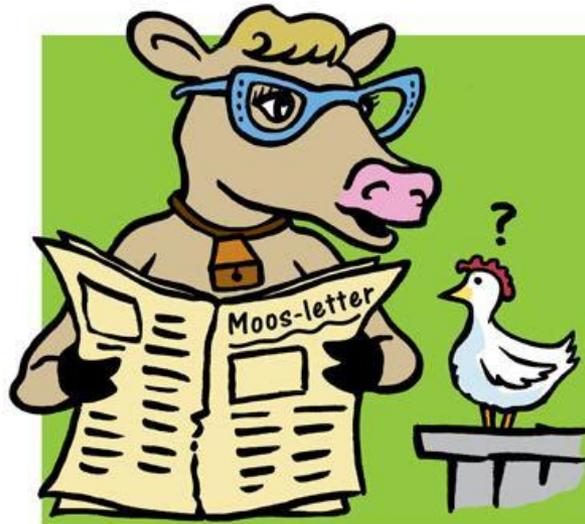


Engineering for Agriculture

2025 Engineers' Workshop

Chelsea Gross, Non-Point Source Manager
**Allie Shreffler, Agricultural Conservation
Technician**





WESTMORELAND AG Moos-letter

Your Source for Ag Updates!

Reach out to be
added to our list!

Opportunities in Agriculture

- What are agriculture (Ag.) conservation best management practices (BMPs)?
- What funding opportunities exist in Ag. conservation?
- Where to start with designing Ag. BMPs?
- How can the District and engineers collaborate to put Ag. BMPs on the ground?

Common Ag. Conservation BMPs

- Roofed Animal Heavy Use Area
- Solid Manure Stacking Pad
- Liquid Manure Storage Tank
- Liquid Manure Reception Pit
- Bunk Silo with Silage Leachate Management
- Milkhouse/Wastewater Transfer
- Manure Composting Systems
- Grassed Waterways or Diversions
- Stabilized Access Roads
- Heavy Use Area Protection
- Culvert/Ford Stream Crossings
- Spring Developments with Watering Troughs
- Terraces

Agriculture Conservation Assistance Program (ACAP)

- 2022-Legislation passed the Clean Streams Fund to create ACAP
 - **Purpose:** To reduce non-point source pollution in the commonwealth streams, rivers, and waterbodies
 - Westmoreland Allocation totaled **\$2,525,644.58**
- FY 2024/2025 ACAP Westmoreland: \$634,921.00 – dedicated in the State Budget
 - **FY 24/25 ACAP Project Funds: \$507,936.80**



Agriculture Conservation Assistance Program

<https://www.youtube.com/watch?v=Gr613noOBZA>



Design Requirements

- Every county may have different requirements for ACAP, however all practices should follow the Natural Resources Conservation Service (NRCS) Conservation Practice Standards from the Field Office Technical Guide for Pennsylvania and NRCS National Engineering Handbook

The screenshot shows the 'Field Office Technical Guide | PA' website. The main content area features a large image of a person in a field with a red circle highlighting the word 'Pennsylvania' and a 'Change state' button below it. The URL 'https://efotg.sc.egov.usda.gov/' is displayed above the image, with 'Select Pennsylvania' written below it. The navigation menu includes 'Document Tree' and 'Document Search'. A sidebar on the left lists sections 1 through 4, with 'Section 4 - Practice Standards and Supporting Documents' circled in red. The main content area shows 'Section 4 - Practice Standards and Supporting Documents' with a message: 'This folder does not contain any documents.' The Westmoreland Conservation District logo is in the bottom right corner.

Field Office Technical Guide | PA

<https://efotg.sc.egov.usda.gov/>
Select Pennsylvania

Pennsylvania

Change state

Document Tree | Document Search

Keyboard Navigation Instructions

Section 1 - General Resource References

Section 2 - Natural and Cultural Resources Information

Section 3 - Resource Concerns and Planning Criteria

Section 4 - Practice Standards and Supporting Documents

Section 4 - Practice Standards and Supporting Documents

Featured by Content Manager | Export CSV

Document Title (A-Z)

This folder does not contain any documents.

Westmoreland Conservation District

Section 3 - Resource Concerns and Planning Criteria



Section 4 - Practice Standards and Supporting Documents



Index

Conservation Practice Standards & Support Documents



Access Control (472)

Access Road (560)

Agrichemical Handling Facility (309)

Air Filtration and Scrubbing (371)

Alley Cropping (311)

Amendments for the Treatment of Agricultural Waste (591)

Anaerobic Digester (366)

Animal Mortality Facility (316)

Annual Forages for Grazing Systems (810)

Aquatic Organism Passage (396)

NRCS Manuals and Handbooks with Pennsylvania Addendums

[Home](#) > [Conservation Basics](#) > [Conservation By State](#) > [Pennsylvania](#) > NRCS Manuals and Handbooks with Pennsylvania Addendums

Links to the National Engineering Manual, PA manual supplements, the Engineering Field Handbook, PA Addendums, and the PA Irrigation Guide.

[National Engineering Manual](#)

 [Index and Amendments to NEM](#) (791.84 KB)

[Engineering Field Handbook](#)

(scroll down and open specific chapter 210-VI-NEH-650.01 through 650.19)

[Pennsylvania Addendums to Engineering Field Handbook](#)

[Ag Waste Management Field Handbook](#)

(scroll down and open specific chapter 210-VI-NEH 651.01 through 651.17)

[Pennsylvania Addendums to Ag Waste Management Field Handbook](#)

 [PA Irrigation Guide 021919.pdf](#) (4.04 MB)

<https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/pennsylvania/nrcs-manuals-and-handbooks-with-pennsylvania>

Ag. Design Considerations

- **What type of livestock does the farmer have?**
- **What are the farmers livestock numbers?**
- **What is their current manure management?**
- **What bedding is being used?**
- **How does the farmer feed his livestock?**
- **What is the livestock's primary water source?**
- **Does the farmer's equipment work for this design?**

The more we know about how a farm is managed, the more **functional** the design becomes for the farmer's operational needs.

Regulatory Design Considerations

- Divert all surface water away or around BMP/BMP stormwater design requirements?
- How much manure storage does the farmer need?
- What are the setbacks to surface waters, wells, public drinking sources, property lines, or roads?
- What safety concerns need addressed?



DROWING HAZARD!



SURFACE MAY
BREAK THROUGH

KEEP OFF SURFACE



DEADLY MANURE GASES POSSIBLE

DEATH
MAY BE IMMEDIATE!



ENTER PIT **ONLY** WITH:
- SELF-CONTAINED AIR SUPPLY
- VENTILATION
- RESCUE HARNESS, MECHANICAL
LIFT, STAND-BY PERSON

Ag. Conservation Projects

C. McChesney Farm Improvement Project - Phase 1

Location: Derry Township

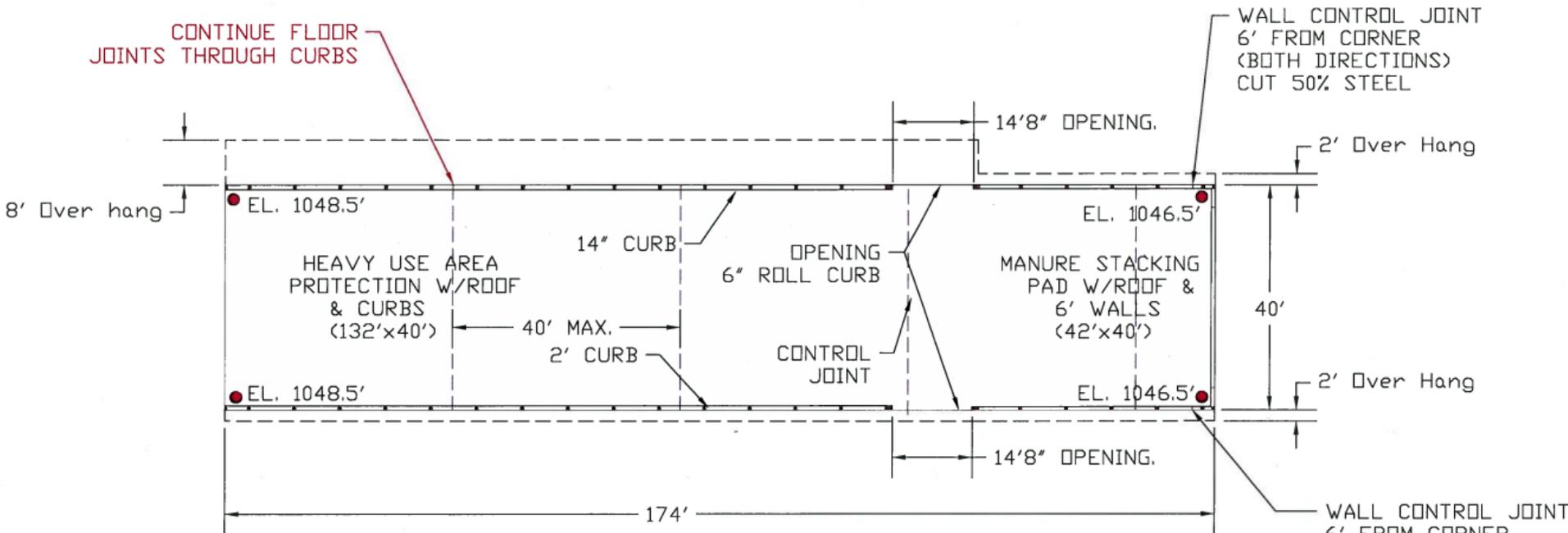
Installed: Fall 2024 –Spring 2025

Cost: \$239,633.71 of Agricultural
Conservation Assistance Program funds with
contributions from Natural Resources
Conservation Service Environmental Quality
Incentives Program (NRCS EQIP)

C. McChesney Farm Improvement Project - Phase 1



Roofed Animal Heavy Use Area w/ Roofed Waste Storage Facility Beef Cattle



CONSTRUCTION NOTES:

1. .6' WALL JOINTS, CUT 50% STEEL. JOINTS ARE LIQUID TIGHT.
2. FLOOR JOINTS CONTINUED THROUGH CURBS ALSO, CUT 50% STEEL. JOINTS ARE LIQUID TIGHT.
3. LOCATION OF JOINT SHOWN ON DRAWING.

*Engineered Design from USDA Natural Resources Conservation Service

C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1

C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1



C. McChesney Farm Improvement Project - Phase 1

Phase 2 BMPs: Stream crossings, streambank fencing, watering system, and rotational grazing system

Poole Farm Manure Management Improvement Project

Location: East
Huntingdon Township

Installed: Fall 2024 –
Spring 2025



Growing Greener Funding:

\$123,195.00

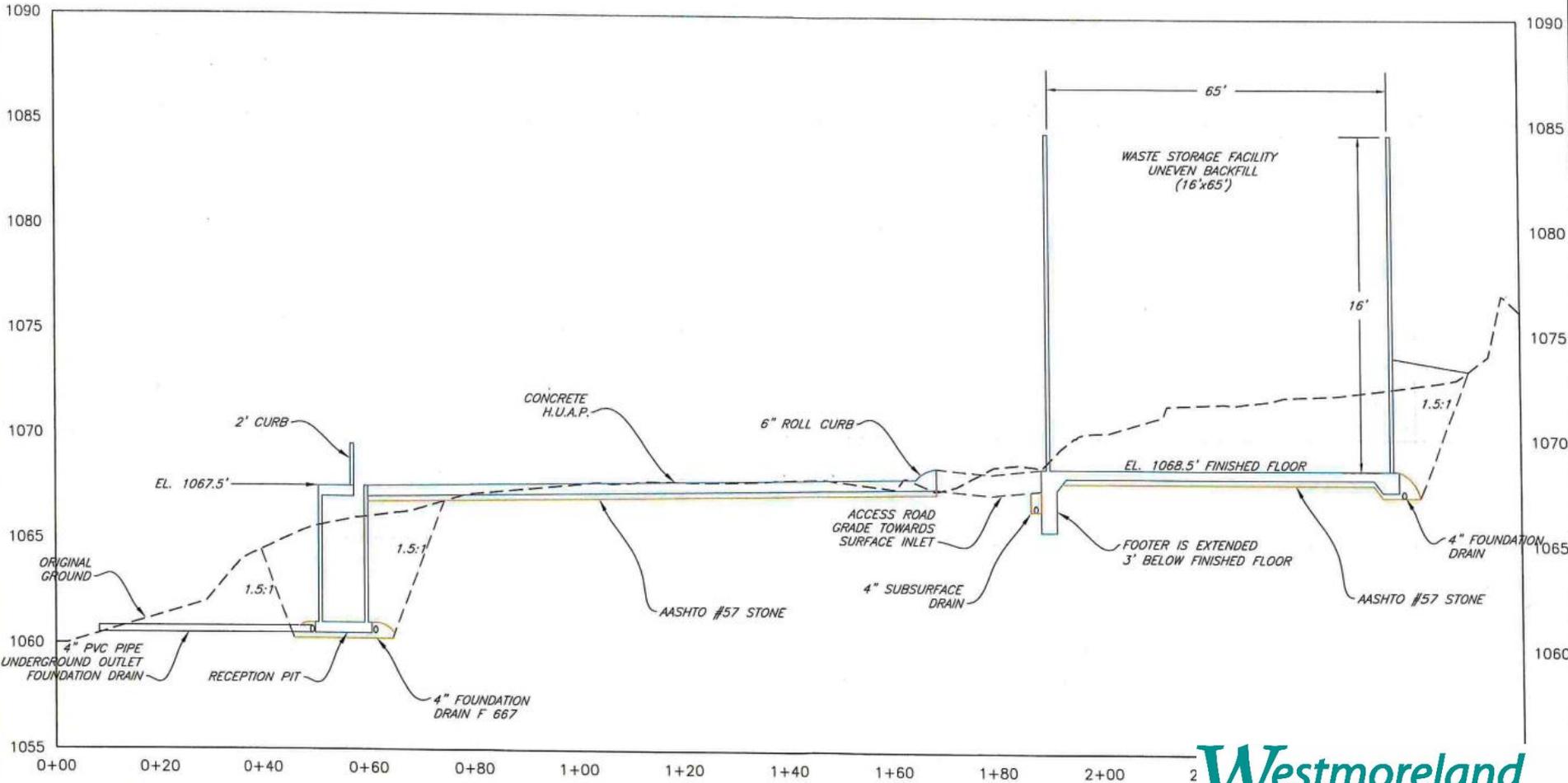
Additional contributions from
NRCS EQIP



Liquid Dairy Waste Storage Facility w/ Reception Pit

CONSTRUCTION NOTE:

1. DIVERT ALL SURFACE WATER AWAY FROM H.U.A.P. and MANURE STACKING PAD.



*Engineered Design from USDA Natural Resources Conservation Service

Poole Farm Manure Management Improvement Project



Poole Farm Manure Management Improvement Project

Poole Farm Manure Management Improvement Project

Poole Farm Manure Management Improvement Project



Poole Farm Manure Management Improvement Project

Poole Farm Manure Management Improvement Project



Poole Farm Manure Management Improvement Project



Pool Farm Manure Management Improvement Project



2024/10/03

Pooler Farm Manure Management Improvement Project

Poole Farm Manure Management Improvement Project

Poole Farm Manure Management Improvement Project

Work to be finished in 2025: Concrete pad repairs, milkhouse waste transfer, solid manure stacking pad



Poole Farm Manure Management Improvement Project



How Can You Get Involved?

J. Hoke Roofed Animal Heavy Use Area/Ag BMP Improvements

- September 2024-**Request for proposal (RFP)** was advertised and sent out to engineering firms to assist with a roofed animal heavy use area.
- November 2024-Letter of interest was due and engineer selected/awarded at District Board of Director's meeting
- December 2024-Pre-design meeting at the farm
- February 2025-Site survey/Start of design
- April 2025-Goal for a finalized design
- May 2025-Project Bid
- Summer 2025- Project Construction



Resource Concern:
Sediment and nutrient runoff at an animal concentration area.

Recommended BMP:
Roofed animal heavy use area and pasture management improvements



Manure Composting System



NOTE:
Schematic representation of fully
constructed aerated compost
structure.

END VIEW



ISOMETRIC VIEW



FRONT VIEW



BACK VIEW



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