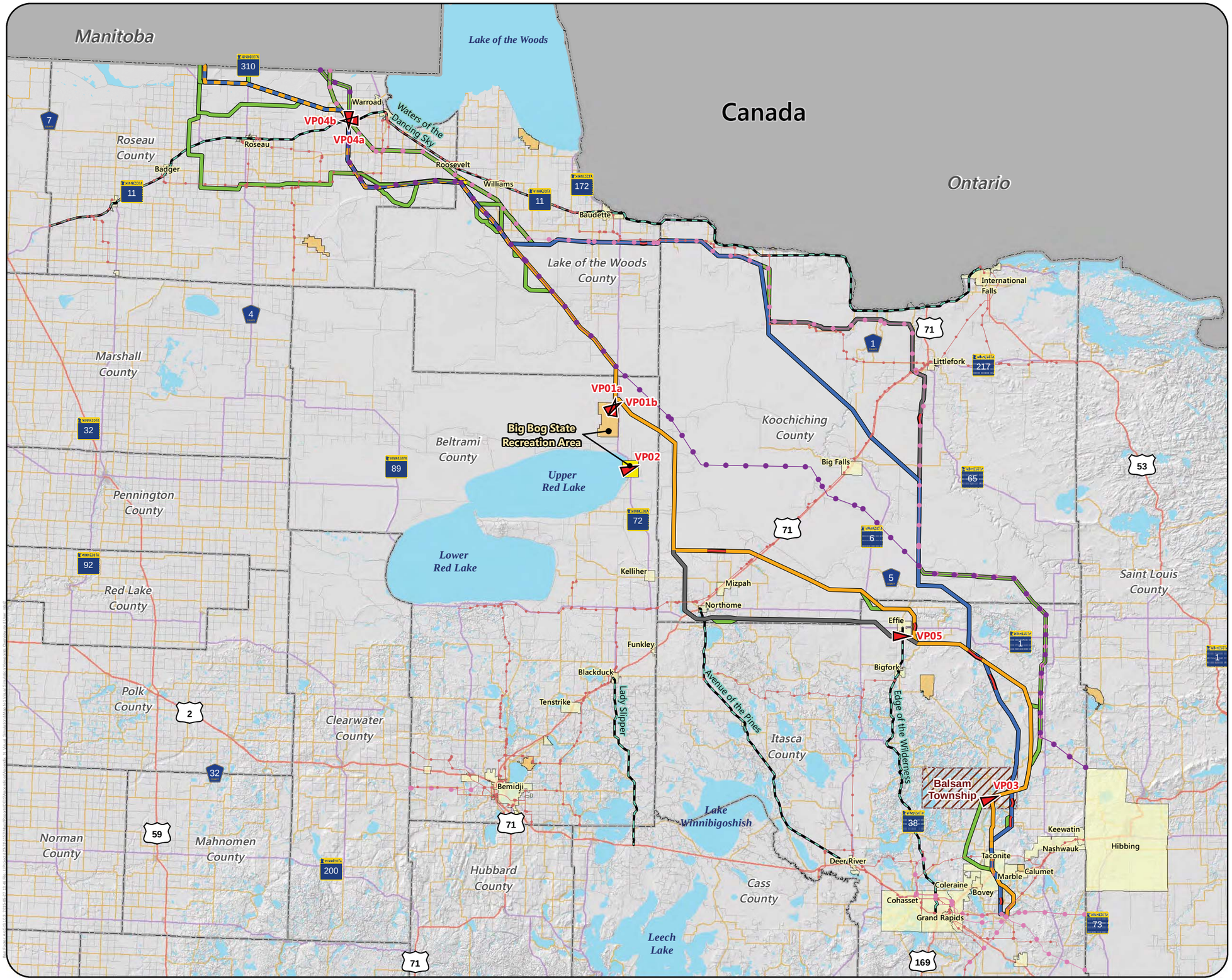
# Appendix N

## Photo Simulations




Visual Simulation Viewpoint

Big Bog State Recreation Area Fire Tower

**Proposed Routes**

- Blue/Orange Route
- Blue Route
- Orange Route
- Segment Option

**Alternatives**

- Route Variation
- Route Variation Hop
- Alignment Modification

**Existing Transmission Lines**

- 69 or 115 kV
- 230 kV
- 500 kV
- Scenic Byway

**Streets and Highways**

- US Highway
- State Trunk Highway
- County State Aid Highway
- Local Road
- State Park
- Balsam Township
- Municipal Boundary
- County Boundary
- International Boundary

Miles

14 7 0 14

Map N-1

**VISUAL SIMULATION VIEWPOINTS OVERVIEW**

Great Northern Transmission Line

Draft Environmental Impact Statement

U.S. DEPARTMENT OF ENERGY

MINNESOTA DEPARTMENT OF COMMERCE

**Viewpoint 01a -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Existing View***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01a**

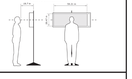
Bog Boardwalk Lookout
off Highway 72

Looking Northeast

Viewpoint Location  Major Road

| | |
|---|---|
| Easting Position: | **1258954.4** |
| Northing Position: | **175653287.5** |
| Elevation of Viewpoint Position (ft): | **1196.1** |
| Height of Camera Above Ground (ft): | **5.4** |
| Date of Photography: | **29-October-2014 at 4:22 pm** |
| Orientation of View: | **NE** |
| Horizontal Field of View: | **124°** |
| Vertical Field of View: | **55°** |

Correct Viewing of TrueView™ Photosimulations




NOTES:

Viewpoint locations have been surveyed by

*Paul Tokarczyk, PE/PLS*
*Barr Engineering*
*3128 14th Avenue East*
*Hibbing, MN 55746*

PROJECTION/ZONE/DATUM:
UTM, Zone 15 NH, NAD83

Heights are above mean sea level.

No part of this photosimulation shall be altered in any way.

Photosimulation Created Using
TrueView™ Technology
(Patent No.: US 8,184,906 B2)

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N-2

**Viewpoint 01a -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Proposed View***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01a**

Bog Boardwalk Lookout
off Highway 72

Looking Northeast

Viewpoint Location
Transmission Line
Major Road

| | |
|---|---|
| Easting Position: | **1258954.4** |
| Northing Position: | **175653287.5** |
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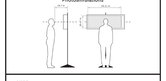


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N-3

**Viewpoint 01a -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Proposed View***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01a**

Bog Boardwalk Lookout
off Highway 72

Looking Northeast

Viewpoint Location
Transmission Line
Major Road

| | |
|---|---|
| Easting Position: | **1258954.4** |
| Northing Position: | **175653287.5** |
| Elevation of Viewpoint Position (ft): | **1196.1** |
| Height of Camera Above Ground (ft): | **5.4** |
| Date of Photography: | **29-October-2014 at 4:22 pm** |
| Orientation of View: | **NE** |
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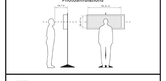


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N-3

**Viewpoint 01a -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Proposed View with Color Overlay to highlight transmission line behind existing vegetation***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01a**

Bog Boardwalk Lookout
off Highway 72

Looking Northeast

Viewpoint Location
Transmission Line
Major Road

| | |
|---|---|
| Easting Position: | **1258954.4** |
| Northing Position: | **175653287.5** |
| Elevation of Viewpoint Position (ft): | **1196.1** |
| Height of Camera Above Ground (ft): | **5.4** |
| Date of Photography: | **29-October-2014 at 4:22 pm** |
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| Horizontal Field of View: | **124°** |
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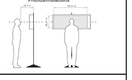
Correct Viewing of TrueView™ Photosimulations

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N-4

**Viewpoint 01b -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Existing View***

N-S

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01b**

Bog Boardwalk Lookout
off Highway 72

Looking East Northeast

Viewpoint Location  Major Road

| | |
|---|---|
| Easting Position: | **1258981.6** |
| Northing Position: | **1765332.7** |
| Elevation of Viewpoint Position (ft): | **1199.0** |
| Date of Photography: | **23-July-2014 at 3:43 pm** |
| Orientation of View: | **NE** |

NOTES:

Viewpoint locations have been captured by handheld GPS

PROJECTION/ZONE/DATUM:
UTM, Zone 15 NH, NAD83

Heights are above mean sea level.

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Photosimulation Created Provided by

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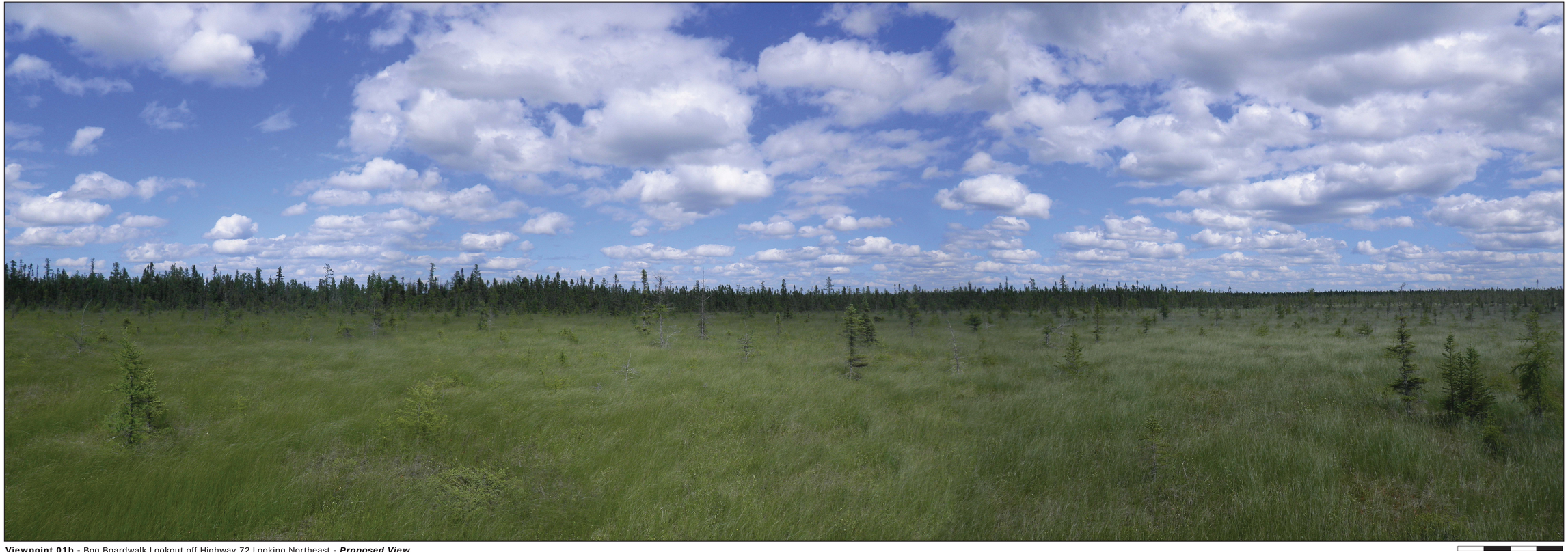

**Viewpoint 01b -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Proposed View***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

N-6

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01b**

Bog Boardwalk Lookout
off Highway 72

Looking East Northeast

Viewpoint Location
Major Road
Transmission Line

| | |
|---|---|
| Easting Position: | **1258981.6** |
| Northing Position: | **1765332.7** |
| Elevation of Viewpoint Position (ft): | **1199.0** |
| Date of Photography: | **23-July-2014 at 3:43 pm** |
| Orientation of View: | **NE** |

NOTES:

Viewpoint locations have been captured by handheld GPS

PROJECTION/ZONE/DATUM:
UTM, Zone 15 NH, NAD83

Heights are above mean sea level.

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Photosimulation Created Provided by

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**Viewpoint 01b -** Bog Boardwalk Lookout off Highway 72 Looking Northeast **- *Proposed View with Color Overlay to highlight transmission line behind existing vegetation***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 01b**

Bog Boardwalk Lookout
off Highway 72

Looking East Northeast

Viewpoint Location
Major Road
Transmission Line

| | |
|---|---|
| Easting Position: | **1258981.6** |
| Northing Position: | **175653132.7** |
| Elevation of Viewpoint Position (ft): | **1199.0** |
| Date of Photography: | **23-July-2014 at 3:43 pm** |
| Orientation of View: | **NE** |

NOTES:

Viewpoint locations have been captured by handheld GPS

PROJECTION/ZONE/DATUM:
UTM, Zone 15 NH, NAD83

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Photosimulation Created Provided by

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N-7

**Viewpoint 02 -** Big Bog Recreation Area Fire Lookout Tower Looking East Southeast **- *Existing View***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 02**

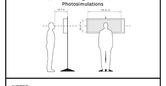
Big Bog Recreation Area
Fire Lookout Tower

Looking East Southeast

Viewpoint Location  Major Road

| | |
|---|---|
| Easting Position: | **1271629.9** |
| Northing Position: | **1707787.4** |
| Elevation of Viewpoint Position Tower Platform (ft): | **1282.0** |
| Height of Camera Above Tower Platform (ft): | **5.4** |
| Height of Tower Platform Above Ground (ft): approximately | **100** |
| Date of Photography: | **25-October-2014 at 1:41 pm** |
| Orientation of View: | **ESE** |
| Horizontal Field of View: | **124°** |
| Vertical Field of View: | **55°** |

Correct Viewing of TrueView™ Photosimulations




NOTES:

Viewpoint locations have been surveyed by

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*Barr Engineering*
*3128 14th Avenue East*
*Hibbing, MN 55746*

PROJECTION/ZONE/DATUM:
UTM, Zone 15 NAD83

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No part of this photosimulation shall be altered in any way.

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N-8

**Viewpoint 02 -** Big Bog Recreation Area Fire Lookout Tower Looking East Southeast **- *Proposed View***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 02**

Big Bog Recreation Area
Fire Lookout Tower

Looking East Southeast

Viewpoint Location
Transmission Line
Major Road

| | |
|---|---|
| Easting Position: | **1271629.9** |
| Northing Position: | **1707787.4** |
| Elevation of Viewpoint Position Tower Platform (ft): | **1282.0** |
| Height of Camera Above Tower Platform (ft): | **5.4** |
| Height of Tower Platform Above Ground (ft): approximately | **100** |
| Date of Photography: | **25-October-2014 at 1:41 pm** |
| Orientation of View: | **ESE** |
| Horizontal Field of View: | **124°** |
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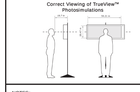
Correct Viewing of TrueView™ Photosimulations

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PROJECTION/ZONE/DATUM:
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(Patent No.: US 8,184,906 B2)

Provided by

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N-9

**Viewpoint 02 -** Big Bog Recreation Area Fire Lookout Tower Looking East Southeast ***- Proposed View with Color Overlay to highlight transmission line in distance***

For on-screen display:
Scale bar to be 4 inches (101.6 mm) wide
Viewing distance 19.7 inches (50 cm)

BARR

**BARR Engineering**
**Great Northern Transmission Line**

**Viewpoint 02**

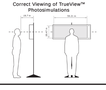
Big Bog Recreation Area
Fire Lookout Tower

Looking East Southeast

Viewpoint Location
Transmission Line
Major Road

| | |
|---|---|
| Easting Position: | **1271629.9** |
| Northing Position: | **1707787.4** |
| Elevation of Viewpoint Position Tower Platform (ft): | **1282.0** |
| Height of Camera Above Tower Platform (ft): | **5.4** |
| Height of Tower Platform Above Ground (ft): approximately | **100** |
| Date of Photography: | **25-October-2014 at 1:41 pm** |
| Orientation of View: | **ESE** |
| Horizontal Field of View: | **124°** |
| Vertical Field of View: | **55°** |

Correct Viewing of TrueView™ Photosimulations

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