REQUEST FOR QUOTE (RFQ)

Chesapeake Conservancy is a non-profit organization that works with conservation partners and landowners to implement Best Management Practices (BMPs) on agricultural land. Chesapeake Conservancy and our Central PA Partnership were awarded a Regional Conservation Partnership Program (RCPP) grant through the USDA Natural Resources Conservation Service (NRCS). Funding for Technical Assistance for practice design and assistance with practice installation and verification is available through RCPP.

As part of the RCPP grant, Chesapeake Conservancy is soliciting quotes for the following services:

- Engineering Services to design a roofed heavy use area/waste storage facility and associated practices for a beef operation.
- Project and Construction Oversight
- Quality Assurance Inspections and Final Certification with PE Stamp

RFQ OVERVIEW AND DESCRIPTION OF WORK

RFQ Release Date: October 1, 2024

Landowner Name: Scott Brown

Project Location: 201 Shady Ridge Lane
Port Matilda, PA 16870
Centre County, Taylor Township

RFQ Issuing Office: Chesapeake Conservancy
Email: paprograms@chesapeakeconservancy.org
Phone: 570-372-4075

RCPP Partners: Natural Resources Conservation Service (NRCS) and Centre County Conservation District

RFQ Due Date: **All quotes must be submitted by:**
October 31, 2024 at 10:00 am EDT
Quotes will not be accepted after this date and time.

RFQ Submission: **All quotes must be submitted electronically, or hand delivered in-person.**
DO NOT MAIL QUOTES – QUOTES WILL NOT BE ACCEPTED THROUGH U.S. MAIL.

Email: paprograms@chesapeakeconservancy.org
Include "Brown RFQ Response – Engineering Services" in the subject line.

In Person: Chesapeake Conservancy
Attention: Kathy Rohrer/Brown RFQ Response – Engineering Services
Susquehanna University, Freshwater Research Institute Building
1250 West Sassafras Street, Selinsgrove, PA 17870
A drop box is located inside the main entrance and is accessible at any time.

Questions: All questions regarding this RFQ should be submitted to:
Email: paprograms@chesapeakeconservancy.org
Contact/Phone: Kathy Rohrer, 570-372-4075

Project Description:
The successful bidder will be responsible for providing engineering and professional services to design and oversee construction of a roofed heavy use area/waste storage facility for a beef operation located in Centre County. The project involves construction of the roofed facility as well as access roads, animal walkway, diversion, water well and other Best Management Practices (BMPs). The new facility will be a stand-alone structure that is not attached to existing buildings.

The design shall include all components needed for constructing the practices identified in Attachment A – Brown Inventory and Evaluation (I&E) that will adequately address water quality. BMPs may include but are not limited to those identified in the landowner's I&E. Bidders should refer to the I&E for practices, estimated quantities and other important information regarding the project site. This information is provided for informational purposes only.

An unnamed tributary to Bald Eagle Creek flows through the property.

A Nutrient Management Plan has been developed for this operation.

This contract will include the following services:

Project Design

- Site survey(s) and engineering of planned BMPs
- Provide a concept plan for approval by NRCS after pre-design meeting
- Coordinate and communicate with NRCS staff to incorporate NRCS comments into final design
- Provide final design and drawings to NRCS for review and approval
    - The Engineer shall prepare all necessary design plans, drawings and specifications to be used for the construction of the BMPs. All information provided shall be complete in detail and contain all necessary information. Drawings shall conform with standard professional practice, including site plans, profiles and sections, erosion and sediment control plan, quality assurance/inspection plan, operation and maintenance plan and all details necessary to illustrate the complete scope of the work.
    - The Engineer shall include design calculations, documentation and cost estimate.
    - The design and drawings shall be signed and sealed by a qualified, licensed professional, and shall meet Pennsylvania Technical Guide Standards and Specifications.
- Provide NRCS approved design and drawings to the Conservancy, RCPP Partner (Conservation District) and landowner
- Provide NRCS technical standards and specifications of planned BMPs
    - Planned BMPs and estimated quantities are found in Attachment A.
- Provide printed sets of 11"x17" or larger drawings and designs for the site showing. Quantity will be determined based on number of attendees.

Project Permits
The landowner will be responsible for applying for and obtaining all permits required for this project.

Project Meetings
Project meetings including but not limited to:

- Pre-design meeting on site
- Site showing for bids on site
- Bid opening or review of bids
- Pre-construction visit on site

Construction Oversight and Quality Assurance

The Engineer is expected to furnish customary engineering advice and assistance necessary to Chesapeake Conservancy, NRCS, landowner, contractors and other project partners to enable all parties to readily understand the project and design. The Engineer shall provide oversight of the project and shall coordinate with Chesapeake Conservancy, NRCS, landowner, contractors and other partners throughout the project. The Engineer is expected to work directly with NRCS and the landowner on such things as design reviews, edits and approvals, site visits and other aspects of the project. The Engineer shall visit the construction site to observe progress and quality of work, to determine if work is proceeding in accordance with the design, to keep Chesapeake Conservancy informed of progress, to guard against defects and deficiencies and to disapprove of work not in conformance with the design and NRCS specifications.

The Engineer will, at a minimum, conduct quality assurance inspections on site during construction for critical tasks including, but not limited to:

- Placing compacted fill or subgrade/stone preparation
- Checking materials (rebar, posts, etc.) before installation
- Check reinforcing steel before concrete pour (not same day as pour)
- Pouring any concrete
- Backfilling poured concrete walls or final grading
- Setting trusses and associated truss bracing (Trusses must be approved by the Engineer prior to ordering. Final truss design needs a P.E. seal.)
- Installing stormwater pipes and drop boxes
- Final inspection for conformity with design, concept and NRCS specifications

Contractor will complete a NRCS RCPP TA-I Practice Certification Sheet (included with Attachment B) for each practice (Contract Item Number-CIN) in the NRCS contract that is part of the engineering design. An example Practice Certification Sheet has been provided by NRCS. The Contractor shall send the completed Practice Certification Sheet(s) to the local NRCS District Conservationist (DC) for functional review and DC signature and copy the Conservancy. NRCS will complete its review and return the signed Practice Certification Sheet(s) to the Contractor. The signed Practice Certification Sheet(s) shall be submitted to the Conservancy with the Contractor's invoice.

When the project is complete, the Engineer will provide the following:

- "As Built" documentation consisting of final drawings of practices and quantities installed and certification statement signed by a professional engineer stating installed practices meet the PA Technical Guide Standards and Specifications.
    - One electronic copy to Chesapeake Conservancy and NRCS.

Bidding Process

The Centre County Conservation District (lead RCPP partner) will be required to utilize a competitive bidding process for the implementation phase of the project. The Conservation District will be responsible for compiling a bid package following their procurement policy. The Engineer and NRCS will review the final bid package for accuracy and completeness. The Engineer shall be available to answer contractors' questions pertaining to the design and supply the District with addenda, if required. The Engineer shall be prepared to provide printed sets of 11"x17" or larger of the designs and drawings for the site showing.

RFQ TERMS AND CONDITIONS

CONSTRUCTION TIMELINE:

Designs shall be completed as soon as possible. Contractors shall include with their response when they can begin working on the design and their projected completion date of the design. Preference shall be given to contractors who can complete the designs in a timeframe which could allow construction to be completed before June 2026 as funding from the RCPP partner for implementation/construction needs to be spent within this timeframe.

If the contracted services are not completed within the designated time period (as specified in the resulting contract from this RFQ), the contract can be extended if agreed to in writing by Chesapeake Conservancy and the contractor.

PA ONE CALL:

Contractor shall follow all laws and regulations relating to the Pennsylvania One-Call System including submitting all required design notifications to the Pennsylvania One-Call System.

COMMUNICATION:

Communication between the Contractor, NRCS, the District and the landowner is crucial to a successful project. Contractor shall work closely with NRCS, the District and the landowner during the design and implementation phases of the project to ensure the project is completely timely.

PAYMENT INFORMATION:

Chesapeake Conservancy will pay Contractor when the design is completed and approved by NRCS and as practices are certified and NRCS reporting requirements are met. Payment(s) will be issued on a Net 30 schedule upon submission of an approved invoice and a completed Application for Payment form.

NRCS REPORTING REQUIREMENTS:

NRCS requires Contractor to complete Attachment B with each invoice. Attachment B includes a RCPP TA-I Certification by Practice Sheet and a RCPP TA-I Reimbursement Summary Sheet.

RCPP TA-I Certification by Practice Sheet

Contractor shall include on the Certification by Practice Sheet basic information about the conservation practice, who was involved, brief description of activities, completion date and the charge by Activity Type (Design or Installation). A separate Certification Practice Sheet is to be completed for each practice in the producer's RCPP contract that is associated with the engineering design.

RCPP TA-I Reimbursement Summary Sheet

For each invoice the Contractor submits to the Conservancy, Contractor shall complete the Reimbursement Summary Sheet by compiling the total reimbursement request for all completed Conservation Practice Sheets for the invoice period. The Reimbursement Summary Sheet shall include the invoice period start and end date, details from the Certification Practice Sheet as well as the total cost being invoiced by conservation practice. The staff position, hours worked and hourly rate associated with each conservation practice should be broken out at the bottom of the form.

EQUAL EMPLOYMENT OPPORTUNITY:

Chesapeake Conservancy is an equal opportunity employer. The successful bidder shall comply with all federal, state, and local equal employment opportunity requirements. Additional information can be found at https://www.ecfr.gov and searching 41 CFR 60-1.4(b).

SMALL BUSINESS AND SMALL DIVERSE BUSINESS:

Chesapeake Conservancy encourages the use of small and small diverse businesses when soliciting Requests for Quotes. Contractors are encouraged to register with the federal government at www.sam.gov and with the Pennsylvania Department of General Services at www.dgs.pa.gov (search Small Diverse Business Verification). Please note Pennsylvania Department of General Service registration is only valid for three years. Contractors are encouraged to verify that their registration is current.

Contractors and any subcontractors who register on Sam.gov and with the PA Dept of General Services and who qualify as a small and/or small diverse business should check the applicable boxes on the Contractor Response Form.

DEBARMENT AND TAX LIABILITY:

Contractors will be required to certify that they and any subcontractors are not listed on the Debarment and Suspension List maintained by the Pennsylvania Department of General Services (https://www.dgs.internet.state.pa.us/debarmentsearch/debarment/index) and the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs (www.SAM.gov) in accordance with Executive Orders 12549 and 12689, "Debarment and Suspension" and have no outstanding tax liabilities. Contractors will also be required to certify that they and any subcontractors are not in default of a loan or funding agreement administered by any Commonwealth agency.

INSURANCE REQUIREMENTS:

Bidders shall include a copy of their current Certificate of Insurance (COI) that reflects their existing levels of liability insurance coverage. Chesapeake Conservancy will work with the successful bidder to ensure adequate levels of insurance are in place for the project prior to finalizing a contract.

Preferred levels of coverage include the following:

Type of Insurance Coverage	***Limit Required***
Workers Compensation and Employer's Liability -	Statutory
Bodily Injury, Each Accident:	State Minimum
Bodily Injury By Disease, Each Employee:	State Minimum
Bodily Injury/Disease, Policy Limit:	State Minimum
General Liability -	
Each Occurrence (Bodily Injury and Property Damage):	$1,000,000
General Aggregate:	$1,000,000
Excess or Umbrella Liability -	
Per Occurrence:	$1,000,000
General Aggregate:	$2,000,000
Automobile Liability -	
Combined Single Limit (Bodily Injury and Property Damage):	$1,000,000
Professional Liability – covering negligent acts, errors, and omissions in performance of professional services	
Each Claim Made	$5,000,000
Annual Aggregate	$5,000,000

It is preferred that all policies (except workers compensation) include a waiver of subrogation and list "**Chesapeake Conservancy"** as additional insured.

Once Chesapeake Conservancy and the successful bidder have reached an agreement pertaining to insurance coverage, the successful bidder shall provide Chesapeake Conservancy with a current COI certified by a licensed insurance broker. The approved COI needs to be provided to Chesapeake Conservancy prior to signing a contract.

Note: Bidders do not need to add the additional insured to their policy when responding to the RFQ. Only the successful bidder will be required to name the additional insured on their policy after the bid is awarded. The Certificate Holder should be as follows: Chesapeake Conservancy, 1212 West Street, Suite 42, Annapolis, MD 21401.

GRANTS:

The terms and conditions of the RCPP Supplemental Agreement for Technical Assistance and Financial Assistance for Easement Due Diligence Entered Into By USDA Natural Resources Conservation Service and Chesapeake Conservancy apply to the contracts that result from this RFP. Copies of the Agreement are available upon request.

PREVAILING WAGE AND ENHANCED MINIMUM WAGE REQUIREMENTS:

Prevailing wage and enhanced minimum wage rates do not apply to this RFQ.

SUBMISSION OF QUOTES AND SELECTION CRITERIA

SUBMISSION OF QUOTES:

Quotes are requested for the items described in the Project Description. Any estimated quantities included in this RFQ are for information only. The successful bidder will be responsible for determining the final quantities and practices as part of the design process.

At a minimum each quote response must include:

- Contractor Quote Form
  - Price – Must follow NRCS Crosswalk format outlined below*
  - Proposed start date
  - Proposed completion date
  - List of exclusions and assumptions (if applicable)
  - Signed by authorized representative
- Contractor General Information Form and corresponding documents**
  - Three references
  - Debarment and tax liability certification
  - Current Certificate of Insurance
  - Signed by authorized representative

Contractors bidding on more than one 2024 RCPP Engineering Services RFQ, will only need to submit one Contractor General Information Form and corresponding documents. Contractors should note on the Contractor Quote Form whether they are including the Contractor General Information Form with this response or if they submitted it with a separate 2024 RCPP Engineering Services response.

All quotes must be submitted electronically, or hand-delivered to Chesapeake Conservancy by the RFQ due date specified on Page 1 of the RFQ.

***NRCS Crosswalk**

A Generalized Crosswalk: Aligning SA TA-I Practices to NRCS 9 Step Planning Process	
TA-I Practice Code and Name	**Implementation TA Tasks – Must be directly related to a potentially viable RCPP funded FA application or contract, and not be otherwise precluded like are TA-E items (per APF), and partner administrative expenses (per Statute.)**
RTIP001 – TA-I, Negotiated Pre-Application	Pre-application assistance may assistance to producers in completion of application, establishing FSA records, and or field work to support eligibility or screening. **(Reminder: this activity does NOT include outreach to producers or general meetings to raise producer awareness of project, which are TA-E or contribution tasks.)**
RTIP002 – TA-I, Negotiated Planning	Steps 1-7 Note: TA-I Planning, Design tasks require adherence to NRCS planning procedures and or practice standards as described for each agreement in Attachment 5 (and or valuation methods attached to individual deliverables). Where partners will not complete entity of a plan or design (e.g. partner will provide a range heath assessment in support of a grazing plan to be prepared by NRCS planner), Attachment 5 must also identify specific requirements of items partner will complete to earn payment.
RTIP003 – TA-I, Negotiated Design	Steps 5, 6, 8 (Design)
RTIP004 – TA-I, Negotiated Installation	Step 8 (Installation)
RTIP005 – TA-I, Negotiated Checkout	Step 8 (Checkout) Note: TA-I Checkout, requires NRCS job approval authority as checkout determines eligibility of completed work for FA payment. Not generally delegated to partners.
RTIP006 – TA-I, Negotiated Post-Application	For post-application assistance Note: Post application assistance is not outcome assessment or monitoring (which are TA-E/Contribution tasks); RTIP006 should be used only where NRCS FA policy requires follow-up e.g. easement monitoring, 5% spot checks (with appropriate separate of duties)

CONTRACTOR SELECTION CRITERIA:

Contractor will be evaluated on the following criteria:

- Quote price
- Proposed start date
- Proposed completion date
- References - Demonstrates experience by providing examples of at least three (3) similar projects in Pennsylvania. More than 3 references are allowed.
- Debarment and tax liability status
- Exclusions and assumptions (if applicable)
- Provided Certificate of Insurance with current levels of coverage

Quotes will be awarded to the most qualified economic bidder, as determined by Chesapeake Conservancy. Chesapeake Conservancy reserves the right to reject any or all quotes and/or cancel the quote for any reason.

CONTRACTOR QUOTE FORM

Contractor Name: _____

Project Name: Scott Brown Engineering Services
Project Location: 201 Shady Ridge Lane, Port Matilda, PA 16870, Centre County

1. Price– Complete Contractor Quote Form Page 2 – ***Required***

   RCPP funding for Technical Assistance is provided through NRCS therefore we are using their categories for defining technical service categories. Include all Staff Position Titles that will be involved with the implementation of this project and Range Rate of staff for those positions, Estimated Number of Hours Per Activity and the Total Cost per Activity. The range of rates should account for the current staff rates and the expected pay increases for those positions over the next 3 years (term of the RCPP producer contract). Bidders may include overhead/admin expenses as a component of their claimed rate but that rate should be customary and reasonable and will be subject to review by NRCS and the Conservancy. Any cost associated with the 6 categories must be broken out. Activities 2-4 are the most typical for this type of project since we have producers with RCPP contracts in place already. Please include additional documentation if you are proposing costs associated with activity 5-6.

2. Date on which design can be started - ***Required***: _____

3. Estimated completion date of the design - ***Required***: _____

4. List any exclusions and assumptions associated with your proposal - _____

   _____

   _____

   _____

5. Please check whether you are submitting the Contractor General Information Form and related supporting documents with this response or if you submitted them under a separate 2024 RCPP Engineering Services RFQ – ***Required:***

   ☐ I have included the Contractor General Information Form with this RFQ response.

   ☐ I submitted the Contractor General Information Form with a separate 2024 RCPP Engineering Services RFQ response.

This quote is submitted in response to the RFQ for the project described above. The quote is based on my knowledge of the plans and specifications identified within. This quote will remain valid for 90 days after submission. If awarded the RFQ, I agree to sign a contract with the Chesapeake Conservancy.

Company Name:_____ Company Tax ID (EIN):_____

Company Address:_____

Representative's Name:_____ Telephone:_____

Email Address:_____

Signature:_____ Title:_____ Date:_____

CONTRACTOR QUOTE FORM

Page 2 of 2

INSERT REQUIRED INFORMATION

(Staff Position Titles, Rate Range, Estimated Hours and Total Cost)

TA-I Activity Code	Activities	Tasks	Staff Position Title(s)	Rate Range $xx-$xx/hr	Estimated # of hours per activity	Total Cost (using avg rates)
RTIP-001	TA Implementation Payment Pre-Application Activity	RCPP related Farm Visits (Follow up visits with NRCS or the farmer to develop application, review documents prior to contract, updating CNMPs or I&Es during ranking, screening, and contracting)				
RTIP-002	Updates to CNMPs as Needed. Amount not to exceed $2,500/farm	Conservation and Nutrient Management Plan development according to NRCS planning procedures				
RTIP-003	TA Implementation Payment Design on FA Applications or Contracts	Design/Engineering (5. Form Alternatives, 6. Evaluate Alternatives, 8. Design to Std, permit design/app, land rights, surveys, final designs)				
RTIP-004	TA Implementation Payment Installation (TA) on FA Applications or Contracts	Installation (8. Installation, inspections for structural practices)				
					Total Cost	

CONTRACTOR GENERAL INFORMATION FORM

Chesapeake Conservancy released ten RFQs for RCPP Engineering Services. Each RFQ is for a different project within the Conservancy's central PA rapid stream delisting catchment areas.

Contractors may bid on one or more of the RFQs. Contractors bidding on multiple RFQs only need to complete and return the Contractor General Information Form and related supporting documents with one of their RFQ submissions.

Contractor Name: _____

Project Name: **2024 RCPP Engineering Services**

1. The following three references are provided with telephone numbers of projects completed of similar scope and size - ***Required***:

   Name:_____ Telephone:_____

   Name:_____ Telephone:_____

   Name:_____ Telephone:_____

2. Small Business or Small Diverse Business (See Terms and Conditions for details) - *Check all that Apply*
   I have registered with Sam.gov and my business (or any subcontractors listed above) qualifies as a ☐ Small Business and/or ☐ Small Diverse Business

   I have registered with the PA Dept of General Services and my business (or any subcontractors listed above) has been certified as a ☐ Small Business and/or ☐ Small Diverse Business.

3. Debarment and tax liability status (See Terms and Conditions for details) - ***Required***:
   ☐I certify that my business, and any subcontractors, are not debarred by the State of Pennsylvania or the federal government.
   ☐I certify that my business, and any subcontractors, have no tax liabilities and are not in default of a loan or funding agreement administered by the State of Pennsylvania.

6. Certificate of Insurance (See Terms and Conditions for details) - ***Required***:
   ☐I have included with my response a copy of my Certificate of Insurance with my current levels of coverage.

This quote is submitted in response to the RFQ for the project described above. The quote is based on my knowledge of the plans and specifications identified within. This quote will remain valid for 90 days after submission. If awarded the RFQ, I agree to sign a contract with the Chesapeake Conservancy.

Company Name:_____ Company Tax ID (EIN):_____

Company Address:_____

Representative's Name:_____ Telephone:_____

Email Address:_____

Signature:_____ Title:_____ Date:_____

ATTACHMENTS:

Attachment A – Brown Inventory and Evaluation (I&E)

Attachment B – NRCS Reporting Requirements (Certification by Practice Sheet and Reimbursement Summary Sheet)

Subject: Scott Brown
Inventory and Evaluation to address resource concerns associated with beef operation
Date: December ,2022

To: Bryan Conklin
NRCS - Centre County, Pa

Note: I&E Revised 5/2024 to remove push to back of wall type storage and slight adjustment to animal numbers.

On November 11th, 2022, (revised 5/2024) Bryan Conklin, Coleten Eiswerth, and myself (Andrew Wodehouse PACD) met with Scott Brown and his wife Karen at their beef farm located in Centre County, Pa to discuss resource concerns associated with their beef herd.
The current herd consists of 30 brood cows @ 1600#, 30 calves @ 300#, 30 finishers @ 1100# and 1 Bull @ 1600# totaling 91.6 animal equivalent units (AEU's). A Nutrient Management Plan has been developed for operation.

Currently there is no manure storage system in place for the beef animals and the farm lacks adequate area for animals to loaf and bed down during periods when pastures are not suitable for grazing. Animals are feed outside and loaf in a riparian area which has created a resource concern. NRCS recommends implementing a roofed heavy use area with manure storage structure that has adequate area for animals to loaf and bed down in when pastures are not suitable for grazing and allows for a manure storage duration of 6 months.
In this report I have sized a structure that is 244' in length x 50' width for loafing/bed down, manure storage, and scrape lane w/ divider curb.
The loafing area should have adequate area for all animals and can be divided into multiple areas within the building to allow animals to be separated into groups such as: cows, calves, finishers, and Bull.
Manure from scrape lane will be pushed/scraped to the storage on a weekly basis. Remaining manure will build-up as bed pack with an approximate depth of 2.44' at the end of 6 months.
All animals would have access to feed along a 200' feed curb. Outside of the feed curb is a 200' x 8' feed pad/apron. Two additional aprons are proposed at entrances to the structure. One apron at entrance to scrape lane and one apron at the storage unloading side entrance.
The manure storage unloading apron will need a retaining wall to allow Scott to load manure into his truck mounted manure spreader. Scott uses a tractor with loader to load the manure spreader. Due to size and maneuverability a tractor with loader is not ideal for unloading manure from the storage structure. Scotts skid loader does not reach high enough to load the truck mounted spreader. To allow for Scott to use a skid loader to load manure a retaining wall will be needed. The retaining wall will allow grade (access road) adjacent to the unloading apron to be lowered approximately 4 to 5

feet. This will give Scott a place to park the truck mounted manure spreader adjacent to the apron and allow the skid loader to dump manure into the spreader. Very similar to a loading dock. The retaining wall will need to extend approximately 65' adjacent to the feed pad/apron. This will allow access road grade to slope down to the elevation where the truck mounted spreader will be parked and support grade under the feed pad. An 8" to 10" high curb is recommended as a safety bump stop. A Tractor safety guard will also be needed along with woven wire safety fence for the areas with a drop greater 3.5 feet.

An access road, diversion, waterway, well and pumping system, pipeline, roof runoff controls, underground outlets, and animal walkway are also included as part of this report. The animal walkway from the proposed structure to the existing barn was request by the owner. Scott expects during the 6-month confinement period that there will be a few sick animals that needed separated from the herd. The walkway will provide a stabilized path to the existing barn when needed.
I sized the heavy use area using NRCS recommended areas. EQIP can only provide cost share based on 100 sq.ft. per animal equivalent unit (AEU). 91.6 AEU x 100 sq.ft. per AEU = 9160 sq.ft. eligible for cost share. The area I have chosen = 38' x 200' = 7600 sq.ft. This area includes approximately 50 sq.ft. around water troughs as area that would not be recommended as bed down area.
The remainder of this report covers soils, heavy use area sizing, manure storage sizing, runoff calculations, estimated quantities for conservation best management practices, an engineer's estimate, and an EQIP estimate.
Note: I am generally not the person to plan or lay out grazing system paddocks and watering systems within paddocks; Contact the Centre County NRCS field office to discuss your desired grazing system layout.

Resource concerns: ground water contamination, clean water contamination, nutrient management.

Participation in this project would require no brown/mud lots on the farm and the animals totally confined in the structure during the winter storage period. The "Agreed-to Management" document should be reviewed with and signed by the owner.

Attached, is an "engineer's estimate" which is an estimate of what I believe it will cost to construct the proposed structure and associated practices. This will give them an idea of the out-of-pocket costs that they may have if they decide to proceed with a project. If Growing Greener funding is being considered for this potential project, please account for prevailing wage labor rates, and multiply my engineer's estimate by 1.3.
Please go over my sketches and estimates with the Mr. Brown. Actual costs may be higher depending on availability of materials at the time of construction. We recommend getting estimates from contractors for a better actual cost of project.

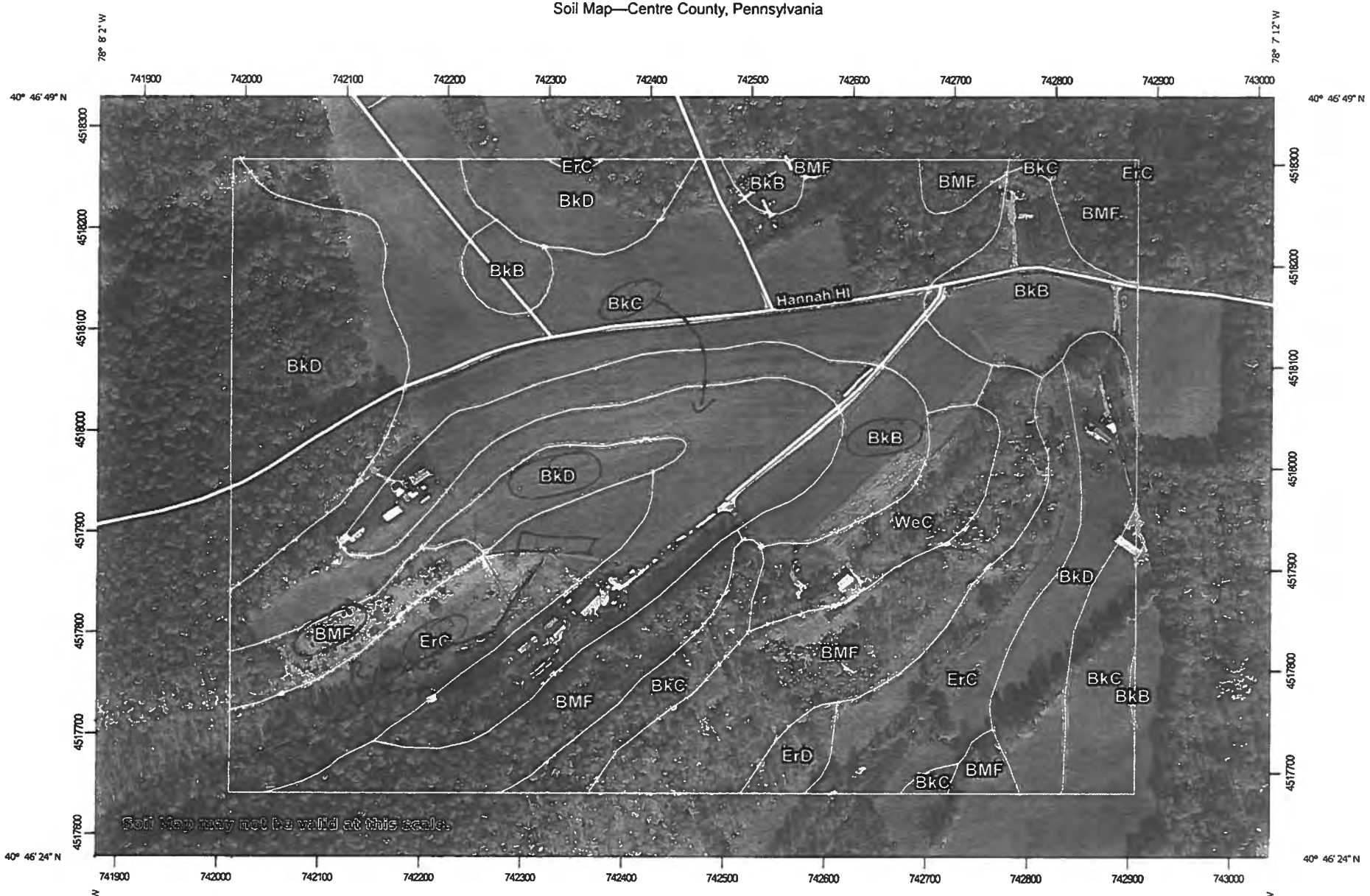
I did not account for any Water Management Practices: some Counties, Townships, or Municipalities require that PA ACT 167 or NPDES permitting be followed for such

projects. Neither NRCS nor PACD will develop a Storm Water Management Plan or design such practices. They should consult with the local County office, Township or Municipality to determine if this project applies to PA ACT 167. The cost for the consulting firm to do what is required and to obtain the permits will be out of pocket as well as the cost to implement the needed practices. A site survey will be necessary, and a PA One Call check should be made prior to starting design work on this site.

TOTAL ENGINEER'S ESTIMATE: $403,700
Note: This estimate does not include cost for enclosing sides (max of 2 side permitted to be enclosed). Enclosing sides is typically not eligible for financial assistance.
EQIP ESTIMATE: [redacted] (based on current herd).
Engineers estimate with prevailing wages $403,700 x 1.3 = $524,810

If you have any questions as to what I have sketched and/or proposed, please don't hesitate to call me. Please check my work for inconsistency or errors.

Andrew Wodehouse
PACD Conservation Technician
Bloomsburg Technical Office



Map Scale: 1:5,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Centre County, Pennsylvania
Survey Area Data: Version 22, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 8, 2020—Nov 9, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BkB	Berks channery silt loam, 3 to 8 percent slopes	17.5	12.6%
BkC	Berks channery silt loam, 8 to 15 percent slopes	48.3	34.8%
BkD	Berks channery silt loam, 15 to 25 percent slopes	25.5	18.4%
BMF	Berks and Weikert soils, 25 to 70 percent slopes	24.2	17.4%
ErC	Ernest channery silt loam, 8 to 15 percent slopes	17.2	12.4%
ErD	Ernest channery silt loam, 15 to 25 percent slopes	1.2	0.8%
WeC	Weikert shaly silt loam, 5 to 15 percent slopes	4.9	3.5%
Totals for Area of Interest		**138.7**	**100.0%**

Centre County, Pennsylvania

BkB—Berks channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2sgb5
Elevation: 320 to 3,570 feet
Mean annual precipitation: 37 to 50 inches
Mean annual air temperature: 47 to 56 degrees F
Frost-free period: 148 to 192 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Berks and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berks

Setting

Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Upper third of mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Residuum weathered from shale and siltstone and/or fine grained sandstone

Typical profile

Ap - 0 to 7 inches: channery silt loam
Bw1 - 7 to 15 inches: channery silt loam
Bw2 - 15 to 28 inches: very channery silt loam
C - 28 to 36 inches: extremely channery silt loam
R - 36 to 46 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F147XY008PA - Shallow Mixed Sedimentary Upland
Other vegetative classification: Dry Uplands (DU2)
Hydric soil rating: No

Minor Components

Weikert

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Other vegetative classification: Droughty Shales (SD2)
Hydric soil rating: No

Brinkerton

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Centre County, Pennsylvania
Survey Area Data: Version 22, Sep 6, 2022

Centre County, Pennsylvania

BkD—Berks channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2sgb7
Elevation: 320 to 3,630 feet
Mean annual precipitation: 37 to 50 inches
Mean annual air temperature: 47 to 56 degrees F
Frost-free period: 148 to 192 days
Farmland classification: Not prime farmland

Map Unit Composition

Berks and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berks

Setting

Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Upper third of mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Residuum weathered from shale and siltstone and/or fine grained sandstone

Typical profile

Ap - 0 to 7 inches: channery silt loam
Bw1 - 7 to 14 inches: very channery silt loam
Bw2 - 14 to 21 inches: extremely channery silt loam
C - 21 to 36 inches: extremely channery silt loam
R - 36 to 46 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F147XY008PA - Shallow Mixed Sedimentary Upland
Other vegetative classification: Dry Uplands (DU2)
Hydric soil rating: No

Minor Components

Weikert

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Other vegetative classification: Droughty Shales (SD2)
Hydric soil rating: No

Brinkerton

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Centre County, Pennsylvania
Survey Area Data: Version 22, Sep 6, 2022

Centre County, Pennsylvania

BMF—Berks and Weikert soils, 25 to 70 percent slopes

Map Unit Setting

National map unit symbol: 2xtjn
Elevation: 610 to 2,000 feet
Mean annual precipitation: 39 to 45 inches
Mean annual air temperature: 47 to 53 degrees F
Frost-free period: 148 to 192 days
Farmland classification: Not prime farmland

Map Unit Composition

Berks and similar soils: 60 percent
Weikert and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berks

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Acid brown residuum weathered from shale and siltstone and/or fine grained sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: channery silt loam
Bw1 - 5 to 15 inches: very channery loam
Bw2 - 15 to 22 inches: very channery silt loam
C - 22 to 37 inches: extremely channery silt loam
R - 37 to 47 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F147XY008PA - Shallow Mixed Sedimentary Upland
Other vegetative classification: Not Suited (NS)
Hydric soil rating: No

Description of Weikert

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
A - 4 to 7 inches: channery silt loam
Bw - 7 to 14 inches: very channery silt loam
C - 14 to 18 inches: extremely channery silt loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: F147XY008PA - Shallow Mixed Sedimentary Upland
Other vegetative classification: Droughty Shales (SD2)
Hydric soil rating: No

Minor Components

Bedington

Percent of map unit: 10 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Centre County, Pennsylvania
Survey Area Data: Version 22, Sep 6, 2022

Centre County, Pennsylvania

ErC—Ernest channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: l23n
Elevation: 300 to 3,000 feet
Mean annual precipitation: 30 to 65 inches
Mean annual air temperature: 46 to 59 degrees F
Frost-free period: 120 to 214 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Ernest and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ernest

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from acid shale and siltstone

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 26 inches: silty clay loam
H3 - 26 to 51 inches: channery silty clay loam
H4 - 51 to 80 inches: channery silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 36 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 14 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F147XY002PA - Mixed Sedimentary Upland
Hydric soil rating: No

Minor Components

Gilpin

Percent of map unit: 10 percent
Hydric soil rating: No

Brinkerton

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Centre County, Pennsylvania
Survey Area Data: Version 22, Sep 6, 2022

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State	Project			
	Scott Brown			
By	Date	Checked by	Date	Job No.
AW	12/22			
Subject			Sheet 2 of	
I+E				

Soils

BKB - hydrologic Group = B, hydric = no, depth to water table = 80+", depth to restrictive feature = 20-40" = bedrock = fail

BkB - hydrologic Group B, hydric = No, depth to water table = 80+", depth to restrictive feature = 20"-40" = bedrock = fail

BME - hydrologic Group B, hydric = No, depth to water table = 80+", depth to restrictive feature = 20"-40" = bedrock = fail

EsC - hydrologic Group = C/D, hydric = no, depth to water table = 14"-24", depth to restrictive feature = 20-36" = fragipan, soil is in a riparian area - fail

Soils are not adequate for filter area

Roofing Mat is justified.

Client: Scott Brown
County: CENTRE-B
Practice: 362
Calculated By: aw
Checked By: _____

State: PA

Date: 12/12/2022
Date: _____

Drainage Area:	12	Acres	(provided from RCN Calculator)
Curve Number:	70		(provided from RCN Calculator)
Watershed Length:	1000	Feet	
Watershed Slope:	10.3	Percent	
Time of Concentration:	0.22	Hours	(calculated value)
Rainfall Distribution - Type:	NOAA_B		
Dimensionless Unit Hydrograph:	<standard>		(default 484)

Storm Number	1	2	3	4	5	6	7
Frequency (yrs)	1	2	5	10	25		
24-Hr rainfall (in)	2.60	3.10	3.90	4.50	5.50		
Runoff (in)	.50	.77	1.26	1.67	2.41		
(ac-ft)	0.50	0.77	1.26	1.67	2.41	0.00	0.00
Peak Discharge (cfs)	5.88	9.83	17.07	23.09	33.78		

diversion and waterway to have capacity for 33.78 cfs

Curve number Computation

Client: Scott Brown
County: CENTRE-B State: PA
Practice: 362
Calculated By: aw Date: 12/12/2022
Checked By: _____ Date: _____

COVER DESCRIPTION			Acres (CN) Hydrologic Soil Group A	B	C	D
CULTIVATED AGRICULTURAL LANDS						
Row crops	C + Crop residue	good	-	4.4(74)	-	-
OTHER AGRICULTURAL LANDS						
Pasture, grassland or range		poor	-	-	-	1.8(89)
Pasture, grassland or range		good	-	5.8(61)	-	-
Total Area (by Hydrologic Soil Group)				10.2		1.8
TOTAL DRAINAGE AREA: 12 Acres					WEIGHTED CURVE NUMBER: 70	

Computation Sheet

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U.S. Department of Agriculture
Natural Resources Conservation Service

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Centre Co Pa	Scott Brown			
By: AW	Date:	Checked by:	Date:	Job No.:
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Scott Brown 5/21/24 Phone Conversation
Calves are born all year. Scott believes using:
30 Cows @ 1600#
30 Calves @ 300#
30 Finishers @ 1100# represents the 6 month confinement period.

30 cows x 1600# / 1000 = 48 AEU's
30 calves x 300# / 1000 = 9 AEU's
30 Finishers x 1100# / 1000 = 33 AEU's
1 Bull x 1600# / 1000 = 1.6 AEU's

48 + 9 + 33 + 1.6 = 91.6 AEU's Total

Max EQIP Eligible Hut = 100 ft^2/AEU x 91.6 AEU's = 9160 ft^2

Recommended Hut

Cows 100 ft^2 x 30 head = 3000 ft^2
Calves 35 ft^2 x 30 head = 1050 ft^2
Finishers 75 ft^2 x 30 head = 2250 ft^2
Bull 400 ft^2 Assume bull in separate pen
3 water troughs @ 50 ft^2 each = 150 ft^2

3000 + 1050 + 2250 + 400 + 150 = 6850 ft^2 recommended area
6850 ft^2 < 9160 ft^2 max = ok

All animals to feed together along feed curb

Feed space (NRCS Fact sheet) using 8' O.C. post spacing (96")

Cows = 28" 96/28 = 3.4 use 3 head per 8' span
30 head / 3 per span = 10 spans

Calves = 16" 96/16 = 6 head per 8' span
30 head / 6 per span = 5 spans

Finishers = 22" 96/22 = 4.36 use 4 head per 8' span
30 / 4 per span = 7.5 use 8 spans

Bull = 16' needed if kept alone = 2 spans

(10+5+8+2) x 8 = 200' feed curb

Computation Sheet

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U.S. Department of Agriculture
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Con't from previous page

200' feed curb length
Scrape lane = yes @ 12' width, length = 200' to match scrape lane.
200' x 12' = 2400 ft² EQIP Eligible as practice 561.

Find approximate HUA width using recommended area,
6850 ft² / 200' = 34.25'

Find approximate overall width including 12' scrape lane, plus (3) 8" wall thicknesses.

34.25' + (.67' x 3) + 12' = 48.26' use 50' outside width.

Find Actual inside HUA area
50' - (3 x .67') - 12 = 35.99' width inside
200' - .67' = 199.33' inside length
35.99' x 199.33' = 7173.9 ft²
7173.9 ft² < 9160 ft² ok

Find Actual HUA Area outside of walls / curbs = Total area wall and curb thickness.

(50' x 200') - (12' x 200') = 7600 ft² HUA
scrape lane

Total Area 50' x 200' = 10,000 ft²

includes 8" feed curb
38' x 200 = 7600 ft²

Computation Sheet

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U.S. Department of Agriculture
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Manure storage for 6 month duration

50% of manure on scrape lane. This manure required 30% solids to allow for stackable manure.

Manure 1.2 ft^3/day/1AEU

91.6 AEU's x 1.2 ft^3/day/AEU = 109.9 ft^3/day

109.9 x 180 days = 19782 ft^3

19782 ft^3 x .5 = 9891 ft^3 on scrape lane

Stackability sheet shows 2825 ft^3 of bedding is needed to allow for stackable manure.

2825 ft^3 x .5 reduction factor = 1412.5 ft^3

9891 + 1412.5 = 11303.5 ft^3 Total from scrape lane.

50% of manure on Hut. This manure is recommended to have 50% solids

Total manure 19782 ft^3 x .5 = 9891 ft^3

Bedding = 9891 ft^3 x .5 = 4945.5 ft^3

Total on Hut 9891 ft^3 + 4945.5 ft^3 = 14836.5 ft^3

Check what approximate depth will be as bedpack.

Bedpack needs approximately 9" initial bedding w/ reduction factor

9" x .5 = 4.5"

4.5"/12 = 0.375'

Actual inside area of Hut = 7173.9 ft^2 from pg. 2

0.375' x 7173.9 ft^2 = 2690.2 ft^3

14836.5 ft^3 + 2690.2 ft^3 = 17526.7 ft^3

17526.7 ft^3 / 7173.9 ft^2 = 2.44' bedpack

Storage for scrape lane manure.

Volume = 11303.5 ft^3 2200 ft^2

Stacking sheet shows a 50'w x 44'l w/ 6' stack height has 11713.4 ft^3 capacity (6' wall needed)

11713.4 - 11303.5 = 409.9 ft^3 to account for loss at side entrance.

Inside storage dimension = 48.66'w x 45.33'l

IS THE PRODUCT STACKABLE?

STACKABLE =	GREATER THAN	30.00%	SOLDS CONTENT
NOT STACKABLE =	LESS THAN	30.00%	SOLIDS CONTENT

MOISTURE CONTENT OF MANURE %		SOLIDS CONTENT %
Dairy =	88	12
Veal =	96	4
Beef =	86	14

MOISTURE CONTENT OF BEDDING %		SOLIDS CONTENT %
Corn Tops (Shredded) =	16	84
Ground Limestone =		
Hay (Chopped) =	14	86
Hay (Loose) =	14	86
Hay (Bailed) =	14	86
Sand =		
Sawdust =	39	61
Newspaper =	8	92
Straw (Chopped) =	10	90
Straw (Loose) =	10	90
Straw (Bailed) =	10	90

MANURE VOLUME (Cu.Ft.)

9891

* BEDDING VOLUME (Cu.Ft.)

2825

scrape
lane

ANIMAL TYPE

Beef

BEDDING TYPE

hay

MANURE SOLIDS CONTENT (%)

14

BEDDING SOLIDS CONTENT (%)

86

* NO REDUCTION FACTOR SHALL BE APPLIED TO BEDDING VOLUME,
THIS IS THE TOTAL VOLUME OF BEDDING BEING USED .

$$\text{SOLIDS CONTENT} = \frac{\text{(Volume of Manure Solids) + (Volume of Bedding Solids)}}{\text{Total Volume of Manure + Bedding}} \times 100$$

= 30.00%

= STACKABLE

IS THE PRODUCT STACKABLE?

STACKABLE =	GREATER THAN	30.00%	SOLDS CONTENT
NOT STACKABLE =	LESS THAN	30.00%	SOLIDS CONTENT

MOISTURE CONTENT OF MANURE %		SOLIDS CONTENT %
Dairy =	88	12
Veal =	96	4
Beef =	86	14

MOISTURE CONTENT OF BEDDING %		SOLIDS CONTENT %
Corn Tops (Shredded) =	16	84
Ground Limestone =		
Hay (Chopped) =	14	86
Hay (Loose) =	14	86
Hay (Bailed) =	14	86
Sand =		
Sawdust =	39	61
Newspaper =	8	92
Straw (Chopped) =	10	90
Straw (Loose) =	10	90
Straw (Bailed) =	10	90

MANURE VOLUME (Cu.Ft.)
9891

* BEDDING VOLUME (Cu.Ft.)
9891 on HUA

ANIMAL TYPE
Beef

BEDDING TYPE
hay

MANURE SOLIDS CONTENT (%)
14

BEDDING SOLIDS CONTENT (%)
86

* NO REDUCTION FACTOR SHALL BE APPLIED TO BEDDING VOLUME,
THIS IS THE TOTAL VOLUME OF BEDDING BEING USED .

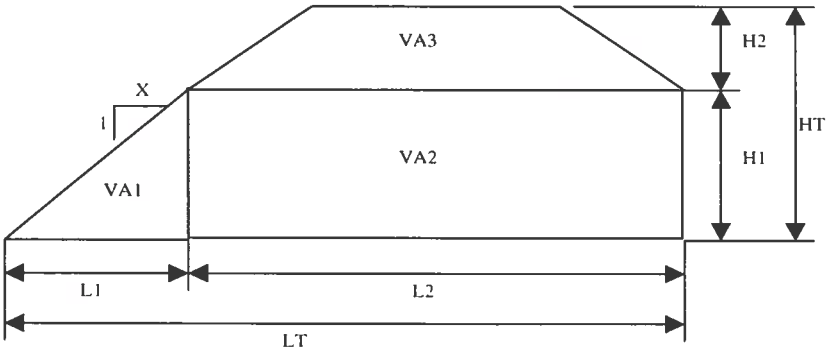
$$\text{SOLIDS CONTENT} = \frac{\text{(Volume of Manure Solids) + (Volume of Bedding Solids)}}{\text{Total Volume of Manure + Bedding}} \times 100$$

= 50.00%

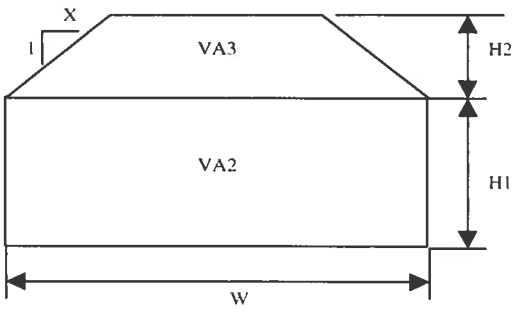
= STACKABLE

STACKING STRUCTURE CALCULATION SHEET
STRUCTURE WITH ONE END OPEN

COUNTY	Center	DATE			
OWNER	Scott Brown	ADDRESS			
PREPARER	AW	TITLE		DATE	
CHECKED		TITLE		DATE	



SIDE VIEW



FRONT VIEW

Storage Volume Required	11303.5	cu. ft.
Storage Duration	180	days

STRUCTURE DIMENSIONS

X - Angle of repose for manure	1	:1 ratio, (1:1 suggested)
HT - Total Manure Height	6	ft.
H1 - Structure Wall Height -4 Ft. max.	5	ft.
H2 - Stackable Height above wall	1	ft.
LT - Total Structure Length	43.33	ft. (Recommend making length divisible by 8')
L1 - Length for VA1	5	ft.
L2 - Length for VA2	38.33	ft.
W - Structure Width	48.66	ft.

CALCULATED VOLUMES

VA1 =	608.3	cu. ft.	(V=.5*L1*W*H1)
VA2 =	9,325.7	cu. ft.	(V=L2*W*H1)
VA3 =	1,779.5	cu. ft.	(V=(L2*W*H2)-(X*L2*H2^2)-(X*W*H2^2)+(1.33*X^2*H2^3))
TOTAL VOLUME =	11,713.4	cu. ft.	11303.5 cu. Ft. = Required volume

CONCLUSION

Structure Length:	43.33 ft.
Structure Width:	48.66 ft.
Height of Manure Pile:	6 ft.
Storage Volume:	11,713 cu. ft.

Computation Sheet

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U.S. Department of Agriculture
Natural Resources Conservation Service

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EQIP Eligible Quantities

313) storage 44'x50' = 2200 ft²

561) Heavy use Area
Scrape Lane = 2400 ft² concrete slab w/ curb reinforced

Hut Loading Area 7600 ft² Rear wall will act as retaining wall.
* 10'x200' = 2000 ft² concrete slab reinforced steep side w/ retaining wall.
Remainder 7600 ft² - 2000 ft² = 5600 ft² concrete slab w/ curb reinforced.

See 561 on following page

* Aprons (14'x16') + (12.67x14) = 401.38 ft² use 402 ft²
concrete slab reinforced w/ gravel foundation

Hut Totals:
Concrete slab w/ curb reinforced = 2400 ft² + 5600 ft² = 8000 ft²
" concrete slab reinforced steep side w/ retaining wall = 2000 ft²
gravel foundation = 402 ft² ← * reduced on following pg

367) Roof
Storage Roof = 44'x50' = 2200 ft² Timber Frame
Roof over Hut and Scrape lane = 1/2 complex foundation and 1/2 timber frame roof.
50x200 = 10000 ft²
5000 ft² Timber frame roof w/ complex foundation.
5000 ft² Timber frame roof.

558) Roof runoff 244'x2 = 488' gutter length

606) Perimeter drain 608' Enveloped 6" or less

620 underground outlet
6" or less w/ risers 350'
8" to 12" = 300'

342) seeding 0.8 ac

362) Diversion 500'

382) Fence Woven wire 360' (Structure) plus 65' along retaining wall at unloading pad = 425'

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

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EQIP Eligible Quantities Cont

412) Waterway 4000 ft² (4000/43560) = 0.092 ac = small

484) Mulching 6670 ft² erosion blanket and 0.73 ac mulch full coverage

468) Rock lined 12" UG outlet apron 560 ft²
Turf reinforced matting 4000 ft²
Apron at waterway outlet 20x20 = 400 ft² 12"

500) Obstruction Removal 0.07 ac Brush/trees > 6"
Fence = 200'

516) Pipeline 350' 2" or less buried

533) Pump (for well) 3hp or less w/ pressure tank and pump housing = 1

560 Access Rd 5880 ft² or 420 Lnft (14' avg width)

614) Frost free energy free trough = 1

642) Water well Typical 6" = 400'

* 561) Additional 561 for a retaining wall at the unloading pad.

Wall length = 65'
Area = 65' x 10' = 650 ft²
This area overlaps the unloading apron by 149 ft².
402 ft² of concrete slab reinforced with gravel foundation will be reduced by 149 ft²
402 ft² − 149 ft² = 253 ft² Total concrete slab reinforced with gravel foundation

Total concrete slab reinforced steep site with retaining wall
= 2000 ft² + 650 ft² = 2650 ft²

575) Walkway gravel with geotextile fabric = 2210 ft²
382) High tensile fence = 3840

DO NOT PRESS CTRL R

EQIP Practice Check List

Name: Scott Brown

County: Centre

Completed By:

Date: 5/29/2024

Practice	General	Component Name	Quantity	Units	Payment per Unit	Incentive Payment
313	Waste Storage Facility					
313		Dry Stack, 2K> Concrete Floor, 8ft-10ft high wall	2200	SF		
342	Critical Area Planting					
342		Native or Introduced Vegetation - Normal Tillage (Organic and Non-Organic)	0.88	AC		
362	Diversion					
362		Diversion, large, greater than 300 feet	500	Ft		
367	Roofs and Covers					
367		Timber Frame Roof	7200	SF		
367		Timber Frame Roof, complex foundation	5000	SF		
382	Fence					
382		Woven Wire	425	Ft		
382		Electric - 4 or more strands	440	Ft		
412	Grassed Waterway					
412		Waterway, small, 0.2 Acres or less	4000	SF		
468	Lined Waterway or Outlet					
468		Turf Reinforced Matting Regional	4000	SF		
468		Rock Lined - 12 inch	960	SF		
484	Mulching					
484		Natural Material - Full Coverage	0.73	AC		
484		Erosion Control Blanket	6670	SF		
500	Obstruction Removal					
500		Removal and Disposal of Brush and Trees > 6 inch Diameter Regional	0.07	AC		
500		Removal and Disposal of Fence Regional	200	Ft		
516	Livestock Pipeline					
516		2 inches or less buried by LF	350	Ft		
533	Pumping Plant					
533		Electric Powered Pump 3 Hp or less with pressure tank and pump housing	1	EA		
558	Roof Runoff Structure					
558		Roof Gutter	488	Ft		
560	Access Road					
560		Constructed road with Heavy Stone Base and Geotextile	420	Ft		
561	Heavy Use Area Protection					
561		Concrete Slab, reinforced with gravel foundation	253	SF		
561		Concrete Slab with Curbs, Reinforced	8000	SF		
561		Concrete Slab with Curb, Steep site with Retaining Wall	2650	SF		
575	Trails and Walkways					
575		Walkway with Gravel and Geotextile	2210	SF		
606	Subsurface Drain					
606		Enveloped Corrugated Plastic Pipe, Single Wall, Less than or equal to 6 inches	608	Ft		
614	Watering Facility					
614		Frost Proof Trough (2 Ball)	1	EA		
620	Underground Outlet					
620		UO 6 inch w Riser or less	350	Ft		
620		UO 8 to 12 inch	300	Ft		
642	Water Well					
642		Typical Well, 6 inch	400	Ft		
Totals					Estimated Payment	

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State	Project			
Centre Co Pa	Scott Brown			
By: AW	Date: 5/24	Checked by:	Date:	Job No.:
Subject: I+E Revised				Sheet 6 of

Engineers Est

313, 561, 367 Storage, Hut, Roof

244' x 50' = 12200 ft² x $31/ft² = $378,200.00

Additional items

Well and pumping system		$15,500
Frost proof trough		$1600
Livestock pipeline	350' x 4/ft	$1400
Waterway	200' x $10	$2000
Diversion	500' x 10/ft	$5000
		$25,500

378,200 + 25,500 = $403,700. Engineers Est.

Est. w/ prevailing wage

$403,700 x 1.3 = $524,810.

A WATER WELL WITH PUMP, PRESSURE TANK AND PRESSURE TANK HOUSING IS NEEDED AS A SOURCE OF WATER FOR LIVESTOCK WHILE CONFINED TO THE HUA. WELL TO BE INSTALLED WITHIN CLOSE PROXIMITY OF HUA. 200' OR LESS

50' X 244'
ROOFED HUA/MANURE
STORAGE STRUCTURE

DIVERSION
500'

WATERWAY
200'

SMALL GROUP OF TREES AND FENCE WILL NEED REMOVED TO ALLOW FOR INSTALLATION OF PROPOSED STRUCTURE

ACCESS ROAD
420' LN.FT.

ANIMAL WALKWAY
WITH FENCE. AREA = 2210 SQ.FT
FENCE LENGTH = 440'

UNNAMED TRIBUTARY
TO BALD EAGLE CREEK
PARTICIPATION IN THIS PROJECT
REQUIRES ALL LIVESTOCK TO BE
EXCLUDED FROM THE STREAM.

100 SCALE

N

1525 1520 1515 1510 1505 1500 1495 1490 1485 1480 1475 1470 1465 1460 1455

Date
Designed
Drawn
Checked
Approved

SCOTT BROWN
I&E REVISED FOR SCRAPE LANE
AND PUSH TO END STORAGE
CENTRE County, PA

United States Department of Agriculture
Natural Resources Conservation Service

File No.
Drawing No.
Sheet of

A WATER WELL WITH PUMP, PRESSURE TANK AND PRESSURE TANK HOUSING IS NEEDED AS A SOURCE OF WATER FOR LIVESTOCK WHILE CONFINED TO THE HUA. WELL TO BE INSTALLED WITHIN CLOSE PROXIMITY OF HUA. 200' OR LESS

50' X 244'
ROOFED HUA/MANURE
STORAGE STRUCTURE

DIVERSION
500'

WATERWAY
200'

SMALL GROUP OF TREES AND FENCE WILL NEED REMOVED TO ALLOW FOR INSTALLATION OF PROPOSED STRUCTURE

FARM
LANE

ACCESS ROAD
420 LN.FT.

ANIMAL WALKWAY
WITH FENCE. AREA = 2210 SQ.FT
FENCE LENGTH = 440'

UNNAMED TRIBUTARY
TO BALD EAGLE CREEK.
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A WATER WELL WITH PUMP, PRESSURE TANK AND PRESSURE TANK HOUSING IS NEEDED AS A SOURCE OF WATER FOR LIVESTOCK WHILE CONFINED TO THE HUA. WELL TO BE INSTALLED WITHIN CLOSE PROXIMITY OF HUA. 200' OR LESS

50' X 244' ROOFED HUA/MANURE STORAGE STRUCTURE

DIVERSION 500'

WATERWAY 200'

SMALL GROUP OF TREES AND FENCE WILL NEED REMOVED TO ALLOW FOR INSTALLATION OF PROPOSED STRUCTURE

FARM LANE

ACCESS ROAD 420 LN.FT.

ANIMAL WALKWAY WITH FENCE. AREA = 2210 SQ.FT FENCE LENGTH = 440'

UNNAMED TRIBUTARY TO BALD EAGLE CREEK. PARTICIPATION IN THIS PROJECT REQUIRES ALL LIVESTOCK TO BE EXCLUDED FROM THE STREAM.

N

100 SCALE

Date

Designed

Drawn

Checked

Approved

SCOTT BROWN

I&E REVISED FOR SCRAPE LANE AND PUSH TO END STORAGE

CENTRE County, PA

United States Department of Agriculture

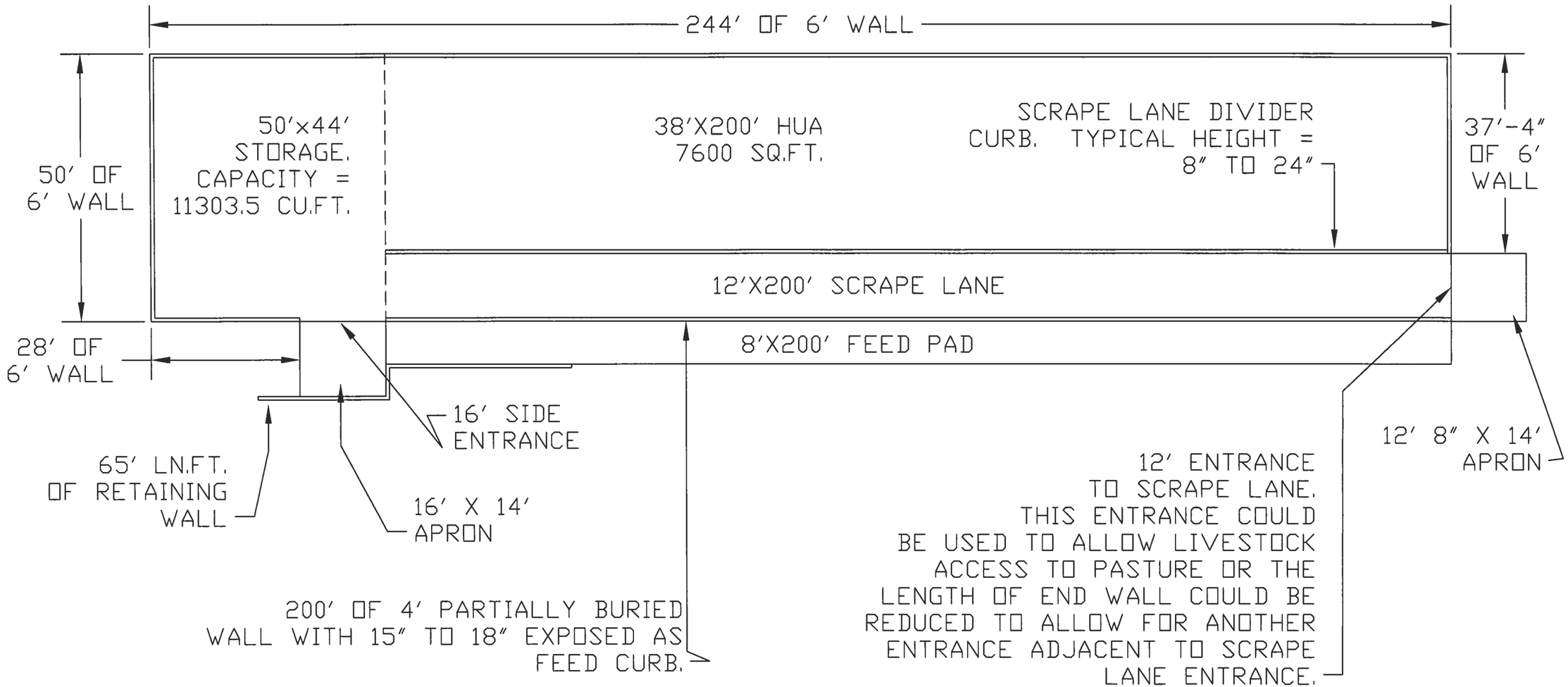
Natural Resources Conservation Service

USDA

File No.

Drawing No.

Sheet of



ALL WALLS/CURBS HAVE AN 8″ THICKNESS.

TWO SIDES OF STRUCTURE ARE PERMITTED TO BE ENCLOSED WITH STEEL SIDING OR ROLL-UP CURTAINS.
14′ CLEARANCE FROM FINISHED FLOOR TO BOTTOM CHORD OF TRUSS IS TYPICAL.

20 SCALE

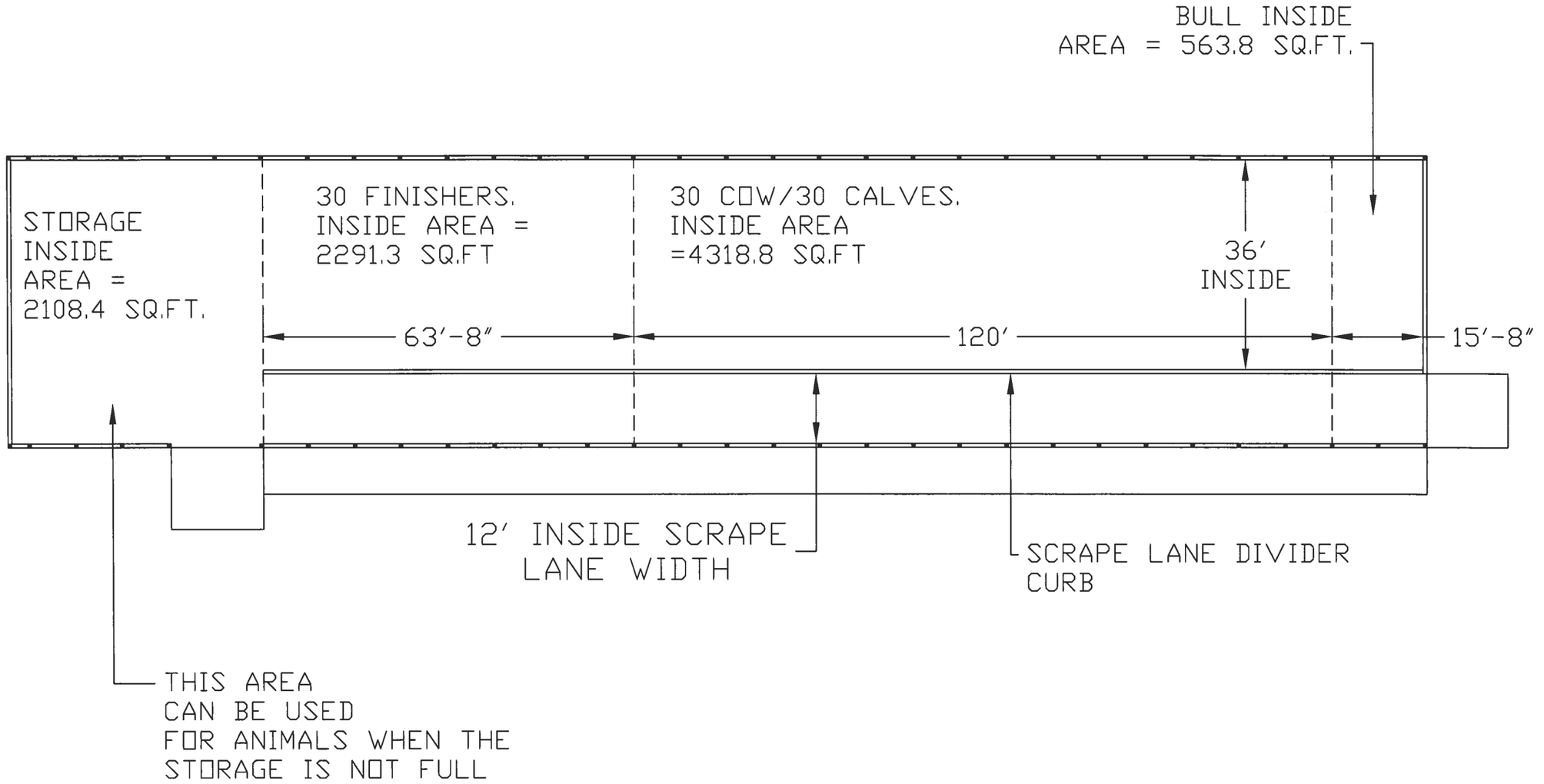
Date
Designed
Drawn
Checked
Approved

SCOTT BROWN
20 SCALE STRUCTURE LAYOUT
CENTRE County, PA

USDA

File No.
Drawing No.
Sheet of

ACTUAL PEN DIVISIONS ARE THE RESPONSIBILITY OF THE OWNER.
AREA(S) SHOWN BELOW DOES NOT INCLUDE SCRAPE LANE AREA.
LENGTH OF SCRAPE LANE PER PEN ALLOWS FOR ALL ANIMALS
TO FEED AT THE SAME TIME.



20 SCALE

Date
Designed
Drawn
Checked
Approved

SCOTT BROWN
20 SCALE STRUCTURE
LAYOUT

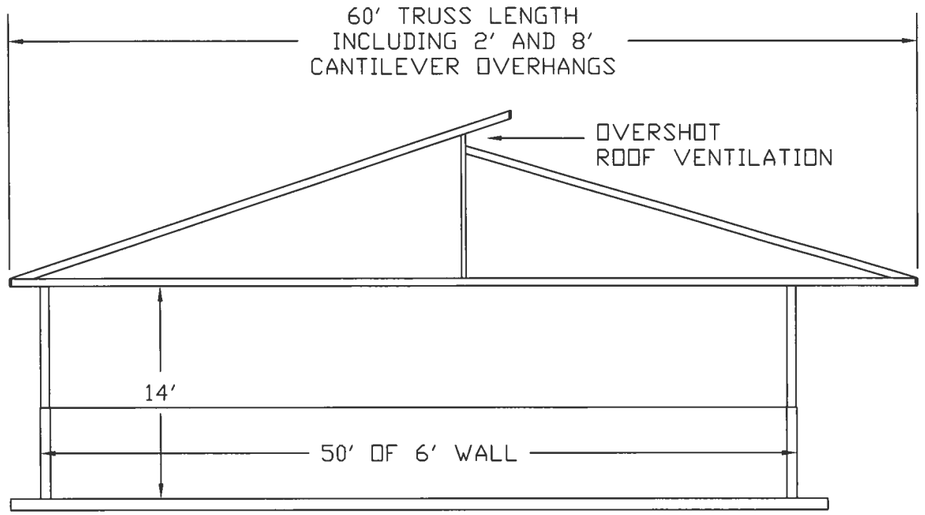
CENTRE County, PA

USDA

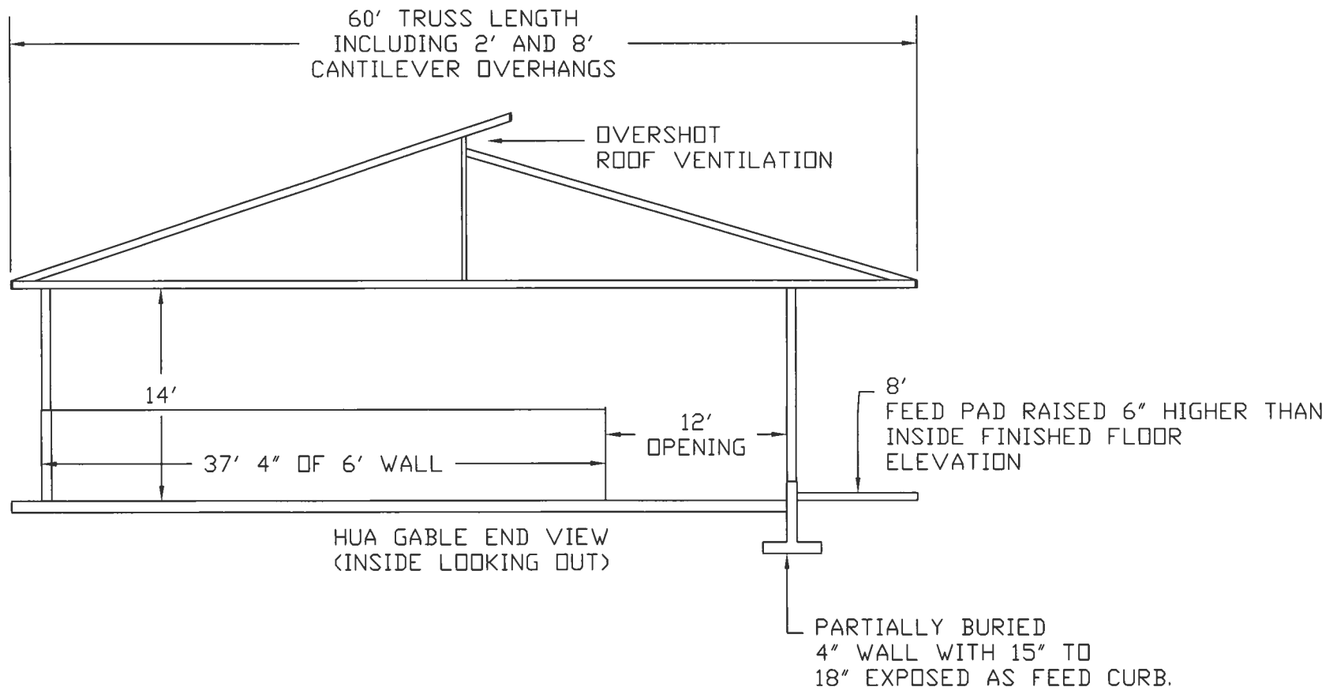
File No.

Drawing No.

Sheet of



STORAGE GABLE END VIEW
(OUTSIDE LOOKING IN)



HUA GABLE END VIEW
(INSIDE LOOKING OUT)

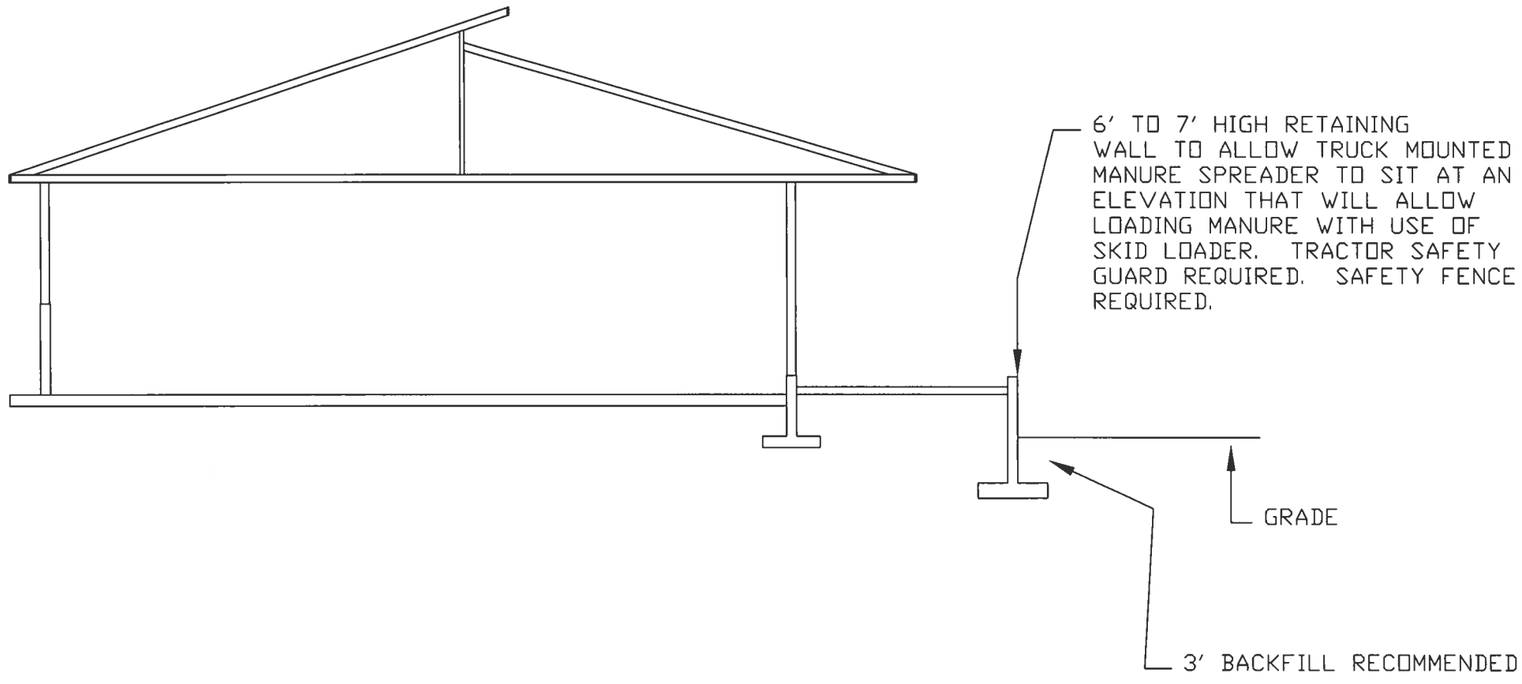
Date
Designed
Drawn
Checked
Approved

SCOTT BROWN
10 SCALE
GABLE END VIEWS

CENTRE County, PA

United States Department of Agriculture
Natural Resources Conservation Service

File No.
Drawing No.
Sheet of



Date

Designed

Drawn

Checked

Approved

SCOTT BROWN

10 SCALE

UNLOADING PAD WITH RETAINING WALL

CENTRE County, PA

United States Department of Agriculture

Natural Resources Conservation Service

File No.

Drawing No.

Sheet of

Attachment B

RCPP TA-I Practice Certification Sheet

RCPP Project Name: Delisting Ag-Impaired Streams in Central PA
RCPP Project Number: 2761
RCPP Contract Participant and Contract Number:

Technical Assistance - Implementation (TA-I) Verification of Certification for Payment

Date:

					Activity Type ($)					Travel Expenses			
CIN	**Practice Code and Name**	**Certified by:**	**Description**	**Completed**	**Pre-Application**	**Planning**	**Design**	**Installation**	**Checkout**	**Mileage**	**IRS Rate**	**Total Travel Expenses**	**Reimbursement Request**

**Attach all invoices and travel logs (if applicable) associated with this practice, showing appliable hourly staff rates and detailed travel records (if applicable), and Design Cover Sheet showing certification*
Complete a separate sheet for each practice

I hereby certify that to the best of my knowledge this practice has been completed fully and to NRCS standards.

_____ _____

Functional Review w/JAA (if certified by consultant) Printed Name and Title:

_____ _____

NRCS DC - (signature, date) Printed Name:

EXAMPLE - RCPP TA-I Practice Certification Sheet

RCPP Project Name: XXXXXXXXXXXXXXX
RCPP Project Number: 1111
RCPP Contract Participant and Contract Number: Joe Smith, 111222333444

Technical Assistance - Implementation (TA-I) Verification of Certification for Payment

Date: 1/1/2024

					Activity Type ($)					Travel Expenses			
CIN	**Practice Code and Name**	**Certified by:**	**Description**	**Completed**	**Pre-Application**	**Planning**	**Design**	**Installation**	**Checkout**	**Mileage**	**IRS Rate**	**Total Travel Expenses**	**Reimbursement Request**
1	340 - Cover Crop	Joe Planner - Partner xyz	Cover crops planted on planned land units per conservation plan. Establishment verified.	12/1/23	$0.00	$0.00	$0.00	$0.00	$79.00	23	$0.63	$14.49	$93.49

*Attach all invoices and travel logs (if applicable) associated with this practice, showing appliable hourly staff rates and detailed travel records (if applicable), and Design Cover Sheet showing certification

I hereby certify that to the best of my knowledge this practice has been completed fully and to NRCS standards.

Functional Review w/JAA (if certified by consultant)

Printed Name and Title:

NRCS DC - (signature, date)

Printed Name:

Technical Assistance - Implementation (TA-I) Verification of Certification for Payment

Date: 1/1/2024

					Activity Type ($)					Travel Expenses			
CIN	**Practice Code and Name**	**Certified by:**	**Description**	**Completed**	**Pre-Application**	**Planning**	**Design**	**Installation**	**Checkout**	**Mileage**	**IRS Rate**	**Total Travel Expenses**	**Reimbursement Request**
2	313 - Waste Storage Facility	Ag, Inc	XXXX gallon waste storage completed. Supporting practices complete. Inspection and redline docs completed.	11/15/23			$4,000.00	$5,200.00	$2,200.00	0	$0.63	$0.00	$11,400.00

*Attach all invoices and travel logs (if applicable) associated with this practice, showing appliable hourly staff rates and detailed travel records (if applicable), and Design Cover Sheet showing certification

I hereby certify that to the best of my knowledge this practice has been completed fully and to NRCS standards.

Functional Review w/JAA (if certified by consultant)

Printed Name and Title:

NRCS DC - (signature, date)

Printed Name:

Technical Assistance - Implementation (TA-I) Verification of Certification for Payment

Date: 1/1/2024

					Activity Type ($)					Travel Expenses			
CIN	**Practice Code and Name**	**Certified by:**	**Description**	**Completed**	**Pre-Application**	**Planning**	**Design**	**Installation**	**Checkout**	**Mileage**	**IRS Rate**	**Total Travel Expenses**	**Reimbursement Request**
4	102 - CNMP	Ag, Inc	I&E, NMP, Conservation Plan components complete, CNMP done.	10/6/23		$3,252.50				0	$0.63	$0.00	$3,252.50

*Attach all invoices and travel logs (if applicable) associated with this practice, showing appliable hourly staff rates and detailed travel records (if applicable), and Design Cover Sheet showing certification

I hereby certify that to the best of my knowledge this practice has been completed fully and to NRCS standards.

Functional Review w/JAA (if certified by consultant)

Printed Name and Title:

NRCS DC - (signature, date)

Printed Name:

RCPP TA-I Reimbursement Summary Sheet

RCPP Project Name: Delisting Ag-Impaired Streams in Central PA
RCPP Project Number: 2761
RCPP Contract Participant and Contract Number:

Technical Assistance - Implementation (TA-I) Reimbursement Request Summary Sheet

Period Start: **Period End:**

					Activity Type ($)					Mileage ($)	
CIN	**Practice Code and Name**	**Certified by:**	**Description**	**Certification Date**	**Pre-Application**	**Planning**	**Design**	**Installation**	**Checkout**	**Total Travel Expenses**	**Reimbursement Request**
TOTAL					**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**

3rd Party or Partner Staff Information for Reimbursement				
Position	Organization	CIN	# of Hours	$/hr rate

*Staff rates must match rates in current TA-I Supplemental Agreement

EXAMPLE - RCPP TA-I Reimbursement Summary

RCPP Project Name: XXXXXXXXXXXXXXX
RCPP Project Number: 1111
RCPP Contract Participant and Contract Number: Joe Smith, 111222333444

Technical Assistance - Implementation (TA-I) Reimbursement Request Summary Sheet

Period Start: 1/1/2023 **Period End: 12/31/2023**

					Activity Type ($)					Mileage ($)	
CIN	**Practice Code and Name**	**Certified by:**	**Description**	**Certification Date**	**Pre-Application**	**Planning**	**Design**	**Installation**	**Checkout**	**Total Travel Expenses**	**Reimbursement Request**
1	340 - Cover Crop	Partner xyz	RCPP related Farm Visits (certification of practice)	12/1/23					$79.00	$14.49	$93.49
2	313 - Waste Storage Facility	Ag, Inc	RCPP related Farm Visits (Follow up visits for design and installation of contracted practices)	11/15/23			$4,000.00	$5,200.00	$2,200.00		$11,400.00
4	102 - CNMP	Ag, Inc	IE, NMP, Conservation Plan, CNMP attachments	10/6/23		$3,252.50					$3,252.50
TOTAL					**$0.00**	**$3,252.50**	**$4,000.00**	**$5,200.00**	**$2,279.00**	**$14.49**	**$14,745.99**

3rd Party or Partner Staff Information for Reimbursement				
Position	Organization	CIN	# of Hours	$/hr rate
Engineer	Team Ag	2	76	150
Conservation Planner	Team Ag	4	26.25	102
Drafter	Team Ag	4	5.75	100

*Staff rates must match rates in current TA-I Supplemental Agreement