NEW BRITAIN TOWNSHIP

207 Park Avenue • Chalfont, PA 18914 • Telephone: (215) 822-1391

CONDITIONAL USE HEARING APPLICATION

Please Note:

It is the applicant's responsibility to complete all pertinent sections of this form. Please contact the Zoning Officer prior to submittal if you need any assistance.

TOWNSHIP USE ONLY

Application #: _____
Date Filed: 2-10-23; KG; m
Payment: $ 2500
Check #: # 1218
Receipt #: # 13982

1. Date: _____

2. Applicant:
   (a) Name: Herding Butterflies, L.P.
   (b) Mailing address: 120 Liberty Ln
   Chalfont, PA 18914
   (c) Telephone number: (215) 606-0178 (Attorney)
   (d) State whether owner of legal title, owner of equitable title, or tenant with the permission of owner of legal title:
   Legal Owner

3. Applicant's attorney, if any:
   (a) Name: Kellie McGowan, Esq.
   (b) Mailing Address: 10 S. Clinton Street, Ste 300
   Doylestown, PA 18901
   (c) Telephone number: (215) 606-0181
   (d) Fax Number: (215) 348-1804

4. Property:
   (a) Present Zoning Use Classification: IO - Industrial/Office
   (b) Tax Parcel Number: 26-001-100-005
   (c) Location (With reference to nearby intersections or prominent features):
   Off Liberty Lane cul-de-sac; Abuts County Line Road (no access)

5. Proposed use:
   Continue permitted principal use as K3 Warehousing with addition of gravel lot
   to be used as and for L2 Outside Storage Use

6. Has any previous zoning applications been filed concerning this property? If yes, specify:
   Yes (see attached Addendum)

I (We) hereby certify that the above information is true and correct to the best of my (our) knowledge, information or belief.

Signature

Notes:

(1) One copy of plans (if size 8 1/2" x 11") or seven copies (if larger than size 8 1/2" x 11") must be attached to the application. The plan or plans must be prepared by a professional engineer or surveyor. The plan or plans must contain all information relevant to the application, including but not limited to, the following: the property related to a street, the dimensions and area of the lot, the dimensions and location of existing buildings or improvements, the dimensions and locations of proposed uses, buildings or improvements.

(2) Filing fee, which must accompany this application, and which is not returnable once the application is accepted.
Conditional Use Application Fee: $2,500.00, plus Professional Services Agreement and escrow.

OBERMAYER

Stephen M. Zaffuto, Esquire
Direct Dial: 215-606-0249
stephen.zaffuto@obermayer.com
www.obermayer.com

Obermayer Rebmann Maxwell & Hippel LLP
10 S. Clinton Street, Suite 300
Doylestown, PA 18901-4640
P: 215-606-0760
F: 215.348-1804

February 9, 2023

VIA ELECTRONIC CORRESPONDENCE
Ryan Gehman, Assistant Planning and Zoning Officer
New Britain Township
207 Park Avenue
Chalfont, PA 18914-2103
rgehman@newbritaintownship.org

Re: 120 Liberty Lane – TMP No. 26-001-100-005

Dear Mr. Gehman:

As you are aware, I represent 120 Liberty Lane (the "Applicant"), with respect to its property located at 120 Liberty Lane Chalfont, PA 18914, identified as Parcel Nos. 26-001-100-005 (the "Property"). In connection herewith, enclosed please find the following:

1. Check for the Conditional Use Application Fee in the amount of $2,500.00.
2. Completed Conditional Use Hearing Application Form, with written Addendum.
3. Seven (7) copies of Site Plan.
4. Deed vesting legal title to applicant.
5. Environmental Impact Statement Report with Exhibits A through C.

Please feel free to contact me should you have any questions or need any additional information.

Very truly yours,

Stephen M. Zaffuto, Esq.

Addendum to the Conditional Use Application of
Herding Butterflies, L.P.
New Britain Township Board of Supervisors

RE: 120 Liberty Lane

Background

Applicant, Herding Butterflies, L.P., is the legal owner of the property located at 120 Liberty Lane in New Britain Township, Bucks County, also identified as Tax Parcel No. 26-001-100-005 (the "Property").

The Property is located within the IO Industrial/Office Zoning District pursuant to the New Britain Township Zoning Map and Zoning Ordinance ("ZO"). The Property has a gross lot area of 3.37 acres, and is presently improved with a 17,611 SF block and metal sided industrial building used as and for a K3 Warehousing use.

Applicant proposes to make certain changes to the lot to add standard and ADA accessible off-street parking spaces and also add a 17,500 SF stone paving area with an 8,800 SF fenced outside storage area. Even with the proposed changes and additions, the Property would remain in conformity with all applicable area and dimensional standards aside from a 35-foot side yard for which a variance has previously been granted. However, the L2 Outside Storage Use is only permitted in the IO Zoning District by conditional use approval.

By this Application, Applicant requests the Board of Supervisors grant a conditional use to permit the L2 Outside Storage Use within the 8,800 SF fenced area of the Property as shown on the Zoning Plan by Holmes Cunningham LLC, dated December 7, 2022, last revised January 27, 2023, attached hereto as an exhibit.

Applicant's request for conditional use is justified as the outside storage use is necessary but incidental to the principal warehousing use it and satisfies all the applicable requirements under § 27-305.L2.b of the Zoning Ordinance. Specifically:

1. No part of the street right-of-way, no sidewalks or other areas intended or designed for pedestrian use, no required parking areas and no part of the required front yard will be occupied by outside storage or display.

2. The outside storage and display areas will occupy an area of less than 0.5 of the existing building coverage.

3. The outside storage area will be shielded from view from all public streets.

Additionally, the application satisfies the general requirements for conditional use approval pursuant to §27-3008 of the Zoning Ordinance. Specifically, the outside storage area will be:

1. In accordance with the Township Comprehensive Plan;

2. In the best interests of the Township, the convenience of the community, the public welfare;

3. Suitable for the property in question, and designed, constructed, operated and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity;

4. In conformance with all applicable requirements of this chapter and all Township ordinances;

5. Suitable in terms of effect on highway traffic and safety with adequate access arrangements to protect streets from undue congestion and hazard;

6. In accordance with sound standards of subdivision and land development practice where applicable; and

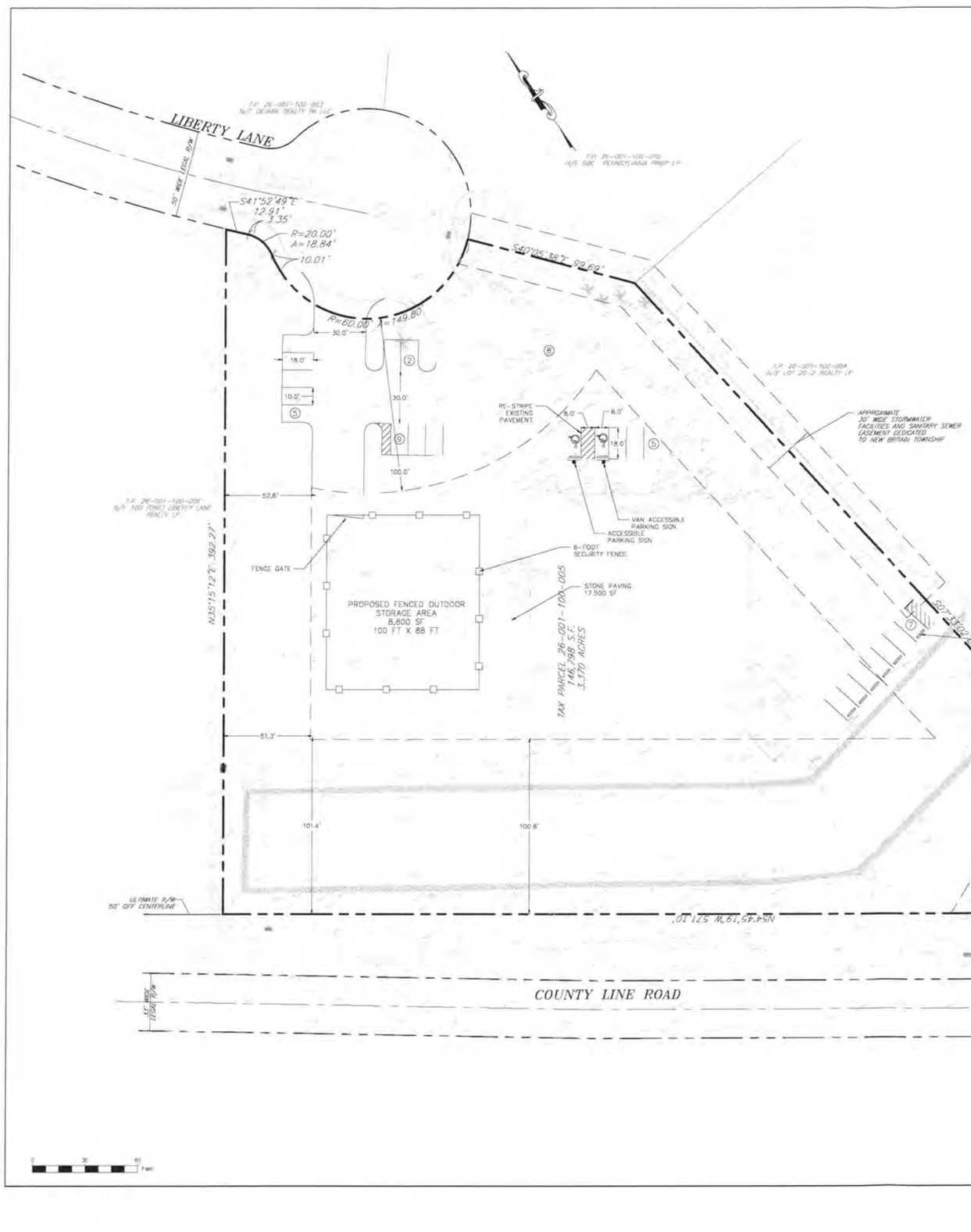
7. In accordance with the specific standards and criteria of this chapter.

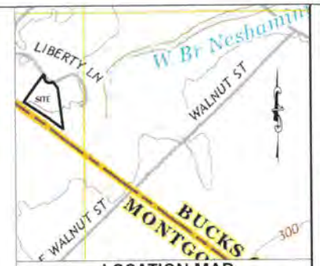
Applicant is entitled to the grant of a conditional use when its application meets the requirements of the Zoning Ordinance. *In re Thompson*, 869 A.2d 659 (Pa. Cmwlth. 2006) (citing *Sheetz, Inc. v. Phoenixville Borough Council*, 804 A.2d 113 (Pa. Cmwlth. 2002); *Levin Board of Supervisors of Benner Township*, 669 A2d 1063 (Pa. Cmwlth. 1995); and *Bailey v. Upper Southampton Towsnhip*, 690 A.2d 1324 (Pa. Cmwlth. 1997)).

Exhibit List

1. Zoning Plan (7 copies)
2. Vesting Deed
3. Environmental Impact Statement Report, prepared by Holmes Cunningham Engineering

Exhibit A





LOCATION MAP

REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAPS SCALE 1" = 800'

ZONING DATA TABLE*			
ZONING DISTRICT: IO INDUSTRIAL/OFFICE DISTRICT			
ITEM	REQUIRED/PERMITTED	EXISTING	PROPOSED
Land Use:	K3; Wholesale Business, Wholesale Storage, Warehousing		
Min. Lot Size	3.0 Ac.	3.37 Ac.	3.37 Ac.
Min. Lot Width	300 FT	350.0 FT	350.0 FT
Min. Front Yard Setback	100 FT	126.4 FT	101.0 FT
Min. Side Yard Setback	50 FT	35 FT **	35 FT **
Min. Rear Yard Setback	100 FT	100.8 FT	100.8 FT
Max. Impervious Coverage	60%	29.9%	46.0%
Max. Building Height	35 FT	28 FT	28 FT
Min. Parking Required	1 Per Employee	18 Spaces	36 Spaces
* Zoning Information/ Requirements taken from Previously approved record plan. See note #1			
** Variance previously granted			

LOT AREA CALCULATIONS		
	S.F.	Acres
Gross Lot Area	146,798	3.370
Land Within R.O.W.	0	0.000
Developable Acreage	146,798	3.370
IMPERVIOUS COVERAGE CALCULATIONS		
Existing Impervious Area		
Existing Buildings and Features	18,175	0.417
Existing Asphalt	22,111	0.508
Existing Concrete Walkways & Walls	3,644	0.084
Total Existing Impervious	43,930	1.008
Existing Impervious Coverage	29.9%	
Proposed Impervious Area		
Existing Buildings and Features To Remain	22,111	0.508
Existing Asphalt To Remain	18,175	0.417
Existing Concrete Walkways & Walls To Remain	3,592	0.082
Proposed Stone Paving	17,500	0.402
Proposed Asphalt	6,208	0.143
Total Proposed Impervious	67,586	1.552
Proposed Impervious Coverage	46.0%	
Building Coverage	**15.1%**	
Change in Impervious Area	**23,656**	

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ROAD CENTERLINE
- EXISTING CONTOUR
- EXISTING WATER
- EXISTING SEWER
- EASEMENTS
- BUILDING SETBACK
- EXISTING BUILDING
- PROPOSED STONE PAVING

NOTES:
1. THIS PLAN IS AN AMENDMENT TO A SITE DEVELOPMENT PLAN PREPARED FOR M.S. HORNIAK ASSOCIATES BY STOUT, TACCONELLI & ASSOCIATES, INC, LAST REVISED SEPTEMBER 11, 1990. ALL NOTES, RESTRICTIONS AND ZONING REQUIREMENTS FROM THAT PLAN SHALL CONTINUE TO BE APPLICABLE.
2. THIS PLAN IS BASED ON A EXISTING FEATURES PLAN PREPARED BY CAVANAUGH SURVEYING SERVICES, DATED DECEMBER 30, 2020.
3. SUBJECT PROPERTY IS WITHIN IO – INDUSTRIAL/OFFICE ZONING DISTRICT.
4. FLOOD ZONE INFORMATION: SUBJECT PARCEL AREA IS LOCATED OUTSIDE ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 288 OF 532, COMMUNITY MAP NO. 42017C0288K WHICH BEARS AN EFFECTIVE DATE OF MARCH 21, 2017.
5. NO NEW STREETS ARE PROPOSED AS PART OF THIS PROJECT.
6. NO NEW STORMWATER MANAGEMENT FACILITIES ARE REQUIRED FOR THIS PROJECT AS THE ADDITIONAL IMPERVIOUS COVERAGE WAS INCLUDED IN THE EXISTING STORMWATER FACILITIES LOCATED WITHIN THE DEVELOPMENT.

Holmes Cunningham LLC
409 E. Butler Ave.,
Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS		
	Date	Description
	1-27-2023	REVISED FOR ZONING COMMENTS

ALL BEFORE YOU DIG!
CALL 811 OR 1-800-242-1776
TWO WORKING DAYS NOTICE FOR LOCATIONS OF UNDERGROUND UTILITY LINES
UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO CONSTRUCTION FOR EXACT LOCATIONS AND TO PROTECT UTILITIES FROM DAMAGE DURING CONSTRUCTION

120 LIBERTY LANE

TMP# 26-001-100-005

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

ZONING PLAN

Robert T. Cunningham, P.E.
PA Lic. No. PA076424

File No.
1592_C0.0_ZONINGPLAN.DWG

Date	12/7/2022		
Scale	1"=30'		
HCE Job	1592		
Designed	RC		
Sheet	1	of	1

Drawing No.

C0.0

Exhibit B

BUCKS COUNTY RECORDER OF DEEDS

55 East Court Street
Doylestown, Pennsylvania 18901
(215) 348-6209

Instrument Number - **2021001028**
Recorded On 1/6/2021 At 7:36:52 AM * Total Pages - 6
* Instrument Type - DEED
Invoice Number - 1140895 User - KLJ
* Grantor - M S HORNIAK ASSOCIATES
* Grantee - HERDING BUTTERFLIES L P
* Customer - SIMPLIFILE LC E-RECORDING
* FEES

STATE TRANSFER TAX	$15,500.00
RECORDING FEES	$89.75
CENTRAL BUCKS SCHOOL DISTRICT REALTY TAX	$7,750.00
NEW BRITAIN TOWNSHIP	$7,750.00
TOTAL PAID	$31,089.75

Bucks County UPI Certification
On January 4, 2021 By TF

This is a certification page

DO NOT DETACH

This page is now part of this legal document.

RETURN DOCUMENT TO:
TOHICKON SETTLEMENT SERVICES, INC.
6464 LOWER YORK RD STE B
NEW HOPE, PA 18938-5608

I hereby CERTIFY that this document is recorded in the Recorder of Deeds Office of Bucks County, Pennsylvania.

THE RECORDERS OFFICE OF BUCKS COUNTY, PA.

Robin M. Robinson

Robin M. Robinson
Recorder of Deeds

* - Information denoted by an asterisk may change during the verification process and may not be reflected on this page.

17D8E4

CERTIFIED PROPERTY IDENTIFICATION NUMBERS
26-001-100--005 - N BRITAIN TWP
CERTIFIED 01/04/2021 BY TF

Prepared by and Return to:
Tohickon Settlement Services, Inc.
6464 Lower York Road, Suite B
New Hope, PA 18938
(215)794-0700

File No. 97726TSS
UPI # 26-001-100-005

This Indenture, made the 10th day of December, 2020, and effective the 15 day of DECEMBER, 2020, the date of delivery to the Grantee

Between

M.S. HORNIAK ASSOCIATES, A PENNSYLVANIA LIMITED PARTNERSHIP

(hereinafter called the Grantor), of the one part, and

HERDING BUTTERFLIES, L.P., A PENNSYLVANIA LIMITED PARTNERSHIP

(hereinafter called the Grantee), of the other part,

Witnesseth, that the said Grantor for and in consideration of the sum of **One Million Five Hundred Fifty Thousand And 00/100 Dollars ($1,550,000.00)** lawful money of the United States of America, unto it well and truly paid by the said Grantee, at or before the sealing and delivery hereof, the receipt whereof is hereby acknowledged, has granted, bargained and sold, released and confirmed, and by these presents does grant, bargain and sell, release and confirm unto the said Grantee

ALL THAT CERTAIN lot or tract of land situate In New Britain Township, Bucks County, Pennsylvania, bounded and described according to a Plan of New Britain Business Park dated April 18, 1985 and later revised and recorded in Plan Book 249 page 4, Plan prepared by Gilmore & Associates, Inc., as follows, to wit:

BEGINNING at a point on the Southwesterly side of Liberty Way (as shown on said Plan) at a corner of Lot No. 22 (as shown on said Plan); thence along the said side of Liberty Way the next three following courses and distances: (1) on the arc of a circle curving to the right having a radius of 1025.00 feet the arc distance of 12.91 feet to a point of reverse curve; (2) on the arc of a circle curving to the left having a radius of 20.00 feet the arc distance of 18.83 feet to a point of curve; and (3) on the arc of a circle curving to the right having a radius of 60.00 feet the arc distance of 148.45 feet to a point; thence along Lot No. 20 and through a 30.00 feet wide stormwater and sanitary sewer easements South 36 degrees 09 minutes 42 seconds East 100.00 feet to an angle; thence still along Lot No. 20 and through the said 30.00 feet wide stormwater and sanitary sewer easements and through stormwater detention area #1, South 03 degrees 37 minutes 06 seconds East 492.60 feet to a point on the Northeasterly side of County Line Road (as shown on said Plan); thence along the said side of County Line Road, North 50 degrees 48 minutes 52 seconds West 571.10 feet to a point; thence along Lot No. 22 North 39 degrees 11 minutes 08 seconds East 392.27 feet to the point and place of beginning.

BEING Lot No. 21 on said Plan.

ALSO Known as Bucks County Uniform Parcel Identifier: Tax Parcel No. 26-001-100-005.

BEING the same premises which Bucks County Economic Development Corporation (formerly known as Bucks County Industrial Development Corporation) by deed dated 4/30/2008 and recorded 5/14/2008 in LR 5797 page 1947 did convey unto M.S. Horniak Associates, a Pennsylvania Limited Partnership.

Together with all and singular the buildings and improvements, ways, streets, alleys, driveways, passages, waters, water-courses, rights, liberties, privileges, hereditaments and appurtenances, whatsoever unto the hereby granted premises belonging, or in anywise appertaining, and the reversions and remainders, rents, issues, and profits thereof; and all the estate, right, title, interest, property, claim and demand whatsoever of it, the said grantor, as well at law as in equity, of, in and to the same.

To have and to hold the said lot or piece of ground described above, with the buildings and improvements thereon erected, hereditaments and premises hereby granted, or mentioned and intended so to be, with the appurtenances, unto the said Grantee, its successors and assigns, to and for the only proper use and behoof of the said Grantee, its successors and assigns, forever.

And the said Grantor, for itself, its successors and assigns, does, by these presents, covenant, grant and agree, to and with the said Grantee, its successors and assigns, that it, the said Grantor, and its successors and assigns, all and singular the hereditaments and premises herein described and granted, or mentioned and intended so to be, with the appurtenances, unto the said Grantee, its successors and assigns, against it, the said Grantor, and its successors and assigns, will **WARRANT SPECIALLY** and defend against the lawful claims of all persons claiming by, through or under the said Grantor but not otherwise.

In Witness Whereof, the party of the first part has caused its common and corporate seal to be affixed to these presents by the hand of its Trustee, and the same to be duly attested by its Secretary. Dated the day and year first above written.

ATTEST

[SEAL]

M.S. HORNIAK ASSOCIATES, A PENNSYLVANIA LIMITED PARTNERSHIP
By: Stephen Horniak, General and Limited Partner; John P. Cataldo, Jr., Trustee under the Residuary Trust under the Will of Mary Horniak a/k/a Molly Horniak; Stephen Horniak, Jr., Limited Partner; Colin Horniak, Limited Partner

By: _____
Stephen Horniak, General and Limited Partner

By: _____
John P. Cataldo, Jr., Trustee

By: _____
Stephen Horniak, Jr., Limited Partner

By: _____
John Colin Horniak a/k/a

By: _____
Colin Horniak, Limited Partner

Commonwealth of Pennsylvania - Notary Seal
Shannon Lee Smith, Notary Public
Montgomery County
My commission expires March 19, 2023
Commission number 1347357
Member, Pennsylvania Association of Notaries

State of Pennsylvania
County of Bucks } ss

This record was acknowledged before me on 12-10-2020 by Stephen Horniak, General and Limited Partner, who represents that he is authorized to act on behalf of M.S. Horniak Associates, a Pennsylvania Limited Partnership.

_____
Notary Public
My commission expires 03-19-2023

State of Pennsylvania
County of Bucks } ss

This record was acknowledged before me on 12-10-2020 by Stephen Horniak, Jr., Limited Partner, who represents that he is authorized to act on behalf of M.S. Horniak Associates, a Pennsylvania Limited Partnership.

_____
Notary Public
My commission expires 03-19-2023

Commonwealth of Pennsylvania - Notary Seal
Shannon Lee Smith, Notary Public
Montgomery County
My commission expires March 19, 2023
Commission number 1347357
Member, Pennsylvania Association of Notaries

State of Pennsylvania
County of Montgomery } ss

This record was acknowledged before me on 12-10-2020 by John Colin Horniak a/k/a Colin Horniak, Limited Partner, who represents that he is authorized to act on behalf of M.S. Horniak Associates, a Pennsylvania Limited Partnership.

Commonwealth of Pennsylvania - Notary Seal
NORMA M. GUNNING, Notary Public
Montgomery County
My Commission Expires November 29, 2021
Commission Number 1064231

Norma M. Gunning
Notary Public
My commission expires 11/29/2021

State of PENNSYLVANIA
County of BUCKS } ss

This record was acknowledged before me on 12/14/2020 by John P. Cataldo, Jr., Trustee, who represents that he is authorized to act on behalf of the Residuary Trust under the Will of Mary Horniak a/k/a Molly Horniak.

Commonwealth of Pennsylvania - Notary Seal
Dawn McCloud, Notary Public
Bucks County
My commission expires October 19, 2022
Commission number 1341848
Member, Pennsylvania Association of Notaries

Notary Public
My commission expires 10/19/2022

The precise residence and the complete post office address of the above-named Grantee is:

120 Liberty Lane
Chalfont, PA 18914

On behalf of the Grantee

DEED

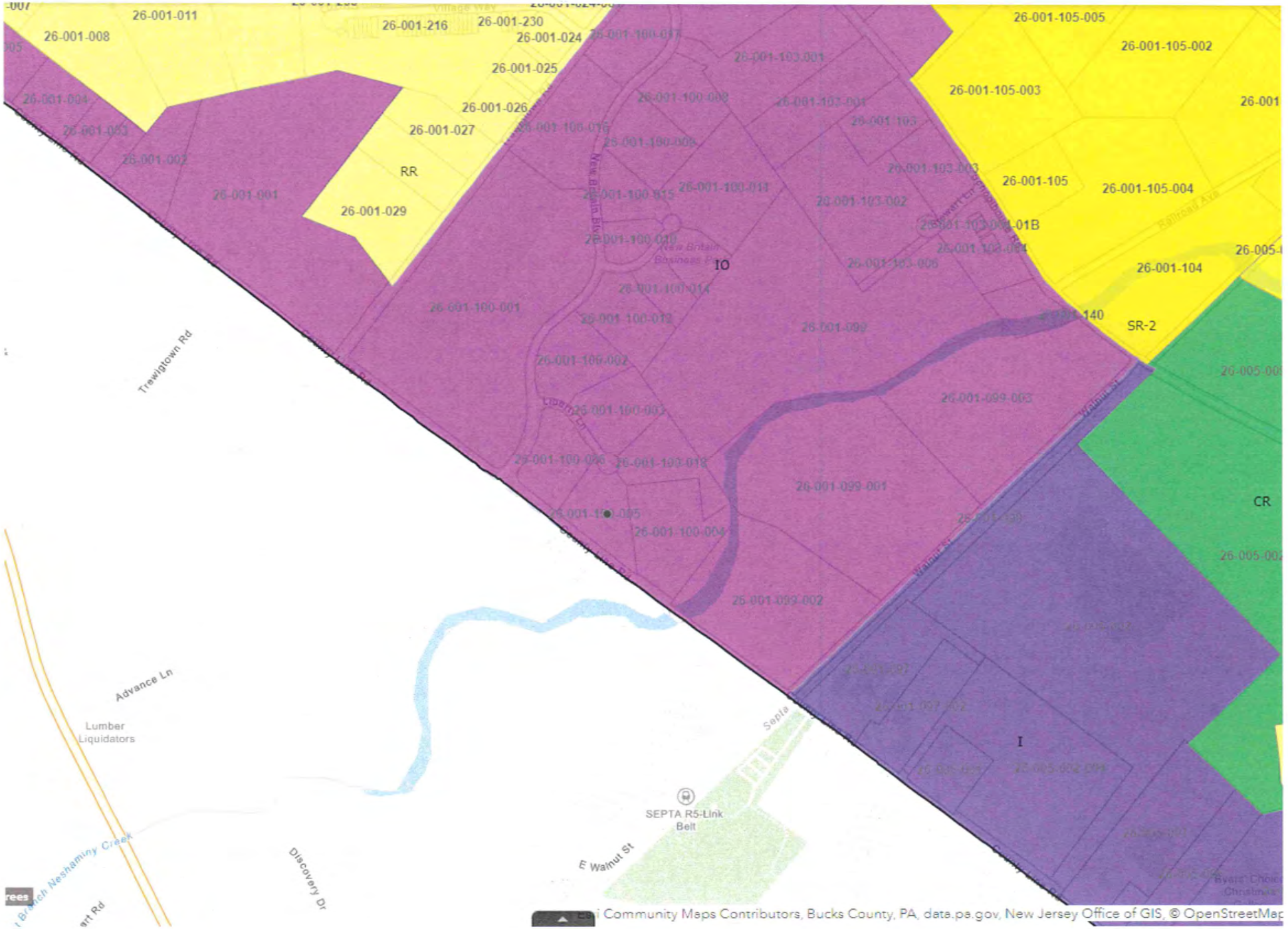
UPI # 26-001-100-005

M.S. Horniak Associates, a Pennsylvania Limited Partnership

TO

Herding Butterflies, L.P., a Pennsylvania Limited Partnership

Tohickon Settlement Services, Inc.
6464 Lower York Road, Suite B
New Hope, PA 18938
Phone: (215)794-0700 Fax: (215)794-0705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26-001-003
26-001-002
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RR
IO
26-001-105-005
26-001-105-002
26-001-105-003
26-001-105
26-001-105-004
26-001-104
SR-2
CR
I
Trewigtown Rd
Advance Ln
Lumber Liquidators
SEPTA R5-Link Belt
E Walnut St
Discovery Dr
Community Maps Contributors, Bucks County, PA, data.pa.gov, New Jersey Office of GIS, © OpenStreetMap

Exhibit C

Kristin Holmes, P.E., LEED AP
Robert Cunningham, P.E., LEED AP

February 2, 2023

Ryan Gehman, Assistant Planning and Zoning Officer
New Britain Township
207 Park Avenue
Chalfont, PA 18914

RE: Environmental Impact Statement Report
Herding Butterflies, L.P.
TMP#: 26-001-100-005
New Britain Township, Bucks County, PA

1. Overview
This Environmental Impact Statement Report is being made in connection with a Conditional Use Application to permit an L2 Outside Storage Use on the property located at 120 Liberty Lane in New Britain Township, Bucks County, Pennsylvania, also identified as Tax Parcel No. 26-001-100-005 ("Property"), within the Township's IO – Industrial/Office Zoning District. This outside storage use will be incidental to the Property's primary use of the Property as K3 Warehousing.

The proposed outside storage area on the Property will be a 100 foot by 88 foot (8,800 square foot) portion of a proposed 17,500 stone paving area and will be surrounded by a 6-foot security fence, as shown on the Zoning Plan prepared by Holmes Cunningham LLC, dated December 7, 2022, last revised January 27, 2023 (Exhibit "A").

Other site improvements are proposed on the Property to provide access to the outside storage area as well as additional off-street parking. The areas in which site improvements are proposed are presently relatively flat, grassy areas adjacent to the existing building. The site is suitable for the outside storage area and use, and the related site improvements will comply with all applicable Township regulations.

2. Compatibility
The proposed outside storage use and related site improvements are compatible with the Township Comprehensive Plan. The L2 Outside Storage use is permitted by conditional use in the IO Zoning District, and the proposed use will satisfy all of the specific and general requirements for the conditional use set forth in the New Britain Township Zoning Ordinance.

3. Location
See the Location Map at Exhibit B.

4. Photographs
See photographs at Exhibit C.

5. Description of the Project
   (a) See Zoning Plan at Exhibit A

   (b) The Property is owned in fee simple by the Applicant, Herding Butterflies, L.P.

6. Physical Resources Inventory
   The physical resources associated with the natural environment of the Property are depicted, and identified on the Zoning Plan at Exhibit A.

7. Biological Inventory
   The portion of the Property subject to the proposed site improvements is an unimproved, grassy area with no notable biological resources.

8. Land Use Inventory
   The Property is presently used as and for Use K3 Warehousing. The area and dimensional standards of the Property are set forth on the Zoning Plan at Exhibit A.

9. Surface Water Inventory
   There are no existing watercourses or water bodies located on the Property, and the Property is located entirely outside the 500-year floodplain. No new stormwater management facilities are required for this project, as the additional impervious coverage was included in the existing stormwater facilities located within the development.

10. Subsurface Water Inventory
    The Property is served by public water and sewer.

11. Existing Features Inventory
    Existing features are shown on the Zoning Plan at Exhibit A.

12. Historic Resources Inventory
    There are no historic resources associated with or within 500 feet of the Property.

13. Visual Resources Inventory
    There are no visual resources associated with the Property.

14. Community Needs Inventory
    The addition of an outside storage use accessory to an existing primary warehousing use of the Property will not create any need for additional or expanded community facilities.

15. Utility Needs Inventory
    The addition of an outside storage use accessory to an existing primary warehousing use of the Property will not create any need for additional or expanded utility installations.

16. Transportation System Inventory
    The proposed outside storage use will not have a significant effect on the relationship of the transportation and circulation systems needs of the proposed project to the existing street or highway network.

17. Adverse Impacts
    The proposed outside storage use and related site improvements will not create any probable adverse impacts. The Property is suitable for the use, and the use will comply with Township regulations regarding location, area, and shielding from view of public streets.

18. Mitigation Measures
    No mitigation measures will be required.

19. Irreversible Impacts

No irreversible environmental changes will occur due to the proposed project.


Dentist

Kristin Holmes, P.E., LEED AP
Robert Cunningham, P.E., LEED AP

February 8, 2023

Matt West, Township Manager
New Britain Township
207 Park Avenue
Chalfont, PA 18914

RE: 396 King Road – Revised Plan Submission
TMP#: 26-004-030
New Britain Township, Bucks County, PA
HCE Project No.: 1734

Dear Matt:

We are in receipt of a review letters for the above-referenced project. Enclosed are copies of the revised documents. Below please find responses to each of the comments contained in those letters.

Review Letter from Gilmore & Associates, Inc. dated December 7, 2022.

A. Zoning Ordinance
We have identified the following issues with the proposed plan regarding the requirements and provisions of the current New Britain Township Zoning Ordinance:

1. §27-502.b.1.(g) & (h) – The building coverage ratio and impervious surface ratio are required to be calculated based on the ratio base site area which excludes 100% protected natural resources. Lot 3 includes a watercourse, riparian buffer, floodplain, and floodplain soils which are all 100% protected resources. Lots 1 and 6 also contain a watercourse and riparian buffer. The ratio base site areas shall be calculated, and the building and impervious coverage ratios adjusted accordingly.
Response: The building coverage ratio and impervious surface ratios have been revised accordingly.

2. §27-502.b.3. & 505.1 – Natural resource protection land, such as watercourses, agricultural soils, woodlands, steep slopes, wetlands, etc., shall be protected and preserved on each site through a conservation easement on each lot. The Resource Protection Land table on Sheet 4 notes 25.12 acres of resource protection land provided. This is not consistent with the conservation easement area of 836, 122 square feet (19.19 acres) shown on the Record Site Plan, Sheet 5. The overlapping resources shall be clarified to confirm the proposed easement includes the required resource protection area.
Response: The overlapping resources have been revised and the conservation easement has been updated.

3. §27-502.b.5. – The Stormwater Management Plan Narrative models 2.32 acres of impervious coverage for the entire site. When an applicant is proposing a land development, the stormwater management facilities shall be designed to manage the runoff from the maximum impervious surface permitted for the entire site. Based on the proposed lot areas, the stormwater management facilities shall be

designed to handle 4.11 acres of impervious coverage from the proposed lots (12% maximum) and the private street.
Response: The stormwater management facilities were revised to account for the maximum allowable impervious coverage based on the ratio base site areas of each lot.

4. §27-505.2. – The Resource Protection Standards table on Sheet 4 notes 32.154 acres of agricultural soil onsite. The area of agricultural soil shall be delineated on the Existing Resource and Site Analysis Plan to demonstrate the 50% protection ratio is achieved.
Response: The area of agricultural soils has been added to the Existing Resource and Site analysis Plan.

5. §27-2115 – No portion of an on-lot septic system shall be located in a manner that would block any stormwater drainage from any lot. A note to this effect shall be added to the grading plan.
Response: Note 13 has been added to the grading plan.

6. §27-2400.a. & i. – We offer the following comments related to the natural resources:

    a. The extent of the existing watercourse and riparian buffer along the frontage shall be added to the plans and the Natural Resource Protection table revised accordingly.
    Response: The extents of the existing watercourse and riparian buffer has been added to the plans and the Natural Resources Protection table.

    b. Zones 1 and 2 of the riparian buffers shall be delineated and dimensioned on the plans.
    Response: Zones 1 and 2 of the Riparian Buffers have been delineated and dimensioned on the plans.

    c. Any improvements to the stream through Lots 1 and 6 may require approval from PADEP.
    Response: Acknowledged.

    d. Supplemental plantings may be required in accordance with §27-2400.i.4 to revegetate any areas where there is little or no existing streamside vegetation.
    Response: Acknowledged.

7. §27-2400.c – The Resource Protection Standards table on the Existing Resource and Site Analysis Plan notes 0.536 acres of floodplain soils. The boundary for the floodplain soils (Bo soils) does not appear to be consistent with the web soil survey map and the Bucks County Parcel and Floodplain Map which both show an area close to 1 acre at the northern corner of the site. The floodplain soils area shall be verified and revised as necessary.
Response: The floodplain soils line has been verified and revised.

8. §27-2400.d – Wetlands boundaries shall be delineated through an on-site assessment conducted by a professional soil scientist and wetland certification provided on the plans.
   Response: No wetlands are located on site. A Wetlands report has been provided with this submission.

9. §27-2401 – The Site Capacity Calculations shall be coordinated with the Resource Protection Standards on the Existing Resource and Site Analysis Plan. These areas shall be reviewed and revised for consistency and discrepancies related to overlapping resources clearly noted.
   Response: The Site Capacity Calculations and Resource Protection Standards have been revised accordingly.

10. §27-2402.b.2. – The base site area shall subtract lands within existing utility rights-of-way or easements. The plans show a utility easement crossing through the property. This area shall be noted in the Site Capacity Calculations on Sheet 4 or the Lot Area and Coverage Table on Sheet 5. A copy of the easement agreement shall be provided for reference.
    Response: The ratio base site area calculations have been revised to account for the utility easement.

B. Subdivision and Land Development Ordinance Waivers
   The following waivers from the Subdivision and Land Development Ordinance have been formally requested by the Applicant in a letter dated September 22, 2022:

1. §22-403 & 404 – From providing separate preliminary and final plan submissions. We recommend no action be taken on this waiver until all zoning issues are resolved, and once our office reviews the Water Resource Impact Study.
   Response: Acknowledged. The Water Resource Impact Study has been provided under a separate cover.

2. §22-502.1.H – From providing a lighting plan, which we support.
   Response: Acknowledged.

3. §22-705.3.E – From the requirement to design private streets to the specifications of a local street related to cartway width. A 20-foot private street is proposed where a 28-foot-cartway is required. We support a waiver conditioned on truck-turning templates being provided for the proposed driveways demonstrating adequate circulation for emergency vehicles onto each lot.
   Response: Truck turning templates have been provided and driveways have been revised as needed.

4. §22-705.3.G – From providing a 1 ½-inch mill and overlay of King Road along the subdivision. The plan currently proposes 2 feet of widening along the King Road frontage. Based on a discussion with the Public Works Superintendent, the road was originally a dirt road tar and chipped over the years. Due to the anticipated construction vehicle traffic, we do not recommend a waiver. We do recommend, however, that the developer document the existing road conditions prior to construction.
   Response: Acknowledged.

5. §22-705.8.C. – From providing a left-side turnaround configuration for the cul-de-sac with a minimum right-of-way radius of 60 feet and a minimum paving radius of 50 feet. The plan proposes a 20-foot-wide loop road at the end of the access road, which we support.
   Response: Acknowledged.

6. §22-705.8.F. – From providing a 15-foot by 20-foot snow storage easement along the right-of- way of the cul-de-sac bulb, which we support.
   Response: Acknowledged.

7. §22-706 – From providing curb and sidewalk along the property frontage of King Road and the proposed private street, which we support.
   Response: Acknowledged.

8. §22-707.A – From providing pedestrian walkways or recreational trails at locations deemed necessary by the Board, which we support. Due to existing utilities, topography, and natural resources, it appears that the opposite side of King Road may be the better location for any future trail.
   Response: Acknowledged.

9. §22-714.3.A – From providing streetlights at the intersection and turnaround. We recommend this be discussed. If a waiver is approved, we recommend that as a condition of the waiver, the locations of any proposed lampposts be added to the plans.
   Response: Acknowledged. Lampposts have been added at the driveways.

10. §22-500.3 – A revised waiver request letter shall be submitted to the Township prior to the Planning Commission meeting if additional waivers are requested based on comments herein.
    Response: Acknowledged. A revised waiver request letter has been provided with this submission.

11. Resolution 2007-12 - For any public improvement waivers granted, the Applicant is required to contribute a fee to the Township to cover 50% of the cost of future improvements to bring Township rights-of-way up to current standards. Based on the current waivers requested, this contribution would be required for partial road widening, curb, sidewalk, streetlighting, etc., if granted. If waived, a cost estimate of the required improvements above with credit for the road improvements to be installed shall be submitted for review. We recommend this cost be estimated prior to the Board of Supervisors taking action on the plans.
    Response: Acknowledged. A cost estimate will be provided under a separate discussion.

C. Subdivision and Land Development Ordinance

We have identified the following issues with the proposed plan regarding the requirements and provisions of the current Subdivision and Land Development Ordinance (SALDO):

1. §22-105.1.D – There were discussions with the Planning Commission and Board of Supervisors regarding deed-restrictions on the individual lots to prevent any

future subdivisions. If the lots are to be deed-restricted, a note to this effect shall be added to the Record Site Plan, Sheet 5 of 14, and included in a Deed of Restrictions.
Response: A note has been added to the record plan.

2. §22-406.1 – The Applicant is responsible for any other required reviews, approvals, permits, etc. (i.e., BCPC, BCCD, PADEP, Fire Marshal, Township Road Opening Permit, Well Construction Permits, etc.) as applicable.
Response: Acknowledged.

3. §22-502.A.(4) – The following issues related to the property line and bearings and distances on the Record Site Plan shall be addressed:

    a. The bearings and distances for the ultimate right-of-way for King Road and distances between the title line, legal right-of-way line and ultimate right-of-way line shall be added to the Record Site Plan.
    Response: Bearings and distances for the Ultimate right-of-way for King Road and distances between the title line, legal right-of-way and the ultimate right-of-way have been added to the Record Site Plan.

    b. The ultimate right-of-way line from the southern side of Henry Court shall align with the ultimate right-of-way line for King Road. In addition, the road widening for King Road shall not extend within Lot 6.
    Response: The Ultimate Right-of-Way line for Henry Court has been revised accordingly and the widening of King Road does not extend within lot 6.

    c. All curves along the ultimate right-of-way lines shall be properly labeled.
    Response: All curves along the ultimate right-of-way have been labeled. A curve table has been provided on the Record Site Plan.

    d. The distance of the northeastern property line along Lot 1 appears to be listed to the legal right-of-way and shall be revised to list the distance to the ultimate right-of-way line.
    Response: The distance of the property line has been revised accordingly.

4. §22-502.B. – The following comments related to plan notes and presentation shall be addressed:

    a. The Cover Sheet note should include the PCSM Plan to be recorded.
    Response: The cover sheet has been revised accordingly.

    b. Once the waivers and design are finalized, a plan view detail and cross-section detail shall clarify the proposed King Road improvements.
    Response: Acknowledged.

    c. The storm sewer structures shall be identified with labels.
    Response: Storm structure labels have been added to the plans.

d. Profiles shall be provided for all storm sewer pipes and structures.
Response: Profiles have been completed and added to the plan view.

e. Legends shall be provided on the E&S Control Plan and PCSWM Plan.
Response: Legends have been provided on the E&S Control Plan and PCSM Plan.

f. A plan scale shall be provided for the Henry Court Profile.
Response: A horizontal and vertical plan scale have been added for all profiles.

5. §22-502.B.(11) – Legal descriptions are required for the new lots, natural resource conservation easements, ultimate right-of-way easement for King Road, private access easement, defined stormwater easements, proposed utility easements, back up septic system easements and any other easements which may be proposed. All easements shall be labeled with metes and bounds.
Response: Acknowledged. Legal Descriptions will be provided under a separate cover.

6. §22-502.B.(20) – The Record Site Plan shall include notations offering the area between the title line and the ultimate right-of-way line of King Road to New Britain Township.
Response: Note 14 on the Record Site Plan has been added.

7. §22-502.D. – Existing features within the tract proposed for subdivision and/or land development and within 100 feet of the tract boundary shall be shown on the plans.
Response: A waiver has been requested to utilized the provided aerial plan.

8. §22-502.D.(1) – The Existing Conditions Plan show existing utility poles extending from King Road towards the existing dwelling. The plan shall clarify if these utility poles will be removed or maintained within a private easement.
Response: The Existing Conditions Plan indicates the existing utility poles to be removed and the existing electric line to be relocated.

9. §22-502.J. – The following New Britain Township Standard Details shall be added to the plans and are included for reference:

a. Typical Roadway Widening Section for Arterial, Collector, and Non-Residential Roads for the widening of King Road, a minor collector street.
Response: The Detail has been added to the plan.

b. Typical Roadway Widening Section for Residential and Local Roads for Henry Court.
Response: The Detail has been added to the plan.

c. Residential Driveway Paving Section Detail.
Response: The Detail has been added to the plan.

10. §22-703.4.C – Lot lines shall be drawn parallel, concentric, at right angles or radial to the street right-of-way line unless not feasible or undesirable due to existing,

permanent, natural or man- made features. There are several property lines shown with horizontal changes in boundary.
Response: A waiver has been requested.

11. §22-704.1 – Note 4 on Sheet 5 of 14 indicates that Henry Court will be privately owned and maintained. We recommend that the street be recorded as a Private Access Easement and not as an Ultimate Right-of-Way. The wording shall be revised accordingly, and the legal description noted as such.
Response: Note 4 has been revised accordingly.

12. §22-705.3.C – Where a subdivision and/or land development abuts or contains an existing street, the applicant shall be required to improve the street to the Township standards for ultimate right-of-way and cartway widths. King Road is considered a minor collector road which requires a 60-foot ultimate right-of-way and 36-foot cartway. We recommend a waiver to allow partial widening along King Road of 2 ft of widening (10 ft is required) with the following conditions:

    a. The ultimate right-of-way width shall be proposed 30 feet from the King Road centerline.
    Response: The Ultimate Right-of-Way has been revised accordingly.

    b. All dead trees, live trees and branches interfering with the existing overhead lines shall be removed within the proposed ultimate right-of-way.
    Response: A note has been added to the record plan.

    c. Relocate two or more utility poles, as needed, to accommodate the Henry Court entrance.
    Response: The existing features plan indicates the two utility poles to accommodate the proposed Henry Court entrance.

    d. The proposed replacement pipe at the entrance shall be increased to 15 inch diameter in accordance with §22-712.5.E & 12.B.
    Response: The proposed replacement pipe has been revised to be a 15" diameter pipe.

    e. Streambanks shall be stabilized where erosion is observed. Associated permits shall be obtained from PADEP.
    Response: Acknowledged.

13. §22-705.4.F – The minimum right-of-way radius at an intersection shall equal the [pavement] radius plus 10 feet. The ultimate right-of-way radius shall be noted at the intersection of Henry Court with King Road.
Response: The Ultimate Right-of-Way radii have been revised accordingly.

14. §22-705.5.B & 6. – The clear sight triangle shall be revised to a 75-foot triangle centered on Henry Court. Minimum sight distances for stopping, passing and intersections per PennDOT standards shall also be shown on the plan.
Response: The clear sight triangle has been revised to a 75-foot triangle.

15. §22-705.7. – Roadway stationing and radii shall be noted on the Record Site Plan.

Response: Roadway stationing has been and Radii have been added to the Record Site Plan.

16. §22-705.12. – All proposed street names shall be recommended by staff and reviewed by the Township Fire Marshal's office for duplication. The street name, Henry Court, shall be subject to approval by the Board of Supervisors.
Response: Acknowledged.

17. §22-705.12.G – We offer the following comments relative to signage:

    a. The location of all traffic signage shall be shown on the Record Site Plan and signage details provided as necessary.
    Response: The proposed signs have been added to the record plan.

    b. All roadway signs, regulatory (warning and street name signs) shall be of high intensity prismatic material meeting minimum ASTM Type III retro-reflective standards.
    Response: Note 19 has been added to the record plan.

    c. "No Parking" signs shall be provided along the private street to ensure adequate access is provided for emergency vehicles, delivery trucks, busses, and trash trucks.
    Response: The proposed shared access road does not have adequate shoulder width to allow parking along the private street and the existing trees in the vicinity of the private street are to remain to deter cars from parking along the private street. The addition of signs would be duplicative.

18. §22-705.13.C. – A note shall be added to the grading plan stating that "All access drives and driveways shall be provided with a stopping area of 20 feet, at a maximum grade of 3%, measured from the ultimate right-of-way". Spot elevations shall be provided at each proposed driveway and the required 10-ft driveway radii provided.
Response: Note 14 has been added to the grading plan. The driveways have been revised to show the required 10-ft driveway radii and spot elevations have been added to the Grading Plan.

19. §22-710 – We defer to the Township Fire Marshal for review of the plans with respect to water supply, emergency access, etc. The plans shall comply with the December 6, 2022 review letter from the Fire Marshall.
Response: Acknowledged.

20. §22-711.3 – The following issues related to erosion control shall be addressed:

    a. The sequence of construction has the rain gardens being constructed first and later specifies the stormwater facilities to be converted once the upslope area has been stabilized. If the rain gardens are to be used as sediment basins during construction, it shall be clarified on the plan and the appropriate notes and details provided.

Response: The construction sequence has been revised to remove the verbiage for converting the stormwater facilities.

b. The sequence of construction shall be revised to specify the construction of Henry Court and note that no occupancy permits may be issued until the street has binder course.
Response: The sequence of construction has been revised to indicate no occupancy permits to be issued until Henry Court binder course has been installed.

c. It shall be clarified if the intent is to provide an individual construction entrance at each lot once Henry Court has been installed.
Response: Rock construction entrances have been added at all proposed lots.

d. The size of the rock construction entrance(s) shall be enlarged to 20-foot minimum width.
Response: The size of the rock construction entrances have been enlarged to 20-foot minimum width.

e. Bypass pumping notes and details shall be provided.
Response: Bypass pumping notes and details have been added to the plans.

f. Erosion controls shall be provided for the following:
    1) For the replacement of the 36" RCP culvert pipe
    2) for the installation of the culvert pipe and road widening along King Road
    3) for the installation of the storm pipes from Henry Court to Lots 1, 5 and 6
    4) For the Type M inlet on Lot 2
    5) Erosion control matting on the 3:1 slopes

Response: The erosion controls have been revised accordingly.

21. §22-711.3 – The following comments related to grading shall be addressed:

a. Detailed grading and spot elevations for the connection between Henry Court and King Road shall be provided to demonstrate adequate drainage at the intersection.
Response: Spot elevations have been added to the plan at the intersection to show proposed grading and slopes.

b. The proposed contours appear to direct runoff towards the dwellings on Lots 1, 2 and 6. Spot elevations shall be provided at the corners of the dwellings and the contours revised as necessary to demonstrate drainage away from the dwelling. Grading around buildings constructed of wood shall have a minimum separation of 8 inches between the top of foundation wall and the outside finished grade elevation.
Response: Spot elevations have been added to Lots 1,2 and 6. Top of foundation elevations are shown on the Grading plan.

c. The existing 440 contour is shown at the headwall for the culvert pipe along King Road with an invert elevation of 440. This will result in the pipe being exposed at this location. The grading should be revised to provide a minimum of 1 foot of cover over the pipe.
Response: The invert of the pipe has been revised to be 437.75. which matched existing grade, to provide a minimum of 1 foot of cover.

d. The proposed 450 and 452 contours on Lot 6 have a slope of 1.5:1 and shall be revised to a maximum slope of 3:1.
Response: The grading on Lot 6 has been revised.

e. The proposed 434 contour near the intersection of Henry Court and King Road shall be verified and revised to cross the road.
Response: The proposed 434 contour has been revised accordingly.

f. The proposed contour for the rain garden bottom at Lot 3 is listed at 456 and appears that it should be 458. The rain garden elevation should be clarified.
Response: The rain garden elevations have been revised.

22. §22-713.2.A & B – The following comments pertain to the protection of existing vegetation:

a. All developments shall be laid out to minimize tree removal of healthy trees and shrubs. Each individual tree, vegetated area and woodlands designated "TO REMAIN" shall be made part of the Tree Protection Zone. The plan shows four trees to remain in the cul-de- sac area. It shall be clarified if the tree row is also to remain and if the layout can be adjusted to save any larger, healthy trees.
Response: The trees located in the cul-de-sac area are to remain. The site has been designed to limit tree disturbance to maximum extent possible.

b. The limits of clearing and location of tree protection fence shall be shown on Sheet 13.
Response: The limit of disturbance, tree protection fencing and proposed tree line has been added to the plan.

c. The notes from sections §22-713.2.B.(4)&(5) shall be added to Sheet 13.
Response: The notes were added to sheet 13.

23. §22-713.4.A – The following comments relate to the proposed street trees:

a. The proposed street length shall be clarified and revised to include both sides of the proposed circle.
Response: The street tree calculations have been revised.

b. §22-713.4.B – The Plan proposes using the existing vegetation along King Road and a portion of Henry Court to meet the street tree requirements. In

addition, supplemental street trees are proposed informally along Henry Court. A partial waiver would be required to use the existing vegetation to meet the street tree requirement and to allow an informal arrangement of supplemental street trees.
Response: A partial waiver has been requested.

c. A note shall be added to the plan specifying that the proposed street trees along Henry Court be staked in the field and reviewed by the Township Engineer prior to installation. The locations shall consider snow storage and utilities.
Response: Note 3 on sheet 14 has been added to the plan.

24. §22-715.2.C.(1) – Park and recreation land is required at a ratio of 2,500 square feet per new dwelling unit or 12,500 square feet. The land shall be dedicated to the Township or other entity as may be approved by the Board. A fee-in-lieu of park and recreation at a rate of $2,500 per dwelling unit or $12,500.00 for the 5 new dwellings may be provided at the Board's discretion.
Response: Acknowledged.

25. §22-716 – Concrete monuments shall be placed at all outbound existing property corners, at all proposed lot corners, including changes in direction of boundary, along the King Road ultimate right-of-way, along the private access easement, along all existing and proposed easements including conservation easements, defined stormwater or storm sewer easements, etc.
Response: Acknowledged. Proposed Concrete Monument location have been added to the plan.

26. §22-719.6. – The site plan shall contain a plan notation stating that any proposed well is subject to the provisions of the well construction standards, which includes requirements for well permitting, water quality testing and well production certification. In addition, all notes related to water mains and the North Wales Water Authority on the Grading, Drainage and Utility Plan shall be removed.
Response: Utility Note 15 has been added. All references to North Wales Water Authority have been removed.

27. §22-719.7.& 8. – For all residential subdivisions containing 3 or more lots, including the existing unit, the Applicant shall submit a Water Resource Impact Study to the Township in accordance with these sections. This study and the required information shall be submitted for review.
Response: The Water Resource Impact Study has been provided to the township under a separate cover.

28. §22-719.11. – For subdivisions and/or land developments involving water supply wells, the applicant shall be required to enter into a Well Depletion Agreement including a well monitoring program with the Township as a condition of final plan approval in accordance with sections §22-719.11.A-C.
Response: Acknowledged. The Well Depletion Agreement will be provided under a separate cover.

29. §22-721. – The plan proposes on-lot septic systems for each lot. All notes related to sanitary sewer mains and the Chalfont New Britain Sewer Authority on the Grading, Drainage and Utility Plan shall be removed.
Response: All notes referencing Chalfont New Britain Sewer Authority have been removed.

30. §22-721.3 – Planning module approval is required to be obtained from the Pennsylvania Department of Environmental Protection (DEP). A completed PADEP Sewage Facilities Planning Module shall be submitted with the preliminary plan application. Prior to submission of the Planning Module to the Township for approval, the planning module shall be approved/executed by the applicant, responsible professional soil scientist, Bucks County Department of Health and Bucks County Planning Commission.
Response: Acknowledged.

31. §22-721.6 – If the property being subdivided contains an existing on-site sewage disposal system, the applicant shall submit to the Township documentation indicating that the existing system has been inspected and is functioning properly. The location of the existing septic system on Lot 4 shall be shown on the plan and inspection report submitted to the Township.
Response: The location of the existing septic system has been added to the plan. Documentation indicating the existing system has been inspected and is functioning properly will be provided prior to building permit phase.

32. §22-721.7 – As required, the primary and backup septic areas are depicted for the proposed homes. We offer the following comments related to on-lot septic systems:

    a. An easement deed-restricting each sewage backup area from being built upon shall be added to the site plan with metes and bounds.
    Response: Easements for the sewage backup areas have been added to the record site plan.

    b. The sewage backup areas shall be located a minimum of 25 feet from the primary system and shall not be located directly down slope of the primary system, or within any well isolation area. Sufficient information shall be provided on a plan to verify.
    Response: Dimensions for the distance from the primary to secondary septic systems have been added to the plan.

D. Stormwater Management Ordinance Comments
We offer the following comments related to the Township's Stormwater Ordinance:

1. §22-712.4 – The Applicant proposes a new rain garden for each of the proposed lots. While the rain gardens aren't identified as detention basins, they are controlling the peak rates for stormwater runoff. We recommend a partial waiver from this section of the Ordinance related to detention basins, conditioned on the following:

a. §27-502.b.5 – Per a previous Zoning comment, each rain garden shall be revised to manage the maximum impervious permitted for the site in accordance with the Township's Stormwater Ordinance.
Response: The rain gardens have been revised to handle the maximum allowable impervious.

b. §22-712.4.A – An emergency spillway shall be provided for each detention basin in order to convey basin inflow in excess of design flows, or in the event the outlet structure becomes blocked and is unable to convey the design flow. Several of the rain gardens are currently near capacity for the 100-year storm and could ultimately overtop the berm. A spillway shall be provided for the rain gardens which are capable of conveying the flow from the 100-year storm without overtopping the berm in the event the outlet structure is not functioning.
Response: Emergency Spillway have been provided as part of the PCSM Report. The Emergency Spillway grading has been added to the plan sheets.

c. §22-712.4.J. – All portions of the detention basin bottom shall be sloped towards the outlet structure at a minimum slope of 2%. Though we understand the desire to promote infiltration, due to the infiltrative capabilities of soils potentially being compromised over time, we recommend the areas be sloped no less than 2% though underdrain is proposed.
Response: The rain gardens have designed to promote the maximum possible area to promote infiltration and evapotranspiration. Underdrains have been provided to promote a managed released design to ensure the rain gardens will dewater in sufficient time.

d. §22-713.5.B.(3) – One deciduous or evergreen tree planted every 20 feet, plus one deciduous or evergreen shrub every 10 feet along the basin perimeter, planted in an informal arrangement. The required plantings shall be provided around the rain gardens.
Response: Rain Gardens plantings have been added to the Landscaping Plan.

e. §22-712.13.A.(2) – An easement and stabilized access are required to each detention basin for maintenance and operation. Each facility shall be individually reviewed to confirm sufficient access is provided from King Road to each facility for maintenance, as well as a blanket or defined easement on each new dwelling lot.
Response: A note has been added to the Record Site Plan.

2. §22-712.5.A – All storm sewer systems shall provide the required capacity for the 100-year design storm based on the Rational Method. Pipe capacity calculations shall be provided for the proposed storm sewer pipes from Henry Court to the rain gardens, for the 36" culvert pipe crossing Henry Court and for the culvert pipe along King Road.
Response: Calculations have been provided for the storm pipes.

3. §22-712.6.A. – All inlets to be utilized in a storm sewer system shall conform to the design standards of the most current PennDOT Publications 408 and 72. The inlet details reference PennDOT Pub 72M, RC-34. This should be revised to specify RC-46M.
   Response: The inlet detail has been revised accordingly.

4. §22-712.6.C. – Inlet spacing in paved areas shall be arranged so that a minimum of 80% of the gutter flow tributary to the inlet will be captured. Inlet capacity reports shall be provided for the inlets along Henry Court. Based on the proposed grades and grate elevations, it appears these inlets may need to be sumped.
   Response: The inlet elevations have been sumped to ensure the gutter flow will be captured.

5. §22-712.7.A. – A manhole detail refencing PennDOT Pub 72M, RC-39M shall be provided.
   Response: A manhole detail has been added to the plans.

6. §22-712.8.A. – The Concrete End Wall detail shall reference PennDOT Pub 72M, RC-31M.
   Response: The Concrete End Wall Detail has been revised.

7. §22-712.8.D. – Rock apron or other approved velocity dissipation devices shall be placed at all headwalls and endwalls to reduce flow velocity and prevent erosion. Riprap aprons shall be provided at the endwall along King Road and the endwall for the 36" RCP crossing Henry Court. Associated sizing calculations shall be provided as well.
   Response: Rip-Rap Aprons have been added to the plans.

8. §22-712.12.A. – All proposed driveways, where curbs and storm sewer are not required by the Board, shall have a culvert with flared end sections or endwalls. Detailed grading for the driveways shall be provided to determine if 24-ft long 15" RCP driveway culverts or concrete trench boxes with grates are necessary.
   Response: Detailed grading has been provided.

9. §22-712.13.A & B – The following comments relate to drainage easement, ownership and maintenance responsibilities of stormwater facilities:

   a. Per the Site Plan Note 5 on Record Site Plan, Sheet 5, the stormwater management facilities are noted to be a perpetual part of the stormwater management system of the Township. This shall be revised to state "of the homeowners or Homeowners Association" and to include the road culverts.
      Response: Note 5 has been revised accordingly.

   b. Per the Site Plan Note 5 on Record Site Plan, Sheet 5, access is provided to the properties for stormwater inspections by the Township and its agents. It shall be clarified whether a blanket easement or defined easements are proposed. Defined easements shall be a minimum of 20 feet in width.
      Response: Note 17 has been added to the record plan, a blanket easement is proposed.

10. §26-123 –The managed release concept developed by PADEP is proposed to meet the volume control and water quality requirements which is permitted for situations where infiltration is infeasible and is subject to PADEP approval. Hydrograph calculations shall be provided demonstrating that the stormwater release rate for the 1.2-inch/2-hour storm does not exceed 0.01 cfs from the equivalent impervious area. Note that a composite Curve Number is not adequate for the modeling of the 1.2 inch/2-hour storm due to the large error associated with averaging of initial abstractions for storms less than or equal to the 2-year/24-hour storm event.
    Response: The 1.2-inch/2-hour storm event (shown as the 3 year storm in the Hydraflow Routing) has been revised.

11. §26-123.2.C.(5)(b) – A minimum infiltration rate of 1/4 inches/hour shall be utilized and a safety factor of 50% applied for design purposes. The plan proposes MRC rain gardens for Lots 1, 2, 3, 5 and 6, however, the Stormwater Infiltration Testing report by VW Consultants, LLC provided acceptable infiltration rates on Lots 1, 2, 3 and 5. Calculations shall be provided to demonstrate the volume control requirement can be met through infiltration.
    Response: The stormwater NPDES worksheets shows the calculated infiltration volume credit. The hydraflow analysis also shows the infiltration rate in the calculations.

12. §26-124.1.C – When calculating the allowable peak runoff rates, developers do not have to account for runoff draining into the subject development site from an off-site area. However, on-site drainage facilities shall be designed to safely convey off-site flows through the development site. The drainage areas to the rain gardens shown on the Post Development Drainage Area Map only include the disturbed areas of the site. The drainage areas shall be revised to include the undisturbed areas onsite and offsite which ultimately drain to the rain gardens to demonstrate they can safely handle the flows from these areas.
    Response: The stormwater calculations have been revised to accommodate any runoff getting to the rain gardens outside of the Limit of disturbance.

13. §26-125.3 – The time of concentration flow paths shall be shown on the drainage area plans to verify the times used in the report.
    Response: The time of concentration flow paths have been added to the drainage area plans.

14. §26-132 – The following discrepancies with the stormwater management design and plans shall be addressed:

    a. The MRC Stormwater Facility Underdrain Detail appears to indicate that the underdrain invert should be 36 inches below the bottom of the rain garden. This is not consistent with the rain garden contours which appear to indicate the invert is 2 feet below the surface. The detail and grading should be revised as necessary to clarify the underdrain elevation.
        Response: The MRC Stormwater Facility Underdrain Detail has been revised.

b. The MRC Stormwater Facility Underdrain Detail appears to indicate 6 inches of topsoil beneath the 24" BMP soil mix. The Rain Garden MRC BMP Soil Detail shows 6 inches of topsoil over the soil mix and is included in the 24-inch depth. The depth of soil mix and layering should be clarified.
Response: The details have been revised to be consistent.

c. The elevation table on the Rain Garden Outlet Structure Detail lists the outlet pipe invert at the same elevation as the underdrain pipe invert. This is not consistent with the plans and stormwater report which list the outlet structure discharge pipe invert one foot lower than the underdrain pipe discharge. The invert elevations should be clarified.
Response: The Rain Garden Outlet Structure Detail has been revised.

d. The level spreader on Lot 6 has a grate elevation of 443.00 which is 3 feet higher than the invert from the outlet structure and will result in a tailwater effect for this rain garden. The elevations and report shall be clarified.
Response: The Lot 6 Rain Garden has been revised since the previous submission.

e. It appears that an existing 18" RCP crossing King Road will connect to the proposed manhole along the eastern side of Lot 1. This pipe has an existing invert of 425.83, which is lower than the manhole invert out of 428.51. The design of this storm pipe connection shall be revised.
Response: The storm pipe inverts have been revised accordingly.

f. A more defined swale shall be provided around the southern side of the dwelling on Lot 1 to direct runoff towards the rain garden in accordance with the drainage area shown on the post Development Drainage Area Map.
Response: The grading has been revised to create a more defined swale.

g. Based on the inverts and pipe length for the culvert pipe along King Road, the pipe slope shall be clarified.
Response: The pipe slopes have been revised accordingly.

h. The pipe slope of 1.74% listed for the Type M Inlet from Henry Court to Lot 2 is not consistent with the structure inverts and should be revised.
Response: The pipe slopes have been revised accordingly.

15. §26-164.1 – The Applicant shall sign an Operation and Maintenance (O&M) agreement with the municipality covering all stormwater and storm sewer facilities and BMPs that are to be privately owned.
Response: Acknowledged. The stormwater Operation and Maintenance (O&M) agreement will be provided under a separate cover.

16. The Stormwater BMP Maintenance Fee applies to all proposed stormwater BMPs installed in the Township to provide a financial guarantee for the timely installation, proper construction and continued maintenance by the owner. The fee will be calculated once the engineer's estimate of probable cost is submitted and is based

on 5% of the construction cost not to exceed $10,000.00. (Township Resolution 2019-03)
Response: Acknowledged.

17. §22-712.13.D & 2022 Fee Resolution – The storm sewer fee for the development will be $2.50 per linear foot of existing and proposed roads. Based on 948 feet of frontage on King Road and 743 feet along Henry Court, a fee of $4,227.50 would be required.
Response: Acknowledged.

E. General Comments

1. The bridges in the area may not support anticipated construction vehicle traffic on King Road near Swamp Road or on Keller Road. Chapman Road should not be accessed by heavy trucks due to the existing road width and condition. As a side note there have also been discussions regarding construction at the County bridge on King Road near Swamp Road.
Response: Acknowledged. This will be discussed and resolved prior to construction.

2. It shall be clarified if the agricultural fields are proposed to be stabilized with lawn or other vegetative cover.
Response: Note 18 has been added to the record plan.

Review Letter from New Britain Township Fire Marshal dated December 6, 2022.

1. Show that fire trucks can turn into the driveways from both the lane and cul-de-sac. Needs a turning radius of 10-foot radius on driveways.
Response: Truck turning templates have been provided and driveways have been revised as needed.

If you have any questions or require additional information, please do not hesitate to contact us at 215-586-3330 or rob@hcengineering.net

Very truly yours,
Holmes Cunningham Engineering

Rob Cunningham, P.E.
Partner

Cc:

O:\1734 - 396 King Road\Outbound\Twp Response Letter 2023-01-10.docx

Kristin Holmes, P.E., LEED AP
Robert Cunningham, P.E., LEED AP

September 22, 2022
Revised February 8, 2023

Via Email

Matthew West, Township Manager
New Britain Township
207 Park Avenue
Chalfont, PA 18914

RE: The Estates at Hill Top Waiver Request Letter
TMP#: 26-004-030
New Britain Township, Bucks County, PA
HCE Project No.: 1734

Dear Matt:

In regard to the above referenced land development project, the applicant requests the following waivers from the Subdivision and Land Development Ordinance.

1. SALDO Section 22-403 & 404 – The Applicant is requesting a waiver to allow a combined preliminary and final subdivision and land development submission for this project. All information required for final plans is included on the land development plan set.

2. SALDO Section 22-502.D. – The Applicant is requesting a waiver to utilize the Aerial Plan in lieu of providing detailed survey information within 100 feet of the property line. The existing information immediately adjacent to the tract and within the adjacent roadways have been provided. An aerial photograph has been provided and the applicant agrees to provide additional information as requested to the satisfaction of the township engineer.

3. SALDO Section 22-502.1.H – The applicant is requesting a waiver from providing a lighting plan, as no new lighting is proposed as part of this project. No pole lighting is proposed for this small-scale residential project with 5 new building lots.

4. SALDO Section 22-703.4.C – The applicant is requesting a waiver from requiring lot lines to be drawn parallel, concentric, at right angles or radial to the street right-of-way. The proposed lot lines have been design to meet these requirements to the best of our ability due to the site constraints.

5. SALDO Section 22-705.3.E – The applicant is requesting a waiver from providing a proposed private street that meets design specifications of a local street. The intent of this development is to provide the aesthetic of a rural neighborhood, which only contains 5 new building lots. The proposed road will be private and maintain by the homeowner's association. The proposed cartway width provides adequate access to the homes and

for emergency vehicles. The required right-of-way width is proposed for the ability to widen the road in the future.

6. SALDO Section 22-705.3.G – The applicant is requesting a waiver from providing mill and overlay of the entire width of the roadway a depth of 1 ½ inches. There are minimal improvements within the existing cartway, which include water and sewer connections on the western side of the Schoolhouse cartway. Additionally, no widening is proposed as part of this project and the existing cartway appears to be in good condition.

7. SALDO Section 22-705.8.C – The applicant is requesting a waiver from providing cul-de-sac streets with a left-side turnaround configuration at the closed end and minimum paving radius of 50 feet. The intent of this development is to provide the aesthetic of a rural neighborhood, which only contains 5 new building lots. A loop road has been provided to the ability for the residents to turn around. The loop road also provide adequate circulation for emergency vehicles.

8. SALDO Section 22-705.8.F – The applicant is requesting a waiver from providing a fifteen-foot by twenty-foot snow storage easement along the right-of-way of the cul-de-sac bulb. The current loop road design provides sufficient room for snow storage. Additionally, the roadway will be privately owned and maintained.

9. SALDO Section 22-706 – The Applicant is requesting a waiver from providing curb and sidewalk along King Road and the proposed private road. There is no existing curb or sidewalk on any surrounding properties, therefore, the applicant proposes to keep the site consistent with the surrounding neighborhood.

10. SALDO Section 22-707.A.– The applicant is requesting a waiver from providing pedestrian walkways or recreational trails on site. The intent of this development is to provide the aesthetic of a rural neighborhood and to match the surrounding neighborhood.

11. SALDO Section 22-713.4.B – The applicant is requesting a partial waiver to use the existing vegetation to meet the street tree requirement and to allow an informal arrangement of supplemental street trees.

12. SALDO Section 22-714.3.A – The Applicant is requesting a waiver from providing streetlights at any location where improvements are shown. The intent of this development is to provide the aesthetic of a rural neighborhood, which only contains 5 new building lots. No internal pedestrian walkways are proposed that require illumination.

Very truly yours,
Holmes Cunningham Engineering

Robert Cunningham, P.E.
Partner

ECC: Joe Casadonti, Casadonti Custom Homes

O:\1734 - 396 King Road\Outbound\Twp 2022-09-22 Waiver Letter.docx

PRELIMINARY AND FINAL LAND DEVELOPMENT AND MAJOR SUBDIVISION PLANS

FOR

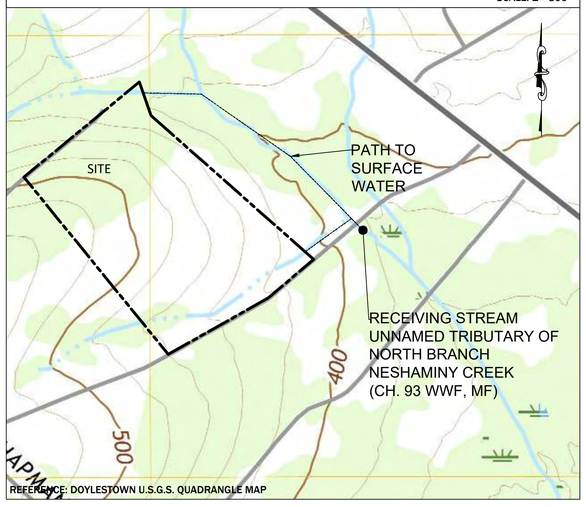
THE ESTATES AT HILL TOP

TMP # 26-004-030

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

SITE LOCATION MAP

SCALE: 1"=800'

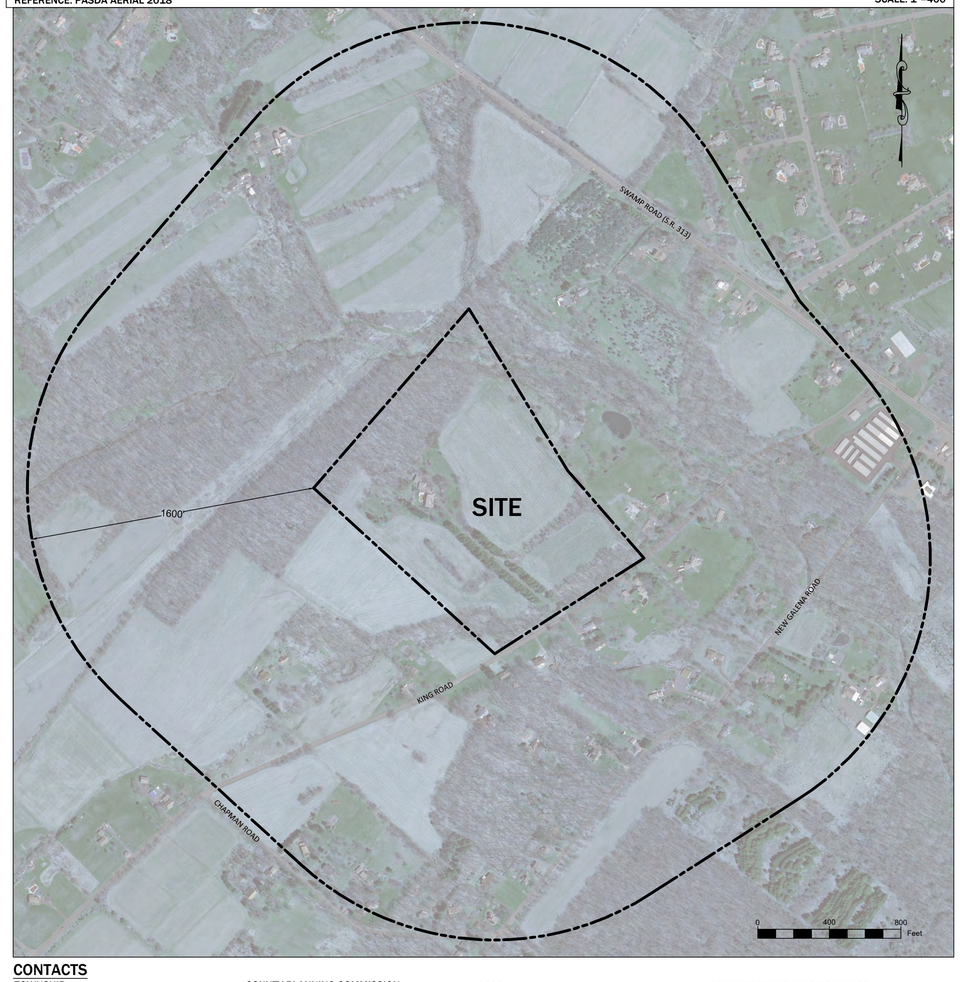


REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAP

AERIAL MAP

REFERENCE: PASDA AERIAL 2018

SCALE: 1"=400'



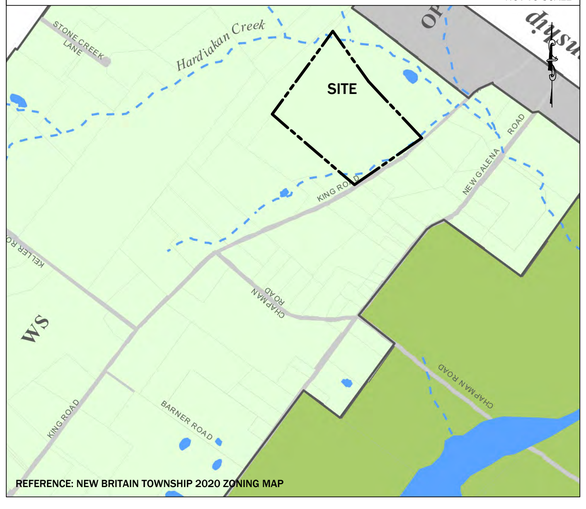
FEMA MAP

NOT TO SCALE

REFERENCE: FEMA MAP 42017C0281J

ZONING MAP

NOT TO SCALE



REFERENCE: NEW BRITAIN TOWNSHIP 2020 ZONING MAP

DRAWING LIST

SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	LAST REVISED DATE
1	C0.0	COVER SHEET	2/8/2023
2	C0.1	EXISTING CONDITIONS PLAN	2/8/2023
3	C0.2	AERIAL MAP	2/8/2023
4	C0.3	EXISTING RESOURCE AND SITE ANALYSIS PLAN	2/8/2023
5*	C1.0	RECORD SITE PLAN	2/8/2023
6	C2.0	GRADING, DRAINAGE AND UTILITY PLAN	2/8/2023
7	C2.1	CONSTRUCTION DETAILS	2/8/2023
8	C3.0	EROSION AND SEDIMENT CONTROL PLAN	2/8/2023
9	C3.1	EROSION AND SEDIMENT CONTROL DETAILS	2/8/2023
10	C3.2	EROSION AND SEDIMENT CONTROL DETAILS	2/8/2023
11*	C4.0	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	2/8/2023
12	C4.1	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	2/8/2023
13	C5.0	TRUCK TURN & PROFILE PLAN	2/8/2023
14	C6.0	LANDSCAPING PLAN	2/8/2023
15	C6.1	LANDSCAPING DETAILS	2/8/2023

* DENOTES PLAN TO BE RECORDED

CONTACTS

TOWNSHIP
NEW BRITAIN TOWNSHIP
207 PARK AVENUE
CHALFONT, Pa 18914
PHONE: (215)-822-1391

TOWNSHIP ENGINEER
GILMORE & ASSOCIATES, Inc
65 EAST BUTLER AVENUE, SUITE 100
NEW BRITAIN, PA 18901
PHONE: 215 345 4330

TOWNSHIP PUBLIC WORKS DEPARTMENT
207 PARK AVENUE
CHALFONT, PA 18914
PHONE: (215)-822-1391

COUNTY PLANNING COMMISSION
BUCKS COUNTY PLANNING COMMISSION
THE ALMSHOUSE NESHAMINY MANOR CENTER
1260 ALMSHOUSE ROAD
DOYLESTOWN, PA 18901
PHONE: 215-345-3400

ELECTRIC AND GAS
PHILDELPHIA ELECTRIC COMPANY
BUCKS/MONT REGION CONTRACTOR AND BUILDER SERVICES
400 PARK AVENUE
WARMINSTER, PA 18974
PHONE: (215) 956-3270
FAX: (215) 956-3240

PECO
WARMINSTER SERVICE BUILDING
400 PARK AVE.,
WARMINSTER, PA 18974
ELECTRIC PHONE: (215) 956-3270
NEW ELECTRIC PHONE: (215) 956-3010
ELECTRIC EMERGENCY: (800) 841-4141
GAS PHONE: (800) 454-4100
NEW GAS PHONE: (800) 454-4100
GAS EMERGENCY: (800) 841-4141
GAS EMERGENCY(ALT): (844) 841-4151

COUNTY CONSERVATION DISTRICT
BUCKS COUNTY CONSERVATION DISTRICT
1456 FERRY ROAD, SUITE 704
DOYLESTOWN, PA 18901
PHONE: 215-345-7577

PREPARED BY:

HOLMES CUNNINGHAM LLC
409 EAST BUTLER AVENUE
UNIT 5
DOYLESTOWN, PA 18901
(215) 586-3330

APPLICANT/ EQUITABLE OWNER

CASADONTI BUILDERS LLC
P.O. BOX 5,
CHALFONT, PA 18914

REVISED:	02/08/2023
DATE:	09/14/2022
PROJECT #	1734
DRAWING #	C0.0
SHEET	1 OF 15

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE GROUND OBSERVATION AT THE SITE. COMPLETENESS OR ACCURACY OF LOCATION CAN NOT BE GUARANTEED.
3. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO THE START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA ACT 121.
4. THIS SITE IS CURRENTLY ZONED WS – WATERSHED DISTRICT IN THE TOWNSHIP OF NEW BRITAIN.
5. ELEVATION INFORMATION IS BASED ON THE NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND HORIZONTAL DATUM ID BASED ON 1983 STATE COORDINATE SYSTEM.
6. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM, IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 2008. (800-242-1776).
7. FLOOD ZONE INFORMATION: A PORTION OF SUBJECT PARCEL AREA IS LOCATED INSIDE ZONE A OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 288 OF 532, MAP NO. 42017C0281J WHICH BEARS AN EFFECTIVE DATE OF MARCH 16, 2015.

LEGEND

- PROPERTY LINE
- RIGHT OF WAY
- CONTOUR
- STORM SEWER
- OVERHEAD WIRES
- FENCE
- SIGN
- UTILITY POLE
- STORM INLET
- MONUMENT
- SPOT ELEVATIONS
- SOIL UNIT SYMBOL
- SOIL UNIT LIMIT
- TREE LINE
- EXISTING TREE

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS		
	Date	Description
	02/08/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
EXCAVATION OR DEMOLITION
10 WORKING DAYS IN DESIGN STAGE
— STOP & CALL —
Pennsylvania One Call
Call Sixtem, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITIES FOR EXPOSED PRIOR TO ANY EXCAVATION.

THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EXISTING CONDITIONS PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C0.1 EXISTING CONDITIONS.DWG

HCE Job	1734	Scale	1"=60'	Sheet	2 of 15
Date	09/14/2022	Designed	RC		

Drawing No.
C0.1

NOTES:
1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. AERIAL PHOTOGRAPHY TAKEN FROM PASDA AERIAL PHOTOGRAPHS 2018.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

holmes cunningham ENGINEERING

REVISIONS

Date	Description
02/08/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND
10 WORKING DAYS IN DESIGN STAGE
-- STOP & CALL --

Pennsylvania One Call System, Inc.
1-800-242-1776

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THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

AERIAL MAP

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C0.2 AERIAL MAP.DWG

HCE Job	1734
Date	09/14/2022
Scale	1"=80'
Designed	RC
Sheet	3 of 15

Drawing No.
C0.2

RESOURCE PROTECTION STANDARDS					
Resource	**Min. Required Protection Ratio**	**Total Area of Land in Resource**	**Required Resource Protection Land**	**Actual Resource Protection Land**	**Actual Protection Ratio**
	%	(Ac.)	(Ac.)	(Ac.)	%
Watercourses	100%	1.052	1.052	0.000	N/A
Floodplains	100%	0.569	0.569	0.569	100%
Floodpain (Alluvial) Soils	100%	0.933	0.933	0.933	100%
Wetlands	100%	0.000	0.000	0.000	N/A
Wetlands Margin	80%	0.000	0.000	0.000	N/A
Riparian Buffer	100%	3.154	3.154	3.154	100%
Lakes and Ponds	100%	0.000	0.000	0.000	N/A
Woodlands (CR, WS, SR-1, SR-2, and RR Zoning Districts)	80%	11.729	9.383	11.099	95%
Agricultral Soils	50%	31.614	15.807	20.794	66%
Steep Slopes 8%-15%	60%	18.272	10.963	13.419	73%
Steep Slopes 15%-25%	70%	2.132	1.492	1.996	94%
Steep Slopes 25%+	85%	0.460	0.391	0.443	96%

Soils Legend

Type	Name	Depth to Bedrock	Depth to Seasonal High Water Table	HSG	Hydric Soil
AbB	Abbottstown silt loam, 3 to 8 percent slopes	40"-60"	6"-18"	D	No
Bo	Bowmansville-Knauers silt loams, 0 to 3 percent slopes	72"-99"	0"-18"	C/D	No
CyB	Culleoka-Weikert channery silt loams, 3 to 8 percent slopes	20"-40"	>80"	B	No
CyC	Culleoka-Weikert channery silt loams, 8 to 15 percent slopes	20"-40"	>80"	B	No
LhD	Lansdale loam, 8 to 25 percent slopes, extremely stony	42"-72"	>80"	B	No
ReB	Readington silt loam, 3 to 8 percent slopes	40"-60"	18"-36"	C	No
RIC	Realville channery silt loam, 8 to 15 percent slopes	20"-40"	6"-36"	D	No

Limitations and Resolutions: The soils found within the project limits have varying limitations including possible shallow depth to groundwater and possible shallow depth to bedrock. In order to resolve the groundwater limitation, any standing water should be pumped through a sediment filter bag. To resolve the bedrock limitation, the contractor shall determine whether rock is rippable. If rock is not rippable, blasting will be required. All blasting shall meet all local, county, state and federal regulations.

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM BOUNDARY & TOPOGRAPHIC PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. AERIAL PHOTOGRAPHY TAKEN FROM PASDA AERIAL PHOTOGRAPHS 2018.
3. THE PROPOSED DEVELOPMENT IS TO BE SERVED BY ON-LOT WELL AND SEPTIC SYSTEMS.
4. THE PROPERTY IS PARTIALLY WITHIN ZONE A FLOOD HAZARD AS PER FEMA PANEL 42017C0281J REVISED MARCH 16, 2015.
5. TOPOGRAPHICAL INFORMATION IS BASED UPON VERTICAL DATUM NAVD 88 AND HORIZONTAL DATUM PA83-S.

Site Capacity Calculations		
	Area (SF)	**Area (AC)**
Gross Site Area Determined by Actual On-site Survey	1,495,537	34.333
Existing Streets Ultimate Rights-of-Way	22,837	0.524
Existing Utility Rights-of-Way or Easements	17,721	0.407
Existing Preservation Easements	0	0.000
Land Not Contiguous	0	0.000
Land Shown on Previous Subdivision Reserved for Open Space, Protection, etc.	0	0.000
Land in a Different Zoning District from Primary Use	0	0.000
Base Site Area	1,454,979	33.402

Resource Protection Land

Natural Resource	**Protection Ratio**	**Acres of Land in Resources**	**Resource Protection Land (AC)**	**Proposed Resource Protection Land (AC)**
Watercourses	1.00	1.05	1.05	1.05
Riparian Buffer	1.00	1.53	1.53	1.53
Floodplain	1.00	0.57	0.57	0.57
Floodplain (Alluvial) Soils	1.00	0.03	0.03	0.03
Wetlands	1.00	0.00	0.00	0.00
Lakes and Ponds	1.00	0.00	0.00	0.00
Steep Slopes 25%+	0.85	0.42	0.36	0.44
Woodlands	0.80	8.15	6.52	6.52
Steep Slopes 15-25%	0.70	0.30	0.21	2.00
Steep Slopes 8-15%	0.60	12.18	7.31	13.42
Total Land with Resource Restrictions			24.24	
Total Land with 1.00 Protection Ratio Restrictions			3.18	
Total Resource Protection Land Required			17.58	
Total Resource Protection Land Provided			19.54	
Total Disturbed Resources			4.70	

Open Space Calculations		
Base Site Area	33.40	Ac.
Multiply by Minimum Open Space Ratio	0.00	
Standard Minimum Open Space	0.00	Ac.
Required Open Space (Greater of 100% Protection Land or Min Open Space)	3.18	Ac.
Net Buildable Site Area Calculations		
Base Site Area	33.40	Ac.
Subtract Required Open Space	3.18	Ac.
Net Buildable Site Area	30.22	Ac.
Density Calculations		
Net Buildable Site Area	30.22	Ac.
Multiply by Maximum Density	N/A	
Number of Dwelling Units Permitted	N/A	
Impervious Surface Calculations		
Base Site Area	33.40	Ac.
Multiply by Maximum Impervious Surface Ratio	0.20	
Maximum Permited Site Impervious Surface	6.68	Ac.

LEGEND

- PROPERTY LINE
- 208 EXISTING CONTOUR
- DISTURBANCE LINE
- ULTIMATE RIGHT-OF-WAY
- STREAM/ WATERCOURSE
- FLOODPLAIN
- WOODLANDS
- RIPARIAN CORRIDOR BUFFER
- STEEP SLOPES 8%-15%
- STEEP SLOPES 15%-25%
- STEEP SLOPES 25%+
- TrB SOIL TYPE
- AGRICULTURAL SOILS

0 80 160 Feet

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

holmes cunningham ENGINEERING

REVISIONS		
Date	**Description**	
02/08/2023	Revised Per Township Engineer Review	

CALL BEFORE YOU DIG!!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR EXCAVATION, DRILLING & BLASTING 10 WORKING DAYS IN DESIGN STAGE — STOP & CALL —
Pennsylvania One Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT ALL UTILITIES FOR EXACT LOCATIONS PRIOR TO ANY EXCAVATION.

THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EXISTING RESOURCE AND SITE ANALYSIS PLAN

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT THOMAS CUNNINGHAM ENGINEER 076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C0.2 ERSAP.DWG

HCE Job	1734	Scale	1"=80'	Designed	EC
Date	09/14/2022			Sheet	4 of 15

Drawing No.
C0.3

LOT AREA AND COVERAGE TABLE

Lot	Gross Lot Area	Right-of-Way Area	Utility Easement Area	100% Natural Resource Protection	Ratio Base Site Area	Building Area	Building Ratio	On-lot Impervious Excluding Building Area	Impervious Ratio	Future Impervious
#	(SF)	(SF)	(SF0	(SF)	(SF)	(SF)	%		%	(SF)
1	256,311	0	0	66,557	189,754	4,046	2.1%	4,196	4.3%	14,528
2	195,852	0	9,749	0	186,103	4,046	2.2%	3,542	4.1%	14,744
3	347,960	0	140	43,548	304,272	4,046	1.3%	4,278	2.7%	28,189
4	293,036	0	0	0	293,036	6,654	2.3%	10,857	6.0%	17,654
5	235,543	0	5,034	0	230,509	4,046	1.8%	3,159	3.1%	20,456
6	166,835	0	0	61,934	104,901	4,046	3.9%	1,748	5.5%	6,794

NEW BRITAIN TOWNSHIP ZONING DATA TABLE

ZONING DISTRICT: WS - WATERSHED DISTRICT

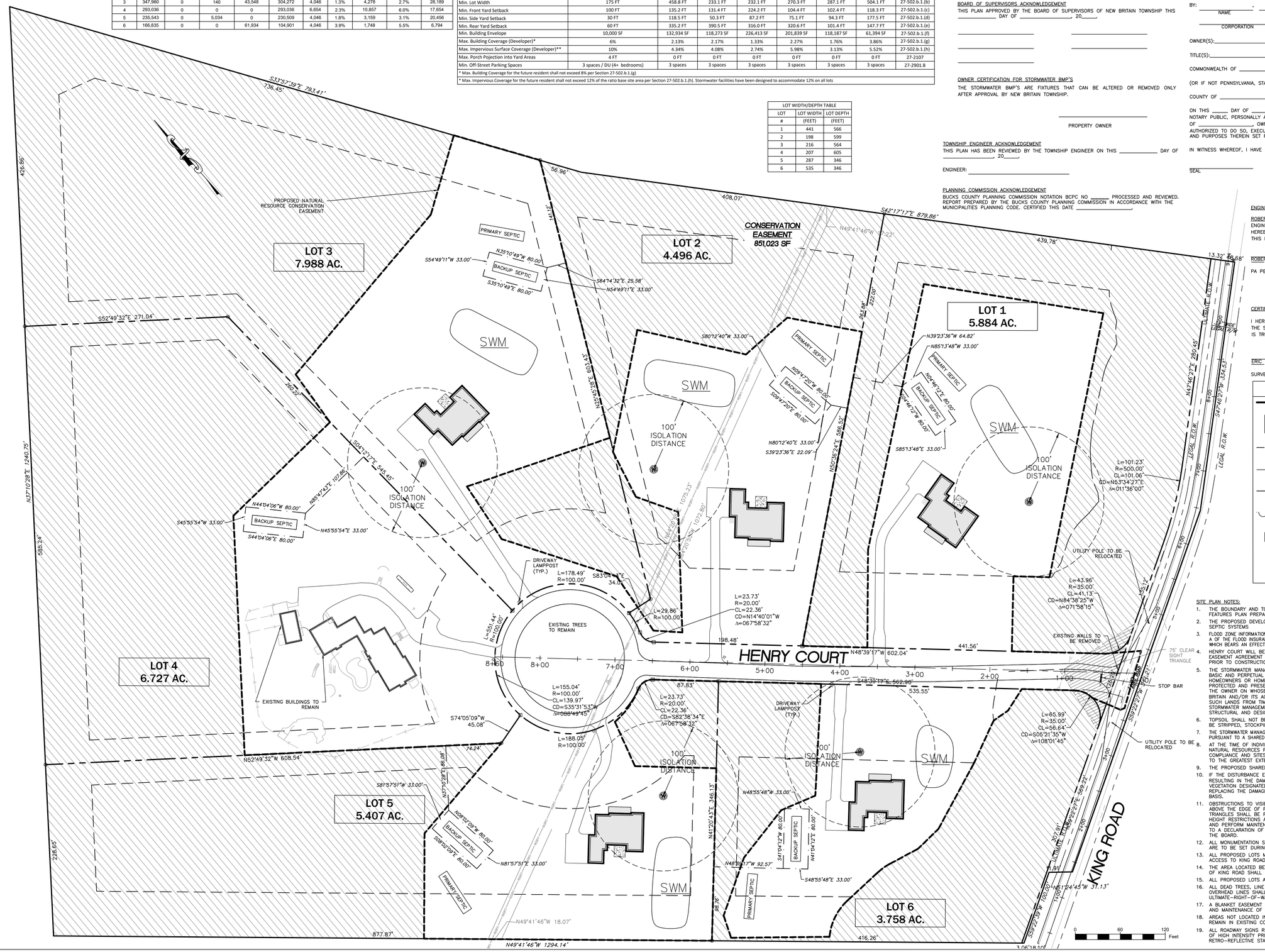
ITEM	REQUIRED/ PERMITTED	PROPOSED LOT 1	PROPOSED LOT 2	PROPOSED LOT 3	PROPOSED LOT 4	PROPOSED LOT 5	PROPOSED LOT 6	Ordinance Section
Use: Zoning 27-501.a	B1: Single Family Detached Dwelling							
Max. Building Height	35 FT	< 35 FT	< 35 FT	< 35 FT	< 35 FT	< 35 FT	< 35 FT	27-502.a
Min. Lot Size	80,000 SF	5.884 AC	4.496 AC	7.988 AC	6.727 AC	5.407 AC	3.758 AC	27-502.b.1.(a)
Min. Lot Width	175 FT	458.8 FT	233.1 FT	232.1 FT	270.3 FT	287.1 FT	504.1 FT	27-502.b.1.(b)
Min. Front Yard Setback	100 FT	135.2 FT	131.4 FT	224.2 FT	104.4 FT	102.4 FT	118.3 FT	27-502.b.1.(c)
Min. Side Yard Setback	30 FT	118.5 FT	50.3 FT	87.2 FT	75.1 FT	94.3 FT	177.5 FT	27-502.b.1.(d)
Min. Rear Yard Setback	60 FT	335.2 FT	390.5 FT	316.0 FT	320.6 FT	101.4 FT	147.7 FT	27-502.b.1.(e)
Min. Building Envelope	10,000 SF	132,934 SF	118,273 SF	226,413 SF	201,839 SF	118,187 SF	61,394 SF	27-502.b.1.(f)
Max. Building Coverage (Developer)*	6%	2.13%	2.17%	1.33%	2.27%	1.76%	3.86%	27-502.b.1.(g)
Max. Impervious Surface Coverage (Developer)**	10%	4.34%	4.08%	2.74%	5.98%	3.13%	5.52%	27-502.b.1.(h)
Max. Porch Pojection into Yard Areas	4 FT	0 FT	0 FT	0 FT	0 FT	0 FT	0 FT	27-2107
Min. Off-Street Parking Spaces	3 spaces / DU (4+ bedrooms)	3 spaces	3 spaces	3 spaces	3 spaces	3 spaces	3 spaces	27-2901.B

* Max. Building Coverage for the future resident shall not exceed 8% per Section 27-502.b.1.(g)

* Max. Impervious Coverage for the future resident shall not exceed 12% of the ratio base site area per Section 27-502.b.1.(h). Stormwater facilities have been designed to accommodate 12% on all lots

LOT WIDTH/DEPTH TABLE

LOT #	LOT WIDTH (FEET)	LOT DEPTH (FEET)
1	441	566
2	198	599
3	216	564
4	207	605
5	287	346
6	535	346



RECORDER OF DEEDS ACKNOWLEDGEMENT

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC. IN AND FOR THE COUNTY OF BUCKS, AT DOYLESTOWN, PENNSYLVANIA IN PLAN BOOK _____, PAGE _____, ON THIS _____ DAY OF _____, 20____.

BUCKS COUNTY RECORDER OF DEEDS

BOARD OF SUPERVISORS ACKNOWLEDGEMENT

THIS PLAN APPROVED BY THE BOARD OF SUPERVISORS OF NEW BRITAIN TOWNSHIP THIS _____ DAY OF _____, 20____.

OWNER CERTIFICATION FOR STORMWATER BMP'S

THE STORMWATER BMP'S ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY NEW BRITAIN TOWNSHIP.

PROPERTY OWNER

TOWNSHIP ENGINEER ACKNOWLEDGEMENT

THIS PLAN HAS BEEN REVIEWED BY THE TOWNSHIP ENGINEER ON THIS _____ DAY OF _____, 20____.

ENGINEER: _____

PLANNING COMMISSION ACKNOWLEDGEMENT

BUCKS COUNTY PLANNING COMMISSION NOTATION BCPC NO _____ PROCESSED AND REVIEWED. REPORT PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE. CERTIFIED THIS DATE _____

OWNER SIGNATURE BLOCK & ACKNOWLEDGEMENT

TO ALL WHOM THESE PRESENTS MAY COME, KNOW YE THAT I, _____,

OF _____, HAS LAID OUT UPON MY/OUR LAND SITUATED IN THE TOWNSHIP OF NEW BRITAIN, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA, CERTAIN LOTS ACCORDING TO THIS PLAN WHICH IS INTENDED TO BE FORTHWITH RECORDED. WITNESS OUR HAND AND SEAL THIS _____ DAY OF _____, 20____.

BY: _____, _____ DATE: _____
NAME TITLE

_____
CORPORATION

OWNER(S): _____

TITLE(S): _____

COMMONWEALTH OF _____

(OR IF NOT PENNSYLVANIA, STATE OF _____)

COUNTY OF _____

ON THIS _____ DAY OF _____, A.D., 20____, BEFORE ME A NOTARY PUBLIC, PERSONALLY APPEARED _____, OF _____ OWNER OF THE SUBJECT PROPERTY, AS SUCH, BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT ON ITS BEHALF FOR THE USES AND PURPOSES THEREIN SET FORTH.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL.

SEAL _____ NOTARY PUBLIC

COMMISSION EXPIRATION DATE

ENGINEER'S CERTIFICATION

ROBERT CUNNINGHAM, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS PLAN IS ACCURATE AND CORRECT AS INDICATED.

DATE: _____

ROBERT CUNNINGHAM, P.E.

PA PE076424

CERTIFICATION OF ACCURACY

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THE SURVEY AND PLAN SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT.

ERIC WILLIAMS, PLS — DATE: _____

SURVEYOR

LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- PROPOSED EASEMENT
- BUILDING SETBACK LINE
- LOT LINE
- PROPOSED WOODLANDS
- PROPOSED CONSERVATION EASEMENT
- PROPOSED MONUMENT
- PROPOSED IRON PIN

SITE PLAN NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN DATED FEBRUARY 10, 2022.
2. THE PROPOSED DEVELOPMENT IS TO BE SERVED BY ON-LOT WELLS AND ON-LOT SEPTIC SYSTEMS
3. FLOOD ZONE INFORMATION: A PORTION OF SUBJECT PARCEL AREA IS LOCATED INSIDE ZONE A OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 288 OF 532, MAP NO. 42017C0281J WHICH BEARS AN EFFECTIVE DATE OF MARCH 16, 2015
4. HENRY COURT WILL BE PRIVATELY OWNED AND MAINTAINED. A SHARED ACCESS EASEMENT AGREEMENT SHALL BE RECORDED ALONG WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
5. THE STORMWATER MANAGEMENT FACILITIES (AS SHOWN ON THIS PLAN) ARE A BASIC AND PERPETUAL PART OF THE STORMWATER MANAGEMENT SYSTEM OF THE HOMEOWNERS OR HOMEOWNERS ASSOCIATION, AND AS SUCH ARE TO BE PROTECTED AND PRESERVED, IN ACCORDANCE WITH THE APPROVED FINAL PLAN BY THE OWNER ON WHOSE LANDS THE FACILITY IS LOCATED, THE TOWNSHIP OF NEW BRITAIN AND/OR ITS AGENTS RESERVE THE RIGHT AND PRIVILEGE TO ENTER UPON SUCH LANDS FROM TIME TO TIME FOR THE PURPOSE OF INSPECTION OF THE STORMWATER MANAGEMENT FACILITIES IN ORDER TO DETERMINE THAT THE STRUCTURAL AND DESIGN INTEGRITY ARE BEING MAINTAINED BY THE OWNERS.
6. TOPSOIL SHALL NOT BE REMOVED FROM THE DEVELOPMENT SITE. TOPSOIL SHALL BE STRIPPED, STOCKPILED, AND REDISTRIBUTED ON THE SITE.
7. THE STORMWATER MANAGEMENT FACILITIES AND SHARED DRIVEWAY MAINTENANCE WILL BE PURSUANT TO A SHARED MAINTENANCE AGREEMENT BETWEEN ALL LOT OWNERS.
8. AT THE TIME OF INDIVIDUAL ZONING PERMIT APPLICATION FOR EACH LOT, THE NATURAL RESOURCES PROTECTION STANDARDS SHALL BE REVIEWED FOR COMPLIANCE AND SITES LAID OUT TO MINIMIZE NATURAL RESOURCE DISTURBANCE TO THE GREATEST EXTENT PRACTICABLE.
9. THE PROPOSED SHARED DRIVEWAY CONSISTS OF APPROXIMATELY 835 LINEAR FEET.
10. IF THE DISTURBANCE ENCROACHES INTO A DESIGNATED TREE PROTECTION ZONE RESULTING IN THE DAMAGE OR DESTRUCTION OF THE EXISTING TREES AND/OR VEGETATION DESIGNATED TO REMAIN, THE APPLICANT SHALL BE RESPONSIBLE FOR REPLACING THE DAMAGED OR DESTROYED VEGETATION ON AN EQUIVALENT CALIPER BASIS.
11. OBSTRUCTIONS TO VISIBILITY SHALL NOT BE PERMITTED WITHIN 2 FEET AND 7 FEET ABOVE THE EDGE OF PAVING. ANY PLANT MATERIALS PLACED WITHIN CLEAR SIGHT TRIANGLES SHALL BE PROPERLY MAINTAINED TO CONTINUALLY COMPLY WITH THE HEIGHT RESTRICTIONS AND THE TOWNSHIP HAS THE RIGHT TO ENTER THE AREA AND PERFORM MAINTENANCE IF DEEMED CRITICAL TO PUBLIC WELFARE PURSUANT TO A DECLARATION OF COVENANTS, RESTRICTIONS AND CONDITIONS APPROVED BY THE BOARD.
12. ALL MONUMENTATION SHALL BE SET BY A PROFESSIONAL LAND SURVEYOR AND ARE TO BE SET DURING CONSTRUCTION.
13. ALL PROPOSED LOTS MUST ACCESS HENRY COURT, NO LOTS SHALL HAVE DIRECT ACCESS TO KING ROAD.
14. THE AREA LOCATED BETWEEN THE TITLE LINE AND ULTIMATE RIGHT-OF-WAY LINE OF KING ROAD SHALL BE OFFERED TO NEW BRITAIN TOWNSHIP.
15. ALL PROPOSED LOTS ARE TO BE DEED RESTRICTED FROM FURTHER SUBDIVISION.
16. ALL DEAD TREES, LINE TREES AND BRANCHES INTERFERING WITH THE EXISTING OVERHEAD LINES SHALL BE REMOVED WITHIN THE PROPOSED ULTIMATE-RIGHT-OF-WAY.
17. A BLANKET EASEMENT IS PROVIDED TO THE TOWNSHIP TO CONDUCT INSPECTIONS AND MAINTENANCE OF STORMWATER FACILITIES AS REQUIRED.
18. AREAS NOT LOCATED IN THE LIMIT OF DISTURBANCE HAVE BEEN PROPOSED TO REMAIN IN EXISTING CONDITIONS.
19. ALL ROADWAY SIGNS REGULATORY (WARNING AND STREET NAME SIGNS) SHALL BE OF HIGH INTENSITY PRISMATIC MATERIAL MEETING MINIMUM ASTM TYPE III RETRO-REFLECTIVE STANDARDS.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS	
Description	Revised Per Township Engineer Review
Date	02/06/2023

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PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR EXCAVATION PLANNING AND 10 WORKING DAYS IN DESIGN STAGE — STOP & CALL!
Pennsylvania One Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

RECORD SITE PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C1.0 RECORD.DWG

HCE Job	1734	Scale	1"=60'	Designed	RC
Date	09/14/2022				
				Sheet	5 of 15

Drawing No.
C1.0

GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES, WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.THE
3. CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR INFORMATION TO THE OWNER AND OWNER'S ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM DEPICTED ON THE PLANS, FOR ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION NOT RELATED TO MEANS AND METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SPECIFIC SITEWORK ITEMS INSTALLED DIFFERENTLY THAN INTENDED AS DEPICTED ON THE PLANS IN THE ABSENCE OF SUBMITTING AND ADDRESSING WRITTEN REQUESTS FOR INFORMATION.
4. SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
5. PVC = POLYVINYLCHORIDE PIPE, HDPE = HIGH DENSITY POLYETHYLENE PIPE, RCP = REINFORCED CONCRETE PIPE
6. STORM DRAINAGE PIPING TO UTILIZE WATER TIGHT JOINTS.
7. COMPACTION CRITERIA FOR FILL PLACEMENT IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA GIVEN ELSEWHERE;

FILL AREA	PERCENT OF MAXIMUM MODIFIED PROCTOR DRY DENSITY
BUILDING FOOTPRINT	95%
PAVEMENT AND ROADWAYS	95%
SIDEWALKS	95%
LANDSCAPE AREAS	93%
TRENCH BACKFILL	SAME AS SURROUNDING AREA

8. PROTECT SUBGRADE FROM EXCESSIVE WHEEL LOADING DURING CONSTRUCTION, INCLUDING CONCRETE TRUCKS AND DUMP TRUCKS.
9. REMOVE AREAS OF FINISHED SUBGRADE FOUND TO HAVE INSUFFICIENT COMPACTION DENSITY TO DEPTH NECESSARY AND REPLACE IN A MANNER THAT WILL COMPLY WITH COMPACTION REQUIREMENTS BY USE OF MATERIAL EQUAL TO OR BETTER THEN BEST SUBGRADE MATERIAL ONSITE. SURFACE OF SUBGRADE AFTER COMPACTION SHALL BE HARD, UNIFORM, SMOOTH, STABLE, AND TRUE TO GRADE AND CROSS SECTION.
10. ALL CONCRETE, UNLESS OTHERWISE NOTED OR SPECIFIED BY REGULATORY AUTHORITIES, SHALL BE A MINIMUM OF 4,000 PSI..
11. NEW BRITAIN TOWNSHIP SHALL HAVE THE RIGHT TO ENTER PRIVATE PROPERTY TO INSPECT AND REPAIR, IF NECESSARY, ANY STORMWATER MANAGEMENT FACILITY.
12. ALL STORMWATER MANAGEMENT FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED OR MODIFIED WITHOUT PRIOR APPROVAL FROM NEW BRITAIN TOWNSHIP.
13. NO PORTION OF AN ON-LOT SEPTIC SYSTEM SHALL BE LOCATED IN A MANNER THAT WOULD BLOCK ANY STORMWATER DRAINAGE FROM ANY LOT.
14. ALL ACCESS DRIVES AND DRIVEWAYS SHALL BE PROVIDED WITH A STOPPING AREA OF 20 FEET, AT A MAXIMUM GRADE OF 3%, MEASURED FROM THE PRIVATE ACCESS EASEMENT.

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS IN A MANNER WHICH WILL NOT NEGATIVELY AFFECT ANY EXISTING USERS OF THESE UTILITIES.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
3. ANY EXISTING FEATURES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE OWNER, AT NO COST TO THE TOWNSHIP.
4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING THE EXISTING UTILITY SERVICE (WATER, SEWER, GAS AND ELECTRIC) TO THE PROPERTY AND ENSURE THAT THEY ARE PROPERLY DISCONNECTED FROM THE EXISTING UTILITIES AND RECONNECTED TO THE NEW SERVICES PROVIDED.
5. THE LOCATION OF THE EXISTING GAS MAINS ARE APPROXIMATE. THE CONTRACTOR SHOULD CONSULT LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION.
6. THE LOCATION OF EXISTING ELECTRIC LINES ARE APPROXIMATE. THE CONTRACTOR SHOULD CONSULT LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION.
7. ALL GAS WORK AND OTHER ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.
8. ALL ELECTRICAL WORK, TRANSFORMER PADS, AND ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS. MIN. DEPTH OF COVER OVER ELECTRIC, GAS, AND CABLE SHALL BE 2 FT.
9. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS, UTILITY LOCATIONS, CATHODIC PROTECTION AND INVERTS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DISRUPTIONS TO EXISTING UTILITIES SERVICES. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN BY THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
10. EIGHTEEN (18) INCHES VERTICAL CLEARANCE SHOULD BE PROVIDED AT ALL UTILITY CROSSINGS.
11. ALL FIRE HYDRANTS AND VALVES SHALL OPEN RIGHT (CLOCKWISE).
12. THE OWNER IS RESPONSIBLE FOR REPLACEMENT OF LANDSCAPING SHOULD DISTURBANCE BE REQUIRED FOR UTILITY REPAIRS.
13. 18 INCHES OF VERTICAL CLEARANCE OR 10 FEET OF HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN THE SANITARY SEWER AND ALL OTHER UTILITIES. OTHERWISE, CONCRETE ENCASEMENT OF THE SANITARY SEWER SHALL BE PROVIDED.
14. THERE SHALL NOT BE BUILT, INSTALLED, CONSTRUCTED, PLANTED OR LOCATED ANY TEMPORARY OR PERMANENT BUILDINGS OR STRUCTURES INCLUDING INFILTRATION BASINS, OR ANY TREES, SHRUBS, OR OTHER LANDSCAPING WITHIN 10 FEET OF SANITARY SEWER FACILITIES, EXCEPT TREES, SHRUBS, AND OTHER LANDSCAPING WHICH WILL NOT GROW TO MORE THAN 6 FEET IN HEIGHT.
15. PROPOSED ON-LOT WELLS ARE SUBJECT TO THE PROVISIONS OF THE WELL CONSTRUCTION STANDARDS, WHICH INCLUDES REQUIREMENTS FOR WELL PERMITTING, WATER QUALITY TESTING, AND WELL PRODUCTION CERTIFICATION.

DRAINAGE LEGEND

- EXISTING STORM PIPE
- EXISTING INLET (Ex.Inlet)
- EXISTING MANHOLE (D)
- PROPOSED STORM PIPE
- PROPOSED YARD INLET — CB=X GR. 185.56 INV 180.00
- PROPOSED CURB INLET — CB=X GR. 185.56 INV 180.00
- PROPOSED MANHOLE — MH=X RIM 185.56 INV 180.00

UTILITY LEGEND

- EXISTING SANITARY SEWER MAIN
- EXISTING SANITARY SEWER MANHOLE (Ex.San MH, S)
- EXISTING WATER MAIN AND VALVE (W)
- EXISTING FIRE HYDRANT
- PROPOSED SANITARY SEWER MAIN.
- PROPOSED SANITARY SEWER MANHOLE. — SAN. MH RIM 185.56 INV 180.00
- PROPOSED WATER MAIN (W)
- PROPOSED WATER VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY SERVICE LATERAL (S)
- PROPOSED WATER SERVICE LATERAL (W)
- PROPOSED TELEPHONE, ELECTRIC, & CABLE (T&E)

GRADING LEGEND

- EXISTING CONTOUR — 185
- EXISTING SPOT ELEVATION — 185.2 x
- PROPOSED CONTOUR — 185
- PROPOSED SPOT ELEVATION — 185.2 x

0 60 120 Feet

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REVISIONS

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THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

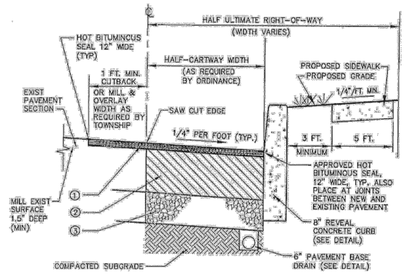
GRADING, DRAINAGE AND UTILITY PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C2.0 GRADING.DWG

HCE Job	1734		
Date	09/14/2022		
Scale	1"=60'	Designed	RC
		Sheet	6 of 15

Drawing No.
C2.0



① 1.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 9.5 mm MIX, PG 64-22, HMA WEARING COURSE, 3.0 TO 10.0 MILLION ESALS, SRL-M

② 4.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 25 mm MIX, PG 64-22, HMA BASE COURSE, 3.0 TO 10.0 MILLION ESALS

③ 6" 3A MODIFIED STONE SUBBASE (MATCH EXISTING IF GREATER)

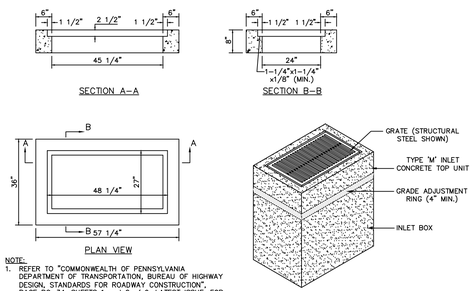
NOTE: NEW ROADS SHALL COMPLY WITH THE ABOVE SPECIFICATION

TYPICAL ROADWAY WIDENING SECTION DETAIL FOR RESIDENTIAL AND LOCAL ROADS

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 18901-5108 • (215) 345-4330
www.gilmore-assoc.com

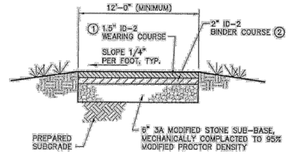
DATE:	LAST REVISED:	SCALE:	DRAWING No:
5/22/09		N.T.S.	3 OF 17



NOTE:
1. REFER TO "COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, BUREAU OF HIGHWAY DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION", PAGE RC-34, SHEETS 1 and 2 of 9, LATEST ISSUE, FOR NOTES AND SPECIFICATIONS REGARDING PRECAST INLET CONSTRUCTION.
2. ALL INLET TOP SHALL BE THE ENVIRONMENT TYPE.
3. ALL INLET IN AREAS TO BE PAVED ARE TO BE BACKFILLED WITH 2A MATERIAL.

TYPE M INLET DETAIL

REFER TO DRAWING C5.1 FOR OUTLET STRUCTURE DETAILS AND INFORMATION



ALTERNATE SPECIFICATION

① 1.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 9.5 mm MIX, PG 64-22, HMA WEARING COURSE, 0.3 TO 3 MILLION ESALS, SRL-M

② 2.0" SUPERPAVE ASPHALT MIXTURE DESIGN, 19mm MIX, PG 64-22, HMA BINDER COURSE, 0.3 TO 3 MILLION ESALS

RESIDENTIAL DRIVEWAY PAVING SECTION DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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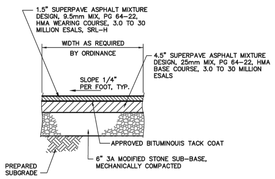

NON-RESIDENTIAL AND MULTI-RESIDENTIAL DRIVEWAYS, PARKING AREAS AND LOADING AREAS PAVING SECTION DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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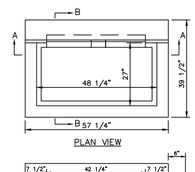
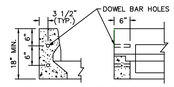
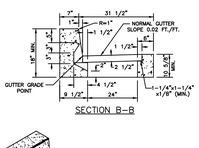
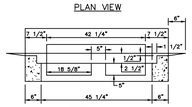
5/22/09		N.T.S.	8 OF 17

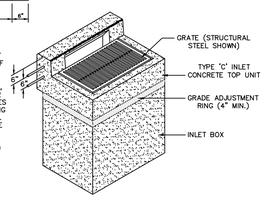




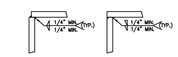


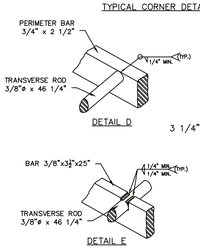


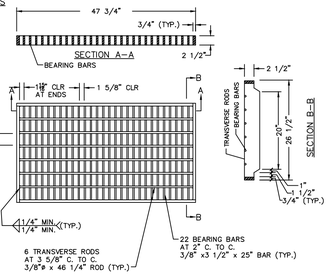
NOTE:
1. REFER TO "COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, BUREAU OF HIGHWAY DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION", PAGE RC-34, SHEETS 1 and 2 of 9, LATEST ISSUE, FOR NOTES AND SPECIFICATIONS REGARDING PRECAST INLET CONSTRUCTION.
2. ALL INLET TOPS SHALL BE THE ENVIRONMENTAL TYPE.
3. ALL INLETS IN AREAS TO BE PAVED ARE TO BE BACKFILLED WITH 2A MATERIAL.



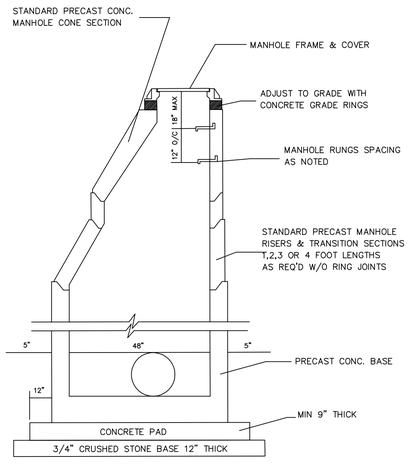
TYPE C INLET DETAIL





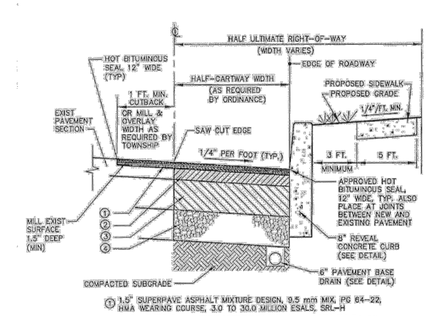


STRUCTURAL STEEL BICYCLE SAFE INLET GRATE DETAIL



NOTES:
1. PRECAST CONCRETE MANHOLES SHALL BE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB #72M) RC-39M, 'STANDARD MANHOLES, PRECAST MANHOLES AND MANHOLE STEPS'.
2. STEPS SHALL BE PROVIDED WHENEVER STRUCTURE EXCEEDS 4 FEET IN DEPTH.
3. STEP DIMENSIONS AND CONFIGURATION SHALL BE IN ACCORDANCE WITH PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB 172M), RC-39M.
4. STEP AND STEP INSTALLATION SHALL MEET ALL REQUIREMENTS OF ASTM C 478 AND C 497 FOR DIMENSIONS, LOAD RATING AND PULLOUT RESISTANCE.
5. PROVIDE FRAME AND GRATE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB 172M) RC-39M, 'STANDARD MANHOLES COVERS, FRAMES AND ADJUSTMENT RISERS'
6. THE CONTRACTOR SHALL PROVIDE CUT SHEETS TO ENGINEER TO REVIEW PRIOR TO CONSTRUCTION.
7. STORM MANHOLE COVERS SHALL HAVE THE WORD "STORM" ON THE COVER IN 2-INCH HIGH LETTERS.
8. STORM MANHOLES SHALLS BE THE ENVIRONMENT TYPE.

PRECAST CONCRETE STORM MANHOLE



① 1.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 9.5 mm MIX, PG 64-22, HMA WEARING COURSE, 3.0 TO 30.0 MILLION ESALS, SRL-H

② 2.0" SUPERPAVE ASPHALT MIXTURE DESIGN, 19 mm MIX, PG 64-22, HMA BINDING COURSE, 3.0 TO 30.0 MILLION ESALS

③ 5" SUPERPAVE ASPHALT MIXTURE DESIGN, 25 mm MIX, PG 64-22, HMA BASE COURSE, 3.0 TO 30.0 MILLION ESALS

④ 6" 3A MODIFIED STONE SUBBASE (MATCH EXISTING IF GREATER)

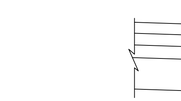
NOTE: NEW ROADS SHALL COMPLY WITH THE ABOVE SPECIFICATION

TYPICAL ROADWAY WIDENING SECTION DETAIL FOR ARTERIAL, COLLECTOR, AND NON-RESIDENTIAL ROADS

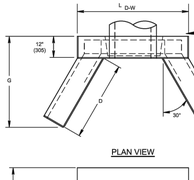
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 18901-5108 • (215) 345-4330
www.gilmore-assoc.com

DATE:	LAST REVISED:	SCALE:	DRAWING No:
5/22/09		N.T.S.	2 OF 17



PAVEMENT TIE-IN



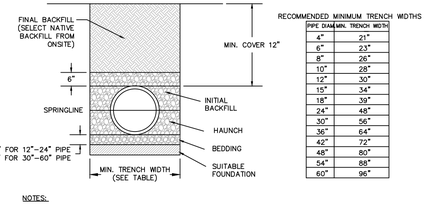
TYPE	INSIDE PIPE DIA. IN./(mm)	WEIGHT LB./(kg)	A IN./(mm)	B IN./(mm)	C IN./(mm)	D IN./(mm)	E IN./(mm)	F IN./(mm)	G IN./(mm)
I	12–15 (305–381)	2400 (1140)	96 (1422)	39 (991)	35 (889)	36 (914)	12 (305)	88 (2184)	44 (1016)
K	18–21 (457–533)	4800 (2214)	114 (1828)	48 (1219)	38 (914)	38 (991)	30 (508)	98 (2438)	48 (1219)
S	24–27 (610–686)	8270 (3280)	138 (1727)	52 (1321)	40 (1016)	42 (1067)	24 (610)	104 (2642)	48 (1219)
W	30–36 (762–914)	9200 (4180)	78 (2007)	65 (1650)	54 (1372)	63 (1600)	28 (711)	134 (3404)	67 (1702)
V	42 (1067)	8500 (4300)	88 (2235)	71 (1803)	54 (1372)	63 (1600)	28 (711)	143 (3632)	67 (1702)
*J	48 (1219)	12700 (5767)	88 (2438)	78 (1981)	66 (1676)	81 (2057)	30 (762)	170 (4318)	83 (2108)
*JS	54–60 (1371–1524)	20440 (9277)	132 (3350)	102 (2591)	88 (2438)	102 (2591)	30 (762)	228 (5486)	102 (2540)
*JSS	72 (1830)	24800 (11248)	142 (3607)	120 (3048)	102 (2896)	108 (2743)	30 (762)	243 (6172)	108 (2890)

SPECIFICATIONS:
1. CONCRETE TO OBTAIN A STRENGTH OF 4,000 PSI (27mPA) IN 28 DAYS.
2. REINFORCING STEEL TO HAVE A YIELD STRENGTH OF 60,000 PSI (414mPA).
3. TYPE MARKED BY * INDICATES WALL MAY BE FABRICATED IN (2) PIECES.

PRECAST CONCRETE STRUCTURES TO BE WET CAST AS MANUFACTURED BY ATLANTIC CONCRETE PRODUCTS OR APPROVED EQUAL.

CONCRETE END WALLS **2001 FT-29**

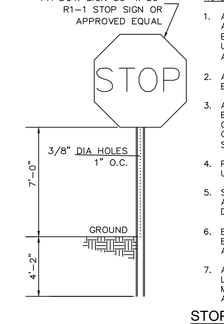
NOTES:
1. REFER TO "COMMON WEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, BUREAU OF HIGHWAY DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION" PUBLICATION 72M.



RECOMMENDED MINIMUM TRENCH WIDTHS	
PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm–600mm); 6" (150mm) FOR 30"–60" (750mm–900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"–60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

HDPE PIPE DETAIL



NOTES
1. ALL POSTS SHALL BE BREAKAWAY POSTS AND OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
2. ALL POSTS SHALL BE EMBEDDED 4'-2" MINIMUM BELOW GRADE.
3. ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT, AND HOLES PUNCHED AND DRILLED BEFORE GALVANIZING. GALVANIZING SHALL BE IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123-78 (OR LATEST REVISED).
4. POSTS MAY BE STEEL, ALUMINUM, OR TWO-PIECE U-POST.
5. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBERS AS SHOWN ON THIS DETAIL AND DIRECTIONAL SIGN SHEET.
6. BOLTS SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT.
7. ALL TRAFFIC AND PEDESTRIAN SIGNAGE AND LOCATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL CURRENT AMENDMENTS.

STOP SIGN

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS		
	Date	Description
	02/06/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG !!!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION, EXCAVATION & 10 WORKING DAYS IN DESIGN STAGE – STOP & CALL
Pennsylvania One Call System, Inc. 1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITIES PRIOR TO COMMENCES PRIOR TO ANY EXCAVATION.

THE ESTATES AT HILL TOP
396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

CONSTRUCTION DETAILS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT THOMAS CUNNINGHAM PE076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C2.1 DETAILS.DWG

HCE Job	1734		
Date	09/14/2022	Scale	N.T.S.
		Designed	RC
		Sheet	7 of 15

Drawing No.
C2.1

LIMIT OF DISTURBANCE = 11.01 ACRES

PROJECT SITE BOUNDARY = 36.17 ACRES

GENERAL NOTES

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. UNDER PENNSYLVANIA LAW THE CONTRACTOR IS REQUIRED TO NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM AT 1-800-242-1776 PRIOR TO THE START OF HIS WORK, SO THAT ALL THE VARIOUS UNDERGROUND UNTILITY OPERATORS WILL BE ABLE TO LOCATE THEIR OWN UTILITIES.
3. THERE ARE NO HQ OR EV WATERSHEDS LOCATED WITHIN THE PROJECT AREA.
4. THERE ARE NO RIPARIAN BUFFERS EXISTING OR PROPOSED AS PART OF THIS PROJECT (WITHIN OR OUTSIDE THE LIMIT OF DISTURBANCE). ADDITIONALLY, RIPARIAN BUFFER OFFSETS ARE NOT NECESSARY.
5. THERE ARE NO WETLANDS WITHIN THE PROJECT AREA.
6. THERE ARE NO INFILTRATION BMPS LOCATED OUTSIDE PROPOSED GRADING AREAS.
7. THE EXISTING SITE IS NOT UNDERLAIN BY ANY NATURALLY OCCURRING GEOLOGIC FORMATIONS OR SOIL CONDITIONS WHICH COULD CAUSE POLLUTION DURING EARTH DISTURBANCE. THEREFORE, NO LOCATIONS ARE IDENTIFIED ON THIS PLAN AND NO DETAILS ARE PROVIDED FOR DISPOSAL OF SUCH MATERIAL.

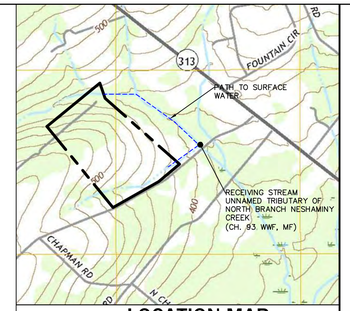
CRITICAL STAGES OF PCSM PLAN IMPLEMENTATION

THE INSTALLATION AND/OR CONVERSION OF EROSION CONTROL FACILITIES TO STORMWATER FACILITIES, INCLUDING THE INFILTRATION BASIN WITH MRC, SHALL BE OVERSEEN BY A LICENSED PROFESSIONAL ENGINEER OR THEIR DESIGNEE.

Soils Legend

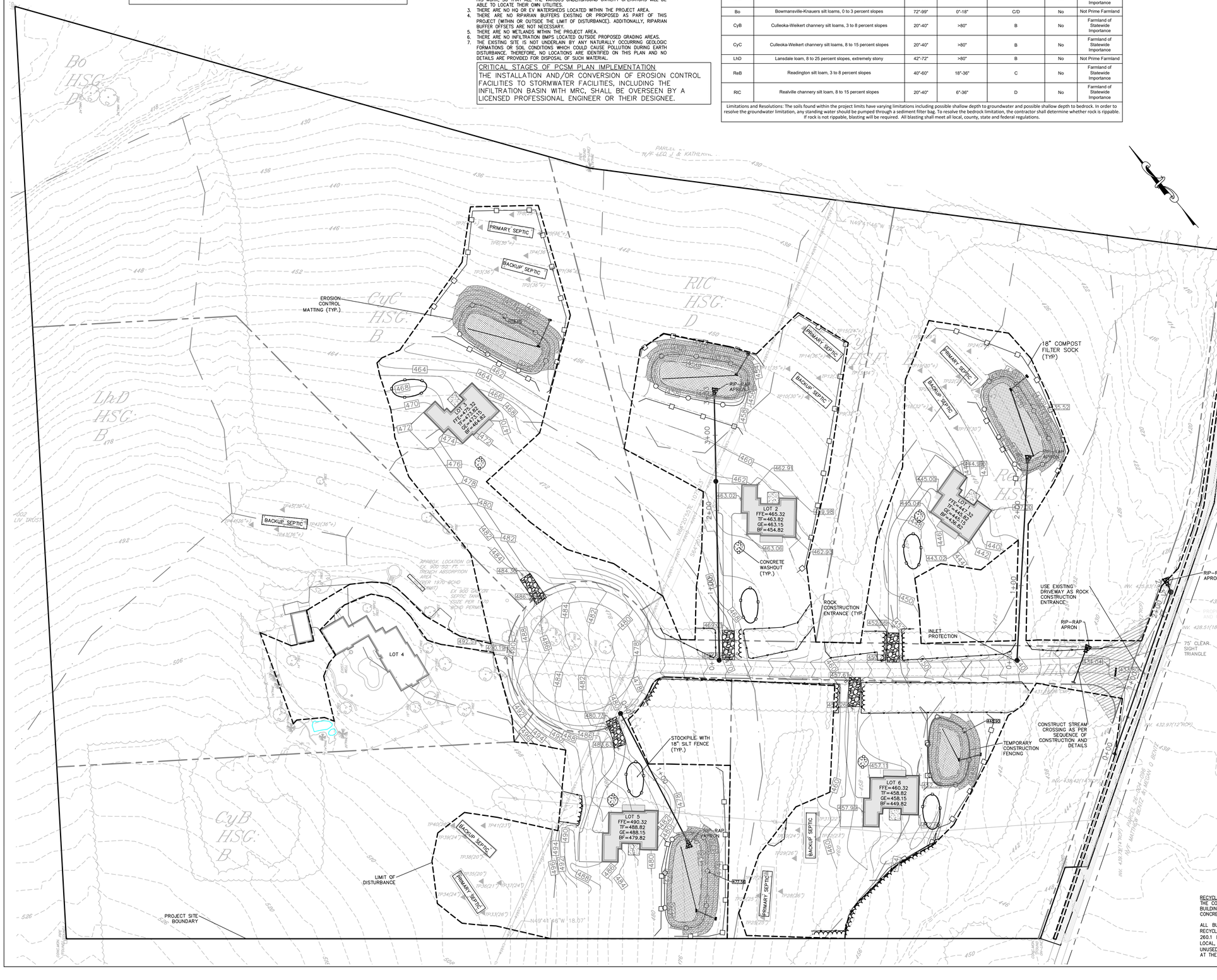
Type	Name	Depth to Bedrock	Depth to Seasonal High Water Table	HSG	Hydric Soil	Agricultural Soil
AbB	Abbotstown silt loam, 3 to 8 percent slopes	40"-60"	6"-18"	D	No	Farmland of Statewide Importance
Bo	Bowmansville-Knauers silt loams, 0 to 3 percent slopes	72"-99"	0"-18"	C/D	No	Not Prime Farmland
CyB	Culleoka-Weikert channery silt loams, 3 to 8 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
CyC	Culleoka-Weikert channery silt loams, 8 to 15 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
LhD	Lansdale loam, 8 to 25 percent slopes, extremely stony	42"-72"	>80"	B	No	Not Prime Farmland
ReB	Readington silt loam, 3 to 8 percent slopes	40"-60"	18"-36"	C	No	Farmland of Statewide Importance
RlC	Realville channery silt loam, 8 to 15 percent slopes	20"-40"	6"-36"	D	No	Farmland of Statewide Importance

Limitations and Resolutions: The soils found within the project limits have varying limitations including possible shallow depth to groundwater and possible shallow depth to bedrock. In order to resolve the groundwater limitation, any standing water should be pumped through a sediment filter bag. To resolve the bedrock limitation, the contractor shall determine whether rock is rippable. If rock is not rippable, blasting will be required. All blasting shall meet all local, county, state and federal regulations.



LOCATION MAP

REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAP



SEQUENCE OF CONSTRUCTION

NOTES:

- SITE DEVELOPMENT OPERATIONS SHOULD BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING GENERAL SEQUENCE OF OPERATIONS. THE CONTRACTOR MAY DEVIATE FROM THE STAGING OF PERMANENT SITE IMPROVEMENT CONSTRUCTION ITEMS, WITH APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR. DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENT CONTROL MEASURES SHOULD NOT OCCUR WITHOUT APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR AND SITE ENGINEER. NO VERTICAL CONSTRUCTION MAY OCCUR UNTIL SUBGRADE IS SET.
- THE RAIN GARDENS SHALL BE INSTALLED BEFORE THE CONSTRUCTION OF ANY BUILDINGS OR SITE IMPROVEMENTS, UNLESS OTHERWISE APPROVED BY THE BOARD AND THE BUCKS COUNTY CONSERVATION DISTRICT. A PRELIMINARY BASIN AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.

1. CONTACT THE BUCKS COUNTY CONSERVATION DISTRICT (215-345-7577), NEW BRITAIN TOWNSHIP, AND THE TOWNSHIP ENGINEER AT LEAST THREE (3) WORKING DAYS PRIOR TO SITE DISTURBANCE.
2. EACH STAGE OF THE SEQUENCE OF CONSTRUCTION MUST BE COMPLETED PRIOR TO INITIATION OF THE NEXT STAGE OF THE SEQUENCE OF CONSTRUCTION. CONSTRUCTION MAY OVERLAP INTO A SUBSEQUENT PHASE AS LONG AS ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED IN THE PREVIOUS PHASE.
3. INSTALL CONSTRUCTION ENTRANCE AT SITE ACCESS, STOCKPILE, COMPOST FILTER SOCK AND TREE PROTECTION FENCE WHERE SHOWN ON THE PLAN. INSTALL PROTECTION FENCE AROUND FUTURE BMPS.
4. STRIP TOPSOIL AND STOCKPILE WHERE SHOWN ON PLAN. ALL STRIPPED TOPSOIL STOCKPILES SHALL HAVE TEMPORARY SEEDING INSTALLED. ROUGH GRADE SITE, DRIVEWAY/PARKING AND BUILDING PADS. INSTALL TEMPORARY EROSION CONTROL BLANKETS.
5. PRIOR TO VERTICAL CONSTRUCTION A STABLE BASE WILL BE ESTABLISHED AND MAINTAINED, TO AVOID ACCELERATED EROSION.
6. A PRELIMINARY RAIN GARDEN AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.
7. BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. BUILDING CONSTRUCTION MAY COINCIDE WITH ADDITIONAL SITE WORK, INCLUDING UTILITY AND STREET CONSTRUCTION, THAT IS LISTED IN THIS SEQUENCE OF CONSTRUCTION. PRIOR TO VERTICAL CONSTRUCTION, SUBGRADE IS TO BE SET, INCLUDING BUT NOT LIMITED TO FOUNDATION WORK, STABLE SUBGRADE/SUBBASE, SUBSURFACE UTILITY WORK, AND DRIVEWAY/PARKING SUBGRADE.
8. INSTALL WATER, SEPTIC, AND STORM SEWER SYSTEM STARTING AT THE DOWNSTREAM ENDS AND WORKING UPSTREAM. ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH DAY. MAKE OFFSITE UTILITY CONNECTIONS AND INSTALL OFFSITE WATER AND SANITARY SEWER, INSTALL CURB, SUBBASE AND BASE COURSE FOR THE DRIVEWAY/PARKING.
9. COMPLETE FINAL GRADING. AFTER FINAL GRADING IS COMPLETED, APPLY PERMANENT SEEDING MIXTURE AND INSTALL ALL REQUIRED PLANTINGS, FENCING, AND LIGHTING. LIGHTING AND HENRY COURT BINDER COURSE SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF ANY USE AND OCCUPANCY PERMITS. ONCE ALL BUILDINGS ARE COMPLETED, FLUSH ALL AFFECTED STORM DRAINAGE PIPES OF ACCUMULATED SILT.
10. FINAL GRADE STORMWATER FACILITY UPON COMPLETING AND STABILIZING EACH TRIBUTARY AREA. INSTALLATION SHALL BE IN ACCORDANCE WITH THE PCSM PLANS, NOTES, AND DETAILS. INSTALLATION OF STORMWATER FACILITY IS A CRITICAL STAGE OF THE CONSTRUCTION SEQUENCE.
11. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT OR ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
12. UPON COMPLETE STABILIZATION OF SITE, REMOVE EROSION CONTROL DEVICES, REMOVE TEMPORARY ORFICE PLATES AND CONVERT SEDIMENT TRAP TO PERMANENT STORMWATER BASIN BMPS PER THE CONSTRUCTION SEQUENCES AND DETAILS FOUND ON THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. THE SITE SHALL BE CONSIDERED STABILIZED WHEN THE PERMANENT VEGETATION HAS PROVIDED A 70% GROUNDCOVER.
13. AFTER CONSTRUCTION IS COMPLETED, INSTALL WEARING COURSE FOR THE DRIVEWAY. REPAIR ANY DAMAGED CURBING, STORM SEWER STRUCTURES, SANITARY SEWER STRUCTURES, LANDSCAPING, LIGHTING, SIDEWALK, DRIVEWAYS, AND/OR ANY OTHER AMENITIES FROM INSTALLATION OF WEARING COURSE.

LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- 208 EXISTING CONTOUR
- 208 PROPOSED CONTOUR
- DOWNSPOUT LOCATION
- COMPOST FILTER SOCK
- LIMIT OF DISTURBANCE
- PROJECT SITE BOUNDARY
- SOILS LINE
- ReB SOILS TYPE
- CONSTRUCTION FENCE
- 12" SILT SOCK

0 60 120 Feet

RECYCLING/ DISPOSAL OF MATERIALS

THE CONSTRUCTION WASTES ANTICIPATED INCLUDE DEMOLITION MATERIALS FROM THE BUILDING AND SITE DEMOLITION AND EXCESS BUILDING MATERIAL SUCH AS CONCRETE, WOOD, ETC.

ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS	
Date	Description
02/08/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG!!!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR EXCAVATION AND DEMOLITION 10 WORKING DAYS IN DESIGN STAGE -- STOP & CALL
Pennsylvania One-Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT ALL UTILITIES PRIOR TO ANY EXCAVATION

THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EROSION AND SEDIMENT CONTROL PLAN

ROBERT THOMAS CUNNINGHAM, ENGINEER, PE076424, COMMONWEALTH OF PENNSYLVANIA, REGISTERED PROFESSIONAL

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File No.
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Date	09/14/2022				

Sheet 8 of 15

Drawing No.
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CLEAN FILL NOTE:

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL RESIDE WITH THE OPERATOR.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)

ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

EROSION / SEDIMENT CONTROL PLAN STANDARD NOTES

STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET; STOCKPILE SLOPES MUST NOT EXCEED 2L:1V.

THE OPERATOR/RESPONSIBLE PERSON (O/RP) ON SITE SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.

IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE O/RP SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

THE O/RP SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE BUCKS COUNTY CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS REGARDLESS OF THEIR LOCATIONS.

ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER UNDISTURBED AREAS.

A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.

EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, THE O/RP SHALL INVITE ALL CONTRACTORS INVOLVED IN THAT ACTIVITY, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN DESIGNER AND THE BUCKS COUNTY CONSERVATION DISTRICT TO A PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED IN THAT ACTIVITY SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INC. AT 1-800-242-1776 TO DETERMINE ANY UNDERGROUND UTILITIES LOCATIONS.

IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITY CEASES, THE O/RP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT SPECIFIED RATES. DISTURBED AREAS THAT ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS.

DISTURBED AREAS THAT ARE AT FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% (PERCENT) VEGETATIVE OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

UPON THE INSTALLATION OF TEMPORARY SEDIMENT BASIN RISER(S), A QUALIFIED SITE REPRESENTATIVE SHALL CONDUCT AN IMMEDIATE INSPECTION OF THE RISER(S), WHEREUPON THE BUCKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS SEALED (WATERTIGHT).

AT STREAM CROSSINGS, A 50-FOOT BUFFER SHALL BE MAINTAINED. ON BUFFERS, CLEARINGS, SOD DISTURBANCES AND EXCAVATIONS, EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITY SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE AVOIDED WITHIN BUFFER ZONES.

UNTIL A SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, RE-SEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED, WILL BE REQUIRED.

SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN SOIL STOCKPILES AND STABILIZED.

ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

SEEDING NOTES:

TEMPORARY SEEDING :

1. TEMPORARY SEEDING SHALL BE DONE IN AREAS WHERE NO ACTIVITY WORK WILL BE PERFORMED. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY.
2. DURING NON-GERMINATING PERIODS, ONLY MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. AREAS MULCHED DURING THE NON-GERMINATING PERIODS, MUST BE LIMED, FERTILIZED, SEEDED, AND MULCHED IMMEDIATELY FOLLOWING THE END OF THE NON-GERMINATING PERIODS.
3. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE (1) YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEED MIXTURE.
4. DISTURBED AREAS WHICH ARE AT EITHER FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
5. TEMPORARY SEEDING STEPS:
   A. APPLY AGRICULTURAL LIMESTONE AT A RATE OF ONE (1) TON PER ACRE. (5 POUNDS PER, 1000 SQUARE FEET)
   B. APPLY FERTILIZER AT THE RATE OF 50-50-50 PER ACRE.
   C. WORK THE LIMESTONE AND FERTILIZER INTO THE SOIL.
   D. UTILIZING THE FOLLOWING SEEDING TYPES, RATES AND TIME SCHEDULE :

TEMPORARY SEEDING

SEASON	RATE	TYPE
MARCH 1 TO JUNE 15	1 LB./1000 SF	ANNUAL RYEGRASS
MAY 15 TO SEPT 15	1 LB./1000 SF	SUDAN GRASS
SEPT 15 TO OCT 15	168 LB./AC	WINTER RYE

   E. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.

6. ALL SEED SHALL BE LABELED, DATED AND QUALITY CONSISTENT WITH SECTION NO. 2

PERMANENT SEEDING:

1. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
2. SEEDING SHALL BE DONE DURING PERIODS FROM APRIL 15TH TO OCTOBER PT, UNLESS OTHERWISE DIRECTED. IF SEEDING IS DONE AFTER OCTOBER 1", DORMANT SEED MUST BE USED AND DISTURBED AREAS MUST BE MULCHED.
3. DISTURBED FINAL GRADED AREAS AND DRAINAGE SWALES WILL BE PERMANENTLY SEEDED AS FOLLOWS:
   A. MINIMUM OF 4" OF TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE SEEDED. TOPSOIL SHALL BE FREE OF STONES, STICKS, WASTE MATERIAL AND SIMILAR DEBRIS. FROZEN GROUND SHALL NOT BE SPREAD AS TOPSOIL AND TOPSOIL SHALL NOT BE SPREAD OVER FROZEN GROUND.
   B. A SOIL ANALYSIS IS RECOMMENDED, HOWEVER, IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AND FERTILIZER AT RATES RECOMMENDED BELOW (OR AS SUGGESTED BY THE SOIL TEST RESULTS (ONE (1) TEST PER 25 ACRES)).
   C. THE LIMESTONE AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO DEPTHS OF 3 TO 4 INCHES. D. GRASS SHALL NOT BE PLANTED AFTER HEAVY RAIN OR WATERING.
   D. ALL SEED USED SHALL BE LABELED IN ACCORDANCE WITH THE U.S. DEPARTMENT OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT IN EFFECT AT THE TIME OF PURCHASE. INERT MATTER SHALL NOT EXCEED 15% AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE.
   E. SMOOTH AND FIRM SEED BED WITH CULTIPACKER OR SIMILAR EQUIPMENT PRIOR TO SEEDING. APPLY SEED UNIFORMLY BY BROADCASTING, DRILLING OR HYDRO SEEDING. COVER SEEDS WITH 1/2" OF SOIL WITH SUITABLE EQUIPMENT.
   F. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.

PERMANENT SEEDING FOR NORMAL MOWED LAWN AREAS:

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE AND RED TOP 12%
OCT 1 TO MARCH 1 & JUNE 1 TO AUG 1	2 LBS./1000 SF	RED TOP*

((*) USE DORMANT SEED, UNIFORMLY APPLIED, WORKING INTO A DEPTH OF 1/4 INCH. THE USE OF MULCH IS REQUIRED. THE USE OF NETTING OR EROSION CONTROL MATS MAY BE REQUIRED.)

PERMANENT SEEDING FOR SPECIAL AREAS
(SWALES, POND EMBANKMENTS, LEVEES, DIVERSION CHANNELS, ETC):

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE 80% AND RYEGRASS 20%

NOTE : SEEDING PERIODS AND SPECIFICATIONS MAY VARY DUE TO SITE CONDITIONS AND VARIANCES FROM THE TIME THIS REPORT IS WRITTEN AND APPROVED. IT MAY BE NECESSARY TO ADAPT SEED SPECIFICATION, VARIETIES, AND QUALITIES. FOR SPECIAL CONDITIONS CONSULT "GUIDELINE FOR RECLAMATION OF SEVERELY DISTURBED AREAS", PENNSYLVANIA STATE UNIVERSITY.

4. FERTILIZER : A SOIL ANALYSIS IS RECOMMENDED BUT IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AT A RATE OF FOUR (4) TONS/ACRE AND 10-20-20 FERTILIZED AT A RATE OF 50 LBS. PER 1000 SF. THESE MATERIALS WILL BE UNIFORMLY APPLIED AND WORKED INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES. IMMEDIATELY BEFORE SEEDING, A 1 0- 1 0- 10 FERTILIZER WILL BE WORKED INTO THE SURFACE AT A RATE OF 10 LBS. PER 1000 SF.
5. HYDRO SEEDING: LIME AND SEED SHALL BE AS SPECIFIED ABOVE, AND FERTILIZER SHALL BE APPLIED AT A RATE OF 40-80. CROWN VETCH SHALL BE INOCULATED AT FOUR TIMES THE MANUFACTURER'S RATE. SHOULD FERTILIZER BE APPLIED WITH THE INOCULANT, THE MIXTURE SHALL NOT REMAIN IN A SLURRY FOR MORE THAN ONE HOUR. WOOD CELLULOSE FIBER, APPLIED AT A RATE OF 35 LBS. PER 1000 SF, MAY BE APPLIED AS PART OF THE SLURRY IN LIEU OF MULCHING. SYNTHETIC MULCH BINDER, SUCH AS CURASOL, DCA-70, TERRE-TACK OR AN APPROVED EQUAL SHALL BE USED PER THE MANUFACTURER'S INSTRUCTIONS TO ANCHOR THE MULCH.
6. MULCHING: MULCHING SHALL BE APPLIED AS FOLLOWS:
   A. STRAW - SHALL BE ALL DRIED AND FREE FROM UNDESIRABLE SEEDS AND COURSE MATERIAL, APPLY AT A RATE OF 115 TO 150 LBS. PER 1000 SF OR 3 TONS PER ACRE. MULCHED AREAS SHALL BE CHECKED PERIODICALLY AND IMMEDIATELY AFTER STORMS AND WIND. DAMAGED OR MISSING MULCH SHALL BE REPLACED. A TACKIFIER APPLIED AFTER STRAW IS RECOMMENDED. TACKIFIER MAY BE ASPHALT OR POLYMER SPRAY. APPLY AT A RATE RECOMMENDED BY THE MANUFACTURER WITH SUITABLE EQUIPMENT. IN LIEU OF MANUFACTURERS RECOMMENDATIONS APPLY AT A RATE OF .04 TO .06 GALLONS PER SQUARE YARD.
   B. NETTING / EROSION CONTROL BLANKETS - THE USE AND INSTALLATION OF EROSION CONTROL BLANKETS OR NETTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND SHALL BE SELECTED FOR THE PROPER APPLICATION AND CONDITIONS.

UTILITY TRENCHING GUIDELINES:

1. CONSTRUCTION REQUIREMENTS -
   A. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
   B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
   C. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   D. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING AS REQUIRED, TO A FACILITY FOR REMOVAL OF SEDIMENTS IN ACCORDANCE WITH PADEP GUIDELINES
   E. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.
2. EXCEPTIONS - IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
   A. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
   B. IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

BMP MAINTENANCE

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION STABILIZATION, AND MAINTENANCE OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE PROPER CONSTRUCTION AND STABILIZATION OF PERMANENT CONTROL MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.

DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING INSPECTIONS OF THE BMPS AFTER EACH RUNOFF EVENT AS WELL AS ON A WEEKLY BASIS. THE CONTRACTOR SHALL KEEP A LOG OF ALL INPECTIONS AND MAINTENANCE PERFORMED ON THE BMPS

THE OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PERMANENT CONTROL MEASURES.

SOIL SEDIMENT REMOVED FROM ANY TEMPORARY CONTROL MEASURE DURING REGULAR MAINTENANCE WILL BE INCORPORATED BACK INTO THE EARTHWORK AS FILL ON THE SITE. SOIL SEDIMENT MATERIAL SHALL BE DISTRIBUTED ON-SITE WITHOUT CHANGING DRAINAGE PATTERNS DURING A SPECIFIC CONSTRUCTION STAGE.

COMPOST FILTER SOCK WILL BE INSPECTED ONCE A WEEK OR AFTER EVERY STORM EVENT, WHICHEVER COMES FIRST. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY. ACCUMULATED SEDIMENTS WILL BE REMOVED AS REQUIRED TO KEEP THE SOCK FUNCTIONAL. DEPOSITS WILL BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK. UNDERCUTTING OR EROSION OF THE TOE ANCHOR OF THE COMPOST FILTER SOCK WILL BE REPLACED IMMEDIATELY WITH ROCK FILTER OUTLETS. ANY MANUFACTURER'S RECOMMENDATIONS WILL BE ADHERED TO FOR REPLACING COMPOST FILTER SOCK DUE TO WEATHERING.

THE CONSTRUCTION ENTRANCE WILL BE INSPECTED AT THE END OF EACH WORK DAY. THE THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE.

AT THE END OF EACH CONSTRUCTION DAY, ANY SEDIMENT DEPOSITED ON PUBLIC ROADWAYS, WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER WILL NOT BE PERMITTED.

LIMITING EXPOSED EXTENT AND DURATION OF DISTURBED AREAS THE INITIAL PHASE OF THE PROPOSED PROJECT CONSISTS OF ESTABLISHING THE SOIL EROSION CONTROL MEASURES IN A SEQUENCE APPROPRIATE TOWARD LIMITING SOIL EROSION. THE EXTENT OF DISTURBED LAND HAS BEEN LIMITED TO INCLUDE ONLY THOSE AREAS REQUIRED FOR THE DEVELOPMENT OF THE SUBJECT SITE. ALL SEDIMENT AND EROSION CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED. THE SEQUENCE OF CONSTRUCTION ACTIVITIES IS OUTLINED IN THE SEQUENCE OF CONSTRUCTION CONTAINED HEREIN AND ON THE DRAWINGS.

PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION

THE PROJECT PROPOSES TO MINIMIZE DISTURBANCE TO THE EXISTING VEGETATION AT THE SITE BY ONLY PROPOSING DISTURBANCE IN THE AREA WHERE NEEDED. THE SITE VEGETATION PROPOSED FOR DISTURBANCE IS MAINLY SCRUB VEGETATION AND VINES WHICH ARE CURRENTLY DETRIMENTAL TO THE LARGE TREES ON THE SOUTHERN PROPERTY LINE.

MINIMIZE SOIL COMPACTION THE PROJECT DESIGN LIMITS THE BULK/ MASS EARTHWORK TO BE PERFORMED AS MUCH AS POSSIBLE. ADDITIONALLY, SOIL COMPACTION WILL NOT BE REQUIRED OTHER THAN IN PROPOSED IMPERVIOUS AREAS.

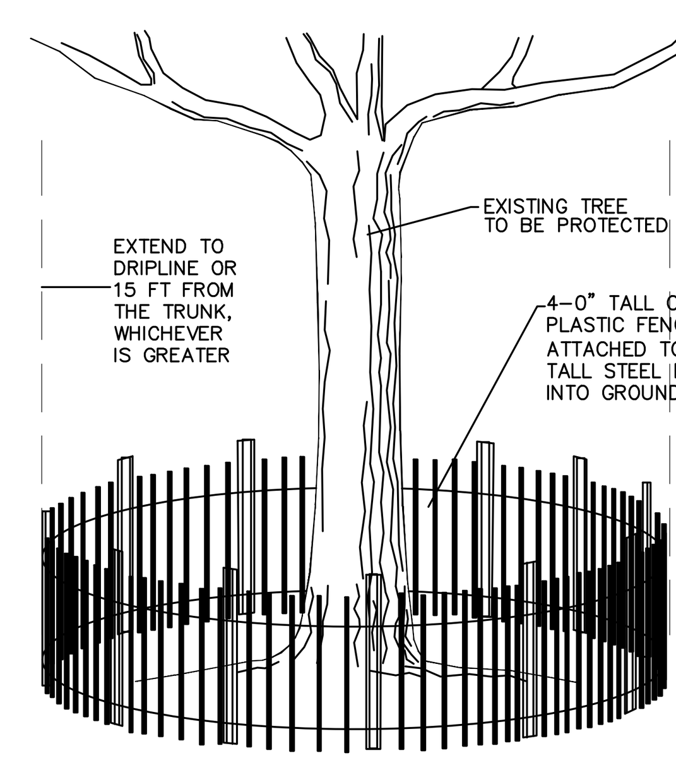
FEATURES AND MEASURES TO MINIMIZE STORMWATER RUNOFF TEMPORARY STABILIZATION: UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED. THE DISTURBED AREAS WILL ALSO BE MULCHED WITH UNROTTED STRAW OR SALT HAY. TEMPORARY STABILIZATION MEASURES ARE SPECIFIED ON SOIL EROSION AND SEDIMENT POLLUTION CONTROL DETAIL PLANS.

PERMANENT STABILIZATION: ALL SLOPES AND DISTURBED AREAS SHALL BE STABILIZED WITH PERMANENT SEEDING AND LANDSCAPING AS SOON AS POSSIBLE AFTER THE FINAL EARTHMOVING AND CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. AREAS THAT ARE PROPOSED TO HAVE SPECIFIC LINING SHALL BE STABILIZED WITH THE SPECIFIED LINING AS SOON AS THE EARTHMOVING AND CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. TEMPORARY SOIL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL A UNIFORM EROSION RESISTANT PERENNIAL VEGETATIVE COVER OF THE DISTURBED AREA IS ESTABLISHED. PERMANENT STABILIZATION MEASURES ARE SPECIFIED ON THE EROSION AND SEDIMENT POLLUTION CONTROL DETAIL PLANS.

SOLIDS SEPARATION: PRIOR TO ANY SITE DISTURBANCE OR CONSTRUCTION ACTIVITIES, A GRAVEL BUFFER WILL BE INSTALLED AT THE EXISTING DRIVEWAYS TO SERVE AS A CONSTRUCTION ENTRANCE. IN ADDITION, FILTER FABRIC FENCING WILL BE INSTALLED AROUND THE PROJECT AREA, DOWNGRADIENT FROM ANY DISTURBANCE, TO PREVENT SEDIMENT FROM LEAVING THE SITE. FILTER FABRIC SILT FENCING WILL BE CONSTRUCTED AND WILL REMAIN OPERATIONAL UNTIL PERMANENT CONTROL MEASURES ARE IN PLACE.

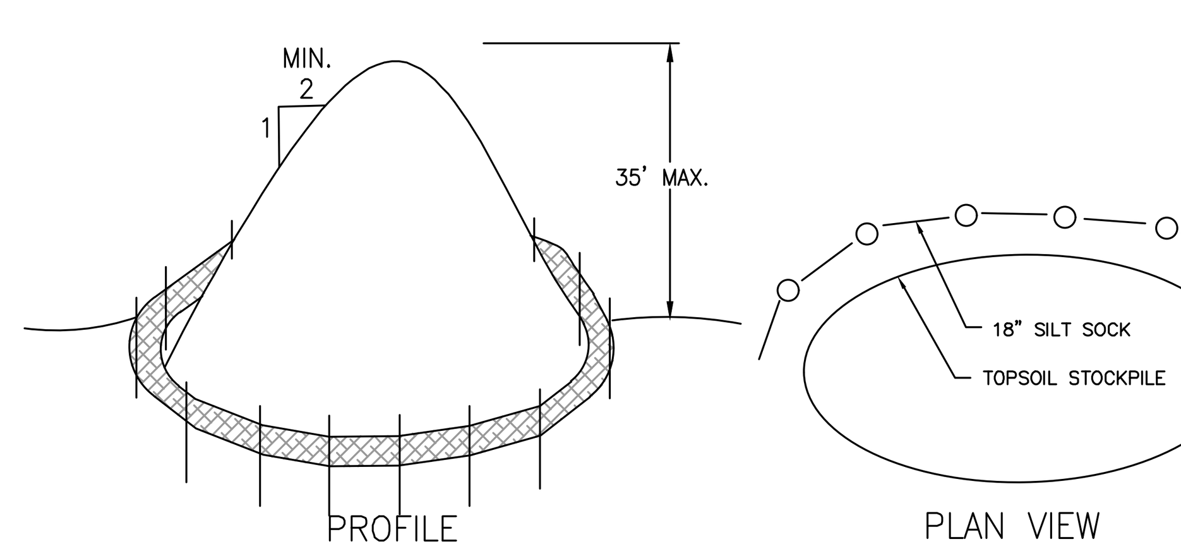
TREE PROTECTION NOTES

A. Prior to any site work, clearing, tree removal, grading, or construction, the tree protection area shall be delineated by the following methods:
(1) The tree protection area that is delineated on the site prior to construction shall conform to the approved development plans.
(2) Forty-eight inch high orange snow fence or other suitable fence, such as super silt fence, mounted on steel posts located 8 feet on center, shall be placed along the boundary of the tree protection area.
(3) Trees being removed shall not be felled, pushed or pulled into a tree protection area or into trees that are to be preserved.
(4) Grade changes and excavations shall not encroach upon the Tree protection area.
(5) No toxic materials, including petroleum products shall be stored less than 100 feet from a tree protection area or a watercourse. If field conditions warrant, a greater distance may be required.
(6) The area within the tree protection area shall not be built upon nor shall any materials be stored there either temporarily or permanently. Vehicles and equipment shall not be parked in the tree protection area.
(7) When tree stumps are located within 10 feet of the tree protection area, the stumps shall be removed by means of a stump grinder to minimize the effect on surrounding root systems.
(8) Tree roots which must be severed shall be cut by a backhoe or similar equipment aligned radially to the tree. This method reduces the lateral movement of the roots during excavation, which if done by other methods could damage the intertwined roots of adjacent trees.
(9) Within 4 hours of any severance of roots, all tree roots that have been exposed and/or damaged shall be trimmed cleanly and covered temporarily with moist peat moss, burlap, or other biodegradable material to keep them from drying out until permanent cover can be installed.
(10) Sediment, retention, and detention basins shall not discharge into the tree protection area.
(11) Sediment, retention, and detention basins shall not be located within the tree protection area.
(12) Trees shall not be used for roping, cables, signs, or fencing. Nails and spikes shall not be driven into trees.
B. Protection from Grade Change.
(1) When the original grade cannot be retained at the tree protection area line, a retaining wall shall be constructed outside the tree protection area.
(2) Appropriate details of the retaining wall design shall be provided.
(3) To ensure the survival of trees, the following methods shall be used.
(a) The top of the wall shall be four inches above the finished grade level.
(b) The wall shall be constructed of large stones, bricks, building tiles, concrete blocks, or treated wood beams not less than 6 inches by 6 inches. A means for drainage through the wall shall be provided so water will not accumulate on either side of the wall. Weep holes shall be required within any wall.
(a) Any severed roots as a result of excavation shall be trimmed so that their edges are smooth and are cut back to a lateral root if exposed.
C. Trees Damaged During Construction. Tree trunks and exposed roots damaged during construction shall be protected from further damage. Damaged branches shall be pruned according to National Arborist Association standards. All cuts shall be made sufficiently close to the trunk or parent limb without cutting into the branch collar or leaving a protruding stub. All necessary pruning cuts must be made to prevent bark from being torn from the tree and to facilitate rapid healing.
E. Tree Replacement. In the event that trees that are to be protected are removed or damaged by accident or by violation of the tree protection requirements, trees shall be replaced on an inch for inch basis.



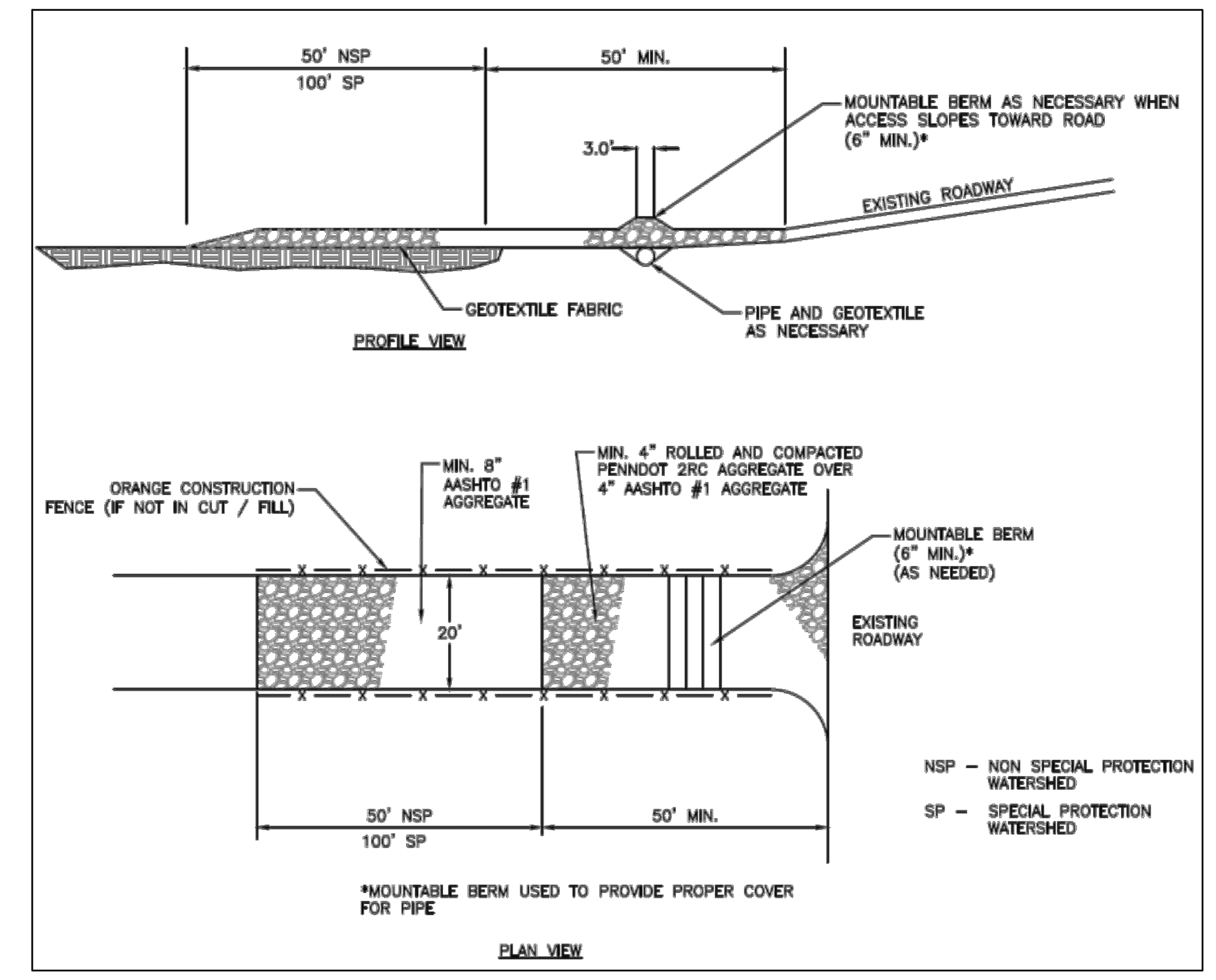
NOTES:
1) FENCE TO BE INSTALLED BEFORE WORK BEGINS. FENCE MUST REMAIN AND BE MAINTAINED THROUGH DURATION OF CONSTRUCTION.
2) ORANGE CONSTRUCTION FENCE MAY BE SUBSTITUTED FOR SNOW FENCE.

TREE PROTECTION FENCING DETAIL



COMPOST FILTER SOCK MUST BE PLACED DOWNSLOPE OF ALL STOCKPILES. IMMEDIATELY APPLY TEMPORARY SEEDING TO ALL STOCKPILES WHICH WILL REMAIN IN PLACE 20 DAYS OR MORE.

STOCKPILE AREA DETAIL



REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

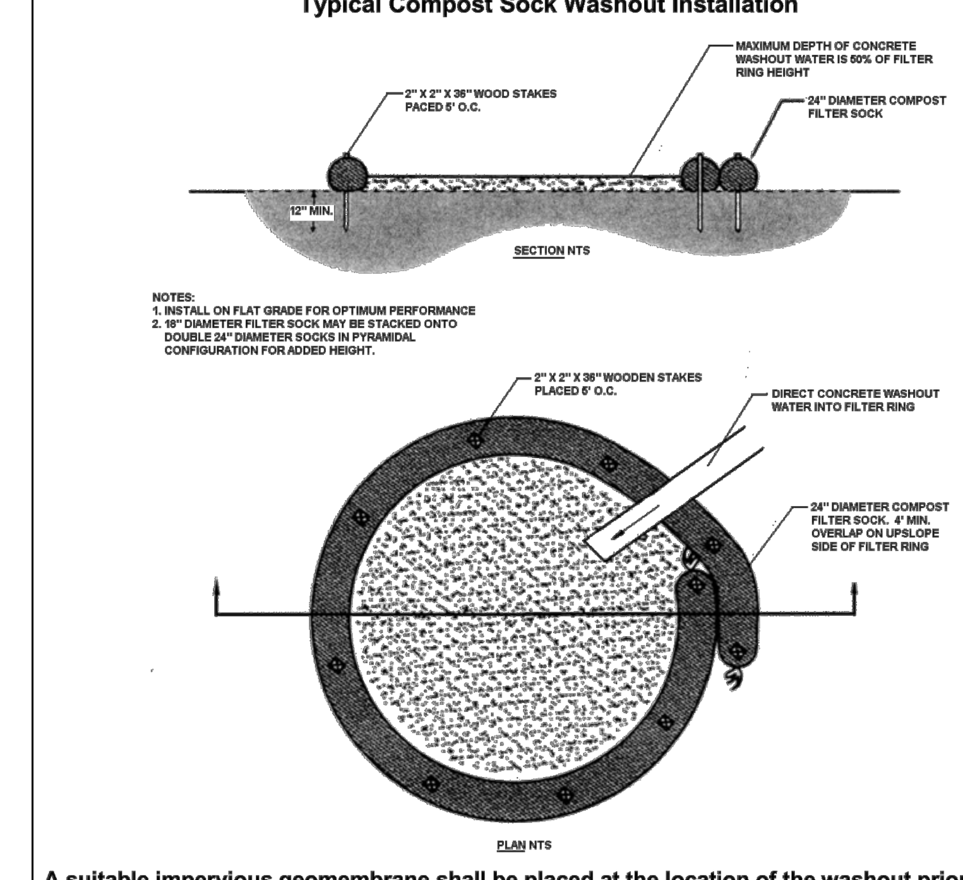
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

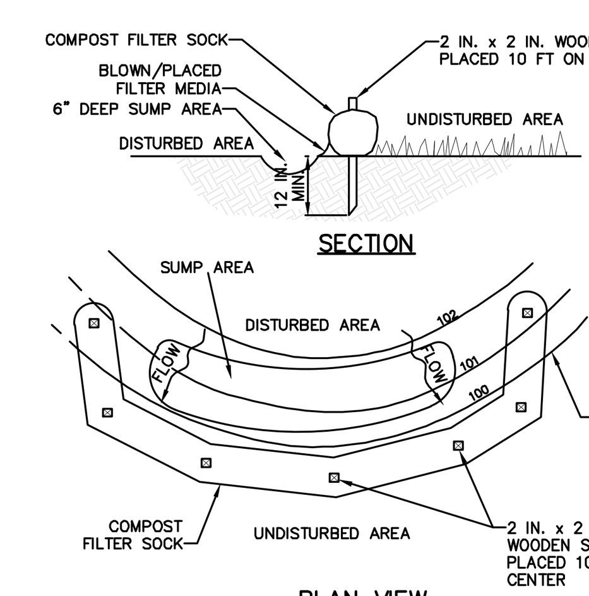
ALTERNATIVE ROCK CONSTRUCTION ENTRANCE

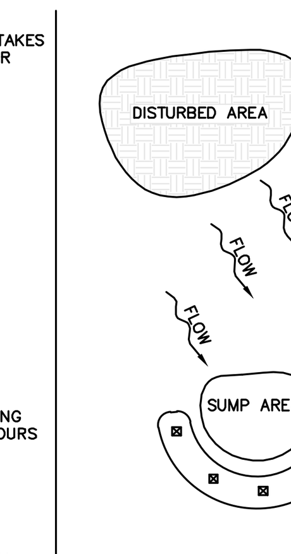
FIGURE 3.18
Typical Compost Sock Washout Installation



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx

CONCRETE WASHOUT DETAIL





"J" HOOK PLACEMENT

NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

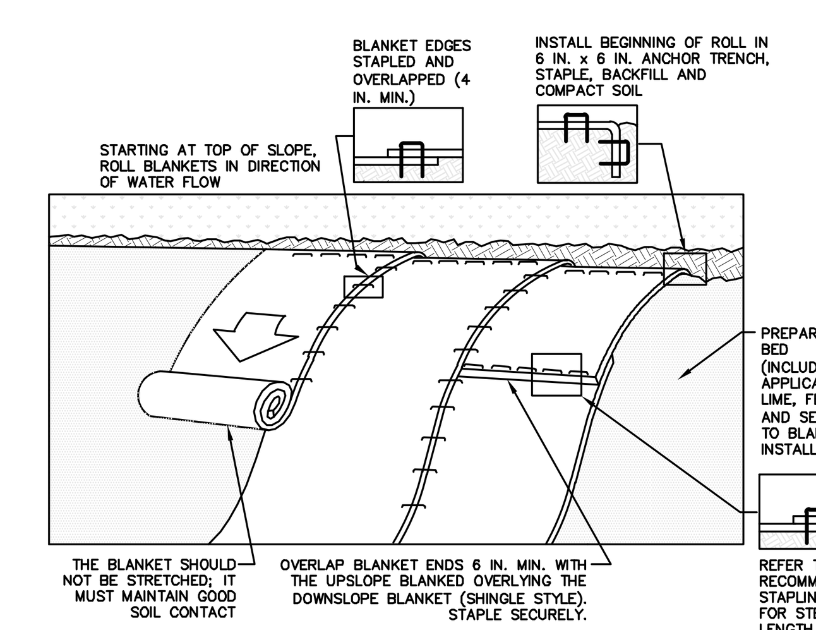
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

REVISIONS

Date	Description
02/08/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG !! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE -- STOP & CALL --
Pennsylvania One Call System, Inc. 1-800-242-1776

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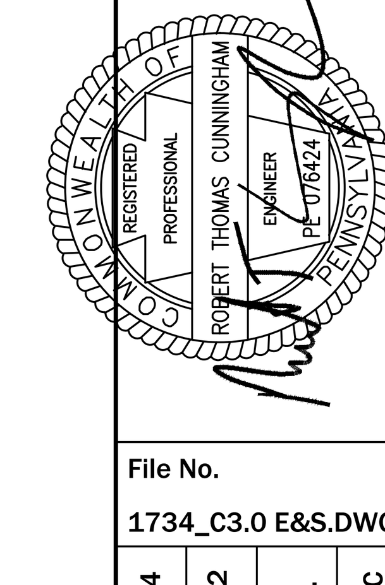
THE ESTATES AT HILL TOP
396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EROSION AND SEDIMENT CONTROL DETAILS

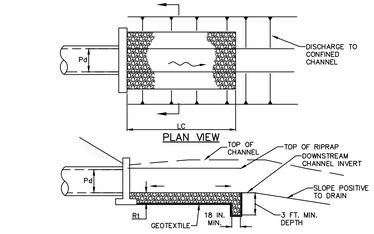


ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C3.0 E&S.DWG

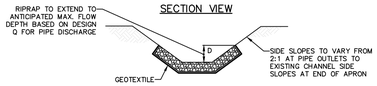
HCE Job	1734
Date	09/14/2022
Scale	N.T.S.
Designed	RC
Sheet	9 of 15

Drawing No.
C3.1



PLAN VIEW

SECTION VIEW



SECTION A–A

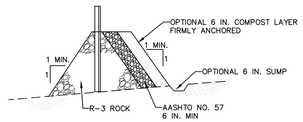
OUTLET NO.	PIPE DIA EQUIV. Pd (IN)	RIPRAP SIZE R–__	RIPRAP THICK. Rt (IN)	APRON LENGTH LC (FT)	APRON INITIAL BOTTOM WIDTH (AT ENDWALL) (FT)	APRON END WIDTH (FT)	APRON INITIAL TOP WIDTH (AT ENDWALL) (FT)	APRON END TOP WIDTH (FT)	APRON SIDE SLOPES H:V
RRA–2	15	3	9	8	3.25	5	7.75	9.5	3:1

NOTES:

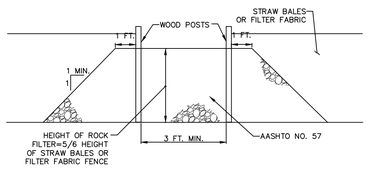
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-3
RIPRAP APRON AT PIPE OUTLET TO AN EXISTING CHANNEL



OUTLET CROSS–SECTION



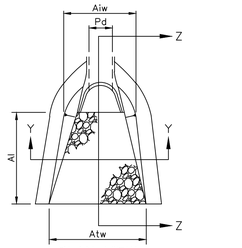
UP–SLOPE FACE

NOTES:

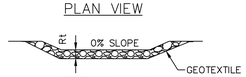
A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

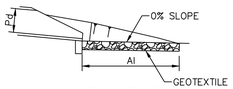
STANDARD CONSTRUCTION DETAIL #4-6
ROCK FILTER OUTLET



PLAN VIEW



SECTION Y–Y



SECTION Z–Z

OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R–__	RIPRAP THICK. Rt (IN)	APRON LENGTH Ai (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
RRA–1	24	4	18	12	6	18

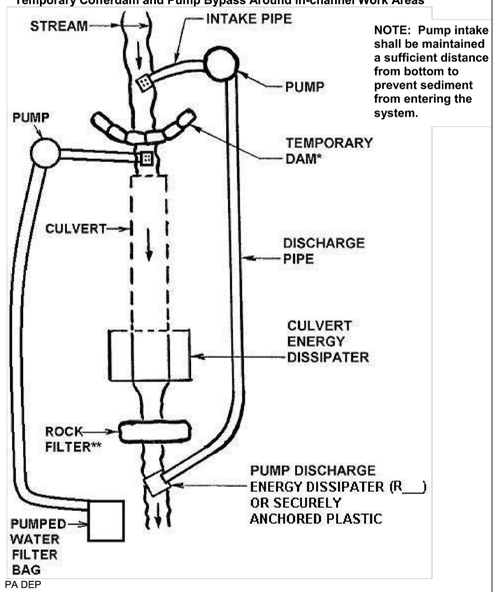
NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET
WITH FLARED END SECTION OR ENDWALL

FIGURE 3.11
Temporary Cofferdam and Pump Bypass Around In-channel Work Areas



PA DEP

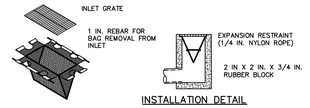
* **Sandbags (Standard Construction Detail #3-15), Jersey barriers (Figure 3.13) or other non-erosive material, no earth fill. Do not excavate a sump for the pump intake.**

** **See Standard Construction Detail # 4-14. For low gradient channels, the rock filter may be replaced by an impervious cofferdam to prevent backflow into the work area.**

TEMPORARY COFERDAN AND BYPASS FOR STREAM CHANNEL WORK AREA

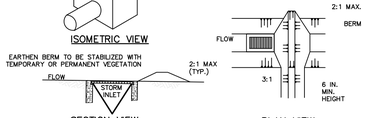
STREAM CHANNEL CULVERT REPLACEMENT SEQUENCE OF CONSTRUCTION:

1. INSTALL BYPASS PUMP AND ENERGY DISSIPATER AS SHOWN ON THE DETAIL.
2. INSTALL COFFERDAM AND ROCK FILTER IN CHANNEL. INSTALL PUMPED WATER FILTER BAG IN A LEVEL, GRASSY, STABLE AREA ADJACENT TO THE CHANNEL.
3. BEGIN EXCAVATION AND REMOVAL OF EXISTING STREAM CROSSING.
4. INSTALL PROPOSED CULVERT AS SHOWN ON THE APPROVED GENERAL PERMIT PLAN.
5. STABILIZE DISTURBED AREA AS PER THE DETAILS AND NOTES SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
6. REMOVE PUMPED WATER FILTER BAG, ROCK FILTER, AND COFFERDAM.
7. REMOVE BYPASS PUMP.



INSTALLATION DETAIL

ISOMETRIC VIEW



SECTION VIEW PLAN VIEW

NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

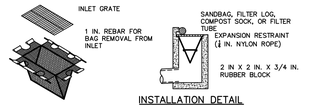
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

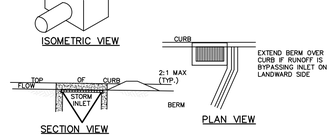
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET



INSTALLATION DETAIL

ISOMETRIC VIEW



SECTION VIEW PLAN VIEW

NOTES:

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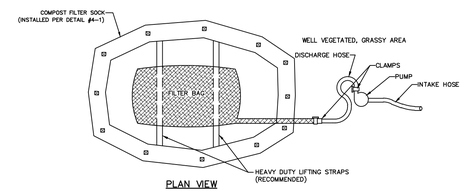
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

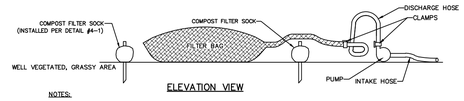
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET



PLAN VIEW



ELEVATION VIEW

NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%, FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG
WITH COMPOST FILTER SOCK

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS		
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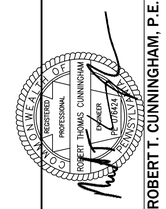
EROSION AND SEDIMENT CONTROL DETAILS



ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C3.0 E&S.DWG

HCE Job	1734	Scale	N.T.S.	Designed	RC
Date	09/14/2022				

Sheet 10 of 15

Drawing No.
C3.2

APPLICANT'S ACKNOWLEDGEMENT

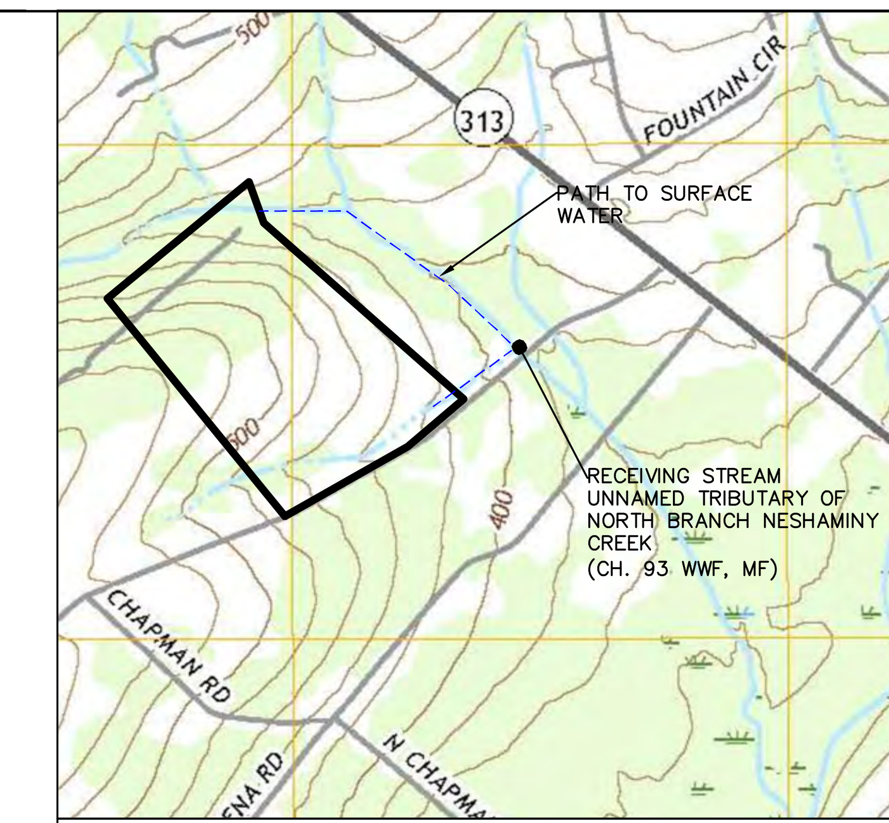
I, ______________________, ACKNOWLEDGE THAT STORMWATER FACILITIES AND BMPs ARE FIXTURES THAT CAN ONLY BE ALTERED AND REMOVED AFTER APPROVAL BY THE MUNICIPALITY AND SUBMISSION OF A REVISED E&S PLAN TO THE CONSERVATION DISTRICT.

____

Soils Legend

Type	Name	Depth to Bedrock	Depth to Seasonal High Water Table	HSG	Hydric Soil	Agricultural Soil
AbB	Abbotstown silt loam, 3 to 8 percent slopes	40"-60"	6"-18"	D	No	Farmland of Statewide Importance
Bo	Bowmansville-Knauers silt loams, 0 to 3 percent slopes	72"-99"	0"-18"	C/D	No	Not Prime Farmland
CyB	Culleoka-Weikert channery silt loams, 3 to 8 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
CyC	Culleoka-Weikert channery silt loams, 8 to 15 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
LhD	Lansdale loam, 8 to 25 percent slopes, extremely stony	42"-72"	>80"	B	No	Not Prime Farmland
ReB	Readington silt loam, 3 to 8 percent slopes	40"-60"	18"-36"	C	No	Farmland of Statewide Importance
RlC	Realville channery silt loam, 8 to 15 percent slopes	20"-40"	6"-36"	D	No	Farmland of Statewide Importance

Limitations and Resolutions: The soils found within the project limits have varying limitations including possible shallow depth to groundwater and possible shallow depth to bedrock. In order to resolve the groundwater limitation, any standing water should be pumped through a sediment filter bag. To resolve the bedrock limitation, the contractor shall determine whether rock is rippable. If rock is not rippable, blasting will be required. All blasting shall meet all local, county, state and federal regulations.



LOCATION MAP

REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAP

GENERAL NOTES

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. UNDER PENNSYLVANIA LAW , THE CONTRACTOR IS REQUIRED TO NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM AT 1-800-242-1776 PRIOR TO THE START OF HIS WORK, SO THAT ALL THE VARIOUS UNDERGROUND UNTILITY OPERATORS WILL BE ABLE TO LOCATE THEIR OWN UTILITIES.
3. THERE ARE NO HQ OR EV WATERSHEDS LOCATED WITHIN THE PROJECT AREA.
4. THERE ARE NO RIPARIAN BUFFERS EXISTING OR PROPOSED AS PART OF THIS PROJECT (WITHIN OR OUTSIDE THE LIMIT OF DISTURBANCE). ADDITIONALLY, RIPARIAN BUFFER OFFSETS ARE NOT NECESSARY.
5. THERE ARE NO WETLANDS WITHIN THE PROJECT AREA.
6. THERE ARE NO INFILTRATION BMPS LOCATED OUTSIDE PROPOSED GRADING AREAS.
7. THE EXISTING SITE IS NOT UNDERLAIN BY ANY NATURALLY OCCURRING GEOLOGIC FORMATIONS OR SOIL CONDITIONS WHICH COULD CAUSE POLLUTION DURING EARTH DISTURBANCE. THEREFORE, NO LOCATIONS ARE IDENTIFIED ON THIS PLAN AND NO DETAILS ARE PROVIDED FOR DISPOSAL OF SUCH MATERIAL.

MINIMIZE IMPERVIOUS AREAS

THE PROJECT HAS LIMITED IMPERVIOUS AREAS PROPOSED TO THE MAXIMUM EXTENT POSSIBLE. THE SITE PLAN HAS CLUSTERED THE DEVELOPMENT TO REDUCE THE EXTENT OF PROPOSED ROADWAYS AND THE DRIVEWAYS ARE THE MINIMUM ACCEPTABLE LENGTH.

PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION

THE LIMIT OF DISTURBANCE IS MINIMIZED TO REDUCE THE DISTURBANCE TO THE EXISTING FEATURES. THE EXISTING VEGETATION AROUND THE PERIMETER OF THE SITE IS TO REMAIN TO THE MAXIMUM EXTENT POSSIBLE. THERE IS NO PROPOSED DISTURBANCE TO DRAINAGE FEATURES.

MINIMIZE LAND CLEARING

THE PROJECT HAS LIMITED THE SOIL DISTURBANCE AREA TO THE MAXIMUM EXTENT POSSIBLE AND LAND CLEARING IS LIMITED TO THE AREAS SHOWN ON THE PLAN.

STRUCTURAL AND NON-STRUCTURAL BMPS TO DECREASE STORMWATER RUNOFF

RE-VEGETATE DISTURBED AREAS: ALL DISTURBED AREAS WILL BE PERMANENTLY SEEDED OR LANDSCAPED. ADDITIONALLY, NEW TREES WILL BE PLANTED THROUGH THE SITE TO REDUCE THE THERMAL IMPACTS OF IMPERVIOUS SURFACES AND REDUCE RUNOFF VOLUME THROUGH TRANSPIRATION.

RECYCLIING/ DISPOSAL OF MATERIALS

THE CONSTRUCTION WASTES ANTICIPATED INCLUDE DEMOLITION MATERIALS FROM THE BUILDING AND SITE DEMOLITION AND EXCESS BUILDING MATERIAL SUCH AS CONCRETE, WOOD, ETC.

ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

LEGEND

Symbol	Description
(heavy solid line)	PROPERTY LINE
(shaded outline)	PROPOSED BUILDING
208 (dashed)	EXISTING CONTOUR
208 (solid)	PROPOSED CONTOUR
(dash-dot line)	PROJECT SITE BOUNDARY
(dashed line)	LIMIT OF DISTURBANCE
(hatch)	UNDERGROUND BASIN
(solid line)	DRAINAGE AREA

0 60 120 Feet

LIMIT OF DISTURBANCE = 11.01 ACRES

PROJECT SITE BOUNDARY = 36.17 ACRES

CRITICAL STAGES OF PCSM PLAN IMPLEMENTATION

THE INSTALLATION AND/OR CONVERSION OF EROSION CONTROL FACILITIES TO STORMWATER FACILITIES, INCLUDING THE INFILTRATION BASIN WITH MRC, SHALL BE OVERSEEN BY A LICENSED PROFESSIONAL ENGINEER OR THEIR DESIGNEE.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

REVISIONS

Date	Description
02/08/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG !! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE -- STOP & CALL --
Pennsylvania One Call System, Inc. 1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT THOMAS CUNNINGHAM PE 076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No. 1734_C4.0 PCSM.DWG

HCE Job	Date	Scale	Designed	Sheet
1734	09/14/2022	1"=60'	RC	11 of 15

Drawing No.

C4.0

SEEDING NOTES:

TEMPORARY SEEDING :

1. TEMPORARY SEEDING SHALL BE DONE IN AREAS WHERE NO ACTIVITY WORK WILL BE PERFORMED. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY.
2. DURING NON-GERMINATING PERIODS, ONLY MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. AREAS MULCHED DURING THE NON-GERMINATING PERIODS, MUST BE LIMED, FERTILIZED, SEEDED, AND MULCHED IMMEDIATELY FOLLOWING THE END OF THE NON-GERMINATING PERIODS.
3. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE (1) YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEED MIXTURE.
4. DISTURBED AREAS WHICH ARE AT EITHER FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
5. TEMPORARY SEEDING STEPS:
   A. APPLY AGRICULTURAL LIMESTONE AT A RATE OF ONE (1) TON PER ACRE. (5 POUNDS PER, 1000 SQUARE FEET)
   B. APPLY FERTILIZER AT THE RATE OF 50-50-50 PER ACRE.
   C. WORK THE LIMESTONE AND FERTILIZER INTO THE SOIL.
   D. UTILIZING THE FOLLOWING SEEDING TYPES, RATES AND TIME SCHEDULE :

TEMPORARY SEEDING

SEASON	RATE	TYPE
MARCH 1 TO JUNE 15	1 LB./1000 SF	ANNUAL RYEGRASS
MAY 15 TO SEPT 15	1 LB./1000 SF	SUDAN GRASS
SEPT 15 TO OCT 15	168 LB./AC	WINTER RYE

   E. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.
6. ALL SEED SHALL BE LABELED, DATED AND QUALITY CONSISTENT WITH SECTION NO. 2

PERMANENT SEEDING:

1. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
2. SEEDING SHALL BE DONE DURING PERIODS FROM APRIL 15TH TO OCTOBER PT, UNLESS OTHERWISE DIRECTED. IF SEEDING IS DONE AFTER OCTOBER 1", DORMANT SEED MUST BE USED AND DISTURBED AREAS MUST BE MULCHED.
3. DISTURBED FINAL GRADED AREAS AND DRAINAGE SWALES WILL BE PERMANENTLY SEEDED AS FOLLOWS:
   A. MINIMUM OF 4" OF TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE SEEDED. TOPSOIL SHALL BE FREE OF STONES, STICKS, WASTE MATERIAL AND SIMILAR DEBRIS. FROZEN GROUND SHALL NOT BE SPREAD AS TOPSOIL AND TOPSOIL SHALL NOT BE SPREAD OVER FROZEN GROUND.
   B. A SOIL ANALYSIS IS RECOMMENDED, HOWEVER, IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AND FERTILIZER AT RATES RECOMMENDED BELOW (OR AS SUGGESTED BY THE SOIL TEST RESULTS (ONE (1) TEST PER 25 ACRES)).
   C. THE LIMESTONE AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO DEPTHS OF 3 TO 4 INCHES. D. GRASS SHALL NOT BE PLANTED AFTER HEAVY RAIN OR WATERING.
   D. ALL SEED USED SHALL BE LABELED IN ACCORDANCE WITH THE U.S. DEPARTMENT OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT IN EFFECT AT THE TIME OF PURCHASE. INERT MATTER SHALL NOT EXCEED 15% AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE.
   E. SMOOTH AND FIRM SEED BED WITH CULTIPACKER OR SIMILAR EQUIPMENT PRIOR TO SEEDING. APPLY SEED UNIFORMLY BY BROADCASTING, DRILLING OR HYDRO SEEDING. COVER SEEDS WITH '/2" OF SOIL WITH SUITABLE EQUIPMENT.
   F. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.

PERMANENT SEEDING FOR NORMAL MOWED LAWN AREAS:

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE AND RED TOP 12%
OCT 1 TO MARCH 1 & JUNE 1 TO AUG 1	2 LBS./1000 SF	RED TOP*

((*) USE DORMANT SEED, UNIFORMLY APPLIED, WORKING INTO A DEPTH OF 1/4 INCH. THE USE OF MULCH IS REQUIRED. THE USE OF NETTING OR EROSION CONTROL MATS MAY BE REQUIRED.)

PERMANENT SEEDING FOR SPECIAL AREAS
(SWALES, POND EMBANKMENTS, LEVEES, DIVERSION CHANNELS, ETC):

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE 80% AND RYEGRASS 20%

NOTE : SEEDING PERIODS AND SPECIFICATIONS MAY VARY DUE TO SITE CONDITIONS AND VARIANCES FROM THE TIME THIS REPORT IS WRITTEN AND APPROVED. IT MAY BE NECESSARY TO ADAPT SEED SPECIFICATION, VARIETIES, AND QUALITIES. FOR SPECIAL CONDITIONS CONSULT "GUIDELINE FOR RECLAMATION OF SEVERELY DISTURBED AREAS", PENNSYLVANIA STATE UNIVERSITY.

4. FERTILIZER : A SOIL ANALYSIS IS RECOMMENDED BUT IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AT A RATE OF FOUR (4) TONS/ACRE AND 10-20-20 FERTILIZED AT A RATE OF 50 LBS. PER 1000 SF. THESE MATERIALS WILL BE UNIFORMLY APPLIED AND WORKED INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES. IMMEDIATELY BEFORE SEEDING, A 1 0- 1 0- 10 FERTILIZER WILL BE WORKED INTO THE SURFACE AT A RATE OF 10 LBS. PER 1000 SF.
5. HYDRO SEEDING: LIME AND SEED SHALL BE AS SPECIFIED ABOVE, AND FERTILIZER SHALL BE APPLIED AT A RATE OF 40-80. CROWN VETCH SHALL BE INOCULATED AT FOUR TIMES THE MANUFACTURER'S RATE. SHOULD FERTILIZER BE APPLIED WITH THE INOCULANT, THE MIXTURE SHALL NOT REMAIN IN A SLURRY FOR MORE THAN ONE HOUR. WOOD CELLULOSE FIBER, APPLIED AT A RATE OF 35 LBS. PER 1000 SF, MAY BE APPLIED AS PART OF THE SLURRY IN LIEU OF MULCHING. SYNTHETIC MULCH BINDER, SUCH AS CURASOL, DCA-70, TERRE-TACK OR AN APPROVED EQUAL SHALL BE USED PER THE MANUFACTURER'S INSTRUCTIONS TO ANCHOR THE MULCH.
6. MULCHING: MULCHING SHALL BE APPLIED AS FOLLOWS:
   A. STRAW - SHALL BE ALL DRIED AND FREE FROM UNDESIRABLE SEEDS AND COURSE MATERIAL, APPLY AT A RATE OF 115 TO 150 LBS. PER 1000 SF OR 3 TONS PER ACRE. MULCHED AREAS SHALL BE CHECKED PERIODICALLY AND IMMEDIATELY AFTER STORMS AND WIND. DAMAGED OR MISSING MULCH SHALL BE REPLACED. A TACKIFIER APPLIED AFTER STRAW IS RECOMMENDED. TACKIFIER MAY BE ASPHALT OR POLYMER SPRAY. APPLY AT A RATE RECOMMENDED BY THE MANUFACTURER WITH SUITABLE EQUIPMENT. IN LIEU OF MANUFACTURERS RECOMMENDATIONS APPLY AT A RATE OF .04 TO .06 GALLONS PER SQUARE YARD.
   B. NETTING / EROSION CONTROL BLANKETS - THE USE AND INSTALLATION OF EROSION CONTROL BLANKETS OR NETTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND SHALL BE SELECTED FOR THE PROPER APPLICATION AND CONDITIONS.

SEQUENCE OF CONSTRUCTION

NOTES:

- SITE DEVELOPMENT OPERATIONS SHOULD BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING GENERAL SEQUENCE OF OPERATIONS. THE CONTRACTOR MAY DEVIATE FROM THE STAGING OF PERMANENT SITE IMPROVEMENT CONSTRUCTION ITEMS, WITH APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR. DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENT CONTROL MEASURES SHOULD NOT OCCUR WITHOUT APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR AND SITE ENGINEER. NO VERTICAL CONSTRUCTION MAY OCCUR UNTIL SUBGRADE IS SET.
- THE RAIN GARDENS SHALL BE INSTALLED BEFORE THE CONSTRUCTION OF ANY BUILDINGS OR SITE IMPROVEMENTS, UNLESS OTHERWISE APPROVED BY THE BOARD AND THE BUCKS COUNTY CONSERVATION DISTRICT. A PRELIMINARY BASIN AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.

1. CONTACT THE BUCKS COUNTY CONSERVATION DISTRICT (215-345-7577), NEW BRITAIN TOWNSHIP, AND THE TOWNSHIP ENGINEER AT LEAST THREE (3) WORKING DAYS PRIOR TO SITE DISTURBANCE.
2. EACH STAGE OF THE SEQUENCE OF CONSTRUCTION MUST BE COMPLETED PRIOR TO INITIATION OF THE NEXT STAGE OF THE SEQUENCE OF CONSTRUCTION. CONSTRUCTION MAY OVERLAP INTO A SUBSEQUENT PHASE AS LONG AS ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED IN THE PREVIOUS PHASE.
3. INSTALL CONSTRUCTION ENTRANCE AT SITE ACCESS, STOCKPILE, COMPOST FILTER SOCK AND TREE PROTECTION FENCE WHERE SHOWN ON THE PLAN. INSTALL PROTECTION FENCE AROUND FUTURE BMPS.
4. STRIP TOPSOIL AND STOCKPILE WHERE SHOWN ON PLAN. ALL STRIPPED TOPSOIL STOCKPILES SHALL HAVE TEMPORARY SEEDING INSTALLED. ROUGH GRADE SITE, DRIVEWAY/PARKING AND BUILDING PADS. INSTALL TEMPORARY EROSION CONTROL BLANKETS.
5. PRIOR TO VERTICAL CONSTRUCTION A STABLE BASE WILL BE ESTABLISHED AND MAINTAINED, TO AVOID ACCELERATED EROSION.
6. A PRELIMINARY RAIN GARDEN AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.
7. BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. BUILDING CONSTRUCTION MAY COINCIDE WITH ADDITIONAL SITE WORK, INCLUDING UTILITY AND STREET CONSTRUCTION, THAT IS LISTED IN THIS SEQUENCE OF CONSTRUCTION. PRIOR TO VERTICAL CONSTRUCTION, SUBGRADE IS TO BE SET, INCLUDING BUT NOT LIMITED TO FOUNDATION WORK, STABLE SUBGRADE/SUBBASE, SUBSURFACE UTILITY WORK, AND DRIVEWAY/PARKING SUBGRADE.
8. INSTALL WATER, SANITARY SEWER, AND STORM SEWER SYSTEM STARTING AT THE DOWNSTREAM ENDS AND WORKING UPSTREAM. ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH DAY. MAKE OFFSITE UTILITY CONNECTIONS AND INSTALL OFFSITE WATER AND SANITARY SEWER, INSTALL CURB, SUBBASE AND BASE COURSE FOR THE DRIVEWAY/PARKING.
9. COMPLETE FINAL GRADING. AFTER FINAL GRADING IS COMPLETED, APPLY PERMANENT SEEDING MIXTURE AND INSTALL ALL REQUIRED PLANTINGS, FENCING, AND LIGHTING. LIGHTING SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF ANY USE AND OCCUPANCY PERMITS. ONCE ALL BUILDINGS ARE COMPLETED, FLUSH ALL AFFECTED STORM DRAINAGE PIPES OF ACCUMULATED SILT.
10. CONVERT STORMWATER FACILITY UPON COMPLETING AND STABILIZING EACH TRIBUTARY AREA. INSTALLATION SHALL BE IN ACCORDANCE WITH THE PCSM PLANS, NOTES, AND DETAILS. INSTALLATION OF STORMWATER FACILITY IS A CRITICAL STAGE OF THE CONSTRUCTION SEQUENCE.
11. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT OR ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
12. UPON COMPLETE STABILIZATION OF SITE, REMOVE EROSION CONTROL DEVICES, REMOVE TEMPORARY ORIFICE PLATES AND CONVERT SEDIMENT TRAP TO PERMANENT STORMWATER BASIN BMPS PER THE CONSTRUCTION SEQUENCES AND DETAILS FOUND ON THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. THE SITE SHALL BE CONSIDERED STABILIZED WHEN THE PERMANENT VEGETATION HAS PROVIDED A 70% GROUNDCOVER.
13. AFTER CONSTRUCTION IS COMPLETED, INSTALL WEARING COURSE FOR THE DRIVEWAY. REPAIR ANY DAMAGED CURBING, STORM SEWER STRUCTURES, SANITARY SEWER STRUCTURES, LANDSCAPING, LIGHTING, SIDEWALK, DRIVEWAYS, AND/OR ANY OTHER AMENITIES FROM INSTALLATION OF WEARING COURSE.

BMP MAINTENANCE PLAN
NOTE: AN ANNUAL REPORT SHALL BE PREPARED AND RETAINED BY THE RESPONSIBLE PARTY STATING THE FOLLOWING MAINTENANCE HAS BEEN PERFORMED.

THE HOMEOWNERS ASSOCIATION IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER CONVEYANCE SYSTEM, AND ALL OTHER PROPOSED BMP'S.

STORMWATER CONVEYANCE SYSTEM

- CATCH BASINS, MANHOLES AND PIPES TO BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST ANNUALLY AS WELL AS AFTER EVERY STORM EXCEEDING 1-INCH OF RAINFALL.
- ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEARING, AND DETERIORATION AT LEAST ANNUALLY.

VEGETATED STORMWATER FACILITY/BASIN (MANAGED RELEASE CONCEPT):
- UPGRADIENT CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED ANNUALLY, OR MORE OFTEN IF HISTORICAL MAINTENANCE RECORDS SUGGEST A MORE FREQUENT CLEANING.
- THE VEGETATION (FOR THE MRC BMP AND CONTRIBUTING DRAINAGE AREA) SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED.
- CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. MOW ONLY AS APPROPRIATE FOR VEGETATIVE SPECIES.
- INSPECT AT LEAST TWO TIMES PER YEAR AFTER RUNOFF EVENTS GREATER THAN 0.8 INCH AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN THE DESIGN PARAMETERS (THE LICENSED PROFESSIONAL ENGINEER SHOULD CLEARLY IDENTIFY WHAT THESE PARAMETERS ARE).
- AT LEAST TWO TIMES PER YEAR, OR MORE IF HISTORICAL MAINTENANCE INDICATE IT IS NECESSARY, INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION, SIGNS OF WATER CONTAMINATION/SPILLS, AND INSTABILITY. LEAF LITTER NEEDS TO BE REMOVED ANNUALLY.
- AS NEEDED, REMOVE ACCUMULATED SEDIMENT AS REQUIRED TO MAINTAIN INFILTRATION THROUGH THE MRCS SOIL MEDIA AND TO MAINTAIN WATER QUALITY FUNCTIONALITY. RESTORE ORIGINAL CROSS SECTION. PROPERLY DISPOSE OF SEDIMENT.
- IF POROUS PAVEMENT IS INCLUDED IN THE DESIGN, VACUUM AT LEAST TWICE PER YEAR. VACUUM SHOULD HAVE SUFFICIENT SUCTION POWER AND BE DESIGNED FOR USE WITH POROUS PAVEMENTS.
- ALL MRC BMP COMPONENTS SHOULD BE MAINTAINED AS INDICATED IN THE STORMWATER BMP MANUAL.

TREE PLANTINGS
- TREES SHALL BE PLANTED IN ACCORDANCE WITH SPECIFICATIONS PREPARED BY THE PROJECT LANDSCAPE ARCHITECT.
- NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF FIVE YEARS FOLLOWING CONSTRUCTION.THE HOMEOWNER'S ASSOCIATION SHALL ENSURE THAT ESCROW FUNDS ARE AVAILABLE FOR REPLACEMENT DURING THIS TIME PERIOD. TREES SHALL BE MAINTAINED AND PROTECTED FOR THE PROJECT LIFE (50 YEARS).
- TREES SHALL BE INSPECTED ANNUALLY AND PRUNED AS NEEDED TO ENSURE HEALTHY CONDITIONS.
- IF IT IS DETERMINED THAT THE TREE IS IN POOR HEALTH, A CERTIFIED ARBORIST SHALL BE CONSULTED IMMEDIATELY TO DETERMINE THE PROPER COURSE OF ACTION.

BMP SEEDING

BASIN FLOORS
SEED IN ERNST SEED MIX (ERNMX-180); RAIN GARDEN AREA MIX
SEEDING RATE IS 20 LBS. PER ACRE WITH 30 LBS. PER ACRE GRAIN RYE (COVER CROP)

ERNMX-180 RAIN GARDEN AREA MIX

26% River Oats, PA/VA Ecotype blend (Chasmanthium latifolium (Uniola latifolia), PA/VA Ecotype blend)
17% Virginia Wildrye, PA Ecotype (Elymus virginicus, PA Ecotype)
15% Fowl Bluegrass (Poa palustris)
10% Fox Sedge, PA Ecotype (Carex vulpinoidea, PA Ecotype)
6% Purple Coneflower (Echinacea purpurea)
4% Blackeyed Susan, Coastal Plain NC Ecotype (Rudbeckia hirta, Coastal Plain NC Ecotype)
3% Zigzag Aster, PA Ecotype (Aster prenanthoides (Symphyotrichum p.), PA Ecotype)
3% Blue False Indigo, Southern WV Ecotype (Baptisia australis, Southern WV Ecotype)
3% Ohio Spiderwort, PA Ecotype (Tradescantia ohiensis, PA Ecotype)
2% Lanceleaf Coreopsis, Coastal Plain NC Ecotype (Coreopsis lanceolata, Coastal Plain NC Ecotype)
2% Wild Bergamot, PA Ecotype (Monarda fistulosa, PA Ecotype)
2% Wild Senna, VA & WV Ecotype (Senna hebecarpa (Cassia h.), VA & WV Ecotype)
2% Autumn Bentgrass, PA Ecotype (Agrostis perennans, PA Ecotype)
2% Marsh (Dense) Blazing Star (Spiked Gayfeather), PA Ecotype (Liatris spicata, PA Ecotype)
1% Early Goldenrod, PA Ecotype (Solidago juncea, PA Ecotype)
1% Oxeye Sunflower, PA Ecotype (Heliopsis helianthoides, PA Ecotype)
1% Swamp Milkweed, PA Ecotype (Asclepias incarnata, PA Ecotype)

BASIN LANDSCAPE MAINTENANCE

THIS BASIN IS DESIGNED TO BECOME NATURALIZED OVER TIME AND WILL REQUIRE LESS MAINTENANCE AS TIME GOES ON.

MOWING - ESTABLISH AND MAINTAIN A NO-MOW ZONE THAT ENCOMPASSES THE BASIN FLOOR AND SIDE SLOPES. MOW THE NO-MOW ZONE 1X/YEAR TO A MINIMUM HEIGHT OF 6". (ANNUALLY IN LATE APRIL/ EARLY MAY). RAKE MOWN MATERIAL AND COMPOST OR DISPOSE OF OFF SITE.

INSPECTIONS - INSPECT BASIN AND NO-MOW ZONES FOR INVASIVE SPECIES SUCH AS PURPLE LOOSESTRIFE, PHRAGMITES, HONEYSUCKLE, ETC. (ANNUALLY IN JULY). IF INVASIVE SPECIES ARE FOUND REMOVE PER RECOMMENDED STANDARDS FOR SPECIFIC SPECIES FOLLOWING GUIDELINES BY PA DCNR (DEPT OF CONSERVATION & NATURAL RESOURCES).

CLEANING - REMOVE TRASH AND DEBRIS (JANUARY & APRIL)

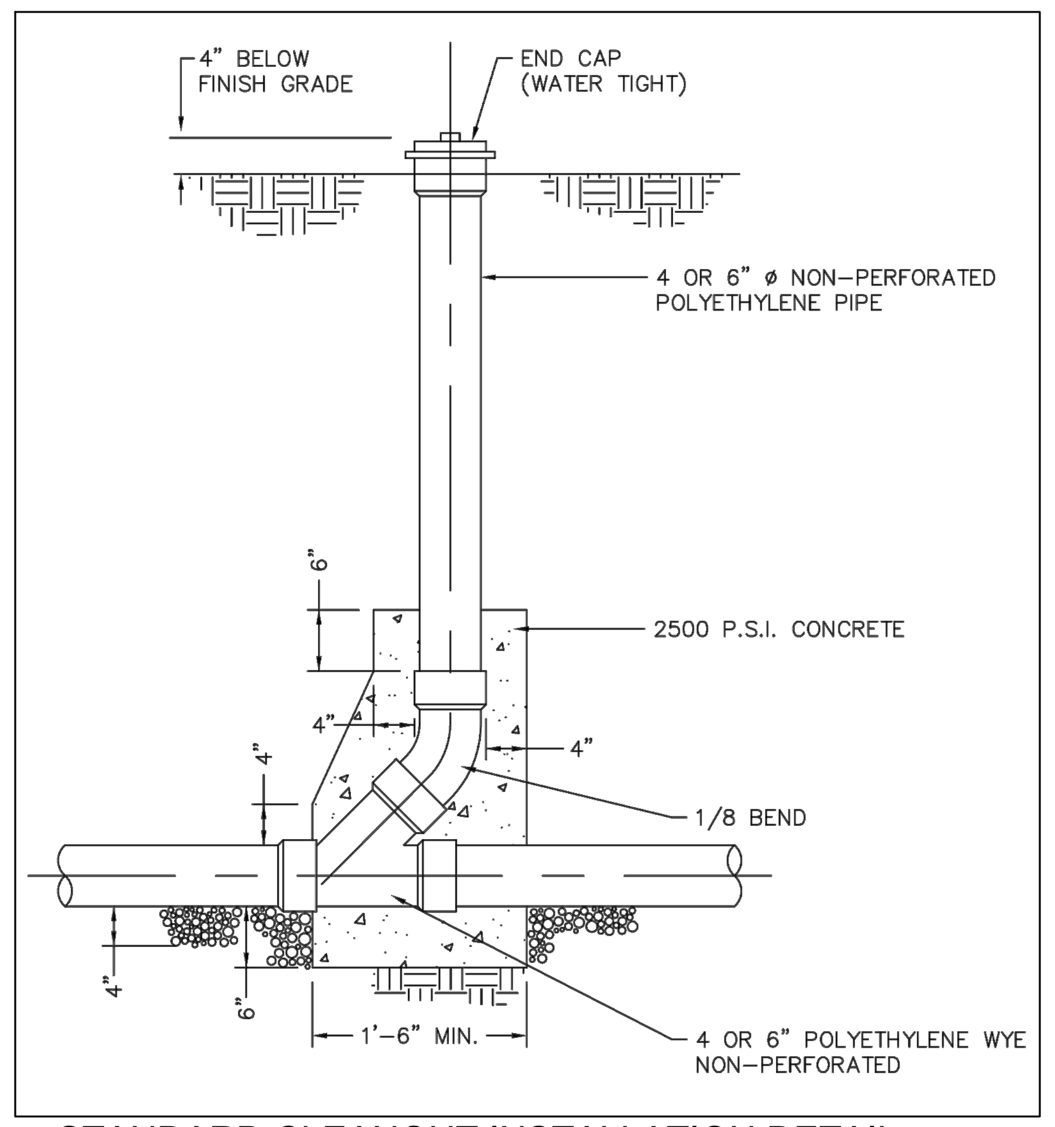
BASIN MAINTENANCE SCHEDULE

THIS BASIN IS DESIGNED TO BECOME NATURALIZED OVER TIME AND WILL REQUIRE LESS MAINTENANCE AS TIME GOES ON.

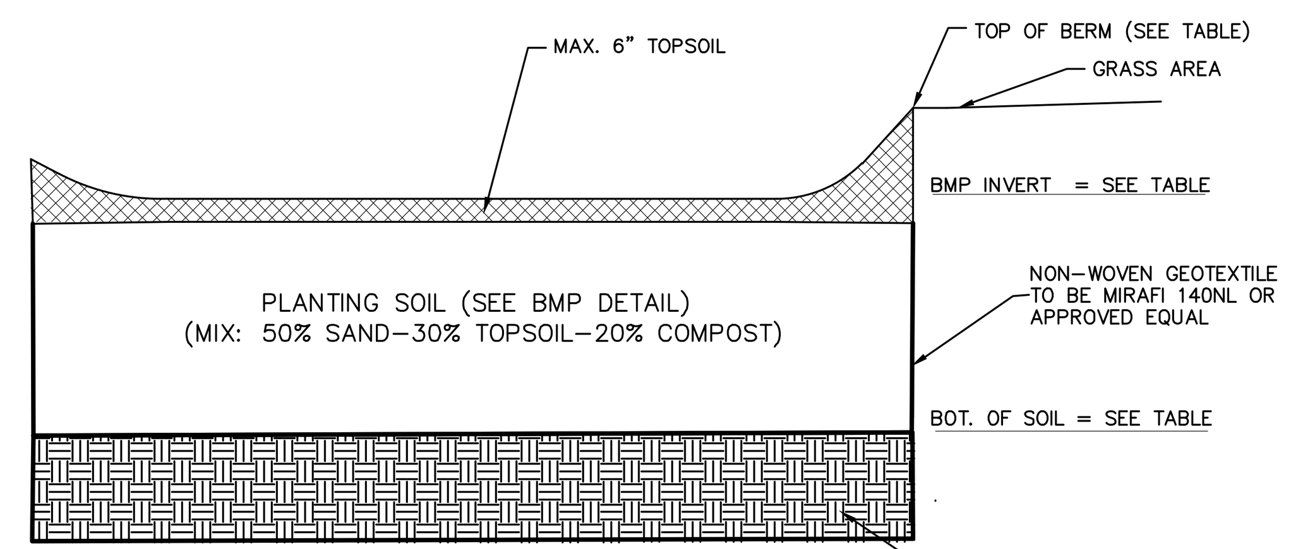
MOWING - ESTABLISH AND MAINTAIN A NO-MOW ZONE THAT ENCOMPASSES THE BASIN FLOOR AND SIDE SLOPES. MOW THE NO-MOW ZONE 1X/YEAR TO A MINIMUM HEIGHT OF 6". (ANNUALLY IN LATE APRIL/ EARLY MAY).

INSPECTIONS - INSPECT BASIN AND NO-MOW ZONES FOR INVASIVE SPECIES SUCH AS PURPLE LOOSESTRIFE, PHRAGMITES, HONEYSUCKLE, ETC. (ANNUALLY IN JULY). IF INVASIVE SPECIES ARE FOUND REMOVE PER RECOMMENDED STANDARDS FOR SPECIFIC SPECIES FOLLOWING GUIDELINES BY PA DCNR (DEPT OF CONSERVATION & NATURAL RESOURCES).

CLEANING - REMOVE TRASH AND DEBRIS (JANUARY & APRIL) OR AS NEEDED.

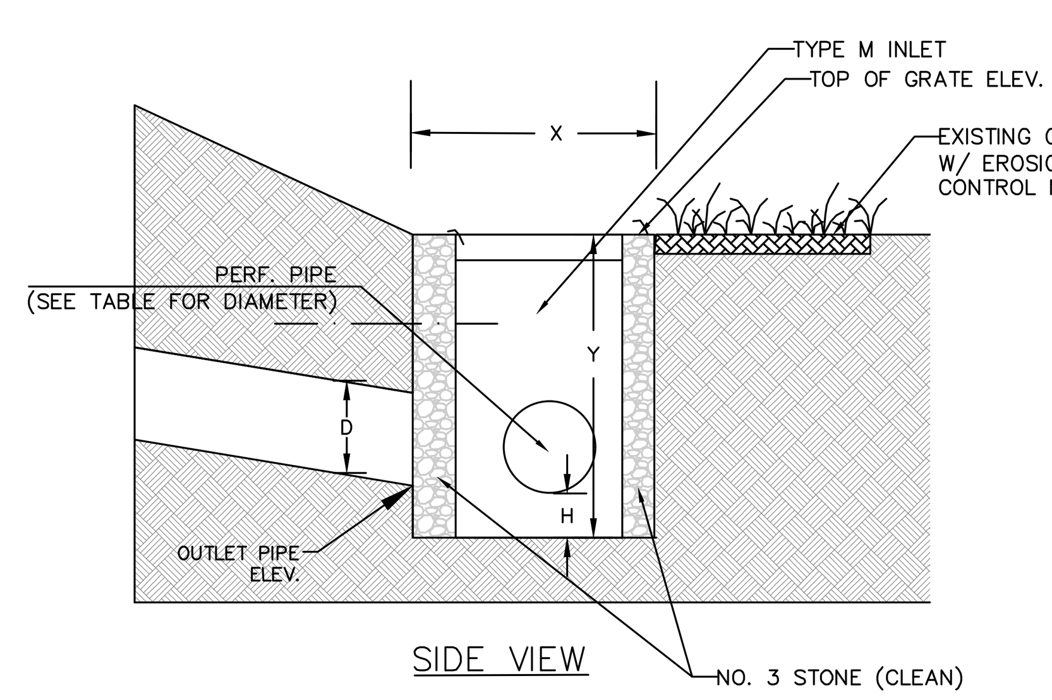


STANDARD CLEANOUT INSTALLATION DETAIL

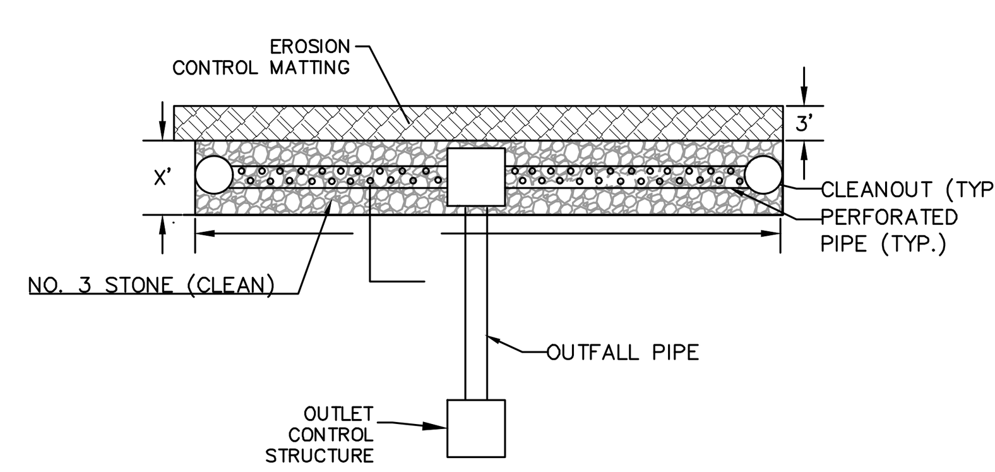


RAIN GARDEN MRC BMP ELEVATIONS			
#	BMP INVERT	BOTTOM OF SOIL	TOP OF BERM
RG LOT 1	433.00	431.00	436.72
RG LOT 2	455.00	453.00	458.95
RG LOT 3	458.00	456.00	460.85
RG LOT 5	457.00	473.00	478.76
RG LOT 6	447.00	445.00	450.10

RAIN GARDEN MRC BMP SOIL DETAIL



SIDE VIEW

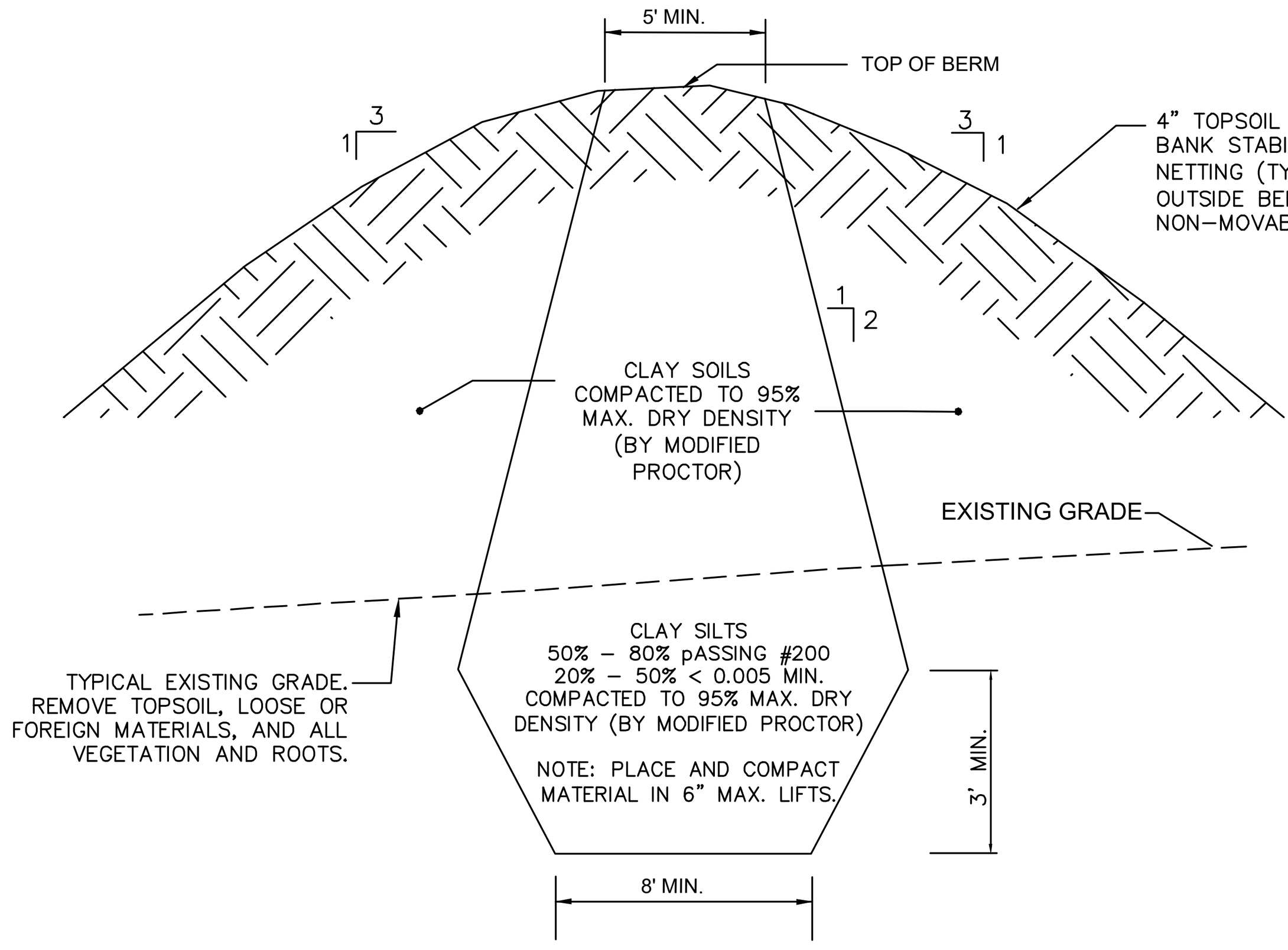


PLAN VIEW

SWF OUTFALL	L	D	OUTFALL PIPE ELEV.	TOP OF GRATE ELEV.	PERF. PIPE DIAMETER	H	Y	X
#	FT	IN	--	--	IN	FT	FT	FT
LOT 1	10	15	428.50	431.00	12	0.50	3.00	5.00
LOT 2	10	15	449.50	452.00	12	0.50	3.00	5.00
LOT 3	10	15	453.50	456.00	12	0.50	3.00	5.00
LOT 5	10	15	471.00	473.50	12	0.50	3.00	5.00
LOT 6	10	15	439.50	443.00	12	0.50	4.00	5.00

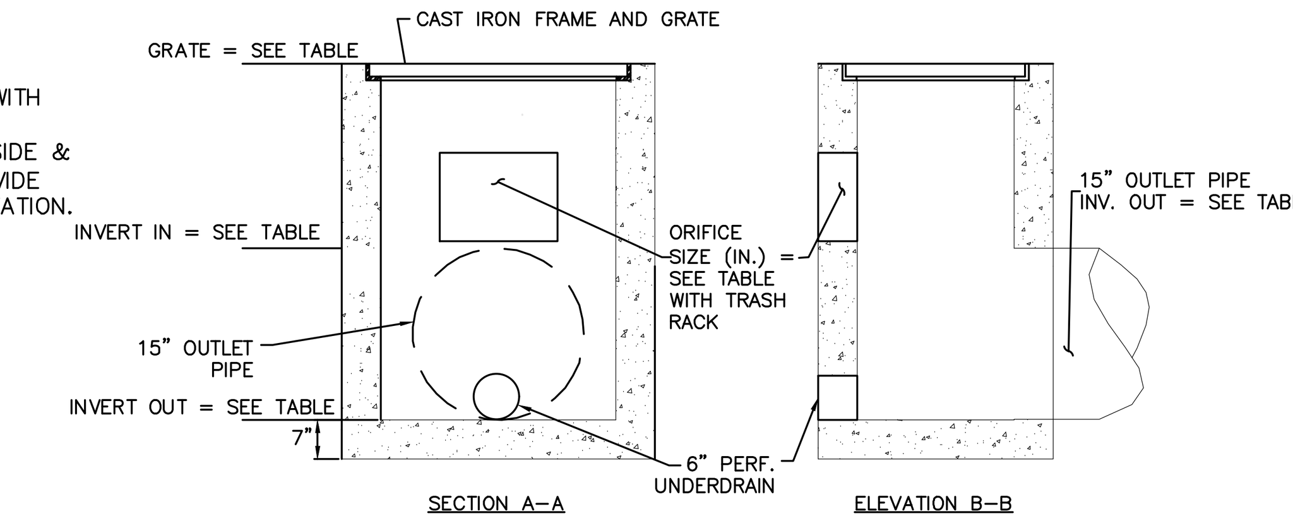
CONSTRUCTION SEQUENCE FOR LEVEL SPREADER:
1. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION AS PER THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (MARCH 2000, OR LATEST EDITION).
2. EXCAVATE LEVEL SPREADER BOTTOM TO A UNIFORM, LEVEL SUBGRADE FREE FROM ROCKS AND DEBRIS. EXCAVATION EQUIPMENT SHOULD BE PLACED OUTSIDE THE LIMITS OF THE LEVEL SPREADER.
3. COMPLETELY WRAP LEVEL SPREADER WITH NONWOVEN GEOTEXTILE. (IF SEDIMENT AND/OR DEBRIS HAVE ACCUMULATED IN LEVEL SPREADER BOTTOM, REMOVE PRIOR TO GEOTEXTILE PLACEMENT.) GEOTEXTILE ROLLS SHOULD OVERLAP BY A MINIMUM OF 24 INCHES WITHIN THE TRENCH. FOLD BACK AND/OR CUT EXCESS GEOTEXTILE DURING STONE PLACEMENT.
4. INSTALL CONTINUOUSLY PERFORATED PIPE, OBSERVATION WELLS/INLETS, AND ALL OTHER LEVEL SPREADER STRUCTURES. CONNECT INCOMING PIPES TO STRUCTURES AS INDICATED ON PLANS.
5. PLACE UNIFORMLY GRADED, CLEAN-WASHED AGGREGATE IN 6-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
6. INSTALL EROSION CONTROL BLANKET DOWNSTREAM OF LEVEL SPREADER AND SECURE AS PER MANUFACTURER'S RECOMMENDATIONS.
7. DO NOT REMOVE EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

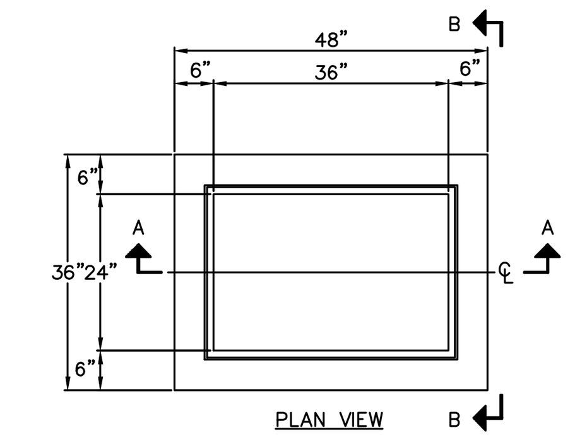
LEVEL SPEADER



STANDARD BASIN BERM CONSTRUCTION NOTES
1. SITE PREPARATION - AREAS UNDER THE EMBANKMENT AND ANY STRUCTURES SHALL BE CLEARED, GRUBBED AND THE TOPSOIL STRIPPED TO REMOVE TREES. VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. IN ORDER TO FACILITATE CLEAN-OUT AND RESTORATION, THE POOL AREA WILL BE CLEARED OF ALL BRUSH AND EXCESS TREES.
2. CUT OFF TRENCH - A CUT-OFF TRENCH WILL BE EXCAVATED ALONG THE BERM CENTERLINE BENEATH EARTH FILL EMBANKMENTS. THE MINIMUM DEPTH SHALL BE 3 FEET. THE CUT-OFF TRENCH SHALL EXTEND TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE 8 FEET BUT WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THEN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SOME AS THOSE FOR EMBANKMENTS. THE TRENCH SHALL BE KEPT FREE OF STANDING WATER DURING THE BACKFILLING OPERATIONS.
3. EMBANKMENT - THE FILL MATERIAL SHALL BE TAKEN FROM SELECTED BORROW AREAS. IT SHALL BE FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES ROCKS OR OTHER OBJECTIONABLE MOTERIAL. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. THE FILL MATERIAL SHOULD CONTAIN SUFFICIENT MOISTURE SO THAT IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE- BALL, IT IS TOO WET FOR PROPER COMPACTION. FILL MATERIAL MUST BE PLACED IN 6 TO 8 INCH LAYERS AND SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. COMPACTION MUST BE OBTAINED BY MECHANICAL SHEEP FOOT ROLLERS. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION OF 5% HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT.

BASIN BERM DETAIL

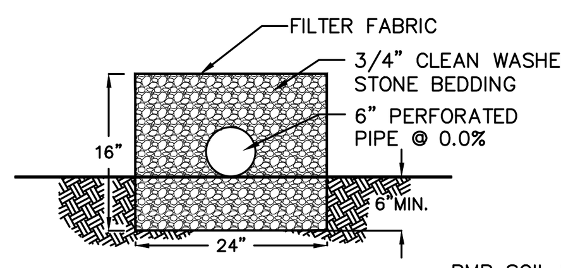




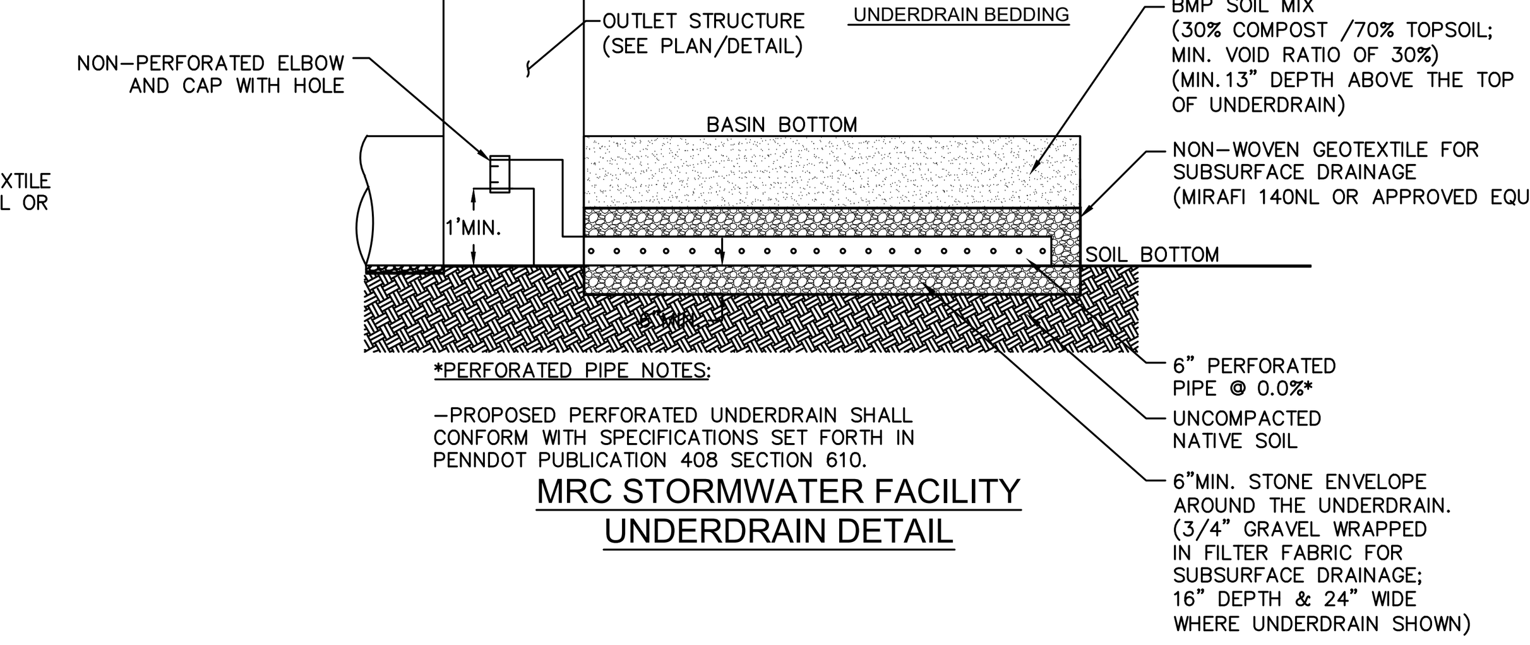
NOTES:
1. OUTLET STRUCTURES SHALL BE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION RC-46M, 'INLETS, CONCRETE TOP UNITS CAST-IN-PLACE AND PRECAST".
2. STEPS SHALL BE PROVIDED WHENEVER STRUCTURE EXCEEDS 4 FEET IN DEPTH.
3. THE CONTRACTOR SHALL PROVIDE CUT SHEETS TO ENGINEER TO REVIEW PRIOR TO CONSTRUCTION.
4. OUTLET PIPES MUST HAVE WATERTIGHT JOINTS.
5. REFER TO THE MRC BASIN UNDERDRAIN DETAIL FOR ORIFICE AND UNDERDRAIN CONNECTIONS.

OUTLET STRUCTURE ELEVATIONS				
LOT #	GRATE	OUTLET PIPE	ORIFICE INVERT	ORIFICE SIZE (IN.)
1	435.75	431.00	434.00	25W X 5H
2	457.75	453.00	456.00	25W X 5H
3	459.75	456.00	459.00	25W X 5H
5	477.75	473.00	476.00	25W X 5H
6	449.75	445.00	447.00	25W X 5H

RAIN GARDEN OUTLET STRUCTURE DETAIL
N.T.S.



UNDERDRAIN BEDDING



*PERFORATED PIPE NOTES:

-PROPOSED PERFORATED UNDERDRAIN SHALL CONFORM WITH SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408 SECTION 610.

MRC STORMWATER FACILITY
UNDERDRAIN DETAIL

*PERFORATED PIPE NOTES:

-PROPOSED PERFORATED UNDERDRAIN SHALL CONFORM WITH SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408 SECTION 610.

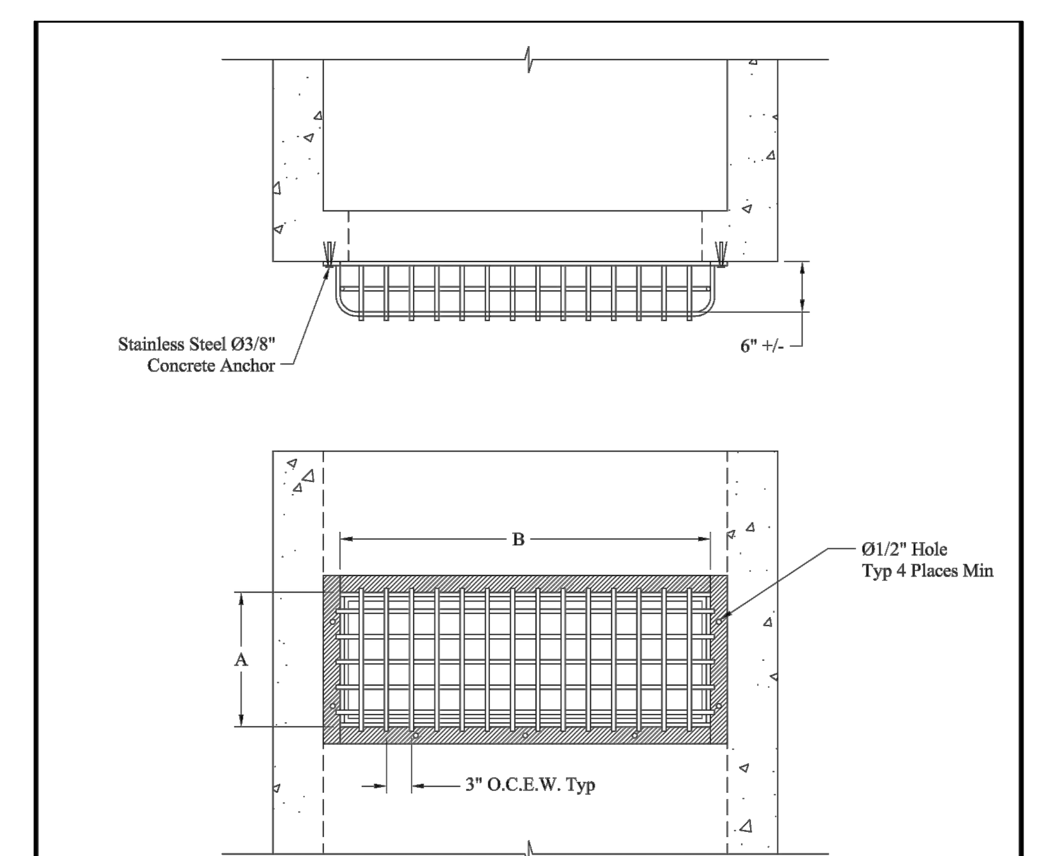
LOT #1 PIPE INVERT ELEVATION: 431.00
LOT #1 OUTLET HOLE SIZE: 0.70-INCHES
LOT #1 OUTLET HOLE ELEVATION: 432.00

LOT #2 PIPE INVERT ELEVATION: 453.00
LOT #2 OUTLET HOLE SIZE: 0.90-INCHES
LOT #2 OUTLET HOLE ELEVATION: 454.00

LOT #3 PIPE INVERT ELEVATION: 456.00
LOT #3 OUTLET HOLE SIZE: 2-INCH
LOT #3 OUTLET HOLE ELEVATION: 457.00

LOT #5 PIPE INVERT ELEVATION: 473.00
LOT #5 OUTLET HOLE SIZE: 0.80-INCH
LOT #5 OUTLET HOLE ELEVATION: 474.00

LOT #6 PIPE INVERT ELEVATION: 445.00
LOT #6 OUTLET HOLE SIZE: 0.80-INCH
LOT #6 OUTLET HOLE ELEVATION: 446.00



Requirements	
A	
B	
Finish	

General Notes
1. Materials:
   2" x 3/16" Flat Steel Bar
   ½" Dia HR Round Steel Bars @ 3" O.C.E.W.
2. Finish Options:
   A. Unfinished
   B. Painted
   C. Hot Dip Galvanized
3. Fastening Method:
   Bolted With ⅜" Stainless Steel Concrete Anchors

Phoenix Precast Products	Flat Wall Trash Rack Rectangular
	P/N:

25"Wx5"H ORIFICE TRASH RACK DETAIL
OR APPROVED EQUAL

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
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holmes cunningham ENGINEERING

REVISIONS

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CALL BEFORE YOU DIG !! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE -- STOP & CALL --
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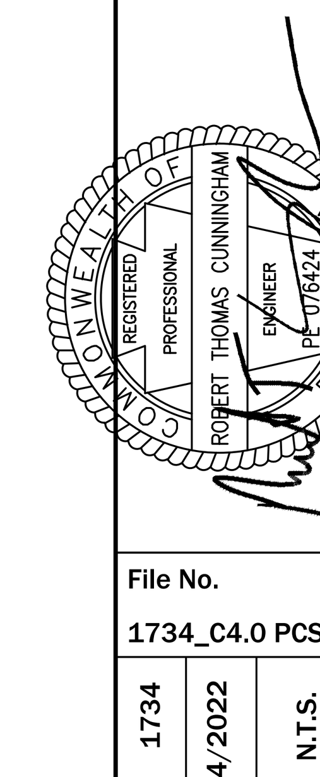
THE ESTATES AT HILL TOP
396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

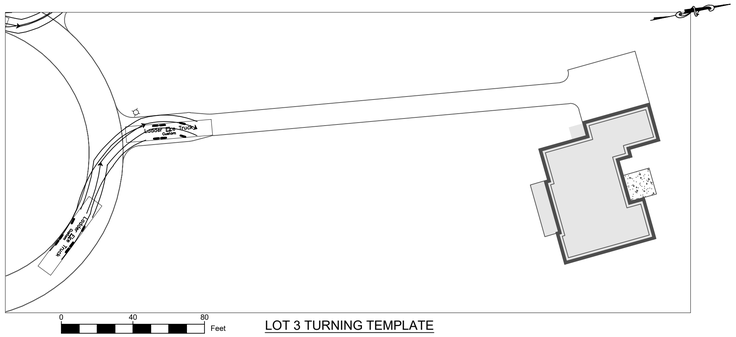


ROBERT T. CUNNINGHAM, P.E.
PA PE076424

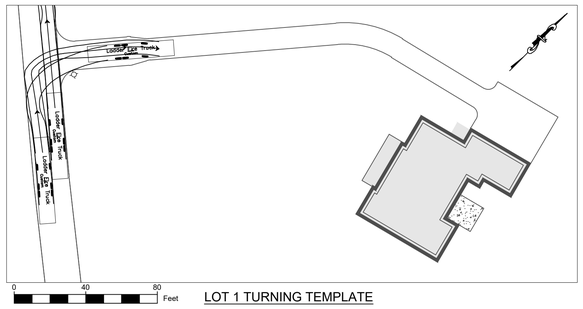
File No.
1734_C4.0 PCSM.DWG

HCE Job	1734
Date	09/14/2022
Scale	N.T.S.
Designed	RC
Sheet	12 of 15

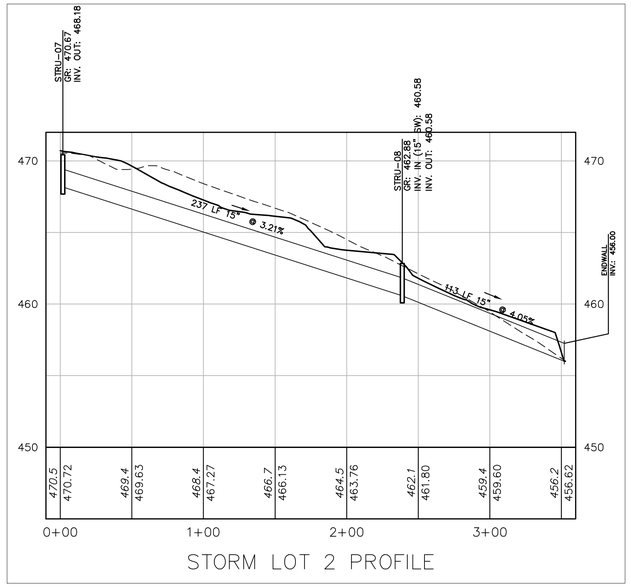
Drawing No.
C4.1



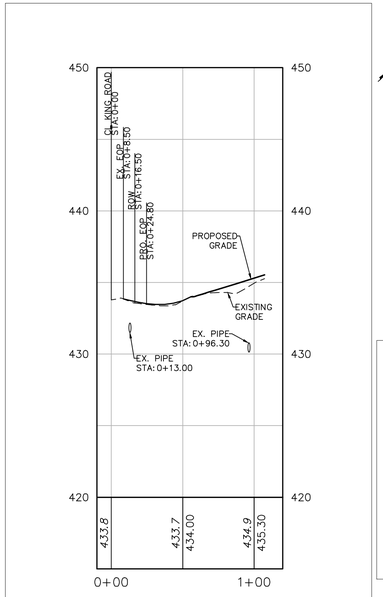
LOT 3 TURNING TEMPLATE



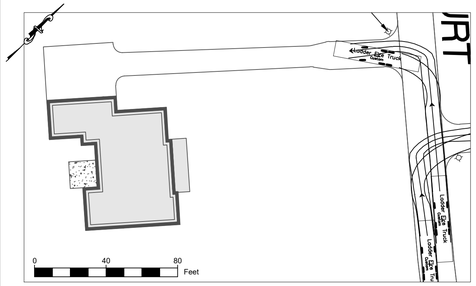
LOT 1 TURNING TEMPLATE



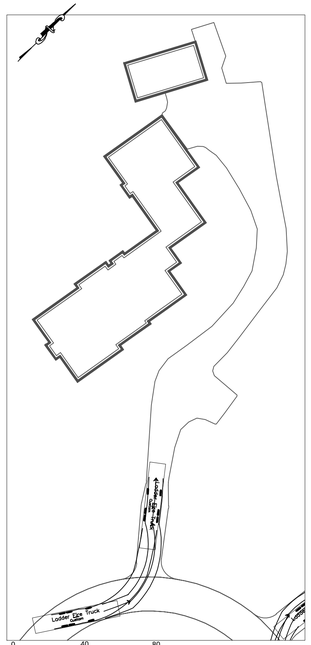
STORM LOT 2 PROFILE



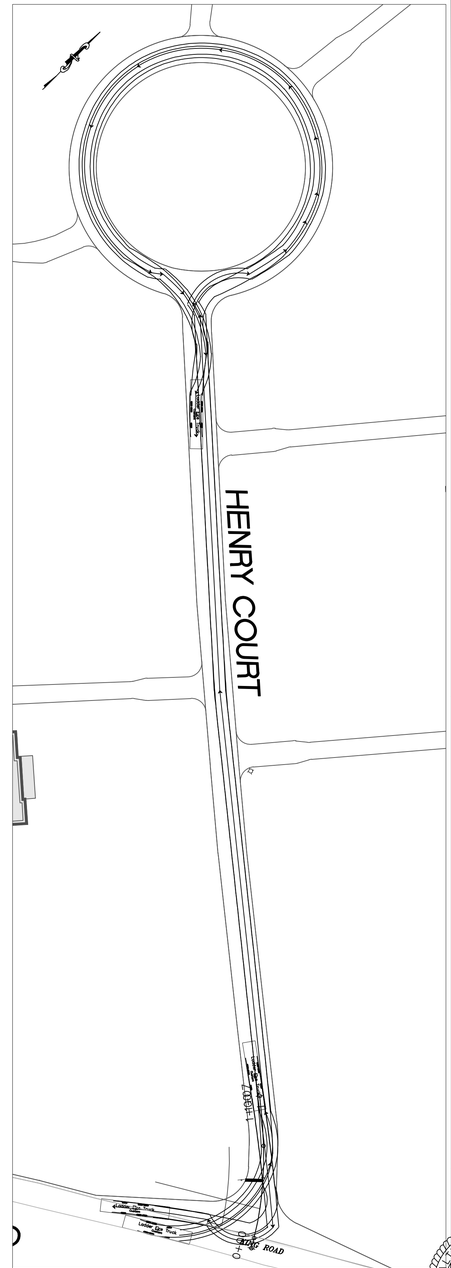
HENRY COURT PROFILE PROFILE



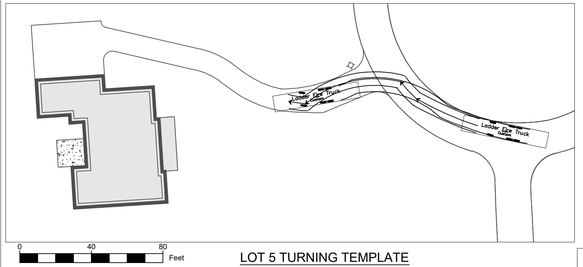
LOT 6 TURNING TEMPLATE



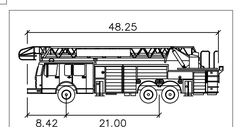
LOT 4 TURNING TEMPLATE



TURNING TEMPLATE



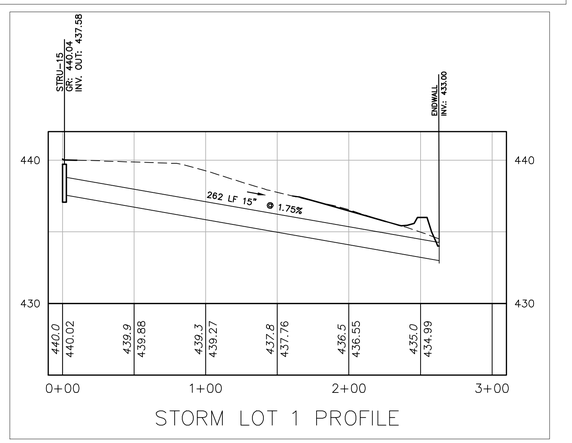
LOT 5 TURNING TEMPLATE



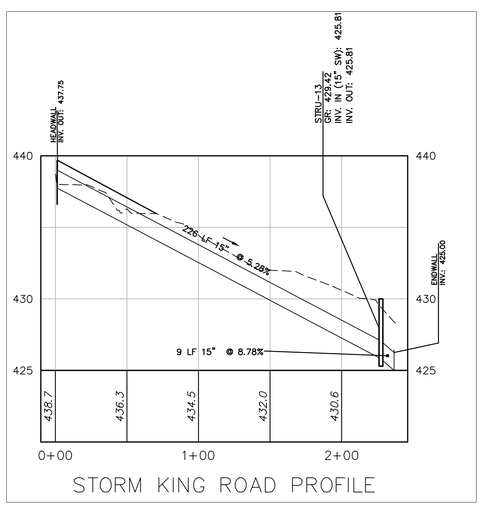
Ladder Fire Truck

	feet
Width	: 8.83
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 48.1

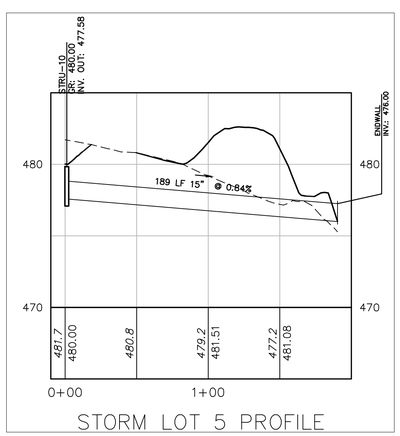
VEHICHLE PROFILE



STORM LOT 1 PROFILE



STORM KING ROAD PROFILE

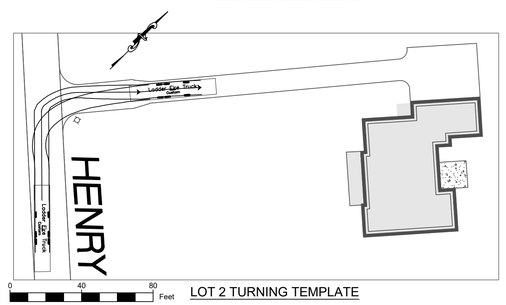


STORM LOT 5 PROFILE

PROFILE SCALE:

0 5 10
Vertical Scale

0 50 100
Horizontal Scale



LOT 2 TURNING TEMPLATE

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

HC Holmes cunningham ENGINEERING

REVISIONS	
Date	Description
02/06/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
PREMARKING OR EXCAVATION
10 WORKING DAYS IN DESIGN STAGE
DIAL 811 OR 1-800-242-1776
Pennsylvania One Call System, Inc.

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THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

TRUCK TURN & PROFILE PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.

HCE Job	1734		
Date	09/14/2022	Designed	RC
Scale	AS SHOWN	Sheet	13 of 15

Drawing No.
C5.0

GENERAL LANDSCAPE NOTES:

1. THE TOWNSHIP ENGINEER SHALL INSPECT AND APPROVE THE TREE PROTECTION FENCE INSTALLATION PRIOR TO ANY CLEARING OR EARTHMOVING ACTIVITIES.
2. IN THE OPINION OF THE TOWNSHIP ENGINEER'S REPRESENTATIVE OR CERTIFIED ARBORIST, ANY TREES DISTURBED, DAMAGED OR KILLED DURING A RESULT OF CONSTRUCTION SHALL BE REPLACED AT A ONE CALIPER INCH FOR ONE CALIPER INCH.
3. ALL PROPOSED STREET TREES ALONG HENRY COURT TO BE STAKED IN THE FIELD AND REVIEWED BY THE TOWNSHIP ENGINEER PRIOR TO INSTALLATION.

LANDSCAPE LEGEND

Street tree

Rain Garden Planting

PLANT SCHEDULE

Plan Symbol	Quantity	Botanical Name	Common Name	Min. Planting Caliper	Min. Planting Spread	Min. Planting Height	Remarks	Comments
Shade Trees								
AR	11	*Acer rubrum 'October Glory'*	'October Glory' Red Maple	3" cal.	-	14-16'	B&B	Full, straight leader
CO	8	*Carya ovata*	Shagbark Hickory	3" cal.	-	14-16'	B&B	Full, straight leader
FG	4	*Fagus grandifolia*	American Beech	3" cal.	-	14-16'	B&B	Full, straight leader
LT	6	*Liriodendron tulipfera*	Tulip Tree	3" cal.	-	14-16'	B&B	Full, straight leader
QA	7	*Quercus alba*	White Oak	3" cal.	-	14-16'	B&B	Full, straight leader
QP	7	*Quercus palustris*	Pin Oak	3" cal.	-	14-16'	B&B	Full, straight leader
TA	7	*Tilia americana*	American Linden	3" cal.	-	14-16'	B&B	Full, straight leader
TD	18	*Taxodium distichum*	Bald Cypress	3" cal.	-	14-16'	B&B	Full, straight leader
QB	14	*Quercus bicolor*	Swamp White Oak	3" cal.	-	14-16'	B&B	Full, straight leader
Ornamental Trees								
AC	16	*Amelanchier canadensis*	Serviceberry	-	-	8-10'	B&B	Multi-stem, min. 5 stems
CC	12	*Cercis canadensis 'Forest Pansy'*	Forest Pansy Redbud	1.5" cal.	-	8-10'	B&B	Full, straight leader
MV	11	*Magnolia virginiana*	Sweetbay Magnolia	-	-	8-10'	B&B	Multi-stem, min. 3 stems
Shrubs*†								
AA	42	*Aronia arbutifolia*	Red Chokeberry	-	-	30"	CONT	Heavy, full specimen
CS	19	*Cornus sericea*	Red Twig Dogwood	-	-	30"	CONT	Heavy, full specimen
IG	16	*Ilex glabra*	Inkberry	-	-	30"	CONT	Heavy, full specimen
IV	69	*Ilex verticillata 'Red Sprite'*	'Red Sprite' Winterberry	-	-	30"	CONT	Heavy, full specimen

** Plant in continuous mulch bed (2-3" depth) until fully established.*

LANDSCAPE REQUIREMENTS CHART - NEW BRITAIN TOWNSHIP

Subdivision Ordinance Item	Requirement	Plan Proposed
Z.O. 27-2400 Natural Resources	No more than 20% woodland disturbance is permitted in the WS district. 20% of woodland disturbance is proposed. No replacement trees are required.	N/A
Z.O. 27-2800 Buffer Yards	Buffer yards shall be required where a nonresidential zoning district adjoins a residential zoning district.	N/A
S.O. 22-713.4 Street Trees	Street trees shall be planted every 30' along all proposed streets and existing streets when they abut or lie within the proposed subdivision and/or land development. Trees shall be planted 3-5' outside the ultimate right-of-way. King Rd.: 948' - 50'(driveway) = 898' 898/30 = 30 trees Internal Rd.: 743' (1190x2)/30 = 79 trees	existing vegetation 50 Shade trees* (+ existing vegetation)
S.O. 22-713.5.B.(3) Landscape Buffers & Screens - Detention/ Retention Basins	One deciduous or evergreen tree planted every 20 feet, plus one deciduous or evergreen shrub every 10 feet along the basin perimeter, planted in an informal arrangement. Rain Garden Lot 1: 307' 307/20 = 15 Deciduous or Evergreen trees 307/10 = 31 Deciduous or Evergreen shrubs Rain Garden Lot 2: 307' 307/20 = 15 Deciduous or Evergreen trees 307/10 = 31 Deciduous or Evergreen shrubs Rain Garden Lot 3: 307' 307/20 = 15 Deciduous or Evergreen trees 307/10 = 31 Deciduous or Evergreen shrubs Rain Garden Lot 5: 307' 307/20 = 15 Deciduous or Evergreen trees 307/10 = 31 Deciduous or Evergreen shrubs Rain Garden Lot 6: 220' 220/20 = 11 Deciduous or Evergreen trees 220/10 = 22 Deciduous or Evergreen shrubs	35 Shade trees (13 existing trees around perimeter) 36 Ornamental trees 146 Shrubs
	Total Landscape Proposed	267 Shade Trees

* Street trees placed behind existing evergreen vegetation along proposed road and elsewhere on lots.

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THE ESTATES AT HILLTOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

LANDSCAPING PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C6.0 LANDSCAPE.DWG

HCE Job	1734	Date	09/14/2022	Scale	1"=60'
Designed	RC	Sheet	14 of 15		

Drawing No.
C6.0

GENERAL LANDSCAPE PLANTING NOTES:

PLANTING MATERIALS

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.

2. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.

3. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANTS ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.

4. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.

5. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.

PLANTING SOILS

1. REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON-SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON-SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS

2. SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS, MARSHES OR CONTAMINATED SITES.

3. IF DEPTH OF PLANTING SOILS AND TOPSOIL IS NOT INDICATED IN PLANS OR DETAILS, A MINIMUM 18" DEPTH SHALL BE PROVIDED FOR ALL TREES AND LARGE SHRUBS; MINIMUM 12" DEPTH SHALL BE PROVIDED FOR GROUNDCOVERS, HERBACEOUS AND MEADOW OR ORNAMENTAL GRASS AREAS AND A MINIMUM 6" LAYER SHALL BE INSTALLED IN ALL LAWN AREAS. TOPSOIL AND PLANTING SOIL DEPTH INDICATED ON PLANS AND PLANTING DETAILS AND NARRATIVE SPECIFICATIONS SHALL GOVERN DEPTH WHEN PROVIDED.

4. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.

5. IF THE QUANTITY OF SOILS FROM THE SITE IS NOT ADEQUATE TO FILL PLANTING AREAS TO THE DEPTH INDICATED IN THE PLANS AND DETAILS, CONTRACTOR SHALL FURNISH PLANTING SOILS THAT ARE FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER AND COMPLY WITH THE FOLLOWING CRITERIA:
   -SOILS SHALL MEET ALL APPLICABLE SOIL REMEDIATION STANDARDS
   -ORGANIC CONTENT: 2-5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS
   -SOLUBLE SALTS: LESS THAN 0.5 MM HOS/CM
   -SOIL PH: 4.5-7% TO BE AMENDED PER SOIL TEST RESULTS
   -PHYSICAL (SIEVE) ANALYSIS/ SOIL TEXTURE
   SAND: 40-60% SILT: 25-60% CLAY: 5-20%
   -NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE.

6. ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULTS SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS, THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE.

7. IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE, WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED, PH RANGE OF 6-8; MOISTURE CONTENT 35-55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL; FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER

8. SCARIFY AND/OR TILL ALL COMPACTED SUBSOILS PRIOR TO ADDING PLANTING SOIL OR TOPSOIL. PLANTING SOILS AND TOPSOIL SHALL BE PLACED IN 12-18" LIFTS THAT ARE LOOSELY COMPACTED. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION.

DELIVERY, STORAGE, AND HANDLING

1. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.

2. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED, DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP OR BREAK BALLED STOCK DURING DELIVERY OR HANDLING.

3. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOT BALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING. IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8" INTO THE PLANTING HOLE. WITH CONTAINER-GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.

4. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.

INSTALLATION

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.

2. THE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.

3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE FINISHED GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.

4. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.

5. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.

6. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.

7. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.

8. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.

9. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.

10. AFTER COMPLETION OF A PROJECT, ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A SHREDDED HARDWOOD BARK OR APPROVED EQUAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.

GUARANTEE

1. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF 18 MONTHS FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

BMP SEEDING

BASIN FLOORS (FOR STORMWATER FACILITIES 1&2)
SEED IN ERNST SEED MIX (ERNMX-180); RAIN GARDEN AREA MIX
SEEDING RATE IS 20 LBS. PER ACRE WITH 30 LBS. PER ACRE GRAIN RYE (COVER CROP)
BASIN FLOOR = 8,000 SF
(4865/43560) X 20 = 2.5 LBS. ERNMX-180
(4865/43560) X 30 = 3.5 LBS. GRAIN RYE

ERNMX-180 RAIN GARDEN AREA MIX

26% River Oats, PA/VA Ecotype blend (Chasmanthium latifolium (Uniola latifolia), PA/VA Ecotype blend)
17% Virginia Wildrye, PA Ecotype (Elymus virginicus, PA Ecotype)
15% Fowl Bluegrass (Poa palustris)
10% Fox Sedge, PA Ecotype (Carex vulpinoidea, PA Ecotype)
6% Purple Coneflower (Echinacea purpurea)
4% Blackeyed Susan, Coastal Plain NC Ecotype (Rudbeckia hirta, Coastal Plain NC Ecotype)
3% Zigzag Aster, PA Ecotype (Aster prenanthoides (Symphyotrichum p.), PA Ecotype)
3% Blue False Indigo, Southern WV Ecotype (Baptisia australis, Southern WV Ecotype)
3% Ohio Spiderwort, PA Ecotype (Tradescantia ohiensis, PA Ecotype)
2% Lanceleaf Coreopsis, Coastal Plain NC Ecotype (Coreopsis lanceolata, Coastal Plain NC Ecotype)
2% Wild Bergamot, PA Ecotype (Monarda fistulosa, PA Ecotype)
2% Wild Senna, VA & WV Ecotype (Senna hebecarpa (Cassia h.), VA & WV Ecotype)
2% Autumn Bentgrass, PA Ecotype (Agrostis perennans, PA Ecotype)
2% Marsh (Dense) Blazing Star (Spiked Gayfeather), PA Ecotype (Liatris spicata, PA Ecotype)
1% Early Goldenrod, PA Ecotype (Solidago juncea, PA Ecotype)
1% Oxeye Sunflower, PA Ecotype (Heliopsis helianthoides, PA Ecotype)
1% Swamp Milkweed, PA Ecotype (Asclepias incarnata, PA Ecotype)

DETENTION BASIN & SIDE SLOPE SEEDING

BASIN FLOOR
SEED IN ERNST SEED MIX (ERNMX-180); RAIN GARDEN AREA MIX
SEEDING RATE IS 20 LBS. PER ACRE WITH 30 LBS. PER ACRE GRAIN RYE (COVER CROP)
BASIN FLOOR = 4,865 SF
(4865/43560) X 20 = 2.5 LBS. ERNMX-180
(4865/43560) X 30 = 3.5 LBS. GRAIN RYE

BASIN SIDE SLOPES
SEED IN ERNST SEED MIX (ERNMX-181): NATIVE STEEP SLOPE MIX W/ ANNUAL RYEGRASS
SEEDING RATE IS 60 LBS. PER ACRE
SIDE SLOPE AREA = 3,690 SF
(3690/43560) X 60 = 5.0 LBS. ERNMX-181

ERNMX-181 NATIVE STEEP SLOPE MIX W/ ANNUAL RYEGRASS

20% Annual Ryegrass (Lolium multiflorum (L. perenne var. italicum))
18% Virginia Wildrye, PA Ecotype (Elymus virginicus, PA Ecotype)
15% Purpletop (Tridens flavus)
12% Creeping Red Fescue (Festuca rubra)
12% Indiangrass, 'Prairie View'-IN Ecotype (Sorghastrum nutans, 'Prairie View'-IN Ecotype)
5% Big Bluestem, 'Southlow'-MI Ecotype (Andropogon gerardi, 'Southlow'-MI Ecotype)
4% Autumn Bentgrass, Albany Pine Bush-NY Ecotype (Agrostis perennans, Albany Pine Bush-NY Ecotype)
4% Tickegrass (Rough Bentgrass), PA Ecotype (Agrostis scabra, PA Ecotype)
2% Partridge Pea, PA Ecotype (Chamaecrista fasciculata (Cassia f.), PA Ecotype)
2% Purple Coneflower (Echinacea purpurea)
2% Blackeyed Susan (Rudbeckia hirta)
1% Marsh (Dense) Blazing Star (Spiked Gayfeather), PA Ecotype (Liatris spicata, PA Ecotype)
1% Oxeye Sunflower, PA Ecotype (Heliopsis helianthoides, PA Ecotype)
1% Lanceleaf Coreopsis, Coastal Plain NC Ecotype (Coreopsis lanceolata, Coastal Plain NC Ecotype)
1% Wild Bergamot (Monarda fistulosa)

BASIN LANDSCAPE MAINTENANCE

THIS BASIN IS DESIGNED TO BECOME NATURALIZED OVER TIME AND WILL REQUIRE LESS MAINTENANCE AS TIME GOES ON.

MOWING - ESTABLISH AND MAINTAIN A NO-MOW ZONE THAT ENCOMPASSES THE BASIN FLOOR AND SIDE SLOPES. MOW THE NO-MOW ZONE 1X/YEAR TO A MINIMUM HEIGHT OF 6". (ANNUALLY IN LATE APRIL/ EARLY MAY). RAKE MOWN MATERIAL AND COMPOST OR DISPOSE OF OFF SITE.

INSPECTIONS - INSPECT BASIN AND NO-MOW ZONES FOR INVASIVE SPECIES SUCH AS PURPLE LOOSESTRIFE, PHRAGMITES, HONEYSUCKLE, ETC. (ANNUALLY IN JULY). IF INVASIVE SPECIES ARE FOUND REMOVE PER RECOMMENDED STANDARDS FOR SPECIFIC SPECIES FOLLOWING GUIDELINES BY PA DCNR (DEPT OF CONSERVATION & NATURAL RESOURCES).

CLEANING - REMOVE TRASH AND DEBRIS (JANUARY & APRIL)

LAWN SEED NOTES:

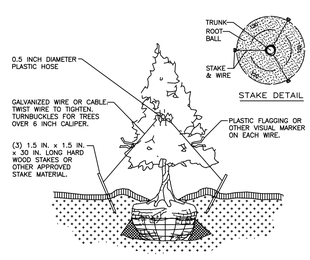
1. PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER THAN 2" DIAMETER.
2. THE FOLLOWNG SEED MIX SHALL BE SOWN AT THE RATES AS DEPICTED:

RED FESCUE	1 1/2 LBS./1,000 SF
PERENNIAL RYEGRASS	1 LBS./1,000 SF
KENTUCKY BLUEGRASS	1 1/2 LBS./1,000 SF
SPREADING FESCUE	1 LBS./1,000 SF

3. SEED MIX SHALL BE MULCHED WITH SALT HAY OR UNROTTED SMALL GRAIN STRAW AT A RATE OF 2 TONS/AC OR 90 LBS/1,000 SF
4. SEEDING DATES FOR THIS MIXTURE SHALL BE AS FOLLOWS:
   SPRING: APRIL 1 - MAY 31
   FALL: AUGUST 16 - OCTOBER 31
5. GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR TO IRRIGATE SEEDED AREA UNTIL AN ACCEPTABLE STAND OF COVER IS ESTABLISHED BY OWNER.

TREE PROTECTION NOTES:

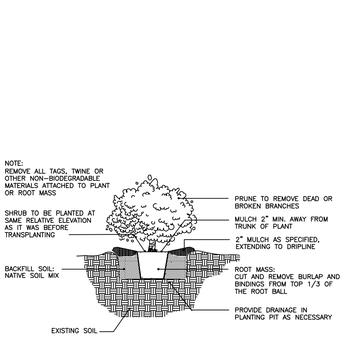
1. ALL EXISTING SHADE TREES WITHIN THE LIMITS OF TREE PROTECTION FENCING AND AS DIRECTED BY THE LANDSCAPE ARCHITECT SHALL BE PROTECTED THROUGHOUT THE DURATION OF WORK.
2. DEMOLITION AND GRADING WORK ADJACENT TO PROTECTED TREES SHALL BE PERFORMED BY A QUALIFIED PERSON WITH A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN WORKING WITH EXCAVATION EQUIPMENT. CONTRACTOR TO PROTECT ROOT MASS AGAINST DAMAGE DURING EXCAVATION. ANY TREE ROOTS THAT ARE DISTURBED, BROKEN OR CUT SHALL BE PRUNED BACK WITH CLEAN SHARP TOOLS.
3. TO MINIMIZE DISTURBANCE OF VEGETATION TO REMAIN, ALL TREE STUMPS TO BE REMOVED WITHIN 10' OF TREE PROTECTION FENCE SHALL BE REMILLED USING A STUMP GRINDER.
4. ALL EXPOSED TREE ROOTS SHALL BE THOROUGHLY IRRIGATED ON A DAILY BASIS UNTIL BACKFILLING CAN OCCUR AS DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.
5. ALL WORK TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF EITHER THE OWNER'S REPRESENTATIVE OR PROJECT LANDSCAPE ARCHITECT. NOTIFY OWNER A MINIMUM OF 48 HOURS PRIOR TO ANY EARTHWORK / EXCAVATION WORK.



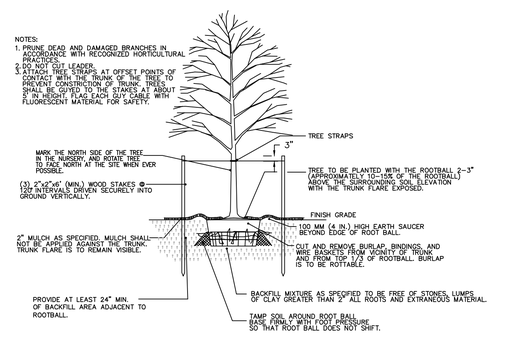
STAKE DETAIL

1. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL.
2. ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM 0.5 INCH.
3. REMOVE ALL STAKING AS SOON AS THE TREE HAS GROWN SUFFICIENT ROOTS TO OVER-COME THE PROBLEM THAT REQUIRED THE TREE TO BE STAKED. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON.
4. TREES NORMALLY DO NOT NEED TO BE STAKED AND STAKING CAN BE HARMFUL TO THE TREE. STAKING SHOULD BE DONE ONLY WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT IF IT IS EXPECTED THAT THE TREE WILL NOT BE ABLE TO SUPPORT ITSELF.
5. WIRE OR CABLE SIZES SHALL BE AS FOLLOWS:
   TREES UP TO 2.5 INCH CALIPER - 14 GAUGE
   TREES 2.5 INCH TO 3 INCH CALIPER - 12 GAUGE
6. TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 INCH CALIPER OF TRUNK MOVEMENT.
7. TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED.

EVERGREEN TREE STAKING DETAIL



SHRUB PLANTING DETAIL



ORNAMENTAL AND SHADE TREE PLANTING/ STAKING DETAIL

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

HC holmes cunningham ENGINEERING

REVISIONS		
	Date	Description
	02/08/2023	Revised Per Township Engineer Review

CALL BEFORE YOU DIG!!!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR EXCAVATION/DEMOLITION 10 WORKING DAYS IN DESIGN STAGE
Pennsylvania One Call System, Inc.
- STOP & CALL -
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO DETERMINE EXACT LOCATIONS PRIOR TO ANY EXCAVATION

THE ESTATES AT HILL TOP

396 KING ROAD
TMP # 26-004-030
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

LANDSCAPING DETAILS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT THOMAS CUNNINGHAM PE076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_C6.0 LANDSCAPE.DWG

HCE Job	1734	Scale	N.T.S.	Designed	RC
Date	09/14/2022				
Sheet	15 of 15				

Drawing No.
C6.1

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

March 14, 2023

File No. 22-05077

Matt West, Township Manager
New Britain Township
207 Park Avenue
Chalfont, PA 18914

Reference: 396 King Road, "The Estates at Hill Top" Preliminary Plan Review 2
Joe Casadonti, T.M.P. #26-004-030

Dear Matt:

Pursuant to your request, Gilmore & Associates, Inc. has reviewed the revised Preliminary Plan submission for the above-referenced project and offers the following comments for consideration:

I. Submission

A. Preliminary and Final Land Development and Major Subdivision Plans for The Estates at Hill Top, as prepared by Holmes Cunningham, LLC, consisting of fifteen (15) sheets, dated September 14, 2022, last revised February 8, 2023.

B. Post Construction Stormwater Management Plan Narrative for The Estates at Hill Top, as prepared by Holmes Cunningham, LLC, dated September 14, 2022, last revised February 9, 2023.

C. The Estates at Hill Top Waiver Request Letter, as prepared by Holmes Cunningham, LLC, dated September 22, 2022, last revised February 8, 2023.

D. Wetland Investigation Report by VW Consultants, LLC, dated February 10, 2023

II. General Information

The 36.1-acre subject tract is located at 396 King Road (T-407) within the Watershed Zoning District. The site currently consists of a single-family dwelling amidst various natural resources and agricultural land. The Applicant proposes to subdivide the property into six (6) single-family dwelling lots (Use B1) which is permitted by right with a +/-740'-long private street, Henry Court. The existing single-family dwelling is proposed to remain on Lot 4. The lots are proposed to have on-lot well and septic systems, with individual rain gardens for each new dwelling lot. Widening and storm sewer improvements are proposed along King Road.

III. Review Comments

A. Zoning Ordinance

We have identified the following comments with the proposed plan regarding the requirements and provisions of the current New Britain Township Zoning Ordinance:

1. §27-502.b.3. & 505.1 – Natural resource protection land, such as watercourses, agricultural soils, woodlands, and steep slopes are proposed to be protected and preserved on each site through a conservation easement on each lot. We offer the following comments related to the proposed conservation easements.

a. The area of each conservation easement on each lot shall be noted on the Record Site Plan and metes and bounds provided.

65 E. Butler Avenue | Suite 100 | New Britain, PA 18901 Phone: 215-345-4330 | Fax: 215-345-8606
www.gilmore-assoc.com

b. The plan notes that all areas located outside of the limits of disturbance are to remain as existing cover. These areas include agricultural soils which are required to be protected and not permitted to be disturbed. The applicant shall discuss if the farming use is proposed to be continued and if the Easement Agreement allows for change in ground cover.

c. We recommend the Easement Agreement indicate that the purpose of the conservation easements is for the protection and maintenance of the natural resources and allows New Britain Township to access the easements for inspection and emergency repair/maintenance should the property owner fail to honor their maintenance responsibility. (§22-712.A.(3)&(4)).

2. §27-502.b.5. – When an applicant is proposing a land development, the stormwater management facilities shall be designed to manage the runoff from the maximum impervious surface permitted for the entire site. The Runoff Coefficient calculations for PR-1 through 6 appear to account for 3.84 acres of impervious. Based on a Ratio Base Site Area of 30.04 acres for the 6 lots and approximately 0.62 acres of impervious for the Henry Court and the widening along King Road, the stormwater management systems shall be designed to manage a total of 4.22 acres of impervious. The total impervious considered in the stormwater design shall be tabulated on the plans and the stormwater report revised to manage the maximum impervious.

3. §27-2400.4.i. – For major subdivisions, replanting of the riparian corridor is required where there is little or no existing streamside vegetation and in accordance with this section. An evaluation of the existing vegetation along the stream shall be provided to determine if any revegetation is required or else a site meeting scheduled with our office to review the vegetation. Based on Sheet 4 of 15, there is an area of riparian corridor on Lot 6 that does not have existing vegetation. Ground cover is required along with trees at a rate of one overstory tree and three shrubs for every 20 feet of waterway.

B. Subdivision and Land Development Ordinance Waivers

The following waivers from the Subdivision and Land Development Ordinance have been formally requested by the Applicant in a letter dated September 22, 2022, last revised February 8, 2023:

1. §22-403 & 404 – From providing separate preliminary and final plan submissions.

2. §22-502.D – From the requirement to show existing features within 100 feet of the tract boundary conditioned on providing an aerial map and any additional information requested by the Township Engineer, which we support.

3. §22-502.1.H – From providing a lighting plan, which we support.

4. §22-703.4.C – From the requirement that lot lines shall be drawn parallel, concentric, at right angles or radial to the street right-of-way line. Several lot lines are not perpendicular or radial to the Henry Court right-of-way line.

5. §22-705.3.C – From constructing full width road improvements along King Road, a minor collector road which requires a 60-foot ultimate right-of-way and 36-foot cartway. The waiver request letter shall be revised to include this waiver. We recommend a waiver to allow partial widening along King Road of 2 ft of widening where 10 ft is required, with the following conditions:

a. A 30-foot ultimate right-of-way along King Road offered as an easement to the Township.

b. As noted on the Record Plan, Site Plan Note 16, all dead trees, live trees and branches interfering with the existing overhead lines removed within the proposed King Road U.R.O.W.

c. As noted on the Existing Features plan, 2 utility poles relocated near the proposed entrance.

d. As shown, the entrance culvert replaced with a minimum 15” diameter pipe.

e. Based on a site visit, there are areas of erosion along the watercourse on both Lots 1 and 6. We recommend any areas of erosion be stabilized, down trees removed from the watercourse, and any associated permits obtained from PADEP, as required.

6. §22-705.3.E – From the requirement to design private streets to the specifications of a local street related to cartway width. A 20-foot private street is proposed where a 28-foot-cartway is required. We support a waiver conditioned on approval of the truck-turning templates by the Fire Marshal.
7. §22-705.3.G – From providing a 1 ½-inch mill and overlay of King Road along the subdivision. The plan currently proposes 2 feet of widening along the King Road frontage. Based on a discussion with the Public Works Superintendent, the road was originally a dirt road tar and chipped over the years and, therefore, we do not recommend a waiver. We would support a partial waiver from milling King Road, with the condition that a leveling course be installed along with 1 ½ of wearing course. We recommend that the developer document the existing road conditions prior to construction.
8. §22-705.8.C. – From providing a left-side turnaround configuration for the cul-de-sac with a minimum right-of-way radius of 60 feet and a minimum paving radius of 50 feet. The plan proposes a 20-foot-wide loop road at the end of the access road, which we support.
9. §22-705.8.F. – From providing a 15-foot by 20-foot snow storage easement along the right-of-way of the cul-de-sac bulb, which we support.
10. §22-706 – From providing curb and sidewalk along the property frontage of King Road and the proposed private street, which we support.
11. §22-707.A – From providing pedestrian walkways or recreational trails at locations deemed necessary by the Board, which we support. Due to existing utilities, topography, and natural resources, it appears that the opposite side of King Road may be the better location for any future trail.
12. §22-713.4.B – From the requirement that street trees be planted between three and five feet outside the ultimate right-of-way line and in an informal arrangement when approved by the Board. In addition, the waiver request should be revised to include a partial waiver from §22-713.4.A. to allow existing trees to partially satisfy the street tree requirement. The Applicant proposes to supplement the existing vegetation with an additional 50 trees. We support this waiver.
13. §22-714.3.A – From providing streetlights at the intersection and turnaround. We support this waiver conditioned on the lamp posts being installed as shown on the plan.
14. Resolution 2007-12 - For any public improvement waivers granted, the Applicant is required to contribute a fee to the Township to cover 50% of the cost of future improvements to bring Township rights-of-way up to current standards. Based on the current waivers requested, this contribution would be required for partial road widening, curb, sidewalk, streetlighting, etc., if granted. If waived, a cost estimate of the required improvements above with credit for the road improvements to be installed shall be submitted for review. **We recommend this cost be estimated by the Applicant's Design Professional and submitted to our office for review prior to the Board of Supervisors taking action on the plans.**

C. Subdivision and Land Development Ordinance

We have identified the following issues with the proposed plan regarding the requirements and provisions of the current Subdivision and Land Development Ordinance (SALDO):

1. §22-406.1 – The Applicant is responsible for any other required reviews, approvals, permits, etc. (i.e., BCPC, BCCD, PADEP, Fire Marshal, Township Road Opening Permit, Well Construction Permits, etc.) as applicable.
2. §22-502.A.(4) – The following issues related to the property line and bearings and distances on the Record Site Plan shall be addressed:
    a. The bearings and distances for the line at the southern end of the King Road Ultimate Right-of-way is cut off from the plan and shall be revised.

b. The distance between the roadway centerline and the ultimate right-of-way of King Road shall be dimensioned on the plan.

3. §22-502.B. – The following comments regarding plan notes/ presentation shall be addressed:

   a. A wetland report has been provided indicating that no wetlands are present on the site. A signed wetlands certification shall be added to the Record Site Plan indicating the absence of wetlands on the site.

   b. At several locations along the road, the ultimate right-of-way appears to be slightly less than the required 30 feet. The distance between the centerline of King Road and the ultimate right-of-way shall be dimensioned on the plan on either side of the proposed intersection with Henry Court.

   c. Once the waivers and design are finalized, a plan view detail and cross-section detail shall clarify the proposed King Road improvements.

   d. Several unidentified dashed and solid lines are shown on the Record Site Plan at the intersection of Henry Court and King Road. The existing storm sewer and notes related to the removal of the existing wall are shown on this plan as well. All unnecessary lines and notes should be removed from the Record Site Plan.

   e. The erosion control matting shall be included in the legend on the E&S Plan.

   f. The legend on the PCSWM Plan shall be revised to match the information on the plan.

4. §22-502.B.(11) – Legal descriptions are required for the new lots, natural resource conservation easements, ultimate right-of-way easement for King Road, private access easement, defined stormwater easements, proposed utility easements, back up septic system easements and any other easements which may be proposed. All easements shall be labeled with metes and bounds.

5. §22-502.E(5), (8), & (9) – The location, size and material of the sanitary sewer pipe, water supply lines and well locations shall be shown on the Grading, Drainage and Utility Plan to verify they do not conflict with any other proposed improvements.

6. §22-705.12. – All proposed street names shall be reviewed by the Township Fire Marshal's office for duplication then approved by the Board of Supervisors. The Applicant shall formally request approval of the proposed street name from the Board of Supervisors.

7. §22-705.12.G – We offer the following comments relative to signage:

   a. The location of all traffic signage shall be shown on the Record Plan and signage details provided.

   b. “No Parking” signs shall be provided along the private street to ensure adequate access is provided for emergency vehicles, delivery trucks, buses, and trash trucks.

8. §22-710 – We defer to the Township Fire Marshal for review of the plans with respect to water supply, emergency access, etc.

9. §22-711.3 – Erosion controls shall be provided for the following:

   a. The plan notes that the existing driveway is to be used as a construction entrance. A note should be added, stating that if any mud or stone is tracked onto King Road, a full construction entrance shall be required. It appears that a construction entrance is required at the existing driveway to provide egress from Lots 3 and 5, unless the road is constructed first, in which case a construction entrance shall be provided for the roadwork.

   b. for the replacement of the 36” RCP culvert pipe

   c. for the installation of the culvert pipe and road widening along King Road

   d. for the installation of the storm pipes from Henry Court to Lots 1 and 5

e. along the northeastern side of Henry Court between Lot 1 and King Road to capture any sediment that bypasses the inlet during construction.

10. §22-711.3 – The following comments related to grading shall be addressed:

    a. Existing and proposed spot elevations should be provided for the connection between Henry Court and King Road to demonstrate adequate drainage at the intersection.

    b. The proposed contours appear to direct runoff towards the dwellings on Lots 1 and 2. Spot elevations shall be provided at the corners of the dwellings and the contours revised as necessary to demonstrate drainage away from the dwelling.

    c. The existing 438 contour is shown at the headwall for the culvert pipe along King Road with an invert elevation of 437.75. This will result in the pipe being exposed at this location. The grading should be revised to provide a minimum of 1 foot of cover over the pipe.

    d. The proposed contour for the rain garden bottom at Lot 3 is listed at 456 and appears that it should be 458. The rain garden elevation should be clarified.

11. §22-713.2.A & B –The plan shows four existing trees and canopy to remain in the cul-de-sac area, however, grading is proposed which may impact the trees. If these trees die as a result of construction, they will be required to be replaced prior to the end of the maintenance period.

12. §22-713.5.B.(3) – Multiple trees and shrubs are proposed on the downward slope of the rain garden embankment berms. The plant material shall be relocated to toe of slope.

13. §22-713.6.A – The proposed trees for the rain gardens on Lots 1, 2, 5 and 6 shall be relocated to a minimum distance of 10 feet to all underground utilities, including storm sewer. In addition, plantings shall be relocated outside the existing cable easement.

14. §22-715.2.C.(1) – Park and recreation land is required at a ratio of 2,500 square feet per new dwelling unit or 12,500 square feet. The land shall be dedicated to the Township or other entity as may be approved by the Board. A fee-in-lieu of park and recreation at a rate of $2,500 per dwelling unit or **$12,500.00** for the 5 new dwellings may be provided at the Board's discretion.

15. §22-716 – Concrete monuments shall be placed at all outbound existing property corners, at all proposed lot corners, including changes in direction of boundary, along the King Road ultimate right-of-way, along the private access easement, along all existing and proposed easements including conservation easements, defined stormwater or storm sewer easements, etc. Monumentation shall be provided in lieu of pins along the property lines, changes in horizontal direction, conservation easements, backup septic easements, existing easement, and along the King Road ultimate right-of-way.

16. §22-719.7.& 8. –The Applicant has submitted a Water Resource Impact Study to the Township. The Applicant shall comply with our Review Memo 1 dated March 1, 2023. We note that it shall be demonstrated that the proposed Lot 2 well will be able to meet the long-term yield.

17. §22-719.11. – For subdivisions and/or land developments involving water supply wells, the applicant shall be required to enter into a Well Depletion Agreement as a condition of final plan approval and in accordance with sections §22-719.11.A-C. The approved Well Monitoring Program shall be attached to the Well Depletion Agreement.

18. §22-721 – Planning module approval is required to be obtained from the Pennsylvania Department of Environmental Protection (DEP). We recommend the Planning Commission and Board of Supervisors review the Planning Module submission and approve it at an upcoming meeting.

19. §22-721.7 – The location of the well isolation area for Lot 4 shall be shown on the plans.

20. §22-721.8 – The applicant shall provide to each lot owner a plan and specifications of the on-lot sewage disposal systems and all operational manuals required for the use and proper maintenance of the systems.

D. Stormwater Management Ordinance Comments

We offer the following comments related to the Township's Stormwater Ordinance

1. §22-712.4 – The Applicant proposes a new rain garden for each of the proposed lots. While the rain gardens aren't identified as detention basins, they are controlling the peak rates for stormwater runoff. We recommend a partial waiver from this section of the Ordinance related to detention basins, conditioned on the following:
   a. §27-502.b.5 – Per the above-noted Zoning comment, the rain gardens shall manage the maximum impervious permitted for the site in accordance with the Township's Stormwater Ordinance.
   b. §22-712.4.A – Though the plans identify the proposed stormwater facilities as rain gardens and not detention basins, the facilities are still detaining stormwater runoff. The emergency spillways are designed to the exact elevation of the 100 year storm. If the basins are not constructed to the design volume, this will result in discharge from the spillway and possibly an increase in the peak flows from the site. We recommend the spillway elevations be raised to provide freeboard.
2. §22-712.5.A – All storm sewer systems shall provide the required capacity for the 100-year design storm based on the Rational Method. The following issues related to the pipe capacity calculations should be addressed:
   a. The Culvert Report for the 36-inch pipe crossing under Henry Court notes a high-water elevation of 436.36. This is higher than embankment and will result in overflow across Henry Court which could damage the road. The pipe size should be increased or the grading around the pipe revised to prevent the flows to this culvert from overtopping the roadway.
   b. The Storm Sewer Tabulation shall label the storm sewer structures to verify the data.
   c. The Storm Sewer Tabulation models the 15" RCP along King Road with a drainage area of 0.20 acres. An offsite drainage area map shall be provided to verify the drainage area to this headwall.
   d. The report models the pipe between Manhole Structure STR 13 and the endwall along King Road as a 15-inch pipe which shall be revised to an 18-inch pipe.
3. §22-712.6.A. – All inlets to be utilized in a storm sewer system shall conform to the design standards of the most current PennDOT Publications 408 and 72. The inlet details reference PennDOT Pub 72M, RC-34. This should be revised to specify RC-46M.
4. §22-712.6.C. – Inlet spacing in paved areas shall be arranged so a minimum of 80% of the gutter flow tributary to the inlet will be captured. Inlet capacity reports shall be provided for the inlets along Henry Court. Inlets STRU 07 and 15 along Henry Court shall be noted to be sumped to ensure they capture the design subdrainage area.
5. §22-712.8.D. – Rock apron shall be placed at all headwalls and endwalls. The rip rap apron details on Sheet 10 only reference PRA-1 and PRA-2 for Lots 1 and 2. The 24-inch pipe size listed in the detail for PRA-1 is not consistent with the proposed pipe. Rip Rap apron details shall be provided for the discharge pipes on Lots 1 and 5, for the 36" RCP culvert crossing Henry Court, and the 18" RCP along King Road.
6. §22-712.12.A. – All proposed driveways, where curbs and storm sewer are not required by the Board, shall have a culvert with flared end sections or endwalls. Runoff is proposed to be directed over the proposed driveways. Twenty-four (24) foot long 15" RCP culverts or concrete trench boxes with grates shall be provided.
7. §26-125.3 – The time of concentration flow paths shall be shown on the drainage area plans and calculations provided in the report to verify the times used for the hydrographs.
8. §26-132 – The following discrepancies with the stormwater management design and plans shall be addressed:

a. The BMP Invert elevations listed in the Rain Garden MRC BMP Elevations table on Sheet 12 are inconsistent with the proposed contours shown on the Grading, Drainage and Utility Plan. The detail and proposed contours shall be revised to clarify this discrepancy.

b. The level spreader on Lot 6 has a grate elevation of 446.00 which is 1 foot higher than the invert from the outlet structure and will result in a tailwater effect for this rain garden. The elevations and report shall be clarified.

c. The Hydrograph for the proposed total undetained flows includes offsite flows (POS-5). Based on the drainage area map, a separate hydrograph shall be provided combining offsite flows with the flows from PR-5 Detained for the Lot 6 MRC Routing. The hydrographs shall be revised.

9. §26-164.1 – The Applicant shall sign an Operation and Maintenance (O&M) agreement with the municipality covering all stormwater facilities and BMPs that are to be privately owned.

10. The Stormwater BMP Maintenance Fee applies to all proposed stormwater BMPs installed in the Township to provide a financial guarantee for the timely installation, proper construction and continued maintenance by the owner. The fee will be calculated once the engineer's estimate of probable cost is submitted and is based on 5% of the construction cost not to exceed $10,000.00. (Township Resolution 2019-03)

11. §22-712.13.D & 2023 Fee Resolution – The storm sewer fee for the development will be $2.50 per linear foot of existing and proposed roads. Based on 948 feet of frontage on King Road and 743 feet along Henry Court, a fee of **$4,227.50** would be required.

E. General Comments

1. The bridges in the area may not support anticipated construction vehicle traffic on King Road near Swamp Road or on Keller Road. Chapman Road should not be accessed by heavy trucks due to the existing road width and condition. As a side note there have also been discussions regarding construction at the County bridge on King Road near Swamp Road.

If you have any questions regarding the above, please contact this office.

Sincerely,

Janene Marchand

Janene Marchand, P.E.
Gilmore & Associates, Inc.
Township Engineers

JM/tw

cc: Michael Walsh, Assistant Manager
Dave Conroy, Director of Planning & Zoning Officer
Ryan Gehman, Assistant Planning and Zoning Officer
Randy Teschner, Code Enforcement/Fire Marshal
Ryan Cressman, Public Works Superintendent
Sean Gresh/Jeffrey P. Garton, Esq., Township Solicitors
Joe Casadonti, Applicant
Robert T. Cunningham, P.E., Holmes Cunningham, LLC
Craig D. Kennard, P.E., E.V.P., Gilmore & Associates, Inc.

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

65 E. Butler Avenue
Suite 100
New Britain, PA 18901
P: 215-345-4330
F: 215-345-8606
www.gilmore-assoc.com

MEMORANDUM

Date:	March 1, 2023
To:	Matt West, New Britain Township Manager
From:	Toby Kessler, P.G.
cc:	Michael Walsh, Randy Teschner, Dave Conroy, Ryan Gehman, Sean Gresh, Jeffrey Garton, Jeffrey Clark, Joe Casadonti, Craig Kennard, Janene Marchand, David Gerstenfeld
Reference:	File 22-05077 396 King Road (Casadonti), Water Resource Impact Study Review 1 TMP 26-004-030

Please note the following review prepared by Gilmore & Associates, Inc. (G&A) on behalf of New Britain Township of the "Water Resources Impact Study Report", prepared by Valley Environmental Services, Inc. (VES), dated January 22, 2023.

Summary: A six-lot single family housing development is proposed with on-lot wells and on-lot septic systems. The 36.1-acre parcel currently consists of an existing house, pole barn, trees, and open fields. VES submitted a Water Resources Impact Study (WRIS) report as required for a preliminary land development application.

Existing wells on the property include the existing residential well on proposed Lot #4 and an existing test well on Lot #1. The WRIS report provides details on drilling of three new wells for proposed Lot #2, Lot #3, and Lot #5 and a 72-hour aquifer pumping test completed by pumping the proposed Lot #2 and Lot #4 wells. The combined pumping rate for the 72-hour test was approximately 6 gpm, which was based on the calculated peak water demand in the subdivision. Water level monitoring during the 72-hour aquifer pumping test included the pumping wells, the proposed Lot #3 and Lot #5 wells, the existing test well in Lot #1, and three offsite existing residential wells. Water quality sampling was performed from the two pumping wells at the completion of the 72-hour aquifer test.

The following summarizes the results of the WRIS:

- The underlying bedrock at the property is the Lockatong Formation. This is typically a low-yielding, tight bedrock formation. Depths of the test wells ranged from 500 to 800 feet, which is typically the deepest depth that water supply wells are installed to obtain water in the Lockatong Formation.
- Yields of the test wells as observed during drilling ranged from 1 to 5.5 gallons per minute (gpm). This is a typical range for wells drilled in the Lockatong Formation.

- Aquifer properties (transmissivity, storage coefficient, specific capacity) indicate poor transmission capability of water within the aquifer, even lower than commonly found in the Lockatong Formation.
- The WRIS provides a projection of pumping for up to one year with no groundwater recharge. The water level projection for Lot #2 indicates that this well would be dewatered after 90 days if pumped continuously at a rate of approximately 3 gpm.
- The WRIS report provides a water budget as required by New Britain Township. The water budget provides an assessment that overall, there will be more groundwater recharge in the proposed subdivision than groundwater withdrawal.
- The WRIS report indicated a change in water level (drawdown) of 25.26 feet in the Lot #3 well and 9.64 feet in the Lot #5 well. No drawdown was observed in Lot #1 Well or the 3 off-site monitoring wells during the 72-hour pumping test.
- Arsenic, Total Coliform and E. coli were found to exceed their respective drinking water limits on Lot #2. The source of arsenic may be naturally occurring in the Lockatong bedrock. The WRIS report recommends a standard in-home treatment system for the arsenic and chlorination of the well prior to being re-tested for occupancy.

  Total coliform was found to be present in the existing Lot #4 well. The WRIS report recommends that the Lot #4 well be chlorinated and re-tested for coliform. If coliform is detected, the water will be treated with an ultra-violet filter.
- The WRIS provides an evaluation of the effect of proposed septic systems on groundwater quality, specifically nitrates in the groundwater. The final, calculated nitrate-nitrogen concentration was reported as 5.59 milligrams per liter (mg/L), which is less than the drinking water maximum contaminant level (MCL) of 10 mg/L.

G&A Comments:

In order for the WRIS to be in compliance with New Britain Township Wells Ordinance and Water Supply Ordinance, Valley Environmental Services, Inc. shall address the following comments:

1. The purpose of the WRIS regulations is to ensure that new wells constructed in the Township are able to provide a reliable, safe, and adequate supply of water (§719.8.A). None of the test wells reported in the study have been identified as having an adequate supply of water even after hydrofracturing. The WRIS report shall be revised to evaluate the likelihood of obtaining sufficient water on each lot per the Township's testing requirements.
2. The location of all existing wells and septic systems within ¼-mile of the proposed wells shall be provided in the WRIS report. (§719.8.D.3).
3. Conclusions regarding the impacts of long-term pumping to surrounding wells shall be drawn from the analysis. (§719.8.E.7). The WRIS report states, "Based on the Lot #2 well long-term pumping test, no adverse impacts to the local groundwater system are anticipated as a result of the 6 proposed domestic water supply wells for the Casadonti-King Road subdivision." This conclusion is inconsistent with the results of that pumping test. Although the proposed water supply wells in Lots #1 and #6 have not been installed, based on the data presented in the report, it is likely that the pumping in the proposed wells in lots #1 and 6 will impact the water levels in nearby existing residential wells. The report shall be revised to adequately predict the change in water level outside the proposed subdivision due to pumping of the proposed wells.
4. The report shall include a contour map of water levels in the test well and monitoring wells after one year of pumping under drought conditions (no recharge), based upon the pump test data (§719.8.E.7). The contours in Figure 7 of the report do not reflect the water levels from the pump test data.

5. The water quality testing did not include a library search for Tentatively Identified Compounds in both the Lot #2 and Lot #4 water laboratory reports. The laboratory report for the Lot #2 well shall be revised to include the Pesticides Group 3 parameters, aldrin and dieldrin. (§719.9.C.2.d)
6. If the existing well on Lot #1 Well is not intended for use, it shall be noted to be properly sealed in accordance with the PADEP Groundwater Monitoring Guidance Manual, February 1996. (§719.9.D.9)
7. The adequacy of each residential water supply shall be determined based upon 200 gallons of water per bedroom per dwelling unit per day. The WRIS report shall be revised to evaluate the potential for the proposed water supply wells to meet the NBT ordinance requirements. (§719.9.E.2).
8. In order to be certified for use for a single-family dwelling, a well shall have a production of not less than 6 gallons per minute as certified by a licensed well driller. If less than 6 gallons per minute yield is established, such a well may still be certified for use if sufficient storage is provided to meet the calculated peak demand. In no case shall a well yielding less than 2 gallons per minute be certified for use by the Township. Well #2 was observed to pump 2.69 gpm over the 72-hr pump test. It does not appear that the Lot 2 well will be able to meet the required long-term yield. The WRIS shall be revised to provide a long-term yield of the Lot #2 well and any recommendations and/or limitations provided accordingly. (§719.9.E.3)
9. The Well depletion agreement required by New Britain Township will need to include at a minimum, monthly monitoring of water levels in all monitoring and pumping wells, and the monitoring of precipitation, from the start of construction through from the date that the Township either accepts dedication of any public improvements or approves completion of improvements not to be publicly dedicated, whichever last occurs. The Applicant shall provide a proposed water level monitoring network in the WRIS to be used in the Well Depletion Agreement. (§719.11).

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

March 7, 2023

File No. 22-05077

Matt West, Township Manager
New Britain Township
207 Park Avenue
Chalfont, PA 18914

Reference: 396 King Road, "The Estates at Hill Top" Planning Module Review 1
Joe Casadonti, T.M.P. #26-004-030

Dear Matt:

Pursuant to your request, Gilmore & Associates, Inc. has reviewed the PADEP Planning Module Component 1 submission including a Site Investigation and Percolation Test Report for On-Lot Disposal of Sewage and Act 537 Plan Sheet 1 of 1 for the above-referenced project. Component 1 Planning Modules are for Exceptions to the Requirement to Revise the Official Plan for smaller scale land development projects, i.e. 10 or less lots. The Applicant proposes 5 new dwelling lots each with both primary and backup sewage disposal systems to be conventional elevated sand mounds. A backup system is also provided for the existing lot, proposed Lot 4. Upon review, we offer the following comments for consideration:

1. We recommend that the Completeness Checklist be completed, and the Zoning Officer and Township Manager (as authorized official of the Planning Agency or New Britain Township) sign Section J. Planning Agency Review.
2. The municipality must review and act upon a complete Component 1 within 60 days of receipt unless the Applicant agrees to another date in writing. While the Township does not officially adopt the component as a revision to their Official Act 537 Plan by resolution, the Board of Supervisors must still formally approve the component. We recommend the Planning Module be added to the Board of Supervisors Agenda when preliminary and/or final approval is being considered for the land development assuming it's within the 60 days of receipt of the module. Once approved, we recommend the Chairman of the Board of Supervisors print his name, sign and date Section K regarding Municipal Action denoting the Township finds the Planning Module to be acceptable.

Once the above comments are addressed to the Township's satisfaction, we recommend the completed Component 1 including the Soil Investigation Reports and Plot Plan be submitted to DEP for review. If you have any questions regarding the above, please contact this office.

Sincerely,

Janene Marchand

Janene Marchand, P.E.
Gilmore & Associates, Inc.
Township Engineers

JM

Attachments: Component 1, Site Investigation Report, PNDI, Act 537 Plan (Site Plan)

cc: Michael Walsh, Assistant Manager
Dave Conroy, Director of Planning and Zoning
Ryan Gehman, Assistant Planning and Zoning Officer
Randy Teschner, Code Enforcement/Fire Marshal
Sean Gresh/Jeffrey P. Garton, Township Solicitors
Joe Casadonti, Applicant
Amanda Daniels, SEO, County of Bucks Department of Health
Tara Bernard, VW Consultants, LLC
Robert T. Cunningham, P.E., Holmes Cunningham, LLC
Craig D. Kennard, P.E., E.V.P., Gilmore & Associates, Inc.

COUNTY OF BUCKS

DEPARTMENT OF HEALTH
Neshaminy Manor Center, 1282 Almshouse Road, Doylestown, PA 18901 - 215-345-3318
FIELD OFFICES
Bucks County Government Services Center, 7321 New Falls Road, Levittown, PA 19055 – 267-580-3510
Bucks County Government Services Center, 261 California Road, Suite #2, Quakertown, PA 18951 – 215-529-7000

County Commissioners
ROBERT J. HARVIE, Jr., Chair
DIANE M. ELLIS-MARSEGLIA, LCSW, Vice-Chair
GENE DIGIROLAMO, Commissioner

Director
DAVID C. DAMSKER, M.D., M.P.H.

February 22nd, 2023

RECEIVED
FEB 23 2023

New BritainTownship- Planning and Zoning
207 Park Avenue
Chalfont, PA 18914

RE: Proposed Subdivision 396 King Road
T.M.# 26-004-030
DEP Code #

Dear Mr.Gehman,

Component 1 (Minor Subdivision) of the Planning Module for Land Development for subject subdivision has been reviewed and signed by this Department in accordance with the requirements of Title 25, Pennsylvania Code, Section 71.44, subchapter C., 71.51, 71.53 and 71.55.

On June 10, 1989, Chapter 71 of the Pennsylvania Sewage Facilities Act (Act 537) was revised. Under the revision, it is now the municipality's responsibility to forward a complete planning module submission of this subdivision to PA DEP for their review.

This Department **cannot** issue any permits on this proposed subdivision until written approval from PA DEP has been received or proof that a complete application has been before PA DEP. This Department must also receive a copy of the signed subdivision plan.

Enclosed please find 2 copies of the following:

1) Component 1
2) Site Investigation and Percolation Test Report for On-Lot Disposal of Sewage
3) Subdivision Plan

If you have any questions, feel free to contact me at 215-345-3848.

Sincerely,

Amanda Daniels

Amanda Daniels
Sewage Enforcement Officer # 3938

cc: Central
District
Casadonti Homes Inc. (Developer), Attn: Joe Casadonti, P.O. Box 5, Chalfont, PA 18914
VW Consultants LLC, 1590 Canary Rd, Quakertown, PA 18951

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Completeness Checklist

The following items should be checked off by the applicant as each is completed. The municipality should confirm that the required items have been included within ten days of receipt and if complete, sign and date the checklist. Submissions not containing the following information will be considered incomplete.

- ☒ Complete Component 1
- ☒ Letter from public water supplier (if applicable)
- ☒ Plot plan and 7.5' topo map showing subdivision
- ☒ "Site Investigation and Percolation Test Report(s)" with results of ***ALL*** profile examinations and percolation tests (suitable and unsuitable)
- ☒ Signature of soils description preparer
- ☒ Signature of developer
- ☒ SEO signature
- ☒ PNDI "Project Planning & Environmental Review Form" (request DEP search) or "Project Environmental Review Receipt" (self completed search) and all appropriate documentation for the form submitted.
- ☒ Planning Agency Signature
- ☐ Zoning Officer Signature (if applicable)

_____
Signature of Municipal Official

_____
Date submittal determined complete

3800-FM-BPNPSM0350 2/2015
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Code No.

SEWAGE FACILITIES PLANNING MODULE

Component 1. Exception to the Requirement to Revise the Official Plan

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE #	CLIENT ID #	SITE ID #	APS ID #	AUTH ID #

This planning module component is used to satisfy the sewage facilities planning requirements for subdivisions of 10 lots or less (*including residual lands*) intended as building sites for detached single family dwelling units served by individual onlot sewage disposal systems. The number of lots includes only those lots created after May 15, 1972. Refer to the instructions for help in completing this component.

NOTE: All soil testing must be field verified by the Sewage Enforcement Officer (SEO). The SEO must notify the approving agency verbally or in writing at least 10 days prior to testing. In some cases, a representative of the approving agency may wish to observe the soil testing.

REVIEW FEES: Amendments to the Sewage Facilities Act established fees to be paid by the developer for review of planning modules for land development. These fees may vary depending on the approving agency for the project (DEP or delegated local agency). Please see Section K and the attached instructions for more information on these fees.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name 396 King Road

2. Brief Project Description Proposed 5-lot residential lot where Lot No. 4 contains the existing house

3. Total Number of Lots:

Number of Lots Being Proposed		5
+ Residual Land Parcel/Lot	+	0
+ Number of Previous Lots Developed from Present Tract As it Appeared on May 15, 1972	+	0
Total	=	5 *

* If total exceeds 10, do not use this form. Contact DEP for correct forms.

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
New Britain	Bucks	☐	☐	☒

Municipality Contact - Last Name	First Name	MI	Suffix	Title
West	Matt			Township Manager
Additional Individual Last Name	First Name	MI	Suffix	Title
Walsh	Michael			Assistant Manager

Municipality Mailing Address Line 1	Mailing Address Line 2
207 Park Avenue	

Address Last Line -- City	State	ZIP+4
Chalfont	PA	18914

Phone + Ext.	FAX (optional)	Email (optional)
(215) 822-1391	( )	mwest@newbritaintownship.org

C. SITE INFORMATION (See Section C of instructions)

Site (Land Development Project) Name 396 King Road

Site Location Line 1	Site Location Line 2			
396 King Road				
Site Location Last Line -- City	**State**	**ZIP+4**	**Latitude**	**Longitude**
Doylestown	PA	18901	40°20'57.0"N	75°10'32.1"W

Detailed Written Directions to Site
From 2 E Main St, Norristown, PA 19401; Continue to DeKalb St (0.2 mi); Take US-202 N to PA-152 N/S Limekiln Pike in Warrington Township 31 min (13.4 mi); Follow PA-152 N/S Limekiln Pike and New Galena Rd to King Rd in New Britain Township 15 min (7.2 mi); site is located at 396 King Rd Doylestown, PA 18901

Description of Site (Project)
Existing 3-bedroom home with cultivated farm fields

Site Contact (Developer) -- Last Name	First Name	MI	Suffix	Phone	Ext.
Casadonti	Joe			(215) 768-2303	

Site Contact Title	Site Contact Firm (if none, leave blank)
Developer	Casadonti Homes
FAX ( )	Email casadontihomes@comcast.net
Mailing Address Line 1 P.O. Box 5	Mailing Address Line 2

Mailing Address Last Line -- City	State	ZIP+4
Chalfont	PA	18914

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
Bernard	Tara		

Title	Consulting Firm
Planning Specialist	VW Consultants, LLC

Mailing Address Line 1	Mailing Address Line 2
1590 Canary Road	

Address Last Line -- City	State	ZIP+4	Country
Quakertown	PA	18951	USA

Email	Phone	Ext.	FAX
tbernard@vw-consultants.com	(215) 536-7006 cell 215-651-1049		( )

E. AVAILABILITY OF DRINKING WATER SUPPLY

This project will be provided with drinking water from the following source: (Check appropriate box)

☒ Individual wells or cisterns.

☐ A proposed public water supply.

☐ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: _____

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section F of the instructions.

The applicant may choose to include additional information beyond that required by Section F of the instructions.

G. GENERAL SITE SUITABILITY (See Section G of instructions)

1. PLOT PLAN

Attach an original or copy of a 7½ minute USGS topographic map with the area of the proposed land development plotted and labeled. Attach a copy of the plot plan of the proposed subdivision showing the following information:

a. Location of all soils profiles and percolation tests.
b. Slope at each test area.
c. Soil types and boundaries.
d. Existing and proposed streets, roadways, access roads, etc.
e. Lot lines and lot sizes.
f. Existing and proposed rights-of-way.
g. Existing and proposed drinking water supplies for proposed and contiguous lots.
h. Existing buildings.
i. Surface waters.
j. Wetlands from National Wetland Inventory Mapping and USDA Hydric Soils Mapping.
k. Floodplain and floodways (Federal Flood Insurance Mapping).
l. Designated open space areas.
m. Remaining acreage under the same ownership and adjoining lots.
n. Existing onlot or sewerage systems; pipelines, transmission lines, etc.
o. Prime agricultural land.
p. Orientation to North.

2. RESIDUAL TRACT PLANNING WAIVER REQUEST

A waiver from sewage facilities planning ☐ is, ☒ is not requested for the residual land tract associated with this project. (See Section H, I and J and instructions for additional information).

3. SOILS INFORMATION

a. Attach copies of "Site Investigation and Percolation Test Report" (3800-FM-BPNPSM0290A) (formerly known as "Appendix A") form(s) for the proposed subdivision.

b. Marginal conditions for long-term onlot sewage disposal ☐ are, ☒ are not present. See marginal conditions information in Sections H and J and in attached instructions.

c. If one or more lots in this subdivision are planned to be served by Individual Residential Spray Irrigation Systems (IRSIS), please see the specific information on IRSIS in Section G of the instructions.

Both the soils description preparer and developer must sign below indicating acknowledgement of the false swearing statement.

I verify that the statements made in this component are true and correct to the best of my knowledge, information and belief. I understand that false statements are made subject to the penalties of 18 Pa. C.S.A. §4904 relating to unsworn falsification to authorities.

Max Russick, CPSS	Joe Casadonti
Soils Description Preparer Name (Print)	Developer Name (Print)
Signature	Signature
10/5/2022	10-5-22
Date	Date

H. MUNICIPALITY'S CERTIFIED SEWAGE ENFORCEMENT OFFICER (See Section H of instructions)

1. I have confirmed the information relating to the general suitability for onlot sewage disposal contained in this component. Confirmation of this information was based upon on-site verification of soil tests, general site conditions and other generally available soils information. The proposed development site:
   - ☒ Is generally suitable for onlot disposal. This module does not constitute individual permit approval.
   - ☐ Is marginal for long-term onlot disposal. (See instructions for information on marginal conditions).
   - ☐ Is not generally suitable for onlot disposal. (See my attached comments regarding this determination).
   - ☐ Cannot be evaluated for general site suitability because of insufficient soils testing.
2. The proposed development site is considered "marginal for onlot disposal" or for long-term onlot system use because one or more of the following conditions exist. (Check all that apply).
   - ☐ Soils profile examinations which document areas of suitable soil intermixed with areas of unsuitable soils.
   - ☐ Site evaluation which documents soils generally suitable for elevated sand mounds with some potential lots with slopes over 12%.
   - ☐ Site evaluation which documents soils generally suitable for in-ground systems with some potential lots with slopes in excess of 20%.
   - ☐ Lot density of more than 1 residential dwelling/acre.
3. Residual Tract Facilities (For use only when there is an existing septic system on the residual tract)
   - ☒ I have inspected the lot on which the existing building and existing septic system is located and have concluded, based on soils mapping or soils evaluation, permit information or site inspection that the long-term sewage disposal needs of this site and the building currently served can be met.
   - ☒ I further acknowledge that no violations of the Sewage Facilities Act are known to me or have become apparent as a result of my site inspection. No inferences regarding future performance of the existing septic system should be drawn from this acknowledgement.
   - ☒ A brief description and sketch of the existing system and site is attached.

Amanda Daniels	3938	2/21/23
Signature of Certified Sewage Enforcement Officer with jurisdiction in municipality where development is proposed	Certification	Date

I. PROTECTION OF RARE, ENDANGERED OR THREATENED SPECIES (See Section I of instructions)

Check one:

☒ The "Pennsylvania Natural Diversity Inventory (PNDI) Project Environmental Review Receipt" resulting from my search of the PNDI database and all supporting documentation from jurisdictional agencies (when necessary) is/are attached.

☐ A completed "Pennsylvania Natural Diversity Inventory (PNDI) Project Planning & Environmental Review Form," (PNDI Form) available at www.naturalheritage.state.pa.us , and all required supporting documentation is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning module will be considered incomplete upon submission to the Department and that the DEP review will not begin, and that processing of my planning module will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdictional agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials _____

J. PLANNING AGENCY REVIEW (See Section J of instructions)

This planning module has been reviewed by the existing municipal planning agency and zoning officer and has been found to be ☒ consistent, ☐ inconsistent with municipal zoning ordinances or subdivision and land development ordinances. A waiver of the sewage facilities planning requirements for the residual tract of this subdivision ☐ has ☒ has not been requested. If requested, the proposed waiver ☒ is ☐ is not consistent with applicable ordinances administered by this agency.

New Britain Township
Municipal Planning Agency Name

Zoning Officer Signature

Planning Agency Signature (Authorized Official)

☐ No municipal planning agency exists

☐ No municipal zoning ordinance exists

K. MUNICIPAL ACTION (See Section K of instructions)

The municipality must act within 60 days of receipt of a complete sewage facilities planning module package.

☒ This planning module has been reviewed by the municipal governing body and has been found to be **ACCEPTABLE**. Approval of this planning module does not constitute individual onlot system permit approval.

☐ This planning module is **NOT ACCEPTABLE** because:

Check appropriate reason(s)

- ☐ The subdivision does not comply with municipal zoning ordinances.
- ☐ The subdivision does not comply with municipal subdivision and land development ordinances.
- ☐ The subdivision is not suitable for the use of individual onlot subsurface absorption areas.
- ☐ The subdivision does not meet the requirements for use of this module or other provisions of Chapter 71 (Administration of Sewage Facilities Planning Program).
- ☐ Other (Explain) _____

☐ The proposed development has been identified in Section G and/or Section H as having marginal conditions or other concerns for the long-term use of onlot sewage systems. The municipality has selected the following method of providing long-term sewage disposal to this subdivision: (Check one)

- ☐ Provision of a sewage management program meeting the minimum requirements of Chapter 71, Section 71.73
- ☐ Replacement area testing
- ☐ Scheduled replacement with sewerage facilities
- ☐ Reduction of the density of onlot systems

The justification required in Section J of the instructions is attached.

☐ A waiver of the planning requirements for the residual tract of this subdivision has been requested.

The municipality acknowledges acceptance of this proposal and requests a waiver of the sewage facilities planning requirements for the residual tract designated on the subdivision plot plan. Our municipal officials accept full responsibility now and in the future to identify any violation of this waiver and to submit to the approving agency any required sewage facilities planning for the designated residual tract should a violation occur or construction of a new sewage-generating structure on the residual tract of the subdivision be proposed. We understand that such planning information may require municipal officials to be responsible for soil testing and other environmental assessments for the residual tract in the future.

_____ _____

Chairperson/Secretary of Governing Body | Signature | Date

New Britain Township
Municipality Name

207 Park Avenue, Chalfont, PA 18914
Address

(Area Code) Telephone No. (215) 822-1391

L. REVIEW FEE (See Section L of instructions)

The Sewage Facilities Act establishes a fee for the DEP planning module review. DEP will calculate the review fee for the project and invoice the project sponsor **OR** the project sponsor may attach a self-calculated fee payment to the planning module prior to submission of the planning package to DEP. (Since the fee and fee collection procedures may vary if a "delegated local agency" is conducting the review, the project sponsor should contact the "delegated local agency" to determine these details.) Check the appropriate box.

☒ I request DEP calculate the review fee for my project and send me an invoice for the correct amount. I understand the Department's review of my project will not begin until DEP receives the correct review fee from me for the project.

☐ I have calculated the review fee for my project using the formula found below and the review fee guidance in the instructions. I have attached a check or money order in the amount of $_____ payable to ***"Commonwealth of Pennsylvania DEP"***. **Include DEP code number and/or project name on check.** I understand DEP will not begin review of my project unless it receives the fee and determines the fee is correct. If the fee is incorrect, DEP will return my check or money order and send me an invoice for the correct amount. I understand the DEP review will **NOT** begin until I have submitted the correct fee.

☐ I request to be exempt from the DEP planning module review fee because this planning module creates **only** one new lot and is the **only** lot subdivided from a parcel of land as that land existed on December 14, 1995. I realize that subdivision of a second lot from this parcel of land shall disqualify me from this review fee exemption. I am furnishing the following deed reference information in support of my fee exemption.

County Recorder of Deeds for _____ County, Pennsylvania

Deed Volume _____ Book Number _____

Page Number _____ Date Recorded _____

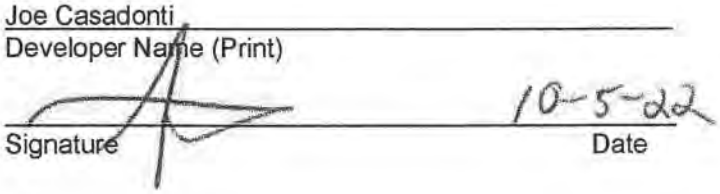
Formula:

_____ Lots X $35.00 = _____

Note: (1) To calculate the review fee for any project, use the number of lots created in the above formula.

(2) When using the number of lots, include only the number of lots being proposed when calculating the review fee. Do not include any "Residual Land Parcel/Lot".

Joe Casadonti
Developer Name (Print)



Signature Date

COMPONENT 1 SEWAGE FACILITIES PLANNING MODULE

PROJECT NARRATIVE – REVISED 3/7/23

396 King Road
Doylestown, PA 18901
New Britain Township, Bucks County
TM# 26-004-030

1. Casadonti Homes is proposing to subdivide the 396 King Road property into 6 residential lots which is located in New Britain Township, Bucks County, PA. There is an existing home with a permitted septic system that will remain, and a lot will be created for this home (proposed Lot No. 4). The remaining five lots are proposed to be new residential homes.

   In support of the proposed 6-lot subdivision, VW performed deep-hole test pits and percolation testing with the Bucks County Health Department (BCHD) on each of the proposed lot to delineate a primary and replacement on-lot sewage disposal. A replacement area has been delineated for the existing home and a copy of the permit for the existing septic system is enclose in the module. The soils observed on the property had seasonal high water table limiting zones (mottling/redox features) generally greater than 20 inches below the existing ground surface. Therefore, the proposed primary and reserve on-lot systems will be conventional elevated sand mounds systems.

   Runoff from the site and adjacent areas flow to an unnamed tributary that flows to the North Branch Neshaminy Creek which is classified as WWF in Chapter 93.

2. Per Title 25 of the PA Code, Chapter 73, the projected daily sewage flow for this 6-lot subdivision is 2,900 gallons per day. The existing dwelling is three-bedrooms at 400 gallons per day, and the proposed dwelling will be four-bedrooms at 500 gallons per day. Therefore, the calculated EDUs for the project is 7.25.

3. Total gross site acreage is 36.099 acres.

4. There is no acreage adjacent to this site under the same ownership. Residential properties border the project site and all utilize on-lot sewage disposal and individual wells. The surrounding properties do not have a high rate of on-lot system malfunctions.

25-4-30

T.M.#

Name of Responsible Party	Post Office Address	Telephone
TRIEST, WM.	R. D.1, Doylestown, Pa. 18901	345-1921

Name of Contact	Post Office Address	Telephone

Township or Borough	No. & Street	Block No.	Lot No.	Section
New Britain Twp.	King Road	51 acre tract		

Directions from Nearest Community

1600' from 313 on King Rd - NW side

Rec'd Central Office	Acknowledged	Rec'd District Office
8/4/70		

SANITATION ASSIGNMENT

TO: Chung Date: 8/4/70

x	Water		Private		Semi-pvt.		Public		Recheck
	Sewage	x	Site Insp.	x	Fin. Insp.		FHA		School
	Insects		Overflow		Stream Pol.		Sub. Div.		Home/Inst.
	Food		Restaurant		Stand		Caterer		
	Refuse		Storage		Collection		Dump		
	Rodents		Rats		Mice		Piggery		
	Animals		Bite		Manure		Rec. Hall		
	Pub. Place		Rest Room		Com./Indus.		Lodging		
	Housing		Mobile		Camp		VA		
	Other		Mosquitoes		Flies		Roaches		

INSTRUCTIONS AND DETAILS:

FIELD REPORT

(Past history, pertinent findings, conclusions, recommendations)

8/5/70 - Permit issued on basis of engineers perc. test and design - Chung

12/18/70 - Compliance issued - Chung

SA-1
lb 3/69

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JAN 4 1971
BUCKS CO.
DEPT. OF HEALTH

BUCKS COUNTY DEPARTMENT OF HEALTH
Neshaminy Manor Center
Doylestown, Pa.

6 - PAID

26-4-30
Tax Map No.
For Dept. Use Only

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AUG 4 1970
BUCKS CO.

Construct [xxx]
Alter [ ]

(Fill out in Quadruplicate)
Application for Permit to Locate and Construct or Alter an Individual Sewage Disposal System

SECTION I: Location of Proposed System, Owner and Contractor

No. and Name of Street	Block #	Lot #	Section #	Township or Boro.
King Road		61 acre tract		New Britain Twp.

Road directions from the nearest community
1600 feet from 313 on King Road - NW side

Name of Present Owner (Print)	Present Address	Telephone
William Triest	RD1, Doylestown, Pa. 18901	345 1921

Name of Contractor	Address	Telephone

IMPORTANT: If there has been a recent change of ownership, give previous owner's name in this space.

SECTION II — Building to be served — Potential Number

a. Residential: No. Bedrooms 3 Expansion Attic - - No. Rooms in Attic --
Check type Facilities: Bath 2½ Kitchen 1 Garbage no
b. Non-residential: Type Building ____ Use: Hrs/Day ____ No. Persons ____
Water use Gal./per day ____ Gal.
Check type Facilities: Toilets ____ Kitchen ____ Garbage Grinder ____ Showers ____

SECTION III: Water Source Information
Type: Public ____ Private yes * Well to be dug If private, depth of well ____ ft. Casing ____ ft.
Type casing ____ Distances from Septic Tank 50 ft., to liquid disposal unit 100 ft.

SECTION IV: Nature of Installation or Alteration
a. Septic Tank: Existing [ ] Installing [xxx]
Liquid capacity: 900 Gal. Length ____ Shape of Tank rnd. Liquid depth 46"
Width: ____ Material conc. Air Space 10" Diameter 76"
b. Liquid Disposal:
1. Trenches: Width 3 ft. Depth 2 ft. Linear Feet of Pipe 300 ft.
Distances between lines 8 ft. Area-Trench Bottom 900 sq. ft.
2. Beds: Width ____ ft. Length ____ ft. Depth ____ ft. Linear Feet of Pipe ____ ft.
Distance between lines ____ ft. Area-Disposal Bed ____ sq. ft.
3. Seepage Pits: Number ____ Distance between pits ____ ft. Shape or size ____
Diameter ____ ft. Depth below inlet ____ ft. Material ____

SECTION V: Soils Test Information
Depth to ground water table none at 6' Depth to bedrock 6'

Hole No.	Time in Min./Inch	No. Tests	Depth	Type of Soil Encountered Depth each type	Sq.Ft./Bedroom
1.	30	2 ea.	24"	6 - 10 in. top soil 14 - 18 in. clay & stone	300
2.	40				
3.	45				
4.	45	ave. 35			
5.	25				
6.	30				

I hereby certify that (1) no public sewer is accessible, (2) that standard percolation tests have been performed in accordance with the technical standards of the Department, (3) that the results of these tests given above are true and correct, and (4) that the type of soil encountered is suitable for on-lot sewage disposal.

Seal and Signature of Registered Professional Engineer or Surveyor: Edward B. Blumrick Date 3 August 1970

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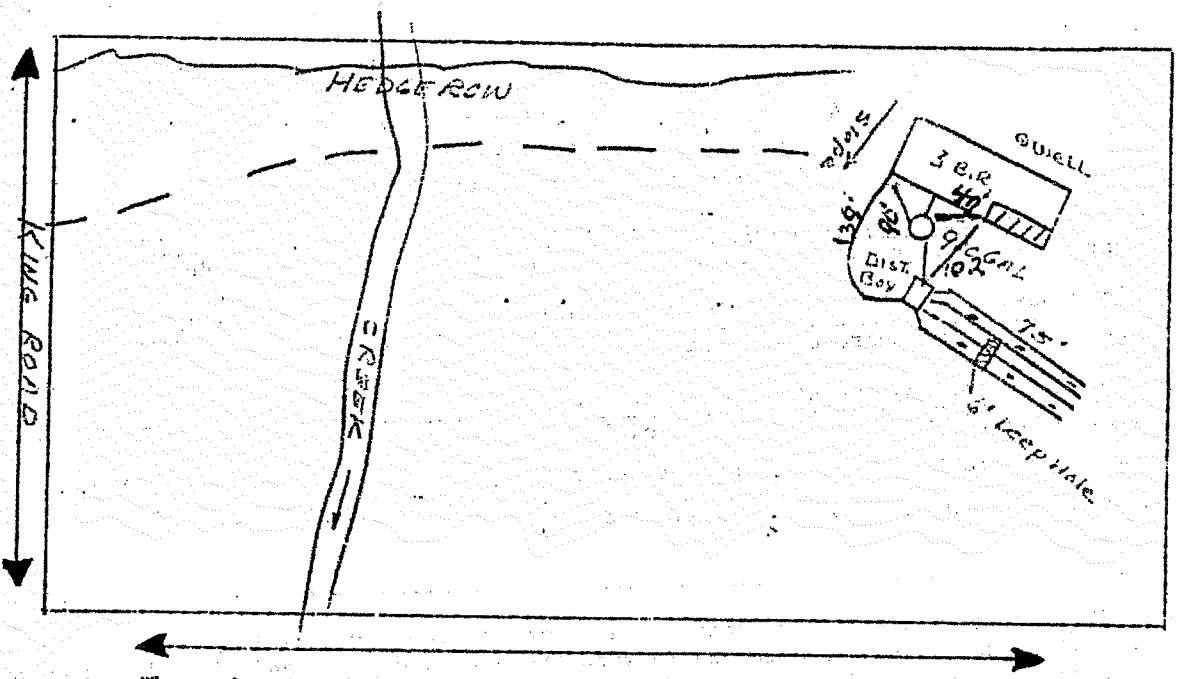
JAN 4 1971
BUCKS CO.
DEPT. OF HEALTH

BCDH SA-9 Rev. 5/68 AMR/LWT/dol

SECTION VI: Sketch of Proposed Installation and Premises

(Show lot dimensions, location of buildings, water supply and property disposal system with distances from buildings, water supply and property lines, length and slope of tile lines, cross section of trenches, beds or seepage pits and other pertinent details.)



The undersigned agrees to construct the above individual sewage disposal system in accordance with the approved plans and the provisions of the Rules and Regulations and Technical Standards of the Department, governing individual sewage disposal effective January 17, 1968. Fee of Sixty-two Dollars ($62.00) is enclosed covering Permit and Certificate of Compliance.

(Please make checks payable to Bucks County Department of Health.)

Owner X Wm W Priest
Date 3 AUGUST 1970

Contractor Edg de Martino per WWP
Date August 5, 1970

PERMIT

Permission has been granted to the above to locate and construct or alter an individual sewage disposal system on the premises described in accordance with these plans. Permission for deviation must be obtained in writing.

Date 8/5/70

By Chung C. Huang
Sanitarian

BUCKS COUNTY DEPARTMENT OF HEALTH
Doylestown, Pennsylvania

William C. Spring, Jr., M.D.
Director

BCDH SA-9 Rev. 3/70
AMR/LWT/1b

(Fill out in quadruplicate)

BUCKS COUNTY DEPARTMENT OF HEALTH
Neshaminy Manor Center
Doylestown, Pa. 18901

[XXX] Construct
[ ] Alter

Tax Map No. 26-4-30

Date

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AUG 4 1970
BUCKS CO.

Application for Certificate of Compliance
To Locate and Construct or Alter
An Individual Sewage Disposal System

Location of Proposed System, Owner and Contractor:

No. and Name of Street	Block No.	Lot No.	Twp. or Boro.	Section
King Road	61 acre tract		New Britain Twp.	

Directions from the Nearest Community

1600 feet from 313 on King Road - NW side

Name of Owner (Print)	No. and Street	Post Office	Telephone
William Triest	RD1, Doylestown, Pa. 18901		345 1921

Name of Contractor (Print)	No. and Street	Post Office	Telephone

The undersigned certifies that the Individual Sewage Disposal System designated above will be constructed in accordance with the approved plans and with the Rules and Regulations and Technical Standards of the Department governing sewage disposal; effective January 17, 1968, and that the issuance of a certificate shall not be construed as a guarantee that the system will function satisfactorily nor shall it in any way restrict the powers or responsibilities of the Bucks County Board of Health in the enforcement of any law or ordinance relating to public health.

Owner X William Triest

Date 3 August 1970

Contractor

Date

CERTIFICATE OF COMPLIANCE

The Individual Sewage Disposal System located as described above has been inspected and found to be in compliance with the previously approved plans, and is in compliance with the Individual Sewage Disposal Regulations, effective January 17, 1968.

Date 12/15/70

By C. Kneipp

BUCKS COUNTY DEPARTMENT OF HEALTH

William C. Spring, Jr., M.D.
Director

BCDH SA-11 Rev. 1/69
AMR/LWT/lh

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ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Reaville Slope 8% Limiting Zone 30"M Ave. Perc. Rate 33.42

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate ☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 17 Description of Horizon	Additional Pits
Ap	0 TO 9 "	10YR 3/4, Gravelly, Silt Loam, Moderate, Medium, Granular, Friable	Pit #18 32"+
			Pit #19 32"+
Bt	9 TO 30 "	7.5YR 5/6, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable	Pit #20 34"M
CB	30 TO 33 "	10YR 5/4, Channery, Silt Loam, Structureless, Massive to Weak, Medium, Prismatic, Firm	
		Common distinct redox features	
	TO "		
	TO "	#0266	
	TO "		Depth to Limiting Zone: 30 Inches
	TO "		

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/28/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☐ Dry ☑ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
1		X	10 / XX	1.875	2.000	1.875	2.000				
2	X		XX / 30	0.500	0.250	0.375	0.375				
3	X	X	XX / 30	4.625	4.250	4.500	4.375	4.250			
4	X	X	XX / 30	1.250	1.250	1.250	1.250				
5	X	X	XX / 30	0.375	0.250	0.375	0.375				
6		X	10 / XX	2.250	2.125	2.250	2.250				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval, No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
1	2.000 "	5.00	20 "
2	0.375 "	80.00	20 "
3	4.250 "	7.06	20 "
4	1.250 "	24.00	20 "
5	0.375 "	80.00	20 "
6	2.250 "	4.44	20 "
TOTAL OF MIN/IN.		200.50 =	33.42 Min
TOTAL No. OF HOLES		6	Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable Soil Type Reaville Slope 8% Limiting Zone 32"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 18	Description of Horizon
Ap	0 TO 11 "		10YR 3/4, Silt Loam, Moderate, Very Fine, Subangular Blocky, Friable
Bt	11 TO 24 "		10YR 5/6, Silty Clay Loam, Moderate, Medium, Subangular Blocky, Friable
C	24 TO 32+ "		10YR 5/4, Very Channery, Silt Loam, Structureless, Massive, Friable
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 32+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Reaville Slope 8% Limiting Zone 32"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate ☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 19	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Very Friable
Bt1	10 TO 24 "		10YR 4/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Bt2	24 TO 32+ "		10YR 4/4, Very Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Firm
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 32+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable Soil Type Reaville Slope 8% Limiting Zone 34"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 20	Description of Horizon
Ap	0 TO 10 "		7.5YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 34 "		7.5YR 5/6, Channery, Silty Clay Loam, Moderate, Medium, Subangular Blocky, Friable
CB	34 TO 36 "		7.5YR 4/6, Very Channery, Silt Loam, Structureless, Massive, Firm Common distinct redox features
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 34 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A. Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable Soil Type Readington Slope 8% Limiting Zone 36"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 21	Description of Horizon
Ap	0 TO 9 "		7.5YR 3/4, Gravelly, Silt Loam, Moderate, Very Fine, Subangular Blocky, Friable
Bt	9 TO 36 "		7.5YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
Bx	36 TO 38 "		7.5YR 4/6, Very Channery, Silt Loam, Moderate, Medium, Prismatic, Firm Common distinct redox depletions and common faint redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval, No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Donnelly #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable Soil Type Readingtor Slope 8% Limiting Zone 25"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 22	Description of Horizon
Ap	0 TO 8 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 25 "		10YR 5/4, Silt Loam, Strong, Medium, Subangular Blocky, Friable
Bx	25 TO 30 "		10YR 4/4, Very Channery, Silt Loam, Weak, Medium, Prismatic, Firm Common distinct redox features
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 25 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Reaville Slope 8% Limiting Zone 29"M Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 23	Description of Horizon
Ap	0 TO 8 "		7.5YR 3/4, Silt Loam, Moderate, Medium, Granular, Friable
Bt1	8 TO 14 "		7.5YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
Bt2	14 TO 29 "		7.5YR 5/4, Flaggy, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Bx	29 TO 33 "		7.5YR 5/6, Very Flaggy, Silt Loam, Weak, Coarse, Prismatic, Firm Common faint redox depletions and common distinct redox concentrations
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 29 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 1 The Estates at Hill Top

☑ Suitable Soil Type Reaville Ta Slope 8% Limiting Zone 24"M Ave. Perc. Rate 80.00

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 24 Description of Horizon
Ap	0 TO 10 "	10YR 3/4, Silt Loam, Moderate, Medium, Granular, Friable
Bt	10 TO 24 "	10YR 5/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Bx	24 TO 34 "	7.5YR 4/6, Very Channery, Silt Loam, Weak, Coarse, Prismatic, Firm Common distinct redox features
	TO "	
	TO "	
	TO "	
	TO "	

Additional Pits
Pit #21 36"M
Pit #22 25"M
Pit #23 29" M

Depth to Limiting Zone: 24 Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/28/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☐ Dry ☑ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
7	X		XX / 30	0.250	0.250	0.250	0.250				
8	X		XX / 30	0.500	0.500	0.500	0.500				
9	X		XX / 30	0.500	0.500	0.500	0.500				
10	X		XX / 30	0.500	0.250	0.375	0.375				
11	X	X	XX / 30	0.375	0.250	0.375	0.375				
12	X	X	XX / 30	0.375	0.375	0.250	0.375				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
7	0.250 "	120.00	20 "
8	0.500 "	60.00	20 "
9	0.500 "	60.00	20 "
10	0.375 "	80.00	20 "
11	0.375 "	80.00	20 "
12	0.375 "	80.00	20 "
TOTAL OF MIN/IN.		480.00 =	80.00 Min
TOTAL No. OF HOLES		6	Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A. Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleoka Ta Slope 10% Limiting Zone 32"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 9	Description of Horizon
Ap	0 TO 8 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 24 "		10YR 5/4, Very Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
C	24 TO 32+ "		10YR 4/6, Extremely Channery, Loam, Structureless, Massive, Very Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 32+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Donnelly #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 CONSERVATION ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable Soil Type Culleoka Ta Slope 10% Limiting Zone 30"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 10	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Channery, Silt Loam, Moderate, Fine, Granular, Very Friable
Bt	10 TO 30+ "		10YR 5/4, Very Flaggy, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 30+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-07

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Culleoka Ta Slope 10% Limiting Zone 25"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 11	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 25+ "		7.5YR 5/6, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 25+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval. No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleoka Ta: Slope 10% Limiting Zone 30"R Ave. Perc. Rate 31.18

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 12 Description of Horizon	Additional Pits
Ap	0 TO 8 "	10YR 3/4, Channery, Silt Loam, Moderate, Very Fine, Subangular Blocky, Very Friable	Pit #9 32"+
			Pit #10 30"+
Bt	8 TO 27 "	10YR 5/6, Very Stony, Silt Loam, Moderate, Fine, Subangular Blocky, Friable	Pit #11 25"+
C	27 TO 30 "	10YR 5/6, Extremely Channery, Silt Loam, Structureless, Massive, Friable	
R	30+ TO "	Bedrock	
	TO "		
	TO "		Depth to Limiting Zone: 30 Inches
	TO "		

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/27/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
1	X		XX / 30	1.000	1.125	1.125	1.125				
2	X		XX / 30	0.250	0.000	0.250	0.250				
3	X		XX / 30	4.125	4.000	4.250	4.125				
4	X		XX / 30	3.875	3.500	4.000	3.625	3.875	3.625	3.375	3.125
5	X		XX / 30	2.875	2.625	2.875	2.750				
6	X		XX / 30	2.375	2.250	2.625	2.375	2.500	2.375		

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
1	1.125 "	26.67	20 "
2	0.250 "	120.00	20 "
3	4.125 "	7.27	20 "
4	3.125 "	9.60	20 "
5	2.750 "	10.91	20 "
6	2.375 "	12.63	20 "

TOTAL OF MIN/IN. 187.08 = 31.18 Min / Inch

TOTAL No. OF HOLES 6

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Culleoka Ta Slope 11% Limiting Zone 34"R Ave. Perc. Rate 15.53

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate ☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 13 Description of Horizon	Additional Pits
Ap	0 TO 10 "	10YR 3/4, Silt Loam, Moderate, Very Faint, Subangular Blocky, Friable	Pit #14 36"+
			Pit #15 36"+
Bt	10 TO 34 "	10YR 4/6, Very Stony, Silt Loam, Moderate, Fine, Subangular Blocky, Friable	Pit #16 40"+
R	34+ TO "	Rippable Bedrock	
	TO "		
	TO "	#0264	
	TO "		Depth to Limiting Zone: 34 Inches
	TO "		

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/27/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
7	X		XX / 30	1.000	0.875	1.125	1.000				
8	X		XX / 30	1.750	1.500	1.875	1.375	1.500	1.500	1.375	
9	X		XX / 30	4.625	4.500	5.000	4.625	4.875	4.500	4.500	4.125
10	X		XX / 30	2.000	1.625	1.750	1.625	1.375	1.250	1.375	1.125
11		X	10 / XX	2.625	2.750	2.750	2.750				
12		X	10 / XX	2.625	2.500	2.625	2.625				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval, No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
7	1.000 "	30.00	20 "
8	1.375 "	21.82	20 "
9	4.125 "	7.27	20 "
10	1.125 "	26.67	20 "
11	2.750 "	3.64	20 "
12	2.625 "	3.81	20 "
TOTAL OF MIN/IN.		93.20 =	15.53 Min
TOTAL No. OF HOLES		6	Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable Soil Type Culleoka Ta Slope 11% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 14	Description of Horizon
Ap	0 TO 8 "		10YR 3/3, Channery, Silt Loam, Moderate, Medium, Subangular Blocky to Weak, Fine, Granular, Friable
Bt	8 TO 19 "		10YR 5/4, Very Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	19 TO 36+ "		10YR 5/4, Very Flaggy, Silt Loam, Weak, Fine, Subangular Blocky, Friable
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Donnelly #3938
Sewage Enforcement Officer

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Bedington 1 Slope 11% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate ☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 15	Description of Horizon
Ap	0 TO 8 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 24 "		10YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	24 TO 36+ "		10YR 5/4, Very Channery, Loam, Weak, Medium, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min

TOTAL No. OF HOLES _____ Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 2 The Estates at Hill Top

☑ Suitable Soil Type Bedington 1 Slope 11% Limiting Zone 40"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 16	Description of Horizon
Ap	0 TO 8 "		10YR 3/4, Very Channery, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 27 "		10YR 4/4, Very Flaggy, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	27 TO 40+ "		10YR 4/4, Very Flaggy, Silt Loam, Weak, Fine, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 40+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) a Daniels #3938

Sewage Enforcement Officer

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleok Tax Slope 13% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 1	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Gravelly, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 24 "		10YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	24 TO 36+ "		10YR 5/4, Very Channery, Silt Loam, Weak, Fine, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ Min

TOTAL No. OF HOLES _____ Inch

The Information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleok Tax Slope 13% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☑ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 2 Description of Horizon
Ap	0 TO 10 "	10YR 3/4, Channery, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 20 "	10YR 5/4, Very Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	20 TO 36+ "	10YR 5/4, Very Flaggy, Silt Loam, Weak, Fine, Subangular Blocky, Friable
	___ TO ___ "	
	___ TO ___ "	
	___ TO ___ "	
	___ TO ___ "	

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable Soil Type Culleok Tax Slope 13% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 3	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 26 "		10YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	26 TO 36+ "		10YR 5/4, Channery, Silt Loam, Weak, Fine, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval, No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ Min

TOTAL No. OF HOLES _____ Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Culleok Tax Slope 13% Limiting Zone 36"+ Ave. Perc. Rate 8.85

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 4 Description of Horizon
Ap	0 TO 11 "	10YR 3/4, Silt Loam, Strong, Very Fine, Granular, Friable
Bt	11 TO 30 "	10YR 5/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
C	30 TO 36+ "	10YR 5/4, Very Flaggy, Silt Loam, Structureless, Massive, Friable to Firm
	___ TO ___ "	
	___ TO ___ "	
	___ TO ___ "	
	___ TO ___ "	

Additional Pits
Pit #1 36"+
Pit #2 36"+
Pit #3 36"+

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/27/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
1	X		XX / 30	3.625	4.500	4.625	5.250	4.250	2.625	2.500	2.500
2		X	10 / XX	2.750	3.000	2.750	2.750				
3		X	10 / XX	3.250	3.250	3.250	3.250				
4	X	X	XX / 30	1.500	1.875	2.125	1.750	1.750	1.875	1.750	
5	X	X	XX / 30	3.250	2.875	2.875	3.000	3.000			
6	X	X	XX / 30	5.000	4.000	4.375	4.125	4.375	4.125		

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
1	2.500 "	12.00	20 "
2	2.750 "	3.64	20 "
3	3.250 "	3.08	20 "
4	1.750 "	17.14	20 "
5	3.000 "	10.00	20 "
6	4.125 "	7.27	20 "

TOTAL OF MIN/IN. 53.13 = 8.85 Min / Inch

TOTAL No. OF HOLES 6

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Culleok Tax Slope 12% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 5	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Channery, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 31 "		10YR 5/4, Very Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	31 TO 36+ "		10YR 5/4, Extremely Channery, Loam, Structureless, Massive, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department

(S) A Daniels #39938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN PENNSYLVANIA

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable Soil Type Culleok Tax Slope 12% Limiting Zone 30"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 6	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
Bt	10 TO 25 "		10YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	25 TO 30+ "		10YR 5/4, Extremely Flaggy, Silt Loam, Weak, Medium, Granular, Friable
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 30+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "
_____	_____ "	_____	_____ "

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleok Tax Slope 12% Limiting Zone 40"+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 7	Description of Horizon
Ap	0 TO 11 "		10YR 3/4, Channery, Silt Loam, Moderate, Fine, Granular, Friable
Bt	11 TO 28 "		10YR 5/4, Very Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
C	28 TO 40+ "		10YR 5/4, Extremely Channery, Loam, Weak, Fine, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 40+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ Min

TOTAL No. OF HOLES _____ Inch

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 BUCKS COUNTY PLANNING COMMISSION

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Donnelly #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 3 The Estates at Hill Top

☑ Suitable Soil Type Culleoka ta› Slope 10% Limiting Zone 29"+ Ave. Perc. Rate 7.55

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 8	Description of Horizon
Ap	0 TO 7 "		10YR 3/4, Channery, Silt Loam, Strong, Fine, Granular, Friable
Bt	7 TO 29+ "		10YR 5/4, Very Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Additional Pits
Pit #5 36"+
Pit #6 30"+
Pit #7 40"+

Depth to Limiting Zone: 29+ Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/27/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☑ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
7	X		XX / 30	3.500	2.875	3.250	2.500	2.875	2.750	2.500	2.500
8	X		XX / 30	5.375	4.875	5.000	4.625	4.625	4.000	4.500	4.250
9		X	10 / XX	4.125	4.250	4.125	4.250				
10		X	10 / XX	3.875	3.750	3.750	3.750				
11	X	X	XX / 30	5.250	4.250	3.625	3.000	3.375	2.625	2.750	2.500
12	X	X	XX / 30	4.500	3.500	3.875	3.625	4.250	3.500	3.625	3.250

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
7	2.500 "	12.00	20 "
8	4.250 "	7.06	20 "
9	4.250 "	2.35	20 "
10	3.750 "	2.67	20 "
11	2.500 "	12.00	20 "
12	3.250 "	9.23	20 "
TOTAL OF MIN/IN.		45.31 =	7.55 Min
TOTAL No. OF HOLES		6	Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 4 The Estates at Hill Top

☑ Suitable Soil Type Culleoka Slope 10% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate ☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 42	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Channery, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 30 "		10YR 5/4, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
C	30 TO 36+ "		10YR 4/4, Very Channery, Silt Loam, Weak, Medium, Prismatic to Weak, Medium, Subangular Blocky, Friable
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. = _____ Min

TOTAL No. OF HOLES _____ Inch

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 4 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleoka Slope 10% Limiting Zone 36" Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 43	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 24 "		10YR 5/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
BC	24 TO 36 "		10YR 5/4, Very Gravelly, Silt Loam, Structureless, Massive, Friable
R	36+ TO ___ "		Bedrock
	___ TO ___ "		
	___ TO ___ "		
	___ TO ___ "		

Depth to Limiting Zone: 36 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 4 The Estates at Hill Top

☑ Suitable Soil Type Culleoka Slope 10% Limiting Zone 36"+ Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 44	Description of Horizon
Ap	0 TO 8 "		10YR 3/3, Channery, Silt Loam, Moderate, Fine, Granular, Friable
Bw	8 TO 28 "		10YR 5/4, Channery, Silt Loam, Weak, Fine, Subangular Blocky, Friable
C	28 TO 36+ "		10YR 5/4, Extremely Flaggy, Silt Loam, Structureless, Massive, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval, No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ Min

TOTAL No. OF HOLES _____ Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #38938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 4 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Culleoka Slope 10% Limiting Zone 32"+ Ave. Perc. Rate 25.35

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 45 Description of Horizon
Ap	0 TO 10 "	10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 32 "	10YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
	TO "	
	TO "	
	TO "	
	TO "	
	TO "	

Additional Pits
Pit #42 36"+
Pit #43 36"R
Pit #44 36"+

Depth to Limiting Zone: 32+ Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/26/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
1	X		XX / 30	3.500	3.250	3.500	3.125	3.125	3.000	3.250	
2	X		XX / 30	3.375	3.500	3.125	3.000	2.750	2.625	2.750	2.500
3	X		XX / 30	0.250	0.250	0.250	0.250				
4	X		XX / 30	5.125	5.000	5.000	5.000				
5		X	10 / XX	3.875	3.875	3.750	3.750				
6		X	10 / XX	4.625	4.625	4.500	4.500				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
1	3.250 "	9.23	20 "
2	2.500 "	12.00	20 "
3	0.250 "	120.00	20 "
4	5.000 "	6.00	20 "
5	3.750 "	2.67	20 "
6	4.500 "	2.22	20 "

TOTAL OF MIN/IN. 152.12 = 25.35 Min / Inch

TOTAL No. OF HOLES 6

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

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Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Readingtor Slope 7% Limiting Zone 26"M Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 33	Description of Horizon
Ap	0 TO 10 "		10YR 3/3, Silt Loam, Weak, Medium, Subangluar Blocky to Weak, Fine, Subangluar Blocky, Friable
Bt	10 TO 26 "		10YR 5/6, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Btx	26 TO 35 "		10YR 4/6, Channery, Silt Loam, Weak, Coarse, Prismatic to Weak, Medium, Subangular Blocky, Firm Common distinct redox features
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 26 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022

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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Beddington Slope 7% Limiting Zone 36+ Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 34	Description of Horizon
Ap	0 TO 9 "		7.5YR 3/3, Silt Loam, Weak, Fine, Granular, Very Friable
Bt1	9 TO 24 "		10YR 4/6, Gravelly, Silty Clay Loam, Moderate, Medium, Subangular Blocky, Friable
Bt2	24 TO 36+ "		10YR 4/6, Channery, Silt Loam, Moderate, Coarse, Subangular Blocky, Friable
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 36+ Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min

TOTAL No. OF HOLES _____ Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable Soil Type Readington Slope 7% Limiting Zone 20"M Ave. Perc. Rate 62.67

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 35 Description of Horizon	Additional Pits
Ap	0 TO 7 "	10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable	Pit #33 26"M
Bt1	7 TO 20 "	10YR 5/4, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable	Pit #34 36"+
Bt2	20 TO 29 "	10YR 5/4, Very Channery, Silt Loam, Weak, Medium, Subangular Blocky, Firm Common faint redox features	Pit #36 21"M
	TO "		
	TO "		
	TO "		Depth to Limiting Zone: 20 Inches
	TO "		

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/26/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1 Inches of drop	Reading No. 2 Inches of drop	Reading No. 3 Inches of drop	Reading No. 4 Inches of drop	Reading No. 5 Inches of drop	Reading No. 6 Inches of drop	Reading No. 7 Inches of drop	Reading No. 8 Inches of drop
1	X		XX / 30	1.250	1.000	1.000	1.000				
2	X		XX / 30	0.250	0.250	0.500	0.500				
3	X		XX / 30	0.375	0.250	0.250	0.250				
4	X		XX / 30	1.500	1.000	1.000	1.000	1.000			
5	X		XX / 30	2.000	1.875	1.750	1.625	1.875			
6	X		XX / 30	0.250	0.000	0.250	0.250				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
1	1.000 "	30.00	20 "
2	0.500 "	60.00	20 "
3	0.250 "	120.00	20 "
4	1.000 "	30.00	20 "
5	1.875 "	16.00	20 "
6	0.250 "	120.00	20 "
TOTAL OF MIN/IN.		376.00 =	62.67 Min
TOTAL No. OF HOLES		6	Inch

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Donnell #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Readington Slope 7% Limiting Zone 21"M Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

Pit# 36

	Inches	Description of Horizon
Ap	0 TO 9 "	10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	9 TO 21 "	7.5YR 5/4, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Btx	21 TO 36 "	7.5YR 4/6, Silt Loam, Weak, Very Coarse, Prismatic to Weak, Thick, Platy, Firm Common prominent redox depletions and common distinct redox concentrations
	TO "	
	TO "	
	TO "	
	TO "	

Depth to Limiting Zone: 21 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Readington Slope 7% Limiting Zone 24"M Ave. Perc. Rate _____

☐ Mottling ☒ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 37	Description of Horizon
Ap	0 TO 8 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 24 "		10YR 5/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
BC	24 TO 36 "		10YR 4/6, Very Channery, Silt Loam, Weak, Medium, Subangular Blocky, Firm Common faint redox depletions and common distinct redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 24 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval, No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Readingtor Slope 6% Limiting Zone 20"M Ave. Perc. Rate 42.68

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 38 Description of Horizon
Ap	0 TO 8 "	10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 20 "	10YR 5/4, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
C	20 TO 36 "	10YR 5/4, Extremely Channery, Silt Loam, Structureless, Massive, Firm Common prominent redox depletions and common distinct redox concentrations
	TO "	
	TO "	
	TO "	
	TO "	

Additional Pits
Pit #37 24"M
Pit #39 24"M
Pit #40 26"M
Pit #41 23"M

Depth to Limiting Zone: 20 Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/26/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☑ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
7	X		XX / 30	3.500	3.250	3.125	3.000	3.000			
8	X		XX / 30	1.125	1.125	1.000	1.000				
9	X		XX / 30	0.250	0.375	0.375	0.375				
10	X		XX / 30	0.500	0.375	0.375	0.375				
11	X		XX / 30	1.500	1.500	1.500	1.375				
12	X		XX / 30	1.125	1.000	1.000	0.875				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
7	3.000 "	10.00	20 "
8	1.000 "	30.00	20 "
9	0.375 "	80.00	20 "
10	0.375 "	80.00	20 "
11	1.375 "	21.82	20 "
12	0.875 "	34.29	20 "

TOTAL OF MIN/IN. 256.10 = 42.68 Min

TOTAL No. OF HOLES 6 Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable

Soil Type Readington Slope 6% Limiting Zone 24"M Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 39	Description of Horizon
Ap	0 TO 10 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Very Friable
Bt1	10 TO 24 "		7.5YR 5/6, Silty Clay Loam, Moderate, Medium, Subangular Blocky, Friable
Bt2	24 TO 32 "		7.5YR 5/6, Channery, Silt Loam, Moderate, Coarse, Subangular Blocky, Firm Common distinct redox features
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 24 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
_____	_____"	_____	_____"
_____	_____"	_____	_____"
_____	_____"	_____	_____"
_____	_____"	_____	_____"
_____	_____"	_____	_____"
_____	_____"	_____	_____"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Readingtor Slope 6% Limiting Zone 26"M Ave. Perc. Rate _____

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 40	Description of Horizon
Ap	0 TO 10 "		10YR 3/3, Silt Loam, Moderate, Fine, Granular, Friable
Bt	10 TO 26 "		10YR 4/6, Channery, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
Btx	26 TO 30 "		10YR 4/4, Very Channery, Silt Loam, Weak, Coarse, Subangular Blocky, Firm Common distinct redox depletions and common faint redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 26 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
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SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 5 The Estates at Hill Top

☑ Suitable Soil Type Readington Slope 6% Limiting Zone 23"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 41	Description of Horizon
Ap	0 TO 12 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	12 TO 23 "		10YR 5/4, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
BC	23 TO 32 "		10YR 5/4, Silt Loam, Moderate, Medium, Subangular Blocky, Friable Common prominent redox depletions and common distinct redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 23 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOH - ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable Soil Type Reaville Slope 10-13% Limiting Zone 25"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☑ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 25	Description of Horizon
Ap	0 TO 9 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Friable
Bt	9 TO 25 "		10YR 5/6, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
CB	25 TO 32 "		10YR 5/6, Very Channery, Silt Loam, Structureless, Massive, Firm Common distinct redox features
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 25 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable Soil Type Reaville Slope 10-13% Limiting Zone 25"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 26	Description of Horizon
Ap	0 TO 8 "		10YR 3/3, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 25 "		2.5Y 4/6, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
CB	25 TO 28 "		2.5Y 4/6, Very Channery, Silt Loam, Weak, Medium, Prismatic, Firm Common prominent redox depletions and common distinct redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 25 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #393

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Readingtor Slope 10-13% Limiting Zone 24"M Ave. Perc. Rate 69.00

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 27 Description of Horizon
Ap	0 TO 7 "	10YR 3/4, Silt Loam, Moderate, Very Fine, Granular, Friable
Bt1	7 TO 24 "	10YR 4/6, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Bt2	24 TO 39 "	10YR 4/6, Channery, Silt Loam, Moderate, Coarse, Subangular Blocky to Moderate, Coarse, Prismatic, Friable to firm Few distinct redox features
	TO "	
	TO "	
	TO "	#0366
	TO "	

Additional Pits
Pit #25 25"M
Pit #26 25"M
Pit #28 26"M

Depth to Limiting Zone: 24 Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/28/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☐ Dry ☑ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
7	X		XX / 30	0.500	0.125	0.125	0.250	0.250			
8	X		XX / 30	1.375	1.125	1.375	1.250				
9	X		XX / 30	0.375	0.500	0.250	0.375				
10	X		XX / 30	0.375	0.250	0.375	0.250				
11	X		XX / 30	0.500	0.500	0.500	0.500				
12	X		XX / 30	3.250	3.000	3.250	3.000				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
7	0.250 "	120.00	20 "
8	1.250 "	24.00	20 "
9	0.375 "	80.00	20 "
10	0.250 "	120.00	20 "
11	0.500 "	60.00	20 "
12	3.000 "	10.00	20 "
TOTAL OF MIN/IN.		414.00 =	69.00 Min
TOTAL No. OF HOLES		6	Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938
Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable Soil Type Readington Slope 10-13% Limiting Zone 26"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate ☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 28	Description of Horizon
Ap	0 TO 8 "		10YR 3/3, Silt Loam, Moderate, Fine, Granular, Friable
Bt	8 TO 26 "		10YR 5/6, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Bx	26 TO 33 "		10YR 5/6, Channery, Silt Loam, Weak, Medium, Prismatic to Weak, Medium, Subangular Blocky, Firm Common distinct redox depletions and common faint redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 26 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 BOH ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable Soil Type Readington Slope 10-15% Limiting Zone 26"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 29	Description of Horizon
Ap	0 TO 8 "		10YR 3/4, Silt Loam, Moderate, Fine, Granular, Very Friable
Bt	8 TO 26 "		10YR 5/4, Channery, Silty Clay Loam, Moderate, Medium, Subangular Blocky, Friable
Bx	26 TO 33 "		10YR 4/6, Very Channery, Silt Loam, Weak, Coarse, Prismatic to Weak, Medium, Subangular Blocky, Firm Common prominent redox depletions and common distinct redox concentrations
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 26 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min / Inch

TOTAL No. OF HOLES

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Readington Slope 10-15% Limiting Zone 24"M Ave. Perc. Rate _____

☐ Mottling ☑ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 30	Description of Horizon
Ap	0 TO 7 "		10YR 3/3, Silt Loam, Moderate, Fine, Granular, Friable
Bt	7 TO 24 "		10YR 5/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
Btx	24 TO 36 "		10YR 4/4, Channery, Silt Loam, Moderate, Medium, Prismatic to Weak, Fine, Subangular Blocky, Firm Common distinct redox features
	TO "		
	TO "		
	TO "		
	TO "		

Depth to Limiting Zone: 24 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions: ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min

TOTAL No. OF HOLES _____ Inch

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Donnelly #3938
Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 21 2022 DOYLESTOWN ADMINISTRATION

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable ☐ Unsuitable Soil Type Readington Slope 10-15% Limiting Zone 22"M Ave. Perc. Rate 79.05

☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☑ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 31 Description of Horizon
Ap	0 TO 10 "	10YR 3/4, Silt Loam, Moderate, Fine, Subangular Blocky, Friable
Bt	10 TO 22 "	10YR 5/6, Silt Loam, Strong, Fine, Subangular Blocky, Friable
Bx/BC	22 TO 33 "	10YR 4/6, Very Channery, Silt Loam, Weak, Coarse, Prismatic to Weak, Moderate, Subangular Blocky, Friable to Firm Common distinct redox features
	TO "	
	TO "	
	TO "	
	TO "	

Additional Pits
Pit #29 26"M
Pit #30 24"M
Pit #32 27"M

Depth to Limiting Zone: 22 Inches

PERCOLATION TEST:

Percolation Test Completed by: VW Consultants LLC / JC Date: 1/28/22

Weather Conditions : ☑ Below 40 F ☐ 40 F or Above ☐ Dry ☑ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☑ Frozen

Hole No.	H20 Left *** Yes	No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
1	X		XX / 30	1.000	0.875	0.875	0.875				
2	X		XX / 30	0.375	0.250	0.250	0.250				
3	X		XX / 30	0.875	0.375	0.375	0.375	0.375			
4	X		XX / 30	0.375	0.125	0.250	0.250				
5	X		XX / 30	0.375	0.250	0.375	0.375				
6	X		XX / 30	1.000	0.875	0.750	0.750				

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
1	0.875 "	34.29	20 "
2	0.250 "	120.00	20 "
3	0.375 "	80.00	20 "
4	0.250 "	120.00	20 "
5	0.375 "	80.00	20 "
6	0.750 "	40.00	20 "

TOTAL OF MIN/IN. 474.29 = 79.05 Min / Inch

TOTAL No. OF HOLES 6

The information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) A Daniels #3938

Sewage Enforcement Officer

ER-BWQ-290 Appendix A
Revised 5-87

SITE INVESTIGATION AND PERCOLATION TEST REPORT FOR ON-LOT DISPOSAL OF SEWAGE

Application No. _____ Municipality New Britain Township County Bucks

Site Location 396 King Road Subd'n Name Lot# 6 The Estates at Hill Top

☑ Suitable Soil Type Reaville Slope 10-15% Limiting Zone 27"M Ave. Perc. Rate _____

☐ Unsuitable ☐ Mottling ☐ Seeps or Ponded Water ☐ Bedrock ☐ Fractures ☐ Coarse Fragments ☐ Perc. Rate

☐ Slope ☐ Unstabilized Fill ☐ Floodplain ☐ Other _____

INSTRUCTIONS FOR COMPLETION OF THIS FORM ARE LOCATED ON THE REVERSE

SOILS DESCRIPTION:

Soils Description Complete by: VW Consultants LLC / MHR Date: 1/3/22

	Inches	Pit# 32 Description of Horizon
Ap	0 TO 8 "	7.5YR 3/4, Silt Loam, Moderate, Fine, Granular, Very Friable
Bt	8 TO 27 "	10YR 5/4, Channery, Silt Loam, Moderate, Medium, Subangular Blocky, Friable
BC	27 TO 32 "	10YR 4/4, Very Channery, Silt Loam, Weak, Medium, Subangular Blocky, Friable Many distinct redox features
	TO "	
	TO "	
	TO "	
	TO "	

Depth to Limiting Zone: 27 Inches

PERCOLATION TEST:

Percolation Test Completed by: _____ Date: _____

Weather Conditions : ☐ Below 40 F ☐ 40 F or Above ☐ Dry ☐ Rain, Sleet, Snow (last 24 hours)

Soil Conditions: ☐ Wet ☐ Dry ☐ Frozen

Hole No.	H20 Left *** Yes	H20 Left *** No	Reading Interval	Reading No. 1: Inches of drop	Reading No. 2: Inches of drop	Reading No. 3: Inches of drop	Reading No. 4: Inches of drop	Reading No. 5: Inches of drop	Reading No. 6: Inches of drop	Reading No. 7: Inches of drop	Reading No. 8: Inches of drop
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								
			10 / 30								

***Water remaining in the hole at the end of the final 30 minute presoak ? Yes, use 30 minute interval; No use 10 minute interval.

Calculation of Average Percolation Rate:

Hole No.	Drop during final period	Perc. Rate as Minutes/Inch	Depth of Hole
	"		"
	"		"
	"		"
	"		"
	"		"
	"		"

TOTAL OF MIN/IN. _____ = _____ Min

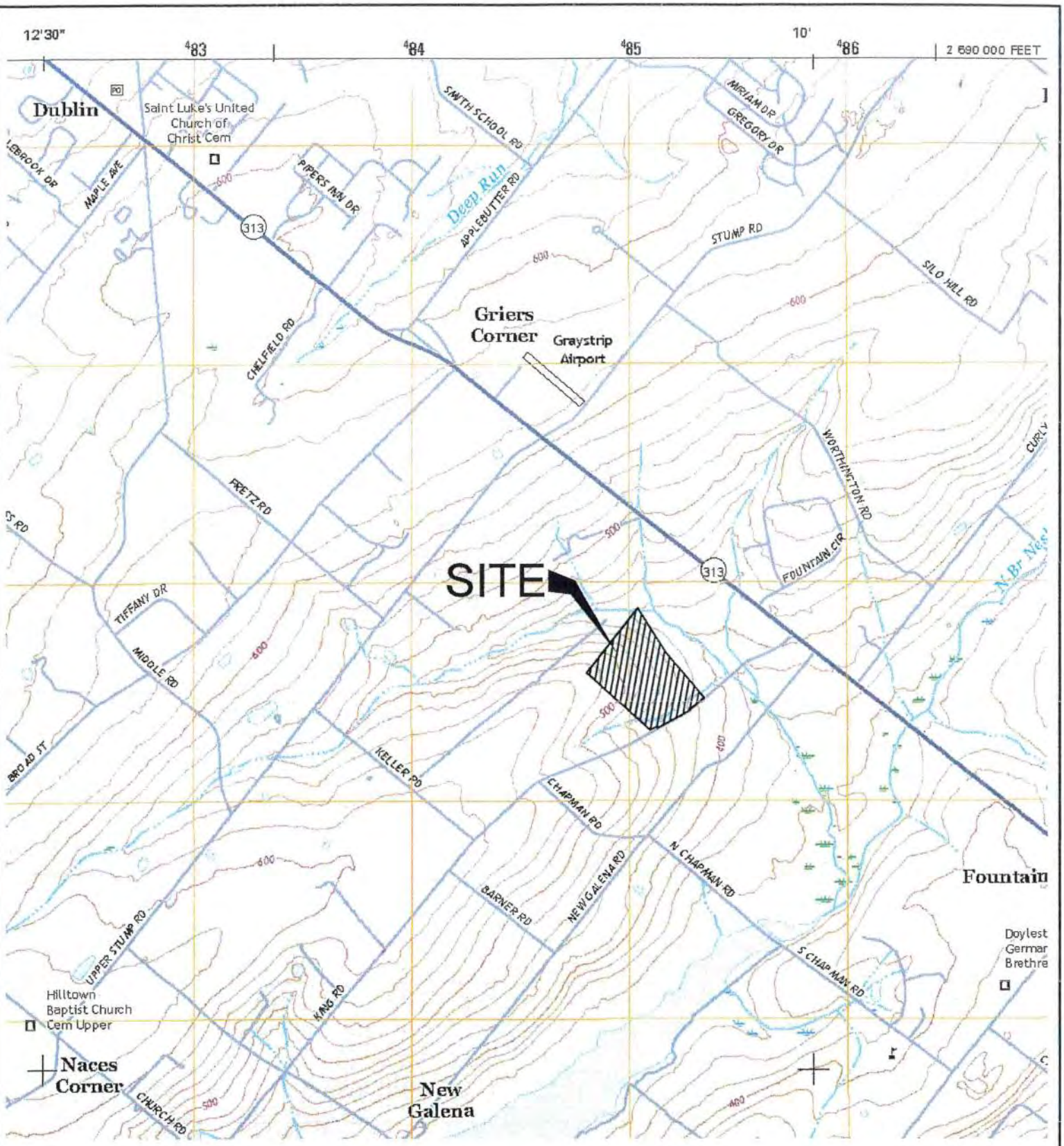
TOTAL No. OF HOLES _____ Inch

The Information provided is the true and correct results of tests conducted by me, performed under my personal supervision, or confirmed in a manner approved by the Department.

(S) #3938

Sewage Enforcement Officer

BUCKS COUNTY DEPT. OF HEALTH RECEIVED NOV 2 1 2022 DOYLESTOWN ADMINISTRATION



Consultants LLC
1590 Canary Rd, Quakertown, PA 18951
215-536-7006 | 215-538-6136 Fax

396 King Road

New Britain Township, Bucks County, Pennsylvania

TM# 26-004-030		Scale: 1 = 24,000
Applicant:	Casadonti Homes, Inc. P.O. Box 5 Chalfont, PA 18914-0005	Date: 11/01/22
		Drawn By: EDW

Quad Map: Doylestown

SHEET 1 of 1

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

February 21, 2023

PNDI Number: 770353
Version: Final_1; 2/17/23

Richelle Daly
VW Consultants, LLC
1590 Canary Road
Quakertown, PA 18951
Email: rdaly@vw-consultants.com (hard copy will not follow)

Re: 396 King Road
New Britain Township, Bucks County, PA

Dear Richelle Daly,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **770353 (Final_1)** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate species or resources under DCNR's jurisdiction are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

Recommended Best Management Practices:

- Use a conservative approach to project design that minimizes permanent and temporary disturbances to soil and native vegetation. This will conserve habitat and limit opportunities for invasive plants.
- Clean boot treads, tools, construction equipment, and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site. This will remove invasive plant seeds and invasive earthworms/cocoons that may have been picked up at other worksites.
- Use clean project materials (e.g., weed-free straw) or materials native to the worksite to avoid introducing invasive species from contaminated sources.
- Revegetate or cover disturbed soil and stockpiles quickly to discourage the germination of invasive plants. Implement proper erosion control practices to stabilize soil and reduce runoff.
- Do not use seed mixes that include invasive species. More information about invasive plants in Pennsylvania can be found at the following link: http://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx
- Use habitat appropriate seed mixes. For example, use a riparian seed mix when reseeding along a waterway. The Bureau of Forestry Planting & Seeding Guidelines can be found at the following link for recommendations: http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20031083.pdf
- Use native plants for landscaping, revegetation, and stormwater management. Do not use nonnative invasive species. Reduce the area of lawn and impermeable surfaces to the fullest extent practicable in favor of native gardens or habitat

restoration (e.g., forest, meadow, wetland, etc.). More information about lawn conversion can be found at the following link: https://www.dcnr.pa.gov/Conservation/Water/LawnConversion/Pages/default.aspx

- Plant forest buffers where trees were historically present along streams, wetlands, and bodies of water. Buffers should be a minimum of 35 feet in width (ideally at least 100 feet in width). Where trees are not appropriate (e.g., powerline rights-of-way), buffer with native shrubs and herbaceous plants. More information about riparian buffers can be found at the following link: https://www.dcnr.pa.gov/Conservation/Water/RiparianBuffers/Pages/default.aspx

- Manage rights-of-way for diverse native plant communities and wildlife (e.g., monarch butterfly). In seed mixes, include wildflowers that have overlapping bloom periods and provide forage for pollinators throughout the growing season. Avoid blanket herbicide applications; instead, spot-treat undesirable tall woody vegetation and invasive weeds. Where mowing is necessary, reduce frequency to once every few years during the dormant season (i.e., after first frost in late fall and before bird nesting in early spring), leaving some refugia for overwintering wildlife.

- Monitor for invasive plants before, during, and after project activities and promptly control any identified infestations. Frequent monitoring allows for early detection and rapid response.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter and a permit has not been acquired, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative, description of project changes and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Alexander Dogonniuck, Ecological Information Specialist, by phone (717-783-3913) or via email (c-adogonni@pa.gov).

Sincerely,

Greg Podniesinski

Greg Podniesinski, Section Chief
Natural Heritage Section

1. PROJECT INFORMATION

Project Name: **396 King Road**
Date of Review: **2/17/2023 12:36:32 PM**
Project Category: **Development, Residential, Subdivision containing more than 2 lots and/or 2 single-family units**
Project Area: **36.11 acres**
County(s): **Bucks**
Township/Municipality(s): **NEW BRITAIN TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **DOYLESTOWN**
Watersheds HUC 8: **Crosswicks-Neshaminy**
Watersheds HUC 12: **North Branch Neshaminy Creek**
Decimal Degrees: **40.349466, -75.175855**
Degrees Minutes Seconds: **40° 20' 58.773" N, 75° 10' 33.785" W**

2. SEARCH RESULTS

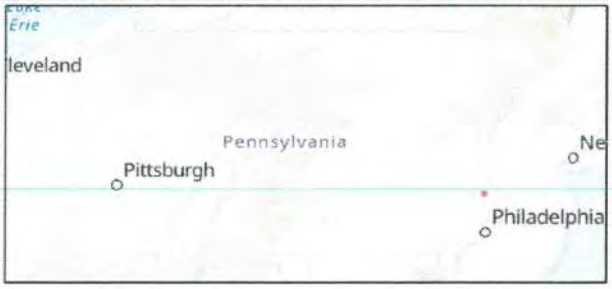
Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

396 King Road

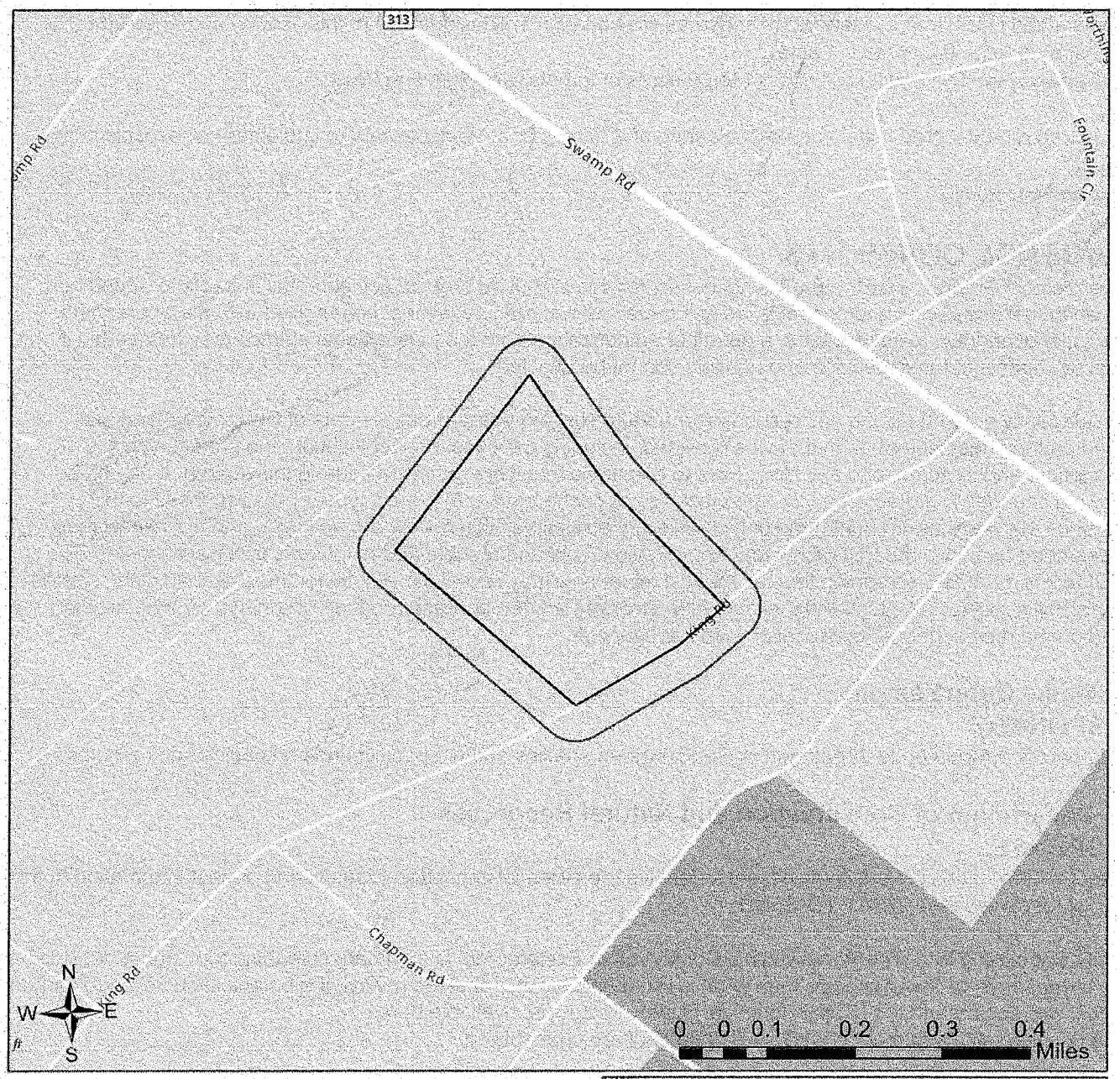
Buffered Project Boundary

Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

396 King Road



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

RESPONSE TO QUESTION(S) ASKED

Q1: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).
Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q2: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?
Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: https://conservationexplorer.dcnr.pa.gov/content/survey-protocols)

Scientific Name	Common Name	Current Status	Proposed Status	Survey Window
Juncus biflorus	Grass-leaved Rush	Special Concern Species*	Special Concern Species*	Fruits July - early November

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).
*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Richelle Daly
Company/Business Name: VW Consultants, LLC
Address: 1590 Canary Road
City, State, Zip: Quakertown, PA 18951
Phone: (215) 536-7006 Fax: (215) 538-6136
Email: rdaly@vw-consultants.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Richelle Daly
applicant/project proponent signature

02/17/2023
date

GENERAL NOTES

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. UNDER PENNSYLVANIA LAW , THE CONTRACTOR IS REQUIRED TO NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM AT 1-800-242-1776 PRIOR TO THE START OF HIS WORK, SO THAT ALL THE VARIOUS UNDERGROUND UNTILITY OPERATORS WILL BE ABLE TO LOCATE THEIR OWN UTILITIES.
3. THERE ARE NO HQ OR EV WATERSHEDS LOCATED WITHIN THE PROJECT AREA.
4. THERE ARE NO RIPARIAN BUFFERS EXISTING OR PROPOSED AS PART OF THIS PROJECT (WITHIN OR OUTSIDE THE LIMIT OF DISTURBANCE). ADDITIONALLY, RIPARIAN BUFFER OFFSETS ARE NOT NECESSARY.
5. THERE ARE NO WETLANDS WITHIN THE PROJECT AREA.
6. THERE ARE NO INFILTRATION BMPS LOCATED OUTSIDE PROPOSED GRADING AREAS.
7. THE EXISTING SITE IS NOT UNDERLAIN BY ANY NATURALLY OCCURRING GEOLOGIC FORMATIONS OR SOIL CONDITIONS WHICH COULD CAUSE POLLUTION DURING EARTH DISTURBANCE. THEREFORE, NO LOCATIONS ARE IDENTIFIED ON THIS PLAN AND NO DETAILS ARE PROVIDED FOR DISPOSAL OF SUCH MATERIAL.

LEGEND

BOUNDARY LINE

ADJOINERS PROPERTY LINE

BUILDING SETBACK

WOODS/BRUSH

UTILITY POLE, OVERHEAD ELECTRIC

EXISTING WELL

EXISTING CONTOUR

WOODLANDS

PROPOSED CONTOUR

PROPOSED SPOT ELEVATION

SOIL TYPE

SOIL TYPE BOUNDARY

SEPTIC TEST PIT LOCATION

Soils Legend

Type	Name	Depth to Bedrock	Depth to Seasonal High Water Table	HSG	Hydric Soil	Agricultural Soil
AbB	Abbotstown silt loam, 3 to 8 percent slopes	40"-60"	6"-18"	D	No	Farmland of Statewide Importance
Bo	Bowmansville-Knauers silt loams, 0 to 3 percent slopes	72"-99"	0"-18"	C/D	No	Not Prime Farmland
CyB	Culleoka-Weikert channery silt loams, 3 to 8 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
CyC	Culleoka-Weikert channery silt loams, 8 to 15 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
LhD	Lansdale loam, 8 to 25 percent slopes, extremely stony	42"-72"	>80"	B	No	Not Prime Farmland
ReB	Readington silt loam, 3 to 8 percent slopes	40"-60"	18"-36"	C	No	Farmland of Statewide Importance
RIC	Realville channery silt loam, 8 to 15 percent slopes	20"-40"	6"-36"	D	No	Farmland of Statewide Importance

Limitations and Resolutions: The soils found within the project limits have varying limitations including possible shallow depth to groundwater and possible shallow depth to bedrock. In order to resolve the groundwater limitation, any standing water should be pumped through a sediment filter bag. To resolve the bedrock limitation, the contractor shall determine whether rock is rippable. If rock is not rippable, blasting will be required. All blasting shall meet all local, county, state and federal regulations.

LOT 1 5.884 AC.
LOT 2 4.496 AC.
LOT 3 7.988 AC.
LOT 4 6.727 AC.
LOT 5 5.407 AC.
LOT 6 3.758 AC.

HENRY COURT
KING ROAD
ULTIMATE R.O.W.
LEGAL R.O.W.

Bo HSG: D
RIC HSG: D
CyC HSG: B
LhD HSG: B
ReB HSG: C
AbB HSG: D
CyB HSG: B

SWM
100' ISOLATION DISTANCE
LOCATION OF PRIMARY SEPTIC FOR PROPOSED DWELLING
LOCATION OF REPLACEMENT SEPTIC FOR PROPOSED DWELLING
LOCATION OF REPLACEMENT SEPTIC FOR EXISTING DWELLING
LOCATION OF PERCOLATION TEST (TYP.)
APPROXIMATE LOCATION OF EXISTING SEPTIC TRENCH ABSORPTION AREA
APPROX. LOCATION OF EX. 900 SQ. FT. TRENCH ABSORPTION AREA PER 1970 BOND PERMIT
EX 900 GALLON SEPTIC TANK (SIZE PER 1970 BOND PERMIT)

S33°57'39"E 793.41'
S42°17'17"E 879.86'
S69°40'27"W 334.53'
S69°22'27"W 317.27'
S51°24'45"W 31.13'
N37°10'28"E 1240.73'
N49°41'46"W 1294.14'
N49°41'46"W 18.07'

WATERS OF THE US TRIBUTARY (ID:2547894) TO THE NORTH BRANCH NESHAMINY CREEK

WATERS OF THE US TRIBUTARY (ID:2547866) TO THE NORTH BRANCH NESHAMINY CREEK

0 60 120 Feet

Holmes Cunningham LLC
409 E. Butler Avenue
Suite 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

holmes cunningham ENGINEERING

REVISIONS

Date	Description
02/08/2023	Per BCHD Review

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR DESIGN AND 10 WORKING DAYS IN DESIGN STAGE — STOP & CALL —
Pennsylvania One Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

THE ESTATES AT HILL TOP

TMP # 26-004-030
396 KING ROAD
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

ACT 537 PLAN

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ROBERT THOMAS CUNNINGHAM — ENGINEER — PE076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1734_S1.0_Act537.DWG

HCE Job	1734	Scale	1"=60'	Designed	EC
Date	10/05/2022			Sheet	1 of 1

Drawing No.
S1.0