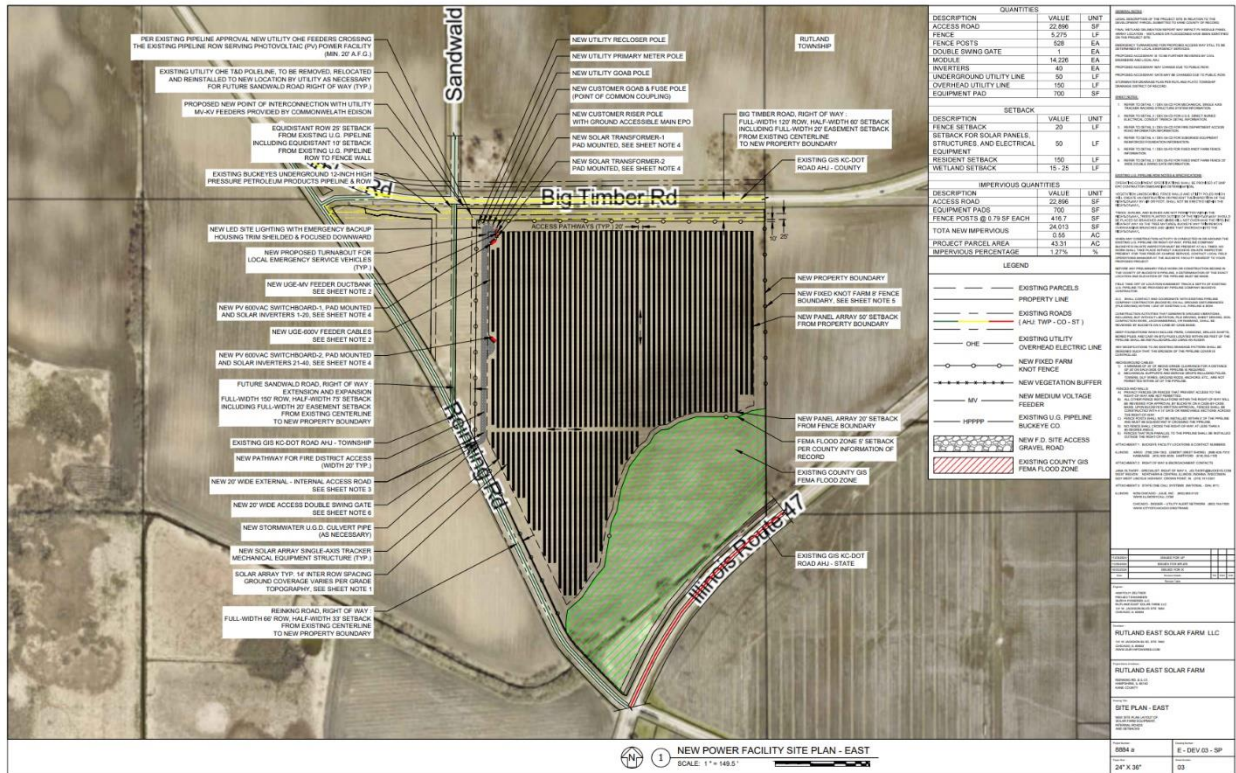


# Rutland East Solar Farm, LLC Drain Tile Mitigation Plan

## Project

Rutland East Solar Farm, LLC (RESF) is proposing to construct a 5 MWac community solar facility on an unincorporated parcel of land currently used for agricultural purposes. This type of use typically utilizes drain tiles to control and manage stormwater runoff.



## AIMA Requirements

RESF has executed an **Agricultural Impact Mitigation Agreement (AIMA)** with the Illinois Department of Agriculture (IDOA) to minimize/manage construction impacts associated with the development of our proposed facility.

Potential damage could result when installing underground cables. Presuming cables will be removed upon decommissioning, pursuant to the AIMA, excavation for the installation of underground cables is limited to a depth of 18-inches within the facility’s fenced perimeter or when traversing beneath an access road provided the cable path is marked at the surface. If cables are left in place, they may be buried to a depth of 5-feet.

The AIMA requires that within 60 days after construction is complete, RESF shall provide the landowner, IDOA, and the Kane-DuPage Soil and Water Conservation District (KDSWCD) with “as built” drawings (strip maps) showing the location of all drainage tile lines by survey station including any drain tile line repair location(s), and any underground cable installed as part of the RESF facility

Any development activity on agricultural land inevitably creates a potential for damaging existing drain tiles, leading to a problematic situation during the eventual decommissioning of RESF's facility at the end of its projected lifespan.

### **RESF Mitigation Efforts**

To minimize damage during construction of the facility and enable proper site restoration in the future, RESF is committed to conducting a complete **drain tile survey** of the parcel immediately upon receiving SUP approval and prior to the issuance of construction permits.

This survey will compile information obtained from private landowners, Kane County staff, a review of existing aerial photographs, and visual field observation. Data will then be aggregated into a mapped plan of all known or suspected drain tile systems onsite. The process will be an ongoing effort as any additional information is obtained prior to or during construction. RESF is also required to restore the site/soils to its pre-development state under the conditions of approval associated with our special use permit (SUP) issued by Kane County.

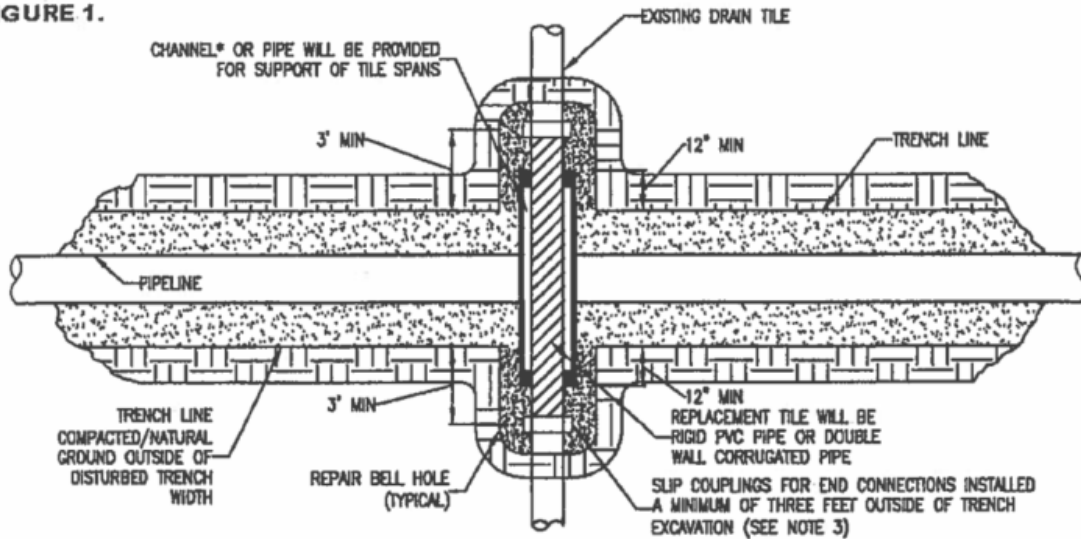
For our immediate needs, RESF will follow this **construction protocol** to avoid and/or mitigate drain tile damage:

- ❖ To the best of our knowledge, present a project design which minimizes known or suspected drain tile systems. Construction activity and impacts on drainage will be managed through the project's SWPPP, included as part of the construction permit set. Contractors will be held responsible for identifying potential signs of damage through the construction/decommissioning process.
- ❖ Known or suspected drain tiles will be flagged in the field during construction. Drain tile locations shall be flagged using GPS technology.
- ❖ Following AIMA guidelines, if drainage tile lines are damaged, following adequate inspection, RESF will temporarily repair the lines (Figure 1) or install new, permanent drain tiles/lines of comparable quality and cost to the original(s), and of sufficient size and appropriate slope in locations that limit direct impact from the facility, ensuring proper drainage is maintained (Figure 2).
- ❖ Should new drain tiles/lines be required, said lines may be located outside of, but adjacent to, the perimeter of the facility. Said repairs should be made within 30 days of discovery, or as permitted by weather conditions and should restore drainage capability onsite prior to RESF development.
- ❖ Should damage occur during decommissioning, repairs and/or installation of new lines shall be completed within 12 months of the facility closure date.
- ❖ Incorporate all data into a mapped plan or exhibit attached as part of the construction permit set, facilitating decommissioning and site restoration.

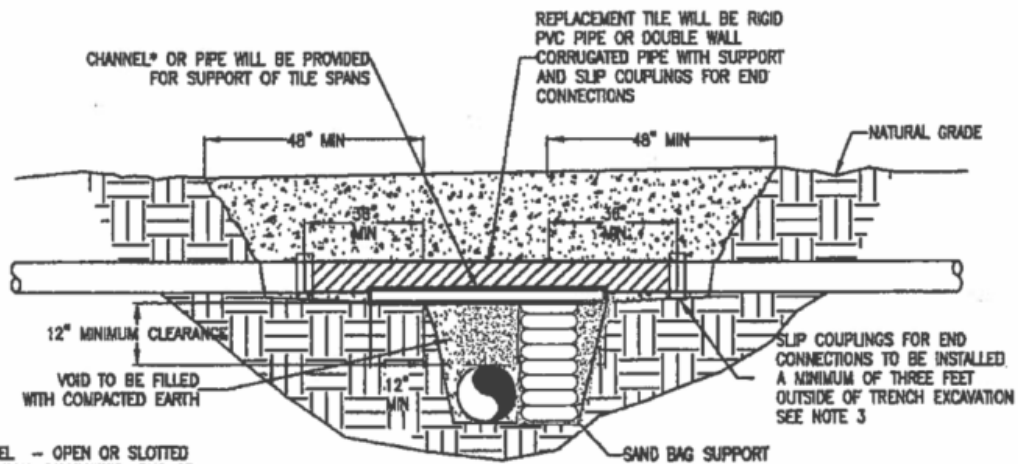
### **Complaint Resolution**

RESF has established a **complaint resolution protocol** concerning overall operations and maintenance procedures associated with the facility. This protocol is extended to address concerns regarding drainage solutions associated with repair or maintenance activity of existing or new drain tiles/lines, in a timely and thorough manner.

**FIGURE 1.**



**PLAN**  
N.T.S.



**CROSS SECTION**  
N.T.S.

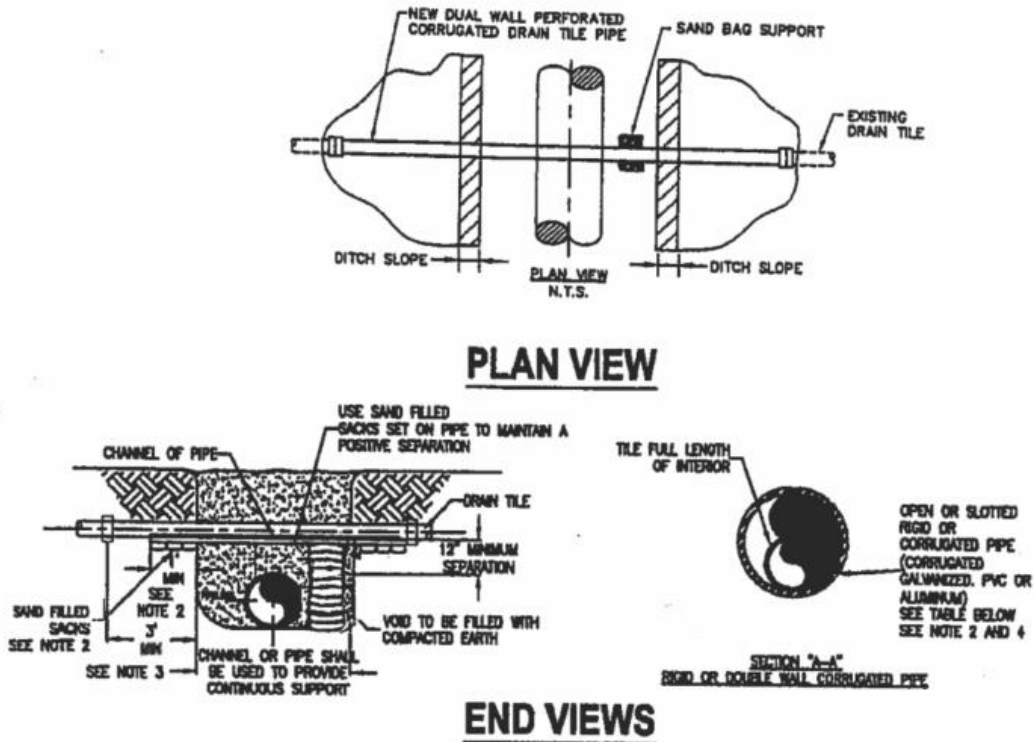
\*CHANNEL - OPEN OR SLOTTED CORRUGATED GALVANIZED, PVC OR ALUMINUM CRADLE TO SUPPORT DRAIN TILE.

**NOTE:**

1. IMMEDIATELY REPAIR TILE IF WATER IS FLOWING THROUGH TILE AT TIME OF TRENCHING. IF NO WATER IS FLOWING AND TEMPORARY REPAIR IS DELAYED, OR NOT MADE BY THE END OF THE WORK DAY, A SCREEN OR APPROPRIATE "NIGHT CAP" SHALL BE PLACED ON OPEN ENDS OF TILE TO PREVENT ENTRAPMENT OF ANIMALS ETC.
2. CHANNEL OR PIPE (OPEN OR SLOTTED) MADE OF CORRUGATED GALVANIZED PIPE, PVC OR ALUMINUM WILL BE USED FOR SUPPORT OF DRAIN TILE SPANS.
3. INDUSTRY STANDARDS SHALL BE FOLLOWED TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES.

**TEMPORARY DRAIN TILE REPAIR**

FIGURE 2.



MINIMUM SUPPORT TABLE			
TILE SIZE	CHANNEL SIZE	PIPE SIZE	
3"	4" @ 5.4 #/ft	4"	STD. WT.
4'-5"	5" @ 6.7 #/ft	6"	STD. WT.
6'-9"	7" @ 9.8 #/ft	9'-10"	STD. WT.
10"	10" @ 15.3 #/ft	12"	STD. WT.

**NOTE:**

1. TILE REPAIR AND REPLACEMENT SHALL MAINTAIN ORIGINAL ALIGNMENT GRADIENT AND WATER FLOW TO THE GREATEST EXTENT POSSIBLE. IF THE TILE NEEDS TO BE RELOCATED, THE INSTALLATION ANGLE MAY VARY DUE TO SITE SPECIFIC CONDITIONS AND LANDOWNER RECOMMENDATIONS.
2. 1'-0" MINIMUM LENGTH OF CHANNEL OR RIGID PIPE (OPEN OR SLOTTED CORRUGATED GALVANIZED, PVC OR ALUMINUM CRADLE) SHALL BE SUPPORTED BY UNDISTURBED SOIL, OR IF CROSSING IS NOT AT RIGHT ANGLES TO PIPELINE, EQUIVALENT LENGTH PERPENDICULAR TO TRENCH. SHIM WITH SAND BAGS TO UNDISTURBED SOIL FOR SUPPORT AND DRAINAGE GRADIENT MAINTENANCE (TYPICAL BOTH SIDES).
3. DRAIN TILES WILL BE PERMANENTLY CONNECTED TO EXISTING DRAIN TILES A MINIMUM OF THREE FEET OUTSIDE OF EXCAVATED TRENCH LINE USING INDUSTRY STANDARDS TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES INCLUDING SLIP COUPLINGS.
4. DIAMETER OF RIGID PIPE SHALL BE OF ADEQUATE SIZE TO ALLOW FOR THE INSTALLATION OF THE TILE FOR THE FULL LENGTH OF THE RIGID PIPE.
5. OTHER METHODS OF SUPPORTING DRAIN TILE MAY BE USED IF ALTERNATE PROPOSED IS EQUIVALENT IN STRENGTH TO THE CHANNEL/PIPE SECTIONS SHOWN AND IF APPROVED BY COMPANY REPRESENTATIVES AND LANDOWNER IN ADVANCE. SITE SPECIFIC ALTERNATE SUPPORT SYSTEM TO BE DEVELOPED BY COMPANY REPRESENTATIVES AND FURNISHED TO CONTRACTOR FOR SPANS IN EXCESS OF 20', TILE GREATER THEN 10" DIAMETER, AND FOR "HEADER" SYSTEMS.
6. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.
7. PRIOR TO REPAIRING TILE, CONTRACTOR SHALL PROBE LATERALLY INTO THE EXISTING TILE TO FULL WIDTH OF THE RIGHTS OF WAY TO DETERMINE IF ADDITIONAL DAMAGE HAS OCCURRED. ALL DAMAGED/DISTURBED TILE SHALL BE REPAIRED AS NEAR AS PRACTICABLE TO ITS ORIGINAL OR BETTER CONDITION.

**PERMANENT DRAIN TILE REPAIR**