Exhibit W
Preliminary Drain Tile Assessment

Stantec

February 8, 2021

DICKINSON WRIGHT PLLC

Birch Solar Project – Preliminary Drain Tile Assessment

February 8, 2021

Prepared for:

Birch Solar 1, LLC

Prepared by:

Stantec Consultation Services, Inc.

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1.0 INTRODUCTION

Birch Solar 1, LLC (Birch Solar) is proposing to construct and operate the Birch Solar 1 Project (Project). The Project Area is located across 2,345 acres of predominately agricultural area in Allen and Auglaize Counties, Ohio. The Project will be composed of photovoltaic solar modules mounted on tracked racking structures, inverters, an electrical collection system, internal access roads, and a Project substation. The Project will be secured with fencing around the Project perimeter. The area with Project infrastructure will comprise a smaller portion of the overall Project Area, totaling approximately 1,410 acres as depicted in Figure 1. The racks will be installed on piles and will be installed with an impact pile driver to a depth of approximately 7.5 feet below the ground surface. Installation of the piles has the potential to damage the drainage tiles that have been installed in the agricultural fields in which the Project is located.

Agricultural drain tiles are installed in agricultural fields to facilitate drainage of those areas to reduce ponding and soil saturation to allow for more optimum soil moisture for crops. Drain tiles were historically made of clay but more recently utilize perforated plastic. The drain tiles are trenched into place at regular intervals and drain to natural or manmade swales or ditches. The drain tile system is typically made of lateral pipes that tie into larger trunk pipes.

Damage to the drain tile system can cause localized flooding or larger scale flooding if damage to trunk pipes is not properly fixed. Birch Solar has attempted to document the location of drain tiles within the Project Area and site Project infrastructure such that damage to the drain tiles is minimized. If drain tiles are damaged during construction, then this assessment also outlines the process that Birch Solar has committed to fix the damage.

2.0 DESKTOP DRAIN TILE ASSESSMENT METHODS

To identify the location of drain tiles, a three-step process is implemented. The first step is to engage landowners and obtain their input on any drain tile location information and the second step is to use publicly available mapping to identify and digitize the location of the drain tiles using geographic information system (GIS) tools. The final step is to document drain tile outflow pipes as part of a field survey effort.

2.1.1 Landowner Input

Birch Solar reached out to landowners to determine if they have drawings, global positioning system (GPS) locations, or any other information that would provide georeferenced data for where drain tiles have been installed within the fields. If possible Birch Solar attempted to understand from the landowner if the identified drain tiles were trunk or lateral lines.

desktop Drain tile assessment Methods

2.1.2 Visual Identification

Using high resolution aerial imagery available for the Project Area, Stantec GIS analysts reviewed mapping looking for signatures consistent with drainage tile and manually digitized the approximate location of the drain tiles using ArcGIS software. Multiple years of historic aerial imagery were reviewed (2013 through 2019) to minimize the limitations of seasonal and annual moisture variability that can affect the identification of the drainage patterns. The drain tile signatures include long straight lines within the field that are lighter than the surrounding vegetation or soil as the area immediately surrounding the installed drain tile dries out faster than the surrounding soil.

The photos below show an example of the typical drain tile aerial photo signature.

Photo 1: Example drain tile signature from the Birch Solar Project with horizontal drain tiles visible as darker brown lines relative to the lighter green vegetation.

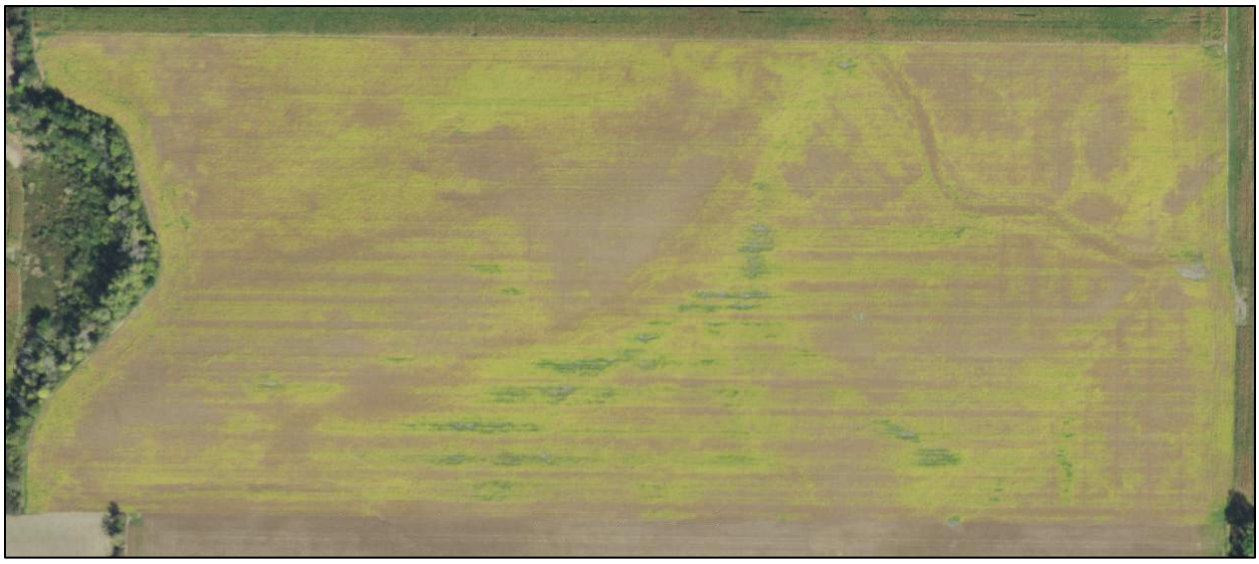

Photo 2: Example drain tile signature from the Birch Solar Project with diagonal drain tiles (southwest – northeast direction) visible as darker green lines relative to the lighter green vegetation.

2.1.3 Outflow Mapping

While completing field surveys, surveyors documented the location of outflow pipes from the drain tiles along roadside streams or manmade ditches. With the outflow point documented an approximation of the drain tile can be made extending into the field.

3.0 RESULTS

Based off the three step process to identify potential drain tile locations, Figure 2 depicts the approximate location of potential drainage tiles found within the Project Area. In areas where drain tile was installed, the identified lateral drain tiles were generally spaced at approximately 50 foot intervals. It should be noted that the location of the drain tile is approximate as the resolution and scale of mapping with the GIS tools does not allow for precision mapping at this stage.

4.0 MITIGATION

The site design has been developed to avoid, where possible, placement of solar module racks where installation of the posts via pile driving could damage drain tiles and result in saturated soils or areas of ponding onsite. In addition, Birch Solar is continuing to work with participating landowners to identify and refine the preliminary drainage tile locations. However, the preliminary assessment of drain tile locations is approximate and construction of the Project could result in damage to drain tiles that were not previously mapped. If during construction drain tiles are damaged, Birch Solar will have in place a procedure to document the location and notification process to ensure that a contractor is engaged to repair the damaged drainage tiles as part of construction and site restoration efforts. The stormwater and erosion controls in place for the Project during construction will also serve to mitigate any offsite water flow that may result from broken drain tiles. During operations Birch Solar will monitor site conditions looking for indications of damaged drain tile, such as saturated soils, ponding, etc. Upon identification of a potentially damaged drain tile, the Applicant will work with the landowner and the contractor to complete the necessary repairs to the drain tile. The Applicant also acknowledges that not all drainage is private and looks forward to working with the local drainage entities in the event public drainage is required throughout the life of the Project.

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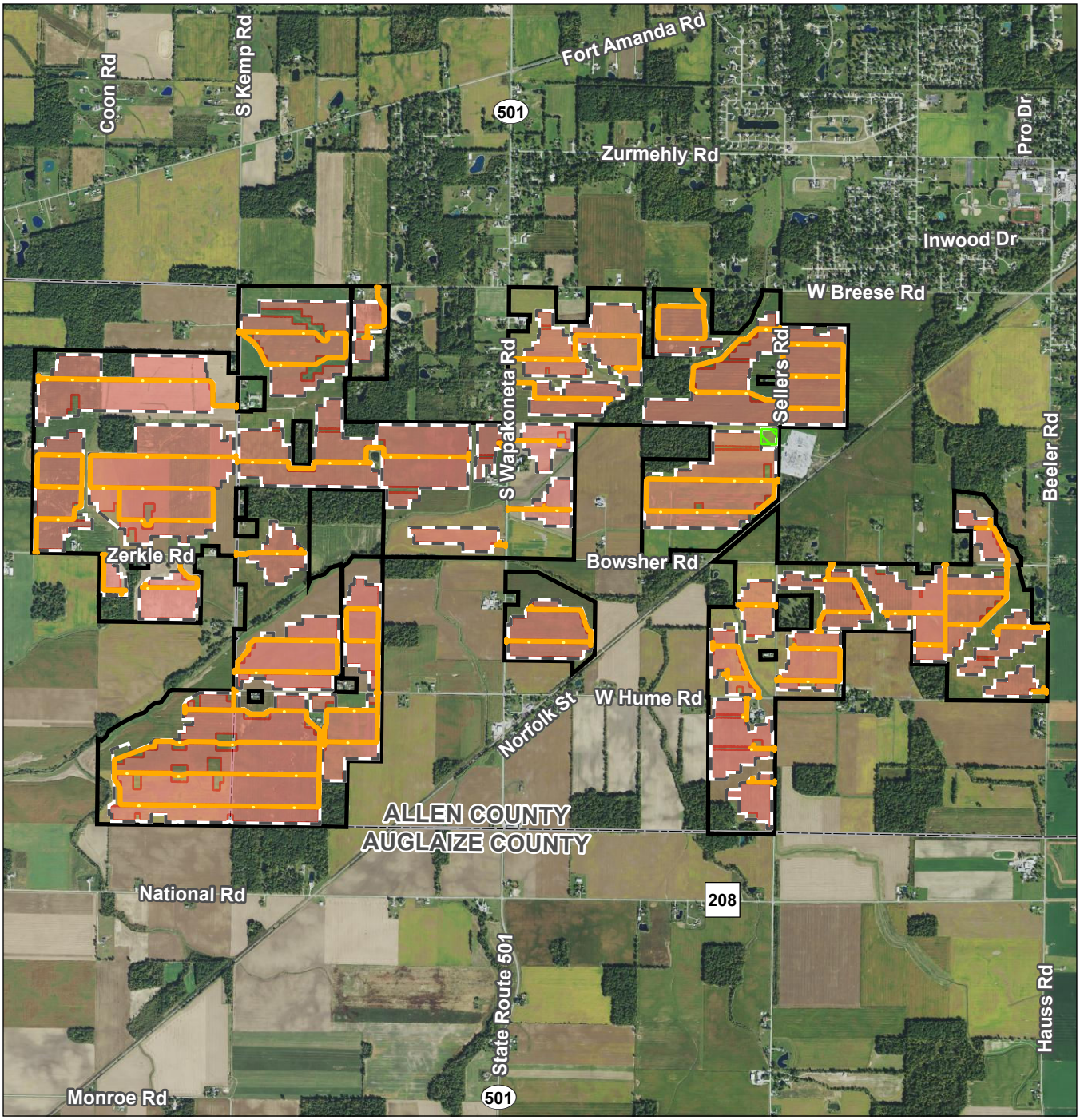
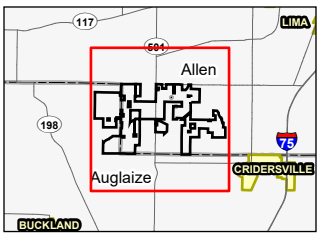
FIGURES





Legend

- Project Area
- Solar Array
- Inverter
- Substation
- Fence
- Access Road

0 1,500 3,000 Feet

(At original document size of 8.5x11)
1:36,000

N

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Notes

1. Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
2. Data Sources: Stantec, Lightsource, USGS, NADS
3. Orthophotography: 2019 NAIP

Project Location
Allen and Auglaize Counties, Ohio

Prepared by JLH on 2021-01-21
TR by CA on 2021-01-23
IR by CMD on 2021-01-23

Client/Project
Lightsource bp
Birch Solar Project

2028113238

Figure No.
1

Title
Project Area Location Map

V:\2028\Active\2028113238\03_data\gis_cad\gis\mxds\2028113238_BirchSolar\2028113238_BirchSolar_GenLayout.aprx Revised: 2021-01-28 By: JHeideman

Figure No.

2

Title

Preliminary Drain Tile Locations

Client/Project 2028113238

Birch Solar 1, LLC
Birch Solar Project

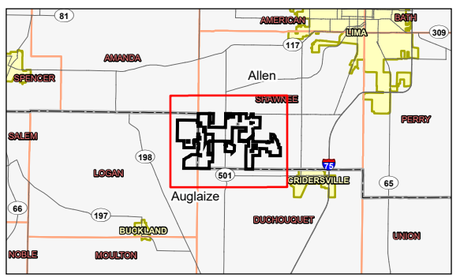
Project Location
Allen and Auglaize Counties, Ohio

Prepared by JLH on 2021-02-08
TR by CD on 2021-02-08
IR by CA on 2021-02-08

N

0 1,000 2,000 Feet
(At original document size of 11x17)
1:22,121

Legend
- Project Area
- Solar Array
- Inverter
- Substation
- Fence
- Access Road
- Possible Drain Tile



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
2. Data Sources: Stantec, Lightsource, USGS, NADS
3. Orthophotography: 2019 NAIP

Preliminary Design - Not for Construction

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Summary: Application - 30 of 31 (Exhibit W - Preliminary Drain Tile Assessment) electronically filed by Christine M.T. Pirik on behalf of Birch Solar 1, LLC