



## Information Sheet on the Enrico Fermi Unit 3 Combined Operating Licenses Environmental Review

### OVERVIEW

Detroit Edison Company (Detroit Edison) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) on September 18, 2008 for combined licenses to construct and operate a new nuclear unit at the Enrico Fermi Atomic Power Plant, Unit 3 (Fermi 3) site in Monroe County.

As part of the NRC's review of Detroit Edison's application, the staff performed an environmental review. The results of that review are documented in the draft Environmental Impact Statement (EIS). The US Army Corps of Engineers (Corps) partnered with the NRC on this environmental review.

Copies of Detroit Edison's Environmental Report and the NRC's draft EIS can be found at the Ellis Library & Reference Center, Monroe County Libraries, 3700 South Custer Road, Monroe, Michigan and on the NRC's website.

More information regarding the NRC's review of the Detroit Edison application, including the draft EIS, is available online at: [www.nrc.gov/reactors/new-reactors/col/fermi.html](http://www.nrc.gov/reactors/new-reactors/col/fermi.html)

### Environmental Project Manager

**Bruce Olson (NRC)**

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### ENVIRONMENTAL REVIEW MILESTONES

|                              |           |
|------------------------------|-----------|
| Application submitted to NRC | Sept 2008 |
| Public Scoping Meetings      | Jan 2009  |
| Publication of Draft EIS     | Oct 2011  |
| Public Meetings on Draft EIS | Dec 2011  |
| Publication of Final EIS     | Nov 2012* |
| * Target date                |           |

**Comments on the Fermi Unit 3 Draft  
EIS will be accepted through  
January 11, 2012.**

**Your input on the EIS is a very important  
aspect of our environmental review. Here  
are a few ways you can share your  
comments with us.**

**Email:** [Fermi3.COLEIS@nrc.gov](mailto:Fermi3.COLEIS@nrc.gov)

**Mail:** Chief, Rulemaking, Directives,  
and Editing Branch  
Division of Administrative Services  
Office of Administration  
Mailstop TWB-05-B01M  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Fax:** 301.492.3446

**Online:**

<http://www.nrc.gov/public-involve/doc-comment/form.html>

**Tonight's Public Meeting:**

Submit verbally on the transcript or  
Submit in writing



# THE NRC'S NEW REACTOR LICENSING PROCESS

The NRC is responsible for issuing combined licenses (COLs) for commercial nuclear power facilities. The combined licenses, if issued by the NRC, would give Detroit Edison the authorization to build and operate a new nuclear unit.

The NRC's evaluation of Detroit Edison's application involves two reviews:

- Safety Review
- Environmental Review

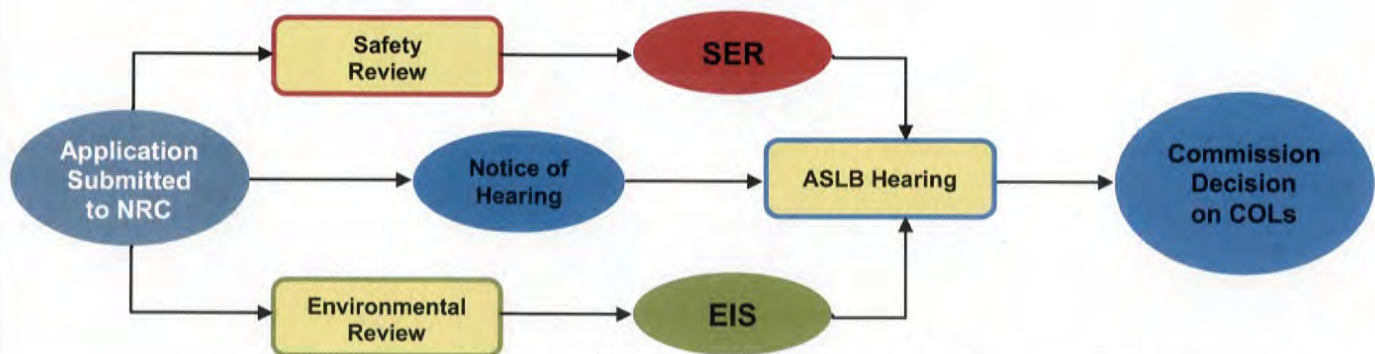


Figure 1. Simple Overview of the NRC's Review of a COL Application

The purpose of the **safety review** is to ensure the new reactors are safely built and operated according to NRC regulations and requirements. The review includes an evaluation of the design of the facility, siting requirements, quality assurance programs, physical security, and emergency preparedness. The NRC's analysis will be documented in the **Safety Evaluation Report (SER)**.

The **environmental review** serves to document the environmental impacts of building and operating new nuclear reactors. The environmental review includes input from the public, consultation and coordination with local, state, and federal agencies, tribal nations, site visits, audits, review of the applicant's Environmental Report, and other documentation. Subject areas reviewed include for example: water quality and use, ecology, land use, air quality, socioeconomics, and environmental justice. The NRC's analysis of the environmental impacts will be documented in the **Environmental Impact Statement (EIS)**.

The Advisory Committee on Reactor Safeguards (ACRS) – an independent group of technical experts – reviews each COL application and the NRC's corresponding safety evaluation, and reports its results to the NRC's five-member Commission. A mandatory public hearing will be conducted by the Commission. Additionally, a contested proceeding may be conducted by the Atomic Safety and Licensing Board (ASLB) panel, who will make a recommendation to the Commission on whether to grant a COL. The Commission makes the final licensing decision.

Detroit Edison submitted an application for one new unit that referenced the ESBWR (Economic Simplified Boiling Water Reactor) design. The ESBWR is a certified reactor design. More information about the ESBWR can be found online at:  
<http://www.nrc.gov/reactors/new-reactors/design-cert/esbwr.html>.



# Draft EIS for Fermi Unit 3

The next two pages provide a brief summary of each chapter in the draft Environmental Impact Statement.

## Chapter 1 – Introduction

This introductory chapter outlines important pieces of the National Environmental Policy Act (NEPA) – such as defining the *proposed action* and the *purpose and need* of the proposed action. For this review the proposed actions are the issuance of NRC combined licenses and issuance of a Corps permit to perform certain construction activities that may impact waters of the United States. In addition, the chapter provides a brief outline of the NRC and Corps environmental review processes.

## Chapter 2 – Affected Environment

This chapter describes the location of the Fermi Unit 3 site and the existing conditions at the site and surrounding area and provides the “baseline” for the analysis. This baseline is used by the team to determine the level of impact the new reactors would have on the environment. This fairly long chapter provides descriptions of the existing land use, ecological resources, current water use and quality, socioeconomic conditions (taxes, public services), air quality, and historic resources, to name a few.



## Chapter 3 – Site Layout and Plant Design

This chapter describes the proposed site layout and the key plant characteristics that are used for the impact analysis of the proposed actions. The chapter briefly describes the major plant structures that would be built, such as the cooling system and power transmission system. This chapter also explains some of the physical activities that would take place while building and operating Fermi Unit 3, including the number of workers, amount of groundwater withdrawn, noise levels, and heights of new structures.

## Chapter 4 – Environmental Impacts of Construction

In this chapter, the review team evaluates the potential impacts associated with building the proposed Fermi Unit 3 on land use, meteorology and air quality, water use and quality, terrestrial and aquatic ecosystems, socioeconomics, environmental justice, historic and cultural resources, nonradiological and radiological health effects, nonradioactive waste, and applicable measures and controls that would limit the adverse impacts of building the new units. A significance level—SMALL, MODERATE or LARGE—of potential adverse impacts is assigned by the review team for each resource area.

## Chapter 5 – Environmental Impacts of Operation

This chapter examines the potential operational impacts on land use, meteorology and air quality, water use and quality, terrestrial and aquatic ecosystems, socioeconomics, historic and cultural resources, environmental justice, nonradiological and radiological health effects, nonradioactive waste, postulated accidents, and applicable measures and controls that would limit the adverse impacts of proposed Fermi Unit 3 operation during the 40-year license period.



## **Chapter 6 – Fuel Cycle, Transportation, and Decommissioning**

This chapter addresses the environmental impacts from (1) the uranium fuel cycle and solid waste management, (2) the transportation of radioactive material, and (3) the decommissioning of proposed Fermi Unit 3. Decommissioning is the safe removal of a facility from service and the reduction of radioactivity to a level that permits the termination of an NRC license.

## **Chapter 7 – Cumulative Impacts**

Cumulative impacts result when the effects of one action are added to or interact with other past, present, and reasonably foreseeable future actions on the same resources. For this cumulative analysis, past actions are those prior to the receipt of the application. Present actions are those related to resources from the time of the COL application until the start of NRC-authorized construction of the proposed new units, in the event licenses are granted. Future actions are those that are reasonably foreseeable through building and operating the proposed Fermi Unit 3, including decommissioning. The geographic area over which past, present, and reasonably foreseeable future actions could contribute to cumulative impacts is dependent on the type of resource considered and is described in Chapter 7 for each resource area examined in Chapters 4 and 5.

## **Chapter 8 – Need for Power**

This chapter discusses the staff's evaluation of the need for baseload generating capacity within the region of interest. In this case, staff relied upon Michigan Public Service Commission's (MPSC's) 21<sup>st</sup> Century Energy Plan studies and forecasts to make its determination of the need for new power. A description of the MPSC's analytical process, and summaries of their findings are provided within this chapter.

## **Chapter 9 – Alternatives**

Alternatives are often described as the "heart of NEPA" and so it makes sense that this is a very long chapter. This chapter contains the evaluation of several alternatives – no-action, energy, sites, and designs. Section 9.1 discusses the no-action alternative—what would the impacts be if the licenses are not issued. In Section 9.2, alternative energy sources, such as coal, natural gas, and a combination of energies (hydropower, conservation and natural gas) are evaluated and impacts are compared to those of nuclear power generation. Section 9.3 provides the staff's review of the alternative site selection process and compares the environmental impacts for the proposed site and alternative sites. Alternative systems, such as cooling and circulating water, were evaluated and compared, in Section 9.4, to the proposed systems.

## **Chapter 10 – Conclusions and Recommendations**

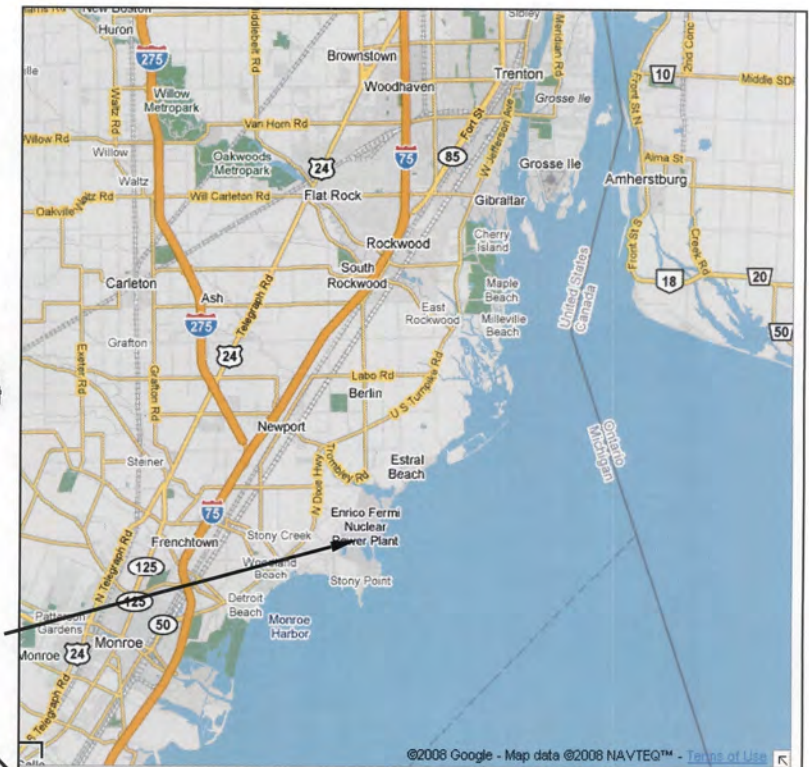
The final chapter of the EIS provides the staff's preliminary recommendation whether the combined licenses should be issued to Detroit Edison. The chapter summarizes the impacts of constructing and operating two new reactors. It also weighs the costs (e.g., habitat loss, traffic noise) versus the benefits (e.g., more jobs, electricity generation) of the two new units.

The NRC staff's preliminary recommendation to the Commission – related to the environmental aspects of the proposed action - is that the combined licenses for Fermi Unit 3 be issued. This recommendation will be part of the input the Commission uses to determine whether or not to issue the combined licenses to Detroit Edison.





PROJECT  
LOCATION



No: LRE -2008-00443-1-S11 10-58-11  
 DETROIT EDISON: Structures, Dredge & Wetland Fill Activities  
 associated w/Proposed Enrico Fermi Unit 3 Nuclear Power Plant  
 BY: Detroit Edison Company (Peter Smith)  
 Lake Erie, FRENCHTOWN Township, MONROE County, MI

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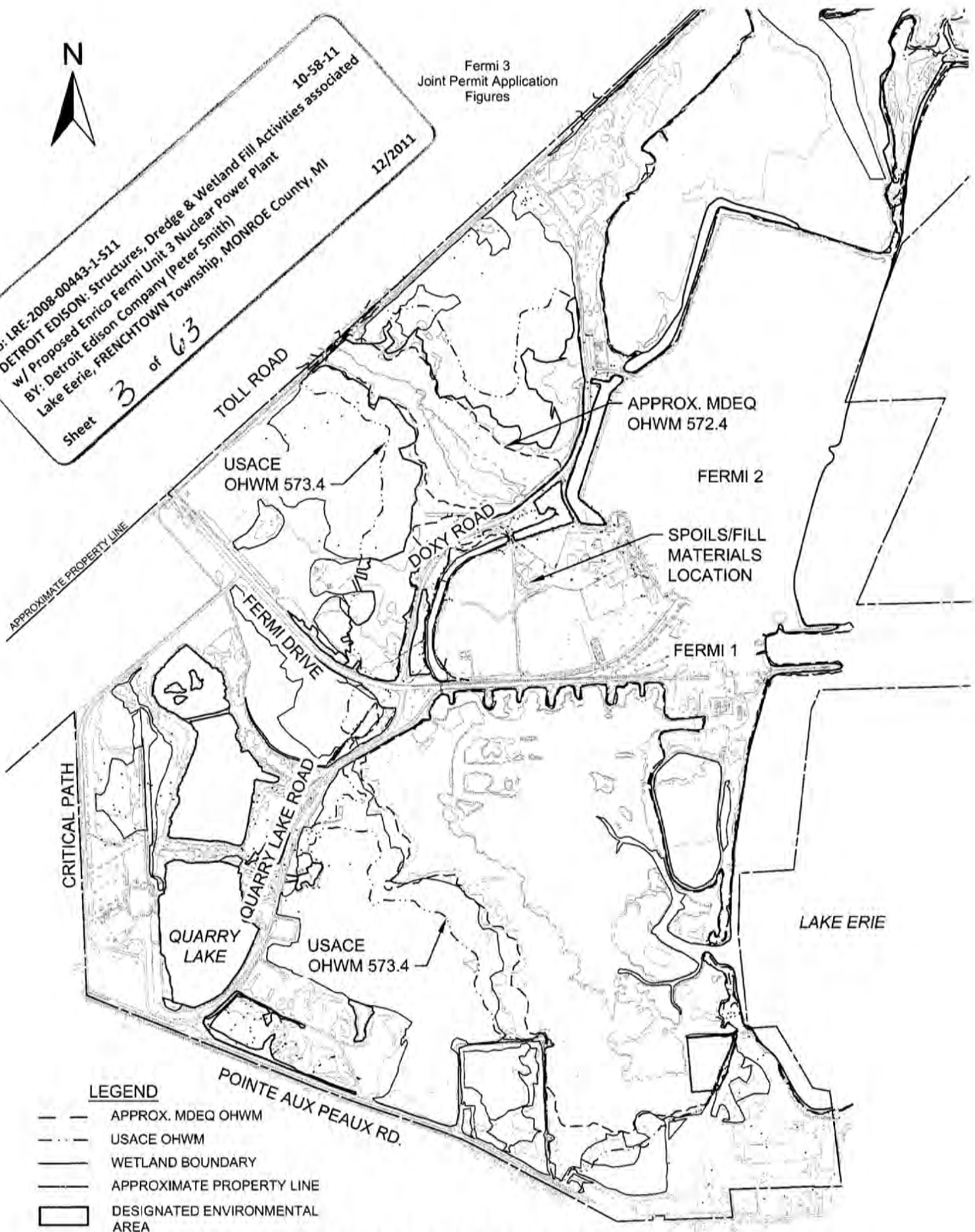




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Fermi 3  
Joint Permit Application  
Figures



**FIGURE 2-1 EXISTING SITE CONDITIONS**

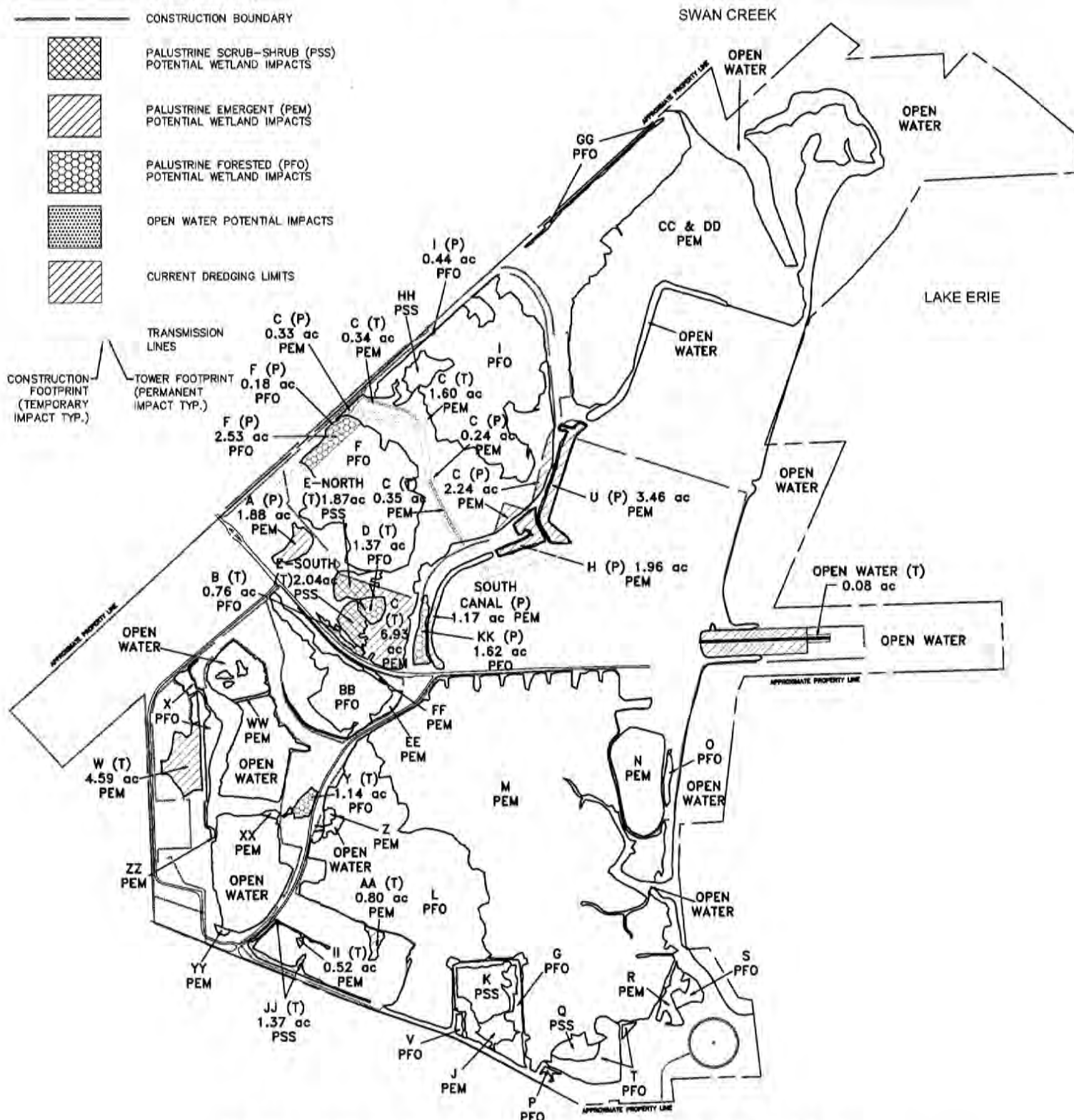
SCALE: 1"=1000'

# LEGEND

|                       |  |
|-----------------------|--|
| PSS                   | PALUSTRINE SCRUB SHRUB WETLAND                         |
| PEM                   | PALUSTRINE EMERGENT WETLAND                            |
| PFO                   | PALUSTRINE FORESTED WETLAND                            |
| ---                   | APPROXIMATE PROPERTY LINE                              |
| ~~~~~                 | OPEN WATER   |
| =====                 | WETLAND BOUNDARY                                       |
| =====                 | CONSTRUCTION BOUNDARY                                  |
| [Cross-hatch pattern] | PALUSTRINE SCRUB-SHRUB (PSS) POTENTIAL WETLAND IMPACTS |
| [Diagonal lines /]    | PALUSTRINE EMERGENT (PEM) POTENTIAL WETLAND IMPACTS    |
| [Dotted pattern]      | PALUSTRINE FORESTED (PFO) POTENTIAL WETLAND IMPACTS    |
| [Stippled pattern]    | OPEN WATER POTENTIAL IMPACTS                           |
| [Diagonal lines \]    | CURRENT DREDGING LIMITS                                |

CONSTRUCTION-  
FOOTPRINT  
(TEMPORARY  
IMPACT TYP.)

TRANSMISSION  
LINES  
TOWER FOOTPRINT  
(PERMANENT  
IMPACT TYP.)



No: LRE-2008-00443-1-511

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FIGURE 2-3 WETLAND IMPACT MAP



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**NEW OPERATIONS ACCESS  
ROAD**

FIGURE 10-4A  
FIGURE 10-4B  
FIGURE 12-8A  
FIGURE 12-8B  
FIGURE 12-8C  
FIGURE 14-2A FIGURE 14-2E  
FIGURE 14-2B FIGURE 14-2F  
FIGURE 14-2C FIGURE 14-2G  
FIGURE 14-2D

**ONSITE TRANSMISSION**

FIGURE 12-9A  
FIGURE 12-9B

TOLL ROAD

APPROX. MDEQ  
OHWM 572.4

**WAREHOUSE, PAP/VIB AND  
PARKING GARAGE**

FIGURE 10-1A  
FIGURE 10-1B  
FIGURE 10-1C  
FIGURE 10-1D  
FIGURE 12-7A  
FIGURE 12-7B

FERMI 2

**CONSTRUCTION AREA 3**

FIGURE 12-4A  
FIGURE 12-4B  
FIGURE 12-4C

USACE  
OHWM 573.4

DOXY ROAD

**CONSTRUCTION AREA 5**

FIGURE 10-3A FIGURE 12-6A  
FIGURE 10-3B FIGURE 12-6B  
FIGURE 14-1A  
FIGURE 14-1B

**CONSTRUCTION AREA 4**

FIGURE 12-5A  
FIGURE 12-5B

FERMI DRIVE

FERMI 1

**LAKE ERIE CONSTRUCTION  
AREA**

FIGURE 10-2A FIGURE 10-2E  
FIGURE 10-2B FIGURE 10-2F  
FIGURE 10-2C FIGURE 10-2G  
FIGURE 10-2D

LAKE ERIE

**CONSTRUCTION AREA 2**

FIGURE 12-3A  
FIGURE 12-3B

USACE  
OHWM 573.4

APPROX. MDEQ  
OHWM 572.4

**CONSTRUCTION AREA 1**

FIGURE 12-2A  
FIGURE 12-2B  
FIGURE 12-2C

QUARRY  
LAKE

QUARRY LAKE ROAD

POINTE AUX PEAUX RD.

**LEGEND**

- APPROX. MDEQ OHWM
- - - USACE OHWM
- WETLAND BOUNDARY
- DESIGNATED ENVIRONMENTAL  
AREA

METEOROLOGICAL  
TOWER

**FIGURE 2-4 LEGEND OF  
CONSTRUCTION AREA LOCATIONS**



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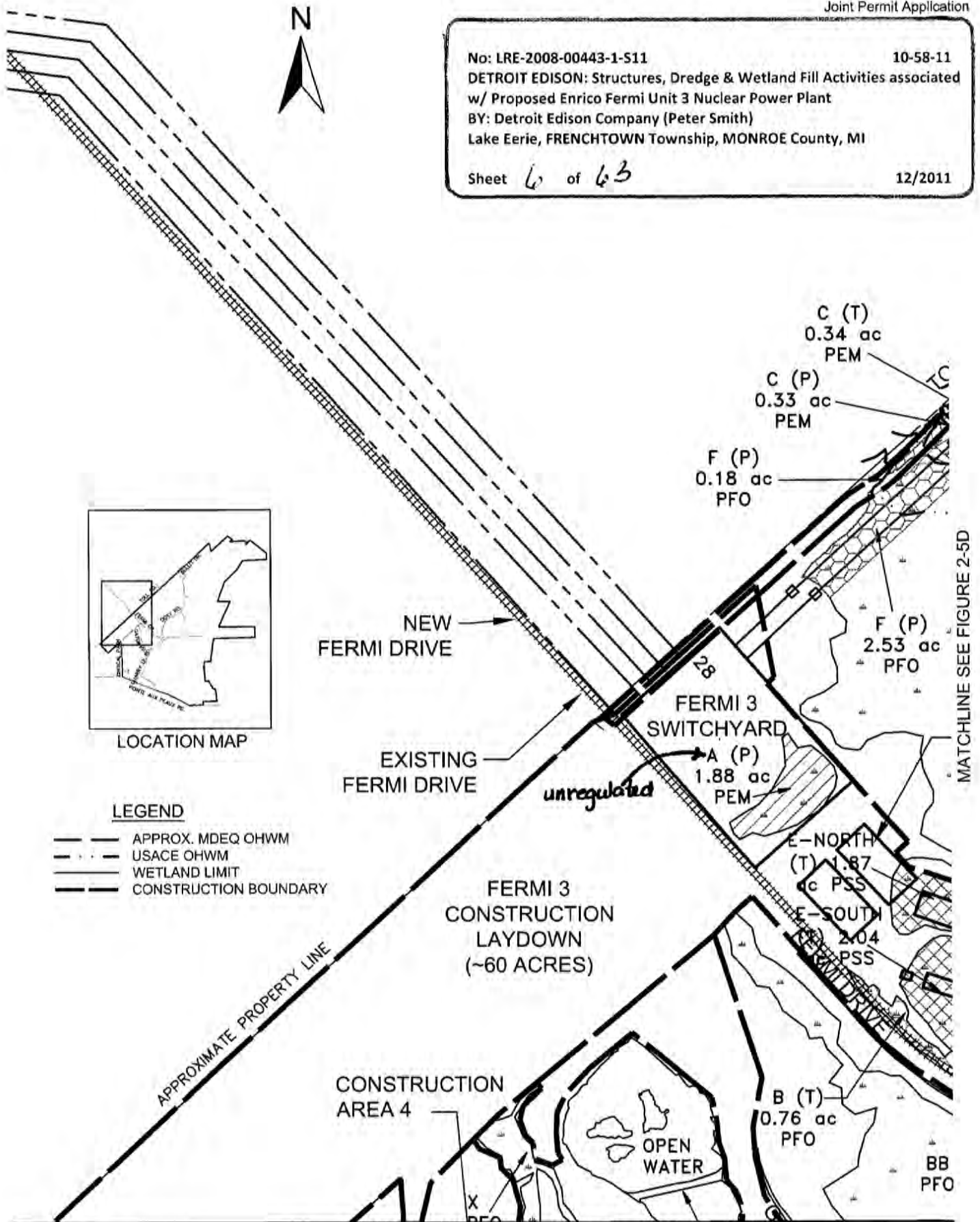
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**FIGURE 2-5B SITE PLAN**

SCALE: 1"=500'

MATCHLINE TO

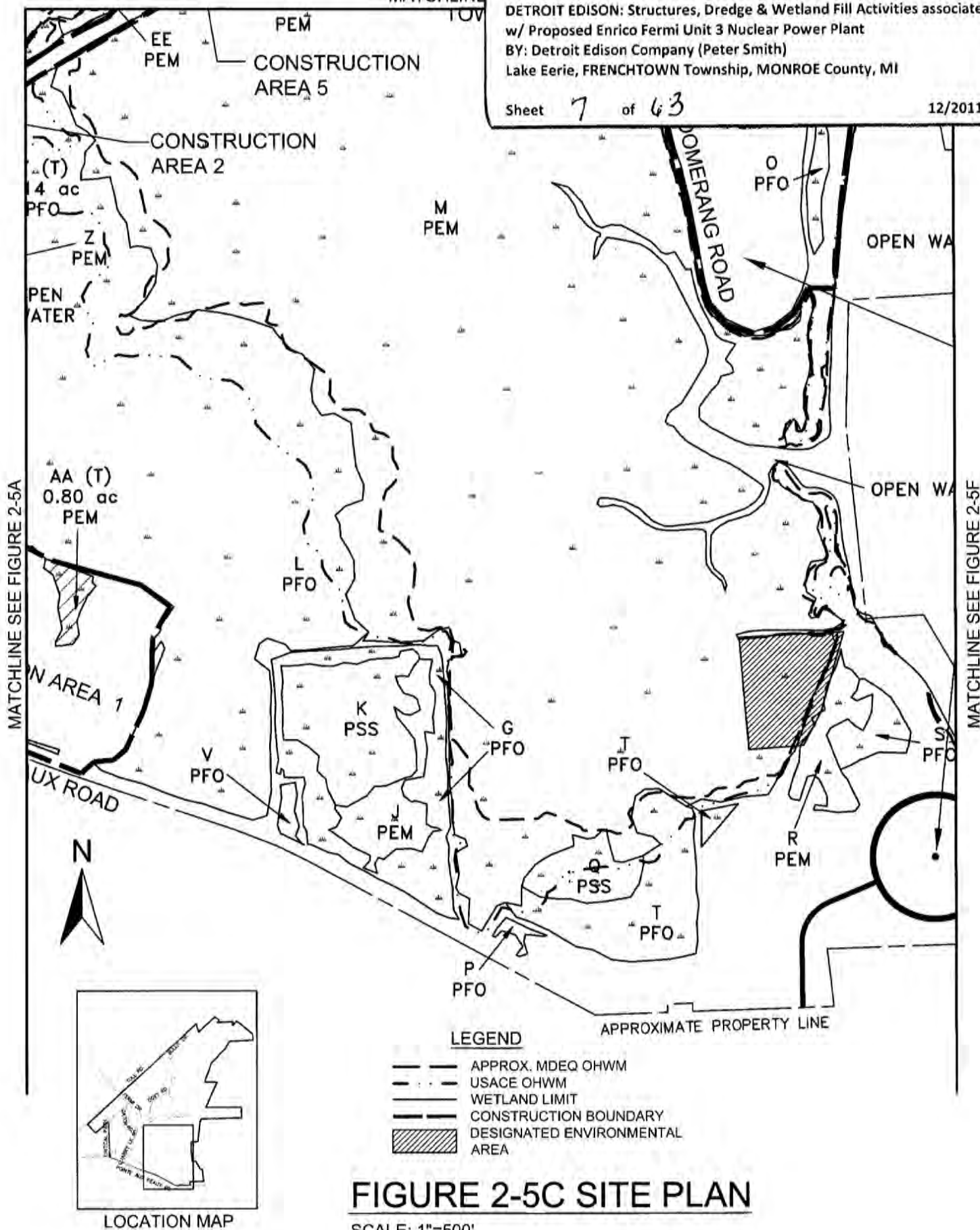
No: LRE-2008-00443-1-511

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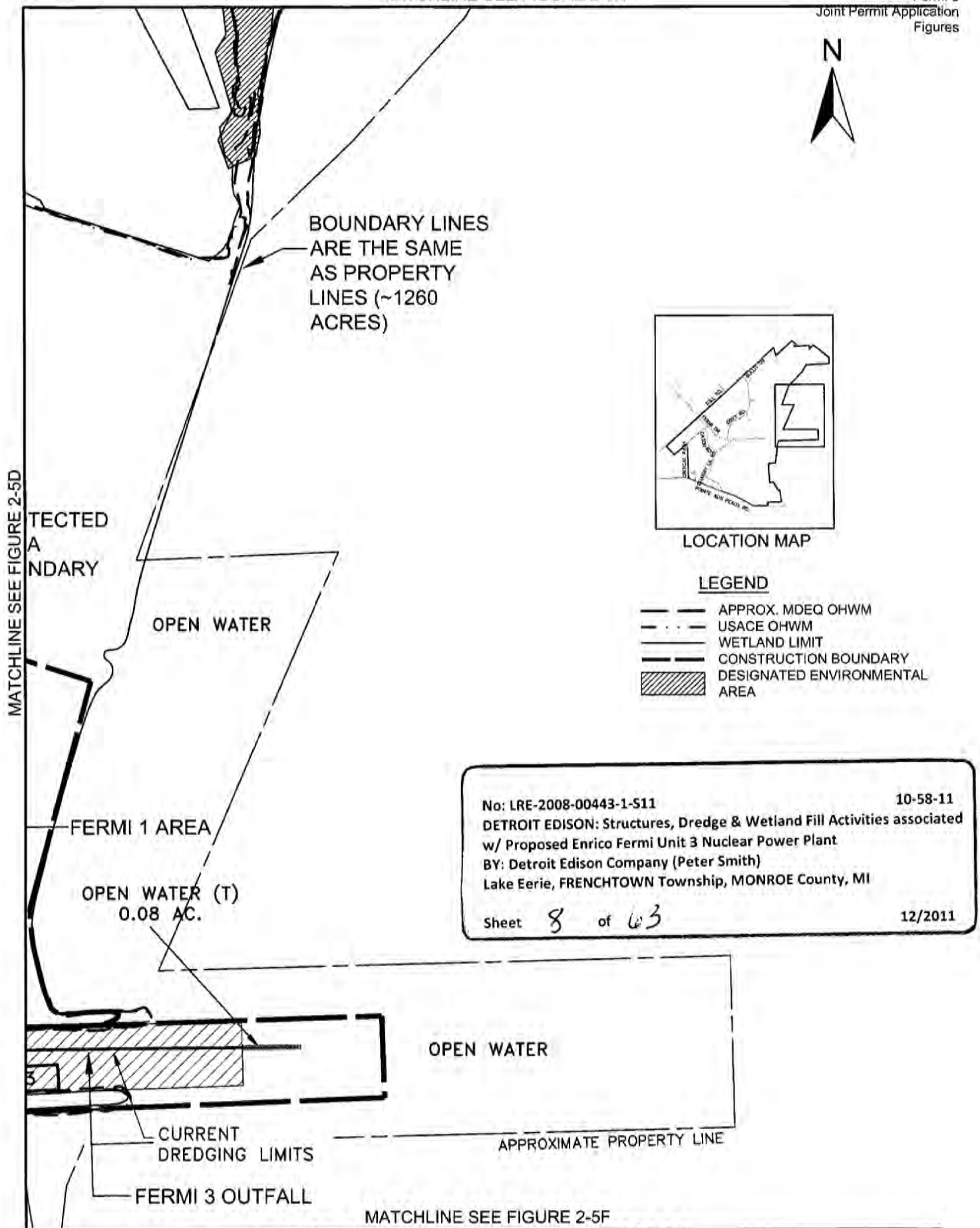
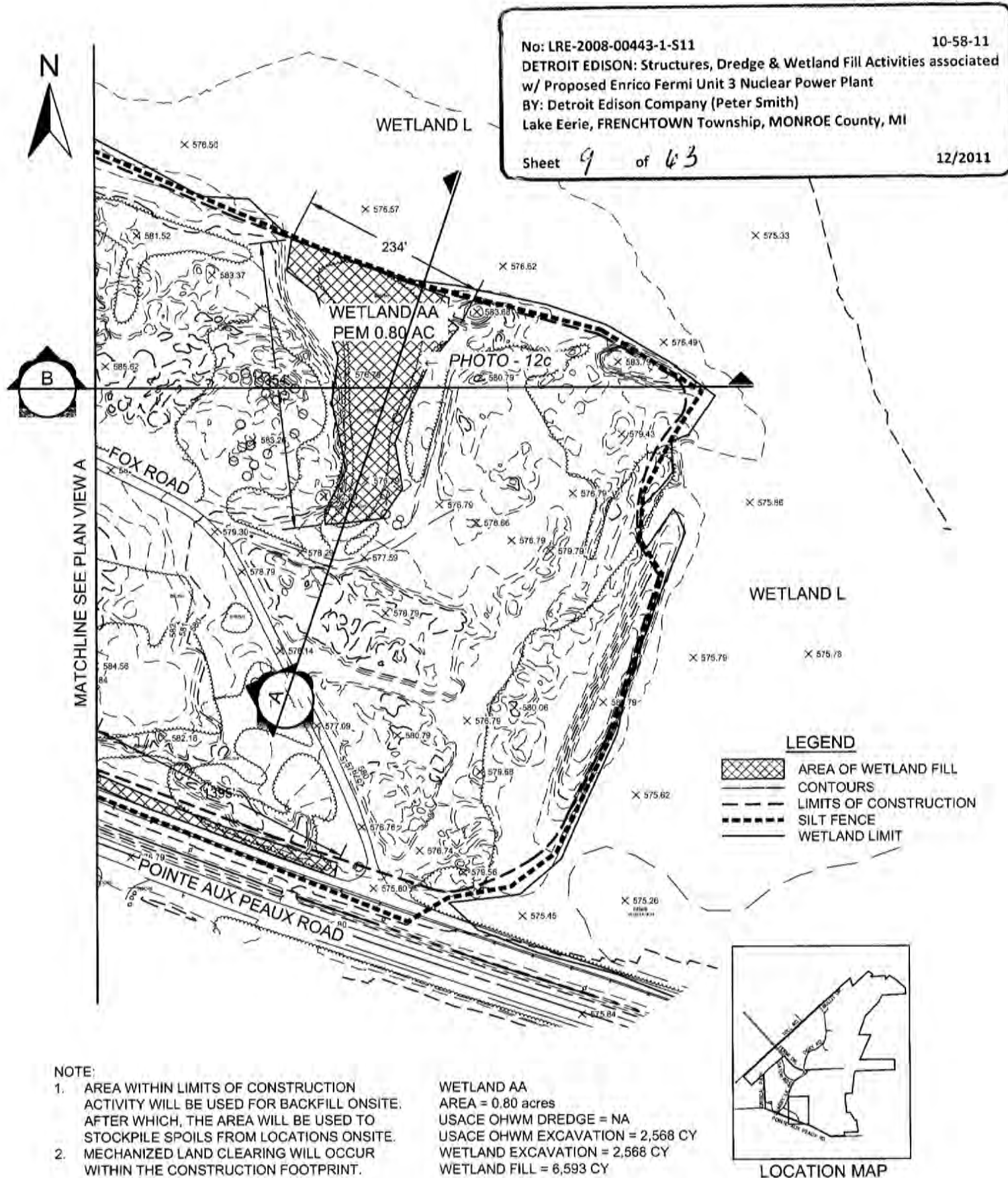


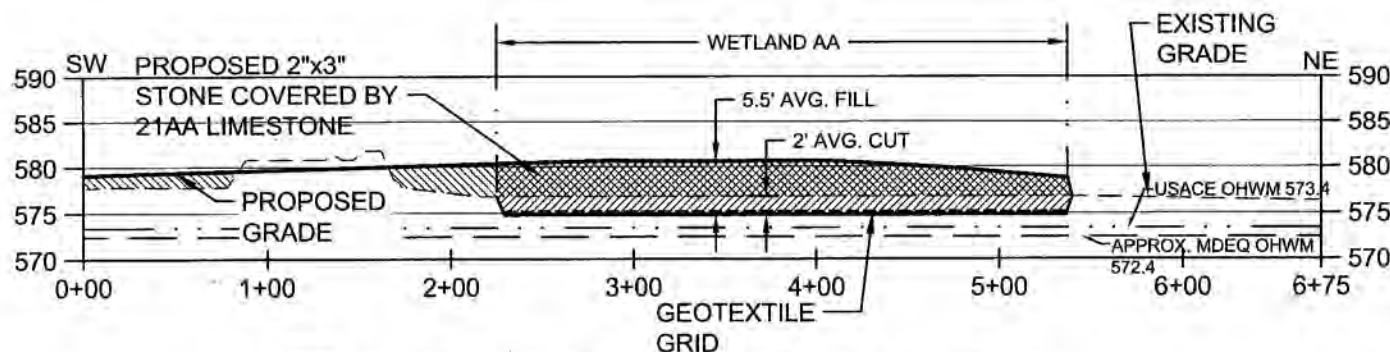
FIGURE 2-5G SITE PLAN



**FIGURE 12-2B CONSTRUCTION AREA 1 PLAN VIEW B**

SCALE: 1"=150'  
 Revision 1



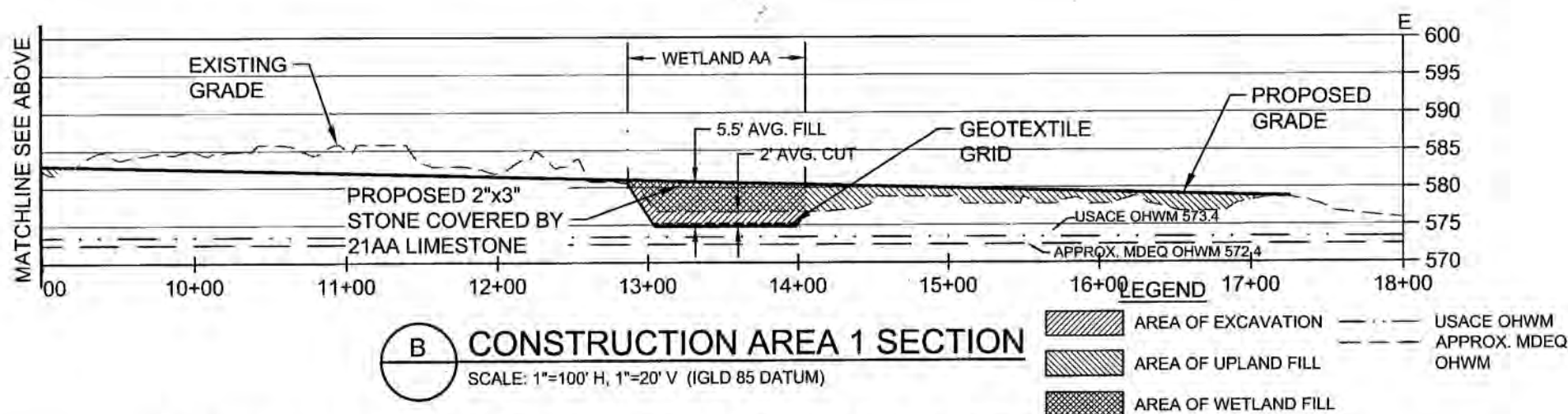


**A CONSTRUCTION AREA 1 SECTION**  
SCALE: 1"=100' H, 1"=20' V (IGLD 85 DATUM)

No: LRE-2008-00443-1-S11 10-58-11  
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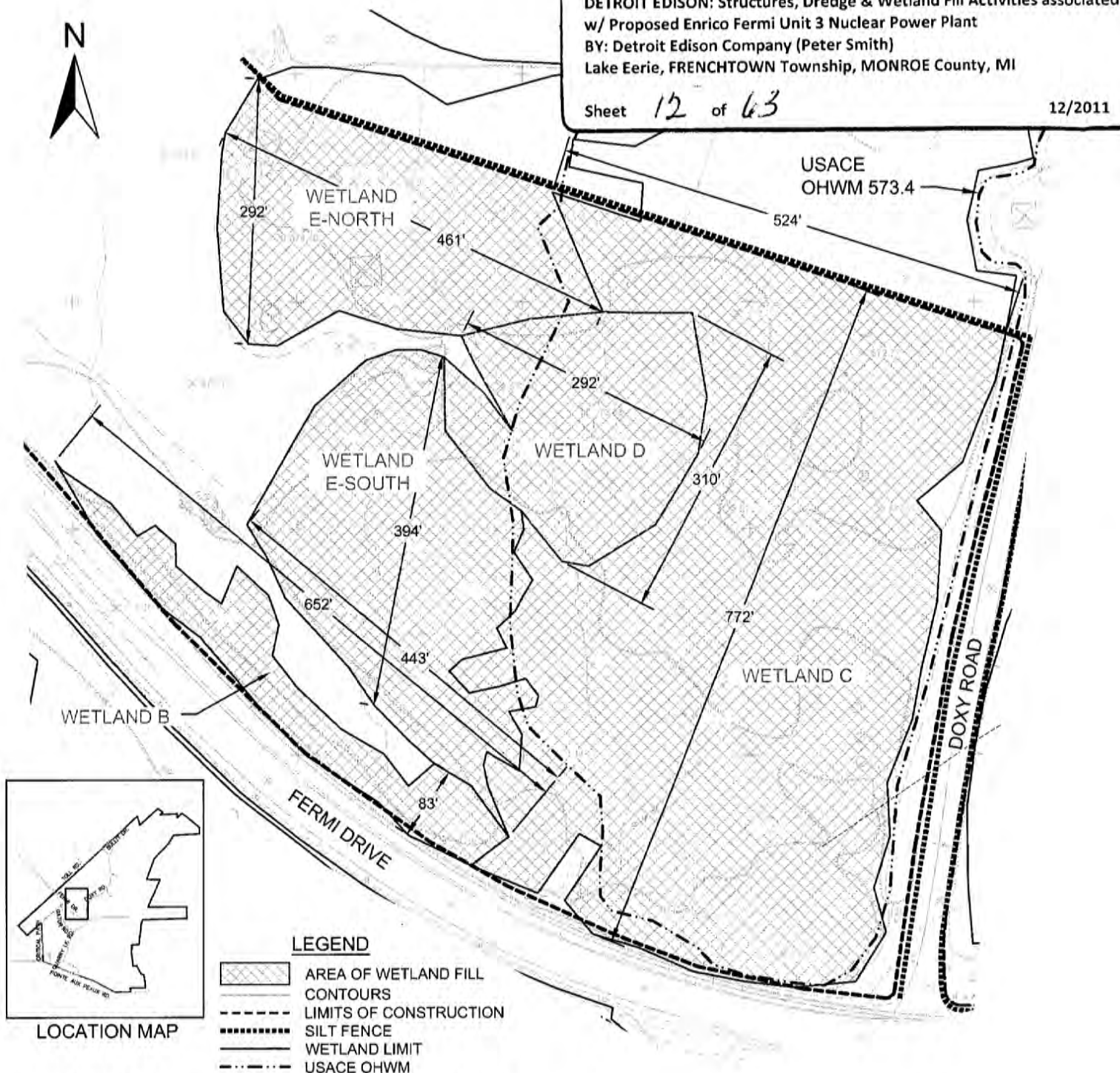


**B CONSTRUCTION AREA 1 SECTION**  
SCALE: 1"=100' H, 1"=20' V (IGLD 85 DATUM)

**FIGURE 12-2C CONSTRUCTION AREA 1 SECTION DETAILS**

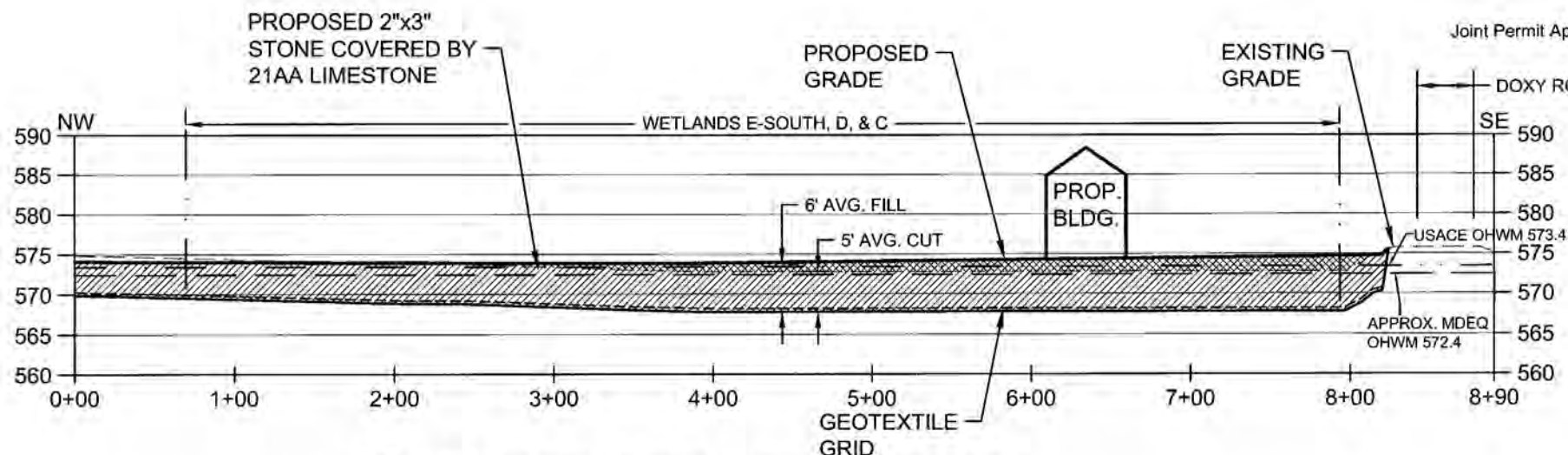






# FIGURE 12-4B CONSTRUCTION AREA 3 PLAN VIEW B

SCALE: 1"=150'



**A CONSTRUCTION AREA 3 SECTION**  
SCALE: 1"=100' H, 1"=20' V (IGLD 85 DATUM)

No: LRE-2008-00443-1-511

10-58-11

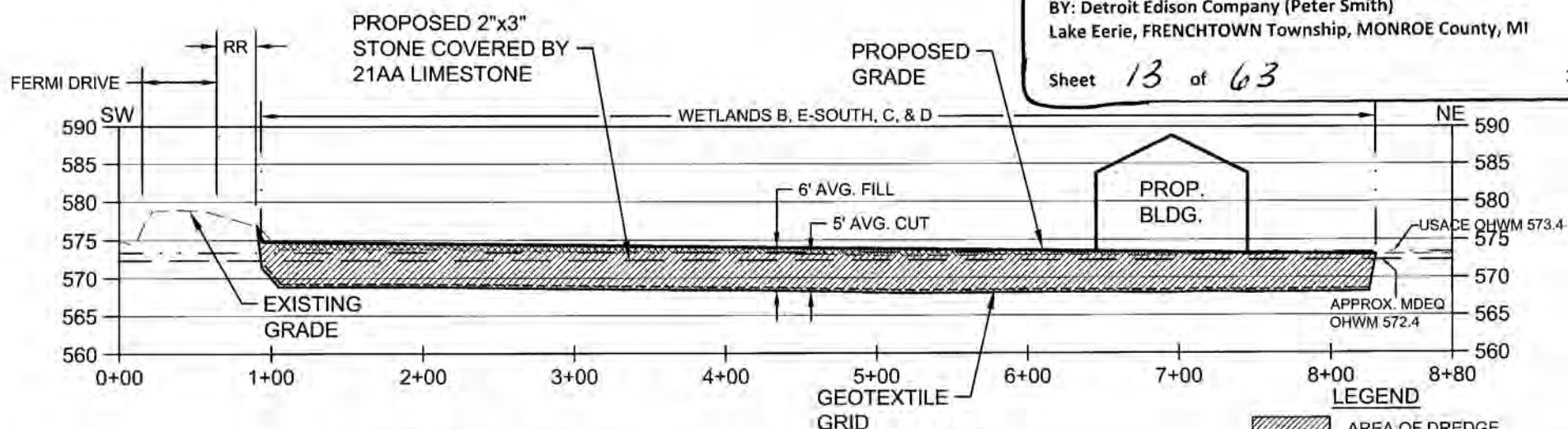
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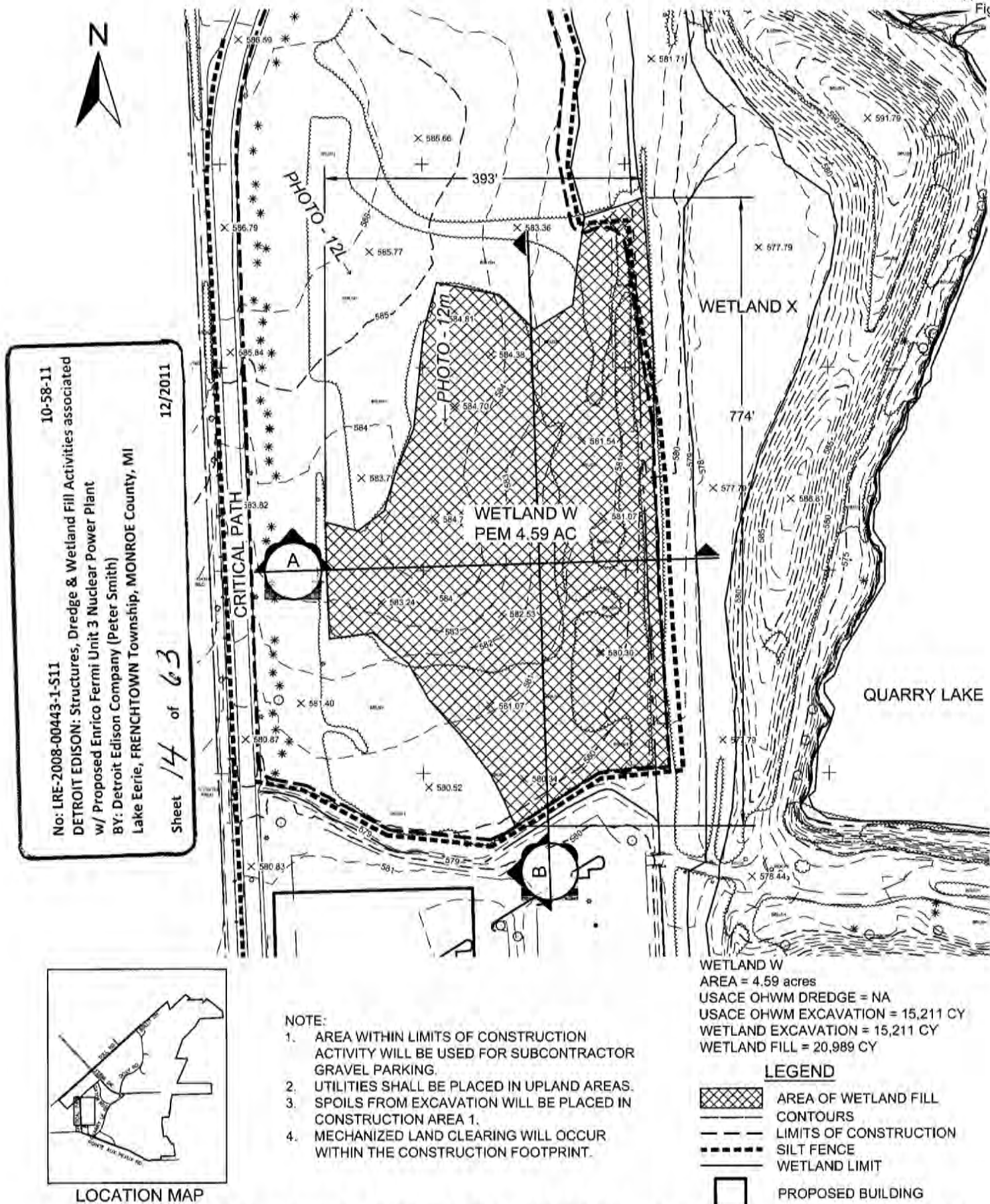
**B CONSTRUCTION AREA 3 SECTION**  
SCALE: 1"=100' H, 1"=20' V (IGLD 85 DATUM)

- LEGEND**
- AREA OF DREDGE
  - AREA OF UPLAND FILL
  - AREA OF WETLAND FILL
  - USACE OHWM
  - APPROX. MDEQ OHWM

NOTE: UTILITIES WILL BE ABOVE GEOTEXTILE FABRIC

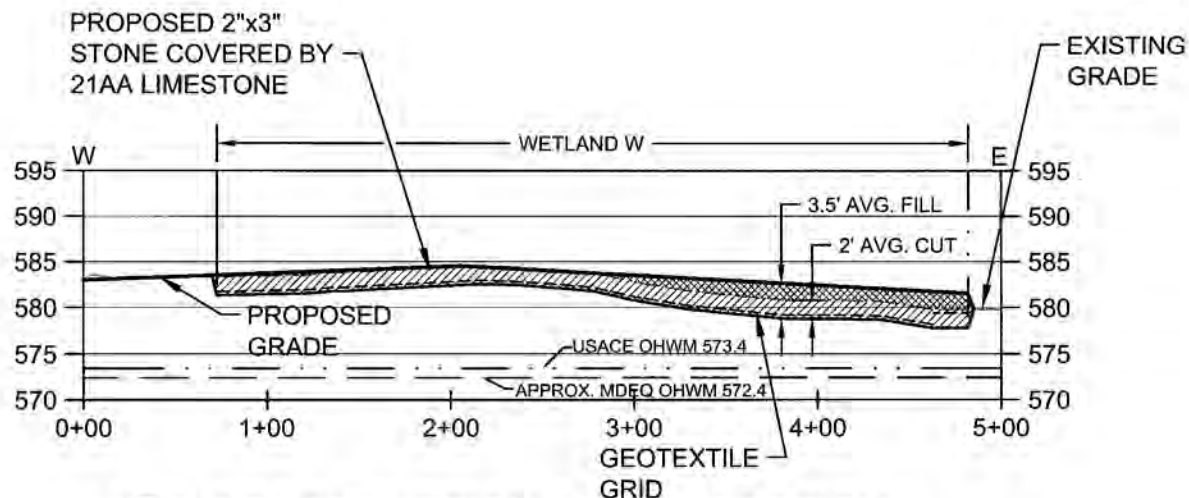
**FIGURE 12-4C CONSTRUCTION AREA 3 SECTION DETAILS**



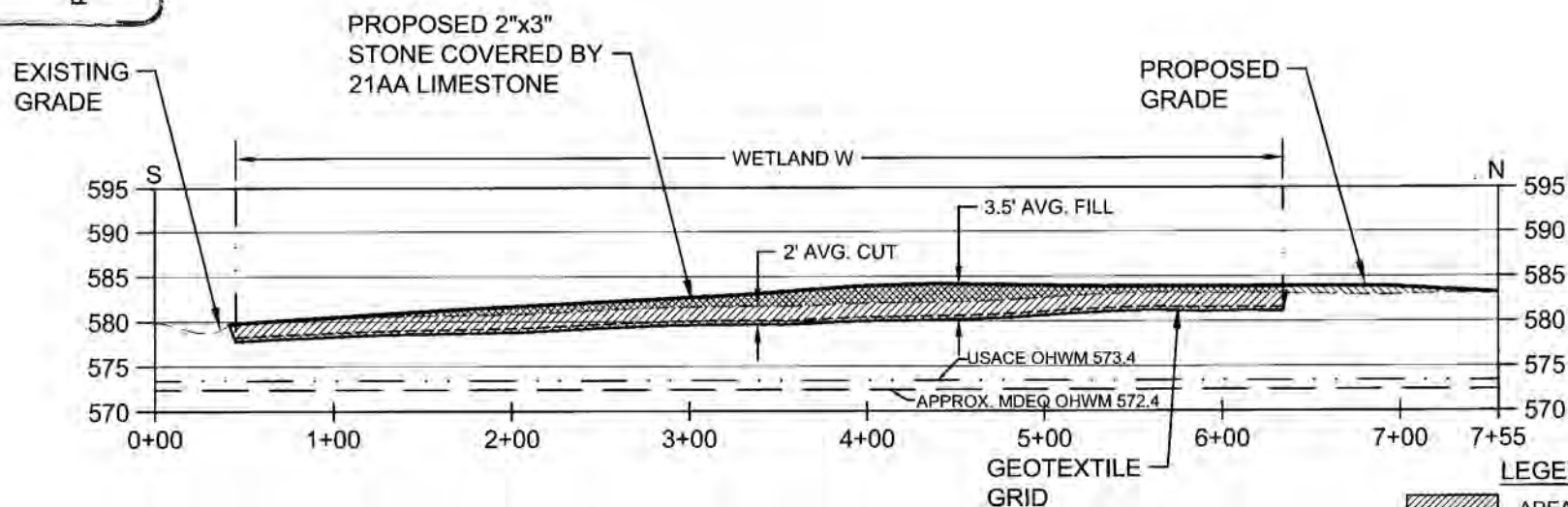


**FIGURE 12-5A CONSTRUCTION AREA 4 PLAN VIEW**

SCALE: 1"=150'



**A CONSTRUCTION AREA 4 SECTION**  
SCALE: 1"=100' H, 1"=20' V (IGLD 85 DATUM)



**B CONSTRUCTION AREA 4 SECTION**  
SCALE: 1"=100' H, 1"=20' V (IGLD 85 DATUM)

- LEGEND**
- AREA OF EXCAVATION
  - AREA OF UPLAND FILL
  - AREA OF WETLAND FILL
  - USACE OHWM
  - APPROX. MDEQ OHWM

**FIGURE 12-5B CONSTRUCTION AREA 4 SECTION DETAILS**

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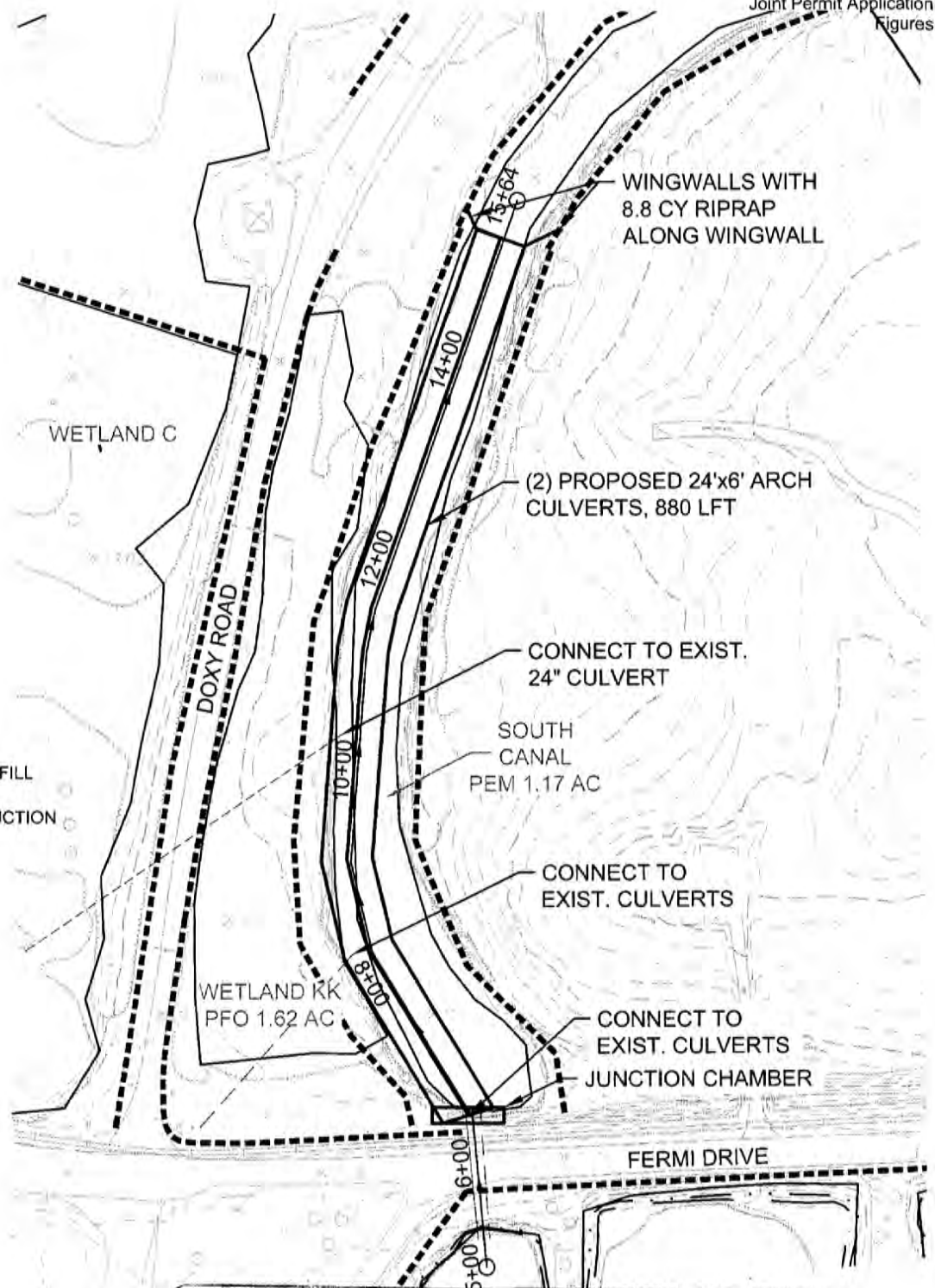




- LEGEND**
- AREA OF WETLAND FILL
  - CONTOURS
  - LIMITS OF CONSTRUCTION
  - SILT FENCE
  - WETLAND LIMIT



LOCATION MAP



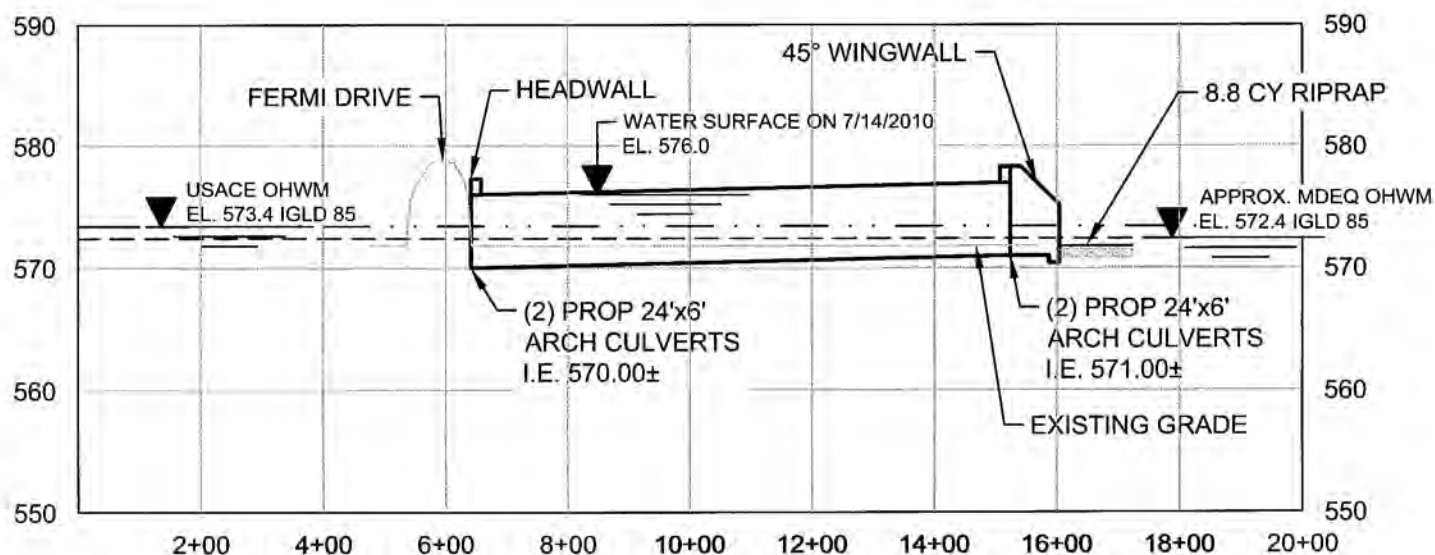
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**FIGURE 10-3A CONSTRUCTION AREA 5 PLAN VIEW**

SCALE: 1"=150'






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# LEGEND

-  WATER ELEVATION
-  USACE OHWM
-  APPROX. MDEQ OHWM

**FIGURE 10-3B**  
**CONSTRUCTION AREA 5 PROFILE OF PROPOSED SOUTH CANAL CULVERTS**

SCALE: 1"=300' HORZ.; 1"=20' VERT. (IGLD 85 DATUM)



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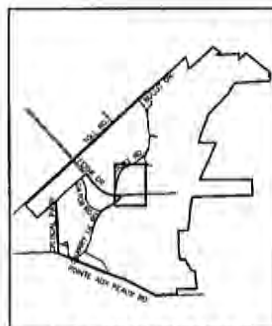
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Fermi 3  
Joint Permit Application  
Figures

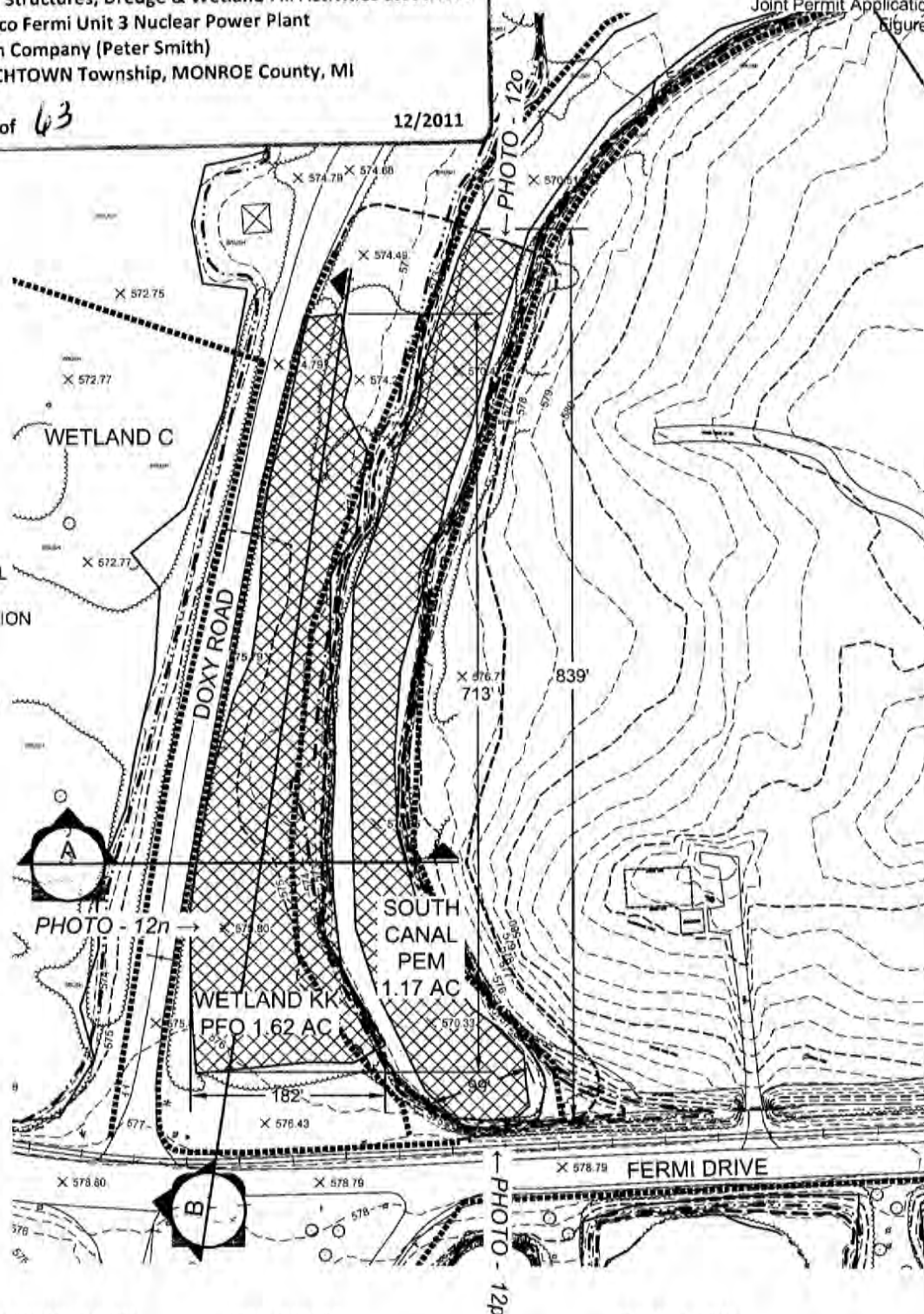


### LEGEND

- AREA OF WETLAND FILL
- CONTOURS
- LIMITS OF CONSTRUCTION
- SILT FENCE
- WETLAND LIMIT
- USACE OHWM
- APPROX. MDEQ OHWM



LOCATION MAP



### NOTE:

1. AREA WITHIN LIMITS OF CONSTRUCTION ACTIVITY WILL BE USED FOR LAYDOWN.
2. SPOILS FROM EXCAVATION WILL BE PLACED IN CONSTRUCTION AREA 1.
3. MECHANIZED LAND CLEARING WILL OCCUR WITHIN THE CONSTRUCTION FOOTPRINT.

WETLAND KK  
AREA = 1.62 acres  
USACE OHWM DREDGE = 2,065 CY  
USACE OHWM EXCAVATION = 3,120 CY  
WETLAND EXCAVATION = 5,185 CY  
WETLAND FILL = 8,884 CY

SOUTH CANAL  
AREA = 1.17 acres  
USACE OHWM DREDGE = NA  
USACE OHWM EXCAVATION = NA  
WETLAND EXCAVATION = NA  
WETLAND FILL = 11,342 CY

## FIGURE 12-6A CONSTRUCTION AREA 5 PLAN VIEW

SCALE: 1"=150'



- ### FIGURE 12-6B CONSTRUCTION AREA 5 SECTION DETAILS

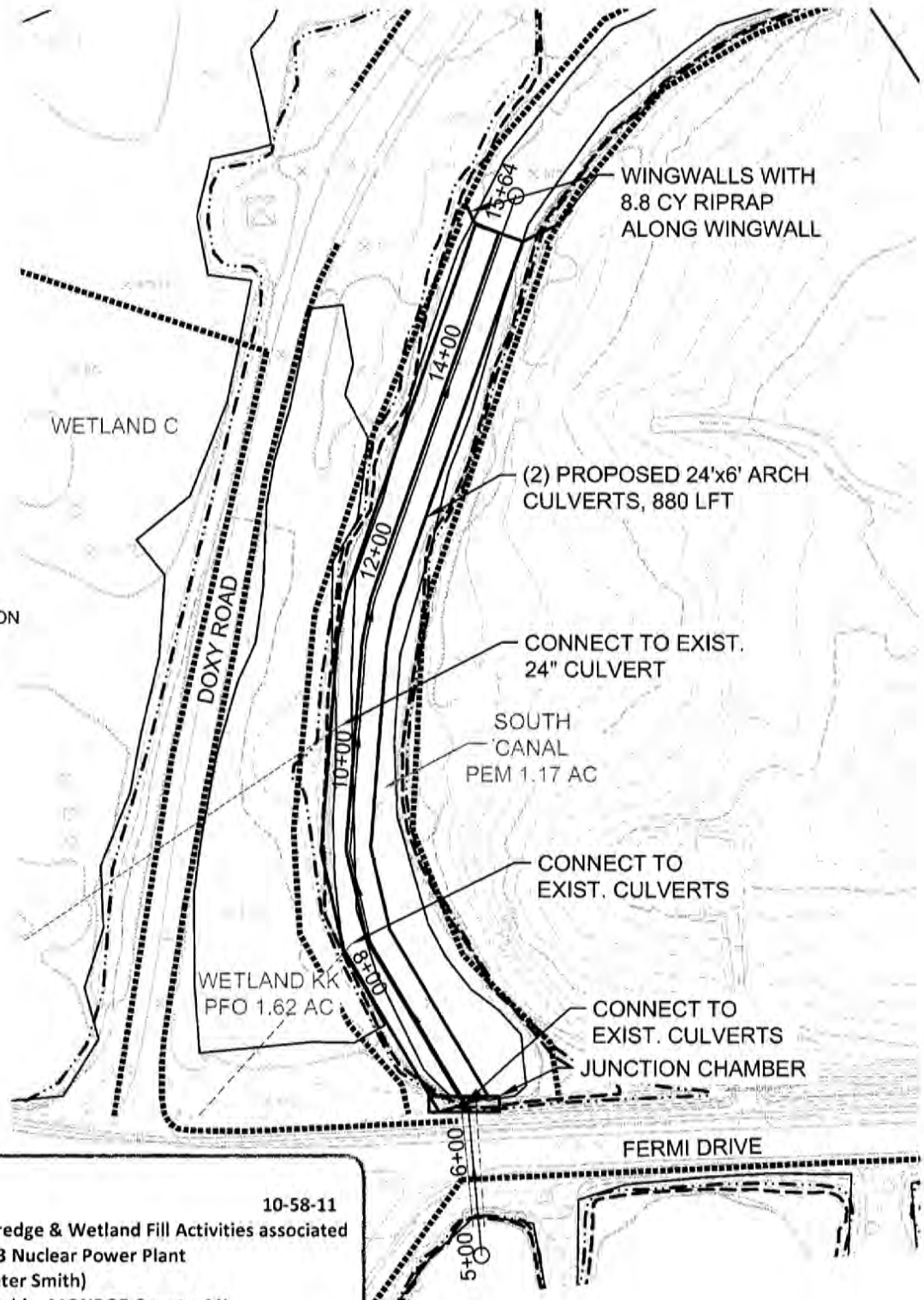




- LEGEND**
- AREA OF WETLAND FILL
  - CONTOURS
  - LIMITS OF CONSTRUCTION
  - SILT FENCE
  - WETLAND LIMIT
  - USACE OHWM
  - APPROX. MDEQ OHWM



LOCATION MAP



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## FIGURE 14-1A CONSTRUCTION AREA 5 PLAN VIEW

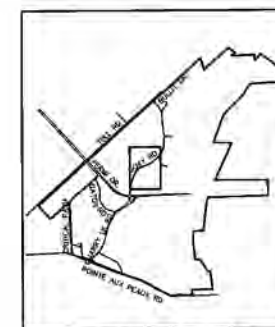
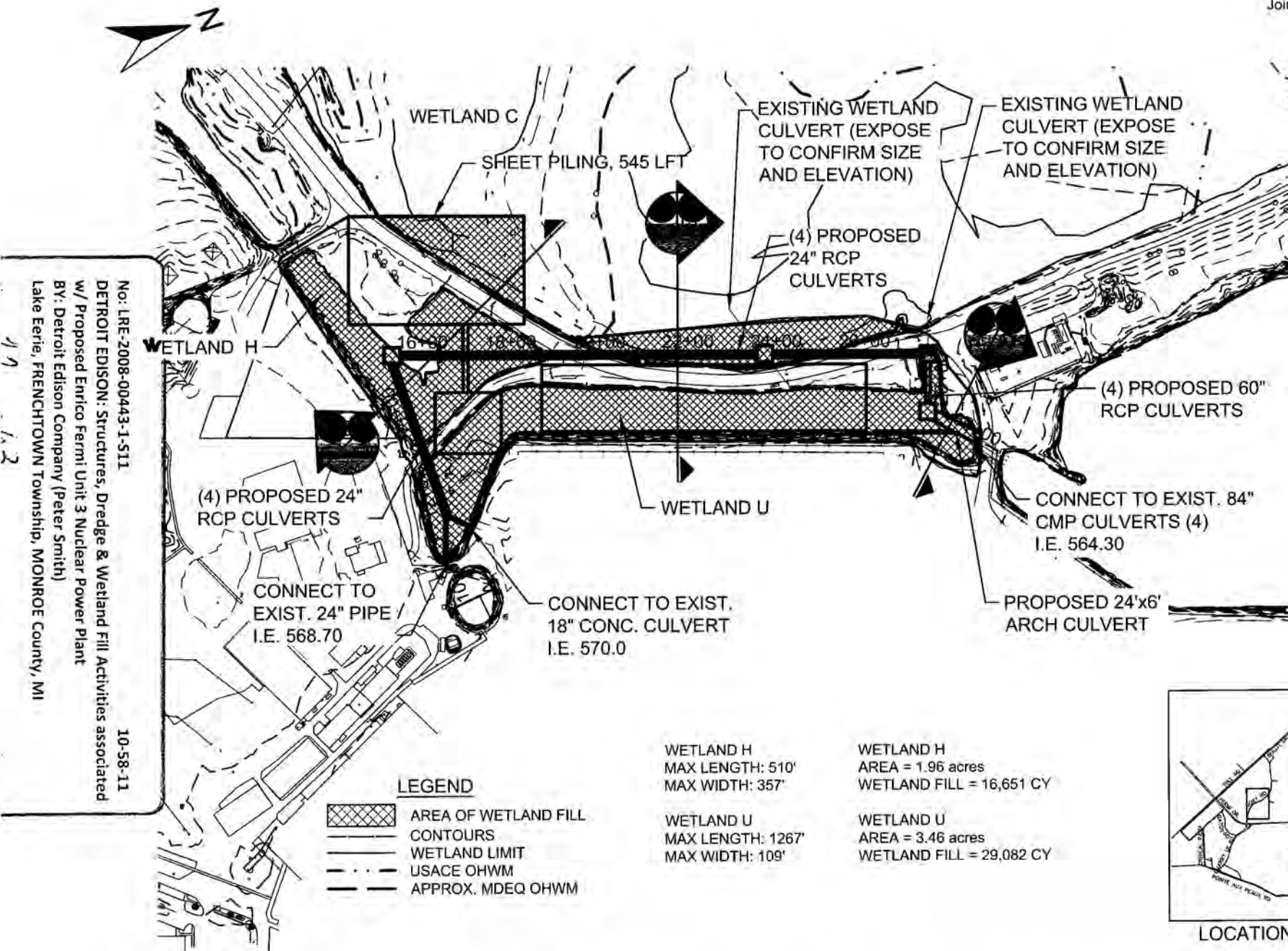
SCALE: 1"=150'

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— · — · — USAEC OHHM  
— — — APPROX. MDEQ OHHM

SCALE: 1"=300' HORZ.; 1"=20' VERT. (IGLD 85 DATUM)



LOCATION MAP

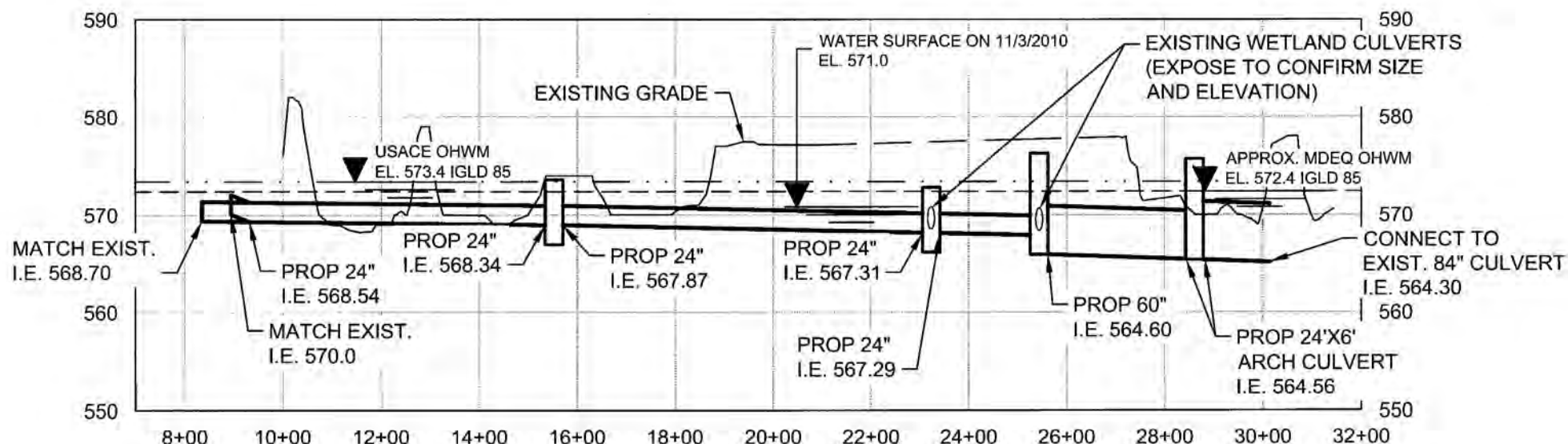
**FIGURE 10-1A  
WAREHOUSE, PAP/VIB PARKING GARAGE PLAN VIEW OF CULVERTS AT DOXY ROAD**

SCALE: 1"=300'

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w/ Proposed Enrico Fermi Unit 3 Nuclear Power Plant  
BY: Detroit Edison Company (Peter Smith)  
Lake Erie, FRENCHTOWN Township, MONROE County, MI

10-58-11





No: LRE-2008-00443-1-511  
DETROIT EDISON: Structures, Dredge & Wetland Fill Activities associated  
w/ Proposed Enrico Fermi Unit 3 Nuclear Power Plant  
BY: Detroit Edison Company (Peter Smith)  
Lake Erie, FRENCHTOWN Township, MONROE County, MI

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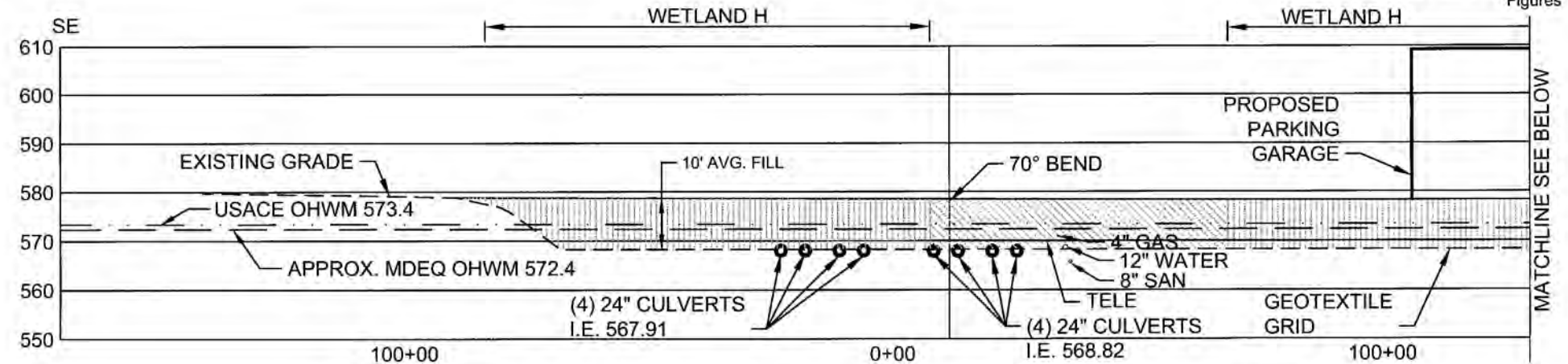
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# LEGEND

— USACE OHWM  
— APPROX. MDEQ OHWM

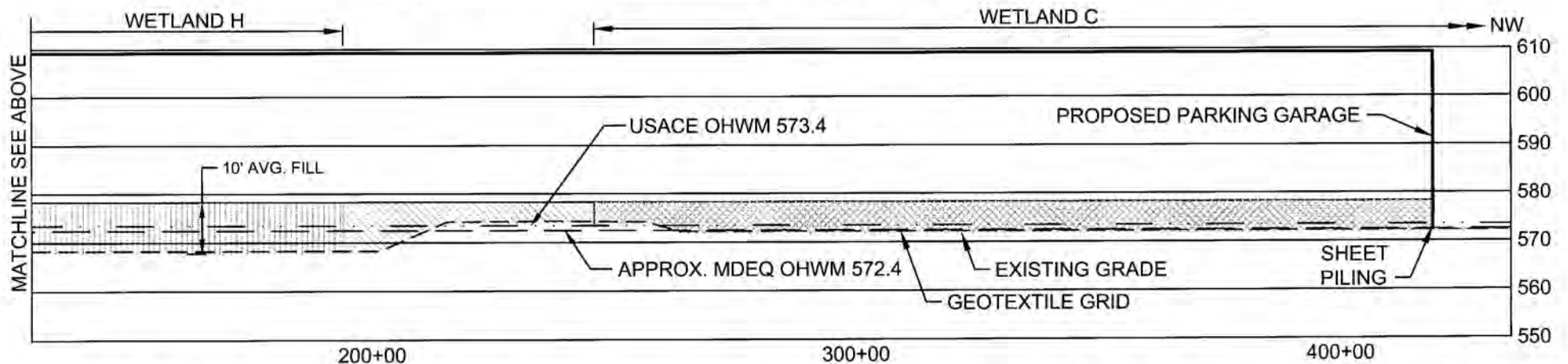
**FIGURE 10-1B**  
**WAREHOUSE, PAP/VIB PARKING GARAGE PROFILE OF PROPOSED CULVERTS AT DOXY ROAD**

SCALE: 1"=300' HORZ.; 1"=20' VERT. (IGLD 85 DATUM)



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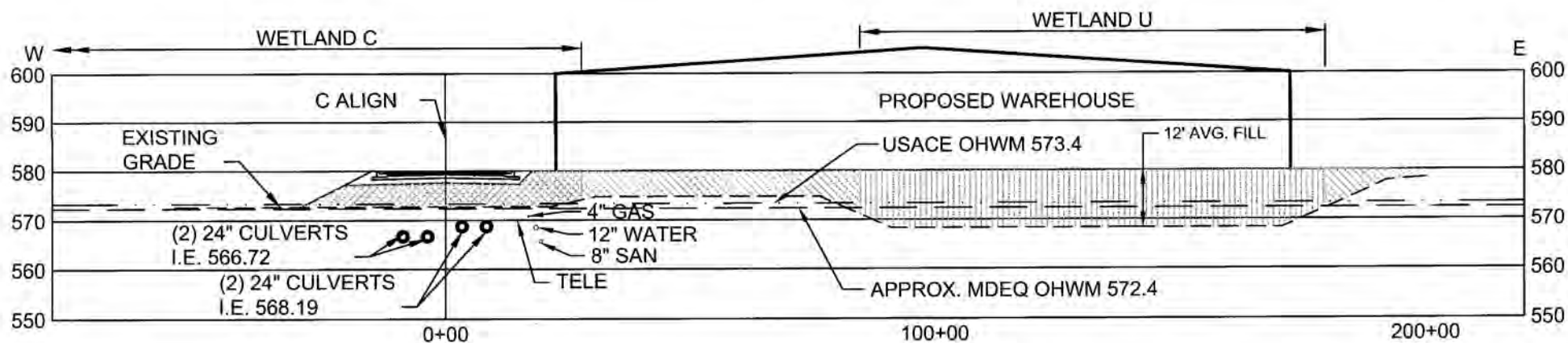
- LEGEND**
- AREA OF UPLAND FILL
  - AREA OF WETLAND FILL
  - AREA OF OPEN WATER FILL
  - USACE OHWM
  - APPROX. MDEQ OHWM



**A** CROSS SECTION OF PROPOSED (4) 24" CULVERTS AT DOXY ROAD STA 14+97.87  
SCALE: 1"=30' (IGLD 85 DATUM)

**FIGURE 10-1C WAREHOUSE, PAP/VIB PARKING GARAGE SECTION 'A' DETAILS**

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**CROSS SECTION OF PROPOSED (4) 24\"/>**

| LEGEND |                         |
|--------|-------------------------|
|        | AREA OF UPLAND FILL     |
|        | AREA OF WETLAND FILL    |
|        | AREA OF OPEN WATER FILL |
|        | USACE OHWM              |
|        | APPROX. MDEQ OHWM       |

**FIGURE 10-1D WAREHOUSE, PAP/VIB PARKING GARAGE SECTION 'B' DETAILS**





**NOTE:**

1. AREA WITHIN LIMITS OF CONSTRUCTION ACTIVITY WILL BE USED FOR SUBCONTRACTOR BUILDINGS AND GRAVEL PARKING.
2. SPOILS FROM EXCAVATION WILL BE PLACED IN CONSTRUCTION AREA 1.
3. UTILITIES SHALL BE PLACED WITHIN EXISTING IMPACT AREAS.
4. MECHANIZED LAND CLEARING WILL OCCUR WITHIN THE CONSTRUCTION FOOTPRINT.

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**WETLAND C**

AREA = 2.24 acres  
USACE OHWM DREDGE = 17,991 CY  
USACE OHWM EXCAVATION = NA  
WETLAND EXCAVATION = 17,991 CY  
WETLAND FILL = 38,172 CY

**WETLAND H**

AREA = 1.96 acres  
WETLAND FILL = 16,651 CY

**WETLAND U**

AREA = 3.46 acres  
WETLAND FILL = 29,082 CY

SEE FIGURE  
10-1D SECTION  
10 FOR DETAIL

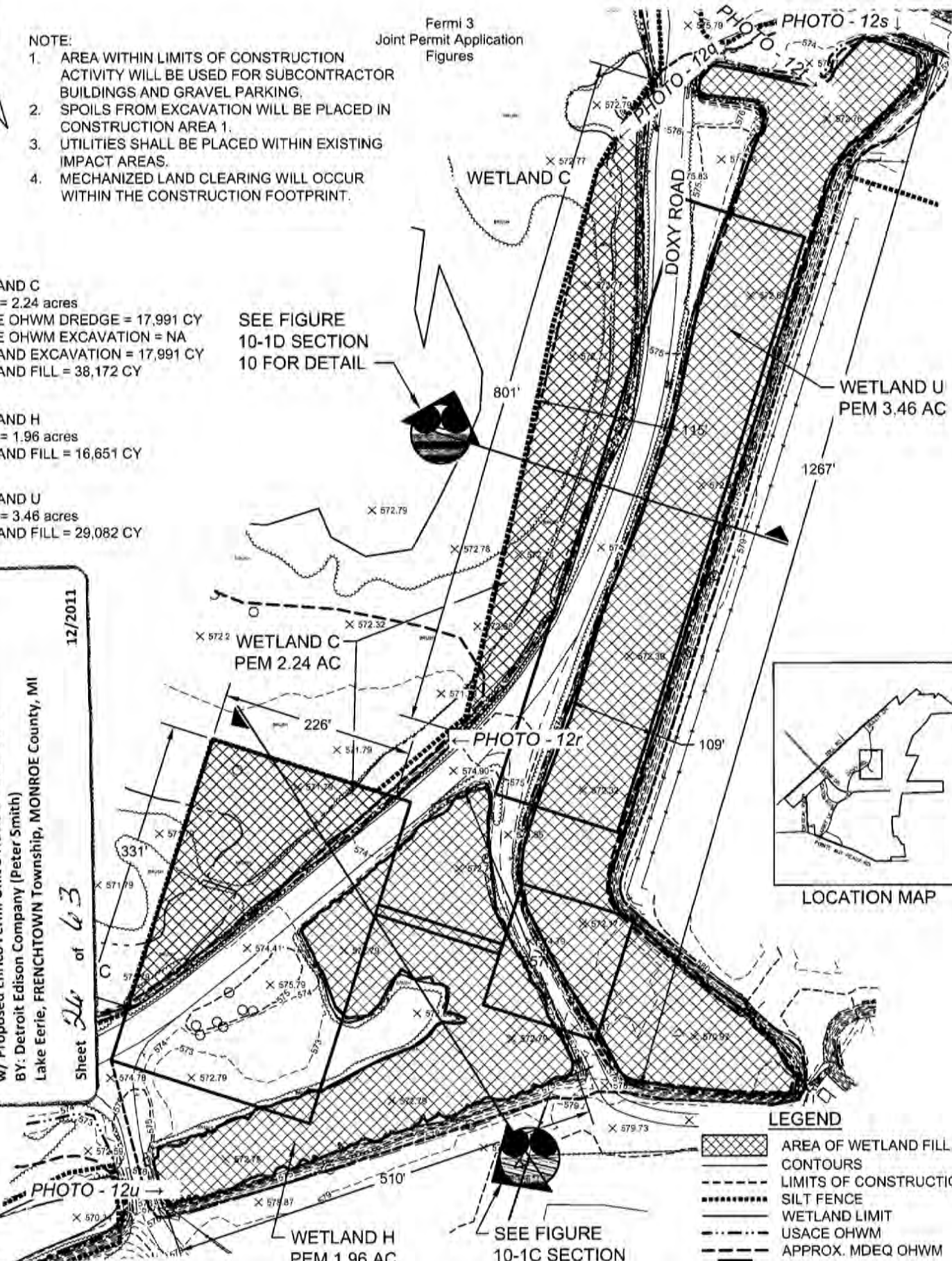
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LOCATION MAP

**LEGEND**

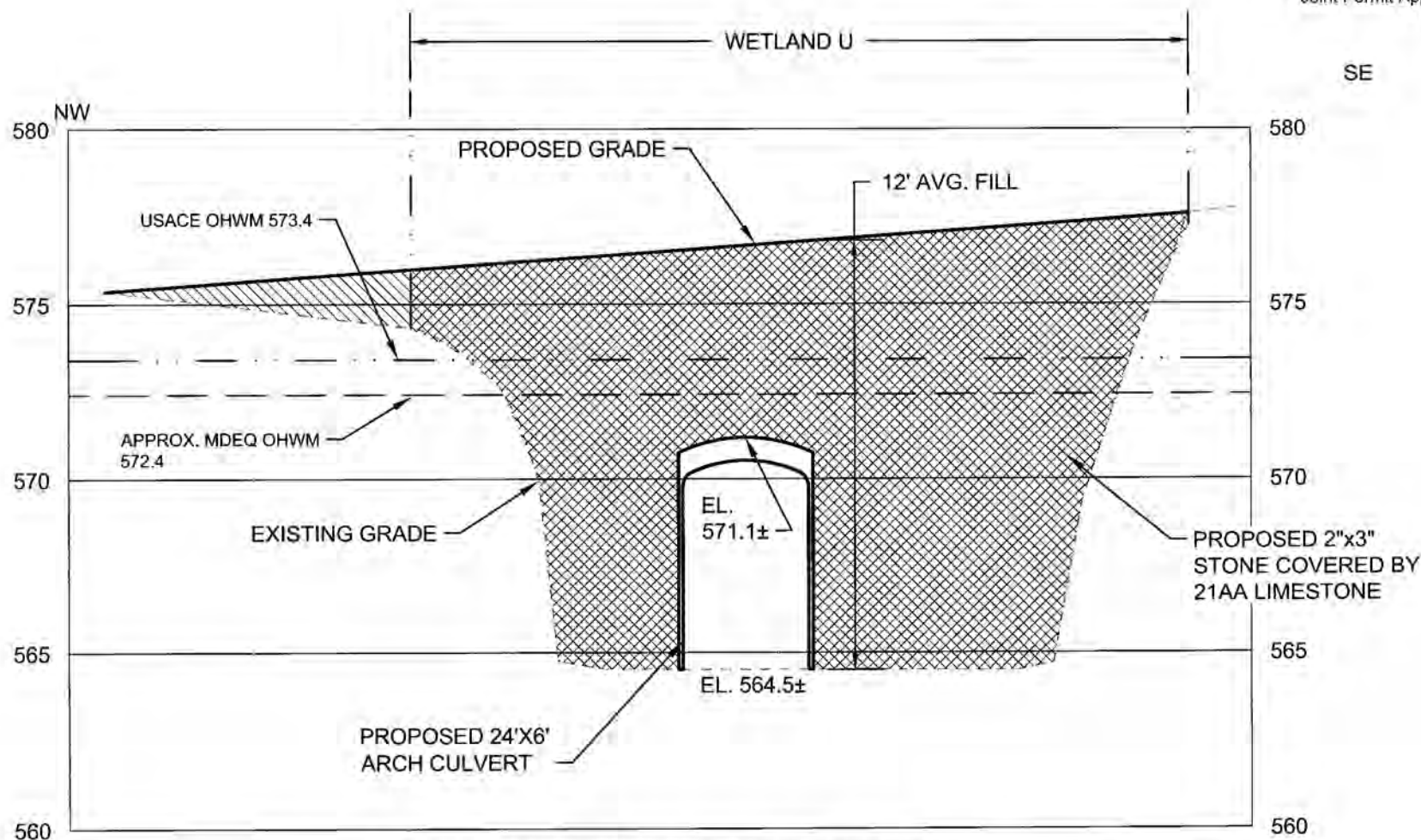
- AREA OF WETLAND FILL
- CONTOURS
- LIMITS OF CONSTRUCTION
- SILT FENCE
- WETLAND LIMIT
- USACE OHWM
- APPROX. MDEQ OHWM
- PROPOSED BUILDING

SEE FIGURE  
10-1C SECTION  
10 FOR DETAIL

**FIGURE 12-7A  
WAREHOUSE, PAP/VIB AND PARKING GARAGE PLAN VIEW**

SCALE: 1"=150'

Revision 1



**CROSS SECTION OF PROPOSED  
24'X6' CULVERT AT DOXY ROAD STA 29+75**

SCALE: 1"=30' HORZ. 1"=3' VERT. (IGLD 85 DATUM)

No: LRE-2008-00443-1-511 10-58-11  
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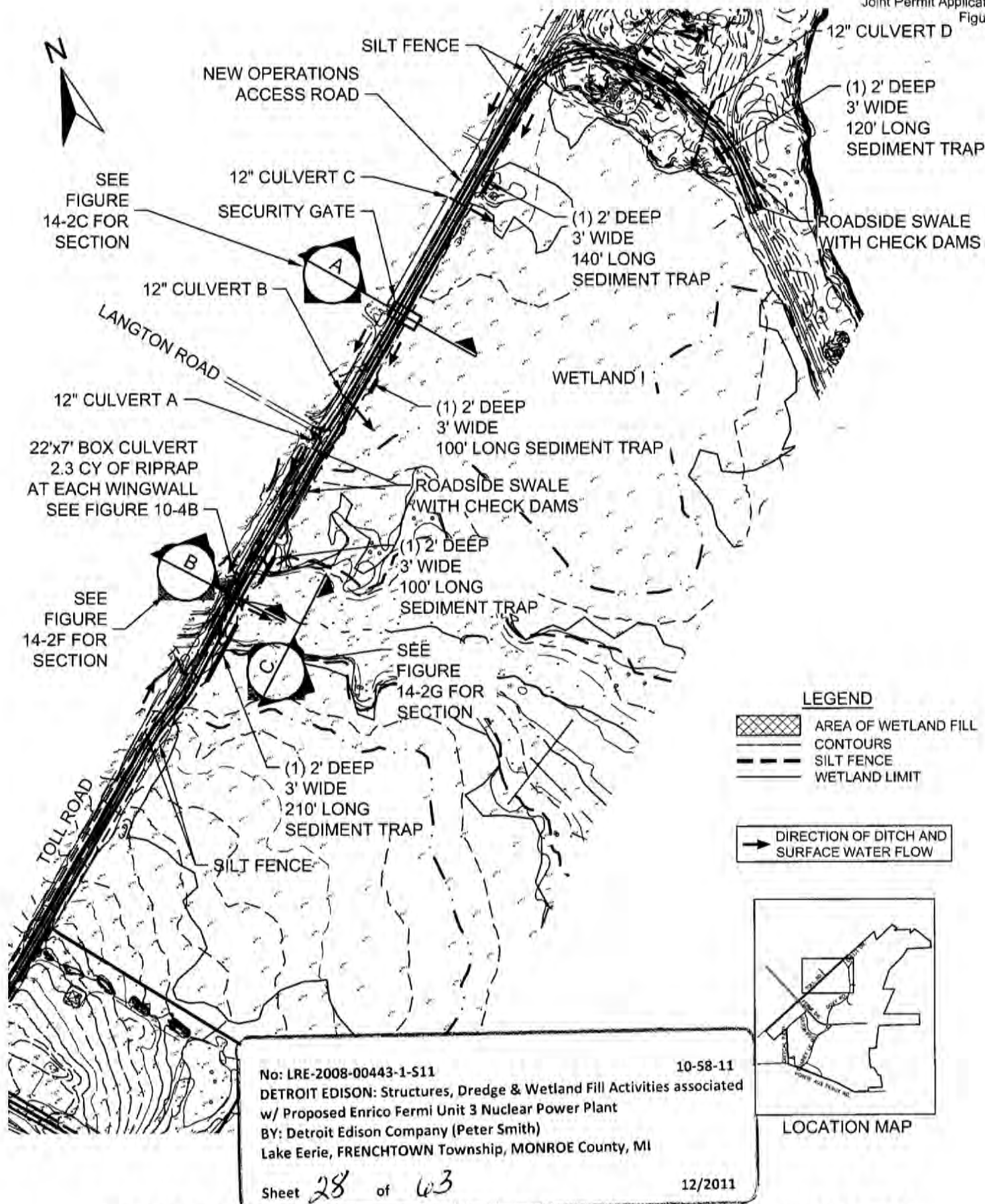
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**LEGEND**

- AREA OF EXCAVATION
- AREA OF UPLAND FILL
- AREA OF WETLAND FILL
- USACE OHWM
- APPROX. MDEQ OHWM

**FIGURE 12-7B WAREHOUSE, PAP/VIB PARKING GARAGE SECTION 'C' DETAILS**





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DETROIT EDISON: Structures, Dredge & Wetland Fill Activities associated  
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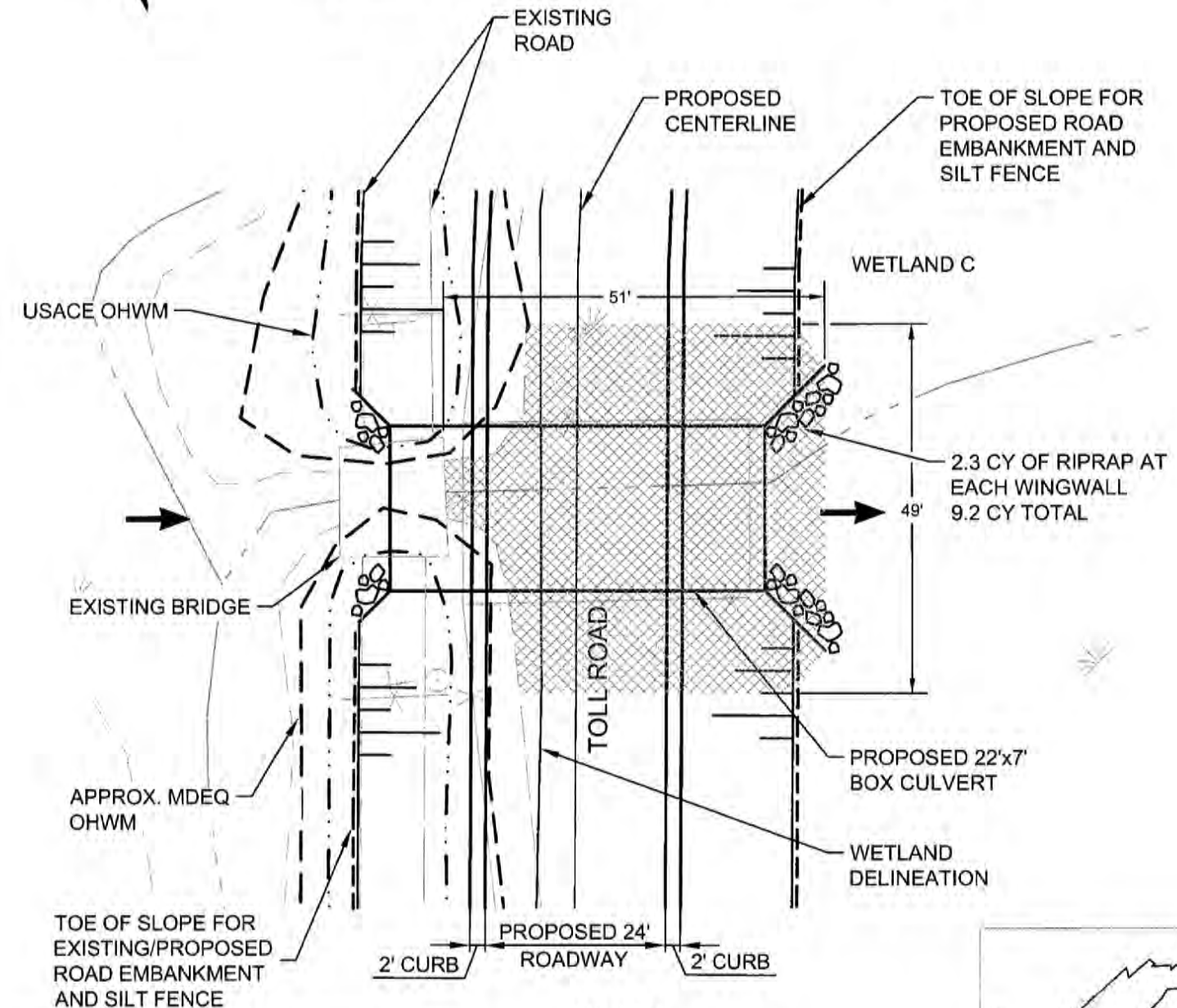
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#### LEGEND

- AREA OF WETLAND FILL
- CONTOURS
- SILT FENCE
- WETLAND LIMIT
- USACE OHWM
- APPROX. MDEQ OHWM

WETLAND C IMPACTS, BOX CULVERT  
ONLY

USACE OHWM DREDGE = 400 CY

USACE WETLAND FILL = 580 CY

APPROX. MDEQ OHWM DREDGE = 340 CY

APPROX. MDEQ OHWM FILL = 580 CY



LOCATION MAP

NOTE:  
NO PROPOSED WETLAND IMPACTS  
ALONG NORTHWESTERLY EDGE  
OF ROAD.

**FIGURE 10-4B**  
**NEW OPERATIONS ACCESS ROAD 22'x7' BOX CULVERT PLAN VIEW**

SCALE: 1"=20'  
Revision 1



August 2011