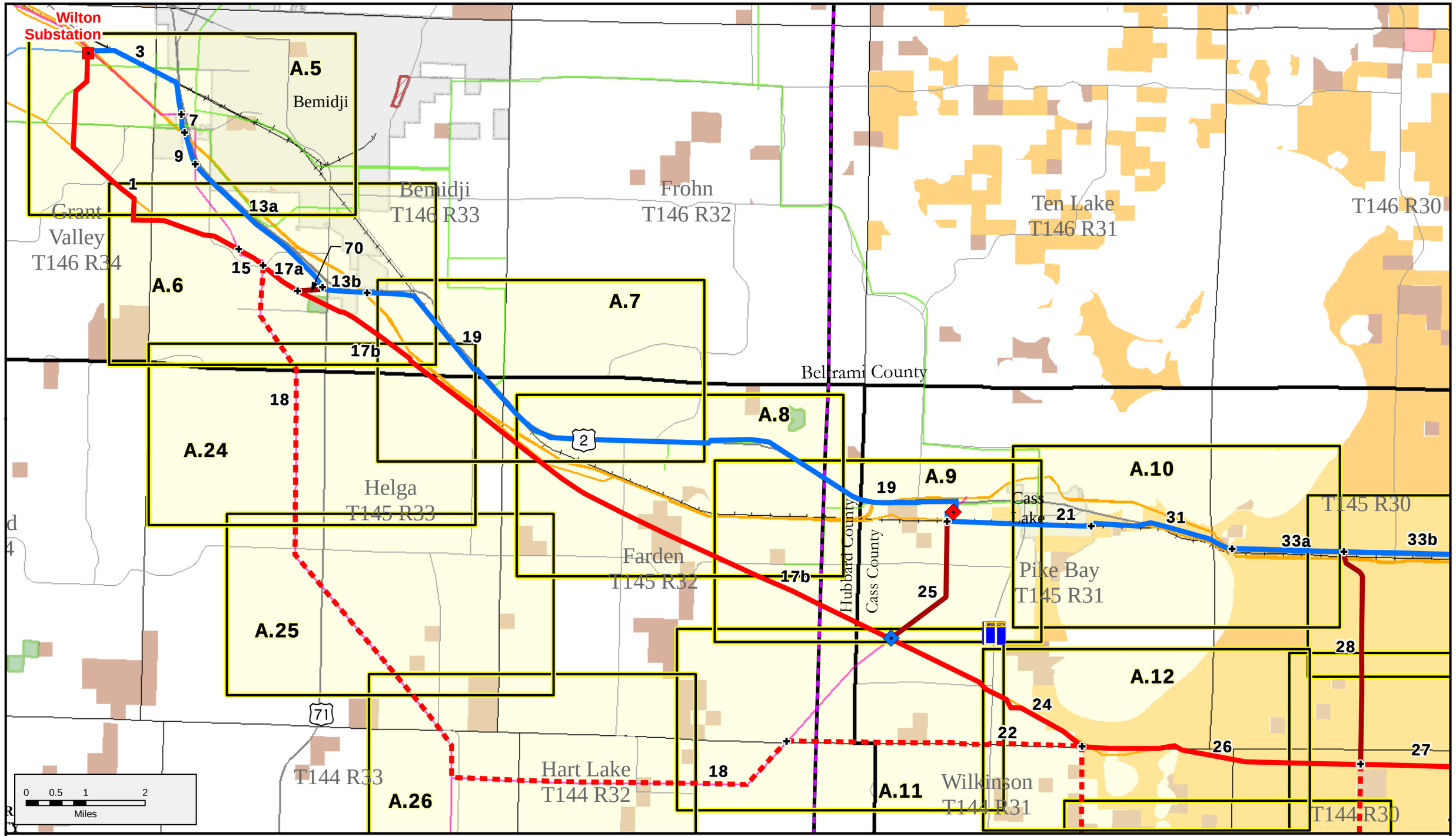
Wilton Substation
3
A.5
Bemidji
7
9
1
13a
Grant Valley T146 R34
Bemidji T146 R33
Frohn T146 R32
Ten Lake T146 R31
T146 R30
70
15
17a
13b
A.6
A.7
19
17b
Beltrami County
18
A.8
A.24
2
Helga T145 R33
A.9
19
A.10
Cass Lake
21
31
33a
33b
T145 R30
Farden T145 R32
17b
Hubbard County
Cass County
25
Pike Bay T145 R31
28
A.12
24
22
26
27
A.25
71
T144 R33
Hart Lake T144 R32
18
A.26
A.11
Wilkinson T144 R31
T144 R30
0 0.5 1 2
Miles
Bemidji-Grand Rapids 230-kV line
CapX2020
Proposed Route Segments
Route 1 Segment
Route 2 Segment
Alternate Route Segment
Route 1 & 2 Segment
Crossover Segment
Appendix A.5 - A.27 Detailed Map Extents
Route Segment Endpoint
Project Endpoint
Potential Cass Lake Substation Expansion
Potential New Substation
Existing Pipelines
Existing Transmission Lines
69 kV
115 kV
230 kV
Leech Lake Reservation
Minucipality
Chippewa National Forest
MN DNR WMA
MN DNR SNA
MN DNR State Park
MN DNR State Forest
Appendix A.2: Proposed Route Segments
230 kV Bemidji to Grand Rapids
Transmission Line Project
Minnkota Power Cooperative,
Otter Tail Power Company & Minnesota Power
Map Document: (N:\GISProj\Otertail\48496\map_docs\mxd\MN route app\Report\Revised\append_A_segment_maps_11x17.mxd)
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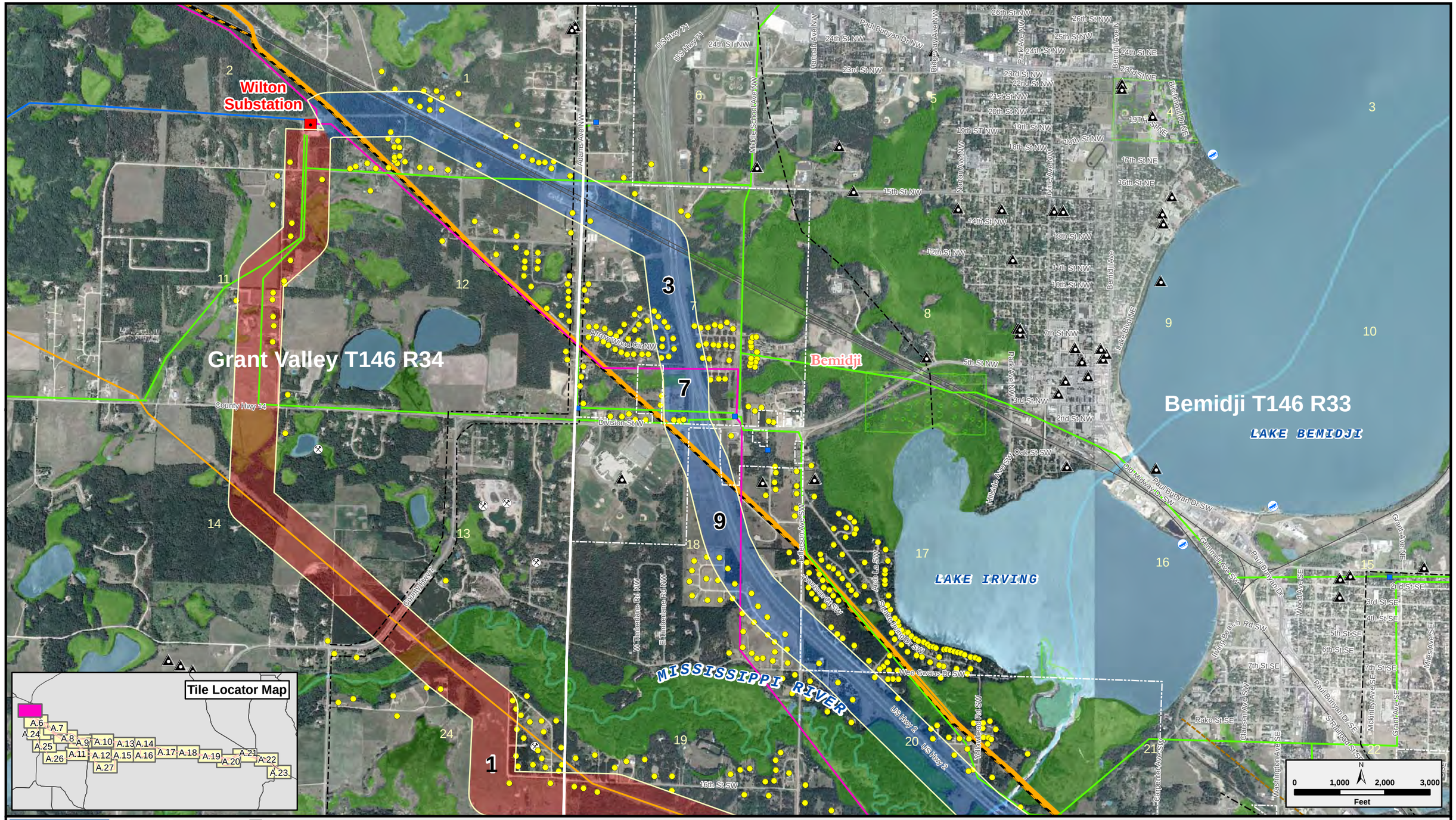

Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Bemidji-Grand Rapids 230-kV line
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Appendix A.05: Detailed Route Maps
230 kV Bemidji to Grand Rapids Transmission Line Project
Minnkota Power Cooperative, Otter Tail Power Company & Minnesota Power

Map Document: (N:\GIS\Proj\OtterTail\48496\map_docs\mxd\MN route appl\Report\Revised\Append_A_Detailed_Routes_11x17_public.mxd)
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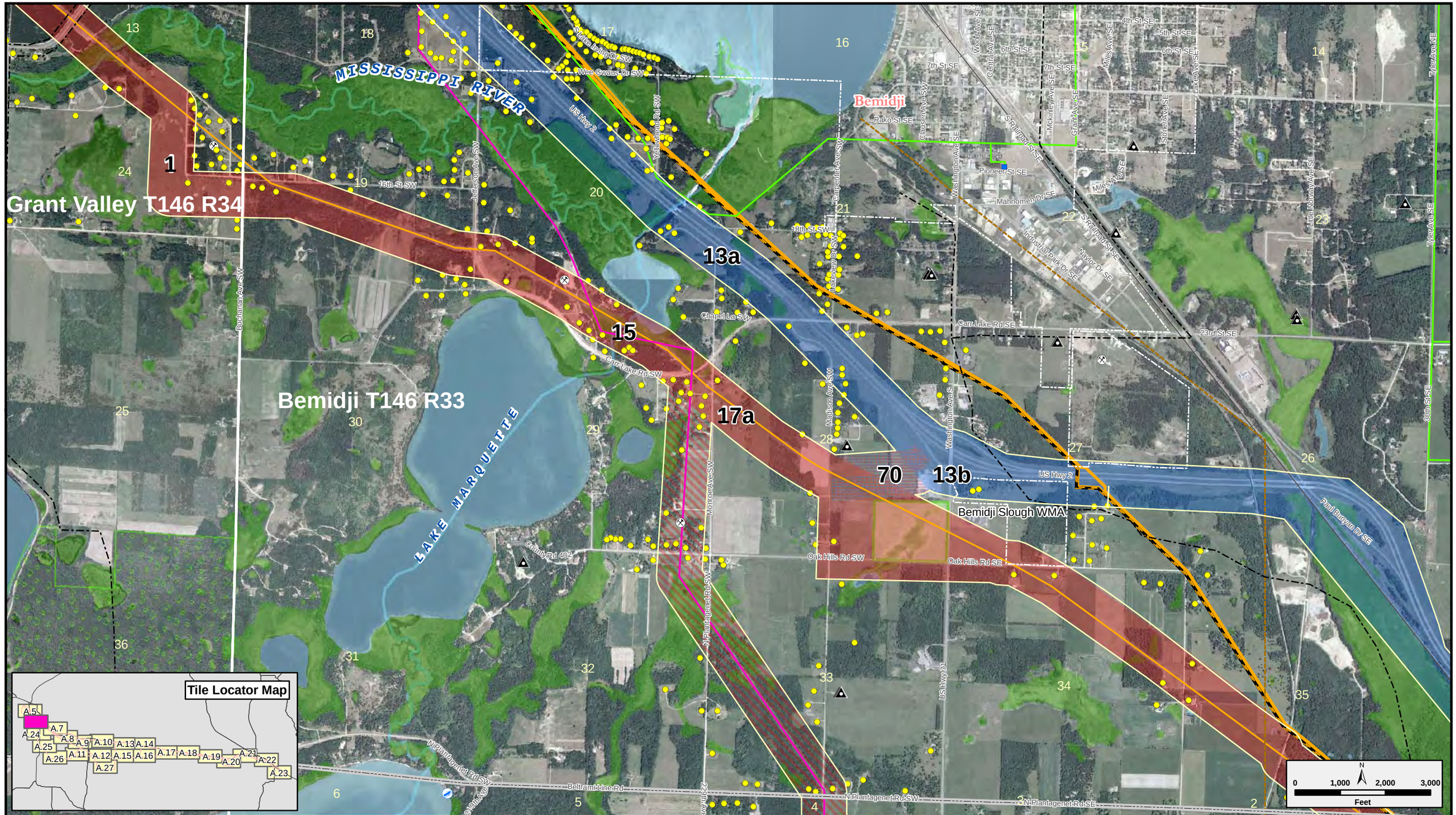

Map Document: (N:\GIS Proj\Otter tail\48496\map_docs\mxd\MN route appl\Report\Revised\Append_A_Detailed_Routes_11x17_public.mxd)
5/23/2008 -- 12:57:49 PM

Appendix A.06: Detailed Route Maps
230 kV Bemidji to Grand Rapids Transmission Line Project
Minnkota Power Cooperative, Otter Tail Power Company & Minnesota Power

Bemidji

Bemidji T146 R33

Frohn T146 R32

Helga T145 R33

Farden T145 R32

BELTRAMI COUNTY

HUBBARD COUNTY

GRACE LAKE

NECKTIE RIVER

US Hwy 2

Paul Bunyan Dr SE

30th St SE

Oak Hills Rd SE

N Plantagenet Rd SE

Beltrami Line Rd

Van Buren Ave SE

Lynx Rd SE

Sunnyside Rd SE

Boulder Dr SE

Walnut Rd SE

Frohn Rd SE

Adella Dr SE

Wolf Lake Dr SE

County Hwy 42

Union Rd

510th St

County Hwy 36

270th Ave

White Cedar Loop

White Cedar Rd

County Hwy 45

Whippoorwill Rd

Wildlife Trl

26 25 30 29 28 27

35 36 31 32 33 34

2 1 6 5 4 3

12 7 8 9 10

0 1,000 2,000 3,000 Feet

N

Tile Locator Map

A.5 A.6 A.24 A.8 A.9 A.10 A.13 A.14 A.25 A.11 A.12 A.15 A.16 A.17 A.18 A.19 A.21 A.26 A.27 A.20 A.22 A.23

Bemidji-Grand Rapids 230-kV line

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Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Map Document: (N:\GIS\Proj\OtterTail\48496\map_docs\mxd\MN route app\Report\Revised\Append_A_Detailed_Routes_11x17_public.mxd)
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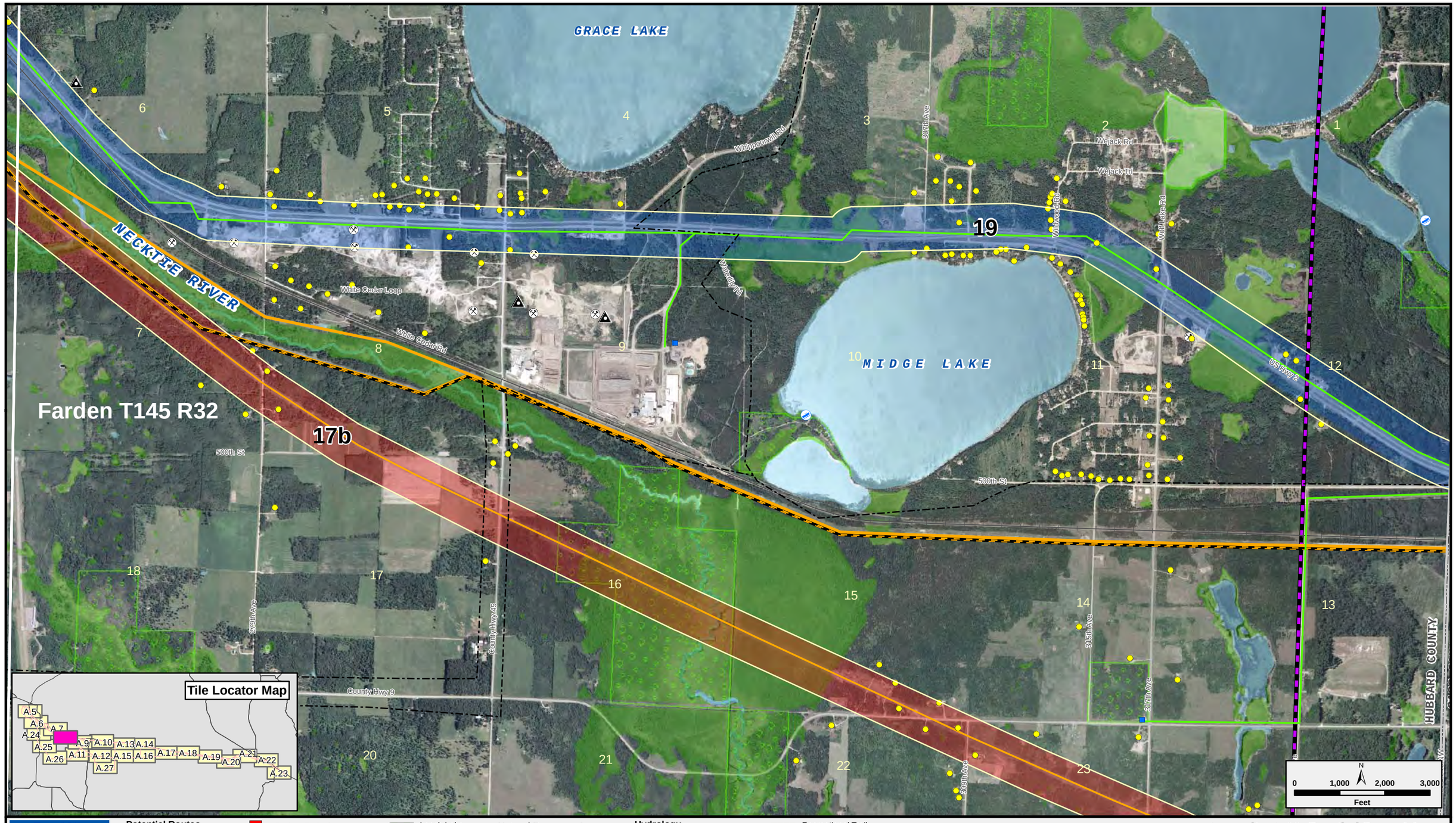
Appendix A.07: Detailed Route Maps
230 kV Bemidji to Grand Rapids Transmission Line Project
Minnkota Power Cooperative, Otter Tail Power Company & Minnesota Power



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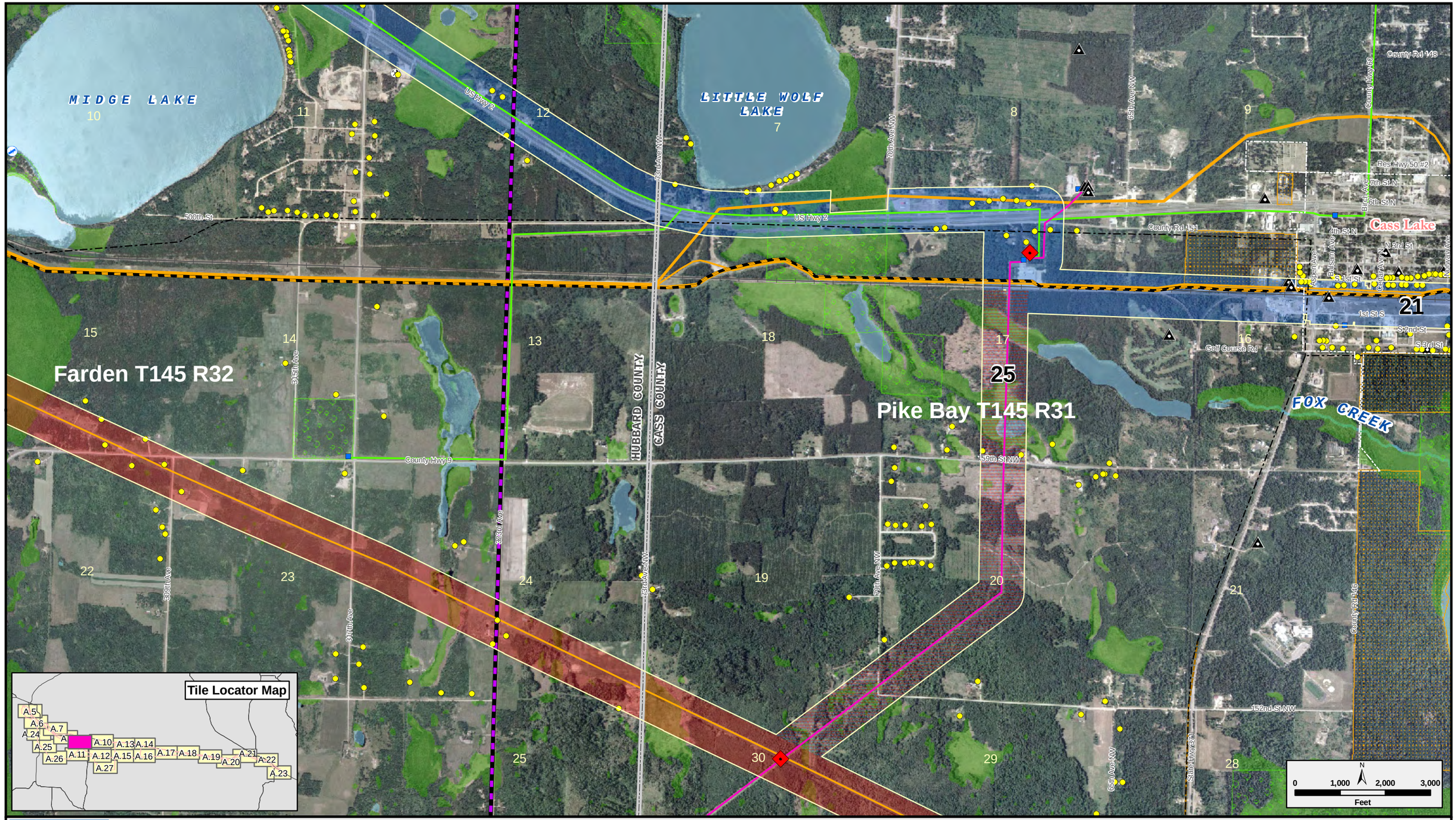
Appendix A.08: Detailed Route Maps
230 kV Bemidji to Grand Rapids Transmission Line Project
Minnkota Power Cooperative, Otter Tail Power Company & Minnesota Power



Bemidji-Grand Rapids 230-kV line

CapX2020

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Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Appendix A.09: Detailed Route Maps
230 kV Bemidji to Grand Rapids
Transmission Line Project
Minnkota Power Cooperative,
Otter Tail Power Company & Minnesota Power

Map Document: (N:\GIS\Proj\Otertail\4849\map_docs\mxd\MN route app\Report\Revised\Append_A_Detailed_Routes_11x17_public.mxd)
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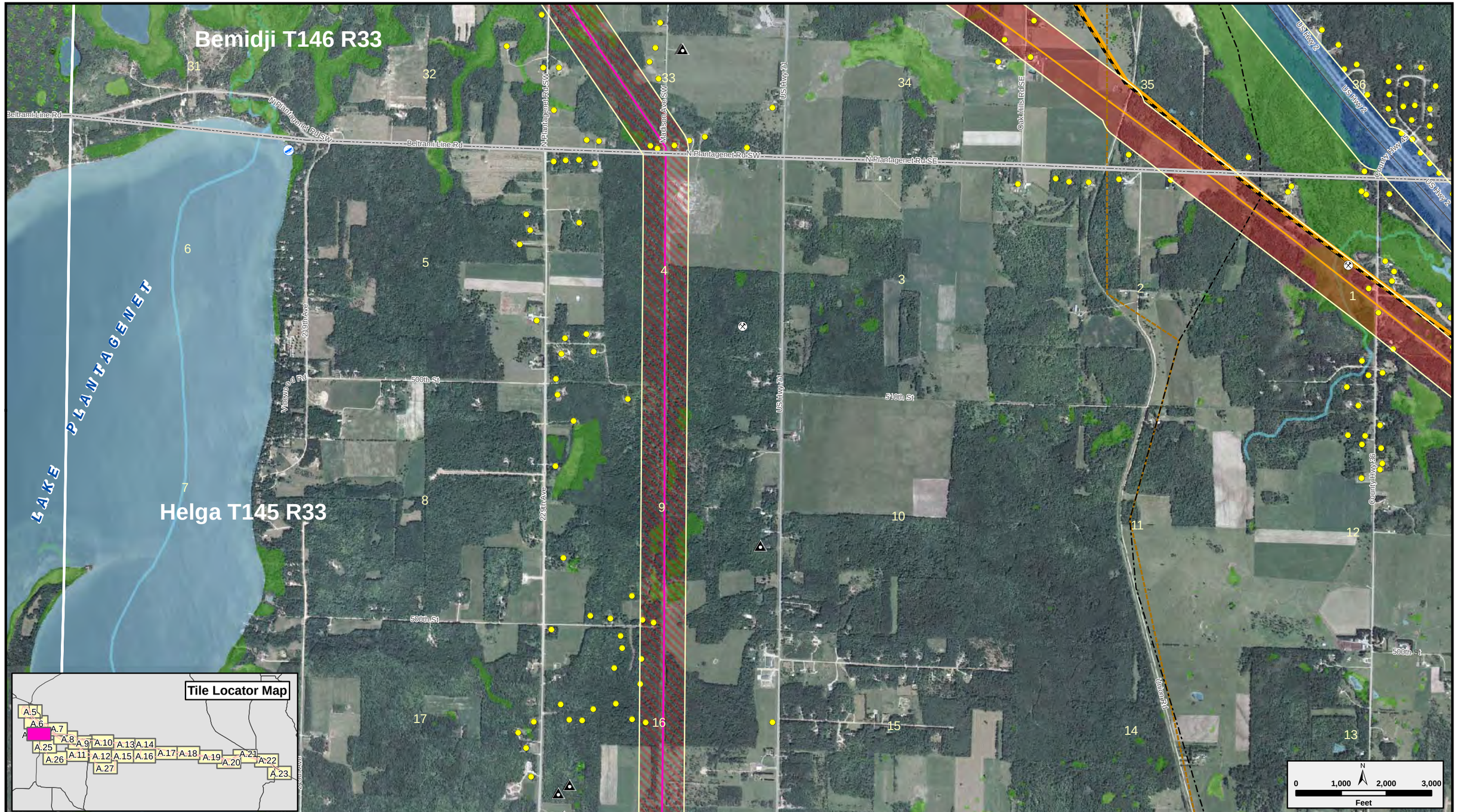

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5/23/2008 -- 12:57:49 PM

Bemidji-Grand Rapids 230-kV line
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Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

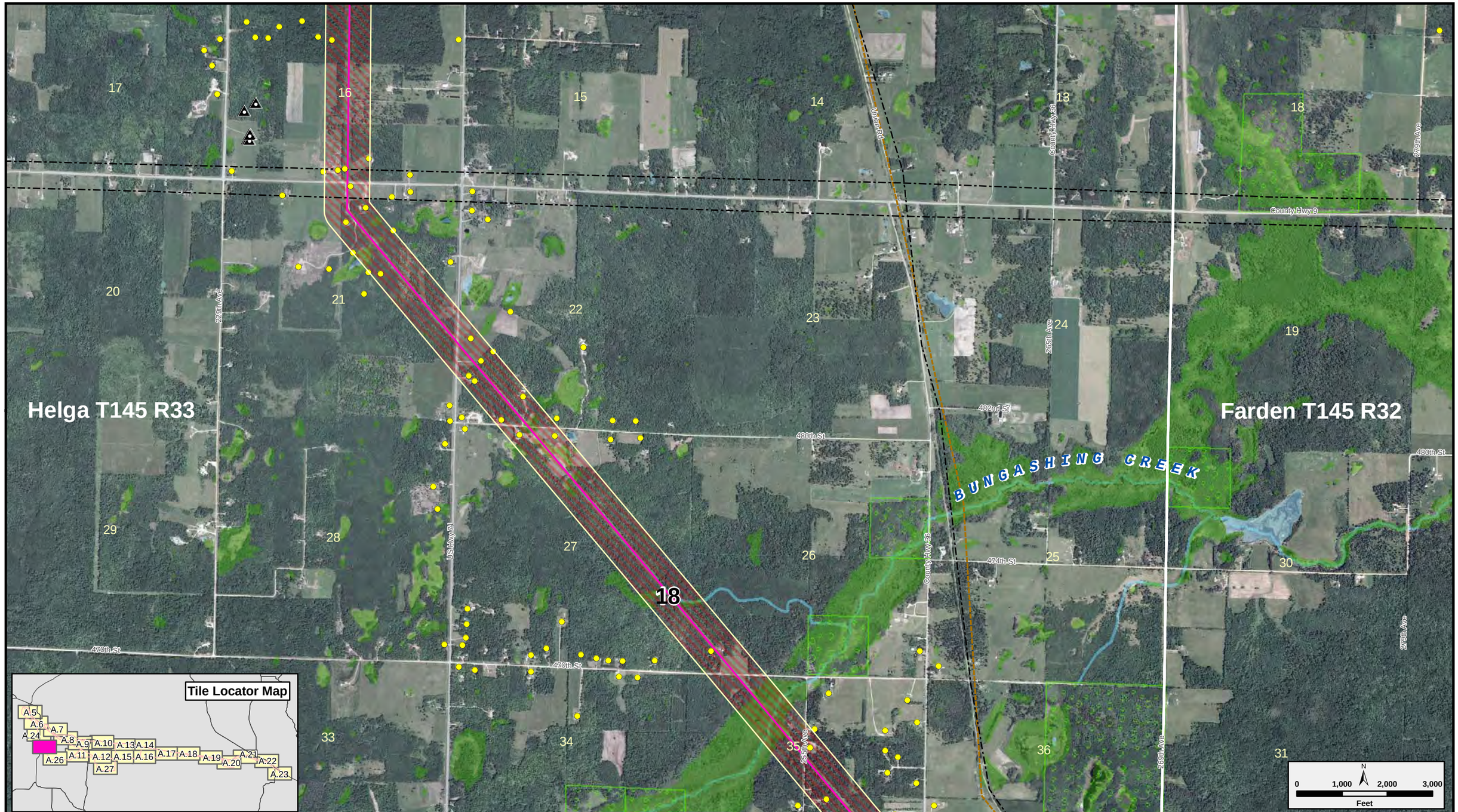
- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Appendix A.24: Detailed Route Maps
230 kV Bemidji to Grand Rapids Transmission Line Project
Minnkota Power Cooperative, Otter Tail Power Company & Minnesota Power



Bemidji-Grand Rapids 230-kV line

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Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Appendix A.25: Detailed Route Maps
230 kV Bemidji to Grand Rapids
Transmission Line Project
Minnkota Power Cooperative,
Otter Tail Power Company & Minnesota Power

Map Document: (N:\GISProj\Otterta\l48496\map_docs\mxd\MN route app\Report\Revised\Append_A_Detailed_Routes_11x17_public.mxd)
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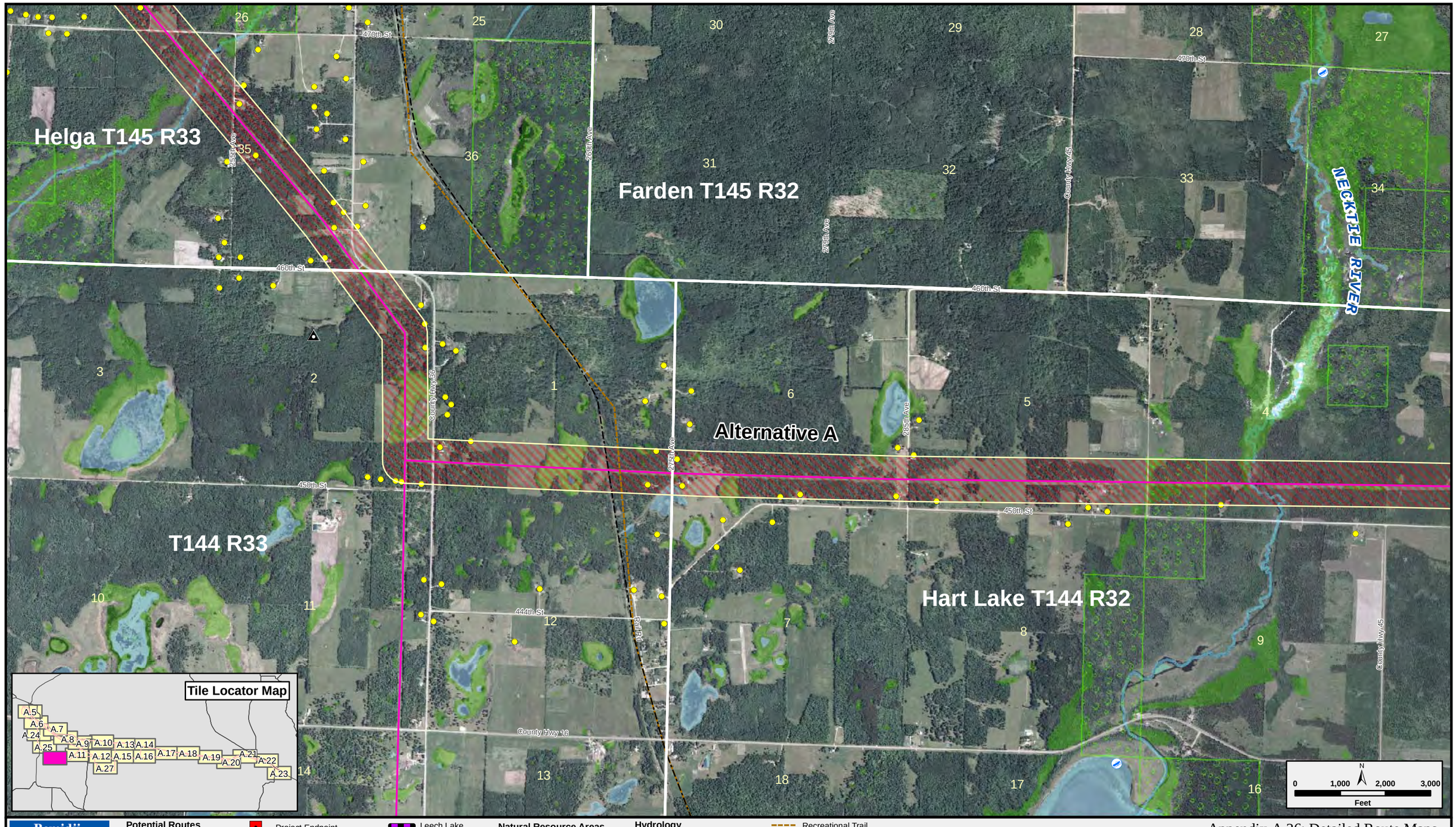

Bemidji-Grand Rapids 230-kV line
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Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Appendix A.26: Detailed Route Maps
230 kV Bemidji to Grand Rapids
Transmission Line Project
Minnkota Power Cooperative,
Otter Tail Power Company & Minnesota Power

Map Document: (N:\GIS\Proj\Otertail\4849\lmap_docs\mxd\MN route appl\ReportRevised\AppendA_Detailed_Routes_11x17_public.mxd)
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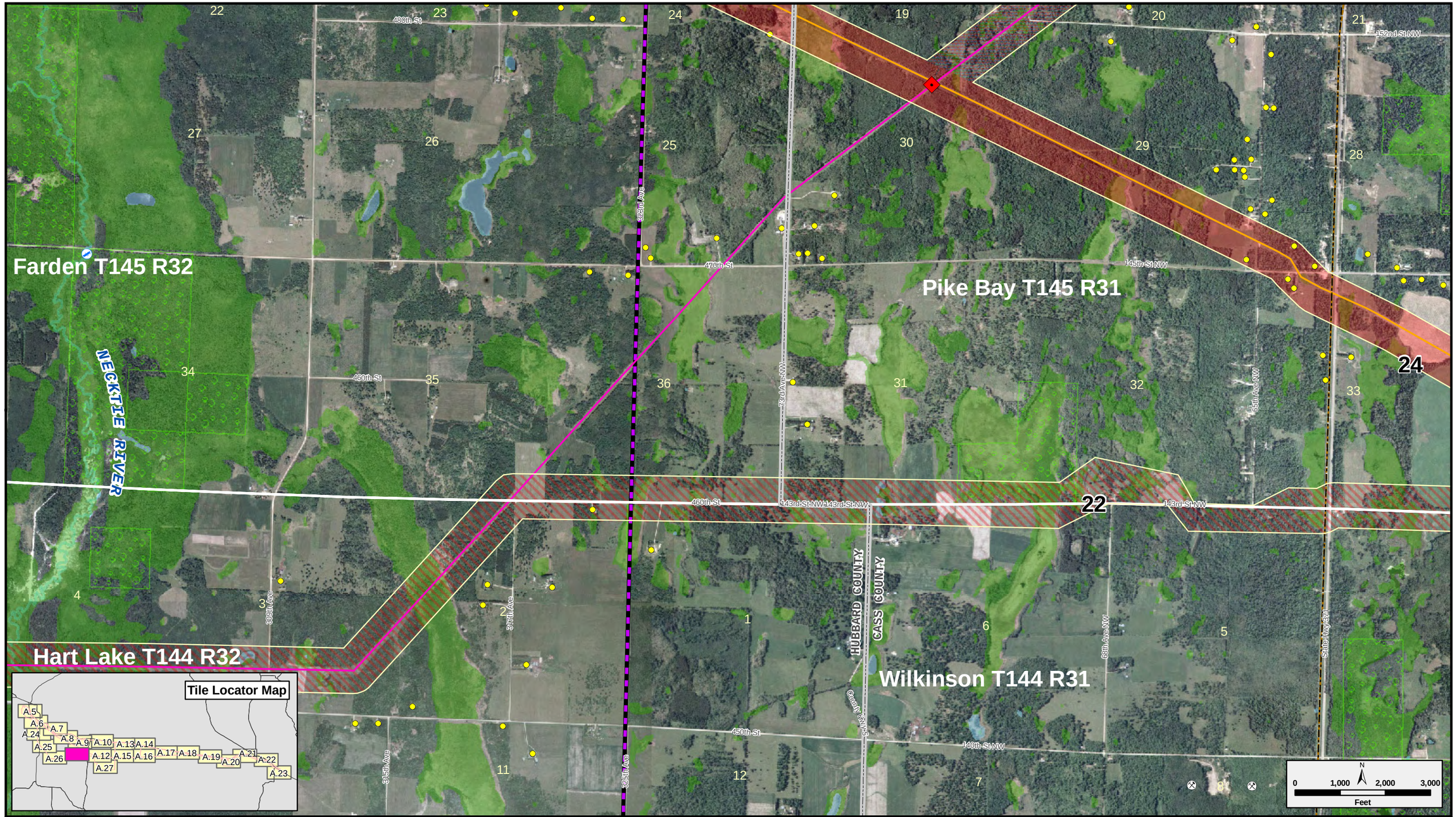

Potential Routes
- Route 1
- Route 2
- Routes 1 & 2
- Alternate Segment
- Crossover Segment

- Project Endpoint
- Proposed Cass Lake Substation

Existing Transmission Lines
- 69 kV Transmission Line
- 115 kV Transmission Line
- 230 kV Transmission Line

- Leech Lake Reservation
- Existing Pipeline
- Proposed Enbridge Pipeline
- Communication Tower
- Substation

Natural Resource Areas
- Wildlife Management Area
- Chippewa National Forest
- MN State Forest
- MN DNR SNA

Hydrology
- NWI Wetland
- PWI Lake
- PWI Stream

- Recreational Trail
- Snowmobile Trail
- Water Access
- Residences
- Gravel Pit

Bemidji-Grand Rapids 230-kV line
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Appendix A.11: Detailed Route Maps
230 kV Bemidji to Grand Rapids Transmission Line Project
Minnkota Power Cooperative, Otter Tail Power Company & Minnesota Power

Map Document: (N:\GIS\Proj\Otertail\48496\map_docs\mxd\MN route appr\Report\Revised\Append_A_Detailed_Routes_11x17_public.mxd)
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