



ACT ONE & Associates
Consulting Engineers & Surveyors

4701 North Front Street
 Harrisburg, PA 17110
 (717) 236-7500 • fax (717) 236-3314
 aoa@actoneassociates.com
 www.actoneassociates.com

Civil Engineering • Construction Management • Building & Structural Plans • Surveying • Sanitary Engineering • Site Planning

February 5, 2024

RECEIVED

Mount Joy Township
 Plan Commission
 Chair Arlen Mummau
 8853 Elizabethtown Road
 Elizabethtown, PA 17022

24-06-WAIV

Feb 07 2024

MOUNT JOY TOWNSHIP

Re: Waiver request for 955 Trail Rd. North
 Lot Addition Plan, for Mark Kleinfelter
 AOA# 24-011

Commissioners:

On behalf of the applicant, ACT ONE & Associates respectfully requests the following Waiver of Mount Joy Township's, Chapter 119, Subdivision and Land Development regulations:

- 1) Chapter 119-32.B. Wetland studies.

The applicant is requesting relief of the requirements of providing a wetlands study and report in accordance with the abovementioned section of the regulations. The applicant is proposing to submit a Subdivision/Lot Addition Plan for review and approval that will increase the size of 2 parcels (460-2303693-317878-0-0000 & 460-2304312-318372-0-0000) to 10 acres each (clean & green enrollment), while decreasing the size of a third parcel (460-2304572-318948-0-0000) from approximately 116.6 acres to 103.1 acres. No construction or land development is proposed on this new plan. See attached Exhibit A.

The 2 smaller parcels already have single-family dwellings therefore no more earth disturbances are necessary. A previous plan (J215-47) attached hereto recorded November 26th, 2002 for these parcels for the same applicant herein indicated 3 areas of potential wetlands (Area A, B & C) along Trail Road North on Lots No. 1, 2 & 4. These areas are mostly within the front building setback. There are 3 other potential wetland areas depicted on a review performed by ARM Group, Inc., as indicated by note #10 on the recorded plan. These areas are along the county line, and mostly in Lebanon County where no changes are proposed. It should be noted that the abovementioned "Review" by ARM Group, Inc. was not completed in accordance with the protocols, or procedures as defined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (hereafter called the Corps Manual). This Regional Supplement is designed for use with the current version of the Corps Manual (Environmental Laboratory 1987) and all subsequent versions.



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Lot #4 on plan J215-47 is currently vacant. The proposed layout of the potential single-family dwelling shown on this plan is well clear of any potential wetlands, and shall be required to submit a stormwater management plan prior to construction, addressing Chapter 113 requirements.

In accordance with the U.S. Fish & Wildlife Service, National Wetlands Inventory mapper, no wetlands, or streams have been designated on, or directly adjacent to this parcel (<https://www.fws.gov/wetlands/Data/Mapper.html>).

The attached soils mapping from the USDA Web Soil Survey <https://websoilsurvey.nrcs.usda.gov/app/> of Hydrologic Soil Group ratings shows that approximately 44% of the area of interest has a B rating and the remaining is a C/D rating. Per the abovementioned survey Group B soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission. Group C soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission. If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes. The areas mapped as C/D on this site are drained according to the contouring on plan J215-47. It seems to reason that areas mapped to be potential areas of wetlands (A, B, C) have been influenced by the installation of Trail Road North and driveways, with inadequate, or clogged drainage facilities like swales and culvert pipes.

Your consideration of this waiver and modification of requirements request shall be greatly appreciated.

Please contact Rob Shaffer with any questions.

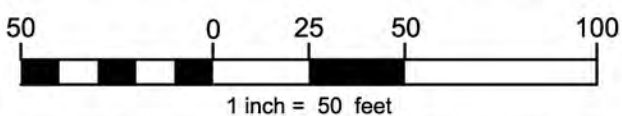
Respectfully submitted,

Robert E. Shaffer, Jr., P.E.
Robshaffer@actoneassociates.com

Grid North MAD83 PA SPCS - South Zone



FILE PATH: \\ACTONESERVER\COMPANY BACKUP\2024\24-011 955 TRAIL RD NORTH KLEINFELTER MT JOY LANCASTER\DRAWING\24-011 955 TRAIL RD NORTH KLEINFELTER MT JOY TWP.DWG
LAST SAVED: 2/6/2024 2:26 PM PLOTTED: 2/6/2024 2:38 PM PLOTTED BY: ACTONE035B



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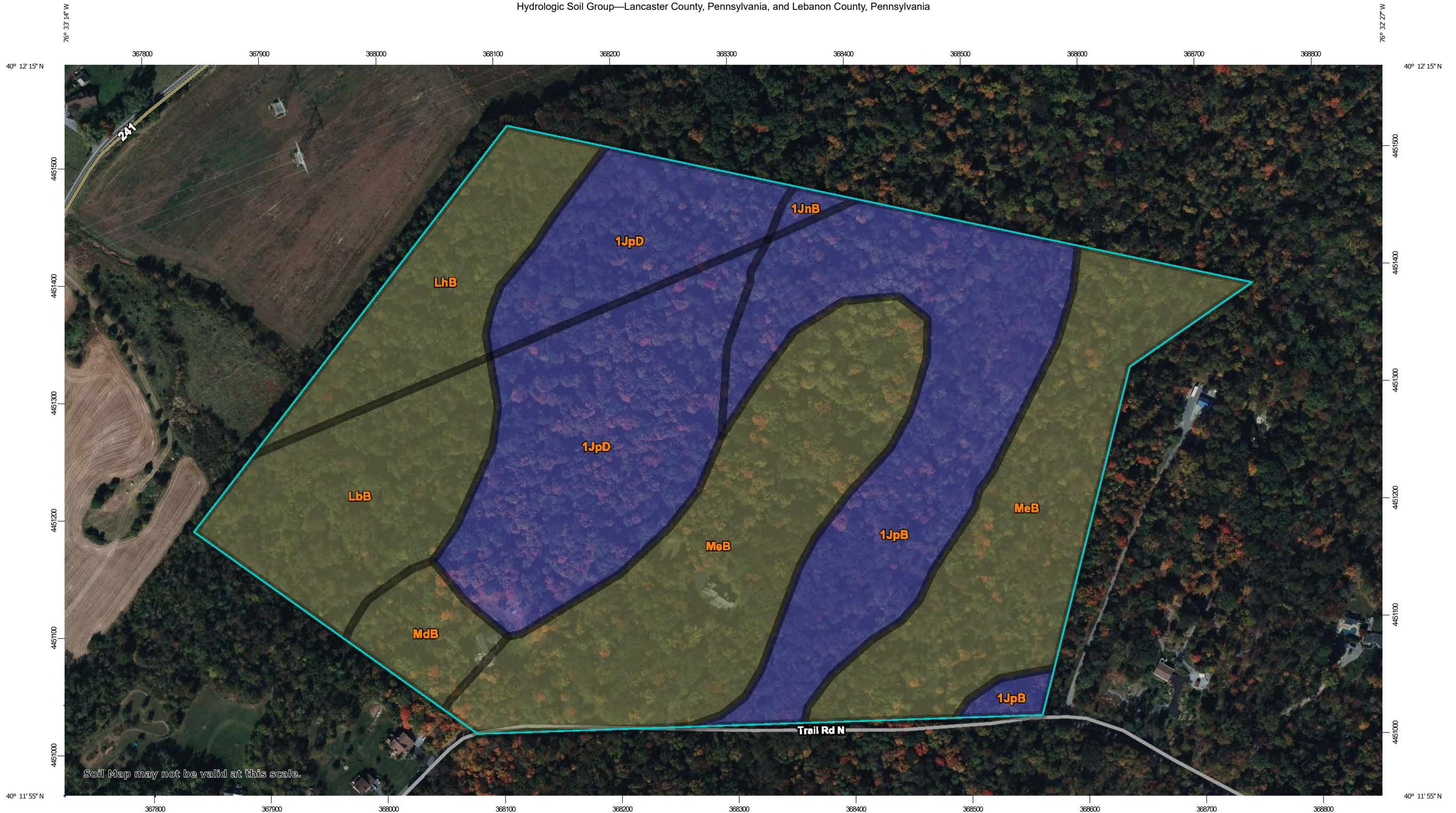
4701 North Front Street
Harrisburg, PA 17110
(717) 236-7500
fax (717) 236-3314
aoa@actoneassociates.com
www.actoneassociates.com

Source of Title

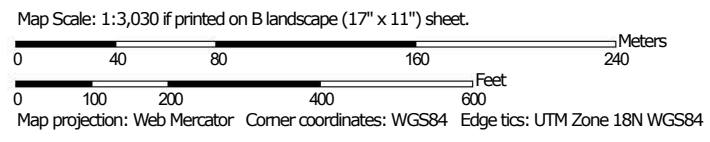
Mark E. Kleinfelter
955 Trail Road North
Elizabethtown, PA 17022
717-449-0268
Tax Parcel Id. 460-2304572-318948,
460-2304312-318372, 460-2303693-317878
Deed Book 6736 Page 412, & Bk 6146, Pg 091

Exhibit A, Waiver Request
955 Trail Road North
Mount Joy Township
Lancaster County

Drawn by: RES Page 1 of 1
Date: February 6, 2024 Job No. 24-011



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


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 scales ranging from 1:15,800 to 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: Lancaster County, Pennsylvania
 Survey Area Data: Version 22, Sep 4, 2023

Soil Survey Area: Lebanon County, Pennsylvania
 Survey Area Data: Version 19, Sep 4, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jul 6, 2020—Nov 7, 2020

MAP LEGEND

MAP INFORMATION

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1JpB	Joanna loam, 0 to 8 percent slopes, extremely stony	B	15.2	19.9%
1JpD	Joanna loam, 8 to 25 percent slopes, extremely stony	B	12.2	16.0%
LbB	Lehigh silt loam, 3 to 8 percent slopes	C/D	8.0	10.6%
MdB	Mount Lucas silt loam, 3 to 8 percent slopes	C/D	2.3	3.1%
MeB	Mount Lucas very stony silt loam, 3 to 12 percent slopes	C/D	26.0	34.3%
Subtotals for Soil Survey Area			63.7	83.8%
Totals for Area of Interest			76.0	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1JnB	Joanna loam, 3 to 8 percent slopes	B	0.4	0.5%
1JpD	Joanna loam, 8 to 25 percent slopes, extremely stony	B	5.6	7.4%
LhB	Lehigh silt loam, 2 to 10 percent slopes	C/D	6.3	8.3%
Subtotals for Soil Survey Area			12.3	16.2%
Totals for Area of Interest			76.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

LANCASTER COUNTY

LANCASTER COUNTY PLANNING COMMISSION

COUNTY COMMISSIONERS
PAUL THIBAUT, Chairman
HOWARD "PETE" SHAUB, Vice-Chairman
RON FORD

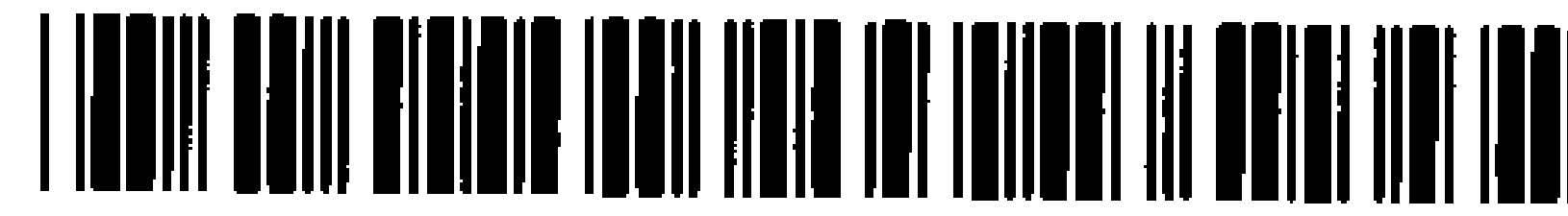
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11/28/2002 01:59PM
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Doc Id: 5135240
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Rec Fee: 15.00

50 NORTH DUKE STREET
PO BOX 83480
LANCASTER, PA 17608-3480
TELEPHONE: 717-299-8333
FAX: 717-295-3659

RONALD T. BAILEY
Executive Director

19 March 2002
02LP

RECORDER OF DEEDS COPY FILE COPY



5135240
Page: 1 of 3
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J215-47

Mr. Richard E. Forry, Secretary
Mount Joy Township Supervisors
159 Mertz Drive
Elizabethtown, PA. 17022

Re: Notice of Plan Receipt for Review
LCPC File #: 02-33

Dear Mr. Forry:

A request to review the plan identified below was received by the Lancaster County Planning Commission on 7 March 2002 and has been scheduled for review at the Commission meeting on 8 April 2002. The LCPC meeting will be held at 4:00 p.m., in Rooms 601 & 602, on the Sixth Floor, of the Courthouse.

Plan Name: Mark E. Kleinfelter & Marian L. Fetter
Application Classification: Final
Municipality: Mount Joy Township
Project Location: North side of Trail Road, approximately 1825' East of Milton Grove Road..

Proposed Use: Residential/Woodland
Number of Lots/Units: 4/4
Total Acreage: 126.000

Property Owner(s): Mark E. Kleinfelter & Marian L. Fetter
Address: 303 Lauschtown Road
Denver, PA. 17517

The Commission welcomes any comments or additional information that may be relevant to the review of this plan. If the Commission or its Staff can be of any assistance to you during your review and approval of this project, please do not hesitate to call me.

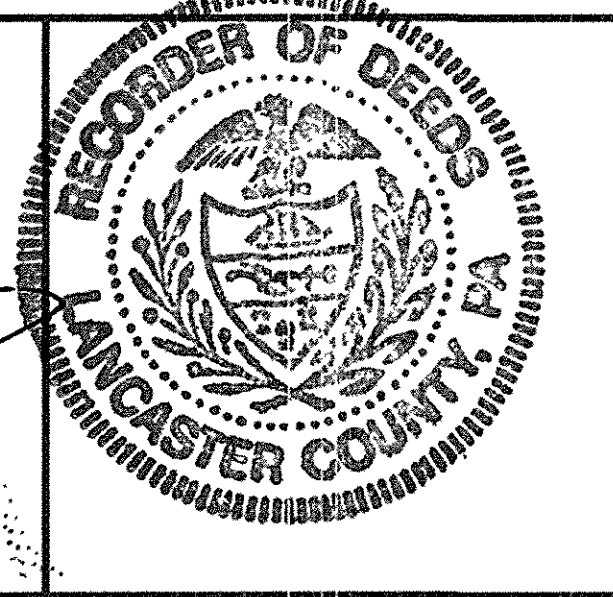
Sincerely,
James R. Cowhey
James R. Cowhey
Deputy Director for Community Planning

JRC/bpk
Copy: Richard Kaleida, Mount Joy Township Planning Commission Secretary
RAV Associates, Engineer
Morgan, Hallgren, Crosswell & Kane, Solicitor
Mark E. Kleinfelter & Marian L. Fetter, Landowners
Jeffrey Burkhart, D.C. Gohn Associates
PP&L, Electric Company
Sprint, Telephone Company
UGI, Gas Company
PaDOT c/o Tom Fogelsanger
Comcast (Lebanon), Cable TV
S:\COMMUNPL\4-8-02\REV-APP-WA\REV-02-33.doc



J-215-47 11/26/02

RECORDED IN THE OFFICE FOR RECORDING OF DEEDS, ETC., IN AND FOR LANCASTER COUNTY, PA. IN SUBDIVISION PLAN BOOK J-215 PAGE 47



WITNESS MY HAND AND SEAL OF OFFICE THIS 26th DAY OF NOVEMBER, 2002

COMMONWEALTH OF PENNSYLVANIA COUNTY OF LANCASTER

ON THIS THE 26th DAY OF November, 2002 BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED (NAME) Mark E. Kleinfelter and Marian L. Fetter WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT HE IS THE OWNER/EQUITABLE OWNER OF THE PROPERTY SHOWN ON THIS PLAN, THAT THE PLAN THEREOF WAS MADE AT HIS DIRECTION, THAT HE ACKNOWLEDGES THE SAME TO BE HIS ACT AND PLAN AND DESIRES THE SAME TO BE RECORDED, AND THAT ALL STREET AND OTHER PROPERTY IDENTIFIED AS PROPOSED PUBLIC PROPERTY (EXCEPTING THOSE AREAS LABELED "NOT FOR DEDICATION") ARE HEREBY DEDICATED TO THE PUBLIC USE.

Mark E. Kleinfelter Marian L. Fetter OWNER/EQUITABLE OWNER - SUBDIVIDER

NOTARY SEAL WITNESS MY HAND AND SEAL THE DAY AND DATE ABOVE WRITTEN

Notary Seal Tammy A. Bennett, Notary Public Mt. Joy Boro, Lancaster County My Commission Expires Oct. 15, 2005 Member, Pennsylvania Association of Notaries COMMISSION EXPIRATION DATE

THE LANCASTER COUNTY PLANNING COMMISSION, AS REQUIRED BY THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE, ACT 247 OF 1968, AS AMENDED, REVIEWED THIS PLAN ON April 8, 2002, AND A COPY OF THE REVIEW IS ON FILE AT THE OFFICE OF THE PLANNING COMMISSION IN L.C.P.C. FILE NO. 02-33. THIS CERTIFICATE DOES NOT INDICATE APPROVAL OR DISAPPROVAL OF THE PLAN BY THE LANCASTER COUNTY PLANNING COMMISSION, AND THE COMMISSION DOES NOT REPRESENT OR GUARANTEE THAT THIS PLAN COMPLIES WITH THE VARIOUS ORDINANCES, RULES, REGULATIONS, OR LAWS OF THE LOCAL MUNICIPALITY, THE COMMONWEALTH, OR THE FEDERAL GOVERNMENT.

u. Sully Jonathan Zilk

AT A MEETING HELD ON 22 April, 2002, THE MOUNT JOY TOWNSHIP PLANNING COMMISSION APPROVED THIS PROJECT, INCLUDING THE COMPLETE SET OF PLANS AND INFORMATION WHICH ARE FILED WITH THE COMMISSION IN MOUNT JOY PLANNING COMMISSION FILE NO. 2002-02-2, BASED UPON ITS CONFORMITY WITH THE STANDARDS OF CHAPTER 119, SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

Fred E. Rutz

- NOTES: 1. EACH LOT WILL BE PROVIDED WITH PRIVATE ON-LOT WATER AND SANITARY SEWER FACILITIES AND WILL PROVIDE A MINIMUM OF TWO (2) OFF-STREET PARKING SPACES... 2. THE KLEINFELTER TRACT CONTAINS APPROXIMATELY 126.5 AC PER THE LATEST RECORDED DEED (DEED 6720-112)... 3. WARNING: THE RESIDENTIAL USES OR LOTS PROPOSED BY THIS SUBDIVISION AND/OR LAND DEVELOPMENT PLAN ARE IN THE AGRICULTURAL ZONING DISTRICT... 4. WAIVERS OF THE FOLLOWING SECTIONS OF THE MOUNT JOY TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE WERE GRANTED BY THE MOUNT JOY TOWNSHIP PLANNING COMMISSION ON APRIL 22, 2002... 5. WAIVERS OF CHAPTER 116, ARTICLE III, SECTION 24A FOR PAVEMENT WIDENING AND CURB INSTALLATION WERE GRANTED BY THE MOUNT JOY TOWNSHIP SUPERVISORS ON MAY 13, 2002... 6. EACH LOT INCLUDES EASEMENTS RESERVED FOR THE INSTALLATION OF A PRIMARY AND/OR A REPLACEMENT SEPTIC LOCATION WHICH MUST BE PROTECTED FROM TRAFFIC BY HEAVY EQUIPMENT... 7. CONSTRUCTION OF IMPROVEMENTS UPON OR DISTURBANCE OF THE REPLACEMENT SEPTIC FIELD LOCATIONS IS PROHIBITED... 8. NOTHING SHALL BE PLACED, PLANTED, SET, OR PUT WITHIN THE AREA OF AN EASEMENT THAT WOULD ADVERSELY AFFECT THE FUNCTION OF THE EASEMENT OR CONFLICT WITH THE EASEMENT AGREEMENT... 9. NO STRUCTURES, LANDSCAPING, OR GRADING MAY BE CONSTRUCTED, INSTALLED, OR PERFORMED WITHIN THE AREA OF THE CLEAR RIGHT-OF-WAY... 10. WETLAND AREAS ARE SHOWN PER A REVIEW PERFORMED BY ANI GROUP, INC. DATED SEPTEMBER 16, 2001... 11. THE PURCHASER OF EACH LOT, AS SHOWN ON THIS PLAN, SHALL RECEIVE A COPY OF THE PLAN AS RECORDED FOR THEIR RECORD AND REVIEW... 12. SITE CONTOURS (1 FOOT INTERVAL) OBTAINED FROM ACTUAL FIELD SURVEY DATA... 13. PERMANENT LOT CORNER MARKERS AND CONCRETE MONUMENTS WILL BE PLACED AS NECESSARY...

ZONING DATA and SITE DATA (TO STREET RIGHT-OF-WAY) table with 9 rows of specifications for agricultural zoning.

LOT 4 (REMAINING LAND) 116.6± ACRES

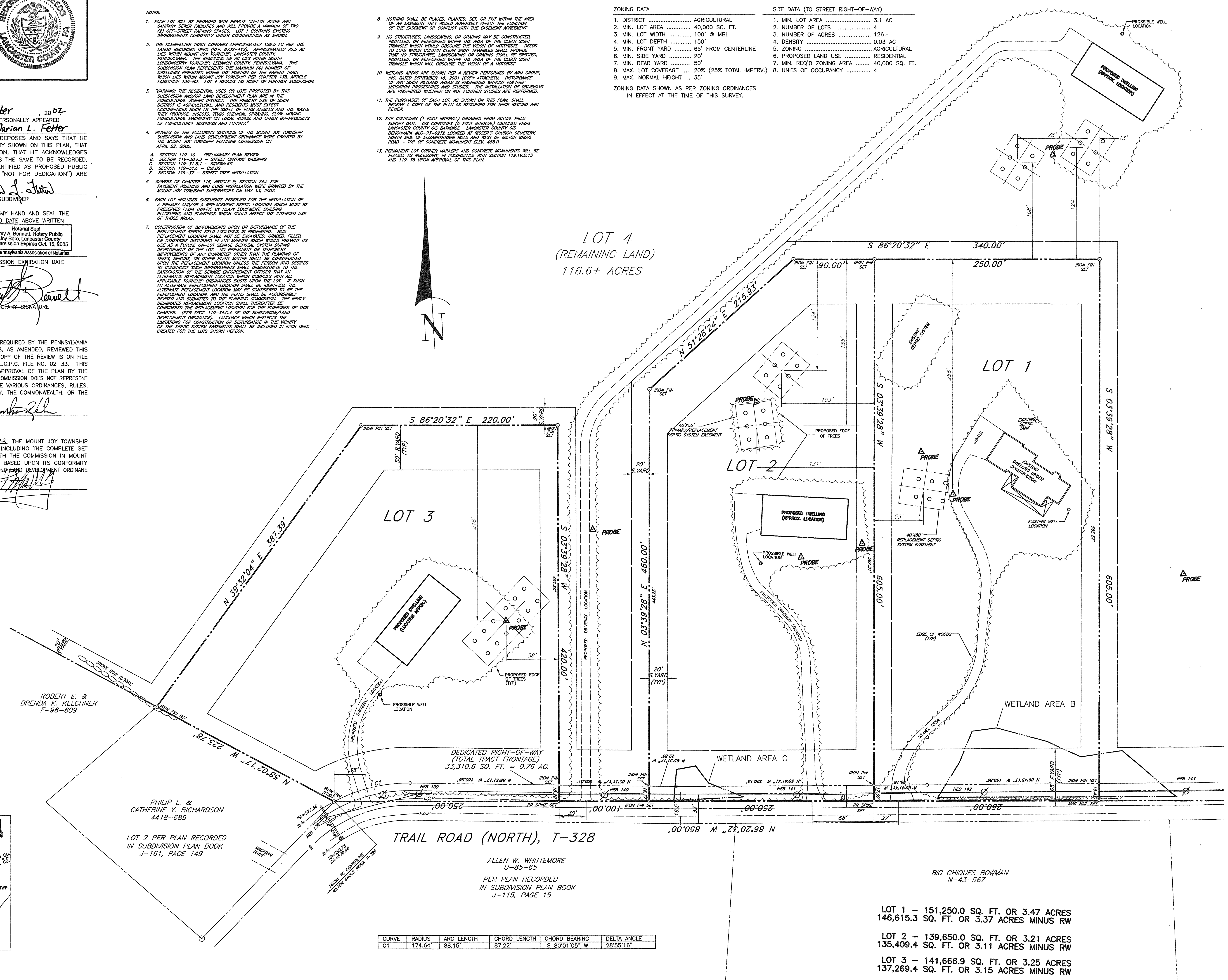
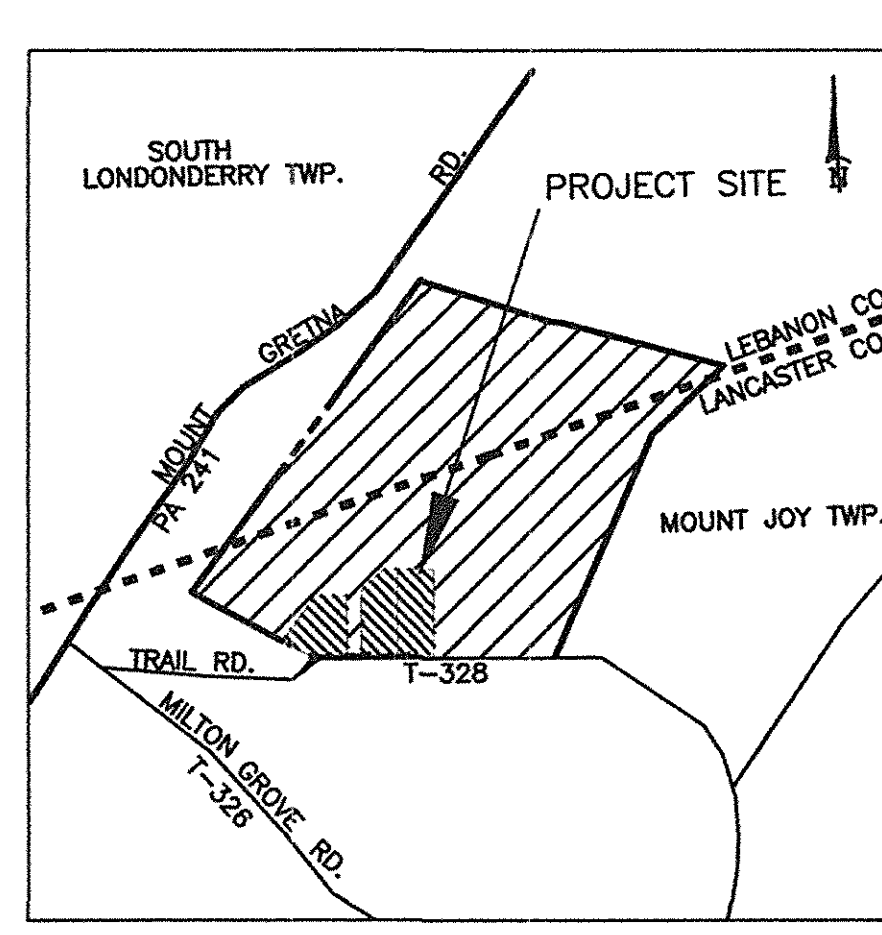


Table with 6 columns: CURVE, RADIUS, ARC LENGTH, CHORD LENGTH, CHORD BEARING, DELTA ANGLE. Row 1: C1, 174.64', 88.15', 87.22', S 80°01'05" W, 28°55'16"

LOT 1 - 151,250.0 SQ. FT. OR 3.47 ACRES 146,615.3 SQ. FT. OR 3.37 ACRES MINUS RW LOT 2 - 139,650.0 SQ. FT. OR 3.21 ACRES 135,409.4 SQ. FT. OR 3.11 ACRES MINUS RW LOT 3 - 141,666.9 SQ. FT. OR 3.25 ACRES 137,269.4 SQ. FT. OR 3.15 ACRES MINUS RW



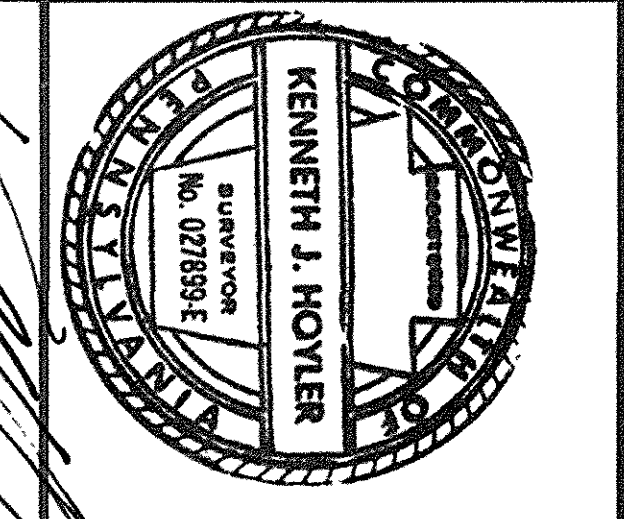
LOCATION MAP GRAPHIC SCALE IN FEET 0 2000 4000

5135240 Page: 2 of 3 11/26/2002 01:56PM

Lc.Pc # 02-33

Table with columns: DATE, REVISIONS, OWNER/EQUITABLE OWNER-SUBDIVIDER, NAME, ADDRESS, TELEPHONE, SOURCE OF TITLE, LANC. CO. TAX MAP, LANC. CO. TAX ASSESSMENT ACCOUNT NO.

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THE SURVEY AND FIELD NOTES AND TRIPLE AND CORRECT TO THE ACCURACY REQUIRED BY THE CHAPTER 119, SUBDIVISION AND LAND DEVELOPMENT.



dc John Associates, Inc. Surveyors Engineers Landscape Architects. 32 MOUNT JOY STREET MOUNT JOY, PA 17552-0128

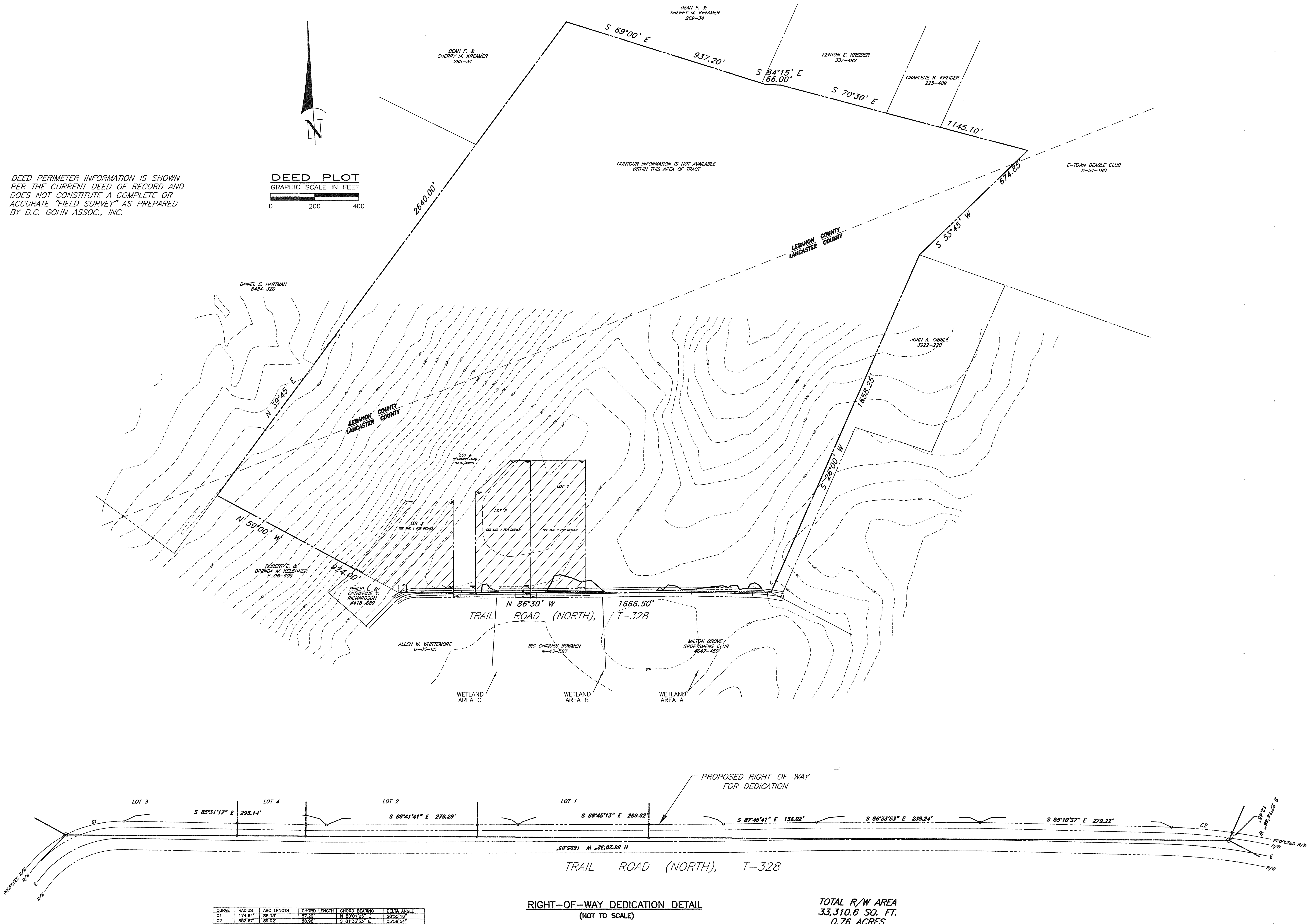
Table with columns: PROJECT NO., SCALE, DATE, DRAWN BY, CHECKED BY, DRAWING NO., SHEET NO.

FINAL SUBDIVISION PLAN FOR MARK E. KLEINFELTER & MARIAN L. FETTER MOUNT JOY TOWNSHIP LANCASTER COUNTY, PENNSYLVANIA

DEED PERIMETER INFORMATION IS SHOWN PER THE CURRENT DEED OF RECORD AND DOES NOT CONSTITUTE A COMPLETE OR ACCURATE "FIELD SURVEY" AS PREPARED BY D.C. GOHN ASSOC., INC.

DEED PLOT
GRAPHIC SCALE IN FEET
0 200 400

CONTOUR INFORMATION IS NOT AVAILABLE WITHIN THIS AREA OF TRACT



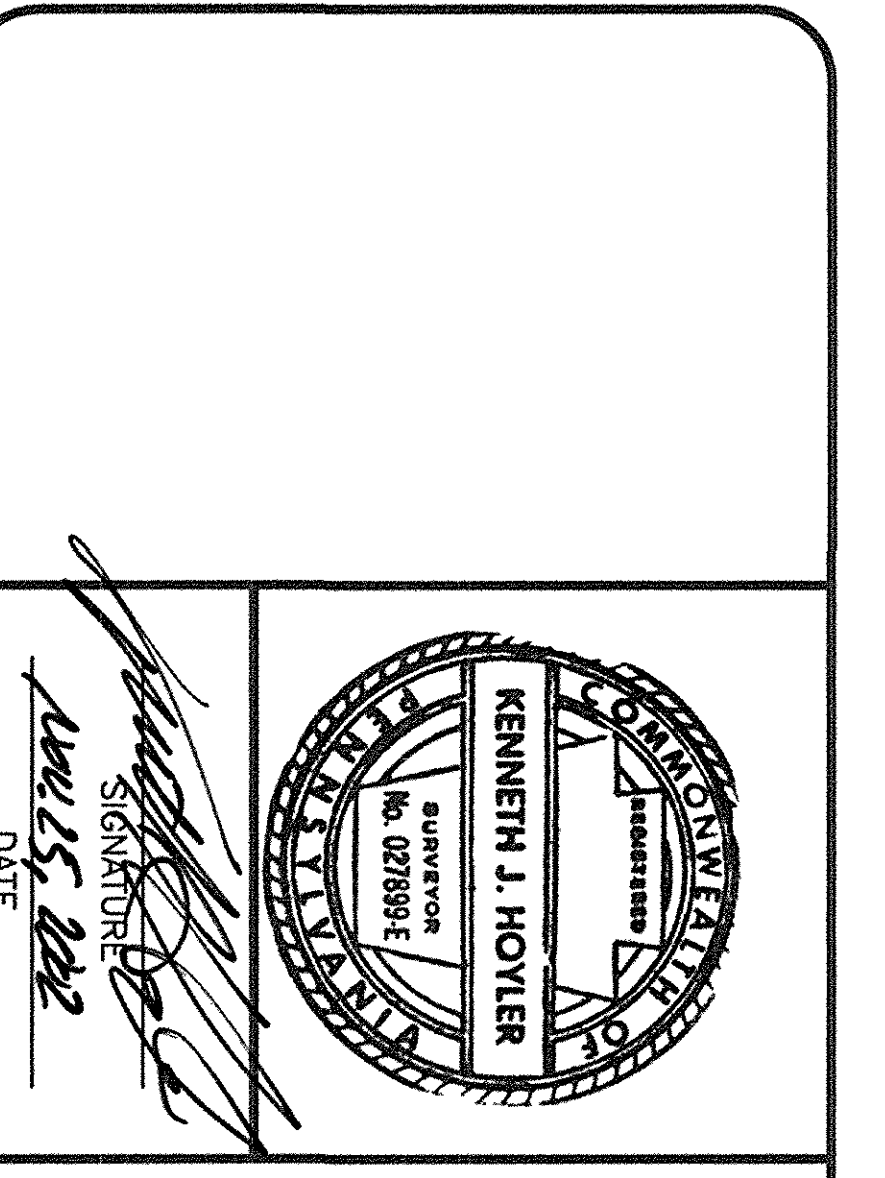
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	174.84	88.15	87.23	N 80°01'05" E	28°55'16"
C2	826.07	89.92	88.99	S 81°53'33" E	02°58'54"

RIGHT-OF-WAY DEDICATION DETAIL
(NOT TO SCALE)

TOTAL R/W AREA
33,310.6 SQ. FT.
0.76 ACRES

DATE	REVISIONS
10/03/02	R/W FOR DEDICATION DETAIL

OWNER/EQUITABLE OWNER-SUBDIVIDER
NAME: MARK E. KLEINFELTER & MARIAN L. FETTER
ADDRESS: 303 LAUSCHTOWN ROAD DENVER, PENNSYLVANIA 17517
TELEPHONE: 215-849-5665
SOURCE OF TITLE: 6736-412
LANC. CO. TAX MAP: 6E-1-5
LANC. CO. TAX ASSESSMENT ACCOUNT NO.: 460-31272-0-0000



dc gohn
Associates, Inc.
Surveyors Engineers
Landscape Architects
32 MOUNT JOY STREET
MOUNT JOY, PA 17552-0128
TEL: 630-5308
FAX: 630-1998

PROJECT NO.: 4058-20
SCALE: 1"=200'
DATE: 1-15-02
DRAWN BY: DAP
CHECKED BY: [Signature]
DRAWING NO.: CG-2398
SHEET NO.: 2 OF 4

DEED PLOT
FOR
MARK E. KLEINFELTER & MARIAN L. FETTER
MOUNT JOY TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA



ARM Group Inc.

Earth Resource Engineers and Consultants

September 18, 2001

RECEIVED

MAR 07 2002

TOWNSHIP

Jeffrey Burkhart
D.C. Gohn Associates, Inc.
32 Mount Joy Street
P.O. Box 128
Mount Joy, PA 17552-0128

Re: Kleinfelter Subdivision
Wetland and Soils Review
Mount Joy Township, Lancaster County,
and South Annville Township, Lebanon
County, Pennsylvania
ARM Project 00173

Dear Mr. Burkhart:

ARM Group Inc. (ARM) is pleased to present this letter report regarding the site reconnaissance for a general Wetland Overview and Soils Review of the Kleinfelter Subdivision property. This site reconnaissance and evaluation was performed to determine the preliminary presence or absence of wetlands on the property, because the presence of wetlands may limit development of the site. The investigation was not performed using the protocols or procedures as outline in the 1987 Army **Core** of Engineers Wetland Delineation Manual (ACOE 1987). A wetland is defined by the presence of three indicators at a specific location: hydrophytic (wetland) vegetation, hydric soils, and hydrology. All three indicators must be present for an area to be identified as a wetland. The review of published soil information was conducted to determine the suitability of the soil on the property for on-site sewage disposal.

BACKGROUND

The subject property is located on the north side of Trail Road, approximately one-half mile east of its intersection with Milton Grove Road, in Mount Joy Township, Lancaster County and South Londonderry Township, Lebanon County, PA. The subject parcel contains approximately 126.5 acres. The property is bounded by agricultural and low-density residential use on the west and north, and wooded land on the east and south. The proposed subdivided lots will have frontage on Trail Road (see attached D.C. Gohn Sketch Plan for Mark Kleinfelter).

WETLAND OVERVIEW

Prior to doing any fieldwork, ARM reviewed the 1990 United States Geological Survey (USGS) topographic map (Figure 1), 1995 aerial photographs (Figure 2), the National Wetland Inventory Maps (Figure 3), and the 1985 Lancaster County Soil maps (Figure 4). The data review was to aid in the identification of potential wetland areas, streams, vegetation density and diversity, and to determine if the land use has changed during the past several years. The review revealed that the property has not been significantly altered as compared to the published maps and photographs.

A field evaluation for the presence or absence of wetland parameters for the proposed subdivision was conducted on June 29, 2000, and a follow up site visit to flag the potential wet areas was conducted on August 1, 2001. Six areas were identified that could potentially be wetlands (Figure 5, A through F).

Vegetation

Wetland vegetation is defined as plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. Vegetation on most of the site is dominated by a variety of nonwetland plants. A wooded area is associated with the unnamed tributary located in Lebanon County, along the northeastern boundary, which is identified as area "F" on Figure 5. Vegetation in these wetland areas, designated A through F, includes Red Maple (*Acer Rubrum*), Spice Bush (*Calycanthus Occidentails*), Sensitive Fern (*Onoclea Sensibilish*), Soft Rush (*Juncus effusus*) and Sedges (*Carex spp.*).

Soils

Hydric Soils on the site, as mapped in the 1985 United States Department of Agriculture, Soil Conservation Service (SCS) report entitled *Soil Survey of Lancaster County, Pennsylvania*, include Lehigh silt loam, 3 to 8 percent slopes (LbB), Mount Lucas silt loam, 3 to 8 percent slopes (MdB), Mount Lucas very stony silt loam, 3 to 12 percent slopes (MeB), Ungers extremely stony loam, 3 to 8 percent slopes (Ubb), and Ungers extremely stony loam, 8 to 25 percent slopes (Ubd).

A hydric soil is defined as a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. The Lehigh silt loam, Mount Lucas silt loam, and Mount Lucas very stony silt loam are listed as soil map units with inclusions of hydric components on the interim list of *Hydric Soils – Lancaster County, Pennsylvania*. The hydric components of the Lehigh silt loam are found in wet spots located in drainageways and seepy areas. The hydric components of the Mount Lucas soil series are found in poorly drained soils located in swales and depressions. These three soil types underlie the west side of the site (Figure 4).



Hydrology

The third indicator of a wetland is the presence of hydrology. Hydrology is often the least exact of the parameters. Wetland hydrology includes all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. These are areas where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions. Topography of the site, based on the site visit and in conjunction with the USGS quadrangle mapping Elizabethtown, PA, 1964, Photorevised 1990, indicates that the property is generally flat along Trail Road, slopes steeply down toward the north from Trail Road toward Lebanon County. The west side of the site slopes down toward the west. Surface drainage is to the unnamed tributary, which flows generally west through the property in the northeastern section of the site. Wet areas of the site related to hydrology were identified by shallow water, of other indicators, and used to identify the wetlands areas A through F on Figure 5.

SOILS REVIEW

Table 12 of the *Soil Survey of Lancaster County*, indicates the general suitability of the soil series for on-site sewage disposal. Limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Only the soil horizon between 24 and 72 inches below ground surface is evaluated.

The Lehigh silt loam has severe limitations for on-site sewage disposal due to wetness and slow percolation. Mount Lucas silt loam and Mount Lucas very stony silt loam have severe limitations for on-site sewage disposal due to wetness and slow percolation; these soils are located at the west side of the site. Ungers extremely stony loam, 3 to 8 percent, has moderate limitation for on-site sewage disposal due to depth to rock and slow percolation, and Ungers extremely stony loam, 8 to 25 percent, has severe limitation for on-site sewage disposal due to slope; these soils underlie the southeast portion of the site, and a band of soil across the central portion of the site. Although these soils are generally classified as having limitations for on-site septic systems, the data from the soil probes will aid in identification of adequate on-site sewage locations.



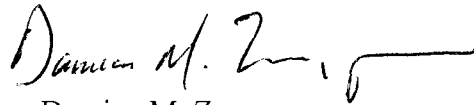
CONCLUSIONS

Based on published information and a site visit, several possible wetland areas were identified on the Kleinfelter property. (Figure 5) Three of the six-wetland areas (A, B and C) are along Trail Road, which may make site access a potential issue. Wetland areas E and D are found in the southwestern section of the site and are split by the Lebanon and Lancaster County lines. Wetland F is in the northwestern section of the site and encompasses the unnamed tributary. Although mapped soils may be marginal or pose severe limitations for on-site sewage disposal due to wetness, slow percolation, slope, or depth to rock, the potential of satisfactory locations are possible due to the topography and possible hydrology over the immediate site area.

If you have any questions concerning this letter report, do not hesitate to contact us.

Sincerely,

ARM Group Inc.



Damian M. Zampogna
Project Geologist

Attachment: D.C. Gohn Sketch Plan



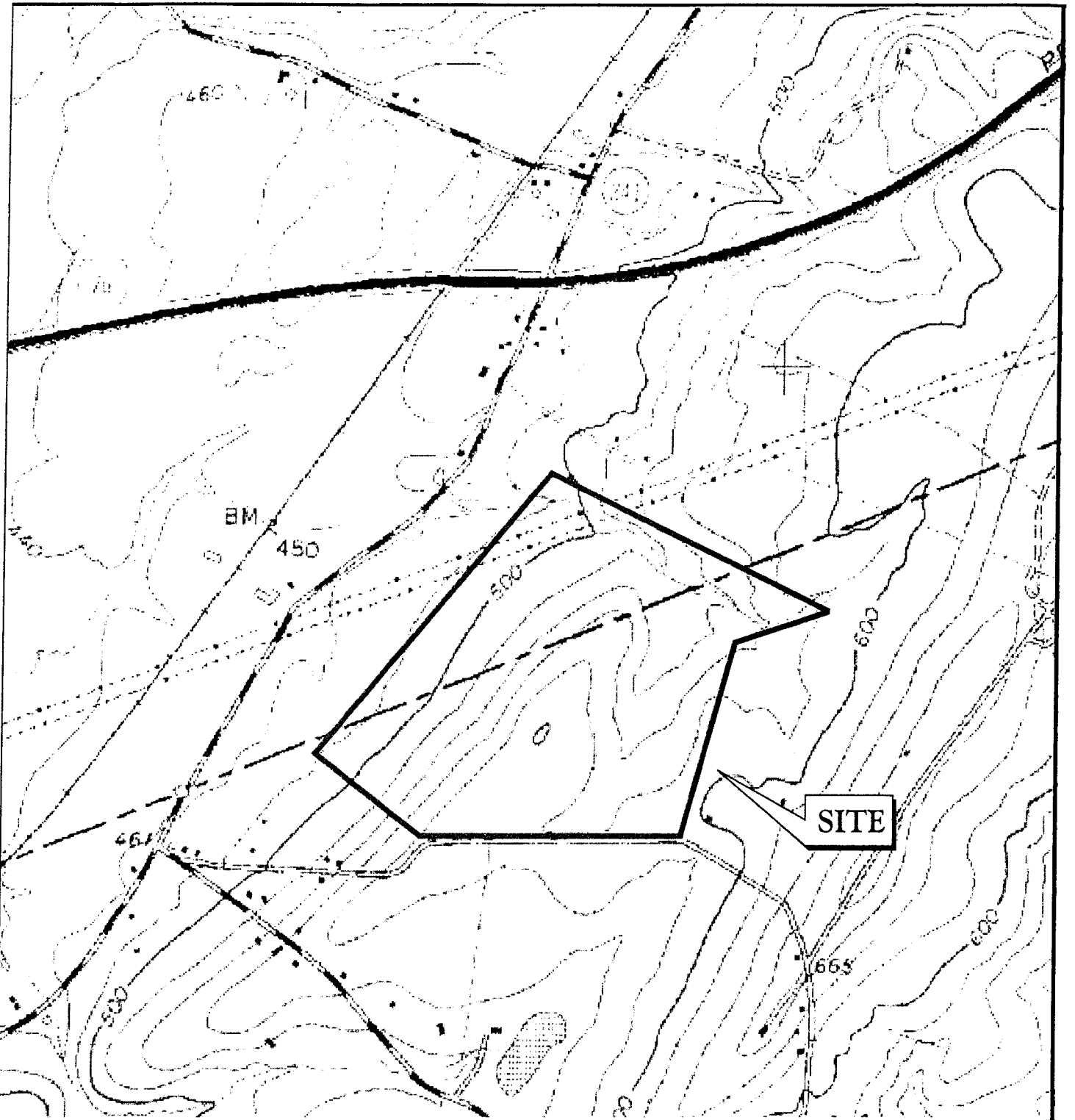
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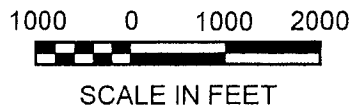
FIGURES






Base Map from the 1964 (Photorevised 1990) USGS 7.5 Minute Topographic Quadrangle of Elizabethtown, Pennsylvania

Figure 1



Site Location Map	
Kleinfelter Subdivision	
Mount Joy Township, Lancaster County, and South Londonderry Township, Lebanon County, Pennsylvania	
July 2001	 ARM Group Inc. Earth Resource Engineers and Consultants <small>1129 West Governor Road • Hershey, PA 17033</small>
00173	



Base Map from the 1995, Air Photo 7 miles NE of Elizabethtown, PA, USGS.

Figure 2



Photo is not to scale.

1995 Aerial Photograph

Kleinfelter Subdivision

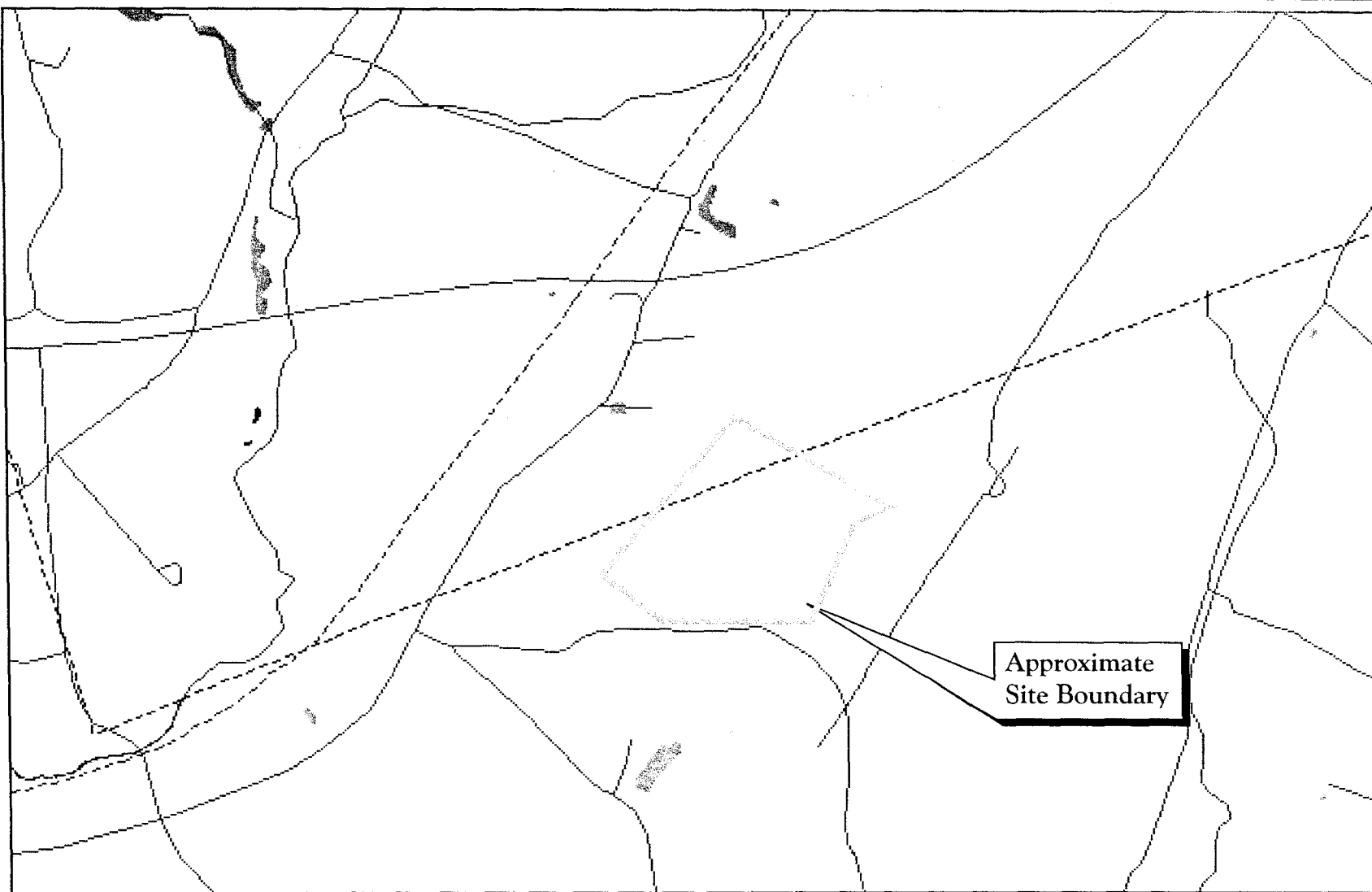
Mount Joy Township, Lancaster County, and
South Londonderry Township, Lebanon County,
Pennsylvania

July 2001

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- PEM/SS1C
- PEM1C
- PFO1A
- PFO1C
- PUBFh
- PUBHh
- Upland
- No Data Available
- Streams
- Roads
- Railroad
- Counties

Approximate Site Boundary



Wetland Data Provided by the U.S. Fish and Wildlife Service's National

N Wetland Inventory

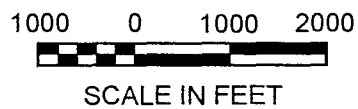


Figure 3

Wetland Inventory Map

Kleinfelter Subdivision

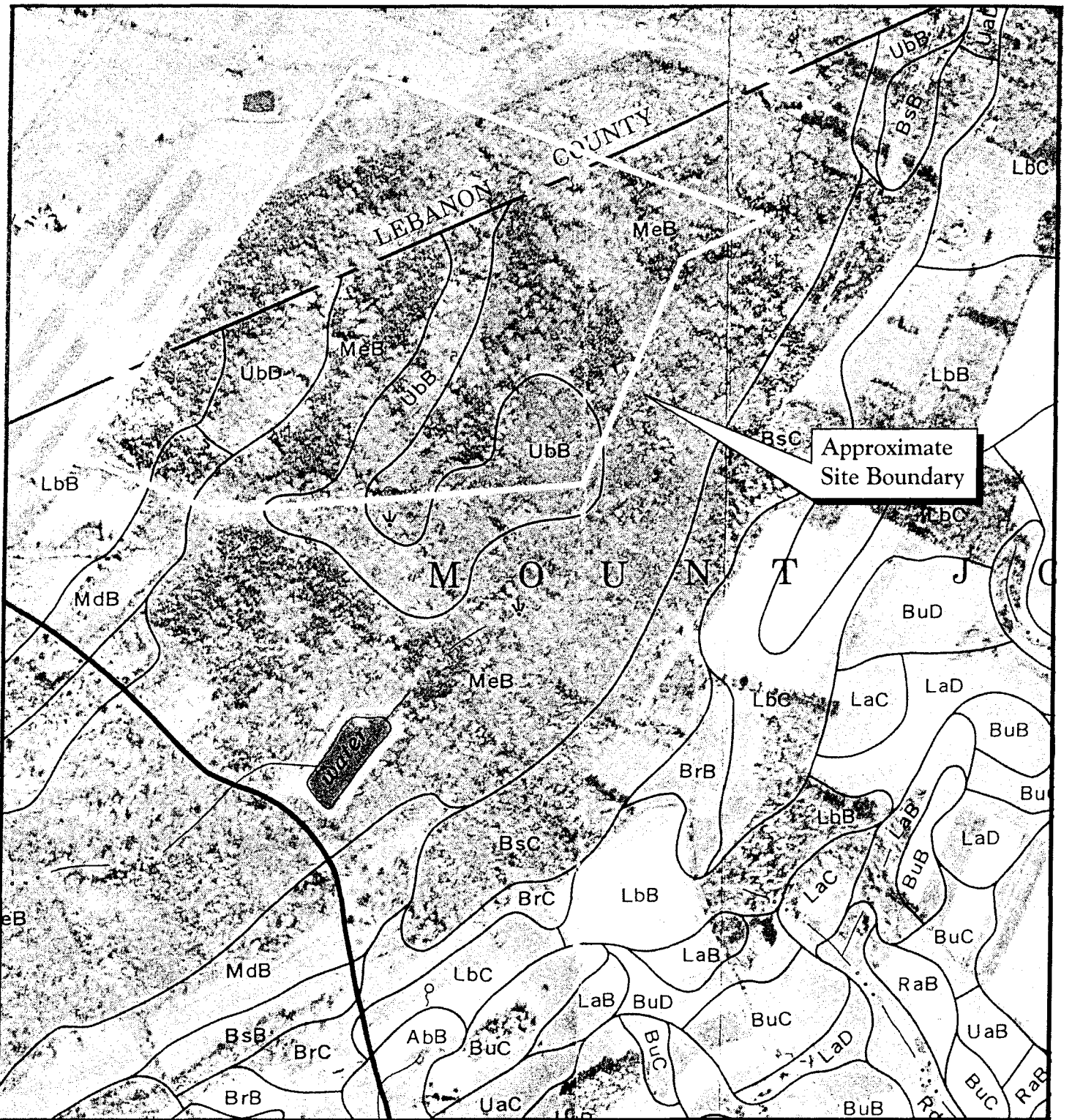
Mount Joy Township, Lancaster County, and
South Londonderry Township, Lebanon County,
Pennsylvania

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Soils on the site, as mapped in the 1985 United States Department of Agriculture, Soil Conservation Service (SCS), report entitled *Soil Survey of Lancaster County, Pennsylvania*

- Lehigh silt loam, 3 to 8 per cent slopes (LbB).*
- Mount Lucas silt loam, 3 to 8 percent slopes (MdB).*
- Mount Lucas very stony silt loam, 3 to 12 percent slopes (MeB).*
- Ungers extremely stony loam, 3 to 8 percent slopes (Ubb).*
- Ungers extremely stony loam, 8 to 25 percent slopes (Ubd).*



Figure 4

Lancaster County Soil Map

Kleinfelter Subdivision

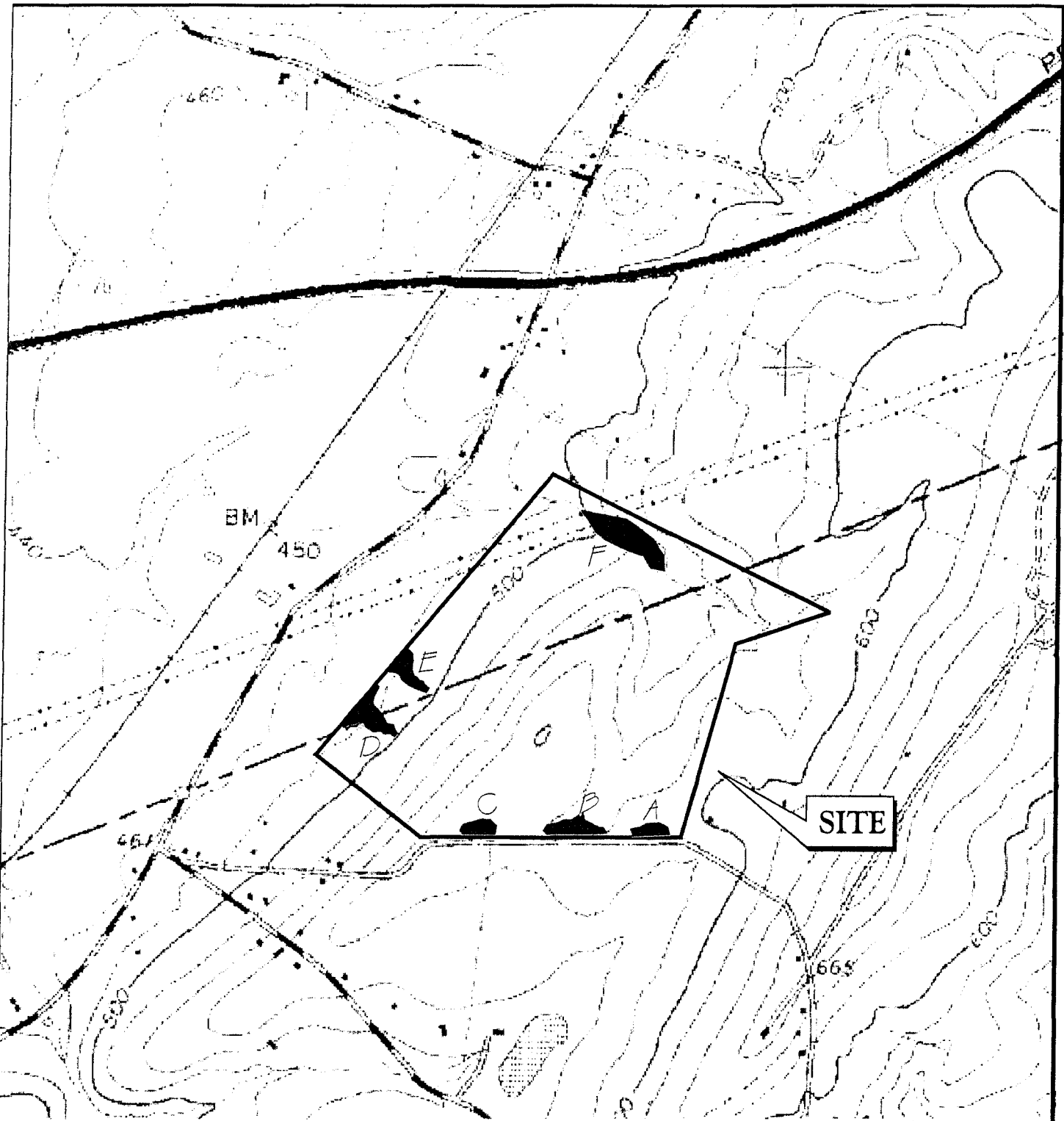
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South Londonderry Township, Lebanon County,
Pennsylvania

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Base Map from the 1964 (Photorevised 1990) USGS 7.5 Minute Topographic Quadrangle of Elizabethtown, Pennsylvania

Figure 5



Key



Potential Wetland Area

1000 0 1000 2000



SCALE IN FEET

Preliminary Wet Areas

Kleinfelter Subdivision

Mount Joy Township, Lancaster County, and
South Londonderry Township, Lebanon County,
Pennsylvania

July 2001

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033

February 13, 2024

Ryan Minnich
Township Manager
Mount Joy Township
8853 Elizabethtown Road
Elizabethtown, PA 17022

Via email: ryan@mtjoytwp.org

Re: 955 Trail Road North
Waiver Request
LCEC Project No: 25-166



LANCASTER CIVIL
★ ★ engineering company ★ ★
p.o. box 8972, lancaster, pa 17604-8972
www.lancastercivil.com

Dear Mr. Minnich,

We have received a waiver request from Act One & Associates for the above-referenced project. The submission consisted of the following documents:

- Waiver request letter dated February 5, 2024
- Site Plan (Exhibit A) dated February 6, 2024
- Recorded Final Subdivision Plan (2002) (J-215, page 47)
- Soils map information dated February 5, 2024
- Wetland and Soils Review dated September 18, 2001

Based upon my review of the submitted information, I offer the following comments for the Township to consider:

Zoning Ordinance

1. A 25 foot buffer surrounding the wetlands boundary shall be conserved (135-307.B). The applicant shall enter into a recordable agreement with the Township providing for the permanent maintenance of the wetland area, in a form acceptable to the Township Solicitor (135-307.E).

Subdivision and Land Development Ordinance

2. A wetlands study shall be provided (119-32.B). The applicant has requested a waiver of this requirement.

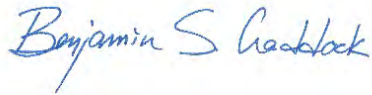
Waiver response: The recorded subdivision plan from 2002 shows three (3) wetland areas along Trail Road North. This is based on the 2001 Wetland and Soils Review which shows six (6) "possible wetland areas". (The 2002 plan only shows three out of the six possible wetland areas.) The wetland review specifically states that the review was not completed in accordance with the Army Corps of Engineers Wetland Delineation Manual.

In 2021 the Township applied for a DEP General Permit for the widening of Trail Road North. As part of that permit, Vortex Environmental performed a wetland investigation (dated May 28, 2021). This investigation also identified three (3) wetland areas along Trail Road North within the boundaries of these properties; however, the wetlands appear to be more extensive than those shown on the 2001 wetland review. This investigation was performed in accordance with the Army Corps of Engineers Wetland Delineation Manual.

As noted above, the Zoning Ordinance requires that the wetland area and the 25 foot buffer be conserved within a conservation easement. This requirement will need to be satisfied as part of the proposed lot line change plan. Providing an accurate, up-to-date wetlands study, that is performed in accordance with standard protocols, will be needed in order to identify the location of the wetlands that will be included within the conservation easement. Based on these considerations, I am not able to support this modification.

If you should have any questions or need additional information, please do not hesitate to contact me at bencraddock@lancastercivil.com or via telephone at 717-799-8599.

Sincerely,

A handwritten signature in blue ink that reads "Benjamin S Craddock".

Benjamin S. Craddock, PE, President

LANCASTER CIVIL

cc: Justin Evans, Township Community Development Director/Zoning Officer (via email)
Patricia Bailey, Township Secretary (via email)
Josele Cleary, Esquire, Township Solicitor (via email)
Robert Shaffer, Jr. PE, ACT ONE & Associates (via email)



Vortex Environmental, Inc.

ENVIRONMENTAL CONSULTANTS

May 28, 2021

Mr. Benjamin S. Craddock, P.E.
Lancaster Civil Engineering Co.
P.O. Box 8972
Lancaster, PA 17604

RE: WETLAND INVESTIGATION ON THE TRAIL ROAD NORTH IMPROVEMENTS PROJECT - PHASE 2; MOUNT JOY TOWNSHIP, LANCASTER COUNTY, PENNSYLVANIA

Dear Ben:

Vortex Environmental, Inc. has conducted a wetland investigation within an approximately 5,000 linear foot study area for the proposed Phase 2 roadway improvements along Trail Road North between N. Milton Grove Road and Forest Lane in Mount Joy Township, Lancaster County, Pennsylvania. Mount Joy Township is proposing roadway improvements including road widening, culvert replacement and drainage improvements along this length of Trail Road North. The linear study area is approximately 5,000 linear feet along both sides of Trail Road North from Milton Grove Road to Forest Lane in the vicinity of the proposed roadway improvements. The linear study area along the roadway totals approximately 6.5 acres. The purpose of this investigation was to determine the presence or absence of "waters of the United States and Commonwealth" within the linear study area for this proposed roadway improvements project. Waters of the United States and Commonwealth include lakes, ponds, reservoirs, swamps, marshes, wetlands, rivers and/or streams (including intermittent streams). The linear study area is located along Trail Road North between Milton Grove Road (western end) and Forest Lane (eastern end)(Figure 1).

The investigation of the linear study area included examination of background materials and a field investigation. The background information examined included the Elizabethtown, PA 7.5-minute USGS topographic quadrangle, aerial photography, and the U.S. Fish and Wildlife Wetlands Online Wetland Mapper. The field investigations were conducted by Bradley J. Gochnauer of Vortex Environmental, Inc. on September 14, 2020. The soils, hydrology, and vegetation within the linear study area were examined for wetland characteristics in accordance with the United States Army Corps of Engineers Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region – Version 2.0 (April 2012). One (1) watercourse (Watercourse 1 – UNT to the Conewago Creek) and eight (8) wetland areas (Wetlands 1 - 8) were observed within the linear study area for the proposed roadway improvements project.

Vegetation

The vegetation within the linear study area consisted of mixed deciduous forest, mowed lawn, old field, emergent and forested wetlands. The mixed deciduous forest was observed throughout the linear study area along both sides of Trail Road North. The mixed deciduous forest vegetation consisted of garlic mustard, Japanese stiltgrass, Japanese honeysuckle, Virginia creeper, European privet, multiflora rose, northern spicebush, poison ivy, common greenbrier, European privet, tartarian honeysuckle, black cherry, black locust, black walnut, green ash, common mulberry, Norway maple, red maple, shagbark hickory and tree-of-heaven. The mowed lawn was observed adjacent to the existing residential properties and driveways along the roadway. The mowed lawn vegetation consisted of unidentified fescue, Kentucky bluegrass, common chickweed, common dandelion, English plantain, field garlic, garlic mustard, hemp-dogbane, Indian strawberry, Japanese stiltgrass, yellow nutsedge, smooth crabgrass and white clover. The old field was observed along the shoulders of Trail Road North. The old field vegetation consisted of curled dock, daisy fleabane, giant foxtail grass, jewelweed, Kentucky bluegrass, common milkweed, morning glory, orchard grass, pigweed, Queen Anne's lace, ragweed, reed canary grass, mile-a-minute, unidentified blackberry, multiflora rose and poison ivy. Scattered trees associated within the mowed lawn and old field areas included American sycamore, black cherry, black locust, black walnut, box-elder, common mulberry and Norway maple.

The emergent and forested wetland areas (Wetlands 1 - 8) were observed within low-lying areas adjacent to the existing roadway. The emergent wetland vegetation consisted of barnyard grass, common boneset, broad-leaved cattail, grass-leaved golden-rod, Japanese stiltgrass, jewelweed, PA smartweed, purple-leaf willow-herb, reed canary grass, common rush, shallow sedge, sweet flag, tearthumb, yellow nutsedge, European privet, multiflora rose and silky dogwood. The forested wetland vegetation consisted of clearweed, Jack-In-The-Pulpit, Japanese stiltgrass, jewelweed, sensitive fern, wood-nettle, common greenbrier, multiflora rose, northern spicebush, poison ivy, European privet, silky dogwood, black walnut, pin oak, green ash, red maple and shag-bark hickory.

Flags B1-B8, C1-C9, D1-D14, E1-E10, F1-F10, G1-G10, H1-H8 and I1-I8 were placed within the linear study area to delineate the boundaries of these eight (8) wetland areas (Wetlands 1 – 8). These eight (8) wetland areas were located within low-lying areas adjacent to the existing roadway in the central portion of the linear study area. The attached site plan shows the location of the regulated watercourse (Watercourse 1) and eight (8) wetland areas (Wetlands 1 – 8).

Hydrology

Hydrology within the majority of the linear study area is generally conveyed via overland sheet flow and existing storm water management facilities (swales, inlets, culverts, etc.) to the south, where it drains off-site into the adjacent forested lands. An intermittent stream

channel (Watercourse 1 – UNT to the Conewago Creek) was observed in the east-central portion of the linear study area. This intermittent stream channel originates at the culvert outfall along Trail Road North and drains to the southwest. Wetland 1 is located across the roadway from this stream channel and provides supporting hydrology. Hydrology within the extreme western portion of the linear study area is generally conveyed via overland sheet flow and existing storm water management facilities to the west, where it flows into the existing storm water management facilities along Milton Grove Road.

The eight (8) wetland areas (Wetlands 1 - 8) were observed within low-lying areas adjacent to the existing roadway. These wetlands are generally situated within the central portion of the linear study area. These eight (8) wetland areas are supported by seasonal high groundwater elevations, overland drainage from the adjacent uplands, stormwater drainage from the adjacent roadway, low-lying topography and poorly drained soils. Primary indicators of wetland hydrology observed within the wetland areas included saturation in the upper 12 inches, water marks, water-stained leaves and oxidized root channels in the upper 12 inches of the soil profile. Secondary indicators of wetland hydrology included wetland drainage patterns and geomorphic position.

The location of the nine (9) regulated features; One (1) watercourse (Watercourse 1) and eight (8) wetland areas (Wetlands 1 - 8) are shown on the attached site plan.

Soils

Five soil series including five soil types; Joanna loam, 1JpB; Brecknock very stony silt loam, BsC; Lehigh silt loam, LbB; Mount Lucas silt loam, MdB; and Mount Lucas very stony silt loam, MeB; exist within the linear study area for the Trail Road North Improvements Project - Phase 2 according to the Soil Survey for Lancaster County, PA (Figure 3). These soil series are not listed as having major hydric characteristics. The Joanna loam, Lehigh silt loam, Mount Lucas silt loam and Mount Lucas very stony silt loam soil series are all listed as having partial inclusions of hydric characteristics. Hydric soils were observed within the eight (8) wetland areas (Wetlands 1 - 8) identified within the approximately 5,000 linear foot study area for the project.

Conclusion

Vortex Environmental, Inc. examined background information and conducted a field investigation to determine the presence or absence of "waters of the United States and Commonwealth" within the approximately 5,000 linear foot study area along Trail Road North for the proposed Phase 2 of the roadway improvements project located in Mount Joy Township, Lancaster County, Pennsylvania. The background information for the project did indicate the possibility of "waters of the United States and Commonwealth" within the linear study area.

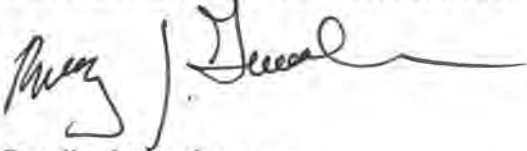
Mr. Benjamin S. Craddock, P.E.
May 28, 2021
Page 4

Based on the September 14, 2020 field investigations, Vortex Environmental, Inc. concludes that nine (9) "waters of the United States and Commonwealth"; exist within the linear study area for the Trail Road North Improvements Project - Phase 2, including one (1) intermittent watercourse (Watercourse 1) and eight (8) wetland areas (Wetlands 1 - 8). The location of these nine (9) regulated features are shown on the attached site plan.

If there are any questions regarding this project, please feel free to contact me.

Sincerely,

VORTEX ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read "Bradley J. Gochnauer", with a long horizontal flourish extending to the right.

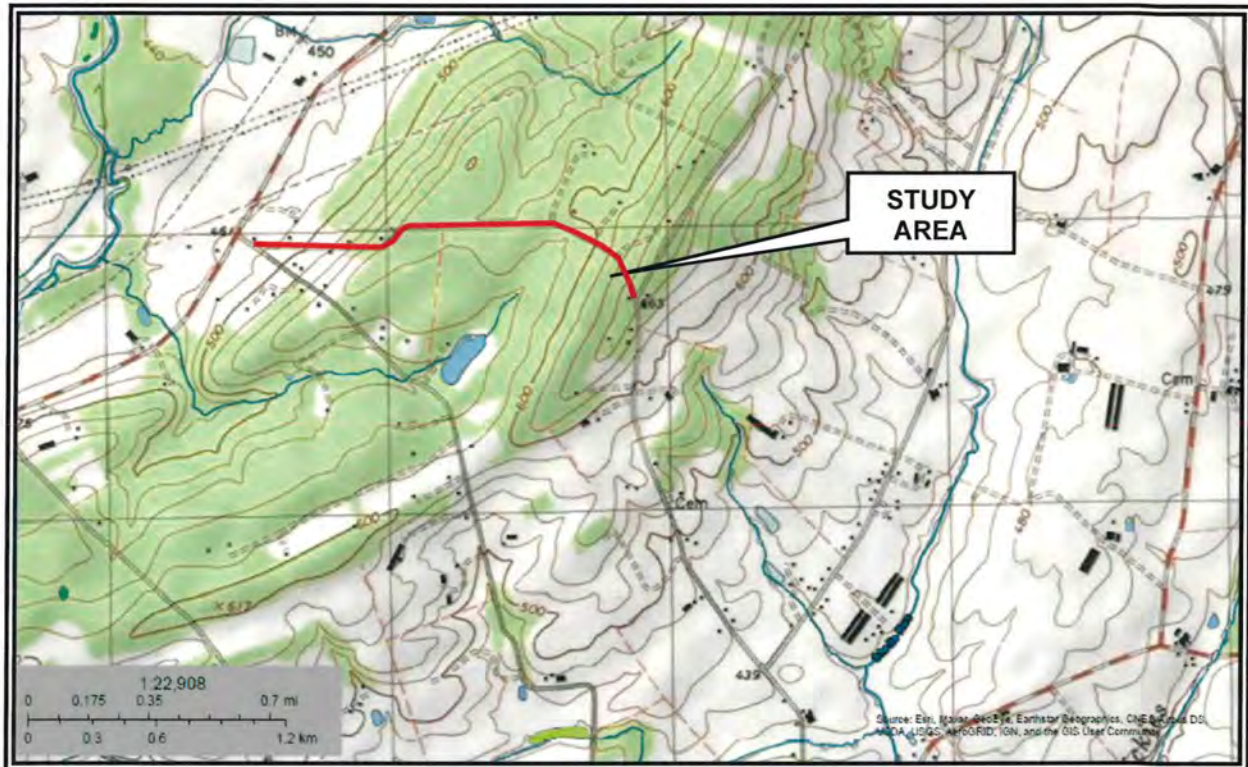
Bradly J. Gochnauer
President



Legend: Study Area Boundary ———	NOT TO SCALE
---	--------------

Figure 1: Site Map for the Trail Road North Improvements Project - Phase 2
Google Maps
Google.com
Mount Joy Township, Lancaster County, PA

VORTEX ENVIRONMENTAL, INC.



Legend:
 Study Area Boundary ———

NOT TO SCALE

Figure 2: USGS Map for the Trail Road North Improvements Project - Phase 2
 Elizabethtown, PA - 7.5-minute USGS Topographic Quadrangle,
 1964; Photo Revised 1990
 Mount Joy Township, Lancaster County, PA

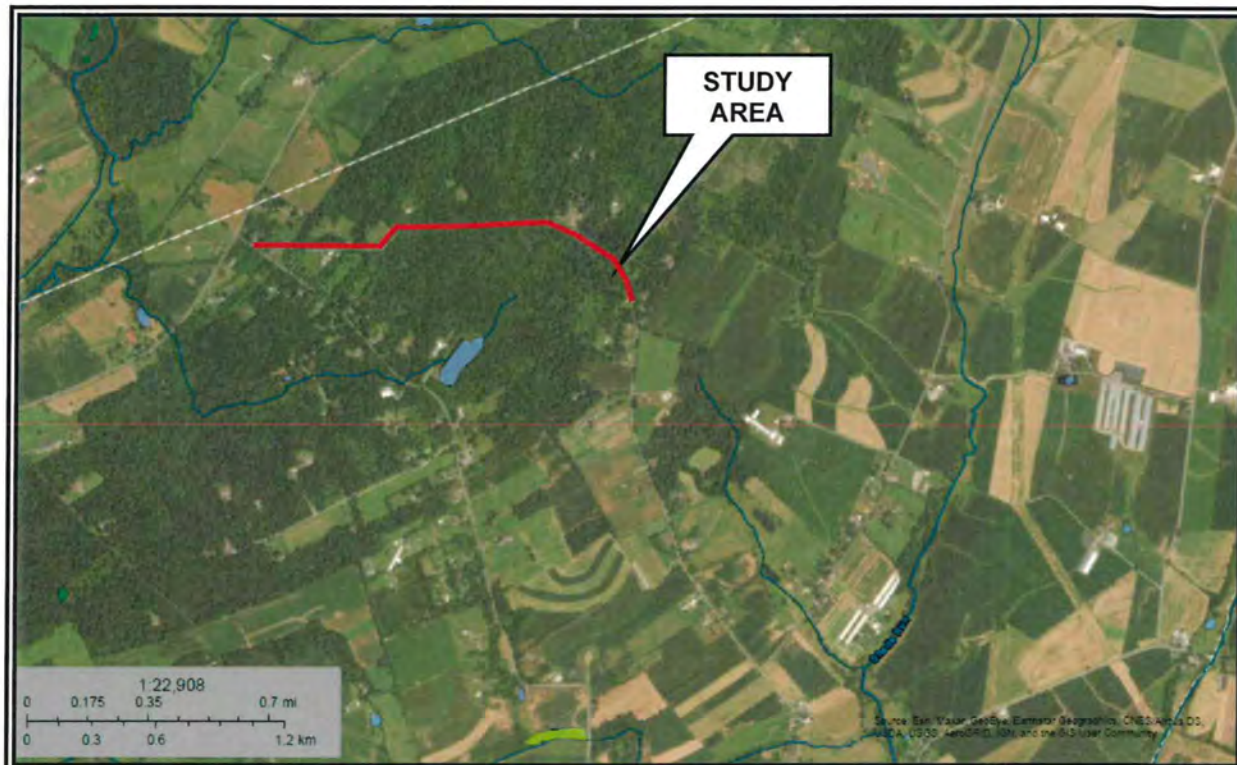
VORTEX ENVIRONMENTAL, INC.



<p>Legend: Study Area Boundary ———</p>	<p>NOT TO SCALE</p>
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Figure 3: Soil Map for the Trail Road North Improvements Project - Phase 2
 Online Web Soil Survey of Lancaster County, PA
<http://websoilsurvey.nrcs.usda.gov/app>
 Mount Joy Township, Lancaster County, PA

VORTEX ENVIRONMENTAL, INC.



<p>Legend: Study Area Boundary ——</p>	<p>NOT TO SCALE</p>
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Figure 4: NWI Map for the Trail Road North Improvements Project - Phase 2
 U.S. Fish and Wildlife Service Wetlands Online Wetland Mapper
<http://wetlandsfws.er.usgs.gov/NWI/index.html>
 Mount Joy Township, Lancaster County, PA

VORTEX ENVIRONMENTAL, INC.

DATA SHEETS
(1 - 4)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont (DRAFT)

Project/Site: Trail Road North Improvements Project City/County: Lancaster Sampling Date: September 14, 2020
 Applicant/Owner: Mount Joy Township State: PA Sampling Point: 1
 Investigator(s): Bradly J. Gochbauer Section, Township, Range: Mount Joy Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none
 Slope (%): 4% Lat: 40.199086 Long: -76.544591 Datum: UTM
 Soil Map Unit Name: MeB NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks: Mixed deciduous forest in the central portion of the linear study area					

VEGETATION - Use scientific names of plants.

Tree Stratum: (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Juglans nigra (Black Walnut)</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. <u>Acer platanoides (Norway Maple)</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>UPL</u>
3. <u>Ailanthus altissima (Tree-of-Heaven)</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>85 = Total Cover</u>		
Sapling/Shrub Stratum: (Plot Size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rosa multiflora (Multiflora Rose)</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. <u>Toxicodendron radicans (Poison Ivy)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. -	_____	<input type="checkbox"/>	-
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>45 = Total Cover</u>		
Herb Stratum: (Plot Size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Alliaria petiolata (Garlic Mustard)</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. <u>Microstegium vimineum (Japanese Stiltgrass)</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. -	_____	<input type="checkbox"/>	-
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>60 = Total Cover</u>		
Woody Vine Stratum: (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. -	_____	<input type="checkbox"/>	-
2. -	_____	<input type="checkbox"/>	-
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species _____ x1= _____

FACW species _____ x2= _____

FAC species _____ x3= _____

FACU species _____ x4= _____

UPL species _____ x5= _____

Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophotic Vegetation Indicators:

Rapid Test for Hydrophotic Vegetation

Dominance Test is > 50%

Prevalence Index is 3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features					Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type *	Loc**			
0-7	7.5YR 4/3	100						Silt Loam	

*1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
 **Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon
- Black Histic
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface
- Sandy Mucky Mineral (S1) (LRR N, MRLA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8)(MRLA 147, 148)
- Thin Dark Surface (S9)(MRLA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12)(LRR N, MLRA 136)
- Umbric Surface (F13) (MRLA 136, 122)
- Piedmont Floodplain Soils (F19)(MLRA 148)

Indicators for Problematic Soils: ***

- 2cm Muck (A10) (MLRA147)
- Piedmont Floodplain Soils(F19)(MLRA 136,147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed and problematic.

Restrictive Layer (if observed):

Type: Roots
 Depth: 7"

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required, check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B13)
- Aquatic Fauna (B13)

- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres or Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two Required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): _____
 (Includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Mixed deciduous forest.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont (DRAFT)

Project/Site: N. Trail Road Improvement Project City/County: Lancaster Sampling Date: September 14, 2020
 Applicant/Owner: Mount Joy Township State: PA Sampling Point: 2
 Investigator(s): Bradly J. Gochbauer Section, Township, Range: Mount Joy Township
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave
 Slope (%): 3% Lat: 40.199291 Long: -76.543668 Datum: UTM
 Soil Map Unit Name: MeB NMI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: Emergent portion of Wetland 1, north of Trail Road North					

VEGETATION - Use scientific names of plants.

Tree Stratum: (Plot Size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus palustris (Pin Oak)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
2. <u>Acer rubrum (Red Maple)</u>	<u>15</u>	<input type="checkbox"/>	<u>FAC</u>
3. -	_____	<input type="checkbox"/>	-
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>35</u> = Total Cover		
Sapling/Shrub Stratum: (Plot Size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum vulgare (European Privet)</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. +	_____	<input type="checkbox"/>	-
3. +	_____	<input type="checkbox"/>	-
4. +	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. +	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>25</u> = Total Cover		
Herb Stratum: (Plot Size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Euthamia graminifolia (Grass-Leaved Golden-Rod)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Microstegium vimineum (Japanese Stiltgrass)</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. <u>Impatiens capensis (Jewelweed)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>90</u> = Total Cover		
Woody Vine Stratum: (Plot Size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. -	_____	<input type="checkbox"/>	-
2. -	_____	<input type="checkbox"/>	-
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species _____ x1= _____

FACW species _____ x2= _____

FAC species _____ x3= _____

FACU species _____ x4= _____

UPL species _____ x5= _____

Totals: (A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Index is 3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features					Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type *	Loc**			
0-6	7.5YR 4/2	75	7.5YR 4/3	25	RM	M	Silt Loam		
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	

*1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
 **Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon
- Black Histic
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface
- Sandy Mucky Mineral (S1) (LRR N, MRLA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8)(MRLA 147, 148)
- Thin Dark Surface (S9)(MRLA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12)(LRR N, MLRA 136)
- Umbric Surface (F13) (MRLA 136, 122)
- Piedmont Floodplain Soils (F19)(MLRA 148)

Indicators for Problematic Soils: ***

- 2cm Muck (A10) (MLRA147)
- Piedmont Floodplain Soils(F19)(MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed and problematic.

Restrictive Layer (if observed):

Type: Rock
 Depth: 6"

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required, check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B13)
- Aquatic Fauna (B13)

- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres or Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two Required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): 3"
 (Includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Emergent portion of Wetland 1

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont (DRAFT)

Project/Site: N. Trail Road Improvement Project City/County: Lancaster Sampling Date: September 14, 2020
 Applicant/Owner: Mount Joy Township State: PA Sampling Point: 3
 Investigator(s): Bradly J. Gochbauer Section, Township, Range: Mount Joy Township
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave
 Slope (%): 3% Lat: 40.199110 Long: -76.546361 Datum: UTM
 Soil Map Unit Name: 1JpB NWI classification: PFO1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: Forested wetland (Wetland 4), south of Trail Road North.					

VEGETATION - Use scientific names of plants.

Tree Stratum: (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fraxinus pennsylvanica (Green Ash)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
2. <u>Acer rubrum (Red Maple)</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. <u>Carya ovata (Shag-Bark Hickory)</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>90 = Total Cover</u>		
Sapling/Shrub Stratum: (Plot Size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lindera benzoin (Northern Spicebush)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
2. <u>Toxicodendron radicans (Poison Ivy)</u>	<u>15</u>	<input type="checkbox"/>	<u>FAC</u>
3. -	_____	<input type="checkbox"/>	-
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	<u>35 = Total Cover</u>		
Herb Stratum: (Plot Size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. -	_____	<input type="checkbox"/>	-
2. -	_____	<input type="checkbox"/>	-
3. -	_____	<input type="checkbox"/>	-
4. -	_____	<input type="checkbox"/>	-
5. -	_____	<input type="checkbox"/>	-
6. -	_____	<input type="checkbox"/>	-
7. -	_____	<input type="checkbox"/>	-
8. -	_____	<input type="checkbox"/>	-
9. -	_____	<input type="checkbox"/>	-
	_____ = Total Cover		
Woody Vine Stratum: (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. -	_____	<input type="checkbox"/>	-
2. -	_____	<input type="checkbox"/>	-
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species x1=

FACW species x2=

FAC species x3=

FACU species x4=

UPL species x5=

Totals: (A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Index is 3.0¹ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type *	Loc**		
0-1							Organic	
1-5	7.5YR 4/2	95	7.5YR 5/8	5	D	PL	Silt Loam	

*1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
 **Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon
- Black Histic
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface
- Sandy Mucky Mineral (S1) (LRR N, MRLA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8)(MRLA 147, 148)
- Thin Dark Surface (S9)(MRLA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12)(LRR N, MLRA 136)
- Umbric Surface (F13) (MRLA 136, 122)
- Piedmont Floodplain Soils (F19)(MLRA 148)

Indicators for Problematic Soils: ***

- 2cm Muck (A10) (MLRA147)
- Piedmont Floodplain Soils(F19)(MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed and problematic.

Restrictive Layer (if observed):

Type: Rock
 Depth: 5"

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B13)
- Aquatic Fauna (B13)

- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres or Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two Required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): 2"

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Forested Wetland (Wetland 4)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont (DRAFT)

Project/Site: N. Trail Road Improvement Project City/County: Lancaster Sampling Date: September 14, 2020
 Applicant/Owner: Mount Joy Township State: PA Sampling Point: 4
 Investigator(s): Bradly J. Gochbauer Section, Township, Range: Mount Joy Township
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave
 Slope (%): 3% Lat: 40.199225 Long: -76.549054 Datum: UTM
 Soil Map Unit Name: MeB NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No

Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: Emergent portion of Wetland 7, north of Trail Road North					

VEGETATION - Use scientific names of plants.

Tree Stratum: (Plot Size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	-
2. _____	_____	<input type="checkbox"/>	-
3. _____	_____	<input type="checkbox"/>	-
4. _____	_____	<input type="checkbox"/>	-
5. _____	_____	<input type="checkbox"/>	-
6. _____	_____	<input type="checkbox"/>	-
7. _____	_____	<input type="checkbox"/>	-
8. _____	_____	<input type="checkbox"/>	-
9. _____	_____	<input type="checkbox"/>	-
_____ = Total Cover			
Sapling/Shrub Stratum: (Plot Size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rosa multiflora (Multiflora Rose)</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>
2. <u>Cornus amomum (Silky Dogwood)</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
3. _____	_____	<input type="checkbox"/>	-
4. _____	_____	<input type="checkbox"/>	-
5. _____	_____	<input type="checkbox"/>	-
6. _____	_____	<input type="checkbox"/>	-
7. _____	_____	<input type="checkbox"/>	-
8. _____	_____	<input type="checkbox"/>	-
9. _____	_____	<input type="checkbox"/>	-
<u>40</u> = Total Cover			
Herb Stratum: (Plot Size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Echinochloa crusgalli (Barnyard Grass)</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>
2. <u>Eupatorium perfoliatum (Common Boneset)</u>	<u>10</u>	<input type="checkbox"/>	<u>FACW</u>
3. <u>Typha latifolia (Broad-leaved Cattail)</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>OBL</u>
4. <u>Persicaria pensylvanicum (PA Smartweed)</u>	<u>15</u>	<input type="checkbox"/>	<u>FACW</u>
5. <u>Scirpus cyperinus (Wool-Grass)</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
6. _____	_____	<input type="checkbox"/>	-
7. _____	_____	<input type="checkbox"/>	-
8. _____	_____	<input type="checkbox"/>	-
9. _____	_____	<input type="checkbox"/>	-
<u>85</u> = Total Cover			
Woody Vine Stratum: (Plot Size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	-
2. _____	_____	<input type="checkbox"/>	-
_____ = Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x1= _____

FACW species _____ x2= _____

FAC species _____ x3= _____

FACU species _____ x4= _____

UPL species _____ x5= _____

Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Index is 3.0¹

Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features					Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type *	Loc**			
0-4	7.5YR 4/2	95	7.5YR 5/8	5	D	PL	Silt Loam		
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	—	

*1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
 **Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon
- Black Histic
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface
- Sandy Mucky Mineral (S1) (LRR N, MRLA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8)(MRLA 147, 148)
- Thin Dark Surface (S9)(MRLA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12)(LRR N, MLRA 136)
- Umbric Surface (F13) (MRLA 136, 122)
- Piedmont Floodplain Soils (F19)(MLRA 148)

Indicators for Problematic Soils: ***

- 2cm Muck (A10) (MLRA147)
- Piedmont Floodplain Soils(F19)(MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*** Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed and problematic.

Restrictive Layer (if observed):

Type: Gravel
 Depth: 4"

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B13)
- Aquatic Fauna (B13)

- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres or Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two Required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): 2"
 (Includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Emergent portion of Wetland ?

COLOR PHOTOGRAPHS
(A - X)



Photo A. Northwestern view of Trail Road North in the eastern portion of the linear study area.



Photo B. Western view of Trail Road North in the vicinity of Wetland 1 and Watercourse 1.



Photo C. Southern view of the intermittent stream channel (Watercourse 1 – UNT to the Conewago Creek) at the southern end of the existing culvert under Trail Road North.



Photo D. Southern view of Watercourse 1, south of Trail Road North.



Photo E. Western view of Wetland 1, north of Trail Road North.

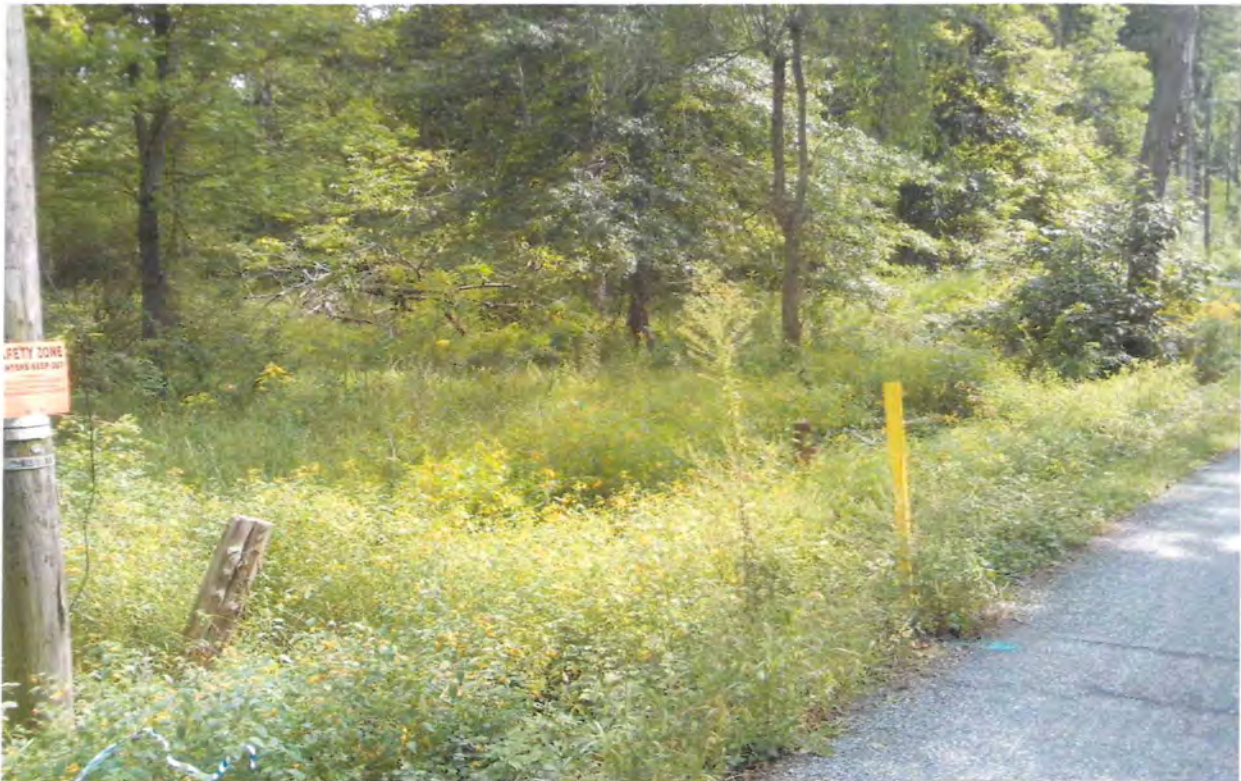


Photo F. Eastern view of Wetland 1, north of Trail Road North.



Photo G. Western view of Trail Road North in the central portion of the linear study area in the vicinity of Wetlands 2 and 3.



Photo H. Northeastern view of Wetland 3, north of Trail Road North.



Photo I. Northwestern view of Wetland 3, north of Trail Road North.



Photo J. Southeastern view of Wetland 2, south of Trail Road North.



Photo K. Southern view of Wetland 2, south of Trail Road North.

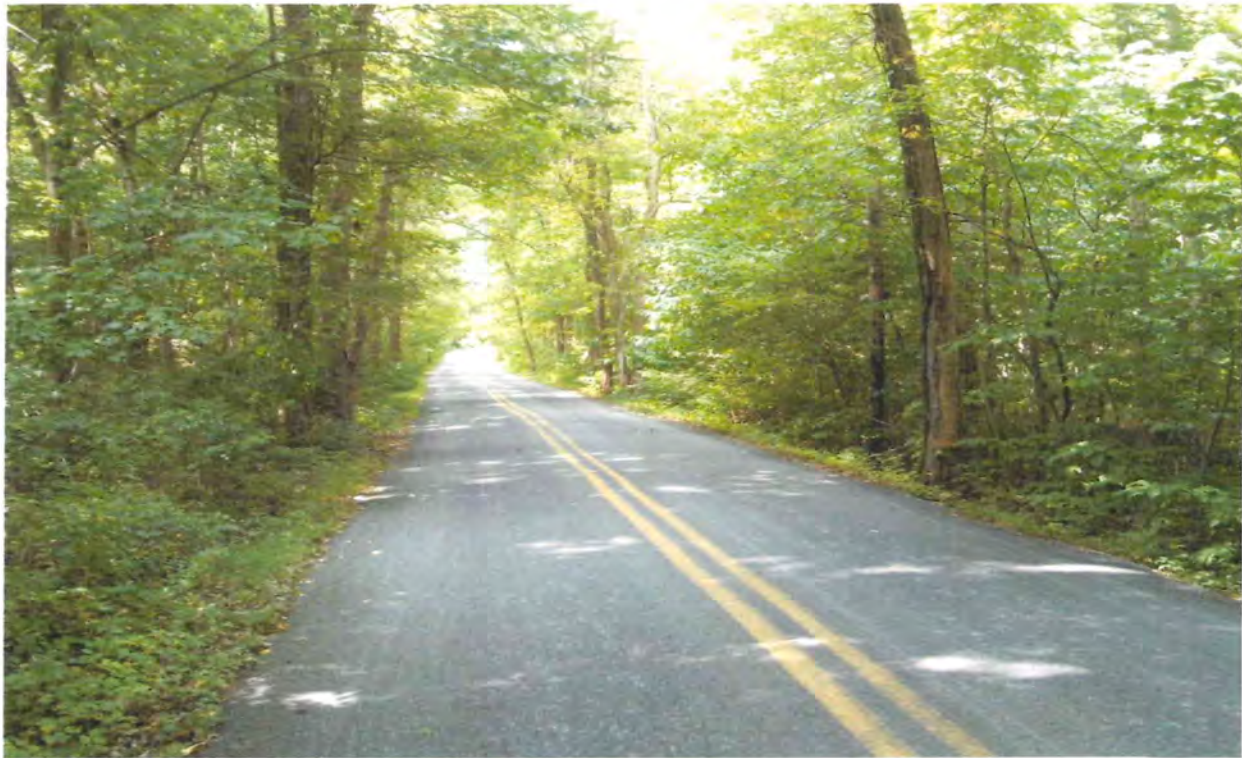


Photo L. Western view of Trail Road North in the central portion of the linear study area.



Photo M. Western view of Wetland 4, south of Trail Road North.



Photo N. Northern view of Wetland 5, north of Trail Road North.



Photo O. Western view of Trail Road North in the vicinity of Wetlands 6 and 7.



Photo P. Northwestern view of Wetland 7, north of Trail Road North.



Photo Q. Southern view of Wetland 6, south of Trail Road North.



Photo R. Northeastern view of Wetland 7, north of Trail Road North.



Photo S. Western view of Trail Road North in the central portion of the linear study area.



Photo T. Southeastern view of Wetland 8 to the south of Trail Road North.



Photo U. Southwestern view of Wetland 8 to the south of Trail Road North.



Photo V. Western view of Trail Road North in the western portion of the linear study area.

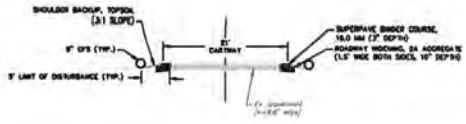


Photo W. Eastern view of Trail Road North in the western portion of the linear study area.



Photo X. Northwestern view of the intersection of Trail Road North and N. Milton Grove Road at the western end of the linear study area.

SITE PLANS



PREPARED BY:
LANCASTER CIVIL ENGINEERING COMPANY
 PG Box 8973, Lancaster, PA 17604
 lancastercivil.com | 717-799-8599
 www.lancastercivil.com

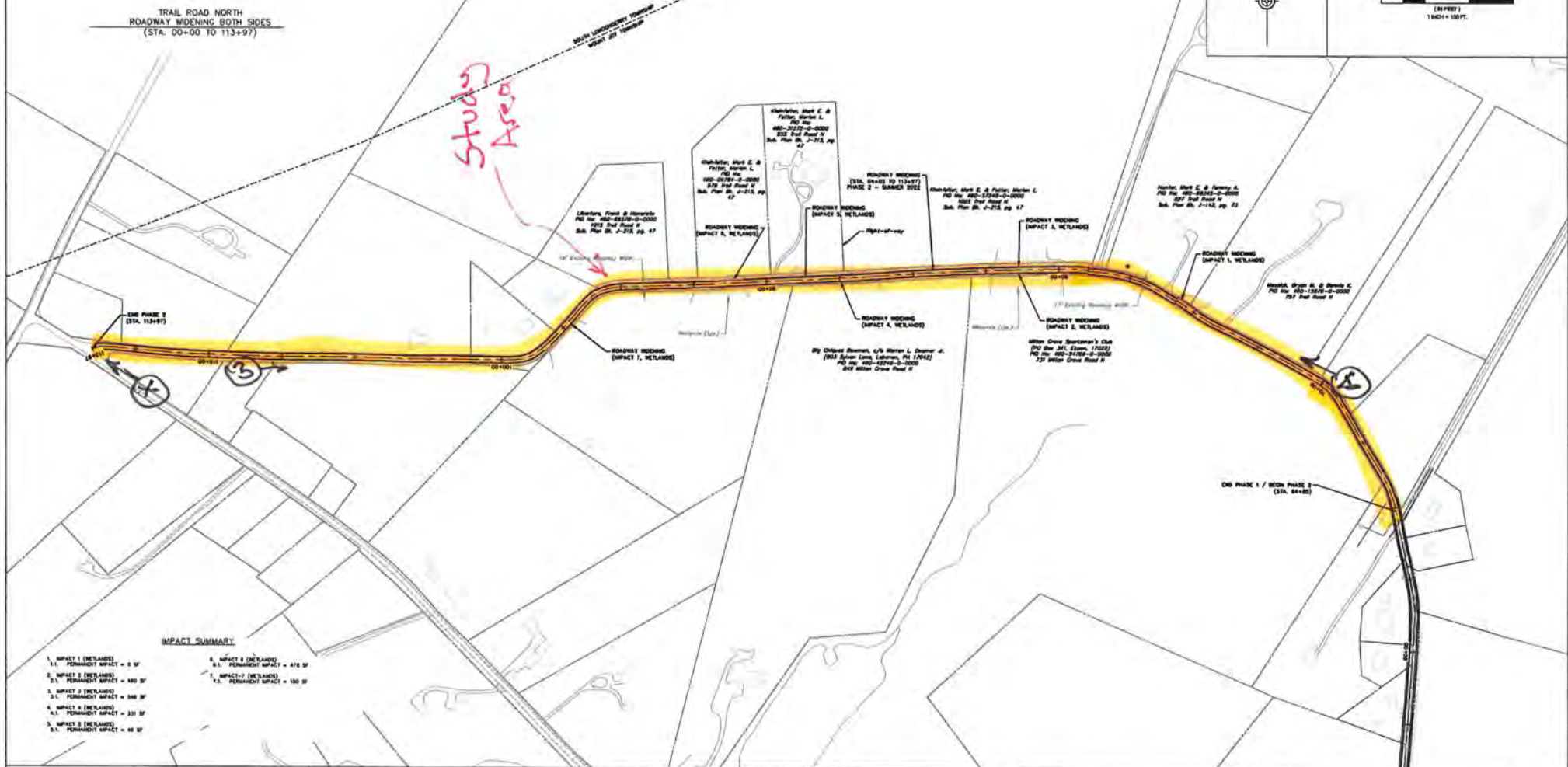
SEAL

DESIGNED BY: BFC
 DRAWN BY: BFC
 CHECKED BY:

PLAN DATE: APRIL 08, 2021
 DWG FILE: 201-0448 - TRAIL ROAD X DESIGN.DWG

NORTH ARROW

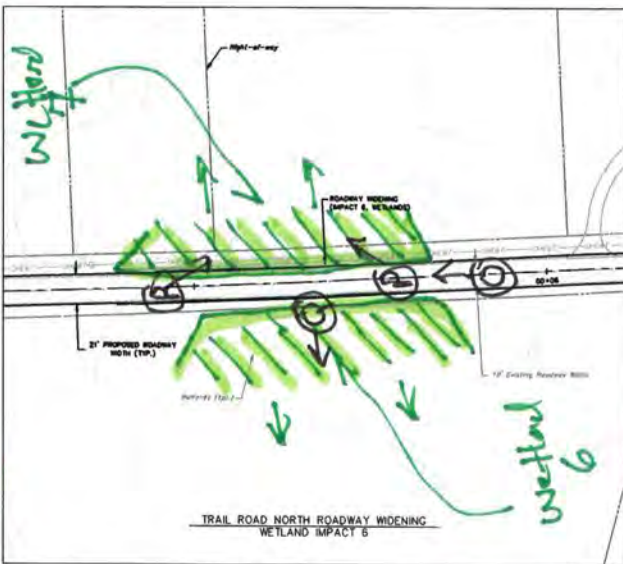
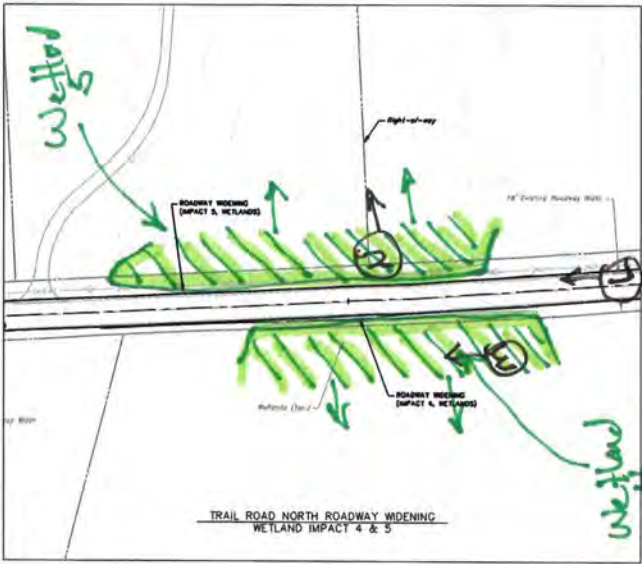
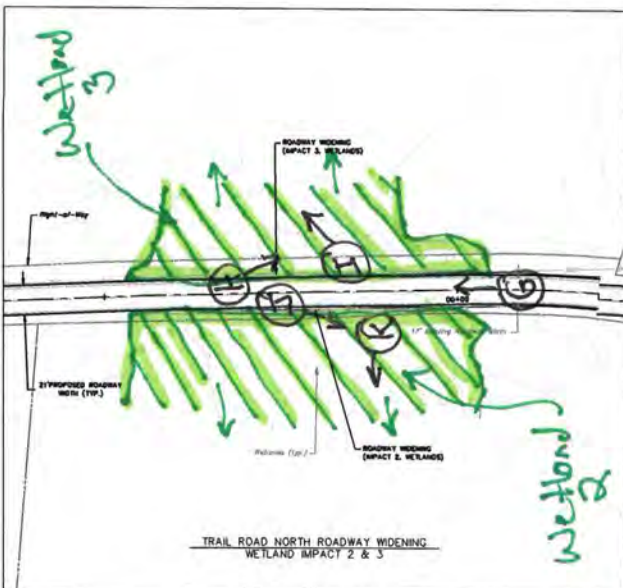
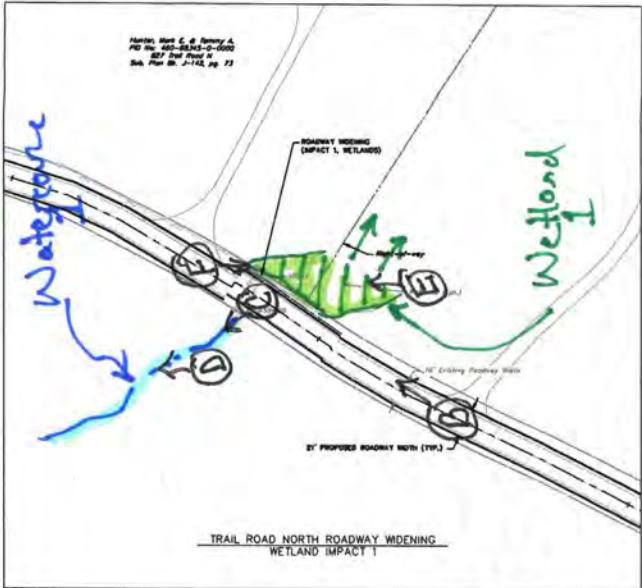
SCALE



IMPACT SUMMARY

1. IMPACT 1 (WETLANDS)	6. IMPACT 8 (WETLANDS)
1.1. PERMANENT IMPACT = 0 SF	6.1. PERMANENT IMPACT = 612 SF
2. IMPACT 2 (WETLANDS)	7. IMPACT 7 (WETLANDS)
2.1. PERMANENT IMPACT = 880 SF	7.1. PERMANENT IMPACT = 150 SF
3. IMPACT 3 (WETLANDS)	
3.1. PERMANENT IMPACT = 348 SF	
4. IMPACT 4 (WETLANDS)	
4.1. PERMANENT IMPACT = 332 SF	
5. IMPACT 5 (WETLANDS)	
5.1. PERMANENT IMPACT = 48 SF	

OWNER: MOUNT JOY TOWNSHIP 8853 ELIZABETHTOWN RD ELIZABETHTOWN, PA 17022	NAME AND LOCATION OF PROJECT TRAIL ROAD NORTH IMPROVEMENTS- PHASE 2			PROJECT NO. 25-105	SHEET NO. C-200
	TRAIL RD NORTH, ELIZABETHTOWN, PA 17022	LANCASTER COUNTY	MOUNT JOY TOWNSHIP, PA	ROAD WIDENING SITE PLAN SHEET 1 OF 5 SHEETS	



PREPARED BY:
LANCASTER CIVIL ENGINEERING COMPANY
 202 Elm Street, Lancaster, PA 17604
 lancaster@lancastercivil.com | 717-799-8599
 www.lancastercivil.com

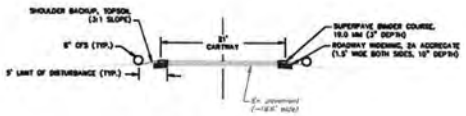
DESIGNED BY: SAC
 DRAWN BY: SAC
 CHECKED BY:

PLAN DATE: APRIL 05, 2021
 DWG FILE: 2021-04-05 - TRAIL ROAD N DESIGN.DWG

SEAL

NORTH ARROW

SCALE



TRAIL ROAD NORTH
 ROADWAY WIDENING BOTH SIDES
 (STA. 00+00 TO 113+97)

OWNER:
 MOUNT JOY TOWNSHIP
 8853 ELIZABETHTOWN RD
 ELIZABETHTOWN, PA 17022

NAME AND LOCATION OF PROJECT
TRAIL ROAD NORTH IMPROVEMENTS- PHASE 2

TRAIL RD NORTH, ELIZABETHTOWN, PA 17022

LANCASTER COUNTY

MOUNT JOY TOWNSHIP, PA

PROJECT NO.
 25-105

ROAD WIDENING SITE PLAN
 SHEET 2 OF 5 SHEETS

SHEET NO.
 C-201

RESUME

BRADLY J. GOCHNAUER

EXPERIENCE

2004-Present	Vortex Environmental, Inc. President
2003	RETTEW Associates, Inc. Senior Biologist
1997-2002	Vortex Environmental Partner
1993-1997	Landstudies, Inc. Environmental Scientist

Mr. Gochnauer has been involved in environmental research and consulting for eighteen (18) years. He has conducted environmental studies throughout Pennsylvania, Maryland, Delaware, and New Jersey.

Mr. Gochnauer has conducted wetland delineations using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands and analysis of soils, vegetation, and hydrology to determine the extent of regulatory jurisdiction. He has compiled and prepared numerous state and federal permit applications for a variety of residential commercial and industrial projects.

Mr. Gochnauer has prepared many wetland mitigation and wetland restoration plans. He has designed several stream stabilization and stream corridor enhancement projects. He has also been involved in the restoration of dredge spoil areas. Mr. Gochnauer managed the biological control program for Purple Loosestrife in the State of Pennsylvania. Mr. Gochnauer has been certified by the Maryland Department of Natural Resources as a qualified professional to perform and review Forest Stand Delineations, and Forest Conservation Plans as per the requirements of COMAR 08.19.06.01.

EDUCATION

The Pennsylvania State University, State College, PA.
Bachelor of Science - Environmental Resource Management, 1992.

CONTINUING EDUCATION

PAEP, Phase I Bog Turtle Program, 2003, 2004
SAIC, Freshwater Wetland Construction, 1999
Pennsylvania State University; Construction of Treatment Wetlands; 1995
Maryland DNR; Forest Conservation and Stormwater Workshop; 1995
Rutgers State University of New Jersey; Stabilization and Restoration of
Disturbed Sites, 1995
Pennsylvania State University; Stormwater Runoff and Water Quality Management
Conference, 1994
Glen Flora Preserve; Carex, Gramineae, and Composite identifications; 1994.