



Ross County Solar

Exhibit E

Drain Tile Mitigation Plan

Case No. 20-1380-EL-BGN

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1. Introduction

Ross County Solar, LLC (Ross County Solar) proposes to construct an up to 120 MW solar array (the Facility, or the Project Area) in Ross County, Ohio. Ross County Solar prides itself in farmer friendly practices, including the proper care and maintenance of drain tile and drainage systems to ensure continued productivity of area farmland. The Facility will be located almost exclusively on agricultural land, much of which contains drain tile. Approximately 2/3 of Ohio's cropland benefits from drainage practices (ODNR, 2009). To ensure the continued operation of the area's drain tile system, Ross County Solar has developed the following Drain Tile Mitigation Plan.

2. Drain Tile Identification

Ross County Solar contracted with Westwood Professional Services to complete a drain tile assessment for the Project Area. Efforts included coordination with the following stakeholders: Ross County to identify public drain tile systems; the Ross County Soil and Water Conservation District (SWCD) for drain tile data they may have on file for private landowners; and regular coordination with participating landowners to obtain copies of available drain tile maps or spatial datasets. The data obtained was aggregated and verified utilizing publicly available aerial imagery to create a spatial dataset of known and suspected drain tile systems. Data from this effort is provided in the map in Appendix A. Landowner coordination is ongoing during permitting efforts and the spatial dataset will be updated should additional data become available prior to construction.

3. Drain Tile Avoidance

Ross County Solar will implement the following drain tile avoidance measures prior to construction:

- A) Drain tile mains will be considered in the development of the final Facility layout and avoided where practicable.
- B) The drain tile spatial dataset shall be shown on the Final Site Plan or, if necessary, a separate plan set displaying drain tile data.
- C) Known drain tile mains will be input into a GPS and flagged in the field during construction to facilitate avoidance during construction activities.

4. Identification of Drain Tile Damage during Construction

Even under ideal circumstances, some drain tile damage during construction is unavoidable. Ross County Solar will utilize the following techniques to identify damaged drain tile during construction.

- A) For the excavation associated with the installation of collection lines and foundation slabs, any broken tile system will likely be visible along the periphery of the excavated area.
- B) It is possible for drain tile to be impacted during the installation of steel for the solar

racking. Should broken tile be noted during pile driving, the location will be assessed for the need for repair based on the specification in section 5.

- C) If damage is not immediately noted during construction activities, damage to the tile system can become apparent over time. Damage can be identified via unexpected flows of water out of the ground, ponding, or alternatively in dry conditions, formation of localized voids or sinkholes at the location of the tile breakage (UW Extension, 2015). Crews will regularly assess the site for any such conditions. Should conditions indicative of damaged tile be noted, the location will be assessed for the need for repair based on the specification in section 5.

5. Drain Tile Repair

Ross County Solar will implement the following protocols if broken drain tile is identified:

- A) Unless otherwise agreed to by the landowner, underground drain tile mains within the footprint of the Facility that are severed or otherwise damaged from construction will be repaired by a qualified contractor within 30 days of discovery of damage, weather and soil conditions permitting.
 - i. Lateral drain tile lines contained within the Facility area may not be repaired, as they are subject to landowner agreements that may not necessitate repair. Excavation of laterals may harm the structural integrity of pile driven posts, and thus repair may not be feasible. These lines will be assessed for repair on a case by case basis.
 - ii. Landowner agreements that do not necessitate the repair of drain tile shall be applicable only to drain tile lines contained fully on the landowners' property.
 - iii. Regardless of landowner agreements, drain tile mains that are known to extend outside of the participating landowner property on the upstream or downstream side will be repaired.
 - iv. If a drain tile line is damaged and it cannot be determined if the line extends onto neighboring parcels based on a field assessment and/or the spatial dataset, regardless of landowner agreements, repairs to the line will be completed.
- B) All repairs will be completed by a qualified contractor. Repairs will consist of the following:
 - i. The drain tile lines that are subject to repair shall be repaired at a minimum to the specifications noted in Appendix B.
 - ii. Alternatively, new drainage tile lines of comparable quality and cost to the original will be installed to restore the underground drainage capacity found onsite prior to construction.
 - iii. All subsurface drains subject to repair shall be repaired or replaced with materials of equal or higher quality and of equal or larger inside diameter as

those which were damaged or removed.

- iv. The subsurface drain repair shall maintain the original alignment, gradient and water flow to the greatest extent practicable.
- C) The locations of all subsurface drains that are repaired will be documented. The location will be recorded via GPS, a photo will be collected, and a description of the repair will be documented and available to the landowner at their request.

6. Complaint Resolution

Ross County Solar is committed to addressing landowner concerns regarding drain tile repair and maintenance. Per the complaint resolution program developed for the Facility, there will be a hotline and form available to collect and address landowner concerns. Ross County Solar will work to address landowner issues related to drainage in timely manner.

7. References

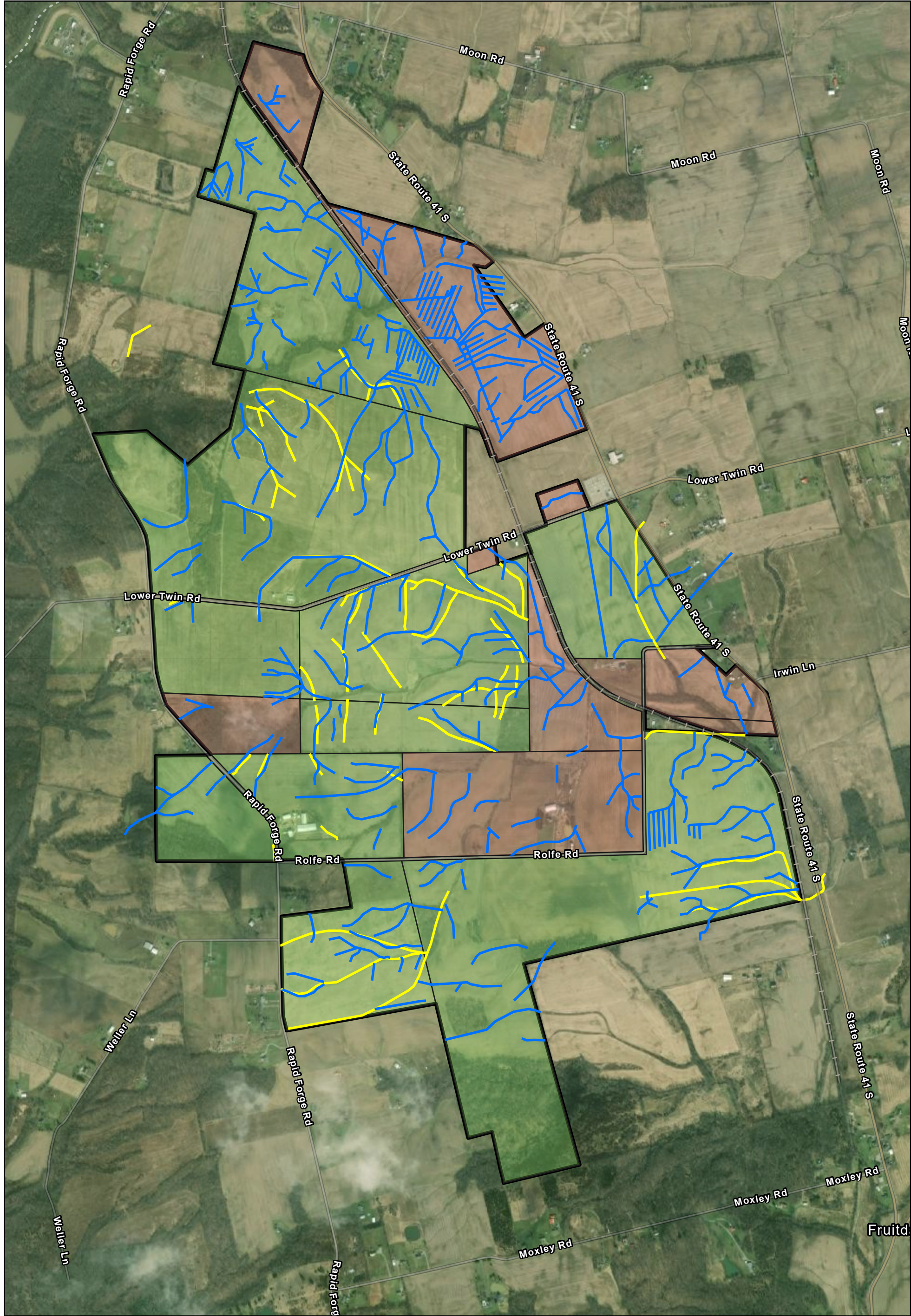
Ohio Department of Agriculture. Ohio Pipeline Standards and Construction Specifications. 2015. Accessed February, 2020. https://agri.ohio.gov/wps/wcm/connect/gov/553ebd44-98e5-485c-a78d-49156289a388/PIPELINE+STANDARD.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-553ebd44-98e5-485c-a78d-49156289a388-mi7NpHD

Ohio Department of Natural Resources, Division of Soil and Water Conservation. Rural Drainage Initiative for Ohio. 2009. Accessed February, 2020. http://soilandwater.ohiodnr.gov/portals/soilwater/pdf/swcd/ODM_Draft_III.pdf

University of Wisconsin Extension. Fixing Tile Blowouts: What you need to know. 2015. Accessed February, 2020. <https://extension.soils.wisc.edu/wcmc/fixing-tile-blowouts-what-you-need-to-know/>

Appendix A

Drain Tile Map

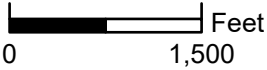


Data Source(s): ESRI 2020, Westwood 2020.

Legend

- Drain Tile Data Provided
- Drain Tile Data Unavailable
- Drain Tile Digitized from Historical Aerials

- Landowner Provided Drain Tile
- Project Area
- Parcel Boundary



Ross County Solar Project
Ross County, OH

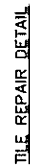
Drain Tile Discovery

October 7, 2020



Appendix B

Drain Tile Specifications



REV	DESCRIPTION	DATE	DWG	CAD

Ross County Solar, LLC

TILE REPAIR DETAIL

SCALE: 800-TO-FOOT

SHEET NO.

QUANTITY OF

TITLE

DWG-001 - TRD

SHEET 1 of 1

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Summary: Application Application Exhibit E (Drain Tile Mitigation Plan) electronically filed by Mr. Michael J. Settineri on behalf of Ross County Solar, LLC