



Union Ridge Solar

Exhibit M

Solar Glare Analysis Report

Case No. 20-1757-EL-BGN

Solar Glare Analysis Report

Union Ridge Solar

Harrison Township, Licking County, Ohio

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1.0 PROJECT OVERVIEW

Union Ridge Solar, LLC (Union Ridge or Applicant), is proposing to construct a 107.7-megawatt (MW) solar energy generation facility in Licking County, Ohio (hereafter referred to as the Project) (see Figure 1). This report provides an assessment of the potential for solar related glare and glint that could be experienced at residences, airports, and roadways located near the proposed Project.

The Applicant is proposing the use of single axis tracking photovoltaic (PV) arrays. Each PV array will be comprised of linear rows of PV modules oriented in a north-south direction and equipped with electric motors that slowly rotate the PV panels to track the movement of the sun and minimize the angle of incidence between the sun and the panels. The PV arrays will have a 60-degree resting angle (i.e., will face east at sunrise). The height of the panels will vary as the structures tilt to follow the sun throughout the day. At their tallest position, the PV panels will be approximately 16 feet tall. For this analysis, panels were split or combined into seven named solar arrays and they covered approximately 380 acres of land (Figure 2).

The Project is located within Harrison Township, Licking County, Ohio, approximately 1.5 miles east of Pataskala and 14 miles southwest of Newark. Elevations in the Project area range from approximately 950 feet above mean sea level (amsl) to 1,040 feet amsl. Land cover within the vicinity of the Project is dominated by active agriculture, with farms and single-family residences generally located along road frontages.

2.0 BACKGROUND

Glare and glint are closely related, but distinct, solar phenomena. Glare is defined as a continuous source of bright light, whereas glint is defined as a momentary flash of bright light. Both glint and glare are common in the existing environment. The sun and artificial light sources can cause glare or glint either directly (such as from a sunset when driving westbound) or indirectly (such as from the sun's reflection off a lake or glass window). Glare can be received by observers that are either stationary or moving, whereas glint is possible only when the observer is moving rapidly, as is often the case with motorists and aviators. As an example, a motorist traveling along a lake with a forested shoreline, may have only brief glimpses of sunlight reflected off of the water at sunset (i.e., glint), whereas an adjacent home with visibility of the water through a break in the foliage may have a continuous source of bright light (i.e., glare) when sunlight strikes the water at the right angle.

The potential effects of glare include annoyance impacts, such as distraction, after-image in the viewer's vision, or temporary avoidance of a view due to the presence of reflected light (Dwyer, 2017; Slana, 2018); safety impacts, such as the potential to disorient motorists or pilots (Auffray et al., 2007; Ho et al., 2011; Riley and Olson, 2011); and human

health impacts, such as permanent retinal damage (Ho et al., 2009).¹ Although less pronounced when compared to glare, the effects of glint are similar and have been conservatively treated the same in all analyses presented in this report. Accordingly, the potential for glint and glare solar phenomena is collectively referred to as glare in the remainder of this report.

As there is an inverse correlation between light absorption and reflection, PV panels are designed to absorb as much of the solar spectrum as possible to maximize efficiency. Virtually all PV panels installed in recent years have at least one anti-reflective coating on the glass to minimize reflection and maximize absorption. However, the front-facing surfaces of PV modules are smooth, specular surfaces that have the potential to reflect a significant proportion of the incoming solar radiation at high incidence angles, much like windows on a building or the surface of a pond or lake at sunrise or sunset (Parretta et al., 1999).

Under clear sky conditions, fixed-tilt PV arrays can produce glare in the early morning and evening when the sun is low on the horizon and the incidence angle between the PV panels and the sun is approximately 60 degrees or greater (Riley and Olsen, 2011). Unlike fixed-tilt systems, tracking PV arrays maintain relatively low incidence angles and thereby minimize the potential for glare to be produced.

Glare that may be produced by a flat-plate PV array can be separated into two general categories: glare with a potential to cause a temporary after-image (i.e., "yellow glare") and glare with a low potential to produce an after-image (i.e., "green glare").² Green glare is relatively low in intensity and is unlikely to produce an after-image. Yellow glare is similar in intensity to glare received from other sources regularly encountered by motorists (e.g., the rising or setting sun and the reflection of the sun off water features, windows, curtain wall buildings, and other smooth surfaces). Yellow glare has the potential to produce a temporary after-image and could temporarily affect a passing motorist.

In order to accurately determine the occurrence, duration, and intensity of glare produced by a photovoltaic system at a given observation point, the following information is needed:

- (1) Location, orientation, and reflectance of the PV panels;
- (2) Location of the observation point;
- (3) Position of the sun;
- (4) Direct Normal Irradiance (DNI); and

¹ Note: human health impacts are typically only associated with concentrating solar power plants or other convex reflective surfaces (e.g., convex curtain wall buildings) that concentrate the incoming solar radiation. Flat-plate photovoltaic systems, such as the proposed Project, do not produce the retinal irradiance levels necessary to result in permanent retinal damage.

² "Red" glare, which is glare that has the potential to cause eye damage, is typically not possible for non-concentrating solar energy facilities such as the proposed Project.

- (5) Geospatial characteristics of any topography, vegetation, buildings, or other potential obstructions between the observation point and the PV panels producing glare and between the PV panels and the sun.

With these inputs, the location and duration of glare can be predicted using computer modeling programs together with follow-up visibility and climatological analyses, as needed.

The following terms are used throughout this assessment.

| | |
|---------------------------------------|--|
| <u>Direct Normal Irradiance (DNI)</u> | The amount of solar radiation received per unit area by a surface that is always held perpendicular (or normal) to the rays that come in a straight line from the direction of the sun at its current position in the sky. |
| <u>Diffuse Solar Radiation:</u> | Solar radiation scattered by molecules and particles in the atmosphere. |
| <u>Direct Solar Radiation:</u> | Solar radiation that has travelled from the sun to the earth's surface in a straight line without scattering. Direct radiation is the component of solar radiation that causes visible glare from flat-plate photovoltaic systems. |
| <u>Glare:</u> | A continuous source of bright light. |
| <u>Glint:</u> | Momentary flash of bright light. |
| <u>Incidence Angle:</u> | The angle between the direct component of insolation (i.e., the sun) and a ray perpendicular to the PV panel. |
| <u>PV Panels:</u> | Photovoltaic panels that are fixed to a ground mounted racking system. On this Project, a single-axis tracking system is proposed. |
| <u>Solar Array:</u> | A contiguous group of PV panels which collectively will be enclosed by security fencing and landscape screening plantings, where applicable. |
| <u>Specular Reflection:</u> | The mirror-like reflection of waves, such as light, from a surface. |

3.0 METHODS

ForgeSolar, a commercial software based on the Solar Glare Hazard Analysis Tool (SGHAT) that was developed by Sandia National Laboratories, was used to evaluate the potential for glare for this Project (Ho et al., 2015). ForgeSolar is an industry standard software available to evaluate the potential for glare from a PV system. This software was initially developed for use by the Federal Aviation Administration (FAA) in evaluating safety impacts to pilots while landing aircraft (Ho et al., 2015) and use of this tool to assess glare at airports remains an accepted method in keeping with the FAA's Interim Solar Policy. The scope of SGHAT's analytical tools has expanded to include the potential for a PV system to produce glare that may be received by terrestrial receptors, such as residences and motorists.

ForgeSolar provides a quantified assessment of when and where glare may occur throughout the year from solar installations, as well as identifying the potential effects on the human eye when glare does occur. However, the

application of this tool in determining the occurrence, duration, and intensity of glare ensures a conservative analysis since it is based on a clear sky and bare earth model, i.e., it does not take into account atmospheric conditions that scatter incoming solar radiation and terrestrial obstructions that visually block the receipt of glare by an observer. Accordingly, SGHAT outputs represent the worst-case scenario.

No consistent national, state, county, or local standards exist that set parameters that could be used to guide the development of a study area for assessing solar glare impacts. However, standards developed in other countries may provide some guidance. In Germany and Switzerland solar glare assessments must be conducted for all dwellings that are located within 100 meters of a solar energy generating facility (Zehndorfer Engineering, 2019). The Study Area selected for this solar impact assessment was conservatively expanded to include all residences and roadways within 1,500 feet and all airports within 2 miles of the Project footprint.³

For this Project, glare was analyzed for the following potentially sensitive receptors.

1. Residences (i.e., receptors) located within the Study Area of the Project.
 - A total of 92 residences were identified within the search radius.
2. No commercial airports were identified within two miles of the Project. However, a private airport within two miles and the three closest commercial airports were analyzed to provide a conservative analysis.
 - Lee's Dogpatch Airport – 1.3 miles south of the Project
 - Miller Farm Landing Strip – 6.5 miles south of the Project
 - Newark-Heath Airport – 9.5 miles east of the Project
 - John Glenn Columbus International Airport – 12 miles west of the Project
3. Travel routes (i.e., roadways) located within or adjacent to the Project.
 - County Route 34 (Blacks road SW) – Located 2,500-feet north of the Project, runs east to west (Route 1)
 - County Route 30 (Refugee Road) – Located on the extreme southern border of the Project, runs east to west (Route 2)
 - County Route 39 (York Road SW) – Located near the eastern border of the Project, runs north to south (Route 3)
 - County Route 42 (Watkins Road SW) – Runs roughly north to south through the Project (Route 4)
 - County Route 151 – Located south west of the western border of the Project (Route 5)

³ Although a Study Area with a 2-mile radius is used in many glare reports in assessing impacts to airports, this is not based on FAA recommendations. A 2-mile radius was selected in this case as ForgeSolar's modeling software uses a 2-mile approach/departure distance, i.e., the selected Study Area is sufficiently large enough to include not only adjacent airports, but potential approach/departure routes that intersect the Project as well.

Residences and travel routes within the Study Area are labeled and shown in Figure 3. Input variables and assumptions used for solar glare modeling calculations for the proposed Project are described below in Table 1 and in detail in Appendix A.

Table 1. Summary of SGHAT Model Inputs

| Parameter | Purpose | Value |
|----------------------|--|--|
| DNI: | The maximum Direct Normal Irradiance (DNI) at the given location at solar noon. This variable is given in units W/m ² . The peak DNI at solar noon is approximately 1,000 W/m ² on a clear, sunny day. | Variable, based on sun position. |
| Receptor height: | Height above ground of viewer. A height of 5.4 feet represents the average human eye viewing level. | 5.4 feet |
| Route height: | Height above ground of traveler in a motor vehicle. | 4 feet |
| Array height: | Height above ground for the highest height and average height of the solar panels. | 16 feet (Maximum); 8 feet (Middle) |
| Axis tracking: | Indicates the type of tracking used by the panels (if any). | Single-axis tracking |
| Fixed-Tilt panels | Orientation of array: | Orientation of the array in degrees, measured clockwise from true north. |
| | Tilt of solar panels: | Tilt (elevation angle) of the modules in degrees, where 0° is facing up and 90° is facing horizontally. |
| Single-Axis Tracking | Tilt of tracking axis: | Specify the elevation angle of the tracking axis in degrees, where 0° is facing up and 90° is facing horizontally. The panels rotate about the tracking axis. |
| | Orientation of tracking axis: | The orientation of the tracking axis in degrees, measured clockwise from true north. Panels facing south at solar noon would have an orientation of 180°. Panels facing east at solar noon would have an orientation of 90°. |
| | Offset angle of module: | The vertical offset angle between the tracking axis and the panel (if any). |
| | Maximum tracking angle: | The maximum angle the panel will rotate in both the clockwise and counterclockwise directions. |
| | Resting angle: | The angle at which the panel will rest overnight. |
| | Module surface material: | Smooth Glass w/o Anti-Reflection Coating |

4.0 RESULTS

Results from the glare analysis determined that no glint or glare would be received at any of the identified residences, airports, or travel routes. Attachment A provides a detailed breakdown of the results for each potentially sensitive receptor.

5.0 CONCLUSIONS

The Applicant conducted a baseline solar glare analysis using ForgeSolar's SGHAT software to identify potential glare impacts that may result from the operation of the Project. This analysis was conducted using industry standard methods and model inputs and was conducted to comply with the FAA's Interim Solar Policy. The results of this analysis indicate that none of the potentially sensitive receptors located within or adjacent to the Project Site will receive glare from the Project.

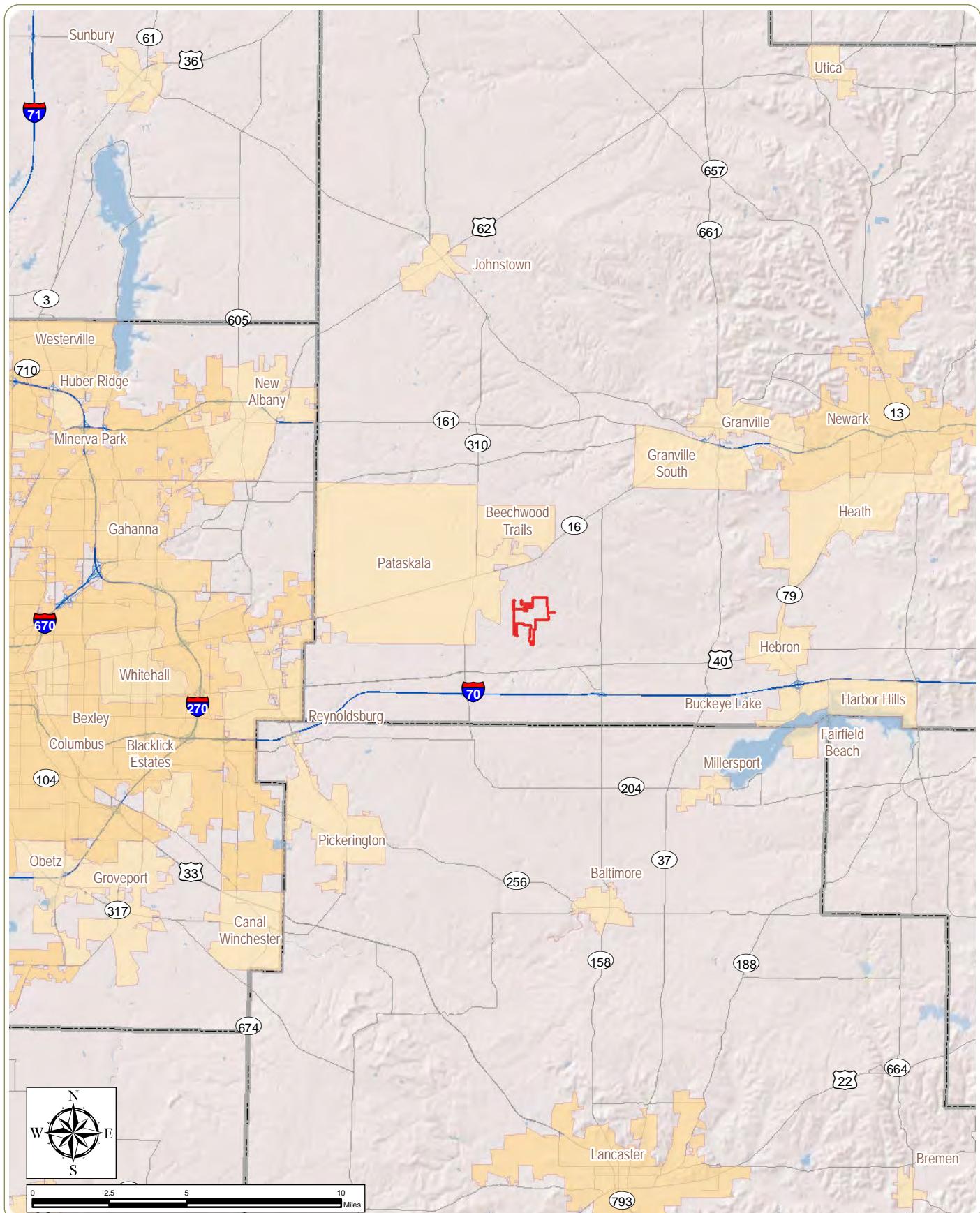
This result is consistent with the Project's proposed use of tracking PV arrays. As noted above, tracking PV arrays maintain low incidence angles by following the sun's position throughout the day. This increases the amount of incoming solar radiation absorbed by the panels and limits the amount reflected. For this reason, tracking PV arrays rarely reflect enough sunlight to produce retinal irradiance values (W/m^2) sufficient to result in either green or yellow glare.

The Project is not anticipated to result in any glare impacts to identified receptors. As no glare is anticipated, no additional avoidance or mitigation measures are necessary.

REFERENCES

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Figures



Union Ridge Solar

Harrison Township, Licking County, Ohio

Figure 1. Regional Project Location

Project Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service and ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on March 18, 2021.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.





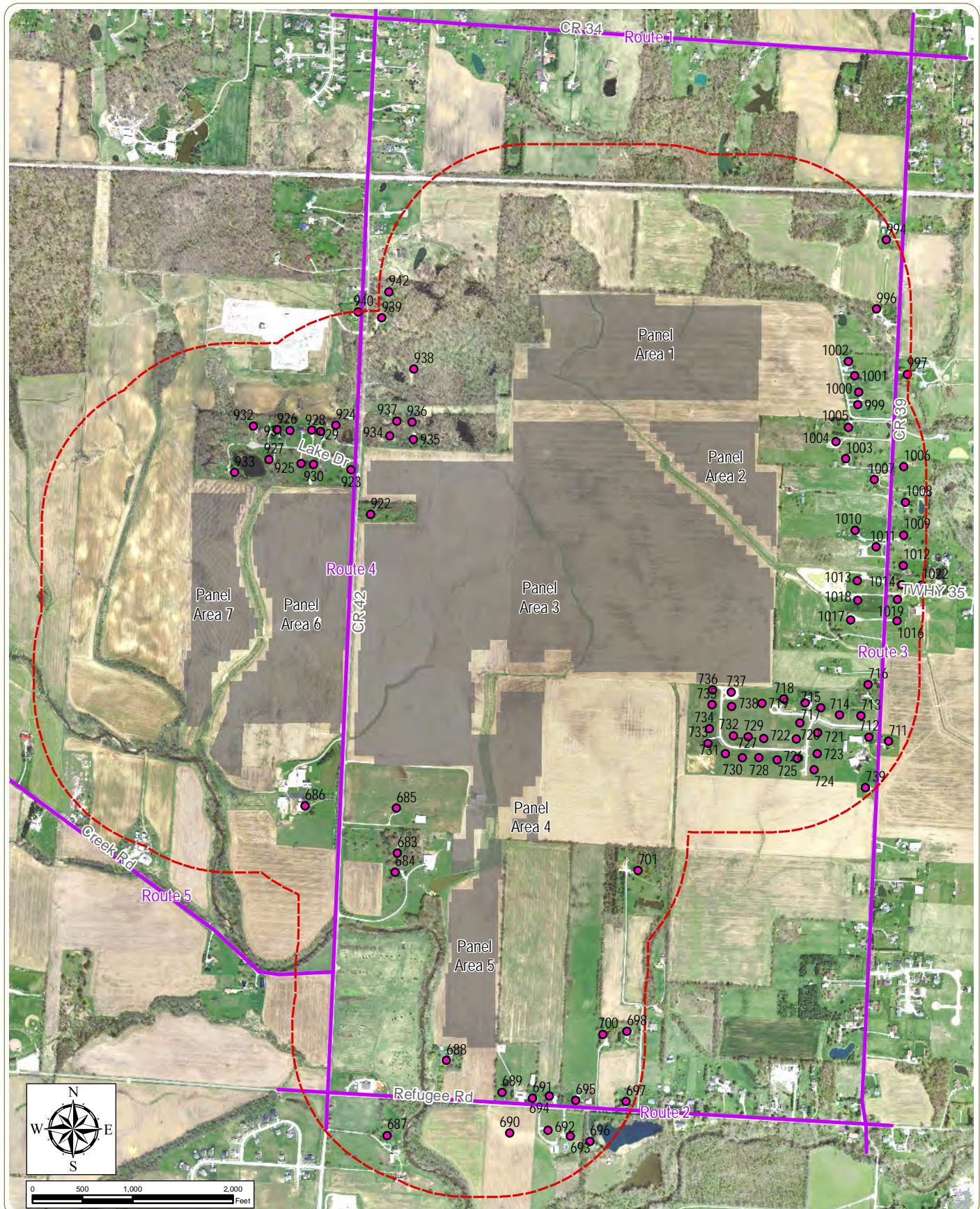
Union Ridge Solar

Harrison Township, Licking County, Ohio

Figure 2. Proposed Project Layout

 PV Panel Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service and ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on March 18, 2021.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



Union Ridge Solar

Harrison Township, Licking County, Ohio

Figure 3. Receptors and Road Segments

Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service and ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on March 18, 2021.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Study Receptor
- Route
- PV Panel Area
- 1,500-foot Study Area

Attachment A

ForgeSolar Glare Analysis



FORGESOLAR GLARE ANALYSIS

Project: **Union Ridge Solar**

Site configuration: **Union Ridge Aviation**

Analysis conducted by Jacob Runner (jrunner@edrdpc.com) at 13:45 on 18 Mar, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

| COMPONENT | STATUS | DESCRIPTION |
|-----------------------|--------|--|
| Analysis parameters | PASS | Analysis time interval and eye characteristics used are acceptable |
| 2-mile flight path(s) | PASS | Flight path receptor(s) do not receive yellow glare |
| ATCT(s) | PASS | Receptor(s) marked as ATCT do not receive glare |

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at <https://www.federalregister.gov/d/2013-24729>



ForgeSolar

Site Configuration: Union Ridge

Project site configuration details and results.

Created Oct. 29, 2020 1:04 p.m.
Updated March 18, 2021 10:16 a.m.
DNI varies and peaks at 1,000.0 W/m²
Analyze every 1 minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone UTC-5
Site Configuration ID: 45044.8028

Summary of Results

No glare predicted!

| PV Name | Tilt | Orientation | "Green" Glare | "Yellow" Glare | Energy Produced | | |
|---------|-------------|-------------|---------------|----------------|-----------------|-----|-----|
| | | | deg | deg | min | min | kWh |
| 1 | SA tracking | SA tracking | 0 | 0 | - | - | - |
| 2 | SA tracking | SA tracking | 0 | 0 | - | - | - |
| 3 | SA tracking | SA tracking | 0 | 0 | - | - | - |
| 4 | SA tracking | SA tracking | 0 | 0 | - | - | - |
| 5 | SA tracking | SA tracking | 0 | 0 | - | - | - |
| 6 | SA tracking | SA tracking | 0 | 0 | - | - | - |
| 7 | SA tracking | SA tracking | 0 | 0 | - | - | - |

Component Data

PV Array(s)

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: 1

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad

Approx. area: 2,215,359 sq-ft



Google, State of Ohio / OSIP, U.S. Geological Survey, USDA Farm Service Agency

| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|-----------|--------------|-----------|
| | | | elevation | ground | elevation |
| | deg | deg | ft | ft | ft |
| 1 | 39.991891 | -82.630593 | 1038.15 | 8.00 | 1046.15 |
| 2 | 39.990443 | -82.630593 | 1029.85 | 8.00 | 1037.85 |
| 3 | 39.990438 | -82.630701 | 1030.75 | 8.00 | 1038.75 |
| 4 | 39.989324 | -82.630701 | 1026.95 | 8.00 | 1034.95 |
| 5 | 39.989324 | -82.639376 | 1013.75 | 8.00 | 1021.75 |
| 6 | 39.989883 | -82.639376 | 1017.15 | 8.00 | 1025.15 |
| 7 | 39.989884 | -82.638874 | 1017.25 | 8.00 | 1025.25 |
| 8 | 39.990723 | -82.638874 | 1014.25 | 8.00 | 1022.25 |
| 9 | 39.990723 | -82.638068 | 1015.25 | 8.00 | 1023.25 |
| 10 | 39.991283 | -82.638068 | 1026.75 | 8.00 | 1034.75 |
| 11 | 39.991283 | -82.638283 | 1022.25 | 8.00 | 1030.25 |
| 12 | 39.991612 | -82.638283 | 1026.55 | 8.00 | 1034.55 |
| 13 | 39.991612 | -82.638498 | 1024.35 | 8.00 | 1032.35 |
| 14 | 39.991891 | -82.638498 | 1028.55 | 8.00 | 1036.55 |
| 15 | 39.991891 | -82.638821 | 1023.25 | 8.00 | 1031.25 |
| 16 | 39.992171 | -82.638821 | 1030.35 | 8.00 | 1038.35 |
| 17 | 39.992171 | -82.634376 | 1040.05 | 8.00 | 1048.05 |
| 18 | 39.991891 | -82.634376 | 1039.55 | 8.00 | 1047.55 |

Name: 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 747,758 sq-ft



Google, State of Ohio / OSIP, U.S. Geological Survey, USDA Farm Service Agency

| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|---------|--------------|---------|
| | | | deg | deg | ft |
| 1 | 39.988715 | -82.634536 | 1009.15 | 8.00 | 1017.15 |
| 2 | 39.988715 | -82.630701 | 1017.75 | 8.00 | 1025.75 |
| 3 | 39.988435 | -82.630701 | 1017.35 | 8.00 | 1025.35 |
| 4 | 39.988435 | -82.630808 | 1017.65 | 8.00 | 1025.65 |
| 5 | 39.987315 | -82.630808 | 1028.05 | 8.00 | 1036.05 |
| 6 | 39.987315 | -82.630038 | 1023.75 | 8.00 | 1031.75 |
| 7 | 39.985307 | -82.630038 | 1001.55 | 8.00 | 1009.55 |
| 8 | 39.985307 | -82.630199 | 1000.45 | 8.00 | 1008.45 |
| 9 | 39.985586 | -82.630199 | 1002.35 | 8.00 | 1010.35 |
| 10 | 39.985587 | -82.630701 | 999.55 | 8.00 | 1007.55 |
| 11 | 39.985861 | -82.630701 | 1001.15 | 8.00 | 1009.15 |
| 12 | 39.985867 | -82.631239 | 999.85 | 8.00 | 1007.85 |
| 13 | 39.986147 | -82.631239 | 1002.15 | 8.00 | 1010.15 |
| 14 | 39.986147 | -82.631561 | 1000.55 | 8.00 | 1008.55 |
| 15 | 39.986426 | -82.631561 | 1004.45 | 8.00 | 1012.45 |
| 16 | 39.986426 | -82.631776 | 1002.15 | 8.00 | 1010.15 |
| 17 | 39.986706 | -82.631776 | 1007.45 | 8.00 | 1015.45 |
| 18 | 39.986706 | -82.632207 | 1001.25 | 8.00 | 1009.25 |
| 19 | 39.987035 | -82.632208 | 1005.45 | 8.00 | 1013.45 |
| 20 | 39.987035 | -82.632869 | 1001.45 | 8.00 | 1009.45 |
| 21 | 39.987315 | -82.632869 | 1003.15 | 8.00 | 1011.15 |
| 22 | 39.987315 | -82.633300 | 1001.75 | 8.00 | 1009.75 |
| 23 | 39.987595 | -82.633300 | 1003.95 | 8.00 | 1011.95 |
| 24 | 39.987595 | -82.633623 | 1003.05 | 8.00 | 1011.05 |
| 25 | 39.987875 | -82.633623 | 1004.85 | 8.00 | 1012.85 |
| 26 | 39.987875 | -82.633945 | 1004.65 | 8.00 | 1012.65 |
| 27 | 39.988149 | -82.633945 | 1006.25 | 8.00 | 1014.25 |
| 28 | 39.988155 | -82.634268 | 1005.35 | 8.00 | 1013.35 |
| 29 | 39.988435 | -82.634268 | 1007.25 | 8.00 | 1015.25 |
| 30 | 39.988435 | -82.634536 | 1006.75 | 8.00 | 1014.75 |

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: 3

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad

Approx. area: 9,816,777 sq-ft



Google, State of Ohio / OSGI, U.S. Geological Survey, USDA Farm Service Agency

| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|-----------|--------------|-----------|
| | | | elevation | ground | elevation |
| | deg | deg | ft | ft | ft |
| 1 | 39.988715 | -82.635469 | 1006.95 | 8.00 | 1014.95 |
| 2 | 39.988435 | -82.635469 | 1007.53 | 8.00 | 1015.53 |
| 3 | 39.988435 | -82.635361 | 1006.93 | 8.00 | 1014.93 |
| 4 | 39.988155 | -82.635361 | 1012.22 | 8.00 | 1020.22 |
| 5 | 39.988149 | -82.635038 | 1008.04 | 8.00 | 1016.04 |
| 6 | 39.987875 | -82.635038 | 1012.30 | 8.00 | 1020.30 |
| 7 | 39.987875 | -82.634716 | 1005.96 | 8.00 | 1013.96 |
| 8 | 39.987595 | -82.634716 | 1008.85 | 8.00 | 1016.85 |
| 9 | 39.987595 | -82.634376 | 1005.78 | 8.00 | 1013.78 |
| 10 | 39.987315 | -82.634376 | 1010.30 | 8.00 | 1018.30 |
| 11 | 39.987315 | -82.634053 | 1003.97 | 8.00 | 1011.98 |
| 12 | 39.986981 | -82.634046 | 1005.07 | 8.00 | 1013.07 |
| 13 | 39.986981 | -82.633623 | 1002.02 | 8.00 | 1010.02 |
| 14 | 39.986706 | -82.633623 | 1003.88 | 8.00 | 1011.88 |
| 15 | 39.986706 | -82.633085 | 1001.03 | 8.00 | 1009.03 |
| 16 | 39.986426 | -82.633085 | 1001.29 | 8.00 | 1009.29 |
| 17 | 39.986426 | -82.632547 | 1000.70 | 8.00 | 1008.70 |
| 18 | 39.986147 | -82.632547 | 1001.85 | 8.00 | 1009.85 |
| 19 | 39.986147 | -82.632207 | 1000.53 | 8.00 | 1008.53 |
| 20 | 39.985867 | -82.632207 | 1000.48 | 8.00 | 1008.48 |
| 21 | 39.985861 | -82.631884 | 998.75 | 8.00 | 1006.75 |
| 22 | 39.985587 | -82.631884 | 999.15 | 8.00 | 1007.15 |
| 23 | 39.985587 | -82.631561 | 997.80 | 8.00 | 1005.80 |
| 24 | 39.985307 | -82.631561 | 999.25 | 8.00 | 1007.25 |
| 25 | 39.985307 | -82.631131 | 997.75 | 8.00 | 1005.75 |
| 26 | 39.985027 | -82.631131 | 1000.61 | 8.00 | 1008.61 |
| 27 | 39.985027 | -82.630701 | 997.99 | 8.00 | 1005.99 |
| 28 | 39.984692 | -82.630683 | 1001.63 | 8.00 | 1009.63 |
| 29 | 39.984692 | -82.630270 | 998.77 | 8.00 | 1006.77 |
| 30 | 39.984416 | -82.630270 | 1002.60 | 8.00 | 1010.60 |
| 31 | 39.984418 | -82.630146 | 1001.21 | 8.00 | 1009.21 |
| 32 | 39.983578 | -82.630146 | 1004.99 | 8.00 | 1012.99 |
| 33 | 39.983578 | -82.630270 | 1004.22 | 8.00 | 1012.22 |
| 34 | 39.981570 | -82.630270 | 1001.15 | 8.00 | 1009.15 |
| 35 | 39.981570 | -82.632869 | 994.03 | 8.00 | 1002.03 |
| 36 | 39.981850 | -82.632869 | 997.59 | 8.00 | 1005.59 |
| 37 | 39.981850 | -82.637207 | 991.02 | 8.00 | 999.02 |
| 38 | 39.982130 | -82.637207 | 991.34 | 8.00 | 999.34 |
| 39 | 39.982130 | -82.637315 | 991.15 | 8.00 | 999.15 |
| 40 | 39.982459 | -82.637313 | 993.95 | 8.00 | 1001.95 |
| 41 | 39.982459 | -82.638283 | 993.44 | 8.00 | 1001.44 |
| 42 | 39.982130 | -82.638283 | 989.88 | 8.00 | 997.88 |
| 43 | 39.982130 | -82.639484 | 985.32 | 8.00 | 993.33 |
| 44 | 39.982459 | -82.639488 | 986.33 | 8.00 | 994.33 |
| 45 | 39.982459 | -82.639591 | 985.76 | 8.00 | 993.76 |
| 46 | 39.982739 | -82.639591 | 987.84 | 8.00 | 995.84 |
| 47 | 39.982739 | -82.640237 | 986.33 | 8.00 | 994.33 |
| 48 | 39.982459 | -82.640237 | 984.04 | 8.00 | 992.05 |
| 49 | 39.982459 | -82.640885 | 985.09 | 8.00 | 993.09 |
| 50 | 39.982130 | -82.640882 | 983.33 | 8.00 | 991.33 |

| | | | | | |
|-----|-----------|------------|---------|------|---------|
| 51 | 39.982130 | -82.640990 | 983.07 | 8.00 | 991.07 |
| 52 | 39.981850 | -82.640990 | 982.86 | 8.00 | 990.87 |
| 53 | 39.981850 | -82.640882 | 982.82 | 8.00 | 990.82 |
| 54 | 39.981570 | -82.640882 | 982.49 | 8.00 | 990.49 |
| 55 | 39.981570 | -82.640775 | 982.41 | 8.00 | 990.41 |
| 56 | 39.980730 | -82.640775 | 981.40 | 8.00 | 989.40 |
| 57 | 39.980730 | -82.640882 | 980.50 | 8.00 | 988.50 |
| 58 | 39.980116 | -82.640881 | 980.58 | 8.00 | 988.58 |
| 59 | 39.980116 | -82.639967 | 981.92 | 8.00 | 989.92 |
| 60 | 39.980730 | -82.639967 | 979.99 | 8.00 | 987.99 |
| 61 | 39.980730 | -82.639806 | 980.07 | 8.00 | 988.08 |
| 62 | 39.981284 | -82.639806 | 981.69 | 8.00 | 989.69 |
| 63 | 39.981284 | -82.638283 | 986.02 | 8.00 | 994.02 |
| 64 | 39.981010 | -82.638283 | 985.45 | 8.00 | 993.45 |
| 65 | 39.981010 | -82.638391 | 984.86 | 8.00 | 992.86 |
| 66 | 39.979002 | -82.638391 | 983.25 | 8.00 | 991.25 |
| 67 | 39.978996 | -82.638606 | 982.89 | 8.00 | 990.89 |
| 68 | 39.978722 | -82.638606 | 981.78 | 8.00 | 989.78 |
| 69 | 39.978722 | -82.639053 | 982.62 | 8.00 | 990.62 |
| 70 | 39.978442 | -82.639053 | 982.15 | 8.00 | 990.15 |
| 71 | 39.978442 | -82.639484 | 980.10 | 8.00 | 988.11 |
| 72 | 39.978162 | -82.639484 | 978.54 | 8.00 | 986.54 |
| 73 | 39.978162 | -82.639914 | 973.47 | 8.00 | 981.47 |
| 74 | 39.977882 | -82.639914 | 973.32 | 8.00 | 981.32 |
| 75 | 39.977882 | -82.640347 | 975.40 | 8.00 | 983.40 |
| 76 | 39.977553 | -82.640344 | 974.34 | 8.00 | 982.34 |
| 77 | 39.977553 | -82.640775 | 978.75 | 8.00 | 986.75 |
| 78 | 39.977273 | -82.640775 | 977.53 | 8.00 | 985.53 |
| 79 | 39.976459 | -82.640793 | 966.79 | 8.00 | 974.79 |
| 80 | 39.976380 | -82.641555 | 967.60 | 0.00 | 967.60 |
| 81 | 39.976993 | -82.641545 | 974.05 | 8.00 | 982.05 |
| 82 | 39.977273 | -82.641545 | 976.43 | 8.00 | 984.43 |
| 83 | 39.977273 | -82.641043 | 978.49 | 8.00 | 986.49 |
| 84 | 39.978162 | -82.641043 | 980.46 | 8.00 | 988.46 |
| 85 | 39.978162 | -82.640990 | 980.20 | 8.00 | 988.20 |
| 86 | 39.978442 | -82.640990 | 980.60 | 8.00 | 988.60 |
| 87 | 39.978442 | -82.640882 | 980.64 | 8.00 | 988.64 |
| 88 | 39.978722 | -82.640882 | 981.28 | 8.00 | 989.28 |
| 89 | 39.978722 | -82.640775 | 980.91 | 8.00 | 988.91 |
| 90 | 39.979281 | -82.640775 | 980.67 | 8.00 | 988.67 |
| 91 | 39.979281 | -82.644305 | 977.76 | 8.00 | 985.76 |
| 92 | 39.979560 | -82.644305 | 973.16 | 8.00 | 981.16 |
| 93 | 39.979561 | -82.645005 | 969.60 | 8.00 | 977.60 |
| 94 | 39.980730 | -82.645005 | 975.72 | 8.00 | 983.73 |
| 95 | 39.980730 | -82.644897 | 977.04 | 8.00 | 985.04 |
| 96 | 39.982404 | -82.644897 | 978.76 | 8.00 | 986.76 |
| 97 | 39.982404 | -82.644790 | 979.19 | 8.00 | 987.19 |
| 98 | 39.984138 | -82.644790 | 985.60 | 8.00 | 993.60 |
| 99 | 39.984138 | -82.644682 | 985.25 | 8.00 | 993.25 |
| 100 | 39.985861 | -82.644682 | 992.76 | 8.00 | 1000.77 |
| 101 | 39.985867 | -82.642836 | 996.54 | 8.00 | 1004.54 |
| 102 | 39.986706 | -82.642779 | 1007.70 | 8.00 | 1015.70 |
| 103 | 39.986706 | -82.644574 | 995.87 | 8.00 | 1003.87 |
| 104 | 39.987315 | -82.644574 | 995.73 | 8.00 | 1003.73 |
| 105 | 39.987315 | -82.644467 | 996.26 | 8.00 | 1004.26 |
| 106 | 39.987595 | -82.644467 | 996.94 | 8.00 | 1004.95 |
| 107 | 39.987595 | -82.639376 | 1013.40 | 8.00 | 1021.40 |
| 108 | 39.988155 | -82.639376 | 1011.51 | 8.00 | 1019.51 |
| 109 | 39.988715 | -82.639376 | 1012.53 | 8.00 | 1020.53 |

Name: 4
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 50,601 sq-ft



Google Images, State of Ohio / OSIP, U.S. Geological Survey, USDA Farm Service Agency

| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|-----------|--------------|-----------|
| | | | elevation | ground | elevation |
| | deg | deg | ft | ft | ft |
| 1 | 39.978442 | -82.638391 | 981.95 | 8.00 | 989.95 |
| 2 | 39.978162 | -82.638391 | 980.65 | 8.00 | 988.65 |
| 3 | 39.977882 | -82.638498 | 979.05 | 8.00 | 987.05 |
| 4 | 39.977273 | -82.638498 | 977.25 | 8.00 | 985.25 |
| 5 | 39.977273 | -82.638874 | 978.25 | 8.00 | 986.25 |
| 6 | 39.977554 | -82.638874 | 979.55 | 8.00 | 987.55 |
| 7 | 39.977553 | -82.639376 | 976.15 | 8.00 | 984.15 |
| 8 | 39.977827 | -82.639376 | 976.65 | 8.00 | 984.65 |
| 9 | 39.977827 | -82.638874 | 979.85 | 8.00 | 987.85 |
| 10 | 39.978162 | -82.638874 | 980.95 | 8.00 | 988.95 |
| 11 | 39.978162 | -82.638498 | 980.55 | 8.00 | 988.55 |
| 12 | 39.978442 | -82.638498 | 981.65 | 8.00 | 989.65 |

Name: 5
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 826,792 sq-ft



Google Images, State of Ohio / OSIP, U.S. Geological Survey, USDA Farm Service Agency

| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|-----------|--------------|-----------|
| | | | elevation | ground | elevation |
| | deg | deg | ft | ft | ft |
| 1 | 39.977273 | -82.639806 | 976.25 | 8.00 | 984.25 |
| 2 | 39.976153 | -82.639806 | 971.95 | 8.00 | 979.95 |
| 3 | 39.976153 | -82.639914 | 971.35 | 8.00 | 979.35 |
| 4 | 39.973865 | -82.639914 | 965.35 | 8.00 | 973.35 |
| 5 | 39.973873 | -82.640022 | 965.15 | 8.00 | 973.15 |
| 6 | 39.973305 | -82.640022 | 963.35 | 8.00 | 971.35 |
| 7 | 39.971576 | -82.640022 | 956.55 | 8.00 | 964.55 |
| 8 | 39.971576 | -82.640990 | 957.05 | 8.00 | 965.05 |
| 9 | 39.971856 | -82.640990 | 957.05 | 8.00 | 965.05 |
| 10 | 39.971856 | -82.641868 | 955.55 | 8.00 | 963.55 |
| 11 | 39.972130 | -82.641868 | 957.75 | 8.00 | 965.75 |
| 12 | 39.972136 | -82.641760 | 958.45 | 8.00 | 966.45 |
| 13 | 39.973305 | -82.641760 | 958.15 | 8.00 | 966.15 |
| 14 | 39.973585 | -82.641760 | 959.15 | 8.00 | 967.15 |
| 15 | 39.973585 | -82.641652 | 959.35 | 8.00 | 967.35 |
| 16 | 39.973865 | -82.641652 | 960.55 | 8.00 | 968.55 |
| 17 | 39.973865 | -82.641545 | 960.85 | 8.00 | 968.85 |
| 18 | 39.974419 | -82.641545 | 963.45 | 8.00 | 971.45 |
| 19 | 39.974424 | -82.641652 | 962.95 | 8.00 | 970.95 |
| 20 | 39.975539 | -82.641652 | 969.65 | 8.00 | 977.65 |
| 21 | 39.975539 | -82.641542 | 969.25 | 8.00 | 977.25 |
| 22 | 39.975873 | -82.641545 | 968.35 | 8.00 | 976.35 |
| 23 | 39.975873 | -82.640775 | 969.35 | 8.00 | 977.35 |
| 24 | 39.976153 | -82.640775 | 965.45 | 8.00 | 973.45 |
| 25 | 39.976153 | -82.640559 | 966.65 | 8.00 | 974.65 |
| 26 | 39.976708 | -82.640559 | 972.65 | 8.00 | 980.65 |
| 27 | 39.976713 | -82.640667 | 974.45 | 8.00 | 982.45 |
| 28 | 39.976993 | -82.640667 | 974.85 | 8.00 | 982.85 |
| 29 | 39.976993 | -82.640237 | 968.95 | 8.00 | 976.95 |
| 30 | 39.977273 | -82.640237 | 970.45 | 8.00 | 978.45 |

Note: PV array encompasses a large surface area (greater than 25 acres). Accuracy of path receptor glare analysis may be affected by footprint size. Additional analyses of array sub-sections may provide more information on expected glare.

Name: 6

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad

Approx. area: 2,218,254 sq-ft



| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|-----------|--------------|-----------|
| | | | elevation | ground | elevation |
| | deg | deg | ft | ft | ft |
| 1 | 39.986706 | -82.648051 | 982.12 | 8.00 | 990.12 |
| 2 | 39.986706 | -82.645112 | 990.42 | 8.00 | 998.42 |
| 3 | 39.985307 | -82.645112 | 987.23 | 8.00 | 995.23 |
| 4 | 39.985307 | -82.645220 | 986.70 | 8.00 | 994.70 |
| 5 | 39.983858 | -82.645220 | 982.20 | 8.10 | 990.31 |
| 6 | 39.983858 | -82.645328 | 981.15 | 8.00 | 989.15 |
| 7 | 39.982459 | -82.645328 | 976.96 | 8.00 | 984.96 |
| 8 | 39.982459 | -82.645452 | 977.63 | 8.00 | 985.63 |
| 9 | 39.980450 | -82.645452 | 973.76 | 8.00 | 981.76 |
| 10 | 39.980450 | -82.645560 | 973.99 | 8.00 | 981.99 |
| 11 | 39.980170 | -82.645560 | 970.45 | 8.00 | 978.45 |
| 12 | 39.980170 | -82.645883 | 973.15 | 8.00 | 981.15 |
| 13 | 39.980450 | -82.645883 | 975.72 | 8.00 | 983.72 |
| 14 | 39.980434 | -82.648980 | 969.03 | 0.00 | 969.03 |
| 15 | 39.978993 | -82.649077 | 970.35 | 0.00 | 970.35 |
| 16 | 39.979024 | -82.649486 | 970.87 | 0.00 | 970.87 |
| 17 | 39.979603 | -82.650174 | 967.27 | 8.00 | 975.27 |
| 18 | 39.980709 | -82.650099 | 959.53 | 8.00 | 967.53 |
| 19 | 39.980730 | -82.649558 | 969.90 | 8.00 | 977.90 |
| 20 | 39.981010 | -82.649558 | 964.46 | 8.00 | 972.46 |
| 21 | 39.981010 | -82.649450 | 965.51 | 8.00 | 973.52 |
| 22 | 39.981570 | -82.649450 | 966.39 | 8.00 | 974.39 |
| 23 | 39.981570 | -82.649020 | 971.92 | 8.00 | 979.92 |
| 24 | 39.981850 | -82.649020 | 969.45 | 8.00 | 977.45 |
| 25 | 39.981850 | -82.648482 | 970.66 | 8.00 | 978.66 |
| 26 | 39.982130 | -82.648482 | 968.11 | 8.00 | 976.11 |
| 27 | 39.982130 | -82.648159 | 969.66 | 8.00 | 977.66 |
| 28 | 39.982404 | -82.648159 | 968.32 | 8.00 | 976.33 |
| 29 | 39.982404 | -82.648051 | 969.70 | 8.00 | 977.70 |
| 30 | 39.982739 | -82.648051 | 969.93 | 8.00 | 977.93 |
| 31 | 39.982739 | -82.647944 | 971.02 | 8.00 | 979.02 |
| 32 | 39.983858 | -82.647944 | 975.88 | 8.00 | 983.88 |
| 33 | 39.983858 | -82.648159 | 974.30 | 8.00 | 982.30 |
| 34 | 39.984138 | -82.648159 | 976.39 | 8.00 | 984.39 |
| 35 | 39.984138 | -82.648374 | 974.09 | 8.00 | 982.10 |
| 36 | 39.984418 | -82.648374 | 977.62 | 8.00 | 985.62 |
| 37 | 39.984418 | -82.648482 | 978.37 | 8.00 | 986.37 |
| 38 | 39.984747 | -82.648484 | 977.84 | 8.00 | 985.84 |
| 39 | 39.984747 | -82.648589 | 978.14 | 8.00 | 986.14 |
| 40 | 39.985027 | -82.648589 | 977.56 | 8.00 | 985.56 |
| 41 | 39.985027 | -82.648642 | 977.61 | 8.00 | 985.61 |
| 42 | 39.985861 | -82.648642 | 979.24 | 8.00 | 987.24 |
| 43 | 39.985867 | -82.648482 | 979.15 | 8.00 | 987.15 |
| 44 | 39.986147 | -82.648482 | 979.05 | 8.00 | 987.05 |
| 45 | 39.986147 | -82.648267 | 979.53 | 8.00 | 987.53 |
| 46 | 39.986426 | -82.648267 | 980.95 | 8.00 | 988.95 |
| 47 | 39.986426 | -82.648051 | 981.06 | 8.00 | 989.06 |

Name: 7
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 988,400 sq-ft



| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|--------|--------------|--------|
| | | | deg | deg | ft |
| 1 | 39.986706 | -82.648912 | 985.43 | 8.00 | 993.43 |
| 2 | 39.986426 | -82.648912 | 982.95 | 8.00 | 990.95 |
| 3 | 39.986426 | -82.649127 | 987.58 | 8.00 | 995.58 |
| 4 | 39.986147 | -82.649127 | 981.86 | 8.00 | 989.86 |
| 5 | 39.986147 | -82.649235 | 981.65 | 8.00 | 989.65 |
| 6 | 39.985867 | -82.649235 | 978.82 | 8.00 | 986.82 |
| 7 | 39.985796 | -82.649342 | 978.44 | 8.00 | 986.44 |
| 8 | 39.985307 | -82.649342 | 977.50 | 8.00 | 985.50 |
| 9 | 39.985307 | -82.649235 | 976.73 | 8.00 | 984.73 |
| 10 | 39.984692 | -82.649237 | 976.14 | 8.00 | 984.14 |
| 11 | 39.984692 | -82.649127 | 975.02 | 8.00 | 983.02 |
| 12 | 39.984138 | -82.649127 | 976.82 | 8.00 | 984.82 |
| 13 | 39.984138 | -82.648912 | 974.35 | 8.00 | 982.35 |
| 14 | 39.983858 | -82.648912 | 975.32 | 8.00 | 983.32 |
| 15 | 39.983858 | -82.648805 | 974.80 | 8.00 | 982.80 |
| 16 | 39.983578 | -82.648805 | 976.23 | 8.00 | 984.23 |
| 17 | 39.983573 | -82.648589 | 973.53 | 8.00 | 981.53 |
| 18 | 39.983298 | -82.648589 | 974.66 | 8.00 | 982.66 |
| 19 | 39.983298 | -82.648482 | 973.75 | 8.00 | 981.75 |
| 20 | 39.983019 | -82.648482 | 971.41 | 8.00 | 979.41 |
| 21 | 39.983019 | -82.648589 | 972.95 | 8.00 | 980.95 |
| 22 | 39.982739 | -82.648589 | 971.37 | 8.00 | 979.37 |
| 23 | 39.982739 | -82.648805 | 973.50 | 8.00 | 981.50 |
| 24 | 39.982459 | -82.648805 | 972.67 | 8.00 | 980.67 |
| 25 | 39.982459 | -82.649447 | 971.25 | 8.00 | 979.25 |
| 26 | 39.982130 | -82.649450 | 965.50 | 8.00 | 973.50 |
| 27 | 39.982130 | -82.649897 | 968.59 | 8.00 | 976.59 |
| 28 | 39.981850 | -82.649897 | 967.80 | 8.00 | 975.80 |
| 29 | 39.981850 | -82.650113 | 970.48 | 8.00 | 978.49 |
| 30 | 39.981010 | -82.650113 | 962.75 | 8.00 | 970.75 |
| 31 | 39.980340 | -82.650521 | 958.83 | 0.00 | 958.83 |
| 32 | 39.980344 | -82.650972 | 963.32 | 0.00 | 963.32 |
| 33 | 39.981010 | -82.650973 | 969.34 | 8.00 | 977.34 |
| 34 | 39.981284 | -82.650973 | 968.36 | 8.00 | 976.37 |
| 35 | 39.981290 | -82.651081 | 968.74 | 8.00 | 976.74 |
| 36 | 39.982130 | -82.651081 | 968.91 | 8.00 | 976.91 |
| 37 | 39.982130 | -82.650973 | 969.00 | 8.00 | 977.01 |
| 38 | 39.982404 | -82.650973 | 971.17 | 8.00 | 979.17 |
| 39 | 39.982404 | -82.650811 | 970.70 | 8.00 | 978.70 |
| 40 | 39.982459 | -82.650811 | 971.37 | 8.00 | 979.37 |
| 41 | 39.985861 | -82.650811 | 978.83 | 8.00 | 986.83 |
| 42 | 39.986720 | -82.650823 | 984.20 | 8.00 | 992.20 |
| 43 | 39.986706 | -82.649342 | 989.95 | 8.00 | 997.95 |

2-Mile Flight Path Receptor(s)

Name: FP 1
Description:
Threshold height : 50 ft
Direction: 93.9 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 39.993682 | -82.908930 | 803.59 | 50.00 | 853.59 |
| 2-mile point | 39.995648 | -82.946626 | 804.30 | 602.74 | 1407.04 |



Name: FP 10
Description:
Threshold height : 50 ft
Direction: 280.7 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 39.952769 | -82.637881 | 1045.79 | 50.00 | 1095.80 |
| 2-mile point | 39.947410 | -82.600774 | 946.05 | 703.20 | 1649.25 |



Name: FP 2
Description:
Threshold height : 50 ft
Direction: 272.9 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 39.991577 | -82.873224 | 811.59 | 50.00 | 861.59 |
| 2-mile point | 39.990130 | -82.835490 | 908.97 | 506.08 | 1415.05 |



Name: FP 3
Description:
Threshold height : 50 ft
Direction: 274.7 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 40.001572 | -82.879275 | 812.08 | 50.00 | 862.08 |
| 2-mile point | 39.999188 | -82.841616 | 909.33 | 506.20 | 1415.53 |



Name: FP 4
Description:
Threshold height : 50 ft
Direction: 94.4 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 40.003183 | -82.907728 | 814.54 | 50.00 | 864.54 |
| 2-mile point | 40.005386 | -82.945407 | 813.99 | 604.01 | 1418.00 |



Name: FP 5
Description:
Threshold height : 50 ft
Direction: 271.4 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 39.883761 | -82.585057 | 922.49 | 50.00 | 972.49 |
| 2-mile point | 39.883069 | -82.547345 | 916.33 | 609.61 | 1525.94 |



Name: FP 6
Description:
Threshold height : 50 ft
Direction: 92.4 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 39.884156 | -82.596387 | 935.58 | 50.00 | 985.58 |
| 2-mile point | 39.885366 | -82.634077 | 935.77 | 603.26 | 1539.04 |



Name: FP 7
Description:
Threshold height : 50 ft
Direction: 266.6 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 40.024979 | -82.454151 | 870.02 | 50.00 | 920.02 |
| 2-mile point | 40.026709 | -82.416418 | 1001.45 | 472.03 | 1473.48 |



Name: FP 8
Description:
Threshold height : 50 ft
Direction: 86.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 40.024354 | -82.469429 | 882.53 | 50.00 | 932.54 |
| 2-mile point | 40.022398 | -82.507143 | 940.15 | 545.84 | 1485.99 |



Name: FP 9
Description:
Threshold height: 50 ft
Direction: 101.9 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

| Point | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| Threshold | 39.953386 | -82.642430 | 1023.18 | 50.00 | 1073.18 |
| 2-mile point | 39.959328 | -82.679385 | 1054.73 | 571.91 | 1626.63 |



Route Receptor(s)

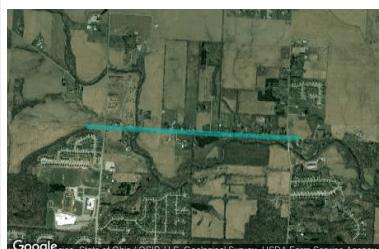
Name: Route 1
Route type: Two-way
View angle: 50.0 deg

| Vertex | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| 1 | 39.999813 | -82.645853 | 1052.35 | 4.00 | 1056.35 |
| 2 | 39.998654 | -82.623279 | 1072.95 | 4.00 | 1076.95 |



Name: Route 2
Route type: Two-way
View angle: 50.0 deg

| Vertex | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| 1 | 39.970385 | -82.647722 | 956.25 | 4.00 | 960.25 |
| 2 | 39.969431 | -82.625870 | 941.25 | 4.00 | 945.25 |



Name: Route 3
Route type: Two-way
View angle: 50.0 deg

| Vertex | Latitude | Longitude | Ground elevation | Height above ground | Total elevation |
|--------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| 1 | 39.968699 | -82.626771 | 935.19 | 4.00 | 939.19 |
| 2 | 39.969439 | -82.626792 | 944.23 | 4.00 | 948.23 |
| 3 | 39.970080 | -82.626943 | 954.36 | 4.00 | 958.36 |
| 4 | 39.979487 | -82.626407 | 1004.82 | 0.00 | 1004.82 |
| 5 | 39.984114 | -82.626148 | 1011.15 | 0.00 | 1011.15 |
| 6 | 39.999867 | -82.625176 | 1083.95 | 4.00 | 1087.95 |



Name: Route 4
Route type: Two-way
View angle: 50.0 deg



| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|---------|--------------|---------|
| | | | deg | deg | ft |
| 1 | 40.001070 | -82.644231 | 1071.03 | 4.00 | 1075.03 |
| 2 | 39.991162 | -82.644598 | 1019.92 | 0.00 | 1019.92 |
| 3 | 39.988932 | -82.644758 | 1005.99 | 0.00 | 1005.99 |
| 4 | 39.986744 | -82.644907 | 993.59 | 0.00 | 993.59 |
| 5 | 39.984588 | -82.645037 | 985.58 | 0.00 | 985.58 |
| 6 | 39.982909 | -82.645172 | 979.15 | 0.00 | 979.15 |
| 7 | 39.981312 | -82.645265 | 975.31 | 0.00 | 975.31 |
| 8 | 39.977709 | -82.645465 | 957.16 | 4.00 | 961.16 |
| 9 | 39.969322 | -82.646001 | 959.16 | 4.00 | 963.16 |

Name: Route 5
Route type: Two-way
View angle: 50.0 deg



| Vertex | Latitude | Longitude | Ground | Height above | Total |
|--------|-----------|------------|--------|--------------|--------|
| | | | deg | deg | ft |
| 1 | 39.973626 | -82.645736 | 953.19 | 0.00 | 953.19 |
| 2 | 39.973618 | -82.646541 | 955.76 | 0.00 | 955.76 |
| 3 | 39.973569 | -82.647432 | 960.39 | 0.00 | 960.39 |
| 4 | 39.973585 | -82.648193 | 956.20 | 0.00 | 956.20 |
| 5 | 39.973742 | -82.648590 | 954.70 | 0.00 | 954.70 |
| 6 | 39.974358 | -82.649416 | 954.84 | 0.00 | 954.84 |
| 7 | 39.974810 | -82.650060 | 955.14 | 0.00 | 955.14 |
| 8 | 39.975772 | -82.651830 | 957.67 | 0.00 | 957.67 |
| 9 | 39.976504 | -82.653021 | 959.04 | 0.00 | 959.04 |
| 10 | 39.977022 | -82.653955 | 960.56 | 0.00 | 960.56 |
| 11 | 39.977647 | -82.654953 | 961.60 | 0.00 | 961.60 |
| 12 | 39.977926 | -82.655489 | 962.21 | 0.00 | 962.21 |
| 13 | 39.978740 | -82.656991 | 964.74 | 0.00 | 964.74 |
| 14 | 39.979801 | -82.658987 | 966.76 | 0.00 | 966.76 |
| 15 | 39.980450 | -82.660220 | 968.20 | 0.00 | 968.20 |
| 16 | 39.981149 | -82.661604 | 970.23 | 0.00 | 970.23 |
| 17 | 39.982012 | -82.663267 | 972.82 | 0.00 | 972.82 |
| 18 | 39.982728 | -82.664726 | 976.23 | 0.00 | 976.23 |

Discrete Observation Receptors

| Number | Latitude | Longitude | Ground elevation | Height above ground | Total Elevation |
|--------|-----------|------------|------------------|---------------------|-----------------|
| | deg | deg | ft | ft | ft |
| 1-ATCT | 39.998230 | -82.893186 | 808.54 | 50.00 | 858.54 |
| OP 683 | 39.976857 | -82.643479 | 972.65 | 5.40 | 978.05 |
| OP 684 | 39.976338 | -82.643555 | 977.25 | 5.40 | 982.65 |
| OP 685 | 39.978092 | -82.643515 | 977.85 | 5.40 | 983.25 |
| OP 686 | 39.978153 | -82.646766 | 972.95 | 5.40 | 978.35 |
| OP 687 | 39.969131 | -82.643825 | 958.15 | 5.40 | 963.55 |
| OP 688 | 39.971185 | -82.641723 | 956.55 | 5.40 | 961.95 |
| OP 689 | 39.970318 | -82.639747 | 959.05 | 5.40 | 964.45 |
| OP 690 | 39.969198 | -82.639466 | 955.85 | 5.40 | 961.25 |
| OP 691 | 39.970162 | -82.638662 | 960.15 | 5.40 | 965.55 |
| OP 692 | 39.969279 | -82.638103 | 961.45 | 5.40 | 966.85 |
| OP 693 | 39.969123 | -82.637308 | 961.35 | 5.40 | 966.75 |
| OP 694 | 39.970216 | -82.638058 | 957.95 | 5.40 | 963.35 |
| OP 695 | 39.970092 | -82.637120 | 956.85 | 5.40 | 962.25 |
| OP 696 | 39.968970 | -82.636611 | 960.25 | 5.40 | 965.65 |
| OP 697 | 39.970069 | -82.635336 | 957.55 | 5.40 | 962.95 |
| OP 698 | 39.971988 | -82.635298 | 963.85 | 5.40 | 969.25 |
| OP 700 | 39.971905 | -82.636157 | 967.55 | 5.40 | 972.95 |
| OP 701 | 39.976402 | -82.634912 | 973.35 | 5.40 | 978.75 |
| OP 711 | 39.979942 | -82.626008 | 1001.15 | 5.40 | 1006.55 |
| OP 712 | 39.980059 | -82.626699 | 1007.15 | 5.40 | 1012.55 |
| OP 713 | 39.980637 | -82.626994 | 1004.65 | 5.40 | 1010.05 |
| OP 714 | 39.980660 | -82.627750 | 1002.75 | 5.40 | 1008.15 |
| OP 715 | 39.980855 | -82.628417 | 1003.65 | 5.40 | 1009.05 |
| OP 716 | 39.981493 | -82.626745 | 1004.65 | 5.40 | 1010.05 |
| OP 717 | 39.980995 | -82.628974 | 1002.15 | 5.40 | 1007.55 |
| OP 718 | 39.981099 | -82.629737 | 999.35 | 5.40 | 1004.75 |
| OP 719 | 39.980984 | -82.630517 | 996.65 | 5.40 | 1002.05 |
| OP 720 | 39.980447 | -82.629159 | 997.65 | 5.40 | 1003.05 |
| OP 721 | 39.980176 | -82.628521 | 996.95 | 5.40 | 1002.35 |
| OP 722 | 39.980008 | -82.629282 | 995.15 | 5.40 | 1000.55 |
| OP 723 | 39.979604 | -82.628551 | 995.45 | 5.40 | 1000.85 |
| OP 724 | 39.979165 | -82.628649 | 996.05 | 5.40 | 1001.45 |
| OP 725 | 39.979460 | -82.629256 | 993.15 | 5.40 | 998.55 |
| OP 726 | 39.979426 | -82.629975 | 991.65 | 5.40 | 997.05 |
| OP 727 | 39.980016 | -82.630447 | 993.45 | 5.40 | 998.85 |
| OP 728 | 39.979487 | -82.630619 | 992.25 | 5.40 | 997.65 |
| OP 729 | 39.980059 | -82.630998 | 993.05 | 5.40 | 998.45 |
| OP 730 | 39.979491 | -82.631208 | 992.55 | 5.40 | 997.95 |
| OP 731 | 39.979600 | -82.631809 | 992.25 | 5.40 | 997.65 |
| OP 732 | 39.980087 | -82.631525 | 993.65 | 5.40 | 999.05 |
| OP 733 | 39.979881 | -82.632423 | 989.35 | 5.40 | 994.75 |
| OP 734 | 39.980286 | -82.632387 | 994.25 | 5.40 | 999.65 |
| OP 735 | 39.980939 | -82.632289 | 989.75 | 5.40 | 995.15 |
| OP 736 | 39.981339 | -82.632271 | 991.65 | 5.40 | 997.05 |
| OP 737 | 39.981278 | -82.631614 | 994.15 | 5.40 | 999.55 |
| OP 738 | 39.980892 | -82.631589 | 991.15 | 5.40 | 996.55 |
| OP 739 | 39.978680 | -82.626833 | 1003.05 | 5.40 | 1008.45 |
| OP 922 | 39.986132 | -82.644444 | 998.55 | 5.40 | 1003.95 |
| OP 923 | 39.987355 | -82.645152 | 994.95 | 5.40 | 1000.35 |
| OP 924 | 39.988570 | -82.645692 | 1011.65 | 5.40 | 1017.05 |
| OP 925 | 39.987520 | -82.646929 | 996.25 | 5.40 | 1001.65 |
| OP 926 | 39.988451 | -82.647787 | 999.45 | 5.40 | 1004.85 |
| OP 927 | 39.987628 | -82.648072 | 992.65 | 5.40 | 998.05 |
| OP 928 | 39.988405 | -82.646234 | 1007.15 | 5.40 | 1012.55 |
| OP 929 | 39.988435 | -82.646544 | 1007.05 | 5.40 | 1012.45 |
| OP 930 | 39.987505 | -82.646484 | 998.05 | 5.40 | 1003.45 |

| | | | | | |
|---------|-----------|------------|---------|------|---------|
| OP 931 | 39.988428 | -82.647322 | 1004.55 | 5.40 | 1009.95 |
| OP 932 | 39.988551 | -82.648628 | 999.55 | 5.40 | 1004.95 |
| OP 933 | 39.987272 | -82.649299 | 991.65 | 5.40 | 997.05 |
| OP 934 | 39.988280 | -82.643775 | 1021.05 | 5.40 | 1026.45 |
| OP 935 | 39.988192 | -82.642927 | 1026.85 | 5.40 | 1032.25 |
| OP 936 | 39.988668 | -82.642986 | 1021.05 | 5.40 | 1026.45 |
| OP 937 | 39.988692 | -82.643513 | 1019.35 | 5.40 | 1024.75 |
| OP 938 | 39.990119 | -82.642915 | 1026.35 | 5.40 | 1031.75 |
| OP 939 | 39.991515 | -82.644068 | 1037.65 | 5.40 | 1043.05 |
| OP 940 | 39.991674 | -82.644901 | 1022.05 | 5.40 | 1027.45 |
| OP 942 | 39.992227 | -82.643818 | 1029.75 | 5.40 | 1035.15 |
| OP 994 | 39.993671 | -82.626109 | 1049.95 | 5.40 | 1055.35 |
| OP 996 | 39.991780 | -82.626452 | 1019.35 | 5.40 | 1024.75 |
| OP 997 | 39.989994 | -82.625352 | 1012.35 | 5.40 | 1017.75 |
| OP 999 | 39.989156 | -82.627117 | 1024.85 | 5.40 | 1030.25 |
| OP 1000 | 39.989496 | -82.627089 | 1026.15 | 5.40 | 1031.55 |
| OP 1001 | 39.989953 | -82.627234 | 1032.05 | 5.40 | 1037.45 |
| OP 1002 | 39.990346 | -82.627453 | 1034.25 | 5.40 | 1039.65 |
| OP 1003 | 39.987679 | -82.627541 | 1022.25 | 5.40 | 1027.65 |
| OP 1004 | 39.988140 | -82.627900 | 1023.85 | 5.40 | 1029.25 |
| OP 1005 | 39.988537 | -82.627455 | 1026.85 | 5.40 | 1032.25 |
| OP 1006 | 39.987467 | -82.625473 | 1009.65 | 5.40 | 1015.05 |
| OP 1007 | 39.987105 | -82.626523 | 1016.35 | 5.40 | 1021.75 |
| OP 1008 | 39.986488 | -82.625411 | 1007.75 | 5.40 | 1013.15 |
| OP 1009 | 39.985587 | -82.625484 | 1012.45 | 5.40 | 1017.85 |
| OP 1010 | 39.985717 | -82.627208 | 1013.05 | 5.40 | 1018.45 |
| OP 1011 | 39.985264 | -82.626454 | 1020.35 | 5.40 | 1025.75 |
| OP 1012 | 39.984754 | -82.625496 | 1013.35 | 5.40 | 1018.75 |
| OP 1013 | 39.984334 | -82.627117 | 1011.55 | 5.40 | 1016.95 |
| OP 1014 | 39.984225 | -82.625551 | 1015.85 | 5.40 | 1021.25 |
| OP 1016 | 39.983238 | -82.625712 | 997.95 | 5.40 | 1003.35 |
| OP 1017 | 39.983258 | -82.627357 | 1000.55 | 5.40 | 1005.95 |
| OP 1018 | 39.983803 | -82.627108 | 1003.15 | 5.40 | 1008.55 |
| OP 1019 | 39.983822 | -82.625700 | 1010.95 | 5.40 | 1016.35 |
| OP 1022 | 39.984220 | -82.624845 | 1010.05 | 5.40 | 1015.45 |

1-ATCT map image



PV Array Results

Summary of PV Glare Analysis

PV configuration and predicted glare

| PV Name | Tilt | Orientation | "Green" Glare | "Yellow" Glare | Energy Produced | Data File  |
|---------|-------------|-------------|---------------|----------------|-----------------|---|
| | deg | deg | min | min | kWh | |
| 1 | SA tracking | SA tracking | 0 | 0 | - | - |
| 2 | SA tracking | SA tracking | 0 | 0 | - | - |
| 3 | SA tracking | SA tracking | 0 | 0 | - | - |
| 4 | SA tracking | SA tracking | 0 | 0 | - | - |
| 5 | SA tracking | SA tracking | 0 | 0 | - | - |
| 6 | SA tracking | SA tracking | 0 | 0 | - | - |
| 7 | SA tracking | SA tracking | 0 | 0 | - | - |

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results

detailed results for each PV array and receptor

1 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

2 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

3 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

4 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

5 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

6 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

7 no glare found



| Component | Green glare (min) | Yellow glare (min) |
|------------|-------------------|--------------------|
| FP: FP 1 | 0 | 0 |
| FP: FP 10 | 0 | 0 |
| FP: FP 2 | 0 | 0 |
| FP: FP 3 | 0 | 0 |
| FP: FP 4 | 0 | 0 |
| FP: FP 5 | 0 | 0 |
| FP: FP 6 | 0 | 0 |
| FP: FP 7 | 0 | 0 |
| FP: FP 8 | 0 | 0 |
| FP: FP 9 | 0 | 0 |
| OP: 1-ATCT | 0 | 0 |
| OP: OP 683 | 0 | 0 |
| OP: OP 684 | 0 | 0 |
| OP: OP 685 | 0 | 0 |
| OP: OP 686 | 0 | 0 |
| OP: OP 687 | 0 | 0 |
| OP: OP 688 | 0 | 0 |
| OP: OP 689 | 0 | 0 |
| OP: OP 690 | 0 | 0 |
| OP: OP 691 | 0 | 0 |
| OP: OP 692 | 0 | 0 |
| OP: OP 693 | 0 | 0 |
| OP: OP 694 | 0 | 0 |
| OP: OP 695 | 0 | 0 |
| OP: OP 696 | 0 | 0 |
| OP: OP 697 | 0 | 0 |
| OP: OP 698 | 0 | 0 |
| OP: OP 700 | 0 | 0 |
| OP: OP 701 | 0 | 0 |
| OP: OP 711 | 0 | 0 |
| OP: OP 712 | 0 | 0 |
| OP: OP 713 | 0 | 0 |
| OP: OP 714 | 0 | 0 |
| OP: OP 715 | 0 | 0 |
| OP: OP 716 | 0 | 0 |
| OP: OP 717 | 0 | 0 |
| OP: OP 718 | 0 | 0 |
| OP: OP 719 | 0 | 0 |
| OP: OP 720 | 0 | 0 |
| OP: OP 721 | 0 | 0 |
| OP: OP 722 | 0 | 0 |
| OP: OP 723 | 0 | 0 |
| OP: OP 724 | 0 | 0 |
| OP: OP 725 | 0 | 0 |
| OP: OP 726 | 0 | 0 |
| OP: OP 727 | 0 | 0 |
| OP: OP 728 | 0 | 0 |

| | | |
|-------------|---|---|
| OP: OP 729 | 0 | 0 |
| OP: OP 730 | 0 | 0 |
| OP: OP 731 | 0 | 0 |
| OP: OP 732 | 0 | 0 |
| OP: OP 733 | 0 | 0 |
| OP: OP 734 | 0 | 0 |
| OP: OP 735 | 0 | 0 |
| OP: OP 736 | 0 | 0 |
| OP: OP 737 | 0 | 0 |
| OP: OP 738 | 0 | 0 |
| OP: OP 739 | 0 | 0 |
| OP: OP 922 | 0 | 0 |
| OP: OP 923 | 0 | 0 |
| OP: OP 924 | 0 | 0 |
| OP: OP 925 | 0 | 0 |
| OP: OP 926 | 0 | 0 |
| OP: OP 927 | 0 | 0 |
| OP: OP 928 | 0 | 0 |
| OP: OP 929 | 0 | 0 |
| OP: OP 930 | 0 | 0 |
| OP: OP 931 | 0 | 0 |
| OP: OP 932 | 0 | 0 |
| OP: OP 933 | 0 | 0 |
| OP: OP 934 | 0 | 0 |
| OP: OP 935 | 0 | 0 |
| OP: OP 936 | 0 | 0 |
| OP: OP 937 | 0 | 0 |
| OP: OP 938 | 0 | 0 |
| OP: OP 939 | 0 | 0 |
| OP: OP 940 | 0 | 0 |
| OP: OP 942 | 0 | 0 |
| OP: OP 994 | 0 | 0 |
| OP: OP 996 | 0 | 0 |
| OP: OP 997 | 0 | 0 |
| OP: OP 999 | 0 | 0 |
| OP: OP 1000 | 0 | 0 |
| OP: OP 1001 | 0 | 0 |
| OP: OP 1002 | 0 | 0 |
| OP: OP 1003 | 0 | 0 |
| OP: OP 1004 | 0 | 0 |
| OP: OP 1005 | 0 | 0 |
| OP: OP 1006 | 0 | 0 |
| OP: OP 1007 | 0 | 0 |
| OP: OP 1008 | 0 | 0 |
| OP: OP 1009 | 0 | 0 |
| OP: OP 1010 | 0 | 0 |
| OP: OP 1011 | 0 | 0 |
| OP: OP 1012 | 0 | 0 |
| OP: OP 1013 | 0 | 0 |

| | | |
|----------------|---|---|
| OP: OP 1014 | 0 | 0 |
| OP: OP 1016 | 0 | 0 |
| OP: OP 1017 | 0 | 0 |
| OP: OP 1018 | 0 | 0 |
| OP: OP 1019 | 0 | 0 |
| OP: OP 1022 | 0 | 0 |
| Route: Route 1 | 0 | 0 |
| Route: Route 2 | 0 | 0 |
| Route: Route 3 | 0 | 0 |
| Route: Route 4 | 0 | 0 |
| Route: Route 5 | 0 | 0 |

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the [Help page](#) for assumptions and limitations not listed here.

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Case No(s). 20-1757-EL-BGN

Summary: Application Exhibit M - Solar Glare Analysis Report electronically filed by Teresa Orahood on behalf of Dylan F. Borchers