Contract Name: Thomas Farms Inc. **County:** Luzerne

Conservation Practice Design for: Grassed Waterway and Lined Waterway

PROJECT NOTES:

REGULATIONS: All Federal, State, and Local Laws. Rules and Regulations governing the construction of this facility shall be strictly followed. The owner or operator is responsible for obtaining all construction permits, including DEP General Permits. Contact the local Conservation District for information on applying for a General Permit.

NRCS DESIGN: Failure to construct this facility in accordance with design or authorized modifications will result in withdrawal of NRCS technical assistance. Withdrawal of financial assistance will also be recommended to the appropriate agencies.

PA ACT 187: The contractor must comply with PA ACT 187 and notify PA One Call at 1-800-242-1776 prior to the start of any excavation. The PA One Call design serial number is 20250691518 dated 3/10/2025.

Contractor Name and Address	Contractor License Number

ENGINEERING JOB CLASS: IV

		NRCS PRACTICE CERTIFICATION					
		The practices listed below have been installed as per the attached drawings and specifications and meet all applicable NRCS standards and specifications and that the as-built documents are a true and correct record. Certification signatures listed below must have appropriate EJAA for the listed conservation engineering practice.					
CIN	**CPS #**	**Conservation Practice**	**Contracted Amount**	**Designed Amount**	**As-built Amount**	**Certification Signature**	**Date**
	412	Grassed Waterway		630			
	468	Lined Waterway		120			

As-Builts Completed By: Date:

Designed By:	Michael Schauch	Date:	3/11/2025
Title:			
Checked By:		Date:	
Title:			
Approved By:	Mark Groshek	Date:	3/24/2025
Title:			

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TABLE OF CONTENTS

Contract Name: Thomas Farms Inc.

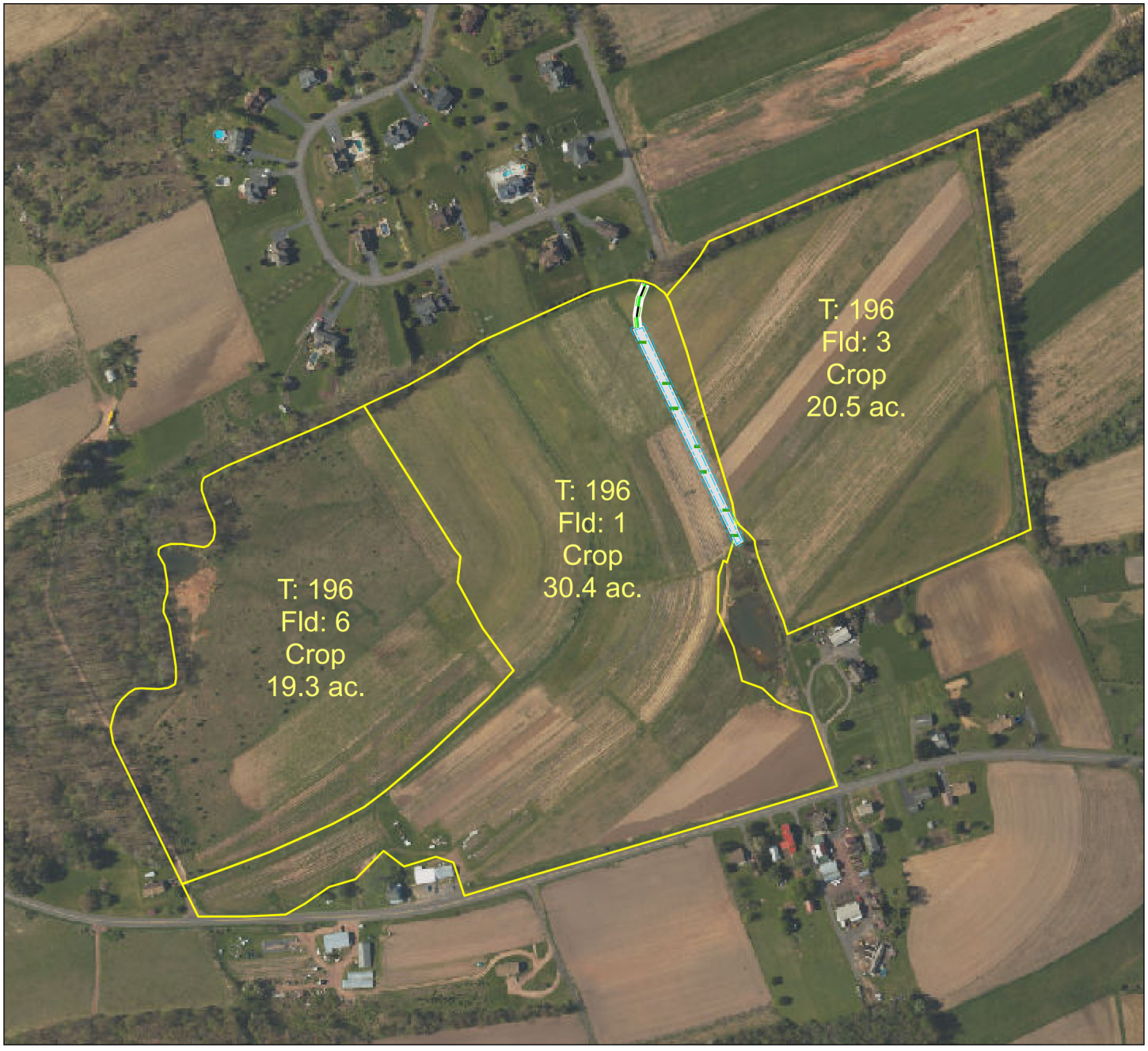
County: Luzerne

Date: 3/7/2025

Conservation Plan Map

Client(s): THOMAS FARM, INC.
Luzerne County, Pennsylvania
Approximate Acres: 70.20

Assisted By: MICHAEL SCHLAUCH
Natural Resources Conservation Service
PLYMOUTH SERVICE CENTER
LUZERNE CONSERVATION DISTRICT



Prepared with assistance from USDA-Natural Resources Conservation Service

0 400
Feet

Conservation Practice Lines
Lined Waterway or Outlet (468)

Conservation Practice Polygons
Grassed Waterway (412)
Practice Schedule PLUs

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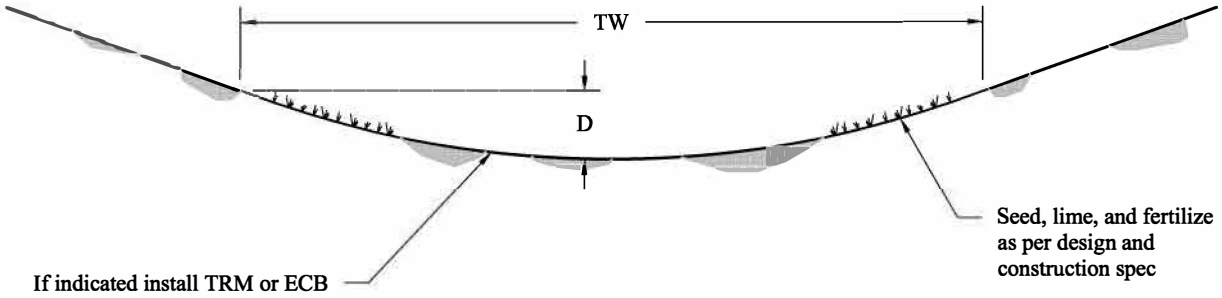
GRASSED WATERWAY-LINED WATERWAY DETAIL

Typical Cross-Section
(not to scale)



Construction Notes:

1. Construct waterway to the dimensions in table below, dimensions shown are after topsoil is applied.

2. Gullies along the waterway shall be filled with compacted earth in 4" loose lifts and compacted with 3-passes of a tracked machine or utilize a hand tamper

3. To help with shaping of the waterway construct to the following dimensions:
   - 3.1. at $\frac{1}{2}$ the top width the depth is equal to D/4
   - 3.2. at $\frac{3}{4}$ the top width the depth is equal to D/2

4. If Erosion Control Blankets (ECB) are to be installed as indicated in the table below they shall be rated for short term longevity and have a minimum shear stress of n/a psf. The ECB shall be installed a minimum of $\frac{2}{3}$ the waterway width

5. If Turf Reinforced Matting (TRM) is to be installed as indicated in the table below they shall be rated for a permanent longevity and have a minimum shear stress of 10 psf. The TRM shall be installed over the entire width of the waterway.

6. Install the ECB or TRM as per the manufacturer's instructions

WATERWAY TABLE

REACH	STA – STA	SLOPE	TW	D	ECB	TRM
1	0+00-2+50 (Grass)	1	24'	1.2'	☐	☐
2	2+50-6+50 (Grass)	4	24'	.8'	☐	☐
					☐	☐
1	0+00-1+00 (Lined)	7	24'	.7'	☐	☒
					☐	☐
					☐	☐
					☐	☐
					☐	☐

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Natural Resources Conservation Service

Thomas Farms Inc.

Luzerne COUNTY, PA

Grassed Waterway Detail

Designed ms Date 3/11/25

Drawn

Checked

Approved

File Name

Drawing Name

Sheet ___ of ___

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State	Project			
PA				
By	Date	Checked by	Date	Job No.
MS	3/7/2025			
Subject				Sheet ____ of ____
Thomas Farms Inc. Waterways				

Waterway 1

REACH 1 = 1%

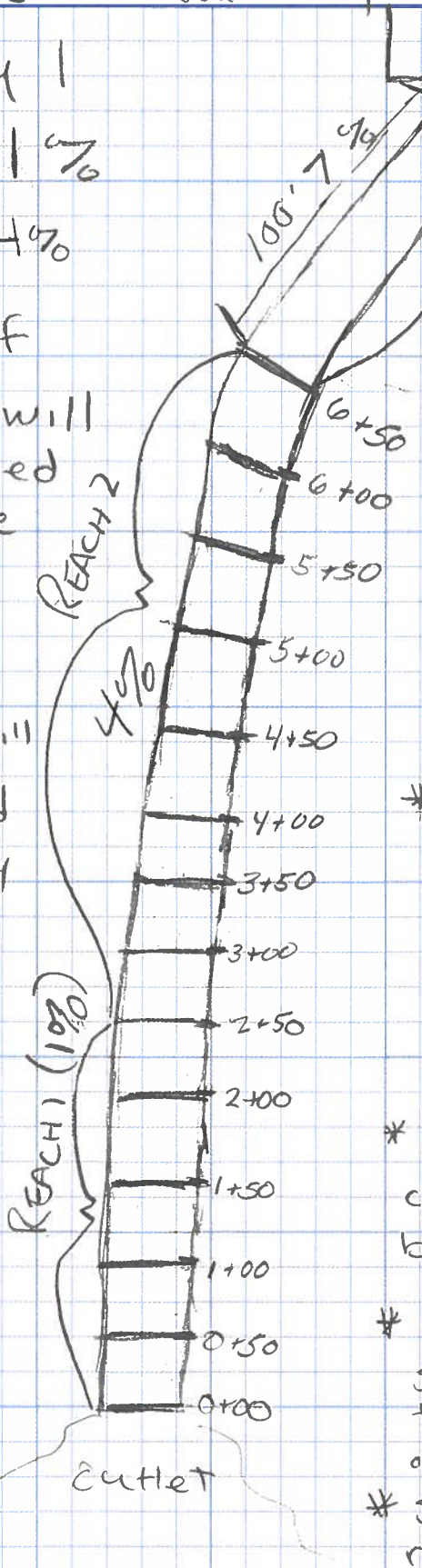
REACH 2 = 4%

* REACH 1 of Waterway 1 will be constructed at 24' wide by 1.2' Deep.

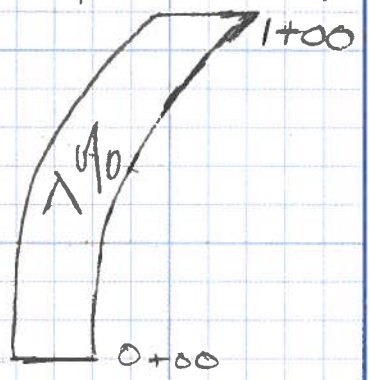
* REACH 2 of Waterway 1 will be constructed at 24' wide by .8' Deep.

* Refer to 342 Spec for planting guidance

* Slopes were shot using hand level.



Waterway 2 Profile:



REACH 1 = 7%

* 20' beyond Waterway 2, Reinforced turf Waterway will extend into REACH 2 of Waterway 1.

* Waterway 2 will be constructed at 24' wide by .7 Deep.

* Waterway 2 exceeds Shear Stress and will need to be installed using reinforced turf.

* SC250 or Rollmax VMAx S200 recommended.

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Natural Resources Conservation Service
Practice Specification
Grassed Waterway (Code 412)

1. SCOPE

The work shall consist of the construction of the Grassed Waterways at locations and grades shown on the drawings, or as stated in Section 5 of the specification. Construction work covered by this specification shall not be performed between October 15 and the following February 15, unless the site conditions and/or construction methods to be used have been reviewed and approved by the Engineer.

2. MATERIALS

The earth material used in constructing the grassed waterway shall be obtained from the grassed waterway area or other approved sources. Other required materials shall be as shown in the drawings or in Section 5 of this specification.

3. FOUNDATION PREPARATION

All trees, stumps, brush and similar material are to be removed from the site and disposed of in a manner consistent with environmental concerns and proper functioning of the grassed waterway. The area shall be stripped of vegetation, topsoil, and unsuitable material. Topsoil shall be stockpiled and spread uniformly over the finished waterway, unless stated otherwise in Section 5 of this Specification.

4. INSTALLATION

Fill shall contain no frozen materials, rocks greater than 6-inches in diameter, roots or wood greater than 2-inches in diameter or 4- inches in length, sod, brush, or other objectionable material.

The earth fill shall be compacted by routing the hauling and spreading equipment over the fill in such a manner that the entire surface of the fill will be traversed by not less than one tract tread of the loaded equipment. However, the compaction shall not be excessive so as to deter a suitable seedbed. The completed grassed waterway shall conform to the cross section(s) shown on the drawings.

When an excess of earth material results from cutting the grassed waterway to the required cross section and grade, it shall be spread adjacent to the grassed waterway without blocking surface runoff from reaching the waterway, or in another

designated area where fill is needed.

Watershed runoff shall be diverted away from the waterway until vegetation is established, as shown in the drawings, or in Section 5 of this Specification. Any protective works shall then be removed, and the disturbed areas shall be seeded to permanent grass. Other options include the use of erosion control blankets for erosion protection until the vegetation is established.

5. ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE:

Natural Resources Conservation Service
Practice Specification
Lined Waterway or Outlet (Code 468)

1. SCOPE

The work shall consist of furnishing materials and installing all components of the lined waterway or outlet, as outlined in this specification and the drawings.

Construction work covered by this specification shall not be performed between December 1 and the following March 15, unless the site conditions and/or construction methods to be used have been reviewed and approved by the Engineer.

2. MATERIALS

All materials used shall conform to the quality and grade noted on the drawings, set forth in Section 6, or as otherwise listed below:

a. ROCK shall be durable and obtained from sources listed in Penn DOT Bulletin 14 or as otherwise approved by the designer. Gradation shall be as specified in Section 6 or on the drawings. The nominal size of a rock is that dimension (middle) which passes through a square opening with the same dimension; i.e., it is not the greatest dimension. The rock shall be free from soil and trash. Rocks shall be angular or sub-angular in shape. However, the least dimension of any individual rock shall be greater than one-third the greatest dimension. Unless specified in Section 6, a gradation quality control check shall be made of the in-place riprap by the Contractor. Any dispute on the acceptability of the gradation shall be resolved by physically testing the riprap in question. The Contractor is to provide the equipment and labor necessary to perform the testing at no additional cost.

b. EARTH FILL material used in constructing the waterway shall be obtained from the waterway area or other approved sources. Fill shall contain no frozen material, rocks greater than 6 inches in diameter, roots or wood greater than 2 inches in diameter or 4 inches in length, sod, brush, or other objectionable material.

c. DRAINFILL AGGREGATE shall meet the requirements of Penn DOT Specifications, Section 703.2, Type A, Coarse Aggregate. The size and gradation shall be as specified in Section 6 or on the drawings.

d. CONCRETE, masonry, or pre-cast concrete shall be made in conformance with the requirements of Penn DOT Specifications, Sections 704, 713, and 714, as appropriate.

e. GEOTEXTILE shall meet the requirements as outlined in NRCS Design Note 24 and NRCS Material Specification 592 or as otherwise stated in the design and specifications. Certification from the manufacturer shall be provided by the Contractor that the geotextile meets these requirements.

f. SYNTHETIC TURF REINFORCEMENT FABRICS shall meet the requirements of Penn DOT Specifications, Section 806.2(b) and (c), unless otherwise set forth in Section 6.

g. GRID PAVERS shall meet the requirements of Penn DOT Specifications, Section 857.

3. SITE PREPARATION

The foundation area shall be cleared of trees, stumps, roots, sod, loose rock, and other material. The waterway cross section shall be excavated to the neat lines and grades as shown on the drawings. The sub-grade surface on which the lining is to be installed shall be excavated or filled as needed. Fill shall be compacted to approximately the same density as the adjacent undisturbed material. No abrupt deviations from the design grade or horizontal alignment shall be permitted.

All material removed by the clearing and grubbing operation shall be disposed of as directed by the Owner or his/her Representative, or as set forth in Section 6.

Areas adjacent to the waterway shall be graded to allow water to drain directly into the waterway.

4. FILTER OR BEDDING

Where a geotextile fabric is required under the lining, it shall be unrolled in a direction parallel to the waterway in a loose manner permitting it to conform to the surface, without damage, when the lining is placed. The fabric shall be secured and overlapped as per the manufacturer's recommendations for waterway applications. Fabric ends shall be trenched, as necessary, to ensure that drainage from adjacent areas does not get under the fabric. Placement of fabric on mud, un-compacted fill or frozen material will not be permitted.

Prior to the placement of the lining material, the fabric shall be inspected and approved by the designated inspector. Notification shall be given far enough in advance to provide time to schedule the inspection.
Any fabric which is damaged during placement of the lining material shall be replaced.

Aggregate bedding shall be placed to the thickness shown on the drawings, or as set forth in Section 6. Compaction of the bedding material is not required; however, the surface of the material shall be reasonably smooth and free of mounds or windrows.

5. LINING PLACEMENT

Rock linings shall be placed by equipment to the thickness specified. The rock shall be installed to the full thickness in one operation, and in such a manner as to avoid serious displacement or damage to the underlying materials or adjacent structures. In no case shall rock be dropped from a height greater than 3 feet.

The rock shall be delivered and placed in such a manner that will ensure that the in-place lining is homogeneous with no one size dominating an area. Some hand placing may be necessary to provide a neat and uniform surface on grade. Rock shall be

placed so as not to obstruct or divert drainage from areas adjacent to the waterway sides.

Concrete linings shall be placed to the thickness shown on the drawings. The surface shall be smooth and even with concrete paste worked to the surface to fill all voids. Careful screeding (striking-off) and/or wood float finishing shall be required, unless otherwise shown on the drawings, or as set forth in Section 6. Adequate precautions shall be taken to protect freshly placed concrete from freezing or extremely high temperatures, to insure proper curing.

Other pavement or linings, such as synthetic turf reinforcement fabrics, grid pavers, etc., shall be installed in accordance with Penn DOT Specifications, Sections 806 and 857, as appropriate, and/or as otherwise set forth in Section 6.

6. ADDITIONAL CONDITIONS WHICH APPLY TO THE PROJECT ARE:

ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE:

A. Grassed Waterways

a. This item shall consist of installing a grassed waterway at the location shown on the plan view.

b. Contact the NRCS office at least 24 hours prior to start of construction.

c. Contact PA One Call (1-800-242-1776 or 811) for underground utility check.

i. Pre-liminary Design One Call has been done: Serial number is **20250691518**

d. The waterway shall be parabolic in shape and parameters can be seen below:

i. Grassed Waterway (1% Channel slope): Can be grass and shall be constructed 24’ wide x 1.2’ deep. Reach 2 (4% Channel Slope) can also be grass and shall be constructed 24’ wide x .8’ deep.

e. Unless upslope water can be diverted during grass establishment, the center 1/3 of width of waterway shall be stabilized with jute fabric, equivalent. Installation of fabric shall be in accordance with manufacturer’s recommendations.

f. Have all materials on site prior to starting construction including the fabric, staples, seed, fertilizer, etc.

g. Strip topsoil and stockpile along the side of the waterway far enough away to allow construction of the channel. It is critical to have at least 6” of topsoil over the finished channel prior to seeding.

h. Construct the channel to the specified dimensions and allow extra depth for adding the topsoil. Any gullies shall be filled with the existing soil and compacted in 4” lifts.

i. Replace topsoil and complete final grading making sure to blend the sides into the existing grades of the adjacent fields. Do not create a hump that will not allow the surface water to easily flow into the waterway.

j. Apply the lime and fertilizer to waterway and lightly disc or harrow prior to seeding. Seeding and mulching shall be at rates shown in design drawings.

Additional Conditions Which Apply to This Project Are:

a. This item shall consist of installing Lined Waterway's at the location shown on the plan view.

b. Contact the NRCS office at least 24 hours prior to start of construction.

c. Contact PA One Call (1-800-242-1776 or 811) for underground utility check.
    a. Pre-liminary Design One Call has been done: Serial number is **20250691518**

d. The Lined Waterway's shall be parabolic in shape, please see dimensions below:

e. Lined Waterway
    a. Lined Waterway will be constructed at 24' wide and have a depth of .7' deep.
    b. Lined Waterway shall be stabilized using permanent reinforced turf. North American Green SC250 or equivalent fabric. A rating of 10lbs/sqft is recommended.
        i. Reach 1 (7%) - .7x62.4x.07=3.1lbs/sqft
    c. Recommending extending Lined Waterway 20 additional feet into Grassed Waterway or until gradual turn has been made. Refer to map and waterway detail.

f. Unless upslope water can be diverted during grass establishment, the center 1/3 of width of waterway shall be stabilized with jute fabric or equivalent. Installation of fabric shall be in accordance with manufacturer's recommendations. Lined Waterway will be constructed of **permanent** reinforced turf.

g. Have all materials on site prior to starting construction including the fabric, staples, seed, fertilizer, etc.

h. Strip topsoil and stockpile along the side of the diversion far enough away to allow construction of the channel. It is critical to have at least 6" of topsoil over the finished channel prior to seeding.

i. Construct the channel to the specified dimensions and allow extra depth for adding the topsoil. Any gullies shall be filled with the existing soil and compacted in 4" lifts.

j. Replace topsoil and complete final grading making sure to blend the sides into the existing grades of the adjacent fields. Do not create a hump that will not allow the surface water to easily flow into the waterway.

k. Apply the lime and fertilizer to waterway and lightly disk or harrow prior to seeding. Seeding and mulching shall be at rates shown in design drawings.

l. Program payment will not be made until all items are complete.

GRASSED WATERWAY SEEDING INFORMATION SHEET

Following Construction Specification PA-342, Critical Area Seeding

1. Permanent seeding must be done on all disturbed areas as a result of the installation of the conservation practices. The planned grassed waterway is required to be seeded following the guidance below.

2. Lime, fertilizer and seeding shall take place after topsoil and final grading of the waterway has been completed. The local quality assurance inspector should verify the designed sizes are adequate prior to any seeding taking place.

3. Prior to seeding the topsoil shall be amended with lime and fertilizer according to the soil tests or at the following rates: **Lime 6 tons/acre, Fertilizer (10-10-20) 1000 lbs/acre**. Amendments shall be incorporated into the soil at a depth of 4 to 6 inches.

4. After soil amendments have be complete permanent seeding shall be applied with a broadcast seeder or drilled. If broadcast; disk lightly to cover seed. The following species and rates shall be followed and shall incorporate a nurse crop:

   a. Nurse Crop (choose one)

Oats	48 lbs/acre
Annual Ryegrass	20 lbs/acre
Wheat	90 lbs/acre

   b. Seed Mixture[1]

Species	Lbs/acre – PLS*
Perennial Ryegrass	30
Tall Fescue OR	35
Kentucky Bluegrass	20

[1] Other seed mixtures are available, contact the local NRCS District Conservationist for guidance on selecting an alternative mixture.

5. After seeding the site shall be mulched with 3/tons per acre of hay or straw and provide 70% ground cover.

6. If erosion control blankets or turf reinforced matting is to be included, seeding shall be done prior to the installation of these items. The manufacturers instructions shall be followed, and the correct longevity and shear stress rating shall be met as shown in the design. Generally, place blankets or turf reinforced matting starting at the outlet and work upward.

**Seeding rates are stated as pounds per acres (lbs/acre) of pure live seed (PLS). PLS is the product of the percentage of pure seed times the percentage of germination divided by 100. (e.g. [85% pure seed x 72% germination] ÷ 100 = 61% PLS). Seed should not be used later than one year after the test date that appears on the label. Use of seed older than one year could result in less than satisfactory vegetative coverage and the need to re-seed the disturbed areas.*

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E & S PLAN

1. *It is the responsibility of the contractor to comply with the provisions of PA Code Title 25, Chapter 102 before performing any drilling.*

2. *All construction permits are the responsibility of the landowner and their contractor.*

3. *Install straw bale barrier or silt fence on the contour at base of slope below the construction area, prior to construction.*

4. *Divert surface water from upslope of the construction site by installing a temporary diversion.*

5. *Minimize the disturbed area.*

6. *Upon completion of construction, all disturbed areas must be seeded and mulched according to NRCS construction specification PA-342 available at the local NRCS Field Office or online at https://efotg.sc.egov.usda.gov/ .*

7. *In addition to the requirements set forth in the PA-342 specification, all state and local regulations shall be followed for seeding. Contact the local Conservation District for more information about the requirements.*

8. *Regrade and establish permanent seeding on all disturbed areas a*s soon as practical after completion of the job.

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Fact Sheet #9

January 2016

Agriculture Construction Safety

Compliance with safety regulations on agricultural projects is required by OSHA and by all construction insurance/ liability companies. The contractor is to maintain a safe working environment for themselves, their employees, subcontractors, and others who must have access to the site. Detailed knowledge and implementation of safety regulations is their responsibility. Those with more than ten employees must have written safety procedures and document implementation.

Imminent danger situations (hazards that could cause death or serious physical harm) require immediate action, including work stoppage. When NRCS and/or partner personnel observe or become aware of an imminent danger on the work site they will alert the contractor and landowner. They will also advise the landowner that funding and/or technical assistance will be withdrawn if the situation is not corrected. Work may continue after the imminent danger is resolved.

Effective January 1, 2015, all employers must report work-related fatalities, hospitalizations, amputations, and losses of an eye. They can contact the 24-hour OSHA hotline at 1-800-321-OSHA (6742) or their regional OSHA office. See OSHA standards 29 CFR 1904.39 for more information.

Soil Cave-In Protection

- Applies to all excavation over five feet in depth.
- OSHA has regulations set forth in Standards 29 CFR 1926 -Subpart P.
- Options include: sloping, shoring, or working from a safe distance.
- See "Fact Sheet" – SOIL CAVE IN – A FATAL SLIP for general information.

Fall Protection

- This applies to all areas where an individual could fall six feet or more.
- OSHA regulations in 29 CFR Parts 1910 for General Industry and 1926 for the Construction Industry apply to agricultural construction.
- OSHA 29 CFR 1926 subpart L deals with scaffolds and 29 CFR 1926 Subpart M deals with overall fall protection, including but not limited to cast-in-place concrete work, leading edge work, pre-cast concrete erection, tying reinforcement steel, truss installation, and roof construction.
- Options include: warning line system, safety monitors, mechanical equipment, controlled access area, covers, safety nets, scaffolding, guardrail system, and personal fall arrest.
- Selected method(s) shall be implemented at the start of construction.

Underground and Overhead Utility Protection

- Contractor is required to do their own utility check via PA-ONE Call system (811).
- Landowner and/or contractor shall contact any overhead utilities and prepare a procedure to avoid contact and/or schedule work with utility oversight.
- Landowner is to mark and locate any known private buried utilities within the work area.

NOTE: Critical safety measures may be highlighted in the Project Drawings and Specifications.

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Appendix

Grassed Waterway,
Lined Waterway
Design

Luzerne County, PA

Operation and Maintenance

Grassed Waterway and Lined Waterway

Code 412, 468

Landowner: Thomas Farms Inc.

County: Luzerne Township: Butler Tract: 196

Field Office Number: Plymouth Field Office

Prepared by: Michael Schlauch Date: 3/11/2025

Inspections and maintenance are required to obtain the intended function of the **Grassed Waterway** for its design life. The waterway capacity and vegetative cover shall be maintained. Items to inspect and maintain during the 10-year design life may include but are not limited to the following.

• Establish a maintenance program to maintain waterway capacity, vegetative cover, and outlet stability. Vegetation damaged by machinery, herbicides, or erosion must be repaired promptly.

• Protect the waterway from concentrated flow by using diversion of runoff or mechanical means of stabilization, such as silt fences, mulching, hay bale barriers, etc., to stabilize grade during vegetation establishment as necessary.

• After vegetation is established, remove any temporary measures, such as diversions or silt fences, that were installed so as to not interfere with design flow.

• Minimize damage to vegetation by excluding livestock whenever possible, especially during wet periods. Permit grazing in the waterway only when a controlled grazing system is being implemented.

• Inspect grassed waterways regularly, especially following heavy rains. Fill, compact, and reseed – damaged areas immediately. Remove sediment deposits to maintain capacity of the grassed waterway.

• Avoid use of herbicides or pesticides that would be harmful to the vegetation or pollinating insects in and adjacent to the waterway area.

• Avoid using waterways as turn rows during tillage and cultivation operations.

• Mow or periodically graze vegetation to maintain capacity, reduce sediment deposition, and maintain suitable plant composition and vigor. Mowing may be appropriate to enhance wildlife values but must be conducted to avoid peak nesting seasons and reduced winter cover.

• Apply supplemental nutrients as needed to maintain the desired species composition and stand density of the waterway.

• Control noxious weeds.

• Do not use waterways as a field road. Avoid crossing with heavy equipment when wet.

• Lift tillage equipment and turn off chemical application equipment when crossing the waterway.

Inspections and maintenance are required to obtain the intended function of the **Lined Waterway** for its design life. The waterway capacity and vegetative cover shall be maintained. Items to inspect and maintain during the 10-year design life may include but are not limited to the following.

• Regular inspection of the lined waterway, especially following heavy rains or large flow events. Promptly repair damages and remove sediment deposits to maintain capacity of the lined waterway.

• Control noxious weeds in the lined waterway or conveyance channel.

• Avoid areas where forbs have been established in the adjacent planted areas when applying herbicides.

• Avoid using the lined waterway as turn-rows during tillage and cultivation operations.

• Do not use the lined waterway as a field road.

• Avoid crossing the lined waterway or conveyance channel with heavy equipment.

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QUALITY ASSURANCE PLAN

Landowner/Operator: Thomas Farm Inc. Location: Drums, PA

Job Description: Grassed Waterway, Lined Waterway Engineering Job Class: _____

Primary QA Inspector: Michael Schlauch Designer: Michael Schlauch

The items listed below are the critical items for inspection as determined by the designer of the project to assure quality workmanship is performed and the intent of the design is met. This is not a complete list, but shows the minimum required to assure that the work meets FOTG standards and specifications. The items listed in **bold** require continuous inspection and is typically required where quality of work cannot be verified by intermittent observations, all other items shall be checked intermittently. Not all items will apply to this project.

- Excavation – follow all safety regulations as per OSHA
- Installation of any pipes – check grade, size, and material conformance
- **Installation of waterways, check channel shape, and grade.**
- Lime, Fertilize, Seed, Mulch: verify that the correct type and amount of each is being applied and applied correctly.
- Other items:
- Other items:

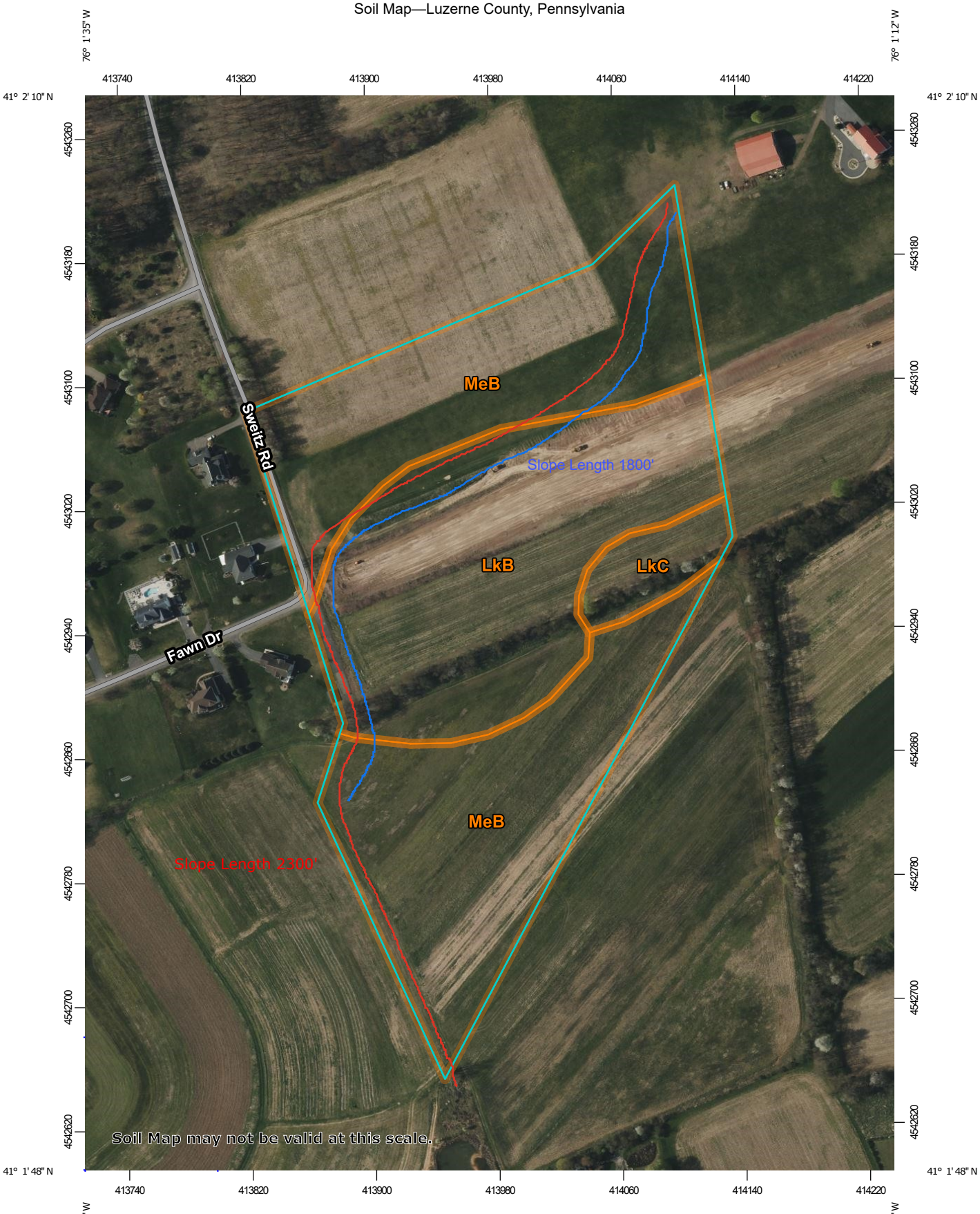
In addition to the plan the inspector shall follow all requirements of the National Engineering Manual and the PA State Supplement, Part 512 to this manual. Daily construction activity shall be documented on the SCS-CPA-6 sheets. As-builts must be completed prior to certification of the job, these shall be in red pen and shall include the inspector's initials and date. No changes or modifications are allowed to this design without approval from the designer.

The undersigned agree to commit time to act as the quality assurance inspector on this job. It is the primary inspector's responsibility to provide continued inspection of this job, if unavailable they shall be responsible for assigning a backup inspector.

Primary Inspector: Date: _____

Inspector's Supervisor: _____ Date: _____

Soil Map—Luzerne County, Pennsylvania



Map Scale: 1:3,380 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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: Luzerne County, Pennsylvania
Survey Area Data: Version 19, Sep 4, 2024

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

Date(s) aerial images were photographed: Apr 19, 2023—May 14, 2023

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
LkB	Leck kill channery silt loam, 3 to 8 percent slopes	9.0	37.7%
LkC	Leck kill channery silt loam, 8 to 15 percent slopes	1.1	4.7%
MeB	Meckesville channery silt loam, 3 to 8 percent slopes	13.8	57.6%
Totals for Area of Interest		**24.0**	**100.0%**

Soils Breakdown:

Row Crops:
Contoured+Crop Residue Class A = 5 acres
Contoured+Crop Residue Class C = 8 acres

Pasture, Grassland or Range Class C = 7 acres

Woods Class A = 2 acres

Impervious Surface
Dirt, Class A = 2 acres

Client: Thomas Farms Inc.
County: LUZERNE-C State: PA
Practice: Waterway
Calculated By: ms Date: 2/24/2025
Checked By: _____ Date: _____

Drainage Area:	24	Acres	(provided from RCN Calculator)
Curve Number:	72		(provided from RCN Calculator)
Watershed Length:	2300	Feet	
Watershed Slope:	6	Percent	
Time of Concentration:	0.53	Hours	(calculated value)
Rainfall Distribution - Type:	NOAA_C		
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)	2.90	3.40	4.30	5.00	6.20		
Runoff (in)	.75	1.06	1.67	2.20	3.16		
(ac-ft)	1.50	2.12	3.34	4.40	6.32	0.00	0.00
Peak Discharge (cfs)	11.13	16.45	27.10	36.12	52.44		

Curve number Computation

Client: Thomas Farms Inc.
County: LUZERNE-C State: PA
Practice: Waterway
Calculated By: ms Date: 2/24/2025
Checked By: _____ Date: _____

COVER DESCRIPTION			Acres (CN) Hydrologic Soil Group A	B	C	D
FULLY DEVELOPED URBAN AREAS (Veg Estab.)						
Streets and roads						
Dirt (w/ right-of-way)			2(72)	-	-	-
CULTIVATED AGRICULTURAL LANDS						
Row crops	C + Crop residue	poor	5(69)	-	8(83)	-
OTHER AGRICULTURAL LANDS						
Pasture, grassland or range		good	-	-	7(74)	-
Woods		good	2(30)	-	-	-
Total Area (by Hydrologic Soil Group)			9		15	
TOTAL DRAINAGE AREA: 24 Acres					WEIGHTED CURVE NUMBER: 72	

PARABOLIC Inputs

Channel Data

Limiting BS, z:1	4.0	**Bed Slope:**	1.000%	**Freeboard:**	NA
Fixed Flow Depth:	NA	**Fixed Flow Width:**	24.00	**Discharge:**	36.1 cfs

Soil Data

Grain Roughness: 0.0156
Allowable Stress: 0.030 lb/sq.ft

Vegetal Data

	Stem Length	Density	Ret Curve Index	Vegetal Cover Factor
Stability			4.44 (D)	Tall Fescue (0.87)
Capacity			5.60 (C)	

Outputs

Flow Conditions with Minimum cover (Stability)

Manning's n	Average Velocity	Flow Depth	Effect. Soil Stress	Flow Width
0.0483	2.38 ft/sec	1.02 ft	0.009 lb/sq.ft	22.2 ft
X-sect. Area	**Hydraulic Radius**	**Bank Slope z1**	**P-Channel Coeff**	**Flow Width w/Fb**
15.2 sq.ft	0.68 ft	5.43:1	0.00828 ft	22.2 ft

Capacity Flow Conditions

Manning's n	Average Velocity	Flow Depth		Flow Width
0.0672	1.89 ft/sec	1.19 ft		24.0 ft
X-sect. Area	**Hydraulic Radius**	**Bank Slope z1**	**P-Channel Coeff**	**Flow Width w/Fb**
19.1 sq.ft	0.79 ft	5.03:1	0.00828	24.0 ft

Design channel is 24.0 ft wide x 1.19 ft deep

USDA United States Department of Agriculture
Natural Resources Conservation Service

Reach Simulation Report
Thomas Farms Inc.
Grassed Waterway 1%
Drums, PA

		Date
Designed	ms	3/18/2025
Drawn		
Checked		
Approved		

EFT Version 4.0.8.1

File Name
Wizard
Drawing Name
03/18/2025
Sheet _____ of _____

PARABOLIC Inputs

Channel Data

Limiting BS, z:1	4.0	**Bed Slope:**	4.000%	**Freeboard:**	NA
Fixed Flow Depth:	NA	**Fixed Flow Width:**	23.99	**Discharge:**	36.1 cfs

Soil Data

Grain Roughness: 0.0156
Allowable Stress: 0.030 lb/sq.ft

Vegetal Data

	Stem Length	Density	Ret Curve Index	Vegetal Cover Factor
Stability			4.44 (D)	Tall Fescue (0.87)
Capacity			5.60 (C)	

Outputs

Flow Conditions with Minimum cover (Stability)

Manning's n	Average Velocity	Flow Depth	Effect. Soil Stress	Flow Width
0.0482	3.62 ft/sec	0.67 ft	0.023 lb/sq.ft	22.2 ft
X-sect. Area	**Hydraulic Radius**	**Bank Slope z1**	**P-Channel Coeff**	**Flow Width w/Fb**
10.0 sq.ft	0.45 ft	8.25:1	0.00545 ft	22.2 ft

Capacity Flow Conditions

Manning's n	Average Velocity	Flow Depth		Flow Width
0.0671	2.88 ft/sec	0.78 ft		24.0 ft
X-sect. Area	**Hydraulic Radius**	**Bank Slope z1**	**P-Channel Coeff**	**Flow Width w/Fb**
12.6 sq.ft	0.52 ft	7.65:1	0.00545	24.0 ft

Design channel is 24.0 ft wide x 0.78 ft deep

USDA United States Department of Agriculture
Natural Resources Conservation Service

Reach Simulation Report
Thomas Farms Inc.
Grassed Waterway 4% Bed
Drums, PA

		Date
Designed	ms	3/18/2025
Drawn		
Checked		
Approved		

EFT Version 4.0.8.1

File Name
Wizard
Drawing Name
03/18/2025
Sheet _____ of _____

PARABOLIC Inputs

Channel Data

Limiting BS, z:1	4.0	**Bed Slope:**	7.000%	**Freeboard:**	NA
Fixed Flow Depth:	NA	**Fixed Flow Width:**	23.99	**Discharge:**	36.1 cfs

Soil Data

Grain Roughness: 0.0156
Allowable Stress: 0.030 lb/sq.ft

Vegetal Data

	Stem Length	Density	Ret Curve Index	Vegetal Cover Factor
Stability			4.44 (D)	Tall Fescue (0.87)
Capacity			5.60 (C)	

Outputs

Flow Conditions with Minimum cover (Stability)

Manning's n	Average Velocity	Flow Depth	Effect. Soil Stress	Flow Width
0.0482	4.28 ft/sec	0.57 ft	0.034 lb/sq.ft	22.2 ft
X-sect. Area	**Hydraulic Radius**	**Bank Slope z1**	**P-Channel Coeff**	**Flow Width w/Fb**
8.4 sq.ft	0.38 ft	9.77:1	0.00460 ft	22.2 ft

Capacity Flow Conditions

Manning's n	Average Velocity	Flow Depth		Flow Width
0.0670	3.41 ft/sec	0.66 ft		24.0 ft
X-sect. Area	**Hydraulic Radius**	**Bank Slope z1**	**P-Channel Coeff**	**Flow Width w/Fb**
10.6 sq.ft	0.44 ft	9.05:1	0.00460	24.0 ft

Warning: Effective Soil Stress is greater than Allowable Stress
(Might re-check your fixed depth and fixed width values)
Design channel is 24.0 ft wide x 0.66 ft deep

USDA United States Department of Agriculture
Natural Resources Conservation Service

Reach Simulation Report
Thomas Farms Inc.
Lined Waterway
Drums, PA

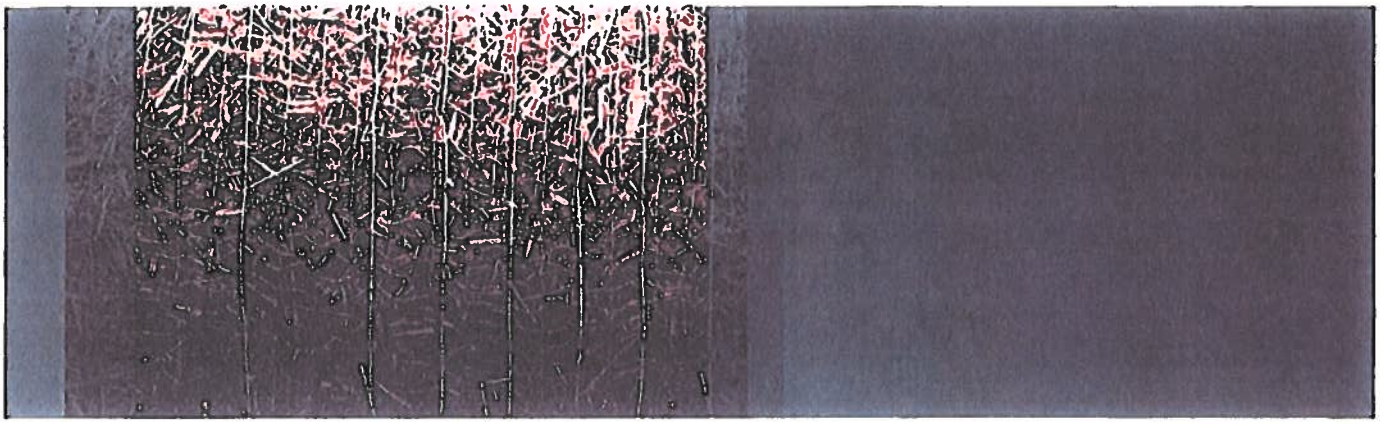
		Date
Designed	ms	3/19/2025
Drawn		
Checked		
Approved		

EFT Version 4.0.8.1

File Name
Wizard
Drawing Name
03/19/2025
Sheet _____ of _____

Effective soil stress is higher than allowable stress. RFT would be required and North American Green SC250 or Rollmax VMAX S200 would be recomended. Both manufacturers have a rating 10lbs/sqft.

.7 (depth) x 62.4 x 7 (slope) = 3.1lbs/sqft



NORTH AMERICAN GREEN

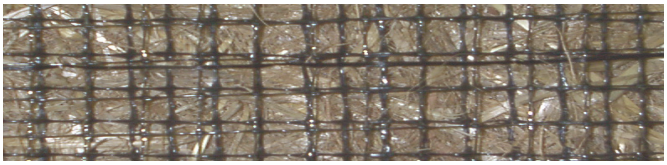
6.5' WIDE

$2.70/SQ.YD $3.00/SQ.YD.

	TEMPORARY			PERMANENT			
	BIONET			BIONET	VMAX		
							
	S150BN	SC150BN	C125BN	C900	SC 250	C350	P550
Longevity	12 mo	18 mo	24 mo	Permanent	Permanent	Permanent	Permanent
Applications	Moderate Flow Channels 3:1 2:1 Slopes	Medium Flow Channels 2:1-1:1 Slopes	High Flow Channels 1:1 and Greater Slopes	High-Flow Channels 1:1 Slopes	High Flow Channels 1:1 and Greater Slopes	High-Flow Channels 1:1 and Greater Slopes	Extreme High Flow Channels 1:1 and Greater Slopes
Design Permissible Shear Stress lbs/ft² (Pa)	Unvegetated 1.85 (88)	Unvegetated 2.10 (100)	Unvegetated 2.35 (112)	Unvegetated 3.0 (144) Vegetated 8.0 (383)	Unvegetated 3.0 (144) Vegetated 10.0 (480)	Vegetated 12.0 (576)	Unvegetated 4.0 (191) Vegetated 14.0 (672)
Design Permissible Velocity ft/s (m/s)	Unvegetated 6.00 (1.83)	Unvegetated 8.00 (2.44)	Unvegetated 10.00 (3.05)	Unvegetated 9.00 (2.7) Vegetated 16.0 (4.9)	Unvegetated 9.5 (2.9) Vegetated 15.0 (4.6)	Unvegetated 10.5 (3.2) Vegetated 20.0 (6.0)	Unvegetated 12.5 (3.8) Vegetated 25.0 (7.6)
Top Net	Lenowoven 100% biodegradable jute fiber 9.30 lbs/1000 ft² (4.53 kg/100 m²) approx wt	Lenowoven 100% biodegradable jute fiber 9.30 lbs/1000 ft² (4.53 kg/100 m²) approx wt	Lenowoven 100% biodegradable jute fiber 9.30 lbs/1000 ft² (4.53 kg/100 m²) approx wt	Heavyweight UV-stabilized polypropylene 5.0 lbs/1000 ft² (2.44 kg/100 m²) approx wt	Heavyweight polypropylene 5.0 lbs/1000 ft² (2.44 kg/100 m²) approx wt	Extra heavyweight polypropylene 8.0 lbs/1000 ft² (3.91 kg/100 m²) approx wt	Ultra heavyweight polypropylene 24.0 lbs/1000 ft² (11.7 kg/100 m²) approx wt
Center Net	N/A	N/A	N/A	N/A	Ultra heavyweight polypropylene - corrugated 24.0 lbs/1000 ft² (11.7 kg/100 m²)	Ultra heavyweight polypropylene - corrugated 24.0 lbs/1000 ft² (11.7 kg/100 m²)	Ultra heavyweight polypropylene - corrugated 24.0 lbs/1000 ft² (11.7 kg/100 m²)
Fiber Matrix	Straw fiber 0.50 lbs/yd² (0.27 kg/m²)	Straw/coconut matrix 70% Straw 0.35 lbs/yd² (0.19 kg/m²) 30% Coconut 0.15 lbs/yd² (0.08 kg/m²)	Coconut fiber 0.50 lbs/yd² (0.27 kg/m²)	UV stabilized polypropylene fiber 0.70 lbs/yd² (0.38 kg/m²)	Straw/coconut matrix 70% Straw 0.35 lbs/yd² (0.19 kg/m²) 30% Coconut 0.15 lbs/yd² (0.08 kg/m²)	Coconut fiber 0.50 lbs/yd² (0.27 kg/m²)	UV stabilized polypropylene fiber 0.50 lbs/yd² (0.27 kg/m²)
Bottom Net	Woven 100% biodegradable jute fiber 7.70 lbs/1000 ft² (3.76 kg/100 m²) approx wt	Woven 100% biodegradable jute fiber 7.70 lbs/1000 ft² (3.76 kg/100 m²) approx wt	Woven 100% biodegradable jute fiber 7.70 lbs/1000 ft² (3.76 kg/100 m²) approx wt	Heavyweight UV stabilized polypropylene 3.0 lbs/1000 ft² (1.47 kg/100 m²) approx wt	Heavyweight UV-stabilized polypropylene 5.0 lbs/1000 ft² (2.44 kg/100 m²) approx wt	Extra heavyweight polypropylene 8.0 lbs/1000 ft² (3.91 kg/100 m²) approx wt	Ultra heavyweight polypropylene 24.0 lbs/1000 ft² (11.7 kg/100 m²) approx wt
Thread	Biodegradable	Biodegradable	Biodegradable	UV-stabilized polypropylene	UV-stabilized polypropylene	UV stabilized polypropylene fiber	UV-stabilized polypropylene

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet
VMax® S200® Turf Reinforcement Mat



DESCRIPTION

The composite turf reinforcement mat (C-TRM) shall be a machine-produced mat of 100% straw fiber matrix incorporated into permanent three-dimensional turf reinforcement matting. The matrix shall be evenly distributed across the entire width of the matting and stitch bonded between a heavy duty UV stabilized nettings with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings, an heavy UV stabilized, dramatically corrugated (crimped) intermediate netting with 0.5 x 0.5 inch (1.27 x 1.27 cm) openings, and covered by an heavy duty UV stabilized nettings with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings. The middle corrugated netting shall form prominent closely spaced ridges across the entire width of the mat. The three nettings shall be stitched together on 1.50 inch (3.81cm) centers with UV stabilized polypropylene thread to form permanent three-dimensional turf reinforcement matting. All mats shall be manufactured with a colored thread stitched along both outer edges as an overlap guide for adjacent mats.

The S200 shall meet Type 5A, 5B, and 5C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.18

Material Content		
Matrix	100% Straw Fiber	0.50 lb/sq yd (0.19 kg/sm)
Netting	Top and Bottom, UV-Stabilized Polypropylene	3 lb/1000 sq ft (1.47 kg/100 sm)
	Middle, Corrugated UV-Stabilized Polypropylene	16 lb/1000 sf (7.81 kg/100 sm)
Thread	Polypropylene, UV Stable	

Standard Roll Sizes		
Width	6.5 ft (2.0 m)	8 ft (2.44m)
Length	55.5 ft (16.9 m)	90 ft (27.4 m)
Weight ± 10%	34 lbs (15.42 kg)	70 lbs (31.8 kg)
Area	40 sq yd (33.4 sm)	80 sq. yd. (66.8 sm)

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.50 in. (12.70 mm)
Resiliency	ASTM 6524	70%
Density	ASTM D792	0.91 g/cm^3
Mass/Unit Area	ASTM 6566	12.0 oz/sy (408 g/sm)
UV Stability	ASTM D4355/ 1000 HR	80%
Porosity	ECTC Guidelines	99%
Light Penetration	ASTM D6567	15%
Tensile Strength – MD	ASTM D6818	450 lbs/ft (6.67 kN/m)
Elongation – MD	ASTM D6818	35%
Tensile Strength – TD	ASTM D6818	450 lbs/ft (6.67 kN/m)
Elongation – TD	ASTM D6818	20%

Design Permissible Shear Stress		
	Short Duration	**Long Duration**
Phase 1: Unvegetated	2.3 psf (110 Pa)	2.3 psf (110 Pa)
Phase 2: Partially Veg.	7.5 psf (360 Pa)	7.5 psf (360 Pa)
Phase 3: Fully Veg.	10.0 psf (480 Pa)	8.0 psf (383 Pa)
Unvegetated Velocity	8.5 fps (2.6 m/s)	
Vegetated Velocity	18 fps (5.5 m/s)	

Slope Design Data: C Factors

	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2.1	≥ 2:1
≤ 20 ft (6 m)	0.0010	0.0209	0.0507
20-50 ft	0.0081	0.0266	0.0574
≥ 50 ft (15.2 m)	0.0455	0.0555	0.081

Roughness Coefficients – Unveg.

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.038
0.50 – 2.0 ft	0.038-0.025
≥ 2.0 ft (0.60 m)	0.025

NORTH AMERICAN GREEN®

Western Green
4609 E. Boonville-New Harmony Rd.
Evansville, IN 47725

nagreen.com
800-772-2040

EASTCOAST erosion control™

Erosion Blankets

Accelerated | Short Term | Extended Term | Permanent |

Please click on a product's name to view that product's PDF specification.

	Product	Functional Longevity	Material	Nets Information	Primary Usage	Shear Stress	Qdor
*	ECSC-2B Biodegradable Straw/Coconut	18 Months *Extended Term*	70% Agricultural Straw and 30% Coconut Fiber	2 Biodegradable Jutes	1:1 to 2:1 Slopes	Unveg. 2 psf	
	ECX-2 Double Net Excelsior	24 Months *Extended Term*	100% Aspen Wood Fiber	2 Photodegradable Polypropylene	1.5:1 to 2:1 Slopes	Unveg. 2.13 psf	✓
*	ECSC-2 Double Net Straw/Coconut	24 Months *Extended Term*	70% Agricultural Straw and 30% Coconut Fiber	1 Photodegradable 1 UV-Stabilized	1:1 to 2:1 Slopes	Unveg. 2.02 psf	✓
	ECC-2B Biodegradable Double Coconut	24 Months *Extended Term*	100% Coconut	2 Biodegradable Jutes	1:1 Slopes	Unveg. 2.25 psf	✓
	ECC-2 Double Net Coconut	36 Months *Extended Term*	100% Coconut	2 UV-Stabilized Polypropylene	1:1 Slopes	Unveg. 2.3 psf	✓

The Ecocyle™ logo on a product image represents availability of Ecocycle Netting technology upon request. For more information on this technology, please visit our Ecocycle page.

7.5 x 120 ft

LCD

Michael Schlauch <mike@luzcd.org>

Ticket Confirm POCS 03/10/25 10:55:07 20250691518-000 New Excavation Preliminary Design

1 message

POCS Ticket Confirmation <Delivery@pa1call.net> Mon, Mar 10, 2025 at 10:55 AM
Reply-To: HelpDesk <helpdesk@pa1call.org>
To: MIKE@luzcd.org

TKTCFM 00000 POCS 03/10/25 10:55:07 20250691518-000 NEW XCAV DSGN

==========PENNSYLVANIA UNDERGROUND UTILITY LINE PROTECTION REQUEST==========
Serial Number--[20250691518]-[000] Channel#--[1048A999][0393][2019-08]
Message Type--[NEW][EXCAVATION][PRELIMINARY DESIGN]

County--[LUZERNE] Municipality--[BUTLER TWP]
Work Site--[556 SAINT JOHNS RD]
Nearest Intersection--[OLD AIRPORT RD]
Second Intersection--[SCHWEITZ RD]
At Intersection--[N] Between Intersections--[N]
Subdivision--[]
Location Information--
[DRUMS PA 18222. WATERWAY WILL START ON N SIDE OF PROPERTY LINE (FENCE ROW)
AND EXTEND S ALONG FIELD ROADWAY TOWARDS POND. ROUGHLY 800FT OF WATERWAY
WILL BE INSTALLED. CALLER STATES THAT THE EASIEST WAY TO ACCESS THE PROP
WOULD BE THROUGH THE DEAD END OF SCHWEITZ RD. THERE WILL BE 2 WATERWAYS
THAT CONNECT.]
Caller Lat/Lon--[]
Mapped Type--[P] Mapped Lat/Lon--
[41.032724/-76.023985,41.032320/-76.025358,41.030183/-76.024242,
41.030653/-76.022890,41.031527/-76.023363,41.032126/-76.023663]
Attachments--[http://www.pa811.org/attachments/20250691518]
Type of Work--[INSTALL WATERWAY] Depth--[1FT]
Extent of Excavation--[800FT X 24FT] Method of Excavation--[GRADING]
Equip Type--[DOZER SKID STEER]
Street--[ ] Sidewalk--[ ] Pub Prop--[ ] Pvt Prop--[X] Other--[]
Private Front--[ ] Rear--[X] Left--[ ] Right--[ ]

Project Dates--[ ] thru [ ] Response Due Date--[24-Mar-25]
Scheduled Excavation Date--[DESIGN]

Caller--[MIKE SCHLAUCH]
Caller Phone--[570-938-3018]
Excavator--[LUZERNE CONSERVATION DISTRICT]
Address--[911 W MAIN ST]
City--[PLYMOUTH] State--[PA] Zip--[18651]
FAX--[] Caller Type--[B]
Email--[MIKE@LUZCD.ORG]
Work For--[LANDOWNER]
Project Contact--[MIKE SCHLAUCH]
Project Contact Phone--[570-938-3018]
Best Time to Call--[0730-1530]
Project Contact Email--[MIKE@LUZCD.ORG]

Prepared--[10-Mar-25] at [1054] by [AMANDA INGRAM]
Remarks--
[***===SUBMITTED MSCHLAUC WR#200120250310--SUBMITTED 3/10/2025 1048===***]

ET 0 ET =FRONTIER COMM PWD0 PWD=PPL ELEC DESIGN SVE0 SVE=SVC ELEC HZLTN

UJ 0 UJ =UGI LEHIGH HAZ

Serial Number--[20250691518]-[000]