

**Ashard Moore / NextEra Energy**  
**South Platte Solar LLC**  
**Special Use**

---

**PLANNING COMMISSION HEARING**

**March 13, 2023**

**7:00 p.m.**

## **TABLE OF CONTENTS**

- PC-South Platte Solar, LLC (Nextera)
  - File Summary
- Additional Application Information
  - Secretary's Certificate
  - Partial Waiver
  - Clarifying Questions
  - Statement of Authority
- Technical & Miscellaneous
  - GLARE Report
- Referrals, Responses and Notices
  - Referrals and Landowner Letters sent and responses received
  - PC Notice and responses
  - Sign Posting and Notarized Affidavit

PC

## PC File Summary



**MORGAN COUNTY  
PLANNING AND BUILDING DEPARTMENT**

**MORGAN COUNTY PLANNING COMMISSION  
FILE SUMMARY**

**March 3, 2023**

**Hearing date – March 13, 2023**

**APPLICANT: South Platte Solar, LLC**

**OWNERS: Kamp Cattle Company, Robert and Dawn Whitney, and Charles E. Ross, et.al.**

This application is for a Special Use Permit to allow for a solar collector facility with a maximum of power output of 500 MWac. The permitted area is located in part of Sections 3-10, 15, and 17-20, Township 2 North, Range 56 West; a part of Sections 28-33, Township 3 North, Range 56 West; and part of Sections 24 & 25, Township 3 North, Range 57 West of the 6<sup>th</sup> PM, Morgan County, Colorado. The permitted area is zoned Agriculture Production.

The applicant, South Platte Solar, LLC, propose solar collector facility within a 10,152 acre project area. The facility will consist of photovoltaic (PV) panels, trackers, inverters, transformers, underground electric collection lines and/or above ground cabling, access roads, a project substation, security fencing, an approximate one-mile generation tie-line connecting the solar collector facility to the point of interconnection, and a 500 megawatt (MW) battery energy storage system (BESS). The BESS is not included as part this application. The applicant has also requested waivers of the setback requirements for several interior property lines and several rights-of-way along section lines.

In addition to the permit application, packets for the Planning Commission hearing include referral responses from the Town of Wiggins and Xcel Energy. Xcel has no apparent conflict with this application, but engineering reviews for the high-pressure natural gas transmission pipeline and electric transmission lines will be necessary prior to development

Also included with the packet is an executive summary of a Glare report, if the Commissioners would like to view the entire report, please come to the Planning and Zoning Office.

Finally, there are no concerns from Matt Harris with Harris Engineering Consultants, Inc., the County's consulting engineer, after review of the preliminary engineering reports with drainage plans. South Platte Solar, LLC has also been in contact with the City of Brush regarding any necessary permits for activities within the Brush Watershed Protection District.

In reviewing this application, the Planning Commission and Board of County Commissioners are required to make a finding that the criteria for granting a Use by Special Review in Section 2-395 of the Morgan County Zoning Regulations have been satisfied. In addition, the County shall consider whether the application complies with the requirements of the Solar Collector Regulations in Section 4-810.



Section 2-395 Special Use Permit Criteria:

- A. The use and its location as proposed are in conformance with the Morgan County Comprehensive Plan. The property is located in the south central and Brush south areas.

Chapter 2 – Plan Summary

2.II.A - Economic Development

Goal – Diversify the economy in Morgan County to broaden business employment opportunities for residents and to further economic growth.

*This project will generate additional property taxes without strain on public resources provided by the county. To the extent possible the operator will seek to hire local contractors throughout construction and the life of the project.*

2.E.1 Utilities

Goal: To ensure that adequate and financially secure public utilities are provided to all developments in Morgan County.

*This project will not require the use of water, sewage or telecommunications onsite and will connect via the Gen-Tie line to the public Service Company of Colorado (PSCO) Pawnee Substation.*

Chapter 5 - Environment

5.IX

Goal - To preserve the manmade and natural environment in order to enhance the quality of life in Morgan County.

*This project will not impact wetlands, floodplain or drainage patterns. A desktop review and field assessment has been completed for the site to avoid adverse impacts on plant and wildlife species. This project will encourage use of renewable resources and production of electric power.*

- B. The application documents are complete and present a clear picture of how the use is to be arranged on the site.
- C. The Site Plan conforms to the district design standards of Section 2-420 and Section 4-820 of the Morgan County Zoning Regulations.
- D. All on and off-site impacts have been satisfactorily mitigated either through agreement, public improvement, site plan requirements or other mitigation measures.  
*The proposed project will result in minimal impacts to off-site areas. During construction and when necessary water trucks will be used for dust mitigation. Best management practices (BMP) will be implemented to protect newly established vegetation, for Storm Water Management and Erosion Control.*
- E. The special use proposed has been made compatible with the surrounding uses and is adequately buffered from any incompatible uses by distance and topography.  
*Buffering from adjacent agricultural uses is not necessary.*
- F. The special use poses no or minimal risk to the public health, safety and welfare.  
*Granting the Special Use Permit will not increase risk to public health, safety or welfare.*

- G. The special use proposed is not planned on a nonconforming parcel.  
*The proposed special use is located on a conforming parcel.*
- H. The applicant has adequately documented a public need for the project. The Applicant has submitted all pertinent technical information, has demonstrated that it has adequate financial resources to implement the project, and has paid all County fees and review costs.  
*The general purpose of the Project is to maximize energy production from available solar resources to deliver renewable electricity to the bulk power transmission system to serve the needs of electric utilities and their customers.*
- I. For any special use requiring a supply of water that the applicant has demonstrated a source of water which is adequate for the proposed use in terms of quantity and reliability and in the case of human consumption, quantity, quality, and reliability.  
*This project does not require a water supply. All water needed during construction (e.g., dust control) will be hauled in by trucks and sourced off-site.*

The following conditions are recommended if the Special Use Permit is approved:

1. South Platte Solar, LLC and Boulevard Associates, LLC are entities being wholly owned subsidiaries of NextEra. Proof of assignment of the leases between the property owners and Boulevard Associates to South Platte Solar must be submitted to the Planning & Zoning Department prior to construction.
2. All necessary land use, environmental, and construction permits, approvals and authorizations will be obtained prior to the start of and during construction as required and may include, but are not limited to, land use permits, right-of-way (ROW) permits, road use agreements, access permits, oversize/overweight permits, grading permits, and stormwater permits.
3. All necessary plans, reports, permits, and certificates will be submitted prior to issuance of any building permit associated with the solar collector facility and may include, but are not limited to, interconnection/crossing agreements, final drainage & erosion control plan, signed and sealed geotechnical report, decommissioning plan, operations and maintenance plan, Liability Insurance Certificate, final locations for any laydown yard, a copy of the APEN issued by the Colorado Department of Public Health and Environment, Unanticipated Discovery plan, and glare analysis.
4. South Platte Solar, LLC will comply with proposed decommissioning plan, any modifications/deviations from the proposed plan must be approved by the County.
5. Any building greater than 120 sq. ft. will require a building permit.
6. No poles shall exceed a height of 100 feet. Any poles that exceed this height will require prior approval from the County, upon a showing by South Platte Solar that such height is necessary. Such additional height may be approved by the County Planning Administrator upon application and request from South Platte Solar, LLC. The County Planning Administrator may request any additional information necessary to determine whether approval should be granted.
7. The substation and solar collector facility shall be enclosed by a security fence and be secured at all times. Emergency services must have access at all times.
8. Prior the commencement of construction, South Platte Solar, LLC will enter into a road use agreement for the use of any public road during construction which shall include the following:

- a. A map showing which County roads will be used during construction.
  - b. A pre-construction baseline survey of County roads to be used during construction to document their pre-construction condition, obtained by and paid for by the applicant and prepared by a Colorado licensed engineer.
  - c. A mitigation plan to address traffic congestion, control, and potential impacts to County roads to be used during construction. The mitigation plan shall also include any dust mitigation activities.
  - d. A requirement that the applicant to return any County roads to their pre-construction baseline condition.
  - e. A requirement to post financial security in an amount not less than one hundred fifteen percent (115%) of the estimated cost to complete all road restoration, in the form of an irrevocable letter of credit or cash escrow. Cost estimates shall be provided by a licensed Colorado engineer. Upon preliminary acceptance of the restored public road, the County shall release all but fifteen percent (15%) of total actual costs of restoration of the public roads, so long as South Platte Solar, LLC is not in default of any provision of the public improvements agreement. The County shall inspect the restored roads and South Platte Solar, LLC shall pay to the County the cost incurred by the County in conducting such inspections. These costs shall be due and payable upon demand of the County. South Platte Solar, LLC shall be responsible for correcting or properly completing the restoration.
  - f. The residual fifteen percent (15%) retained by the County shall act as security for South Platte Solar, LLC's guarantee that the restoration remains free of defect during a two year warranty period. South Platte Solar, LLC may at any time during the preliminary acceptance or warranty period offer to provide a substitute or supplemental form of financial security to that security as originally posted with and/or retained by the County. The County may accept substitute or supplemental forms of security in its sole discretion.
9. Prior the commencement of construction on a segment, South Platte Solar, LLC must obtain all proper permissions from landowners to use private roads or develop access roads on any private property. No private access roads, new or currently in use, shall become public rights of way unless approved and accepted by the Board of County Commissioners.
  10. The County will require written notice for all staging or laydown areas, or other temporary areas for construction or repair activities ("Temporary Areas") utilized after final construction is completed. South Platte Solar, LLC must provide a map showing the Temporary Area by size (acreage and perimeter), a list of materials and equipment to be stored on the Temporary Areas, activities within the area (e.g., grading, storage, etc.), the length of time the temporary construction or staging or laydown areas will be in use and must notify the County at least thirty (30) days prior to the use of the temporary area. It shall be a condition of all equipment and materials must be removed from the Temporary Areas and the area returned to a condition similar to its condition prior to construction. No permanent structures may remain in the Temporary Areas unless approved by the County pursuant to the applicable Morgan County Zoning Regulations.
  11. The project area shall be reclaimed and/or reseeded as soon as practicable but no later than six months after South Platte Solar, LLC has completed construction, unless the County Planning Administrator grants an extension for demonstrated good cause.

12. Construction occurring within ¼ quarter mile of any residence shall not commence earlier than 7 a.m.
13. South Platte Solar, LLC shall prevent the existence of any nuisances by way of its construction activities. All trash, litter, construction waste and any potentially hazardous materials shall be disposed of properly off-site. If the County determines that a nuisance exists and the nuisance is not abated or an abatement plan is not submitted to the satisfaction of the County, the County may, upon thirty (30) days' notice under this Agreement, draw upon the Performance Guarantee to pay the cost and expenses of abating the nuisance. The decision to draw on the Performance Guarantee shall be within the sole discretion of the County.
14. South Platte Solar, LLC shall comply with all applicable law and regulations related to safety and emergency management during construction and on-going operations.
15. South Platte Solar, LLC shall be responsible for the payment of all costs and fees incurred by the County associated with this Permit. The County shall invoice South Platte Solar, LLC for costs and fees and payment will be due by South Platte Solar, LLC within thirty (30) days of the date of the invoice. Failure to pay may result in enforcement actions by the County.

Nicole Hay,  
Morgan County Planning Administrator



**ADDITIONAL APPLICATION**  
**INFORMATION**

Secretary's Certificate

Partial Waiver

Clarifying Questions

Statement of Authority.

## NEXTERA ENERGY RESOURCES, LLC

### SECRETARY'S CERTIFICATE

The undersigned, Jason B. Pear, Assistant Secretary of NextEra Energy Resources, LLC, a Delaware limited liability company (the "Company"), hereby certifies that:

1. Boulevard Associates, LLC, a Delaware limited liability company, is a wholly owned, indirect subsidiary of the Company; and

2. South Platte Solar, LLC, a Delaware limited liability company, is a wholly owned, indirect subsidiary of the Company.

IN WITNESS WHEREOF, I have hereunto signed my name on this 23<sup>rd</sup> day of January, 2023.

By: 

Name: Jason B. Pear

Title: Assistant Secretary

December 7, 2022

ATTN: Nicole Hay  
Morgan County Planning  
Zoning & Building Department  
231 Ensign, P.O. Box 596  
Fort Morgan, CO 80701

Re: South Platte Request for Waiver of Setback Requirements  
File R0036044.00

Dear Nicole:

On behalf of South Platte Solar LLC ("Applicant"), Westwood Professional Services ("Westwood") is requesting a waiver of certain setback requirements for the proposed South Platte Solar Project ("Project") in Morgan County, Colorado ("County"). The Project boundary encompasses 10,152 acres of private agricultural land that is leased for the construction, operation, and maintenance of a 500-megawatt solar energy generation facility.

## Property Line Setbacks

### Regulatory Requirements

According to Section 4-825(D)(1) of the Morgan County Zoning Regulations<sup>1</sup> ("Zoning Regulations"), the applicable setbacks for principal ground-mounted solar collectors are as follows:

- 70-foot setback from above-ground public utility power lines or communication lines;
- 70-foot setback from existing public road, highway, or railroad;
- 500-foot setback from inhabited buildings, including residences, schools, hospitals, churches, or public libraries; and
- 70-foot setback from all other property lines.

### Requested Waiver

Special circumstances exist which are unique to the proposed Project, and which are not applicable to other types of constructed structures or buildings. The proposed Project will include the installation of solar panels, trackers, inverters, transformers, underground electric collection lines and/or above ground cabling, access roads, a substation, security fencing, an interconnection generation tie line, and a battery energy storage system, with a total footprint of approximately 5,869 acres. Due to the expansive Project footprint, the Applicant has executed various solar lease and easement agreements and transmission easement agreements with the following participating landowners:

---

<sup>1</sup> <https://morgancounty.colorado.gov/sites/morgancounty/files/documents/Zoning%20Regulations%20Revised%20-102822.pdf>.

<b>Landowner(s)</b>	<b>Contract Type</b>	<b>Size</b>	<b>Status</b>
Kamp Cattle Company	Solar Lease and Easement Agreement	8,873 acres	Signed
Charles E. Ross; Jane Louise Ross; Bernard L. Ross; Sonja Luna Ross; Harold G. Ross	Solar Lease and Easement Agreement	160 acres	Signed
Robert Allen Whitney; Dawn M. Whitney	Solar Lease and Easement Agreement	800 acres	Signed
City of Brush, Colorado	Transmission Easement Agreement	120 feet (width)	Signed
Huey Ranch Co.	Option and Transmission Easement	150 feet (width), plus 50 feet (width) for area of appurtenances and 215 feet (radius) for transmission line corners/turns	Signed

Strict interpretation and enforcement of the property line setbacks outlined in the Zoning Regulations would deprive the Applicant of the property rights granted in the aforementioned agreements, as well as those commonly enjoyed by other applicants proposing to develop solar and transmission infrastructure on land leased from participating landowners and spanning multiple parcels. As such, the Applicant requests a waiver of the setback requirements for the following interior property lines:

<b>Parcel Number</b>	<b>Setback Area</b>
1229-240-00-004	70-foot corridors along eastern and southern property lines
1229-240-00-005	70-foot corridors along western and southern property lines
1229-250-00-001	70-foot corridors along northern and eastern property lines
1231-300-00-002	70-foot corridors along western and eastern property lines
1231-300-00-001	70-foot corridors along western, eastern, and southern property lines
1231-290-00-001	70-foot corridors along western, eastern, and southern property lines
1231-280-00-001	70-foot corridors along western and southern property lines
1231-310-00-001	70-foot corridors along northern, eastern, and southern property lines
1231-320-00-001	70-foot corridors along northern, southern, eastern, and western property lines
1231-330-00-001	70-foot corridors along western and northern property lines



<b>Parcel Number</b>	<b>Setback Area</b>
1289-060-00-001	70-foot corridors along northern, eastern, and southern property lines
1289-050-00-001	70-foot corridors along northern, western, and southern property lines
1289-070-00-001	70-foot corridors along northern, eastern, and southern property lines
1289-080-00-001	70-foot corridors along northern, southern, eastern, and western property lines
1289-090-00-001	70-foot corridors along western and eastern property lines
1289-100-00-002	70-foot corridors along western and southern property lines
1289-100-00-001	70-foot corridors along northern, western, and southern property lines
1289-180-00-001	70-foot corridors along northern, eastern, and southern property lines
1289-170-00-001	70-foot corridors along northern, western, and southern property lines
1289-150-00-001	70-foot corridor along northern property line
1289-190-00-001	70-foot corridors along northern and eastern property lines
1289-200-00-001	70-foot corridors along northern and western property lines

## **Section Line Setbacks**

### **Regulatory Requirements**

According to Section 4-825(D)(3) of the Zoning Regulations, the County has established rights-of-way ("ROW") that are located 30 feet on each side of section lines to allow for maintenance of existing county roads and construction of new county roads. The County reviews the placement of solar panels within these ROW on a case-by-case basis to confirm that they will not conflict with the County's existing and future road plans. Absent any conflicts, the County may issue a waiver that will allow for placement of solar panels within the existing ROW in accordance with the Zoning Regulations.

### **Requested Waiver**

At this time, neither the Applicant nor Westwood has been made aware of any plans to construct new county roads or conduct maintenance on existing county roads within these ROW. Because the proposed Project does not present any conflicts with either existing or future road plans, the Applicant requests a waiver of the setback requirements for the following sections:

<b>Township, Range, Section</b>	<b>Setback Area</b>
T3N, R57W, S24	30-foot corridors along western, southern, and eastern section boundary lines
T3N, R57W, S25	30-foot corridors along northern, eastern, southern, and western section boundary lines
T3N, R56W, S30	30-foot corridors along northern, eastern, southern, and western section boundary lines

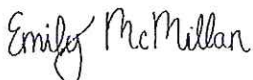
<b>Township, Range, Section</b>	<b>Setback Area</b>
T3N, R56W, S29	30-foot corridors along northern, eastern, southern, and western section boundary lines
T3N, R56W, S28	30-foot corridors along northern, western, and southern section boundary lines
T3N, R56W, S31	30-foot corridors along northern, eastern, and southern section boundary lines
T3N, R56W, S32	30-foot corridors along northern, eastern, southern, and western section boundary lines
T3N, R56W, S33	30-foot corridors along northern and western section boundary lines
T2N, R56W, S6	30-foot corridors along northern, eastern, and southern section boundary lines
T2N, R56W, S5	30-foot corridors along northern, western, and southern section boundary lines
T2N, R56W, S7	30-foot corridors along northern, eastern, and southern section boundary lines
T2N, R56W, S8	30-foot corridors along northern, eastern, southern, and western section boundary lines
T2N, R56W, S9	30-foot corridors along western, southern, and eastern section boundary lines
T2N, R56W, S10	30-foot corridors along western, southern, and eastern section boundary lines
T2N, R56W, S18	30-foot corridors along northern, eastern, southern, and western section boundary lines
T2N, R56W, S17	30-foot corridors along northern, eastern, southern, and western section boundary lines
T2N, R56W, S15	30-foot corridors along western, northern, and eastern section boundary lines
T2N, R56W, S19	30-foot corridors along northern and eastern section boundary lines
T2N, R56W, S20	30-foot corridors along western, northern, and eastern section boundary lines

These waivers, if approved, are the minimum variances necessary to make possible the reasonable construction, operation, and maintenance of the proposed Project. Approval of this waiver request will not confer on the Applicant any special privilege that is denied by the Zoning Regulations for other development projects in the County. Accordingly, the approval of these waivers will be consistent with the general intent and purpose of the Zoning Regulations and will not be detrimental to the adjacent properties or public welfare.

Please contact me if you have any questions.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES



Emily Mcmillan, Permitting Specialist



February 27, 2023

ATTN: Nicole Hay  
Morgan County Planning  
Zoning & Building Department  
231 Ensign, P.O. Box 596  
Fort Morgan, CO 80701

Re: South Platte Solar Special Use Permit Application  
File R0036044.00

Dear Nicole:

On behalf of South Platte Solar, LLC ("Applicant"), Westwood Professional Services ("Westwood") is providing responses to the Morgan County ("County") review comments pertaining to the South Platte Solar ("Project") Special Use Permit Application ("Application") provided on January 19, 2023, during a phone call with Nicole Hay of the Morgan County Planning and Zoning Department. The review comments and corresponding responses are grouped by Application section, with comments denoted in bold italics and responses immediately subsequent.

## **Staging/Laydown Areas**

***County requests confirmation that the temporary laydown yard will be reclaimed following construction.***

Prior to commencement of construction and utilization of the proposed temporary laydown yard, stable access will be provided, with culverts to be installed as necessary. Sediment controls will also be installed, with topsoil to be stripped and stockpiled around the upgradient perimeter for a diversion of water or along the downgradient perimeter for runoff control. The stockpiles will be temporarily covered with hydromulch or wood following temporary seed establishment. Upon completion of construction and staging activities, all rock will be removed, the soil will be decompacted, and the topsoil will be reapplied to the area. Once the laydown yard is entirely removed, all disturbed areas will be returned to pre-construction conditions, which may include the application of seed and mulch cover for restoration.

Should a future need arise requiring a comparable area for either operation or maintenance efforts, the required area will be subject to independent coordination with the county.

## **Public Roads and Haul Routes**

***County seeks additional information regarding an alternate haul route for the Project.***

The Applicant anticipates that hauling activities will occur both within and outside the Project extents. At this time, the primary haul route proposed is County Road 24, which runs to the north of the Project. An alternate or additional haul route, County Road L to the east of the Project, may be utilized for delivery of equipment components and construction materials if County Road 24 is

inaccessible for any reason. If the condition of County Road L is insufficient to withstand the increased loading caused by the Project, despite the normal maintenance activities of the County, repairs or improvements may be necessary. Prior to commencing Project construction activities, the Applicant will consult with, and receive input and approval from, the Morgan County Road & Bridge department ("Road & Bridge") regarding the haul roads to be used for the Project. The updated Haul Route Map is included in **Attachment 1**.

### **Decommissioning Plan**

***County requests a complete Decommissioning Plan for the proposed Project.***

A Decommissioning Plan was prepared by Westwood, with a report dated February 23, 2023, in accordance with Morgan County Zoning Regulations Section 4-835. The Decommissioning Plan is included in **Attachment 2**.

### **Ownership**

***County requests documentation verifying the Applicant's status as a legal entity.***

Documentation verifying the Applicant's status as a legal entity is included in **Attachment 3**.

### **Road Agreement**

***County requests an executed Road Use Agreement ("RUA") for the proposed Project.***

On February 8, 2023, the Applicant commenced discussions with the Morgan County Road and Bridge Department to develop a RUA for the use and repair of public roadways in connection with the development and construction of the Project. These conversations will be ongoing, concurrent with the Application process. The RUA will be executed prior to construction and will be provided upon completion.

### **Issued for Permitting Civil Design Plan Set**

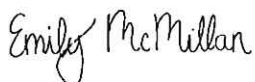
***County requests the updated site design incorporating the requisite 70-foot infrastructure setbacks.***

The Issued for Permitting Civil Design Plan Set has been revised to incorporate all requisite setback requirements and is included in **Attachment 4**.

Please contact me if you have any questions.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

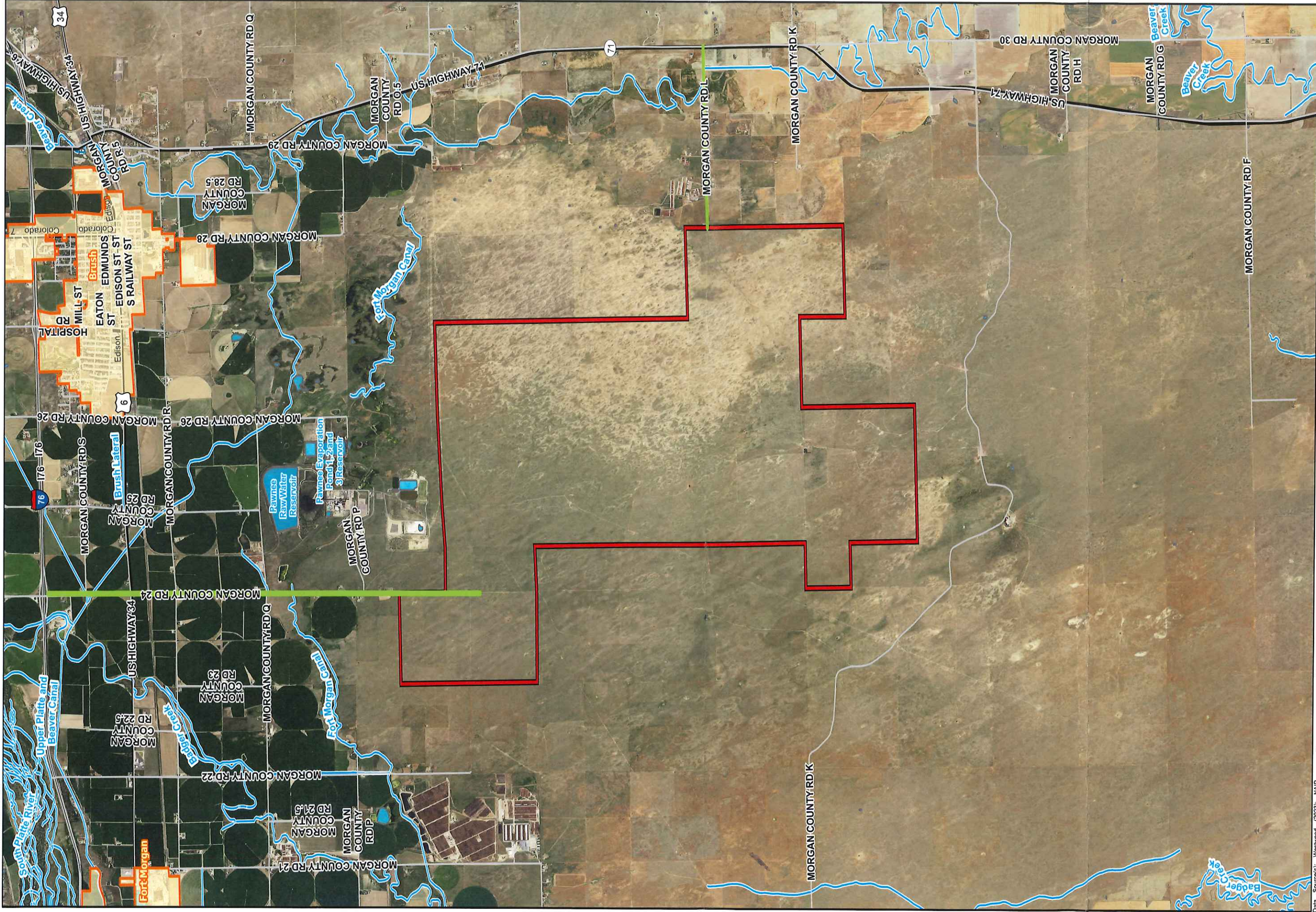


Emily Mcmillan, Permitting Specialist



# **Attachment 1: Haul Route Map**





### Legend

- Project Area
- Haul Route
- NHD Flowline
- NHD Waterbody

## South Platte Solar Project

Morgan County, Colorado



Haul Route



# **Attachment 2: Decommissioning Plan**



A DECOMMISSIONING PLAN FOR

# South Platte Solar Project

Morgan County, Colorado

FEBRUARY 23, 2023

PREPARED FOR:

South Platte Solar LLC

PREPARED BY:

**Westwood**



# Decommissioning Plan

South Platte Solar Project

Morgan County, Colorado

Prepared for:

South Platte Solar LLC  
North Palm Beach, FL 33408

Prepared by:

Westwood Professional Services  
12701 Whitewater Drive, Suite 300  
Minnetonka, MN 55343  
(952) 937-5150

Project Number: 0036044.00

Date: February 23, 2023

## Table of Contents

1.0	Introduction / Project Description .....	1
2.0	Proposed Future Land Use .....	1
3.0	Decommissioning Activities .....	1
3.1	Decommissioning of Project Components.....	2
3.1.1	Modules.....	2
3.1.2	Racking.....	2
3.1.3	Steel Foundation Posts .....	2
3.1.4	Underground Cables and Lines.....	2
3.1.5	Inverters, Transformers, and Ancillary Equipment .....	2
3.1.6	Equipment Foundations and Ancillary Foundations .....	3
3.1.7	Fence .....	3
3.1.8	Access Roads.....	3
3.1.9	Substation.....	3
3.1.10	Operations and Maintenance Building.....	4
3.2	Reclamation .....	4
4.0	Best Management Practices (BMPs) .....	4
4.1	Erosion Control .....	4
4.2	Sediment Control .....	6
4.3	Controlling Stormwater Flowing Onto and Through the Project.....	6
4.4	Permitting .....	7
4.5	Health and Safety Standards.....	7
5.0	Timeline and Contacts.....	7
6.0	Decommissioning Costs .....	8

## Attachments

Attachment A: Overall Site Layout

Attachment B: Decommissioning Cost Estimate

## 1.0 Introduction / Project Description

This Decommissioning Plan (“Plan”) has been prepared for the South Platte Solar Project in accordance with Morgan County Resolution No. 2022 BCC 017. The purpose of the Plan is to describe the means and methods that can be used to remove all structures, foundations, underground cables, and equipment and to reclaim and restore the land altered during the construction and operation of the solar project to its predevelopment condition to the extent feasible. This Plan has been developed based on preliminary site layouts and equipment, which may be subject to change as the planning process is ongoing.

The South Platte Solar Project (Facility) is a 500-Megawatt (MW) alternating current (700-MW direct current) solar power generation project proposed by South Platte Solar LLC (Applicant) in Morgan County, Colorado. Upon completion, the Facility will comprise a solar array consisting of ground-mounted photovoltaic panels and electrical support equipment, underground collection lines, a substation, an operations and maintenance (O&M) facility, access roads, and fencing. The Facility is located on approximately 10,152 acres of private agricultural leased land. This Plan accounts for components within the typical system as marked on the Overall Site Layout in Attachment A.

The useful life of solar panels is generally considered to be 35 years. At that time, the project will either be decommissioned or repowered with newer technology. The Plan identifies components which may be removed and areas that may be restored once the Facility has ceased to perform its originally intended function for more than 12 consecutive months, or when the Facility has surpassed the useful lifespan of the modules and facilities.

## 2.0 Proposed Future Land Use

Prior to the development of the Facility, the land use of the project area was primarily shrubland and grassland. After all equipment and infrastructure is removed during decommissioning, any holes or voids created by poles, concrete pads, and other equipment will be filled in with native soil to the surrounding grade, and the site will be restored to pre-construction conditions to the extent practicable. All access roads and other areas compacted by equipment will be decompacted to a depth necessary to ensure drainage of the soil and root penetration prior to fine grading and revegetation to match preconstruction conditions. Please refer to Section 3.2 for a detailed description of reclamation activities.

## 3.0 Decommissioning Activities

Decommissioning of the solar facility will include removing the solar panels, solar panel racking, steel foundation posts and beams, inverters, transformers, overhead and underground cables and lines, equipment pads and foundations, equipment cabinets, and ancillary equipment. The civil facilities, access road, security fence, and drainage structures and sedimentation basins are included in the scope. Standard decommissioning practices will be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements.

During decommissioning, the landowners will be consulted to identify the extent and type of



work to be completed. Some Facility infrastructure, such as the access roads, may be left in place at the landowners' requests. Underground utility lines, if deeper than 24 inches below ground surface elevation, may be left in place to minimize land disturbance and associated impacts to future land use.

Decommissioning will include the removal and transportation of all project components from the Facility site. All dismantling, removal, recycling, and disposal of materials generated during decommissioning will comply with rules, regulations, and prevailing Federal, State, and local laws at the time decommissioning is initiated and will use approved local or regional disposal or recycling sites as available. Recyclable materials will be recycled to the furthest extent practicable. Non-recyclable materials will be disposed of in accordance with State and Federal law.

### **3.1 Decommissioning of Project Components**

#### **3.1.1 Modules**

Modules will be inspected for physical damage, tested for functionality, and disconnected and removed from racking. Functioning modules will be packed, palletized, and shipped to an offsite facility for reuse or resale. Non-functioning modules will be shipped to the manufacturer or a third party for recycling or disposal. The decommissioning estimate has been prepared to show the costs for the current year and at the end of 35 years. Since the modules will have negligible resale value at end of life, dismantling will be much faster, and all the modules will be hauled to a nearby landfill.

#### **3.1.2 Racking**

Racking and racking components will be disassembled and removed from the steel foundation posts, processed to appropriate size, and sent to a metal recycling facility.

#### **3.1.3 Steel Foundation Posts**

All structural foundation steel posts will be pulled out to full depth, removed, processed to appropriate size, and shipped to a recycling facility. The posts can be removed using back hoes or similar equipment. During decommissioning, the area around the foundation posts may be compacted by equipment and, if compacted, the area will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation.

#### **3.1.4 Underground Cables and Lines**

All underground cables and conduits will be removed to a depth agreed to in landowner agreements or down 24 inches. Topsoil will be segregated and stockpiled for later use prior to any excavation and the subsurface soils will be staged next to the excavation. The subgrade will be compacted per standards. Topsoil will be redistributed across the disturbed area.

#### **3.1.5 Inverters, Transformers, and Ancillary Equipment**

All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Owner's sole discretion, consistent with applicable regulations and industry standards.



### **3.1.6 Equipment Foundations and Ancillary Foundations**

The ancillary foundations are pile foundations for the equipment pads. As with the solar array steel foundation posts, the foundation piles will be pulled out completely. Duct banks will be excavated to a depth agreed to in landowner agreements or down 24 inches. All unexcavated areas compacted by equipment used in decommissioning will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density similar to the surrounding soils. All materials will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the owner's sole discretion, consistent with applicable regulations and industry standards.

### **3.1.7 Fence**

All fence parts and foundations will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Owner's sole discretion, consistent with applicable regulations and industry standards. The surrounding areas will be restored to pre-solar farm conditions to the extent feasible.

### **3.1.8 Access Roads**

Facility access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the Landowner and one of the following options will be pursued:

1. After final clean-up, roads may be left intact through mutual agreement of the landowner and the owner unless otherwise restricted by federal, state, or local regulations.
2. If a road is to be removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately, at the Owner's sole discretion, consistent with applicable regulations and industry standards. Clean aggregate can often be used as "daily cover" at landfills for no disposal cost. All internal service roads are constructed with geotextile fabric and eight inches of aggregate over compacted subgrade. Any ditch crossing connecting access roads to public roads will be removed unless the landowner requests it remains. The subgrade will be decompacted using a chisel plow or other appropriate subsoiling equipment. All rocks larger than four inches will be removed. Topsoil that was stockpiled during the original construction will be distributed across the open area. The access roads and adjacent areas that are compacted by equipment will be decompacted.

### **3.1.9 Substation**

Decommissioning of the project substation will be performed with the rest of the Facility. All steel, conductors, switches, transformers, and other components of the substation will be disassembled and taken off site to be recycled or reused. Foundations and underground components will be removed to a depth agreed to in landowner agreements or down 24 inches. The rock base will be removed using bulldozers and backhoes or front loaders. The material will be hauled from the site using dump trucks to be recycled or disposed at an off-site facility. Additionally, any permanent stormwater treatment facilities (e.g., infiltration ponds and engineered drainage swales) will be removed. Topsoil will be reapplied to match surrounding grade to preserve existing drainage patterns. Topsoil and subsoil will be decompacted to a minimum depth of 18 inches and the site will be revegetated to match pre-construction conditions.



### **3.1.10 Operations and Maintenance Building**

The O&M Building is a sturdy, general purpose steel building. If the building is not repurposed, decommissioning will include disconnection of the utilities and demolition of the building structure, foundation, rock base parking lot, and associated vegetated/stormwater handling facilities. All associated materials will be removed from the site using wheeled loaders or backhoes and bulldozers and hauled off site in dump trucks. All recyclable materials will be brought to appropriate facilities and sold; the remaining materials will be disposed of at an approved landfill facility. Subgrade soils will be decompacted and graded to blend with the adjacent topography. Topsoil will be reapplied to match existing surrounding grade to preserve existing drainage patterns, and the site will be tilled either to a farmable condition or re-vegetated, depending upon location.

## **3.2 Reclamation**

The Owner will restore and reclaim the site to the pre-solar farm condition consistent with the site lease agreement. The Owner assumes that most of the site will be returned to farmland and/or pasture after decommissioning through implementation of appropriate measures to facilitate such uses. If no specific use is identified, the Owner will vegetate the site with a seed mix approved by the local soil and water conservation district or similar agency. The goal of restoration will be to restore natural hydrology and plant communities to the greatest extent practicable while minimizing new disturbance and removal of native vegetation. In addition to the reclamation activities described above for each decommissioning activity, all unexcavated areas compacted by equipment and activity during the decommissioning will be decompacted to a depth of 18 inches, or to a different depth as needed, to ensure proper density of topsoil consistent and compatible with the surrounding area and associated land use. All materials and debris associated with the Facility decommissioning will be removed and properly recycled or disposed of at off-site facilities.

## **4.0 Best Management Practices (BMPs)**

During decommissioning, erosion and sediment control BMPs will be implemented to minimize potential for erosion of site soils and sedimentation of surface waters and waters of the state. Because decommissioning will entail disturbance of more than one acre of soil, the Applicant will prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under the state-specific National Pollutant Discharge Elimination System (NPDES) permit prior to initiating soil disturbing activities. Potential BMPs to be implemented during decommissioning activities are described below and will be subject to refinement in the SWPPP. The decommissioning team will review the permitting requirements at the time of decommissioning and obtain any other necessary permits, which may include a US Army Corps of Engineers Section 404 Permit to Discharge Dredged or Fill Material.

### **4.1 Erosion Control**

Erosion control measures will be refined based on the standard of practice current at the time the SWPPP is developed for decommissioning. All disturbed areas without permanent impermeable or gravel surfaces, or planned for use as crop land, will be vegetated for final stabilization. All slopes steeper than 4:1 should be protected with erosion control blankets.



Restoration should include seed application prior to application of the blanket. All slopes 4:1 or flatter should be restored with seed and mulch, which will be disc anchored.

Project Phasing/Design BMP: Time periods during which disturbed soils are exposed should be minimized to the degree possible. Stabilization of soils will generally be accomplished immediately following decommissioning and removal of the access roads, fencing, modules and racking, equipment, electrical cables, substation, and O&M facility. Where this is not possible, temporarily exposed soils will be temporarily stabilized with vegetation in accordance with the SWPPP for decommissioning.

Erosion Control Blankets and Seed BMP: Erosion control blanket (double-sided netting with wood fiber or weed-free straw fiber blanket) will be used as temporary stabilization for areas of slopes steeper than 4:1 and for areas of concentrated flow, such as ditches, swales, and similar areas around culverts. Additionally, seed will be applied in these areas as necessary for temporary and/or permanent vegetative growth. The SWPPP developed for decommissioning will provide detailed specifications for erosion control blankets to be used under various slope and drainage conditions.

Ditch/Channel Protection: Where new channels are formed, as in the case of culverts removed from access roads and the removal of low water crossings, the resulting channel will be protected with erosion control blankets as described in the section above.

Surface Roughening: Surface roughening, or slope tracking, is the act of running a dozer or other heavy tracked equipment perpendicular to the grade of disturbed slopes. The tracks will provide a rough surface to decrease erosion potential during an interim period until a smooth grade, seed, and erosion control blanket can be applied.

Temporary Mulch Cover and Seed BMP: Temporary mulch cover (wood fiber to resist loss from grazing by wildlife or domestic animals) will be applied at a rate of two tons per acre to provide temporary erosion protection of exposed soils on slopes flatter than or equal to 3:1. Seed will be applied with the mulch for temporary and/or permanent vegetative growth as called for in the SWPPP. Mulch will be used for all soil types where slopes are flatter than 3:1 and no significant concentrated flows are present. The mulch will be disc-anchored to the soil to keep it from blowing away. The mulch prohibits raindrop impact from dislodging soil and subsequently carrying the soil away during sheet drainage. If there is a challenge securing mulch to sandy soils, tackifier may be used to assist in disc anchoring.

Soil Stockpiles: Topsoil and subsoils that are stripped from the construction site will be stockpiled separately on site. Stockpiles will be located in areas that will not interfere with the decommissioning activities nor encroach upon pavement, site drainage routes, or other areas of concentrated flow. Stockpiles should also be located away from wetlands and surface waters. Perimeter controls, such as silt fence, will be installed around all stockpiles that are not placed within existing silt fences or other sediment control, where the potential exists for material to be eroded and transported to sensitive natural resources. Soils that are stockpiled for longer durations will be temporarily seeded and mulched or stabilized with a bonded fiber polymer emulsion.

Permanent Seed and Temporary Mulch and/or Erosion Control Blanket BMP: In areas at final grade that will not be used for agriculture, permanent seed will be applied to promote vegetative cover for permanent erosion control. Temporary mulch and/or erosion control blanket will be



applied where appropriate to provide temporary erosion protection until the permanent seed is established.

## 4.2 Sediment Control

Removal of Ditch Crossing BMP: Temporary ditch crossings may be needed to accommodate the movements of cranes or other heavy equipment. Perimeter controls such as silt fence will be used at crossing locations to minimize runoff from exposed soils. Crossings will occur during dry conditions, if possible. If a stream is wet at the time of the crossing, alternative BMPs may be used, such as installing a temporary dam or using a bypass pump to create dry conditions at the proposed crossing location. Timber construction mats will be used as needed to prevent compaction and rutting at crossing locations. All temporary fills and construction mats will be removed immediately after the crossing is successfully completed and the temporarily disturbed area is restored using the appropriate BMPs as described above.

Dewatering: A temporary sump and rock base will be used if a temporary pump is used to dewater an area of accumulated water. If a rock base cannot be used, the pump intake will be elevated to draw water from the top of the water column to avoid the intake and discharge of turbid water. Energy dissipation riprap will be applied to the discharge area of the pump hose. The water will be discharged to a large flat vegetated area for filtration/infiltration prior to draining into receiving waters of conveyances/ditches. If discharge water is unavoidably turbid, dewatering bags, temporary traps, rock weepers, or other adequate BMP will be used to control sediment discharge.

Silt Fence BMP or Fiber Logs: Silt fences or fiber logs will be used as perimeter controls downgradient of exposed soils during construction to capture suspended sediment particles on site, to the extent possible. The standard silt fence or fiber logs will also be used in smaller watershed areas where the contributing areas are typically less than 1/4 acre of drainage per 100 feet of standard silt fence or fiber logs. Standard silt fence or fiber logs will also be used for stockpiles eight feet high or higher which have slopes of 3:1 or steeper. Standard silt fence or fiber logs should not be used in areas of highly erodible soils which are found within streams, slopes, or banks of creeks and streams within the Facility's site.

Rock Entrance/Exit Tracking Control BMP: Rock construction entrances will be installed where access to a construction area from adjacent paved surfaces is needed.

Street Scraping/Sweeping BMP: Street scraping and sweeping will be used to retrieve sediment tracked or washed onto paved surfaces at the end of each working day, or as needed.

## 4.3 Controlling Stormwater Flowing Onto and Through the Project

Given the low gradient of the slopes in the project area, controlling stormwater flow that enters the project area will likely require minimal effort during decommissioning activities. Only newly disturbed areas may require new, temporary stormwater control.

Diversion Berms/Swales/Ditches: It may be necessary to direct diverted flow toward temporary settling basins via berms, swales, or ditches. If diversion controls are deemed necessary for decommissioning activities, these must be stabilized by temporary mulch and seeding, erosion control blankets, or by installing riprap to protect the channel from erosive forces.

Rock Check Dams: It may be necessary to install temporary check dams within swales or ditches



that convey stormwater from areas disturbed by decommissioning activities. Rock check dams effectively control flow velocity and sediment, augmenting temporary stabilization of channels. Filter fabric can help filter the flow, minimize the scour of the soil under the rock, and facilitate removal of the check dams once permanent stabilization is achieved. The height of check dams should be at least two feet. Spacing depends upon slope. Downgradient rock checks should have a top elevation equal to the bottom elevation of the previous (upgradient) rock check.

**Temporary Sedimentation Basins:** Sedimentation basins serve to remove sediment from runoff from disturbed areas of the site. The basins detain runoff long enough to allow the majority of the sediment to settle out prior to discharge. The location and dimensions of temporary sedimentation basins, if any are necessary, will be verified in accordance with Colorado Department of Public Health & Environment requirements at the time of decommissioning.

#### 4.4 Permitting

All decommissioning and reclamation activities will comply with Federal and State permit requirements. In Colorado, decommissioning activities that will disturb more than one acre of soil will require submittal of a Notice of Intent for coverage under the Colorado Department of Public Health and Environment Construction Stormwater Discharge Permit. The permits will be applied for and received prior to decommissioning construction activities commencing. As part of the NOI requirements, a SWPPP will be developed prior to filing for construction stormwater permit coverage.

If necessary for decommissioning activities, wetlands and waters permits will be obtained from the US Army Corps of Engineers (USACE). A Spill Prevention, Control, and Countermeasure (SPCC) Plan for decommissioning will likely also be required for decommissioning work.

#### 4.5 Health and Safety Standards

Work will be conducted in strict accordance with the Applicant's health and safety plan. The construction contractor hired to perform the decommissioning will also be required to prepare a site-specific health and safety plan. All site workers, including subcontractors, will be required to read, understand, and abide by the Plans. A site safety office will be designated by the construction contractor to ensure compliance. This official will have stop-work authority over all activities on the site should unsafe conditions or lapses in the safety plan be observed.

### 5.0 Timeline and Contacts

Decommissioning of the solar farm will be initiated if the project has ceased to perform its originally intended function for more than 12 consecutive months unless for the purpose of repowering the facility with replacement solar panels or as explicitly agreed to in writing by the County Planning Department. It is anticipated that the decommissioning activities for the project can be completed within the 270-day period granted by Morgan County Resolution No. 2022 BCC 017. The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews.

At this time, the project contacts are still being determined. This information will be provided in the table below as it becomes available.

Role	Name	Company	Contact Information
Project Developer Point of Contact			
Facility Operator Point of Contact			
Morgan County Point of Contact			
Landowner			
Landowner			
Landowner			
Landowner			
Landowner			
Landowner			
Landowner			
Landowner			
Landowner			

## 6.0 Decommissioning Costs

There are currently active markets for scrap steel, aluminum, and copper, used transformers and electrical equipment, and used solar panels. Scrap metal prices have been discounted from posted spot prices found on [www.scrapmonster.com](http://www.scrapmonster.com). Pricing for used panels has been discounted from prices received from We Recycle Solar for a similar project. The pricing of the used panels has incorporated the degradation from five years of use as warranted by the manufacturer (not more than 0.5% per year). Westwood recommends reviewing and revising this cost estimate every five to 10 years to reflect current pricing trends, material salvage values, and equipment resale values.

The total estimated cost of decommissioning the South Platte Solar Project is approximately \$47,862,500 (\$68,375 per MW), including crop loss. Estimated salvage/scrap value of the modules, racking, transformers, and other materials is approximately \$57,472,600. The net decommissioning costs after accounting for resale and salvage values is approximately \$9,610,100 in surplus, or \$13,729 in surplus per MW.

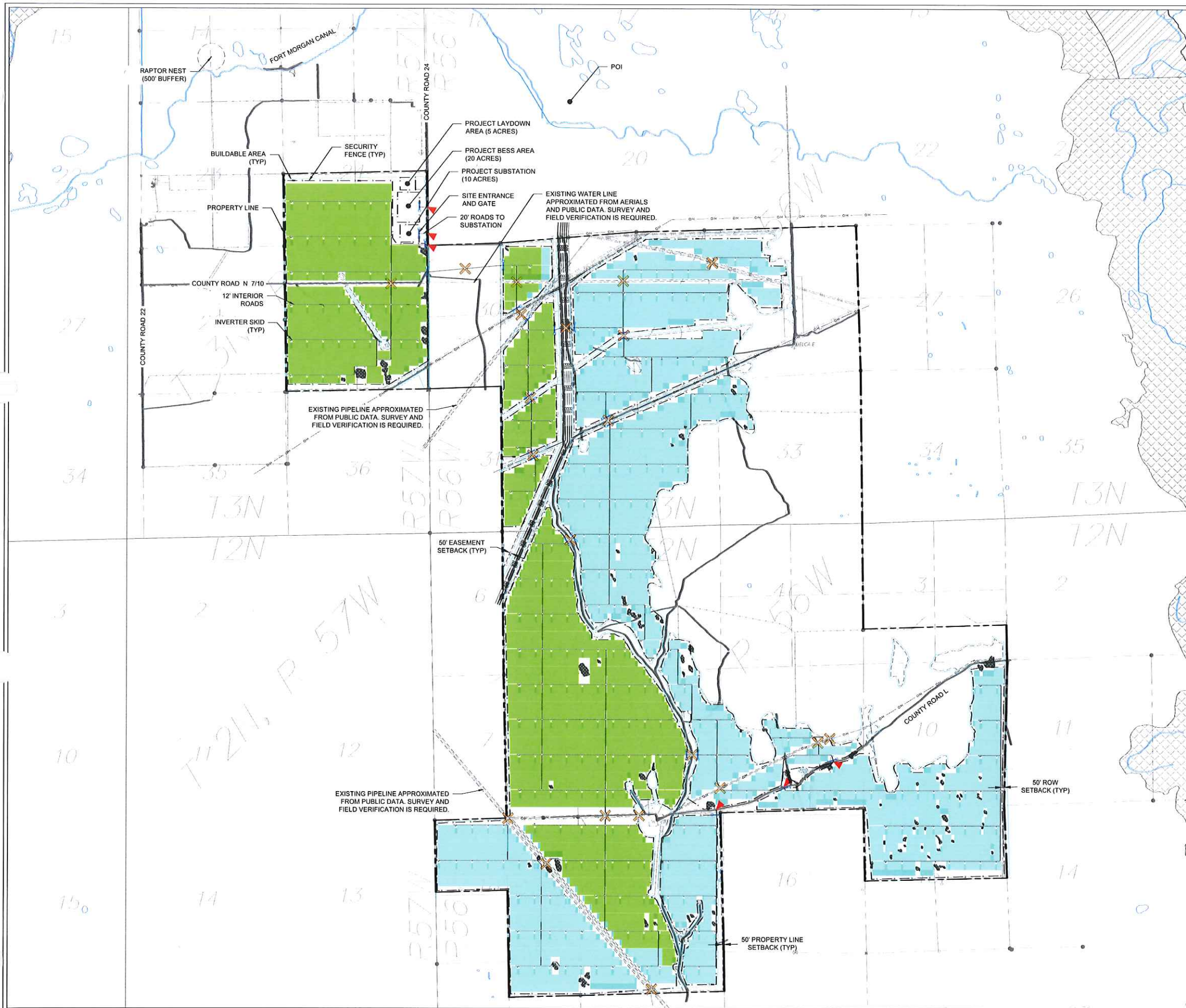


The background of the entire page is a dark red topographic map. It features intricate, swirling red contour lines of varying thicknesses. A dashed red line runs vertically through the center of the page. On the left edge, there are three white circular punch holes. A single solid red dot is located on the dashed line in the lower third of the page.

# **Attachment A**

## **Overall Site Layout**





10/26/2022 8:56 AM

1 OVERALL SITE LAYOUT  
1" = 1700'  
0' 850' 1700' 3400'

#### SHEET NOTES:

1. LOCATIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY. SLOPES OF THE SITE AND LOCATIONS MUST BE VERIFIED ON SITE BEFORE INSTALLATION.
2. FINAL STRING SIZING TO BE CONFIRMED BY ENGINEER-OF-RECORD.
3. CROSSING LOCATIONS INDICATE APPROXIMATE ROAD AND DC CROSSINGS AT EXISTING FEATURES. MV COLLECTION CROSSINGS ARE TBD AFTER MV COLLECTION LAYOUT. ALL CROSSINGS TO BE FINALIZED BY ENGINEER OF RECORD.
4. LAYOUT REPRESENTS MAX EXTENTS.

#### REFERENCE FILES USED:

1. BUILDABLE BOUNDARIES: South Platte Buildable\_8.10.22.kmz, DATED 08/10/2022
2. POI LOCATION: Colorado KMZs\_Revamp.kmz, DATED 05/19/2022
3. WETLAND BOUNDARIES: Wetland\_Water\_Poly.shp, DATED 06/24/2022
4. OIL & GAS EXCLUSIONS: South Platte Oil and Gas Exclusions.kmz, DATED 07/28/2022
5. RAPTOR NEST: RaptorNest\_NextEra.shp, DATED 06/24/2022
6. PRELIMINARY TOPO/ALTA/PLANIMETRICS: 0036044-00V-ECON.dwg, 0036044-00V-SURV-EXPORT.dwg, 0036044-00V-PLANIMET.dwg, DATED 20220914
7. PIPELINE: CO\_Round\_Top\_1984\_geo.pdf, DOWNLOADED 07/19/2022

#### TYPICAL SYSTEM SPECIFICATIONS:

SYSTEM STC DC RATING (MW)	700.00
SYSTEM AC RATING AT INVERTERS (MVA)	541.86
SYSTEM AC RATING AT POI (MVA)	500.00
DC/AC RATIO AT POI	1.40
AVERAGE DC/AC RATIO AT INVERTER	1.39
MODULE MODEL	LONGI BIFACIAL 555W
MODULE STC DC RATING (W)	555
MODULE COUNT	126160
MODULES PER STRING	26
STRING COUNT	4850
3 STRING TRACKER	15584
2 STRING TRACKER	954
INVERTER MODEL	PE P54105
INVERTER RATING (MVA)	4.105
QUANTITY OF INVERTERS	132
TRANSFORMER RATING (MVA)	4.105
QUANTITY OF TRANSFORMERS	132
DC SYSTEM VOLTAGE (V)	1500
INTERCONNECTION VOLTAGE (KV)	345
GENERATION TIE LINE LENGTH (MILES)	160
BACKING SYSTEM	TRACKER (1-PORTRAIT)
MODULE TILT	4/-60°
AZIMUTH	180°
GCR	0.4
PITCH / ROW-TO-ROW SPACING (LF)	18.50
CLEARANCE BETWEEN ROWS (LF)	11.10
MAX DESIGN TEMPERATURE SOURCE	ASHRAE 2% DB TEMP MAX COLORADO PLAINS REGIONAL (724586)
MAX DESIGN TEMPERATURE (°C)	32.2°
MIN DESIGN TEMPERATURE SOURCE (FOR STRING SIZING)	PER NEC 690.7(A)(3)
MIN DESIGN TEMP FOR STRING SIZING (°C)	-30.0°
BUILDABLE AREA (ACRES)	6584
PROPERTY AREA (ACRES)	10152

#### TOTAL (TYPICAL PLUS MAX EXTENT) SYSTEM SPECIFICATIONS:

SYSTEM STC DC RATING (MW)	1553.33
SYSTEM AC RATING AT INVERTERS (MVA)	1198.66
SYSTEM AC RATING AT POI (MVA)	1100.00
AVERAGE DC/AC RATIO AT INVERTER	1.30
DC/AC RATIO AT POI	1.30
MODULE MODEL	LONGI BIFACIAL 555W
MODULE STC DC RATING (W)	555
MODULE COUNT	2793796
MODULES PER STRING	26
STRING COUNT	107446
3 STRING TRACKER	33656
2 STRING TRACKER	3339
INVERTER MODEL	PE P54105
INVERTER RATING (MVA)	4.105
QUANTITY OF INVERTERS	292
TRANSFORMER RATING (MVA)	4.105
QUANTITY OF TRANSFORMERS	292
FENCED AREA (ACRES)	5969
FENCING LENGTH (LF)	274345
ROADS (LF)	252413

#### LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- PROPOSED ROAD
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRICAL
- EXISTING FENCE
- SETBACK
- RIGHT OF WAY (ROW)
- EASEMENT
- EXISTING GAS LINE
- WATER LINE (LOCATION APPROXIMATE)
- PIPELINE (LOCATION APPROXIMATE)
- BUILDABLE AREA
- NWI WETLANDS, 50 FT SETBACK (TYP)
- FEMA FLOOD ZONE A
- FLOODWAY
- OIL & GAS EXCLUSION
- FLOOD EXCLUSION
- SITE ENTRANCE AND GATE
- SITE ACCESS
- CROSSING LOCATION (SEE NOTE 3)

REVAMP  
ENGINEERING, INC.

428 13th St.  
3rd floor  
Oakland, CA 94612  
www.revamp-eng.com

THIS DOCUMENT IS THE PROPERTY OF REVAMP ENGINEERING, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, MANUFACTURE, USE, OR SELL ANYTHING IT MAY DESCRIBE. NO PART IS TO BE DISCLOSED WITHOUT WRITTEN PERMISSION FROM REVAMP ENGINEERING, INC.

ENGINEER'S STAMP

PRELIMINARY - NOT  
FOR CONSTRUCTION

CLIENT  
NEXTERA  
ENERGY  
RESOURCES

PROJECT NAME  
SOUTH PLATTE SOLAR

SITE LOCATION  
FORT MORGAN, CO  
40.2174° - 103.6788°

#### DRAWING ISSUE

1	05/31/2022 PRELIMINARY
2	06/14/2022 TOTAL SYS SPEC TABLE
3	09/22/2022 NEW BUILDABLE & ALTA
4	10/05/2022 NEW BUILDABLE

#### REVISION ISSUE


DRAWN BY: CL CHECKED BY: JP

PROJECT NO.: 22083

DRAWING TITLE

OVERALL SITE  
LAYOUT

DRAWING NUMBER

E200



22083 - SOUTH PLATTE - E200 - LAYOUTS.DWG





# **Attachment B**

## **Decommissioning Cost Estimate**

## South Platte Solar Project

	Quantity	Unit	Unit Cost	Total Cost
<b>Mobilization/Demobilization</b>	1	Lump Sum	\$3,100,700.00	\$3,100,700
<i>Mobilization was estimated to be approximately 7% of total cost of other items.</i>				
<b>Permitting</b>				
County Permits	1	Lump Sum	\$10,000.00	\$10,000
State Permits	1	Lump Sum	\$20,000.00	\$20,000
<b>Subtotal Permitting</b>				<b>\$30,000</b>

*Demobilization will require MOPP and NPL Plans. Cost is an estimate of the permit preparation cost.*

### Civil Infrastructure

Remove Gravel Surfacing from Road	49,613	Cubic Yards (BV)	\$2.56	\$127,232
Haul Gravel Removed from Road to Landfill (Fort Morgan, CO)	62,016	Cubic Yards (LV)	\$7.81	\$484,649
Dispose of Gravel Removed from Road (Landfill uses as Daily Cover)	80,373	Tons	\$0.00	\$0
Remove Geotextile Fabric from Beneath Access Roads	279,072	Square Yards	\$1.40	\$390,701
Haul Geotech Fabric to Landfill (Fort Morgan, CO)	76.7	Tons	\$5.73	\$440
Dispose of Geotech Fabric	76.7	Tons	\$81.00	\$6,216
Remove and Load Culvert from Beneath Access Roads	2	Each	\$420.00	\$840
Haul Culvert Removed from Access Roads to Landfill (Fort Morgan, CO)	0.6	Tons	\$5.73	\$3
Dispose of Culvert	0.6	Tons	\$81.00	\$49
Remove Low Water Crossing from Access Road	25.0	Each	\$3,400.00	\$85,000
Haul Low Water Crossing Materials to Landfill (Fort Morgan, CO)	1,000	Ton	\$5.73	\$5,731
Dispose of Low Water Crossing Materials	1,000	Ton	\$30.00	\$30,000
Grade Road Corridor (Re-spread Topsoil)	125,583	Linear Feet	\$1.57	\$197,144
Decompact Road Area	57.7	Acres	\$89.03	\$5,133
Remove Chainlink Fence (Substation, BESS, O&M, etc.)	2,639	Linear Feet	\$6.84	\$18,051
Haul Chainlink Fence to Metal Recycling (Atwood, CO)	14	Tons	\$11.71	\$165
Remove Agricultural Fence	113,943	Linear Feet	\$2.40	\$273,463
Haul Agricultural Fence to Metal Recycling (Atwood, CO)	177	Tons	\$11.71	\$2,068
<b>Subtotal Civil Infrastructure</b>				<b>\$1,626,886</b>

*Civil removal costs are a combination of RCADOL and costs where applicable. RCADOL cost for Fort Morgan, CO, and industry standards provided to Westwood.*

### Structural Infrastructure

Remove Steel Foundation Posts (Arrays, Equipment, Met Towers)	211,584	Each	\$15.31	\$3,239,536
Haul Array Steel Post to Metal Recycling (Atwood, CO)	15,234	Tons	\$10.47	\$159,436
Remove Tracker Racking per String	48,510	Each	\$271.89	\$13,189,266
Haul Tracker Racking to Metal Recycling (Atwood, CO)	37,808	Tons	\$10.47	\$395,691
Remove Drive Motor Posts	16,488	Each	\$15.31	\$252,446
Haul Drive Motor Posts to Metal Recycling (Atwood, CO)	1,187	Tons	\$10.47	\$12,424
<b>Subtotal Structural Infrastructure</b>				<b>\$17,248,799</b>

*Steel removal costs were calculated by using RCADOL information for derivation of steel members. Hoisting calculations are based on the locations of metal receptors.*

### Electrical Collection System

Remove PV Panels	1,261,260	Each	\$5.27	\$6,647,891
Haul PV 95% of Panels to Reseller (Phoenix, AZ)	35,925	Tons	\$192.17	\$6,903,748
Haul 5% of PV Panels to Landfill (Fort Morgan, CO)	1,891	Tons	\$5.73	\$10,836
Dispose of PV Panels	1,891	Tons	\$81.00	\$153,155
Remove Combiner Boxes	132	Each	\$60.00	\$7,920
Remove Equipment Skids	132	Each	\$1,107.22	\$146,153
Remove Equipment Pad Frames and Foundations	132	Each	\$1,761.61	\$232,533
Haul Concrete Foundations	32	Tons	\$19.44	\$620
Dispose of Concrete from Transformer Foundation	32	Tons	\$20.00	\$638
Haul Equipment to Transformer Disposal (Grand Junction, CO)	132	Each	\$1,638.34	\$216,261
Remove SCADA Equipment	1	Each	\$2,000.00	\$2,000
Remove DC Collector System Cables	500.00	Per MW	\$2,000.00	\$1,000,000
Remove Underground (AC) Collector System Stub-Ups	132	Locations	\$400.00	\$52,800
Load and Haul Cables for Recycling	84.5	Tons	\$10.47	\$884
<b>Subtotal Electrical Collection</b>				<b>\$15,375,439</b>

*Electrical removal costs of PV Panels and Combiner Boxes were based on industry standard installation rates. Equipment pads, ACV Equipment, and SCADA Equipment at Atwood cost are based on removal of equipment from site only, and credits being a final awarded value and RCADOL information on a mobilization rates.*



<b>Substation</b>				
Disassemble and Remove Main Power Transformer(s)	2	Each	\$4,500.00	\$9,000
Haul Transformer(s) Offsite	370	Tons	\$65.53	\$24,227
Haul Transformer Oil Offsite	25,660	Gallons	\$0.09	\$2,309
Dispose of Transformer (Including Oil) (Salvage Value)	2	Each	\$0.00	\$0
Excavate Around Transformer Foundation(s)	2	Each	\$962.50	\$1,925
Remove Complete Transformer Foundation(s)	140	Cubic Yards	\$97.54	\$13,656
Backfill Excavation Area from Transformer Foundation Removal	240	Cubic Yards	\$42.84	\$10,282
Haul Concrete (Foundations Transformer, Switch Gear, etc.)	284	Tons	\$19.44	\$5,524
Dispose of Concrete from Transformer Foundation	9	Tons	\$20.00	\$170
Demolish Substation Site Improvements (fences, etc)	1	LS	\$3,500.00	\$3,500
Demolish Control Building and Foundation	1	LS	\$12,000.00	\$12,000
Remove Medium/High Voltage Equipment	1	LS	\$3,500.00	\$3,500
Remove Structural Steel Substation Frame	1	LS	\$3,500.00	\$3,500
Remove Copper Ground Grid	1	LS	\$6,541.00	\$6,541
Load Copper Wire	20,000	Feet	\$0.51	\$10,220
Haul Copper Wire to Recycling	6.5	Tons	\$10.47	\$68
Haul - Demolition Materials, Removed Equipment & Structural Steel	20	Tons	\$10.47	\$209
Dispose of Demolition Materials & Removed Equipment	20	Tons	\$81.00	\$1,620
Remove and Load Gravel Surfacing from Substation Site	2,252	Cubic Yards (BV)	\$2.56	\$5,775
Haul Gravel Removed from Substation Site	2,815	Cubic Yards (LV)	\$7.81	\$21,997
Dispose of Gravel from Substation Site (Use as Daily Cover)	3,648	Tons	\$0.00	\$0
Grade Substation Site	1	LS	\$6,541.00	\$6,541
Erosion and Sediment Control at Substation Site	605	LF	\$3.73	\$2,257
Decompact Substation Site (Subsoiling)	2.1	Acres	\$89.03	\$186
Permanent Seeding at Substation Site	2.1	Acres	\$6,050.00	\$12,667
<b>Subtotal Substation</b>				<b>\$157,673</b>
<b>O&amp;M Building</b>				
Demolish O&M Building	30,525	Cubic Feet	\$0.44	\$13,431
Demolish O&M Building Foundation	122	Cubic Yards	\$11.43	\$1,397
Demolish O&M Site Improvements (fences, etc)	835	Linear Feet	\$6.84	\$5,710
Haul Concrete (O&M Building Foundation)	122	Cubic Yards	\$26.50	\$3,239
Dispose of Concrete from O&M Building Foundation	248	Tons	\$20.00	\$4,950
Cap and Abandon Well	1	Lump Sum	\$1,000.00	\$1,000
Remove & Restore Septic and Drainfield area	1	Lump Sum	\$3,000.00	\$3,000
Dispose of O&M Building Demolition and Removed Site Improvements	1	Lump Sum	\$2,500.00	\$2,500
Remove and Load Gravel Surfacing of O&M Site	269	Cubic Yards (BV)	\$2.56	\$690
Haul Gravel Removed from O&M Site	336	Cubic Yards (LV)	\$7.81	\$2,627
Dispose of Gravel from O&M Site	436	Tons	\$0.00	\$0
Decompact O&M Building Site	1.0	Acres	\$350.00	\$350
Grade O&M Building Site	1	LS	\$2,953.95	\$2,954
Erosion and Sediment Control at O&M Building Site	417	Linear Feet	\$3.73	\$1,557
Permanent Seeding O&M Building Site	1.0	Acres	\$6,050.00	\$6,050
<b>Subtotal O&amp;M Building</b>				<b>\$49,455</b>
<b>Site Restoration</b>				
Perimeter Controls (Erosion and Sediment Control)	58,291	Linear Feet	\$3.73	\$217,425
Permanent Seeding on Site	1,590.2	Acres	\$6,050.00	\$9,620,458
<b>Subtotal Site Restoration</b>				<b>\$9,837,884</b>
<b>Project Management</b>				
Project Manager	39	Weeks	\$3,749.00	\$144,604
Superintendent	39	Weeks	\$3,525.00	\$135,964
Field Engineer	39	Weeks	\$3,269.00	\$126,090
Clerk	39	Weeks	\$750.00	\$28,929
<b>Subtotal Project Management</b>				<b>\$435,587</b>
<i>Standard industry weekly rates from RSMeans.</i>				
<b>Subtotal Demolition/Removals</b>				<b>\$47,862,500</b>



<b>Salvage</b>				
Fencing (Wire/Agricultural)	177	Tons	\$197.31	\$34,848
Fencing (Chain Link)	14	Tons	\$197.31	\$2,773
Steel Posts	15,234	Tons	\$197.31	\$3,005,874
Module Racking	37,808	Tons	\$197.31	\$7,460,025
PV Modules	1,198,197	Each	\$37.64	\$45,095,267
Transformers and Inverters	4,819,980	Pounds	\$0.29	\$1,409,844
Substation Transformers (Core and Coils)	441,856	Pounds	\$0.29	\$129,243
Substation Transformers (Tanks and Fittings)	149	Tons	\$197.31	\$29,351
Transformers (Oil)	125,980	Gallons	\$0.70	\$88,186
Substation Ground Grid (Copper)	13,060	Pounds	\$3.68	\$48,061
DC Collection Line Stub-Ups (Copper)	144,270	Pounds	\$1.02	\$147,155
AC Collection Line Stub-Ups (Aluminum)	24,750	Pounds	\$0.89	\$21,904
<b>Subtotal Salvage</b>				<b>\$57,472,600</b>

*Salvage values are a combination of the following factors; current market metal salvage prices, current secondary market for solar panel module recycling, discussions with national companies that specialize in recycling and reselling electrical transformers and inverters, and the assumption that care is taken to prevent any damage or breakage of equipment.*

<b>Total Demolition Minus Salvage</b>	<b>(\$9,610,100)</b>
---------------------------------------	----------------------

**Notes:**

1. Prices used in analysis are estimated based on research of current average costs and salvage values.
2. Prices provided are estimates and may fluctuate over the life of the project.
3. Contractor means and methods may vary and price will be affected by these.

## Cost Estimate Assumptions

To develop a cost estimate for the decommissioning of the South Platte Solar Project, Westwood engineers made the following assumptions and used the following pricing references. Costs were estimated based on current pricing, technology, and regulatory requirements. The assumptions are listed in order from top to bottom of the estimate spreadsheet. When publicly available bid prices or State Department of Transportation bid summaries were not available for particular work items, we developed time- and material-based estimates considering composition of work crews and equipment and material required. While materials may have a salvage value at the end of the project life, the construction activity costs and the hauling/freight costs are separated from the disposal costs or salvage value to make revisions to salvage values more transparent.

1. A project of this size and complexity requires a full-time project manager with full-time support staff.
2. Common labor will be used for the majority of tasks, supplemented by electricians, steel workers, and equipment operators where labor rules may require. Since State Department of Transportation unit prices are used, where possible, and the other costs are based on RSMeans Construction Costs, the labor rates will reflect union labor rates.
3. Mobilization was estimated at approximately 7% of total cost of other items.
4. Permit applications will require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The cost for these documents was split between the two phases.

5. Road gravel removal was estimated on a time and material basis. Since the material will not remain on site, a hauling cost is added to the removal cost. Clean aggregate can typically be used as "daily cover" at landfills without incurring a disposal cost. The road gravel may also be used to fortify local driveways and roads, lowering hauling costs but incurring placing and compaction costs. The hauling costs to a landfill represents an upper limit to costs for disposal of the road gravel.
6. Grade Road Corridor reflects the cost of mobilizing and operating light equipment to spread and smooth the topsoil stockpiled on site during construction to replace the aggregate removed from the road.
7. Erosion and sediment control along road reflects the cost of silt fence on the downhill side of the road adjacent to wetlands and drainage swales.
8. Topsoil is required to be stockpiled on site during construction, so no topsoil replacement is expected to replace the road aggregate. Subsoiling cost to decompact roadway areas is estimated as \$89.03 per acre, and tilling to an agriculture-ready condition is estimated as \$158.78 per acre.
9. Tracker array posts are lightweight "I" beam sections installed with a specialized piece of equipment and can be removed with a standard backhoe with an attachment for gripping the piles. We estimate crew productivity at 240 posts per day, resulting in a per post cost of approximately \$15.31.
10. A metal recycling facility (Atwood Auto & Metal) is located in Atwood, CO, approximately 34 miles from the project site. Pricing was acquired from both facilities and from [www.scrapmonster.com](http://www.scrapmonster.com). The posts weigh approximately 150 pounds each, and we estimate the hauling costs at approximately \$0.31 per ton mile. The pricing from ScrapMonster was reduced to reflect the processing required for the posts to fit recycling requirements.
11. It is assumed that the racking structures weigh approximately 15 pounds per linear foot of array. Each solar panel has a width of 44.61 inches. The facility has 1,261,260 modules, 5,041,079 feet of array, weighing 37,816 tons. The arrays are made of steel pipes; a crew with hand tools can disassemble and cut the pieces to sizes for recycling at a rate of about 1800 pounds per person per hour, or about \$349 per ton.
12. Hauling the steel to Atwood, CO costs about \$10.47 per ton.
13. The solar panels for this project measure approximately 3.72 feet by 7.40 feet and weigh 60 pounds. They can easily be disconnected, removed, and packed by a three-person crew at a rate we estimate at 36 panels per hour.
14. The equipment skids will consist of inverter(s), a transformer, and a panel on a metal frame approximately 19 feet long by eight feet wide by eight feet six inches tall. The skids weigh approximately 36,000 pounds and can be disconnected by a crew of electricians. They must be lifted by a mobile crane for transport to the recycler. They contain copper or aluminum windings.
15. The transformers contain either copper or, more commonly, aluminum windings that have significant salvage value. They are typically oil filled, but most transformer recyclers will accept the transformers with oil. The estimated costs include removal of metal frame and conduits feeding the equipment.
16. Medium voltage (MV) equipment and SCADA equipment are mounted on the same equipment skids as the inverters and transformers, and they are enclosed in weatherproof cabinets. Their size requires light equipment to remove them. The costs for the removal of the pile foundations are included in the "Remove Steel Foundation Posts" estimate.

17. The underground collector system cables are placed in trenches with a minimum of 18 inches of cover. Several cables/circuits are placed side by side in each trench. The conduits and cables can be removed by trenching.
18. The project access is via a gravel surfaced road, so we have not included a rock construction entrance to reduce tracking of sediment off-site by trucks removing materials.
19. Perimeter control pricing is based on silt fence installation around downgradient sides of the project perimeter.
20. Metal salvage prices (steel, aluminum, copper) are based on February 2023 quotes from [www.scrapmonster.com](http://www.scrapmonster.com). Posted prices are three months old. This estimate uses an average of US Midwest and West Coast prices. These prices are based on delivery to the recycling facility with the material prepared to meet size, thickness, cleanliness, and other specifications. A reduction of 25% has been taken from this price to reflect the processing by the contractor to meet the specifications.
21. The steel posts and array racking are priced at \$197.31 per ton based on #1 HMS (heavy melting steel).
22. Solar module degradation is approximately 0.50% per year, or 88% after 25 years. There is currently a robust market for used solar panels and pricing can be found on eBay and other sites. We have assumed that as long as the modules are producing power, they will have economic value. To avoid overestimating the used modules' value, we used the minimum pricing of approximately \$0.07 per watt based on a We Recycle Solar quote prepared on October 22, 2020. Pricing is based on delivery to their facility. For interim decommissioning, resale of used modules will be most cost effective.
23. There is an active market for reselling and recycling electrical transformers and inverters with several national companies specializing in recycling. However, we have assumed that the electrical equipment will be obsolete at the time of decommissioning, so we have based the pricing on a percentage of the weight that reflects the aluminum or copper windings that can be salvaged. Pricing was obtained from [www.scrapmonster.com](http://www.scrapmonster.com). We have assumed a 25% recovery of the weight of the transformers and inverters for aluminum windings.
24. The collection lines are priced assuming copper conductor wire for the direct current circuits, which is typical. The prices reflect a reduced yield of copper resulting from the stripping of insulation and other materials from the wire prior to recycling. The estimate uses an average of the Midwest and West Coast prices of #2 insulated copper wire with a 50% recovery rate as found on [www.scrapmonster.com](http://www.scrapmonster.com) in February 2023 (but representative of three months prior), which is \$1.36 per pound.
25. Care to prevent damage and breakage of equipment, PV modules, inverters, capacitors, and SCADA must be exercised, but removal assumes unskilled common labor under supervision.



# **Attachment 3: Legal Entity Documentation**

## NEXTERA ENERGY RESOURCES, LLC

### SECRETARY'S CERTIFICATE

The undersigned, Jason B. Pear, Assistant Secretary of NextEra Energy Resources, LLC, a Delaware limited liability company (the "Company"), hereby certifies that:

1. Boulevard Associates, LLC, a Delaware limited liability company, is a wholly owned, indirect subsidiary of the Company; and
2. South Platte Solar, LLC, a Delaware limited liability company, is a wholly owned, indirect subsidiary of the Company.

IN WITNESS WHEREOF, I have hereunto signed my name on this 23<sup>rd</sup> day of January, 2023.

By: 

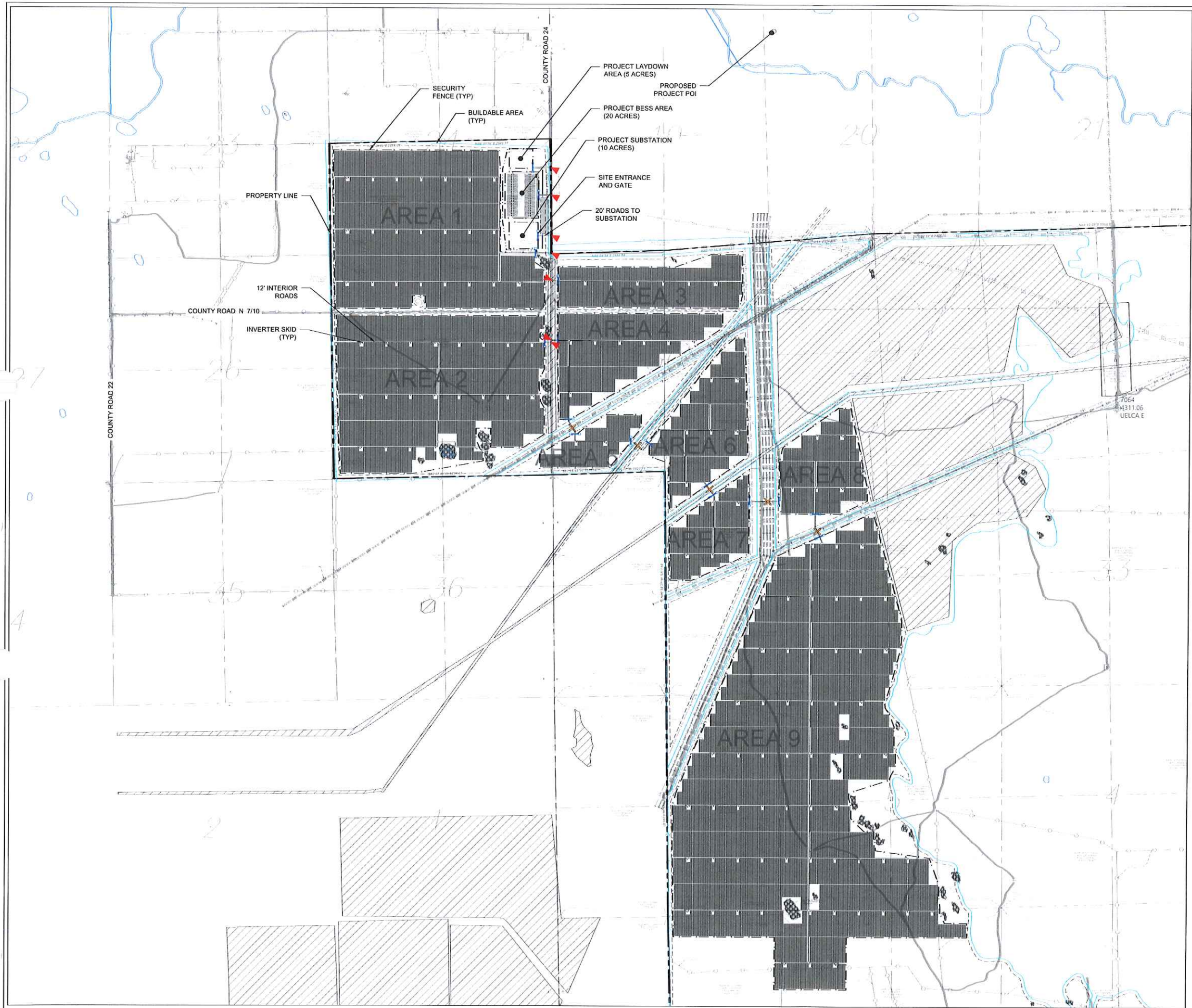
Name: Jason B. Pear

Title: Assistant Secretary



# **Attachment 4: Issued for Permitting Civil Design Plan Set**





2/24/2023 9:42 AM

1 OVERALL SITE LAYOUT  
1" = 1100'

0' 550' 1100' 2200'

SHEET NOTES:

1. LOCATIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY. SLOPES OF THE SITE AND LOCATIONS MUST BE VERIFIED ON SITE BEFORE INSTALLATION.
2. FINAL STRING SIZING TO BE CONFIRMED BY ENGINEER-OF-RECORD.
3. CROSSING LOCATIONS INDICATE APPROXIMATE ROAD CROSSINGS AT EXISTING FEATURES. MV COLLECTION CROSSINGS ARE TBD AFTER MV COLLECTION LAYOUT. ALL CROSSINGS TO BE FINALIZED BY ENGINEER OF RECORD.

REFERENCE FILES USED:

1. BUILDABLE BOUNDARIES: South Platte Solar\_BLL w\_exclusions\_02 23 2023.KMZ, DATED 02/22/2023
2. POI LOCATION: Colorado KMZs\_Revamp.kmz, DATED 05/19/2022
3. WETLAND BOUNDARIES: Wetland\_Water\_Poly.shp, DATED 06/24/2022
4. OIL & GAS EXCLUSIONS: South Platte Oil and Gas Exclusions.kmz, DATED 07/28/2022
5. RAPTOR NEST: RaptorNest\_NextEra.shp, DATED 06/24/2022
6. TOPO/ALTA/PLANIMETRICS:
  - 6.1. 0036044-00V-ECON.dwg, RECEIVED 11/16/2022
  - 6.2. 0036044-00V-SURV.dwg, RECEIVED 11/16/2022
  - 6.3. 0036044-00V-PLANIMET.dwg, RECEIVED 11/16/2022
7. PIPELINE: CO\_Round\_Top\_1984\_geo.pdf, DOWNLOADED 07/19/2022

TYPICAL SYSTEM SPECIFICATIONS:

SYSTEM STC DC RATING (MW)	700.01
SYSTEM AC RATING AT INVERTERS (MVA)	541.86
SYSTEM AC RATING AT POI (MW)	500.00
DC/AC RATIO AT POI	1.40
AVERAGE DC/AC RATIO AT INVERTER	1.29
MODULE MODEL	BYD MLTK-36 575 (EXTRAPOLATED)
MODULE STC DC RATING (W)	575
MODULE COUNT	1217400
MODULES PER STRING	25
STRING COUNT	48696
3-STR TRACKERS	15894
2-STR TRACKERS	507
INVERTER MODEL	PE HEM FS410SM
INVERTER RATING (MVA)	4.105
QUANTITY OF INVERTERS	132
TRANSFORMER RATING (MVA)	4.105
QUANTITY OF TRANSFORMERS	132
DC SYSTEM VOLTAGE (V)	1500
INTERCONNECTION VOLTAGE (KV)	345
GEN-TIE LINE LENGTH (MILES)	1.2
RACKING SYSTEM	NEXTRACKER 1P
MODULE TILT	+/- 52°
AZIMUTH	180°
GCR	0.40
PITCH / ROW-TO-ROW SPACING (LF)	18.68
CLEARANCE BETWEEN ROWS (LF)	11.21
MAX DESIGN TEMPERATURE SOURCE	ASHRAE 2% DB TEMP MAX
MAX DESIGN TEMPERATURE (°C)	32.3°
MIN DESIGN TEMPERATURE SOURCE	ASHRAE EXTREME ANNUAL MEAN MINIMUM DB
MIN DESIGN TEMP FOR STRING SIZING (°C)	-23.1°
BUILDABLE AREA (ACRES)	19977
FENCED AREA (ACRES)	2407
FENCING LENGTH (L.F.)	133313
ROADS (L.F.)	99841

AREA	SYSTEM STC DC RATING (MW)	SYSTEM AC CAPACITY (MVA)	MODULE STC DC RATING (W)	INV QTY	DC/AC RATIO AT INVERTER
AREA 1	115.42	90.31	575	22	1.278
AREA 2	116.50	86.21	575	21	1.351
AREA 3	31.28	24.63	575	6	1.270
AREA 4	38.12	28.74	575	7	1.327
AREA 5	11.10	8.21	575	2	1.352
AREA 6	33.02	24.63	575	6	1.341
AREA 7	20.66	16.42	575	4	1.258
AREA 8	25.90	20.53	575	5	1.262
AREA 9	308.01	242.20	575	59	1.272

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- PROPOSED ROAD
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRICAL
- EXISTING FENCE
- SETBACK
- RIGHT OF WAY (ROW)
- EASEMENT
- EXISTING GAS LINE
- WATER LINE (LOCATION APPROXIMATE)
- PIPELINE (LOCATION APPROXIMATE)
- BUILDABLE AREA
- NWI WETLANDS, 50 FT SETBACK (TYP)
- EXCLUSION AREA
- FLOOD EXCLUSION
- SITE ENTRANCE AND GATE
- SITE ACCESS
- CROSSING LOCATION (SEE NOTE 3)



REVAMP

ENGINEERING, INC.

428 13th St.  
3rd Floor  
Oakland, CA 94612  
www.revamp-eng.com

THIS DOCUMENT IS THE PROPERTY OF REVAMP ENGINEERING, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ITS RECEIPT OR POSSESSION DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, MANUFACTURE, USE, OR SELL ANYTHING IT MAY DESCRIBE. NO PART IS TO BE DISCLOSED WITHOUT WRITTEN PERMISSION FROM REVAMP ENGINEERING, INC.

ENGINEER'S STAMP

PRELIMINARY - NOT FOR CONSTRUCTION

CLIENT  
NEXTERA  
ENERGY  
RESOURCES

PROJECT NAME  
SOUTH PLATTE BESS

SITE LOCATION  
FORT MORGAN, CO  
40.2174° - 103.6788°

DRAWING ISSUE

- 1 05/31/2022 PRELIMINARY
- 2 06/14/2022 TOTAL SYS SPEC TABLE
- 3 09/22/2022 NEW BUILDABLE & ALTA
- 4 10/05/2022 NEW BUILDABLE
- 5 02/23/2023 BUILDABLE & MODULE

REVISION ISSUE

DRAWN BY:MM CHECKED BY:NN

PROJECT NO.: 22083

DRAWING TITLE  
OVERALL SITE LAYOUT

DRAWING NUMBER

E200





### STATEMENT OF AUTHORITY

1. This Statement of Authority relates to an entity<sup>1</sup> named Kamp Cattle Company and is executed on behalf of the entity pursuant to the provisions of Section 38-30-172, C.R.S.

2. The type of entity is a:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> corporation    | <input type="checkbox"/> registered limited liability partnership         |
| <input type="checkbox"/> nonprofit corporation     | <input type="checkbox"/> registered limited liability limited partnership |
| <input type="checkbox"/> limited liability company | <input type="checkbox"/> limited partnership association                  |
| <input type="checkbox"/> general partnership       | <input type="checkbox"/> government or governmental subdivision or agency |
| <input type="checkbox"/> limited partnership       | <input type="checkbox"/> trust (Section 38-30-108.5, C.R.S.)              |
| <input type="checkbox"/> other:                    |   |

3. The entity is formed under the laws of: -Wyoming

4. The mailing address for the entity is: P.O. Box 395, Eaton, CO 80615

5. The ☒ name ☒ position of each person authorized to execute instruments conveying, encumbering, or otherwise affecting title to real property on behalf of the entity is:

Norma Beamer, President

6. The authority of the foregoing person(s) to bind the entity is ☒ not limited ☐ limited as follows: n/a

7. Other matters concerning the manner in which the entity deals with interests in real property: none

Executed this 3<sup>rd</sup> day of March, 2021.

Kamp Cattle Company

By: Norma Beamer  
Norma Beamer, President

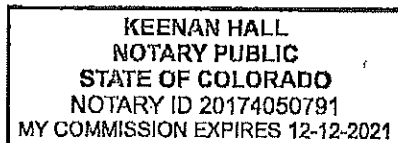
STATE OF COLORADO )  
COUNTY OF Weld ) ss.

The foregoing instrument was acknowledged before me this 3rd day of March, 2021,  
by Norma Beamer, as President of Kamp Cattle Company.

Witness my hand and official seal.

My commission expires: 12/12/2021

[Signature]  
Notary Public



<sup>1</sup>This form should not be used unless the entity is capable of holding title to real property.

<sup>2</sup>The absence of any limitation shall be prima facie evidence that no such limitation exists.

<sup>3</sup>The statement of authority must be recorded to obtain the benefits of the statute.

No. 1112. Rev. 8-01. STATEMENT OF AUTHORITY

[Insert Name] - Statement of Authority  
DDE - 090286/000129 - 686102 v1



Rec'd

RECORDING REQUESTED BY AND  
WHEN RECORDED MAIL TO:

Kermit Brown, Esq.  
Brown & Hiser LLC  
515 Iverson Avenue  
Laramie, WY 82070

SPACE ABOVE THIS LINE FOR RECORDER'S USE

### SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED is dated as of August 15, 2016, between CONSTANCE HARVEY AMENDED AND RESTATED REVOCABLE TRUST AGREEMENT DATED JULY 13, 2012, formerly known as THE CONSTANCE HARVEY REVOCABLE TRUST U/A/D JUNE 19, 2003 ("Grantor"), whose address is 210B, South Monarch Street, Aspen, Colorado 81611 and KAMP CATTLE COMPANY, a Wyoming corporation ("Grantee"), whose address is 27 South Mountain View Drive, Eaton, Colorado 80615.

WITNESSETH, that Grantor, for NO CONSIDERATION, the receipt and sufficiency of which are hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm unto Grantee, its successors and assigns forever, all of the real property, together with all rights, privileges and easements appurtenant thereto and all improvements located thereon in the County of Morgan, State of Colorado as legally described on Exhibit A attached hereto and incorporated herein by this reference (collectively, the "Property").

TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, the reversions, remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of Grantor, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances;

TO HAVE AND TO HOLD the said premises above bargained and described, with the appurtenances, unto Grantee and Grantee's successors, and assigns forever. Grantor, for Grantor and Grantor's successors, and assigns, does covenant and agree that Grantor shall and will WARRANT THE TITLE AND DEFEND the above described premises, in the quiet and peaceable possession of Grantee and Grantee's successors, and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under Grantor except and subject to: those matters set forth on Exhibit B attached hereto and made part hereof.

IN WITNESS WHEREOF, Grantor has executed this Special Warranty Deed as of the day and year set forth above.

[signatures begin on following page]

19720

IN WITNESS WHEREOF, the Grantor has executed this deed on the date set forth above.

**GRANTOR:**

CONSTANCE HARVEY AMENDED AND  
RESTATED REVOCABLE TRUST  
AGREEMENT DATED JULY 13, 2012, formerly  
known as THE CONSTANCE HARVEY  
REVOCABLE TRUST U/A/D JUNE 19, 2003

By: \_\_\_\_\_  
Thomas Harold Harvey, Co-Trustee

By: Ann Helen Harvey  
Ann Helen Harvey, Co-Trustee

STATE OF COLORADO )  
 ) ss.  
COUNTY OF \_\_\_\_\_ )

The foregoing SPECIAL WARRANTY DEED was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2016, by Thomas Harold Harvey, as Co-Trustee of the Constance Harvey Amended and Restated Revocable Trust Agreement Dated July 13, 2012, formerly known as The Constance Harvey Revocable Trust U/A/D June 19, 2003.

WITNESS my hand and official seal.  
My Commission expires \_\_\_\_\_

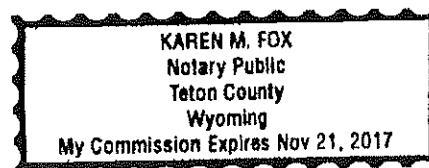
\_\_\_\_\_  
Notary Public

STATE OF WY )  
 ) ss.  
COUNTY OF Teton )

The foregoing SPECIAL WARRANTY DEED was acknowledged before me this 11 day of Aug, 2016, by Ann Helen Harvey, as Co-Trustee of the Constance Harvey Amended and Restated Revocable Trust Agreement Dated July 13, 2012, formerly known as The Constance Harvey Revocable Trust U/A/D June 19, 2003.

WITNESS my hand and official seal.  
My Commission expires Nov 21, 2017

Karen M. Fox  
Notary Public





IN WITNESS WHEREOF, the Grantor has executed this deed on the date set forth above.

**GRANTOR:**

CONSTANCE HARVEY AMENDED AND  
RESTATED REVOCABLE TRUST  
AGREEMENT DATED JULY 13, 2012, formerly  
known as THE CONSTANCE HARVEY  
REVOCABLE TRUST U/A/D JUNE 19, 2003

By:

Thomas Harold Harvey  
Thomas Harold Harvey, Co-Trustee

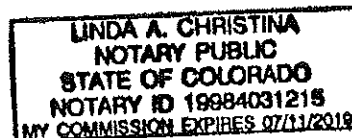
By:

Ann Helen Harvey  
Ann Helen Harvey, Co-Trustee

STATE OF COLORADO     )  
  ) ss.  
COUNTY OF Pitkin     )

The foregoing SPECIAL WARRANTY DEED was acknowledged before me this 12<sup>th</sup> day of August, 2016, by Thomas Harold Harvey, as Co-Trustee of the Constance Harvey Amended and Restated Revocable Trust Agreement Dated July 13, 2012, formerly known as The Constance Harvey Revocable Trust U/A/D June 19, 2003.

WITNESS my hand and official seal.  
My Commission expires \_\_\_\_\_



Linda A. Christina  
Notary Public

STATE OF \_\_\_\_\_ )  
  ) ss.  
COUNTY OF \_\_\_\_\_ )

The foregoing SPECIAL WARRANTY DEED was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2016, by Ann Helen Harvey, as Co-Trustee of the Constance Harvey Amended and Restated Revocable Trust Agreement Dated July 13, 2012, formerly known as The Constance Harvey Revocable Trust U/A/D June 19, 2003.

WITNESS my hand and official seal.  
My Commission expires \_\_\_\_\_

\_\_\_\_\_  
Notary Public

**EXHIBIT A TO SPECIAL WARRANTY DEED**  
*(Legal Description of the Property)*

Township 2 North, Range 56 West of the 6th P.M. Morgan County, Colorado

Section 3: S1/2 S1/2

Section 4: S1/2 SE1/4, W1/2, Lot 1 (NE1/4NE1/4), Lot 2 (NW1/4NE1/4), S1/2NE1/4,  
N1/2SE1/4

Section 5: ALL

Section 6: E1/2

Section 7: E1/2

Section 8: ALL

Section 9: ALL

Section 10: ALL

Section 15: N1/2

Section 17: ALL

Section 18: NW1/4, E1/2

Section 19: N1/2 NE1/4

Section 20: N1/2 N1/2

Township 3 North, Range 56 West of the 6th P.M. Morgan County, Colorado

Section 28: All EXCEPT a parcel of land in the SE1/4 of Section 28, Township 3 North, Range 56 West of the 6th P.M., described as: Commencing at a point from the SE corner of said Section 28 bears S 61°10'58" E. at 2727.9 feet (based on the East side of said Section 28 bearing N0°10'14"W.); thence N. 0°10'14"W. 871.2 feet; thence S 89°49'46" W. 50 feet; thence S0°10'14"E 871.2 feet; thence N89°49'46"E. 50.0 feet to the point of beginning.

Section 29: ALL

Section 30: E1/2

Section 31: E1/2

Section 32: All

Section 33: All



# **TECHNICAL & MISC**

**-GLARE Report**



GLARE REPORT

# South Platte Solar Project

MORGAN COUNTY, COLORADO

FEBRUARY 24, 2023

PREPARED FOR:  
South Platte Solar LLC

PREPARED BY:  
**Westwood**

# Glare Report

## South Platte Solar Project

Morgan County, Colorado

Prepared for:  
South Platte Solar LLC  
North Palm Beach, FL 33408

Prepared by:  
Westwood Professional Services  
12701 Whitewater Drive, Suite 300  
Minnetonka, MN 55343  
(952) 937-5150

Project Number: 0036044.00  
Date: February 24, 2023



# Executive Summary

Westwood Professional Services, Inc. (Westwood) completed a glare study using Forge Solar’s GlareGauge software to analyze glare hazard for the proposed South Platte Solar Project (Project) located in Morgan County, Colorado.

Thirty observation points (OPs) were assessed for this study (**Table 1**). They are derived from 15 residences within approximately 5000-feet of a proposed array each assessed for glare at two heights, 5-feet, and 15-feet above ground level (AGL). No air traffic control towers (ATCT) OPs were located at the two airports assessed for this project.

Four flight paths (FPs) from the two airports were assessed for glare within approximately 10 miles of the Project Area. Fort Morgan Municipal Airport (FMM) has 2 FPs, and Brush Municipal Airport (7V5) also has 2 FPs.

Five area public road segments (Routes) nearest the arrays were assessed for glare.

Table 1 – Components Modeled for Glare

Total Number of Components in South Platte Glare Analysis	
OPs	30 (From 15 Residences) 0 (From ATCT)
FPs	4
Routes	5

This glare analysis used an average 6-foot array height with solar panel arrays having 0-degree and 5-degree resting angle (DRA), also referred to as stow angles. Data are summarized in **Appendix A** and details are in **Appendix B**. The glare values of minutes/year are calculated using line of site elevations and do not account for existing vegetation or structures that would reduce the visibility of glare from arrays by physical screening.

The summary **Table 2** reports the number of residential OPs, Routes, and FP receptors receiving the three categories of glare: red glare (*potential for permanent eye damage* [retinal burn]), yellow glare (*potential for producing an after image*), and green glare (*low potential for producing an after-image*).

This Project uses PV modules; they do not focus reflected sunlight. PV modules do not produce red glare. PV modules being considered for this Project are manufactured to absorb as much light as possible rather than reflecting light thereby reducing yellow and green glare compared to other modules using reflecting and uncoated glass. This Project will use a single axis tracker to follow the sun. It produces less glare and provides more options to mitigate glare when it occurs compared to a fixed axis solar array system.

Table 2 – Summary of Receptors Receiving Glare

Summary for South Platte Glare Analysis						
Number of Components with Glare	Green Glare		Yellow Glare		Red Glare	
	0 DRA	5 DRA	0 DRA	5 DRA	0 DRA	5 DRA
Observation Points (OPs)	30	24	1	-	-	-
Flight Paths (FPs)	2	2	-	-	-	-
Routes	5	4	4	2	-	-

- PV solar modules do not produce red glare because they do not concentrate reflected light.

Based upon the results, none of the Residential OPs, Routes, Flight Paths would have glare of an intensity to cause permanent impacts (red glare) because PV modules do not concentrate glare. The FPs from the two modeled airports located within approximately 10 miles of the Project also do not receive yellow glare.

Brush Municipal Airport runway 250 (FP 2) is predicted to receive a maximum of 2748 minutes of green glare per year and no yellow glare. And Fort Morgan Municipal Airport runway 140 (FP4) is predicted to receive a maximum of 483 minutes of green glare per year and no yellow glare. And since the project is not located on a federally obligated airport, this Project complies with the Federal Aviation Administration (FAA) glare guidance 2021.

## Table of Contents

<b>1.0 Introduction.....</b>	<b>5</b>
1.1 General Discussion of Reflection .....	6
1.1.1 Reflection Type from Solar Modules.....	6
1.1.2 Relative Reflectance of Solar Modules Compared to Other Surfaces .....	7
1.2 Important Considerations.....	9
1.3 Overview of Sun Movements and Relative Reflections .....	9
1.3.1 Determining the Vector Location of Incident Sunlight .....	9
1.3.2 Sunlight Geometry .....	10
<b>2.0 Description of the Proposed Project.....</b>	<b>11</b>
2.1 Geometric Characteristics of Photovoltaic Panel Configuration and Their Influence on Perceived Glare.....	13
<b>3.0 Identification of Observation Points, Routes, and Flight Paths .....</b>	<b>14</b>
<b>4.0 Glare Assessment Methodology.....</b>	<b>18</b>
<b>5.0 Glare Results .....</b>	<b>21</b>
5.1 Observation Points (OPs) and Route Segments.....	21
<b>6.0 References .....</b>	<b>23</b>

## Tables

Table 1 – Components Modeled for Glare .....	1
Table 2 – Summary of Receptors Receiving Glare.....	2
Table 3 – Location of OPs Modeled Adjacent to Arrays .....	14
Table 4 – Location of Routes Near Arrays.....	16
Table 5 – Location of 2-Mile Flight Paths from Airports within Approximately 10 Miles of the Project.....	18

## Figures

Figure 1 – Glare Hazard Plot .....	5
Figure 2 – Specular and Diffuse Reflections .....	6
Figure 3 – Light Transmission of Glass .....	7
Figure 4 – Analysis of Typical Material Reflectivity with Sunlight Angle .....	8
Figure 5 – Albedo for Various Common Surfaces.....	8
Figure 6 – Solar Path Chart Plotting Solar Azimuths and Elevations as a Function of Time and Date for the Location of the Proposed Solar Project .....	10
Figure 7 – (a) Geometry of the Reflection (L2) of an Incident Ray of Sunlight (L1) from a Vertical Reflective Surface (Source: Lillefair, 1987). (b) Reflections from a Sloping Reflective 1-Single Axis Tracker Surface (Source: Stine and Geyer, 2001) .....	11



Figure 8 – Diagram of the Racking System Configuration for the Proposed Project 1Mh=7.4’; 2Mh=14.8’ .....	11
Figure 9 – Diagram Showing Tracker Array Rotation and Orientation for the Proposed Project 12	
Figure 10 – Solar PV Tracker System Configuration at (a) 9:00 AM, (b) 10:00 AM, (c) 12:00 PM, and (d) 2:00 PM on December 21st, the Winter Solstice.....	12
Figure 11 – Typical 1-Axis Tracking System Configuration Elevation View A up to 14-ft @Max D; B was assessed for 6-ft; C=1-ft; D=52° to -52°; R= was assessed at 0-degrees and 5-degrees .....	13
Figure 12 – Residential OP and Route Example Adjacent to Proposed Arrays .....	14
Figure 13 – Route Example.....	15
Figure 14 – Flight Path (FP) Example.....	17
Figure 16 – Example of Modeled PV Sub-Array Input Parameters .....	19

## Exhibits

Exhibit 1: Site Location Map

Exhibit 2: Glare Study Residence & Road Receptors

*(Attached with Part 1 of 3)*

## Appendices

### Appendix A: Summary Glare Data

Appendix A-1: 6 ft Array Height 5-Degree Rest Angle

Appendix A-2: 6 ft Array Height 0-Degree Rest Angle

*(Attached with Part 1 of 3)*

### Appendix B: Detail Glare Data

Appendix B1: Detail Glare Data 6 ft Array Height 5-Degree Rest Angle

*PDF Attached as Part 2 of 3*

Appendix B2: Detail Glare Data 6 ft Array Height 0-Degree Rest

Angle

*PDF Attached as Part 3 of 3*

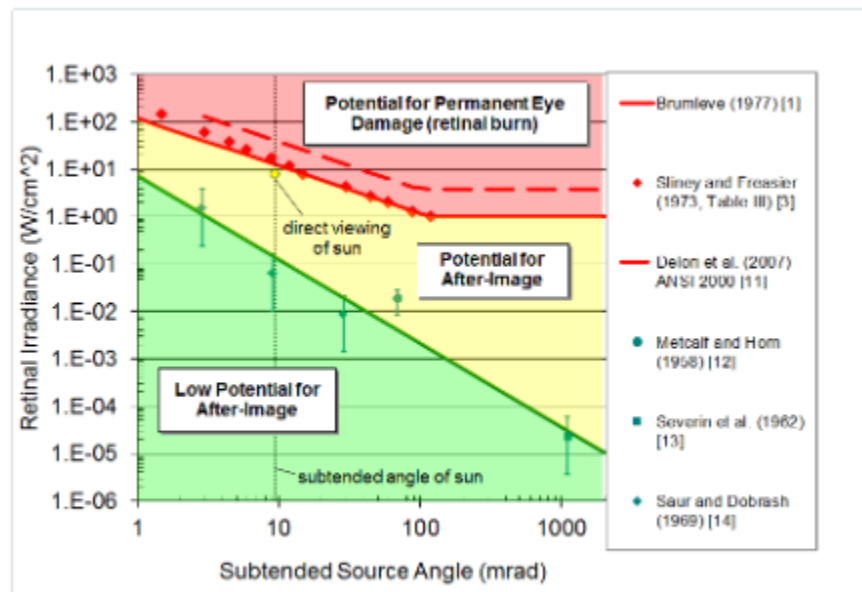
## 1.0 Introduction

Westwood was contracted by South Platte Solar, LLC (South Platte) to prepare a glare study for the proposed Project. The Project is generally located 5.5 miles southeast of Fort Morgan, west of Highway 71, in Morgan County, Colorado (**Exhibit 1**). The Project will consist of a series of photovoltaic (PV) modules fixed to single axis solar trackers arranged in arrays. Panels will be placed on participating properties and have an installed capacity of up to 500 MWAC (**Exhibit 2**).

Westwood used the web-based Forge Solar's GlareGauge software to complete a glare analysis to determine the potential for glare from the PV panels to adversely affect pilots and airport air traffic control tower operators, residents in the area, and drivers passing through. This Project is not located on airport property and there are no ATCTs near the Project.

This study analyzes the anticipated glint and glare attributable to the Project, and any associated impact on nearby residences, road, and airports. The ocular impact (being connected to the eye or vision) of solar glare is quantified into three categories (Ho, 2011) (**Figure 1**). These categories, assume a typical blink response in the observer. Note that retinal burn is not possible for PV glare since PV modules do not focus reflected sunlight.

- Green – low potential to cause after-image
- Yellow – potential to cause temporary after-image
- Red – potential to cause retinal burn (permanent eye damage)



Sample glare hazard plot defining ocular impact as function of retinal irradiance and subtended source angle (Ho, 2011)

Figure 1 – Glare Hazard Plot

## 1.1 General Discussion of Reflection

The potential impact of glare from PV modules and other types of solar collection systems is receiving increased attention as a potential nuisance to neighboring residential properties or potential hazard or distraction for vehicle drivers, pilots, and air-traffic control personnel at nearby airports.

A common misconception about solar PV modules is that they inherently cause or create a lot of glare, posing a nuisance to neighbors and a safety risk for pilots. While in certain situations the glass surfaces of solar PV modules can produce glare (a reflection of bright light for a longer duration), light absorption, rather than reflection, is central to the function of a solar PV panel. PV modules absorb solar radiation that is converted to electricity. Solar PV modules are constructed from high transmission, low iron glass and are covered with Anti-Reflective Coatings (ARC). Modern solar PV modules reflect as little as two percent of incoming sunlight, slightly less than still water and less than soil or even wood shingles (Sandia, 2014).

### 1.1.1 Reflection Type from Solar Modules

Smooth surfaces such as glass and still water exhibit specular reflection. Specular reflection is when light hits the surface at one angle and is reflected in another direction, like a mirror. Specular reflection can be contrasted with diffuse reflection, which occurs when light reflects off microscopically rough surfaces and scatters. Diffuse reflection is what happens when light hits virtually everything in our field of vision. The difference between the two types of reflections is illustrated in **Figure 2**. Since solar modules are flat and have a relatively smooth surface, most of the light reflected is specular, meaning that incident light from a specific direction is reradiated in a different direction.

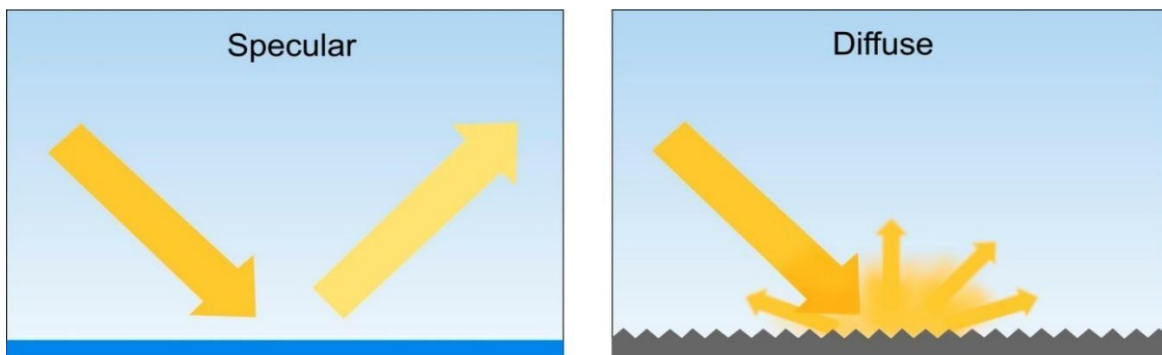


Figure 2 – Specular and Diffuse Reflections

When sunlight is reflected on a smooth surface, it can result in glare for those who are on the receiving angle. In both cases, the light reflected is diminished by having first hit the substrate that reflected it—unless that surface is polished such as a mirror. When the sun is the original source of the light reflected off a reflective surface, the time and position at which glare might occur depends on the original position of the sun in the sky in relation to the location of the viewer or OP.



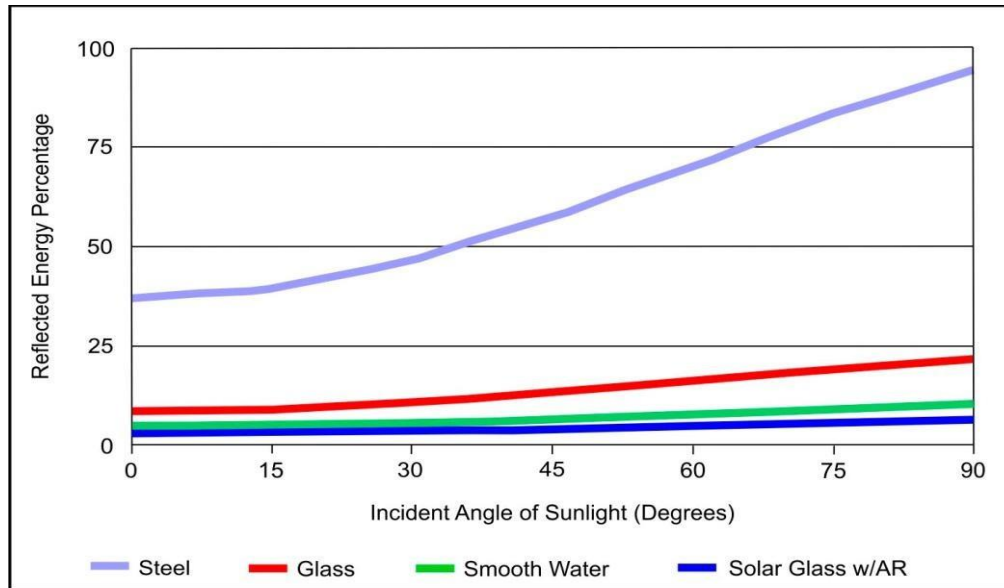
### 1.1.2 Relative Reflectance of Solar Modules Compared to Other Surfaces

Solar modules are designed to absorb light, and accordingly reflect only a small amount of the sunlight that falls on them compared to most other everyday objects. Modern PV modules have slightly less intense reflectivity than still surface water. (Anurag A, 2017). The module glass, one of the uppermost and important components of a solar panel, reflects only a small portion of the light that falls on it—about 2 to 4 percent, depending on whether it received an ARC. To increase solar panel efficiency and power output, most of the solar PV modules in use today are treated with an ARC. An example of how anti-reflective technology can increase light transmission in glass and reduce overall reflection is provided in **Figure 3**. Standard low-iron glass reflects approximately 8 percent of light, whereas ARC-glass modules reflect a total of approximately 2-percent to 3-percent of the light.

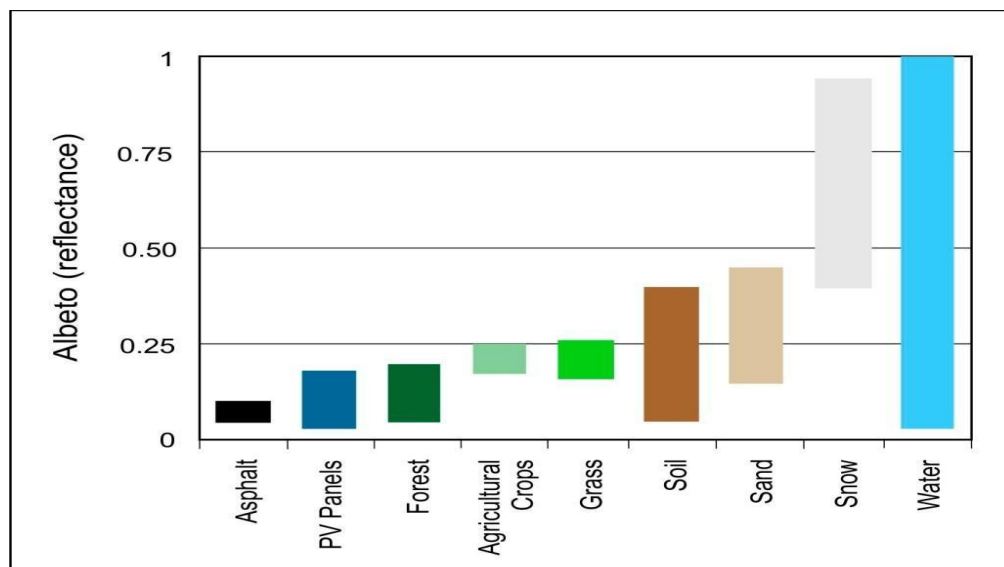


Figure 3 – Light Transmission of Glass

Studies have been conducted which have measured the intensity of reflections from PV solar modules with respect to other naturally occurring and manmade surfaces. The results of the studies show that reflections of the sun from solar modules are possible; however, the reflections produced will be of intensity like, or less than, those produced from still water and less than reflections from glass and steel. The reflectivity of solar modules relative to other natural or manmade surfaces are provided in **Figures 4** and **5**.



**Figure 4 – Analysis of Typical Material Reflectivity with Sunlight Angle**  
 (Source: Capital Solar Farm Visual Impact Assessment, 2010)



**Figure 5 – Albedo for Various Common Surfaces**  
 (Source: Capital Solar Farm Visual Impact Assessment, 2010)

One measure of reflectivity is albedo, the ratio of solar radiation across the visible and invisible light spectrum reflected by a surface. Albedo varies between 0, a surface that reflects no light, and 1, a mirror-like surface that reflects all incoming light. Solar PV modules with a single ARC have a reflectivity of between 0.03 and 0.18. Common sand has an albedo between 0.15 and 0.45 and agricultural vegetation has an albedo between 0.18 and 0.25. This diffuse reflectivity measure is consistent with the intent of solar PV modules to absorb the majority of solar energy for conversion to electricity.

## 1.2 Important Considerations

Before considering the mathematics of sunlight reflectivity, it is important to understand several fundamental limitations concerning the extent to which glare might be visible to nearby receptors (residences, routes, or flight paths).

First, for glare to appear, the observer must be able to see the top surface of the PV modules. For this to occur, at a minimum, the receptor would need to be at a height sufficient to slightly look down at the tops of the solar modules.

Second, since the panels will be mounted on single axis tracking systems, the surface of the panels will always try to follow the position of the sun (but fixed in one axis). Due to this property, steep glancing angles are minimized as compared to a non-tracking system.

Lastly, glare is avoided when vegetation or other impediments are located between the observer and the solar modules. A home, for example, may be in the general area of a site with solar PV modules. That house, however, is at no risk of exposure to solar glare if other buildings or trees stand between it and the solar modules.

## 1.3 Overview of Sun Movements and Relative Reflections

The basic concept to understand in any discussion of glare elevation is that the angle of incidence is always equal to the angle of reflectance. The empirical inquiry is then whether the potential observer is within the altitude of reflection given the distance of the observer from the solar PV panel. At any angle of reflectance, as a potential observer is further and further away from the solar PV panel, the elevation of the reflected sunlight (i.e., any glare) is more likely to be above the observer and, thus, not seen. In contrast, at a high angle of reflectance, the elevation of reflected sunlight will likely be above the observer—even at short distances.

Given the basic principle of light reflectivity, evaluating the angle of reflectance from a solar PV panel must begin with a determination of the altitude of the sun (in degrees) relative to the ground. The “solar altitude” is the angle of the sun in degrees above or below the horizon. As such, the most important consideration when calculating light reflectivity is not the horizon, but the angle at which the solar panel is mounted relative to the horizon.

As the angle of the sun in relation to the solar PV panel increases, the angle of reflection will decrease, and the altitude of reflection will increase. The altitude of the sun differs based on a number of different factors: the time of day, the season of the year, and the latitude at which the solar PV panel is located.

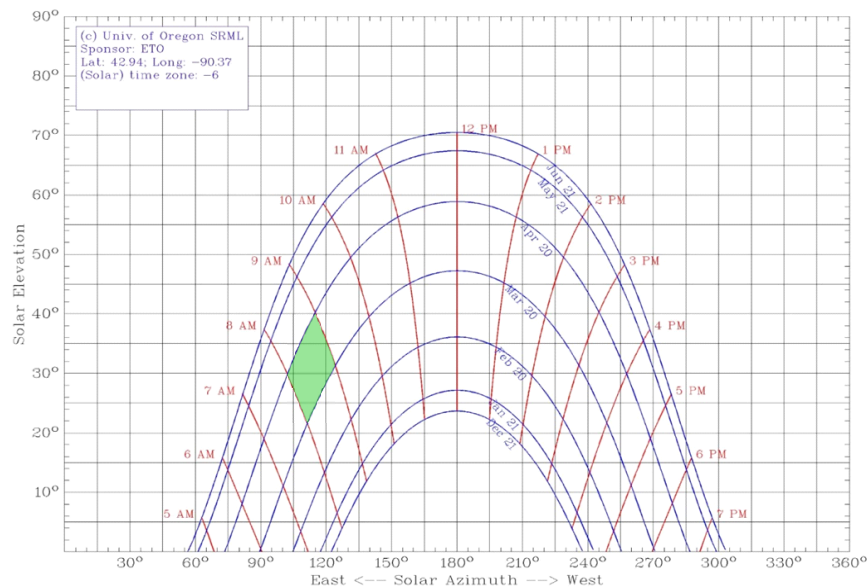
### 1.3.1 Determining the Vector Location of Incident Sunlight

The sun’s apparent path across the sky changes slightly every day in known and predictable ways depending on the location of the subject area on the earth and date of the year. At any given instant, the sun’s position in the sky can be described by a directional vector characterized by an azimuth and an elevation. An azimuth is



defined as the angle of the sun's position from due north in a clockwise direction. For example, if the sun rose exactly in the east and set exactly in the west, the azimuth of the sunrise would be  $90^\circ$  from north, and the sunset would occur at  $270^\circ$  from the north. The sun's elevation is defined as the degrees of the sun's orb above the horizon at any instant in time. Other azimuth conventions consider azimuth from north to south along the east half as ranging from  $0^\circ$  to  $180^\circ$ , and along the west half as ranging from  $0^\circ$  to  $-180^\circ$ .

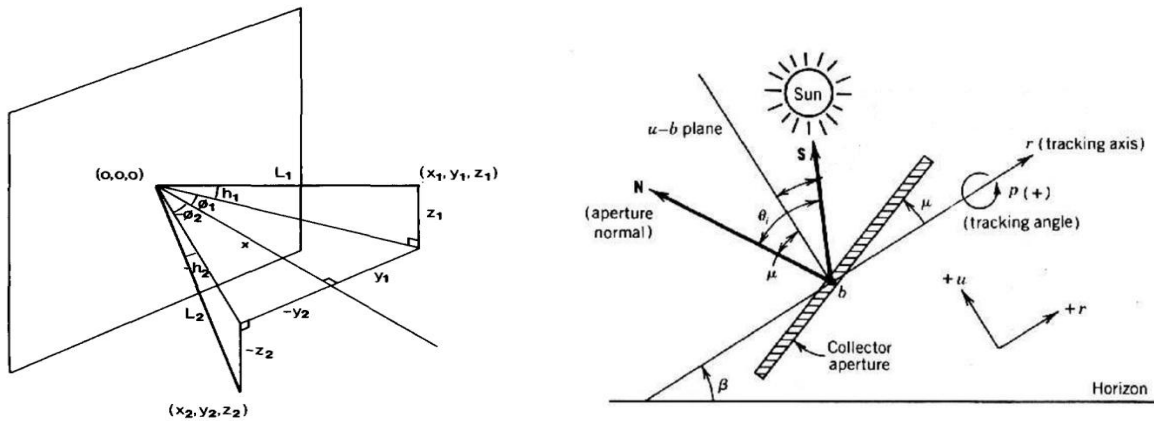
Sun path chart diagrams plot the azimuth and elevation of the sun at any instant in time for any location on the earth. A sun path chart for the latitude and longitude of the proposed Project is shown in **Figure 6**. The sun's path for a given date is shown in blue and the time during which the sun is at a specific location in the sky is shown in red. For the location of a given receptor such as a residence, the solar elevation and azimuth where reflections would be received at the receptor can be calculated and plotted on the solar chart. For example, for the hypothetical receptor shown in green, reflected light would only be received when the sun is between approximately  $75^\circ$  and  $90^\circ$  azimuth (from north) and at an elevation between  $22^\circ$  and  $40^\circ$ . From the chart, this would occur between 8 a.m. and 9 a.m. between the dates of March 20 to April 20.



**Figure 6 – Solar Path Chart Plotting Solar Azimuths and Elevations as a Function of Time and Date for the Location of the Proposed Solar Project**

### 1.3.2 Sunlight Geometry

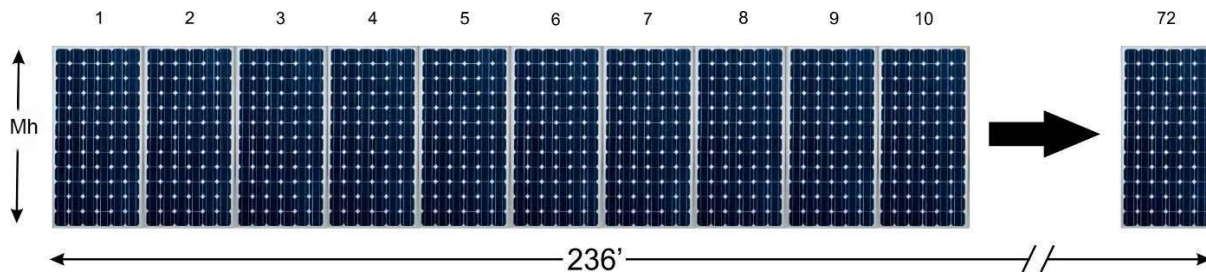
The determination and characterization of the geometry of incident and reflected light is a mathematical process that is based on angles and vectors in three-dimensional coordinate systems. Light reflected from a surface is described in **Figure 7a & b** and shows that reflected light is symmetrical about the normal of the surface. All methods used to calculate the path of reflected rays assume this symmetric condition.



**Figure 7 – (a) Geometry of the Reflection (L2) of an Incident Ray of Sunlight (L1) from a Vertical Reflective Surface (Source: Lillefair, 1987). (b) Reflections from a Sloping Reflective 1-Single Axis Tracker Surface (Source: Stine and Geyer, 2001)**

## 2.0 Description of the Proposed Project

The Project may use PV modules from a variety of manufacturers. The modules will be divided in ranks and arranged in a series of irregular rectangular units. Modules will likely be stacked in a one or two module height (Mh) configuration in a portrait mode on a single axis tracker system (**Figure 8**). The tracker will rotate east to west along a north-south axis from the horizontal in east-west oriented ranks with the panel normal oriented due south (**Figures 9 and 10**). When installed, dimensions of a typical single axis tracking system elevation are shown in (**Figure 11**).



**Figure 8 – Diagram of the Racking System Configuration for the Proposed Project 1Mh=7.4'; 2Mh=14.8'**



Figure 9 – Diagram Showing Tracker Array Rotation and Orientation for the Proposed Project

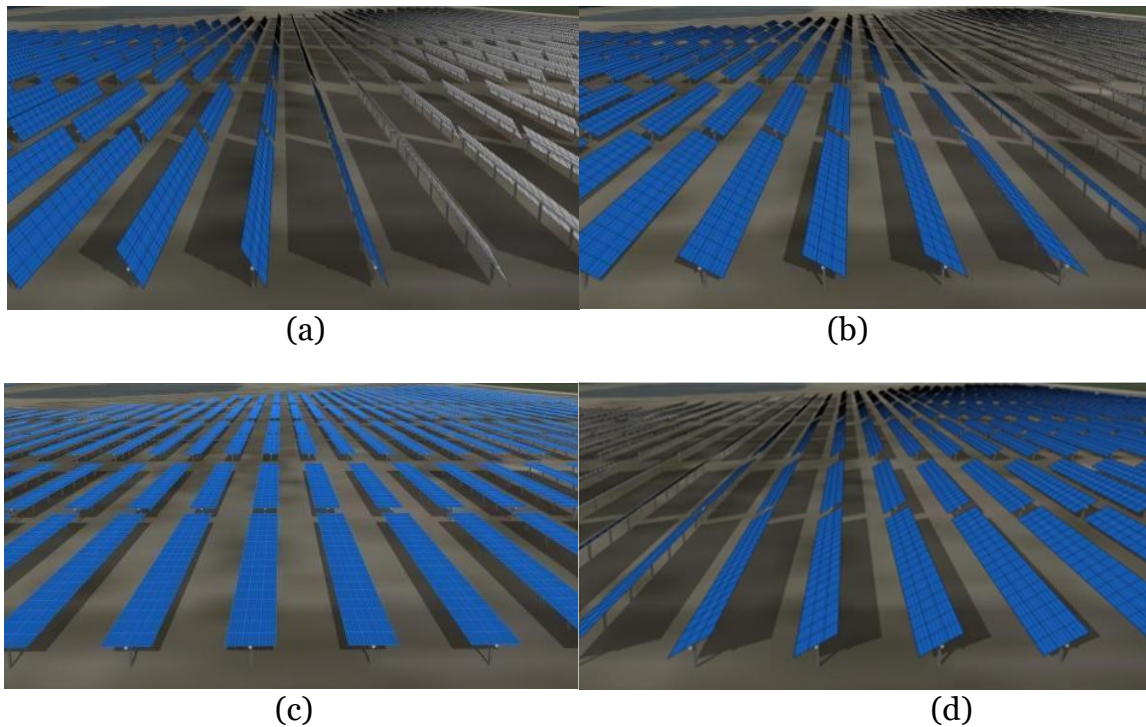


Figure 10 – Solar PV Tracker System Configuration at (a) 9:00 AM, (b) 10:00 AM, (c) 12:00 PM, and (d) 2:00 PM on December 21st, the Winter Solstice



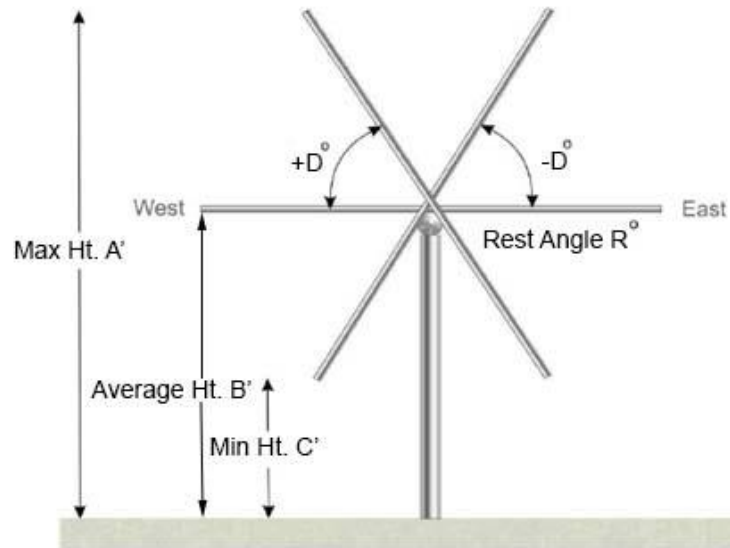


Figure 11 – Typical 1-Axis Tracking System Configuration Elevation View A up to 14-ft @Max D; B was assessed for 6-ft; C=1-ft; D=52° to -52°; R= was assessed at 0-degrees and 5-degrees

## 2.1 Geometric Characteristics of Photovoltaic Panel Configuration and Their Influence on Perceived Glare

With respect to assessing the impacts of reflected sunlight associated with PV modules for the proposed Project, the following assumptions apply:

1. Perceived glare was based on line-of-sight from the reflective surface without accounting for visual screening from vegetation or buildings.
2. The magnitude and duration of glare reflections will be related to the height of the observer. When the height of the observer is less than the module height and the landscape is flat, only one reflecting rank of PV modules will be visible at a time.
3. Stationary receptors that are below the top height of the PV modules will only see glare from those modules whose reflective surfaces are visible from that location. The glare will move as the sun moves until the azimuth and elevation of the sun's rays are such that reflections are no longer received at the stationary receptor.
4. Because the orientation of each rank is the same, each rank will reflect glare at the same angle for the same time increment and given azimuth and elevation angle of the sun. Thus, if a car with the observer at a height below the highest point of the PV rank observes a solar reflection, the same reflection at the same relative location will be observed as the car proceeds parallel to the PV ranks.
5. As the height of the stationary receptor increases above the height of the PV rank, progressively more of the area of adjacent ranks will be observed. At low heights, the majority of the PV panel area of successive ranks is blocked, but as heights increase progressively more of the reflective area of the full array contributes to glare.

### 3.0 Identification of Observation Points, Routes, and Flight Paths

Fifteen residences modeled at two heights each account for 30 residential OPs. An example OP is shown in **Figure 12**. These residences were located within 5000 feet of the proposed arrays and were assessed at 5 feet and 15 feet AGL to simulate eye level at a first and second story for each residence (two OPs for each residence).



Figure 12 – Residential OP and Route Example Adjacent to Proposed Arrays

Specific details regarding the OPs Modeled in relation to the solar arrays are presented in **Table 3**, and the locations of the OPs and PV arrays are depicted in **Exhibit 2**.

Table 3 – Location of OPs Modeled Adjacent to Arrays

Vertex/ID	Position	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
1000	First Floor	40.220481	-103.696338	4394.046	5	4399.0
1002	Second Floor	40.220481	-103.696338	4394.046	15	4409.0
1003	First Floor	40.219277	-103.728882	4325.851	5	4330.9
1004	Second Floor	40.219277	-103.728882	4325.851	15	4340.9
1005	First Floor	40.218143	-103.698451	4392.688	5	4397.7
1006	Second Floor	40.218143	-103.698451	4392.688	15	4407.7
1007	First Floor	40.217442	-103.698578	4392.501	5	4397.5

Vertex/ID	Position	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
1008	Second Floor	40.217442	-103.698578	4392.501	15	4407.5
1009	First Floor	40.21711	-103.698243	4393.512	5	4398.5
1010	Second Floor	40.21711	-103.698243	4393.512	15	4408.5
1011	First Floor	40.210009	-103.7339	4339.523	5	4344.5
1012	Second Floor	40.210009	-103.7339	4339.523	15	4354.5
1013	First Floor	40.206668	-103.734675	4364.481	5	4369.5
1014	Second Floor	40.206668	-103.734675	4364.481	15	4379.5
1015	First Floor	40.163778	-103.608408	4299.376	5	4304.4
1016	Second Floor	40.163778	-103.608408	4299.376	15	4314.4
1017	First Floor	40.162505	-103.616327	4302.684	5	4307.7
1018	Second Floor	40.162505	-103.616327	4302.684	15	4317.7
1019	First Floor	40.16163	-103.704171	4493.694	5	4498.7
1020	Second Floor	40.16163	-103.704171	4493.694	15	4508.7
1021	First Floor	40.160406	-103.604858	4302.398	5	4307.4
1022	Second Floor	40.160406	-103.604858	4302.398	15	4317.4
1023	First Floor	40.160265	-103.607958	4303.639	5	4308.6
1024	Second Floor	40.160265	-103.607958	4303.639	15	4318.6
1025	First Floor	40.15972	-103.613872	4304.009	5	4309.0
1026	Second Floor	40.15972	-103.613872	4304.009	15	4319.0
1027	First Floor	40.148762	-103.607694	4305.292	5	4310.3
1028	Second Floor	40.148762	-103.607694	4305.292	15	4320.3
1029	First Floor	40.144908	-103.669283	4380.079	5	4385.1
1030	Second Floor	40.144908	-103.669283	4380.079	15	4395.1

Five public road segments nearest the arrays were also assessed for glare. An example of County Road 24 is shown in **Figure 13**. Specific details regarding the Routes modeled for glare are presented in **Table 4**. The routes were assessed for glare using a height of 3.5 feet AGL to simulate an average eye level of a driver of a passenger vehicle following Federal Highway Administration Guidance (US Department of Transportation, 2022).

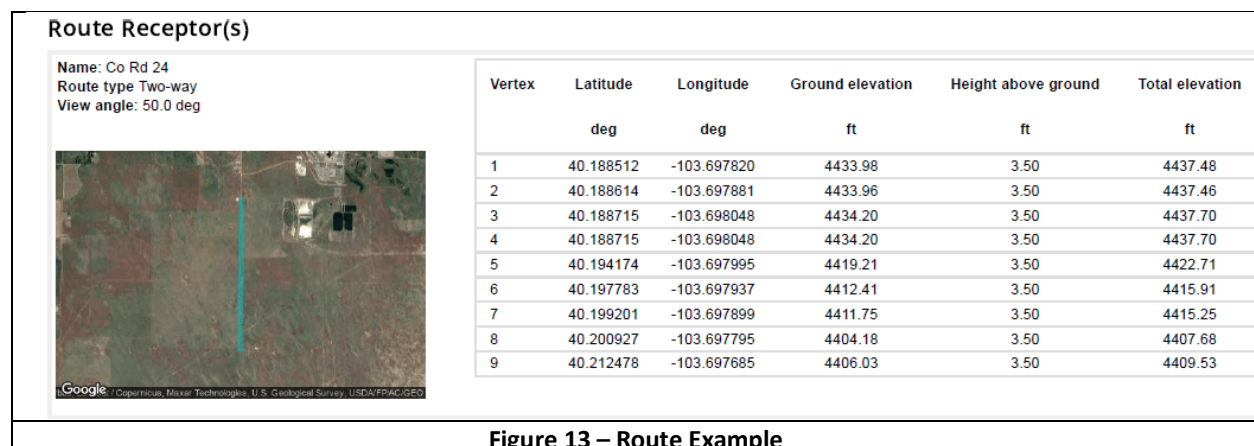




Table 4 – Location of Routes Near Arrays

Route Name	Latitude	Longitude	Ground Elevation (ft)	Eye Height (ft) Above Ground
Co Rd 24	40.18851233	-103.6978197	4434.0	4437.5
Co Rd 24	40.21247804	-103.6976852	4406.0	4409.5
Co Rd L Seg. 1	40.1457144	-103.6667485	4377.4	4380.9
Co Rd L Seg. 1	40.14829695	-103.65145	4340.7	4344.2
Co Rd L Seg. 2	40.14853889	-103.6501546	4338.8	4342.3
Co Rd L Seg. 2	40.15380585	-103.6390079	4315.7	4319.2
Co Rd L Seg. 3	40.15854229	-103.6307118	4312.2	4315.7
Co Rd L Seg. 3	40.16050256	-103.6194944	4303.3	4306.8
Co Rd N 7/10	40.19962399	-103.716946	4415.7	4419.2
Co Rd N 7/10	40.19965002	-103.7200318	4405.5	4409.0

Four FPs were the aviation features assessed for glare from two airports within approximately 10 miles of the Project. Brush Municipal Airport (7V5) is located north of the Project; it has two flight paths runways, 70 (FP1) and 250 (FP2) **Figure 14**. Fort Morgan Municipal Airport (FMM) is located northwest of the Project; it has two flight paths runways, 320 (FP3) and 140 (FP4) **Figure 15**. There are no one air traffic control towers OP (ATCT) located these airports.

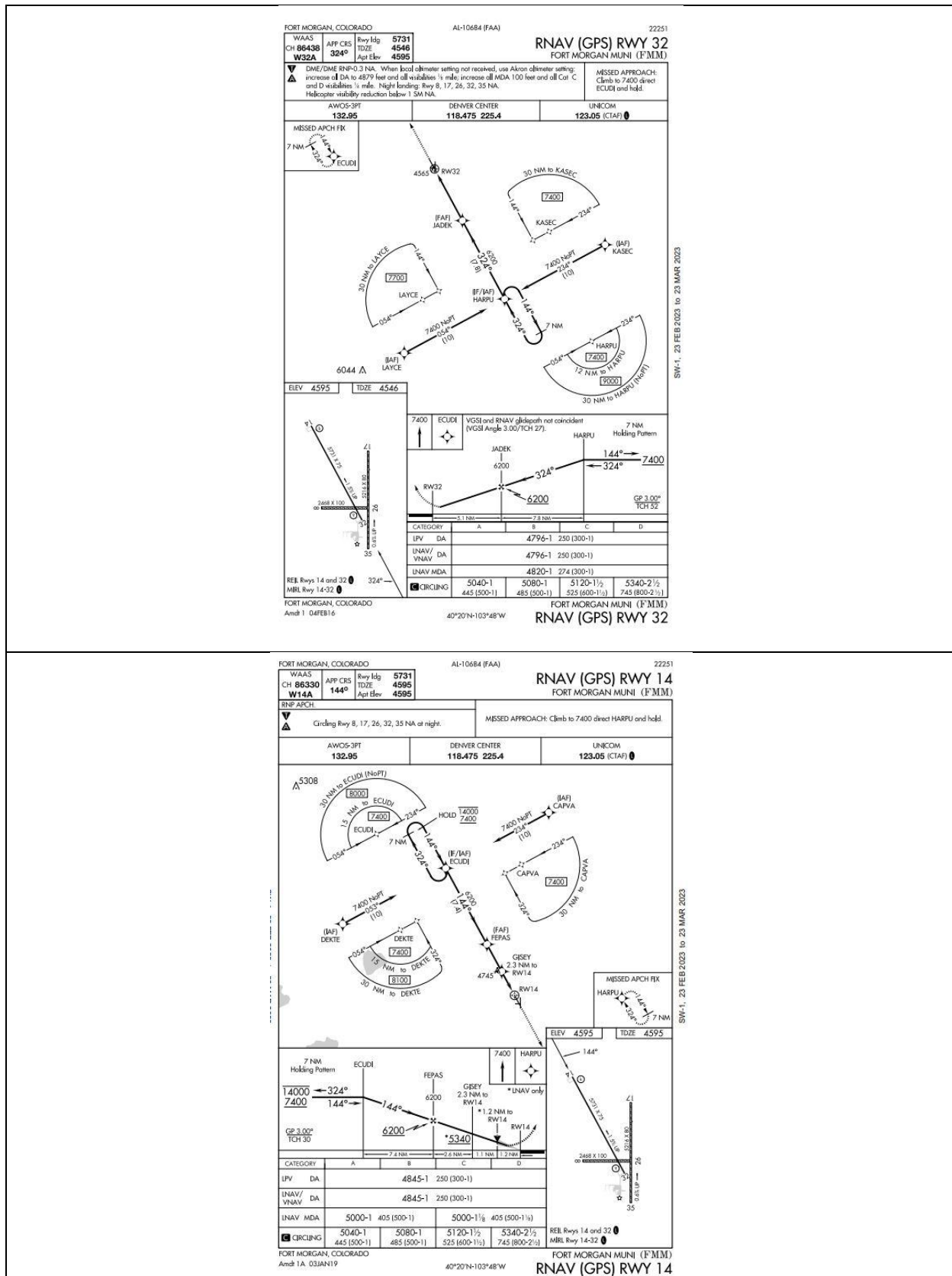
## 2-Mile Flight Path Receptor(s)

Name: FP 1 Brush 70  
 Description: None  
 Threshold height : 50 ft  
 Direction: 83.8 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	40.263702	-103.583180	4267.80	50.00	4317.80
2-mile point	40.260600	-103.620894	4231.30	640.00	4871.30



Figure 14 – Flight Path (FP) Example



**Figure 15 – Fort Morgan Municipal Airport Diagram 1**

Details regarding the FPs modeled for glare are presented in **Table 5**. No air traffic control towers exist at the airports modeled and the Project is not an on-airport project as defined by the FAA.

**Table 5 – Location of 2-Mile Flight Paths from Airports within Approximately 10 Miles of the Project**

Airport Flight Path	Vertex/ID	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
FP 1 Brush 70	1	40.2637	-103.583	4267.8	50	4317.8
FP 1 Brush 70	2	40.2606	-103.621	4231.3	639.9	4871.3
FP 2 Brush 250	1	40.26505	-103.568	4303.3	50	4353.3
FP 2 Brush 250	2	40.26834	-103.531	4331	575.7	4906.7
FP 3 Ft Morgan 320	1	40.33153	-103.802	4508.2	50	4558.2
FP 3 Ft Morgan 320	2	40.30589	-103.785	4458.3	653.3	5111.7
FP 4 Ft Morgan 140	1	40.34434	-103.811	4590.2	50	4640.2
FP 4 Ft Morgan 140	2	40.36953	-103.83	4583.5	610.1	5193.6

## 4.0 Glare Assessment Methodology

For glare modeling purposes, the Project was divided into PV sub-array areas as shown in **Exhibit 2**. To model the potential intensity and time of Project-related glare to receptors, Westwood used Forge Solar's GlareGauge solar glare analysis software (formally the Solar Glare Hazard Analysis Tool [SGHAT]). GlareGauge is a web-based tool that estimates when and where solar glare could occur throughout a typical year from a PV array as viewed from specified observer locations. GlareGauge uses an interactive ArcMap or Google Map interface together with a few user-specified parameters such as orientation and tilt of the modules to quickly locate a site, outline the proposed array, and calculate the occurrence, intensity, and size of the potential glare throughout the year.

If glare potential is predicted, the GlareGauge calculates the retinal irradiance and subtended angle (size/distance) of the glare source to estimate potential ocular hazards. Ocular hazards



range in severity from a potential temporary after-image to retinal burn. GlareGauge produces a color-coded display of the potential for glare to result in an ocular impact. The glare classifications are low potential for producing an after-image (green), potential for producing an after image (yellow), and potential for permanent eye damage (red).

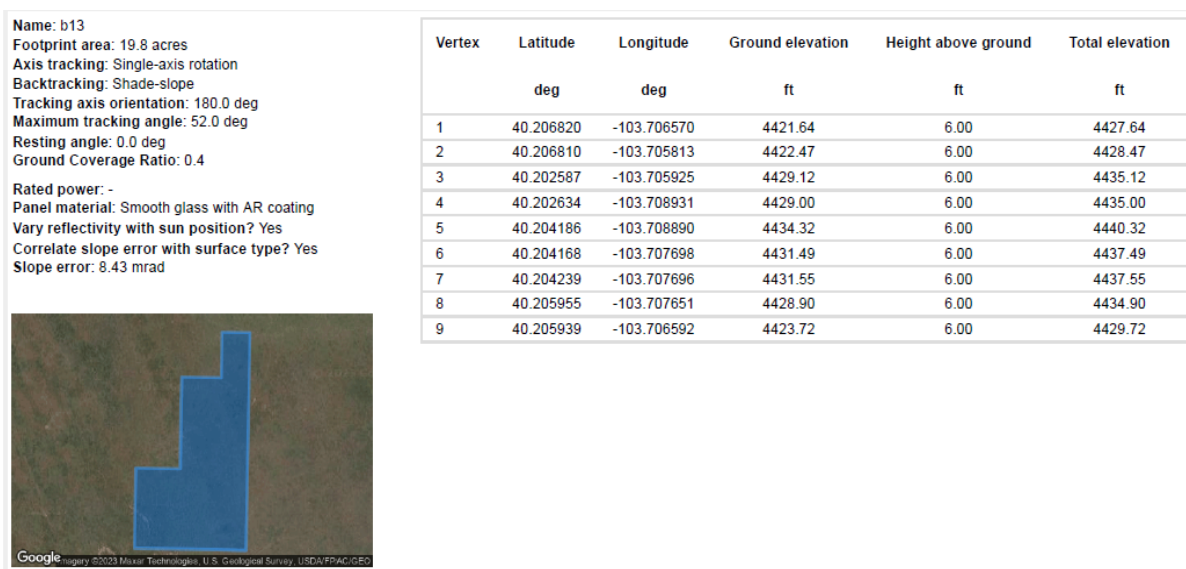
After the Project Area is determined and its design characteristics are known, information from each glare-sensitive receptor is input into the model. Each of the OPs were identified on the project map as an OP and the height of the observer was incorporated. Each OP was assessed with two solar panel resting angles (0-degrees and 5-degrees). An example of the GlareGauge model is shown in **Figure 16**.

The FAA issued guidance in 2013 regarding glare assessment for PV solar projects on and near airports. The Forge Solar site provides an evaluation of adherence to this policy which determines if yellow glare is predicted along flight paths or any glare at air traffic control towers. This guidance was superseded by FAA in 2021 final guidelines. The FAA published a final policy aimed at ensuring that airport solar projects do not create hazardous glare. The policy requires airports to measure the visual impact of such projects on pilots and air traffic control personnel.

The policy applies to proposed solar energy systems at federally obligated airports with control towers. Federally obligated airports are public airports that have accepted federal assistance in the form of grants of property conveyances.

As more airports invest in this technology for environmental and economic benefits, the FAA wants to make sure that the reflection from the systems' glass surfaces do not create a glare that poses a safety hazard for pilots and air traffic controllers.

Under the final policy, airports are no longer required to submit the results of an ocular analysis to FAA. Instead, the airport must file a Notice of Proposed Construction or Alteration Form 7460-1 that includes a statement that the project will not cause any visual impact. The airport submits the form to the FAA for review and approval (FAA, 2021).



**Figure 16 – Example of Modeled PV Sub-Array Input Parameters**

*Tilt of Tracking Axis* – Elevation angle of the tracking axis in degrees, where 0-degrees is facing skyward, and 90-degrees is facing horizontally. The modules rotate about the tracking axis. 0-degrees was selected as the modules will be facing up.

*Orientation of Tracking Axis* – Orientation of the tracking axis in degrees, measured clockwise from true north. In this case the value was determined to be 180-degrees.

*Offset angle of Module* – The vertical offset angle between the tracking axis and the panel. No offset was selected for the single axis tracker.

*Maximum Tracking Angle* – The maximum angle the panel will rotate in both the clockwise and counterclockwise directions from the zenith (upward) position. The maximum rotation limit currently under consideration is  $\pm 60$ -degrees.

*Rated Power (kW)* – kW power of solar PV plant. No rated power was selected for the proposed size of the solar arrays because the area of panel coverage is the primary factor at this site.

*Module Surface Material* – Type of PV material used and surface finish of panel. According to specifications from the module manufacturers, it was determined that the input ‘Smooth Glass with ARC’ would be the most representative option.

*Reflectivity of PV Module* – The near-normal specular reflectance of PV glass (e.g., with ARC) can be as low as 2-percent, the reflectance can increase as the incidence angle of the sunlight increases (glancing angles). This number is based in part on the array parameters shown in **Figure 12**.

*Slope Error* – Mirror-like surfaces that produce specular reflections will have a slope error closer to zero, while rough surfaces that produce more scattered (diffuse) reflections have higher slope errors. Based on typical values for the module types under consideration, an 8.43 mrad (slope error limit) was used.

*Latitude and Longitude* – The latitude and longitude of the PV array boundary vertices were used to define the area covered by proposed PV array. **Appendix A** provides the coordinates of the perimeter and their map image which also correspond to PV arrays shown in **Exhibit 2**. GlareGauge creates a reflective plane using elevation values of the array for the glare assessment.

*Ground Elevation* – Elevation of vertices above sea level. Values are input into the table once the vertex is located. This is considered the point’s base elevation. This value is used to shape the reflective plane used to estimate glare.

*Height above Ground* – User input to modify/correct vertex elevation above ground. This is defined as ‘PV array installation height above ground.’ Since this Project will use a single axis tracker system the height varies as shown in **Figure 10**.

*Total Elevation* – Calculated after adding the ‘Ground Elevation’ and ‘Height above Ground.’ All units are in feet.

### Observation Point Parameters

OP parameters were receptor points located using GIS software and aerial photographs of the Project Area. Location, elevation, and a calculated field of the receptors were used. For residences, a 5-foot height above ground was used for first floor receptor height and a 15-foot height above ground was used for second floor receptor height (**Appendix A**).

### Flight Path (FP) Parameters

Flight Paths (FP) are straight line landing patterns into the airport. FP parameters were calculated using GIS software and aerial photographs of the Project Area. Location, elevation, and a calculated field of receptors were used. A 50-foot threshold height at the airport and 3-degree glide path above ground was used for receptor height. These parameter units are in feet (**Appendix A**).

Total Elevation – Is calculated after adding the ‘Ground Elevation’ and ‘Height above Ground’ (HaG). All units are in feet.

Ground Elevation – Elevation of OPs above sea level. Values are pulled into the table once the OP is located. This is the point’s base elevation.

Eye level Height above Ground – User input to modify/correct observer’s elevation above ground.

## 5.0 Glare Results

### 5.1 Observation Points (OPs) and Route Segments

Results from the GlareGauge analysis determined that glare occurred most at the OPs, FPs, and Routes when the array rest angle was 0-degrees compared to 5-degrees. Glare is most frequently predicted just after sunrise, when the sun is low on the horizon and viewers are looking east at the arrays, and just before sunset, when the sun is low on the horizon and viewers are looking west at the arrays. This is summarized in **Appendix A** and model output details are in **Appendix B**.

**Table 2** shows number of receptors receiving glare with a six-foot array height having 0-degree and 5-degree rest angles. Since this is a PV project, no red glare is predicted from the arrays modeled at the OPs, routes, or flight paths. Yellow and green glare is minimized if a 5-degree rest angle is used. Glare is similar from a 6-foot array at a 0-degree rest angle.

The predicted glare at each flight path is in compliance with the 2013 FAA guidelines because there is no yellow glare to flight paths or the air traffic control tower in the area. The Project is also in compliance with the 2021 FAA guidance for glare because this Project is not located on a federally obligated airport.



**Table 2 – Number of Receptors Receiving Glare**

Summary for South Platte Glare Analysis						
Number of Components with Glare	Green Glare		Yellow Glare		Red Glare	
	0 DRA	5 DRA	0 DRA	5 DRA	0 DRA	5 DRA
Observation Points (OPs)	30	24	1	-	-	-
Flight Paths (FPs)	2	2	-	-	-	-
Routes	5	4	4	2	-	-

\* PV solar modules do not produce red glare

The glare classifications in reducing severity:

Red Glare (potential for permanent eye damage)

Yellow Glare (potential for producing an after image)

Green Glare (low potential for producing an after-image)

Glare is calculated using line of site elevations and the model does not account for existing vegetation or structures that would reduce the visibility of glare from arrays by physical screening. So the glare is modeled as a conservative scenario since it is likely that buildings and landscaping exist in the area which would reduce seeing glare.

At a resting angle other than 0-degrees, as an observer is further away from the array, the elevation of the reflected sunlight (i.e., glare) is more likely to be above the observer and, thus, not seen. In contrast, at a high angle of reflectance, the elevation of reflected sunlight will likely be above the observer, even at short distances. As the angle of the sun in relation to the solar PV panel increases, the angle of reflection will decrease, and the altitude of reflection will increase. Due to minimum elevation changes between OPs and the angle of the sun in relation to the solar PV arrays, glare will occur at lower elevations during the spring and fall equinox to the west and south of the Project during morning hours, and during the winter solstice in the east during evening hours.

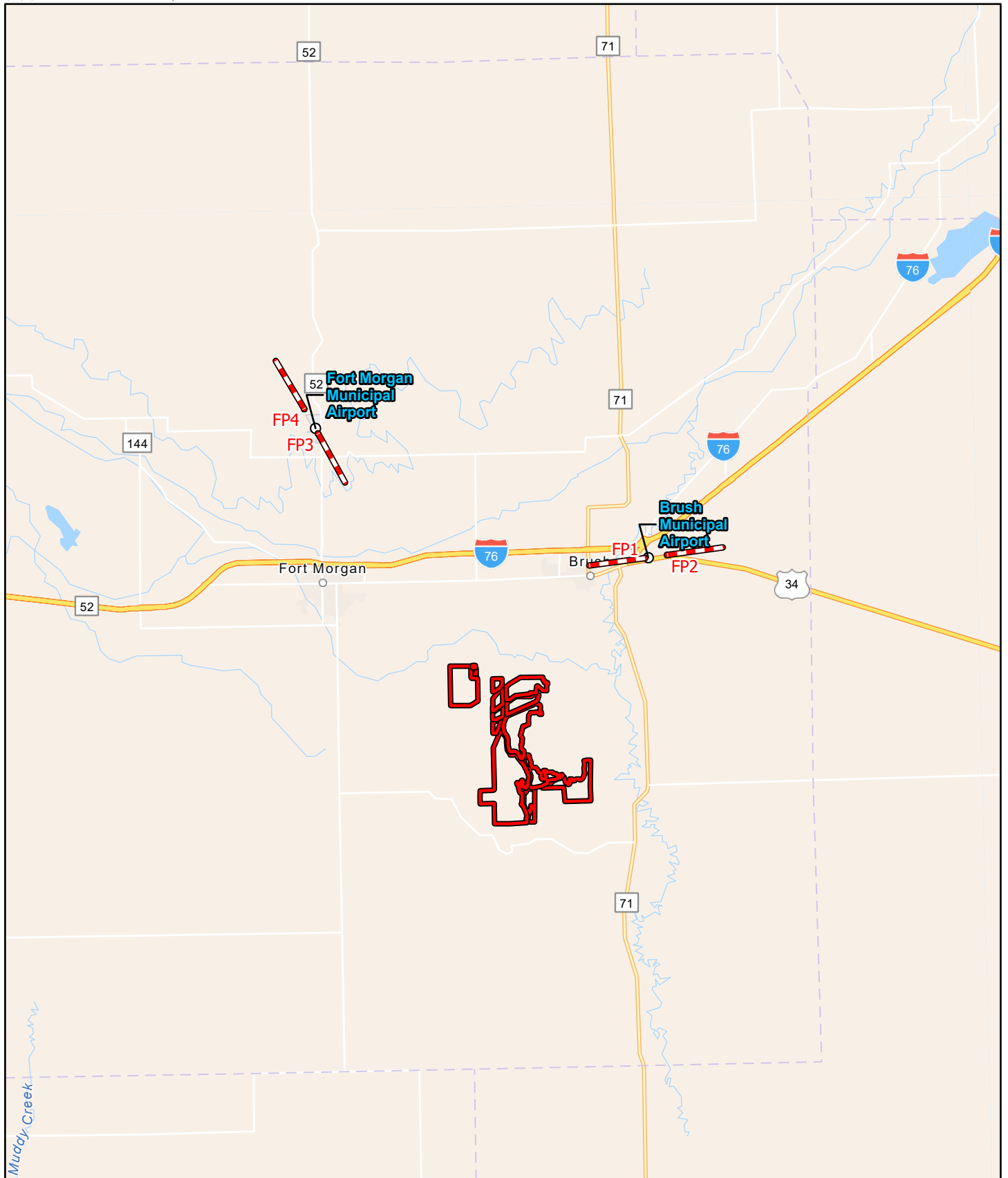
Glare from the Project is not anticipated to raise concerns based on these modeled results, which indicate that none of the OPs would have glare of an intensity to cause permanent impacts. This model incorporates conservative assumptions, including disregarding existing visual screening between the arrays and the OPs. However, if concerns regarding glare arise after the Project is operational, mitigation options may be available including installing vegetation or other screening and adjusting the resting angle of the panels.

## 6.0 References

- Anurag A, Z. J. (2017). General Design Procedures for Airport-Based Solar Photovoltaic Systems. *Energies*, 10 (8) 1194. Retrieved from <https://www.mdpi.com/1996-1073/10/8/1194>
- Capital Solar Farm Visual Impact Assessment. 2010. Available at [https://majorprojects.affinitylive.com/public/a56f5113529f7061acb6de0cb400a52e/Capital%20EA%20Final%201.0%20Appendix%20F\\_compressed-Part4%20.pdf](https://majorprojects.affinitylive.com/public/a56f5113529f7061acb6de0cb400a52e/Capital%20EA%20Final%201.0%20Appendix%20F_compressed-Part4%20.pdf)
- FAA. (2021, May 26). *faa-issues-policy-solar-projects-airports*. Retrieved from United States Department of Transportation, Federal Aviation Administration: <https://www.faa.gov/newsroom/faa-issues-policy-solar-projects-airports>
- Ho, C. K., Ghanbari, C. M., and Diver, R. B., 2011, "Methodology to Assess Potential Glint and Glare Hazards From Concentrating Solar Power Plants: Analytical Models and Experimental Validation", *ASME J. Sol. Energy Eng.*, 133. ([Download](#))
- Lillefair, P.D. 1987. Prediction of reflected solar dazzle from sloping facades. *Building and environment* 22(4):285-291).
- Sandia National Laboratories (Sandia). 2014. Solar Glare Hazard Analysis Tool (SGHAT) User's Manual, Ver 2D. Sandia National Laboratories. 34 pp.
- Stine, W.B. and M. Geyer. 2001. Power from the Sun. e-book Power from the Sun.net.
- US Department of Transportation, F. H. (2022, 05 04). *5.1.4 Recommended Guidelines - FHWA*. Retrieved from [mutcd.fhwa.dot.gov](https://mutcd.fhwa.dot.gov/rpt/tcstoll/chapter514.htm): <https://mutcd.fhwa.dot.gov/rpt/tcstoll/chapter514.htm>

## Exhibits





Data Source(s): Westwood (2023); NAIP Imagery (2021); U.S. Census Bureau (2021).

## Legend

 Project Area

Layer  
Flight Paths

 0

0 2 Miles

**Westwood**

Toll Free (888) 937-5150 [westwoodps.com](http://westwoodps.com)  
Westwood Professional Services, Inc.

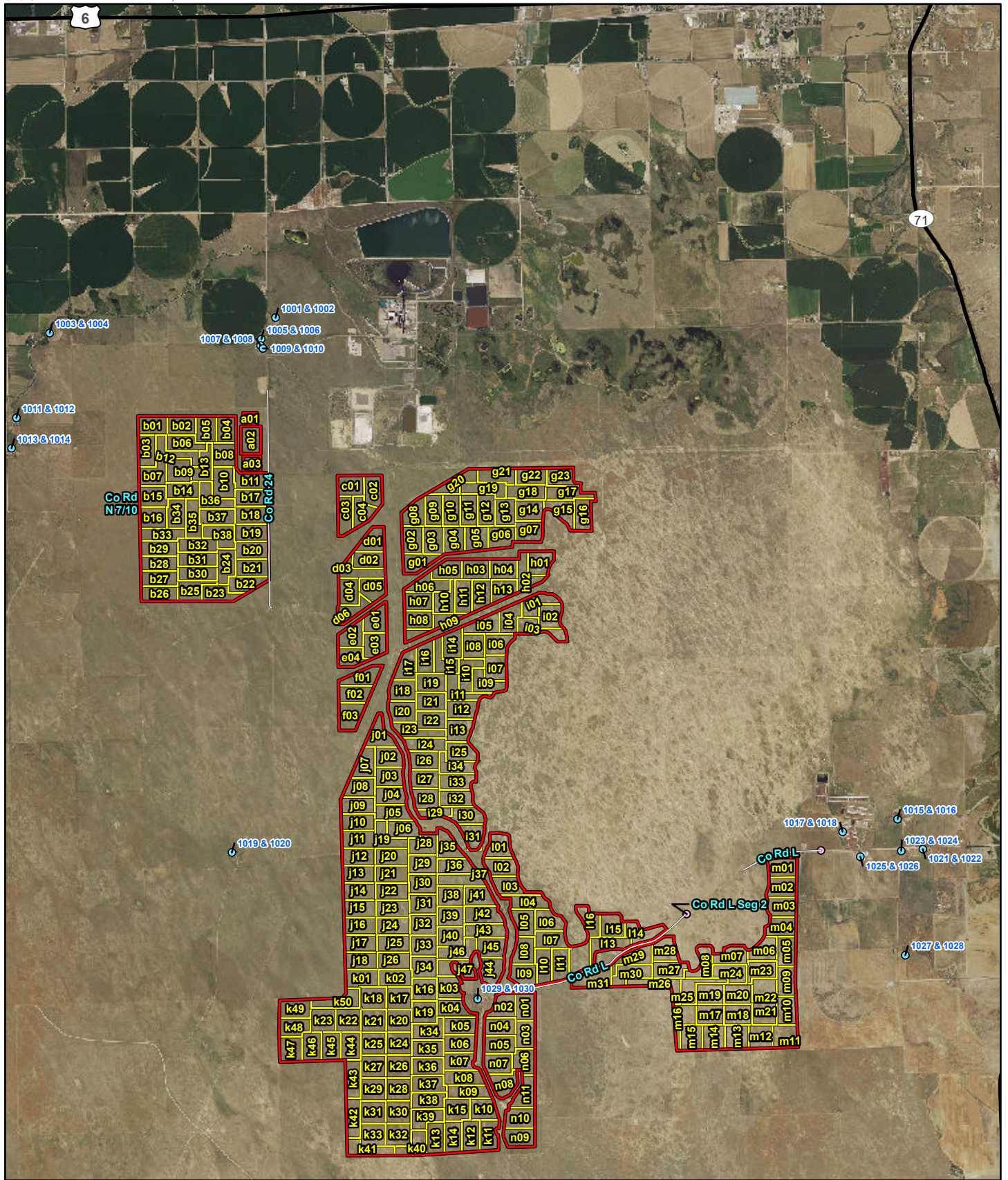
## South Platte Solar Project

Morgan County, Colorado

Site Location &  
Airport Flight Paths



EXHIBIT 1



Data Source(s): Westwood (2023); NAIP Imagery (2021); U.S. Census Bureau (2021).

0 5,500 Feet

**Westwood**

Toll Free (888) 937-5150 westwoodps.com  
Westwood Professional Services, Inc.

## Legend

- Fence Area
- Array Block
- Observation Point

- Route
- Major Road

## South Platte Solar Project

Morgan County, Colorado  
Array Layout  
Glare Modeled  
OPs and Routes



EXHIBIT 2

**Appendix A**  
**Glare Summary Pages**



**Appendix A1**  
**5-Degree Rest Angle 6ft Array Height**  
**Summary**

[illegible]

Arrays a01-b17 with 5 Degree Rest Angle Yellow Glare Min/Yr																						
Component	a01	a02	a03	b01	b02	b03	b04	b05	b06	b07	b08	b09	b10	b11	b12	b13	b14	b15	b16	b17	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	



[illegible]

Arrays b17-b37 with 5 Degree Rest Angle Yellow Glare Min/Yr																					
Component	b18	b19	b20	b21	b22	b23	b24	b25	b26	b27	b28	b29	b30	b31	b32	b33	b34	b35	b36	b37	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	144	2395	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3000	3000
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

[illegible]



[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

Arrays i07-i26 with 5 Degree Rest Angle Green Glare Min/Yr																						
Component	i07	i08	i09	i10	i11	i12	i13	i14	i15	i16	i17	i18	i19	i20	i21	i22	i23	i24	i25	i26	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	2220	-	1191	-	-	-	-	-	-	-	-	-	-	-	-	-	2220	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	483	-	-	-	-	-	-	-	-	-	-	-	-	-	483	
OP 1000	-	-	-	-	-	-	2239	-	-	-	-	-	-	-	-	-	-	-	-	-	2239	
OP 1002	-	-	-	-	-	-	2249	-	-	-	-	-	-	-	-	-	-	-	-	-	2249	
OP 1003	-	-	-	-	-	-	970	-	-	-	-	-	-	-	-	-	-	-	-	-	970	
OP 1004	-	-	-	-	-	-	985	-	-	-	-	-	-	-	-	-	-	-	-	-	985	
OP 1005	-	-	-	-	-	-	1767	-	-	-	-	-	-	-	-	-	-	-	-	-	1767	
OP 1006	-	-	-	-	-	-	1778	-	-	-	-	-	-	-	-	-	-	-	-	-	1778	
OP 1007	-	-	-	-	-	-	1682	-	-	-	-	-	-	-	-	-	-	-	-	-	1682	
OP 1008	-	-	-	-	-	-	1690	-	-	-	-	-	-	-	-	-	-	-	-	-	1690	
OP 1009	-	-	-	-	-	-	1716	-	-	-	-	-	-	-	-	-	-	-	-	-	1716	
OP 1010	-	-	-	-	-	-	1724	-	-	-	-	-	-	-	-	-	-	-	-	-	1724	
OP 1011	-	-	-	-	562	-	554	-	-	-	-	-	-	-	-	-	-	-	-	-	562	
OP 1012	-	-	-	-	568	-	548	-	-	-	-	-	-	-	-	-	-	-	-	-	568	
OP 1013	-	-	-	-	476	-	271	-	-	-	-	-	-	-	-	-	-	-	-	301	476	
OP 1014	-	-	-	-	430	-	277	-	-	-	-	-	-	-	-	-	-	-	-	313	430	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	461	-	3891	-	-	-	-	-	-	-	-	-	-	-	-	-	3891	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	677	-	603	-	-	-	-	-	-	-	-	-	-	-	-	151	677	

[illegible]



[illegible]

Arrays i27-j12 with 5 Degree Rest Angle Yellow Glare Min/Yr																					
Component	i27	i28	i29	i30	i31	i32	i33	i34	j01	j02	j03	j04	j05	j06	j07	j08	j09	j10	j11	j12	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

[illegible]

[illegible]



Arrays j34-k07 with 5 Degree Rest Angle Green Glare Min/Yr																						
Component	j34	j35	j36	j37	j38	j39	j40	j41	j42	j43	j44	j45	j46	k01	k02	k03	k04	k05	k06	k07	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

Arrays j34-k07 with 5 Degree Rest Angle Yellow Glare Min/Yr																						
Component	j34	j35	j36	j37	j38	j39	j40	j41	j42	j43	j44	j45	j46	k01	k02	k03	k04	k05	k06	k07	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

Arrays k08-k29 wit 5 Degree Rest Angle Green Glare Min/Yr																										
Component	k08	k09	k10	k11	k12	k13	k14	k15	k16	k17	k18	k19	k20	k21	k22	k23	k24	k25	k26	k27	k28	k29	Maximum Minutes			
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		

[illegible]



Arrays k30-k50 with 5 Degree Rest Angle Green Glare Min/Yr																					
Component	k30	k31	k32	k33	k34	k35	k36	k37	k38	k39	k40	k41	k42	k43	k45	k46	k47	k48	k49	k50	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

[illegible]

Arrays I01-m04 with 5 Degree Rest Angle Green Glare Min/Yr																						
Component	I01	I02	I03	I04	I05	I06	I07	I08	I09	I10	I11	I12	I13	I14	I15	I16	m01	m02	m03	m04	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

Arrays I01-m04 with 5 Degree Rest Angle Yellow Glare Min/Yr																						
Component	I01	I02	I03	I04	I05	I06	I07	I08	I09	I10	I11	I12	I13	I14	I15	I16	m01	m02	m03	m04	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	



Arrays m05-m24 with 5 Degree Rest Angle Green Glare Min/Yr																					
Component	m05	m06	m07	m08	m09	m10	m11	m12	m13	m14	m15	m16	m17	m18	m19	m20	m21	m22	m23	m24	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

[illegible]

[illegible]

[illegible]



**Appendix A2**  
**0-Degree Rest Angle 6ft Array Height**  
**Summary**

Arrays a01-b17 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	a01	a02	a03	b01	b02	b03	b04	b05	b06	b07	b08	b09	b10	b11	b12	b13	b14	b15	b16	b17	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	450	304	533	1	-	-	-	946	749	-	1062	46	683	1053	-	-	-	-	251	775	1062
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	392	663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	663
OP 1002	-	-	-	452	714	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	714
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	693	-	-	-	-	693
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	787	-	-	-	-	787
OP 1005	-	-	-	531	864	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	864
OP 1006	-	-	-	602	962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	962
OP 1007	-	-	-	522	996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	996
OP 1008	-	-	-	646	1112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1112
OP 1009	-	-	-	585	1107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1107
OP 1010	-	-	-	653	1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1188
OP 1011	-	-	-	-	-	-	-	-	-	1071	-	-	-	-	-	-	-	1048	1	-	1071
OP 1012	-	-	-	-	-	-	-	-	-	1096	-	-	-	-	-	-	-	1113	161	-	1113
OP 1013	-	-	-	-	-	-	-	-	-	635	-	-	-	-	-	-	3	322	507	-	635
OP 1014	-	-	-	-	-	-	-	-	-	660	-	-	-	-	-	-	305	366	653	-	660
OP 1015	-	-	3	-	-	281	8	247	-	-	588	-	-	-	-	-	-	-	-	-	588
OP 1016	-	-	4	-	-	307	9	253	-	-	593	-	-	1	-	-	-	-	-	-	593
OP 1017	-	-	-	-	-	337	-	31	-	-	314	-	-	-	-	-	-	-	-	-	337
OP 1018	-	-	-	-	-	359	-	40	-	-	323	-	-	-	-	-	-	-	-	-	359
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	1	-	-	352	-	162	-	-	508	-	-	-	-	-	-	-	-	-	508
OP 1022	-	-	3	-	-	304	-	197	-	-	511	-	-	1	-	-	-	-	-	-	511
OP 1023	-	-	-	-	-	346	-	84	-	-	429	-	-	-	-	-	-	-	-	-	429
OP 1024	-	-	-	-	-	343	-	128	-	-	430	-	-	-	-	-	-	-	-	-	430
OP 1025	-	-	-	-	-	300	-	-	-	-	194	-	-	-	-	-	-	-	-	-	300
OP 1026	-	-	-	-	-	304	-	-	-	-	197	-	-	-	-	-	-	-	-	-	304
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	215	-	-	-	-	24	-	-	-	-	-	-	-	-	-	215
Route: Co Rd N 7/10	-	283	-	-	-	-	-	-	-	808	-	-	-	-	89	-	-	-	-	-	808

Arrays a01-b17 with 0 Degree Rest Angle Yellow Glare Min/Yr																					
Component	a01	a02	a03	b01	b02	b03	b04	b05	b06	b07	b08	b09	b10	b11	b12	b13	b14	b15	b16	b17	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

Arrays b17-b37 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	b18	b19	b20	b21	b22	b23	b24	b25	b26	b27	b28	b29	b30	b31	b32	b33	b34	b35	b36	b37	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	607	483	597	292	422	985	982	651	351	256	86	290	777	927	886	-	-	779	836	545	985
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3292	3292
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3342	3342
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	669	669
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	680	680
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3733	3733
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3807	3807
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3706	3706
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3784	3784
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3566	3566
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3645	3645
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	409	-	-	-	409
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	449	-	-	254	449
OP 1013	-	-	-	-	-	-	-	-	-	-	-	285	-	-	-	-	30	-	-	69	285
OP 1014	-	-	-	-	-	-	-	-	-	-	-	387	-	-	-	-	47	-	-	-	387
OP 1015	312	268	-	-	-	1	397	-	-	-	-	-	297	300	335	-	-	27	411	-	411
OP 1016	222	298	-	-	-	1	411	-	-	-	-	-	305	309	345	-	-	35	459	-	459
OP 1017	282	408	-	-	-	-	515	-	-	-	-	-	325	390	417	-	-	61	425	-	515
OP 1018	325	401	-	-	-	1	487	-	-	-	-	-	337	301	410	-	-	70	412	-	487
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	375	301	-	-	-	-	435	-	-	-	-	-	295	331	355	-	-	38	510	-	510
OP 1022	320	381	-	-	-	-	448	-	-	-	-	-	328	345	370	-	-	47	485	-	485
OP 1023	338	413	-	-	-	1	421	-	-	-	-	-	336	365	407	-	-	56	502	-	502
OP 1024	362	398	-	-	-	2	470	-	-	-	-	-	338	370	395	-	-	55	356	-	470
OP 1025	218	273	-	-	-	-	537	-	-	-	-	-	380	434	425	-	-	66	361	-	537
OP 1																					



Arrays b17-b37 with 0 Degree Rest Angle Yellow Glare Min/Yr																					
Component	b18	b19	b20	b21	b22	b23	b24	b25	b26	b27	b28	b29	b30	b31	b32	b33	b34	b35	b36	b37	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	144	2395	-	-	191	-	-	-	-	-	-	2	-	-	-	-	-	-	1790	2395
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

Arrays b38-g02 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	b38	c01	c02	c03	c04	d01	d02	d03	d04	d05	d06	e01	e02	e03	e04	f01	f02	f03	q01	q02	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	153	583	-	664	841	637	585	990	628	469	-	652	-	-	-	162	-	-	7	46	990
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1705	-	-	-	-	-	1705
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1713	-	-	-	2	-	1713
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1416	-	-	-	144	-	1416
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1482	-	-	-	138	-	1482
OP 1015	-	-	-	-	572	-	567	426	-	-	-	373	-	-	-	136	78	-	-	3	572
OP 1016	-	-	-	-	570	-	484	430	-	1	-	322	-	-	-	191	90	-	-	123	570
OP 1017	-	-	-	-	43	-	371	515	-	-	-	496	-	-	-	2	-	-	-	7	515
OP 1018	-	-	-	-	44	-	405	525	-	-	-	531	-	-	-	4	1	-	-	10	531
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	422	-	536	576	1	-	-	405	-	-	-	188	77	-	-	117	576
OP 1022	-	-	-	-	425	-	506	616	1	2	-	418	-	-	-	123	118	1	-	73	616
OP 1023	-	-	-	-	252	-	491	522	-	1	-	457	-	-	-	5	88	-	-	66	522
OP 1024	-	-	-	-	255	-	493	594	1	3	-	464	-	-	-	244	115	1	-	66	594
OP 1025	-	-	-	-	-	-	333	349	-	-	-	649	-	-	-	-	2	-	-	-	649
OP 1026	-	-	-	-	-	-	312	408	-	1	-	596	-	-	-	2	74	-	-	-	596
OP 1027	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	-	139	1	-	-	139
OP 1028	-	-	-	-	-	-	-	-	-	-	-	104	-	-	-	-	186	1	-	-	186
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	192	-	-	-	-	-	-	-	-	-	-	-	-	-	2475	5	-	-	189	6	2475
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	80	188	-	-	-	435	-	-	-	-	1	-	-	-	435
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2239	-	-	-	203	102	2239

[illegible]

Arrays g03-g22 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	g03	g04	g05	g06	g07	g08	g09	g10	g11	g12	g13	g14	g15	g16	g17	g18	g19	g20	g21	g22	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	364	291	-	18	828	289	662	95	-	366	-	-	-	-	-	2522	1158	-	2522
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	321	-	-	787	-	1138	-	1138
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	308	-	-	800	-	1145	-	1145
OP 1003	-	-	-	-	-	946	-	-	-	260	153	-	-	4	-	-	307	-	373	-	946
OP 1004	-	-	-	-	-	956	-	-	-	313	144	-	-	134	-	-	214	-	374	-	956
OP 1005	-	-	-	-	-	-	-	-	-	184	95	-	-	431	-	-	1403	-	1390	-	1403
OP 1006	-	-	-	-	-	-	-	-	-	176	107	-	-	435	-	-	1512	-	1400	-	1512
OP 1007	-	-	-	-	-	-	-	-	-	350	161	-	-	500	-	-	1604	-	1258	-	1604
OP 1008	-	-	-	-	-	-	-	-	-	347	172	-	-	477	-	-	1629	-	1267	-	1629
OP 1009	-	-	-	-	-	-	-	-	-	380	128	-	-	491	-	-	1633	-	1241	-	1633
OP 1010	-	-	-	-	-	-	-	-	-	380	157	-	-	471	-	-	1660	-	1251	-	1660
OP 1011	3	-	-	-	-	498	-	-	-	254	236	-	-	209	-	-	120	-	221	-	498
OP 1012	5	-	-	-	-	503	-	-	-	247	245	-	-	167	-	-	154	-	223	-	503
OP 1013	233	-	-	-	-	442	-	-	-	252	266	-	-	221	-	-	125	-	181	-	442
OP 1014	204	-	-	-	-	457	-	-	-	271	263	-	-	242	-	-	129	-	183	-	457
OP 1015	-	-	95	-	-	-	42	-	-	-	-	-	-	-	-	-	-	-	-	-	95
OP 1016	-	-	96	-	-	-	43	-	-	-	-	-	-	-	-	-	-	-	-	-	96
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73
OP 1022	-	147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	147
OP 1023	-	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85
OP 1024	-	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	114	-	-	-	-	-	-	-	-	-	32	-	-	257	19	-	-	-	-	-	257
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	372	-	-	-	-	494	-	82	-	316	324	-	-	304	49	-	109	-	67	-	494



[illegible]

Arrays g23-i06 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	g23	h01	h02	h03	h04	h05	h06	h07	h08	h09	h10	h11	h12	h13	i01	i02	i03	i04	i05	i06	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	346	-	19	285	-	-	-	123	-	232	-	1227	-	-	-	-	-	1227
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	843	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	843
OP 1000	-	2792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2792
OP 1002	-	2811	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2811
OP 1003	-	183	-	-	446	-	-	-	-	-	2	-	-	258	466	-	-	-	-	-	466
OP 1004	-	192	-	-	338	-	47	-	-	-	66	-	-	277	407	-	-	-	-	-	407
OP 1005	-	2111	-	-	-	-	-	-	-	-	-	-	-	-	272	-	-	-	-	-	2111
OP 1006	-	2131	-	-	-	-	-	-	-	-	-	-	-	-	275	-	-	-	-	-	2131
OP 1007	-	1855	-	-	-	-	-	-	-	-	-	-	-	-	334	-	-	-	-	-	1855
OP 1008	-	1879	-	-	-	-	-	-	-	-	-	-	-	-	338	-	-	-	-	-	1879
OP 1009	-	1840	-	-	-	-	-	-	-	-	-	-	-	-	338	-	-	-	-	-	1840
OP 1010	-	1852	-	-	-	-	-	-	-	-	-	-	-	-	344	-	-	-	-	-	1852
OP 1011	-	-	-	-	179	-	-	-	-	-	-	-	-	-	231	-	-	-	-	-	231
OP 1012	-	-	-	-	168	-	-	-	-	-	1	-	-	87	217	-	-	-	-	-	217
OP 1013	-	-	-	-	181	-	-	-	-	-	-	-	-	51	164	-	-	-	-	-	181
OP 1014	-	-	-	-	171	-	-	-	-	-	1	-	-	84	187	-	-	-	-	-	187
OP 1015	-	-	-	455	-	433	-	-	382	-	-	-	677	-	-	-	-	615	981	-	981
OP 1016	-	-	-	460	-	599	-	-	373	-	-	-	683	-	-	-	-	628	1005	-	1005
OP 1017	-	-	-	-	-	95	-	-	592	-	-	-	197	-	-	-	-	113	643	-	643
OP 1018	-	-	-	-	-	49	-	-	590	-	-	-	205	-	-	-	-	142	588	-	590
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	292	-	450	-	-	459	-	-	-	539	-	-	-	-	479	870	-	870
OP 1022	-	-	-	294	-	473	-	-	479	-	-	-	544	-	-	-	-	485	874	-	874
OP 1023	-	-	-	77	-	184	-	-	515	-	-	-	394	-	-	-	-	323	765	-	765
OP 1024	-	-	-	77	-	338	-	-	584	-	-	-	415	-	-	-	-	326	773	-	773
OP 1025	-	-	-	-	-	-	-	-	509	-	-	-	13	-	-	-	-	-	387	-	509
OP 1026	-	-	-	-	-	-	-	-	515	-	-	-	15	-	-	-	-	-	416	-	515
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	256	-	-	185	27	21	-	-	-	94	204	-	82	415	-	-	-	-	-	415
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	375	-	-	-	-	-	-	-	-	-	65	-	375
Route: Co Rd N 7/10	-	-	-	-	177	-	78	-	-	-	141	-	-	95	188	-	-	-	-	-	188

[illegible]

Arrays i07-i26 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	i07	i08	i09	i10	i11	i12	i13	i14	i15	i16	i17	i18	i19	i20	i21	i22	i23	i24	i25	i26	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	1283	-	1326	141	1188	-	-	-	-	-	-	-	-	-	-	-	-	385	1326
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	344	-	-	-	-	-	-	-	-	-	-	-	-	-	344
OP 1000	-	-	-	-	-	-	2241	-	-	-	-	-	-	-	-	-	-	-	-	-	2241
OP 1002	-	-	-	-	-	-	2259	-	-	-	-	-	-	-	-	-	-	-	-	-	2259
OP 1003	-	-	-	-	-	-	342	-	-	-	-	-	-	-	-	-	-	-	-	-	342
OP 1004	-	-	-	-	-	-	343	-	-	-	-	-	-	-	-	-	-	-	-	-	343
OP 1005	-	-	-	-	-	-	1755	-	-	-	-	-	-	-	-	-	-	-	-	-	1755
OP 1006	-	-	-	-	-	-	1777	-	-	-	-	-	-	-	-	-	-	-	-	-	1777
OP 1007	-	-	-	-	-	-	1680	-	-	-	-	-	-	-	-	-	-	-	-	-	1680
OP 1008	-	-	-	-	-	-	1691	-	-	-	-	-	-	-	-	-	-	-	-	-	1691
OP 1009	-	-	-	-	-	-	1713	-	-	-	-	-	-	-	-	-	-	-	-	-	1713
OP 1010	-	-	-	-	-	-	1726	-	-	-	-	-	-	-	-	-	-	-	-	-	1726
OP 1011	-	-	-	433	577	-	717	218	450	303	-	669	-	-	187	-	-	-	-	203	717
OP 1012	-	-	-	545	409	-	719	278	441	359	-	688	-	-	189	-	-	-	-	187	719
OP 1013	-	-	-	378	415	-	847	155	451	410	-	595	-	-	388	-	-	-	-	424	847
OP 1014	-	-	-	567	467	-	856	183	439	413	-	645	-	-	394	-	-	-	-	469	856
OP 1015	-	563	-	-	-	-	-	-	-	-	224	-	323	-	-	1	-	-	232	-	563
OP 1016	-	600	-	-	-	-	-	-	-	-	235	-	325	-	-	2	-	-	235	-	600
OP 1017	-	775	-	-	-	-	-	-	-	-	310	-	386	-	-	-	-	-	267	-	775
OP 1018	-	815	-	-	-	-	-	-	-	-	325	-	401	-	-	1	-	-	266	-	815
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	9	-	-	-	87
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	8	-	-	-	133
OP 1021	-	793	-	-	-	-	-	-	-	-	258	-	351	-	-	1	-	-	252	-	793
OP 1022	-	847	-	-	-	-	-	-	-	-	273	-	355	-	-	2	-	-	260	-	847
OP 1023	-	823	-	-	-	-	-	-	-	-	256	-	375	-	-	1	-	-	262	-	823
OP 1024	-	852	-	-	-	-	-	-	-	-	297	-	373	-	-	1	-	-	272	-	852
OP 1025	-	678	-	-	-	-	-	-	-	-	398	-	448	-	-	-	-	-	292	-	678
OP 1026	-	685	-	-	-	-	-	-	-	-	398	-	459	-	-	1	-	-	304	-	685
OP 1027	-	-	-	-	-	-	-	-	-	-	214	-	453	-	-	3	-	-	816	-	816
OP 1028	-	-	-	-	-	-	-	-	-	-	236	-	507	-	-	5	-	-	830	-	830
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	587	497	-	3280	250	364	406	-	1212	-	69	551	-	-	-	-	-	3280
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	438	-	-	-	-	-	-	-	-	563	-	840	-	-	-	-	-	494	-	840
Route: Co Rd N 7/10	-	-	-	771	558	-	1048	258	535	486	-	977	-	-	426	-	-	-	-	281	1048



[illegible]

[illegible]

Arrays i27-j12 with 0 Degree Rest Angle Yellow Glare Min/Yr																					
Component	i27	i28	i29	i30	i31	i32	i33	i34	j01	j02	j03	j04	j05	j06	j07	j08	j09	j10	j11	j12	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

Arrays j13-j33 with 0 Degree Rest Angle Green Glare Min/Yr																							
Component	j13	j14	j15	j16	j17	j18	j19	j20	j21	j22	j23	j24	j25	j26	j27	j28	j29	j30	j31	j32	j33	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	135	-	-	-	109	155	-	-	217	239	245	238	246	271	100	-	-	-	-	-	28	271	
OP 1016	137	-	-	-	168	194	-	-	217	243	246	245	266	280	110	-	-	-	-	-	31	280	
OP 1017	105	-	-	-	113	164	-	-	218	248	251	241	270	288	96	-	-	-	-	-	27	288	
OP 1018	154	-	-	-	165	229	-	1	218	250	253	241	272	290	100	-	-	-	-	-	33	290	
OP 1019	-	-	406	294	140	-	282	-	-	-	-	-	-	-	-	145	-	-	-	-	-	406	
OP 1020	-	-	441	309	150	-	285	1	-	-	-	-	-	1	-	147	-	-	-	-	-	441	
OP 1021	123	-	-	-	118	164	-	89	181	225	230	231	243	253	90	-	-	-	-	-	12	253	
OP 1022	158	-	-	-	133	119	-	85	215	227	229	228	246	256	98	-	-	-	-	-	16	256	
OP 1023	131	-	-	-	149	166	-	77	196	228	232	230	235	255	90	-	-	-	-	-	14	255	
OP 1024	187	-	-	-	118	179	-	120	215	232	233	231	247	258	96	-	-	-	-	-	17	258	
OP 1025	92	-	-	-	91	134	-	-	214	237	237	236	249	264	82	-	-	-	-	-	14	264	
OP 1026	140	-	-	-	146	176	-	93	218	238	237	238	253	268	91	-	-	-	-	-	16	268	
OP 1027	122	1	-	-	79	90	-	177	255	242	238	233	221	209	64	-	-	-	-	-	-	255	
OP 1028	171	2	-	-	89	125	-	221	258	247	240	234	226	206	84	-	-	-	-	-	1	258	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	89	89	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	588	14	-	-	-	-	-	-	231	588	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	571	884	1005	1197	1342	1314	577	-	302	-	-	207	-	47	1342	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	491	719	710	629	584	566	561	-	-	-	-	-	-	1	719	
Route: Co Rd L Segment 3	55	-	-	-	-	207	-	-	283	269	315	305	323	344	71	-	-	-	-	-	34	344	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

[illegible]



Arrays j34-k07 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	j34	j35	j36	j37	j38	j39	j40	j41	j42	j43	j44	j45	j46	k01	k02	k03	k04	k05	k06	k07	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	385	-	-	-	-	-	-	-	-	-	385
OP 1012	-	-	-	-	-	-	-	-	-	-	386	-	-	-	-	-	-	-	-	-	386
OP 1013	-	-	-	-	-	-	-	-	-	-	468	-	-	-	-	-	-	-	-	-	468
OP 1014	-	-	-	-	-	-	-	-	-	-	469	-	-	-	-	-	-	-	-	-	469
OP 1015	-	-	-	-	283	-	-	-	-	-	-	-	-	-	123	267	250	420	482	-	482
OP 1016	-	-	-	-	286	-	-	-	-	-	-	-	-	-	136	239	327	422	434	-	434
OP 1017	-	-	-	-	292	-	-	-	-	-	-	-	-	-	-	300	370	511	556	-	556
OP 1018	-	-	-	-	290	-	-	-	-	-	-	-	-	-	4	282	368	498	694	-	694
OP 1019	-	-	-	8	-	97	-	-	-	-	1103	-	-	-	-	-	7	-	-	-	1103
OP 1020	-	-	-	10	-	104	-	-	-	-	1110	-	-	-	-	-	5	-	-	-	1110
OP 1021	-	-	-	-	260	-	-	-	-	-	-	-	-	-	148	235	263	325	307	-	325
OP 1022	-	-	-	-	263	91	-	-	-	-	-	-	-	-	183	233	290	320	360	-	360
OP 1023	-	-	-	-	263	-	-	-	-	-	-	-	-	-	195	207	304	285	372	-	372
OP 1024	-	-	-	-	263	76	-	-	-	-	-	-	-	-	128	238	281	348	373	-	373
OP 1025	-	-	-	-	234	-	-	-	-	-	-	-	-	-	156	194	299	381	320	-	381
OP 1026	-	-	-	-	273	-	-	-	-	-	-	-	-	-	182	227	360	386	403	-	403
OP 1027	-	-	380	108	246	3	-	-	-	-	-	-	-	47	198	184	234	220	254	-	380
OP 1028	-	-	392	114	240	98	-	-	-	-	-	-	-	49	202	187	218	238	236	-	392
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	16	728	693	-	-	461	-	-	728
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	58	810	924	1144	1686	656	-	-	1686
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	88	596	-	-	-	-	-	-	-	-	178	371	589	-	616	878	845	-	878
Route: Co Rd L Segment 2	-	-	2190	3	685	-	-	-	-	-	-	-	-	15	9	19	401	733	878	-	2190
Route: Co Rd L Segment 3	-	-	-	-	370	-	-	-	-	-	-	-	-	-	2	243	553	839	793	-	839
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	343	-	-	-	-	-	-	-	-	-	343

Arrays j34-k07 with 0 Degree Rest Angle Yellow Glare Min/Yr																						
Component	j34	j35	j36	j37	j38	j39	j40	j41	j42	j43	j44	j45	j46	k01	k02	k03	k04	k05	k06	k07	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1087	319	-	-	-	1087	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	-	378	-	-	-	19	218	-	-	378	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

Arrays k08-k29 wit 0 Degree Rest Angle Green Glare Min/Yr																										
Component	k08	k09	k10	k11	k12	k13	k14	k15	k16	k17	k18	k19	k20	k21	k22	k23	k24	k25	k26	k27	k28	k29	Maximum Minutes			
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1015	715	5	-	-	335	-	-	1197	357	-	-	373	260	3	319	-	291	-	-	130	415	379	1197			
OP 1016	717	6	-	-	340	-	-	1202	360	-	-	379	319	146	322	-	331	-	-	166	414	399	1202			
OP 1017	606	-	-	-	-	-	-	1015	384	-	-	407	298	3	346	-	270	-	-	142	495	492	1015			
OP 1018	627	2	-	-	-	-	-	1031	387	-	-	413	331	126	348	-	347	-	-	143	532	493	1031			
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
OP 1021	468	1	-	-	657	-	-	759	306	-	-	322	227	7	291	-	299	-	-	151	252	300	759			
OP 1022	463	204	-	-	665	-	-	807	316	-	-	325	283	87	292	-	254	-	-	139	281	282	807			
OP 1023	526	4	-	-	592	-	-	808	318	-	-	331	267	6	296	-	272	-	-	146	264	314	808			
OP 1024	530	57	-	-	598	-	-	909	323	-	-	330	276	132	303	-	307	-	1	184	290	299	909			
OP 1025	727	4	-	-	441	-	-	1216	337	-	-	351	279	3	309	-	330	-	-	147	346	329	1216			
OP 1026	733	3	-	-	449	-	-	1227	337	-	-	353	273	5	313	-	316	-	-	141	348	343	1227			
OP 1027	281	96	-	-	406	-	-	455	268	-	-	270	202	-	252	-	257	-	-	129	188	169	455			
OP 1028	146	104	-	-	413	-	-	445	273	-	-	270	178	-	254	-	260	-	-	146	183	199	445			
OP 1029	-	-	-	-	-	-	-	-	1784	-	-	1564	-	-	534	-	-	-	-	-	271	-	1784			
OP 1030	-	-	-	-	-	-	-	-	1942	-	-	1710	-	-	555	-	916	-	-	317	-	299	1942			
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
Route: Co Rd L Segment 1	344	-	-	-	-	-	-	3	924	-	-	964	-	-	512	-	583	-	-	-	567	726	964			
Route: Co Rd L Segment 2	534	-	-	-	-	-	-	644	710	-	-	614	-	-	535	-	435	-	-	-	589	701	710			
Route: Co Rd L Segment 3	647	-	-	-	-	-	-	972	495	-	-	559	190	3	423	-	507	-	-	4	569	691	972			
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			

[illegible]

Arrays k30-k50 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	k30	k31	k32	k33	k34	k35	k36	k37	k38	k39	k40	k41	k42	k43	k45	k46	k47	k48	k49	k50	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	428	-	269	72	9	-	1130	937	-	-	-	-	331	66	-	-	1130
OP 1016	-	-	-	-	429	-	251	75	433	-	1022	940	-	-	-	-	335	62	-	-	1022
OP 1017	-	-	-	-	466	-	234	116	8	-	972	876	-	-	-	-	352	63	-	-	972
OP 1018	-	-	-	-	487	-	366	135	352	-	996	881	-	-	-	-	354	69	-	-	996
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	306	-	166	41	220	-	665	672	-	-	-	-	293	62	-	-	672
OP 1022	-	-	-	-	322	1	216	44	226	-	777	655	-	-	-	-	297	58	-	-	777
OP 1023	-	-	-	-	333	-	175	45	227	-	952	746	-	-	-	-	306	60	-	-	952
OP 1024	-	-	-	-	297	-	230	49	323	-	978	737	-	-	-	-	307	62	-	-	978
OP 1025	-	-	-	-	374	-	244	40	5	-	1132	971	-	-	-	-	319	60	-	-	1132
OP 1026	-	-	-	-	361	-	225	60	374	-	1149	975	-	-	-	-	322	66	-	-	1149
OP 1027	-	-	-	-	208	-	98	7	1	-	446	375	-	-	-	-	252	58	-	-	446
OP 1028	-	-	-	-	253	-	102	11	213	-	470	402	-	-	-	-	253	62	-	-	470
OP 1029	-	-	-	-	1053	-	-	-	-	-	-	-	-	-	-	-	482	79	-	38	1053
OP 1030	-	-	-	-	1243	-	-	-	-	-	-	-	-	-	-	-	498	96	-	55	1243
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	-	-	-	1018	-	-	23	-	-	-	608	-	-	-	-	500	81	-	-	1018
Route: Co Rd L Segment 2	-	-	-	-	670	-	7	128	-	-	481	771	-	-	-	-	502	101	-	-	771
Route: Co Rd L Segment 3	-	-	-	-	737	-	404	175	-	-	813	854	-	-	-	-	434	82	-	-	854
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0



[illegible]

Arrays I01-m04 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	I01	I02	I03	I04	I05	I06	I07	I08	I09	I10	I11	I12	I13	I14	I15	I16	m01	m02	m03	m04	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	-	-	192
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	184	-	-	184
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	173	16	-	173
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	191	16	-	191
OP 1015	-	-	-	330	-	-	-	-	363	455	2	-	393	-	418	-	-	-	-	268	455
OP 1016	-	-	-	336	-	-	-	-	442	502	5	-	501	-	431	-	-	-	7	285	502
OP 1017	-	-	-	325	-	-	-	-	495	511	3	-	495	-	509	-	-	-	-	-	511
OP 1018	-	-	-	360	-	-	-	-	467	574	6	-	604	-	508	-	-	-	-	-	604
OP 1019	-	-	-	-	-	-	45	-	-	6	141	-	-	-	-	-	-	95	-	-	141
OP 1020	-	-	-	-	-	-	59	-	-	7	144	-	-	-	-	-	-	97	-	-	144
OP 1021	-	-	-	150	-	-	-	-	307	351	4	-	329	-	323	-	-	-	-	1525	1525
OP 1022	-	-	-	165	-	-	-	-	355	442	99	-	373	-	334	-	-	-	7	1555	1555
OP 1023	-	-	-	168	-	-	-	-	374	351	3	-	373	-	342	-	-	-	-	1390	1390
OP 1024	-	-	-	166	-	-	-	-	383	397	118	-	386	-	352	-	-	-	788	1435	1435
OP 1025	-	-	-	156	-	-	-	-	404	498	2	-	430	-	378	-	-	-	-	801	801
OP 1026	-	-	-	178	-	-	-	-	370	503	4	-	455	-	396	-	-	-	754	845	845
OP 1027	-	-	-	-	-	-	-	-	263	234	1	-	204	-	277	-	-	-	-	486	486
OP 1028	-	-	-	-	-	-	-	-	249	255	109	-	232	-	282	-	-	-	715	544	715
OP 1029	-	-	-	-	-	-	701	-	-	-	304	-	-	759	-	-	-	294	-	-	759
OP 1030	-	-	-	-	-	-	739	-	-	-	349	-	-	703	-	-	-	306	-	-	739
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	38	-	275
Route: Co Rd L Segment 1	-	-	-	-	-	-	476	-	589	-	111	-	-	641	-	-	-	779	-	-	779
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	985	16	-	-	1008	247	655	-	-	925	-	-	1008
Route: Co Rd L Segment 3	-	-	-	353	-	-	-	-	705	893	-	-	960	-	891	-	-	100	-	-	960
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	283	23	-	283

Arrays I01-m04 with 0 Degree Rest Angle Yellow Glare Min/Yr																						
Component	I01	I02	I03	I04	I05	I06	I07	I08	I09	I10	I11	I12	I13	I14	I15	I16	m01	m02	m03	m04	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	1923	-	232	-	-	295	-	-	-	-	-	-	1923	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	737	751	1518	-	-	82	-	-	1518	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	131	-	-	131	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

Arrays m05-m24 with 0 Degree Rest Angle Green Glare Min/Yr																					
Component	m05	m06	m07	m08	m09	m10	m11	m12	m13	m14	m15	m16	m17	m18	m19	m20	m21	m22	m23	m24	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	-	172
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	-	170
OP 1013	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	431	-	431
OP 1014	-	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	422	-	422
OP 1015	-	1101	-	620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1101
OP 1016	-	1151	-	678	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1151
OP 1017	-	-	-	398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	398
OP 1018	-	-	-	491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	491
OP 1019	2	-	-	12	-	-	-	2	412	77	-	453	89	334	81	366	125	111	425	-	453
OP 1020	2	-	-	12	-	-	-	59	408	91	-	454	91	334	80	366	121	105	426	-	454
OP 1021	671	867	-	569	-	-	-	-	-	-	22	-	282	-	-	-	-	-	-	-	867
OP 1022	685	876	-	596	-	-	-	-	-	-	95	-	288	-	-	-	-	-	-	-	876
OP 1023	283	1385	-	582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1385
OP 1024	388	1430	-	737	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1430
OP 1025	-	1346	-	660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1346
OP 1026	-	1408	-	870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408
OP 1027	535	2	-	-	592	1236	720	-	-	-	350	-	382	-	-	-	-	-	-	149	1236
OP 1028	646	9	-	-	660	1269	771	5	-	-	444	-	346	-	-	-	3	-	-	204	1269
OP 1029	-	-	-	-	-	-	-	-	406	1	-	440	-	312	63	356	2	3	322	2	440
OP 1030	-	-	-	-	-	-	-	-	417	86	-	453	-	315	80	356	78	70	410	41	453
Route: Co Rd 24	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	332	-	332
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	1444	2	-	1284	-	1069	4	894	3	3	777	2	1444
Route: Co Rd L Segment 2	-	-	-	2	-	-	-	-	46	-	-	-	-	850	-	1145	-	-	1448	-	1448
Route: Co Rd L Segment 3	-	-	-	260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260
Route: Co Rd N 7/10	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	286	-	286

Arrays m05-m24 with 0 Degree Rest Angle Yellow Glare Min/Yr																						
Component	m05	m06	m07	m08	m09	m10	m11	m12	m13	m14	m15	m16	m17	m18	m19	m20	m21	m22	m23	m24	Maximum Minutes	
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd L Segment 1	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4	
Route: Co Rd L Segment 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	-	-	18	-	148	
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	



Arrays m25-n11 with 0 Degree Rest Angle Green Glare Min/Yr																			
Component	m25	m26	m27	m28	m29	m30	m31	n01	n02	n03	n04	n05	n06	n07	n08	n09	n10	n11	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	170	89	477	-	225	1120	-	-	-	1427	-	1427
OP 1016	-	-	-	-	-	-	2	172	155	467	-	250	1093	-	-	-	1432	-	1432
OP 1017	-	-	-	-	-	-	-	191	178	385	-	269	950	-	-	-	907	-	950
OP 1018	-	-	-	-	-	-	4	323	187	404	-	313	956	-	-	-	913	-	956
OP 1019	65	23	-	-	-	-	80	366	-	229	182	102	125	-	-	-	-	-	366
OP 1020	70	24	-	-	-	-	93	382	-	208	205	107	124	-	-	-	-	-	382
OP 1021	-	-	-	-	-	-	-	107	109	276	-	130	770	-	-	-	1533	-	1533
OP 1022	-	-	-	-	-	-	1	158	129	297	-	162	706	-	-	-	1545	-	1545
OP 1023	-	-	-	-	-	-	-	112	127	298	-	140	802	-	-	-	1658	-	1658
OP 1024	-	-	-	-	-	-	1	151	128	316	-	155	869	-	-	-	1665	-	1665
OP 1025	-	-	-	-	-	-	-	3	117	314	-	135	1211	-	-	-	1533	-	1533
OP 1026	-	-	-	-	-	-	1	132	143	426	-	183	1136	-	-	-	1561	-	1561
OP 1027	-	-	-	-	-	1	-	-	114	176	-	-	399	-	-	-	565	-	565
OP 1028	-	-	-	-	-	5	-	1	122	204	-	-	441	-	-	-	574	-	574
OP 1029	81	118	-	-	84	5	-	706	-	3	-	-	-	-	-	-	-	-	706
OP 1030	97	133	-	-	86	6	-	898	-	397	290	-	-	-	-	-	-	-	898
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	134	122	-	-	298	24	412	95	-	-	-	-	-	-	-	-	-	-	412
Route: Co Rd L Segment 2	-	-	-	-	34	-	242	-	34	312	-	6	341	-	-	-	-	-	341
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	7	258	436	-	214	746	-	-	-	919	-	919
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

Arrays m25-n11 with 0 Degree Rest Angle Yellow Glare Min/Yr																			
Component	m25	m26	m27	m28	m29	m30	m31	n01	n02	n03	n04	n05	n06	n07	n08	n09	n10	n11	Maximum Minutes
FP 1 Brush 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 2 Brush 250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 3 Ft Morgan 320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
FP 4 Ft Morgan 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
OP 1030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd L Segment 1	-	5	-	-	78	-	2269	585	-	-	-	-	-	-	-	-	-	-	2269
Route: Co Rd L Segment 2	-	-	-	-	-	-	865	-	-	-	-	-	-	-	-	-	-	-	865
Route: Co Rd L Segment 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Route: Co Rd N 7/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

## **REFERRALS, RESPONSES, NOTICES**

Landowner Letter

Landowner Letter Responses

Public Comments or Concerns

Newspaper Notification

Applicant Sign Posting and

Notarized Affidavit



## MORGAN COUNTY PLANNING AND BUILDING DEPARTMENT

### TO REFERRAL AGENCIES:

- Century Link
- Colo. Dept. of Natural Resources
- Colo. Dept. of Public Health and Environment
- Colo. O&G Conservation Commission
- Colo. State Land Board, Dept. of Nat. Resources
- Division of Wildlife
- Wiggins Fire Department
- Brush Fire Department
- Fort Morgan Fire Department
- Kinder Morgan, Inc.
- Weld County Planning Department
- Morgan County Assessor
- Morgan County Communications Center
- Morgan County Quality Water
- Morgan County Road & Bridge
- Morgan County Rural Electric Assoc.
- Morgan Soil Conservation District
- Morgan County Sheriff
- Western Area Power Administration
- USDA Farm Service Agency
- Cheyenne Plains Gas Pipeline Company, LLC
- City of Wiggins
- City of Fort Morgan
- City of Brush
- CDOT
- Xcel Energy

FROM: Cheryl Brindisi, Morgan County Planning & Zoning Technician  
231 Ensign St, PO Box 596, Fort Morgan, CO 80701  
970-542-3526 / 970-542-3509 fax / cbrindisi@co.morgan.co.us

DATE: February 15, 2023

RE: Land Use Application- Special Use Permit

The following Special Use Permit application will be heard by the Planning Commission on **Monday, March 13, 2023 at 7:00 p.m.** in the Assembly Room of the Morgan County Administrative Building, 231 Ensign Street, Fort Morgan, CO 80701 (Basement level; use elevator entrance in SW corner). You are welcome to attend and comment at this public meeting.

**Applicants:** South Platte Solar, LLC

**Landowners:** Kamp Cattle Company, Robert and Dawn Whitney, and Charles E. Ross, et al.

**Legal Description:** A part of Sections 3-10, 15, and 17-20, Township 2 North, Range 56 West, a part of Sections 28-33, Township 3 North, Range 56 West, and a part of Sections 24 & 25, Township 3 North, Range 57 West of the 6<sup>th</sup> PM, Morgan County, Colorado.

**Request:** Special Use Permit to construct and operate a 500MWac solar energy generation facility southeast of Fort Morgan, Colorado.

Documents pertaining to the above identified matters are on file in the Planning Administrator's Office, 231 Ensign St., Fort Morgan, Colorado. Documents are also available on the Morgan County Website <https://morgancounty.colorado.gov>

Please offer any comments or concerns you may have about this application.  
Do not hesitate to contact me at any time if you have questions.

**You are encouraged to provide comments to this application by March 1, 2023 or attend the Planning Commission meeting on Monday, March 13, 2023. (See Map Attached)**



Cheryl Brindisi &lt;cbrindisi@co.morgan.co.us&gt;

**South Platte Solar, LLC Land Use application - Special Use Permit Construction of 500MW ac solar facility**

6 messages

O'Rourke, Barbara &lt;Borourke@wapa.gov&gt;

Thu, Feb 16, 2023 at 11:56 AM

To: "cbrindisi@co.morgan.co.us" &lt;cbrindisi@co.morgan.co.us&gt;

Cc: "Kueny, Mark" &lt;Kueny@wapa.gov&gt;, "VonBonn, Kyle" &lt;Vonbonn@wapa.gov&gt;, "Ford, Joel" &lt;jford@tristategt.org&gt;

Good Morning Cheryl,

The proposed Special Use Permit for construction of the 500MWac Solar Facility encompasses Section 25, T3N, R57W where The Western Area Power Administration (WAPA) owns and operates its Hoyt-Beaver Creek 230-kV Transmission line currently operating at 115-kV. (Map attached) This is a double circuit line in which Tri-State owns its Henry Lake - Story 230-kV Transmission line. WAPA is responsible for maintenance of both transmission lines and holds the easements. The easement width for this double circuit line is 85'. (42.5 feet on either side of the centerline). WAPA asks your cooperation in keeping any and all facilities outside the easement area. Should the proponent need to pass under the transmission line during construction we ask they file for a Special Use Permit from WAPA or if they intend to install a permanent access road that will cross WAPA's easement they need to file for a License Agreement with WAPA for the permanent access road within the Right-of-Way.

I have included Joel Ford with Tri-State on this email so he is aware of the project. Joel, I'm not sure but Tri-State may have renamed your line, this is how it shows in our GIS system.

Thank you kindly,

Barb

**Barbara O'Rourke | Realty Specialist**

Western Area Power Administration | Rocky Mountain Region | Loveland, CO

(O) 970-461-7284 (M) 970-218-7288 |

Join us on Twitter

**2 attachments****Referral Memo - South Platte Solar, LLC.pdf**

86K

**Hoyt-Beaver Creek.pdf**

3794K



Cheryl Brindisi <cbrindisi@co.morgan.co.us>  
To: Nicole Hay <nhay@co.morgan.co.us>


Thu, Feb 16, 2023 at 1:26 PM

Referral Response  
[Quoted text hidden]

---

**2 attachments**

 **Referral Memo - South Platte Solar, LLC.pdf**  
86K

 **Hoyt-Beaver Creek.pdf**  
3794K

---

Cheryl Brindisi <cbrindisi@co.morgan.co.us>  
To: "O'Rourke, Barbara" <Borourke@wapa.gov>  
Cc: "Kueny, Mark" <Kueny@wapa.gov>, "VonBonn, Kyle" <Vonbonn@wapa.gov>, "Ford, Joel" <jford@tristategt.org>

Thu, Feb 16, 2023 at 1:28 PM

Thank you for this information. I have also forwarded this email to my Superior, Nicole Hay, Morgan County Planning Administrator.

**Thank you**

**Cheryl Brindisi, Planning and Zoning Technician**  
**Morgan County Planning and Zoning**  
**231 Ensign St.**  
**PO Box 596**  
**Fort Morgan, CO 80701**  
**970-542-3526 EXT 1475**

[CBrindisi@co.morgan.co.us](mailto:CBrindisi@co.morgan.co.us)

[Quoted text hidden]

---

O'Rourke, Barbara <Borourke@wapa.gov>  
To: Cheryl Brindisi <cbrindisi@co.morgan.co.us>  
Cc: "Kueny, Mark" <Kueny@wapa.gov>, "VonBonn, Kyle" <Vonbonn@wapa.gov>, "Ford, Joel" <jford@tristategt.org>

Thu, Feb 16, 2023 at 1:31 PM

Greatly appreciated. Thank you Cheryl!!

[Quoted text hidden]

---

Cheryl Brindisi <cbrindisi@co.morgan.co.us>  
To: "O'Rourke, Barbara" <Borourke@wapa.gov>  
Cc: "Kueny, Mark" <Kueny@wapa.gov>, "VonBonn, Kyle" <Vonbonn@wapa.gov>, "Ford, Joel" <jford@tristategt.org>

Thu, Feb 16, 2023 at 1:31 PM

You're welcome!  
[Quoted text hidden]

---

Cheryl Brindisi <cbrindisi@co.morgan.co.us>  
To: Nicole Hay <nhay@co.morgan.co.us>

Thu, Feb 16, 2023 at 1:31 PM

----- Forwarded message -----

From: O'Rourke, Barbara <Borourke@wapa.gov>

Date: Thu, Feb 16, 2023 at 11:56 AM

Subject: South Platte Solar, LLC Land Use application - Special Use Permit Construction of 500MW ac solar facility


To: cbrindisi@co.morgan.co.us <cbrindisi@co.morgan.co.us>


Cc: Kueny, Mark <Kueny@wapa.gov>, VonBonn, Kyle <Vonbonn@wapa.gov>, Ford, Joel <jford@tristategt.org>

[Quoted text hidden]

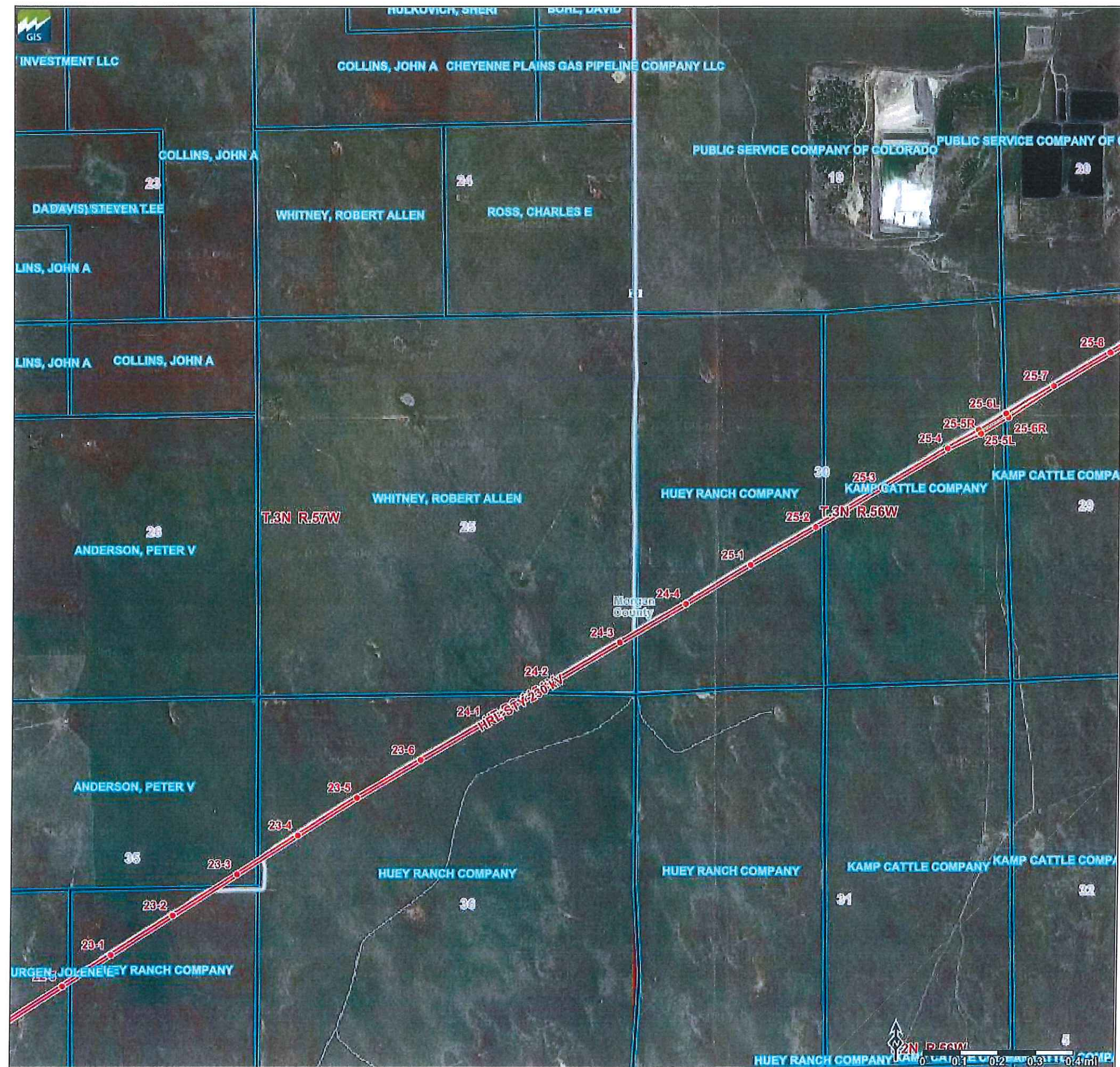
---

**2 attachments**

 **Referral Memo - South Platte Solar, LLC.pdf**  
86K

 **Hoyt-Beaver Creek.pdf**  
3794K





### Rocky Mountain Region Western Area Power Administration

This map and data are the property of WAPA/DOE and are intended for planning and analysis only. No reproduction or copying of this product is allowed without the sole consent of WAPA/DOE. To contact WAPA about this map, please call 1-800-336-7288.

Scale 1:16,717  
2/16/2023 11:36 A.M.

- Proposed and Re-route Structure
- Transmission Structure
- Distribution Structure
- Sectionalizing Cabinet
- De-Energized Structure
- Non-WAPA Structure
- Proposed or Re-route Line
- Transmission Line
- Transmission Bus Line
- Distribution Line
- Underground Line
- De-Energized Line
- Non-WAPA Transmission Line
- Documented Access Road
- ROW Maintenance Road
- General Use Access Road
- Proposed New Access Road
- Non WAPA Documented Access Road
- Public Road
- Abandon Road
- Parcel Ownership Data
- Township & Range
- Sections
- Proposed Facility / Substation / Switchyard
- Facility / Substation / Switchyard
- De-Energized Facility / Substation / Switchyard
- Non-WAPA Facility / Substation / Switchyard
- States
- Counties
- Google Aerials and Labels





February 16, 2023

Morgan County Planning Dept.  
Attn: Cheryl Brindisi  
231 Ensign Street  
Fort Morgan, CO 80701

Re: Land Use Application – Special Use Permit: South Platte Solar, LLC to construct and operate a 500MWac solar energy generation facility.

Dear Cheryl Brindisi,

The Town of Wiggins recently received a referral request for comments; regarding a special review application for South Platte Solar, LLC to construct and operate a 500MWac solar energy generation facility. The Town of Wiggins is satisfied that the Special Use Permit application will have no impact on any Town of Wiggins owned property and has no comment to add to the review. Thank you for the opportunity to review the application.

Sincerely,

Hope Becker  
Planning & Zoning Administrator

cc: Tom Acre, Interim Town Manager



Right of Way & Permits

1123 West 3<sup>rd</sup> Avenue  
Denver, Colorado 80223  
Telephone: 303-285-6482  
Jacobus.b.nijenhuis@xcelenergy.com

February 24, 2023

Morgan County Planning and Zoning  
231 Ensign St.  
PO Box 596  
Fort Morgan, CO 80701

Attn: Cheryl Brindisi

**Re: AMENDED RESPONSE**  
**Special Use Application for South Platte Solar, LLC**

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has no apparent conflict with the **South Platte Solar, LLC** special use application.

Engineering reviews for the high-pressure natural gas transmission pipeline and electric transmission lines will be necessary prior to development.

Jacobus (Julien) Nijenhuis  
Public Service Company of Colorado dba Xcel Energy  
Right of Way and Permits Department





Cheryl Brindisi &lt;cbrindisi@co.morgan.co.us&gt;

**AMENDED RESPONSE South Platte Solar - Referral Comment to Morgan County**

1 message

**Nijenhuis, Jacobus B** <Jacobus.B.Nijenhuis@xcelenergy.com>

Fri, Feb 24, 2023 at 11:22 AM

To: "Keiser, Nathan" &lt;Nathan.Keiser@nexteraenergy.com&gt;, Cheryl Brindisi &lt;cbrindisi@co.morgan.co.us&gt;

Cc: "Moore, Ashard" &lt;Ashard.Moore@nexteraenergy.com&gt;

Hi Nathan,

Thank you for your email.

I was not aware of this project. Therefore, I sent out the letter so a project like this gets brought to the attention with the right people since we do have facilities in the area.

I attached my amended response to this email.

Good luck with your project and please let me know if you have any more questions.

Kind regards,

**Jacobus (Julien) Nijenhuis****Xcel Energy****Public Service Company of Colorado, PSCo****Contract Right of Way Agent****Right of Way and Permits Department****Electric & Gas Distribution, HP Gas****1123 West 3rd Ave Denver, CO 80223****E: [Jacobus.b.nijenhuis@xcelenergy.com](mailto:Jacobus.b.nijenhuis@xcelenergy.com)****O: 303-285-6482****From:** Keiser, Nathan <[Nathan.Keiser@nexteraenergy.com](mailto:Nathan.Keiser@nexteraenergy.com)>**Sent:** Thursday, February 23, 2023 4:17 PM**To:** Nijenhuis, Jacobus B <[Jacobus.B.Nijenhuis@xcelenergy.com](mailto:Jacobus.B.Nijenhuis@xcelenergy.com)>**Cc:** Moore, Ashard <[Ashard.Moore@nexteraenergy.com](mailto:Ashard.Moore@nexteraenergy.com)>**Subject:** South Platte Solar - Referral Comment to Morgan County

You don't often get email from [nathan.keiser@nexteraenergy.com](mailto:nathan.keiser@nexteraenergy.com). [Learn why this is important](#)

**EXTERNAL - STOP & THINK** before opening links and attachments.

Good afternoon Julien,

My name is Nathan Keiser and I'm a project manager for NextEra and am working on the South Platte solar project referenced in the attached referral comment provided by Xcel to Morgan County.

The letter requests that License Agreements are obtained prior to any final approval of the development plan. Can you please clarify what you mean by, "final approval?"

As you are likely aware, this one of the projects being bid in the upcoming PSCo RFP and our permitted design is subject to revisions if the project is selected and we proceed with hiring an EPC contractor.

I just want to clarify that you're not requesting us execute these License Agreements prior to Morgan County approval, or even having definitive direction that the project will be constructed? I'm also the PM on the Neptune and Thunder Wolf projects near Pueblo and we executed the License Agreements once we had a more comprehensive, "Issued for Construction," design and much closer to construction.

We will absolutely work closely with Xcel on obtaining these agreements in the future, but as mentioned, just wanted to clarify that you weren't referring to final Morgan County approval.

I look forward to working with you on these projects going forward as well. In Pueblo I worked with Ted Morris, and then Amber Dedus, and always enjoy working with PSCo!

Thanks Julien!

Nathan

**Nathan Keiser**  
**Project Manager, Renewable Development**  
**NextEra Energy Resources**

Mobile: 720-975-3733



AMENDED RESPONSE Special Use Application for South Platte Solar LLC.doc

89K



Right of Way & Permits

1123 West 3<sup>rd</sup> Avenue  
Denver, Colorado 80223  
Telephone: 303-285-6482  
Jacobus.b.nijenhuis@xcelenergy.com

February 23, 2023

Morgan County Planning and Zoning  
231 Ensign St.  
PO Box 596  
Fort Morgan, CO 80701

Attn: Cheryl Brindisi

**Re: Special Use Application for South Platte Solar, LLC**

Public Service Company of Colorado's (PSCo) Right of Way and Permits Referral Desk has determined there are **possible conflicts** with the above captioned project. Public Service Company has an existing *electric transmission* line and an existing *high-pressure natural gas transmission* pipeline with associated land rights as shown within this property. Any activity including grading, proposed landscaping, erosion control or similar activities involving our existing right-of-way will require Public Service Company approval. Encroachments across Public Service Company's easements must be reviewed for safety standards, operational and maintenance clearances, liability issues, and acknowledged with a Public Service Company License Agreement to be executed with the property owner. PSCo is requesting that, prior to any final approval of the development plan, it is the responsibility of the property owner/developer/contractor to contact the following for development plan review and execution of License Agreements:

- **for Electric Transmission:** email [coloradorightofway@xcelenergy.com](mailto:coloradorightofway@xcelenergy.com) or website [www.xcelenergy.com/rightofway](http://www.xcelenergy.com/rightofway)
- **for High Pressure Natural Gas Transmission:** [https://www.xcelenergy.com/encroachment application](https://www.xcelenergy.com/encroachment_application) - click on Colorado, if necessary; an engineer will then be in contact to request specific plan sheets.

As a safety precaution, PSCo would like to remind the developer to contact Colorado 811 for utility locates prior to construction.

Jacobus (Julien) Nijenhuis  
Public Service Company of Colorado dba Xcel Energy  
Right of Way and Permits Department





## MORGAN COUNTY PLANNING AND BUILDING DEPARTMENT

February 15, 2023

Dear Neighboring Landowners:

South Platte Solar, LLC as applicant and Kamp Cattle Company, Robert and Dawn Whitney, and Charles E. Ross, et al. as landowners have submitted an application to our office for a Use by Special Review Permit.

**Legal Description:** A part of Sections 3-10, 15, and 17-20, Township 2 North, Range 56 West, a part of Sections 28-33, Township 3 North, Range 56 West, and a part of Sections 24 & 25, Township 3 North, Range 57 West of the 6<sup>th</sup> PM, Morgan County, Colorado.

**Request:** South Platte Solar, LLC has submitted a Special Use Permit Application to construct and operate a 500MWac solar energy generation facility southeast of Fort Morgan, Colorado. See attached site map.

This application is scheduled to be heard by the Planning Commission on **Monday, March 13, 2023 at 7:00 p.m.** to be held in the Assembly Room of the Morgan County Administration Building, 231 Ensign St., (Basement Level) Fort Morgan, Colorado:

Documents pertaining to the above identified matters are on file in the Planning Administrator's Office, 231 Ensign St., Fort Morgan, Colorado. Documents are also available on the Morgan County Website <https://morgancounty.colorado.gov>

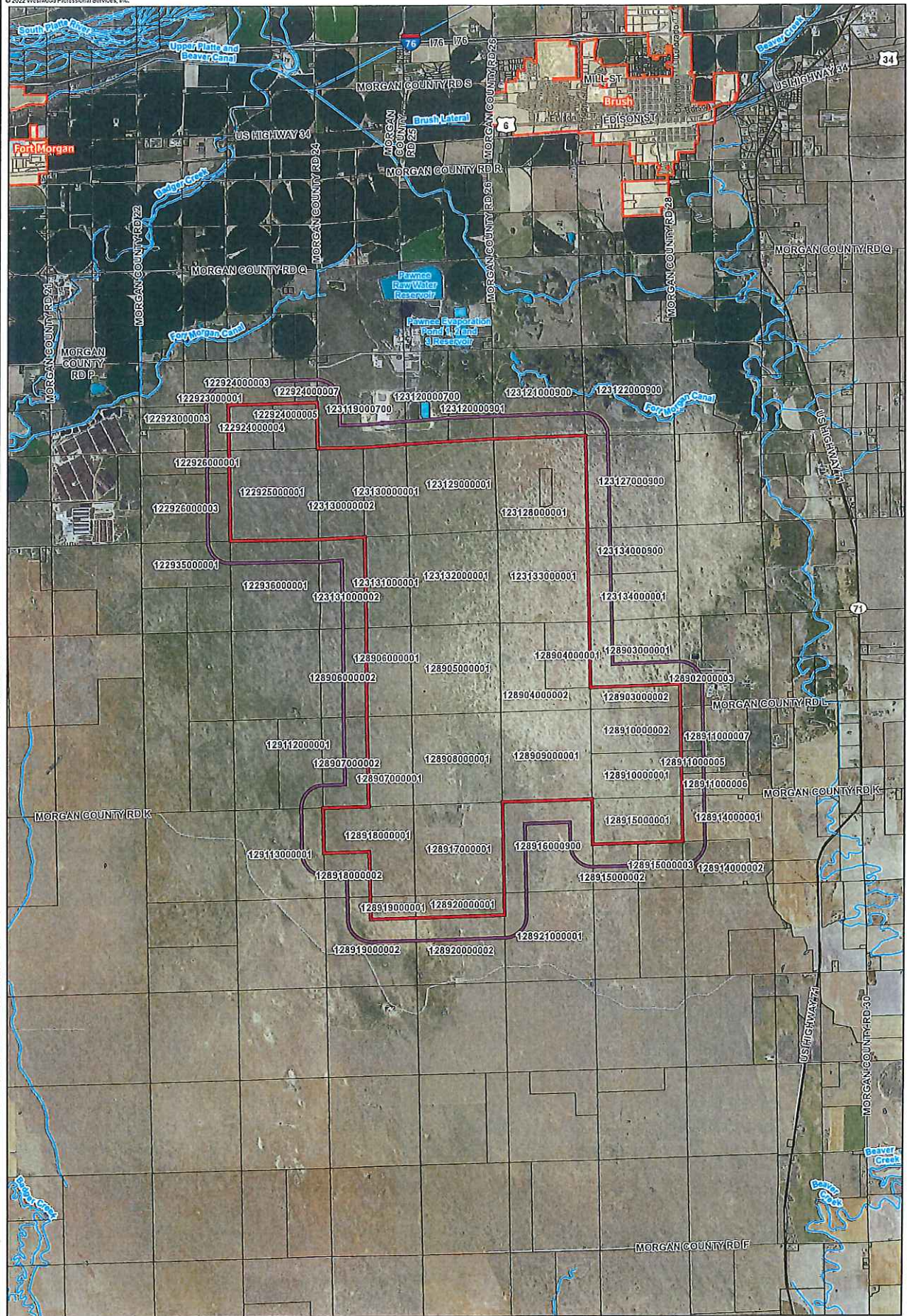
If you have any questions pertaining to these applications or if you would like to review the file, either contact us at (970)542-3526 or stop by our office prior to the hearing. If you have any comments or concerns, plan to attend this hearing.

Sincerely,

*Nicole Hay*

Nicole Hay  
Planning & Zoning Director

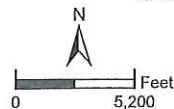




Data Source(s): Westwood (2022); NAIP (2021); NHD (2022); U.S. Census Bureau (2021).

### Legend

- Project Area
- 1320 ft Buffer
- Parcels
- NHD Flowline
- NHD Waterbody



## South Platte Solar Project

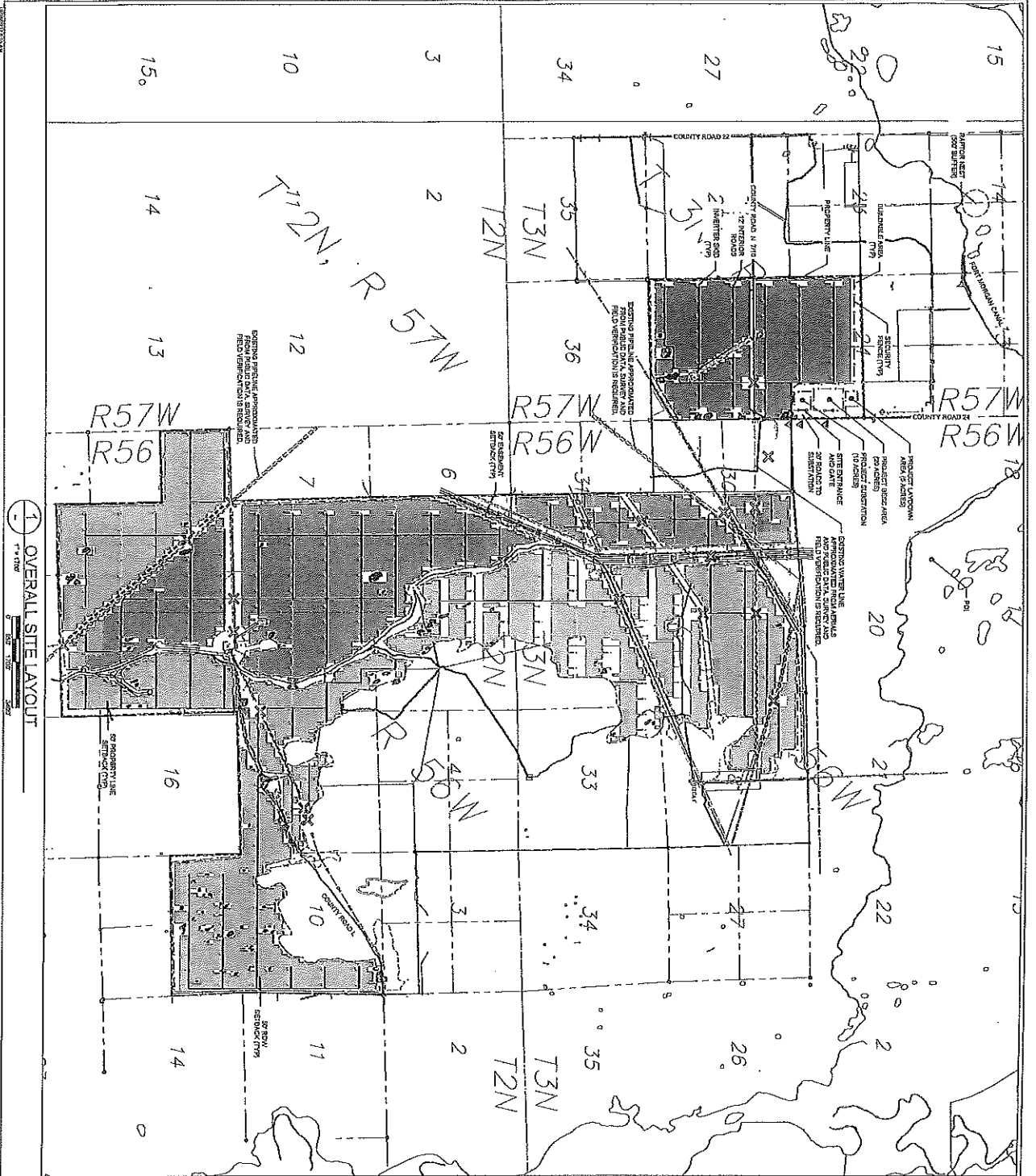
Morgan County, Colorado

Adjacent Property Owners

**Westwood**  
 Tel: (814) 857-5100 westwoodps.com  
 Westwood Professional Services, Inc.

EXHIBIT 3





1 OVERALL SITE LAYOUT

<p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li>PROPERTY BOUNDARY</li> <li>FENCE LINE</li> <li>PROPOSED ROAD</li> <li>EXISTING ROAD</li> <li>EXISTING OVERHEAD ELECTRICAL</li> <li>EXISTING FENCE</li> <li>RIGHT OF WAY ROW</li> <li>DEVELOPER</li> <li>WATER LINE (LOCATION APPROXIMATE)</li> <li>PROPOSED LOCATION APPROXIMATE</li> <li>BLANKET AREA</li> <li>NEW VENTILATION, DPT STRUCTURE</li> <li>FLUORESCENT</li> <li>CL &amp; OIL EXPLORATION</li> <li>FLOOD EXCLUSION</li> <li>SITE ACCESS</li> <li>CROSSING LOCATION (SEE NOTE 3)</li> </ul>	<p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>LOCATIONS SHOWN ARE FOR GENERAL GUIDANCE ONLY. A COPY OF THE FINAL ENGINEERING DRAWINGS SHALL BE PROVIDED TO THE LOCAL GOVERNMENT FOR REVIEW AND APPROVAL. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.</li> <li>THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.</li> <li>CROSSING LOCATION (SEE NOTE 3)</li> <li>THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.</li> <li>THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.</li> <li>THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.</li> <li>THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.</li> </ol>
--	---

**REYAMP**

301 N. 1st St.

Denver, CO 80202

Phone: (303) 733-1111

Website: [www.reyamp.com](http://www.reyamp.com)

**PRELIMINARY - NOT FOR CONSTRUCTION**

**ENERGY**

**DESIGN**

**PROJECT NAME**

**SOUTH PLATTE SOLAR**

**SITE LOCATION**

**FORT MORGAN, CO**

**40.2174°, -103.6788°**

**TRAINING NUMBER**

**E200**

16

COLLINS, JOHN A  
P O BOX 512  
FORT MORGAN, CO 80701

CHEYENNE PLAINS GAS PIPELINE COMPANY LLC  
P O BOX 4372  
HOUSTON, TX 77210-4372

PUBLIC SERVICE COMPANY OF COLORADO  
P O BOX 1979  
DENVER, CO 802011979

CITY OF BRUSH  
P O BOX 363  
BRUSH, CO 80723

MORGAN COUNTY QUALITY WATER DISTRICT  
P O BOX 1218  
FORT MORGAN, CO 80701

WEITZEL LAND LLC  
28271 CO RD L  
BRUSH, CO 80723

MORGAN COUNTY R E A  
P O BOX 738  
FORT MORGAN, CO 80701

GEBAUER, PATRICK J &  
AUGUST, LUAN  
15488 CO RD 57  
HILLROSE, CO 80733

CECIL, STEPHEN & JOANN  
P O BOX 40  
FORT MORGAN, CO 80701

STATE OF COLORADO  
BOARD OF LAND COMMISSIONERS  
1313 SHERMAN ST - RM 620  
DENVER, CO 80203

KAMP CATTLE COMPANY  
P O BOX 395  
EATON, CO 80615

HUEY RANCH COMPANY  
615 E BIJOU AVE  
FORT MORGAN, CO 80701

DAVIS, SAMANTHA LEE  
14450 CO RD 22  
FORT MORGAN, CO 80701

ANDERSON, PETER V & KAREN V  
20738 CO RD N  
FORT MORGAN, CO 80701

WHITNEY, ROBERT & DAWN  
21415 CO RD 22  
FORT MORGAN, CO 80701

ROSS, CHARLES E ET AL  
PO BOX 6112  
LONGMONT, CO 80501

**NOTICE OF MORGAN COUNTY PLANNING COMMISSION'S REVIEW OF  
ONE LAND USE APPLICATION**

Notice is hereby given that on Monday, March 13, 2023 at 7:00 p.m., or as soon as possible thereafter, a public hearing will be held to consider the following applications:

- 1.) **Applicant:** South Platte Solar, LLC  
**Landowners:** Kamp Cattle Company, Robert and Dawn Whitney, and Charles E. Ross, et al.  
**Legal Description:** A part of Sections 3-10, 15, and 17-20, Township 2 North, Range 56 West, a part of Sections 28-33, Township 3 North, Range 56 West, and a part of Sections 24 & 25, Township 3 North, Range 57 West of the 6<sup>th</sup> PM, Morgan County, Colorado.  
**Request:** Special Use Permit to construct and operate a 500MWac solar energy generation facility southeast of Fort Morgan, Colorado  
**Date of Application:** January 20, 2023.

**THE COUNTY WILL CONTINUE TO OFFER THE OPTION TO ATTEND MEETINGS REMOTELY. IF YOU HAVE ANY QUESTIONS REGARDING ATTENDING THE MEETING, PLEASE CONTACT THE PLANNING OFFICES AT 970-542-3526.**

To participate remotely you may connect via Zoom at:

<https://us02web.zoom.us/j/85930979237>

Or Telephone:

Dial:

US: +1 719 359 4580

Webinar ID: 859 3097 9237

Documents pertaining to the above identified matters are on file in the Planning Administrator's Office, 231 Ensign St., Fort Morgan, Colorado. Documents are also available on the Morgan County Website <https://morgancounty.colorado.gov>

At time of the meeting an opportunity will be given for presentation of evidence in support of or in opposition to the application.

  
\_\_\_\_\_  
Nicole Hay  
Morgan County Planning Administrator

Published: February 25, 2023



The above sign was posted on (date) February 27, 2023, pursuant to the  
Morgan County Zoning Resolution by (name of applicant) South Platte Solar.

Project name and number: South Platte Solar Project SU2023-0002

\*Signature of Applicant/Representative: \_\_\_\_\_

STATE OF COLORADO )  
 ) ss.  
COUNTY OF MORGAN )

JENAFER SANTOS  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID# 20194036716  
MY COMMISSION EXPIRES 10/03/2023

Signed before me this date: February 27, 2023

My Commission expires: October 3, 2023

NOTARIZED BY: \_\_\_\_\_

Jenifer Santos





