



Memorandum

Foth Infrastructure & Environment, LLC
2121 Innovation Court, Suite 300
P.O. Box 5126 • De Pere, WI 54115-5126
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

July 26, 2016

TO: Brian Van Straten, Outagamie County Recycling & Solid Waste Department

CC: Chris Anderson, Foth Infrastructure & Environment, LLC

FR: Marty Sturzl, Foth Infrastructure & Environment, LLC

RE: Northwest Landfill – Preliminary Layout

The purpose of the memorandum is to present a summary of preliminary engineering performed to define potential landfill airspace and earthwork volumes associated with development of a Northwest Landfill on the current Outagamie County Landfill property. The contents of this memorandum should be considered preliminary. Further refinement will be required based on site limitations which may not be known at this time.

Background

The Outagamie County Landfill property consists of approximately 450 acres and includes two closed landfills (West Landfill and East Landfill) and one active landfill (Northeast Landfill [NELF]).

The NELF serves as the regional landfill for Brown, Outagamie, and Winnebago Counties (BOW) and is estimated to have capacity until 2022 based on an annual airspace utilization of ~730,000 cubic yards (cy) per year.

The current regional plan includes a transition of landfilling to the future Brown County South Landfill once the NELF reaches capacity.

The Outagamie County Landfill property has area which could be used for additional landfilling. The remainder of this memorandum discusses the potential for expansion of waste disposal capacity at the Outagamie County Landfill property.

Preliminary Layout

The potential limits of waste for the Northwest Landfill is shown on Figure 1. The limits are based on minimum setbacks (from property lines, existing waste limits, highways, etc.) established for the NELF. The total acreage of the potential waste limits shown is ~83.7 acres.

The landfill siting requirements in Wisconsin require notification of affected communities which are defined as cities, towns, or villages within 1,500 feet of the proposed waste limits. As shown on Figure 1, the affected communities consist of the city of Appleton and the villages of Little Chute and Grand Chute.

Preliminary Capacity

The potential capacity of the Northwest Landfill was estimated using a base (top of clay liner elevation) of 705 feet based on design of the NELF. The maximum airspace assuming a base elevation of 705 feet and 4H:1V slopes to a peak is estimated to be 12.3 million cy (Figure 2).

Wisconsin Department of Natural Resources (WDNR) regulations limit landfill site life to 15 years. Therefore, the area shown on Figure 2 should be able to provide the maximum site life allowed based on current airspace utilization rates (730,000 cy x 15 years = ~11 million cy). A “needs” analysis will be required as part of a feasibility report to justify the design airspace.

Preliminary Earthwork

Figure 3 summarizes preliminary excavation volumes based on a bottom of liner elevation of 701 feet and a surface water sedimentation basin excavation in the southwest corner of the site. The total in-place volume of excavation is ~4.7 million cy.

Figure 4 shows potential uses of the excavated materials which include:

- ♦ Clay liner material;
- ♦ Final cover material;
- ♦ Daily/intermediate material; and
- ♦ Stockpiled material.

The overall preliminary soil balance shows all excavated soils can be used on-site as summarized below:

Item	Volume (in-place cy)
1. Soils Available From Construction of Northwest Landfill (Figure 3)	
a. Excavation to Subbase Grades (701 feet, includes existing soil stockpiles)	4,620,000
b. Excavation of Sedimentation Basin	78,000
Totals =	4,698,000
2. Soils Uses (Figure 4)	
a. NELF Final Cover (5 feet over 55.3 acres)	446,000
b. Northwest Landfill Clay Liner (4 feet over 83.7 acres)	540,000
c. Northwest Landfill Final Cover (5 feet over 83.7 acres)	701,000
d. Stockpile A	1,640,000
e. Stockpile B	410,000
f. Stockpile C	431,000
g. Stockpile D	40,000
h. Daily and Intermediate Cover (10%) of Airspace	615,000
Totals =	4,823,000
Net Balance	-125,000

The negative balance indicates less material may be required to be stockpiled.

Long-Term Expansion Potential

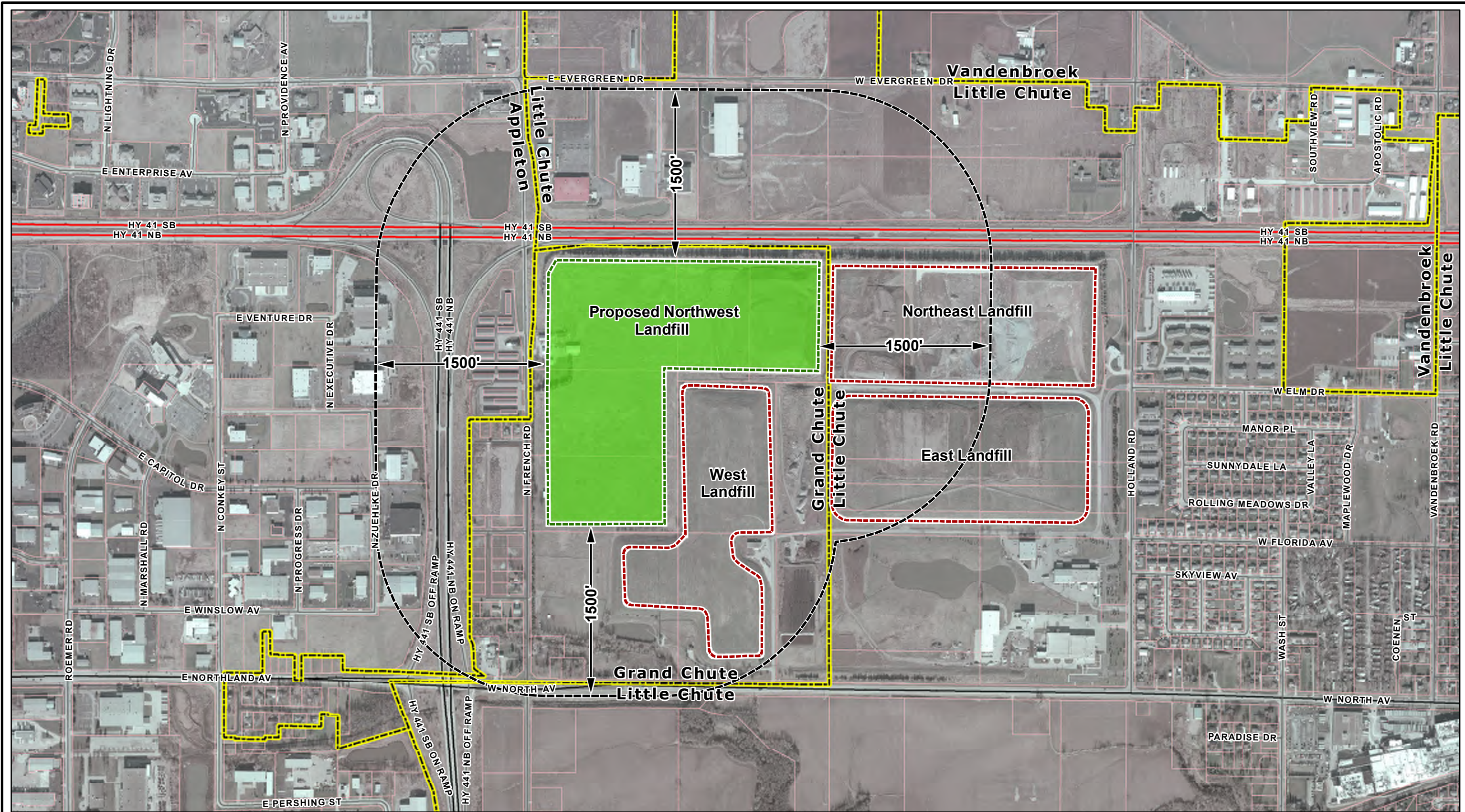
The Outagamie County property would have additional long-term airspace capacity if a portion of the West Landfill could be relocated into the Northwest Landfill. An estimated 1.8 million cy of waste would need to be relocated (Figure 5) to provide an additional ~39 acres of liner expansion to the Northwest Landfill. It is estimated the expansion would provide an additional potential airspace capacity of ~13 million cy (Figures 2 through 6). The net additional airspace would be 13 million cy minus the 1.8 million cy of relocated airspace or 11.2 million cy.

Summary

There is potential airspace available on the Outagamie County Landfill property based on this preliminary engineering analysis. A Northwest Landfill could provide up to 15 years of site life (based on current filling rates). In addition, relocation of waste in the West Landfill could extend the site life of the Northwest Landfill by an additional 15 years (based on current filling rates).

All estimated potential capacities are contingent on the ability to obtain the necessary permits and approvals.

Attachments



NOTES:

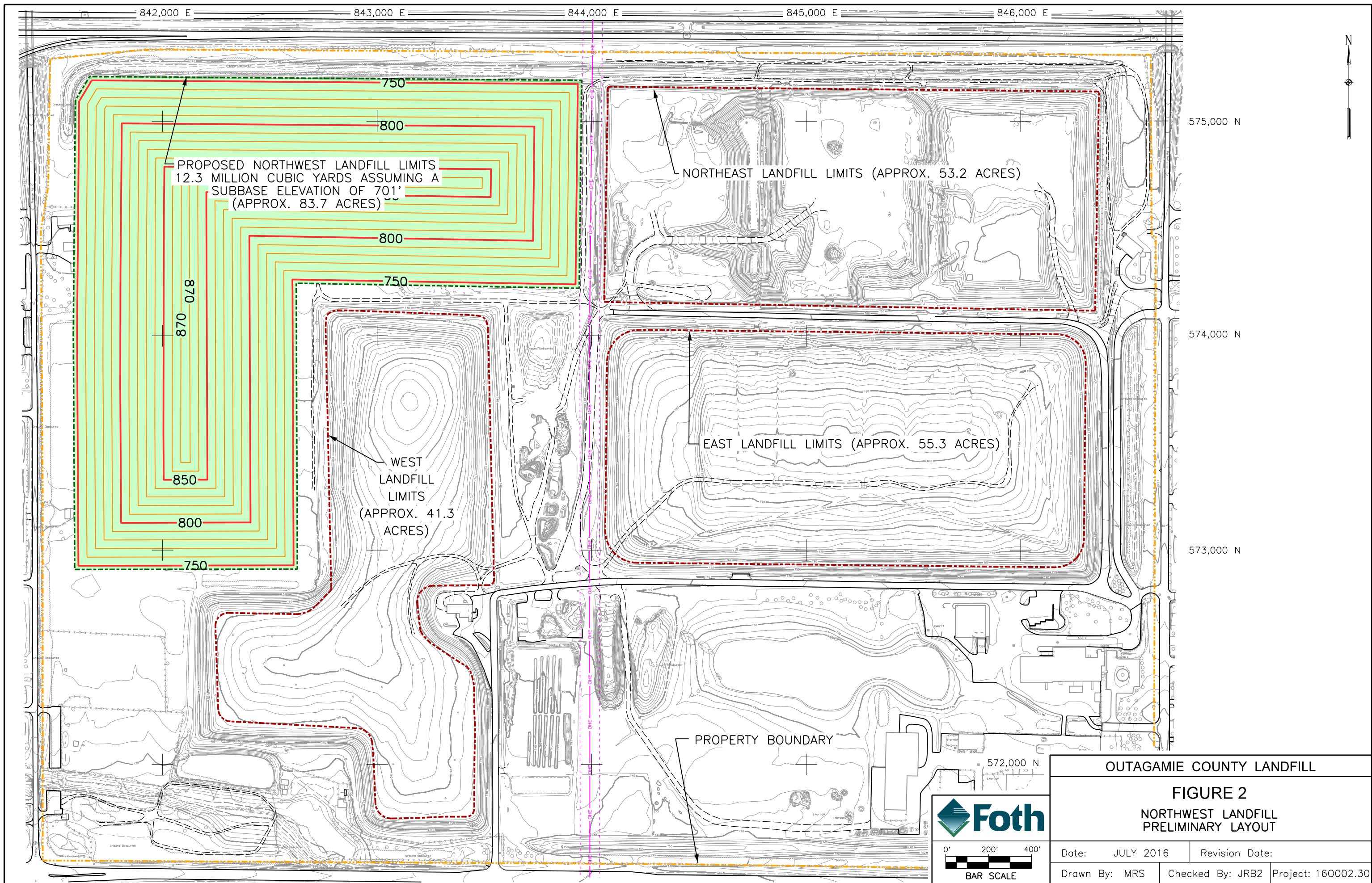
1. 6" resolution air photo acquired on 11/28/15.
2. Tax parcel, municipal boundary and street data from Outagamie County Land Information.
3. Horizontal coordinate system is NAD 1983 Outagamie County Coordinate System, units in feet.

LEGEND

- | | |
|-------------------------------------|--------------------|
| Proposed Landfill | Interstate Highway |
| Existing Landfill | State Highway |
| 1500' Radius from Proposed Landfill | County Highway |
| Tax Parcels | Local Streets |
| Municipal Boundary | |

0 400 800 Feet

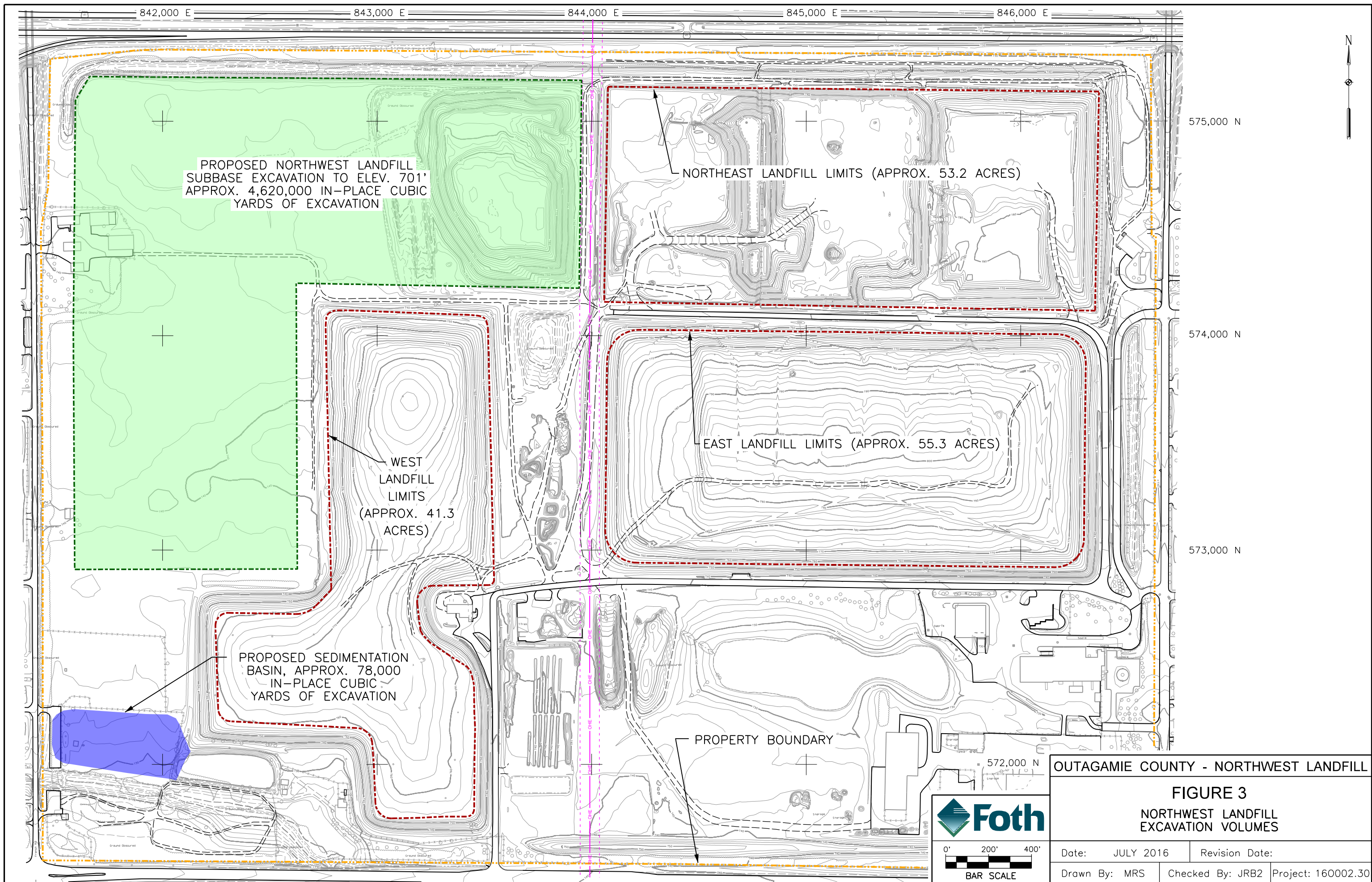
OUTAGAMIE COUNTY - NORTHWEST LANDFILL		
FIGURE 1 PROPOSED NORTHWEST LANDFILL WITH MUNICIPAL BOUNDARIES OUTAGAMIE COUNTY, WISCONSIN		
Date: JULY 2016	Revision Date:	
Drawn By: BJW1	Checked By: MRS	Project: 16O002.30



OUTAGAMIE COUNTY LANDFILL

FIGURE 2
NORTHWEST LANDFILL
PRELIMINARY LAYOUT

Date:	JULY 2016	Revision Date:	
Drawn By:	MRS	Checked By:	JRB2
		Project:	160002.30



PROPOSED NORTHWEST LANDFILL
SUBBASE EXCAVATION TO ELEV. 701'
APPROX. 4,620,000 IN-PLACE CUBIC
YARDS OF EXCAVATION

NORTHEAST LANDFILL LIMITS (APPROX. 53.2 ACRES)

EAST LANDFILL LIMITS (APPROX. 55.3 ACRES)

WEST
LANDFILL
LIMITS
(APPROX. 41.3
ACRES)

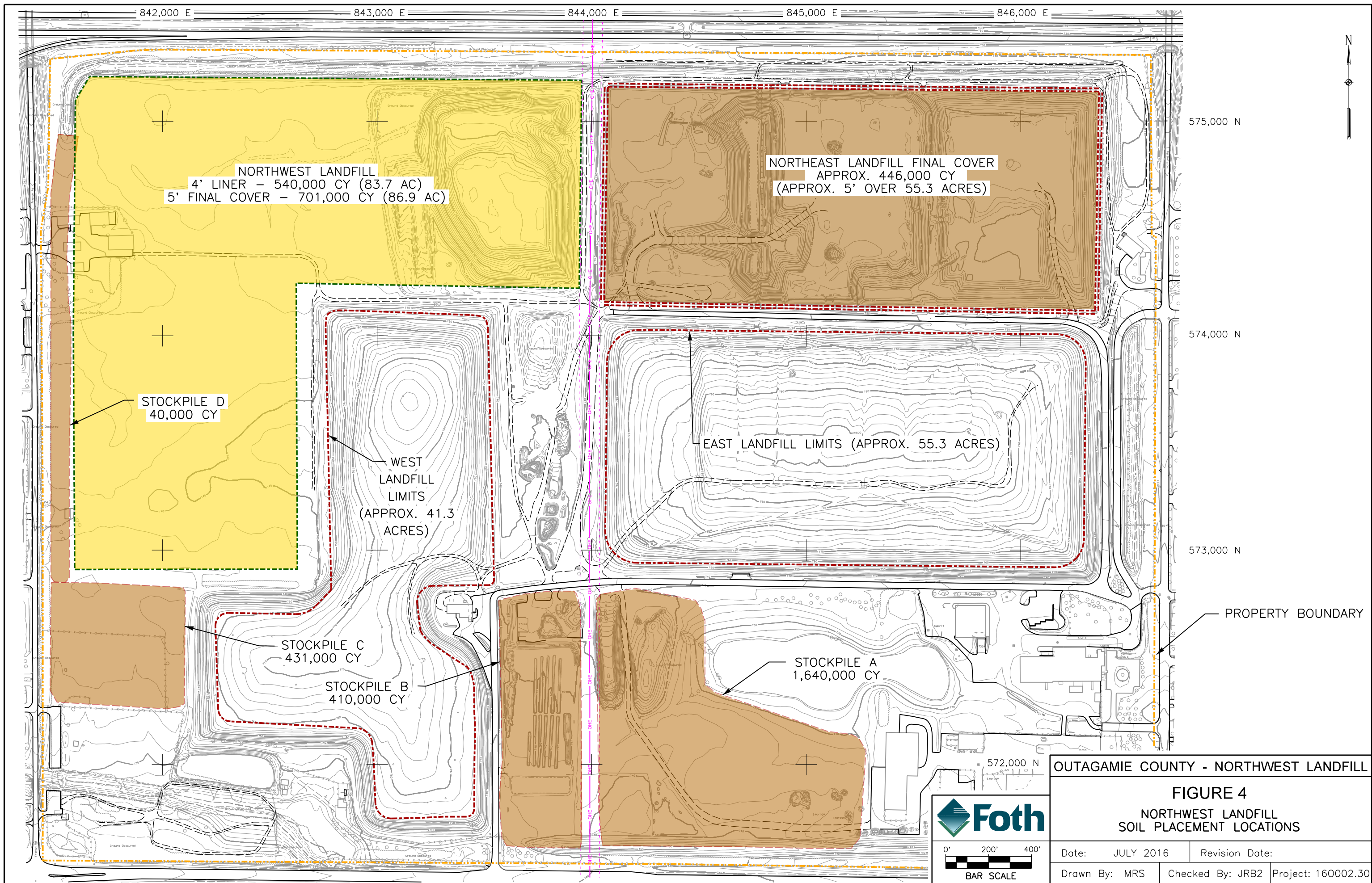
PROPOSED SEDIMENTATION
BASIN, APPROX. 78,000
IN-PLACE CUBIC
YARDS OF EXCAVATION

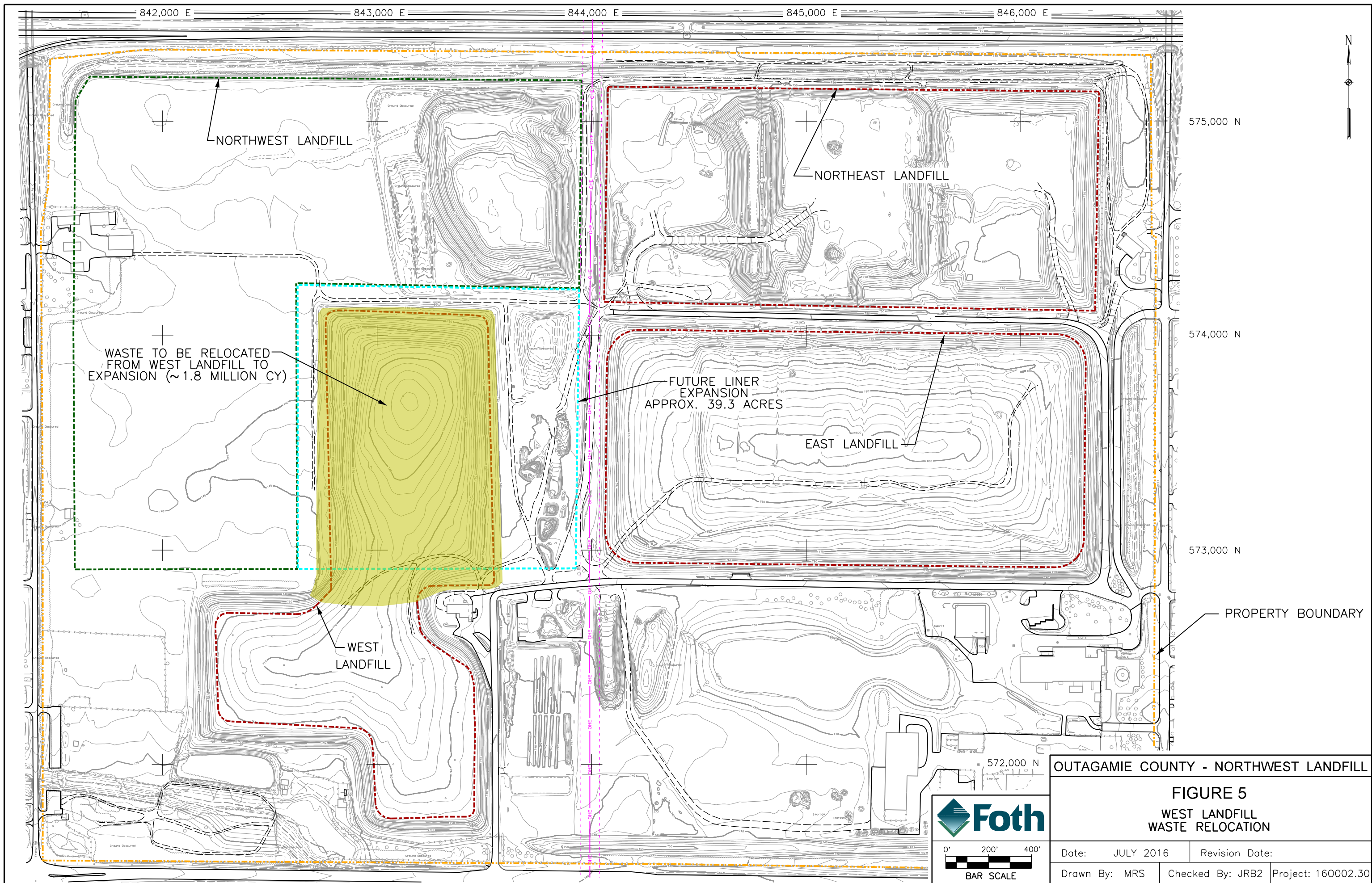
PROPERTY BOUNDARY

OUTAGAMIE COUNTY - NORTHWEST LANDFILL

FIGURE 3
NORTHWEST LANDFILL
EXCAVATION VOLUMES

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OUTAGAMIE COUNTY - NORTHWEST LANDFILL

FIGURE 5
WEST LANDFILL
WASTE RELOCATION

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