

Map Unit Symbol	Map Unit Name
1029	Pits, Gravel
12C	Emmert Gravelly Loamy Coarse Sand, 3 to 12 Percent Slopes
12D	Emmert Gravelly Loamy Coarse Sand, 15 to 25 Percent Slopes
153B	Santiago Silt Loam, 2 to 6 Percent Slopes
153C	Santiago Silt Loam, 6 to 15 Percent Slopes
177B	Gotham Loamy Sand, 1 to 6 Percent Slopes
1820F	Mahtomedi Variant-Rock Outcrop Complex, 25 to 60 Percent Slopes
49B	Antigo Silt Loam, 2 to 6 Percent Slope
49C	Antigo Silt Loam, 6 to 12 Percent Slope

Legend

- Zavoral Property Boundary
- Mining and Reclamation Limit
- Proposed Access Road

0 500 Feet

N

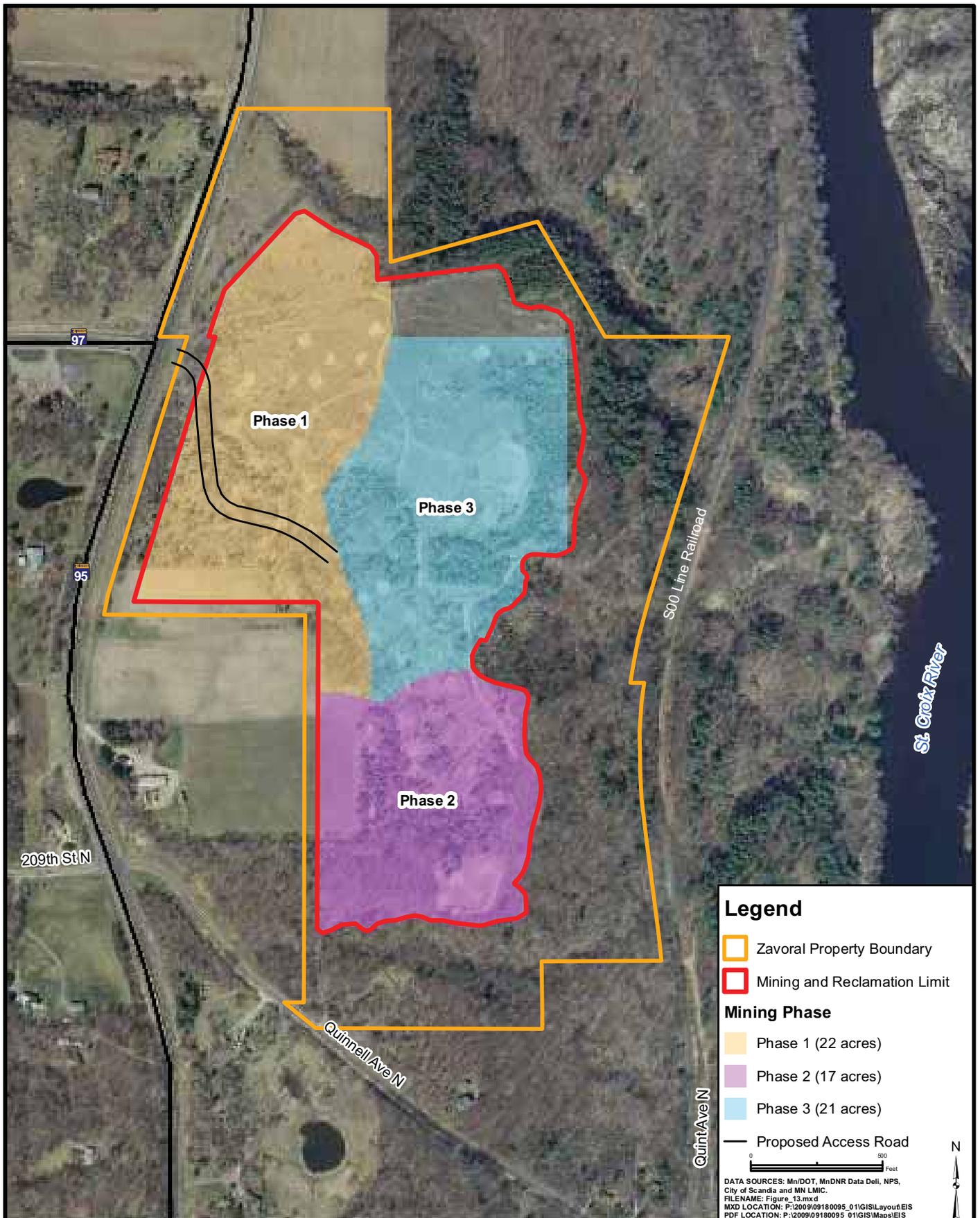
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FIGURE 12
ZAVORAL SITE SOIL MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA



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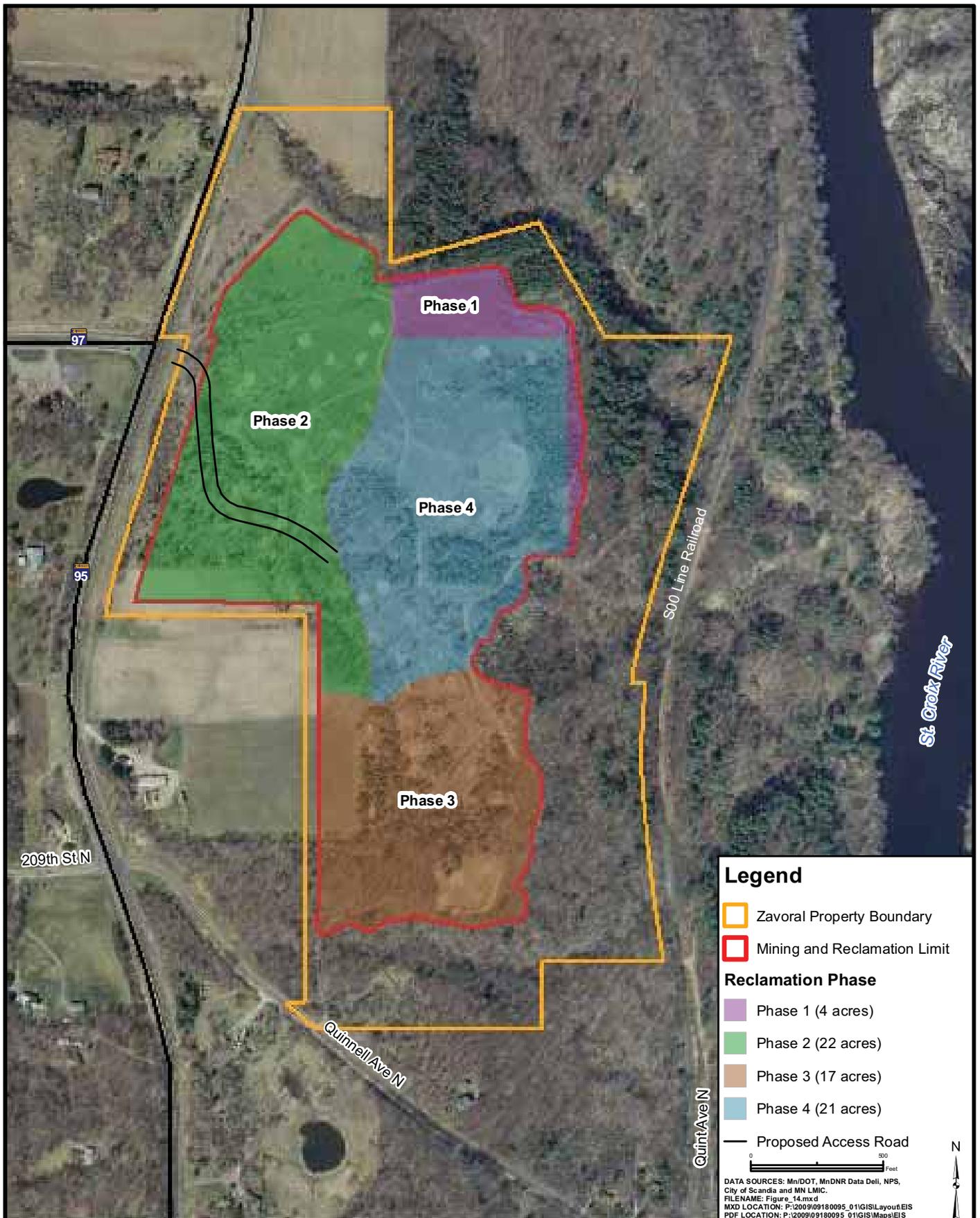
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FIGURE 13
MINING PHASES MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA

NOV. 2011

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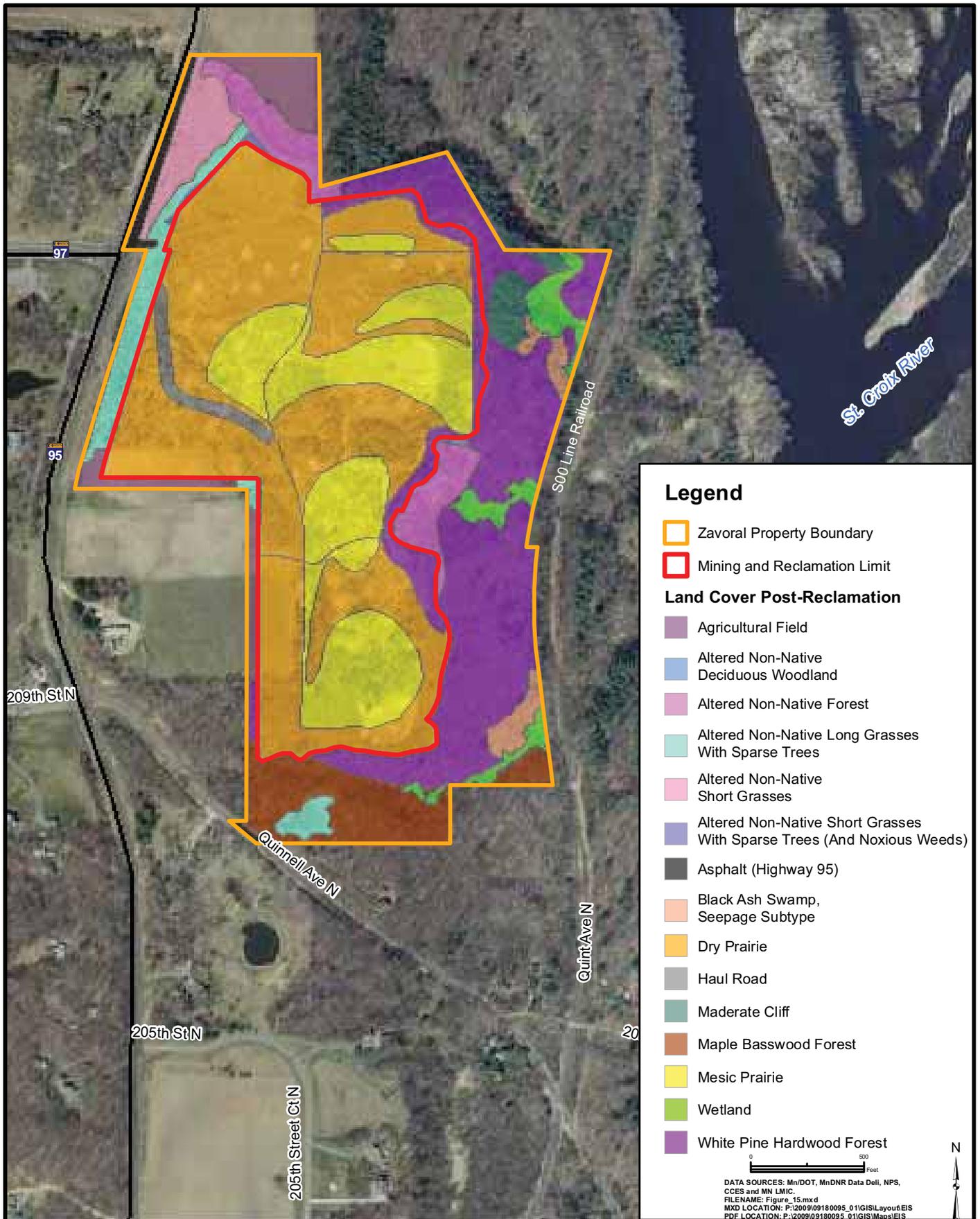
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FIGURE 14
RECLAMATION PHASES MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA

NOV. 2011

60210154



Legend

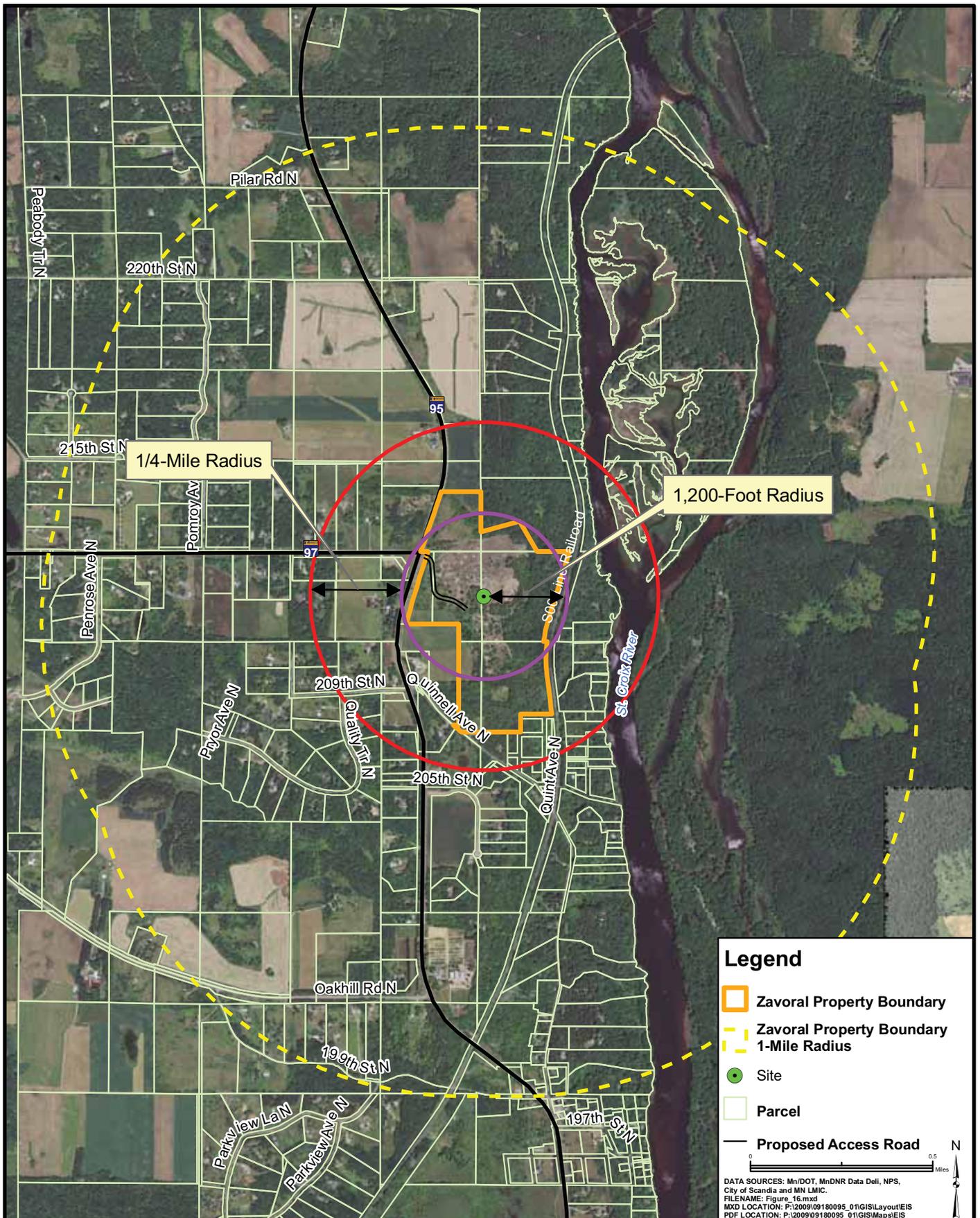
- Zavoral Property Boundary
 - Mining and Reclamation Limit
- Land Cover Post-Reclamation**
- Agricultural Field
 - Altered Non-Native Deciduous Woodland
 - Altered Non-Native Forest
 - Altered Non-Native Long Grasses With Sparse Trees
 - Altered Non-Native Short Grasses
 - Altered Non-Native Short Grasses With Sparse Trees (And Noxious Weeds)
 - Asphalt (Highway 95)
 - Black Ash Swamp, Seepage Subtype
 - Dry Prairie
 - Haul Road
 - Moderate Cliff
 - Maple Basswood Forest
 - Mesic Prairie
 - Wetland
 - White Pine Hardwood Forest

0 500 Feet
 DATA SOURCES: Mn/DOT, MnDNR Data Deli, NPS, CCES and MN LMIC.
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FIGURE 15
POST-RECLAMATION LAND COVER MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA



Prepared By:
AZCOM

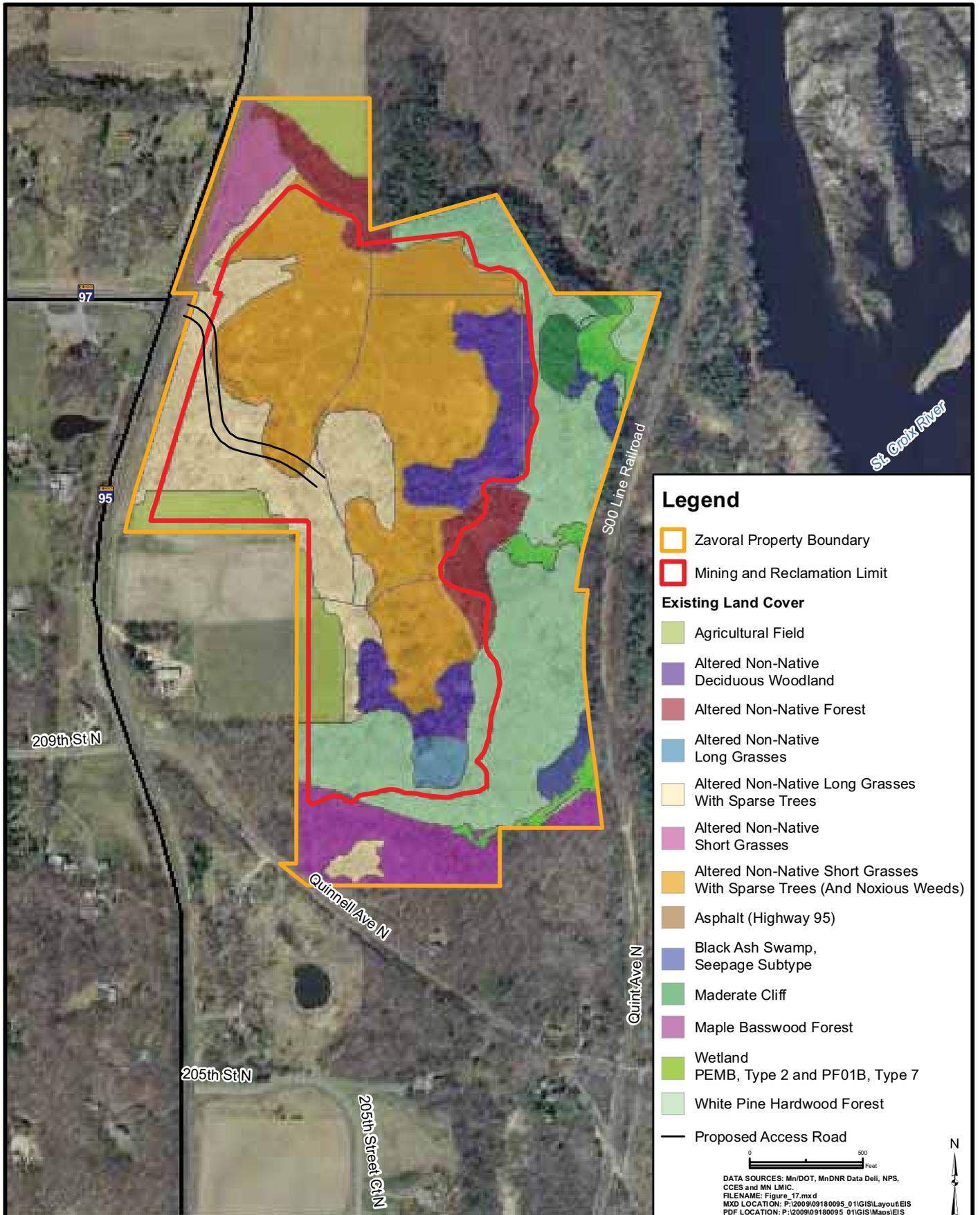
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FIGURE 16
PARCEL MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA

NOV. 2011

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Legend

- Zavoral Property Boundary
- Mining and Reclamation Limit
- Existing Land Cover**
- Agricultural Field
- Altered Non-Native Deciduous Woodland
- Altered Non-Native Forest
- Altered Non-Native Long Grasses
- Altered Non-Native Long Grasses With Sparse Trees
- Altered Non-Native Short Grasses
- Altered Non-Native Short Grasses With Sparse Trees (And Noxious Weeds)
- Asphalt (Highway 95)
- Black Ash Swamp, Seepage Subtype
- Moderate Cliff
- Maple Basswood Forest
- Wetland PEMB, Type 2 and PF01B, Type 7
- White Pine Hardwood Forest
- Proposed Access Road

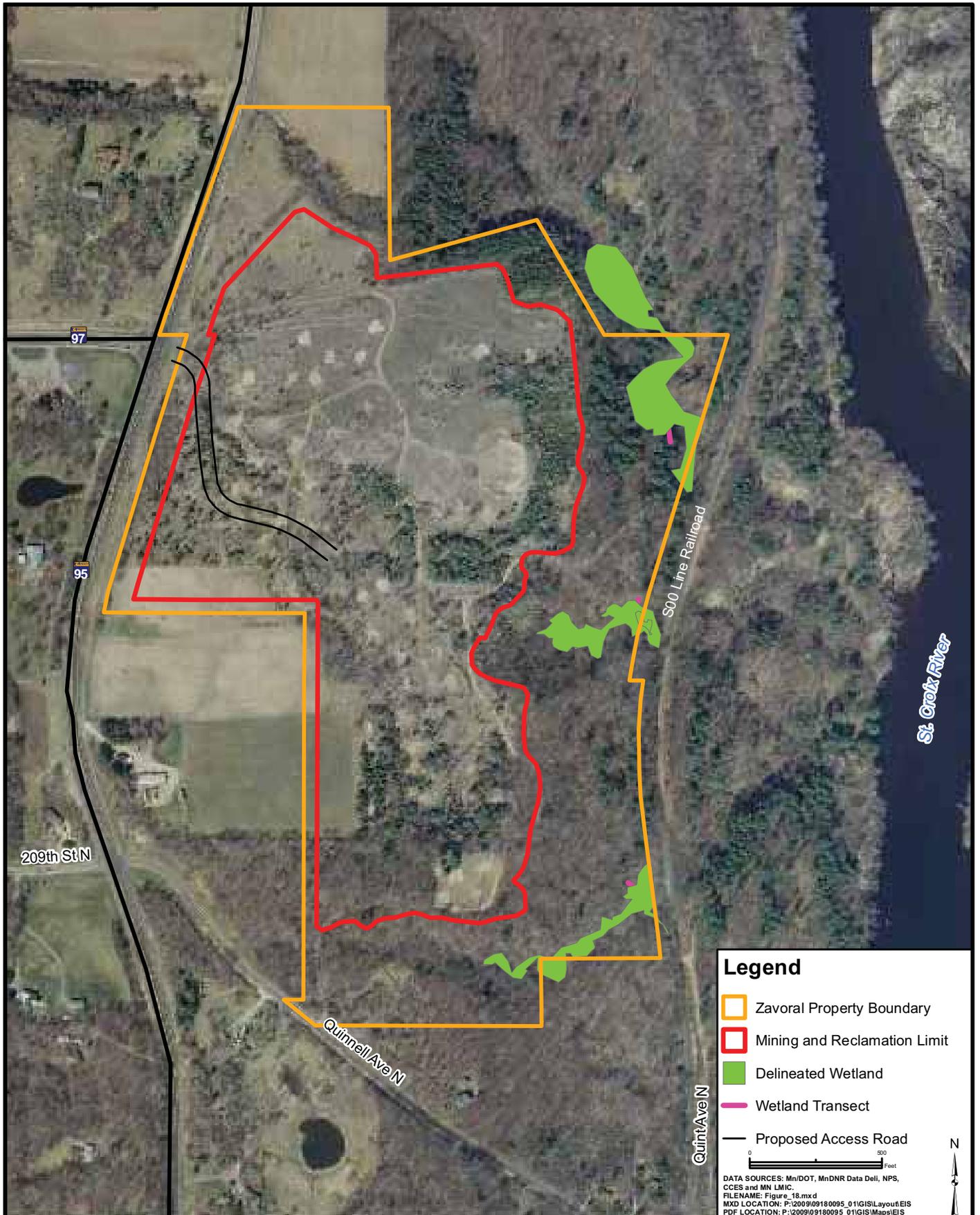
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**FIGURE 17
 EXISTING LAND COVER MAP**

ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA



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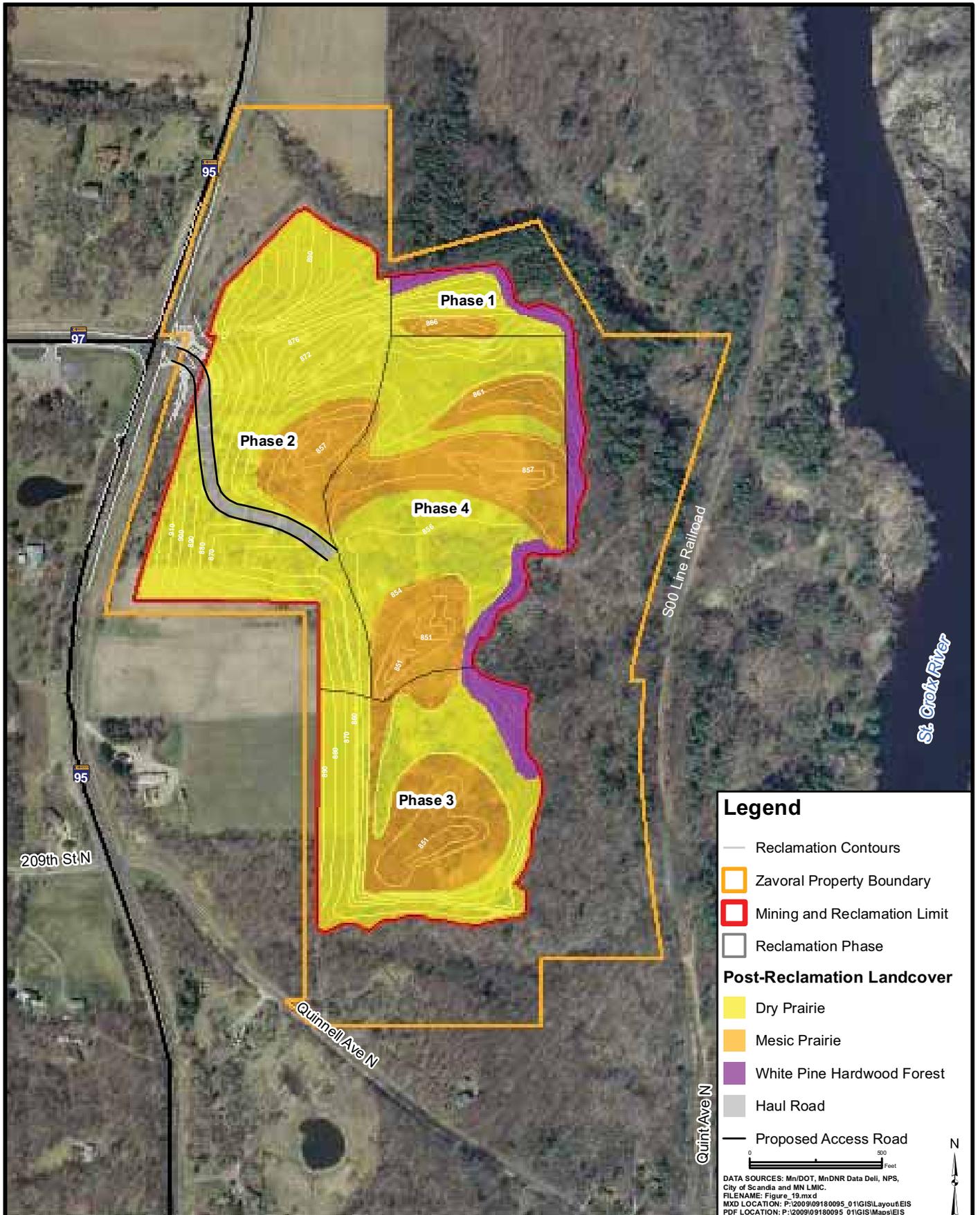
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FIGURE 18
DELINEATED WETLAND MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA

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Legend

- Reclamation Contours
- ▭ Zavoral Property Boundary
- ▭ Mining and Reclamation Limit
- ▭ Reclamation Phase

Post-Reclamation Landcover

- Dry Prairie
- Mesic Prairie
- White Pine Hardwood Forest
- Haul Road
- Proposed Access Road

0 50 Feet

DATA SOURCES: Mn/DOT, MnDNR Data Deli, NPS, City of Scandia and MN LMC.
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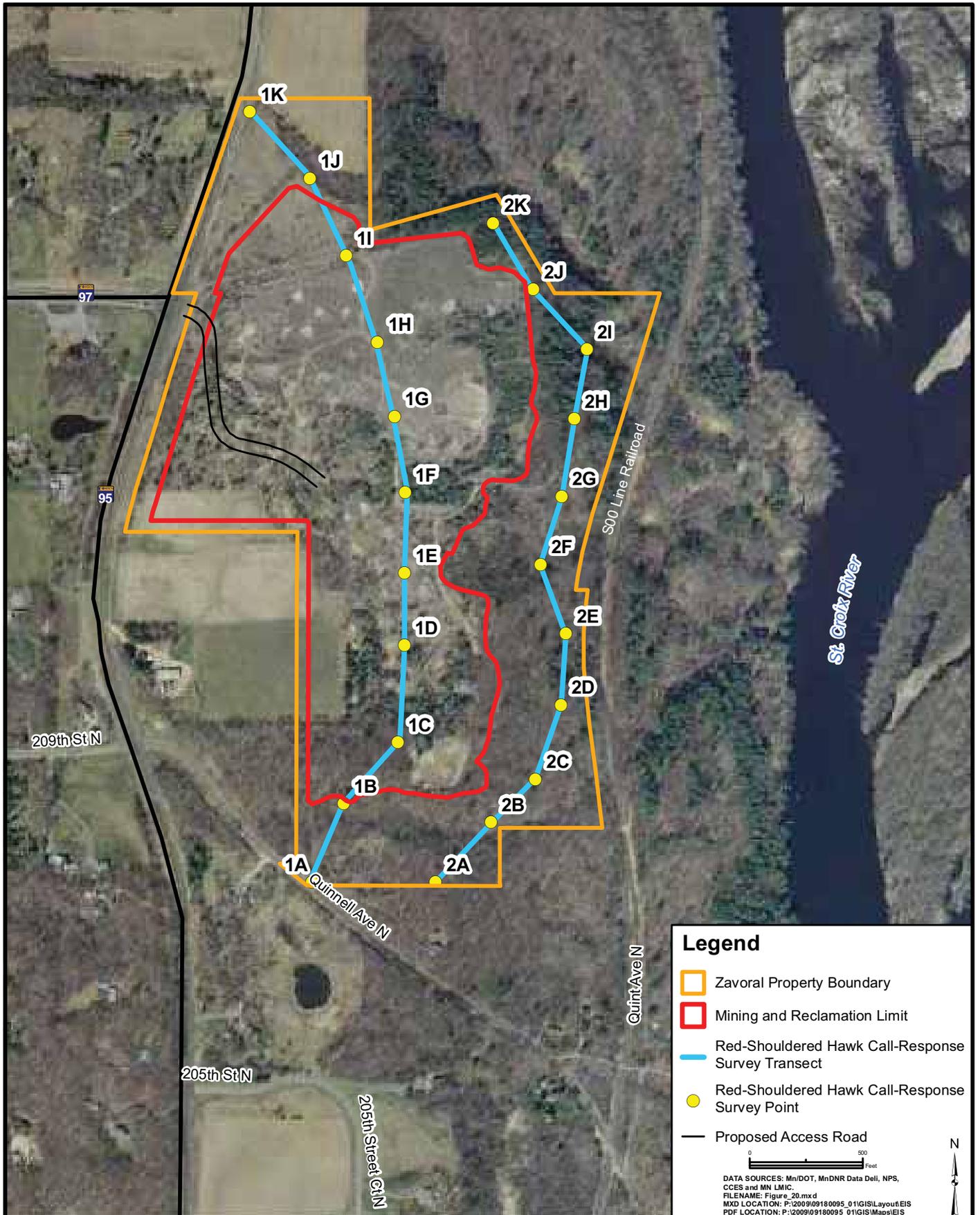
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FIGURE 19
ZAVORAL SITE 64-ACRE MINING AND RECLAMATION
AREA POST-RECLAMATION LAND COVER
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA

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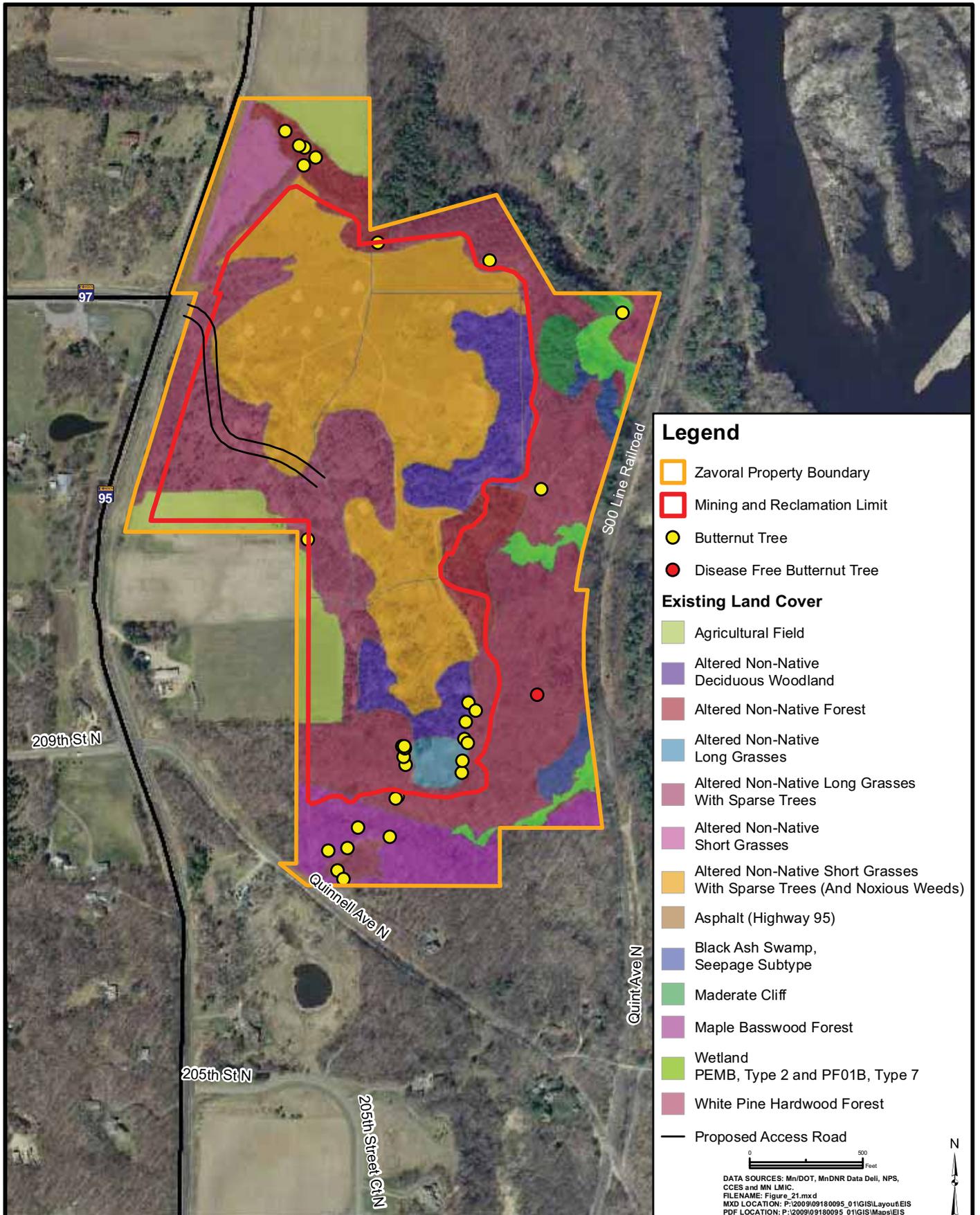
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FIGURE 20
RED-SHOULDERED HAWK SURVEY MAP
 ZAVORAL MINING AND RECLAMATION PROJECT
 SCANDIA, MINNESOTA

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Legend

- Zavoral Property Boundary
- Mining and Reclamation Limit
- Butternut Tree
- Disease Free Butternut Tree

Existing Land Cover

- Agricultural Field
- Altered Non-Native Deciduous Woodland
- Altered Non-Native Forest
- Altered Non-Native Long Grasses
- Altered Non-Native Long Grasses With Sparse Trees
- Altered Non-Native Short Grasses
- Altered Non-Native Short Grasses With Sparse Trees (And Noxious Weeds)
- Asphalt (Highway 95)
- Black Ash Swamp, Seepage Subtype
- Maderate Cliff
- Maple Basswood Forest
- Wetland
PEMB, Type 2 and PF01B, Type 7
- White Pine Hardwood Forest
- Proposed Access Road

0 500 Feet

DATA SOURCES: Mn/DOT, MnDNR Data Deli, NPS, CDES and MN LMIC.
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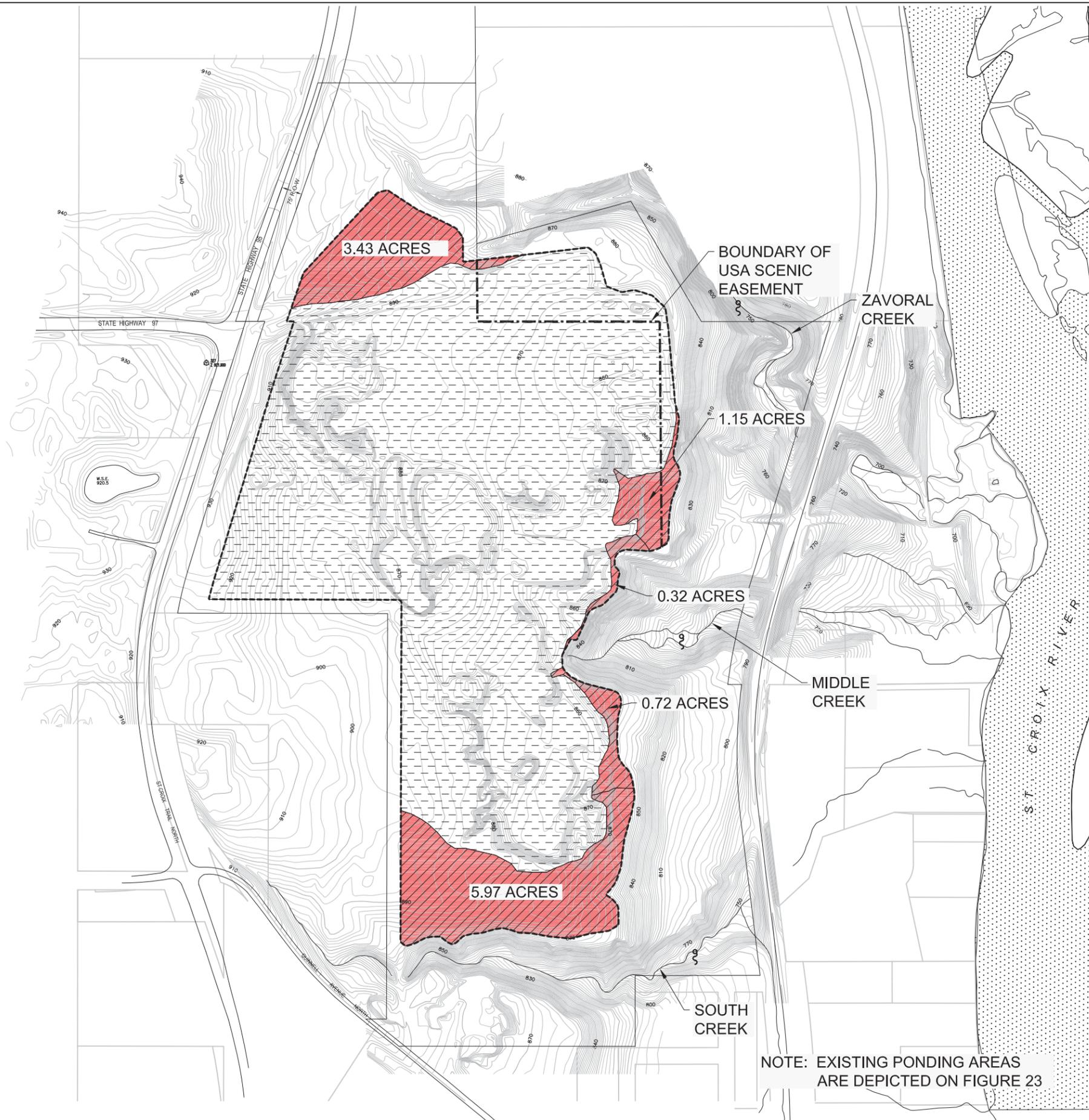
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FIGURE 21
BUTTERNUT TREE LOCATION MAP

ZAVORAL MINING AND RECLAMATION PROJECT
SCANDIA, MINNESOTA

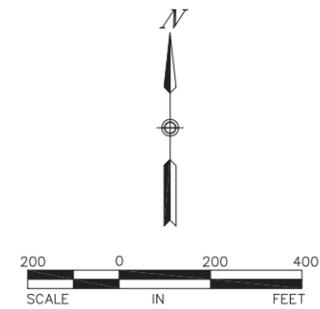
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NOTE: EXISTING PONDING AREAS ARE DEPICTED ON FIGURE 23

LEGEND

-  MINING AND RESTORATION AREA BOUNDARY
-  WATERSHED AREA DRAINING OFF-SITE
-  WATERSHED AREA INTERNALLY DRAINED (RUNOFF TRAPPED IN ON-SITE DEPRESSIONS)
-  APPROXIMATE LOCATION OF SPRING



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**EXISTING ZAVORAL SITE WATERSHED BOUNDARIES
SCANDIA, MINNESOTA**

Drawn :	KLM 8/9/2011
Checked:	RAC 8/9/2011
Approved:	
PROJECT NUMBER	9180095.02
FIGURE NUMBER	22