Exhibit J
Construction Route Study
Burns McDonnell

February 1, 2021

Marion County Solar Project
Construction Route Study

Savion Energy

Marion County Solar Project
Project No. 127547

Revision 2
2/1/2021

Marion County Solar Project
Construction Route Study

prepared for

Savion Energy
Marion County Solar Project
Marion County, Ohio

Project No. 127547

Revision 2
2/1/2021

prepared by

Burns & McDonnell Engineering Company, Inc.
Richmond, Virginia

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Savion Energy
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1.0 NARRATIVE

Project Description

The Marion County Solar Project (Project) is located in Marion County, Ohio. As shown in Appendix A on Exhibit 1 - Location Map, the Project is located in Marion Township directly north of Marion, Ohio. The Project boundary, shown in Appendix A, details the footprint of the approximately 1,000 acre project.

The purpose of this project is to harness the renewable energy of the sun in order to supply energy into the transmission and distribution power grid. The proposed construction brings with it the potential for roadway damages due to the increased construction traffic. This study has been prepared to satisfy the relevant portions of the Ohio Power Siting Board (OPSB) requirements specified in the Ohio Administrative Code, Sections 4906-4-06(F)(3) and 4906-4-06(F)(4).

Section 4906-4-06(F)(3) states: “The applicant shall evaluate and describe the anticipated impact to roads and bridges associated with construction vehicles and equipment delivery. Describe measures that will be taken to improve inadequate roads and repair roads and bridges to at least the condition present prior to the project.”

Section 4906-4-06(F)(4) states: “The applicant shall list all transportation permits required for construction and operation of the project, and describe any necessary coordination with appropriate authorities for temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility.”

Site Description

The Project is proposed on cultivated lands within the aforementioned jurisdictions. Construction of the solar arrays will require minimal clearing or grubbing of existing vegetation. The fields are relatively gentle sloping and rely on sheet flow to convey stormwater runoff from the Project site. The existing topography and drainage patterns will generally remain unchanged with addition of the Project. It should be noted that the bedrock depth is approximately 3-feet in this area.

Adjacent Property

The properties adjacent to the Project area are mostly agricultural, industrial, and residential. Little Scioto River is located on the west side of the Project and flows from north to south. Little Scioto River and its associated floodplain are located within the Project boundary. Little Scioto flows under County Route 94 (Hillman-Ford Road) through a 2-lane concrete bridge. According to Brad

Irons, the Marion County Engineer, County Route 94 (Hillman-Ford Road) is frequently closed due to flooding from rain events of 3-inches or more. An unnamed tributary to Little Scioto flows east to west through the center of the Project site. There is no known flooding associated with this tributary. An unnamed, well-defined rock swale is located on the south end of the Project. There is no known flooding associated with this swale. There are no planned direct discharges to any water course associated with this Project.

It should be noted that there are several industrial operations in the area. POET Biorefining bounds the Project to the west on County Route 94 (Hillman-Ford Road). During peak season, POET Biorefining can receive up to 400 tractor trailers of corn delivery a day. Buckeye Ready-Mix, LLC is located is located approximately one mile east of the Project boundary. National Lime & Stone Co. Quarry is located approximately 2 miles east of the Project site.

Transportation Access Points

Burns and McDonnell recommends the developer have three site access points for construction. The three recommended access points are on State Route 423 (Marion-Upper Sandusky Road). These construction entrances will provide access to the entire site. While it is possible for the construction equipment, concrete, aggregate, supplies, and general construction traffic to approach the Project area from multiple directions, it is anticipated that the concentrated construction traffic will be limited to State Route 4 (Marion-Bucyrus Road) and County Route 162 (Marion-Williamsport Road). Proposed internal site access to the solar panel arrays is shown on Exhibit 1 in Appendix A.

The jurisdictions associated with the public roads proposed for use during the Project shown in Appendix A, are:

Marion County – County Route 162 (Marion-Williamsport Road), County Route 66 (Kenton-Galion Road)

Ohio Department of Transportation (ODOT) – State Route 4 (Marion-Bucyrus Road), State Route 423 (Marion-Upper Sandusky Road)

2.0 PRE-CONSTRUCTION ROADWAY CHARACTERISTICS

Existing Data

Existing data related to vehicle traffic volumes and crashes within the study area is defined on Exhibit 2 in Appendix A. The data was obtained from the ODOT Transportation Information Mapping System (TIMS), which is shown on Exhibit 3 in Appendix A. Annual Average Daily Traffic (AADT) for the State and County roads is listed within that data. A detailed capacity analysis was not completed for this study. However, field observation of the transportation network did not reveal any locations where traffic flow and/or capacity appeared to create undue delay for the traveling public.

Table 1 below summarizes the traffic conditions on the roads within the study area.

Table 1: Traffic Conditions

Roadway Name	Lanes	Total Road Widths	AADT*
State Route 4 (Marion-Bucyrus Road)	2	24 feet	3480
State Route 423 (Marion-Upper Sandusky Road)	2	21 feet	3026
County Route 162 (Marion-Williamsport Road)	2	24 feet	4837
County Route 94 (Hillman-Ford Road)	2	19-24 feet	1690
County Route 66 (Kenton-Galion Road)	2	21 feet	741
Township T-219 (Barford Road)	2	18.5	N/A

* AADT = Average Annual Daily Traffic

According to TIMS, in 2019 there were 21 accidents within the study area. One accident occurred on County Route 94 (Hillman-Ford Road). Two accidents occurred on County Route 66 (Kenton-Galion Road). Five accidents occurred on State Route 423 (Marion-Upper Sandusky Road), one of which was fatal. Four accidents occurred on State Route 4 (Marion-Bucyrus Road), one of which was a serious injury. Nine accidents occurred on County Route 162 (Marion-Williamsport Road), three of which involved possible injuries.

The roadways within the Project area have adequate sight distance along their alignments, are in rural areas, and do not carry a high volume of traffic. It should be noted the right turning radius from State Route 4 (Marion-Bucyrus Road) onto State Route 423 (Marion-Upper Sandusky Road) is approximately 35 feet. Tractor trailers are capable of making this turn but the intersection and shoulder should be closely monitored for deterioration. As such, permanent right-of-way

improvements at this intersection may be required by the County if high volumes of construction traffic are anticipated. A standard level of care should be taken to properly construct and sign the proposed construction entrances per the ODOT Traffic Control in Work Zone Standards.

School Bus Route and Mass Transit Systems

The public-school district for the Project area is the Ridgedale Local School District. The high school, middle school, and elementary school are all located on the same campus, about 2 miles northwest of the Project boundary. The Transportation Supervisor is Robin Townsend. Due to the geographic region served by the school system and the rural nature of the surrounding area, the students are picked-up/dropped-off individually at their place of residence. The number of stops and buses within and around the Project area is limited due to the low density of houses. Ms. Townsend requested that deliveries for the Project only occur between 7:30AM and 3:00PM during the school year.

There are no rail or bus mass transit systems in the Project area.

Route Load Bearing, Structural Rating and Other Route Restrictions

A field review of existing conditions along the roads within the Project area was conducted by Burns & McDonnell on October 26 and 27, 2020.

Road and Bridge Load Posting Restrictions

As shown in Appendix A, there are six (6) bridges along the roads evaluated for this study. Bridge numbers 5131316 and 5135761 are located on County Route 66 (Kenton-Galion Road). Bridge 5103452 is located on State Route 423 (Marion-Upper Sandusky Road). Bridge 5100178 is located on State Route 4 (Marion-Bucyrus Road). Bridge numbers 5131847 and 5136393 are located on County Route 94 (Hillman-Ford Road). A one-lane unnamed railroad underpass is located on County Route 94 (Hillman-Ford Road). This one-lane underpass has a vehicle height restriction of 12’-9”. All bridges appear to be in good condition. There are no weight-restricted bridges.

There are no temporary or permanently load restricted roads in the Project area. However, through trucks are prohibited on County Route 94 (Hillman-Ford Road) north of Pleasant Hill Road.

Road Surface Type and Conditions

The road surface types along the Project transportation routes are all asphalt. Table 2 summarizes the road conditions within the study area.

Table 2: Road Conditions

Roadway Name	Road Condition
State Route 4 (Marion-Bucyrus Road)	State maintained plant mix surface, good condition. Minor road rehab in 2019
State Route 423 (Marion-Upper Sandusky Road)	State maintained plant mix, good condition, 2' paved shoulder
County Route 162 (Marion-Williamsport Road)	County maintained plant mix, good condition. Part of industrial connector, built for heavy haul
County Route 94 (Hillman-Ford Road)	County maintained chip and seal, fair condition, flooding potential, no shoulder
County Route 66 (Kenton-Galion Road)	County maintained chip and seal, fair condition, reflective cracking, no shoulder
Township T-219 (Barford Road)	Township maintained plant mix, great condition, residential, do not use for construction traffic

The roadways within the study area are generally well-maintained rural routes. To the maximum extent possible, construction traffic should utilize State Route 4 (Marion-Bucyrus Road), State Route 423 (Marion-Upper Sandusky Road), and County Road 162 (Marion-Williamsport Road). County Road 94 (Hillman-Ford Road) should be avoided due to the one-lane underpass, potential for flooding, and narrow roadway. Township T-219 (Barford Road) is a narrow, residential road and should not be used during construction. Instead, traffic should make the turn from State Route 4 (Marion-Bucyrus Road) onto State Route 423 (Marion-Upper Sandusky Road). County Route 66 (Kenton-Galion) showed minor reflective cracking, but no potholes and should be closely monitored to verify that no further cracking or potholes form during Project construction. The other routes within the study area do not appear to exhibit any underlying issues, but rather normal aging that requires routine maintenance. A Road Use Maintenance Agreement (RUMA) must be prepared between the County and the developer prior to construction to address potential issues with the existing roads. Based on the findings of this study, are no significant concerns for use of the existing roads for this Project from a transportation perspective.

Overhead Clearance

There is one clearance issue on the one-lane underpass on County Route 94 (Hillman-Ford Road). However, this road should not be used as a haul road during construction. There are no anticipated clearance issues with overhead electric crossings and tree overhang locations since the construction vehicles for the Project will be legal heights and no intersection improvements are proposed.

3.0 PROJECT IMPACTS TO THE TRANSPORTATION NETWORK

Projected Future Traffic Conditions

While construction vehicles are traveling through the Project area and along delivery route roadways, the existing traffic may experience minor delays to allow for the safe passage of these vehicles.

A RUMA is required for Marion County. During development of the RUMA, the developer or the developer's designee will coordinate with Marion County to determine the applicable thresholds and procedures for implementing appropriate work zone measures for the safety of the commuting public and members of the construction team. As part of the RUMA, procedures for corrective action on any damaged elements of the roadway caused by vehicle trips generated by the construction of the site will be developed.

Roadway widths may be a challenge for construction traffic. Drivers should be encouraged to stay on the pavement surface to minimize rutting of the shoulders and rutting or heaving of the pavement along the edges. Cold and wet conditions that correspond to winter construction could lead to premature pavement failures that would require remediation by the developer.

During operation and maintenance, the facility will not generate a significant volume of traffic. Therefore, projected additional future traffic will be negligible.

Adequacy of the Road System to Accommodate Projected Traffic

Truck load assumptions are based on typical solar projects that will need to be finalized in conjunction with the Marion County RUMA. The planned construction entrances access the Project site from roadways that appear to be well maintained and structurally sound, therefore no improvements beyond the construction entrance is required for access. An extra wide construction entrance should be utilized to support the roadway edge of pavement and allow for the wide swing of the trucks, allowing them to stay on the paved surface throughout the entire turn movement into the site. Particular attention should be given to the intersections, where the larger tractor trailers tend to track off the pavement. These shoulder areas deteriorate quickly under the construction loadings. Other transport roads within the study area do not appear to exhibit any obvious structural issues, beyond normal aging requiring routine maintenance.

During development of the RUMA, the developer will coordinate with Marion County to determine any pre-construction road maintenance needed. However, the only areas of potential concern are

the right-hand turn from State Route 4 (Marion-Bucyrus Road) onto State Route 423 (Marion-Upper Sandusky Road) and the fair condition of County Route 66 (Kenton-Galion Road). There do not appear to be any areas of significant concern on the existing roads.

It is anticipated that the construction traffic will consist of WB-50s (8.5 feet wide x 42.5 feet long x 10 feet high), standard concrete trucks, standard dump trucks, and pick-up trucks. One overweight permit, submitted to Marion County, is expected for this Project for transport and delivery of the transformer. The construction traffic, apart from the transformer delivery, should be legally loaded and not oversized.

Roads will need to be monitored during construction and reviewed again upon completion of construction to determine if repairs are required. Roads will be returned to pre-construction conditions or better. If work is scheduled during favorable weather patterns, the pavement structure remains supported along the edges, construction traffic is kept to the construction entrances noted in the report and off of the shoulders of the road, there should be minimal remedial asphalt removal, subgrade compaction, or asphalt patching required.

During operation and maintenance, the facility will not generate a significant volume of traffic. Therefore, improvements to the road system are not necessary to accommodate projected operations traffic.

Traffic and Transportation Mitigation Measures

All roads should be monitored during construction for potholing and deterioration of the pavement to verify that they are safe for general construction and local roadway traffic. The volume and weight of the general construction traffic may cause accelerated distress that could require temporary repair, especially at the construction entrances. Constant monitoring of the roadway conditions is vital to minimizing damages. Identifying an issue and taking immediate temporary corrective action prior to failure can dramatically reduce final repair costs. After completion of construction activities, the temporary corrective measure may need to be removed and replaced with a permanent solution. Repairing the roadways to pre-construction conditions will be part of the RUMA.

Road Use and Restoration Agreements

Special hauling permits, with the exception of transformer delivery, are not anticipated for the Project because the construction vehicles will be legal heights, widths, and weights. As previously stated, a RUMA is required with Marion County where the County roads are being used for

delivery of equipment. There are no temporary or permanent road closures, lane closures, or road access restrictions expected with this Project. All necessary traffic control for construction and operation of the proposed facility shall be in accordance with ODOT standards and specifications. A Construction Access Permit from the County will be required for each of the temporary construction access points to the Project site. An overweight permit will be required for delivery of the Transformer. Work in Right-of-Way permits will be required for any work done in the right-of-way.

APPENDIX A - SITE LOCATION/ROAD STUDY MAP

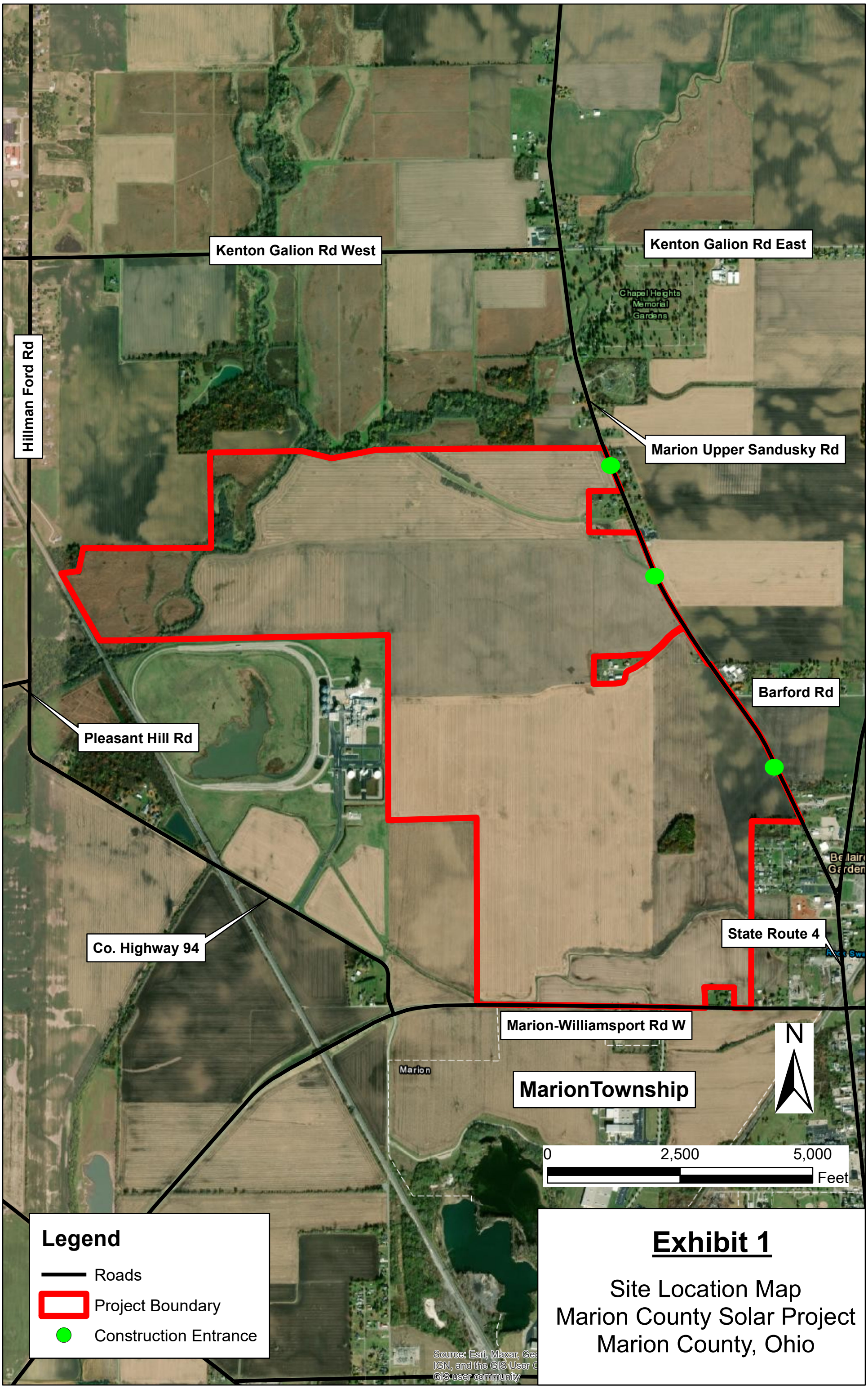

Exhibit 1

Site Location Map
Marion County Solar Project
Marion County, Ohio

Exhibit 2

Study Area Map
Marion County Solar Project
Marion County, Ohio

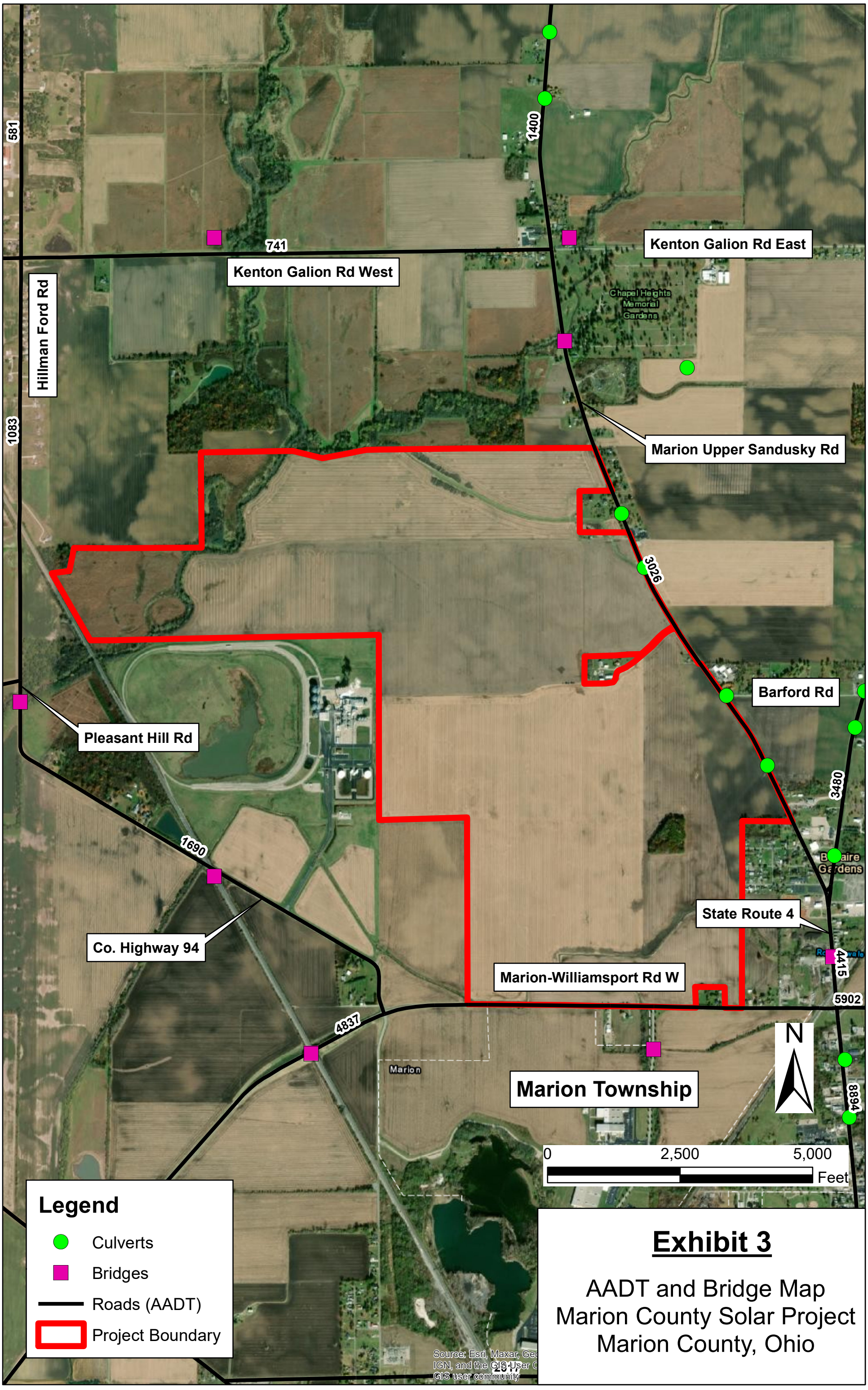

Exhibit 3

AADT and Bridge Map
Marion County Solar Project
Marion County, Ohio

MARION COUNTY

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Exhibit 4

Local Contacts
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Marion County, Ohio

APPENDIX B - SITE PHOTOS

STATE ROUTE 4
MARION-BUCYRUS ROAD

TURNING RADIUS

STATE ROUTE 4
MARION-BUCYRUS ROAD

TURNING RADIUS

STATE ROUTE 4
MARION-BUCYRUS ROAD

TURNING RADIUS

STATE ROUTE 4
MARION-BUCYRUS ROAD

SOUTH

STATE ROUTE 4
MARION-BUCYRUS ROAD

NORTH

TOWNSHIP T-219
BARFORD ROAD

WEST

TOWNSHIP T-219
BARFORD ROAD

CULVERT

TOWNSHIP T-219
BARFORD ROAD

EAST

TOWNSHIP T-219
BARFORD ROAD

EAST

TOWNSHIP T-219
BARFORD ROAD

WEST

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

SOUTH

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

NORTH

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

SOUTH

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

NORTH

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

NORTH - BRIDGE 5103452

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

BRIDGE 5103452

STATE ROUTE 423
MARION-UPPER SANDUSKY ROAD

SOUTH - BRIDGE 5103452

COUNTY ROUTE 66
KENTON-GALION ROAD

EAST

COUNTY ROUTE 66
KENTON-GALION ROAD

WEST

COUNTY ROUTE 66
KENTON-GALION ROAD

CRACKING

COUNTY ROUTE 66
KENTON-GALION ROAD

CRACKING

COUNTY ROUTE 66
KENTON-GALION ROAD

WEST - BRIDGE 5135761

COUNTY ROUTE 66
KENTON-GALION ROAD

NORTH - BRIDGE 5135761

COUNTY ROUTE 66
KENTON-GALION ROAD

EAST - BRIDGE 5135761

COUNTY ROUTE 66
KENTON-GALION ROAD

BRIDGE 5135761

COUNTY ROUTE 66
KENTON-GALION ROAD

WEST

COUNTY ROUTE 66
KENTON-GALION ROAD

EAST

COUNTY ROUTE 66
KENTON-GALION ROAD

RUTTING

COUNTY ROUTE 66
KENTON-GALION ROAD

CRACKING

COUNTY ROUTE 66
KENTON-GALION ROAD

EAST - BRIDGE 5131316

COUNTY ROUTE 66
KENTON-GALION ROAD

EAST - BRIDGE 5131316

COUNTY ROUTE 66
KENTON-GALION ROAD

WEST - BRIDGE 5131316

COUNTY ROUTE 94
HILLMAN-FORD ROAD

THROUGH TRUCKS PROHIBITED

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH

COUNTY ROUTE 94
HILLMAN-FORD ROAD

SOUTH

COUNTY ROUTE 94
HILLMAN-FORD ROAD

CRACKING

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH - ONE LANE UNDERPASS

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH - ONE LANE UNDERPASS

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH - HIGH WATER

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH - THROUGH TRUCKS PROHIBITED

COUNTY ROUTE 94
HILLMAN-FORD ROAD

SOUTH - BRIDGE 5136393

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH - BRIDGE 5136393

COUNTY ROUTE 94
HILLMAN-FORD ROAD

SOUTH - BRIDGE 5136393

COUNTY ROUTE 94
HILLMAN-FORD ROAD

BRIDGE 5131847

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH - BRIDGE 5131847

COUNTY ROUTE 94
HILLMAN-FORD ROAD

SOUTH - BRIDGE 5131847

COUNTY ROUTE 94
HILLMAN-FORD ROAD

BRIDGE 5131847

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH

COUNTY ROUTE 94
HILLMAN-FORD ROAD

SOUTH

COUNTY ROUTE 94
HILLMAN-FORD ROAD

NORTH

COUNTY ROUTE 94
HILLMAN-FORD ROAD

SOUTH

COUNTY ROUTE CR-162
MARION-WILLIAMSPORT ROAD

WEST

COUNTY ROUTE CR-162
MARION-WILLIAMSPORT ROAD

EAST

COUNTY ROUTE CR-162
MARION-WILLIAMSPORT ROAD

EAST

COUNTY ROUTE CR-162
MARION-WILLIAMSPORT ROAD

WEST

COUNTY ROUTE CR-162
MARION-WILLIAMSPORT ROAD

CULVERT

COUNTY ROUTE CR-162
MARION-WILLIAMSPORT ROAD

ROAD CRACKING OVER CULVERT

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Summary: Application - 12 of 30 (Exhibit J - Construction Route Study) electronically filed by Christine M.T. Pirik on behalf of Marion County Solar Project, LLC