



ATWELL-HICKS
DEVELOPMENT CONSULTANTS

**WETLAND DETERMINATION
AND DELINEATION REPORT**

for

**THE 75.69± ACRE PROPERTY LOCATED
Northwest of the Intersection of
Denton Road and Ecorse Road
Van Buren Township
Wayne County, Michigan**

Prepared for:

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Atwell-Hicks, LLC Project No. 06001622

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EXECUTIVE SUMMARY

Atwell-Hicks (Atwell) has completed a wetland determination and delineation for the approximately 75.69-acre property on Ecorse Road, east of Denton Road in Section 6 of Van Buren Township, Wayne County, Michigan (T3S - R8E). The Wetland Determination and Delineation follows the scope of services presented in Section 1.1, *Scope of Service*.

This executive summary is intended to be taken in context with the complete report and is not designed to be used as a separate document. The following summarizes the findings of the Wetland Determination.

This document is a determination of the regulatory status of any wetlands, significant bodies of water, watercourses and/or floodplain located on the subject property, based on the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA). This regulatory act includes three parts concerning this wetland determination and delineation. The first, Part 301, Inland Lakes and Streams, states that any watercourse, which has definable banks, a bed and visible evidence of a continued flow or continued occurrence of water, would be regulated. Additionally, any body of water with a surface area greater than five (5) acres would be regulated. The second, Part 303, Wetlands Protection, states that if a wetland is five (5) acres or larger and located within a county with a population of 100,000 or more, and/or connected to or located within 500 feet of any regulated body of water or watercourse, it would be regulated. Both the above parts prohibit the fill, dredge, removal of soils, construction, placement or removal of structures, redirection of water and artificial drainage of any regulated wetland, body of water or waterway without a Michigan Department of Environmental Quality (MDEQ) issued permit. The third, Part 31, Water Resources Protection, states that a person shall not occupy or permit the occupation of land for residential, commercial or industrial purposes or fill or grade or permit the filling or grading for a purpose other than agricultural land in a floodplain, stream bed or channel of a stream, as ascertained and determined for the record by the department.

The subject property consists of a rectangular shaped parcel located at the northwest corner of the intersection of Ecorse Road and Denton Road in Van Buren Township, Michigan. The property is vacant consists of a mix of semi-mature wooded areas, open field and shrub thicket. The information gathered from site reconnaissance and the review of historical and current documents indicates that seven (7) wetland areas (Wetlands A - G) and one (1) watercourse are located on the subject property.

Of the seven (7) wetland areas (Wetlands A - G) and one (1) watercourse located within the boundary of the subject property, five (5) of the wetlands (Wetlands A, C, D, F and G) and the one (1) watercourse appear to meet the requirements of Part 303, Wetlands Protection, and or Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA).

Part 301, Inland Lakes and Streams, states that a features is considered a regulated watercourse if it possesses a defined bed, banks and evidence of continued flow or continued occurrence of

water. The watercourse in the southern portion that forms a tributary of the Horner Drain meets the criteria of a watercourse and would be considered regulated by the MDEQ.

Part 303, Wetlands Protection, clearly states that a wetland is considered regulated if it is five (5) acres or larger and located within a county with a population of at least 100,000, or if it is connected to or located within 500 feet of a regulated watercourse or body of water larger than one (1) acre. Wetland A is connected to the watercourse in the southern portion of the site, which should be considered a regulated watercourse. Wetland C is connected to the regulated watercourse via a roadside ditch. Wetland D is larger than five (5) acres and is similarly connected to the regulated watercourse via the roadside ditch. Wetland F is larger than five (5) acres. Wetland G is smaller than five (5) acres; however, it is located within 500 feet of the stormwater basin on the property to the west. This feature is approximately 2.33-acres, as determined by aerial interpretation, and therefore considered a regulating body of water. Therefore, Wetlands A, C, D, F and G would be considered regulated and subject to permitting by the MDEQ.

Wetlands B and E do not appear to meet the requirements of Part 303 and should be not considered regulated by the MDEQ. Wetlands B and E are smaller than five (5) acres, do not possess connections to a regulated watercourse or the roadside ditch, and appear to be more than 500 feet from any regulating feature. Therefore, these wetlands should not be subject to permitting by the MDEQ.

A permit is required by the MDEQ for any proposed work (*e.g.*, filling, dredging, construction, draining and/or other wetland development) that takes place within the boundaries of a regulated wetland, body of water or floodplain. Any construction activities that take place outside of these boundaries do not require a permit from the MDEQ. Please be advised that MDEQ has the final authority on the extent of regulated wetlands, lakes and streams in the state of Michigan.

1.0-INTRODUCTION

Atwell-Hicks (Atwell) was contracted to perform a wetland determination and delineation for the approximately 75.69-acre property located northwest of the intersection of Ecorse Road and Denton Road in Section 6 of Van Buren Township, Wayne County, Michigan (T3S - R8E).

The purpose of the site inspection and delineation was to determine if any wetlands, significant bodies of water, watercourses and/or floodplain are currently present on the subject property, and, if found, to establish if the entities would fall under the jurisdiction of the Michigan Department of Environmental Quality (MDEQ) by Part 303, Wetlands Protection, Part 301, Inland Lakes and Streams, and/or Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA). Additionally, an extensive review of current and historical documentation, which included available aerial photographs, National Wetland Inventory maps and soil survey maps for the property, took place in order to evaluate site specific characteristics. The following report discusses the findings and conclusions.

The wetland determination and delineation was performed in accordance with the MDEQ Wetland Identification Manual, *A Technical Manual for Identifying Wetlands in Michigan* (March 2001) and the Army Corps of Engineers *Field Guide for Wetland Delineation* (January 1987). The determination of any wetland depends on three basic parameters. These parameters are: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time) (*Michigan Wetlands*, Tip of the Mitt Watershed Council, 1992). The above parameters are virtually always inter-related and present in wetland systems.

1.1 Scope of Service

Elements of the wetland determination and delineation include the site inspection, delineation of wetland boundaries, current and historical document review, and submittal of this report, which discusses the property's specific characteristics, including any wetland areas if encountered. Specifically, the Wetland Determination and Delineation included the following services:

- Perform a background documentation review that includes a review of the National Wetland Inventory Map, FIRM Floodplain Map, USGS Topographic Map, Wayne County Soil Survey and aerial photographs.
- Perform site reconnaissance, which evaluates specific site characteristics and features.
- Delineate (flag) the boundaries of the existing wetland area(s), which provides the size, shape and location of any wetland(s) on the subject property, as defined by Parts 301 and 303 of the NREPA.

- Prepare and submit this report summarizing the findings of the above-described tasks, evaluating the wetland characteristics and determining the wetland regulation(s), which may or may not apply to the wetland system(s) present on the subject property.

2.0 SITE DESCRIPTION

The subject property, consisting of approximately 75.69-acres, is located north of Ecorse Road on the west side of Denton Road in Van Buren Township, Wayne County. Specifically, the property is located eastern $\frac{1}{2}$ of the southeast $\frac{1}{4}$ of Section 6 of Van Buren Township (T3S – R8E). The property is vacant and contains a mix of landscape types. A *Site Location Map* is included in *Appendix I*.

3.0 SITE RECONNAISSANCE & CHARACTERISTICS

Atwell conducted a site inspection and delineation of the subject property on November 29th and December 4th and 5th, 2006. Refer to the *Property Features Map* presented in *Appendix I*. Photographs depicting conditions at the time of the site inspection are provided in *Appendix II*. The subject property consists of an undeveloped rectangular shaped parcel. The topography is relatively flat, with a slight overall downward slope to the east. The northern portion of the property also slopes down to the north. The site is bordered by Denton Road to the east, Ecorse Road to the south, and a General Motors plant to the west. A railroad track and utility corridor extend along the northern property boundary. Old, overgrown trails are scattered through the property.

The site consists of a mixture of landscape types. Areas of semi-mature forest are located in the center and northeast portions of the property. The remainder of the site consists of old field in varying stages of succession including open field, shrub thicket, and areas of young trees. Overall the vegetative cover on the property is heavy, and dense shrubs comprise a majority of the vegetation. Observed vegetation includes common buckthorn (*Rhamnus cathartica*), black cherry (*Prunus serotina*), sugar maple (*Acer saccharum*), cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*), red oak (*Quercus rubra*), cedar (*Juniperus virginiana*), olive (*Elaeagnus umbellata*), grape (*Vitis* spp.), carrot (*Daucus carota*), teasel (*Dipsacus fullonum*), goldenrods (*Solidago* spp.), asters, and various grasses.

The information gathered from the delineation and the review of historical and current documents indicates that seven (7) wetland systems and one (1) watercourse are located on the subject property. The wetlands have been labeled Wetlands A, B, C, D, E, F and G. The drain is an unnamed tributary to the Horner Drain. Refer to the *Wetland Location Map* presented in *Appendix III*. A discussion of the wetlands follows.

3.1 Wetland A

Wetland A is a 4.84-acre multi-classified wetland located in the southern portion of the property. Refer to the *Wetland Location Map* in *Appendix III*. The wetland is associated with an unnamed watercourse that originates at the western property boundary, where it receives runoff from the

plant to the west. The watercourse extended south and then east across the property. At Denton Road the watercourse connected to a roadside ditch that extends north-south before exiting the property via a culvert beneath the road. At the time of the delineation, approximately 6 to 8 inches of water was observed. The watercourse had a sediment bed and shallow banks.

Near the eastern side of the property the wetland was limited to the vicinity of the watercourse, which provides the hydrology. In the southwestern portion of the site the wetland extended away from the watercourse to encompass numerous depressional areas that collect and retain runoff and precipitation. The majority of the system was a scrub-shrub wetland dominated by glossy buckthorn (*Rhamnus frangula*), silky dogwood (*Cornus amomum*), redosier dogwood (*Cornus stolonifera*), riverbank grape (*Vitis riparia*) and common buckthorn. Forested portions included cottonwood, red maple, American elm (*Ulmus americana*). Little to no herbaceous vegetation was present in areas with dense shrubs and a closed canopy, but some areas of wet meadow wetland with lakebank sedge (*Carex lacustris*), grass-leaved goldenrod (*Euthamia graminifolia*), and purple loosestrife (*Lythrum salicaria*) were also present. These species range in wetland indicator status from FAC+ to OBL, which indicates that they are typically found in wetlands (refer to the *Common Wetland Definitions* at the end of the report). Signs of hydrology observed at the time of the delineation include saturated soil, pockets of inundation and ice, blackened leaves and shallow root systems. The wetland appeared to be seasonally saturated to seasonally inundated, depending on location.

3.2 Wetland B

Wetland B is an isolated 0.20-acre forested and scrub-shrub wetland located on the eastern side of the property. Refer to the *Wetland Location Map* in *Appendix III*. The forested portion consisted of a depressional pocket of silver maples (*Acer saccharinum*). The western side of the wetland included a portion of scrub-shrub wetland dominated by silky dogwood and glossy buckthorn. These species range in wetland indicator status from FAC+ to FACW+, which indicates that they typically occur in wetlands (see *Common Wetland Definitions*). Watermarks and a predominance of wetland vegetation provided evidence of hydrology. Runoff from the surrounding uplands and precipitation appear to provide the sources of hydrology, resulting in a seasonally inundated hydrologic regime.

3.3 Wetland C

Wetland C is a 1.89-acre forested/scrub-shrub wetland located in a depressional area on the eastern side of the property. Refer to the *Wetland Location Map* in *Appendix III*. The system consisted of forested wetland with a scrub-shrub fringe, which extended east to the roadside ditch along Denton Road. The central forested portion was dominated by eastern cottonwood and silver maple. This area contained mature trees with an open understory, and little herbaceous vegetation was observed other than fowl manna grass (*Glyceria striata*). Vegetation in the scrub-shrub portions included silky dogwood, redosier dogwood, gray dogwood (*Cornus foemina*), glossy buckthorn, young silver maples, goldenrods (*Solidago canadensis*, *S. gigantea*), purple loosestrife, reed canary grass (*Phalaris arundinacea*) and sedges (*Carex* spp.). The majority of these species range in wetland indicator status from FAC- to OBL, which indicates

that they are typically occur in wetlands (see *Common Wetland Definitions*). Surface water runoff and precipitation appear to collect in the depression before off-loading to the roadside ditch. The observed watermarks, buttressed tree trunks, blackened leaves and hummocks suggest that the central portion of the wetland is seasonally saturated and the higher edges are seasonally saturated.

3.4 Wetland D

Wetland D is a multiclassified 7.84-acre wetland that extends across the center of the property. Refer to the *Wetland Location Map* in *Appendix III*. The majority of the wetland consisted of scrub-shrub wetland dominated by glossy buckthorn. Additional species included silver maple, box elder (*Acer negundo*), and avens (*Geum* spp.). In contrast to the scrub-shrub wetland areas that contained excessively dense shrub vegetation, the central portion of the wetland was comprised of a semi-mature forested wetland with an open understory. Eastern cottonwood, red maple, silver maple and American elm were the dominant canopy species. The southeast corner of the wetland extends into a disturbed open area where a building was located historically. This portion of the wetland would be characterized as wet meadow wetland. Observed vegetation includes purple loosestrife, reed canary grass, cattails (*Typha* spp.), water plantain (*Alisma plantago-aquatica*), grass-leaved goldenrod, soft rush (*Juncus effusus*), and beggar-ticks (*Bidens frondosus*). These species range in wetland indicator status from FAC+ to OBL, which indicates that they typically occur in wetlands (see *Common Wetland Definitions*).

The wetland appears to be seasonally saturated to inundated. Evidence of hydrology observed during the delineation includes pockets of inundation and ice, saturated soils, watermarks, hummocks and a predominance of wetland vegetation. It appears that the wetland receives runoff from the surrounding uplands, which generally drains east across the site. The wetland then off-loads to the roadside ditch along Denton Road. In addition to the depressional areas that pocket water, it appears that the dense shrub cover serves to shade the wetland, thereby allowing the water to be retained long enough to support wetland conditions. The wetland appears to be seasonally saturated to inundated.

3.5 Wetland E

Wetland E is a 0.41-acre forested wetland located on the western side of the property. Refer to the *Wetland Location Map* in *Appendix III*. This wetland possessed characteristics similar to the semi-mature forested portions of Wetland D. The dominant vegetation included Eastern cottonwood, red maple, silver maple and American elm. These species range in wetland indicator status from FAC to OBL, which indicates that they typically occur in wetlands (see *Common Wetland Definitions*). Small amounts of young glossy buckthorn were present, but otherwise the understory was relatively open. Pockets of inundation and ice provided evidence of hydrology, which appears to be provided from precipitation and runoff. The wetland is likely seasonally inundated.

3.6 Wetland F

Wetland F is a 5.28-acre multiclassified wetland located along the northern property boundary. The northern portion of the wetland extends along the railroad tracks through a utility corridor. Dominant vegetation in this area was characteristic of wet meadow wetland, including reed canary grass, purple loosestrife, grass-leaved goldenrod, sedges, spotted joe-pye-weed (*Eupatorium maculatum*) and blue vervain (*Verbena hastata*). A pocket of forested wetland extended south from the utility corridor in the northeast corner of the property. This depressional area was dominated by cottonwood, red maple and boxelder. To the west, the wetland possessed characteristics of scrub-shrub wetland. Young red maple and silver maple, glossy buckthorn, and sensitive fern (*Onoclea sensibilis*) were present. These species range in wetland indicator status from FAC to OBL, which indicates they typically occur in wetlands (see *Common Wetland Definitions*).

As stated previously, the northern portion of the site drains to the north. In the more southern scrub-shrub portions of the wetland, surface water runoff and precipitation appear to be retained by the thick shrub cover, resulting in seasonal saturation and inundation. Significant amounts of water collect within the utility corridor, forming a drainage swale at the base of the railroad tracks. In this area the hydrology appears to be seasonally inundated.

3.7 Wetland G

Wetland G is a small, 0.01-acre, wet meadow wetland located along the western property boundary in the northern portion of the property. This linear wetland is located within a swale that appears to receive water from the General Motors plant to the west, most likely associated with the stormwater management pond located behind the plant buildings. Purple loosestrife, common reed (*Phragmites australis*), horsetail (*Equisetum* spp.), cattails and willows (*Salix* spp.) were the dominant vegetation. These species range in wetland indicator status from FAC to OBL, which indicates that they typically occur in wetlands (see *Common Wetland Definitions*). The wetland is likely inundated seasonally, as well as after large storm events when runoff from the west increases. A predominance of wetland vegetation and saturated soils provided evidence of wetland hydrology.

4.0 NATIONAL WETLAND INVENTORY MAP REVIEW

A review of the National Wetland Inventory Map (NWI) was conducted to determine the likely presence, location, size and type of wetlands that may be located on the subject property. The United States Fish and Wildlife Service generate the Wetland Inventory Maps through aerial photograph interpretation. The MDEQ spatial library provides the GIS spatial data utilized to create the Wayne County Wetland Map, which also illustrates this information. Copies of the *National Wetland Inventory Map* and *Wayne County Wetland Map* are included in *Appendix II* for review.

The NWI map depicts no areas within the boundary of the subject property that are characteristic of land that typically supports wetland systems. An artificial water feature is located west of the site, south of the CSX railroad. This feature is labeled as POWKHx. These labels indicate that the wetland is classified as Palustrine (P), Open Water (OW), Artificial (K), Permanent (H), and Excavated (x). This corresponds with the stormwater pond observed behind the GM plant on the property west of the subject site. The Wayne County Wetland Map documents no wetland complexes on the subject property. The open water feature on the property to the west is shown and documented as 1.921-acres.

The wetland inventory maps show areas that are characteristic of land that typically supports wetland systems. NWI maps may not show accurately the extent or existence of wetland systems in a specific area or correctly identify the wetlands present. NWI maps are utilized for preliminary analysis only. Actual field reconnaissance is necessary to determine the actual existence and type of wetlands on a site.

5.0 FIRM FLOODPLAIN MAP REVIEW

A review of the FIRM (Flood Insurance Rate Map) Floodplain Map was conducted to determine the existence, location and zone of any floodplain, which may be located within the boundary of the subject property. FIRMs are maps that show floodplain areas along rivers and tributaries. The maps record the following data: 100-year (1% chance of annual flooding) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood (Base Flood Elevations), and the risk premium zones developed from topographical information across a floodplain. The Federal Emergency Management Agency (FEMA) generates FIRM floodplain maps for flood insurance purposes. The FIRM map for the property shows the area located within the boundary of the subject property is not currently mapped. A copy of the *FIRM Floodplain Map* is included in *Appendix V*.

6.0 USGS TOPOGRAPHIC MAP REVIEW

The USGS 7.5 Min Topographic Quadrangle for Denton, Michigan (1969 Photorevised 1980) and Ypsilanti East (1967 Photorevised 1980) indicates that the subject property is at elevations between 705 and 710 feet above sea level. Overall the property slopes down to the east. The 710 contour suggests a drainage swale in the southern portion of the property, which corresponds with on-site observations. Additionally, it appears that a slightly higher area in the northeast portion of the site directs additional drainage to the north. Several structures are shown along Denton Road and Ecorse Road. None of these were present during the site inspection; however, the observed disturbed open field areas correspond with the historical location of these buildings.

The map depicts a forested area in the northeast corner and along the western side of the property. While this corresponds with the more mature forested areas observed during the site inspection, additional earlier successional wooded areas were also observed throughout the property. The map shows no wetlands or watercourses on the site.

Similar to the NWI maps, USGS maps typically show only the most distinct areas of wetland systems, and are utilized for preliminary analysis only. Once again, actual field reconnaissance is necessary to determine the actual existence, size, and type of a wetland on a site. A copy of the *USGS Topographic Map* is included in *Appendix VI*.

7.0 AERIAL PHOTOGRAPH REVIEW

Aerial photographs dated 2003 and 2002 were obtained from Aerials Express and TerraServerUSA and utilized to determine specific site characteristics. See the *Property Features Map* in *Appendix I*. The aerials show the subject property relatively the same as it appeared during the site inspection. The 2002 photograph shows two buildings along Denton Road, but the 2003 aerial shows the property vacant. An overgrown two-track is visible in the southern portion of the property, which corresponds to the trails observed on-site. The property appears to consist of wooded areas and old field in various successional stages. The dense vegetation observed on site can be seen in both photographs. The wetland areas are clearly visible on the 2002 aerial photograph, which was used to create the *Wetland Location Map* in *Appendix III*. Due to the dense vegetation, the wetland areas are not clearly visible. All of the wetlands on the property are shown on the *Wetland Location Map* presented in *Appendix III*.

8.0 SITE SOILS & CHARACTERISTICS

According to the Soil Survey of Wayne County, four (4) major soil series are found on the subject property. These soils are Gilford sandy loam (Gf), Spinks loamy sand (SpB), Thetford loamy sand (ThA), and Wasepi loamy sand (WaA). Gilford sandy loam is classified as a Michigan hydric soil according to the Natural Resources Conservation Service. The term hydric indicates that the soil favors the growth and regeneration of hydrophytic (wetland) vegetation by its ability to hold water for extended periods of time. A discussion of each soil type follows. Refer to the *Wayne County Soil Survey Map* presented in *Appendix VII* for the location of each soil within the property.

Gilford sandy loam (Gf) is a very poorly drained soil formed in loamy sand. A representative profile consists of a dark gray sandy loam surface layer, mottled sandy loam and sandy clay loam subsoil and gravelly sand underlying material. Permeability is moderately rapid and runoff is very slow. Maintaining drainage is the principal management concern. This soil is located at the northwest corner and center of the site near the western boundary.

Spinks loamy sand, 0 to 6 percent slopes (SpB) consists of well drained, nearly level soils formed in sandy material. A representative soil profile consists of 10 inches of dark brown loamy sand underlain by fine sand. Some soils in this mapping unit have silty clay loam at depth between 38 to 60 inches. Permeability is rapid and surface runoff is slow. This soil is found in the center of the property, extending off-site to the west. It generally corresponds with the upland area between Wetlands D and F.

Thetford loamy sand, 0 to 2 percent slopes (ThA) consists of somewhat poorly drain, nearly level soils. A representative profile has a 10 inch dark grayish brown loamy sand surface layer. The 3

inch thick subsurface layer is pale-brown sand with mottles. The subsoil consists of friable fine sand, loose fine sand and loose loamy sand. The underlying material is light gray fine sand. Available water capacity is low. The soil has moderately rapid permeability. The runoff is very slow. These soils comprise the majority of the property.

Wasepi loamy sand, 0 to 2 percent slopes (WaA) consists of somewhat poorly drain, nearly level soil formed in sandy and gravelly glacial deposits. A representative profile has a 9 inch dark brown loamy sand surface layer. The subsoil consists of friable loamy sand and gravelly sandy loam. The underlying material is gravelly sand. Available water capacity is low and runoff is very slow. The soil has moderately rapid permeability. This soil is found in the southwest corner of the property.

9.0 CONCLUSIONS & RECOMMENDATIONS

In conclusion, there are seven (7) wetland areas (Wetlands A – G) and one (1) watercourse located within the boundary of the subject property. Five (5) of the wetlands (Wetlands A, C, D, F and G) and the watercourse appear to meet the requirements of Part 303, Wetlands Protection, and/or Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA).

Part 301, Inland Lakes and Streams, states that a features is considered a regulated watercourse if it possesses a defined bed, banks and evidence of continued flow or continued occurrence of water. The watercourse in the southern portion that forms a tributary of the Horner Drain meets the criteria of a watercourse and would be considered regulated by the MDEQ.

Part 303, Wetlands Protection, clearly states that a wetland is considered regulated if it is five (5) acres or larger and located within a county with a population of at least 100,000, or if it is connected to or located within 500 feet of a regulated watercourse or body of water larger than one (1) acre. Wetland A is connected to the watercourse in the southern portion of the site, which should be considered a regulated watercourse. Wetland C is connected to the regulated watercourse via a roadside ditch. Wetland D is larger than five (5) acres and is similarly connected to the regulated watercourse via the roadside ditch. Wetland F is larger than five (5) acres. Wetland G is smaller than five (5) acres; however, it is located within 500 feet of the stormwater basin on the property to the west. This feature is approximately 2.33-acres, as determined by aerial interpretation, and therefore considered a regulating body of water. Therefore, Wetlands A, C, D, F and G would be considered regulated and subject to permitting by the MDEQ.

Wetlands B and E do not appear to meet the requirements of Part 303 and should be not considered regulated by the MDEQ. Wetlands B and E are smaller than five (5) acres, do not possess connections to a regulated watercourse or the roadside ditch, and appear to be more than 500 feet from any regulating feature. Therefore, these wetlands should not be subject to permitting by the MDEQ.

A permit is required by the MDEQ for any proposed work (*e.g.*, filling, dredging, construction, draining and/or other wetland development) that takes place within the boundaries of a regulated wetland, body of water or floodplain. Any construction activities that take place outside of these boundaries do not require a permit from the MDEQ. Please be advised that MDEQ has the final authority on the extent of regulated wetlands, lakes and streams in the state of Michigan.

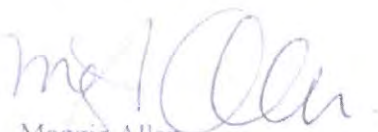
The information used in determining the location of wetland areas contained within any given property is established by the *1987 Manual*. The following documents were also used to support our position.

Wayne County Soil Survey
Hydric Soils of the United States
USGS Topographic Map - Denton, Mich. and Ypsilanti East, Mich. Quadrangles
National Wetlands Inventory Map - Denton, Mich. and Ypsilanti East, Mich. Quadrangles
FIRM Floodplain Map
2002 and 2003 Aerial Photographs of the subject property

If you have any questions regarding this or any other matter, please feel free to contact our offices at (810) 225-6000.

Sincerely,

ATWELL-HICKS, LLC



Maggie Allan
Environmental Specialist
Ecological Services



Bobbi Roberson
Project Manager
Ecological Services

COMMON WETLAND DEFINITIONS

Atypical wetland: This term refers to areas in which one or more parameters (vegetation, soil and/or hydrology) have been sufficiently altered by human activities or natural events to preclude the presence of wetland indicators of the parameter.

Emergent Wetland: Vegetative classification of a wetland system based on the dominate vegetation consisting of rooted herbaceous plant species that have parts extending above a water surface.

100-year flood: means a flood with a magnitude, which has a 1% chance of occurring or being exceeded in any given year.

Floodplain: The area of land adjoining a river or stream that will be inundated by a 100-year flood.

Floodway: The channel of a river or stream and the portions of the floodplain adjoining the channel that are reasonably required to carry and discharge a 100-year flood.

Inland lake or stream: "...any natural or artificial lake, pond or impoundment which has a surface area of 5 acres or greater; a river, stream or creek which may or may not be serving as a drain; any body of water which has definite banks, a bed and visible evidence of a continued flow or continued occurrence of water..." as defined by Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Hydric soil: Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (1991 National Technical Committee on Hydric Soils definition).

Hydrophytes: A plant species that grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats.

Scrub/Shrub Wetland: Vegetative classification of a wetland system based on the dominate vegetation consisting of woody plants less than 3 inches in diameter but greater than 3 feet in height.

Typical situation: That, which normally, usually, or commonly occurs.

Vernal Pool: Shallow, intermittently flooded forested wetland, generally dry for most of the summer and fall

Wooded (Forested) Wetland: Vegetative classification of a wetland system based on the dominate vegetation consisting of woody plants 3 inches in diameter or greater regardless of height.

Wetland: "...land characterized by the presence of water at a frequency and duration sufficient to support and that under normal circumstances does support wetland vegetation or aquatic life and is commonly referred to as a bog, swamp, or marsh..." as defined by Part 303 Wetlands Protection of the Natural Resources and Environmental Protection Act, 1994 PA 451.

Wetland hydrology: Hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at sometime during the growing season.

Wetland Indicator List:

OBL: Obligate wetland plant that occurs almost always, 99% of the time, in wetlands under natural conditions, but which rarely occur in non-wetlands.

FACW: Facultative wetland plant, that occurs usually, 67% to 99% of the time, in wetlands, but also occurs 1% to 33% in non-wetlands.

FAC: Facultative plant, that occurs in both wetlands and non-wetlands 33% to 67% of the time.

FACU: Plant that occurs sometimes 1% to 33% of the time in wetlands but occurs more often, 67% to 99% in non-wetlands.

APPENDIX I

Site Location Map
&
Property Features Map

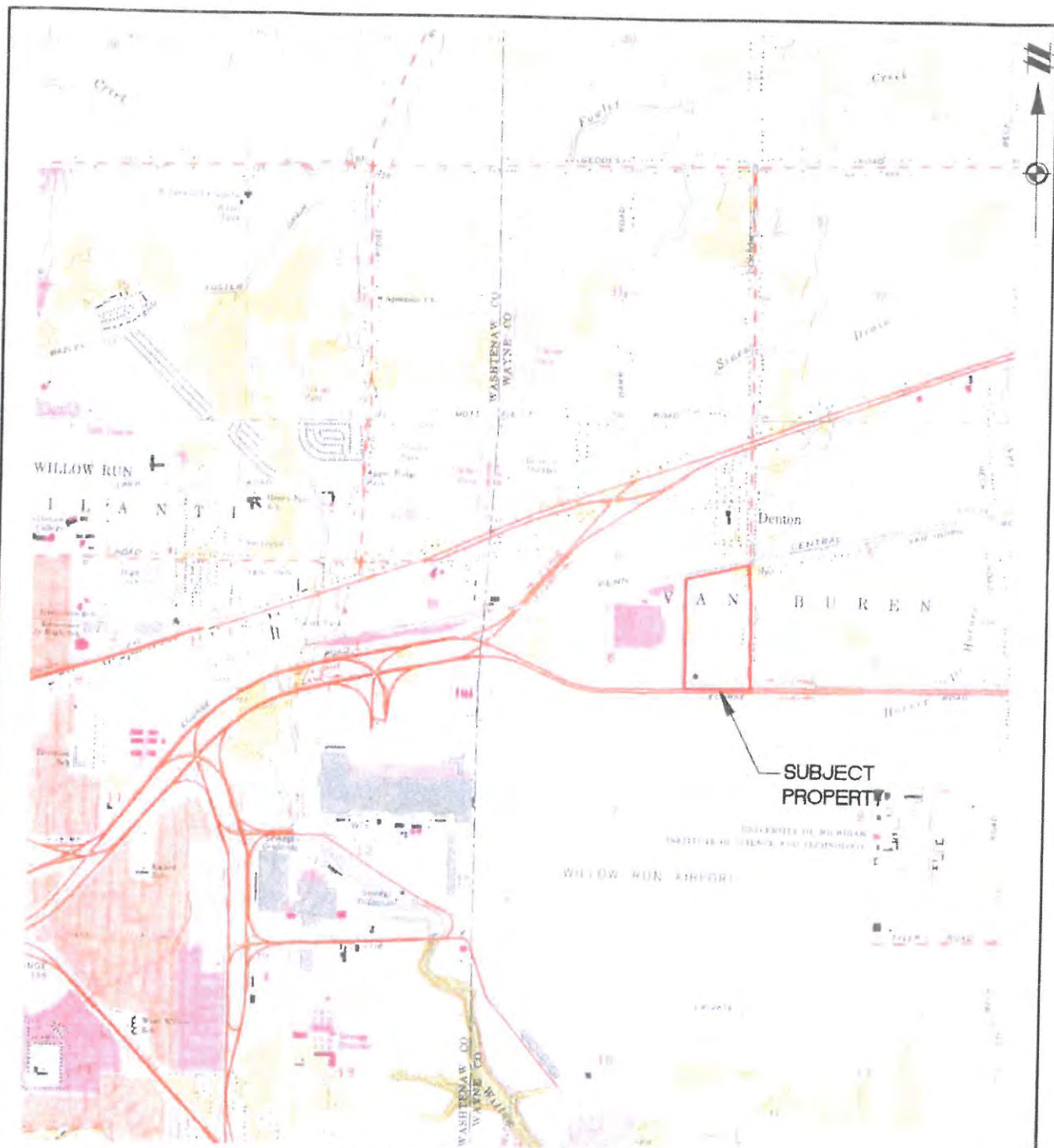


FIGURE 1: SITE LOCATION MAP
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

SCALE 0 1500 3000

1" = 3000 FEET

SOURCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLE
DENTON, MICHIGAN QUADRANGLE - PHOTO-REVISED 1980
BELLEVILLE, MICHIGAN QUADRANGLE - PHOTO-REVISED 1980
YPSILANTI EAST, MICHIGAN QUADRANGLE - PHOTO-REVISED 1980

PROJECT NO.: 06001622
DATE: DECEMBER 2006
DR: RPH
CAD FILE: 06001622.EC-01.APPENDICES.DWG

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FIGURE 2: PROPERTY FEATURES MAP
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

SCALE 0 250 500
1" = 500 FEET

LEGEND:
— SUBJECT PROPERTY
— APPROXIMATE CENTERLINE OF WATERCOURSE
— APPROXIMATE CENTERLINE OF ROADSIDE DITCH

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DATE: DECEMBER 2006
DR: RPH
CAD FILE: 06001622.EC-01.APPENDICES.DWG

SOURCE: 2003 AERIALS EXPRESS, LLC
AERIAL IMAGERY AND GIS VIEWER, VERSION 4.3.601
WAYNE COUNTY, MICHIGAN

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APPENDIX III

Wetland Location Map

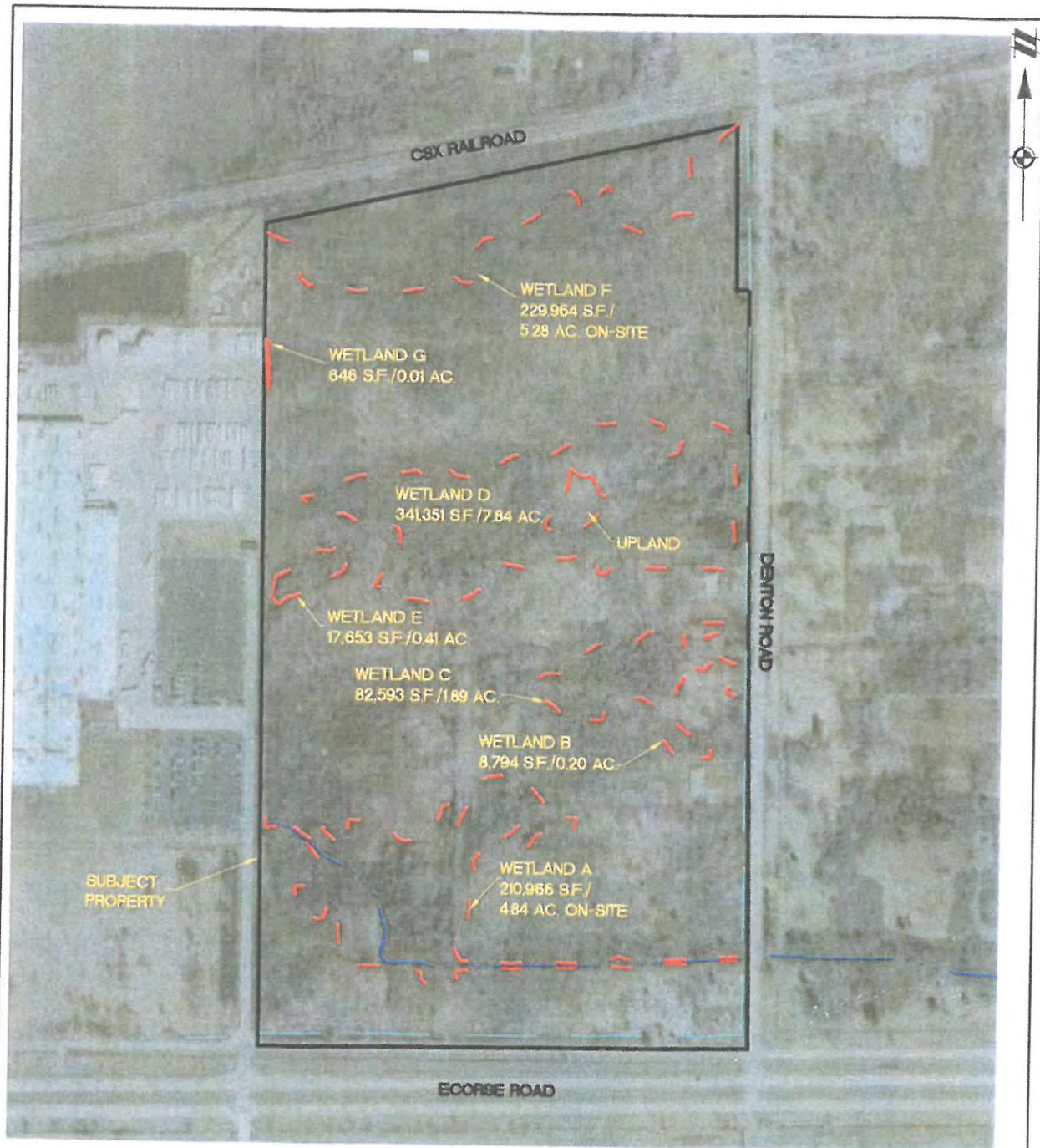


FIGURE 3: WETLAND LOCATION MAP
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

LEGEND:

- SUBJECT PROPERTY
- - - DELINEATED WETLAND BOUNDARY
- APPROXIMATE CENTERLINE OF WATERCOURSE
- - - APPROXIMATE CENTERLINE OF ROADSIDE DITCH

SCALE 0 200 400

1" = 400 FEET

WETLAND DELINEATION PERFORMED BY ATWELL-HICKS ON 11/29/06
AND 12/4 & 5/06
SOURCE: WWW.TERRASERVER.MICROSOFT.COM
IMAGE COURTESY OF THE USGS
URBAN AREAS PHOTOGRAPH DATED 4/10/2002

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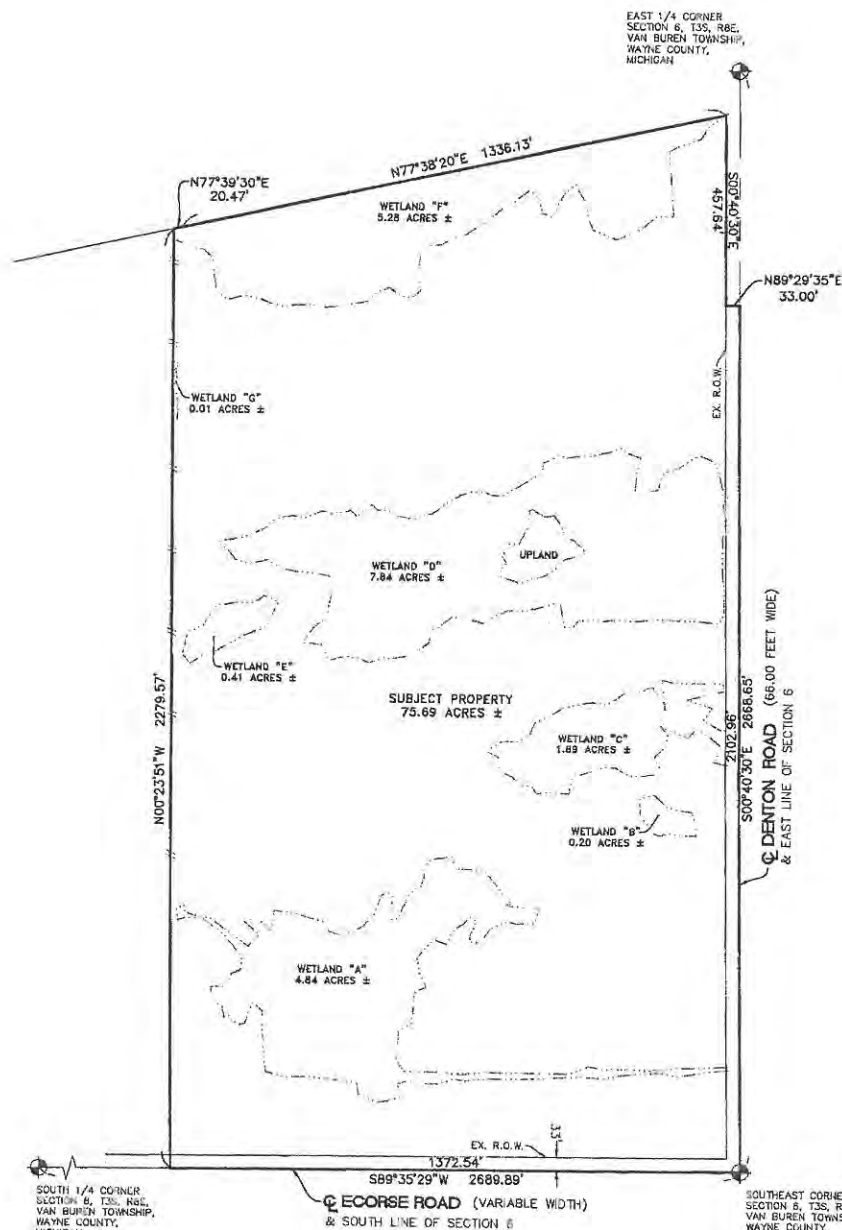
3 WORKING DAYS
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1-800-482-7171
FOR THE LOCATION OF
UNDERGROUND FACILITIES

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:

CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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LEGEND	
	WETLAND BOUNDARY
	SECTION CORNER
	R.O.W. RIGHT OF WAY

TOTAL WETLAND AREA: 20.47 ACRES±

NOTES:
WETLANDS WERE LOCATED DECEMBER
5th-7th, 2006

BOUNDARY INFORMATION WAS TAKEN
FROM ATWELL-HICKS JOB NO. 05000049,
AND DRAWING: 05000049SU-01

REFER TO THE WETLAND
DETERMINATION/DELINEATION REPORT
BY ATWELL-HICKS DATED
DECEMBER 15, 2006

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SECTION 6	TOWN 6 SOUTH, RANGE 8 EAST
	VAN BUREN TOWNSHIP
	WAYNE COUNTY, MICHIGAN

LAND AMERICA
WETLANDS
ON A
75.69 ACRE PARCEL
LOCATED IN

CAD FILE
06001622SU-01

REVISIONS

DATE
12-11-06

AH

SCALE 0 100 200
1" = 200 FEET

DR. CAL CH. BEGO

P.M. B. OLIVER

BOOK N/A

JOB 06001622.12

FILE NO.
2227-25

APPENDIX IV
Wetland Inventory Maps

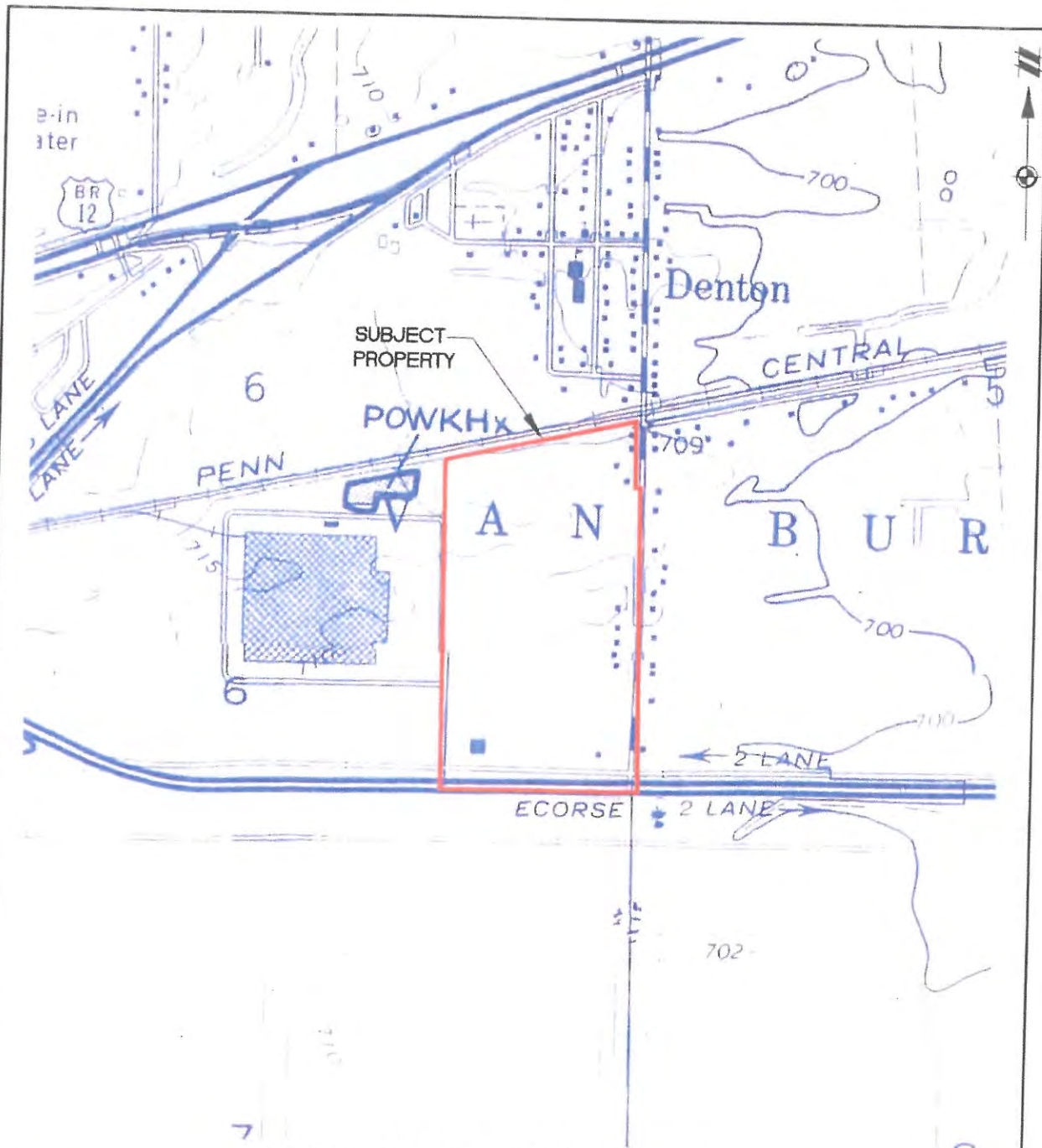


FIGURE 4: NATIONAL WETLAND INVENTORY
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

LEGEND
P: PALUSTRINE
OW: OPEN WATER
K: ARTIFICIAL
H: PERMANENT
x: EXCAVATED

NO WETLANDS WERE IDENTIFIED ON-SITE

SCALE 0 500 1000
1" = 1000 FEET

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SOURCE: US FISH AND WILDLIFE SERVICE
DENTON, MICHIGAN QUADRANGLE
YPSILANTI EAST, QUADRANGLE
OCTOBER, 1978

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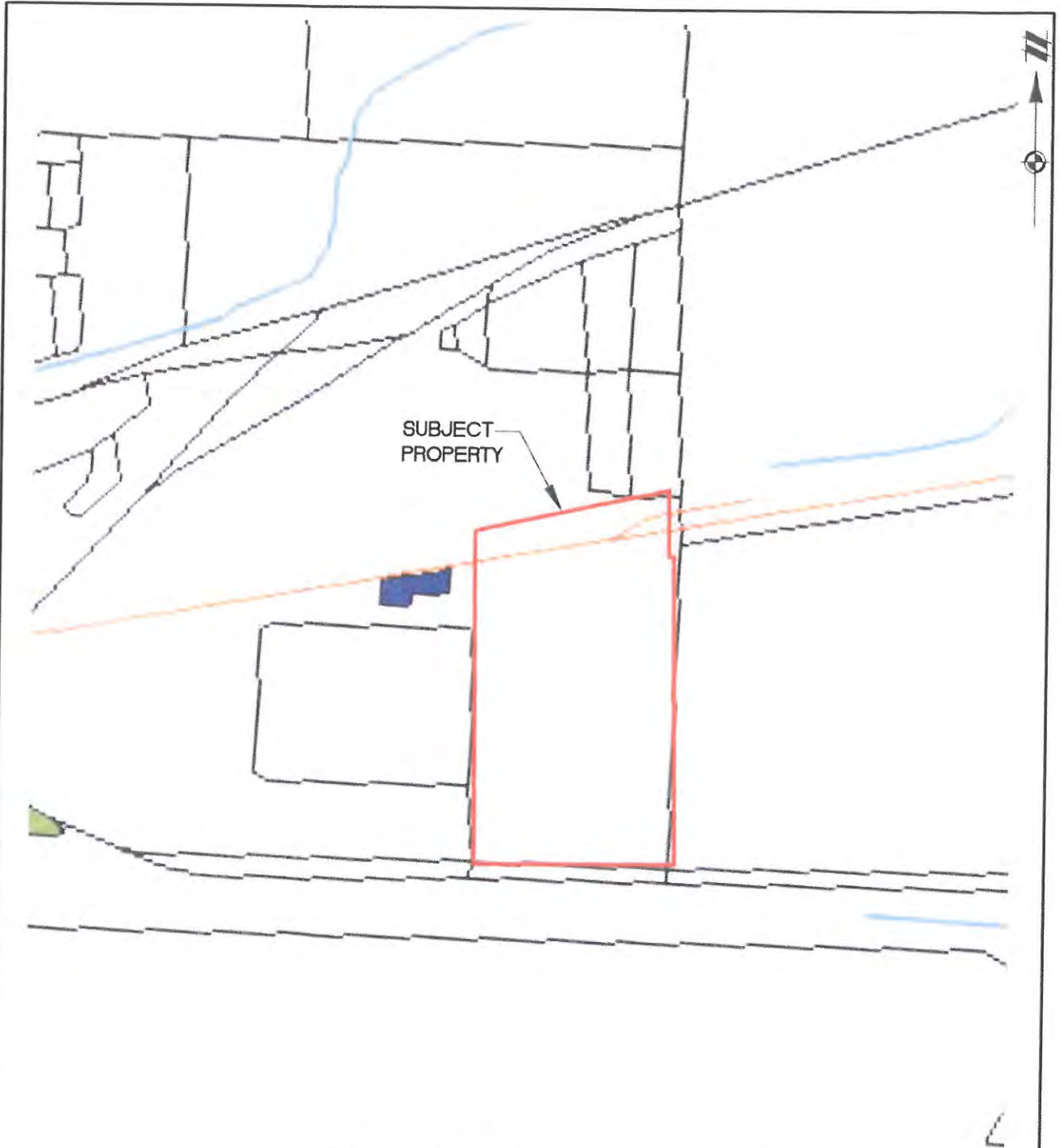


FIGURE 5: WAYNE COUNTY WETLAND INVENTORY
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

- LEGEND
- SCRUB SHRUB
 - OPEN WATER
 - FORESTED
 - EMERGENT
 - STREAM
 - ROAD
 - RAILROAD

SCALE 0 500 1000
1" = 1000 FEET

SOURCE: MICHIGAN DEPARTMENT OF NATURAL RESOURCES
MICHIGAN GEOGRAPHIC DATA LIBRARY
DLG100L, NWI_24K

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APPENDIX V

FEMA Flood Insurance Rate Map

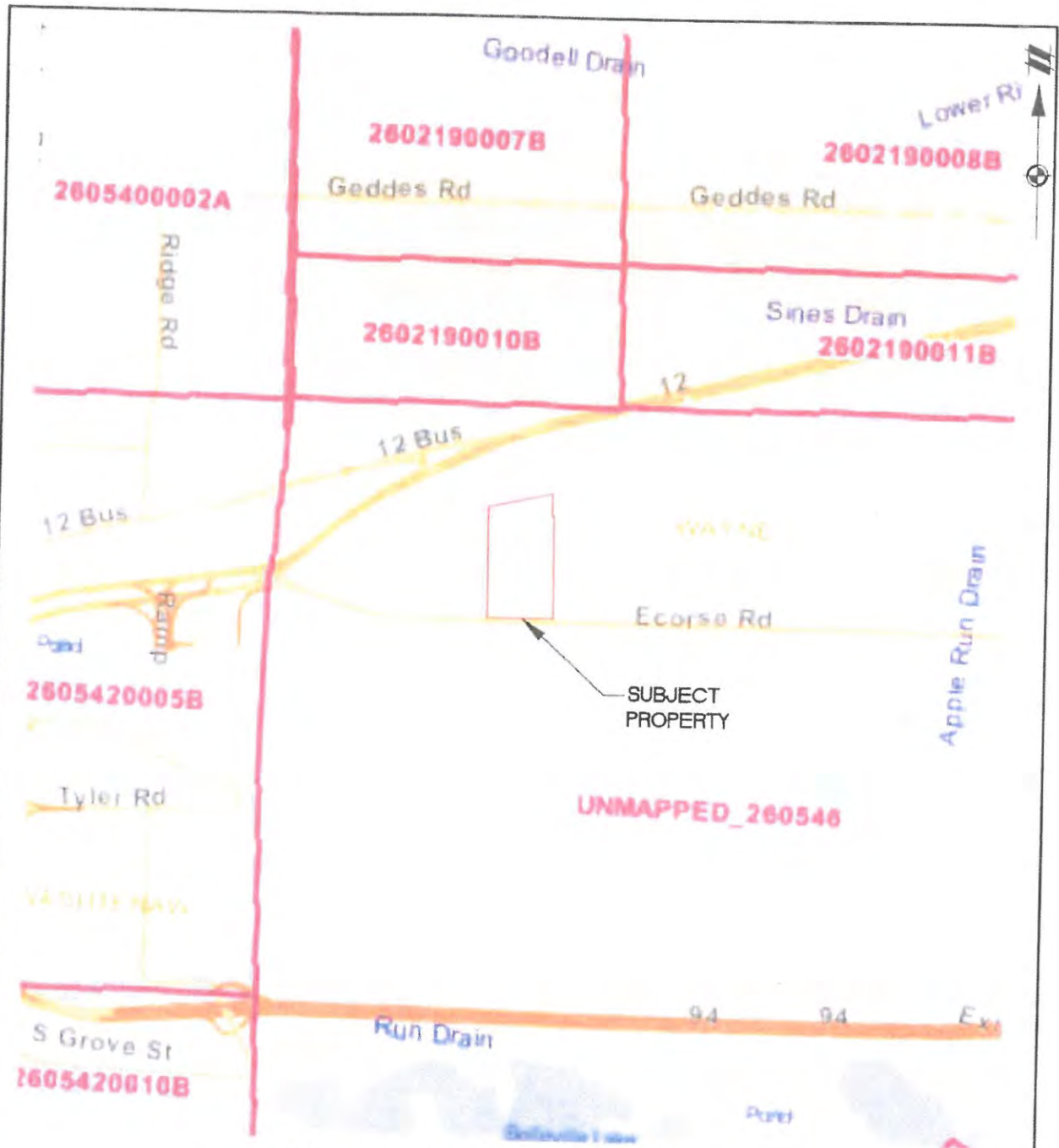


FIGURE 6: FLOOD INSURANCE RATE MAP
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

SCALE 0 1500 3000
1" = 3000 FEET

SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY
PANEL NUMBER: 260546

PROJECT NO.: 06001622
DATE: DECEMBER 2006
DR: RPH
CAD FILE: 06001622-EG-01 APPENDICES.DWG

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APPENDIX VI
USGS Topographic Map

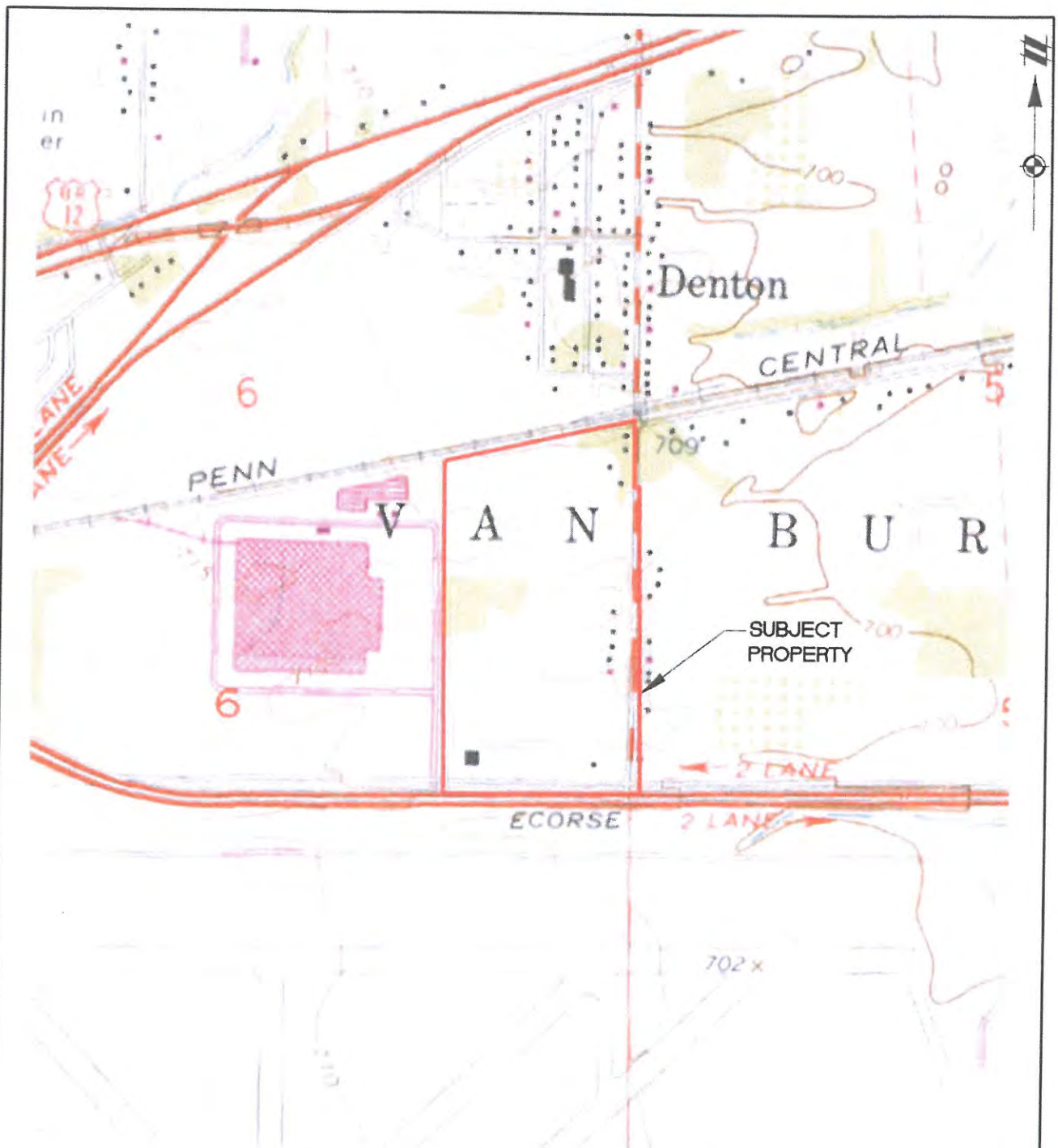


FIGURE 7: USGS TOPOGRAPHIC MAP
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

SCALE 0 500 1000
1" = 1000 FEET

SOURCE: USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLE
DENTON, MICHIGAN QUADRANGLE - PHOTO-REVISED 1980
BELLEVILLE, MICHIGAN QUADRANGLE - PHOTO-REVISED 1980
YPSILANTI EAST, MICHIGAN QUADRANGLE - PHOTO-REVISED 1980

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APPENDIX VII

Wayne County Soil Survey Map

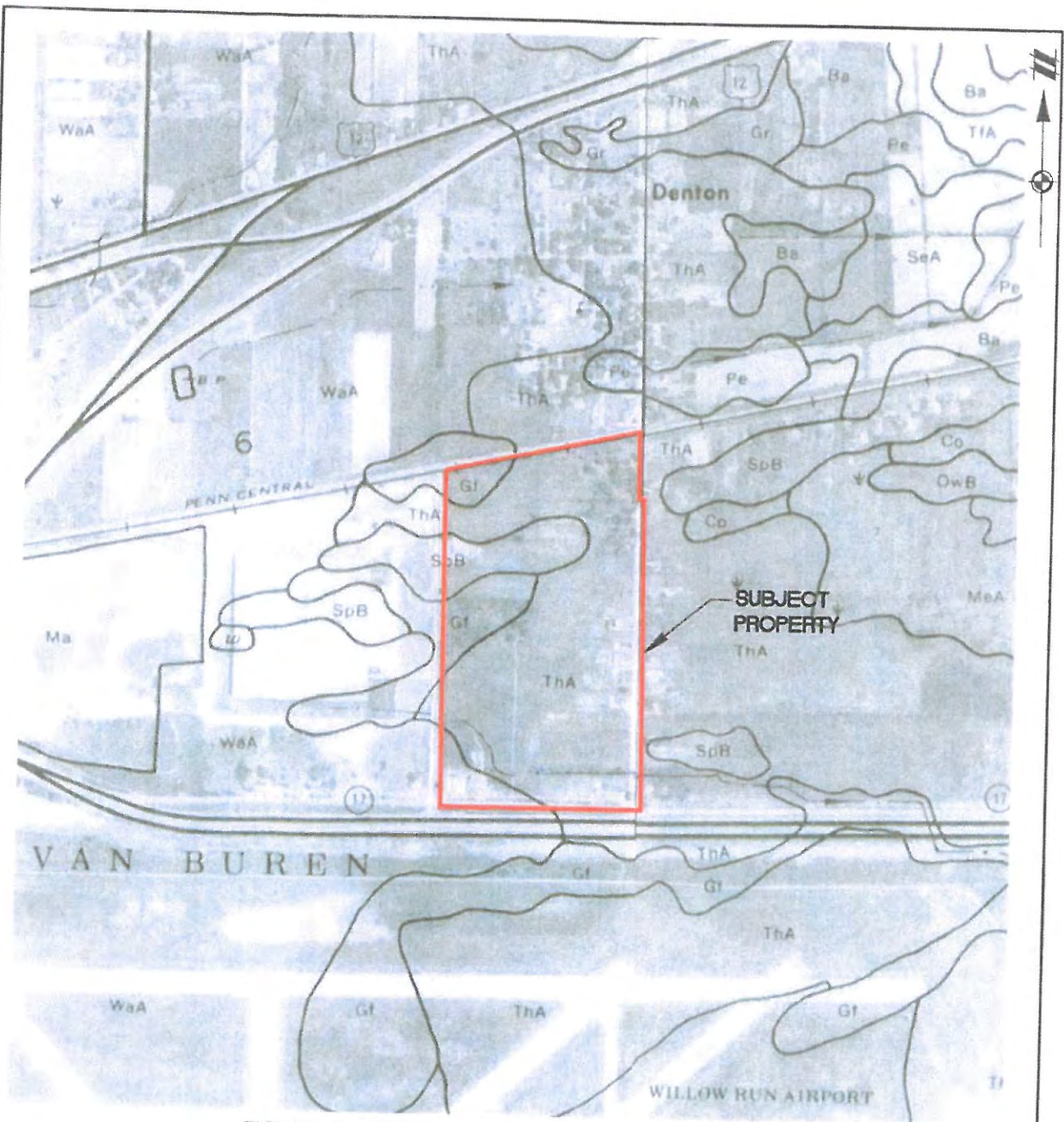


FIGURE 8: WAYNE COUNTY SOIL SURVEY MAP
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

LEGEND:

- Gf: Gilford sandy loam
- ThA: Thetford loamy sand 0-2% slopes
- SpB: Spinks loamy sand 0-6% slopes
- WbA: Wasepi loamy sand 0-2% slopes

*Indicates hydric soils as determined by the Natural Resource Conservation Service.

SCALE 0 500 1000

1" = 1000 FEET

PROJECT NO.: 06001622

DATE: DECEMBER 2006

DR: RPH
CAD FILE: 06001622.EC-01.APPENDICES.DWG

SOURCE: WAYNE COUNTY SOIL SURVEY-1977
NATURAL RESOURCE CONSERVATION SERVICE
SHEETS 21 & 22

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APPENDIX II
Site Photographs

SITE PHOTOGRAPHS



Photograph 1: Photograph of an area of old field in the northern portion of the property.
Note the dense shrubs in the background, which were characteristic of the site.



Photograph 2: View facing west (upstream) along the watercourse in the southern portion of the property.

SITE PHOTOGRAPHS



Photograph 3: Wetland A included areas of dense shrubs, including glossy buckthorn and silky dogwood.



Photograph 4: View of Wetland B, which was dominated by silver maples.
Note the watermarks and open understory.

SITE PHOTOGRAPHS



Photograph 5: The central portion of Wetland C consisted of a semi-mature wooded wetland.



Photograph 6: The perimeter of Wetland C and the eastern portions near Denton Road possessed scrub-shrub characteristics.

SITE PHOTOGRAPHS



Photograph 7: Wetland D included portions of thickly vegetated scrub-shrub wetland.



Photograph 8: The west-central portion of Wetland D was forested with an open understory.

SITE PHOTOGRAPHS



Photograph 9: Facing west across Wetland E. Pockets of ice provided evidence of wetland hydrology.



Photograph 10: View of the wet meadow portion of Wetland F. The railroad tracks that form the northern property boundary separate the wetland from the residential development farther north.

SITE PHOTOGRAPHS



Photograph 11: View of the scrub-shrub portion of Wetland F dominated by young maples and glossy buckthorn.



Photograph 12: Facing north at Wetland G, which receives runoff from the plant west of the subject property.