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Response to Questions #1

For Shape Ditch Project

Issued: November 3, 2021

The following are responses to questions that our office has received via email with regards to the above mentioned project.

- 1. Q: Is there a completion date?
 - A: The project's completion date is October 1, 2022.
- 2. Q: Are there any extra requirements from the gas company when digging around the gas line?
 A: Yes. The contractor will have to adhere to the requirements of TC Energy and Sunoco. The proposed drainage tiles have been set at an elevation that maintains minimum clearance requirements from the TC Energy and Sunoco lines.
- 3. Q: For bonding do you have an estimate for this project?
 - A: The Engineer's Estimate is \$334,988.
- 4. Q: In regards to the pipe trench detail: Is it required to install the pipe with a ditch machine or round bottom bucket? Can we use an excavator and have a flat bottom trench?
 - A: Pipe is to be installed per 'ASTM F449-16: Standard Practice for Subsurface Installation of Corrugated Polyethylene Pipe for Agricultural Drainage or Water Table Control'. Per these standards, if a flat bottom is used then the following trench widths and bedding depths must be adhered to for this project:
 - -Minimum trench width for 18" diameter tile: 27"
 - -Minimum bedding depth for 18" diameter tile: 4" of #57 aggregate fill
 - -Minimum trench width for 24" diameter tile: 34"
 - -Minimum bedding depth for 24" diameter tile: 4" of #57 aggregate fill
 - -Minimum trench width for 30" diameter tile: 42"
 - -Minimum trench width for 30" diameter tile: 6" of #57 aggregate fill

Respectfully,

Michael J. Kerns, P.E.

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Assistant Engineer, Logan County Engineer's Office