



**STATUS REPORT**  
**EAST RANGE WATER PROJECT**  
**TASK 2 & TASK 3**  
**EAST RANGE WATER BOARD**  
**CITY OF AURORA & TOWN OF WHITE**  
**SEH Project No. 159723**

DATE: Friday, May 13, 2022

**DISCUSSION ITEMS**

The following provides a brief discussion of the project status to date. The items in **BOLD** are new since the 4/14/2022 status report.

**DECISIONS AND/OR DIRECTION FROM THE ERWB AT THIS MEETING:**

1. **Request Town of White to provide guidance for a response to 2.b.4. below.**
2. **If SEH should delineate the area of tree cutting to assist the ERWB (Town of White) prior to the June 1 deadline?**
3. **Review and direction on SEH's Public Outreach Plan (Item 11).**

1) Task 2 – Final Design

a) WTP and Raw and Finished Water Main:

1. **Received MDH plan approval letter, dated April 15, 2022, for these two (2) projects.**

b) Raw Water Intake Building:

1. **Two (2) sets of 100% signed construction documents for the Raw Water Intake and Pump Station (RWPS) were submitted to the MDH on Tuesday, May 10, 2022.**
2. **Communications with Chad Kolstad indicate the project approval date will be set to match the April 15, 2022 date.**

c) Project Bid Dates:

1. For the MDH submittals, the proposed project bid dates are just placeholders.
2. SEH also understands that the final determination for project schedule and bid dates will be made after the funding matters are settled.

2) Appropriations Permit

a) SEH has submitted the draft the permit application.

b) 12/17/2021 SEH received the following questions and information request from the DNR that SEH will respond to following discussions with the ERWB:

1. Amount of groundwater to be appropriated for constructing the caisson/water intake. Include dewatering details, such as proposed receiving water (will it be pumped directly into the Embarrass Pit?). SEH will respond in the final response packet by sharing the dewatering specification from the Raw Water Intake documents.
2. Provide evidence of ownership, or control of, or a license to use, the riparian property where the water intake will be located. SEH will provide a copy of the SLC lease agreement in the final response packet once it is finalized with the County.
3. Water Supply Contingency Plans (or other agreements) for the City of Biwabik and Giants Ridge that address potential impacts to their existing water supplies and mitigation for impacts. SEH still needs to update the draft contingency plan agreements for the City of Biwabik and the IRRRB.
4. Details regarding impacts to the existing public access, such as if the plan is to alter/close the access and inform the public of changes. SEH would like to hear from the Town of White on a response that we can include in the final response packet.
5. Changes that would be needed to the system if other municipalities are added on to the same system. SEH will respond in the final response packet by stating: There will be no physical changes needed to the Raw Water Pump Station should Biwabik and/or Hoyt Lakes request service in the future. The Raw Water Pump Station and Intake have been physically sized to support service to Biwabik and Hoyt Lakes.
6. SEH will assemble the collection of responses in one (1) document as soon as all items are addressed.

- 3) Environmental Review:
  - a) Minnesota State Historic Preservation Office (SHPO):
    1. **Received draft report from Duluth Archaeology Center. L.L.C. for the Phase Ia archaeological assessment. The draft report recommends further a Phase I archaeological investigation.**
    2. **SEH is not certain that a further Phase I archaeological investigation will encounter anything of archaeological significance and responded to Duluth Archaeology Center. L.L.C. with the following opinions for discussion:**
      - (1) **SEH Notes: Virtually all of the water main work is on public ROW that has been previously disturbed for construction of the roadways and utilities that lie in those ROWs. This is inclusive of all proposed water main work including that which passes through Pineville, on Lake Mine Road, on HWY 135 and on Scenic Acres Drive, south of HWY 135.**
      - (2) **SEH Notes: The site of the proposed Water Treatment Plant is located on the City of Aurora Public Works property that has seen a great deal of disturbance and manipulation over the years and not likely to possess undetected archaeological features.**
      - (3) **SEH Notes: The Raw Water Intake and Pump Station is proposed to be constructed on the north side of Lake Mine, east of the boat landing.**
        - i. **SEH Notes: Soil borings taken at the location determined there to be nine (9) feet of fill overtop of glacially deposited sands and gravels that extended to the 90-foot termination depth of the boring.**
        - ii. **SEH Notes: With that amount of fill being applied across the area, a Phase I archaeological investigation will not be able to pick up on archaeologically significant elements.**
      - (4) **SEH Notes: No portion of the proposed work will extend into the historic Embarrass River delineation.**
    3. **SEH's request for edits to draft report:**
      - (1) **SEH would like to see the contents of the report edited to include research on the historic mining activities associated with the Embarrass Mine.**
      - (2) **SEH would like to see a discussion provided in the report prior to the Recommendations Section that describes IF further investigations were to be made, just what could be gained if a Phase I archaeological investigation were performed on all of these areas that have previously been, and quite significantly, disturbed. Included in these discussions should be descriptions of the actual site survey activities that would be performed as part of a Phase I archaeological investigation, and finally**
      - (3) **SEH would like to see the recommendations changed to note that a further Phase I archaeological investigation would be an inefficient expense of time and money and would more closely resemble an effort of "looking for a needle in a haystack".**
      - (4) **SEH acknowledged that of course, through the execution of the project, should indications of burials are observed during any activities, the Minnesota Office of the State Archaeologist must be notified at 612/725-2411 or 612/725-2729. Local law enforcement must also be notified.**
    4. **Duluth Archaeology Center. L.L.C. responded to these comments**
      - (1) **The final report will clarify the lack of potential for buried artifacts in areas that were heavily disturbed for mining (like the 9' of fill at the pumping station area).**
      - (2) **The final report will be more specific about the Phase I archaeological investigation survey recommended to include a pedestrian walkover, near the south end of the water line in the Pineville area as apparently there's reason to think burial mounds might be present in that area because they're known from areas about that distance from other portions of the historic Embarrass Riverbed. SEH indicated again that this area will have the pipelines constructed within the roadways and so, no mounds exist.**

- (3) **The final report is forth coming.**
  - (4) **SEH requested that Duluth Archaeology Center. L.L.C. provide a proposal, concurrent with the production of the final report, that identifies:**
    - i. **What will the work will entail,**
    - ii. **What will it cost, and**
    - iii. **How soon can she get it completed.**
  - (5) Once the report is complete, it will be submitted to SHPO to complete the entire Environmental Review to the satisfaction of the MDH for DRWF funding. Response from SHPO is expected to take 2-3 weeks after submittal.
- b) MPCA:
1. The ERWB received a response letter on 1/3/2022. The letter provides guidance for storm water runoff that SEH is following in our preparing the project SWMPP.
  2. No further comments are needed.
- c) US Fish and Wildlife:
1. SEH received email comments on 12/22/2021.
  2. According to the comments received, SEH was directed to utilize the USFW Information for Planning and Consultation (IPaC) system to create an “official species list” of federally listed species and designated critical habitat that may be impacted by this project. Specifically, for the:
    - (1) Rusty patched bumble bee, and the
    - (2) Northern Long Eared Bat (NLEB):
  3. SEH completed this response on 1/11/2022.
- d) Once all comments are received, SEH will prepare a summary letter to the MDH indicating the Environmental Review is complete.
- 4) Building Official Review:
- a) SEH submitted the 100% signed construction documents for the WTP to the BO on 2/11/2022.
  - b) SEH received a review letter from the BO on 2/1/2022 indicating approval.
- 5) MDH Communications and Review:
- a) See Item 1 above.
- 6) Project Schedule
- a) MDH Plan approval: Anticipated around May 13, 2022.
  - b) MDH approval of Environmental Review: June 15, 2022.
  - c) Final Environmental Review posting to Newspaper and close of comment period: July 15, 2022.
  - d) Task 3 - Permitting and Regulatory Approvals March 2020 – August 2022
  - e) Task 4 - Bidding & Project Award Services as the ERWB may direct
- 7) Scenic Acres:
- a) Service agreement and connection fees between East Range Water Board and ScenicAcres yet to be determined.
  - b) **SEH will respond to the Scenic Acres’ question on the capacity to move water supplies between Aurora and Biwabik in each direction.**
- 8) Pineville and Scenic Acres Water Main
- a) An easement was presented to Rosa for the Scenic Acres water main section in the vicinity of the intersection of HWY 135 and Scenic Acres Road. No response back, yet. A copy of this easement agreement was conveyed to the COA/TOW this past week.
- 9) Tech Meetings:
- a) SEH and COA/TOW plant operations staff have not met since the 1/11/2022 meeting.
  - b) Another Tech Meeting will not be scheduled until the raw water intake documents are complete

and we have response back from the MDH.

10) Tree Cutting Needs:

- a) Tree cutting must be conducted outside of the June 1 – August 15 time frame due to the potential presence of the Northern Long Eared Bat long-eared bat.
- b) That means if the ERWB plans to move forward with construction of the water project this summer, all tree cutting should be completed before June 1.
- c) SEH will assist the ERWB with delineation of the area where construction is likely to impact trees.
- d) The ERWB should plan to move forward with the tree cutting before June 1, 2022. The trees do not have to be hauled out – just cut down.
- e) **The Town of White received documents on 5/6/2022 to sign for an agreement with St. Louis County to cut trees down in the area of the project.**

11) East Range Public Outreach

- a) **SEH awaiting direction from the ERWBD.**

END.

**LETTER REPORT:  
PHASE IA PRE-FIELD ASSESSMENT OF EAST RANGE JOINT WATER  
TREATMENT SYSTEM, CITIES OF AURORA AND WHITE, ST. LOUIS COUNTY,  
MINNESOTA**

**Susan C. Mulholland**

**April 28, 2022**

**Duluth Archaeology Center Report No. 22-11**

**INTRODUCTION**

A Phase IA pre-field assessment was requested for the East Range Joint Water Treatment System (ERJWTS), consisting of a treatment plant, pump station, and water main in St. Louis County, Minnesota (Figure 1). The project is located in T58N R15W sections 4-7 and T58N R16W section 12 in the City of Aurora and the Town of White (Figure 2). The project includes 1200 feet of water main along existing roads and 3.75 acres for the water treatment plant (Figure 3). The general area topography is a mining landscape associated with the Embarrass Mine and includes the townsite associated with the Bangor and Embarrass Mines.

Pre-field assessment includes a request to the State Historic Preservation Office (MnSHPO) for review of the databases for previously recorded archaeological sites and historic structures. The site database at the Office of the State Archaeologist (OSA) was also reviewed for recorded archaeological sites in the vicinity. In addition, historic aerial photographs and historic land survey records were reviewed for indications of unrecorded historic properties. Topography and water features were reviewed as well for potential for unrecorded archaeological sites.

**REVIEW OF RECORDED HISTORIC PROPERTIES**

No verified archaeological sites were previously recorded within the project boundaries, although the project is within an unverified site (Figure 4). Site 21SLIt is the “ghost town” of Pineville located in T58N R15W section 6. The site was not field verified, although the current streets within Pineville are assumed to be remnants from the historic townsite. The townsite lies between the Bangor and Embarrass Mines and was originally called Cotton (Lamppa 1962:78-109). It was platted in the early twentieth century; a few people still lived there in 1962. Early settlement was associated with development of the Bangor Mine to the west (1910-1918), as well as the short-

lived Syracuse Mine (with very deep deposits). In the 1940s the Embarrass River was diverted to the west and the Embarrass Mine (now Embarrass Mine Lake) excavated for the World War II effort (Lamppa 2004:224). The Embarrass Mine appears to be located on or near the earlier Syracuse Mine, subsuming those workings.

Pre-Contact archaeological sites recorded within the general vicinity are located on the shores of Esquagama Lake to the south (Table 1). All three sites are Native American mortuary sites with either human remains or surface mound features. Site 21SL0168 consists of remains from a single individual accidentally uncovered next to a house at the south side of the lake; the materials were reburied. Site 21SL0393 is a single burial mound maintained next to CSAH 4 on the east side of the lake. Site 21SL0456 consists of two burial mounds about 1/8 mile apart, between the south side of Esquagama and Little Esquagama Lakes.

**Table 1. Recorded Archaeological Sites in General Area**

<b>SITE # / NAME</b>	<b>TYPE</b>	<b>LOCATION</b>
21SL0168 / Esquagama Lake	single burial	58 / 16 / 34
21SL0393 / Esquagama Lake II	burial mound (1)	58 / 16 / 35
21SL0456 / Esquagama Lake III	burial mounds (2)	58 / 16 / 34

The mid-1800s General Land Office (GLO) survey notes ([www.glorerecords.blm.gov](http://www.glorerecords.blm.gov)) were compiled into a series of maps that show trails/roads as well as structures/villages/homesteads at the time of the survey. The project area is in the vicinity of a major trail route (Trygg 1966:sheets 17, 18). The Duluth-Vermilion Trail is a travel/transportation route through the area, passing near the major lakes in this chain on the Embarrass River: Esquagama, Embarrass, Wynne-Sabin (Figures 5, 6). The trail crossed the Embarrass River between Embarrass and Wynne Lakes, in the vicinity of the current Embarrass Mine Lake (the former Embarrass Mine pit). An early dam is also reported on the river, possibly for logging activities (Lamppa 1962:86). A bridge on the dam was “part of the old road to Aurora.” It is not know if the Duluth-Vermilion Trail crossed on the same spot or elsewhere on this portion of the river.

Historic accounts of early water transportation routes indicate that the Embarrass River in the Wynne/Sabin Lake area had a portage route to the Pike River to the west/northwest (Luukkonen

2006). The Embarrass River is part of the St. Louis River drainage, connecting to Lake Superior at the east and via the Savannah Portage to the Mississippi River through Big Sandy Lake (Luukkonen 2006). The Pike River drains north into the Vermilion Lake complex and ultimately Crane Lake on the Border Route through the Vermilion River. The connection between three major water drainages is at the Height of Land Portage (21SLal) north of Sabin Lake. The potential for unrecorded archaeological sites along the Embarrass River and the lakes is very high as a consequence of the Duluth-Vermilion Trail.

The oldest historic aerial photographs on the MnDNR webpage are the 1940/1941 set ([www.dnr.state.mn.us/maps/landview/index.html](http://www.dnr.state.mn.us/maps/landview/index.html)). Pineville is shown as settled in place by July 4, 1940; the Embarrass River is within its original channel (Figure 7). The original stream route is still present in 1941 but by 1948, the river has been rerouted through a diversion channel to the northwest (Figure 8). The Embarrass Mine is then well developed and visible in the area between Embarrass and Wynne Lakes, completely disturbing any remnants of a logging dam/road bridge across the original Embarrass River (and the earlier Duluth-Vermilion Trail) as well as the earlier Syracuse Mine.

## **REVIEW OF TOPOGRAPHY AND WATERWAYS**

The project is partially within or adjacent to the original Embarrass River valley including Embarrass Lake in the south and Wynne Lake in the north. This segment of the Embarrass River drainage has good potential for unrecorded archaeological sites including burial mounds (as indicated by Esquagama Lake to the south). Several collections of artifacts have been reported in public media along the Wynne-Sabin Lake basin (William Latady, personal communication, XXXX). The Height of Land Portage north of Sabin Lake provides a connection to the Rainy Lake drainage, used in the Contact period and quite possibly the pre-Contact. Embarrass Mine Lake, adjacent to the western end of the eastern half of the project, is a man-made water feature formed by the flooding of the former Embarrass Mine pit. Although any archaeological features associated with the original Embarrass River would have been destroyed by mining activities, the Embarrass Mine is a potential historic property (post-Contact contexts).

The topography as mapped by LiDAR ([www.dnr.state.mn.us/maps/mntopo/index.html](http://www.dnr.state.mn.us/maps/mntopo/index.html)) is at a finer contour interval (2 feet) than on the USGS topographic maps (10 feet). The topography of the area varies from rolling to steep hill slopes in some areas to flatter (possibly artificially) terrain

(Figures 9, 10). The eastern project area has flatter terrain east of Embarrass Mine Lake with more steep slopes north of the lake. The western portion has steep slopes north of Highway 135, except for Pineville townsite; the area south of the highway is more open although still with some sloping terrain. The project APE is not adjacent to original water features, so potential for pre-Contact archaeological sites is lower. However, the intense mining activities and associated settlement of townsites throughout this area of the Mesabi Range indicate that post-Contact sites could be anywhere.

## CONCLUSIONS

**One recorded archaeological site** is located within the ERJWTS project in Aurora and White adjacent to Embarrass Mine Lake and the Embarrass River. The site is unverified, consisting of the “ghost town” of Pineville (21SLIt); a portion of the water main will be along some of the streets within the townsite. In addition, the Embarrass Mine Lake is formed within the Embarrass Mine pit and part of the project is near the lakeshore. The Duluth-Vermilion Lake Trail also was recorded in the mid-1800s in the vicinity of the project. The potential for unrecorded archaeological sites is high within the ERJWTS project, including Contact (travel/trading) and post-Contact (mining, settlement) historic contexts.

**A significant water feature (Embarrass Lake)** is located adjacent to part of the ERJWTS project, which indicates a high potential for unrecorded pre-Contact archaeological sites in the general vicinity. The Embarrass River was a major travel/transportation route as it leads to a portage between the St. Louis and Rainy River drainages. Original waterways are of high potential for historic and earlier occupations (Hudak et al. 2002). In contrast, Embarrass Mine Lake is an artificial water body formed by flooding the former Embarrass Mine pit. The area around the former mine has a high potential for unrecorded surface features from mining activities while the lake/pit is itself a major feature associated with mining.

***Areas within the ERJWTS project appear to have significant potential for unrecorded surface and subsurface archaeological sites and site features.*** The Embarrass Mine has not been investigated or recorded (like the nearby Erie Mining Company as the Erie Mining Company Mining Landscape Historic District). Roads, railroad grades, ore dumps, pits, shafts, and other features associated with mining (including townsites) can be contributing elements to such a historic district. The Pineville townsite, although recorded, is not field verified or researched and appears to be



associated with both early mining (Bangor and Syracuse Mines) and the World War II mining (Embarrass Mine) periods. In addition, the portion of the water main south of Embarrass Lake has the potential to intersect pre-Contact Native American archaeological sites as well as possible historic sites such as farmsteads/homesteads.

***A Phase I archaeological investigation is recommended prior to ground disturbance for the East Range Joint Water Treatment System in the City of Aurora and Town of White.*** The investigation should research the historic mining activities associated with the Embarrass Mine and associated settlement at Pineville. Field survey of suitable areas where ground disturbance is proposed should be conducted to identify surface features and subsurface deposits of archaeological sites. The investigation should consider where ground disturbance is proposed in relation to components of all types of archaeological sites.

If indications of burials are observed during any activities, the Minnesota Office of the State Archaeologist must be notified at 612/725-2411 or 612/725-2729. Local law enforcement must also be notified. Burial mounds are probable in areas adjacent to original water features, such as Embarrass Lake. Indications of burials also include but are not limited to graves, headstones/memorials, human remains, offerings, and coffin parts.

## REFERENCES

Hudak, G. J., E. Hobbs, A. Brooks, C. A. Sersland, and C. Phillips. 2002. *Predictive Model of Precontact Archaeological Site Location for the State of Minnesota*. Minnesota Department of Transportation, St. Paul.

Lamppa, M. G. 1962. *Ghost Towns and Locations of the Vermilion and East Mesabi Mining Districts*. M.A. Plan B Paper, University of Minnesota.

Lamppa, M. G. 2004. *Minnesota's Iron Country: Rich Ore, Rich Lives*. Lake Superior Port Cities, Inc.

Luukkonen, L. 2006. *Between the Waters: Tracing the Northwest Trail from Lake Superior to the Mississippi*. Dovetailed Press, Duluth..

Trygg, J. W. 1967. *Composite Map of the United States Land Surveyors' Original Plats and Field Notes*. Sheets 17, 18, Minnesota Series. Self published, Ely.

Waters, T. F. 1977. *The Streams and Rivers of Minnesota*. University of Minnesota Press. Minneapolis.

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Amanda Gronhovd, State Archaeologist, 328 West Kellogg Boulevard, St. Paul MN 55102.

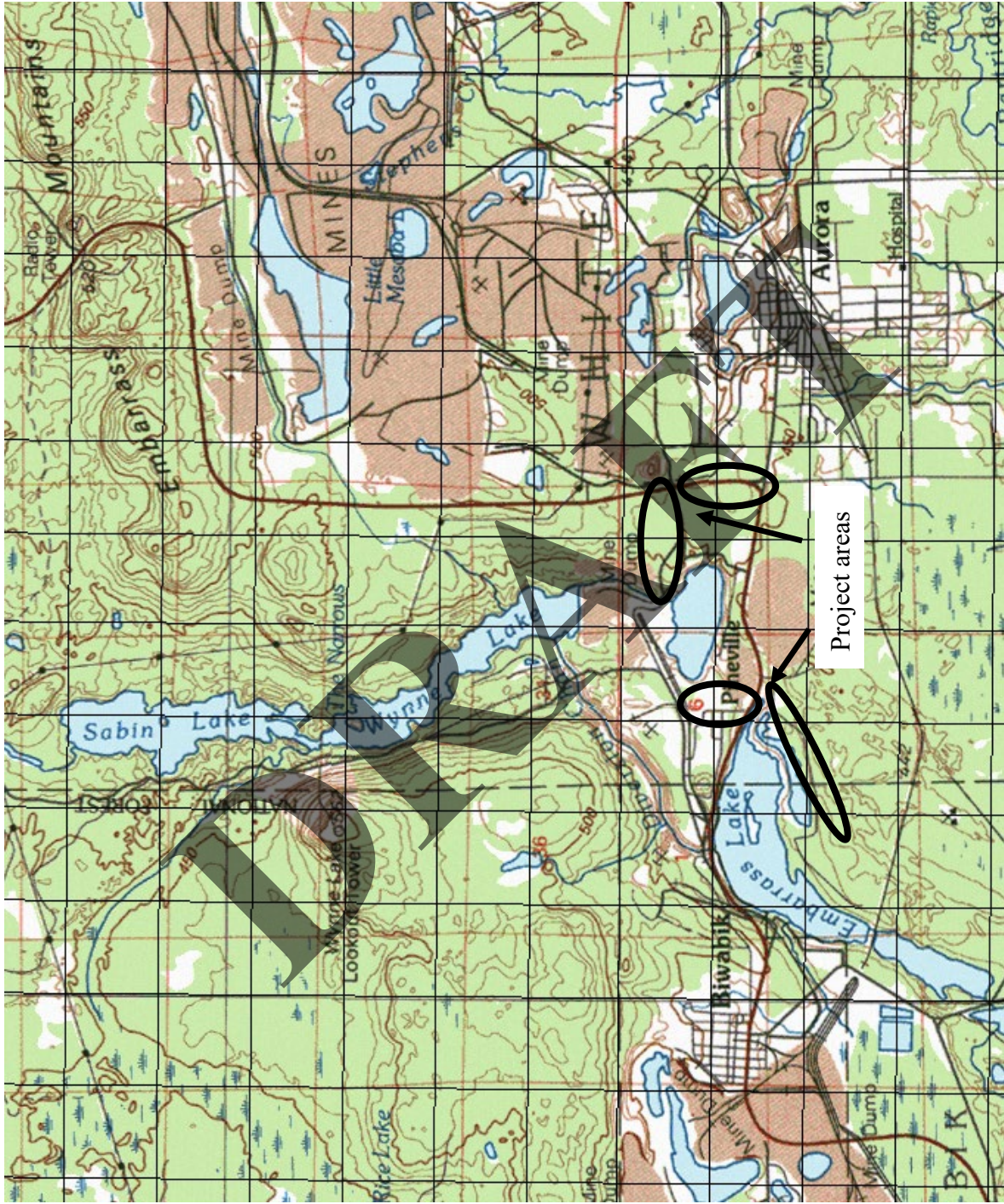


Figure 1. ERJWTS project location, Vermillion Lake quadrangle (1994), 1:100,000 USGS topographic map.

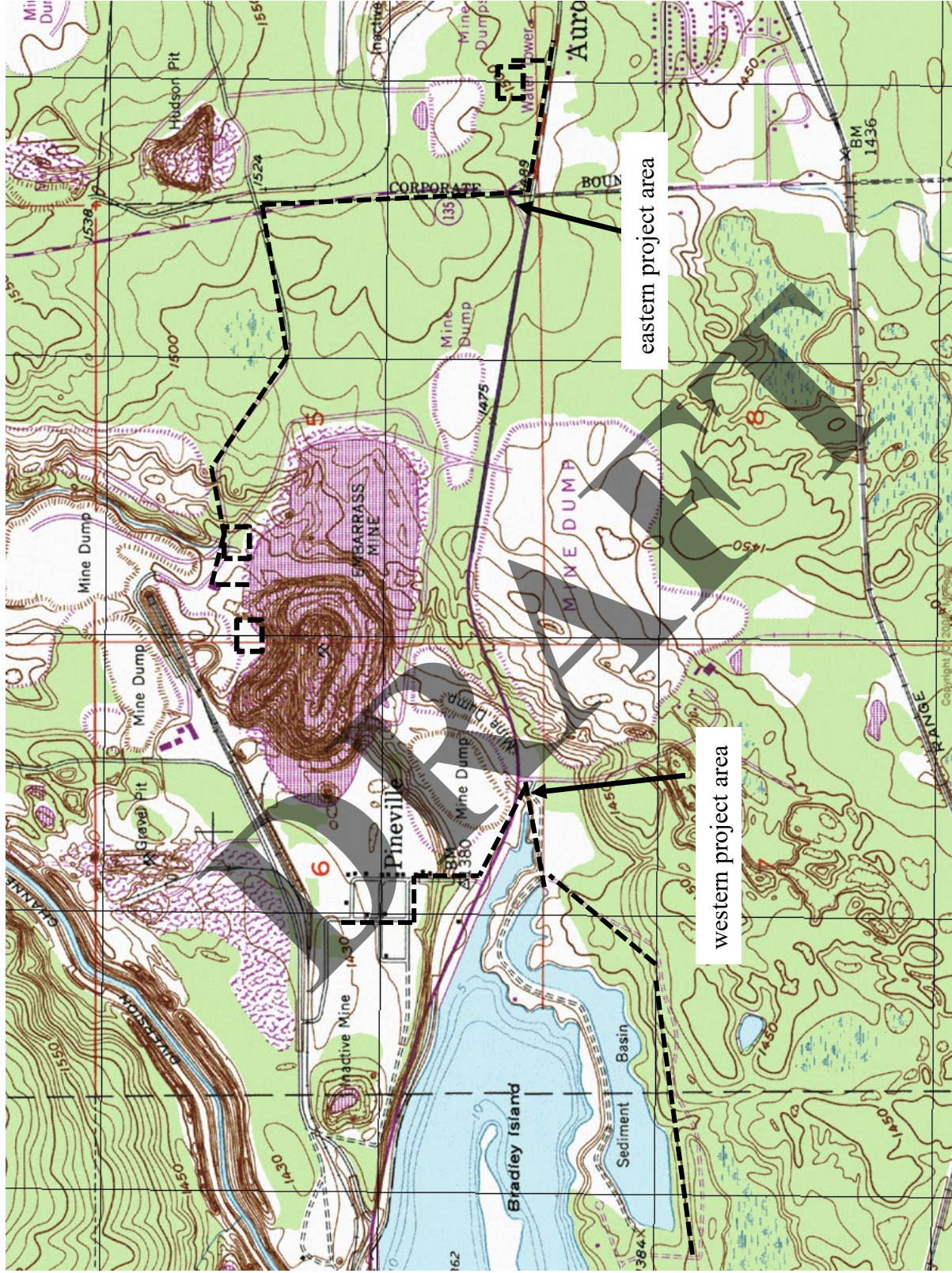
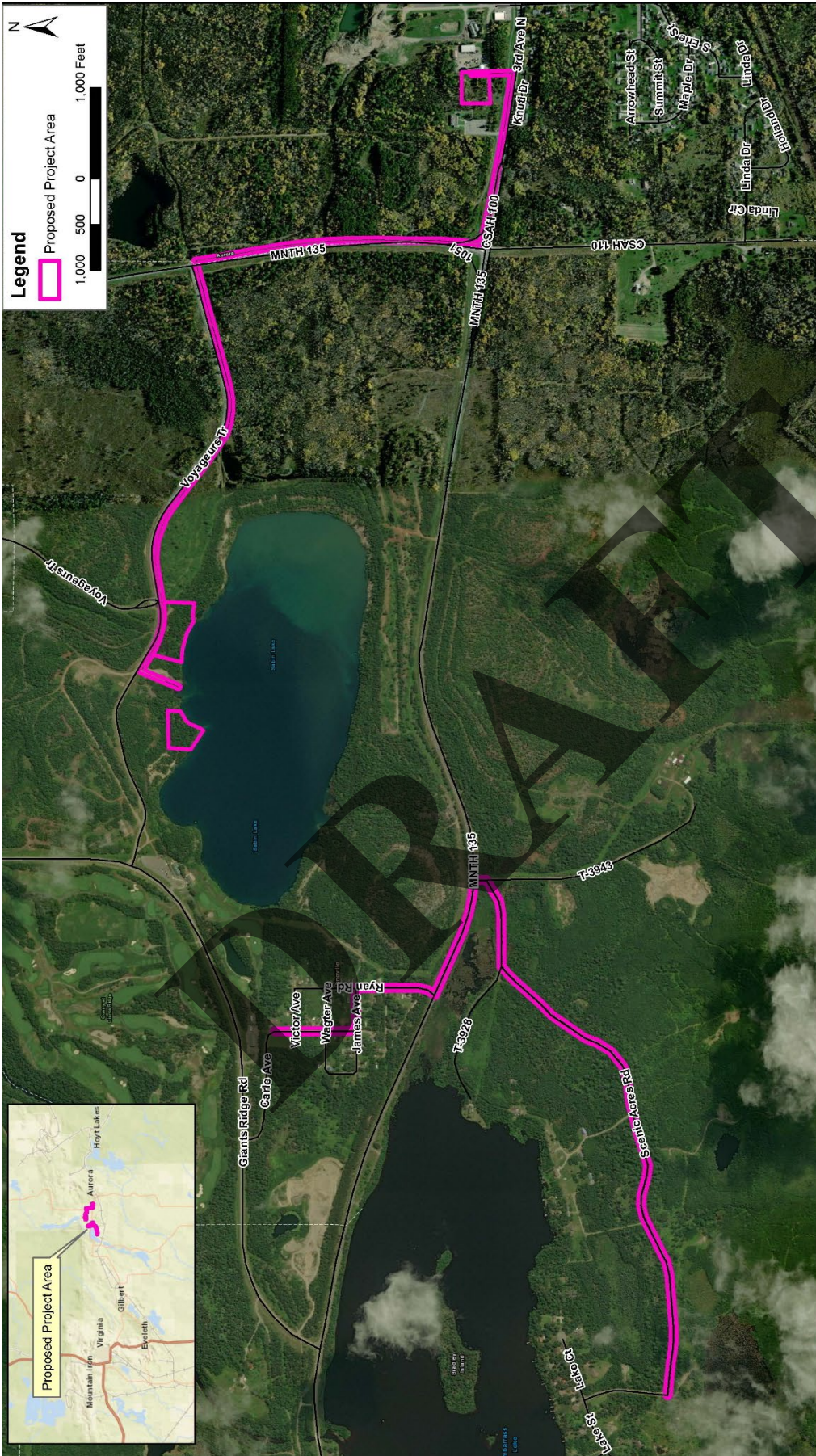


Figure 2. ERJWTS project areas, Biwabik quadrangle (1950/ 1985), 1:24,000 USGS topographic map.



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Project: XXXXX 000000  
 Print Date: 3/12/2022  
 Made by:  
 Projection: St. Louis Co Trans Merc  
 Units: US Survey Feet  
 Source: ESRI, SRTM, DNR

**PROPOSED PROJECT LOCATION**  
 EAST RANGE WATER BOARD  
 Aurora, St. Louis County, Minn.

Figure X

Figure 3. ERJWTS project areas (pink lines). From SEH.

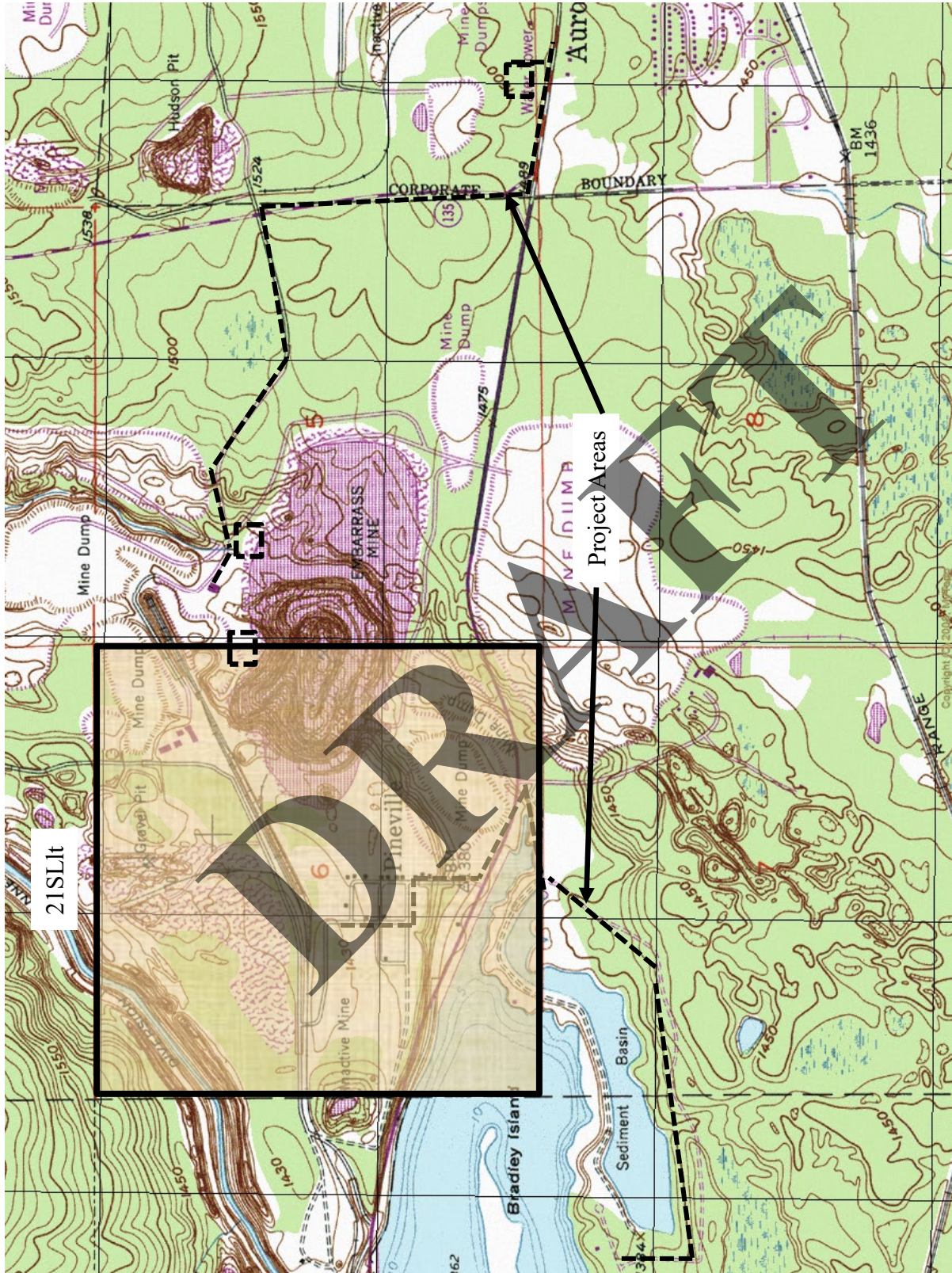


Figure 4. Pineville archaeological site (21SLlt) in ERJWTS project. Biwabik quadrangle (1950/ 1985), 1:24,000 USGS topographic map.



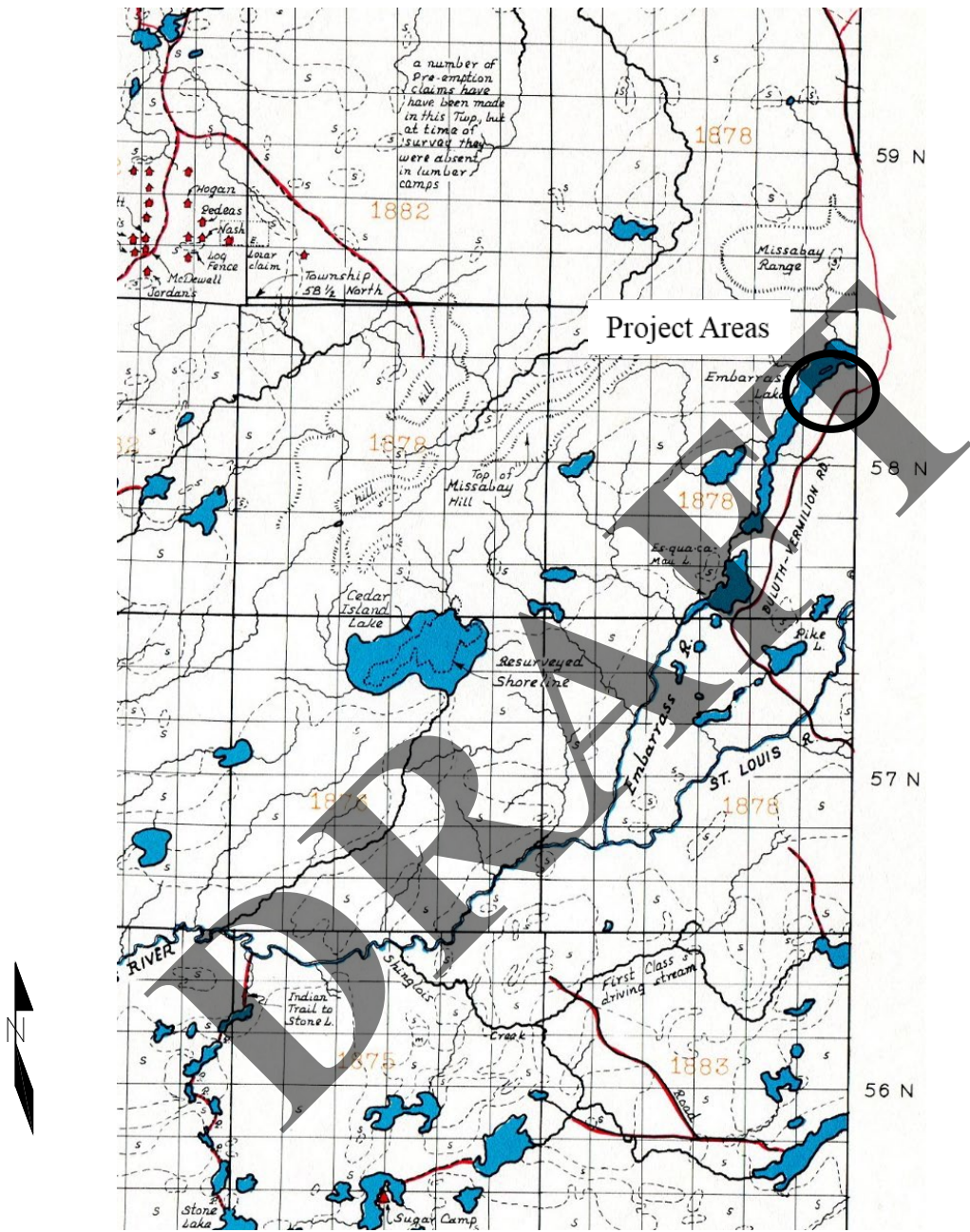


Figure 5. GLO cultural features in vicinity of project (Trygg 1966: sheet 18).

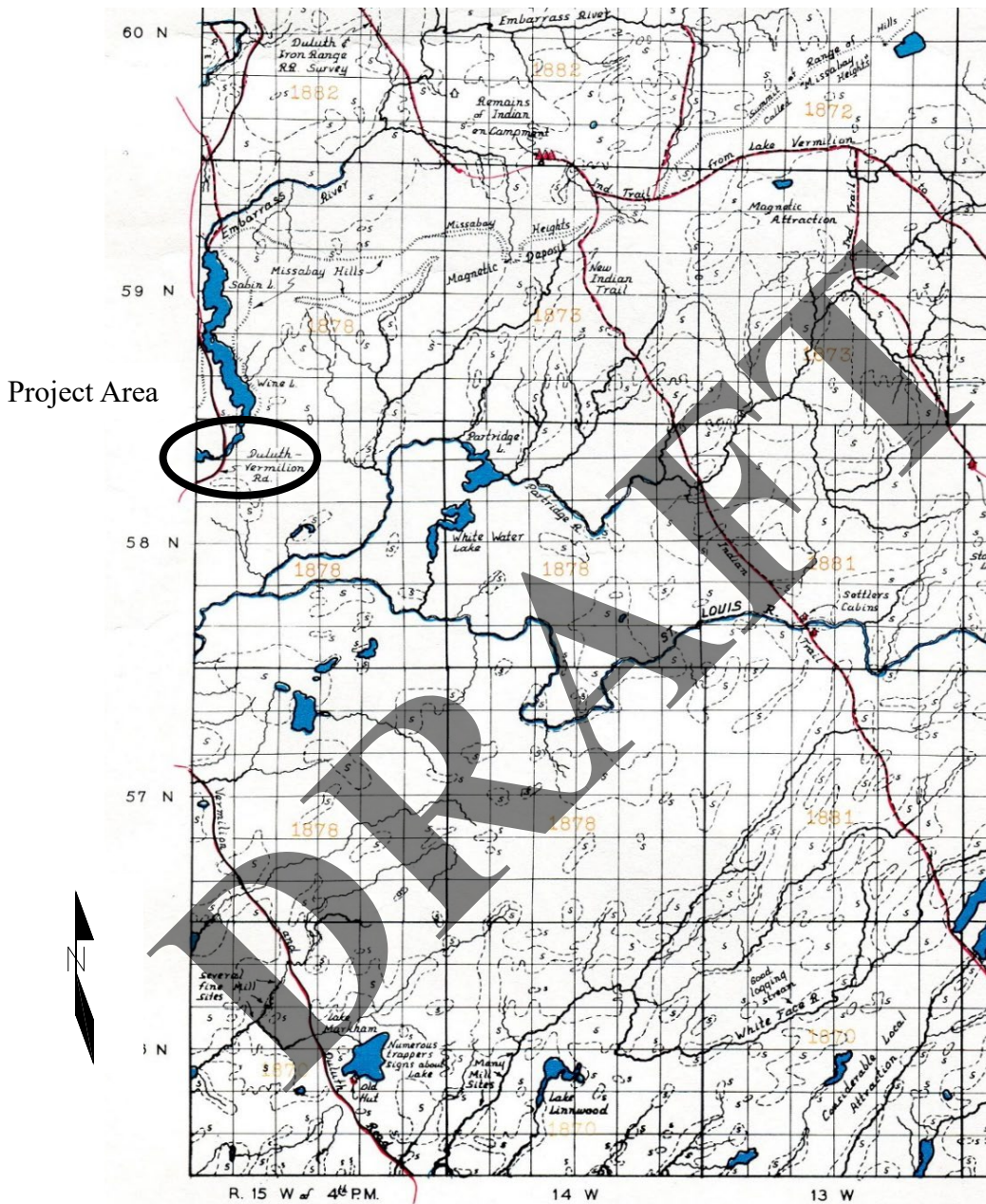


Figure 6. GLO cultural features in vicinity of project (Trygg 1966: sheet 17).



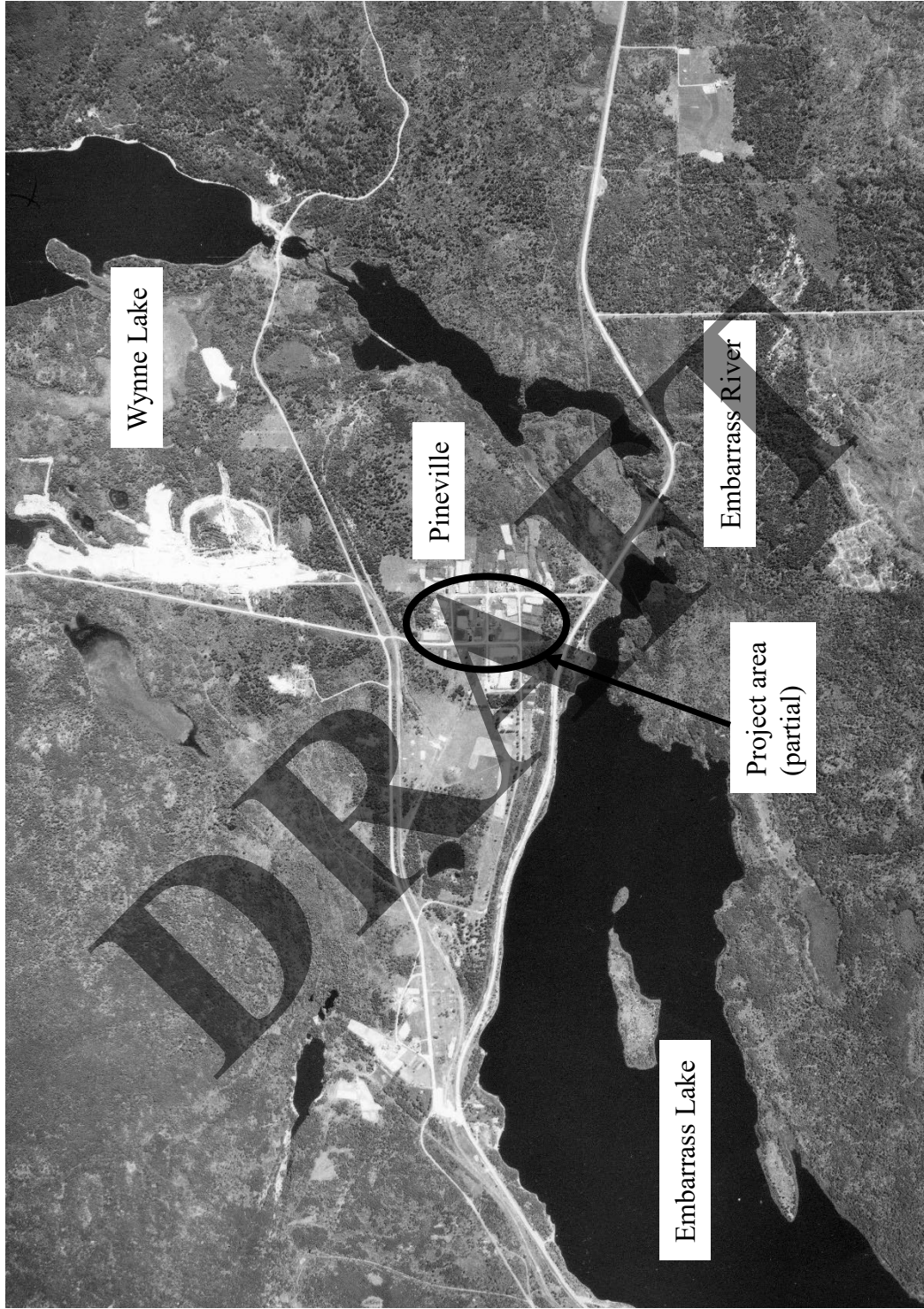


Figure 7. Historic aerial photograph CIR-18-51, July 4, 1940.  
From [www.dnr.state.mn.us/maps/landview/index.html](http://www.dnr.state.mn.us/maps/landview/index.html).

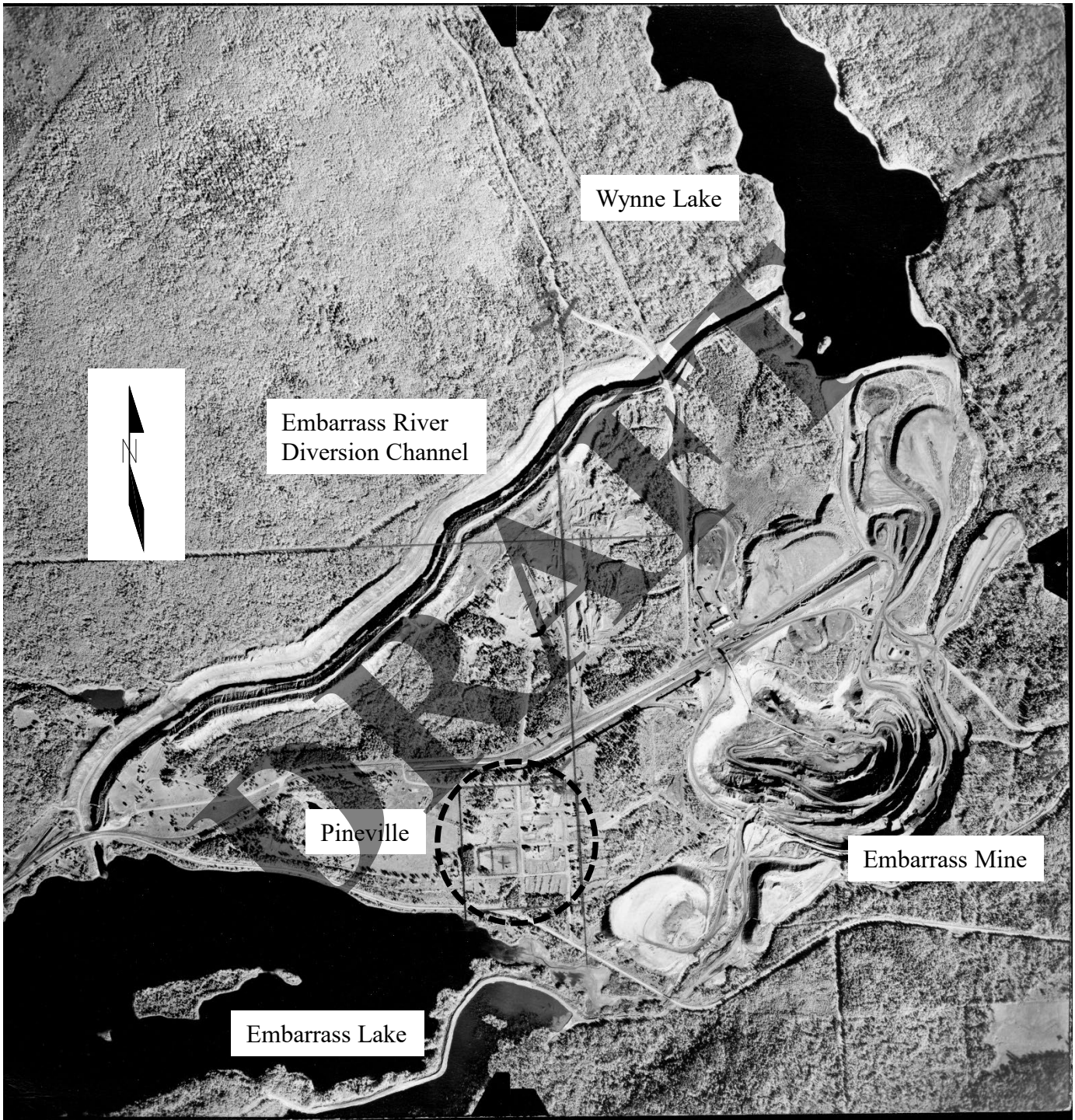
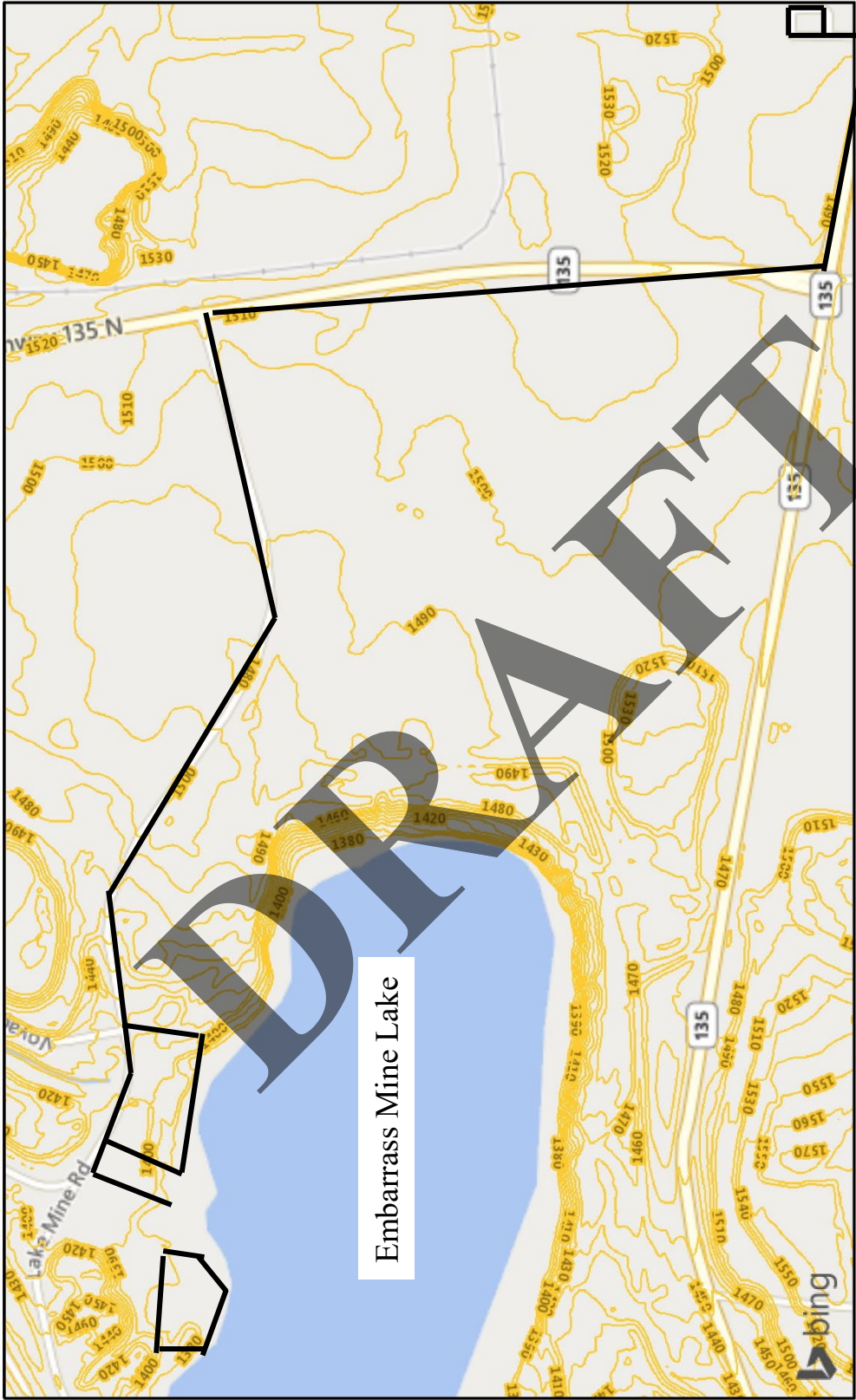


Figure 8. Historic aerial photograph SLC-40-44, September 22, 1948.  
From [www.dnr.state.mn.us/maps/landview/index.html](http://www.dnr.state.mn.us/maps/landview/index.html).

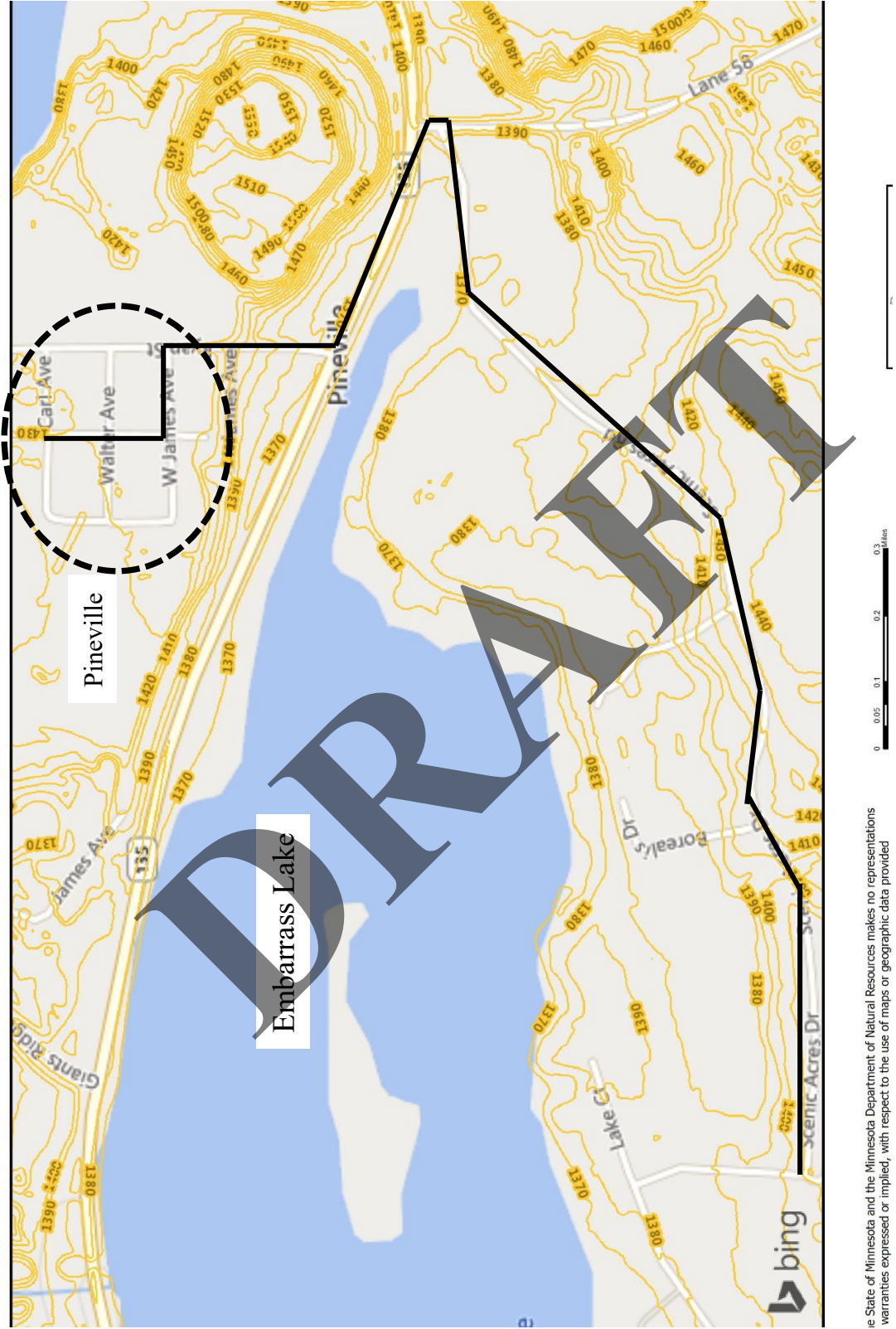


Embarrass Mine Lake

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Figure 9. LiDAR topographic contours of ERJWTS project, eastern portion. From [www.dnr.state.mn.us/maps/mntopo/index.html](http://www.dnr.state.mn.us/maps/mntopo/index.html).



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Figure 10. LiDAR topographic contours of ERJWTS project, western portion. From [www.dnr.state.mn.us/maps/mntopo/index.html](http://www.dnr.state.mn.us/maps/mntopo/index.html).