report on a plan view showing the location of wetland types. Sample transects shall be permanently staked at a frequency sufficient to locate the transect in the field.

- c. Delineate any extensive (greater than 0.01 acre in size) open water areas, bare soil areas, areas dominated by invasive species, and areas without a predominance of wetland vegetation, and provide their location on a plan view.
- d. Document any sightings or evidence of wading birds, songbirds, waterfowl, amphibians, reptiles, and other animal use (lodges, nests, tracks, scat, etc.) within the wetland noted during monitoring. Note the number, type, date, and hour of the sightings and evidence.
- e. Inspect the site, during all monitoring visits and inspections, for oil, grease, man-made debris, and all other contaminants and report findings. Rate (e.g., poor, fair, good, excellent) and describe the water clarity in the mitigation wetland.
- f. Provide annual photographic documentation of the development of the mitigation wetland during vegetation sampling from permanent photo stations located within the mitigation wetland.

- g. At a minimum, photo stations shall be located at both ends of each transect. Photos must be labeled with the location, date photographed, and direction.
- h. Provide one-time photographic documentation during construction of the placement of at least six (6) inches of high quality soil, from the A horizon of an organic or loamy surface texture soil, across the site.
- i. Provide the number and type of habitat structures placed and representative photographs of each structure type.
- j. Provide a written summary of data from previous monitoring periods and a discussion of changes or trends based on all monitoring results. This summary shall include a calculation of the acres of each wetland type established, a plan view drawing depicting each ecological type, and identification of all performance standards and whether each standard has been met.
- k. Provide a written summary of all the problem areas that have been identified and potential corrective measures to address them.

16. A qualified individual able to identify vegetation to genus and species must conduct the wetland monitoring. The MDEQ reserves the right to reject reports with substandard monitoring data.

17. The MDEQ will determine if the performance standards have been met. If the performance standards have not been met, the MDEQ may require subsequent annual monitoring until final approval from the MDEQ can be granted.

Prior to final written approval of the mitigation by the MDEQ, the permittee shall submit the following:

- i. A written statement that the mitigation is complete and request for final approval of the mitigation.
- ii. A copy of the permit.
- iii. "As-built" plans and specifications signed and sealed by a registered surveyor or licensed engineer.
- ii. A surveyed boundary of the established wetland within the mitigation area, including the total acreage of the mitigation wetland and the acreage of each type of wetland created.
- iii. Complete all monitoring requirements including the submittal of all required monitoring reports.

Floodplain Conditions

18. The applicant shall delineate the 100-year floodplain and floodway, and determine the 100-year floodplain of the Fetterly Drain at the subject site.

19. The applicant shall certify that the proposed crossings are designed to pass the 100-year flood without causing harmful interference, and provide such certification including hydraulic waterway design calculations as supporting documentation to the department.

20. Equal compensation for any and all proposed fill within the floodplain may be required by the City of Troy. The applicant must contact the City of Troy to obtain necessary approvals prior to any construction on site.

21. Pursuant to the 44 CFR 60.3(b) (7), the applicant must also assure that the flood carrying capacity within the altered portions of the watercourse is maintained.

22. The City of Troy enforces the requirements pursuant to the Michigan Building Code 2003 and Michigan Residential Code 2003, and are as follows:

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Michigan Building Code 2003:

23. This permit does not waive the requirements of Michigan Building Code 2003 (Code) and its referenced standards, ASCE 7-98: Minimum Design Loads for Buildings and Other Structures, and ASCE 24-98: Flood Resistant Design and Construction, for substantial improvements to existing structures or new construction. The following is a summary of the requirements in areas prone to flooding, please reference the Code for details:

- 109.3.3 – The elevation certificate required in Section 1612.5 shall be submitted to the local building official. National Flood Insurance Program (NFIP) communities must use the elevation certificate form found at www.fema.gov/nfip. This form may be used in non-NFIP communities.
- 1612.4 – Type II buildings shall have the lowest floors elevated one (1) foot above design flood elevations.
- The elevation requirements of referenced standard ASCE 24-98 (Chapter 8) must be met for electrical, plumbing, mechanical, heating, ventilation, and air conditioning components.

Michigan Residential Code 2003:

24. This permit does not waive the requirements of the Michigan Residential Code 2003 (Code) for the construction of, or substantial improvements to, buildings and structures. The following is a summary of the requirements in areas prone to flooding, please reference the Code for the exact language:

- R 109.1.3 - A registered professional engineer or land surveyor must submit an elevation certificate to the local building official upon placement of the lowest floor, including basement, prior to further vertical construction. When the project is located in a National Flood Insurance Program (NFIP) Community, the elevation certificate form, found at www.fema.gov/nfip, must be used. This form may be used in non-NFIP communities.
- R 323.1.1 - Structural systems of all buildings and structures shall be designed, connected, and anchored to resist flotation, collapse, or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation.
- R 323.1.2 – Flood resistant construction. Buildings and structures shall be constructed by methods and practices that minimize flood damage.
- R 323.1.3 - The design flood elevation shall be used to define areas prone to flooding and shall describe, at a minimum, the base flood elevation at the depth of peak elevation of flooding (including wave height) which has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year.
- R 323.1.4 - The lowest floor shall be the floor of the lowest enclosed area, including basement, but excluding any unfinished flood-resistant enclosure that is usable solely for vehicle parking, building access, or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.
- R 323.1.5 - Protection of mechanical and electrical systems. Electrical systems, equipment, and components; heating, ventilating, air conditioning and duct systems; plumbing appliances, plumbing fixtures, and other service equipment shall be located at or above the design flood elevation (This also applies to those previously listed items that were replaced as part of a substantial improvement.). The previously listed items may be installed below the design flood elevation provided they are designed to be installed to prevent water from entering or accumulating in accordance with the flood resistant construction requirements of the International Building Code. Electrical wiring systems are permitted to be located below the design flood elevation provided they conform to the provisions of the electrical part of the Code for wet locations.
- R 323.1.7 - Building materials used below the design flood elevation shall be flood-resistant.
- R 323.1.9 - "As-built" elevations certificates. A registered design professional shall prepare and seal documentation of the elevations specified in section R 323.2.2 through R 323.2.3.
- R 323.2.1 - Elevation requirements.
 1. Buildings and structures shall have the lowest floor elevated one (1) foot above the design flood elevation.

2. In areas of shallow flooding (AO zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet on the FIRM, or not less than 2 feet if a depth is not specified.
 3. Basement floors that are below grade on all sides shall be elevated to or above the design flood elevation.
Exception: Enclosed areas below the design flood elevation, including basements that have floors which are not below grade on all sides, shall meet the requirements of section R 323.2.2 of the Code.
 - R 323.2.2 - Enclosed areas, including crawl spaces, that are below the design flood elevation shall:
 1. Be used solely for parking of vehicles, building access or storage.
 2. Be provided with flood openings which shall meet the following criteria:
 - 2.1 There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
 - 2.2 The total net area of all openings shall be at least one (1) square inch for each square foot of enclosed area.
 - 2.3 The bottom of each opening shall be one (1) foot or less above the adjacent ground level.
 - 2.4 Openings shall be at least three (3) inches in diameter.
 - 2.5 Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.
 - 2.6 Openings installed in doors and windows that meet requirements 2.1 through 2.5 are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.
 - R 323.2.3 - Foundation Design and Construction. Foundation walls for all buildings and structures erected in flood hazard areas shall meet the requirements of Chapter 4 of the Code.
25. The applicant upon project completion shall submit to this office within 60 days of project completion "as-built" plans, signed and sealed by a qualified design professional licensed by the State of Michigan, certifying that the project has been completed in accordance with this permit.
26. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
27. In issuing this permit, the MDEQ has relied on the information and data which the permittee has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
28. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state or federal approval, or authorizations necessary to conduct the activity.
29. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representatives of the permittee, undertaken in connection with this permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.

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30. Noncompliance with these terms and conditions, and/or the initiation of other regulated activities not specifically authorized by this permit shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the MDEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.

31. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity and/or mitigation plan from the MDEQ. Such revision requests shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.

32. This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to accept transfer of the permit. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties which includes all the above information may be provided to the MDEQ. The MDEQ will review the request and if approved, will provide written notification to the new owner.

33. A permit may be extended for cause. To request an extension of a permit a written request must be submitted to the MDEQ before the expiration date of the permit. The request must indicate the reasons for the extension. The MDEQ will review the request, and if approved, will provide written notification to the permittee.

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34. This permit shall become effective on the date of the MDEQ representative's signature. Upon signing by the permittee named herein, this permit must be returned to the MDEQ's Land and Water Management Division, Southeast Michigan District Office, 27700 Donald Court, Warren, MI 48073, for final execution.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

x [Signature] 8-11-11
Permittee Date

X [Signature]
Printed Name and Title of Permittee

Dan Wyant, Director
Department of Environmental Quality

By [Signature]
Jeremy Richardson
Water Resources Division

cc: City of Troy Clerk
Oakland County Drain Commission
Oakland County CEA
MR. Todd Holloway, Holloway EPI

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M-3 AUGMENTATION LIST

Habitat Augmentation List

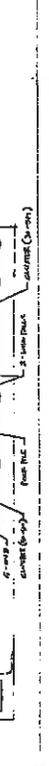
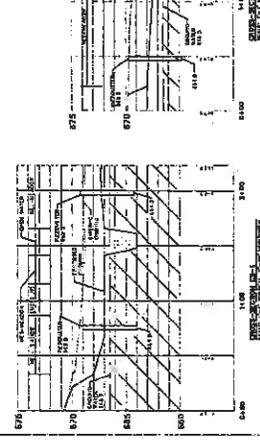
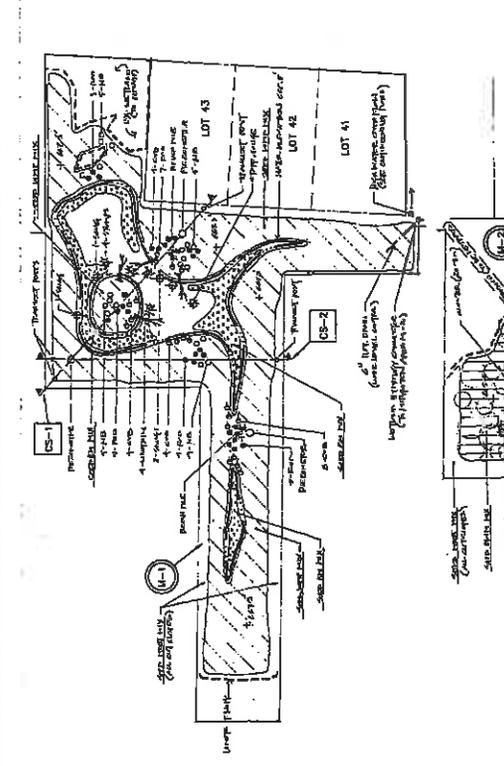
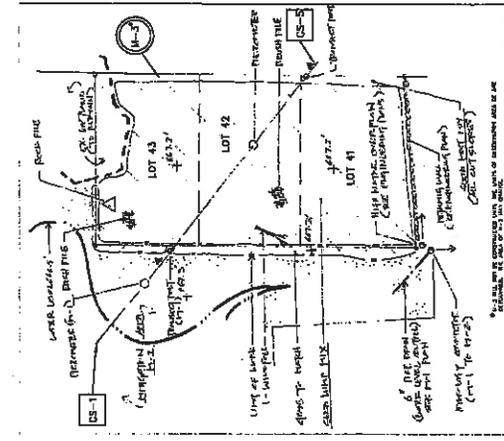
Code	Description	Quantity	Notes
1
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M-3 PLANTING LIST

Planting List

Code	Plant Name	Quantity	Notes
1
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NOTES: 1. ALL PLANTS TO BE PLANTED BY THE CONTRACTOR. 2. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE PLANTING LIST. 3. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE AUGMENTATION LIST. 4. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE PLANTING LIST. 5. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE AUGMENTATION LIST. 6. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE PLANTING LIST. 7. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE AUGMENTATION LIST. 8. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE PLANTING LIST. 9. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE AUGMENTATION LIST. 10. PLANTS TO BE PLANTED IN ACCORDANCE WITH THE PLANTING LIST.



M-1 AND M-2 AUGMENTATION LIST

Habitat Augmentation List

Code	Description	Quantity	Notes
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7
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9
10

Planting List

Code	Plant Name	Quantity	Notes
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M-1 AND M-2 AUGMENTATION LIST

Habitat Augmentation List

Code	Description	Quantity	Notes
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Planting List

Code	Plant Name	Quantity	Notes
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MODEL FILE NO. 07-63-0049-P

PEA
 GARRETT FAMILY LIMITED PARTNERSHIP
 PROJECT: HONOLULU
 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813
 ARCHITECT: JET
 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813

WILSON PERMIT PLANS
 WILSON PERMIT PLANS
 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813
 SEE ATTACHED PERMIT NO. 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813

Callaway
 THE CALLAWAY GROUP
 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813
 SEE ATTACHED PERMIT NO. 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813

Holloway PPA
 HOLLOWAY PARTNERSHIP
 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813
 SEE ATTACHED PERMIT NO. 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813

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APPROVED FOR THE
 HONOLULU DISTRICT
 DEPARTMENT OF PUBLIC WORKS
 1000 KALANIAN'OLUHIA DRIVE
 HONOLULU, HAWAII 96813

APR 27 2011
 7011
 SOUTH PAST HIGHWAY INTERSECTION

DATE: 04/25/2011
 TIME: 10:00 AM

APR 25 2011

WATER RESOURCES
 COUNTY EAST PHOENIX COUNTY OFFICE

WATER RESOURCES

COUNTY EAST PHOENIX COUNTY OFFICE

MDCO FILE NO. 07-63-004B-P

PROFESSIONAL ENGINEER
WETLAND PERMIT PLANS
 PROJECT: WETLAND PERMIT PLANS
 SHEET: 00-04
 DATE: 04/25/2011

WETLAND PERMIT PLANS
 SHEET 00-04 OF 06
 SEMI-DISTRICT

LOCATION MAP
 SEE SHEET 00-01

THESE PLANS AND RELATED PARTS ARE
 SUBJECT TO THE CONDITIONS CONTAINED IN
 MDCO WETLAND PERMIT #

Wetland Details

PLANNING, INC.
 PLANNING, INC.
 2300 W. WASHINGTON AVENUE
 PHOENIX, AZ 85016
 602-998-8888

MDCO PERMIT #
 00-04

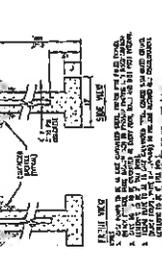
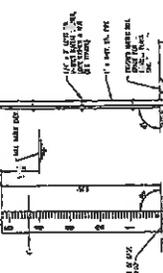
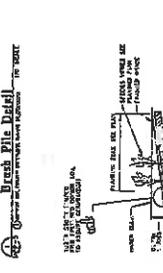
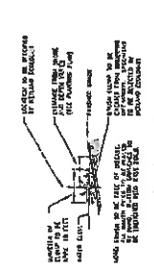
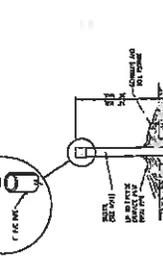
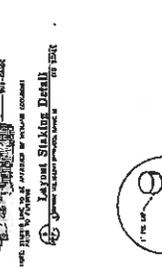
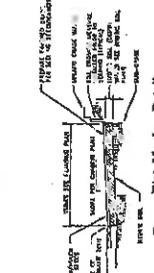
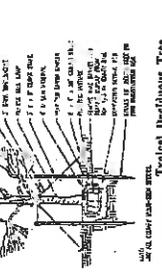
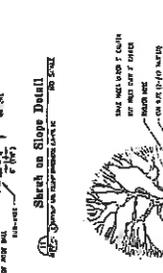
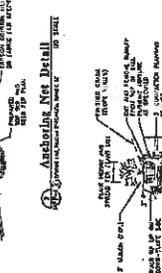
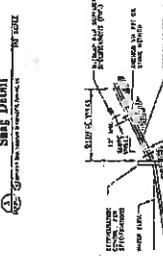
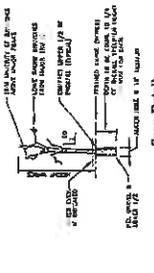
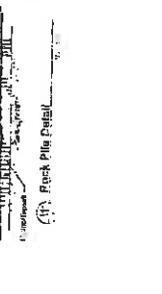
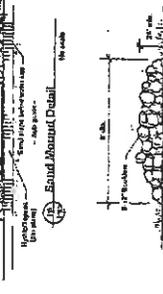
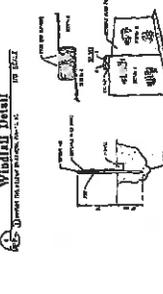
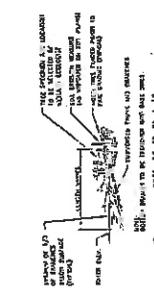
STATE: MD
 COUNTY: MONTGOMERY

PROJECT ADDRESS

PROJECT NUMBER

Oak Forest Subdivision Mitigation
 City of Troy, Oakland County, MI

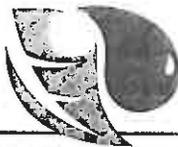
DATE: APRIL 25, 2011



CAUTION:
 THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AUTHORITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AUTHORITIES.



Highway 94
 10000 Highway 94, Troy, MI 48063
 (313) 486-1000



WRC
WATER RESOURCES COMMISSIONER

John P. McCulloch

December 7, 2011

Mr. Kevin Nosek, P.E.
Professional Engineering Associates, Inc.
2430 Rochester Court, Suite 100
Troy, Michigan 48098

RE: **Fetterly Drain
Oak Forest Project
Job # 2000-250.D, last revised August 20, 2011
Part of the Northeast ¼ of Section 11, City of Troy**

Dear Mr. Nosek:

This office has received two (2) sets of construction plans for the referenced project. Our review indicates the following:

1. The proposed project will involve the Fetterly Drain, a legally established county drain under the jurisdiction of this office. A drain permit is required and has been prepared by this office.
2. The proposed project is a site condominium development. This development is not being established under Act 288 of 1967, as amended, the Subdivision Act of 1967. Therefore, it is not under our authority to perform a detailed review of the development's storm drain system. Our review is limited to the storm water discharge to the county drain. It is the responsibility of the local municipality to review and approve the development's storm drain system.
3. With respect to the submitted plans, the involvements with the drain are as follows:
 - a. The developed storm water runoff from this site will be routed to an enclosed storm drain system and discharge to two Contech Stormwater Treatment Systems and then to the two proposed detention basins. Detention Basin No. 1 will outlet through an 8" diameter orifice in proposed ES103, and Detention Basin No. 2 will outlet through a 6" diameter orifice in a proposed ES203. The two detention basins will be connected to the Fetterly Drain at two locations. Per this office letter dated February 14, 2011, we will accept the detention basin design for the 25-year storm. There is sufficient storage in the detention basins for a 25-year storm event.
 - b. Additionally, this office has received information from Contech for the Stormwater Treatment System certifying that the said model has been designed to treat the 10-year design flow to the Fetterly Drain, with excess flow from larger events to bypass unobstructed in accordance with design standards for manufactured treatment systems. The total suspended solid removal efficiency is shown to be at 80% and the floatable free oil removal efficiency is shown to be at 90%, which meets WRC design standards for manufactured treatment systems.



- c. That two proposed 42" dia. concrete culverts that will be installed in the Fetterly Drain have the capacity to pass the peak flow based on 10-year storm as indicated in the Fetterly Drain Improvements Plans.
- d. The site has been reviewed for the construction of sanitary sewer that will be connect to an existing City of Troy public sewer which ultimately outlets into the George W. Kuhn Drain Drainage District formerly known as the Oakland County Southeastern Sewage Disposal System.. The MDEQ Part 41 Permit Application has been forwarded to MDEQ by this office.

This office has no objection to the proposed project provided:

- A. **Before any construction affecting the aforementioned County Drain begins, a WRC bonded contractor must obtain an Oakland County Drain Inspection Permit.**

The following are new bonding requirements of the Oakland County Water Resources Commissioner's Office for all County Drain permit work:

- a. \$5000 surety bond on WRC form no. DC-443 available online at:
 - 1. http://www.oakgov.com/water/assets/docs/om_surety_bond_for_m.pdf
 - b. \$500 cash bond posted at WRC (refundable)
 - c. Liability insurance naming WRC as additional insured
- B. The \$250 site plan review fee was paid and an inspection deposit of \$3500 shall be paid to this office and upon satisfactory completion of the work done to the Fetterly Drain, an accounting of the inspection expenses will be made and an appropriate refund or invoice will be issued for the inspection deposit. The permit may be picked up at this office between 8:30 a.m. and 5:00 p.m., Monday through Friday.
 - C. That a 48-hour notice is given to our Inspection Department at 248-858-1105 prior to any construction affecting the aforementioned County Drain. **In the event that our Inspection Department is not notified as stipulated herein, the entire deposit will be forfeited.**
 - D. That the applicant, or their contractor, informs this office of any pre-construction utility meetings regarding this project so that this office may attend if deemed necessary.
 - E. That flow is maintained in the said Drain at all times during construction.
 - F. That the Oakland County Water Resources Commissioner, the County of Oakland and the Drainage District are held harmless from all costs, suits and damages which may arise out of the proposed construction.
 - G. That this final conditional approval will not relieve the applicant and/or their contractor of the responsibility of obtaining permits, approvals or clearances as may be required from federal, state or local authorities, the public utilities and private property owners.

- H. That the proposed involvements with the Fetterly Drain are carried out in accordance with the Oakland County Water Resources Commissioner's Storm Drain Notes and Details Sheet and that said Details Sheet should be incorporated as part of the approved plans. The most current Storm Drain Detail Sheet can be found at the following web address: <http://www.oakgov.com/water/publications/stormdetail.html>
- I. Upon completion of the project, kindly supply this office with as-built drawings of the culverts. As-built drawings are to be provided on CD in a TIF format. JPEG or PDF are acceptable formats if TIF is not available.
- J. That related earth disruption conforms to applicable requirements of Part 91, Soil Erosion and Sedimentation Control of the Natural Resource and Environmental Protection Act, Act 451 of the Public Acts of 1994. **Application should be made to City of Troy office for the required soil erosion permit.**
- K. If the permit issued for this project is not picked up within ninety (90) days of the date of this letter, this office will contact the applicant. If the applicant cannot be contacted, the applicant will be notified by mail that the permit and all approvals pertaining thereto will be rescinded.

If there are any questions regarding this matter, contact Rima Raouf at 248-975-9520.

Sincerely,



Glenn R. Appel, P.E.
Assistant Chief Engineer

ERS/rd/dd

c: City of Troy



WATER RESOURCES COMMISSIONER

John P. McCulloch

CC: Scott F. SW
04.943.3

February 14, 2011

Mr. Kenneth J. Budry, PE
Professional Engineering Associates, Inc.
2430 Rochester Court
Suite 100
Troy, MI 48083-1872

**Reference: Fetterly Drain
Proposed "Oak Forest" and "Oak Forest South" condominium site plans
Professional Engineering Associates, Inc., Job Nos. 2000-038 & 250
Part of the Northeast ¼ of Section 11, City of Troy**

Dear Mr. Budry:

This office has received a request to honor the terms of the site plan review for preliminary plans for these projects that were first submitted in April 2005. At that time a cursory drainage review of the plans was performed and a review letter was issued in June 10, 2005 with a subsequent letter on August 27, 2008 (copies attached).

The original review comments regarding the Oak Forest condominium developments remain valid. It should be noted that our detention basin design requirements have changed since 2005. Current design requirements for a detention basin are to detain the 100-year storm and provide a sediment forebay. However, this office will honor the original approval under the old design requirements provided the following is added per the August 27, 2008 letter:

1. Increasing the size of the detention basins is investigated. We would like to see the space maximized in order to detain as much storm water as possible. Perhaps a detention basin that is designed for the 25-year or 50-year storm will conform to the space.
2. A sediment forebay or pre-treatment structure is provided for both sites. If a sediment forebay is incorporated within the detention basin, it must be designed according to our current standards. The volume of the forebay may be included as part of the overall volume provided by the basin.

RECEIVED

FEB 22 2011

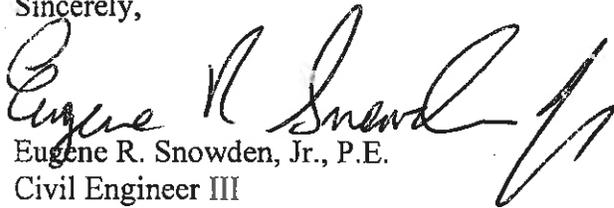
ENGINEERING

A dry detention basin is considered instead of a basin with a permanent water elevation. It is our belief that a sediment forebay or pre-treatment structure will provide the same water quality of a wet basin. Use of both methods would be redundant.



Other than the aforementioned comments, this office has no objections to the submitted site plans. At your convenience please submit the requested information in this letter and the June 10, 2005 letter and final plans so that we may complete our review. If there are any questions concerning this matter, kindly contact Ricky A. DeVisch, P.E. at 248-858-4939.

Sincerely,

A handwritten signature in black ink, appearing to read "Eugene R. Snowden, Jr.", written in a cursive style.

Eugene R. Snowden, Jr., P.E.
Civil Engineer III

ERS/rd/dd

c: City of Troy

Enclosure



June 10, 2005

IN OFFICE COPIES:
E & C/City of Troy/correspondence
E & C/Chapter 4/Fetterly Drain
TM/ Appl. No. 5-127 344-102
S. Korth
K. Warren

Mr. David Baumhardt
Professional Engineering Associates, Inc.
2430 Rochester Court
Suite 100
Troy, MI 48083-1872

Reference: Fetterly Drain; Proposed "Fetterly Drain Clean-out", "Oak Forest" and "Oak Forest South" preliminary site plans; PEA Job No. 94158; Location: Part of the Northeast 1/4 of Section 11, City of Troy

Dear Mr. Baumhardt:

This office has received one (1) copy of the preliminary site plan for the referenced projects. These plans were submitted by your office for review. A cursory drainage review of the plans indicates the following:

1. The proposed project will involve the Fetterly Drain, a legally established County Drain under the jurisdiction of this office. A permit for the work will be required from this office.
2. The proposed work will consist of constructing two condominium developments that will discharge storm water to the Fetterly Drain. The work will also include cleaning, deepening and widening the open ditch Fetterly Drain that traverses the project site. The Drain is proposed to be routed approximately 25 feet east of the present location.

With reference to the submitted plans, specific comments are as follows:

Fetterly Drain Clean-out-

3. The following information must be submitted to this office with the final engineering plans:
 - a) A plan and profile view of the new relocated section of the drain, commencing from the point of beginning of the clean-out to the point of ending. The profile should include top of bank elevations for both sides of the ditch, channel slope, channel invert elevations, road crossings and the hydraulic grade line. The profile should extend as far upstream as necessary to show that the existing hydraulic grade will not be adversely affected by the new clean-out section.
 - b) A topographic map with the entire existing area tributary to the Fetterly drain outlined. This area will be used to calculate the required capacity of the drain.
 - c) Hydraulic calculations for the relocated section of the drain. The capacity of the drain must not be diminished and the present velocity of the flow should be maintained.
 - d) A detail of the proposed connections to the existing drain.



One Public Works Drive
Building 95 West
Waterford, MI 48328-1907
www.co.oakland.mi.us/drain
P 248.858.0958
F 248.858.1066



- e) How will the drain improvements affect the flow in the existing downstream watercourse? How will the peak flow be changed? Pre- and Post-development hydrographs for the Fetterly Drain and the downstream watercourse must be submitted.
- f) Are any improvements to this watercourse proposed? During a site visit on June 1, 2005, serious bank erosion (bare rooted trees) at the junction of the two watercourses was observed. Please address this issue with the final engineering plans.
- g) A minimum easement width of 15 feet from the top of bank is required on each side of the drain.

The proposed dimensions of the new channel cannot be commented on at this time, as no design information or hydraulic calculations were submitted with the preliminary plans. When this information has been submitted the channel sizing calculations will be reviewed.

- 4. The drain clean-out must be continuous. There is a parcel that is presently excepted from the plans. The drain clean-out cannot commence without including this stretch of the drain.
- 5. At the time the Fetterly Drain was established easements for drainage purposes were not required to be recorded with the County Clerk; it was legally sufficient to have them on file at the drain office. It will be necessary to record a new easement for that part of the drain that traverses this site. The easement must be at minimum, wide enough to include the extreme width of the open ditch drain plus 15' on each side measured from the top of bank. The proposed easement must be submitted to this office for review prior to issuing a drain permit. The new easement must be a metes and bounds centerline description of the drain.
- 6. The existing easement will be abandoned in consideration for the granting of the new easement.
- 7. Upon completion of the project, this office must be provided with one set of "As-Built" mylars reproduced from the original engineering drawings, showing plan, profile and the new easement of the relocated section of the drain. A digital copy of the as-builts is also required.

Oak Forest and Oak Forest South-

- 8. There are portions of each site that are outside of the Fetterly Drain service area. Approximately the east 840' of parcel 20-11-226-006 and the West 210' of parcel 20-11-201-012. Consequently, a service area enlargement will be necessary. This request must go to the Drain Commissioner for approval. Enclosed is a description of the Fetterly District. Kindly draw the district onto the engineering

2005-0127

August 27, 2008

Mr. Ken Budry
Professional Engineering Associates, Inc.
2430 Rochester Court
Suite 100
Troy, MI 48083-1872

Reference: Fetterly Drain; Proposed "Oak Forest" and "Oak Forest South" condominium site plans; PEA Job Nos. 2000-038 & 250; Location: Part of the Northeast ¼ of Section 11, City of Troy

Dear Mr. Budry:

This office has received one (1) copy of each site plan for the referenced projects. These plans were submitted by your office for review. Preliminary plans for these projects were first submitted in April, 2005. At that time a cursory drainage review of the plans was performed and a review letter was issued in June, 2005 (copy attached).

The original review comments regarding the Oak Forest condominium developments remain valid however; our detention basin design requirements have changed since 2005. Current design requirements for a detention basin are to detain the 100-year storm and provide a sediment forebay. This office will honor the original approval under the old design requirements provided the following:

1. Increasing the size of the detention basins is investigated. We would like to see the space maximized in order to detain as much storm water as possible. Perhaps a detention basin that is designed for the 25-year or 50-year storm will conform to the space.
2. A sediment forebay or pre-treatment structure is provided for both sites. If a sediment forebay is incorporated within the detention basin, it must be designed according to our current standards. The volume of the forebay may be included as part of the overall volume provide by the basin.
3. A dry detention basin is considered instead of a basin with a permanent water elevation. It is our belief that a sediment forebay or pre-treatment structure will provide the same water quality of a wet basin. Use of both methods would be redundant.

Other than the aforementioned comments, this office has no objections to the submitted site plans. At your convenience please submit the requested information in this letter and the June, 2005 letter and final plans so that we may complete our review. If there are any questions concerning this matter, kindly contact Karen Warren, P.E. at 248-452-8645.

Very truly yours,

Steven A. Korth, P.E.
Chief Engineer

Enclosure

SAK/kw/ds

c: City of Troy