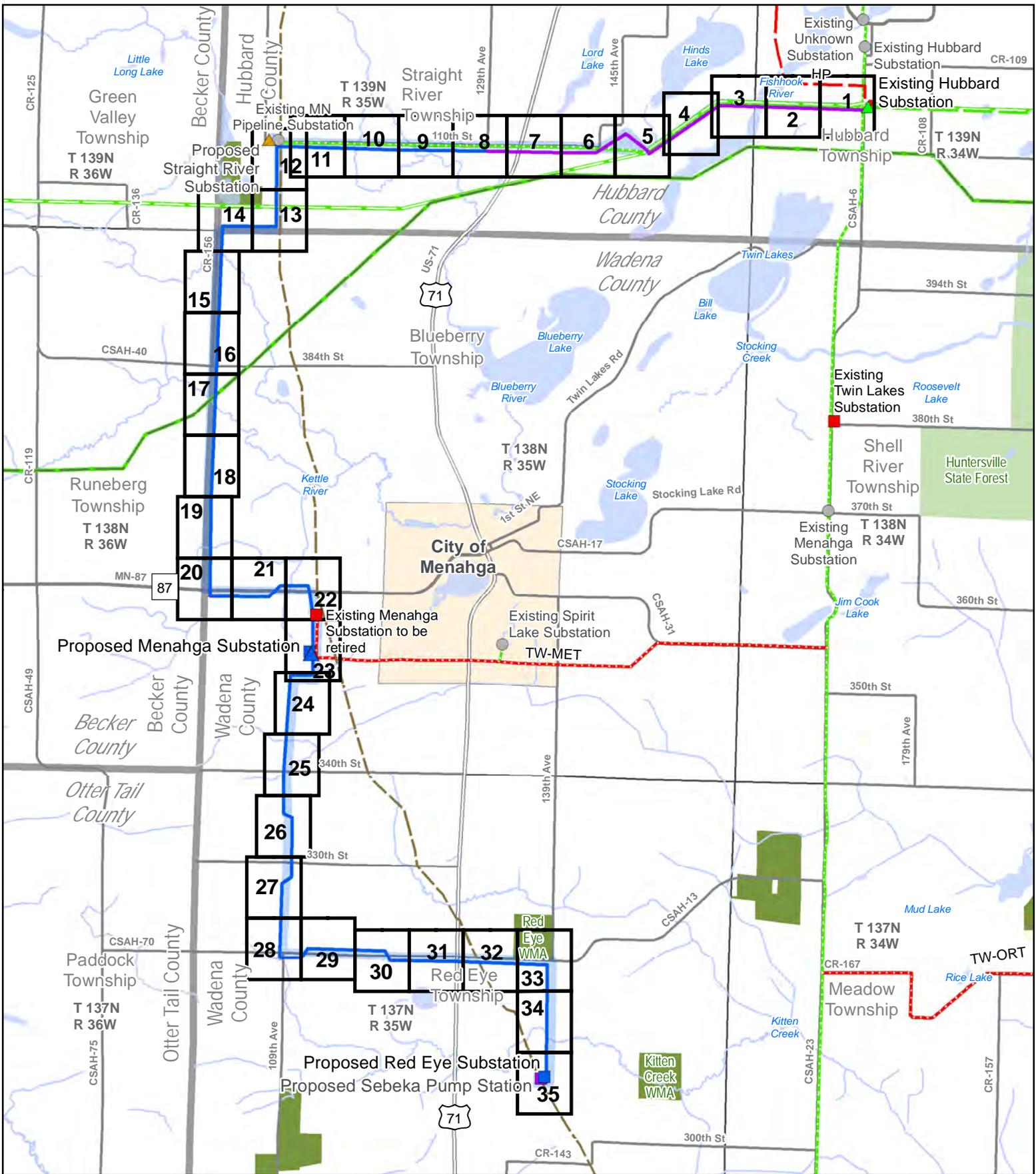


# **APPENDIX G**

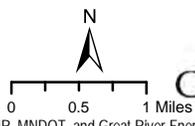
## **Detailed Route Maps**

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| <ul style="list-style-type: none"> <li>Great River Energy</li> <li>Proposed Route (500' width)</li> <li>Proposed Alignment - Single Circuit 115 kV</li> <li>Proposed Alignment - Double Circuit 115 kV</li> <li>Proposed Transmission Substation</li> <li>Existing 34.5 kV Transmission Line</li> <li>Existing 115 kV Transmission Line</li> <li>Existing Transmission Substation</li> <li>Todd-Wadena Electric</li> <li>Proposed Distribution Substation</li> <li>Existing Distribution Substation</li> </ul> | <ul style="list-style-type: none"> <li>Minnesota Power</li> <li>Proposed Transmission Substation</li> <li>Existing Distribution Substation</li> <li>Other Electric Transmission Utility</li> <li>Existing 34.5 kV Transmission Line</li> <li>Existing 115 kV Transmission Line</li> <li>Existing 230 kV Transmission Line</li> <li>Existing 250 kV Transmission Line</li> <li>Minnesota Pipe Line</li> <li>Proposed Pump Station</li> <li>Existing Pipeline</li> </ul> |
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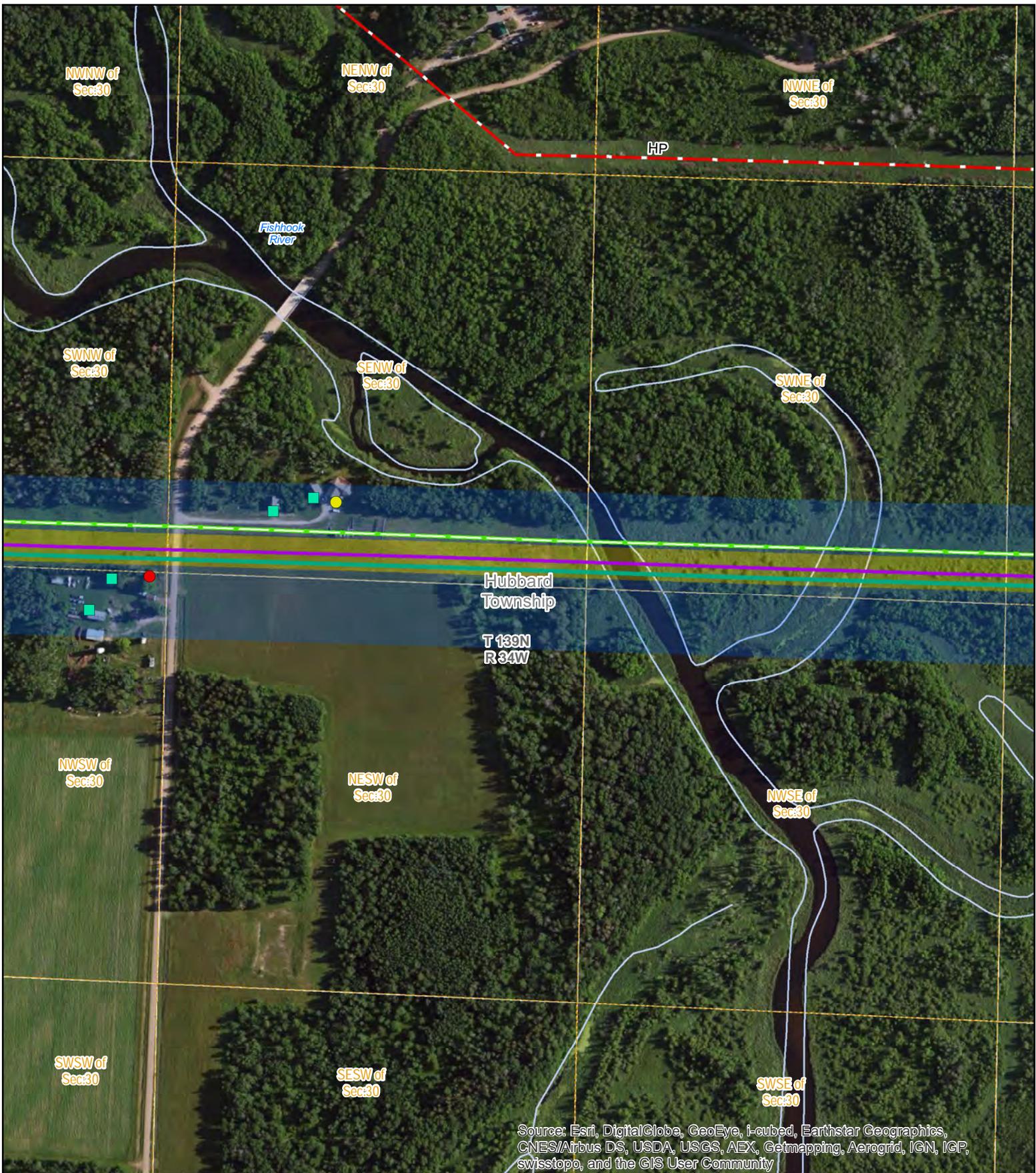
Menahga Area 115 kV Project  
Appendix G - Detailed Route Maps  
Map Sheet Key



GIS Data sources include: MNGEO, MNDNR, MNDOT, and Great River Energy.

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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

<p>Great River Energy</p> <ul style="list-style-type: none"> <li>Proposed Route (500' width)</li> <li>Proposed Easement Area (100' width)</li> <li>Proposed Alignment - Single Circuit 115 kV</li> <li>Proposed Alignment - Double Circuit 115 kV</li> <li>Proposed Transmission Substation</li> <li>Existing 34.5 kV Transmission Line</li> <li>Existing 115 kV Transmission Line</li> <li>Existing Transmission Substation</li> <li>Proposed Substation Fence</li> </ul>	<p>Todd-Wadena Electric</p> <ul style="list-style-type: none"> <li>Proposed Distribution Substation</li> <li>Existing Distribution Substation</li> </ul> <p>Minnesota Power</p> <ul style="list-style-type: none"> <li>Proposed Transmission Substation</li> <li>Existing Distribution Substation</li> <li>Other Electric Transmission Utility</li> <li>Existing 34.5 kV Transmission Line</li> <li>34.5 kv line to be removed with the project</li> <li>Existing 115 kV Transmission Line</li> </ul>	<ul style="list-style-type: none"> <li>Existing 230 kV Transmission Line</li> <li>Existing 250 kV Transmission Line</li> </ul> <p>Structure</p> <ul style="list-style-type: none"> <li>Residence 50-100' (1)</li> <li>Residence 100-150' (0)</li> <li>Residence 150-250' (1)</li> <li>Commercial / Industrial 50-100' (0)</li> <li>Non-Residential Building 0-250' (4)</li> <li>Minnesota Pipe Line</li> <li>Proposed Pump Station</li> </ul>	<ul style="list-style-type: none"> <li>Existing Pipeline</li> </ul>
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### Menahga Area 115 kV Project

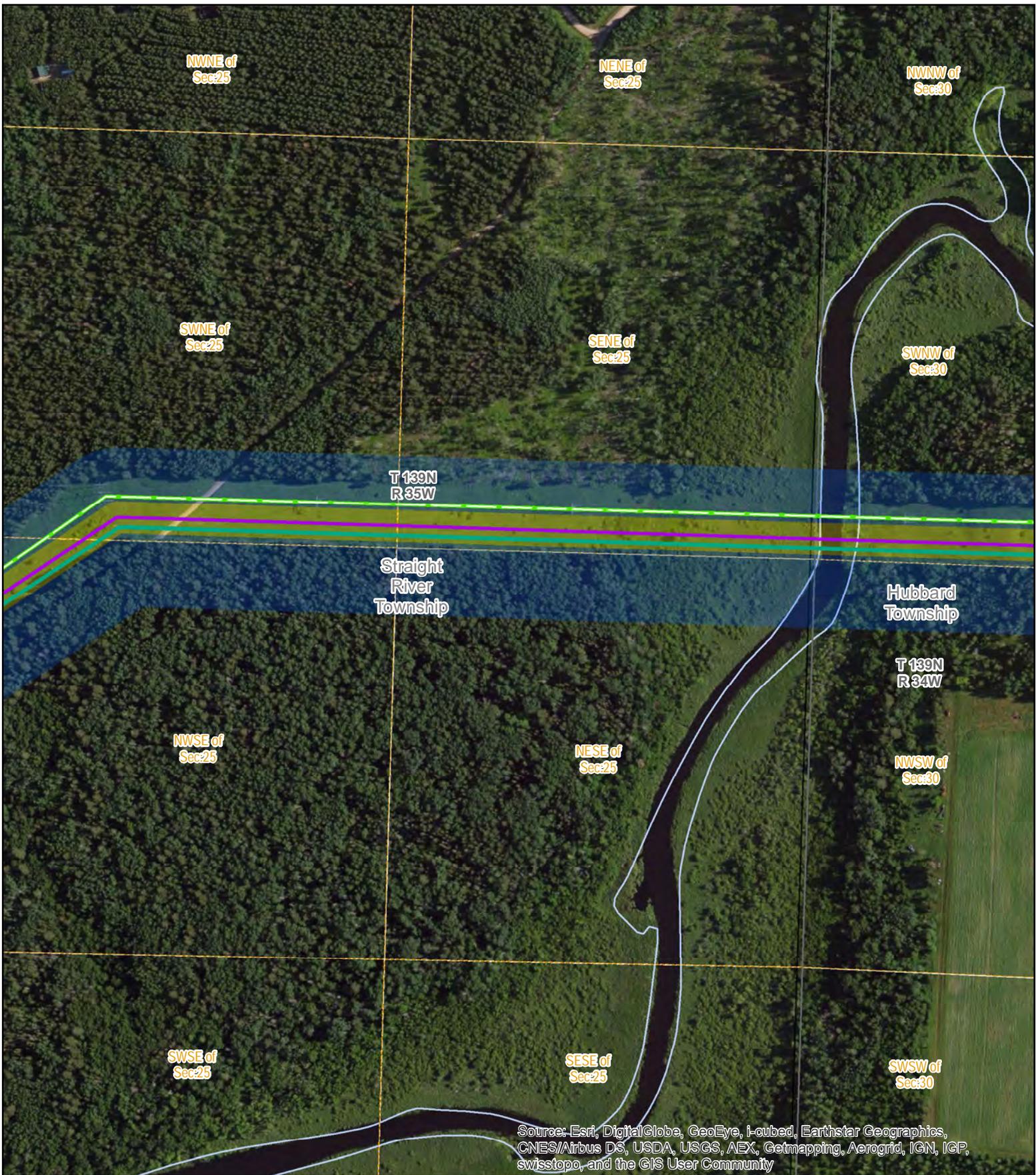
## Appendix G - Detailed Route Maps

### Map Sheet 2 of 35

0 50 100 200 Feet

GIS Data sources include:  
MNGEO, MNDNR, MNDOT, and Great River Energy.

**GREAT RIVER ENERGY**  
A Touchstone Energy Cooperative



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

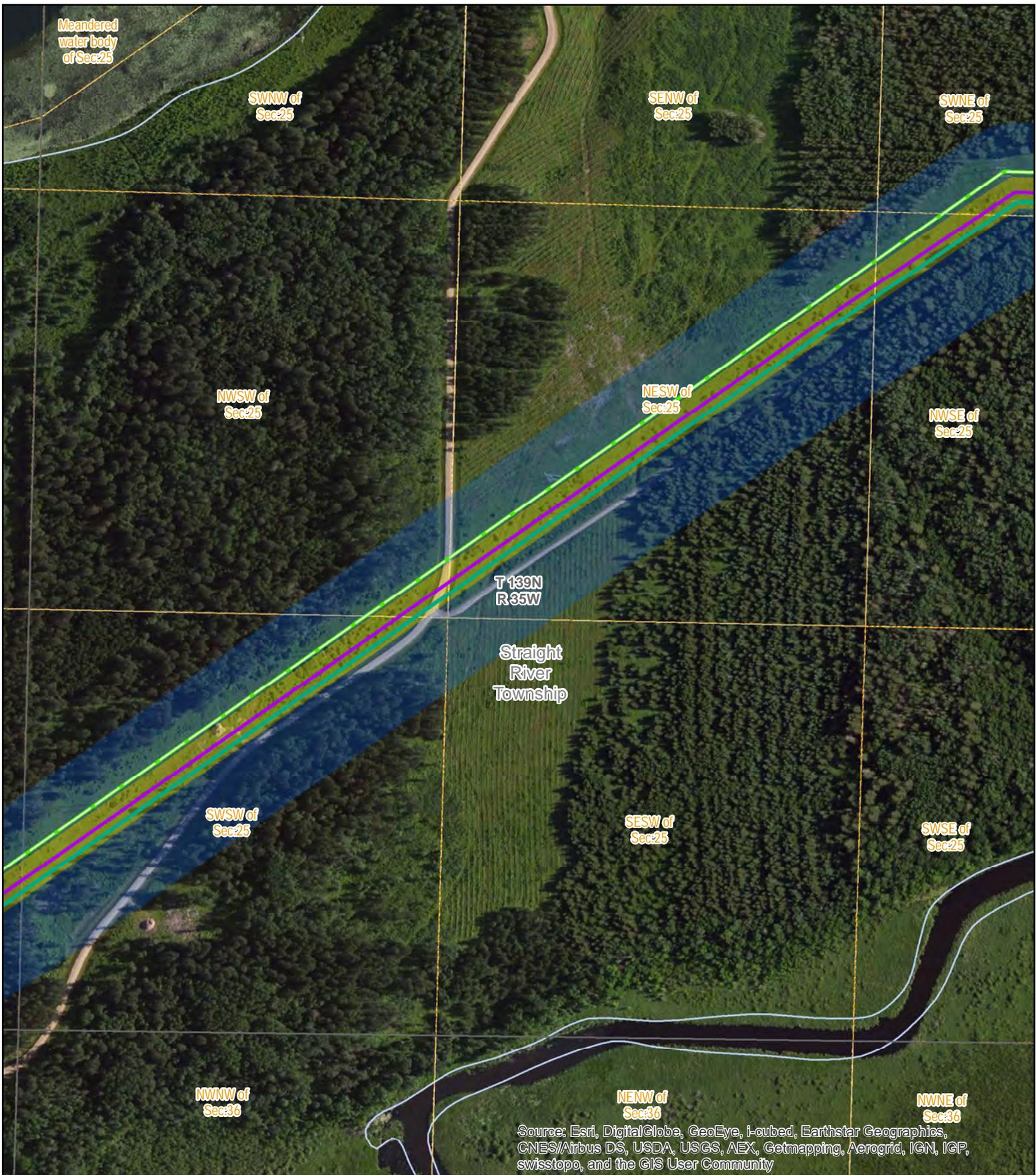
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**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 3 of 35**

N  
 0 50 100 200 Feet  
 GIS Data sources include:  
 MNGEO, MNDNR, MNDOT, and Great River Energy.

**GREAT RIVER ENERGY**  
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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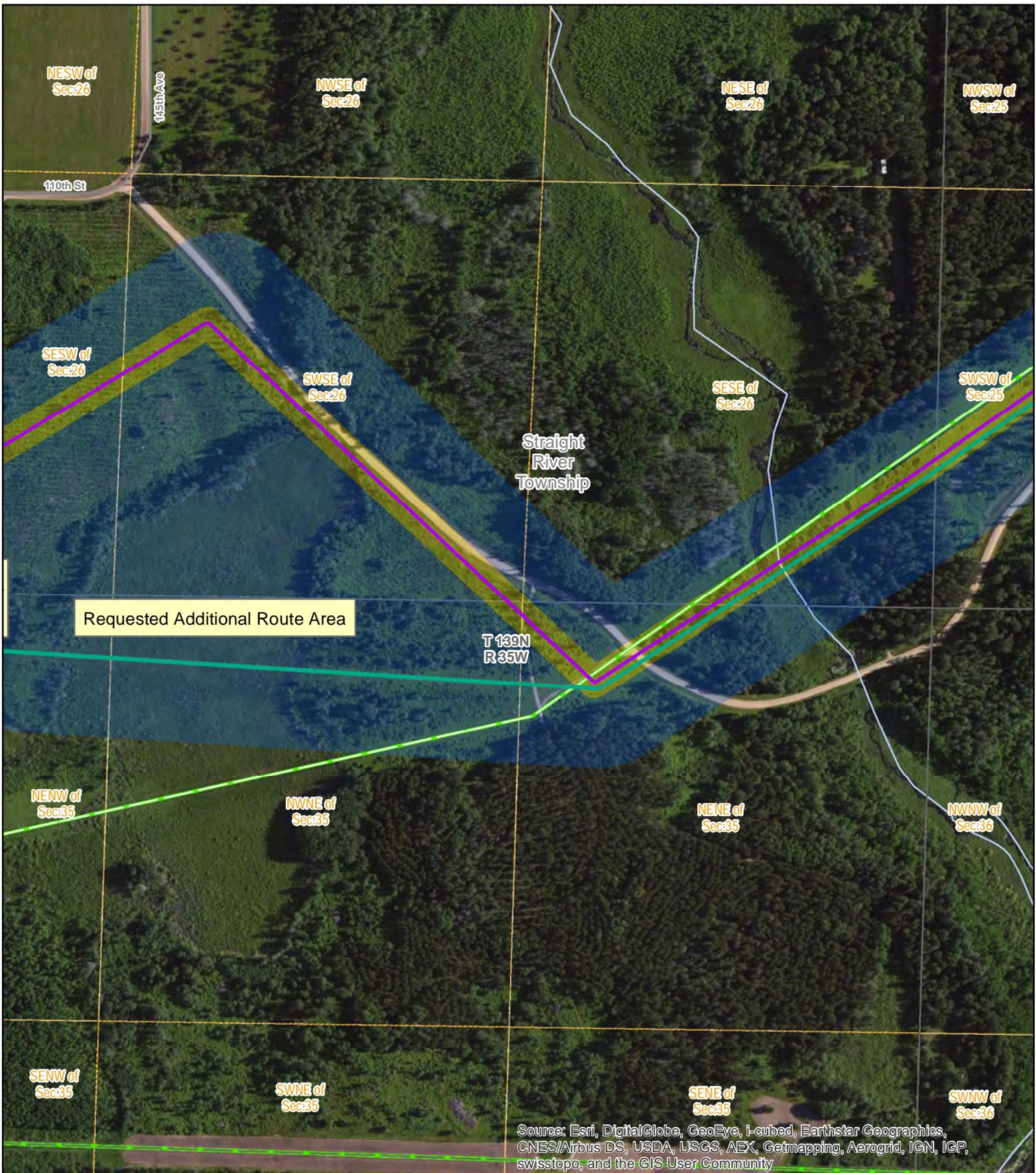
**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 4 of 35**

0 50 100 200 Feet

GIS Data sources include:  
 MNGEO, MNDNR, MNDOT, and Great River Energy.

**GREAT RIVER ENERGY**  
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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### Menahga Area 115 kV Project

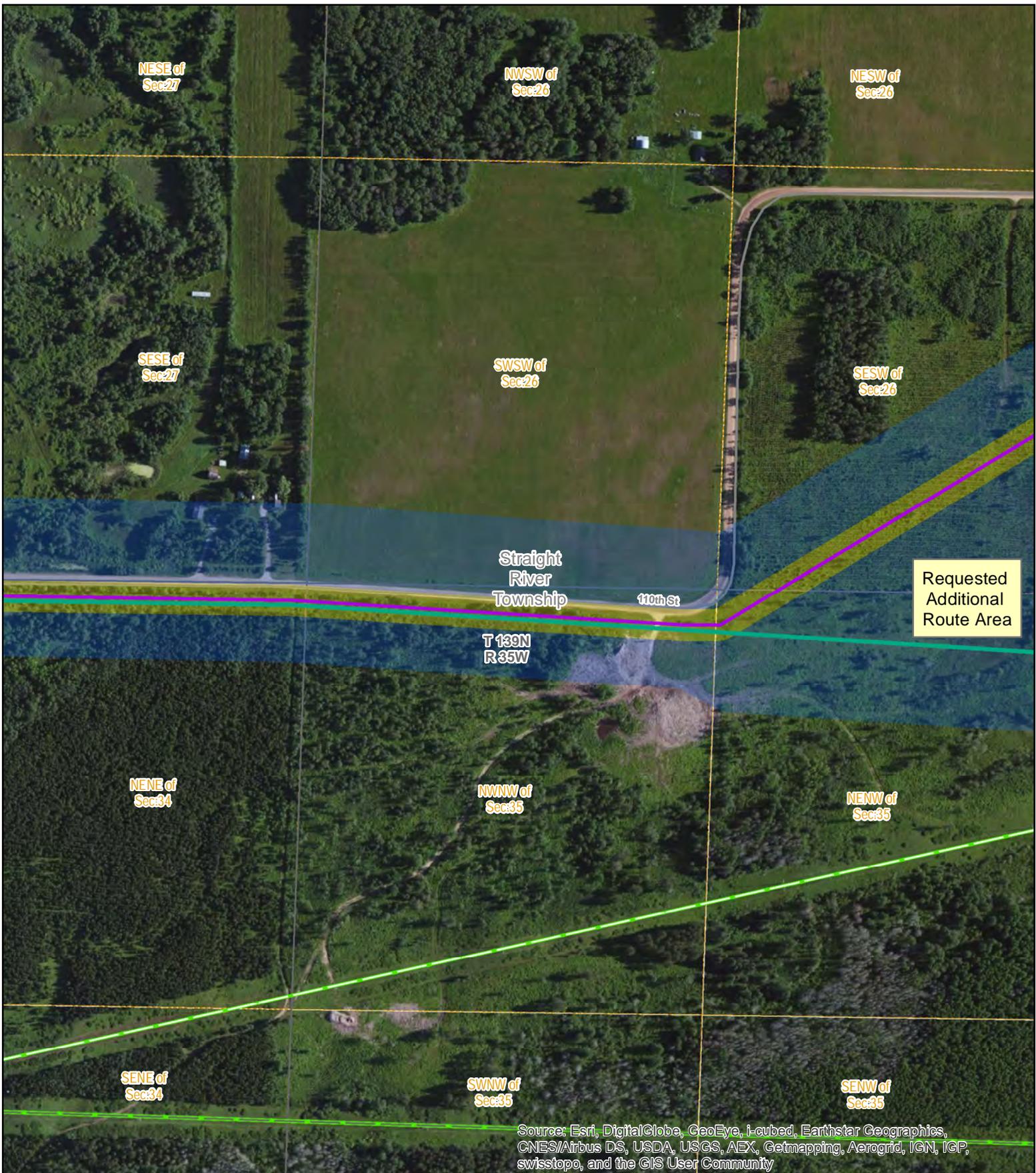
## Appendix G - Detailed Route Maps

# Map Sheet 5 of 35

0 50 100 200 Feet

GIS Data sources include:  
MNGEO, MNDNR, MNDOT, and Great River Energy.

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<p>Great River Energy</p> <ul style="list-style-type: none"> <li>Proposed Route (500' width)</li> <li>Proposed Easement Area (100' width)</li> <li>Proposed Alignment - Single Circuit 115 kV</li> <li>Proposed Alignment - Double Circuit 115 kV</li> <li>Proposed Transmission Substation</li> <li>Existing 34.5 kV Transmission Line</li> <li>Existing 115 kV Transmission Line</li> <li>Existing Transmission Substation</li> <li>Proposed Substation Fence</li> </ul>	<p>Todd-Wadena Electric</p> <ul style="list-style-type: none"> <li>Proposed Distribution Substation</li> <li>Existing Distribution Substation</li> </ul> <p>Minnesota Power</p> <ul style="list-style-type: none"> <li>Proposed Transmission Substation</li> <li>Existing Distribution Substation</li> </ul> <p>Other Electric Transmission Utility</p> <ul style="list-style-type: none"> <li>Existing 34.5 kV Transmission Line</li> <li>34.5 kv line to be removed with the project</li> <li>Existing 115 kV Transmission Line</li> </ul>	<ul style="list-style-type: none"> <li>Existing 230 kV Transmission Line</li> <li>Existing 250 kV Transmission Line</li> </ul> <p>Structure</p> <ul style="list-style-type: none"> <li>Residence 50-100' (0)</li> <li>Residence 100-150' (0)</li> <li>Residence 150-250' (0)</li> <li>Commercial / Industrial 50-100' (0)</li> <li>Non-Residential Building 0-250' (0)</li> <li>Minnesota Pipe Line</li> <li>Proposed Pump Station</li> </ul> <p>Existing Pipeline</p>
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### Menahga Area 115 kV Project

## Appendix G - Detailed Route Maps

# Map Sheet 6 of 35

0 50 100 200 Feet

GIS Data sources include:  
MNGEO, MNDNR, MNDOT, and Great River Energy.

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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 7 of 35**

0 50 100 200 Feet  
 GIS Data sources include:  
 MNGEO, MNDNR, MNDOT, and Great River Energy.

**GREAT RIVER ENERGY**  
 A Touchstone Energy Cooperative



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGR, swisstopo, and the GIS User Community

- Great River Energy
- Proposed Route (500' width)
- Proposed Easement Area (100' width)
- Proposed Alignment - Single Circuit 115 kV
- Proposed Alignment - Double Circuit 115 kV
- Proposed Transmission Substation
- Existing 34.5 kV Transmission Line
- Existing 115 kV Transmission Line
- Existing Transmission Substation
- Proposed Substation Fence

- Todd-Wadena Electric
- Proposed Distribution Substation
- Existing Distribution Substation
- Minnesota Power
- Proposed Transmission Substation
- Existing Distribution Substation
- Other Electric Transmission Utility
- Existing 34.5 kV Transmission Line
- 34.5 kv line to be removed with the project
- Existing 115 kV Transmission Line

- Existing 230 kV Transmission Line
- Existing 250 kV Transmission Line
- Structure
- Residence 50-100' (0)
- Residence 100-150' (1)
- Residence 150-250' (2)
- Commercial / Industrial 50-100' (0)
- Non-Residential Building 0-250' (5)
- Minnesota Pipe Line
- Proposed Pump Station

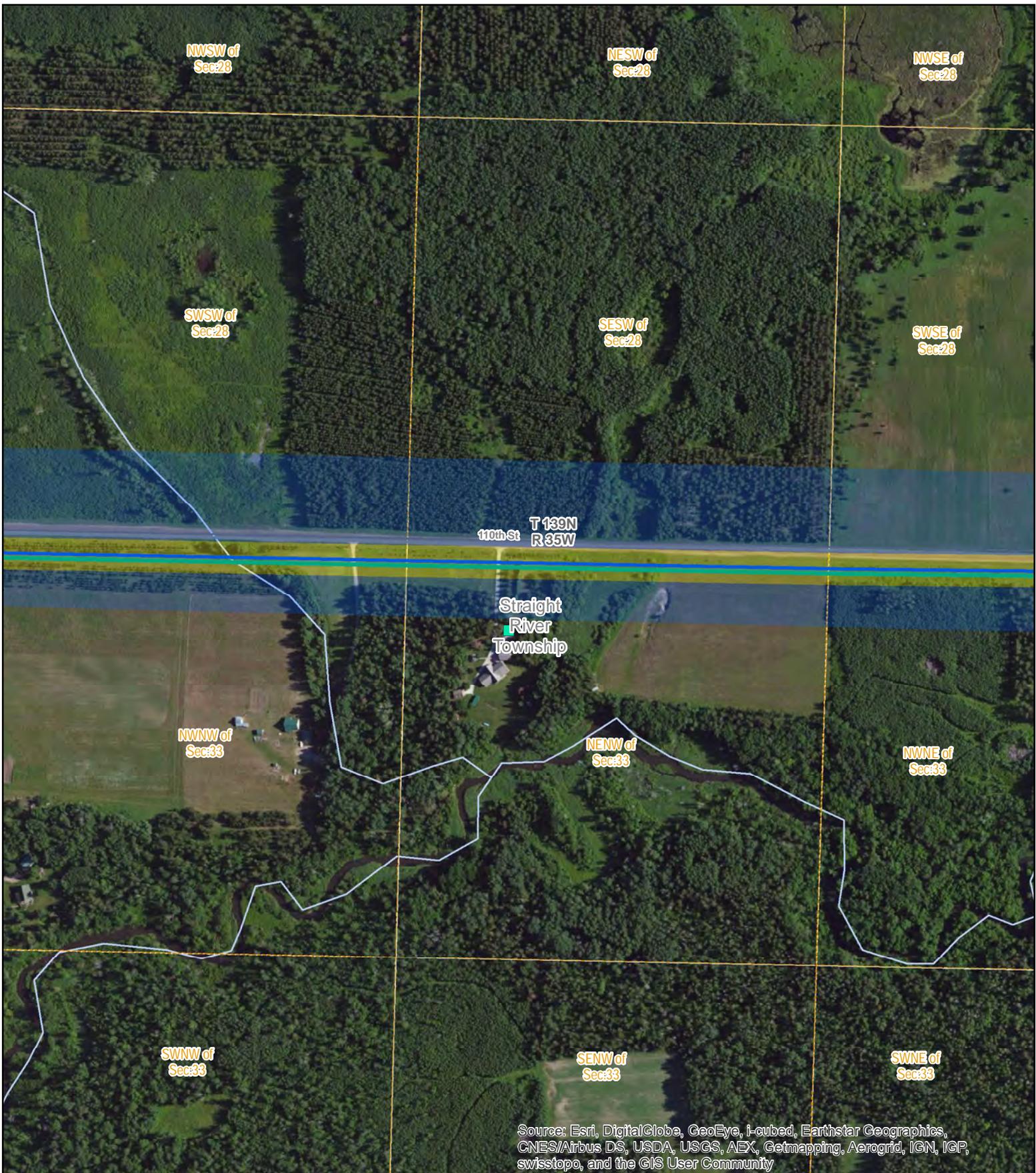
- Existing Pipeline

**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 8 of 35**

N  
 0 50 100 200 Feet  
 GIS Data sources include:  
 MNGEO, MNDNR, MNDOT, and Great River Energy.

**GREAT RIVER ENERGY**  
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## Menahga Area 115 kV Project

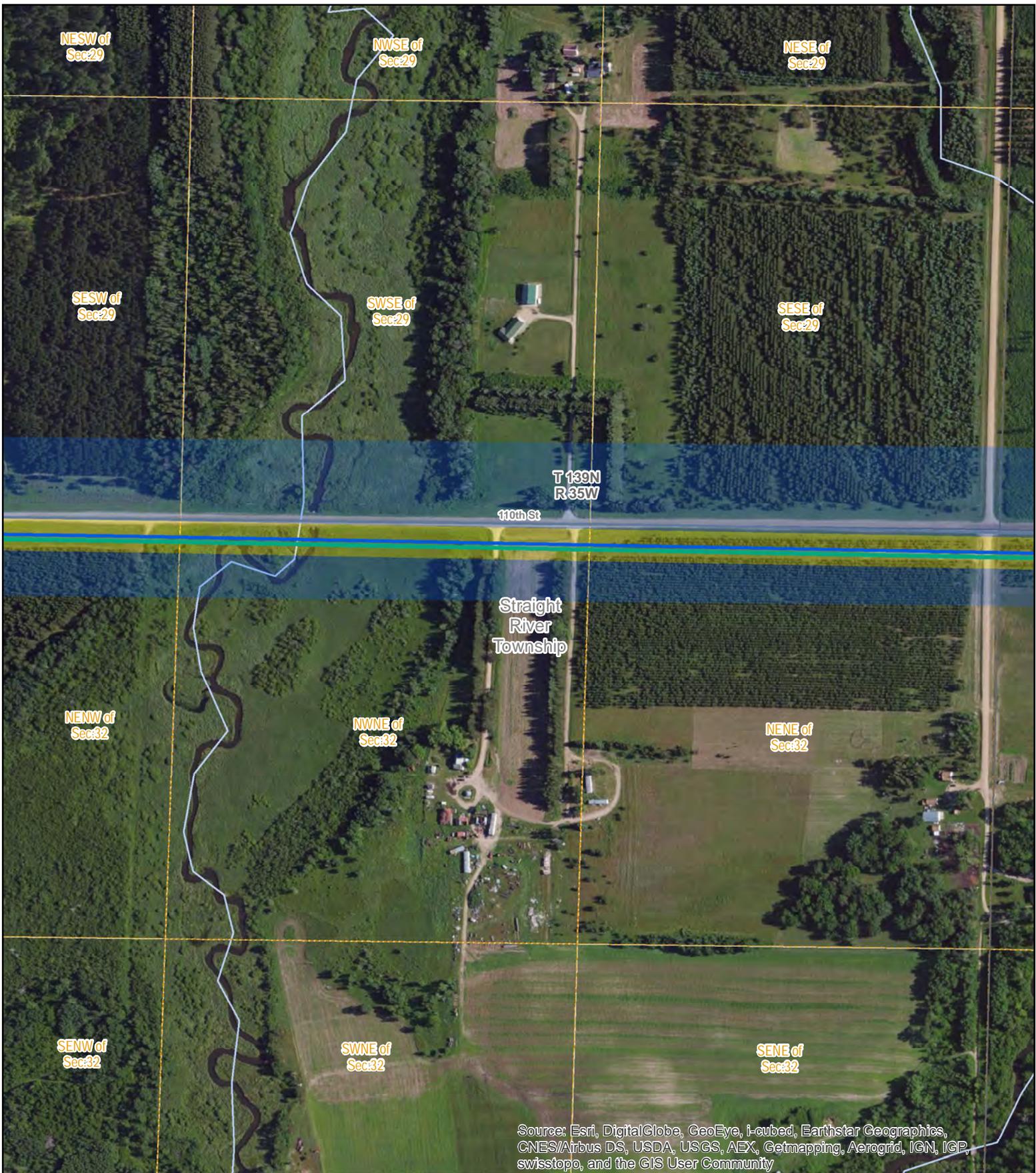
### Appendix G - Detailed Route Maps

Map Sheet 9 of 35

0 50 100 200 Feet

GIS Data sources include:  
MINGEO, MNDNR, MNDOT, and Great River Energy.

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A Touchstone Energy Cooperative



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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## Menahga Area 115 kV Project

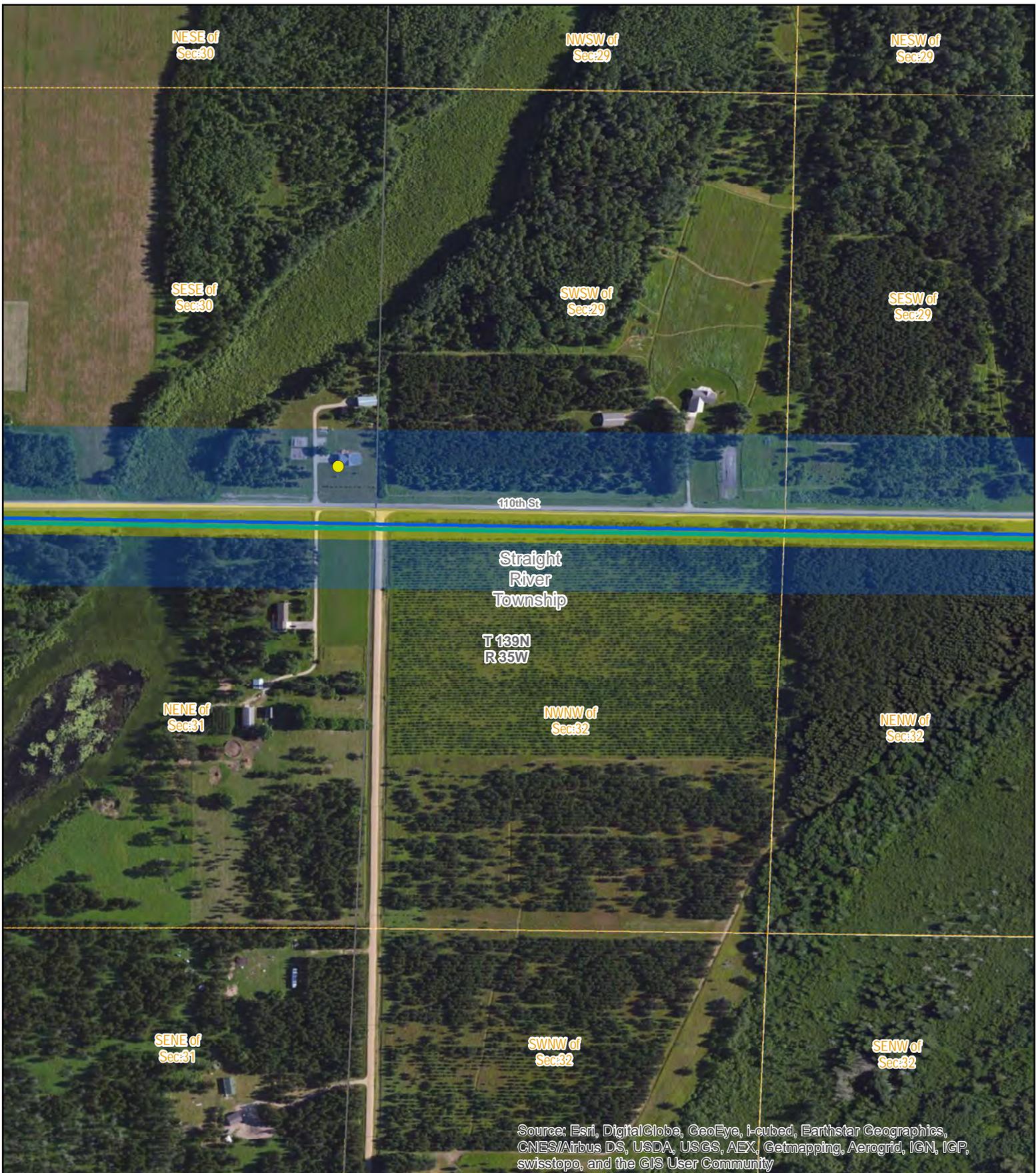
### Appendix G - Detailed Route Maps

Map Sheet 10 of 35

0 50 100 200 Feet

GIS Data sources include:  
MNGEO, MNDNR, MNDOT, and Great River Energy.

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A Touchstone Energy Cooperative



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## Menahga Area 115 kV Project

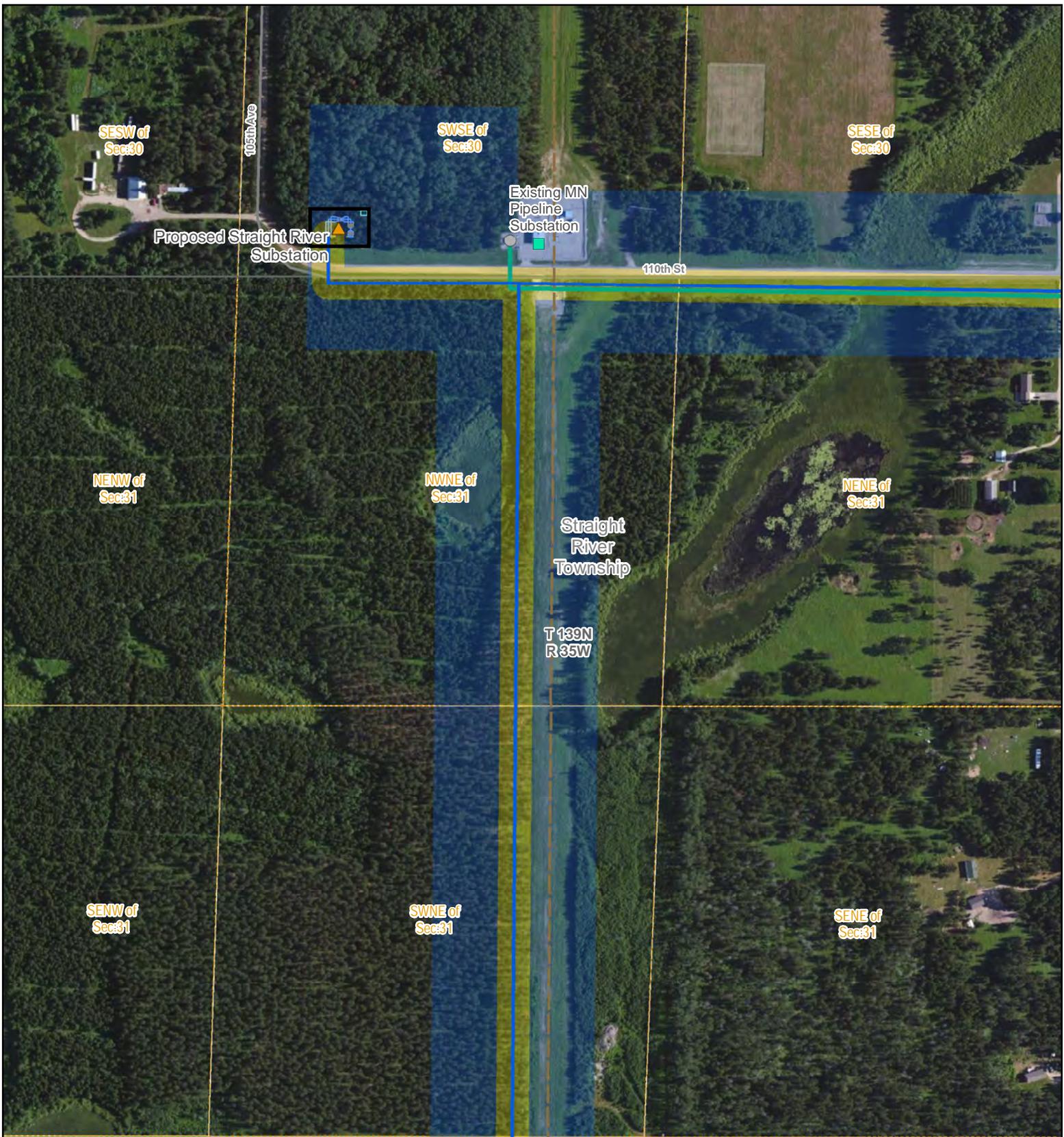
### Appendix G - Detailed Route Maps

Map Sheet 11 of 35

0 50 100 200 Feet

GIS Data sources include:  
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**GREAT RIVER ENERGY**  
A Touchstone Energy Cooperative



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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### Menahga Area 115 kV Project

## Appendix G - Detailed Route Maps

# Map Sheet 12 of 35

0 50 100 200 Feet

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A Touchstone Energy Cooperative



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

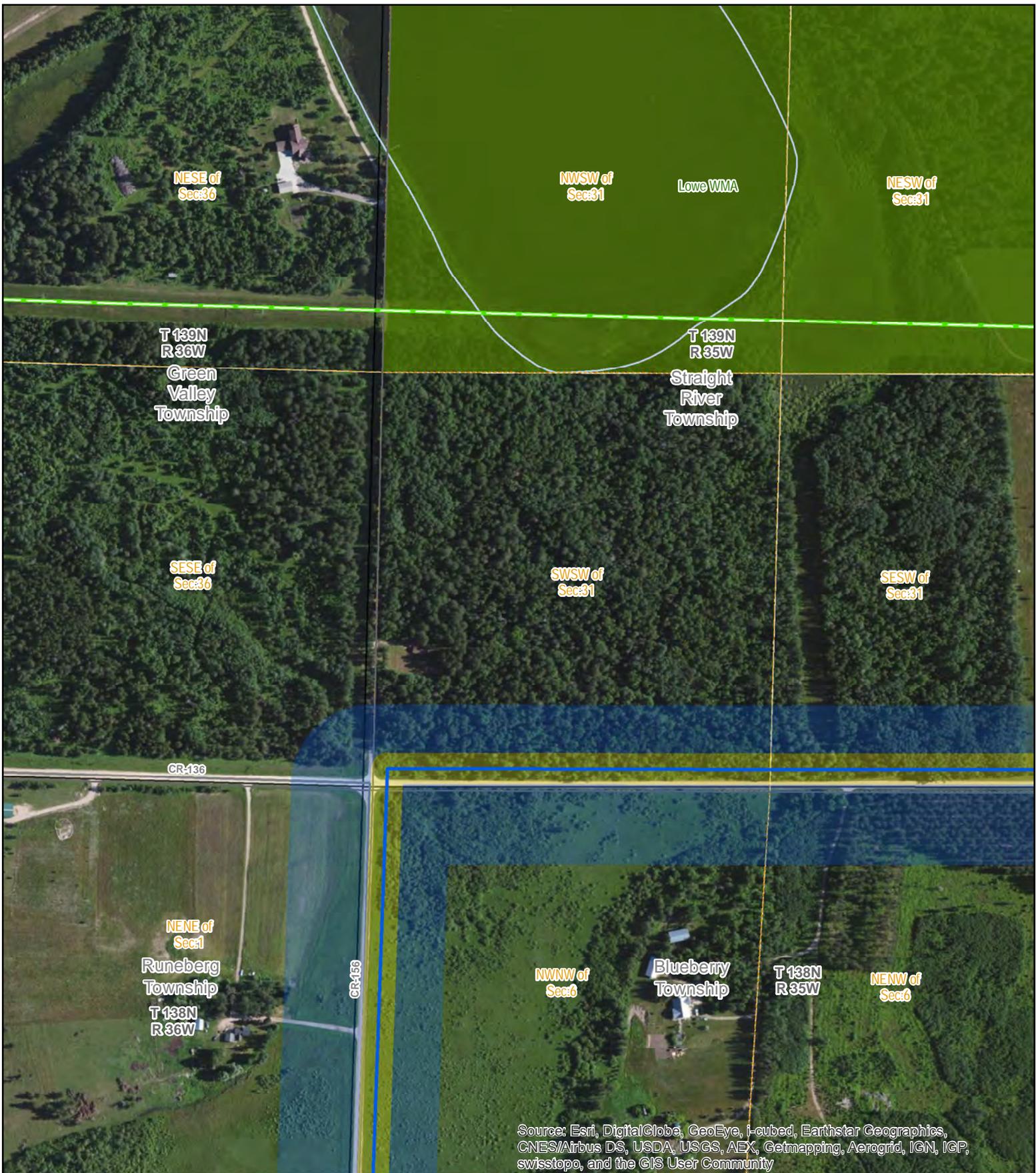
Great River Energy	Todd-Wadena Electric	Existing 250 kV Transmission Line
Proposed Route (500' width)	Proposed Distribution Substation	Structure
Proposed Easement Area (100' width)	Existing Distribution Substation	Residence 50-100' (0)
Proposed Alignment - Single Circuit 115 kV	Minnesota Power	Residence 100-150' (0)
Proposed Alignment - Double Circuit 115 kV	Proposed Transmission Substation	Residence 150-250' (0)
Proposed Transmission Substation	Existing Distribution Substation	Commercial / Industrial 50-100' (0)
Existing 34.5 kV Transmission Line	Other Electric Transmission Utility	Non-Residential Building 0-250' (0)
Existing 115 kV Transmission Line	Existing 34.5 kV Transmission Line	Minnesota Pipe Line
Existing Transmission Substation	Existing 115 kV Transmission Line	Proposed Pump Station
Proposed Substation Fence	Existing 230 kV Transmission Line	Existing Pipeline

**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 13 of 35**

N  
0 50 100 200 Feet  
GIS Data sources include:  
MINGEO, MNDNR, MNDOT, and Great River Energy.

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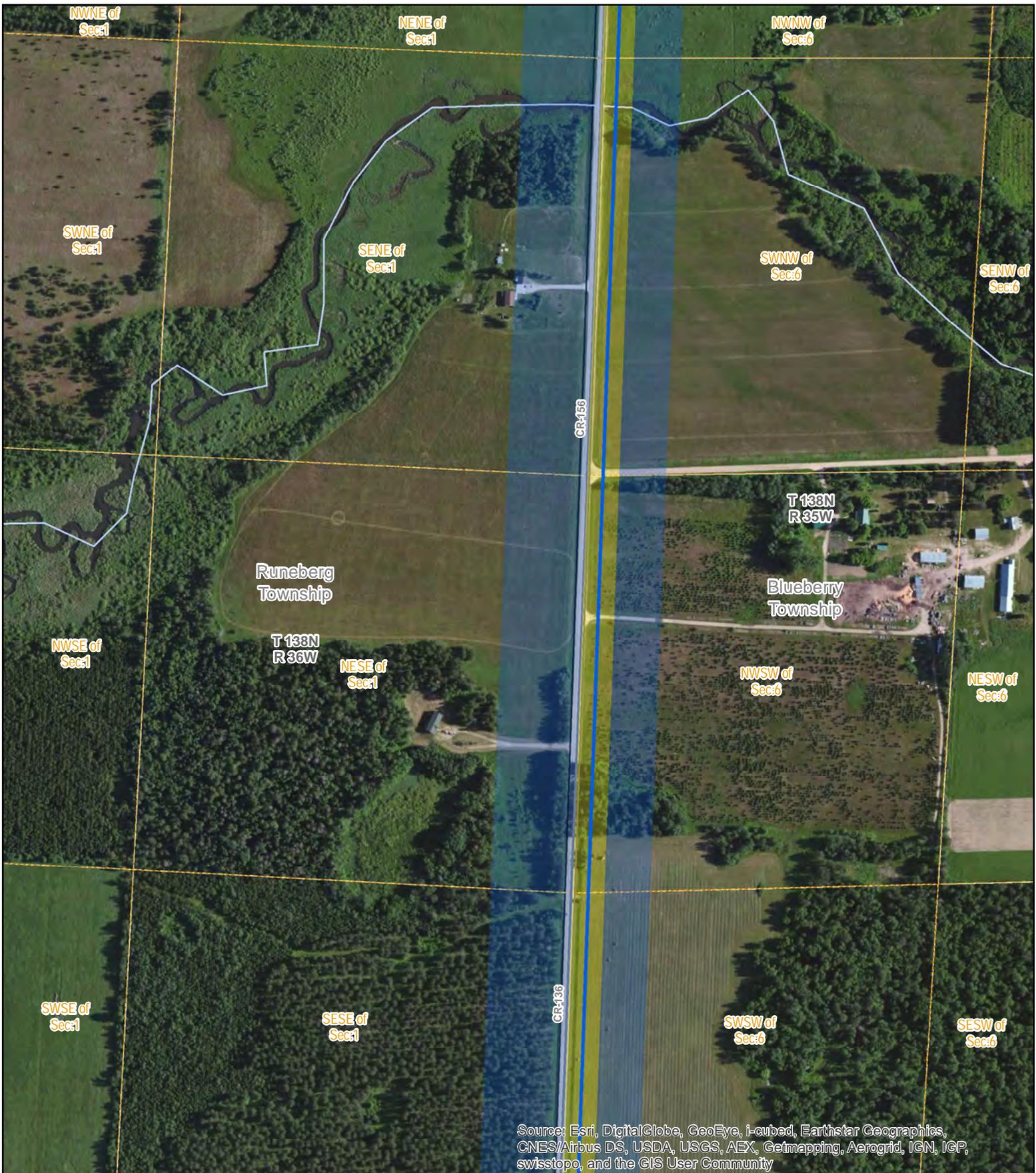
- |  |                                     |                                       |
|--|-------------------------------------|---------------------------------------|
| Great River Energy                         | Todd-Wadena Electric                | Existing 250 kV Transmission Line     |
| Proposed Route (500' width)                | Proposed Distribution Substation    | Structure                             |
| Proposed Easement Area (100' width)        | Existing Distribution Substation    | ● Residence 50-100' (0)               |
| Proposed Alignment - Single Circuit 115 kV | Minnesota Power                     | ● Residence 100-150' (0)              |
| Proposed Alignment - Double Circuit 115 kV | Proposed Transmission Substation    | ● Residence 150-250' (0)              |
| Proposed Transmission Substation           | Existing Distribution Substation    | ★ Commercial / Industrial 50-100' (0) |
| Existing 34.5 kV Transmission Line         | Other Electric Transmission Utility | ■ Non-Residential Building 0-250' (0) |
| Existing 115 kV Transmission Line          | Existing 34.5 kV Transmission Line  | Minnesota Pipe Line                   |
| Existing Transmission Substation           | Existing 115 kV Transmission Line   | Proposed Pump Station                 |
| Proposed Substation Fence                  | Existing 230 kV Transmission Line   | Existing Pipeline                     |

**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 14 of 35**

N  
0 50 100 200 Feet  
GIS Data sources include:  
MNGEO, MNDNR, MNDOT, and Great River Energy.

**GREAT RIVER ENERGY**  
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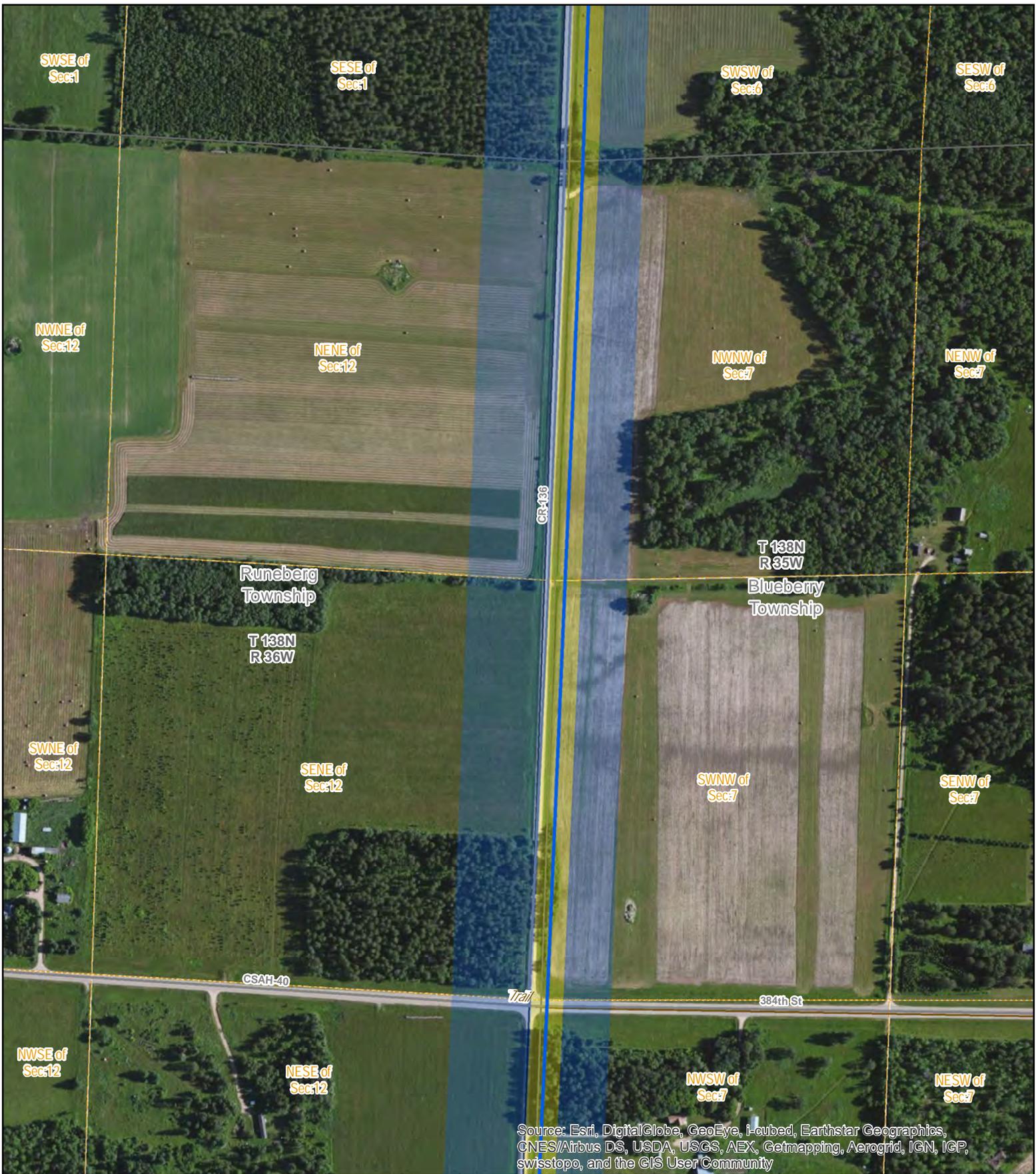
- |  |                                     |                                     |
|--|-------------------------------------|-------------------------------------|
| Great River Energy                         | Todd-Wadena Electric                | Existing 250 kV Transmission Line   |
| Proposed Route (500' width)                | Proposed Distribution Substation    | Structure                           |
| Proposed Easement Area (100' width)        | Existing Distribution Substation    | Residence 50-100' (0)               |
| Proposed Alignment - Single Circuit 115 kV | Minnesota Power                     | Residence 100-150' (0)              |
| Proposed Alignment - Double Circuit 115 kV | Proposed Transmission Substation    | Residence 150-250' (0)              |
| Proposed Transmission Substation           | Existing Distribution Substation    | Commercial / Industrial 50-100' (0) |
| Existing 34.5 kV Transmission Line         | Other Electric Transmission Utility | Non-Residential Building 0-250' (0) |
| Existing 115 kV Transmission Line          | Existing 34.5 kV Transmission Line  | Minnesota Pipe Line                 |
| Existing Transmission Substation           | Existing 115 kV Transmission Line   | Proposed Pump Station               |
| Proposed Substation Fence                  | Existing 230 kV Transmission Line   | Existing Pipeline                   |

## Menahga Area 115 kV Project Appendix G - Detailed Route Maps

Map Sheet 15 of 35

0 50 100 200 Feet  
GIS Data sources include:  
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Great River Energy	Todd-Wadena Electric	Existing 250 kV Transmission Line
Proposed Route (500' width)	Proposed Distribution Substation	Structure
Proposed Easement Area (100' width)	Existing Distribution Substation	Residence 50-100' (0)
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Proposed Transmission Substation	Existing Distribution Substation	Commercial / Industrial 50-100' (0)
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Existing 115 kV Transmission Line	Existing 34.5 kV Transmission Line	Minnesota Pipe Line
Existing Transmission Substation	Existing 115 kV Transmission Line	Proposed Pump Station
Proposed Substation Fence	Existing 230 kV Transmission Line	Existing Pipeline

**Menahga Area 115 kV Project**  
**Appendix G - Detailed Route Maps**  
**Map Sheet 16 of 35**

N  
0 50 100 200 Feet  
GIS Data sources include:  
MINGEO, MNDNR, MNDOT, and Great River Energy.

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