NEW BRITAIN TOWNSHIP

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

SUBDIVISION & LAND DEVELOPMENT APPLICATION

TOWNSHIP USE ONLY

Date Recieved: _____
Payment: _____
Check #: _____
Receipt #: _____
Escrow Acc. #: _____

1. Date of Application: 12/15/2022
2. Date of Plan or Revision: 12/15/2022
3. Application for: Sketch Plan
4. Name of Subdivision or Land Development: 180 New Britain Blvd & 354 Schoolhouse Road
5. Location: 180 New Britain Blvd & 354 Schoolhouse Road
6. Tax Map Parcel #: 26-001-100 & 26-001-102 Total Acreage: Gross Lot 1 - 1.433 Acres, Lot 2 - 8.4 Acres Net Lot 1 - 0.0925 Acres, Lot 2 - 6.945 Acres
7. Net Buildable Site Area (from Section 2401): 7.423 Acres
8. Zoning Requirements:

Zoning District	IO	Minimum Lot Size	3 AC	Maximum Density	N/A
Front Yard	50'	Side Yard	25'	Rear Yard	50'

9. Number of Lots or Dwelling Units: 2
10. Equitable Owner of Record of Land: 180 New Britain Blvd Associates, LLC
    Address: One Tower Bridge, 100 Front Street, Suite 560, West Conshohocken PA 19428
    Phone: 717.435.0911 E-mail: amiller@catacomm.com
11. Applicant: 180 New Britain Blvd Associates, LLC
    Address: One Tower Bridge, 100 Front Street, Suite 560, West Conshohocken PA 19428
    Phone: 717.435.0911 E-mail: amiller@catacomm.com
12. Registered Engineer or Surveyor: RETTEW Associates
    Address: 1020 Columbia Avenue, Lancaster PA 17603
    Phone: 484.798.9782 E-mail: klm.fasnacht@rettew.com

This is to certify that I have read Article V of the New Britain Township Subdivision and Land Development Ordinance and that the accompanying plan meets the requirements of that Article to the best of my knowledge.

Signature of Applicant

Kimberly M Fasnacht
Signature of Registered Engineer or Surveyor

RETTEW

We answer to you.

3020 Columbia Avenue, Lancaster, PA 17603 ● Phone: (800) 738-8395
E-mail: rettew@rettew.com ● Website: rettew.com

December 15, 2022

New Britain Township Planning Commission
207 Park Avenue
Chalfont PA 18914

RE: 180 New Britain Blvd/345 Schoolhouse Road Sketch Plan
New Britain Township, Bucks County, PA
RETTEW Project No. 111902045

Dear Planning Commission:

On behalf of our client, 180 New Britain Blvd Associates, LLC we are submitting the above referenced Sketch Plan which proposes the expansion of the existing loading dock area located on the 180 New Britain Blvd property to provide 18 trailer parking spots, 5 loading docks and an additional 43 parking spaces.

The concept assumes that the Schoolhouse Road Parcel and 180 New Britain Blvd. Parcel will be consolidated into one lot. The properties are identified as Tax Map Parcel No. 26-001-102 and 26-001-100. The property is in the IO (Industrial/Office) Zoning District. The property is located within the New Britain Business Park.

A variance will be required as the plan proposes impervious surface exceeding the maximum allowed per the Zoning Ordinance. Stormwater will be managed by a subsurface infiltration bed beneath the paving.

A wetland investigation was completed on September 14, 2021 on Lot 2 and January 6, 2022 on Lot 1. No wetland or streams were present within the project area per the field investigation.

We request the Sketch Plan be formally reviewed by the Fire Marshall, Zoning Officer, and Township Engineer.

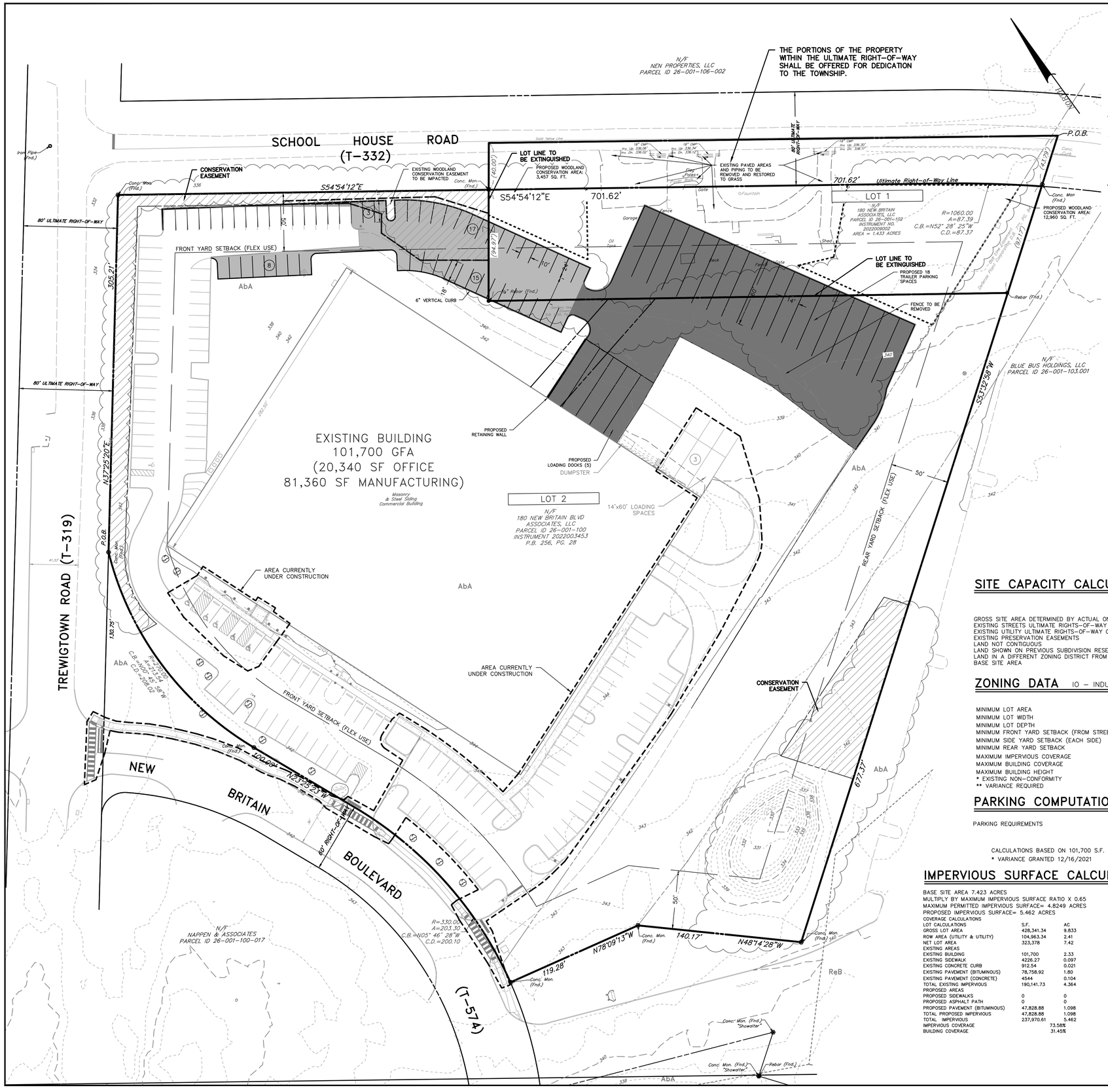
Should you have any questions or need any additional information, please do not hesitate to contact me at kim.fasnacht@rettew.com or on my cell phone at (484)798-9782

Sincerely,

Kimberly M Fasnacht

Kim Fasnacht, PMP, LEED AP
Project Manager

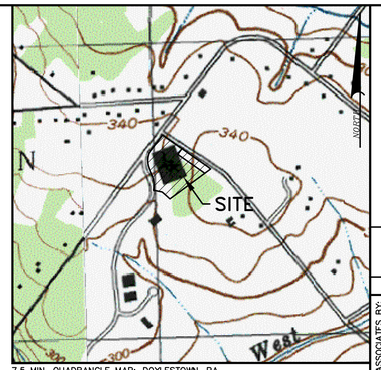
\\EgnyteDrive\rettew\Shared\Projects\11190\111902045\LD\Submissions\2022-12-14 Sketch Plan\LTR- cover letter.docx



LEGEND

- BENCHMARK
- CONCRETE MONUMENT
- FOUND PROPERTY MARKER
- CALCULATED PROPERTY MARKER
- TREE LINE
- BRUSH LINE
- W/4" — 4" WHITE PAINT LINE
- DY/4" — 4" DOUBLE YELLOW PAINT LINE
- RIGHT OF WAY LINE
- PROPERTY LINE
- ADJOINER PROPERTY LINE
- ZONING BOUNDARY
- GIS CONTOUR (2')
- PROPOSED SETBACK LINE
- PROPOSED PAVEMENT
- PROPOSED CURB
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED PAVEMENT MARKING
- SOIL TYPE BOUNDARY LINE
- PROPOSED PAVING
- PROPOSED HEAVY DUTY PAVING

NOTES:
1. EXISTING CONTOURS ARE 2 & 10.
2. AN AQUATIC RESOURCE INVESTIGATION CONDUCTED ON SEPTEMBER 14, 2021 AND JANUARY 5, 2022 BY A QUALIFIED ENVIRONMENTAL SCIENTIST NO WETLANDS OR STREAMS WERE FOUND ON EITHER PARCEL.



7.5 MIN. QUADRANGLE MAP: DOYLESTOWN, PA

LOCATION MAP

SCALE – 1"=2000'

OWNER/DEVELOPER

180 NEW BRITAIN BLVD ASSOCIATES, LLC
GABE CLARK, PARTNER
ONE TOWER BRIDGE
100 FRONT STREET, SUITE 560
WEST CONSHOHOCKEN, PA 19428

SOURCE OF TITLE – LOT 1

180 NEW BRITAIN BLVD ASSOCIATES, LLC
PARCEL ID 26-001-102
INSTRUMENT # 2022009002

SOURCE OF TITLE – LOT 2

180 NEW BRITAIN BLVD ASSOCIATES, LLC
PARCEL ID 26-001-100
INSTRUMENT # 2022003453

SITE DATA

EXISTING NUMBER OF LOTS	2	
LOT AREA	1.433 AC LOT 1 8.400 AC LOT 2	
EXISTING USE	LOT 1 K18 FLEX USE	LOT 2 RESIDENTIAL
PROPOSED USE	K18	
WATER	EXISTING (PUBLIC)	EXISTING (PUBLIC)
SANITARY	EXISTING (PUBLIC)	EXISTING (PUBLIC)
PROPOSED NUMBER OF LOTS	1	
CONSOLIDATED LOT AREA	9.833 AC	

SITE CAPACITY CALCULATIONS

	LOT 1		LOT 2		PROPOSED COMBINED LOTS	
	AREA (SF)	AREA (AC)	AREA (SF)	AREA (AC)	AREA (SF)	AREA (AC)
GROSS SITE AREA DETERMINED BY ACTUAL ON-SITE SURVEY	365,904	8.40	62,437.34	1.433	428,341.34	9.833
EXISTING STREETS ULTIMATE RIGHTS-OF-WAY	11,543.40	0.265	19,164.93	0.439	30,708.33	0.704
EXISTING UTILITY ULTIMATE RIGHTS-OF-WAY OR EASEMENT	51,836.40	1.19	3034.00	0.069	54,870.4	1.259
EXISTING PRESERVATION EASEMENTS	0	0	0	0	0	0
LAND NOT CONTIGUOUS	0	0	0	0	0	0
LAND SHOWN ON PREVIOUS SUBDIVISION RESERVED FOR OPEN SPACE, PROTECTION, ECT	19,384.20	0.445	0	0	19,384.20	0.445
LAND IN A DIFFERENT ZONING DISTRICT FROM PRIMARY USE	0	0	0	0	0	0
BASE SITE AREA	283,140	6.50	40238.41	0.923	323,378.41	7.423

ZONING DATA IO – INDUSTRIAL OFFICE

	REQUIRED	EXISTING (LOT 1)	EXISTING (LOT 2)	PROPOSED COMBINED LOTS
MINIMUM LOT AREA	3 AC.	8.400 AC.	1.433 AC.	9.8331 AC.
MINIMUM LOT WIDTH	200 FT.	>200 FT.	>200 FT.	>200 FT.
MINIMUM LOT DEPTH	200 FT.	>200 FT.	140 FT.*	>200 FT.
MINIMUM FRONT YARD SETBACK (FROM STREET RIGHT-OF-WAY)	50 FT.	50 FT.	50 FT.	50 FT.
MINIMUM SIDE YARD SETBACK (EACH SIDE)	25 FT. (EACH SIDE)	25 FT.	25 FT.	25 FT.
MINIMUM REAR YARD SETBACK	50 FT.	50 FT.	50 FT.	50 FT.
MAXIMUM IMPERVIOUS COVERAGE	65%	55.6%	N/A	73.59%*
MAXIMUM BUILDING COVERAGE	50%	33.2%	N/A	31.45%
MAXIMUM BUILDING HEIGHT	35 FT.	<35 FT.	N/A	<35 FT.

* EXISTING NON-CONFORMITY
** VARIANCE REQUIRED

PARKING COMPUTATIONS

	REQUIRED	EXISTING	PROPOSED
PARKING REQUIREMENTS	1 SPACE PER 275 S.F. 101,700 S.F. 370 SPACES*	137 SPACES	180 SPACES

CALCULATIONS BASED ON 101,700 S.F. OF FLOOR SPACE
* VARIANCE GRANTED 12/16/2021

IMPERVIOUS SURFACE CALCULATION

BASE SITE AREA 7.423 ACRES
MULTIPLY BY MAXIMUM IMPERVIOUS SURFACE RATIO X 0.65
MAXIMUM PERMITTED IMPERVIOUS SURFACE= 4.8249 ACRES
PROPOSED IMPERVIOUS SURFACE= 5.462 ACRES

COVERAGE CALCULATIONS LOT CALCULATIONS	S.F.	AC
GROSS LOT AREA	428,341.34	9.833
ROW AREA (UTILITY & UTILITY)	104,963.34	2.41
NET LOT AREA	323,378	7.42
EXISTING AREAS		
EXISTING BUILDING	101,700	2.33
EXISTING SIDEWALK	4226.27	0.097
EXISTING CONCRETE CURB	912.54	0.021
EXISTING PAVEMENT (BITUMINOUS)	78,758.92	1.80
EXISTING PAVEMENT (CONCRETE)	4544	0.104
TOTAL EXISTING IMPERVIOUS	190,141.73	4.364
PROPOSED AREAS		
PROPOSED SIDEWALKS	0	0
PROPOSED ASPHALT PATH	0	0
PROPOSED PAVEMENT (BITUMINOUS)	47,828.88	1.098
TOTAL PROPOSED IMPERVIOUS	47,828.88	1.098
TOTAL IMPERVIOUS	237,970.61	5.462
IMPERVIOUS COVERAGE	73.58%	
BUILDING COVERAGE	31.45%	

NATURAL RESOURCE CALCULATIONS (COMBINED LOTS)

NATURAL RESOURCES	PROTECTION RATIO	LAND IN RESOURCES (AC)	REQUIRED RESOURCE PROTECTION LAND (AC)	PROVIDED RESOURCE PROTECTION LAND (AC)
WATERCOURSES	1.0	0.00	0.00	0.00
RIPARIAN BUFFER	1.0	0.00	0.00	0.00
FLOODPLAIN	1.0	0.00	0.00	0.00
FLOODPLAIN (ALLUVIAL) SOILS	1.0	0.00	0.00	0.00
WETLANDS	1.0	0.00	0.00	0.00
LAKES OR PONDS	1.0	0.00	0.00	0.00
WETLANDS MARGINS	0.80	0.00	0.00	0.00
WOODLANDS (1)	1.0	0.89	0.445	0.448
WOODLANDS (2)	0.5	0.541	0.27	0.27
STEEP SLOPES 8–15%	0.60	0.30	0.18	0.18
STEEP SLOPES 15–25%	0.70	0.18	0.126	0.126
STEEP SLOPES 25% OR MORE	0.85	0.15	0.1275	0.1275
TOTAL LAND WITH RESOURCE RESTRICTIONS			2.061	
TOTAL LAND WITH 1.00 PROTECTION RATIO			0.00	
TOTAL RESOURCE PROTECTION LAND REQUIRED			1.1485	
TOTAL RESOURCE PROTECTION LAND PROVIDED			1.1515	
TOTAL DISTURBED RESOURCES			0.9095	

OPEN SPACE = THE TOTAL OF RESOURCE PROTECTION LAND WITH A 1.00 PROTECTION RATIO = 0.00
NET BUILDABLE SITE AREA = BASE AREA – REQUIRED OPEN SPACE = 7.423 – 0.00 = 7.423 AC

(1) LOT 2 PROTECTED PER PREVIOUS LD PLAN
(2) LOT 1

NO.	DATE	REVISION

FOR RETTEW ASSOCIATES BY:

XREFS:
111902045-SV-BASE
111902045-EB-BASE
111902045-LD-SHRD
111902045-TB-BASE
111902045-LD-BASE

MANAGER: KIM M. FASNACHT
DESIGN BY: JAO | CHKD BY: KMF
SURV. CHIEF: | FIELDBOOK NO. DATA COLLECTOR
DRAWN BY: JAO | CHKD BY: KMF
DRAWING REFERENCE: C:\LVAD\System\Software\Autodesk\Terrain\ACAD\Templates\111902045-Sketch Plan.dwg

CLIENT
CATALYST COMMERCIAL DEVELOPMENT
ONE TOWER BRIDGE
100 FRONT STREET, SUITE 560
WEST CONSHOHOCKEN, PA 19428

SCALE 1"=40'
0 20' 40' 80' 120'

RETTEW
RETTEW Associates, Inc.
3020 Columbia Avenue, Lancaster, PA 17603
Phone: (717) 715-1396 Fax: (717) 435-8535
Email: info@rettew.com
Website: www.rettew.com
Engineers • Planners • Surveyors • Landscape Architects
Environmental Consultants

SITE PLAN
SKETCH PLAN
FOR

345 SCHOOLHOUSE ROAD

NEW BRITIAN TOWNSHIP BUCK COUNTY, PA

DATE: 12/15/22
SHEET NO. ____ OF 1
DWG. NO. 111902045

NOT FOR CONSTRUCTION/NOT FOR BIDDING

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

January 16, 2023

File No. 21-07036.01

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

Reference: 354 Schoolhouse Road – Sketch Plan Review 1
180 New Britain Blvd Associates, LLC, TMP #26-001-100 & 26-001-102

Dear Matt:

Pursuant to your request, Gilmore & Associates, Inc. has reviewed the Sketch Plan for the above-referenced project to identify any zoning, engineering, or planning issues that may have an impact on the proposed development.

I. Submission

- Sketch Plan for 345 Schoolhouse Road, consisting of one (1) sheet, prepared by Rettew Associates, Inc. dated December 15, 2022.

II. General

The Applicant, 180 New Britain Blvd Associates, LLC, proposes to consolidate TMP's #26-001-100 and #26-001-102 to expand their existing Flex Space Use (K18) (Warehouse and Office) by constructing additional vehicle and trailer parking at the rear of the existing industrial building. The site is located at 180 New Britain Boulevard and 354 Schoolhouse Road (formerly a non-conforming single-family dwelling) within the Industrial/ Office (IO) Zoning District and a Flex Use is permitted by-right in the zoning district.

On January 21, 2021, the New Britain Township Zoning Hearing Board (ZHB) granted a variance with conditions to allow 137 spaces where 370 are required. In addition, the Applicant received land development approval on June 20, 2022 for a parking lot expansion. The Sketch Plan proposes an additional 43 off-street parking spaces, 18 trailer spaces and 5 loading dock spaces on the NE side of the building.

III. Review Comments

A. Zoning Ordinance

We offer the following comments with respect to the current New Britain Township Zoning Ordinance:

1. §27-201&1801.c – The plan proposes 18 trailer parking spaces between the rear of the existing building and Schoolhouse Road. The intent of these trailer spaces shall be discussed and clarified if they will be used as long-term storage, temporary parking, staging, loading, or combination thereof. We note that outdoor storage is permitted in the IO zoning district by Conditional Use and is defined as the keeping, in an unenclosed area, of any goods, junk, material, merchandise, or vehicles in the same place for more than 24 hours. We further note that Finding of Facts #31 indicates that "No studs or other materials will be stored outside" with regard to product, metal studs and other building elements.

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

2. §27-1802.b – The maximum impervious surface ratio is 65%. The Impervious Surface Calculations table lists a proposed impervious surface ratio of 73.59% where the existing impervious area is 55.6%. The Applicant has indicated in the cover letter that a variance from this requirement will be requested. We also note that the Zoning Data table mistakenly notes this as an existing non-conformity.

3. §27-2400.f.2.(a) – Where more than 20% of the woodlands are being disturbed, all disturbed woodlands exceeding this 20% limit shall be replaced on an acre-for-acre basis through the planting of replacement trees. The actual number of replacement trees shall be calculated by multiplying the acreage of disturbance exceeding 20% by 200 trees per acre. All replacement trees shall have a minimum tree caliper of 3 1/2 inches' DBH. The plan appears to propose approximately 50% disturbance of the combined woodlands on both properties. Based on approximately 0.71 acres of disturbance, 86 replacement trees would be required. The total woodlands disturbance shall be clarified on the plan and replacement trees provided.

4. §27-2401.c – For subdivision and land development plans, restrictions meeting Township specifications must be placed in the deed for each site or lot that has natural resource protection areas within its boundaries. The previous land development plan established conservation easements over the existing woodlands which are proposed to be disturbed. The Applicant proposes to relocate the conservation easement to an alternate woodland area onsite. We note that the relocated easement is within 5 feet of the proposed improvements and may not provide sufficient room for grading. The layout may need to be revised to ensure the proposed improvements do not encroach within the remaining woodland area to be protected. In addition, the existing easement may not be amended without approval of the Board of Supervisors.

5. §27-2500.a.7. – A traffic impact study shall be required for any use expected to generate greater than 100 new trips inbound to the site or out bound from the site in site peak hour traffic, or 1,000 trips per day. The plan proposes an additional 43 parking spaces, 18 trailer spaces and 5 loading spaces, in addition to the 53 parking spaces being installed currently. The Applicant shall clarify the cumulative total anticipated increase in trips to determine if a traffic study is required.

6. §27-2901.K. – 1 parking space per 275 square feet of total floor area is required for a K18 Flex Space use. As previously noted, the Applicant received a variance from this requirement to provide a total of 137 off-street parking spaces, where 370 are required. The ZHB Decision for this variance indicated that the previously approved 137 spaces would be sufficient for the Applicant's use and that no materials would be stored outside the building. Due to the acquisition of 354 Schoolhouse, the Applicant proposes an additional 43 spaces and 18 trailer parking spaces. We defer to the Zoning Officer on whether or not there is a need for an additional parking variance based on the Findings of Facts and testimony at the ZHB hearing.

7. §27-2904.f.1. – Any paved area of 1,000 square feet or more designed for use, or that would be open to the public during night hours shall be adequately illuminated for security purposes. A lighting plan shall be provided with the preliminary plan submission.

8. §27-2904.g.3. – No off-street parking space nor outdoor display of vehicles or articles for sale shall be located within 10 feet of the ultimate right-of-way line of any street. Approximately 8 parking spaces are proposed within 10 feet of the Schoolhouse Road Ultimate right-of-way.

9. §27-2904.g.5. – All paved areas, exempt curbs or sidewalks, shall be setback a minimum of 20 feet from the exterior structural walls of any industrial building for firefighting, walks, and foundation landscaping. The existing setback to the northern corner of the building is 18 feet and a 13-foot setback is proposed. This setback does not apply to delivery entrances.

10. §27-2904.h. – Landscaping shall be provided around the proposed parking area. For every existing tree on the lot that is preserved and maintained and that would generally meet the requirements of this section, one less shade tree shall be required to be planted. If it is the Applicant's intent to use the existing vegetation to meet this requirement, the type and size of the existing trees in this area shall be identified on the plan.

11. §27-2904.j.2.(a). – A minimum of 3% of all required off-street parking spaces shall be handicapped spaces. Based on a proposed total of 180 parking spaces, 6 accessible parking spaces would be required. The improvements currently under construction include 5 accessible parking spaces. One (1) additional accessible parking space shall be provided.

12. §27-2906.a.2. & c – Vehicle circulation plans shall be provided to demonstrate adequate space is provided for emergency vehicles to maneuver the site and for trailers to access the loading docks.

B. Subdivision and Land Development and Stormwater Management Ordinance

Upon submission of a preliminary application, this project will be subject to Subdivision and Land Development Ordinance and Stormwater Ordinance reviews. We anticipate additional review comments once preliminary plans, and all associated reports and studies are submitted to the Township. Any requests for modifications from the requirements set forth in the Ordinance shall be submitted in writing, including the grounds and facts of unreasonableness or hardship on which it is based and the minimum modification necessary.

1. §22-401.8 – Neighbor notifications are required with the submission of a preliminary plan.

2. §22-505 – A Community Impact Assessment Report is required for the development and is required at the time of preliminary plan submission. The previous land development application received a waiver from this requirement due to the site being within a planned industrial development.

3. §22-704 – The proposed improvements cross an existing sanitary sewer easement. It appears the easement over sanitary sewer service to the former dwelling on TMP #26-001-102. The intent for the service and easement shall be noted on the plan. The existing services to the former dwelling shall be abandoned in accordance with all Department of Health regulations.

4. §22-705.3., 705.4, & 706 – Where a land development abuts or contains an existing street, the applicant is required to improve the street to the Township standards. The Applicant previously paid a $25,000 contribution in lieu of road improvements with the condition that sidewalk be installed, as well as curb ramp upgrades and crosswalks along New Britain Boulevard. Since then, the Applicant has acquired 354 Schoolhouse Road. While New Britain Boulevard is adequate in width, Trewigtown Road and Schoolhouse Road are less than the required 24' half-width for major collector roads. In addition, these two roads do not have the required sidewalk and curb and full width milling and overlay is required. The following improvements shall be discussed:

    a. The two adjacent southeastern parcels, (TMP #26-001-103.001, Mode Transportation and TMP #26-001-103-1, Clauser Tree Care) were recently widened along the Schoolhouse Road frontage, curb and bituminous walking trail installed, as well as milling and overlay. The adjacent Mode parcel was widened 4 feet, with curb, 6-foot bituminous walkway and half-width mill and overlay. It appears that a number of street trees and existing vegetation would need to be removed to accommodate street widening.

    b. The radius at the southernmost corner of the Trewigtown-Schoolhouse Road intersection is required to be 25 feet wide at a minimum.

    c. With required street widening, storm sewer inlets and piping would be required in accordance with §22-712.5&6.

    d. Township Resolution 2007-12 may be applicable if waivers of the SALDO are requested at the time of preliminary plan submission.

5. §22-708.2.D. – No more than 15 parking spaces shall be permitted in a continuous row without being separated by a ten-foot by eighteen-foot planting island. The plan proposes a row of 17 consecutive parking spaces and should be revised to provide the required island.

6. §22-710 – We defer to the Township Fire Marshal for review of the plans with respect to emergency access, etc.

7. §22-713 – Parking lot and buffer landscaping will be required for the proposed parking expansion and street trees will be required along the frontage of 354 Schoolhouse Road where sufficient existing vegetation does not currently exist.
8. §22-716 – Concrete monuments shall be provided along the ultimate right-of-way of Schoolhouse Road.
9. §26-121 – The Applicant is required to obtain an NPDES Permit from DEP for the proposed earth disturbance and meet the Township's SWM site plan requirements, volume control requirements, and peak rate control requirements to manage runoff for proposed impervious surfaces greater than 5,000 square feet.

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

Sincerely,

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

JM/tw

cc: Michael Walsh, Assistant Manager
David Conroy, Director of Planning and Zoning Officer
Ryan Gehman, Assistant Planning and Zoning Officer
Jeffrey P. Garton, Esq., Township Solicitor
Andrew Miller, 180 New Britain Blvd Associates, LLC
Kim Fasnacht, P.E., Rettew Associates, Inc.
Craig D. Kennard, P.E., E.V.P., Gilmore & Associates, Inc.
Tim Wallace, P.E., Gilmore & Associates, Inc.

NEW BRITAIN TOWNSHIP

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

SUBDIVISION & LAND DEVELOPMENT APPLICATION

1.	Date of Application:	October 31, 2022
2.	Date of Plan or Revision:	09-23-2022
3.	Application for:	Subdivision & Land Development
4.	Name of Subdivision or Land Development:	Galena Reserve Mobile Home Park
5.	Location:	Limekiln Pike

TOWNSHIP USE ONLY

Date Recieved: ______
Payment: #9900 ; KG; D.
Check #: #127664
Receipt #: #13616
Escrow Acc. #: ______

6. Tax Map Parcel #: 26-012-051 Total Acreage: Gross 15.608 Base Site Area 14.732

7. Net Buildable Site Area (from Section 2401): 10.312

8. Zoning Requirements:

Zoning District	MHP	Minimum Lot Size	4,500	Maximum Density	6.0
Front Yard	8.00'	Side Yard	10.00'	Rear Yard	16.00'

9. Number of Lots or Dwelling Units: 33

10. Equitable Owner of Record of Land: RHG Properties, LLC
Address: P.O. Box 677
Morgantown, PA 19543
Phone: 610-396-7021 E-mail: mwells@gspmanagement.com

11. Applicant: RHG Properties, LLC
Address: P.O. Box 677
Morgantown, PA 19543
Phone: 610-396-7021 E-mail: mwells@gspmanagement.com

12. Registered Engineer or Surveyor: Urwiler & Walter, Inc.
Address: 3126 Main Street, P.O. Box 269
Sumneytown, PA 18084
Phone: 215-234-4562 E-mail: scamburn@urwilerwalter.com

13. Type of Water & Sewer: ☑ Public Water ☐ Private Water
☑ Public Sewer ☐ Private Sewer

14. Proposed Use: Mobile Home Park

This is to certify that I have read Article V of the New Britain Township Subdivision and Land Development Ordinance and that the accompanying plan meets the requirements of that Article to the best of my knowledge.

Michelle L Wells
Signature of Applicant

[illegible]
Signature of Registered Engineer or Surveyor

SUBDIVISION & LAND DEVELOPMENT
PLAN SUBMISSION CHECKLIST

Date of Application: October 31, 2022

Subdivision/Land Development Name: Galena Reserve Mobile Home Park

Address of Property: Limekiln Road, Doylestown, PA 18901

Owner(s) Name: RHG Properties, LLC

Applicant(s) Name: RHG Properties, LLC

Tax Map Parcel Number: 26-012-051

Plan Sets for New Britain Township - Folded to 8 1/2 x 11: (9 Full Size, 5 11x17)

- ☑ NBT Board of Supervisors (Full Size) - 5 Copies
- ☑ Township Engineer (Full Size) - 1 Copy
- ☑ Fire Marshal (Full Size) - 1 Copy
- ☑ NBT Planning Commission (11x17) - 2 Copies
- ☑ NBT File (Full Size) - 2 Copies
- ☑ Digital Submission - Flash Drive or File Sharing Service

Application Forms & Fees to be Submitted to the Township: *All applicants include these items or the application will be considered administratively incomplete and returned to the applicant.*

- ☑ New Britain Township Subdivision and Land Development Application (1 Signed Original)
- ☑ Filing Fee according to the most current Fee Schedule adopted by Resolution
- ☑ Escrow Fee according to the most current Fee Schedule adopted by Resolution
- ☐ Contract for Professional Services Agreement (3 Signed Originals)
- ☑ Proof of Submission to Bucks County Planning Commission
- ☐ Proof of Submission to Bucks County Conservation District
- ☐ Proof of Submission to Water Authority (North Penn/North Wales/Aqua), if applicable
- ☐ Proof of Submission to Chalfont New Britain Joint Sewer Authority **OR** Buck County Department of Health
- ☑ Stormwater Management Report (2 Copies) (Digital Acceptable)
- ☑ PADEP Sewage Facilities Planning Module Application/Mailer approved by Sewer Authority or SEO (Original & 2 Copies)
- ☐ Traffic Impact Study, if applicable (2 Copies) (Digital Acceptable)
- ☐ PADOT Highway Occupancy Permit Plan/Application, if applicable (2 Copies)
- ☑ Community Impact Assessment Report, if applicable (4 Copies)
- ☐ Affidavit of Mailing Notification, Mailing Content & Post Property of SLD Application (§ 22-401.8 General Procedures)
- ☐ Township Road Opening Permit, if applicable
- ☐ Water Resource Impact Study, if applicable (2 Copies) (Digital Acceptable)
- ☑ Waiver Request Letter with Justification

Reviewed By: _____ Date: _____
Township Representative

**All fees or contributions in lieu of shall be payable to New Britain Township. All plan sets, applications and forms shall be submitted directly to New Britain Township.*

The attached checklist is provided for the applicant as a guideline to assist in the submission process. All applicants must include these items or the application will be considered administratively incomplete and returned to the applicant.

NEW BRITAIN TOWNSHIP
90-DAY REVIEW PERIOD WAIVER

I/We, the applicant, understand that the time necessary for adequate review of this application and plans for compliance with current Zoning and Subdivision & Land Development Ordinances, including reviews of any revised plans, may exceed the 90-day review period stipulated under the Municipalities Planning Code.

In recognition of the above, I/we hereby waive the 90-day review period, with the understanding that I/we may revoke this waiver at any time in the future, upon 30-day written notice to the New Britain Township Zoning Officer.

Name of Subdivision/Land Development: Galena Reserve Mobile Home Park

Tax Map Parcel Number(s): 26-012-051

Signature of Applicant: Michelle R Stells Date: October 31, 2022

Signature of Applicant: _____ Date: _____

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
established 1966

3126 MAIN STREET
P.O. BOX 269
SUMNEYTOWN, PA 18084-0269
215-234-4562
215-234-0889 (FAX)

October 31, 2022

Planning Commission and Board of Supervisors
New Britain Township
207 Park Avenue
Chalfont, PA 18914

Subject: RHG Properties, LLC
Galena Reserve Mobile Home Park Subdivision and Land Development
Limekiln Road, New Britain Township

Dear Board Members:

On behalf of the applicant, we hereby request the following **WAIVERS** from the New Britain Township – Subdivision and Land Development Ordinance (Chapter 22), as last amended:

1. Section 22-706.1.B. – Curb along property frontage of Limekiln Road

   Required: Curbs shall be installed along the property frontage of every existing street abutting a proposed subdivision and/or land development.

   Proposed: No curbs are proposed along the property frontage of Limekiln Road.

   Justification: There is no curbs throughout the entire length of Limekiln Road. A roadside drainage swale system is proposed to collect stormwater runoff from Limekiln Road.

2. Section 22-706.2.B. – Sidewalk along property frontage of Limekiln Road

   Required: Sidewalk shall be installed along the property frontage of every existing street abutting a proposed subdivision and/or land development.

   Proposed: No sidewalks are proposed along the property frontage of Limekiln Road.

   Justification: There is no sidewalks throughout the entire length of Limekiln Road. Additionally, a 6 ft wide asphalt walkway is proposed along Limekiln Road outside of right-of-way within the property boundary.

3. Section 22-712.2.K – Sump pump and roof drain

Required: All sump pump and roof drains for proposed residential and nonresidential buildings shall be connected to an existing or proposed storm sewer system or discharged directly to a stormwater detention facility. Sump pump and roof drains may be discharged to a watercourse or drainage swale provided a minimum twenty-foot drainage easement is provided over all affected properties. Sump pumps and roof drains shall not be discharged over or through a curb onto a public street or connected to a roadway underdrain system.

Proposed: Roof drains downspouts discharges to splash block and sheet flows to nearby swales.

Justification: Roof drains downspouts are proposed to discharge to splash block to nearby swales in order to maximize the infiltration capability.

4. Section 22-712.4.G – Detention basin outlet pipe size

Required: All basin outlet pipes shall be watertight reinforced concrete having "0-Ring" joints, with a minimum size of 18 inches.

Proposed: (Partial Waiver) To allow 12 inch pipe size for Raingarden facility.

Justification: Raingarden proposes smaller pipe for outflow to minimize flows and increase dewatering times, which is typical for a smaller scale stormwater management facility such as a Raingarden.

5. Section 22-712.4.I – Detention basin freeboard

Required: The minimum freeboard through the emergency spillway shall be one foot.

Proposed: (Partial Waiver) To allow the emergency spillway elevation of the Raingarden to have a freeboard of six (6) inches.

Justification: : The stormwater design standard that is referenced is for a larger type stormwater management basin, the requirements are not appropriate for smaller stormwater BMP's such as a Raingarden.

6. Section 22-712.4.J – Detention basin bottom slope

Required: All portions of the detention basin bottom shall be sloped towards the outlet structure at a minimum slope of 2%.

Proposed: To allow basin bottom with no slope to support infiltration.

Justification: The proposed stormwater water basins bottom has no slope to promote infiltration in the amended soil section of these BMPs.

7. Section 22-712.4.K – Detention basin berm width

   Required: The minimum basin berm width at the design elevation shall be 10 feet.

   Proposed: (Partial Waiver) To allow Raingarden top of berm width to be 5 feet.

   Justification: The stormwater design standard that is referenced is for a larger type stormwater management basin, the requirements are not appropriate for smaller stormwater BMP's such as a Raingarden.

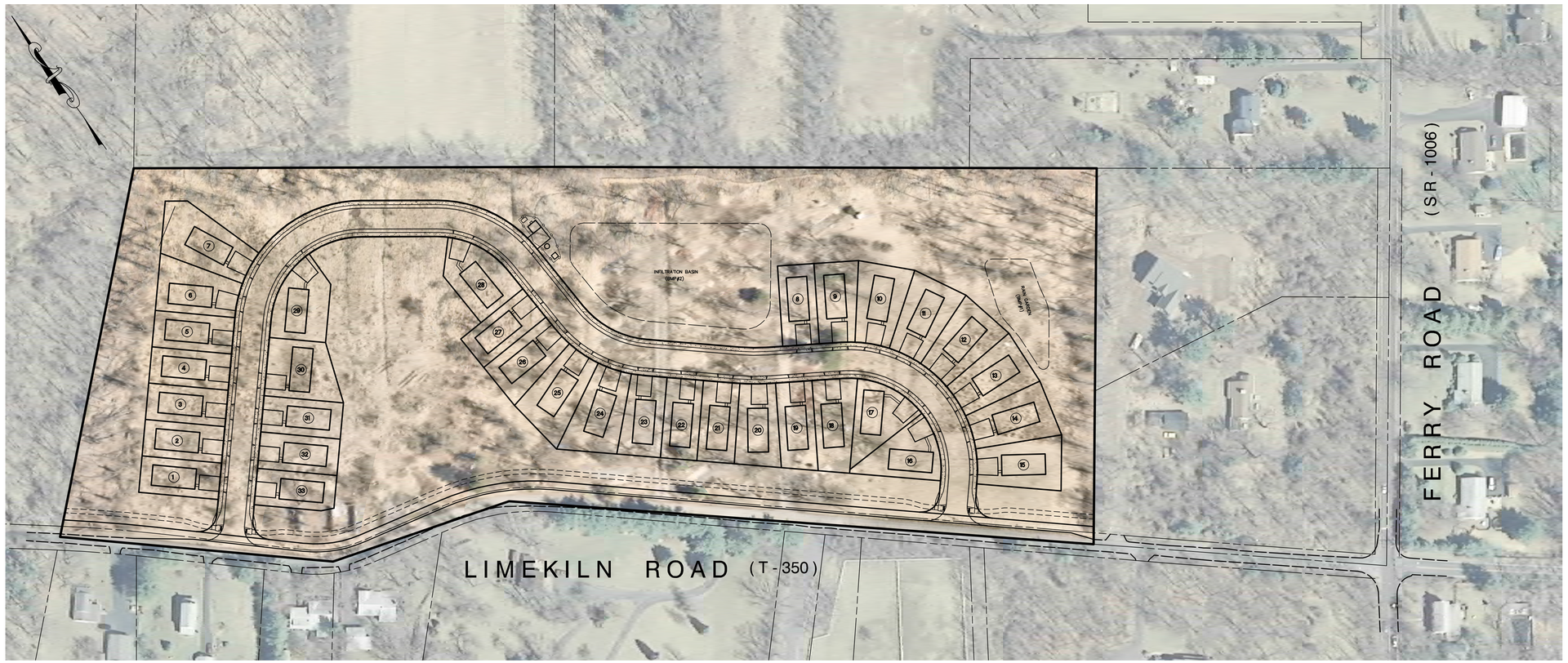
Should you have any questions, please do not hesitate to contact me.

Sincerely,

URWILER & WALTER, INC.

Scott T. Camburn

cc: RHG Properties, LLC.



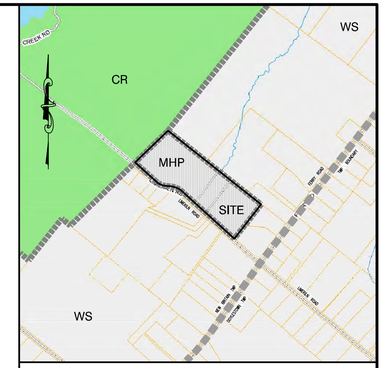
PRELIMINARY SUBDIVISION AND LAND DEVELOPMENT PLANS

PREPARED FOR

R H G PROPERTIES, L L C

- GALENA RESERVE MOBILE HOME PARK -

NEW BRITIAN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA



LOCATION MAP:

CR CONSERVATION & RECREATION
MHP MANUFACTURING RESIDENTIAL
WS WATERSHED

800 0 400 800
(IN FEET) 1 inch = 800 ft.

TABULATION OF SHEETS

* – SHEETS 2, 3, 15 THROUGH 22 – (TO BE RECORDED)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

TITLE PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

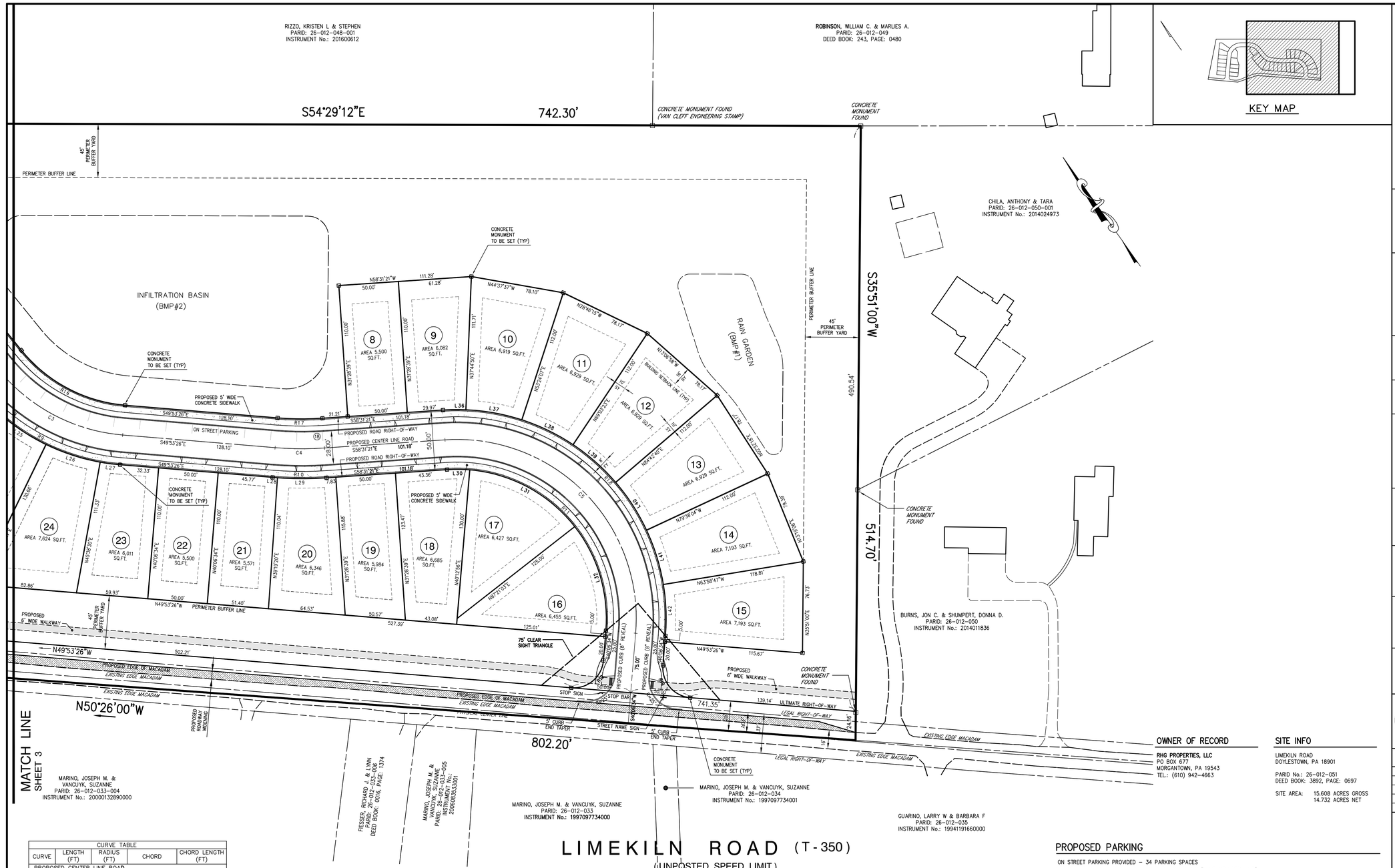
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

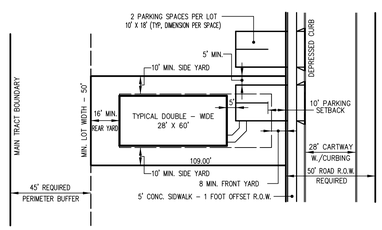
40' 0 40' 80' 160'
SCALE: 1" = 80'

SHEET No. 1 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



CURVE TABLE				
CURVE	LENGTH (FT)	RADIUS (FT)	CHORD	CHORD LENGTH (FT)
PROPOSED CENTER LINE ROAD				
C3	121.21	150.00	S26°44'32"E	117.93
C4	41.43	275.00	S54°12'23"E	41.39
C5	258.22	150.00	N09°12'24"W	**227.49**
PROPOSED ROAD RIGHT-OF-WAY				
R9	141.41	175.00	S26°44'32"E	137.59
R10	45.20	300.00	S54°12'24"E	45.15
R11	215.18	125.00	N09°12'24"W	189.58
R12	39.27	25.00	N85°06'34"E	**35.36**
R16	101.00	125.00	S26°44'32"E	98.28
R17	37.66	250.00	S54°12'24"E	37.63
R18	301.25	175.00	N09°12'24"W	265.41
R19	39.27	25.00	S04°53'26"E	35.36
PROPOSED LOTS				
L25	47.81	175.00	S20°52'35"E	47.67
L26	47.81	175.00	S36°31'52"E	47.67
L27	16.90	175.00	S47°07'28"E	16.89
L28	4.12	300.00	S50°17'03"E	4.12
L29	41.08	300.00	S54°36'00"E	41.04
L30	19.06	125.00	N54°09'12"W	19.05
L31	102.83	125.00	N26°13'01"W	99.96
L32	93.28	125.00	N18°43'48"E	**91.14**
L36	19.15	175.00	N55°23'15"W	19.14
L37	47.81	175.00	N44°25'31"W	47.67
L38	47.81	175.00	N28°46'15"W	47.67
L39	47.81	175.00	N13°06'58"W	47.67
L40	47.81	175.00	N02°32'18"E	47.67
L41	47.81	175.00	N18°11'35"E	47.67
L42	43.03	175.00	N33°03'53"E	42.92



TYPICAL LOT DETAIL
SCALE: 1"=40'

TOTAL TRACT IMPERVIOUS SURFACE CALCULATIONS

1,559 L.F. PROPOSED ROAD (R.O.W. TO R.O.W.)

CARTWAY - 28' WIDE	43,653 S.F.
SIDEWALK 5' WIDE BOTH SIDES	15,590 S.F.
DRIVES WITHIN R.O.W.	3,960 S.F.
PROPOSED DWELLINGS 33 AT 28' X 60'	55,440 S.F.
PROPOSED PUMP STATION BUILDING AND PARKING	800 S.F.
ON LOT PARKING (INCLUDES 10' APPROACH) 66 SPACES AT 28 X 10	18,480 S.F.
ON LOT WALKWAYS - 4' WIDE (25' L.F ALLOCATION) 25 L.F. PER UNIT	3,300 S.F.
PROPOSED 6' WIDE WALKWAY	8,845 S.F.
TOTAL IMPERVIOUS SURFACE	150,068 S.F. (3.445 ACRES) 23.39 % OF BASE SITE AREA

* THE STORMWATER FACILITIES ARE DESIGNED FOR MAXIMUM ALLOWABLE IMPERVIOUS AREA (25%) = 3.683 ACRES

PROPOSED PARKING

ON STREET PARKING PROVIDED - 34 PARKING SPACES
OFF STREET PARKING PROVIDED - 66 PARKING SPACES "2 SPACES PER UNIT"
TOTAL PARKING PROVIDED - 100 PARKING SPACES
PUMP STATION EMPLOYEE PARKING PROVIDED - 2 PARKING SPACES

ZONING DATA: MHP - MANUFACTURING HOME PARK DISTRICT

DIMENSIONAL STANDARDS - B9 USE - MOBILE HOME PARK II - AGE RESTRICTED UNITS

	REQUIRED	PROVIDED
MINIMUM LOT AREA - SINGLE WIDE	3,600 SQUARE FEET	N/A
MINIMUM LOT AREA - DOUBLE WIDE	4,500 SQUARE FEET	4,500 SQUARE FEET (MIN.)
MIN. WIDTH AT BUILDING SETBACK LINE - SINGLE WIDE	36 FEET	N/A
MIN. WIDTH AT BUILDING SETBACK LINE - DOUBLE WIDE	50 FEET	50 FEET (MIN.)
MINIMUM YARDS SETBACK:		
FRONT	8 FEET	8 FEET (MIN.)
SIDE	10 FEET	10 FEET (MIN.)
REAR	16 FEET	16 FEET (MIN.)
MAXIMUM BUILDING COVERAGE RATIO - SINGLE WIDE	30 PERCENT	N/A
MAXIMUM BUILDING COVERAGE RATIO - DOUBLE WIDE	35 PERCENT	31.11 PERCENT (MAX.)
MINIMUM SITE AREA	10 ACRES	14.73 ACRES (NET)
MAXIMUM DENSITY	6.0 D.U./ACRE	2.25 D.U./ACRE
MAXIMUM IMPERVIOUS SURFACE RATIO:	25 PERCENT	23.39 PERCENT
MINIMUM OPEN SPACE RATIO	30 PERCENT	55.10 PERCENT

Commonwealth of Pennsylvania
County of Bucks

On the ..... day of ....., 20....., before me the subscriber, a Notary Public of the Commonwealth of Pennsylvania, residing in ..... personally appeared ..... (name of officer of corporation), who acknowledged (himself/herself) to be the (president/secretary) of ..... (name of the corporation), a corporation, and that as such (president or secretary), being authorized to do so, (he/she) executed the foregoing plan by signing that the said corporation is the registered owner of the designated land, that all necessary approvals of the plan have been obtained and is endorsed thereon, and that (he/she/they) desire that the foregoing plan be recorded according to law.

Witness my hand and notarial seal, the day and year aforesaid.

My Commission Expires (SEAL) Notary Public

(I/We), ..., have laid out upon (my/our) land situate in the Township of New Britain, County of Bucks, Commonwealth of Pennsylvania, certain lots and streets according to the accompanying plan which is intended to be recorded. Witness my hand and seal this ..... day of ....., 20..... .

Approved by the Board of Supervisors of the Township of New Britain this ..... day of ....., 20..... .

Approved by the Planning Commission Chairman of the Township of New Britain this ..... day of ....., 20..... .

Reviewed by Township Engineer.

Township Engineer DATE

BCPC No. .....
PROCESSED AND REVIEWED. Report prepared by the Bucks County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date .....

Executive Director, Bucks County Planning Commission

Recorded in the office of the Recorder of Deeds, Bucks County, Pennsylvania in Plan Book:..... Page:..... on the ..... day of ..... 20..... .

Recorder of Deeds

I hereby certify that this plan represents a survey made by me and the monuments shown thereon exist as located, and that all dimensional and geodetic details are correct.

PAUL YASKOWSKI, PLS: NO. SU28869-E DATE

I hereby certify to the best of my knowledge that the Stormwater Management (SWM) site plan meets all design standards and criteria of New Britain Township.

ALAN C. BREYER, P.E. NO. 25546-E DATE

I do hereby certify that the delineation of the wetlands shown on this plan is in accordance with the findings of my filed investigation and that I have determined these limits based upon the CORP of Engineers guidelines.

DR. JOHN SCZCEPANSKI, PHD DATE

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

RECORD PLAN (1 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

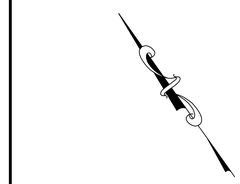
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

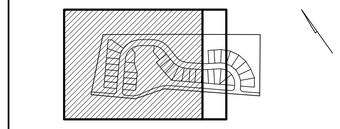
SHEET No. 2 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

CURVE TABLE				
CURVE	LENGTH (FT)	RADIUS (FT)	CHORD	CHORD LENGTH (FT)
PROPOSED CENTER LINE ROAD				
C1	221.49	150.00	S82°52'01"W	201.91
C2	134.14	150.00	N29°12'44"W	129.71
C3	121.21	150.00	S26°44'32"E	117.93
PROPOSED ROAD RIGHT-OF-WAY				
R6	38.81	25.00	S03°54'24"E	35.03
R7	184.58	125.00	S82°52'00"W	168.26
R8	111.78	125.00	N29°12'44"W	108.10
R9	141.41	175.00	S26°44'32"E	137.59
R13	39.73	25.00	N86°05'36"E	35.68
R14	258.41	175.00	S82°52'00"W	235.56
R15	156.50	175.00	N29°12'44"W	151.33
R16	101.00	125.00	S26°44'32"E	98.28
PROPOSED LOTS				
L20	107.69	125.00	S65°14'43"W	104.39
L21	76.89	125.00	N72°27'09"W	75.68
L22	15.81	125.00	N51°12'29"W	15.80
L23	95.97	125.00	N25°35'21"W	93.63
L24	28.88	175.00	S08°19'17"E	28.85
L25	47.81	175.00	S20°52'35"E	47.67
L26	47.81	175.00	S36°31'52"E	47.67
L27	16.90	175.00	S47°07'28"E	16.89
L33	46.53	175.00	S48°10'55"W	46.40
L34	47.81	175.00	S63°37'37"W	47.67
L35	164.06	175.00	N81°41'19"W	158.12



BUCKS CO
"PEACE VALLEY PARK"
PARID: 26-003-088
INSTRUMENT No.: 1995019940001



KEY MAP

GENERAL NOTES

1. PROPERTY BOUNDARY SURVEYED AND CALCULATED BY URWILER & WALTER, INC. IN JANUARY 2019.
2. TOTAL TRACT AREA: 15.608 ACRES GROSS; 14.732 ACRES NET
3. TOPOGRAPHY SURVEY PERFORMED BY URWILER & WALTER, INC. JANUARY 2019.
4. HORIZONTAL DATUM: (NAD 83) NORTH AMERICAN DATUM OF 1983.
5. BENCHMARK:
   ELEVATION: 467.51
   DESCRIPTION: TRENCH DRAIN GRATE
   LOCATION: APPROXIMATELY 380 FEET NORTHWESTERLY DIRECTION FROM THE MOST SOUTHEAST PROPERTY CORNER ALONG LIMEKILN ROAD 'AS NOTED ON PLAN'.
   DATUM: (NGVD 88) NORTH AMERICAN VERTICAL DATUM OF 1988
6. PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION 'X' – AREA OF MINIMAL FLOOD HAZARD (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) BY FEMA, ON FLOOD INSURANCE RATE MAP NO. 283 OF 532, WITH A MAP REVISED DATE OF MARCH 16, 2015, MAP NUMBER 42017C0283J, IN BUCKS COUNTY, STATE OF PENNSYLVANIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH THE PREMISES IS SITUATED.
7. WETLAND DETERMINATION CONDUCTED BY NOVA CONSULTANTS, LTD. AND VERIFIED BY THE UNITED STATES ARMY CORP OF ENGINEERS ON JULY 29, 2020. TOTAL AREA OF WETLAND AREA 13,480 SQUARE FEET / 0.309 ACRES.
8. DWELLING TYPE – MOBILE HOME (33 UNITS PROPOSED) SHALL CONSIST A 28'x60' (1,680 SQUARE FEET) DOUBLE WIDE MOBILE HOME.
9. MINIMUM NUMBER OF LOTS PRIOR TO THE FIRST OCCUPANCY IS 10.
10. DOUBLE WIDE WITH 2 PARKING SPACES ARE RESTRICTED TO A MAXIMUM OF 3 BEDROOMS.
11. RIGHT OF WAY OF LIMEKILN ROAD IS HEREBY OFFERED FOR DEDICATION TO NEW BRITAIN TOWNSHIP. RHG PROPERTIES, LLC. SHALL PROVIDE EASEMENTS AND MAINTENANCE TO THE INTERIOR ROAD PRIOR TO FINAL PLAN APPROVAL.
12. BENCHES WILL BE PROVIDED ALONG ALL WALKING TRAILS.
13. ALL LOTS WILL BE PROVIDED WITH PUBLIC WATER AND SEWER.
14. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND IN ACCORDANCE WITH THE UTILITY OWNER'S SPECIFICATIONS.
15. RHG PROPERTIES, LLC. IS REQUIRED TO MAINTAIN THE AREA OF THE CLEAR SIGHT TRIANGLES. THE TOWNSHIP HAS THE RIGHT TO ENTER AND PERFORM REQUIRED MAINTENANCE IN THE AREA IF DEEMED CRITICAL TO PUBLIC WELFARE PURSUANT TO A DECLARATION OF COVENANTS, RESTRICTIONS AND CONDITIONS APPROVED BY THE BOARD. NO STRUCTURE, FENCE, PLANTING, OR OTHER OBSTRUCTION SHALL INTERFERE WITH TRAFFIC VISIBILITY WITHIN THE CLEAR SIGHT TRIANGLES SHOWN ON THIS PLAN. VEGETATION NOTED TO BE CLEARED WITHIN THE CLEAR SIGHT TRIANGLES SHALL BE REQUIRED TO BE REMOVED PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY LOT WITHIN THE SUBDIVISION.
16. THE TOWNSHIP ENGINEER SHALL INSPECT AND APPROVE THE TREE PROTECTION FENCE INSTALLATION PRIOR TO ANY CLEARING OR EARTHMOVING ACTIVITIES.
17. IN THE OPINION OF THE TOWNSHIP ENGINEER'S REPRESENTATIVE OR CERTIFIED ARBORIST, ANY TREES DISTURBED, DAMAGED OR KILLED DURING OR AS A RESULT OF CONSTRUCTION SHALL BE REPLACED AT A ONE CALIPER INCH FOR ONE CALIPER INCH.
18. ALL MONUMENTATION SHALL BE SET BY A PROFESSIONAL LAND SURVEYOR AND ARE TO BE SET PRIOR TO PLAN RECORDING UNLESS THE COST FOR THIS WORK IS INCLUDED IN A FINANCIAL SECURITY AGREEMENT.
19. EACH MOBILE HOME SHALL BE PLACED ON A PERMANENT FOUNDATION OF AT LEAST EIGHT POURED CONCRETE OR MASONRY PILLARS SET ON A CONCRETE BASE AT LEAST EIGHT INCHES THICK. THE PILLARS SHALL BE SPACED NO MORE THAN 10 FEET APART WITH THE END PIERS BEING NO FARTHER THAN FIVE FEET FROM THE ENDS OF THE UNIT. THE PILLARS SHALL BE AT LEAST ONE BY TWO FEET IN SIZE AND AT LEAST 36 INCHES BELOW GRADE. EACH PILLAR SHALL HAVE INSTALLED A TIE-DOWN RING TO WHICH THE MOBILE HOME SHALL BE SECURED. THE ANCHORING SYSTEM SHALL BE APPROVED BY THE TOWNSHIP ENGINEER.
20. A DEED RESTRICTION WILL BE REQUIRED FOR THE OPEN SPACE LOT TO PREVENT FUTURE SUBDIVISION FOR A NON-OPEN SPACE USE AND TO PREVENT THE DEVELOPMENT OF THE OPEN SPACE FOR BUILDINGS AND OTHER STRUCTURES WHICH DO NOT RELATE TO THE OPEN SPACE.
21. THE PROPOSED STORMWATER BEST MANAGEMENT PRACTICES (BMP'S) SHOWN ON THESE PLANS ARE A BASIC AND PERPETUAL PART OF THE STORMWATER MANAGEMENT SYSTEM OF THE PROPOSED SITE, AND, AS SUCH, ARE TO BE PROTECTED AND PRESERVED IN ACCORDANCE WITH THE APPROVED FINAL PLANS OF THEIR SUCCESSORS AND ASSIGNS OF THESE LANDS.
22. RHG PROPERTIES, LLC. IS RESPONSIBLE FOR OWNERSHIP AND MAINTENANCE OF INTERIOR ROAD, OPEN SPACE, EASEMENTS, STORMWATER MANAGEMENT FACILITIES AND UTILITIES OF THE PROPOSED SITE.
23. A BLANKET EASEMENT IS GRANTED TO TOWNSHIP AND/OR ITS AGENTS RESERVE THE RIGHT AND PRIVILEGE TO ENTER UPON THESE LANDS FROM TIME TO TIME FOR THE INSPECTION OF SAID FACILITIES IN ORDER TO DETERMINE THAT THE STRUCTURAL AND DESIGN INTEGRITY IS BEING MAINTAINED BY THE OWNER AND OR THEIR ASSIGNS, AND THE PROPER OPERATION AND MAINTENANCE ARE BEING CONDUCTED.
24. ALL CONSTRUCTION AND MATERIALS MUST COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, LAWS, ORDINANCES, RULES AND CODES, AND ALL APPLICABLE OSHA REQUIREMENTS. ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT.
25. URWILER AND WALTER, INC. MAKES NO CLAIM AS TO THE ACCURACY OF THE UNDERGROUND UTILITIES. THE SHOWN UTILITIES ARE BASED ON INFORMATION PROVIDED BY THE UTILITY COMPANIES VIA PLANS AND SITE MARK-OUT, IN ADDITION TO ASSUMPTIONS MADE FROM SITE OBSERVATIONS OF VISIBLE SURFACE FEATURES. THE VERTICAL DEPTHS SHOWN ARE APPROXIMATE AS TAKEN FROM THE UTILITY COMPANY AS-BUILT PLANS (WHEN AVAILABLE) OR ASSUMED DEPTHS (WHEN NO AVAILABLE) AND HAVE NOT BEEN ACCURATELY LOCATED BY TEST PITS/SOFT-DIG OR OTHER GEOPHYSICAL TECHNIQUES (UNLESS INDICATED).
26. CONTRACTOR WILL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY OR TO REQUEST THE RELOCATION OF THE EXISTING FACILITY BY THE UTILITY. NOTIFY THE ENGINEER OF WORK IF ANY DISCREPANCIES IN UTILITY LINE LOCATIONS ARE FOUND. THE COSTS FOR THE EXPLORATION WORK SHALL BE INCIDENTAL TO THE ITEMS INCLUDED IN THE CONTRACTOR'S PROPOSAL.
27. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE COMMENTS TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND CONFIRMED THAT ALL NECESSARY OR REQUIRED PERMITS HAVE BEEN OBTAINED. CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
28. PROVIDE SHOP DRAWINGS/LITERATURE SUBMITTALS FOR ALL ITEMS PERTAINING TO THE STORM SEWER SYSTEM, STORM STRUCTURES, PIPE, ETC., CONCRETE; I.E., CURB, SIDEWALK, ETC., ALL AGGREGATES, ALL ASPHALT DESIGN MIXES, RETAINING WALLS, ETC. TO THE TOWNSHIP ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION.
29. ALL STREET LIGHTS SHALL BE INSTALLED AND ENERGIZED PRIOR TO THE ISSUANCE OF THE FIRST OCCUPANCY PERMIT FOR ANY SUBDIVISION AND/OR LAND DEVELOPMENT OR FIRST PHASE OR SECTION THEREOF AND THE LIGHTING AND MAINTENANCE COSTS SHALL BE ASSESSED TO AFFECTED PROPERTY OWNERS ON A PER LOT BASIS.

SITE CAPACITY CALCULATIONS

RESOURCE	PROTECTION RATIO	AREA OF RESOURCE	PROTECTED RESOURCE	ALLOWABLE DISTURBED RESOURCE	PROPOSED DISTURBED RESOURCE
WATERCOURSES	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
RIPARIAN BUFFER	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
FLOODPLAIN	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
FLOODPLAIN (ALLUVIAL) SOIL	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
WETLANDS	1.0	0.309 ACRES	0.309 ACRES	0 ACRES	0 ACRES
LAKES / PONDS	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
WETLAND MARGIN	0.8	0.329 ACRES	0.263 ACRES	0.066 ACRES	0.025 ACRES
WOODLANDS	0.8	2.680 ACRES	2.144 ACRES	0.536 ACRES	0.320 ACRES
8% TO 15% SLOPES *	0.6	0 ACRES *	0 ACRES	0 ACRES	0 ACRES
15% TO 25% SLOPES *	0.7	0 ACRES *	0 ACRES	0 ACRES	0 ACRES
25% + SLOPES *	0.85	0 ACRES *	0 ACRES	0 ACRES	0 ACRES

* ISOLATED AREAS CREATED BY FORMER ROAD WAYS AND PAD SITES

TOTAL LAND IN RESOURCE PROTECTION — 3.318 ACRES — 2.716 ACRES

TOTAL LAND WITH 1.0 PROTECTION RATIO — 0.309 ACRES — 0.309 ACRES

TOTAL RESOURCE PROTECTION LAND PROVIDED — 2.716 ACRES

TOTAL DISTURBED AREA — 0.602 ACRES — 0.345 ACRES

GROSS SITE AREA — 15.608 ACRES
ULTIMATE R.O.W. — 0.876 ACRES
NON-CONTIGUOUS LAND — 0 ACRES
PREVIOUSLY RESERVED LAND — 0 ACRES
LAND WITH OTHER USES — 0 ACRES
BASE SITE AREA — 14.732 ACRES

MINIMUM OPEN SPACE — 14.732 ACRES X 0.30 = 4.420 ACRES
STANDARD MINIMUM OPEN SPACE — 4.420 ACRES
REQUIRED OPEN SPACE — 4.420 ACRES
NET BUILDABLE SITE AREA — 14.732 ACRES MINUS 4.420 ACRES = 10.312 ACRES
ALLOWABLE DENSITY — 10.321 ACRES X 6 DWELLING UNITS PER ACRE = 61 DWELLING UNITS
ALLOWABLE IMPERVIOUS SURFACE AREA — 14.732 ACRES X 0.25 = 3.683 ACRES

OPEN SPACE CALCULATIONS

REQUIRED OPEN SPACE = BASE SITE AREA X 0.30
REQUIRED OPEN SPACE = 14.732 ACRES X 0.30 = 4.420 ACRES
PROVIDED OPEN SPACE = 8.117 ACRES, EXCLUDES LOTTED PARCELS AND ROAD RIGHT OF WAY
OPEN SPACE WITHIN BUFFER 3.549 ACRES
OTHER OPEN SPACE 4.568 ACRES
TOTAL OPEN SPACE 8.117 ACRES

WAIVER REQUESTED

FROM THE NEW BRITAIN TOWNSHIP – SUBDIVISION AND LAND DEVELOPMENT ORDINANCE (CHAPTER 22), AS LAST AMENDED:

1. **SECTION 22–706.1.B.** – CURB ALONG PROPERTY FRONTAGE OF LIMEKILN ROAD
   REQUIRED: CURBS SHALL BE INSTALLED ALONG THE PROPERTY FRONTAGE OF EVERY EXISTING STREET ABUTTING A PROPOSED SUBDIVISION AND/OR LAND DEVELOPMENT.
   PROPOSED: NO CURBS ARE PROPOSED ALONG THE PROPERTY FRONTAGE OF LIMEKILN ROAD.
2. **SECTION 22–706.2.B.** – SIDEWALK ALONG PROPERTY FRONTAGE OF LIMEKILN ROAD
   REQUIRED: SIDEWALK SHALL BE INSTALLED ALONG THE PROPERTY FRONTAGE OF EVERY EXISTING STREET ABUTTING A PROPOSED SUBDIVISION AND/OR LAND DEVELOPMENT.
   PROPOSED: NO SIDEWALKS ARE PROPOSED ALONG THE PROPERTY FRONTAGE OF LIMEKILN ROAD.
3. **SECTION 22–712.2.K** – SUMP PUMP AND ROOF DRAIN
   REQUIRED: ALL SUMP PUMP AND ROOF DRAINS FOR PROPOSED RESIDENTIAL AND NONRESIDENTIAL BUILDINGS SHALL BE CONNECTED TO AN EXISTING OR PROPOSED STORM SEWER SYSTEM OR DISCHARGED DIRECTLY TO A STORMWATER DETENTION FACILITY. SUMP PUMP AND ROOF DRAINS MAY BE DISCHARGED TO A WATERCOURSE OR DRAINAGE SWALE PROVIDED A MINIMUM TWENTY-FOOT DRAINAGE EASEMENT IS PROVIDED OVER ALL AFFECTED PROPERTIES. SUMP PUMPS AND ROOF DRAINS SHALL NOT BE DISCHARGED OVER OR THROUGH A CURB ONTO A PUBLIC STREET OR CONNECTED TO A ROADWAY UNDERDRAIN SYSTEM.
   PROPOSED: ROOF DRAINS DOWNSPOUTS DISCHARGES TO SPLASH BLOCK AND SHEET FLOWS TO NEARBY SWALES.
4. **SECTION 22–712.4.G** – DETENTION BASIN OUTLET PIPE SIZE
   REQUIRED: ALL BASIN OUTLET PIPES SHALL BE WATERTIGHT REINFORCED CONCRETE HAVING "O-RING" JOINTS, WITH A MINIMUM SIZE OF 18 INCHES.
   PROPOSED: (PARTIAL WAIVER) TO ALLOW 12 INCH PIPE SIZE FOR RAINGARDEN FACILITY.
5. **SECTION 22–712.4.I** – DETENTION BASIN FREEBOARD
   REQUIRED: THE MINIMUM FREEBOARD THROUGH THE EMERGENCY SPILLWAY SHALL BE ONE FOOT.
   PROPOSED: (PARTIAL WAIVER) TO ALLOW THE EMERGENCY SPILLWAY ELEVATION OF THE RAINGARDEN TO HAVE A FREEBOARD OF SIX (6) INCHES.
6. **SECTION 22–712.4.J** – DETENTION BASIN BOTTOM SLOPE
   REQUIRED: ALL PORTIONS OF THE DETENTION BASIN BOTTOM SHALL BE SLOPED TOWARDS THE OUTLET STRUCTURE AT A MINIMUM SLOPE OF 2%
   PROPOSED: TO ALLOW BASIN BOTTOM WITH NO SLOPE TO SUPPORT INFILTRATION.
7. **SECTION 22–712.4.K** – DETENTION BASIN BERM WIDTH
   REQUIRED: THE MINIMUM BASIN BERM WIDTH AT THE DESIGN ELEVATION SHALL BE 10 FEET.
   PROPOSED: (PARTIAL WAIVER) TO ALLOW RAINGARDEN TOP OF BERM WIDTH TO BE 5 FEET.

Commonwealth of Pennsylvania
County of Bucks

On the ..... day of ....., 20....., before me the subscriber, a Notary Public of the Commonwealth of Pennsylvania, residing in ..... personally appeared ..... (name of officer of corporation), who acknowledged (himself/herself) to be the (president/secretary) of ..... (name of the corporation), a corporation, and that as such (president or secretary), being authorized to do so, (he/she) executed the foregoing plan by signing that the said corporation is the registered owner of the designated land, that all necessary approvals of the plan have been obtained and is endorsed thereon, and that (he/she/they) desire that the foregoing plan be recorded according to law.

Witness my hand and notarial seal, the day and year aforesaid.

....
My Commission Expires (SEAL) Notary Public

(I/We), ..., have laid out upon (my/our) land situate in the Township of New Britain, County of Bucks, Commonwealth of Pennsylvania, certain lots and streets according to the accompanying plan which is intended to be recorded. Witness my hand and seal this ..... day of ....., 20..... .

Approved by the Board of Supervisors of the Township of New Britain this ..... day of ....., 20..... .

Approved by the Planning Commission Chairman of the Township of New Britain this ..... day of ....., 20..... .

Reviewed by Township Engineer.

Township Engineer DATE

BCPC No. .....
PROCESSED AND REVIEWED. Report prepared by the Bucks County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date .....

Executive Director, Bucks County Planning Commission

Recorded in the office of the Recorder of Deeds, Bucks County, Pennsylvania in Plan Book: ..... Page: ..... on the ..... day of ....., 20..... .

Recorder of Deeds

I hereby certify that this plan represents a survey made by me and the monuments shown thereon exist as located, and that all dimensional and geodetic details are correct.

PAUL YASKOWSKI, PLS: NO. SU28869–E DATE

I hereby certify to the best of my knowledge that the Stormwater Management (SWM) site plan meets all design standards and criteria of New Britain Township.

ALAN C. BREYER, P.E. NO. 25546–E DATE

I do hereby certify that the delineation of the wetlands shown on this plan is in accordance with the findings of my filed investigation and that I have determined these limits based upon the CORP of Engineers guidelines.

DR. JOHN SCZCEPANSKI, PHD DATE

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

RECORD PLAN (2 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 3 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

GENERAL NOTES:

1. PROPERTY BOUNDARY SURVEYED AND CALCULATED BY URWILER & WALTER, INC. IN JANUARY 2019.
2. TOTAL TRACT AREA: 15.608 ACRES GROSS; 14.732 ACRES NET
3. PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X" – AREA OF MINIMAL FLOOD HAZARD (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) BY FEMA, ON FLOOD INSURANCE RATE MAP NO. 283 OF 532, WITH A MAP REVISED DATE OF MARCH 16, 2015, MAP NUMBER 42017C0283J, IN BUCKS COUNTY, STATE OF PENNSYLVANIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH THE PREMISES IS SITUATED.
4. AERIAL IMAGE TAKEN FROM BUCKS COUNTY MAPS AND DATA PORTAL WEDSITE, IMAGERY DATE 2021.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

AERIAL PHOTOGRAPH PLAN
GALENA RESERVE

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

100' 0 100' 200' 400'
SCALE: 1"= 200'

SHEET No. 4 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS + SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

KEY MAP

GENERAL NOTES

1. PROPERTY BOUNDARY SURVEYED AND CALCULATED BY URWILER & WALTER, INC. IN JANUARY 2019.
2. TOTAL TRACT AREA: 15.608 ACRES GROSS; 14.732 ACRES NET
3. TOPOGRAPHY SURVEY PERFORMED BY URWILER & WALTER, INC. JANUARY 2019.
4. HORIZONTAL DATUM: (NAD 83) NORTH AMERICAN DATUM OF 1983.
5. BENCHMARK:
   ELEVATION: 467.51
   DESCRIPTION: TRENCH DRAIN GRATE
   LOCATION: APPROXIMATELY 380 FEET NORTHWESTERLY DIRECTION FROM THE MOST SOUTHEAST PROPERTY CORNER ALONG LIMEKILN ROAD 'AS NOTED ON PLAN'.
   DATUM: (NGVD 88) NORTH AMERICAN VERTICAL DATUM OF 1988
6. PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION 'X' – AREA OF MINIMAL FLOOD HAZARD (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) BY FEMA, ON FLOOD INSURANCE RATE MAP NO. 283 OF 532, WITH A MAP REVISED DATE OF MARCH 16, 2015, MAP NUMBER 42017C0283J, IN BUCKS COUNTY, STATE OF PENNSYLVANIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH THE PREMISES IS SITUATED.
7. WETLAND DETERMINATION CONDUCTED BY NOVA CONSULTANTS, LTD. AND VERIFIED BY THE UNITED STATES ARMY CORP OF ENGINEERS ON JULY 29, 2020. TOTAL AREA OF WETLAND AREA 13,480 SQUARE FEET / 0.309 ACRES.
8. AERIAL IMAGE TAKEN FROM BUCKS COUNTY MAPS AND DATA PORTAL WEDSITE, IMAGERY DATE 2021.
9. REFER TO SHEET 23 & 24 FOR DEMOLITION OF EXISTING FEATURES WITHIN PROPERTY BOUNDARY.

LEGEND

- EXISTING CONTOUR
- EXISTING EDGE OF STONE
- EXISTING EDGE OF MACADAM
- EXISTING EDGE OF WOODS
- EXISTING TREES
- EXISTING STORM SEWER
- SOIL TYPES
- WETLANDS
- WETLAND FLAG POINT
- WETLAND TEST BORING
- PROPERTY BOUNDARY
- ULTIMATE RIGHT-OF-WAY
- BUILDING SETBACK LINE
- ADJOINING PROPERTY LINE
- EXISTING OVERHEAD WIRES
- EXISTING UTILITY POLE
- EXISTING TREES STANDING ALONE (TO BE REMOVED)
- EXISTING OVERHEAD WIRES (TO BE RELOCATED)
- EXISTING UTILITY POLE (TO BE RELOCATED)
- EXISTING UNDERGROUND CONDUIT (TO BE RELOCATED) W/ POLE
- EXISTING ITEM (TO BE REMOVED)

SITE CAPACITY CALCULATIONS

RESOURCE	PROTECTION RATIO	AREA OF RESOURCE	PROTECTED RESOURCE	ALLOWABLE DISTURBED RESOURCE	PROPOSED DISTURBED RESOURCE
WATERCOURSES	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
RIPARIAN BUFFER	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
FLOODPLAIN	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
FLOODPLAIN (ALLUVIAL) SOIL	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
WETLANDS	1.0	0.309 ACRES	0.309 ACRES	0 ACRES	0 ACRES
LAKES / PONDS	1.0	0 ACRES	0 ACRES	0 ACRES	0 ACRES
WETLAND MARGIN	0.8	0.329 ACRES	0.263 ACRES	0.066 ACRES	0.025 ACRES
WOODLANDS	0.8	2.680 ACRES	2.144 ACRES	0.536 ACRES	0.320 ACRES
8% TO 15% SLOPES *	0.6	0 ACRES *	0 ACRES	0 ACRES	0 ACRES
15% TO 25% SLOPES *	0.7	0 ACRES *	0 ACRES	0 ACRES	0 ACRES
25% + SLOPES *	0.85	0 ACRES *	0 ACRES	0 ACRES	0 ACRES

* ISOLATED AREAS CREATED BY FORMER ROAD WAYS AND PAD SITES

TOTAL LAND IN RESOURCE PROTECTION	3.318 ACRES	2.716 ACRES
TOTAL LAND WITH 1.0 PROTECTION RATIO	0.309 ACRES	0.309 ACRES
TOTAL RESOURCE PROTECTION LAND PROVIDED		2.716 ACRES
TOTAL DISTURBED AREA	0.602 ACRES	0.345 ACRES

GROSS SITE AREA	15.608 ACRES
ULTIMATE R.O.W.	0.876 ACRES
NON-CONTIGUOUS LAND	0 ACRES
PREVIOUSLY RESERVED LAND	0 ACRES
LAND WITH OTHER USES	0 ACRES
BASE SITE AREA	14.732 ACRES

MINIMUM OPEN SPACE	14.732 ACRES X 0.30 = 4.420 ACRES
STANDARD MINIMUM OPEN SPACE	4.420 ACRES
REQUIRED OPEN SPACE	4.420 ACRES
NET BUILDABLE SITE AREA	14.732 ACRES MINUS 4.420 ACRES = 10.312 ACRES
ALLOWABLE DENSITY	10.321 ACRES X 6 DWELLING UNITS PER ACRE = 61 DWELLING UNITS
ALLOWABLE IMPERVIOUS SURFACE AREA	14.732 ACRES X 0.25 = 3.683 ACRES

OPEN SPACE CALCULATIONS

REQUIRED OPEN SPACE = BASE SITE AREA X 0.30
REQUIRED OPEN SPACE = 14.732 ACRES X 0.30 = 4.420 ACRES
PROVIDED OPEN SPACE = 8.117 ACRES; EXCLUDES LOTTED PARCELS AND ROAD RIGHT OF WAY

OPEN SPACE WITHIN BUFFER	3.549 ACRES
OTHER OPEN SPACE	4.568 ACRES
TOTAL OPEN SPACE	8.117 ACRES

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

EXISTING FEATURES and NATURAL RESOURCE PLAN (1 OF 2)
GALENA RESERVE

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 5 OF 49

URWILER & WALTER, INC.
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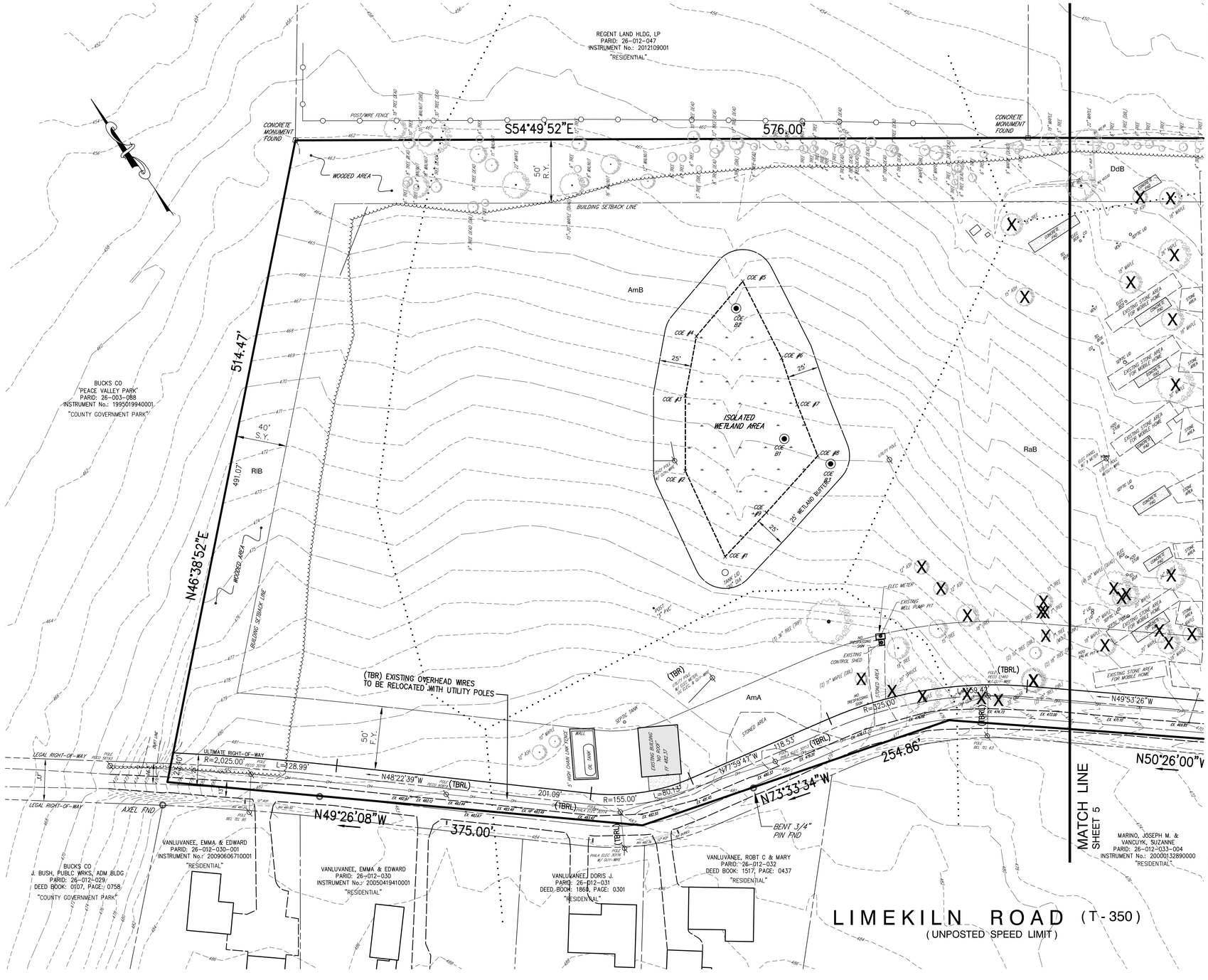


SOIL DATA:

SOILS DATA OBTAINED FROM USDA–NATURAL RESOURCES CONSERVATION SERVICES–WEB SOIL SURVEY–NATURAL COOPERATIVE SOIL SURVEY.

AmA AMWELL SILT LOAM, 0 TO 3 PERCENT SLOPES
HYDROLOGIC SOIL GROUP "D", HYDRIC SOIL "NO"
FARMLAND CLASSIFICATION: FARMLAND OF STATEWIDE IMPORTANCE

AmB AMWELL SILT LOAM, 3 TO 8 PERCENT SLOPES
HYDROLOGIC SOIL GROUP "D", HYDRIC SOIL "NO"
FARMLAND CLASSIFICATION: FARMLAND OF STATEWIDE IMPORTANCE

DdB DOYLESTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES
HYDROLOGIC SOIL GROUP "C/D", HYDRIC SOIL "YES"
FARMLAND CLASSIFICATION: NOT PRIME FARMLAND

RaB RARITAN SILT LOAM, 3 TO 8 PERCENT SLOPES
HYDROLOGIC SOIL GROUP "C/D", HYDRIC SOIL "NO"
FARMLAND CLASSIFICATION: PRIME FARMLAND

ReA READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES
HYDROLOGIC SOIL GROUP "C", HYDRIC SOIL "NO"
FARMLAND CLASSIFICATION: PRIME FARMLAND

RlB REAVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
HYDROLOGIC SOIL GROUP "D", HYDRIC SOIL "NO"
FARMLAND CLASSIFICATION: FARMLAND OF STATEWIDE IMPORTANCE

SOIL LIMITATION

NOTE:
THIS IS NOT AN ALL–INCLUSIVE LIST
ABSENCE OF AN X DOSE NOT MEAN "NO POTENTIAL LIMITATION"
FOR MORE COMPREHENSIVE LIST OF SOIL LIMITATIONS, LOG ONTO THE NRCS WEBSITE AT: **http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.**

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODED	FLOODING	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH/ LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK–SWELL	SINKHOLE	PONDING	WETNESS
AMWELL	X	C/S		X		X	X	X	X	X		X				
DOYLESTOWN	X	C/S	X	X		X	X	X	X	X	X	X				X
RARITAN	X	C/S				X	X		X	X	X	X				X
READINGTON	X	C/S		X		X	X	X	X	X	X	X				X
REAVILLE	X	C/S	X	X		X	X		X	X	X	X				X

SOIL LIMITATION DEFINITION

CUTBANKS CAVE – GRADE ALL SLOPES TO 4:1 OR FLATTER.

CORROSIVE TO CONCRETE / STEEL – PROVIDE POLYMERS TO PROTECT CONCRETE AND STEEL.

DROUGHTY – IRRIGATE SOILS TO PREVENT WILTING.

EASILY ERODIBLE – STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION OR PROVIDE EROSION AND SEDIMENTATION CONTROL DEVICES AND FACILITIES TO RETAIN ENTRAINED SEDIMENT ON–SITE.

FLOODING – MINIMIZE OR ELIMINATE CONSTRUCTION WITHIN MAPPED AND ALLUVIAL SOILS.

DEPTH TO SATURATION ZONE / SEASONAL HIGH WATER TABLE – PROVIDE UNDERDRAINS TO ELIMINATE A PERSISTENT HIGH WATER TABLE. FOR OCCASIONAL HIGH WATER TABLE, PUMP WATER FROM TRENCHES / FOOTINGS TO A PUMP WATER FILTER BAG.

HYDRIC / HYDRIC INCLUSIONS – HYDRIC SOILS HAVE BEEN MAPPED BY NOVA CONSULTANTS, INC.. NO WETLAND IMPACTS ARE PROPOSED FOR THIS PROJECT.

LOW STRENGTH / LANDSLIDE PRONE – GRADE SOILS TO 4:1 OR FLATTER.

SLOW PERCOLATION – ADD SAND OR ORGANICS TO INCREASE SOIL PERCOLATION RATES.

PIPING – USE ANTI–SEEP COLLARS TO ELIMINATE PIPING.

POOR SOURCE OF TOPSOIL – IMPORT ADEQUATE TOPSOIL OR ADD ORGANIC MATERIAL (MULCH) TO CREATE A SUITABLE TOPSOIL.

FROST ACTION – MINIMIZE OR ELIMINATE COLD WEATHER CONSTRUCTION. IF POSSIBLE, ADD EXPANSION JOINTS TO MINIMIZE FROST ACTION IMPACTS.

SHRINK / SWELL – MINIMIZE CONTACT WITH WATER.

POTENTIAL SINKHOLE – PERFORM GEOLOGIC EVALUATION FOR KARST GEOLOGY AND KARST SOIL.

PONDING – PROVIDE POSITIVE GRADING WITH A 2% SLOPE, UNDERDAINS OR A STORM SEWER CONVEYANCE SYSTEM.

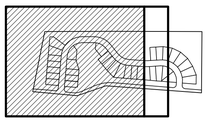
WETNESS – PROVIDE POSITIVE GRADING OR UNDERDRAINS.

LEGEND

EXISTING CONTOUR 425
EXISTING EDGE OF STONE
EXISTING EDGE OF MACADAM
EXISTING EDGE OF WOODS
EXISTING TREES
EXISTING STORM SEWER
SOIL TYPES
WETLANDS
WETLAND FLAG POINT COE #
WETLAND TEST BORING COE B1
PROPERTY BOUNDARY
ULTIMATE RIGHT–OF–WAY
BUILDING SETBACK LINE
ADJOINING PROPERTY LINE
EXISTING OVERHEAD WIRES OH
EXISTING UTILITY POLE PSE PHEA ELEC 30113
EXISTING TREES STANDING ALONE (TO BE REMOVED) X
EXISTING OVERHEAD WIRES (TO BE RELOCATED) (TBR)
EXISTING UTILITY POLE (TO BE RELOCATED) PSE PHEA ELEC 30113 (TBR)
EXISTING ITEM (TO BE REMOVED) (TBR)

PENNSYLVANIA ONE CALL SYSTEM (PENNSYLVANIA 811) UNDERGROUND UTILITY USERS

USER'S NAME	ADDRESS	CONTACT & TELEPHONE/E–MAIL	RESULTS
CHALFONT NEW BRITAIN TWP JT SEWAGE AUTH	1645 UPPER STATE ROAD DOYLESTOWN, PA. 18901	JOHN SCHMIDT jschmidt@cbnaa.org	CLEAR – NO FACILITIES
BUCKS COUNTY WATER AND SEWER AUTHORITY	1275 ALMSHOUSE ROAD WARRINGTON, PA. 18976	JAMES NAPOLEON n.jom@bcwsa.net	DID NOT RESPOND
AQUA PENNSYLVANIA INC	762 W. LANCASTER AVE. BRYN MAWR, PA. 19010	STEVE PIZZI stpizzi@aquaamerica.com	CLEAR – NO FACILITIES
PECO ENERGY C/O USIC	450 S HENDERSON RD, SUITE B KING OF PRUSSIA, PA. 19406	NIKKIA SIMPKINS nikkiasimpkins@usicllc.com	CONFLICT LINES NEARBY
NEW BRITIAN TOWNSHIP	207 PARK AVENUE CHALFONT, PA. 18914	RYAN CRESSMAN rcressman@newbritaintownship.org	CLEAR – NO FACILITIES
COMCAST CABLEVISION	55 INDUSTRIAL DRIVE IVYLAND, PA. 18974	KATHIE BROWN	CLEAR – NO FACILITIES
VERIZON PENNSYLVANIA LLC	1050 VIRGINIA DRIVE FORT WASHINGTON, PA. 19034	LAURA LIPPINCOTT laura.m.lippincott@one.verizon.com	CONFLICT LINES NEARBY



KEY MAP

GENERAL NOTES

1. PROPERTY BOUNDARY SURVEYED AND CALCULATED BY URWILER & WALTER, INC. IN JANUARY 2019.
2. TOTAL TRACT AREA: 15.608 ACRES GROSS; 14.732 ACRES NET
3. TOPOGRAPHY SURVEY PERFORMED BY URWILER & WALTER, INC. JANUARY 2019.
4. HORIZONTAL DATUM: (NAD 83) NORTH AMERICAN DATUM OF 1983.
5. BENCHMARK:
   ELEVATION: 467.51
   DESCRIPTION: TRENCH DRAIN GRATE
   LOCATION: APPROXIMATELY 380 FEET NORTHWESTERLY DIRECTION FROM THE MOST SOUTHEAST PROPERTY CORNER ALONG LIMEKILN ROAD 'AS NOTED ON PLAN'.
   DATUM: (NGVD 88) NORTH AMERICAN VERTICAL DATUM OF 1988
6. PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION 'X' – AREA OF MINIMAL FLOOD HAZARD (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) BY FEMA, ON FLOOD INSURANCE RATE MAP NO. 283 OF 532, WITH A MAP REVISED DATE OF MARCH 16, 2015, MAP NUMBER 42017C0283J, IN BUCKS COUNTY, STATE OF PENNSYLVANIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH THE PREMISES IS SITUATED.
7. WETLAND DETERMINATION CONDUCTED BY NOVA CONSULTANTS, LTD. AND VERIFIED BY THE UNITED STATES ARMY CORP OF ENGINEERS ON JULY 29, 2020. TOTAL AREA OF WETLAND AREA 13,480 SQUARE FEET / 0.309 ACRES.
8. AERIAL IMAGE TAKEN FROM BUCKS COUNTY MAPS AND DATA PORTAL WEDSITE, IMAGERY DATE 2021.
9. REFER TO SHEET 23 & 24 FOR DEMOLITION OF EXISTING FEATURES WITHIN PROPERTY BOUNDARY.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

EXISTING FEATURES and NATURAL RESOURCE PLAN (2 OF 2)
GALENA RESERVE

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

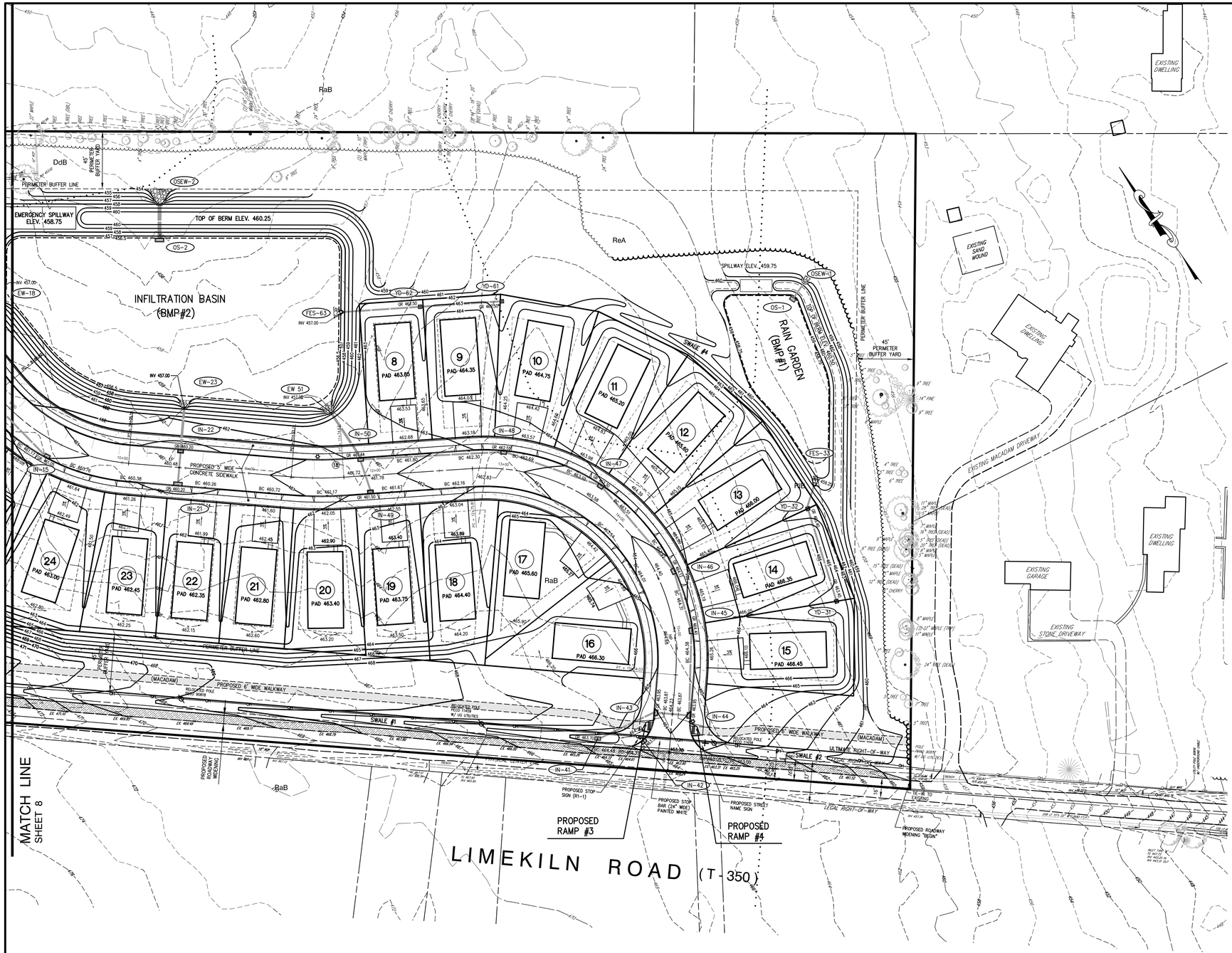
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

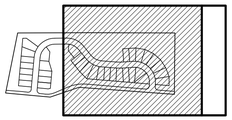
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

20' 0 20' 40' 80'
SCALE: 1" = 40'

SHEET No. 6 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com





KEY MAP

LEGEND

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING EDGE OF STONE
- EXISTING EDGE OF MACADAM
- EXISTING EDGE OF WOODS
- EXISTING TREES
- EXISTING STORM SEWER
- SOIL TYPES
- WETLANDS
- WETLAND FLAG POINT
- WETLAND TEST BORING
- PROPERTY BOUNDARY
- ULTIMATE RIGHT-OF-WAY
- BUILDING SETBACK LINE
- ADJOINING PROPERTY LINE
- BUFFER YARD
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED STORM SEWER
- PROPOSED EDGE OF WOODS
- PROPOSED STREET LIGHT

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

GRADING PLAN (1 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE: 1" = 40'

SHEET No. 7 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
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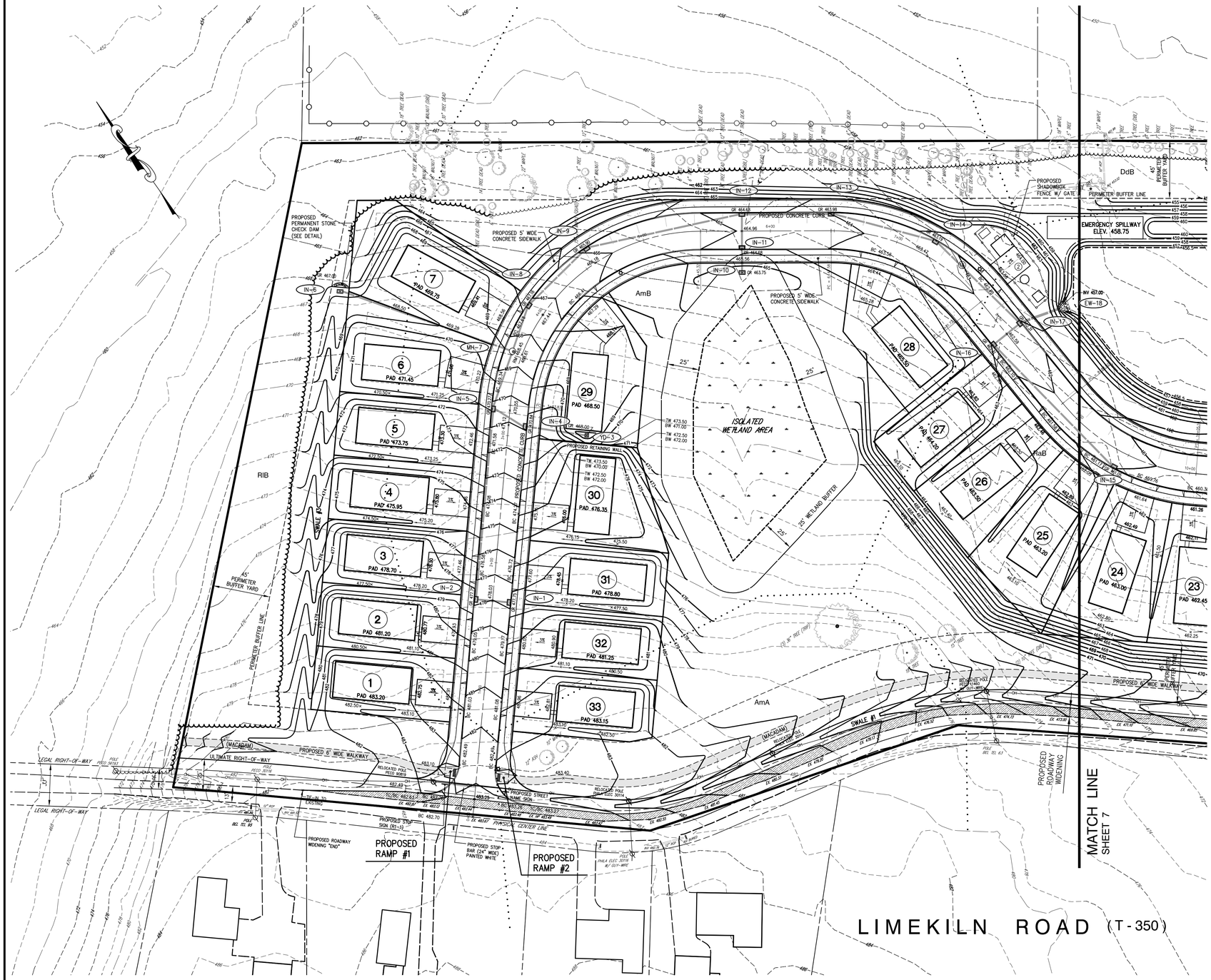
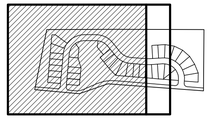


GRADING NOTES:

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
2. ALL CONTRACTORS PROVIDING CONSTRUCTION SERVICES AT THIS SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND REGULATIONS. URWILER AND WALTER, INC., TOWNSHIP, ITS AGENTS AND ASSIGNS WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFIRM WITH THE APPLICABLE OSHA STANDARDS AND REGULATIONS.
3. SEE PROFILE PLAN FOR INFORMATION RELATED TO STORM SEWERS AND STORM SEWER STRUCTURES.
4. ALL DETENTION AND RETENTION BASIN EMBANKMENTS SHALL BE PLACED IN EIGHT INCH MAXIMUM LIFTS AND COMPACTED TO A MINIMUM NINETY FIVE PERCENT DRY DENSITY. PRIOR TO PROCEEDING TO THE NEXT LIFT, COMPACTION SHALL BE CHECKED BY AN APPROVED SOILS ENGINEER WHO SHALL PROVIDE THE TOWNSHIP ENGINEER WITH A WRITTEN REPORT. COMPACTION TESTS SHALL BE PERFORMED USING THE MODIFIED PROCTOR METHOD IN ACCORDANCE WITH ASTM D-1577.
5. IN THE EVENT OF DISCREPANCIES AND IN CONFLICTS BETWEEN PLANS, THE SITE PLAN SHALL TAKE PRECEDENCE AND CONTROL. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER IN WRITING OF ANY DISCREPANCIES AND OR CONFLICTS.
6. TOP AND BOTTOM OF WALL ELEVATIONS (TW & BW) REPRESENT THE PROPOSED FINISHED GRADE AT THE FACE OF WALL AND DO NOT REPRESENT THE ELEVATION OF THE PROPOSED WALL (INCLUDING THE CAP UNIT OR FOOTING). WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR BASED ON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE ALL WALLS SHOWN HEREON MUST BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER AND THAT SIGNED AND SEALED SHOP DRAWINGS ARE APPROVED BY THE MUNICIPALITY PRIOR TO THEIR CONSTRUCTION. FURTHER THE CONTRACTOR SHALL ENSURE THAT FENCING, GUIDERAIL, UTILITIES, AND OTHER SITE AMENITIES IN THE VICINITY OF THE RETAINING WALL(S), PROPOSED SCHEMATICALLY IN THESE PLANS, SHALL BE CONSIDERED AND INCORPORATED INTO THE RETAINING WALL DESIGN (BY OTHERS).
7. ALL SURFACE AREAS SHALL BE PROPERLY GRADED TO ENSURE PROPER DRAINAGE AWAY FROM BUILDINGS TO NEAREST INLET OR WATERCOURSE WITHOUT PONDING OR OBSTRUCTION.
8. THE MAXIMUM UNPAVED SLOPE IS 3:1 AND THE MINIMUM PAVED SLOPE IS 1%
9. THE ROOF DRAIN DOWNSPOUT SHALL DISCHARGE TO GRADE AND VEGETATED AREA AND SHALL BE DIRECTED TO FLOW AWAY FROM THE CONCRETE PAD.
10. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFUL REVIEW OF THE LATEST CIVIL PLANS AND THE LATEST ARCHITECTURAL PLANS (INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLAN, WHERE APPLICABLE). CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND URWILER AND WALTER, INC., IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST.
11. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE AND ALL UNSUITABLE EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL GOVERNMENTAL AUTHORITIES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER CONTRACTOR.
12. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES.
13. THE CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.
14. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC PLAN FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE R.O.W. OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE.
15. ANY SPRING ENCOUNTERED DURING ROADWAY CONSTRUCTION SHALL BE OUTLETTED BY U-DRAIN TO NEAREST STORM SEWER FACILITY OR WATERCOURSE. U-DRAIN PLACEMENT TO BE BY THE DIRECTION OF THE TOWNSHIP ENGINEER.
16. REFER TO SHEET 43 FOR HANDICAP RAMP ENLARGEMENT AND DETAILS.



KEY MAP

LEGEND

EXISTING CONTOUR
EXISTING SPOT ELEVATION
EXISTING EDGE OF STONE
EXISTING EDGE OF MACADAM
EXISTING EDGE OF WOODS
EXISTING TREES
EXISTING STORM SEWER
SOIL TYPES
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WETLAND FLAG POINT
WETLAND TEST BORING
PROPERTY BOUNDARY
ULTIMATE RIGHT-OF-WAY
BUILDING SETBACK LINE
ADJOINING PROPERTY LINE
BUFFER YARD
PROPOSED CONTOUR
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PROPOSED STORM SEWER
PROPOSED EDGE OF WOODS
PROPOSED STREET LIGHT

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

GRADING PLAN (2 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

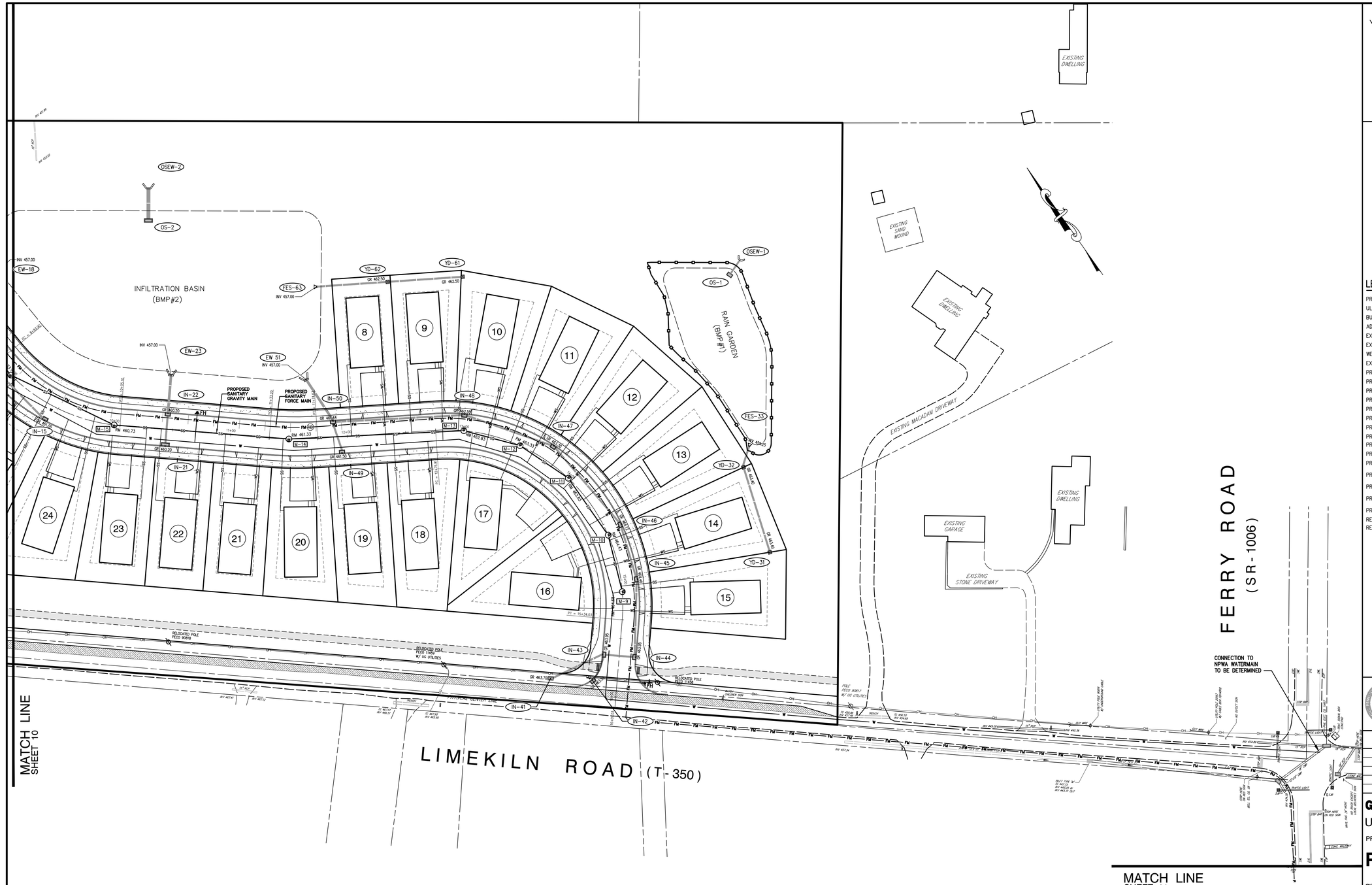
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

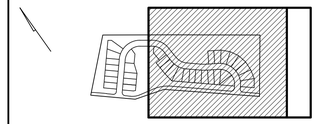
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1" = 40'

SHEET No. 8 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com





KEY MAP

LEGEND

- PROPERTY BOUNDARY
- ULTIMATE RIGHT-OF-WAY
- BUILDING SETBACK LINE
- ADJOINING PROPERTY LINE
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- EXISTING EDGE OF MACADAM
- WETLANDS
- EXISTING STORM SEWER
- PROPOSED POLE MOUNTED LIGHT
- PROPOSED TREE PROTECTION FENCE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED SANITARY FORCE MAIN
- PROPOSED SANITARY MANHOLE — M-10
- PROPOSED FIRE HYDRANT — FH
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED STORM YARD INLET — MH-7
- PROPOSED STORM INLET — IN-50
- PROPOSED STORM YARD INLET — YD-61
- PROPOSED STORM DW ENDWALL — EW-23
- PROPOSED STORM FLARED END SECTION — FES-63
- RELOCATED PECO POLE
- RELOCATED OVERHEAD WIRE

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

UTILITY PLAN (1 OF 3)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 9 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
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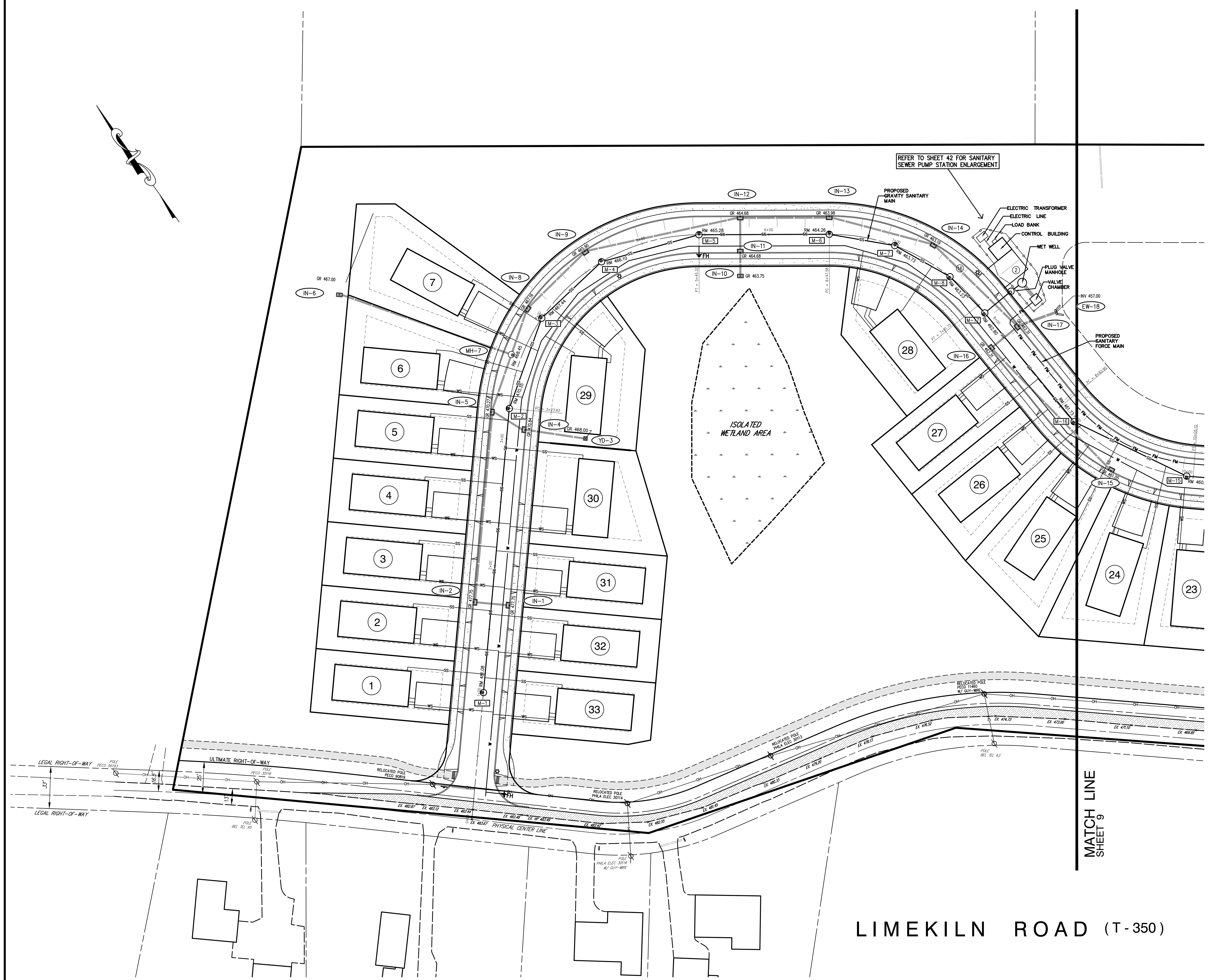
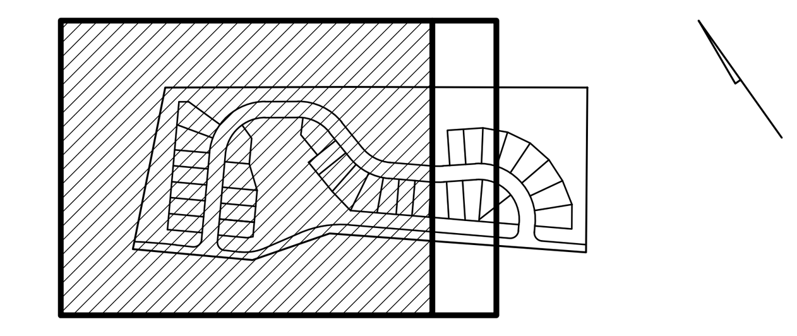


UTILITY NOTES:

1. ALL MATERIALS AND METHODS OF CONSTRUCTION ARE TO BE IN ACCORDANCE WITH TOWNSHIP, NORTH PENN WATER AUTHORITY, BUCKS COUNTY WATER AND SEWER AUTHORITY STANDARDS, AND CURRENT PENNDOT STANDARDS AND SPECIFICATIONS, WHICHEVER MAY BE GREATER.
2. LOCATION OF PROPOSED UTILITY POLE RELOCATION IS AT THE SOLE DISCRETION OF PECO.
3. ALL STORM SEWER INLET STRUCTURES SHALL CONFORM TO PENNDOT FORM 408 LATEST EDITION.
4. ALL CURB INLETS SHALL BE PENNDOT 4' TYPE "C" INLETS WITH BICYCLE SAFE STRUCTURAL STEEL GRATES UNLESS SPECIFIED ON THE PLANS. ALL LAWN AREA/ROADSIDE SWALE AREA INLETS SHALL BE PENNDOT 4' TYPE "M". TYPE "M" INLETS WITHIN ROADWAYS SHALL HAVE BICYCLE SAFE STRUCTURAL STEEL GRATES.
5. A MINIMUM OF 24-INCHES OF COVER MUST BE MAINTAINED OVER ALL STORM SEWER PIPING WITHIN ROADWAY AREAS. THE TOP OF GRATE ELEVATION FOR ALL STORM SEWER INLETS IS THE CENTER OF THE INLET AT THE FACE OF CURB. THE CONTRACTOR IS RESPONSIBLE FOR PROJECTING THE ROADWAY GRADE ACROSS THE LENGTH OF THE INLET.
6. ALL STORM SEWER PIPING SHALL BE HIGH-DENSITY CORRUGATED POLYETHYLENE (HDPE) TYPE-S (SMOOTH INTERIOR), UNLESS OTHERWISE INDICATED, AND CONFORM TO PENNDOT SPECIFICATIONS (PUB. 408 – SECTION 601) AND STANDARD DETAILS. ALL STORMWATER BASIN OUTFALL PIPING SHALL BE RCP CLASS 3 WITH WATERTIGHT "O" GASKET JOINTS.
7. ALL CONCRETE ENDWALL SHALL CONFORM TO PENNDOT FORM 408 LATEST EDITION.
8. ALL ROOF DRAINS SHALL BE SDR 35 PVC PIPE (SIZE AS SHOWN) OR APPROVED EQUAL.
9. CONSTRUCTION OF SANITARY SEWER FACILITIES SHALL COMPLY WITH THE "STANDARD WATER AND SEWER SPECIFICATIONS," DATED JANUARY 2020, AS PREPARED FOR BUCKS COUNTY WATER AND SEWER AUTHORITY.
10. ALL GRAVITY SANITARY SEWER MAIN SHALL BE 8 INCH SDR 26 PVC.
11. ALL GRAVITY SANITARY SEWER LATERALS TO RIGHT-OF-WAY SHALL BE 6 INCH SDR 35 PVC PIPE. GRAVITY SANITARY SEWER LATERALS SHALL BE LAID ON A SLOPE OF NOT LESS THAN 1/4 INCH PER FOOT. GRAVITY SANITARY SEWER SERVICE WILL BE PROVIDED TO THE FIRST FLOOR ELEVATION OF EACH DWELLING. METALLIC DETECTION TAPE SHALL BE PROVIDED 12 INCHES ABOVE EACH SEWER LATERAL FROM THE MAIN TO THE BUILDING SEWER CLEANOUT. SHOP DRAWINGS OF ALL SEWER MATERIALS TO BE INSTALLED UNDER THE WORK SHALL BE SUBMITTED TO BUCKS COUNTY WATER AND SEWER AUTHORITY FOR REVIEW AND APPROVAL. THE EXACT LOCATION AND DEPTH OF EACH SEWER LATERAL SHALL BE SUBMITTED TO BUCKS COUNTY WATER AND SEWER AUTHORITY DURING THE FINAL INSPECTION OR THE LATERAL WILL NOT BE AUTHORIZED FOR USE.
12. ALL SANITARY FORCE MAIN SHALL BE CEMENT LINED DUCTILE IRON (DIP) MINIMUM CLASS 50 THICKNESS.
13. THE PROPERTY OWNER SHALL PAY TO THE TOWNSHIP AND TO THE AUTHORITY WHICH TREATS THE SEWAGE THE CURRENT FEES FOR THE TREATMENT AND COLLECTION OF SEWAGE WHEN SUCH FACILITIES ARE MADE AVAILABLE TO THE APPLICANT'S SITE.
14. ALL WATER MAIN MATERIALS AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH PENNSYLVANIA NORTH PENN WATER AUTHORITY STANDARDS AND SPECIFICATIONS. ALL WATER MAINS SHALL BE PRESSURE CLASS 52 CEMENT LINED DUCTILE IRON PIPE WITH POLY WRAP. ALL SERVICE LATERALS SHALL BE 3/4" COPPER AND SHALL INCLUDE A VALVE, CURB BOX, AND 18-INCH DIAMETER RESIDENTIAL METER PIT.
15. A MINIMUM OF 4-FEET OF COVER MUST BE MAINTAINED OVER ALL SANITARY SEWER LINES/MAINS AND WATER LINES/MAINS.
16. A MINIMUM VERTICAL SEPARATION OF 18 INCHES SHALL BE PROVIDED AT ALL UTILITY CROSSINGS. A HORIZONTAL SEPARATION OF 10 FEET AND/OR A VERTICAL SEPARATION OF 18 INCHES SHALL BE MAINTAINED BETWEEN THE SANITARY SEWER AND ANY OTHER UTILITY PIPELINES. WHERE PIPELINES MUST CROSS UNDER A SEWER, THE INSTALLATION MUST ALSO PROVIDE ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER TO PREVENT DEFLECTION AND BREAKING OF THE SEWER. WHERE PROPER CLEARANCES CAN NOT BE PROVIDED, THE SEWER SHALL BE CONCRETE ENCASED FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF THE CONFLICT. NO WATERLINE, MAIN OR SERVICES SHALL CROSS UNDER A SANITARY SEWER LINE (MAIN, LATERALS, FORCE MAIN ETC.) EXCEPT WHERE INDICATED ON PLANS.
17. CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SEWER, WATER AND STORM SYSTEMS, MUST BE REPAIRED IN ACCORDANCE WITH REFERENCED TOWNSHIP, COUNTY AND/OR DOT DETAILS AS APPLICABLE. CONTRACTOR MUST COORDINATE INSPECTION AND APPROVAL OF COMPLETED WORK WITH THE AGENCY WITH JURISDICTION OVER SAME.
18. ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC. ARE TO BE INSTALLED UNDERGROUND. ALL NEW UTILITIES/SERVICES MUST BE INSTALLED IN ACCORDANCE WITH THE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
19. ALL GAS VALVES, WATER VALVES, WATER METERS AND MANHOLES (STORM, SANITARY, PHONE, ELECTRIC, AND GAS) WITHIN THE PROJECT LIMIT WILL BE RESET TO THE PROPOSED FINISHED GRADE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ADJUST OR RELOCATE THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS TO MATCH THE GRADING.
20. A WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE. ALL TEMPORARY WATER SUPPLY MEANS SHALL BE APPROVED BY THE FIRE MARSHAL'S OFFICE.
21. SEE PROFILE PLAN FOR INFORMATION RELATED TO STORM SEWERS, STORM SEWER STRUCTURES, SANITARY SEWERS, SANITARY SEWER STRUCTURES, FORCE MAIN AND WATER MAIN.
22. SANITARY SEWER PUMP STATION AND FORCE MAIN DESIGN DETAIL SHALL BE PROVIDED IN FUTURE.
23. REFER TO SHEET 42 FOR SANITARY SEWER PUMP STATION ENLARGEMENT.



KEY MAP

LEGEND

- PROPERTY BOUNDARY
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- PROPOSED SANITARY SEWER LATERAL — SS
- PROPOSED SANITARY FORCE MAIN — FM
- PROPOSED SANITARY MANHOLE — M-10
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- PROPOSED STORM FLARED END SECTION — FES-63
- RELOCATED PECO POLE
- RELOCATED OVERHEAD WIRE — OH

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LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

UTILITY PLAN (2 OF 3)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 10 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com

LEGEND

EXISTING EDGE OF MACADAM	
ADJOINING PROPERTY LINE	
PROPOSED SANITARY FORCE MAIN	FM FM FM FM FM
PROPOSED WATER MAIN	W

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

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GALENA RESERVE MOBILE HOME PARK

UTILITY PLAN (3 OF 3)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

50' 0 50' 100' 200'
SCALE: 1"= 100'

SHEET No. 11 OF 49

URWILER & WALTER, INC.
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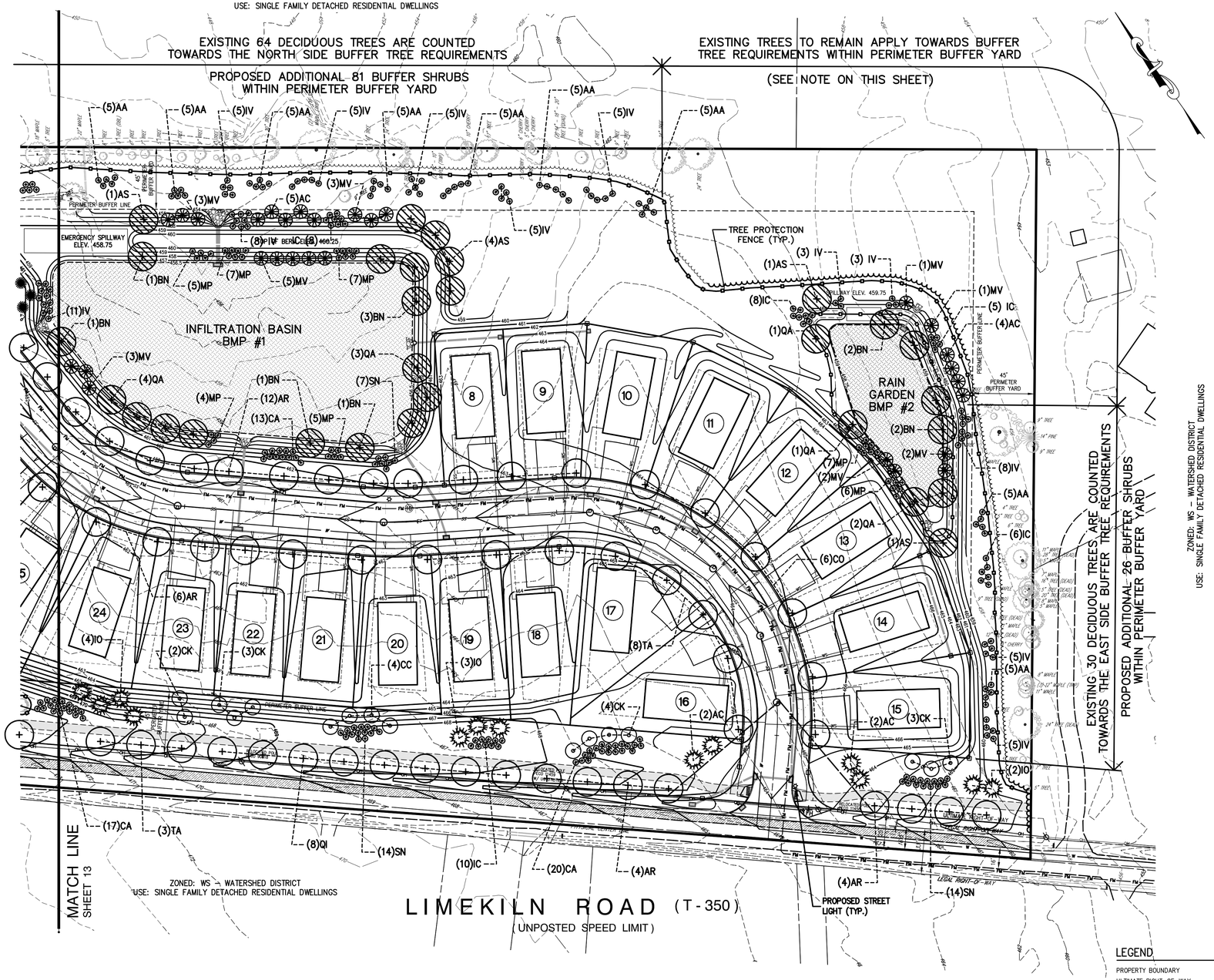

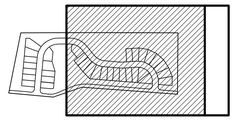

KEY MAP

GENERAL NOTES:

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
2. REFER TO SHEET 14 FOR LANDSCAPE DETAILS.
3. THE STREET TREES SHALL BE PLANTED 3 TO 5 FEET BEHIND ULTIMATE RIGHT OF WAY.

LANDSCAPE KEY

PROPOSED DECIDUOUS/SHADE TREES: (MIN. CALIPER SIZE 3–1/2 INCHES)

(114) STREET

(29) STORMWATER BMP

PROPOSED ORNAMENTAL TREE: (MIN. CALIPER 1–1/2 – 2 INCHES) (MIN. HEIGHT 8 FEET)

(31) BUFFER YARD AREA

(29) STORMWATER BMP

PROPOSED EVERGREEN TREES: (MIN. HEIGHT 6 FEET)

(16) SANITARY PUMP STATION

(18) BUFFER YARD AREA

PROPOSED DECIDUOUS/EVERGREEN SHRUBS: (MIN. HEIGHT 30 INCHES)

(335) SHURBS

EXISTING TREES:

STORMWATER BMP GRASS MIX

THE NORTH AND EAST SIDE PROPERTY BOUNDARY IS NEXT TO WS – WATERSHED DISTRICT. NO ADDITIONAL BUFFER PLANTINGS IS REQUIRED IN AREAS WHERE THERE IS A 45 FEET PERIMETER BUFFER YARD OF EXISTING TREES.

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REVISIONS

DATE	DESCRIPTION

LEGEND

- PROPERTY BOUNDARY
- ULTIMATE RIGHT-OF-WAY
- BUILDING SETBACK LINE
- ADJOINING PROPERTY LINE
- EXISTING CONTOUR
- EXISTING EDGE OF STONE
- EXISTING EDGE OF MACADAM
- WETLANDS
- EXISTING EDGE OF WOODS
- EXISTING TREES
- EXISTING STORM SEWER
- BUFFER YARD
- PROPOSED CONTOUR
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED SANITARY FORCE MAIN
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED POLE MOUNTED LIGHT
- PROPOSED TREE PROTECTION FENCE
- PROPOSED EDGE OF WOODS

GALENA RESERVE MOBILE HOME PARK

LANDSCAPE PLAN (1 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

20' 0 20' 40' 80'
SCALE: 1" = 40'

SHEET No. 12 OF 49

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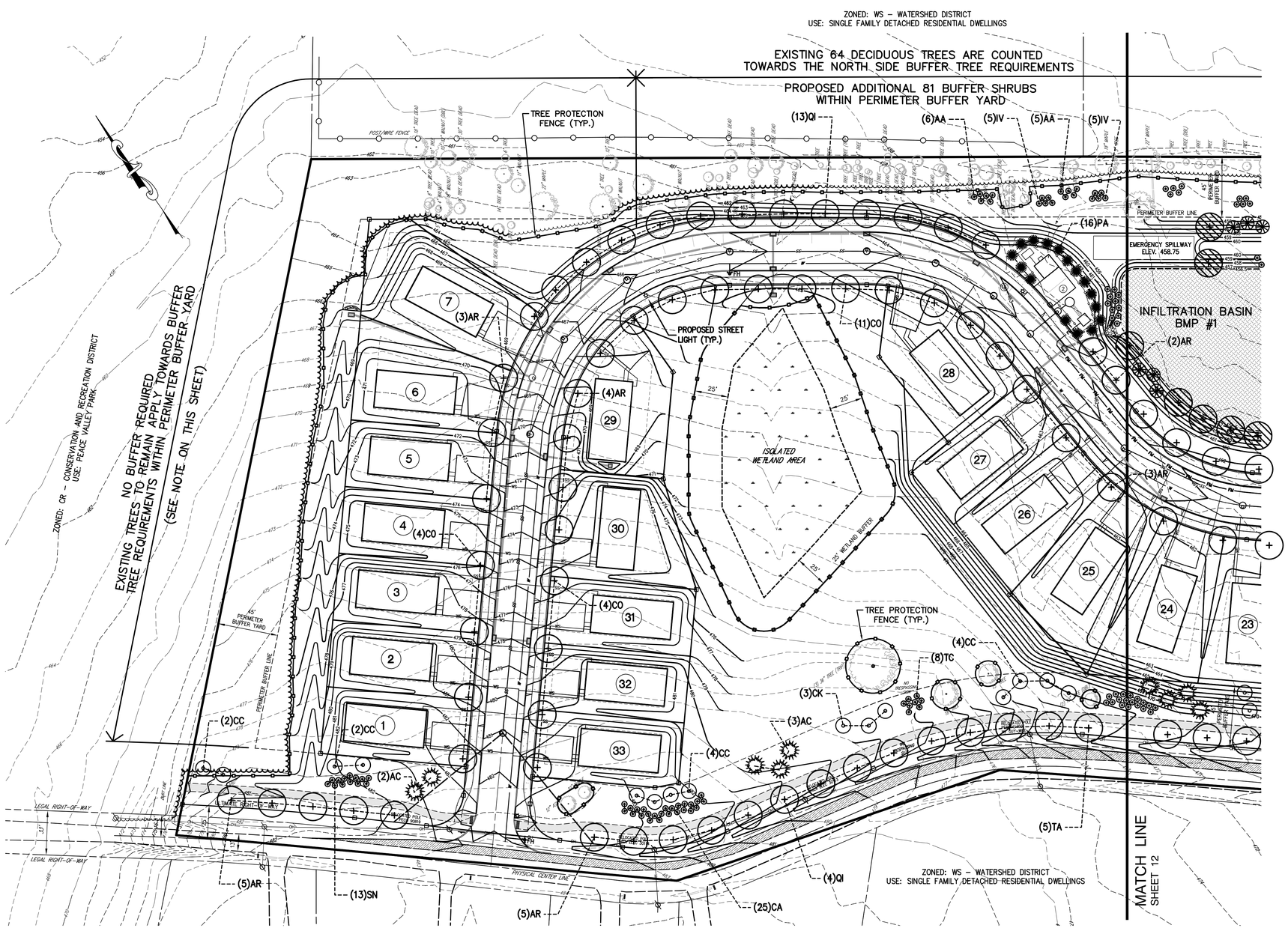

LEGEND

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- ULTIMATE RIGHT-OF-WAY
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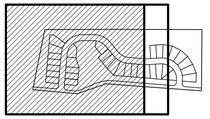

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PROPOSED EVERGREEN TREES: (MIN. HEIGHT 6 FEET)

(16) SANITARY PUMP STATION

(18) BUFFER YARD AREA

PROPOSED DECIDUOUS/EVERGREEN SHRUBS: (MIN. HEIGHT 30 INCHES)

(335) SHRUBS

EXISTING TREES:

STORMWATER BMP GRASS MIX

THE WEST SIDE PROPERTY BOUNDARY IS NEXT TO PEACE VALLEY PARK IN CR – CONSERVATION AND RECREATION DISTRICT WITH 45 FEET PERIMETER BUFFER YARD OF EXISTING TREES. (NO ADDITIONAL BUFFER PLANTING REQUIRED).

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GALENA RESERVE MOBILE HOME PARK

LANDSCAPE PLAN (2 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1" = 40'

SHEET No. 13 OF 49

URWILER & WALTER, INC.
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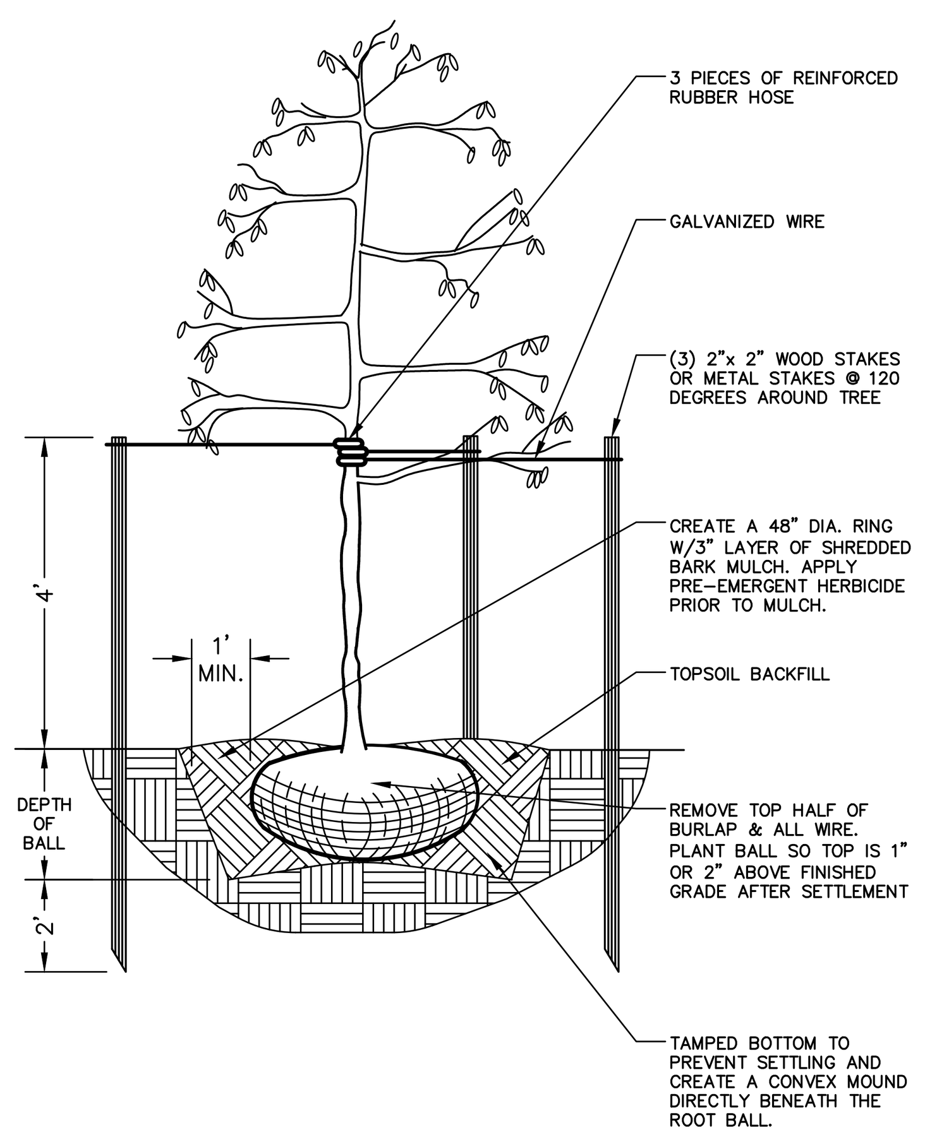
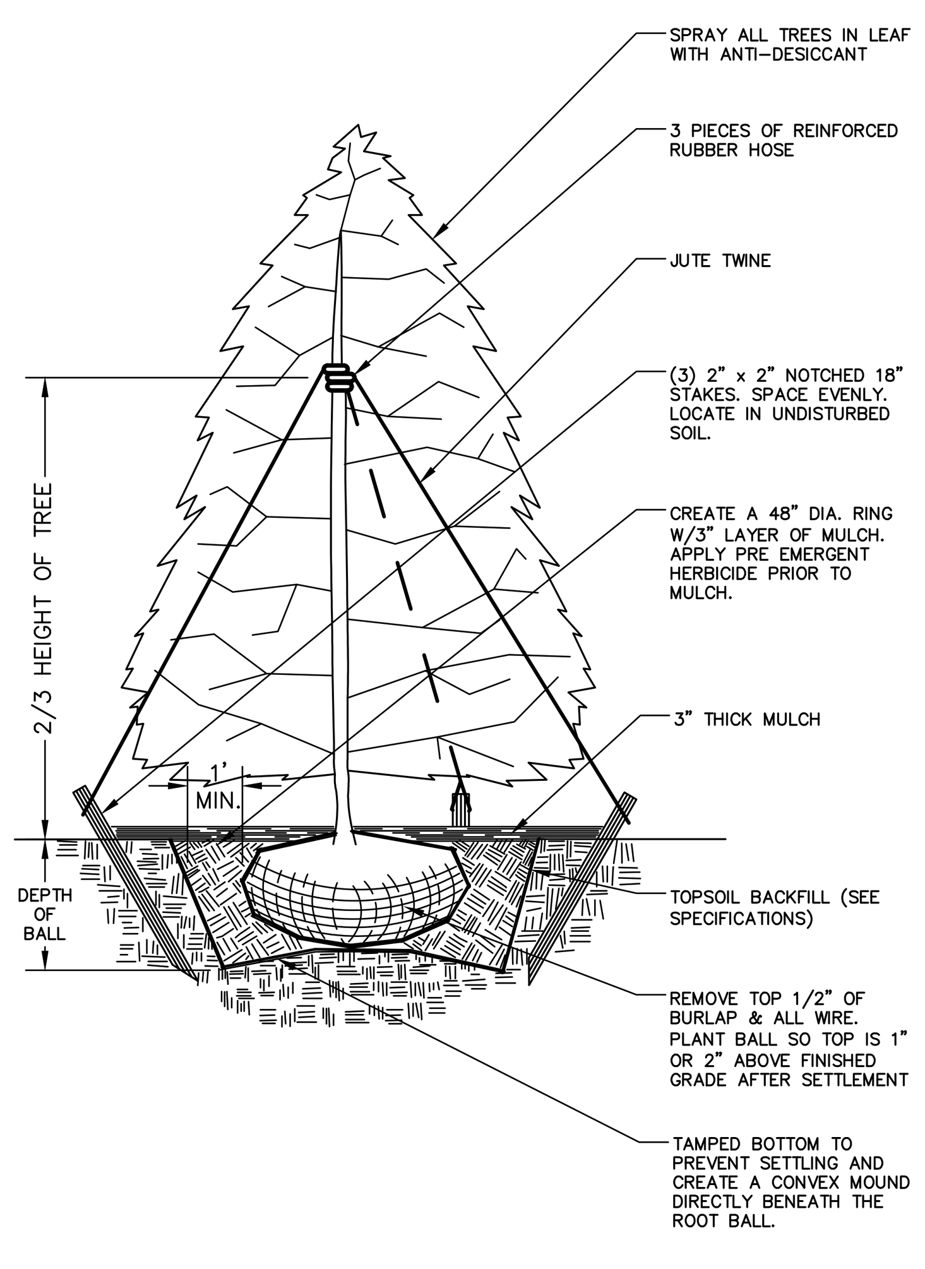


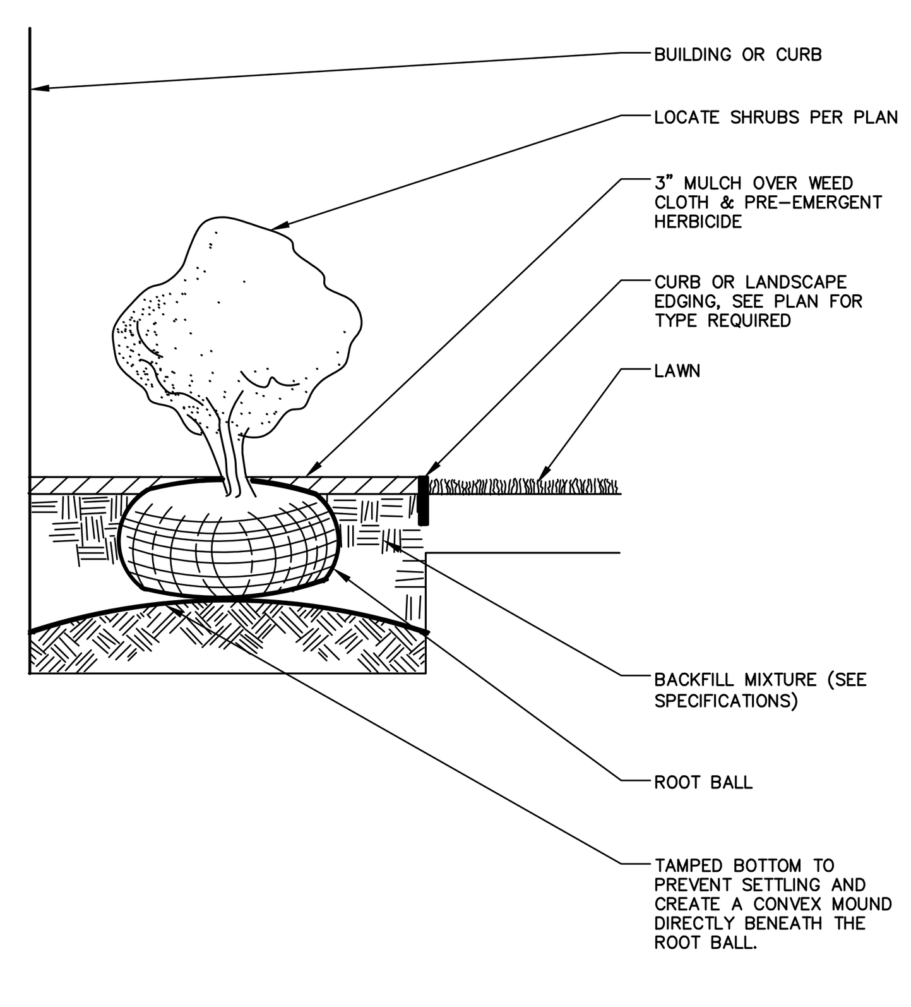
DECIDUOUS TREE PLANTING & STAKING DETAIL NTS

NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.



EVERGREEN TREE PLANTING & STAKING DETAIL NTS

NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.



SHRUB PLANTING DETAIL NTS

NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

LANDSCAPING CHART

SYMBOL	ABBREV.	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE AT INSTALLATION	ROOT CONDITION
(114) STREET	*TA	TILIA AMERICANA	AMARICAN LINDEN	16	MIN. 3 1/2" CALIPER	B&B
	*CO	CELTIS OCCIDENTALIS	HACKBERRY	25	MIN. 3 1/2" CALIPER	B&B
	*AR	ACER RUBRUM	RED MAPLE	48	MIN. 3 1/2" CALIPER	B&B
	QI	QUERCUS IMBRICARIA	SHINGLE OAK	25	MIN. 3 1/2" CALIPER	B&B
(29) STORMWATER BMP	*AS	ACER SACCHARUM	SUGAR MAPLE	7	MIN. 3 1/2" CALIPER	B&B
	*QA	QUERCUS ALBA	WHITE OAK	11	MIN. 3 1/2" CALIPER	B&B
	*BN	BETULA NIGRA	RIVER BIRCH	11	MIN. 3 1/2" CALIPER	B&B
(31) BUFFER YARD AREA	CK	CORNUS KOUSA	JAPANESE DOGWOOD	15	MIN. 1 1/2" - 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
	*CC	CERCIS CANDENSIS	REDBUD	16	MIN. 1 1/2" - 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
(29) STORMWATER BMP	AC	AMELANCHIER CANADENSIS	SERVICEBERRY	9	MIN. 1 1/2" - 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
	*MV	MAGNOLIA VIRGINIA	SWEETBAY MAGNOLIA	20	MIN. 1 1/2" - 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
(16) SANITARY PUMP STATION	PA	PICEA ABIES	NORWAY SPRUCE	16	MIN. HEIGHT 6 FEET	B&B
(18) BUFFER YARD AREA	AC	ABIES CONCOLOR	WHITE FIR	9	MIN. HEIGHT 6 FEET	B&B
	*IO	ILEX OPACA	AMERICAN HOLLY	9	MIN. HEIGHT 6 FEET	B&B
(335) SHURBS	*AA	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	61	MIN. HEIGHT 30 INCHES	CONTAINER
	*CA	CLETHRA ALNIFOLIA	SUMMERSWEET	75	MIN. HEIGHT 30 INCHES	CONTAINER
	IC	ILEX CRENATA	JAPANESE HOLLY	37	MIN. HEIGHT 30 INCHES	CONTAINER
	*IV	ILEX VERTICILATA	WINTERBERRY	65	MIN. HEIGHT 30 INCHES	CONTAINER
	*MP	MYRICA PENNSYLVANICA	BAYBERRY	41	MIN. HEIGHT 30 INCHES	CONTAINER
	SN	SPIREA NIPPONICA	SNOW MOUND SPIREA	48	MIN. HEIGHT 30 INCHES	CONTAINER
	*TC	TAXUS CANADENSIS	AMERICAN YEW	8	MIN. HEIGHT 30 INCHES	CONTAINER
* INDICATES NATIVE						

LANDSCAPING COMPLIANCE CHART

SECTION	REQUIREMENT	LANDSCAPE QUANTITIES (REQUIRED)	LANDSCAPE QUANTITIES (PROVIDED)	COMPLIANCE
ZONING § 27-2081 & SALDO § 22-713.5.B.(6) 45 FT WIDE BUFFER AREA - MULTIFAMILY RESIDENTIAL UNITS	A BERM VARYING IN HEIGHT FROM THREE TO FIVE FEET, WITH ONE ORNAMENTAL OR EVERGREEN TREE FOR EVERY 20 FEET, PLUS ONE DECIDUOUS OR EVERGREEN SHRUB FOR EVERY 10 FEET, PLANTED IN AN INFORMAL ARRANGEMENT ALONG THE PERIMETER OF THE PROPERTY BEING SUBDIVIDED. THE MAXIMUM SIDE SLOPES OF THE BERM SHALL BE FOUR HORIZONTAL TO ONE VERTICAL.	805 LF OF NORTH SIDE PROPERTY BUFFER LENGTH, 258 LF OF EAST SIDE PROPERTY BUFFER LENGTH AND 1129 LF OF SOUTH SIDE PROPERTY BUFFER LENGTH BETWEEN MHP AND WS ZONING DISTRICT ORNAMENTAL / EVERGREEN TREE: 805/20 = 41 TREES (NORTH SIDE) 258/20 = 13 TREES (EAST SIDE) 1129/20 = 57 TREES (SOUTH SIDE) DECIDUOUS /EVERGREEN SHRUB: 805/10 = 81 SHRUBS (NORTH SIDE) 258/10 = 26 SHRUBS (EAST SIDE) 1129/10 = 113 SHRUBS (SOUTH SIDE)	EXISTING TREES ALONG NORTH SIDE – 78 TREES OUT OF WHICH 14 TREES ARE DEAD. HENCE, 64 TREES ARE CREDITED TOWARDS THE BUFFER PLANTING REQUIREMENTS. 81 SHRUBS ARE ADDED ALONG NORTH SIDE BUFFER AREA. EXISTING TREES ALONG EAST SIDE – 38 TREES OUT OF WHICH 8 TREES ARE DEAD. HENCE, 30 TREES ARE CREDITED TOWARDS THE BUFFER PLANTING REQUIREMENTS. 26 SHRUBS ARE ADDED ALONG EAST SIDE BUFFER AREA. EXISTING TREES ALONG SOUTH SIDE –8 TREES ARE CREDITED TOWARDS THE BUFFER PLANTING REQUIREMENTS. 49 TREES AND 113 SHRUBS ARE ADDED ALONG SOUTH SIDE BUFFER AREA.	COMPLIES
SALDO § 22-713.5.B.(5) PRIVATE SEWAGE PUMP STATION	A MINIMUM SIX-FOOT WOODEN SHADOW-BOX FENCE, OR APPROVED EQUAL, ON ALL SIDES, WITH A STAGGERED ROW OF EVERGREEN TREES PLANTED EVERY 10 FEET ALONG THE FENCE PERIMETER.	160 LF OF SEWAGE PUMP STATION PERIMETER EVERGREEN TREE: 160/10 = 16 TREES	16 EVERGREEN TREES ADDED ALONG SEWAGE PUMP STATION PERIMETER.	COMPLIES
SALDO § 22-713.5.B.(3) DETENTION 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.	744 LF OF INFILTRATION BASIN PERIMETER 392 LF OF RAIN GARDEN BASIN PERIMETER DECIDUOUS / EVERGREEN TREE: 744/20 = 38 TREES (INFILTRATION BASIN) 392/20 = 20 TREES (RAIN GARDEN) DECIDUOUS /EVERGREEN SHRUB: 744/10 = 75 SHRUBS (INFILTRATION BASIN) 392/10 = 40 SHRUBS (RAIN GARDEN)	38 TREES AND 75 SHRUBS ADDED ALONG INFILTRATION BASIN PERIMETER. 20 TREES AND 40 SHRUBS ADDED ALONG RAIN GARDEN PERIMETER.	COMPLIES
SALDO § 22-713.4 STREET TREES	EVERY 30 FEET ALONG ALL PROPOSED STREETS AND EXISTING STREETS WHEN THEY ABUT OR LIE WITHIN THE PROPOSED SUBDIVISION AND/OR LAND DEVELOPMENT.	LIMEKILN ROAD = 1429 LF LONG – 2 SIGHT TRIANGLES (150 LF EACH) = 1129 LF 1129/30 = 38 TREES INTERNAL ROAD = 1559 LF LONG (BOTH SIDES) - 2 SIGHT TRIANGLES STRAIGHT LINE (75 LF EACH) - 680 LF (34 DRIVEWAYS – 20 LF EACH) = 2288 LF 2288/30 = 76 TREES	38 TREES ARE ADDED ALONG LIMEKILN ROAD 76 TREES ARE ADDED ALONG BOTH SIDES OF INTERNAL ROAD.	COMPLIES

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK:
THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS:
A. GENERAL – ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.
B. TOPSOIL – NATURAL, FRIABLE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 5.5–7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.
C. LAWN – LAWN AREAS SHALL BE SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED WITHIN THE SOIL EROSION AND SEDIMENT CONTROL NOTES. FOR SOIL BED PREPARATIONS, REFER TO ITEM 8 BELOW.
I. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.
II. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.
D. MULCH – ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF HARDWOOD BARK MULCH, AT A MINIMUM, UNLESS A GREATER AMOUNT IS OTHERWISE STATED ON THE LANDSCAPE PLAN.
E. FERTILIZER
I. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.
II. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.
F. PLANT MATERIAL
I. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY AMERICAN HORT (FORMERLY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION).
II. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.
III. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.
IV. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1¼", WHICH HAVE NOT BEEN COMPLETELY CALLUSED, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.
V. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.
VI. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.
VII. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.
VIII. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES
A. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.
B. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS
A. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.
B. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.
C. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION
A. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR 15 FEET FROM THE TRUNK OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.
B. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY 'VISI-FENCE', OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.
C. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.
D. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS
A. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.
B. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.
C. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.
I. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.
II. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.
III. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING
A. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.
B. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1"±).
C. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.
D. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING
A. CONTRACTOR SHALL PROVIDE A SIX INCH (6") THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AND LAWN AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.
B. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAYBE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.
C. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.
D. ALL LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA – FOR BID PURPOSES ONLY [SEE SPECIFICATION 6.A.]):
I. 20 POUNDS 'GRO-POWER' OR APPROVED EQUAL SOIL CONDITIONER/FERTILIZER
II. 20 POUNDS 'NITRO-FORM' (COURSE) 38-0-0 BLUE CHIP OR APPROVED NITROGEN FERTILIZER
E. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

9. PLANTING
A. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.
B. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.
C. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.
D. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.
E. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
F. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS: THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:
I. PLANTS: MARCH 15 TO DECEMBER 15
II. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1
PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.
G. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:

ACER RUBRUM	PLATANUS X ACERIFOLIA
BETULA VARIETIES	POPULUS VARIETIES
CARPINUS VARIETIES	PRUNUS VARIETIES
CRATAEGUS VARIETIES	PYRUS VARIETIES
KOELREUTERIA	QUERCUS VARIETIES
LIQUIDAMBAR STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA VARIETIES

H. PLANTING PITS SHALL BE DUG WITH LEVEL OR CONVEX BOTTOMS, WITH THE WIDTH THREE TIMES THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:
I. 1 PART PEAT MOSS
II. 1 PART COMPOSTED COW MANURE BY VOLUME
III. 3 PARTS TOPSOIL BY VOLUME
IV. 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
A) 2 TABLETS PER 1 GALLON PLANT
B) 3 TABLETS PER 5 GALLON PLANT
C) 4 TABLETS PER 15 GALLON PLANT
D) LARGER PLANTS: 2 TABLETS PER ½" CALIPER OF TRUNK
I. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.
J. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.
K. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE. NO PRUNING SHALL BE CONDUCTED WITHIN THE FIRST YEAR OF PLANTING.
L. GROUND COVER AREAS SHALL RECEIVE A ¼" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.
M. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.
N. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.
O. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

10. TRANSPLANTING (WHEN REQUIRED)
A. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT. (SEE SPECIFICATION 2.F. ABOVE)
B. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.
C. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.
D. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.
E. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.
F. IF TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING
A. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.
B. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.
C. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE
A. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF EIGHTEEN (18) MONTH FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.
B. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.
C. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND UNTIL TURNOVER TO THE OWNER/OPERATOR. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.
D. LAWNS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND UNTIL TURNOVER TO THE OWNER/OPERATOR THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP
A. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.
B. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

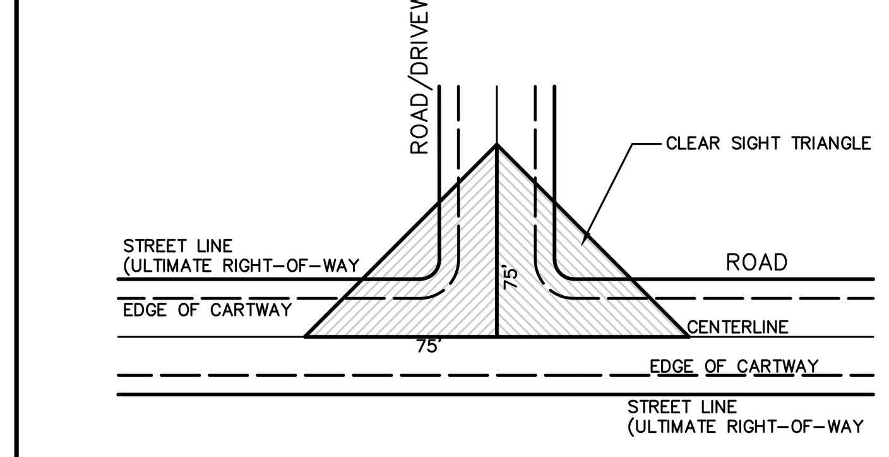
LANDSCAPING NOTES:

1. THE LOCATION, DIMENSIONS AND SPACING OF REQUIRED PLANTINGS SHOULD BE ADEQUATE FOR THEIR PROPER GROWTH AND MAINTENANCE, TAKING INTO ACCOUNT THE SIZES OF SUCH PLANTINGS AT MATURITY AND THEIR PRESENT AND FUTURE ENVIRONMENTAL REQUIREMENTS, SUCH AS WIND, SOIL, MOISTURE AND SUNLIGHT. PLANTINGS SHOULD BE SELECTED AND LOCATED WHERE THEY WILL NOT CONTRIBUTE TO CONDITIONS HAZARDOUS TO PUBLIC SAFETY.
2. ALL PLANT MATERIAL SHALL MEET THE MINIMUM STANDARDS FOR HEALTH, FORM, AND ROOT CONDITION AS OUTLINED IN THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) Z60.1 – 1996, AS AMENDED. ALL PLANT MATERIAL SHALL BE HARDY AND WITHIN THE UNITED STATES DEPARTMENT OF AGRICULTURAL (USDA) HARDINESS ZONE 6, APPLICABLE TO BUCKS COUNTY, PENNSYLVANIA.
3. ALL SHADE AND EVERGREEN TREES SHALL BE SUPPORTED WITH STAKES AND GUY WIRING IN ACCORDANCE WITH THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) STANDARDS. THE BACKFILL FOR EXCAVATED PLANTING AREAS SHALL BE COMPOSED OF NATIVE TOPSOIL AND SHALL BE MULCHED SIX INCHES BEYOND THE DRIPLINE.
4. THE LANDSCAPE PLAN SHALL CONTAIN PLAN NOTATION STATING THAT THE APPLICANT IS REQUIRED TO MAINTAIN AND GUARANTEE ALL PLANT MATERIAL UNTIL THE END OF THE EIGHTEEN-MONTH MAINTENANCE PERIOD. ANY PLANT MATERIAL THAT IS DEEMED, IN THE OPINION OF THE TOWNSHIP ENGINEER, NOT TO HAVE SURVIVED OR NOT TO HAVE GROWN IN A MANNER CHARACTERISTIC OF ITS TYPE, SHALL BE REPLACED WITHIN THE EIGHTEEN-MONTH MAINTENANCE PERIOD.
5. ALL PLANTING SHALL BE AT THE LOCATIONS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT THE CORRECT GRADES, ALIGNMENT, AND TO THE INDICATED LAYOUT OF THE PLANTING BEDS.
6. THE CONTRACTOR SHALL LAY OUT WITH IDENTIFIABLE STAKES THE LOCATION OF ALL PLANTING BEDS AS INDICATED ON DRAWING. THE LAYOUT OF PLANTING SHALL BE APPROVED BY THE PROJECT REPRESENTATIVE PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANT BEDS.
7. THE CONTRACTOR SHALL NOTIFY THE PROJECT REPRESENTATIVE IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANTS. THE CONTRACTOR SHALL STATE THE CONDITIONS AND SUBMIT A PROPOSAL FOR CORRECTING THE CONDITIONS, INCLUDING ANY CHANGE IN COST, FOR REVIEW AND ACCEPTANCE BY THE PROJECT REPRESENTATIVE.
8. MINOR ADJUSTMENTS TO TREE LOCATIONS MAY BE NECESSARY DUE TO FIELD CONDITIONS AND FINAL GRADING. THE CONTRACTOR SHALL NOTIFY THE OWNER IF ADJUSTMENTS ARE REQUIRED.
9. ALL TREES SHALL BE PLANTED NO CLOSER THAN 6 FT FROM WATER LATERAL, SANITARY LATERAL AND STORM SEWERS.

STORMWATER BMP GRASS MIX (ERNMX-180-1)

MIX COMPOSITION
45.0% SCHIZACHYRIUM SCOPARIUM, 'CAMPER' (LITTLE BLUESTEM, 'CAMPER')
20.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)
8.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)
7.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE)
4.5% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)
1.0% JUNCUS EFFUSUS (SOFT RUSH)
0.5% CAREX SCOPARIA, PA ECOTYPE (BLUNT BROOM SEDGE, PA ECOTYPE)

HEIGHT: 0.3 – 5.0 FT
SEEDING RATE: 15 LB PER ACRE WITH A COVER CROP OF GRAIN RYE AT 30 LB PER ACRE



LOCAL STREET
CLEAR SIGHT TRIANGLE DETAIL NTS

SIGHT TRIANGLES NOTES

A. PROPER SIGHT LINES AS PROVIDED BY CURRENT PENNDOT REGULATIONS SHALL BE MAINTAINED AT ALL STREET INTERSECTIONS. CLEAR-SIGHT TRIANGLES SHALL BE MAINTAINED ALONG ALL APPROACHES TO INTERSECTIONS AND SHALL BE MEASURED ALONG STREET CENTER LINES FROM THEIR POINT OF INTERSECTION.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

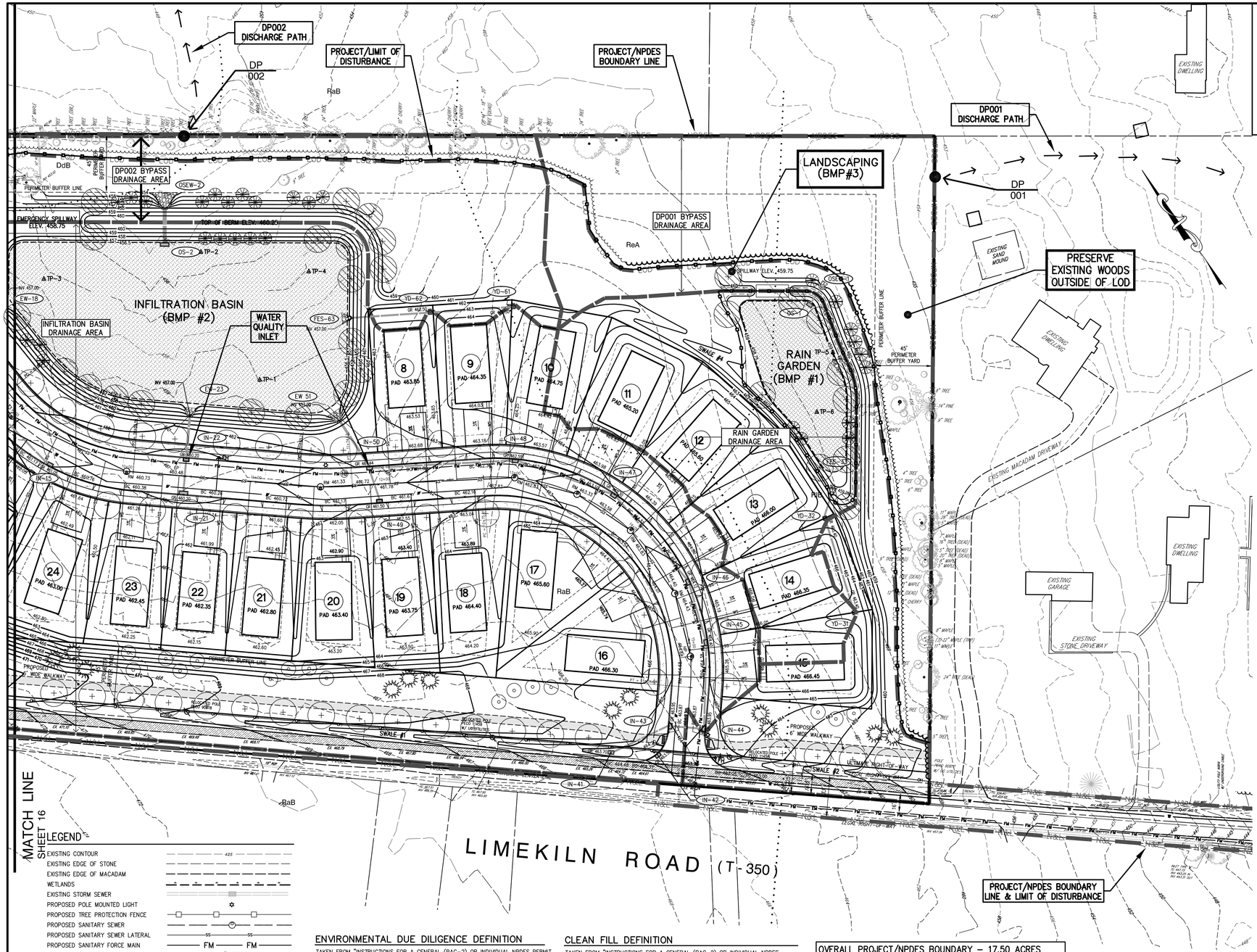
GALENA RESERVE MOBILE HOME PARK
LANDSCAPE DETAIL PLAN
PREPARED FOR
RHG PROPERTIES, LLC.
SITUATE IN
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE: AS SHOWN

SHEET No. 14 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



LEGEND

- EXISTING CONTOUR
- EXISTING EDGE OF STONE
- EXISTING EDGE OF MACADAM
- WETLANDS
- EXISTING STORM SEWER
- PROPOSED POLE MOUNTED LIGHT
- PROPOSED TREE PROTECTION FENCE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED SANITARY FORCE MAIN
- PROPOSED SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED EDGE OF WOODS
- RELOCATED PECO POLE
- RELOCATED OVERHEAD WIRE
- STORMWATER MANAGEMENT TEST PIT
- AMENDED SOILS
- SOIL TYPES
- LIMIT OF DISTURBANCE
- PROJECT/NPDES BOUNDARY
- PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE
- DISCHARGE POINT DRAINAGE AREA
- PROPOSED TREES - BMP #3

ENVIRONMENTAL DUE DILIGENCE DEFINITION

TAKEN FROM "INSTRUCTIONS FOR A GENERAL (PAG-2) OR INDIVIDUAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES", PREPARED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED MAY 2007.

THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS:

"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 AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL"."

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT www.pacode.com

CLEAN FILL DEFINITION

TAKEN FROM "INSTRUCTIONS FOR A GENERAL (PAG-2) OR INDIVIDUAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES", PREPARED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED MAY 2007

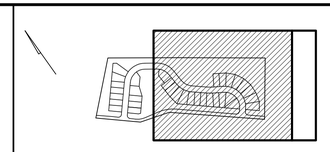
"UNCONTAMINATED, NON-WATER SOLUBLE, NON-COMPOSTABLE INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE 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.)"

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL.

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

ALL DISTURBED AREAS WITHIN THE NPDES BOUNDARY FOR OFF-SITE SANITARY PIPELINE, OFF-SITE WATER PIPELINE, AND TEMPORARY CONSTRUCTION EASEMENT AREA WILL BE RESTORED TO A MEADOW IN GOOD CONDITION, OR A LAWN CONDITION, OR AN IMPERVIOUS COVER CONDITION AS IT CURRENTLY EXISTS. THE PRE-CONSTRUCTION DRAINAGE PATTERNS SURROUNDING THE OFF-SITE SANITARY PIPELINE, OFF-SITE WATER PIPELINE, AND TEMPORARY CONSTRUCTION EASEMENT AREA MUST BE MAINTAINED. AS A RESULT OF RESTORING THE OFF-SITE SANITARY PIPELINE, OFF-SITE WATER PIPELINE CONSTRUCTION AND TEMPORARY ACCESS ROAD TO A MEADOW IN GOOD CONDITION, OR A LAWN CONDITION,OR AN IMPERVIOUS COVER CONDITION AS IT CURRENTLY EXISTS, AND MAINTAINING PRE-CONSTRUCTION DRAINAGE PATTERNS IN ACCORDANCE WITH 25 PA CODE § 102.8(g)(2)(ii), IT IS NOT REQUIRED TO CONSIDER 20% OF THE EXISTING IMPERVIOUS AREA AS A MEADOW IN GOOD CONDITION FOR DP003, DP004 AND DP005 PEAK FLOW, WATER QUALITY AND VOLUME CONTROL CALCULATIONS.



GENERAL PCSM PLANNING AND DESIGN §102.8(b)

THE FOLLOWING MEASURES ARE TAKEN TO MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:

- ACCESS THE SITE THROUGH DESIGNATED CONSTRUCTION ENTRANCE
- PROTECT EXISTING TREES WITH TREE PROTECTION FENCING
- THE POST DEVELOPMENT CONDITIONS OF THE SITE MAINTAIN THE SAME POINTS OF INTEREST AND GENERAL DRAINAGE PATTERNS AS THE PRE DEVELOPMENT CONDITIONS.

THE FOLLOWING MEASURES ARE TAKEN TO MINIMIZE SOIL COMPACTION:

- ACCESS THE SITE THROUGH DESIGNATED CONSTRUCTION ENTRANCE
- USE TREADED MACHINERY WHERE PRACTICAL DURING EARTHMOVING OPERATIONS
- GRADE SITE TO MINIMIZE EXTENT OF CUTS/FILLS

THE FOLLOWING MEASURES WERE TAKEN TO PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL, AND CHEMICAL QUALITIES OF THE RECEIVING STREAM:

- DIRECT RUNOFF FROM IMPERVIOUS SURFACES TO BMPS
- THE USE OF NATIVE SPECIES REQUIRES LESS FERTILIZATION AND CHEMICAL APPLICATION THAN NONNATIVE SPECIES.
- MAINTAIN GENERALLY THE SAME DRAINAGE PATTERNS AS IN THE EXISTING CONDITION

THE FOLLOWING MEASURES ARE TAKEN TO PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF:

- PROVIDE INFILTRATION BASIN AND RAIN GARDEN TO HELP REDUCE RUNOFF RATES
- MINIMIZE IMPERVIOUS AREAS WHERE PRACTICAL
- MAINTAIN GENERALLY THE SAME DRAINAGE PATTERNS AS THE EXISTING CONDITION

THE FOLLOWING MEASURES WERE TAKEN TO MINIMIZE ANY INCREASE IN STORMWATER RUNOFF VOLUME:

- USE OF INFILTRATION BASIN, RAIN GARDEN AND LANDSCAPING TO REDUCE RUNOFF RATES AND VOLUME
- MINIMIZE IMPERVIOUS AREAS WHERE PRACTICAL
- MAINTAIN GENERALLY THE SAME DRAINAGE PATTERNS AS IN THE EXISTING CONDITION

THE FOLLOWING MEASURES WERE TAKEN TO MINIMIZE IMPERVIOUS AREAS:

- THE PROPOSED PCSM PLAN AND DEVELOPMENT LAYOUT PROVIDE AN EFFICIENT CONFIGURATION OF IMPERVIOUS SURFACES IN ORDER TO MINIMIZE THE AMOUNT OF IMPERVIOUS COVERAGE TO THE MAXIMUM EXTENT POSSIBLE

THE FOLLOWING MEASURES WERE TAKEN TO MINIMIZE LAND CLEARING AND GRADING:

- PROTECT EXISTING NATURAL RESOURCES WITH TREE PROTECTION FENCING
- GRADE SITE TO MINIMIZE EXTENT OF CUTS/FILLS THE FOLLOWING MEASURES WERE TAKEN TO UTILIZE OTHER STRUCTURAL OR NON-STRUCTURAL BMPS

THE FOLLOWING MEASURES WERE TAKEN TO UTILIZE OTHER STRUCTURAL OR NONSTRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF:

- DIRECT RUNOFF TO INFILTRATION BASIN AND RAIN GARDEN TO HELP REDUCE RUNOFF RATES AND VOLUME
- PROVIDE LANDSCAPE RESTORATION TO HELP REDUCE RUNOFF VOLUME
- MINIMIZE IMPERVIOUS AREAS WHERE PRACTICAL

SITE LAND USES §102.8(f)(3)

PAST AND HISTORIC LAND USES (5 YEARS AND 50 YEARS) – RESIDENTIAL, MEADOW AND WOODLANDS

PRESENT LAND USE – RESIDENTIAL, MEADOW AND WOODLANDS

FUTURE LAND USES – RESIDENTIAL

CHAPTER 93 CLASSIFICATION §102.8(f)(5)

THE PROJECT SITE DISCHARGES TO TWO DIFFERENT SUB-WATERSHEDS. APPROXIMATELY THREE-FOURTHS OF THE LOT DRAINS TO THE NORTH SIDE TO UNNAMED TRIBUTARY OF NORTH BRANCH NESHAMINY CREEK AND ONE FORTH DRAINS TO THE NORTHEAST TO UNNAMED TRIBUTARY OF NORTH BRANCH PINE RUN, AND THE RECEIVING WATERSHED IS NESHAMINY CREEK.

THIS SECTION OF THE UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK IS CLASSIFIED IN CHAPTER 93 OF THE PENNSYLVANIA CODE AS WARM WATER FISHERY (WWF) AND MIGRATORY FISHERY (MF). THIS SECTION OF THE UNNAMED TRIBUTARY TO NESHAMINY CREEK IS LISTED IN THE PENNSYLVANIA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT – STREAMS WITHIN CATEGORY 2.

THIS SECTION OF THE UNNAMED TRIBUTARY TO PINE RUN IS CLASSIFIED IN CHAPTER 93 OF THE PENNSYLVANIA CODE AS TROUT STOCK FISHERY (TSF) AND MIGRATORY FISHERY (MF). THIS SECTION OF THE UNNAMED TRIBUTARY TO PINE RUN IS LISTED IN THE PENNSYLVANIA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT – STREAMS WITHIN CATEGORY 4A.

AQUATIC LIFE (8854) – CATEGORY 4A
IMPAIRMENT SOURCE: SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT)
IMPAIRMENT CAUSE: SILTATION
DATE LISTED: 2002

THE ENTIRE SITE DRAINS TO NESHAMINY CREEK WATERSHED. NESHAMINY CREEK HAS A TMDL PLAN RELATED TO SILTATION AND SUSPENDED SOLIDS.

APPLICANTS ACKNOWLEDGMENT

I/WE, _____ ACKNOWLEDGE THAT ANY REVISIONS TO THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN MUST BE APPROVED BY NEW BRITAIN TOWNSHIP (AND THE CONSERVATION DISTRICT AND / OR DEP) AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE CONSERVATION DISTRICT FOR DETERMINATION OF ADEQUACY, AS APPLICABLE. THE STORMWATER CONTROLS AND BMP'S ARE FIXTURES THAT CAN NOT BE ALTERED OR REMOVED WITHOUT THE APPROVAL BY THE MUNICIPALITY.

_____
SIGNATURE

DESIGN ENGINEER CERTIFICATION

I (DESIGN ENGINEER) _____ ON THIS DATE _____ HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE NEW BRITAIN TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

_____
SIGNATURE

OWNER OF RECORD

RHG PROPERTIES, LLC
PO BOX 677
MORGANTOWN, PA 19543
TEL.: (610) 942-4663

SITE INFO

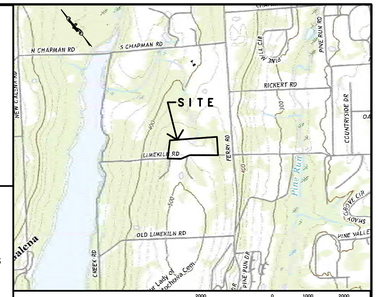
LIMEKILN ROAD
DOYLESTOWN, PA 18901

PARID No.: 26-012-051
DEED BOOK: 3892, PAGE: 0697

SITE AREA: 15.608 ACRES GROSS
14.732 ACRES NET

RESPONSIBLE PARTY

RHG PROPERTIES, LLC



LOCATION MAP
2000 0 1000 3000
(IN FEET) 1 inch = 2000 ft.

GENERAL NOTES

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
2. ALL CONTRACTORS PROVIDING CONSTRUCTION SERVICES AT THIS SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND REGULATIONS. URWILER AND WALTER, INC., NEW BRITAIN TOWNSHIP, ITS AGENTS AND ASSIGNS WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFIRM WITH THE APPLICABLE OSHA STANDARDS AND REGULATIONS.
3. INFILTRATION BASIN AND RAINGARDEN AMENDED SOILS AREA TO BE SEEDED WITH ERNST RAIN GARDEN GRASS MIX (ERNMX-180-1).
4. SEE SHEET 18 FOR LANDSCAPING CHART.
5. THE PROPERTY OWNER SHALL HAVE THE RESPONSIBILITY FOR THE PERPETUAL MAINTENANCE OF THE PERMANENT STORMWATER BMP'S, AND PIPES WHICH ARE LOCATED ON HIS PROPERTY. NO CHANGES SHALL BE MADE TO THE STRUCTURES, PIPES OR FINISH GRADING WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWNSHIP. THE TOWNSHIP HAS THE RIGHT TO ENTER THE LOT TO PERFORM ANY REQUIRED MAINTENANCE WHICH HAS NOT BEEN PROPERLY PERFORMED OR CARRIED OUT IN A TIMELY MANNER. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE COST OF ANY MAINTENANCE WHICH IS PERFORMED BY THE TOWNSHIP. THE TOWNSHIP SHALL LIEN THE PROPERTY FOR SAID COSTS UNTIL THE TOWNSHIP HAS BEEN REIMBURSED IN FULL.
6. IT SHALL BE UNLAWFUL TO ALTER OR REMOVE ANY PERMANENT STORMWATER BMP REQUIRED BY AN APPROVED BMP OPERATIONS AND MAINTENANCE PLAN, OR ALLOW THE PROPERTY TO REMAIN IN A CONDITION WHICH DOES NOT CONFORM TO AN APPROVED BMP OPERATIONS AND MAINTENANCE PLAN, UNLESS AN EXCEPTION IS GRANTED IN WRITING BY THE TOWNSHIP.
7. THE NEW BRITAIN TOWNSHIP IS GRANTED A BLANKET EASEMENT TO ACCESS EVERY CONVEYANCE AND BMP LOCATED ON THE PROPERTY FOR INSPECTION AND MAINTENANCE OR PRESERVATION OF STORMWATER RUNOFF CONVEYANCE, INFILTRATION AND DETENTION AREAS. THE NEW BRITAIN TOWNSHIP MAY UNDERTAKE ANY ACTION NECESSARY TO ENFORCE STORMWATER WATER MANAGEMENT REGULATIONS OF O&M PLAN AND O&M AGREEMENT. THIS SHALL BE A RIGHT OF THE TOWNSHIP BUT SHALL NOT BE CONSIDERED AS AN OBLIGATION OR DUTY.
8. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
9. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.

   SEDIMENT/SILT REMOVAL FROM BMPs SHALL BE DISPOSED OF WITHIN LANDSCAPE AREAS ON-SITE. IF THE QUANTITY OF SEDIMENT/SILT EXCEEDS THE LANDSCAPE AREA ABILITY TO ACCEPT IT, DISPOSAL OF THIS MATERIAL WILL BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.
10. TREE PROTECTION FENCE USED TO PROTECT STORMWATER BMP's SHALL BE REMOVED AT TIME OF STABILIZATION.
11. REFER TO SHEET 22 FOR SITE DISCHARGE MAP.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (1 OF 8)
PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

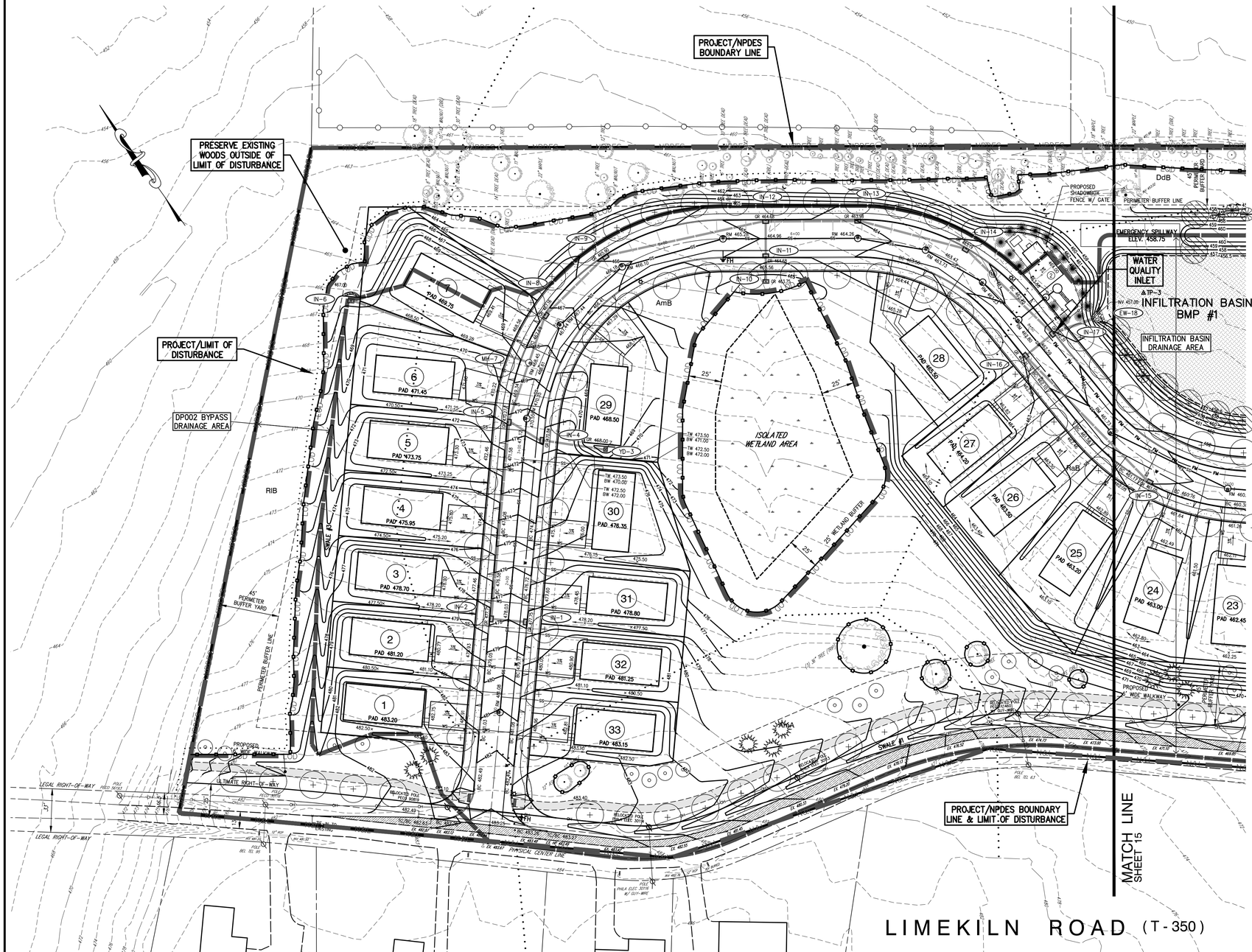
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1" = 40'

SHEET No. 15 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON–SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF–SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF–SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

ALL DISTURBED AREAS WITHIN THE NPDES BOUNDARY FOR OFF–SITE SANITARY PIPELINE, OFF–SITE WATER PIPELINE, AND TEMPORARY CONSTRUCTION EASEMENT AREA WILL BE RESTORED TO A MEADOW IN GOOD CONDITION, OR A LAWN CONDITION, OR AN IMPERVIOUS COVER CONDITION AS IT CURRENTLY EXISTS. THE PRE–CONSTRUCTION DRAINAGE PATTERNS SURROUNDING THE OFF–SITE SANITARY PIPELINE, OFF–SITE WATER PIPELINE, AND TEMPORARY CONSTRUCTION EASEMENT AREA MUST BE MAINTAINED. AS A RESULT OF RESTORING THE OFF–SITE SANITARY PIPELINE, OFF–SITE WATER PIPELINE CONSTRUCTION AND TEMPORARY ACCESS ROAD TO A MEADOW IN GOOD CONDITION, OR A LAWN CONDITION,OR AN IMPERVIOUS COVER CONDITION AS IT CURRENTLY EXISTS, AND MAINTAINING PRE–CONSTRUCTION DRAINAGE PATTERNS IN ACCORDANCE WITH 25 PA CODE § 102.8(g)(2)(ii), IT IS NOT REQUIRED TO CONSIDER 20% OF THE EXISTING IMPERVIOUS AREA AS A MEADOW IN GOOD CONDITION FOR DP003, DP004 AND DP005 PEAK FLOW, WATER QUALITY AND VOLUME CONTROL CALCULATIONS.

GENERAL PCSM PLANNING AND DESIGN §102.8(6)

THE FOLLOWING MEASURES ARE TAKEN TO MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:

- ACCESS THE SITE THROUGH DESIGNATED CONSTRUCTION ENTRANCE
- PROTECT EXISTING TREES WITH TREE PROTECTION FENCING
- THE POST DEVELOPMENT CONDITIONS OF THE SITE MAINTAIN THE SAME POINTS OF INTEREST AND GENERAL DRAINAGE PATTERNS AS THE PRE DEVELOPMENT CONDITIONS.

THE FOLLOWING MEASURES ARE TAKEN TO MINIMIZE SOIL COMPACTION:

- ACCESS THE SITE THROUGH DESIGNATED CONSTRUCTION ENTRANCE
- USE TREADED MACHINERY WHERE PRACTICAL DURING EARTHMOVING OPERATIONS
- GRADE SITE TO MINIMIZE EXTENT OF CUTS/FILLS

THE FOLLOWING MEASURES WERE TAKEN TO PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL, AND CHEMICAL QUALITIES OF THE RECEIVING STREAM:

- DIRECT RUNOFF FROM IMPERVIOUS SURFACES TO BMPS
- THE USE OF NATIVE SPECIES REQUIRES LESS FERTILIZATION AND CHEMICAL APPLICATION THAN NONNATIVE SPECIES.
- MAINTAIN GENERALLY THE SAME DRAINAGE PATTERNS AS IN THE EXISTING CONDITION

THE FOLLOWING MEASURES ARE TAKEN TO PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF:

- PROVIDE INFILTRATION BASIN AND RAIN GARDEN TO HELP REDUCE RUNOFF RATES
- MINIMIZE IMPERVIOUS AREAS WHERE PRACTICAL
- MAINTAIN GENERALLY THE SAME DRAINAGE PATTERNS AS THE EXISTING CONDITION

THE FOLLOWING MEASURES WERE TAKEN TO MINIMIZE ANY INCREASE IN STORMWATER RUNOFF VOLUME:

- USE OF INFILTRATION BASIN, RAIN GARDEN AND LANDSCAPING TO REDUCE RUNOFF RATES AND VOLUME
- MINIMIZE IMPERVIOUS AREAS WHERE PRACTICAL
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- THE PROPOSED PCSM PLAN AND DEVELOPMENT LAYOUT PROVIDE AN EFFICIENT CONFIGURATION OF IMPERVIOUS SURFACES IN ORDER TO MINIMIZE THE AMOUNT OF IMPERVIOUS COVERAGE TO THE MAXIMUM EXTENT POSSIBLE

THE FOLLOWING MEASURES WERE TAKEN TO MINIMIZE LAND CLEARING AND GRADING:

- PROTECT EXISTING NATURAL RESOURCES WITH TREE PROTECTION FENCING
- GRADE SITE TO MINIMIZE EXTENT OF CUTS/FILLS THE FOLLOWING MEASURES WERE TAKEN TO UTILIZE OTHER STRUCTURAL OR NON–STRUCTURAL BMPS

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SITE LAND USES §102.8(f)(3)

PAST AND HISTORIC LAND USES (5 YEARS AND 50 YEARS) – RESIDENTIAL, MEADOW AND WOODLANDS

PRESENT LAND USE – RESIDENTIAL, MEADOW AND WOODLANDS

FUTURE LAND USES – RESIDENTIAL

CHAPTER 93 CLASSIFICATION §102.8(f)(5)

THE PROJECT SITE DISCHARGES TO TWO DIFFERENT SUB–WATERSHEDS. APPROXIMATELY THREE–FOURTHS OF THE LOT DRAINS TO THE NORTH SIDE TO UNNAMED TRIBUTARY OF NORTH BRANCH NESHAMINY CREEK AND ONE FORTH DRAINS TO THE NORTHEAST TO UNNAMED TRIBUTARY OF NORTH BRANCH PINE RUN, AND THE RECEIVING WATERSHED IS NESHAMINY CREEK.

THIS SECTION OF THE UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK IS CLASSIFIED IN CHAPTER 93 OF THE PENNSYLVANIA CODE AS WARM WATER FISHERY (WWF) AND MIGRATORY FISHERY (MF). THIS SECTION OF THE UNNAMED TRIBUTARY TO NESHAMINY CREEK IS LISTED IN THE PENNSYLVANIA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT – STREAMS WITHIN CATEGORY 2.

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AQUATIC LIFE (8854) – CATEGORY 4A
IMPAIRMENT SOURCE: SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT)
IMPAIRMENT CAUSE: SILTATION
DATE LISTED: 2002

THE ENTIRE SITE DRAINS TO NESHAMINY CREEK WATERSHED. NESHAMINY CREEK HAS A TMDL PLAN RELATED TO SILTATION AND SUSPENDED SOLIDS.

APPLICANTS ACKNOWLEDGMENT

I/WE _____ ACKNOWLEDGE THAT ANY REVISIONS TO THE APPROVED POST–CONSTRUCTION STORMWATER MANAGEMENT PLAN MUST BE APPROVED BY NEW BRITAIN TOWNSHIP (AND THE CONSERVATION DISTRICT AND / OR DEP) AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE CONSERVATION DISTRICT FOR DETERMINATION OF ADEQUACY, AS APPLICABLE. THE STORMWATER CONTROLS AND BMP'S ARE FIXTURES THAT CAN NOT BE ALTERED OR REMOVED WITHOUT THE APPROVAL BY THE MUNICIPALITY.

_____
SIGNATURE

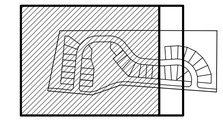
DESIGN ENGINEER CERTIFICATION

I (DESIGN ENGINEER) _____ ON THIS DATE _____ HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE NEW BRITAIN TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

_____
SIGNATURE

LEGEND

- EXISTING CONTOUR
- EXISTING EDGE OF STONE
- EXISTING EDGE OF MACADAM
- WETLANDS
- EXISTING STORM SEWER
- PROPOSED POLE MOUNTED LIGHT
- PROPOSED TREE PROTECTION FENCE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED SANITARY FORCE MAIN
- PROPOSED SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED EDGE OF WOODS
- RELOCATED PECO POLE
- RELOCATED OVERHEAD WIRE
- STORMWATER MANAGEMENT TEST PIT
- AMENDED SOILS
- SOIL TYPES
- LIMIT OF DISTURBANCE
- PROJECT/NPDES BOUNDARY
- PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE
- DISCHARGE POINT DRAINAGE AREA
- PROPOSED TREES – BMP #3



KEY MAP

GENERAL NOTES

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
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4. SEE SHEET 18 FOR LANDSCAPING CHART.
5. THE PROPERTY OWNER SHALL HAVE THE RESPONSIBILITY FOR THE PERPETUAL MAINTENANCE OF THE PERMANENT STORMWATER BMP'S, AND PIPES WHICH ARE LOCATED ON HIS PROPERTY. NO CHANGES SHALL BE MADE TO THE STRUCTURES, PIPES OR FINISH GRADING WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWNSHIP. THE TOWNSHIP HAS THE RIGHT TO ENTER THE LOT TO PERFORM ANY REQUIRED MAINTENANCE WHICH HAS NOT BEEN PROPERLY PERFORMED OR CARRIED OUT IN A TIMELY MANNER. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE COST OF ANY MAINTENANCE WHICH IS PERFORMED BY THE TOWNSHIP. THE TOWNSHIP SHALL LIEN THE PROPERTY FOR SAID COSTS UNTIL THE TOWNSHIP HAS BEEN REIMBURSED IN FULL.
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8. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
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10. TREE PROTECTION FENCE USED TO PROTECT STORMWATER BMP's SHALL BE REMOVED AT TIME OF STABILIZATION.
11. REFER TO SHEET 22 FOR SITE DISCHARGE MAP.

OWNER OF RECORD

RHG PROPERTIES, LLC
PO BOX 677
MORGANTOWN, PA 19543
TEL.: (610) 942–4663

SITE INFO

LIMEKILN ROAD
DOYLESTOWN, PA 18901

PARID No.: 26–012–051
DEED BOOK: 3892, PAGE: 0697

SITE AREA: 15.608 ACRES GROSS
14.732 ACRES NET

RESPONSIBLE PARTY

RHG PROPERTIES, LLC

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (2 OF 8)
PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

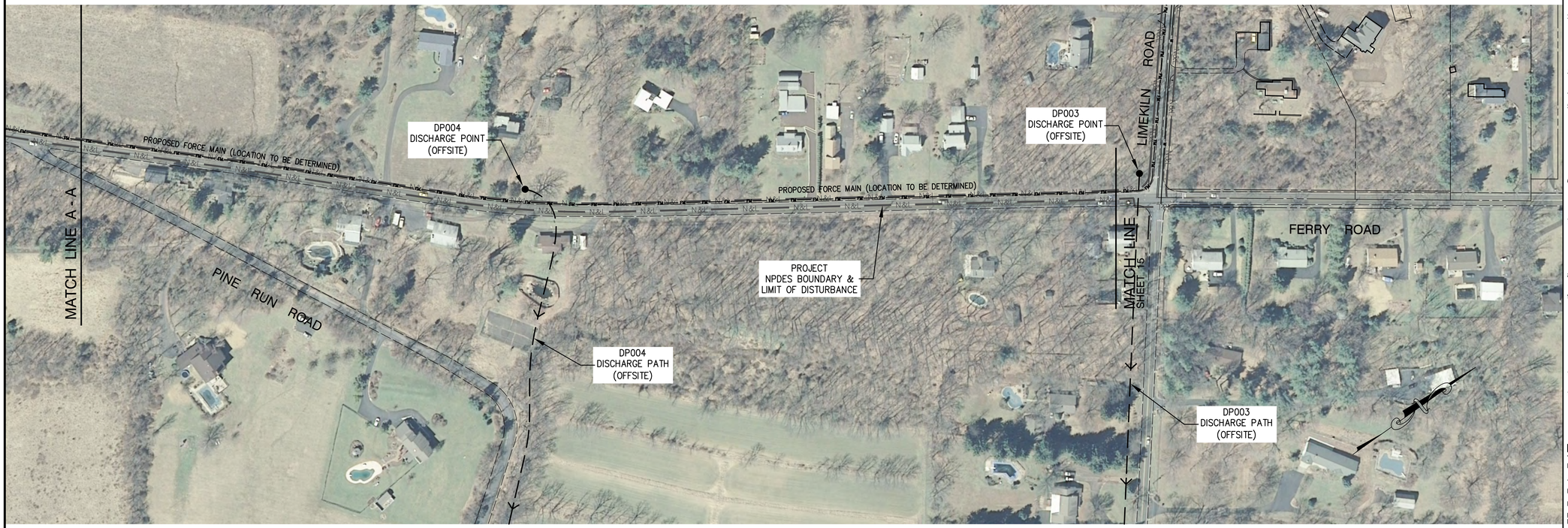
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

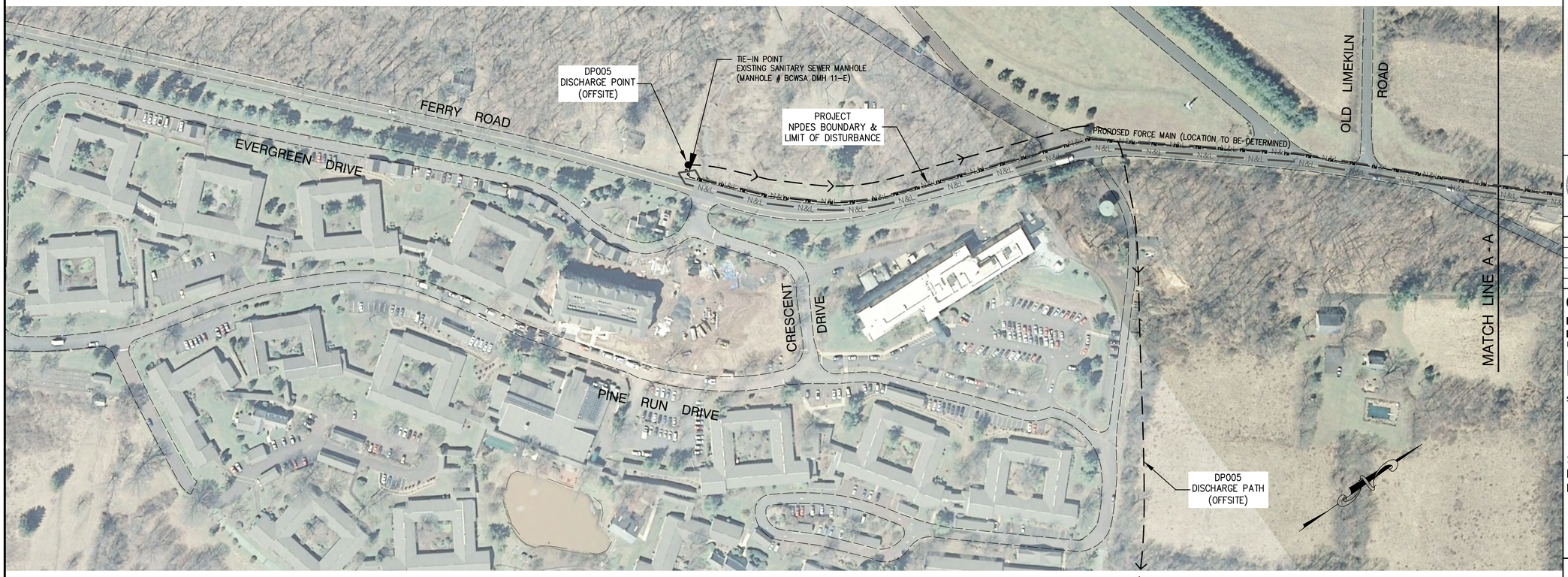
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 16 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com





GENERAL NOTES

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
2. ALL CONTRACTORS PROVIDING CONSTRUCTION SERVICES AT THIS SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND REGULATIONS. URWILER AND WALTER, INC., NEW BRITAIN TOWNSHIP, ITS AGENTS AND ASSIGNS WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFIRM WITH THE APPLICABLE OSHA STANDARDS AND REGULATIONS.
3. INFILTRATION BASIN AND RAINGARDEN AMENDED SOILS AREA TO BE SEEDED WITH ERNST RAIN GARDEN GRASS MIX (ERNMX-180-1).
4. SEE SHEET 18 FOR LANDSCAPING CHART.
5. THE PROPERTY OWNER SHALL HAVE THE RESPONSIBILITY FOR THE PERPETUAL MAINTENANCE OF THE PERMANENT STORMWATER BMP'S, AND PIPES WHICH ARE LOCATED ON HIS PROPERTY. NO CHANGES SHALL BE MADE TO THE STRUCTURES, PIPES OR FINISH GRADING WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWNSHIP. THE TOWNSHIP HAS THE RIGHT TO ENTER THE LOT TO PERFORM ANY REQUIRED MAINTENANCE WHICH HAS NOT BEEN PROPERLY PERFORMED OR CARRIED OUT IN A TIMELY MANNER. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE COST OF ANY MAINTENANCE WHICH IS PERFORMED BY THE TOWNSHIP. THE TOWNSHIP SHALL LIEN THE PROPERTY FOR SAID COSTS UNTIL THE TOWNSHIP HAS BEEN REIMBURSED IN FULL.
6. IT SHALL BE UNLAWFUL TO ALTER OR REMOVE ANY PERMANENT STORMWATER BMP REQUIRED BY AN APPROVED BMP OPERATIONS AND MAINTENANCE PLAN, OR ALLOW THE PROPERTY TO REMAIN IN A CONDITION WHICH DOES NOT CONFORM TO AN APPROVED BMP OPERATIONS AND MAINTENANCE PLAN, UNLESS AN EXCEPTION IS GRANTED IN WRITING BY THE TOWNSHIP.
7. THE NEW BRITAIN TOWNSHIP IS GRANTED A BLANKET EASEMENT TO ACCESS EVERY CONVEYANCE AND BMP LOCATED ON THE PROPERTY FOR INSPECTION AND MAINTENANCE OR PRESERVATION OF STORMWATER RUNOFF CONVEYANCE, INFILTRATION AND DETENTION AREAS. THE NEW BRITAIN TOWNSHIP MAY UNDERTAKE ANY ACTION NECESSARY TO ENFORCE STORMWATER WATER MANAGEMENT REGULATIONS OF O&M PLAN AND O&M AGREEMENT. THIS SHALL BE A RIGHT OF THE TOWNSHIP BUT SHALL NOT BE CONSIDERED AS AN OBLIGATION OR DUTY.
8. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
9. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.

   SEDIMENT/SILT REMOVAL FROM BMPs SHALL BE DISPOSED OF WITHIN LANDSCAPE AREAS ON-SITE, IF THE QUANTITY OF SEDIMENT/SILT EXCEEDS THE LANDSCAPE AREA ABILITY TO ACCEPT IT, DISPOSAL OF THIS MATERIAL WILL BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.
10. TREE PROTECTION FENCE USED TO PROTECT STORMWATER BMP's SHALL BE REMOVED AT TIME OF STABILIZATION.
11. REFER TO SHEET 22 FOR SITE DISCHARGE MAP.

LEGEND

EXISTING EDGE OF MACADAM
ADJOINING PROPERTY LINE
PROPOSED SANITARY FORCE MAIN — FM — FM — FM — FM — FM —
PROPOSED WATER MAIN — W — W —
PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE — N&L — N&L —

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (3 OF 8)
PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

50' 0 50' 100' 200'
SCALE: 1"= 100'

SHEET No. 17 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
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LONG-TERM OPERATION AND MAINTENANCE SCHEDULE §102.8(f)(10)

UNTIL THE SITE IS STABILIZED AND DURING THE CONSTRUCTION ACTIVITIES, ALL BMPS MUST BE MAINTAINED PROPERLY BY CONTRACTOR. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL BMPS AS SPECIFIED. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, RE-GRADING, RE-SEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY AND IN ACCORDANCE WITH THESE PROCEDURES, PLANS, AND DETAILS. ANY AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.
ALL SITE INSPECTIONS MUST BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE INDICATING THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG MUST BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.
SHOULD ON-SITE EROSION OCCUR FROM THE LANDSCAPED AREAS, THE SOURCE OF EROSION SHALL BE IMMEDIATELY STABILIZED AND THE INLETS AND STORMWATER PIPING SHALL BE CHECKED FOR ACCUMULATION AND CLEARED IF ACCUMULATION OF SEDIMENT EXISTS.
HEAVY CONSTRUCTION VEHICLES SHALL NOT BE PARKED ON OR DRIVEN OVER BMP FACILITIES AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY EQUIPMENT, INCLUDING MOWERS.
INSPECT INFILTRATION FACILITIES AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SIGNS OF EROSION.
REMOVE ACCUMULATED SEDIMENT FROM THE FACILITIES AS REQUIRED. RESTORE ORIGINAL CROSS-SECTION IF NECESSARY. PROPERLY DISPOSE OF SEDIMENT AS SPECIFIED. FOR ABOVE-GROUND INFILTRATION FACILITIES, REMOVE AND REPLACE SAND/STONE LAYER AS NECESSARY IF FACILITY DEWATERING TIME EXCEEDS 72 HOURS.

RAIN GARDEN (BMP #1)

BY THE PROPERTY OWNER(S), RAIN GARDENS, CATCH BASINS, DRAINS, INLETS AND YARD AREAS (UPGRADIENT OF THE RAIN GARDEN) SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS. MAINTENANCE WILL BE AS FOLLOWS:

1. VEGETATION ALONG THE SURFACE OF THE RAIN GARDEN SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS VEGETATED AS SOON AS POSSIBLE.
2. VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON OR WITHIN THE RAIN GARDEN, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS.
3. INSPECT THE RAIN GARDEN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
4. ALSO, INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION / SPILLS AND SLOPE STABILITY IN THE BERMS.
5. REMOVE ACCUMULATED SEDIMENT FROM THE RAIN GARDEN AS REQUIRED. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.
6. ALL RAIN GARDEN STRUCTURES EXPECTED TO RECEIVE AND/OR TRAP DEBRIS AND SEDIMENT SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1-INCH.
7. STRUCTURES INCLUDE RAIN GARDEN BOTTOMS, TRASH RACKS, OUTLET STRUCTURES, RIPRAP OR GABION STRUCTURES AND INLETS.
8. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE BASIN IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND REVEGETATED.
9. MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM, BUT ALL DETRITUS SHOULD BE REMOVED FROM THE BASIN.
10. VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND FOR UNWANTED GROWTH OF EXOTIC / INVASIVE SPECIES.
11. VEGETATIVE COVER SHOULD BE MAINTAINED AT A MINIMUM OF 95 PERCENT. IF VEGETATIVE COVER HAS BEEN REDUCED BY 10%, VEGETATION SHOULD BE REESTABLISHED. IF AT SOME FUTURE DATE, THE RAIN GARDEN FAILS TO EMPTY WITHIN 72 HOURS, THE PROPERTY OWNER IS RESPONSIBLE TO REPLACE / REPAIR EITHER THE INEFFECTIVE AREA OR THE ENTIRE BMP. THE FOLLOWING SEQUENCE SHALL BE USED FOR REPAIR / REPLACEMENT OF INFILTRATION BMPS:

   A. INSTALL TEMPORARY SEDIMENT CONTROL BMPS INCLUDING CONSTRUCTION ENTRANCE(S) AND 18-INCH SILT FENCE. THE CONSTRUCTION ENTRANCE SHALL BE AT THE ACCESS POINT FROM A DRIVEWAY OR MACADAM ROAD. SILT FENCE LOCATION SHALL BE DOWN SLOPE OF DISTURBED AREAS.
   B. REMOVE DEAD OR DYING VEGETATION, EXCAVATE THE RAIN GARDEN(S) TO PROPOSED DEPTH AND HAUL ALL WASTE MATERIAL TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.
   C. SCARIFY EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
   D. BACKFILL WITH AMENDED SOIL (ENGINEERED FILTER MEDIA) AS SHOWN ON PLANS AND SPECIFICATIONS. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE, IF NECESSARY. CONFIRM THROUGH INFILTRATION TESTING THAT THE SUBGRADE MATERIAL HAS ADEQUATE POROSITY AND INFILTRATIVE CAPACITY. IF TESTING INDICATES THAT THE SUBGRADE INFILTRATIVE CAPACITY IS DIMINISHED THE PROPERTY OWNER(S) WILL USE AMENDED SOILS TO REESTABLISH INFILTRATIVE CAPACITY. A SECOND SET OF SOIL TEST WILL BE NECESSARY TO RECONFIRM THAT INFILTRATION HAS BEEN ESTABLISH AT AN ACCEPTABLE RATE.
   E. REESTABLISH DESIGN ELEVATION WITH MISCELLANEOUS GRADING. LEAVE SPACE FOR UPPER LAYER OF COMPOST, MULCH OR TOPSOIL AS SPECIFIED ON PLANS.
   F. PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
   G. PLANT VEGETATION ACCORDING TO THE PLANTING PLAN AND APPLY MULCH,
   H. AFTER THE RAIN GARDENS STABILIZES (70% VEGETATION COVER), REMOVE TEMPORARY EROSION CONTROL BMPS AND VEGETATE REMAINING DISTURBED AREAS.

OUTLET STRUCTURE REPLACEMENT:

IF NECESSARY, REPLACE THE OUTLET STRUCTURE WITH A PRECAST CONCRETE STRUCTURE.
A. INSTALL CONSTRUCTION ENTRANCE AND COMPOST FILTER SOCK OR 18 INCH SILT FENCE.
B. USE A BACKHOE TO LIFT THE EXISTING STRUCTURE FROM ITS FOUNDATION.
C. INSTALL NEW STRUCTURE PER DETAIL ON SHEET P-6. USE NON-SHRINK GROUT FOR ALL CONNECTIONS.
D. REPLACE / REPAIR DISTURBED AREAS AS SPECIFIED IN PERENNIAL GROUND COVER.
E. REMOVE EROSION CONTROL BMP'S. VEGETATE ANY REMAINING DISTURBED AREAS.

INFILTRATION BASIN (BMP #2)

INSPECTION AND MAINTENANCE BY THE PROPERTY OWNER(S) IS NECESSARY TO ENSURE PROPER FUNCTIONALITY OF THIS BMP AND SHOULD TAKE PLACE ON A QUARTERLY BASIS. MAINTENANCE WILL BE AS FOLLOWS:
1. CATCH BASINS AND INLETS (UPGRADIENT OF INFILTRATION BASIN) SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS.
2. THE VEGETATION ALONG THE SURFACE OF THE INFILTRATION BASIN SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.
3. VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON AN INFILTRATION BASIN, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS.
4. INSPECT THE BASIN AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
5. ALSO INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
6. MOW ONLY AS APPROPRIATE FOR VEGETATIVE COVER SPECIES.
7. REMOVE ACCUMULATED SEDIMENT FROM BASIN AS REQUIRED. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.
8. ENGINEERED FILTER MEDIA SOILS SHALL BE INSPECTED AFTER EACH RAINFALL EVENT OR QUARTERLY. IF BACKWATER OCCURS DUE TO CLOGGING, THE PROPERTY OWNER(S) SHALL USE A RAKE AND SCARIFY THE TOP TWO INCHES OF SOIL FOR RE-ESTABLISHMENT OF HYDRAULIC CONDUCTIVITY. IF THIS PROCEDURE IS INADEQUATE, TO INCREASE THE SOIL POROSITY AND HYDRAULIC CONDUCTIVITY, THE ENGINEERED FILTER MEDIA SOILS WILL NEED TO BE REPLACED.
9. REPLACEMENT OF ENGINEERED FILTER MEDIA SOILS SHALL OCCUR DURING PERIODS OF DRY WEATHER, PREFERABLY FROM JUNE THROUGH AUGUST. LISTED BELOW IS THE PROCEDURE FOR REPLACING THE ENGINEERED FILTER MEDIA SOILS AND PERFORATED PIPE:

   A. INSTALL CONSTRUCTION ENTRANCE AND 18-INCH COMPOST FILTER SOCK.
   B. USE A BACKHOE TO EXCAVATE THE PERFORATED PIPE AND ENGINEERED FILTER MEDIA SOILS. DISPOSE OF PIPE AND ENGINEERED FILTER MEDIA SOILS IN ACCORDANCE WITH TITLE 25, PA CODE CHAPTER 260.1 AND 271.1.
   C. REPLACE PERFORATED PIPE AND ENGINEERED FILTER MEDIA SOILS PER DETAILS SHOWN ON THE PLANS.
   D. REVEGETATE DISTURBED AREAS IN ACCORDANCE WITH OPERATION AND MAINTENANCE NOTES SHOWN ON THE PLANS.
   E. REMOVE TEMPORARY EROSION CONTROL BMP'S AND STABILIZE ANY REMAINING DISTURBED AREAS.

WATER QUALITY SNOUT

FIRST YEAR ONLY RECOMMENDATIONS:
1. MONTHLY MONITORING OF A NEW INSTALLATION AFTER THE SITE HAS BEEN STABILIZED.
2. MEASUREMENTS SHOULD BE TAKEN AFTER EACH RAIN EVENT OF .5 INCHES OR MORE, OR MONTHLY, AS DETERMINED BY LOCAL WEATHER CONDITIONS.
3. CHECKING SEDIMENT DEPTH AND NOTING THE SURFACE POLLUTANTS IN THE STRUCTURE WILL BE HELPFUL IN PLANNING MAINTENANCE.

FOR ONGOING MAINTENANCE AFTER FIRST YEAR:
1. THE POLLUTANTS COLLECTED IN SNOUT EQUIPPED STRUCTURES WILL CONSIST OF FLOATABLE DEBRIS, TRASH AND OILS ON THE SURFACE OF THE CAPTURED WATER, AND GRIT AND SEDIMENT ON THE BOTTOM OF THE STRUCTURE.
2. IT IS BEST TO SCHEDULE MAINTENANCE BASED ON THE SOLIDS COLLECTED IN THE SUMP.
3. OPTIMALLY, THE STRUCTURE SHOULD BE CLEANED WHEN THE SUMP IS HALF FULL (E.G. WHEN 2 FEET OF MATERIAL COLLECTS IN A 4 FOOT SUMP, CLEAN IT OUT).
4. STRUCTURES SHOULD ALSO BE CLEANED IF A SPILL OR OTHER INCIDENT CAUSES A LARGER THAN NORMAL ACCUMULATION OF POLLUTANTS IN A STRUCTURE.
5. MAINTENANCE IS BEST DONE WITH A VACUUM TRUCK.
6. ALL COLLECTED WASTES MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS.
7. TO MAINTAIN THE SNOUT HOODS THEMSELVES, AN ANNUAL INSPECTION OF THE ANTI-SIPHON VENT AND ACCESS HATCH ARE RECOMMENDED. A SIMPLE FLUSHING OF THE VENT, OR A GENTLE RODDING WITH A FLEXIBLE WIRE ARE ALL THAT'S TYPICALLY NEEDED TO MAINTAIN THE ANTI-SIPHON PROPERTIES.

LANDSCAPING (BMP #3)

THE PROPERTY OWNER(S) SHALL CONDUCT BIANNUAL INSPECTION IN THE SPRING AND FALL OF EACH YEAR OF EXISTING ON-SITE LANDSCAPING AND PERFORM ROUTINE MAINTENANCE AS FOLLOWS:

1. LANDSCAPING RESTORATION PLANTED AS A PERENNIAL COVER CAN BE EXPECTED TO REQUIRE ANNUAL MOWING IN ORDER TO CONTROL INVASIVE SPECIES. APPLICATION OF AN HERBICIDE (ROUNDUP OR SIMILAR GLYPHOSATE HERBICIDE) AROUND THE PROTECTIVE TREE SHELTER / TUBES MAY BE NECESSARY, REINFORCE BY SELECTIVE CUTTING/MANUAL REMOVAL, IF NECESSARY. THIS INITIAL MAINTENANCE ROUTING IS NECESSARY FOR THE FIRST 2 TO 3 YEARS OF GROWTH AND MAY BE NECESSARY FOR UP TO 5 YEAR UNTIL TREE GROWTH AND TREE CANOPY BEGINS TO FORM, NATURALLY INHIBITING WEED GROWTH (ONCE SHADING IS ADEQUATE, GROWTH OF INVASIVE SPECIES AND OTHER WEEDS WILL BE NATURALLY PREVENTED.
2. PERENNIAL GROUND COVER SHALL BE PROPERLY MAINTAINED BY THE PROPERTY OWNER(S) TO ENSURE PROPER EFFECTIVENESS. IN PARTICULAR, IT IS CRITICAL THAT SHEET FLOW CONDITIONS AND INFILTRATION ARE SUSTAINED THROUGHOUT THE PROJECT LIFE. EFFECTIVENESS OF PERENNIAL GROUND COVER CAN DETERIORATE DUE TO LACK OF MAINTENANCE AND POOR VEGETATIVE COVER.
3. PERENNIAL GROUND COVER THAT RECEIVES OR TRAPS SEDIMENT AND DEBRIS SHOULD BE INSPECTED FOR CLOGGING, DENSITY OF VEGETATION, DAMAGE BY FOOT OR VEHICULAR TRAFFIC, EXCESSIVE ACCUMULATIONS, AND CHANNELIZATION. INSPECTION SHOULD BE MADE ON A QUARTERLY BASIS FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION, AND THEN ON A BIANNUAL BASIS THEREAFTER. INSPECTIONS SHOULD ALSO BE MADE AFTER EVERY STORM EVENT GREATER THAN 1-INCH DURING THE ESTABLISHMENT PERIOD.
4. SEDIMENT AND DEBRIS SHOULD BE ROUTINELY REMOVED (BUT NEVER LESS THAN BIANNUALLY) OR UPON OBSERVATION, WHEN BUILDUP EXCEEDS 2-INCHES IN DEPTH IN PERENNIAL GROUND COVER AREAS. RILLS AND GULLIES OBSERVED ALONG THE STRIP MAY BE FILLED WITH TOPSOIL, STABILIZED WITH EROSION CONTROL MATTING, AND EITHER SEEDED OR SODDED AS DESIRED. FOR CHANNELS LESS THAN 12-INCHES WIDE, FILLING WITH CRUSHED GRAVEL, WHICH ALLOWS GRASS TO CREEP IN OVER TIME, IS ACCEPTABLE. FOR WIDER CHANNELS, I.E. GREATER THAN 12-INCHES, REGRADING AND RESEEDING MAY BE NECESSARY.
5. SMALL BARE AREAS MAY ONLY REQUIRE OVER SEEDING. REGRADING MAY ALSO BE REQUIRED WHEN POOLS OF STANDING WATER ARE OBSERVED.
6. SEDIMENT SHOULD BE REMOVED WHEN PERENNIAL GROUNDCOVER AREAS ARE THOROUGHLY DRY. TRASH AND DEBRIS REMOVED FROM THE SITE SHOULD BE DEPOSITED ONLY AT THE SUITABLE DISPOSAL/RECYCLING SITES AND MUST COMPLY WITH APPLICABLE LOCATE, STATE AND FEDERAL WASTE REGULATIONS. IF PERENNIAL LAWN AREAS WILL PROVIDE SEDIMENT CONTROL, THEY SHOULD BE REGARDED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION HAS CONCLUDED.
7. MAINTAINING A VIGOROUS PERENNIAL GROUND COVER IS CRITICAL FOR MAXIMIZING POLLUTANT REMOVAL EFFICIENCY AND EROSION PREVENTION. GRASS COVER SHOULD BE MOWED, WITH LOW GROUND PRESSURE EQUIPMENT, AS NEEDED TO MAINTAIN A HEIGHT OF 4-6 INCHES. MOWING SHOULD BE DONE ONLY WHEN THE SOIL IS DRY, IN ORDER TO PREVENT TRACKING DAMAGE TO VEGETATION, SOIL COMPACTION AND FLOW CONCENTRATIONS. GRASSES SHOULD BE ALLOWED TO GROW AS HIGH AS POSSIBLE BUT MOWED FREQUENTLY ENOUGH TO AVOID TROUBLESOME INSECTS OR NOXIOUS WEEDS.
8. IF VEGETATIVE COVER IS NOT FULLY ESTABLISHED WITH THE DESIGNATED TIME, IT SHOULD BE REPLACED WITH AN ALTERNATIVE SPECIES. UNWANTED OR INVASIVE GROWTH SHOULD BE REMOVED ON AN ANNUAL BASIS. VEGETATIVE COVER SHOULD BE SUSTAINED AT 85% AND REESTABLISHED IF GREATER DAMAGE IS OBSERVED. IF PERENNIAL GROUNDCOVER EXHIBITS SIGNS OF POOR DRAINAGE AND/OR VEGETATIVE COVER, PERIODIC SOIL AERATION AND LIMING MAY BE NECESSARY.
9. GROUNDCOVER REVEGETATION PROCEDURES:

   A. REMOVE EXISTING DEAD OR DYING VEGETATION.
   B. SCARIFY THE SOIL SURFACE TO A DEPTH OF ONE-HALF INCH.
   C. APPLY SEED AND APPLY STRAW OR HAY TO HOLD IN PLACE.
   D. WATER AS NECESSARY.

10. DRIED LIMBS THAT SNAP WHEN TWISTED AND LACK OF LEAVES ARE AN INDICATION OF DEAD OR DYING VEGETATION. REFER TO AN ARBORIST PRIOR TO REPLACEMENT OF EXISTING TREES. IF NECESSARY, TO REMOVE AND REPLACE THE TREE, FOLLOW THE PROCEDURES BELOW:

   A. THE LIMIT OF DISTURBANCE WILL BE MARKED IN THE FIELD WITH 18" SILT FENCE OR 12" COMPOSED FILTER SOCK ALONG THE PERIMETER OF THE AREA OF DISTURBANCE.
   B. CUT EXISTING TREE(S) COMMENCING DEAD LIMBS STARTING WITH THE SMALL LIMBS AND BRANCHES AND TERMINATE WITH THE TRUNK.
   C. COMMENCE INSTALLATION OF REPLACEMENT TREE(S).

CATCH BASINS AND STORM SEWER CONVEYANCE SYSTEM

ALL CATCH BASINS AND ASSOCIATED CONVEYANCE SYSTEM SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR (4) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1 INCH. SEDIMENT LADEN WATER CREATED DURING INLET AND STORM SEWER CLEANING MUST BE CAPTURED BEFORE IT ENTERS THE UNDERGROUND DETENTION FACILITIES. SEDIMENT SHOULD BE DISPOSED OF PROPERLY. IF SIGNS OF FAILURE ARE NOTED, AN ENGINEER OR OTHER QUALIFIED PROFESSIONAL SHOULD BE CONTACTED TO INITIATE THE REPAIR PROCESS.

ROOF DRAINS

GUTTERS, GUTTER LEAF GUARDS AND DOWNSPOUT SHOULD BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST FOUR (4) TIMES PER YEAR, AS WELL AS AFTER EVERY STORM GREATER THAN 1 INCH. SEDIMENT SHOULD BE DISPOSED OF PROPERLY.

OTHER MAINTENANCE

- BLOW OFF ALL SIDEWALKS AND CORNERS USING POWER BLOWERS. (SERVICE TO BE PROVIDED ON DAYS WHEN LOT CANNOT BE SWEPT, I.E.: HEAVY RAINS, SNOW). FREQUENCY: WEEKLY.
- EMPTY ALL TRASH RECEPTACLES AND REPLACE LINERS. FREQUENCY: SEVEN (7) TIMES PER WEEK.
- HAND-PICK ENTIRE LOT FRONT, REAR, AND SIDES, INCLUDING ALL TRASH ENCLOSURES OF VISIBLE TRASH. INCLUDING CATCH BASINS. FREQUENCY: WEEKLY.
- HAND-PICK ALL LANDSCAPED AREAS. FREQUENCY: WEEKLY

SWALES

IN GENERAL, MAINTENANCE STRATEGIES FOR SWALES SHOULD FOCUS ON SUSTAINING THE HYDRAULIC AND POLLUTANT REMOVAL EFFICIENCY OF THE CHANNEL, AS WELL AS MAINTAINING A DENSE VEGETATIVE COVER.

THE PROPERTY OWNER(S) SHALL CONDUCT INSPECTION AND MAINTENANCE ACTIVITIES ANNUALLY AND WITHIN 48 HOURS FOLLOWING A MAJOR STORM EVENT (> 1-INCH RAINFALL DEPTH).

THE FOLLOWING SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES ARE RECOMMENDED:
- INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3-INCHES AT ANY SPOT OR COVERING VEGETATION).
- INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS AND GULLIES, CORRECT AS NEEDED.
- INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE.
- MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN SWALE IS DRY TO AVOID RUTTING.
- INSPECT FOR LITTER; REMOVE PRIOR TO MOWING.
- INSPECT FOR UNIFORMITY IN CROSS-SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
- INSPECT SWALE INLET (CURB CUTS, PIPES, ETC) AND OUTLETS FOR SIGNS FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED.

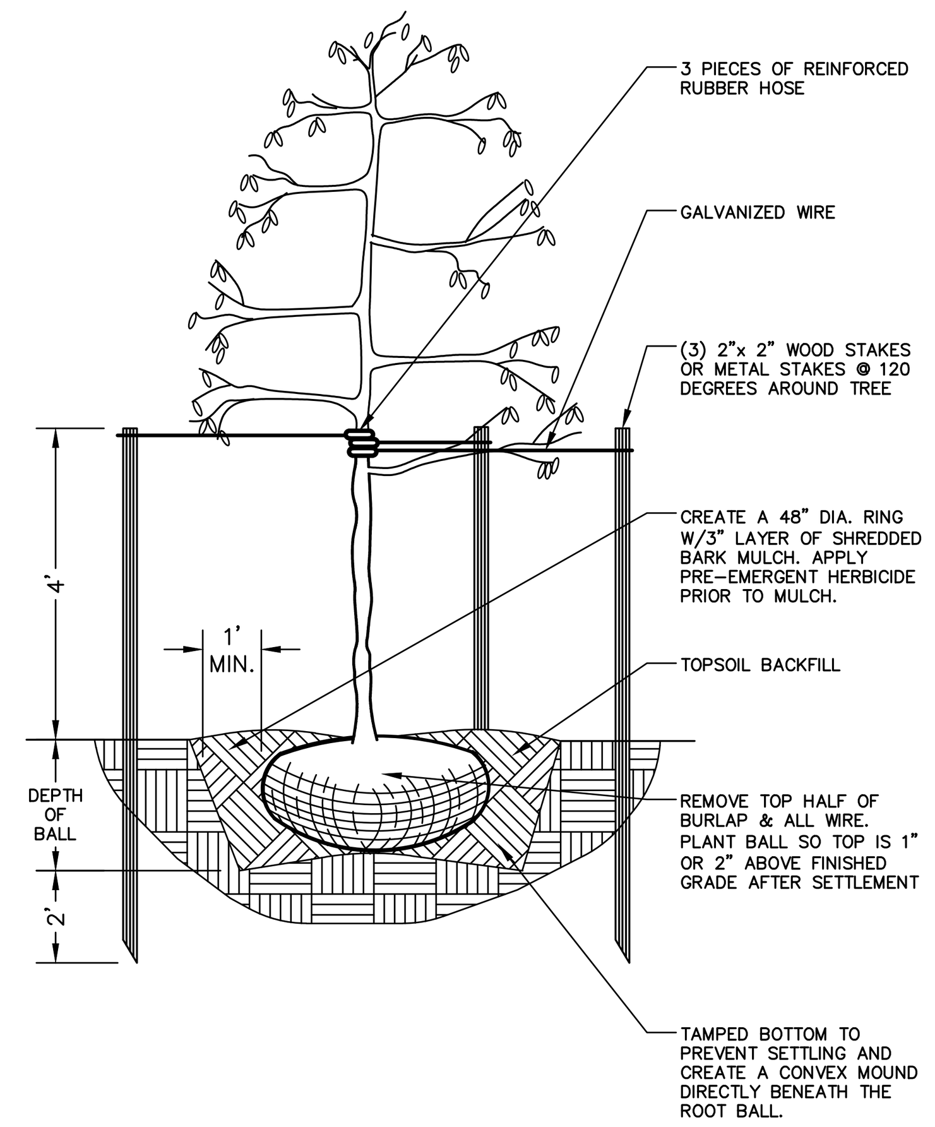
MAINTENANCE ACTIVITIES TO BE DONE AS NEEDED:
- PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT.
- RESEED BARE AREAS, INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING.
- ROTOTILL AND REPLANT SWALE IF DRAW DOWN TIME IS MORE THAN 48 HOURS.
- INSPECT AND CORRECT CHECK DAMS WHEN SIGNS OF ALTERED WATER FLOW (CHANNELIZATION, OBSTRUCTIONS, EROSION, ETC) ARE IDENTIFIED.
- WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDES ONLY WHEN ABSOLUTELY NECESSARY.

WINTER CONDITIONS ALSO NECESSITATE ADDITIONAL MAINTENANCE CONCERNS, WHICH INCLUDE THE FOLLOWING:
- INSPECT SWALE IMMEDIATELY AFTER THE SPRING MELT, REMOVE RESIDUAL (E.G. SAND) AND REPLACE DAMAGED VEGETATION WITHOUT DISTURBING REMAINING VEGETATION.
- IF ROADSIDE OR PARKING LOT RUNOFF IS DIRECTED TO THE SWALE, MULCHING AND OR SOIL AERATION MANIPULATION MAY BE REQUIRED IN THE SPRING TO RESTORE SOIL STRUCTURE AND MOISTURE CAPACITY AND TO REDUCE THE IMPACTS OF DEICING AGENTS.
- USE NONTOXIC, ORGANIC DEICING AGENTS, APPLIED EITHER AS BLENDED, MAGNESIUM CHLORIDE-BASED LIQUID PRODUCTS OR AS PRETREATED SALT.
- USE SALT-TOLERANT VEGETATION IN SWALES.

IF AT SOME FUTURE DATE, THE SWALES FAIL AS A RESULT OF EROSION OR INABILITY TO INFILTRATE STORMWATER, THE PROPERTY OWNER(S) IS RESPONSIBLE TO REPLACE / REPAIR EITHER THE INEFFECTIVE AREA OR THE ENTIRE SWALE BMP. THE FOLLOWING SEQUENCE SHALL BE USED FOR REPAIR / REPLACEMENT OF THE SWALE:
1. INSTALL TEMPORARY SEDIMENT CONTROL BMP'S INCLUDING CONSTRUCTION ENTRANCE(S) AND 18-INCH SILT FENCE. THE CONSTRUCTION ENTRANCE SHALL BE AT THE ACCESS POINT FROM A PUBLIC ROAD OR DRIVEWAY. SILT FENCE SHALL BE DOWN SLOPE OF DISTURBED AREAS.
2. REMOVE DEAD OR DYING VEGETATION, EXCAVATE THE SWALE TO THE PROPOSED DEPTH AND HAUL ALL WASTE MATERIAL TO AN APPROVED CONSTRUCTION WASTE MATERIAL SITE.
3. SCARIFY EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
4. BACKFILL THE SWALE AS SHOWN ON THE PLANS AND SPECIFICATIONS, OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE, IF NECESSARY.
5. REESTABLISH DESIGN ELEVATIONS WITH MISCELLANEOUS GRADING. LEAVE SPACE FOR UPPER LAYER OF TOPSOIL AS SPECIFIED ON THE PLANS.
6. APPLY GEOTEXTILE TO DISTURBED AREAS AND VEGETATE AS A TURF LAWN.
7. AFTER THE SWALE(S) STABILIZE (70% VEGETATION COVER), REMOVE TEMPORARY EROSION CONTROL BMP'S AND RE VEGETATE ANY REMAINING DISTURBED AREAS.

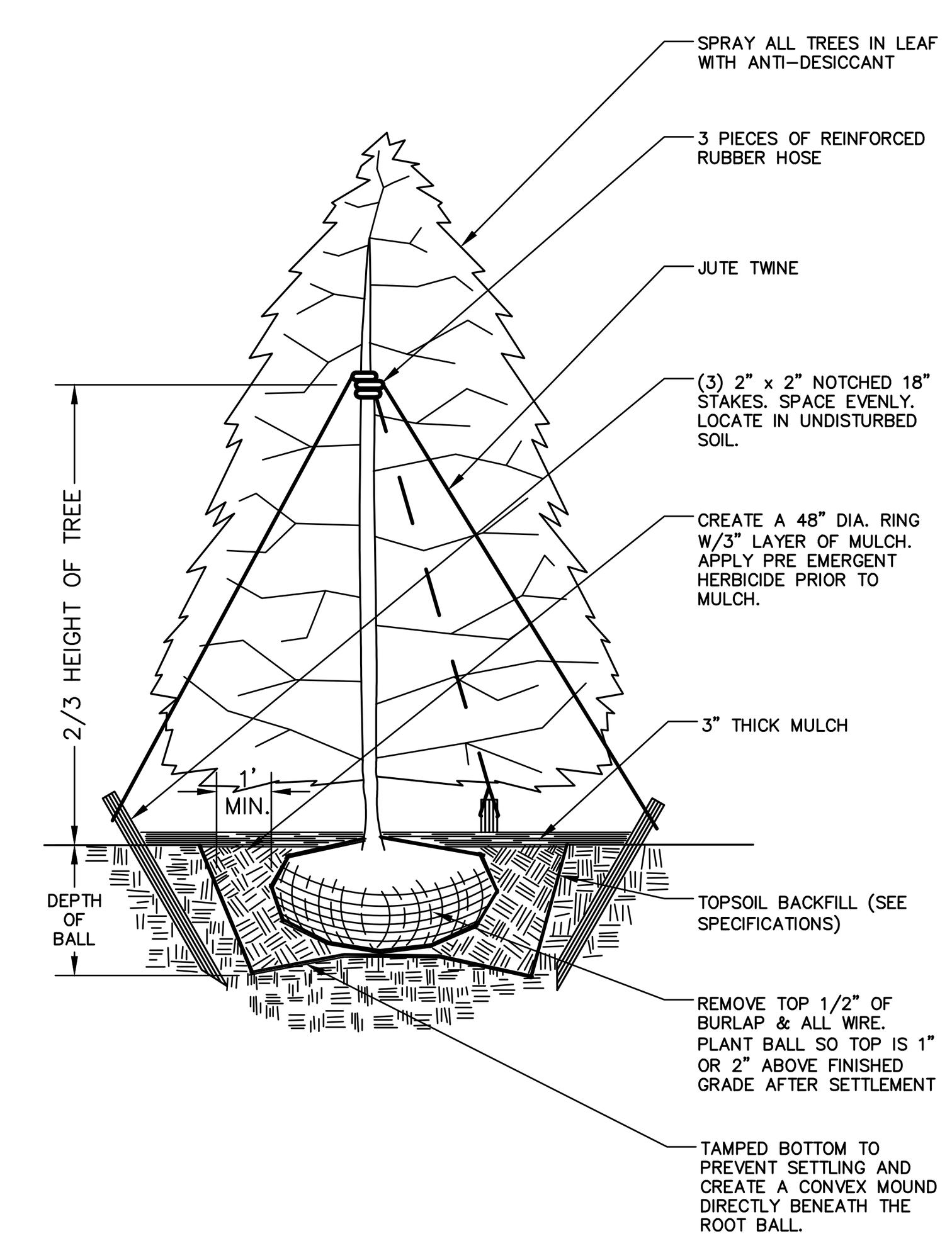
LANDSCAPING CHART

SYMBOL	ABBREV.	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE AT INSTALLATION	ROOT CONDITION
(114) STREET	*TA	TILIA AMERICANA	AMERICAN LINDEN	16	MIN. 3 1/2" CALIPER	B&B
	*CO	CELTIS OCCIDENTALIS	HACKBERRY	25	MIN. 3 1/2" CALIPER	B&B
	*AR	ACER RUBRUM	RED MAPLE	48	MIN. 3 1/2" CALIPER	B&B
	QI	QUERCUS IMBRICARIA	SHINGLE OAK	25	MIN. 3 1/2" CALIPER	B&B
(29) STORMWATER BMP	*AS	ACER SACCHARUM	SUGAR MAPLE	7	MIN. 3 1/2" CALIPER	B&B
	*QA	QUERCUS ALBA	WHITE OAK	11	MIN. 3 1/2" CALIPER	B&B
	*BN	BETULA NIGRA	RIVER BIRCH	11	MIN. 3 1/2" CALIPER	B&B
(31) BUFFER YARD AREA	CK	CORNUS KOUSA	JAPANESE DOGWOOD	15	MIN. 1 1/2" – 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
	*CC	CERCIS CANDENSIS	REDBUD	16	MIN. 1 1/2" – 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
(29) STORMWATER BMP	AC	AMELANCHIER CANADENSIS	SERVICEBERRY	9	MIN. 1 1/2" – 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
	*MV	MAGNOLIA VIRGINIA	SWEETBAY MAGNOLIA	20	MIN. 1 1/2" – 2" CALIPER & MIN. HEIGHT 8 FEET	B&B
(16) SANITARY PUMP STATION	PA	PICEA ABIES	NORWAY SPRUCE	16	MIN. HEIGHT 6 FEET	B&B
(18) BUFFER YARD AREA	AC	ABIES CONCOLOR	WHITE FIR	9	MIN. HEIGHT 6 FEET	B&B
	*IO	ILEX OPACA	AMERICAN HOLLY	9	MIN. HEIGHT 6 FEET	B&B
(335) SHURBS	*AA	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	61	MIN. HEIGHT 30 INCHES	CONTAINER
	*CA	CLETHRA ALNIFOLIA	SUMMERSWEET	75	MIN. HEIGHT 30 INCHES	CONTAINER
	IC	ILEX CRENATA	JAPANESE HOLLY	37	MIN. HEIGHT 30 INCHES	CONTAINER
	*IV	ILEX VERTICILATA	WINTERBERRY	65	MIN. HEIGHT 30 INCHES	CONTAINER
	*MP	MYRICA PENNSYLVANICA	BAYBERRY	41	MIN. HEIGHT 30 INCHES	CONTAINER
	SN	SPIREA NIPPONICA	SNOW MOUND SPIREA	48	MIN. HEIGHT 30 INCHES	CONTAINER
	*TC	TAXUS CANADENSIS	AMERICAN YEW	8	MIN. HEIGHT 30 INCHES	CONTAINER
* INDICATES NATIVE						



DECIDUOUS TREE PLANTING & STAKING DETAIL NTS

NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

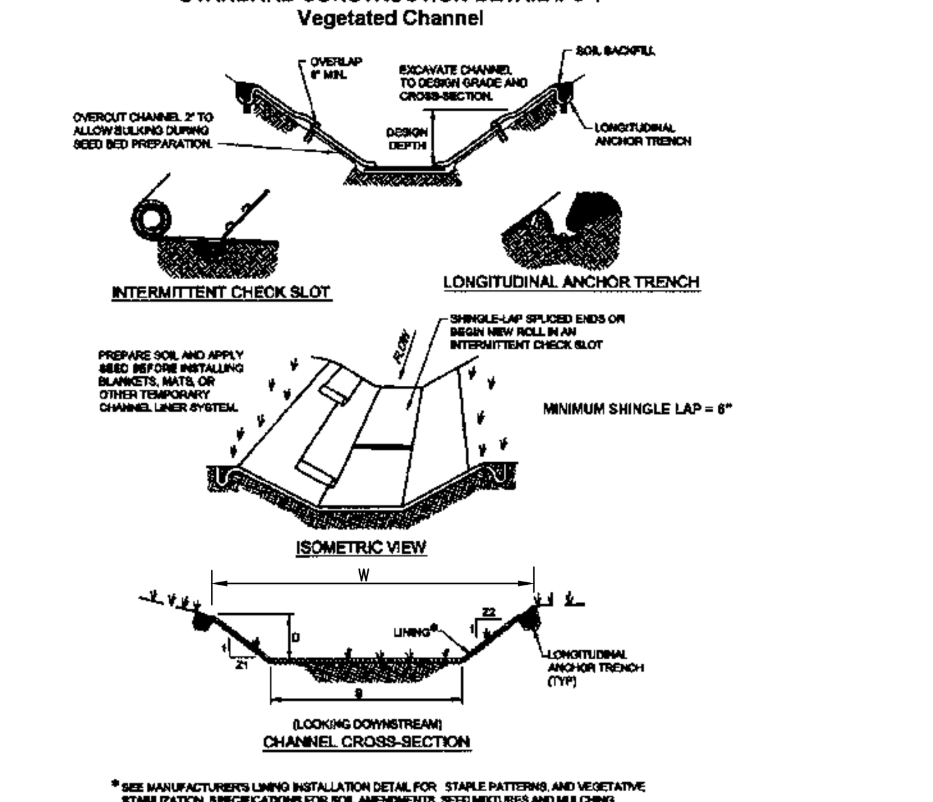


EVERGREEN TREE PLANTING & STAKING DETAIL NTS

NOTE:
1. FLOOD PLANTING PIT WITH WATER TWICE WITHIN 24 HOURS OF PLANTING.

LANDSCAPING – (BMP #3)

STANDARD CONSTRUCTION DETAIL # 6-1
Vegetated Channel



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, AND VEGETATIVE STABILIZATION SPECIFICATIONS FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION.

Adapted from Salix Applied Earthcare - Erosion Draw 5.0

CHANNEL	B (FT)	D (FT)	W (FT)	Z1 (FT)	Z2 (FT)	LINING
SWALE #1	2	1.0	14	8	4	NAG SC150BN*
SWALE #2	2	1.0	10	4	4	NAG SC150BN*
SWALE #3	2	1.0	14	6	6	NAG SC150BN*
SWALE #4	2	1.0	12	5	5	NAG SC150BN*

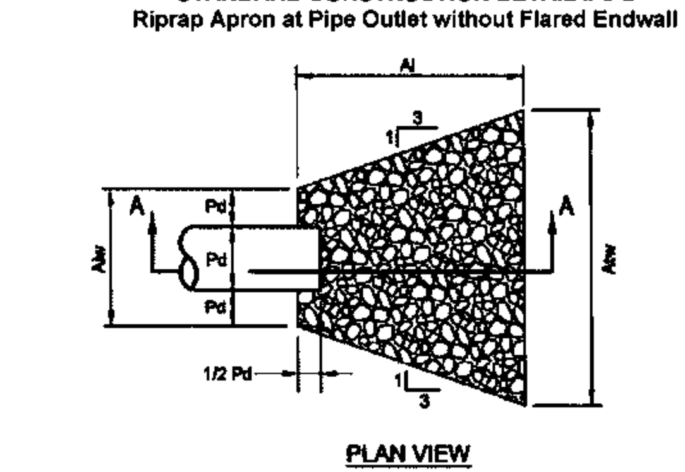
*NORTH AMERICAN GREEN SC150BN TURF REINFORCEMENT MAT

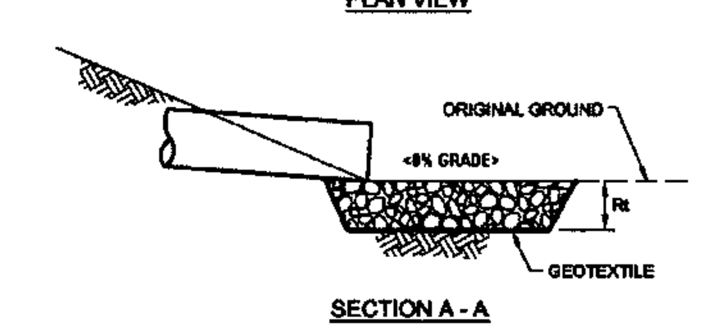
Anchor trenches shall be installed at beginning and end of channel in the same manner as longitudinal anchor trenches.

Channel dimensions shall be constantly maintained. Channel shall be cleaned whenever total channel depth is reduced by 25% at any location. Sediment deposits shall be removed within 24 hours of discovery or as soon as soil conditions permit access to channel without further damage. Damaged lining shall be repaired or replaced within 48 hours of discovery.
No more than one third of the shoot (grass leaf) shall be removed in any mowing. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Excess vegetation shall be removed from permanent channels to ensure sufficient channel capacity.

–INSPECT SWALE AFTER EACH RAINFALL EVENT–

STANDARD CONSTRUCTION DETAIL # 9-2
Riprap Apron at Pipe Outlet without Flared Endwall





Adapted from USDOT, FHA HEC-14

OUTLET No.	PIPE DIA. (Pd) (in)	TAILWATER CONDITION (Max or Min)	MAN. "n" FOR PIPE	PIPE SLOPE (FT/FT)	Q (cfs)	V* (fps)	RIPRAP SIZE (R-4 min)	Rt (in)	Al (ft)	Aiw (ft)	Atw (ft)
BMP#1	12	Max	0.012	0.018	2.40	1.97	R-3	9	5	3	5
BMP#2	30	Max	0.012	0.019	35.80	8.64	R-4	18	12	8	20
EW-18	24	Max	0.013	0.005	16.24	6.35	R-3	9	8	6	14
EW-23	18	Max	0.013	0.005	4.65	3.19	R-3	9	6	5	11
FES-33	15	Min	0.013	0.059	1.00	2.96	R-3	9	5	4	6
EW-51	24	Max	0.013	0.005	9.26	4.97	R-3	9	8	6	14
FES-63	15	Max	0.013	0.020	0.96	1.85	R-3	9	5	4	9

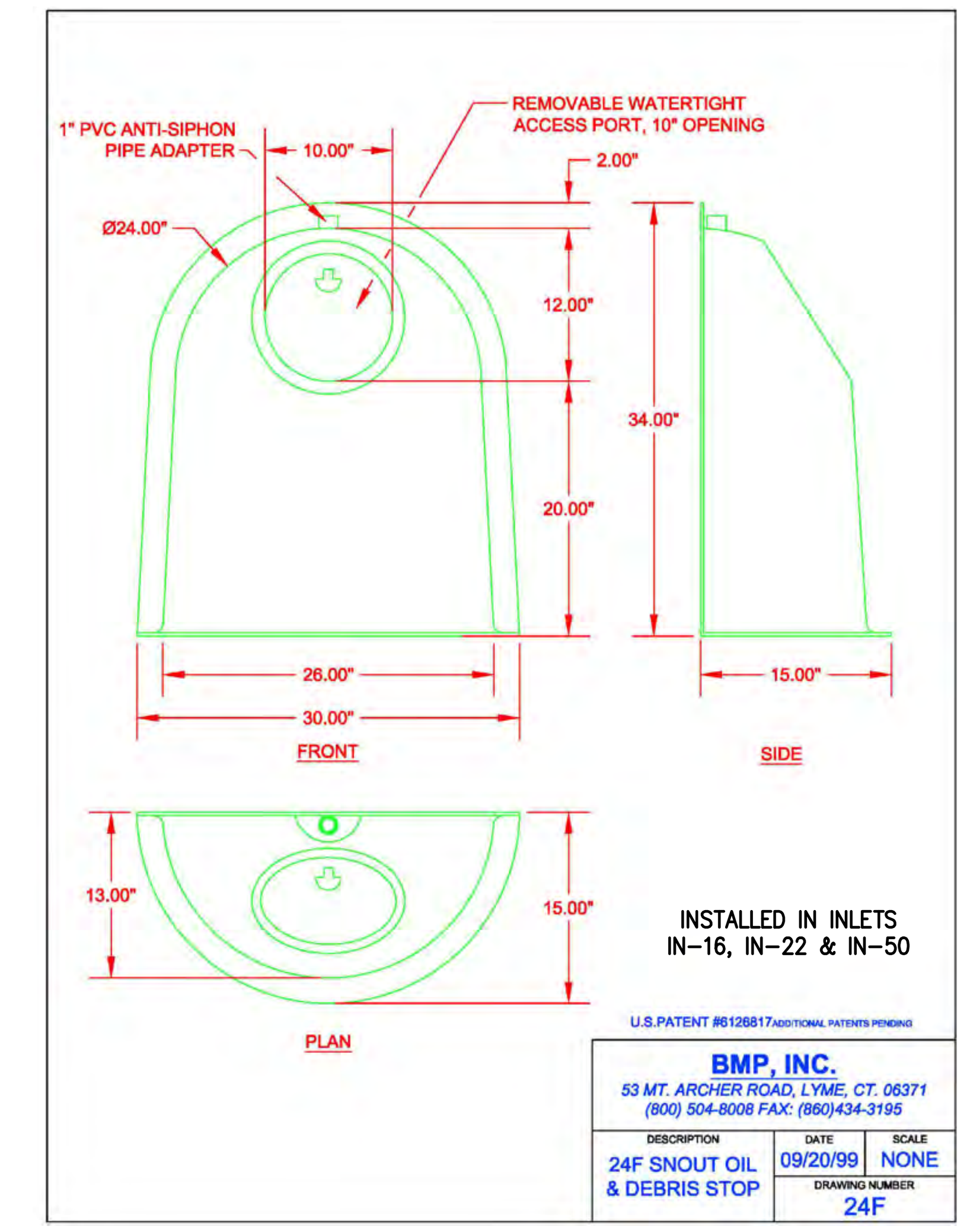
* : The anticipated velocity (V) should not exceed the maximum permissible shown in Table 6.6 for the proposed riprap protection. Adjust for less than full pipe flow. Use Manning's equation to calculate velocity for pipe slopes > or = 0.05 ft/ft.

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.

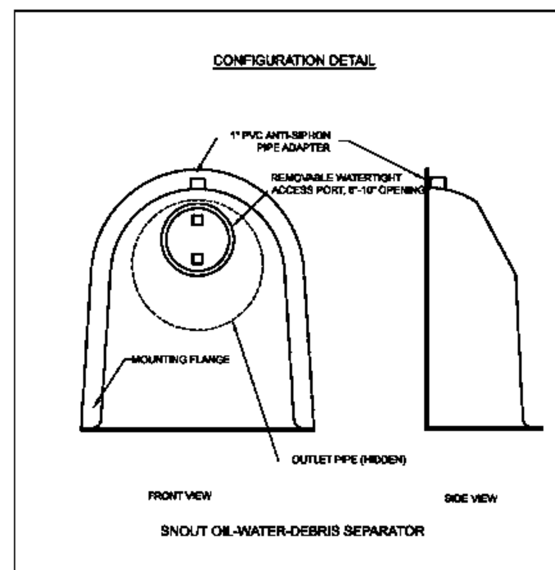
Extend riprap on back side of apron to at least ½ depth of pipe on both sides to prevent scour around the pipe.

*INSPECT ROCK RIP ON A BI-ANNUAL BASIS. REPLACE STONE & GEOTEXTILE IF 50% OR MORE STONE IS DISPLACED BY FLOOD WATER OR THE ROCK RIPRAP SETTLES DUE TO UNDERMINING.
*DISCHARGE POINT



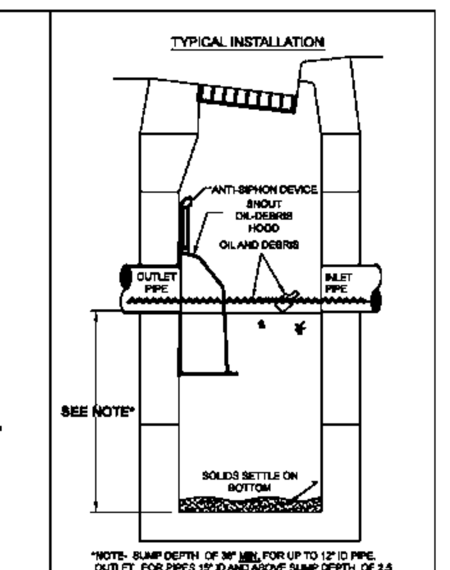
INSTALLED IN INLETS
IN-16, IN-22 & IN-50

CONFIGURATION DETAIL



SNOUT OIL-WATER-DEBRIS SEPARATOR

TYPICAL INSTALLATION

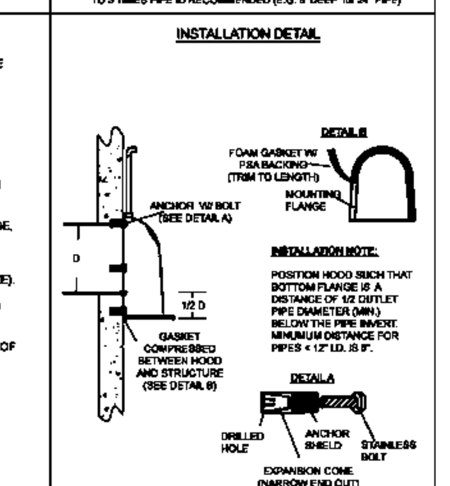


*NOTE- SUMP DEPTH OF 36" MIN. FOR UP TO 12" ID PIPE. OUTLET. FOR PIPES 15" ID AND ABOVE SUMP DEPTH OF 2.5 TO 3 TIMES PIPE ID RECOMMENDED (E.G. 8' DEEP for 24" PIPE)

NOTES:
1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:
BEST MANAGEMENT PRODUCTS, INC
9 MATHEWS DRIVE, UNIT A1-A2.
EAST HADDAM, CT 06423
TOLL FREE: (800) 504-8008 OR (888) 434-0277, FAX: (877) 434-3197
WEB SITE: www.bmpinc.com
OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
8. ALL STRUCTURE JOINTS SHALL BE WATERTIGHT.
9. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
10. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT
INSTALLATION KIT SHALL INCLUDE:
A. INSTALLATION INSTRUCTIONS
B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
D. 3/8" STAINLESS STEEL BOLTS
E. ANCHOR SHIELDS

US Patent # 6126817, 7951294, 7857966, 8512556
Canada Patent # 2285146, 2690156, 2690156 others pending

INSTALLATION DETAIL



HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

DESCRIPTION	DATE	SCALE
OIL- DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/18	NONE
	DRAWING NUMBER	SP-SN

INFILTRATION RATES SUMMARY

BASIN NAME	BOTTOM OF BASIN ELEVATION	TESTPIT #	TEST HOLE #	EXISTING GRADE ELEVATION AT TESTPIT	DEPTH OF INFILTRATION TESTING (FT.)	ELEVATION AT INFILTRATION TESTING DEPTH	DEPTH FROM BOTTOM OF BASIN TO LIMITING ZONE (FT)	ELEVATION AT LIMITING ZONE DEPTH	DEPTH TO LIMITING LAYER (FT.)	INFILTRATION RATE (IN/HR)	GEOMEAN INFILTRATION RATE (IN/HR)	DESIGNED INFILTRATION RATE (IN/HR) WITH FACTOR OF SAFETY
Infiltration Basin (BMP # 2)	456.00	TP-101	DR-101Ba	458.86	3.00	455.86	2.14	453.86	5.00	1.50	4.72	2.36
			DR-101Bb	458.86	3.00	455.86	2.14	453.86	5.00	6.38		
		TP-102	DR-102A	455.13	3.50	451.63	6.37	449.63	5.50	9.00		
			DR-102B	455.13	3.50	451.63	6.37	449.63	5.50	6.75		
		TP-103	DR-103A	457.33	2.00	455.33	2.67	453.33	4.00	6.75		
			DR-103B	457.33	2.00	455.33	2.67	453.33	4.00	6.75		
		TP-104	DR-104A	457.04	3.00	454.04	3.96	452.04	5.00	2.25		
			DR-104B	457.04	3.00	454.04	3.96	452.04	5.00	4.13		
Rain Garden (BMP-1)	457.75	TP-105	DR-105A	456.98	1.50	455.48	4.27	453.48	3.50	1.25	2.27	1.13
			DR-105B	456.98	1.50	455.48	4.27	453.48	3.50	1.25		
		TP-106	DR-106A	458.62	1.00	457.62	2.13	455.62	3.00	4.50		
			DR-106B	458.62	1.00	457.62	2.13	455.62	3.00	3.75		

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (4 OF 8)
PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

SCALE: 1"= 40'

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

BMP IMPLEMENTATION/INSTALLATION/CRITICAL STAGE OVERSIGHT AND AS-BUILT PLAN REQUIREMENTS §102.8(f)(7)

OVERSIGHT

THE APPLICANT/ PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BEST MANAGEMENT PRACTICES (BMPS). ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPS TO ENSURE PROPER LOCATION AND FUNCTION AT THE DISCRETION OF THE CONSERVATION DISTRICT/OR TOWNSHIP. A LICENSED PROFESSIONAL ENGINEER KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPS PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT. OVERSIGHT SHALL INCLUDE THE FOLLOW CRITICAL STAGES OF BMP IMPLEMENTATION.

CRITICAL STAGES

THE FOLLOWING ARE CRITICAL STAGES OF CONSTRUCTION

- INSTALLATION OF INFILTRATION BASIN
- INSTALLATION OF SWALES
- INSTALLATION OF RAINGARDEN
- INSTALLATION OF WATER QUALITY SNOUT
- INSTALLATION OF LANDSCAPE RESTORATION
- CONVERSION OF SEDIMENT BASIN TO INFILTRATION BASIN

AS-BUILT PLANS

REGARDLESS OF OWNERSHIP, THE APPLICANT/PERMITTEE SHALL SUBMIT TO THE TOWNSHIP AN ACTUAL AS-BUILT PLAN FOR THE STORMWATER MANAGEMENT FACILITIES REQUIRED PER THE APPROVED STORMWATER MANAGEMENT PLAN. THE AS-BUILT PLAN SHALL SHOW ALL FINAL DESIGN SPECIFICATIONS FOR ALL PERMANENT STORMWATER MANAGEMENT FACILITIES AND SHALL BE BASED ON AN ACTUAL FIELD SURVEY PERFORMED BY THE SURVEYOR OF RECORD. THE SURVEYOR SHALL CERTIFY AS TO THE ACCURACY OF THE AS-BUILT DATA. IN ADDITION TO THE SURVEYOR'S CERTIFICATION, THE AS- BUILT PLAN SHALL CONTAIN A STATEMENT SIGNED AND SEALED BY THE ENGINEER OF RECORD INDICATING THAT THE BMP'S WERE INSTALLED PER THE APPROVED STORMWATER MANAGEMENT DESIGN.

THE AS-BUILT PLAN FOR THE STORMWATER MANAGEMENT FACILITIES SHALL BE SUBMITTED TO THE TOWNSHIP WITHIN SIX MONTHS OF THE COMPLETION OF THE PROJECT (OR INDIVIDUAL PHASE OF THE PROJECT) FOR REVIEW AND FINAL INSPECTION BY THE MUNICIPAL ENGINEER.

AS-BUILT PLANS FOR THE STORMWATER BMPS SHALL BE SUBMITTED TO THE CONSERVATION DISTRICT WITHIN SIX MONTHS FOLLOWING THE COMPLETION OF THE PROJECT {OR INDIVIDUAL PHASE) TO ALLOW FOR NOTICE OF TERMINATION (NOT) PROCESSING.

GEOLOGY FORMATION NOTE §102.8(f)(12)

SITE IS UNDERLAIN BY THE STOCKTON FORMATION AND LOCKATONG FORMATION. THE STOCKTON IS UPPER TRIASSIC IN AGE WHICH IS APPROXIMATELY BETWEEN 237 TO 207 MILLION YEARS AGO AND IS LIGHT-GRAY TO BUFF, COARSE-GRAINED, ARKOSIC SANDSTONE; INCLUDES REDDISH-BROWN TO GRAYISH-PURPLE SANDSTONE, SILTSTONE, AND MUDSTONE. THE LOCKATONG IS DEFINED AS A LIGHT TO DARK GRAY, GREENISH-GRAY, AND BLACK VERY FINE GRAINED SANDSTONE, SILTY ARGILLITE, AND LAMINATED MUDSTONE. (SEE FIGURE 3 FOR PA GEOLOGICAL MAP)

THE WATER BEARING PROPERTIES OF THE SITE ARE UNKNOWN. NO ROCK OUTCROPPINGS ARE LOCATED ON THIS SITE AND THE POTENTIAL FOR KARST FEATURES (SINKHOLES) IS MINIMAL.

IF DURING CONSTRUCTION, IT IS DETERMINED THAT THE SITE IS UNDERLAIN BY CARBONATE GEOLOGY THE CONTRACTOR SHALL IMMEDIATELY TERMINATE CONSTRUCTION AND ADHERE TO THE FOLLOWING:

A. CONSULT WITH A HYDROGEOLOGIST, HYDROLOGIST AND REGULATORY AGENCIES AS TO POTENTIAL SURFACE OR GROUNDWATER CONTAMINATION.

B. IF NECESSARY, MODIFY PROPOSED BMPS ACCORDING TO THE SPECIALIST RECOMMENDATIONS AND APPROVAL BY REGULATORY AGENCIES.

C. REPAIR SINKHOLES IN ACCORDANCE WITH FIGURE 17.1, 17.2,17.3 AND 17.4 OF THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, DATED MARCH 2012.

D. IF TOXIC MATERIAL (PYRITE, FOR EXAMPLE) IS ENCOUNTERED, THE CONTRACTOR SHALL EXCAVATE THIS MATERIAL, APPLY GEOTEXTILE TO THE BASE OF EXCAVATION AND REPLACE WITH STABLE MATERIAL.

* DURING SITE GEOLOGY TESTING / INFILTRATION, CARBONATE SOIL CONDITIONS OR OTHER POTENTIALLY TOXIC CONDITIONS WERE NOT ENCOUNTERED.

BASIN CONVERSION SEQUENCE OF CONSTRUCTION

THE FOLLOWING SEQUENCE SHALL BE FOLLOWED FOR THE CONVERSION OF SEDIMENT BASIN INTO INFILTRATION BASIN:

1. ONCE THE DRAINAGE AREAS TO THE SEDIMENT BASIN HAS BEEN COMPLETELY STABILIZED (A MIN OF 70% STABILIZATION) AND THE CONSERVATION DISTRICT HAS GIVEN APPROVAL, THE SEDIMENT BASIN CAN BE CONVERTED TO THEIR PERMANENT STORMWATER CONFIGURATION.
2. TAKE CARE NOT TO COMPACT INFILTRATION SURFACE DURING CONSTRUCTION.
3. INFILTRATION AREA IN THE PERMANENT STORMWATER INFILTRATION BASIN SHOULD BE RE-PERCED TO ENSURE THAT AN ADEQUATE INFILTRATION RATE STILL EXISTS.
4. DEWATER BASINS IF NECESSARY. ALL PUMPED WATER MUST BE THROUGH A FILTRATION DEVICE, DESILT BASINS, STABILIZE ANY AREA DISTURBED DURING THE CONVERSION PROCESS.
5. EXCAVATE BOTTOM OF SEDIMENT BASIN TO THE ELEVATION FOR THE PROPOSED BASIN. TAKE CARE NOT TO COMPACT BOTTOM OF BASIN. ADD AMENDED SOIL TO DEPTH SHOWN ON PLANS TO IMPROVE INFILTRATION.
6. REMOVE TEMPORARY RISER/SKIMMER IF NECESSARY AND STABILIZE AREA. APPLY BASIN SEED MIX PER PCSM PLAN AND EROSION CONTROL BLANKET AS SPECIFIED ON E&S DRAWINGS.

INFILTRATION TESTING NOTE

URWILER & WALTER, INC. MAKES NO GUARANTEES, REPRESENTATIONS OR WARRANTY ON INFILTRATION CAPABILITY OF THE SOILS OTHER THAN IN THE IMMEDIATE AREAS THAT HAVE BEEN TESTED AT THE TIME OF TESTING. FURTHER, URWILER & WALTER, INC. CANNOT GUARANTEE THAT TESTED INFILTRATION RESULTS WILL NOT CHANGE (BETTER OR WORSE) DURING DIFFERENT SEASONS, TEMPERATURE AND SOIL MOISTURE CONDITIONS. SOIL INFILTRATION IS DIRECTLY AFFECTED BY LAND MANAGEMENT PRACTICES, COMPACTION, TEMPERATURE AND PROTECTIVE VEGETATIVE COVER. A MEASURED SOIL INFILTRATION TEST DOES NOT NECESSARILY INDICATE THE SOIL'S INFILTRATION CAPABILITY IN ANY AREAS OUTSIDE THE AREA TESTED. A SOIL'S INFILTRATION RATE IS HIGHLY DYNAMIC AND THEREFORE RECOMMENDED SAFETY FACTORS HAVE BEEN TAKEN INTO ACCOUNT PER PADEP PROTECTION GUIDELINES.

POTENTIAL THERMAL IMPACTS TO SURFACE WATERS §102.8.(f)(13)

THERMAL IMPACTS ARE MINIMIZED BY FILTERING THE SURFACE WATER THROUGH THE RAINGARDEN, INFILTRATION BASIN, AND LANDSCAPING. THIS EXTENDED DETENTION OF STORMWATER WILL PREVENT ANY DETRIMENTAL THERMAL IMPACTS FROM OCCURRING. THE THERMAL IMPACT POTENTIAL TO THE UNNAMED TRIBUTARY OF NORTH BRANCH NESHAMINY CREEK AND PINE RUN IS MINIMAL.

SOIL AMENDMENTS SPECIFICATIONS & CONSTRUCTION SEQUENCE
(TO BE USED WITHIN RAIN GARDEN AND INFILTRATION BASIN)

A. SOIL AMENDMENT WILL CONSIST OF TOPSOIL, CLAY AND SAND.
   i. TOPSOIL CONTENT: 25% SANDY LOAM SOIL WITH PH IN RANGE OF 5.8-7.1 AVOIDING EXTREMES; TOPSOIL SHOULD BE SCREENED TO BE FREE OF STONES LARGER THAN ½" IN ANY DIMENSION.
   ii. CLAY CONTENT: LESS THAN 5-10% OF TOTAL AMENDED MIX.
   iii. SAND CONTENT: 50% OF SPECIFIC POORLY GRADED (COARSE OR GRAVELLY) SAND MEETING ASTM D422 SPECIFICATIONS; PROVIDE CERTIFICATION PROVING GRADATION.

B. PROCEDURE:
   1) FIRST OPTION IS TO SPREAD 6-INCHES OF COMPOST OR OTHER SOIL AMENDMENT MEDIA OVER THE AREA DESIGNATED FOR SOIL RESTORATION AND TILL TO A DEPTH OF 8-INCHES FOR MINOR COMPACTION.
   2) SECOND OPTION IS TO USE PRE-MIXED AMENDED SOIL MEDIA, EVENLY SPREAD AMENDED SOIL MEDIA TO A DEPTH OF 6-INCHES OVER THE ENTIRE AREA DESIGNATED FOR SOIL RESTORATION.
   3) ROTOTILL, OR RIP THE SUBGRADE, REMOVE ROCKS, DISTRIBUTE THE COMPOST, SPREAD THE NUTRIENTS, ROTOTILL AGAIN.

C. USE A HAND TAMPER TO COMPACT AMENDED SOILS.
D. PLANT DISTURBED SURFACES IN ACCORDANCE WITH BMP OPERATION AND MAINTENANCE
E. SOIL AMENDMENT MEDIA USUALLY CONSISTS OF COMPOST BUT CAN INCLUDE MUSHROOM SOIL, MULCH, MANURES, SAND AND MANUFACTURED MICROBIAL SOLUTIONS.
F. SOIL RESTORATION SHOULD NOT BE USED ON SLOPES GREATER THAN 30%. IN THESE AREAS, DEEP-ROOTED VEGETATION CAN BE USED TO INCREASE STABILITY.
G. SOIL RESTORATION SHOULD NOT TAKE PLACE WITHIN THE DRIP LINE OF A TREE TO AVOID DAMAGING THE ROOT SYSTEM.
H. ON-SITE SOILS WITH AN ORGANIC CONTENT OF AT LEAST 5 PERCENT CAN BE PROPERLY STOCKPILED (TO MAINTAIN ORGANIC CONTENT) AND REUSED.
I. ONCE COMPLETE, ELIMINATE ENCROACHMENT BY VEHICLES AND CONSTRUCTION EQUIPMENT.

RECYCLING OR DISPOSAL OF MATERIALS §102.8(f)(11)

THE FOLLOWING IS A LIST THAT INCLUDES, BUT THAT IS NOT LIMITED TO, THE POTENTIAL CONSTRUCTION WASTES THAT MAY EXIST ON-SITE:
- CONCRETE CURB AND SIDEWALK
- ASPHALT
- E&S BMP – COMPOST FILTER SOCKS
- E&S BMP – EROSION CONTROL MATTING
- E&S BMP – FILTER BAG INLET PROTECTION
- E&S BMP – REGULATED FILL MATERIALS
- GENERAL TRASH

ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 Pa. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
BELOW IS A LIST OF METHODS FOR THE PROPER RECYCLING/DISPOSAL OF VARIOUS MATERIALS:

1. DUST CONTROL – CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE AT THE STABILIZED CONSTRUCTION ENTRANCE. THE PURPOSE IS TO TRAP DUST AND MUD THAT WOULD OTHERWISE BE CARRIED OFF-SITE BY CONSTRUCTION TRAFFIC. WATER TRUCKS WILL BE USED AS NEEDED DURING CONSTRUCTION TO REDUCE DUST GENERATED ON THE SITE. DUST CONTROL MUST BE PROVIDED BY THE CONTRACTOR TO A DEGREE THAT IS ACCEPTABLE TO THE LOCAL CONSERVATION DISTRICT. AFTER CONSTRUCTION, THE SITE WILL BE STABILIZED, WHICH WILL REDUCE THE POTENTIAL FOR DUST GENERATION.
2. SOLID WASTE DISPOSAL – NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORMWATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. THE CONTAINERS WILL BE EMPTIED AS NECESSARY BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE.
3. SANITARY FACILITIES – ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS. TEMPORARY SANITARY FACILITIES WILL BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THEY MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND WILL BE SERVICED BY A LICENSED COMMERCIAL OPERATOR.
4. WATER SOURCE – NON-STORMWATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER. WATER USED FOR CONSTRUCTION WHICH DISCHARGES FROM THE SITE MUST ORIGINATE FROM A PUBLIC WATER SUPPLY OR PRIVATE WELL APPROVED BY THE STATE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE.
5. CONCRETE WASTE FROM CONCRETE READY-MIX TRUCKS – DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN SPECIFICALLY DESIGNATED DIKED AREAS PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER AND STORMWATER THAT WILL BE DISCHARGED FROM THE SITE.

BMP FAILURE DEFINED (PROTOCOL 2 DEP BMP MANUAL)

PRIMARY CAUSES OF FAILURE INCLUDE SOIL COMPACTION WHICH LEADS TO POOR INFILTRATION RATES. LACK OF PROPER STABILIZATION PRIOR TO BMP INSTALLATION WHICH LEADS TO SEDIMENTATION, LACK OF PRETREATMENT LEADING TO SEDIMENTATION, AND LACK OF PROPER BMP MAINTENANCE.

INFILTRATION BASIN – FAILURE OF THE INFILTRATION BASIN OCCURS WHEN THE BASIN HOLDS SURFACE WATER FOR MORE THAN 72 HOURS AFTER A RAIN EVENT.

RAINGARDEN – FAILURE OF THE RAINGARDEN OCCURS WHEN THE BASIN HOLDS SURFACE WATER FOR MORE THAN 72 HOURS AFTER A RAIN EVENT.

WATER QUALITY SNOUT – EXCESSIVE PONDING IN THE INLET BOX COULD INDICATE THAT THERE MAY BE SEDIMENT/DEBRIS BUILDUP IN THE BOX.

LANDSCAPE RESTORATION – FAILURE INDICATORS INCLUDE PLANT MATERIALS THAT FAILS TO ESTABLISH OR DIES OFF OR EXCESSIVE QUANTITY OF INVASIVE SPECIES.

SWALE – FAILURE OF SWALE OCCURS WHEN THE BOTTOM OF SWALE BECOMES OVERLY COMPACTED AND/OR POOR VEGETATION GROWTH BECOMES EVIDENT IN THE BOTTOM OF SWALE.

BMP CONSTRUCTION SEQUENCE AND SPECIFICATION

CRITICAL STAGE – REQUIRES A LICENSED PROFESSIONAL OR DESIGNEE AT THE SITE FOR THIS STAGE.

RAINGARDEN (BMP #1) CONSTRUCTION SEQUENCE

1. INSTALL TEMPORARY SEDIMENT CONTROL BMPS AS SHOWN ON THE PLANS.
2. COMPLETE SITE GRADING. IF APPLICABLE, CONSTRUCT CURB CUTS OR OTHER INFLOW ENTRANCE BUT PROVIDE PROTECTION SO THAT DRAINAGE IS PROHIBITED FROM ENTERING CONSTRUCTION AREA.
3. STABILIZE GRADING WITHIN THE LIMIT OF DISTURBANCE EXCEPT WITHIN THE RAIN GARDEN AREA. RAIN GARDEN BED AREAS MAY BE USED AS TEMPORARY SEDIMENT TRAPS PROVIDED THAT THE PROPOSED FINISH ELEVATION OF THE BED IS 12 INCHES LOWER THAN THE BOTTOM ELEVATION OF THE SEDIMENT TRAP.
4. EXCAVATE RAIN GARDEN TO PROPOSED INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
5. BACKFILL RAIN GARDEN WITH AMENDED SOIL AS SHOWN ON PLANS AND SPECIFICATIONS. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.
6. PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
7. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH OR TOPSOIL AS SPECIFIED ON PLANS.
8. PLANT VEGETATION ACCORDING TO PLANTING PLAN.
9. MULCH AND INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY.

RAINGARDEN (BMP #1) SPECIFICATIONS

1. SITE PREPARATION
   a. EXISTING SUB-GRADE IN RAINGARDEN AREAS SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC.
   b. INITIAL EXCAVATION CAN BE PERFORMED DURING ROUGH SITE GRADING BUT SHALL NOT BE CARRIED TO WITHIN ONE FEET OF THE FINAL BOTTOM ELEVATION. FINAL EXCAVATION SHOULD NOT TAKE PLACE UNTIL ALL DISTURBED AREAS IN THE DRAINAGE AREA HAVE BEEN STABILIZED.
   c. WHERE EROSION OF SUB-GRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING IN THE GRADED BOTTOM, THIS MATERIAL SHALL BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE OR EQUIVALENT BY LIGHT TRACTOR.
   d. BRING SUB-GRADE OF RAINGARDEN AREA TO LINE, GRADE, AND ELEVATIONS INDICATED. FILL AND LIGHTLY REGRADE ANY AREAS DAMAGED BY EROSION, PONDING, OR TRAFFIC COMPACTION. ALL RAINGARDEN AREAS SHALL BE LEVEL GRADE ON THE BOTTOM.
   e. HALT EXCAVATION AND NOTIFY ENGINEER IMMEDIATELY IF EVIDENCE OF SINKHOLE ACTIVITY OR PINNACLES OF CARBONATE BEDROCK ARE ENCOUNTERED IN THE RAINGARDEN AREA.

2. RAINGARDEN INSTALLATION
   a. UPON COMPLETION OF SUB-GRADE WORK, THE ENGINEER SHALL BE NOTIFIED AND SHALL INSPECT AT HIS/HER DISCRETION BEFORE PROCEEDING WITH BIORETENTION INSTALLATION.
   b. FOR THE SUBSURFACE STORAGE INSTALLATION, AMENDED SOILS SHOULD BE PLACED ON THE BOTTOM TO THE SPECIFIED DEPTH.
   c. PLANTING SOIL SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUB-GRADE PREPARATION/BED INSTALLATION. ANY ACCUMULATION OF DEBRIS OR SEDIMENT THAT TAKES PLACE AFTER APPROVAL OF SUB-GRADE SHALL BE REMOVED PRIOR TO INSTALLATION OF PLANTING SOIL AT NO EXTRA COST TO THE OWNER.
   d. INSTALL PLANTING SOIL (EXCEEDING ALL CRITERIA) IN 18-INCH MAXIMUM LIFTS AND LIGHTLY COMPACT (TAMP WITH BACKHOE BUCKET OR BY HAND). KEEP EQUIPMENT MOVEMENT OVER PLANTING SOIL TO A MINIMUM – DO NOT OVER COMPACT. INSTALL PLANTING SOIL TO GRADES INDICATED ON THE DRAWINGS.
   e. PLANT TREES AND SHRUBS ACCORDING TO SUPPLIER'S RECOMMENDATIONS AND ONLY FROM MID-MARCH THROUGH THE END OF JUNE OR FROM MID-SEPTEMBER THROUGH MID- NOVEMBER.
   f. DO NOT APPLY MULCH SINCE GROUND COVER IS TO BE GRASS OR COVER WILL BE ESTABLISHED BY SEEDING.
   g. PROTECT RAIN GARDENS FROM SEDIMENT AT ALL TIMES DURING CONSTRUCTION. HAY BALES, DIVERSION BERMS AND/OR OTHER APPROPRIATE MEASURES SHALL BE USED AT THE TOE OF SLOPES THAT ARE ADJACENT TO RAIN GARDENS TO PREVENT SEDIMENT FROM WASHING INTO THESE AREAS DURING SITE DEVELOPMENT.
   h. WHEN THE SITE IS FULLY VEGETATED AND THE SOIL MANTLE STABILIZED THE PLAN DESIGNER SHALL BE NOTIFIED AND SHALL INSPECT THE RAIN GARDEN DRAINAGE AREA AT HIS/HER DISCRETION BEFORE THE AREA IS BROUGHT ONLINE AND SEDIMENT CONTROL DEVICES REMOVED.
   i. WATER VEGETATION AT THE END OF EACH DAY FOR TWO WEEKS AFTER PLANTING IS COMPLETED.

INFILTRATION BASIN (BMP #2) CONSTRUCTION SEQUENCE

1. PROTECT INFILTRATION BASIN AREA FROM COMPACTION PRIOR TO INSTALLATION.
2. IF POSSIBLE, INSTALL INFILTRATION BASIN DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT- LADEN WATER FROM ENTERING INLETS AND PIPES.
3. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4. EXCAVATE INFILTRATION BASIN BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES.
6. SEED AND STABILIZE TOPSOIL. (VEGETATE IF APPROPRIATE WITH NATIVE PLANTINGS.)
7. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

INFILTRATION BASIN (BMP #2) SPECIFICATIONS

1. SITE PREPARATION
   a. ALL EXCAVATION AREAS, EMBANKMENTS, AND WHERE STRUCTURES ARE TO BE INSTALLED SHALL BE CLEARED AND GRUBBED AS NECESSARY, BUT TREES AND EXISTING VEGETATION SHOULD BE RETAINED AND INCORPORATED WITHIN THE INFILTRATION BASIN AREA WHERE POSSIBLE.
   b. WHERE FEASIBLE, TREES AND OTHER NATIVE VEGETATION SHOULD BE PROTECTED. A MINIMUM 10- FOOT RADIUS AROUND THE INLET AND OUTLET STRUCTURES CAN BE CLEARED TO ALLOW CONSTRUCTION.
   c. ANY CLEARED MATERIAL SHOULD BE USED AS MULCH FOR EROSION CONTROL OR SOIL STABILIZATION.
   d. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BOTTOM OF THE RESERVOIR. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE PROPOSED INFILTRATION BASIN TO MINIMIZE COMPACTION OF THE SOIL. THE BOTTOM OF THE INFILTRATION BASIN SHALL BE UNDISTURBED OR SCARIFIED TO A DEPTH OF 6 INCHES. IF COMPACTION SHOULD OCCUR, SOILS SHOULD BE RESTORED AND AMENDED AS SPECIFIED IN ENGINEERED MEDIA SPECIFICATIONS.
   e. EXCAVATE INFILTRATION BASIN TO WITHIN TWO FEET OF FINAL ELEVATION OF THE BASIN FLOOR. FINAL EXCAVATION TO FINISHED GRADE SHALL BE DEFERRED UNTIL ALL UPSLOPE DISTURBED AREAS HAVE BEEN STABILIZED. THE BASIN BOTTOM AND SIDE EMBANKMENTS SHALL BE ROUGHENED WERE SHEARED AND SEALED BY HEAVY EQUIPMENT.

2. EARTH FILL MATERIAL & PLACEMENT
   a. THE FILL MATERIAL SHOULD BE TAKEN FROM APPROVED DESIGNATED EXCAVATION AREAS. IT SHOULD BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6 INCHES, OR OTHER OBJECTIONABLE MATERIALS. MATERIALS ON THE OUTER SURFACE OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION.
   b. AREAS WHERE FILL IS TO BE PLACED SHOULD BE SCARIFIED PRIOR TO PLACEMENT. FILL MATERIALS FOR THE EMBANKMENT SHOULD BE PLACED IN MAXIMUM 8-INCH LIFTS. THE PRINCIPAL SPILLWAY SHOULD BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.
   c. THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE SITE SHOULD BE CONTROLLED. FOR THE EMBANKMENT, EACH LIFT SHOULD BE COMPACTED TO 95% OF THE STANDARD PROCTOR. FILL MATERIAL SHOULD CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED IN TO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

3. EMBANKMENT CORE
   a. THE CORE SHOULD BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHOULD BE AT LEAST FOUR FEET. THE HEIGHT SHOULD EXTEND UP TO AT LEAST THE 10-YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHOULD BE 1 TO 1 OR FLATTER. THE CORE SHOULD BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. THE CORE SHOULD BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

4. STRUCTURE BACKFILL
   a. BACKFILL ADJACENT TO PIPES AND STRUCTURES SHOULD BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHOULD BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHOULD FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHOULD DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET TO ANY PART OF THE STRUCTURE. EQUIPMENT SHOULD NOT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE.
   b. STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF THE PADOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. MATERIAL SHOULD BE PLACED SO THAT A MINIMUM OF 6 INCHES OF FLOWABLE FILL SHOULD BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL MATERIAL SHOULD BE 7 INCHES TO ASSURE FLOWABILITY OF THE MIXTURE. ADEQUATE MEASURES SHOULD BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL ALL METAL PIPE SHOULD BE BITUMINOUS COATED. ADJOINING SOIL FILL SHOULD BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 4 INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT.
   c. REFER TO CHAPTER 220 OF PENNDOT PUB. 408 (2000).

5. ROCK RIPRAP
   a. ROCK RIPRAP SHOULD MEET THE REQUIREMENTS OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS

6. STABILIZATION
   a. ALL BORROW AREAS SHOULD BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHOULD BE STABILIZED BY SEEDING, PLANTING AND MULCHING.
   b. FOLLOWING COMPLETION OF THE FINAL GRADING, THE BOTTOM OF THE BASIN SHALL BE TILLED WITH A ROTARY TILLER OR DISC HARROW AND THEN SMOOTHED OUT WITH A LEVELING DRAG OR EQUIVALENT GRADING EQUIPMENT.

7. PLANTING
   a. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF IN SITU SOILS IN THE BOTTOM OF THE INFILTRATION BASIN IN ORDER TO PROMOTE HEALTHY PLANT GROWTH AND TO ENCOURAGE INFILTRATION.
   b. INFILTRATION BASINS CAN BE PLANTED WITH NATURAL GRASSES, MEADOW MIX, OR OTHER "WOODY" MIXES, SUCH AS TREES OR SHRUBS. THESE PLANTS HAVE LONGER ROOTS THAN TRADITIONAL GRASS AND INCREASE SOIL PERMEABILITY. NATIVE PLANTS SHOULD BE USED WHEREVER POSSIBLE.

LANDSCAPE RESTORATION (BMP #3) CONSTRUCTION SEQUENCE

1. THE FOLLOWING CONSTRUCTION SEQUENCE HAS BEEN PROVIDED TO ADDRESS POST CONSTRUCTION STORMWATER MANAGEMENT REQUIREMENTS ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM FOLLOWING THE SPECIFICATIONS ON THE APPROVED LANDSCAPE PLANS.
2. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.
3. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.
4. IN SO FAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.
5. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.
6. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.
7. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
8. PLANTING PITS SHALL BE DUG WITH LEVEL OR CONVEX BOTTOMS, WITH THE WIDTH THREE TIMES THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS.
9. FILL SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.
10. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL
11. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED ON THE LANDSCAPE PLANS AND FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.
12. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

LANDSCAPE RESTORATION (BMP #4) SPECIFICATIONS

1. SCOPE OF WORK:

THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS

A. GENERAL – ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.
B. TOPSOIL – NATURAL, FRIABLE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 5.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.
C. LAWN – LAWN AREAS SHALL BE SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED WITHIN THE SOIL EROSION AND SEDIMENT CONTROL NOTES. FOR SOIL BED PREPARATIONS, REFER TO ITEM 8 BELOW.
   I. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.
   II. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.
D. MULCH – ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF HARDWOOD BARK MULCH, AT A MINIMUM, UNLESS A GREATER AMOUNT IS OTHERWISE STATED ON THE LANDSCAPE PLAN.
E. FERTILIZER
   I. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.
   II. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.
F. PLANT MATERIAL
   I. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY AMERICAN HORT (FORMERLY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION).
   II. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.
   III. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.
   IV. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1¼", WHICH HAVE NOT BEEN COMPLETELY CALLUSED, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.
   V. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.
   VI. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.
   VII. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.
   VIII. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES

A. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.
B. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS

A. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.
B. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.
C. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION

A. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR 15 FEET FROM THE TRUNK OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.
B. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY 'VISI-FENCE', OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.
C. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.
D. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS

A. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.
B. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.
C. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.
   I. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.
   II. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.
   III. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING

A. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.
B. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1"±).
C. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.
D. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING

A. CONTRACTOR SHALL PROVIDE A SIX INCH (6") THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AND LAWN AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.
B. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAYBE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.
C. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.
D. ALL LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA – FOR BID PURPOSES ONLY [SEE SPECIFICATION 6.A.]):
   I. 20 POUNDS 'GRO-POWER' OR APPROVED EQUAL SOIL CONDITIONER/FERTILIZER
   II. 20 POUNDS 'NITRO-FORM' (COURSE) 38-0-0 BLUE CHIP OR APPROVED NITROGEN FERTILIZER
E. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

9. PLANTING

A. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.
B. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.
C. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.
D. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.
E. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
F. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:
   I. PLANTS: MARCH 15 TO DECEMBER 15
   II. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1
   PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.
G. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:

ACER RUBRUM	PLATANUS X ACERIFOLIA
BETULA VARIETIES	POPULUS VARIETIES
CARPINUS VARIETIES	PRUNUS VARIETIES
CRATAEGUS VARIETIES	PYRUS VARIETIES
KOELREUTERIA	QUERCUS VARIETIES
LIQUIDAMBAR STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA VARIETIES

H. PLANTING PITS SHALL BE DUG WITH LEVEL OR CONVEX BOTTOMS, WITH THE WIDTH THREE TIMES THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:
   I. 1 PART PEAT MOSS
   II. 1 PART COMPOSTED COW MANURE BY VOLUME
   III. 3 PARTS TOPSOIL BY VOLUME
   IV. 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
      A) 2 TABLETS PER 1 GALLON PLANT
      B) 3 TABLETS PER 5 GALLON PLANT
      C) 4 TABLETS PER 15 GALLON PLANT
      D) LARGER PLANTS: 2 TABLETS PER ½" CALIPER OF TRUNK
I. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.
J. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.
K. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE. NO PRUNING SHALL BE CONDUCTED WITHIN THE FIRST YEAR OF PLANTING.
L. GROUND COVER AREAS SHALL RECEIVE A ¼" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.
M. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.
N. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.
O. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

10. TRANSPLANTING (WHEN REQUIRED)

A. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT. (SEE SPECIFICATION 2.F. ABOVE)
B. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.
C. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.
D. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.
E. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.
F. IF TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING

A. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.
B. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.
C. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE

A. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF EIGHTEEN (18) MONTH FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.
B. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.
C. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND UNTIL TURNOVER TO THE OWNER/OPERATOR. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.
D. LAWNS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND UNTIL TURNOVER TO THE OWNER/OPERATOR THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP

A. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.
B. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

SWALES

IN GENERAL, MAINTENANCE STRATEGIES FOR SWALES SHOULD FOCUS ON SUSTAINING THE HYDRAULIC AND POLLUTANT REMOVAL EFFICIENCY OF THE CHANNEL, AS WELL AS MAINTAINING A DENSE VEGETATIVE COVER.

THE PROPERTY OWNER(S) SHALL CONDUCT INSPECTION AND MAINTENANCE ACTIVITIES ANNUALLY AND WITHIN 48 HOURS FOLLOWING A MAJOR STORM EVENT (> 1-INCH RAINFALL DEPTH).

THE FOLLOWING SCHEDULE OF INSPECTION AND MAINTENANCE ACTIVITIES ARE RECOMMENDED:

- INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3-INCHES AT ANY SPOT OR COVERING VEGETATION).
- INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS AND GULLIES, CORRECT AS NEEDED.
- INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE.
- MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN SWALE IS DRY TO AVOID RUTTING.
- INSPECT FOR LITTER; REMOVE PRIOR TO MOWING.
- INSPECT FOR UNIFORMITY IN CROSS-SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
- INSPECT SWALE INLET (CURB CUTS, PIPES, ETC) AND OUTLETS FOR SIGNS FOR SIGNS OF EROSION OR BLOCKAGE, CORRECT AS NEEDED.

MAINTENANCE ACTIVITIES TO BE DONE AS NEEDED:

- PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT.
- RESEED BARE AREAS, INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING.
- ROTOTILL AND REPLANT SWALE IF DRAW DOWN TIME IS MORE THAN 48 HOURS.
- INSPECT AND CORRECT CHECK DAMS WHEN SIGNS OF ALTERED WATER FLOW (CHANNELIZATION, OBSTRUCTIONS, EROSION, ETC) ARE IDENTIFIED.
- WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDES ONLY WHEN ABSOLUTELY NECESSARY.

WINTER CONDITIONS ALSO NECESSITATE ADDITIONAL MAINTENANCE CONCERNS, WHICH INCLUDE THE FOLLOWING:

- INSPECT SWALE IMMEDIATELY AFTER THE SPRING MELT, REMOVE RESIDUAL (E.G. SAND) AND REPLACE DAMAGED VEGETATION WITHOUT DISTURBING REMAINING VEGETATION.
- IF ROADSIDE OR PARKING LOT RUNOFF IS DIRECTED TO THE SWALE, MULCHING AND OR SOIL AERATION MANIPULATION MAY BE REQUIRED IN THE SPRING TO RESTORE SOIL STRUCTURE AND MOISTURE CAPACITY AND TO REDUCE THE IMPACTS OF DEICING AGENTS.
- USE NONTOXIC, ORGANIC DEICING AGENTS, APPLIED EITHER AS BLENDED, MAGNESIUM CHLORIDE-BASED LIQUID PRODUCTS OR AS PRETREATED SALT.
- USE SALT-TOLERANT VEGETATION IN SWALES.

IF AT SOME FUTURE DATE, THE SWALES FAIL AS A RESULT OF EROSION OR INABILITY TO INFILTRATE STORMWATER, THE PROPERTY OWNER(S) IS RESPONSIBLE TO REPLACE / REPAIR EITHER THE INEFFECTIVE AREA OR THE ENTIRE SWALE BMP. THE FOLLOWING SEQUENCE SHALL BE USED FOR REPAIR / REPLACEMENT OF THE SWALE:

1. INSTALL TEMPORARY SEDIMENT CONTROL BMP'S INCLUDING CONSTRUCTION ENTRANCE(S) AND 18-INCH SILT FENCE. THE CONSTRUCTION ENTRANCE SHALL BE AT THE ACCESS POINT FROM A PUBLIC ROAD OR DRIVEWAY. SILT FENCE SHALL BE DOWN SLOPE OF DISTURBED AREAS.
2. REMOVE DEAD OR DYING VEGETATION, EXCAVATE THE SWALE TO THE PROPOSED DEPTH AND HAUL ALL WASTE MATERIAL TO AN APPROVED CONSTRUCTION WASTE MATERIAL SITE.
3. SCARIFY EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
4. BACKFILL THE SWALE AS SHOWN ON THE PLANS AND SPECIFICATIONS, OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE, IF NECESSARY.
5. REESTABLISH DESIGN ELEVATIONS WITH MISCELLANEOUS GRADING. LEAVE SPACE FOR UPPER LAYER OF TOPSOIL AS SPECIFIED ON THE PLANS.
6. APPLY GEOTEXTILE TO DISTURBED AREAS AND VEGETATE AS A TURF LAWN.
7. AFTER THE SWALE(S) STABILIZE (70% VEGETATION COVER), REMOVE TEMPORARY EROSION CONTROL BMP'S AND RE VEGETATE ANY REMAINING DISTURBED AREAS.

RAIN GARDEN GRASS MIX (ERNMX-180-1)

MIX COMPOSITION
45.0% SCHIZACHYRIUM SCOPARIUM, 'CAMPER' (LITTLE BLUESTEM, 'CAMPER')
20.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)
8.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)
7.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE)
4.5% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)
1.0% JUNCUS EFFUSUS (SOFT RUSH)
0.5% CAREX SCOPARIA, PA ECOTYPE (BLUNT BROOM SEDGE, PA ECOTYPE)

HEIGHT: 0.3 – 5.0 FT
SEEDING RATE: 15 LB PER ACRE WITH A COVER CROP OF GRAIN RYE AT 30 LB PER ACRE

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS	
DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (5 OF 8)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 19 OF 49

URWILER & WALTER, INC.
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TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

RECOMMENDED SEEDING MIXTURES

1. TEMPORARY SEEDING:
   ANNUAL RYE GRASS (40 LBS/ACRE)

2. PERMANENT SEEDING:
   SEED MIXTURE:
   TALL FESCUE (PLS – 60 LBS/ACRE)
   OR
   FINE FESCUE (PLS – 35 LBS/ACRE)
   OR
   KENTUCKY BLUEGRASS (PLS – 25 LBS/ACRE)
   AND REDTOP (PLS – 3 LBS/ACRE)
   OR
   PERENNIAL RYE GRASS (PLS – 15 LBS/ACRE)

   (PLS – PURE LIVE SEED)

   SEEDING DATES:
   FEBRUARY 15 TO MAY 1 AND AUGUST 15 TO OCTOBER 15

3. SEEDING NOTES:
   A. THE LIMESTONE, FERTILIZER AND MULCHING INFORMATION APPLIES TO BOTH TEMPORARY AND PERMANENT SEEDING.
   B. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED SHALL BE MULCHED IMMEDIATELY. DURING NON–GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE SEEDED AND MULCHED WITH A PERMANENT SEED MIXTURE AND MULCH.
   C. SWALES, DETENTION BASINS, SEDIMENT TRAPS, STOCKPILES AND OTHER STRUCTURAL EROSION CONTROL DEVICES MUST BE SEEDED AND MULCHED IMMEDIATELY.
   D. ONCE SEED HAS BEEN SET, VEHICULAR TRAFFIC OR OTHER SOURCES OF COMPACTION SHOULD BE AVOIDED.
   E. NEW SEED SHOULD BE IRRIGATED ADEQUATELY WHEN VEGETATION IS 70% ESTABLISHED.

TEMPORARY STABILIZATION WITH SEED

1. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN TWELVE (12) MONTHS MUST BE SEEDED AND MULCHED IMMEDIATELY WITH A TEMPORARY COVER.
2. ALL AREAS TO BE PERMANENTLY SEEDED SHALL ALSO RECEIVE TEMPORARY SEEDING CONCURRENTLY.
3. SEEDBED PREPARATION FOR TEMPORARY SEEDING
   a) PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO SLOPE.
   b) APPLY AGRICULTURAL LIME AT A RATE OF 1 TONE PER ACRE
   c) APPLY 10–10–10 FERTILIZER A RATE OF 500 POUNDS PER ACRE
   d) WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR (4) INCHES.

TOPSOIL APPLICATION

1. TOPSOIL SHALL CONSIST OF FRIABLE SURFACE SOIL REASONABLY FREE OF GRASS, ROOTS, WEEDS, STICKS, STONES, OR OTHER FOREIGN MATERIALS. THE TOPSOIL SHALL CONSIST OF SANDY LOAM, WITH SOIL PARTICLES WITHIN THE FOLLOWING PERCENTAGES: CLAY; 0–25; SILT; 25–50; SAND; 50–70; DECOMPOSED ORGANIC MATTER; 5–10. THE SOIL SHALL HAVE A SOIL ACIDITY RANGE BETWEEN A PH 5.0 TO PH 7.0. THE SOIL SALINITY SHALL NOT EXCEED 3 MILLIMHOS PER CENTIMETER (AS DESCRIBED BY USDA CIRCULAR NO. 982).
2. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.
3. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM – 2 INCHES ON FILL OUTSLOPES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
4. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

TABLE 11.1
Cubic Yards of Topsoil Required for Application to Various Depths

Depth (in)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

Adapted from VA DSWC

PERMANENT STABILIZATION WITH SEED

1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.
2. IMMEDIATELY PRIOR TO TOPSOIL DISTRIBUTION, THE SURFACE SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3–5 INCHES TO PROVIDE A GOOD BOND WITH THE TOPSOIL.
3. SEEDBED PREPARATION FOR PERMANENT SEEDING
   a) A SOIL TEST SHALL BE CONDUCTED TO ACCURATELY DETERMINE NECESSARY SOIL AMENDMENTS.
   b) PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO SLOPE.
   c) SOIL MODIFICATIONS:
      I. APPLY 10–10–20 RATED FERTILIZER AT A RATE OF 1000 POUNDS PER ACRE OR 25 POUNDS PER 1000 SQUARE FEET, OR AS DIRECTED BY SOIL TEST.
      II. APPLY AGRICULTURAL LIME AT A RATE OF 6 TONS PER ACRE OR 240 POUNDS PER 1000 SQUARE FEET, OR AS DIRECTED BY SOIL TEST.
   d) WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED.
   e) REMOVE FROM THE SURFACE ALL STONES ONE INCH (1") OR LARGER IN ANY DIMENSION, REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.
   f) INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RE–TILLED AND FIRMED AS ABOVE.
4. ALL NEWLY SEEDED AREAS SHALL BE STABILIZED IMMEDIATELY USING AN APPROVED TEMPORARY STABILIZATION METHOD.

UTILITY TRENCH EXCAVATION

1. 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.
2. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR A MAX. OF SIX DAYS FOR CERTAIN CASES REQUIRING TESTING OF THE INSTALLED PIPE.
3. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING TO A FACILITY FOR REMOVAL OF SEDIMENT (SEDIMENT FILTER BAG, SEE DETAIL) BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS.
4. 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 IMMEDIATELY.
5. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FORM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
6. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

VEGETATIVE STABILIZATION

1. ALL DISTURBED AREAS THAT HAVE NOT OTHERWISE BEEN STABILIZED AND HAVE SIGNIFICANT POTENTIAL FOR EROSION SHOULD BE STABILIZED WITH VEGETATION. THIS INCLUDES GRADED AREAS WHERE IT IS ANTICIPATED THAT FUTURE EARTHMOVING WILL TAKE PLACE WITHIN THE COMING YEAR. AREAS THAT WILL BE SUBJECT TO EARTHMOVING WITHIN 12 MONTHS MAY BE STABILIZED WITH TEMPORARY SEED MIXTURES, PREDOMINANTLY ANNUAL GRASSES. ALL OTHERS SHOULD BE STABILIZED WITH PERMANENT SEED MIXTURES – PREDOMINANTLY PERENNIAL GRASSES. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED.
2. CRITICAL AREAS – ERODIBLE SOILS, WITHIN 50 FEET OF A SURFACE WATER, ETC. – SHOULD BE BLANKETED. TEMPORARY EROSION CONTROL BMPS THAT WERE INSTALLED FOR THE EARTHMOVING PHASE OF THE PROJECT MUST REMAIN IN PLACE AND BE MAINTAINED IN WORKING ORDER UNTIL PERMANENT STABILIZATION IS ACHIEVED.
3. AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN (I.E. ANTICIPATE THE COMPLETION DATE AND SCHEDULE THE SEEDER). IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE. THIS REQUIREMENT SHOULD BE CLEARLY STATED IN THE SEEDING AND MULCHING SPECIFICATIONS CONTAINED ON THE PLAN DRAWINGS.
4. BEFORE THE SEEDING BEGINS, TOPSOIL SHOULD BE APPLIED AND ANY REQUIRED SOIL AMENDMENTS WORKED INTO THE SOIL TO A DEPTH OF 4 TO 6 INCHES. IF COMPOST IS TO BE ADDED TO THE TOPSOIL, IT SHOULD BE WORKED INTO THE SOIL WITH THE OTHER SOIL AMENDMENTS UNLESS IT IS BEING APPLIED AS AN EROSION CONTROL BMP.

STABILIZATION WITH MULCH

1. MULCHING IS MOST APPLICABLE TO THOSE AREAS SUBJECT TO PERIODIC DISTURBANCE AND REWORKING IN ADDITION, STABILIZATION WITH FIBER MULCH SHALL BE USED DURING NON–GERMINATION PERIODS.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN TABLE 11.6.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR–DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL – ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24–HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 450 F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL.
5. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON–TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
6. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.)			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

BCCD – STANDARD E&S NOTES

THE FOLLOWING NOTES SHOULD BE PLACED ON THE E&S PLAN DRAWINGS.

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES – 6 TO 12 INCHES ON COMPACTED SOILS – PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

STAGING OF EARTHMOVING ACTIVITIES

CONSTRUCTION SHALL BE DONE IN ONE (1) TOTAL PHASE.

A. OVERALL PROJECT/NPDES BOUNDARY– 17.40 ACRES

B. OVERALL LIMIT OF DISTURBANCE: 14.60 ACRES

C. ON–SITE LIMIT OF DISTURBANCE– 12.77 ACRES

D. OFF–SITE LIMIT OF DISTURBANCE– 0.45 ACRES (FOR INSTALLATION OF UTILITIES WITHIN LIMEKILN ROAD RIGHT–OF–WAY)

E. OFF–SITE LIMIT OF DISTURBANCE– 1.38 ACRES (FOR INSTALLATION OF UTILITIES WITHIN FERRY ROAD RIGHT–OF–WAY)

THE APPLICANT OR ASSIGNS SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROLS FOR ALL PROPOSED CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED FOUR (4) DAYS [IMMEDIATELY FOR HQ/EV WATERSHEDS], OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES INCLUDING, BUT NOT LIMITED TO: THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS AND A REPRESENTATIVE OF THE COUNTY CONSERVATION DISTRICT FOR AN ON–SITE PRE–CONSTRUCTION MEETING.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING ACT 187 (1–800–242–1776) THREE DAYS PRIOR TO EXCAVATION.

UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.

GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING OF THE TOPSOIL. THE PERMITTEE SHALL PROVIDE ENGINEERING OVERSIGHT FOR THE SCARIFYING OF THE SUBSOIL. A LICENSED PROFESSIONAL OR DESIGNEE KNOWLEDGEABLE IN THE SCARIFYING OF SUBSOIL, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

A WEEKLY INSPECTION LOG SHALL BE FORWARDED TO THE TOWNSHIP AND COUNTY CONSERVATION DISTRICT DURING CONSTRUCTION.

BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ENSURE 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 OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

NOTE– FOR A CRITICAL STAGE IDENTIFIED IN THE CONSTRUCTION SEQUENCE: A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL BE ON SITE DURING ALL CRITICAL STAGE CONSTRUCTION. THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 3 DAYS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.

DEMOLITION OF EXISTING IMPROVEMENTS AS FOLLOWS:

1. THE CONTRACTOR SHALL CLEARLY DELINEATE ALL PROPOSED DISTURBANCE LIMITS WITH CONSTRUCTION STAKING AND/OR CONSTRUCTION FENCING AS INDICATED ON THE PLANS.
2. INSTALL TREE/CONSTRUCTION PROTECTION FENCING AROUND THE TREES TO REMAIN, AND RAIN GARDEN AT THE LOCATIONS SHOWN ON THE PLANS.
3. INSTALL PERIMETER COMPOST FILTER SOCKS (1–9) AS INDICATED ON THE PLANS.
4. THE EXISTING MACADAM DRIVEWAYS ON THE SITE SHALL BE UTILIZED AS CONSTRUCTION ENTRANCE FOR THE DEMOLITION PURPOSE.
5. ALL EROSION CONTROL DEVICES SHALL BE STABILIZED AND IN WORKING ORDER PRIOR TO DEMOLITION.
6. RELOCATE EXISTING UTILITY POLES AND OVERHEAD ELECTRIC LINES ALONG LIMEKILN ROAD AS NOTED ON PLANS.
7. REMOVE ALL EXISTING STONE AREAS, MACADAM AREAS, CONCRETE PADS, UTILITY POLES, WELLS, SEPTIC TANKS, ELECTRIC BOXES, TELEPHONE BOXES, ELECTRIC PANELS, UTILITY POLES WITH GUY WIRES ASSOCIATED WITH MOBILE HOMES OUTSIDE OF LEGAL RIGHT–OF–WAY BUT WITHIN PROPERTY BOUNDARIES, AS SHOWN ON THE DEMOLITION PLAN.

   ALL CONSTRUCTION DEBRIS TO BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.

TEMPORARY GRADING FOR SEDIMENT FACILITY CONSTRUCTION AS FOLLOWS:

8. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK AS SHOWN ON THE PLANS. ERECT SIGNAGE AT THE SAME LOCATION WITH WORKING "CONSTRUCTION ENTRANCE".
9. CLEAR AND GRUB ONLY IN AREAS NECESSARY TO CONSTRUCT SEDIMENT BASIN. STRIP TOPSOIL AND PLACE TOPSOIL IN THE DESIGNATED TOPSOIL STOCKPILE LOCATION SHOWN ON THE PLAN. TOPSOIL STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
10. CONSTRUCT SEDIMENT BASIN WITH ALL ASSOCIATED APPURTENANCES: PERMANENT OUTLET STRUCTURE, KEY TRENCH, CONCRETE ANTI–SEEP COLLARS, OUTLET PIPE, ENDWALL, ROCK RIP RAP, TEMPORARY CLEAN–OUT STAKES AND SKIMMER. SEE SEDIMENT BASIN DETAILS FOR BOTTOM ELEVATION – DO NOT OVER EXCAVATE. SEDIMENT BASIN BERM SHALL BE CONSTRUCTED TO THE CORRECT ELEVATION AS SHOWN IN THE SEDIMENT BASIN DETAILS. SPREAD TOPSOIL OVER SEDIMENT BASIN BERM AND SEED AND MULCH WITH PERMANENT SEEDING (REFER TO SEEDING AND MULCHING RATES). INSTALL TURF REINFORCEMENT MAT OVER EMERGENCY SPILLWAY TO TOE OF THE EMBANKMENT.
11. SIMULTANEOUSLY WHILE CONSTRUCTING SEDIMENT BASIN, INSTALL COMPOST FILTER SOCK SEDIMENT TRAP AS SHOWN ON THE PLANS.
12. THE SEDIMENT BASIN AND COMPOST FILTER SOCK SEDIMENT TRAP MUST BE STABILIZED AND FUNCTIONING PROPERLY PRIOR TO ANY FURTHER EARTH DISTURBANCE ACTIVITIES IN THEIR DRAINAGE AREAS. UPON INSTALLATION OF THE SKIMMER, AN IMMEDIATE INSPECTION OF THE SKIMMER SHALL BE CONDUCTED BY A QUALIFIED SITE REPRESENTATIVE AND THE COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE PROPER SKIMMER IS INSTALLED AND SEALED, PER PLAN.
13. CLEAR AND GRUB ONLY IN AREAS NECESSARY TO INSTALL TEMPORARY DIVERSION BERM AND TEMPORARY SWALE DRAINING TO SEDIMENT BASIN. IMMEDIATELY STABILIZE DISCHARGE AREA FOR TEMPORARY DIVERSION BERM AND TEMPORARY SWALE WITH EROSION CONTROL BLANKET.
14. ONCE THE SEDIMENT BASIN AND COMPOST FILTER SOCK SEDIMENT TRAP ARE CONSTRUCTED, THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION RUNOFF IS DIRECTED TO SEDIMENT BASIN AND COMPOST FILTER SOCK SEDIMENT TRAP. A FEW AREAS MAY SHEET FLOW TO PERIMETER COMPOST FILTER SOCKS UNTIL INTERNAL ROAD IS ROUGH GRADED AND INLETS ARE INSTALLED WHICH WILL DIRECT FLOW INTO SEDIMENT BASIN.

GENERAL SITE CONSTRUCTION AS FOLLOWS:

15. PROVIDE GENERAL SITE LAYOUT.
16. CLEAR AND GRUB INTERNAL ROAD AREA, AS REQUIRED FOR GRADING AND CONSTRUCTION ACTIVITY. STRIP TOPSOIL AND PLACE TOPSOIL IN THE DESIGNATED TOPSOIL STOCKPILE LOCATION SHOWN ON THE PLAN. TOPSOIL STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
17. INSTALL CONCRETE WASHOUT AT THE LOCATION SHOWN ON THE PLAN. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE ENTIRE LENGTH OF INTERNAL ROAD. CONSTRUCTION SHALL TAKE PLACE FROM HIGH TO LOW AREAS AS MUCH AS POSSIBLE. ALL AREAS DISTURBED DURING THE EARTHWORK PHASE OF CONSTRUCTION MUST BE TEMPORARILY SEEDED AND STABILIZED IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.
18. BEGIN TO CONSTRUCT STORMWATER CONVEYANCE PIPING AND INLET SYSTEM, GRAVITY SEWER MAIN, SANITARY FORCE MAIN, WATER MAIN AND OTHER UTILITIES WITHIN THE INTERNAL ROAD. BEGIN INSTALLATION AT THE BOTTOM OF EACH RUN. IMMEDIATELY INSTALL ROCK RIP RAP AT THE ENDWALLS AS NOTED. IMMEDIATELY STABILIZE AREAS UPON COMPLETION OF EACH SECTION OF PIPE OR AT THE END OF EACH DAY.
19. REMOVE THE TEMPORARY DIVERSION BERM AND TEMPORARY SWALE DRAINING TO SEDIMENT BASIN SINCE THE INTERNAL ROAD IS ROUGH GRADED WITH INLETS.
20. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE ENTIRE LENGTH OF LIMEKILN ROAD WIDENING. CONSTRUCTION SHALL TAKE PLACE FROM HIGH TO LOW AREAS AS MUCH AS POSSIBLE. ALL AREAS DISTURBED DURING THE EARTHWORK PHASE OF CONSTRUCTION MUST BE TEMPORARILY SEEDED AND STABILIZED IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.
21. SIMULTANEOUSLY, CONSTRUCT SWALES # 1 AND 2 ALONG LIMEKILN ROAD WIDENING AREA AND IMMEDIATELY STABILIZE THE SWALES WITH EROSION CONTROL BLANKET.
22. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE PUMP STATION BUILDING AREA AND ASSOCIATED PARKING TO SUBGRADE ELEVATION.
23. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE BUILDING PAD AND DRIVEWAYS TO SUBGRADE ELEVATION.
24. INSTALL ALL UNDERGROUND UTILITIES I.E., WATER, SANITARY SEWER, ELECTRICITY, TELEPHONE, CABLE ETC. ASSOCIATED WITH THE INDIVIDUAL BUILDING LOT. SEED, MULCH, AND STABILIZE ANY DISTURBED SOIL IMMEDIATELY.
25. BEGIN THE INSTALLATION OF PROPOSED OFF–SITE SANITARY FORCEMAIN AND CONNECT TO THE EXISTING MANHOLE IN FERRY ROAD ALONG WITH CONNECTION TO WATER MAIN AT FERRY ROAD AND LIMEKILN ROAD INTERSECTION. BEGIN INSTALLATION AT THE BOTTOM OF EACH RUN. IMMEDIATELY STABILIZE AREAS UPON COMPLETION OF EACH SECTION OF PIPE OR AT THE END OF EACH DAY.
26. FINE GRADE INTERNAL ROAD AND LIMEKILN ROAD EXTENSION AREA. PLACE STONE BASE COURSE ON INTERNAL ROAD AND LIMEKILN ROAD AND COMPACT AS SOON AS POSSIBLE TO STABILIZE SOIL.
27. CONSTRUCT CONCRETE CURB AND BACKFILL IN ALL AREAS AND STABILIZE.
28. BEGIN CONSTRUCTION OF INDIVIDUAL BUILDING PADS FOR LOTS 8–15 AND ASSOCIATED DRIVEWAYS.
29. BEGIN CONSTRUCTION OF INDIVIDUAL BUILDING PADS AND ASSOCIATED DRIVEWAYS FOR LOT 1–7 AND SIMULTANEOUSLY CONSTRUCT SWALE # 3 AND IMMEDIATELY STABILIZE THE SWALES WITH EROSION CONTROL BLANKET.
30. ONCE THE BUILDING LOTS 1–15 ARE STABILIZED, BEGIN CONSTRUCTING THE REMAINING LOTS 16–33 AND IMMEDIATELY STABILIZE.

FINAL STABILIZATION

31. INITIATE FINAL GRADING AND PLACEMENT OF TOPSOIL IN ALL LANDSCAPE AREAS. AS SOON AS SLOPES, CHANNELS, AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING OF THE TOPSOIL. THE PERMITTEE SHALL PROVIDE ENGINEERING OVERSIGHT FOR THE SCARIFYING OF THE SUBSOIL. A LICENSED PROFESSIONAL OR DESIGNEE KNOWLEDGEABLE IN THE SCARIFYING OF SUBSOIL, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.
32. TOPSOIL TO BE REDISTRIBUTED TO A DEPTH OF EIGHT (8) INCHES, THEN PERMANENT SEEDING AND MULCHING SHALL BE APPLIED AT THE SPECIFIED RATES. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED. AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN (I.E. ANTICIPATE THE COMPLETION DATE AND SCHEDULE THE SEEDER). IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE. SEEDING AND MULCHING REQUIREMENTS ARE SPECIFIED ON THE PLANS.
33. IMMEDIATELY INSTALL ALL REQUIRED EMBANKMENT GEOTEXTILE MATERIAL.
34. ONCE THE CONTRIBUTING DRAINAGE AREAS TO THE COMPOST FILTER SOCK SEDIMENT TRAP HAVE BEEN STABILIZED, AND UPON APPROVAL BY THE DESIGNATED LICENSE PROFESSIONAL, ONLY THEN SHALL THE TEMPORARY EROSION CONTROL DEVICES BE REMOVED AND THE COMPOST FILTER SOCK SEDIMENT TRAP REMOVED. FINAL STABILIZATION OF COMPOST FILTER SOCK SEDIMENT TRAP REQUIRE REMOVAL OF ACCUMULATED SEDIMENT AND STABILIZATION OF DISTURBED AREAS.
35. INITIATE INSTALLATION OF THE RAIN GARDEN AND SWALE # 3. IMMEDIATELY STABILIZE SWALE # 3 WITH AN EROSION CONTROL BLANKET. INSTALLATION MUST INCLUDE BULK EARTHWORK TO REACH GRADES INDICATED ON PLANS, PLACEMENT OF SUITABLE SOILS, AND SEEDING. THE CONSTRUCTION OF THE RAIN GARDEN MUST BE IN ACCORDANCE WITH THE RAIN GARDEN CONSTRUCTION SEQUENCE OUTLINED ON THE PCSM DETAIL SHEET. OUTLET STRUCTURE PIPE FROM STORM STRUCTURE (OS–1) TO ENDWALL (OSEW–1), SPILLWAY WITH LINER, AND ASSOCIATED GEOTEXTILE LINER SHOULD BE CONSTRUCTED.

    (A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL INSPECT THE RAIN GARDEN INSTALLATION.)
36. BEGIN CONVERTING THE SEDIMENT BASIN TO FUNCTIONING PERMANENT INFILTRATION BASIN WITH ALL INSTALLED APPURTENANCES. REMOVE ALL SEDIMENT ACCUMULATION WITHIN THE SEDIMENT BASIN. REGRADE BASIN CONFIGURATION, INSTALL ENGINEERING FILTER MEDIA IN THE BASIN BOTTOM. PERFORM ANY NECESSARY FINAL GRADING WITHIN THE BASIN. ANY AREA DISTURBED DURING THE CONVERSION OF THE BASIN SHALL BE IMMEDIATELY STABILIZED. SEE SEDIMENT BASIN SEQUENCE ON THE PLANS FOR CONSTRUCTION PROCEDURES.

    (A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL INSPECT THE CONVERSION OF SEDIMENT BASIN TO INFILTRATION BASIN INSTALLATION.)
37. INSTALL ALL DRIVEWAYS, INTERNAL ROAD, AND LIMEKILN ROAD EXTENSION AREA WITH A BINDER COURSE.
38. INSTALL FINAL VEGETATION AND LANDSCAPING SPECIFIED ON THE LANDSCAPE PLAN, INCLUDING LANDSCAPE RESTORATION.

    (A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL VERIFY THE INSTALLATION OF LANDSCAPE RESTORATION.)
39. FINAL STABILIZATION SHALL HAVE OCCURRED WHEN THE FOLLOWING CONDITIONS HAVE BEEN MET.
    A. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON–GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS, WHICH ARE AT, FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
    B. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER 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.
    C. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST BE STABILIZED IMMEDIATELY.
40. AFTER ALL CONSTRUCTION WORK IS COMPLETED, INCLUDING BUILDINGS THE OWNER/DEVELOPER MAY REQUEST INSTALLATION OF WEARING COURSE. AFTER WEARING COURSE INSTALLATION, INSTALL ALL PERMANENT STRIPING AND COMPLETE ALL SIGNAGE.
41. CLEAR SITE OF THE DEBRIS AND ALL UNWANTED MATERIALS. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
42. REFER TO THE TEMPORARY EROSION CONTROL NOTES AND GENERAL EROSION CONTROL NOTES INCLUDED ON THE PLANS FOR ADDITIONAL SPECIFICATION AND REQUIREMENTS.
43. THE NPDES (PERMITEE) AND OR (CO–PERMITTEE) IS RESPONSIBLE TO FILE A 'NOTICE OF TERMINATION' WITH THE COUNTY CONSERVATION DISTRICT UPON COMPLETION AND STABILIZATION OF ALL EARTHMOVING ACTIVITIES.

LIST OF CRITICAL STAGES

THE FOLLOWING ARE CRITICAL STAGES OF CONSTRUCTION:
- INSTALLATION OF INFILTRATION BASIN
- INSTALLATION OF SWALES
- INSTALLATION OF RAIN GARDEN
- INSTALLATION OF VEGETATED SWALE
- INSTALLATION OF LANDSCAPE RESTORATION
- CONVERSION OF SEDIMENT BASIN TO INFILTRATION BASIN

SOILS DATA:

SOILS DATA OBTAINED FROM USDA–NATURAL RESOURCES CONSERVATION SERVICES–WEB SOIL SURVEY–NATURAL COOPERATIVE SOIL SURVEY.

AmA AMWELL SILT LOAM, 0 TO 3 PERCENT SLOPES
AmB AMWELL SILT LOAM, 3 TO 8 PERCENT SLOPES
DdB DOYLESTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES
RaB RARITAN SILT LOAM, 3 TO 8 PERCENT SLOPES
ReA READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES
RIB REAVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS

NOTE:
THIS IS NOT AN ALL–INCLUSIVE LIST
ABSENCE OF AN X DOSE NOT MEAN "NO POTENTIAL LIMITATION"
FOR MORE COMPREHENSIVE LIST OF SOIL LIMITATIONS, LOG ONTO THE NRCS WEBSITE AT: **http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.**

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODED	FLOODING	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH/LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK–SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
AMWELL	X	C/S		X		X	X	X	X	X		X				
DOYLESTOWN	X	C/S	X	X		X	X	X	X	X	X	X				X
RARITAN	X	C/S				X	X		X	X	X	X				X
READINGTON	X	C/S		X		X	X	X	X	X	X	X				X
REAVILLE	X	C/S	X	X		X	X		X	X	X	X				X

SOIL RESOLUTIONS

CUTBANKS CAVE – GRADE ALL SLOPES TO 4:1 OR FLATTER.

CORROSIVE TO CONCRETE / STEEL – PROVIDE POLYMERS TO PROTECT CONCRETE AND STEEL.

DROUGHTY – IRRIGATE SOILS TO PREVENT WILTING.

EASILY ERODIBLE – STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION OR PROVIDE EROSION AND SEDIMENTATION CONTROL DEVICES AND FACILITIES TO RETAIN ENTRAINED SEDIMENT ON–SITE.

FLOODING – MINIMIZE OR ELIMINATE CONSTRUCTION WITHIN MAPPED AND ALLUVIAL SOILS.

DEPTH TO SATURATION ZONE / SEASONAL HIGH WATER TABLE – PROVIDE UNDERDRAINS TO ELIMINATE A PERSISTENT HIGH WATER TABLE. FOR OCCASIONAL HIGH WATER TABLE, PUMP WATER FROM TRENCHES / FOOTINGS TO A PUMP WATER FILTER BAG.

HYDRIC / HYDRIC INCLUSIONS – HYDRIC SOILS HAVE BEEN MAPPED BY NOVA CONSULTANTS, INC.. NO WETLAND IMPACTS ARE PROPOSED FOR THIS PROJECT.

LOW STRENGTH / LANDSLIDE PRONE – GRADE SOILS TO 4:1 OR FLATTER.

SLOW PERCOLATION – ADD SAND OR ORGANICS TO INCREASE SOIL PERCOLATION RATES.

PIPING – USE ANTI–SEEP COLLARS TO ELIMINATE PIPING.

POOR SOURCE OF TOPSOIL – IMPORT ADEQUATE TOPSOIL OR ADD ORGANIC MATERIAL (MULCH) TO CREATE A SUITABLE TOPSOIL.

FROST ACTION – MINIMIZE OR ELIMINATE COLD WEATHER CONSTRUCTION. IF POSSIBLE, ADD EXPANSION JOINTS TO MINIMIZE FROST ACTION IMPACTS.

SHRINK / SWELL – MINIMIZE CONTACT WITH WATER.

POTENTIAL SINKHOLE – PERFORM GEOLOGIC EVALUATION FOR KARST GEOLOGY AND KARST SOIL.

PONDING – PROVIDE POSITIVE GRADING WITH A 2% SLOPE, UNDERDAINS OR A STORM SEWER CONVEYANCE SYSTEM.

WETNESS – PROVIDE POSITIVE GRADING OR UNDERDRAINS.

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (6 OF 8)
PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

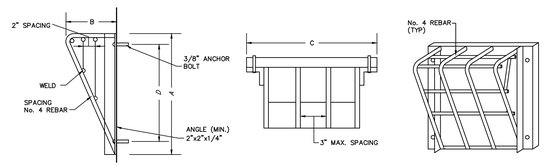
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 20 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com



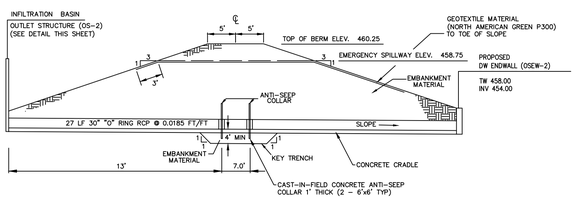
OUTLET STRUCTURE	TRASH RACK	A	B	C	D	QTY
BMP #1	RECTANGULAR ORIFICE 36"x 3"	10"	3"	44"	5"	1
BMP #2	RECTANGULAR ORIFICE 24"x 10"	17"	6"	28"	12"	2
BMP #2	RECTANGULAR ORIFICE 72"x 10"	17"	6"	77"	12"	1

TRASH RACK DETAIL NTS

NOTE: 1. AFTER RACK IS CONSTRUCTED (WELDED) THE ASSEMBLY SHALL BE PAINTED WITH A RUST PROOF COATING.

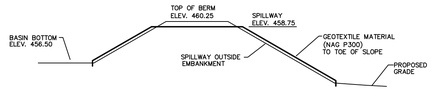
EMBANKMENT COMPACTION NOTES

1. KEY TRENCH TO EXTEND 4 FEET INTO UNDISTURBED SUBSOIL.
2. IMPERVIOUS CORE AND KEY TRENCH WITH COMPACTED BACKFILL SCS SOILS TYPE CL-ML OR CL CLASSIFICATION OR APPROVED EQUAL.
3. THE CONTRACTOR SHALL PROVIDE SOIL TESTING OR SOIL VERIFICATION FOR CORE TRENCH BACKFILL TO THE TOWNSHIP ENGINEER PRIOR TO CONSTRUCTING EMBANKMENT.
4. ALL DETENTION AND RETENTION BASIN EMBANKMENTS SHALL BE PLACED IN EIGHT-INCH MAXIMUM LIFTS AND COMPACTED TO A MINIMUM NINETY-FIVE PERCENT DRY DENSITY. PRIOR TO PROCEEDING TO THE NEXT LIFT, COMPACTION SHALL BE CHECKED BY AN APPROVED SOILS ENGINEER WHO SHALL PROVIDE THE TOWNSHIP ENGINEER WITH A WRITTEN REPORT. COMPACTION TESTS SHALL BE PERFORMED USING THE MODIFIED PROCTOR METHOD IN ACCORDANCE WITH ASTM D-1577.
5. CORE TRENCH TOP ELEVATION SHALL BE SET AT OR ABOVE THE 25 YEAR WATER SURFACE ELEVATION.
6. THE CUT-OFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE EARTH FILL EMBANKMENT. THE MINIMUM DEPTH SHALL BE 4 FEET. THE CUT-OFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE ELEVATION PROVIDED ON THE DETAIL. THE BOTTOM WIDTH SHALL BE 4 FEET, BUT WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 3H:1V.

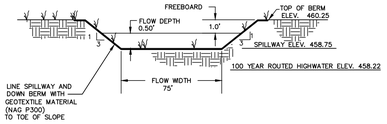


BMP #2 - INFILTRATION BASIN - BERM SECTION

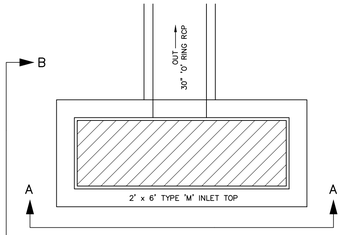
NTS



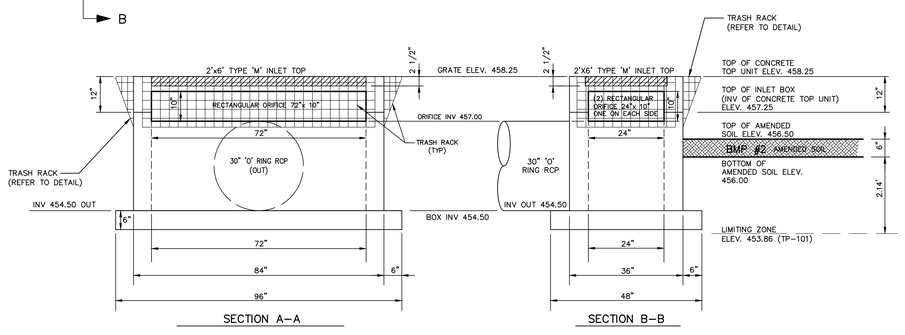
BMP #2 - INFILTRATION BASIN EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY NTS



BMP #2 - INFILTRATION BASIN EMERGENCY SPILLWAY DETAIL NTS



INFILTRATION BASIN (BMP #2), PERMANENT OUTLET STRUCTURE (OS-2) IS TO BE INSTALLED DURING CONSTRUCTION OF SEDIMENT BASIN. CONNECT SKIMMER TO INFILTRATION BASIN (BMP #2) OUTLET STRUCTURE (OS-2), CIRCULAR ORIFICE FOR THE SKIMMER TO BE PRECAST TO ACCEPT THE TEMPORARY 3 INCH PVC STUB PIPE. UPON CONVERSION OF SEDIMENT BASIN TO INFILTRATION BASIN (BMP #2) SEAL THE TEMPORARY 3 INCH CIRCULAR ORIFICE WITH CONCRETE PLUG.



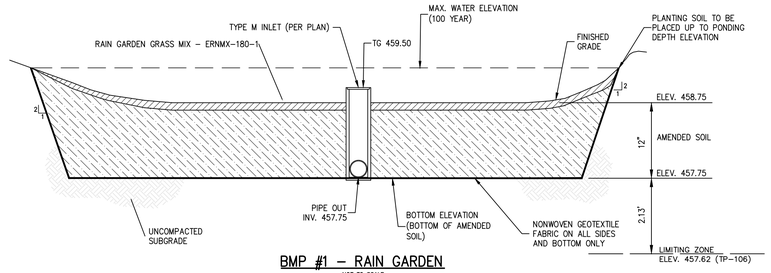
SECTION A-A SECTION B-B

BMP #2 - INFILTRATION BASIN MONOLITHIC OUTLET STRUCTURE (OS-2) PRECAST CONCRETE 2' x 6' INLET BOX w/GRATE DETAIL

SCALE: 1"=2'

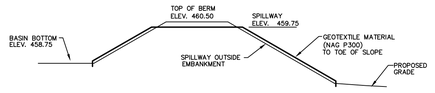
NOTES:

1. BUTYL RESIN MASTIC SEAL SHALL BE PLACED WITH ALL JOINTS OF THE OUTLET STRUCTURE WHEN ASSEMBLED AND BETWEEN TOP OF INLET BOX AND INVERT OF CONCRETE TOP UNIT.

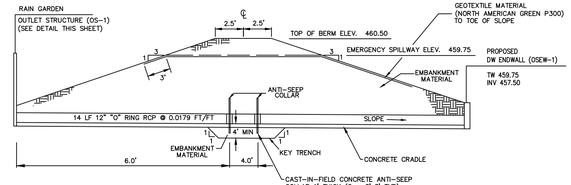


BMP #1 - RAIN GARDEN

NOT TO SCALE

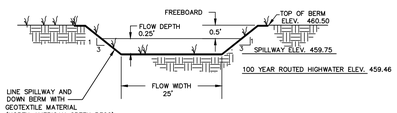


BMP #1 - RAIN GARDEN EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY NTS

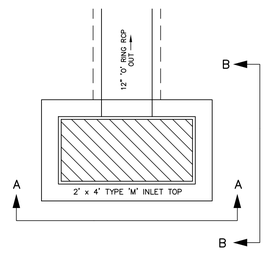


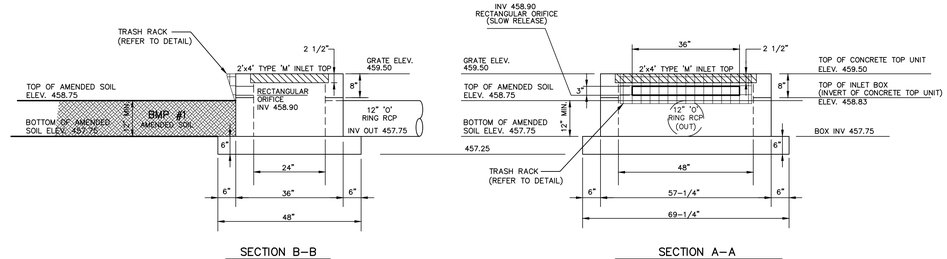
BMP #1 - RAIN GARDEN - BERM SECTION

NTS



BMP #1 - RAIN GARDEN EMERGENCY SPILLWAY DETAIL NTS





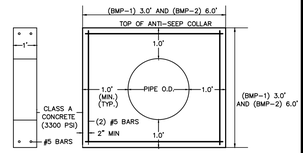
SECTION B-B SECTION A-A

BMP #1 - RAIN GARDEN MONOLITHIC OUTLET STRUCTURE (OS-1) PRECAST CONCRETE 2' X 4' INLET BOX w/GRATE DETAIL

SCALE: 1"=2'

NOTES:

1. BUTYL RESIN MASTIC SEAL SHALL BE PLACED WITH ALL JOINTS OF THE OUTLET STRUCTURE WHEN ASSEMBLED AND BETWEEN TOP OF INLET BOX AND INVERT OF CONCRETE TOP UNIT.

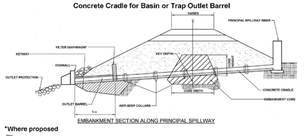


BMP #1 AND BMP #2 CONCRETE ANTI-SEEP COLLARS DETAIL NTS

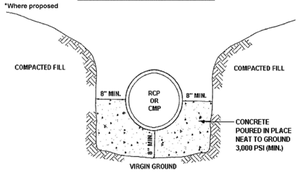
NOTES:
1. TO BE FRAMED AND POURED AROUND BASIN OUTLET PIPE
2. CAST-IN-PLACE CONCRETE COLLAR THICKNESS TO BE 12"
3. ANTI-SEEP COLLARS SHOULD NOT BE LOCATED CLOSER THAN 2 FEET TO A PIPE JOINT

BMP #1 AND BMP #2 CONCRETE CRADLE DETAIL

Concrete Cradle for Basin or Trap Outlet Barrel



*Where proposed



NOT TO SCALE

CROSS-SECTION AT OUTLET BARREL

Adapted from Westmoreland Conservation District

Note: A concrete cradle may be used in conjunction with anti-seep collars and/or filter diaphragm.

Anti-seep collar number, size and spacing shall be as shown elsewhere in plan.

Filter diaphragm location (L_{FD}) shall be as shown in Figure 7.8.

WATER SURFACE ELEVATION TABLE

(ALL UNITS IN FEET)

BASIN NAME	2 YEAR STORM EVENT	100 YEAR STORM EVENT
BMP #1	458.85	459.46
BMP #2	457.05	458.22

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (7 OF 8)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE: AS SHOWN

SHEET No. 21 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
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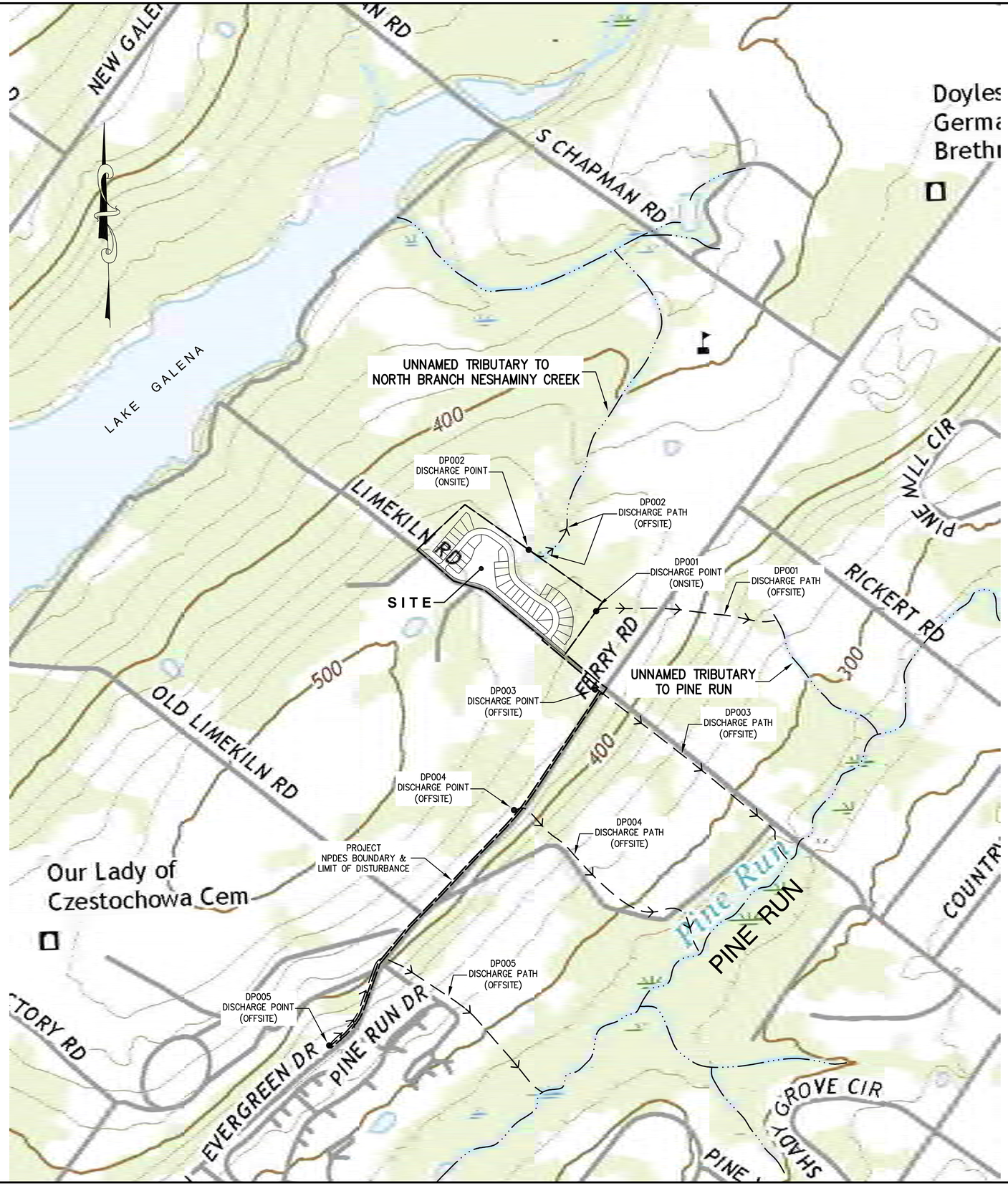

ONSITE

DP001 DISCHARGE POINT DRAINS TO UNNAMED TRIBUTARY TO PINE RUN
DP002 DISCHARGE POINT DRAINS TO UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK

OFFSITE

DP003, DP004 AND DP005 DISCHARGE POINT DRAINS TO PINE RUN

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN (8 OF 8)

SITE DISCHARGE MAP

PREPARED FOR

RHG PROPERTIES, LLC

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

MARCH 17, 2022
PROJECT No. 18075
FILE: 18075-022-PCSWM

200' 0 200' 400' 800'
SCALE: 1" = 400'

SHEET No. 22 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
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PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

COMPOST FILTER SOCK #5 (18" HEIGHT)

COMPOST FILTER SOCK #4 (18" HEIGHT)

COMPOST FILTER SOCK #3 (12" HEIGHT)

OMPOST FILTER SOCK #2 (12" HEIGHT)

COMPOST FILTER SOCK #1 (12" HEIGHT)

DP002 DISCHARGE PATH

DP 002

DP001 DISCHARGE PATH

DP 001

TREE PROTECTION FENCE (TYP)

NPDES BOUNDARY

LIMIT OF DISTURBANCE

EXISTING MACADAM DRIVEWAY TO BE UTILIZED AS CONSTRUCTION ENTRANCE FOR DEMOLITION PURPOSE ONLY
(LIMEKILN ROAD SHALL BE SWEPT AT END OF EACH WORK DAY)

BENCHMARK

NPDES BOUNDARY & LIMIT OF DISTURBANCE

MATCH LINE SHEET 24

LIMEKILN ROAD (T-350)
(UNPOSTED SPEED LIMIT)

FERRY ROAD (SR-1006)

EXISTING DWELLING

EXISTING SAND MOUND

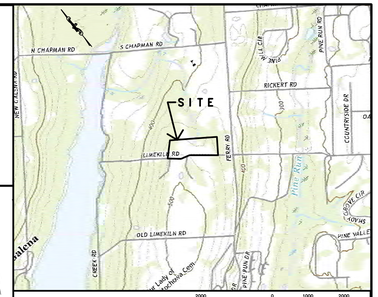
EXISTING GARAGE

EXISTING STONE DRIVEWAY

EXISTING MACADAM DRIVEWAY

WOODED AREA

KEY MAP



LOCATION MAP

(IN FEET) 1 inch = 2000 ft.

GENERAL NOTES

1. THIS PLAN IS TO BE USED IN CONJUNCTION WITH THE 'EROSION CONTROL REPORT' PREPARED FOR THE SITE.
2. REMOVAL AND DISPOSAL OF MATERIAL REMOVED FROM THE SILT SOCKS AND OTHER EROSION CONTROL MEASURES, (NON-CONTAMINATED SOIL SHALL BE GRADED INTO THE SITE) (CONTAMINATED SOIL SHALL BE REMOVED/DISPOSED TO A LICENSED DISPOSAL FACILITY FOR CONTAINING WASTE PRODUCTS).
3. FOR DETAILS AND INFORMATION REGARDING EROSION CONTROL, REFER TO THE 'EROSION CONTROL DETAIL PLAN' SHEETS 30, 31, 32, 33 & 34.
4. IN THE EVENT THAT FILL IS BROUGHT TO THE SITE, THE OPERATOR WILL BE RESPONSIBLE TO PERFORM ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ALL IMPORTED FILL MEETS THE DEFINITION OF CLEAN FILL AS DESCRIBED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
5. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
6. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
7. THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN(PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.
8. TREE PROTECTION FENCE USED TO PROTECT WOODED AREAS, WETLAND AREAS AND INFILTRATION BMP's SHALL BE REMOVED FOLLOWING SITE CONSTRUCTION.
9. ALL DIVERSION BERMS, CHANNELS AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
10. BONAR "ENKAMAT 7010" SHALL BE USED ON ALL SLOPES THAT ARE 3:1 OR STEEPER. ALL PROPOSED SWALES TO BE LINE WITH NORTH AMERICAN GREEN "SC 150 BN". EMERGENCY SPILLWAYS SHALL BE LINED WITH NORTH AMERICAN GREEN "P300".

RECEIVING WATER: UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK & PINE RUN
RECEIVING WATERSHED: NESHAMINY CREEK
CHAPTER 93 CLASSIFICATION:
NORTH BRANCH NESHAMINY CREEK: WARM WATER FISHERY (WWF) MIGRATORY FISHERY (MF)
PINE RUN: TROUT STOCK FISHERY (TSF) MIGRATORY FISHERY (MF)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

LEGEND

EXISTING CONTOUR	346	LIMIT OF DISTURBANCE	LOD LOD
EXISTING SANITARY SEWER		PROJECT/NPDES BOUNDARY	NPDES
EXISTING STORM SEWER		PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE	N&L N&L
EXISTING WATER LINE	W	COMPOST FILTER SOCK	CFS
EXISTING GAS LINE	G	EXISTING TREES STANDING ALONE (TO BE REMOVED)	X X
EXISTING OVERHEAD WIRES	OH OH	TO BE REMOVED	(TBR)
EXISTING EDGE OF MACADAM		TO BE RELOCATED	(TBRL)
EXISTING EDGE OF TREES			
EXISTING TREE			
WETLANDS			
PROPOSED EDGE OF TREES			
PROPOSED TREE PROTECTION FENCE			

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

ALL EXISTING STONE AREA, MACADAM, CONCRETE PAD, UTILITY POLES, WELL, SEPTIC TANKS, ELECTRIC BOX, TELEPHONE BOX, ELECTRIC PANEL, UTILITY POLE WITH GUY WIRES ASSOCIATED WITH MOBILE HOMES OUTSIDE OF LEGAL RIGHT-OF-WAY BUT WITHIN PROPERTY BOUNDARY IS TO BE REMOVED. REFER TO SHEET 7 AND 8 FOR ALL RELOCATED UNDERGROUND AND ABOVEGROUND UTILITIES, POLES AND SIGNS LOCATION ALONG LIMEKILN ROAD.

GALENA RESERVE MOBILE HOME PARK

DEMOLITION with EROSION CONTROL PLAN (1 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE: 1"= 40'

SHEET No. 23 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

COMPOST FILTER SOCK #9 (24" HEIGHT)

COMPOST FILTER SOCK #8 (24" HEIGHT)

COMPOST FILTER SOCK #7 (24" HEIGHT)

COMPOST FILTER SOCK #6 (18" HEIGHT)

COMPOST FILTER SOCK #5 (18" HEIGHT)

TREE PROTECTION FENCE (TYP)

NPDES BOUNDARY

LIMIT OF DISTURBANCE

ISOLATED WETLAND AREA

NPDES BOUNDARY & LIMIT OF DISTURBANCE

MATCH LINE SHEET 23

LIMEKILN ROAD (T-350)
(UNPOSTED SPEED LIMIT)

DEMOLITION NOTES

1. THIS PLAN IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY TO IDENTIFY THE LIMITS OF DEMOLITION AND SHALL NOT BE CONSIDERED ALL INCLUSIVE. ADDITIONAL ITEMS MAY BE FOUND THAT SHOULD BE DEMOLISHED. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LIMITS AND EXTENTS OF DEMOLITION. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR ACTUAL BUILDING DEMOLITION AND COORDINATION.
2. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, PENNSYLVANIA STATE AND TOWNSHIP REGULATIONS.
3. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 et seq.), AS AMENDED AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
4. URWILER AND WALTER, INC. HAS NO CONTRACTUAL, LEGAL, OR OTHER RESPONSIBILITY FOR JOB SITE SAFETY OR JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME.
5. THE DEMOLITION PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION, ONLY, REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR MUST ALSO REVIEW THE OTHER SITE PLAN DRAWINGS AND INCLUDE IN DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
6. CONTRACTOR MUST RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS OR SPECIFICATIONS, CONCERNS REGARDING THE APPLICABLE SAFETY STANDARDS, OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT, WITH URWILER AND WALTER, INC., IN WRITING, AND RESPONDED TO BY URWILER AND WALTER, INC., IN WRITING, PRIOR TO THE INITIATION OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY.
7. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES AND CODES.
8. PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE FOR/TO OBTAINING ALL REQUIRED PERMITS AND MAINTAINING THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND OTHER PUBLIC AGENCIES HAVING JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK AND DEMOLITION WORK.
9. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR/TO:
   - i. ENSURE COPIES OF ALL PERMITS AND APPROVALS ARE ON SITE FOR REVIEW.
   - ii. THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO SITE DISTURBANCE.
   - iii. ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE, SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
   - iv. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES.
   - v. FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENT AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   - vi. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES.
   - vii. A COMPLETE INSPECTION FOR CONTAMINANTS, BY A LICENSED ENVIRONMENTAL TESTING AGENCY, OF ALL BUILDINGS AND/OR STRUCTURES TO BE REMOVED SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL CONTAMINANTS SHALL BE REMOVED AND DISPOSED OF BY A FEDERALLY LICENSED CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING HAZARDOUS MATERIAL, SOILS, ASBESTOS, OR OTHER REFERENCED OR IMPLIED HEREIN IS SOLELY THE RESPONSIBILITY OF THE OWNER'S ENVIRONMENTAL CONSULTANT.
10. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE.
11. IN THE ABSENCE OF SPECIFIC REQUIREMENTS, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY OWNER'S GEOTECHNICAL ENGINEER.
12. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
13. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH: THE "MANUAL ON UNIFORM TRAFFIC CONTROL," AS WELL AS FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHTS-OF-WAY.
14. THE CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY WHERE REQUIRED.
15. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINES, WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
16. USE DUST CONTROL MEASURES TO LIMIT THE AMOUNT OF AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR TO WITHIN FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
17. THE CONTRACTOR IS RESPONSIBLE TO SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
18. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
19. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
20. LANDSCAPING TO REMAIN IS TO BE PROTECTED DURING ALL SITE WORK. REFER TO LANDSCAPING PLAN.

LEGEND

EXISTING CONTOUR	346
EXISTING SANITARY SEWER	
EXISTING STORM SEWER	
EXISTING WATER LINE	W
EXISTING GAS LINE	G
EXISTING OVERHEAD WIRES	OH
EXISTING EDGE OF MACADAM	
EXISTING EDGE OF TREES	
EXISTING TREE	
WETLANDS	
PROPOSED EDGE OF TREES	
PROPOSED TREE PROTECTION FENCE	
LIMIT OF DISTURBANCE	LOD
PROJECT/NPDES BOUNDARY	NPDES
PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE	N&L
COMPOST FILTER SOCK	CFS
EXISTING TREES STANDING ALONE (TO BE REMOVED)	
TO BE REMOVED	(TBR)
TO BE RELOCATED	(TBRL)

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

ALL EXISTING STONE AREA, MACADAM, CONCRETE PAD, UTILITY POLES, WELL, SEPTIC TANKS, ELECTRIC BOX, TELEPHONE BOX, ELECTRIC PANEL, UTILITY POLE WITH GUY WIRES ASSOCIATED WITH MOBILE HOMES OUTSIDE OF LEGAL RIGHT-OF-WAY BUT WITHIN PROPERTY BOUNDARY IS TO BE REMOVED. REFER TO SHEET 7 AND 8 FOR ALL RELOCATED UNDERGROUND AND ABOVEGROUND UTILITIES, POLES AND SIGNS LOCATION ALONG LIMEKILN ROAD.

KEY MAP

RECEIVING WATER: UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK & PINE RUN
RECEIVING WATERSHED: NESHAMINY CREEK
CHAPTER 93 CLASSIFICATION:
NORTH BRANCH NESHAMINY CREEK: WARM WATER FISHERY (WWF)
MIGRATORY FISHERY (MF)
PINE RUN: TROUT STOCK FISHERY (TSF)
MIGRATORY FISHERY (MF)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

DEMOLITION with EROSION CONTROL PLAN (2 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

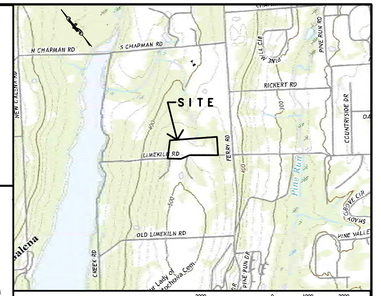
20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 24 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

COMPOST FILTER SOCK #5 (18" HEIGHT)
COMPOST FILTER SOCK #4 (18" HEIGHT)
COMPOST FILTER SOCK #3 (12" HEIGHT)
OMPOST FILTER SOCK #2 (12" HEIGHT)
COMPOST FILTER SOCK #1 (12" HEIGHT)
DP002 DISCHARGE PATH
DP 002
DP001 DISCHARGE PATH
DP 001
TREE PROTECTION FENCE (TYP)
EMERGENCY SPILLWAY ELEV. 458.75
TOP OF BERM ELEV. 460.25
STONE BERM
BAFFLE (SEE DETAIL)
OUTLET STRUCTURE WITH SKIMMER (SEE DETAIL)
SEDIMENT BASIN (SEE DETAIL)
CLEAN OUT STAKE (SEE DETAIL)
EMERGENCY SPILLWAY "LINED WITH EROSION CONTROL BLANKET" (NAG P300)
WOODED AREA
EXISTING SAND MOUND
NPDES BOUNDARY
BMP TREE PROTECTION FENCE
RAIN GARDEN BMP #1 (NOT A SEDIMENT FACILITY)
EXISTING DWELLING
EXISTING GARAGE
EXISTING STONE DRIVEWAY
COMPOST FILTER SOCK SEDIMENT TRAP (30" HEIGHT) "BASE" (2) 18" COMPOST FILTER SOCK "TOP" (1) 12" COMPOST FILTER SOCK EFFECTIVE LENGTH = 340 LF MIN. SURFACE AREA OF CONTAINMENT ± 6,950 SQ.FT. (SEE DETAIL)
LIMIT OF DISTURBANCE
PRE DEVELOPMENT DRAINAGE AREA TO COMPOST FILTER SOCK SEDIMENT TRAP
PRE DEVELOPMENT DRAINAGE AREA TO SEDIMENT BASIN
TOPSOIL STOCKPILE
COMPOST FILTER SOCK #15 (16" HEIGHT)
BENCHMARK
STABILIZED CONSTRUCTION ENTRANCE W/ WASH RACK (75 LF) (WASH RACK TO DISCHARGE TO SEDIMENT TRAP)
CONSTRUCTION ENTRANCE SIGN
NPDES BOUNDARY & LIMIT OF DISTURBANCE
MATCH LINE SHEET 26
LIMEKILN ROAD (T-350) (UNPOSTED SPEED LIMIT)
FERRY ROAD (S.R. 1006)
RELOCATED POLE PECO 308118
RELOCATED POLE PECO 11459 W/CTV& UTILITIES
RELOCATED POLE PECO 11458 W/CTV& UTILITIES
ESTIMATE RIGHT-OF-WAY
LEGAL RIGHT-OF-WAY
LOD
NPDES
N&L
OFS
RaB
DdB
ReA
RIB
AmA
AmB

KEY MAP



LOCATION MAP
2000 0 1000 3000
(IN FEET) 1 inch = 2000 ft.

GENERAL NOTES

1. THIS PLAN IS TO BE USED IN CONJUNCTION WITH THE 'EROSION CONTROL REPORT' PREPARED FOR THE SITE.
2. REMOVAL AND DISPOSAL OF MATERIAL REMOVED FROM THE SILT SOCKS AND OTHER EROSION CONTROL MEASURES, (NON-CONTAMINATED SOIL SHALL BE GRADED INTO THE SITE) (CONTAMINATED SOIL SHALL BE REMOVED/DISPOSED TO A LICENSED DISPOSAL FACILITY FOR CONTAINING WASTE PRODUCTS).
3. FOR DETAILS AND INFORMATION REGARDING EROSION CONTROL, REFER TO THE 'EROSION CONTROL DETAIL PLAN' SHEETS 30, 31, 32, 33 & 34.
4. IN THE EVENT THAT FILL IS BROUGHT TO THE SITE, THE OPERATOR WILL BE RESPONSIBLE TO PERFORM ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ALL IMPORTED FILL MEETS THE DEFINITION OF CLEAN FILL AS DESCRIBED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
5. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
6. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
7. THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN(PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.
8. TREE PROTECTION FENCE USED TO PROTECT WOODED AREAS, WETLAND AREAS AND INFILTRATION BMP's SHALL BE REMOVED FOLLOWING SITE CONSTRUCTION.
9. ALL DIVERSION BERMS, CHANNELS AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
10. BONAR "ENKAMAT 7010" SHALL BE USED ON ALL SLOPES THAT ARE 3:1 OR STEEPER. ALL PROPOSED SWALES TO BE LINE WITH NORTH AMERICAN GREEN "SC 150 BN". EMERGENCY SPILLWAYS SHALL BE LINED WITH NORTH AMERICAN GREEN "P300".

SOIL DATA:

SOILS DATA OBTAINED FROM USDA-NATURAL RESOURCES CONSERVATION SERVICES-WEB SOIL SURVEY-NATURAL COOPERATIVE SOIL SURVEY.

AmA	AMWELL SILT LOAM, 0 TO 3 PERCENT SLOPES
AmB	AMWELL SILT LOAM, 3 TO 8 PERCENT SLOPES
DdB	DOYLESTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES
RaB	RARITAN SILT LOAM, 3 TO 8 PERCENT SLOPES
ReA	READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES
RIB	REAVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

RECEIVING WATER: UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK & PINE RUN
RECEIVING WATERSHED: NESHAMINY CREEK
CHAPTER 93 CLASSIFICATION:
NORTH BRANCH NESHAMINY CREEK: WARM WATER FISHERY (WWF) MIGRATORY FISHERY (MF)
PINE RUN: TROUT STOCK FISHERY (TSF) MIGRATORY FISHERY (MF)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

LEGEND

EXISTING CONTOUR
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING WATER LINE
EXISTING GAS LINE
EXISTING OVERHEAD WIRES
EXISTING EDGE OF MACADAM
EXISTING EDGE OF TREES
EXISTING TREE
SOILS LINE
WETLANDS
PROPOSED EDGE OF TREES
PROPOSED TREE PROTECTION FENCE
PROPOSED STORM SEWER
RELOCATED PECO POLE
RELOCATED OVERHEAD WIRE

TEMPORARY CONTOUR
LIMIT OF DISTURBANCE
PROJECT/NPDES BOUNDARY
PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE
COMPOST FILTER SOCK
CONSTRUCTION ENTRANCE WITH WASH RACK
TOPSOIL STOCKPILE
DOWNSLOPE SIDE

PROPOSED RIP-RAP
EMERGENCY SPILLWAY GEOTEXTILE LINER
SWALE GEOTEXTILE LINER
DRAINAGE AREA TO SEDIMENT BASIN/TRAP

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

GALENA RESERVE MOBILE HOME PARK

TEMPORARY GRADING FOR SEDIMENT FACILITY CONSTRUCTION with EROSION CONTROL PLAN (1 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 25 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

COMPOST FILTER SOCK #9 (24" HEIGHT)

COMPOST FILTER SOCK #8 (24" HEIGHT)

COMPOST FILTER SOCK #7 (24" HEIGHT)

COMPOST FILTER SOCK #6 (18" HEIGHT)

COMPOST FILTER SOCK #5 (18" HEIGHT)

TREE PROTECTION FENCE (TYP)

NPDES BOUNDARY

STABILIZED DISCHARGE AREA FOR DIVERSION BERM RUNOFF "LINED WITH EROSION CONTROL BLANKET" (NAG SC150BN)

TEMPORARY FILTREXX RUNOFF DIVERSION BERM (18" HEIGHT) (SEE DETAIL)

TEMPORARY SWALE DRAINING TO SEDIMENT BASIN "LINED WITH EROSION CONTROL BLANKET" (NAG SC150BN)

OUTLET STRUCTURE WITH SKIMMER (SEE DETAIL)

SEDIMENT BASIN (SEE DETAIL)

EMERGENCY SPILLWAY "LINED WITH EROSION CONTROL BLANKET" (NAG P300)

COMPOST FILTER SOCK #15 (18" HEIGHT)

TOPSOIL STOCKPILE

PRE DEVELOPMENT DRAINAGE AREA TO TEMPORARY DIVERSION BERM

PRE DEVELOPMENT DRAINAGE AREA TO SEDIMENT BASIN

LIMIT OF DISTURBANCE

NPDES BOUNDARY & LIMIT OF DISTURBANCE

MATCH LINE SHEET 25

ISOLATED WETLAND AREA

25' WETLAND BUFFERS

EMERGENCY SPILLWAY ELEV. 458.75

TOP OF BERM ELEV. 460.25

AmB

AmA

RaB

RIB

DdB

LEGAL RIGHT-OF-WAY

ULTIMATE RIGHT-OF-WAY

LIMEKILN ROAD (T-350)
(UNPOSTED SPEED LIMIT)

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

LEGEND

- EXISTING CONTOUR
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING EDGE OF MACADAM
- EXISTING EDGE OF TREES
- EXISTING TREE
- SOILS LINE
- WETLANDS
- PROPOSED EDGE OF TREES
- PROPOSED TREE PROTECTION FENCE
- PROPOSED STORM SEWER
- RELOCATED PECO POLE
- RELOCATED OVERHEAD WIRE
- TEMPORARY CONTOUR
- LIMIT OF DISTURBANCE
- PROJECT/NPDES BOUNDARY
- PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE
- COMPOST FILTER SOCK
- CONSTRUCTION ENTRANCE WITH WASH RACK
- TOPSOIL STOCKPILE
- PROPOSED RIP-RAP
- EMERGENCY SPILLWAY GEOTEXTILE LINER
- SWALE GEOTEXTILE LINER
- DRAINAGE AREA TO SEDIMENT BASIN/TRAP

KEY MAP

RECEIVING WATER: UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK & PINE RUN
RECEIVING WATERSHED: NESHAMINY CREEK
CHAPTER 93 CLASSIFICATION:
NORTH BRANCH NESHAMINY CREEK: WARM WATER FISHERY (WWF) MIGRATORY FISHERY (MF)
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REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

TEMPORARY GRADING FOR SEDIMENT FACILITY CONSTRUCTION with EROSION CONTROL PLAN (2 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

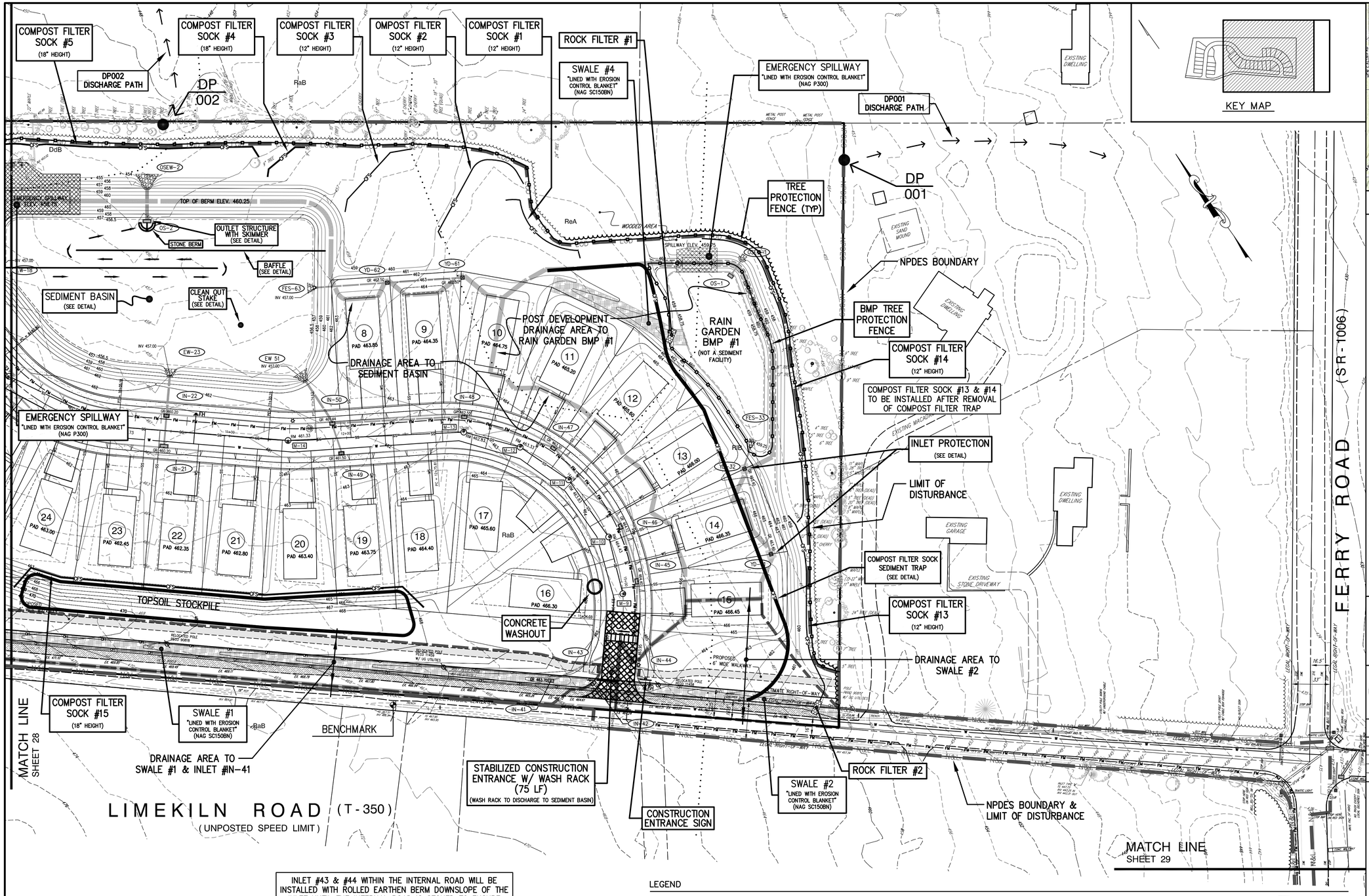
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

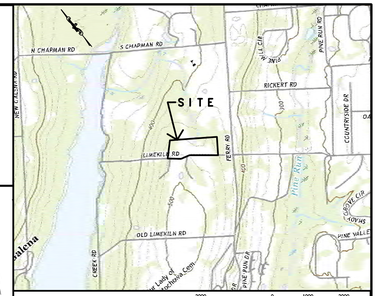
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE: 1"= 40'

SHEET No. 26 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com





LOCATION MAP (IN FEET) 1 inch = 2000 ft.

GENERAL NOTES

1. THIS PLAN IS TO BE USED IN CONJUNCTION WITH THE 'EROSION CONTROL REPORT' PREPARED FOR THE SITE.
2. REMOVAL AND DISPOSAL OF MATERIAL REMOVED FROM THE SILT SOCKS AND OTHER EROSION CONTROL MEASURES, (NON-CONTAMINATED SOIL SHALL BE GRADED INTO THE SITE) (CONTAMINATED SOIL SHALL BE REMOVED/DISPOSED TO A LICENSED DISPOSAL FACILITY FOR CONTAINING WASTE PRODUCTS).
3. FOR DETAILS AND INFORMATION REGARDING EROSION CONTROL, REFER TO THE 'EROSION CONTROL DETAIL PLAN' SHEETS 30, 31, 32, 33 & 34.
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6. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
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8. TREE PROTECTION FENCE USED TO PROTECT WOODED AREAS, WETLAND AREAS AND INFILTRATION BMP's SHALL BE REMOVED FOLLOWING SITE CONSTRUCTION.
9. ALL DIVERSION BERMS, CHANNELS AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
10. BONAR "ENKAMAT 7010" SHALL BE USED ON ALL SLOPES THAT ARE 3:1 OR STEEPER. ALL PROPOSED SWALES TO BE LINE WITH NORTH AMERICAN GREEN "SC 150 BN". EMERGENCY SPILLWAYS SHALL BE LINED WITH NORTH AMERICAN GREEN "P300".

SOIL DATA:

SOILS DATA OBTAINED FROM USDA–NATURAL RESOURCES CONSERVATION SERVICES–WEB SOIL SURVEY–NATURAL COOPERATIVE SOIL SURVEY.

AmA	AMWELL SILT LOAM, 0 TO 3 PERCENT SLOPES
AmB	AMWELL SILT LOAM, 3 TO 8 PERCENT SLOPES
DdB	DOYLESTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES
RaB	RARITAN SILT LOAM, 3 TO 8 PERCENT SLOPES
ReA	READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES
RiB	REAVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

RECEIVING WATER: UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK & PINE RUN
RECEIVING WATERSHED: NESHAMINY CREEK
CHAPTER 93 CLASSIFICATION:
NORTH BRANCH NESHAMINY CREEK: WARM WATER FISHERY (WWF) MIGRATORY FISHERY (MF)
PINE RUN: TROUT STOCK FISHERY (TSF) MIGRATORY FISHERY (MF)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

INLET #43 & #44 WITHIN THE INTERNAL ROAD WILL BE INSTALLED WITH ROLLED EARTHEN BERM DOWNSLOPE OF THE INLET UNTIL THE INTERNAL ROAD IS STONED TO ENSURE RUNOFF WILL ENTER INLET PRIOR TO SURROUNDING AREA REACHES FINAL GRADE.

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON–SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF–SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF–SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

LEGEND

EXISTING CONTOUR
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING WATER LINE
EXISTING GAS LINE
EXISTING OVERHEAD WIRES
EXISTING EDGE OF MACADAM
EXISTING EDGE OF TREES
EXISTING TREE
SOILS LINE
WETLANDS
PROPOSED EDGE OF TREES
PROPOSED TREE PROTECTION FENCE
PROPOSED SANITARY SEWER
PROPOSED SANITARY SEWER LATERAL
PROPOSED SANITARY FORCE MAIN
PROPOSED SANITARY MANHOLE

PROPOSED FIRE HYDRANT
PROPOSED WATER LINE
PROPOSED WATER SERVICE LINE
PROPOSED STORM SEWER
RELOCATED PECO POLE
RELOCATED OVERHEAD WIRE
LIMIT OF DISTURBANCE
PROJECT/NPDES BOUNDARY
PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE
COMPOST FILTER SOCK
CONSTRUCTION ENTRANCE WITH WASH RACK
TOPSOIL STOCKPILE

FILTER BAG INLET PROTECTION
ROCK FILTER
PROPOSED RIP-RAP
EMERGENCY SPILLWAY GEOTEXTILE LINER
SWALE GEOTEXTILE LINER
DRAINAGE AREA TO SEDIMENT BASIN/TRAP
DRAINAGE AREA TO SWALE

SCALE: 1" = 40'

SHEET No. 27 OF 49

GALENA RESERVE MOBILE HOME PARK

LAND DEVELOPMENT with EROSION CONTROL PLAN (1 OF 3)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND XREF ECP

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com

COMPOST FILTER SOCK #10, #11 & #12 TO BE INSTALLED AFTER REMOVAL OF TEMPORARY DIVERSION BERM

COMPOST FILTER SOCK #11 (12" HEIGHT)

COMPOST FILTER SOCK #10 (12" HEIGHT)

COMPOST FILTER SOCK #9 (24" HEIGHT)

COMPOST FILTER SOCK #8 (24" HEIGHT)

COMPOST FILTER SOCK #7 (24" HEIGHT)

COMPOST FILTER SOCK #6 (18" HEIGHT)

COMPOST FILTER SOCK #5 (18" HEIGHT)

COMPOST FILTER SOCK #12 (12" HEIGHT)

TREE PROTECTION FENCE (TYP)

NPDES BOUNDARY

SWALE #3 "LINED WITH EROSION CONTROL BLANKET" (NAG SC150BN)

LIMIT OF DISTURBANCE

DRAINAGE AREA TO SWALE #3 & INLET #IN-6

DRAINAGE AREA TO SWALE #1 & INLET #IN-41

NPDES BOUNDARY & LIMIT OF DISTURBANCE

SWALE #1 "LINED WITH EROSION CONTROL BLANKET" (NAG SC150BN)

NOT A CONSTRUCTION ENTRANCE (CONSTRUCTION BARRIER ACROSS INTERNAL ROAD ENTRANCE)

SEDIMENT BASIN (SEE DETAIL)

EMERGENCY SPILLWAY ELEV. 458.75

EMERGENCY SPILLWAY "LINED WITH EROSION CONTROL BLANKET" (NAG P300)

COMPOST FILTER SOCK #16 (18" HEIGHT)

COMPOST FILTER SOCK #15 (18" HEIGHT)

DRAINAGE AREA TO SEDIMENT BASIN

ISOLATED WETLAND AREA

25' WETLAND BUFFER

TOPSOIL STOCKPILE

MATCH LINE SHEET 27

LIMEKILN ROAD (T-350)
(UNPOSTED SPEED LIMIT)

LEGAL RIGHT-OF-WAY

ULTIMATE RIGHT-OF-WAY

PROPOSED LOD

PHYSICAL CENTER LINE

AmB

AmA

RIB

DdB

HaB

LEGEND

EXISTING CONTOUR	346
EXISTING SANITARY SEWER	
EXISTING STORM SEWER	
EXISTING WATER LINE	W
EXISTING GAS LINE	G
EXISTING OVERHEAD WIRES	OH
EXISTING EDGE OF MACADAM	
EXISTING EDGE OF TREES	
EXISTING TREE	
SOILS LINE	UgB
WETLANDS	
PROPOSED EDGE OF TREES	
PROPOSED TREE PROTECTION FENCE	
PROPOSED SANITARY SEWER	
PROPOSED SANITARY SEWER LATERAL	SS
PROPOSED SANITARY FORCE MAIN	FM
PROPOSED SANITARY MANHOLE	M-10
PROPOSED FIRE HYDRANT	FH
PROPOSED WATER LINE	W
PROPOSED WATER SERVICE LINE	WS
PROPOSED STORM SEWER	
RELOCATED PECO POLE	
RELOCATED OVERHEAD WIRE	OH
LIMIT OF DISTURBANCE	LOD
PROJECT/NPDES BOUNDARY	NPDES
PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE	N&L
COMPOST FILTER SOCK	CFS
CONSTRUCTION ENTRANCE WITH WASH RACK	
TOPSOIL STOCKPILE	TOPSOIL STOCKPILE CFS CFS DOWNSLOPE SIDE
FILTER BAG INLET PROTECTION	
ROCK FILTER	
PROPOSED RIP-RAP	
EMERGENCY SPILLWAY GEOTEXTILE LINER	
SWALE GEOTEXTILE LINER	
DRAINAGE AREA TO SEDIMENT BASIN/TRAP	
DRAINAGE AREA TO SWALE	

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

KEY MAP

RECEIVING WATER: UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK & PINE RUN
RECEIVING WATERSHED: NESHAMINY CREEK
CHAPTER 93 CLASSIFICATION:
NORTH BRANCH NESHAMINY CREEK: WARM WATER FISHERY (WWF) MIGRATORY FISHERY (MF)
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LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

LAND DEVELOPMENT with EROSION CONTROL PLAN (2 OF 3)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 28 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
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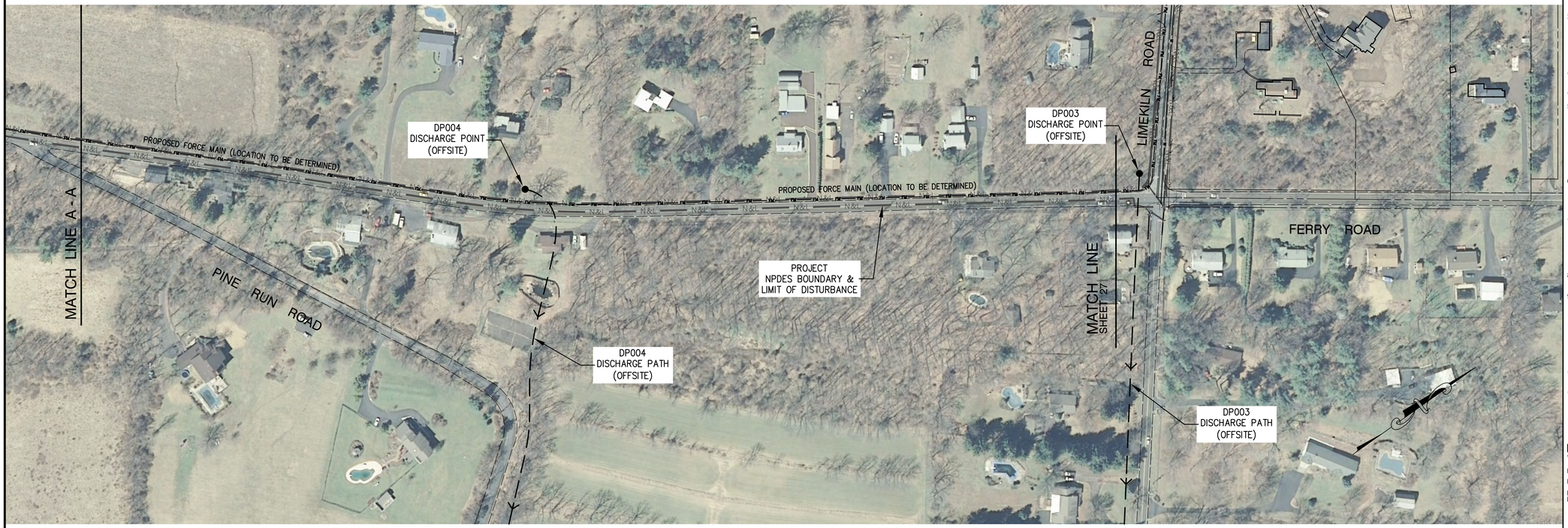
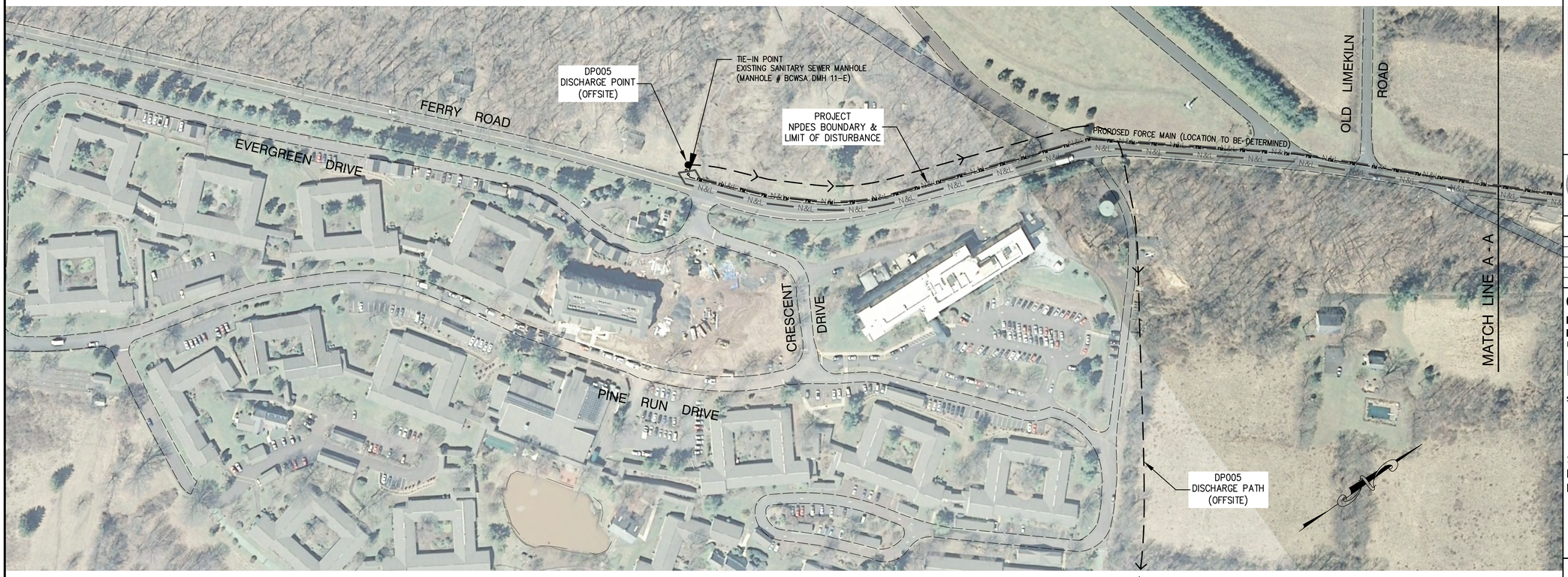




GENERAL NOTES

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
2. ALL CONTRACTORS PROVIDING CONSTRUCTION SERVICES AT THIS SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND REGULATIONS. URWILER AND WALTER, INC., NEW BRITAIN TOWNSHIP, ITS AGENTS AND ASSIGNS WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFIRM WITH THE APPLICABLE OSHA STANDARDS AND REGULATIONS.
3. INFILTRATION BASIN AND RAINGARDEN AMENDED SOILS AREA TO BE SEEDED WITH ERNST RAIN GARDEN GRASS MIX (ERNMX-180-1).
4. SEE SHEET 18 FOR LANDSCAPING CHART.
5. THE PROPERTY OWNER SHALL HAVE THE RESPONSIBILITY FOR THE PERPETUAL MAINTENANCE OF THE PERMANENT STORMWATER BMP'S, AND PIPES WHICH ARE LOCATED ON HIS PROPERTY. NO CHANGES SHALL BE MADE TO THE STRUCTURES, PIPES OR FINISH GRADING WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWNSHIP. THE TOWNSHIP HAS THE RIGHT TO ENTER THE LOT TO PERFORM ANY REQUIRED MAINTENANCE WHICH HAS NOT BEEN PROPERLY PERFORMED OR CARRIED OUT IN A TIMELY MANNER. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE COST OF ANY MAINTENANCE WHICH IS PERFORMED BY THE TOWNSHIP. THE TOWNSHIP SHALL LIEN THE PROPERTY FOR SAID COSTS UNTIL THE TOWNSHIP HAS BEEN REIMBURSED IN FULL.
6. IT SHALL BE UNLAWFUL TO ALTER OR REMOVE ANY PERMANENT STORMWATER BMP REQUIRED BY AN APPROVED BMP OPERATIONS AND MAINTENANCE PLAN, OR ALLOW THE PROPERTY TO REMAIN IN A CONDITION WHICH DOES NOT CONFORM TO AN APPROVED BMP OPERATIONS AND MAINTENANCE PLAN, UNLESS AN EXCEPTION IS GRANTED IN WRITING BY THE TOWNSHIP.
7. THE NEW BRITAIN TOWNSHIP IS GRANTED A BLANKET EASEMENT TO ACCESS EVERY CONVEYANCE AND BMP LOCATED ON THE PROPERTY FOR INSPECTION AND MAINTENANCE OR PRESERVATION OF STORMWATER RUNOFF CONVEYANCE, INFILTRATION AND DETENTION AREAS. THE NEW BRITAIN TOWNSHIP MAY UNDERTAKE ANY ACTION NECESSARY TO ENFORCE STORMWATER WATER MANAGEMENT REGULATIONS OF O&M PLAN AND O&M AGREEMENT. THIS SHALL BE A RIGHT OF THE TOWNSHIP BUT SHALL NOT BE CONSIDERED AS AN OBLIGATION OR DUTY.
8. CONSTRUCTION WASTE INCLUDES MILLINGS, CONCRETE, BLOCK, WOOD, LANDSCAPING, SEDIMENT / SILT, ETC.
9. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.

   SEDIMENT/SILT REMOVAL FROM BMPs SHALL BE DISPOSED OF WITHIN LANDSCAPE AREAS ON-SITE, IF THE QUANTITY OF SEDIMENT/SILT EXCEEDS THE LANDSCAPE AREA ABILITY TO ACCEPT IT, DISPOSAL OF THIS MATERIAL WILL BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.
10. TREE PROTECTION FENCE USED TO PROTECT STORMWATER BMP's SHALL BE REMOVED AT TIME OF STABILIZATION.
11. REFER TO SHEET 22 FOR SITE DISCHARGE MAP.

LEGEND

PROPOSED WATER LINE — W —

PROPOSED SANITARY FORCE MAIN — FM — FM — FM — FM — FM —

PROJECT/NPDES BOUNDARY & LIMIT OF DISTURBANCE — N&L — N&L —

OVERALL PROJECT/NPDES BOUNDARY – 17.50 ACRES
OVERALL LIMIT OF DISTURBANCE – 14.60 ACRES
ON-SITE LIMIT OF DISTURBANCE – 12.77 ACRES
OFF-SITE LIMIT OF DISTURBANCE – 0.45 ACRES
(FOR UTILITY INSTALLATION WITHIN LIMEKILN ROAD ROW)
OFF-SITE LIMIT OF DISTURBANCE – 1.38 ACRES
(FOR UTILITY INSTALLATION WITHIN FERRY ROAD ROW)

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

LAND DEVELOPMENT with
EROSION CONTROL PLAN (3 OF 3)
PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

50' 0 50' 100' 200'
SCALE: 1"= 100'

SHEET No. 29 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

EROSION AND SEDIMENT CONTROL PLAN NOTE

A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. ADDITIONALLY, THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED AND HAS BEEN APPROVED BY THE COUNTY CONSERVATION DISTRICT AND/OR LOCAL MUNICIPALITY IN COMPLIANCE WITH CHAPTER 102 RULES & REGULATIONS, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL OFF SITE SOIL AND/OR ROCK SPOIL AND/OR BORROW AREAS. §102.4(5)(xiv).

EROSION CONTROL PLAN REVISION NOTE

BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE 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 OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION. §102.4(b)(5)(XIV)

SITE LAND USES §102.4(b)(5)(iii)

PAST AND HISTORIC LAND USES (5 YEARS AND 50 YEARS) – RESIDENTIAL, MEADOW AND WOODLANDS
PRESENT LAND USE – RESIDENTIAL, MEADOW AND WOODLANDS
FUTURE LAND USES – RESIDENTIAL

CHAPTER 93 CLASSIFICATION §102.4(b)(5)(v)

THE PROJECT SITE DISCHARGES TO TWO DIFFERENT SUB-WATERSHEDS. APPROXIMATELY THREE-FOURTHS OF THE LOT DRAINS TO THE NORTH SIDE TO UNNAMED TRIBUTARY OF NORTH BRANCH NESHAMINY CREEK AND ONE FORTH DRAINS TO THE NORTHEAST TO UNNAMED TRIBUTARY OF NORTH BRANCH PINE RUN, AND THE RECEIVING WATERSHED IS NESHAMINY CREEK.

THIS SECTION OF THE UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK IS CLASSIFIED IN CHAPTER 93 OF THE PENNSYLVANIA CODE AS WARM WATER FISHERY (WWF) AND MIGRATORY FISHERY (MF). THIS SECTION OF THE UNNAMED TRIBUTARY TO NESHAMINY CREEK IS LISTED IN THE PENNSYLVANIA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT – STREAMS WITHIN CATEGORY 2.

THIS SECTION OF THE UNNAMED TRIBUTARY TO PINE RUN IS CLASSIFIED IN CHAPTER 93 OF THE PENNSYLVANIA CODE AS TROUT STOCK FISHERY (TSF) AND MIGRATORY FISHERY (MF). THIS SECTION OF THE UNNAMED TRIBUTARY TO PINE RUN IS LISTED IN THE PENNSYLVANIA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT – STREAMS WITHIN CATEGORY 4A.

AQUATIC LIFE (8854) – CATEGORY 4A
IMPAIRMENT SOURCE: SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT)
IMPAIRMENT CAUSE: SILTATION
DATE LISTED: 2002

THE ENTIRE SITE DRAINS TO NESHAMINY CREEK WATERSHED. NESHAMINY CREEK HAS A TMDL PLAN RELATED TO SILTATION AND SUSPENDED SOLIDS.

POTENTIAL POLLUTION CAUSING MATERIALS §102.4(b)(5)(xii)

SITE IS UNDERLAIN BY THE STOCKTON FORMATION AND LOCKATONG FORMATION. THE STOCKTON IS UPPER TRIASSIC IN AGE WHICH IS APPROXIMATELY BETWEEN 237 TO 207 MILLION YEARS AGO AND IS LIGHT-GRAY TO BUFF, COARSE-GRAINED, ARKOSIC SANDSTONE; INCLUDES REDDISH-BROWN TO GRAYISH-PURPLE SANDSTONE, SILTSTONE, AND MUDSTONE. THE LOCKATONG IS DEFINED AS A LIGHT TO DARK GRAY, GREENISH-GRAY, AND BLACK VERY FINE GRAINED SANDSTONE, SILTY ARGILLITE, AND LAMINATED MUDSTONE. (SEE FIGURE 3 FOR PA GEOLOGICAL MAP)

THE WATER BEARING PROPERTIES OF THE SITE ARE UNKNOWN. NO ROCK OUTCROPPINGS ARE LOCATED ON THIS SITE AND THE POTENTIAL FOR KARST FEATURES (SINKHOLES) IS MINIMAL.

IF DURING CONSTRUCTION, IT IS DETERMINED THAT THE SITE IS UNDERLAIN BY CARBONATE GEOLOGY THE CONTRACTOR SHALL IMMEDIATELY TERMINATE CONSTRUCTION AND ADHERE TO THE FOLLOWING:

A. CONSULT WITH A HYDROGEOLOGIST, HYDROLOGIST AND REGULATORY AGENCIES AS TO POTENTIAL SURFACE OR GROUNDWATER CONTAMINATION.

B. IF NECESSARY, MODIFY PROPOSED BMPS ACCORDING TO THE SPECIALIST RECOMMENDATIONS AND APPROVAL BY REGULATORY AGENCIES.

C. REPAIR SINKHOLES IN ACCORDANCE WITH FIGURE 17.1, 17.2,17.3 AND 17.4 OF THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, DATED MARCH 2012.

D. IF TOXIC MATERIAL (PYRITE, FOR EXAMPLE) IS ENCOUNTERED, THE CONTRACTOR SHALL EXCAVATE THIS MATERIAL, APPLY GEOTEXTILE TO THE BASE OF EXCAVATION AND REPLACE WITH STABLE MATERIAL.

*DURING SITE GEOLOGY TESTING / INFILTRATION, CARBONATE SOIL CONDITIONS OR OTHER POTENTIALLY TOXIC CONDITIONS WERE NOT ENCOUNTERED.

POTENTIAL THERMAL IMPACTS TO SURFACE WATERS §102.4(b)(5)(xiii)

IMPACTS ARE MINIMIZED BY FILTERING THE SURFACE WATER THROUGH THE COMPOST SOCKS AND SEDIMENT BASIN/TRAP FOLLOWED BY FILTERING THROUGH EXISTING UNDISTURBED VEGETATION. IN ADDITION, PRESERVING EXISTING VEGETATION, VEGETATIVE SWALES AND QUICKLY STABILIZING THE PROPERTY WILL ALSO AID IN MINIMIZING THERMAL IMPACTS.

THE FOLLOWING "OTHER MEASURES" WILL CONTROL, PREVENT AND MINIMIZE STORMWATER RUNOFF:

1. PRESERVE AND PROTECT TREES AND BRUSH AREAS.
2. MINIMIZE THE AREA OF DISTURBANCE
3. STABILIZE QUICKLY IMPACTED AREAS THAT WILL NOT BE RE-DISTURBED WITHIN 1-YEAR.
4. CONVEY STORMWATER VIA SWALES.

THE CONSTRUCTION SEQUENCE IS DESIGNED TO FOCUS ON SPECIFIC CONSTRUCTION TASKS AT A GIVEN TIME AND STABILIZE THE AREAS IMMEDIATELY UPON COMPLETION. IMPERVIOUS AREAS WILL BE INSTALLED LATER IN THE PROJECT, ROADWAYS WILL BE PAVED LAST.

THE THERMAL IMPACT POTENTIAL TO THE UNNAMED TRIBUTARY OF UNNAMED TRIBUTARY TO NORTH BRANCH NESHAMINY CREEK AND PINE RUN IS MINIMAL.

E&S PLANNING DESIGN – 102.(b)(4)

THE EROSION AND SEDIMENT CONTROL PLAN WAS PLANNED, DESIGNED AND TO BE IMPLEMENTED TO BE CONSISTENT WITH THE PCSM PLAN UNDER 25 PA. CODE §102.8 (RELATING TO PCSM REQUIREMENTS). THE PURPOSE OF THIS NARRATIVE AND THE EROSION CONTROL ASPECTS OF THE PLANS ARE TO PREVENT THE ACCELERATED EROSION OF EXPOSED SITE SOILS DURING CONSTRUCTION AND TO RETAIN ON SITE ALL SEDIMENT PRODUCED BY CONSTRUCTION ACTIVITIES. THIS WILL BE ACCOMPLISHED BY STRICT ADHERENCE TO THE FOLLOWING NOTES, SEQUENCE OF CONSTRUCTION, AND EROSION AND SEDIMENT CONTROL DETAILS SHOWN ON THE PLAN. THIS PLAN WILL FURTHER ACT TO PROVIDE THE FOLLOWING:

1. MINIMIZE EXTENT AND DURATION OF EARTH DISTURBANCE: A CONSTRUCTION SEQUENCE IS PROPOSED SO THE CONSTRUCTION IS LIMITED TO INDIVIDUAL STEPS AT A GIVEN TIME, WHICH WILL BE STABILIZED IMMEDIATELY UPON COMPLETION. A LIMIT OF DISTURBANCE IS TO BE STAKED AT THE BEGINNING OF THE CONSTRUCTION SEQUENCE TO MINIMIZE THE AMOUNT OF DISTURBANCE AS THE PROJECT SITE ALLOWS. ORANGE CONSTRUCTION FENCE / TREE PROTECTION FENCE IS TO BE INSTALLED TO DELINEATE THE PROPOSED TREE LINE AND PROTECT EXISTING TREES. TEMPORARY SEEDING AND MULCHING WILL BE APPLIED IMMEDIATELY TO ALL DISTURBED AREAS.

2. MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION: THE EXISTING DRAINAGE FEATURES WILL BE PROTECTED BY THE IMPLEMENTATION OF EROSION & SEDIMENT CONTROLS UPSTREAM OF THE EXISTING DRAINAGE FEATURES. TREES AND TREE LINES ARE TO BE PROTECTED AS MARKED ON THE PLAN DURING CONSTRUCTION BY UTILIZING TREE PROTECTION FENCE AND STAKING THE LIMIT OF DISTURBANCE.

3. MINIMIZE SOIL COMPACTION: SOIL COMPACTION WILL ALSO BE MINIMIZED IN AREAS OF PROPOSED BMPS, I.E. INFILTRATION BASIN, RAIN GARDEN AND VEGETATED SWALES. AREAS OF PROPOSED SOIL AMENDMENTS AND LANDSCAPE RESTORATION WILL HAVE MINIMAL SOIL COMPACTION AS WELL. AS MENTIONED ABOVE, A CONSTRUCTION SEQUENCE IS PROPOSED TO LIMIT THE CONSTRUCTION TO INDIVIDUAL STEPS AT A GIVEN TIME, WHICH WILL BE STABILIZED IMMEDIATELY UPON COMPLETION. STAKING THE LIMIT OF DISTURBANCE PREVENTS CONSTRUCTION VEHICLES FROM TRAVELLING OUTSIDE OF THE NECESSARY CONSTRUCTION AREAS. LIMITING THE AREA FOR CONSTRUCTION VEHICLES WILL MINIMIZE SOIL COMPACTION OUTSIDE OF THE CONSTRUCTION AREAS.

4. UTILIZE OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF: THE SEDIMENT BASIN/TRAP AND COMPOST SOCKS WILL MINIMIZE THE GENERATION OF INCREASED STORMWATER RUNOFF. A CONSTRUCTION ENTRANCE WITH A WASHRACK IS PROPOSED AT THE ENTRANCE TO THE PROPERTY WILL DIVERT THE RUNOFF TO A SEDIMENT BASIN DURING CONSTRUCTION. EROSION CONTROL BLANKET IS PROPOSED FOR 3:1 SLOPES AND SWALES.

LAND DEVELOPMENT PLANNING AND DESIGN MINIMIZES THE AREA OF PERMANENT IMPERVIOUS AREAS. THE APPLICANT THROUGH SITE PLANNING WITH INPUT WITH TOWNSHIP ASSISTED IN MINIMIZING THE TOTAL AREA OF DISTURBANCE AND IMPERVIOUS COVER.

E&S GENERAL NOTES

1. THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROL STRUCTURES. ADDITIONAL FACILITIES OR MEASURES SHALL BE INSTALLED WHERE NECESSARY OR WHERE DIRECTED BY EITHER THE TOWNSHIP OR THE COUNTY CONSERVATION DISTRICT AS CONSTRUCTION PROGRESSES.

2. THE OWNER/CONSTRUCTION MANAGER IS RESPONSIBLE FOR ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROLS AND SITE STABILIZATION. THE OWNER SHALL ASSIGN ONE INDIVIDUAL TO BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL FACILITIES AND MEASURES.

3. PROTECTION TO THE EXISTING TREES AND SHRUBS SHALL BE TAKEN BY THE CONTRACTOR TO ELIMINATE UNNECESSARY DAMAGE.

4. ANY DRY FILL HAULED OFFSITE MUST BE TAKEN TO A LOCATION WITH AN EROSION AND SEDIMENTATION CONTROL PLAN WHICH HAS BEEN REVIEWED BY THE COUNTY CONSERVATION DISTRICT FOR ADEQUACY.

5. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE WITHIN TRIBUTARY AREAS OF THOSE CONTROLS.

6. STOCKPILES MUST BE STABILIZED IMMEDIATELY.

7. NO CHANGES SHALL BE MADE IN THE CONTOUR OF THE LAND. NO GRADING, EXCAVATING, REMOVAL OR DESTRUCTION OF THE TOPSOIL, TREES OR OTHER VEGETATIVE COVER OF THE LAND SHALL BE COMMENCED WITHIN A PROPOSED SUBDIVISION OR LAND DEVELOPMENT TRACT UNTIL SUCH TIME THAT A PLAN FOR SEDIMENTATION CONTROL AND MINIMIZING EROSION HAS BEEN REVIEWED AND FOUND SATISFACTORY BY THE COUNTY CONSERVATION DISTRICT AND REVIEWED AND APPROVED BY THE TOWNSHIP, OR THERE HAS BEEN A DETERMINATION BY THE TOWNSHIP, UPON RECOMMENDATION BY THE COUNTY CONSERVATION DISTRICT, THAT SUCH PLANS ARE NOT NECESSARY.

8. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. ADDITIONALLY, THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED AND HAS BEEN APPROVED BY THE COUNTY CONSERVATION DISTRICT AND/OR LOCAL MUNICIPALITY IN COMPLIANCE WITH CHAPTER 102 RULES & REGULATIONS, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL OFF-SITE SOIL AND/OR ROCK SPOIL AND/OR BORROW AREAS.

9. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE 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 OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

10. CONTRACTOR SHALL USE TREADED MACHINERY AND MINIMIZE SOIL COMPACTION WHEREVER POSSIBLE. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.

11. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.

12. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.

13. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER-EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.

14. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.

15. SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.

16. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.

17. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, CONSERVATION DISTRICT OR THE DEPARTMENT.

18. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.

19. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM EIGHT INCHES (8") LAYERED LIFTS AT 95% DRY DENSITY.

LOCATION AND TYPE OF E&S BMPS §102.4(B)(5)(VI)

SOIL EROSION CONTROL WILL BE HANDLED IN VARIOUS WAYS. THE FOLLOWING EROSION CONTROL METHODS UTILIZED FOR THIS SITE WILL MINIMIZE ANY DEGRADATION TO THE SURFACE WATER LEAVING THE PROPERTY AND WILL BE DIRECTED TO THE EXISTING DISCHARGE POINT, NOTED AS POI ON THE PLANS:

1. ROCK CONSTRUCTION ENTRANCE WITH WASHRACK: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SILTS, CLAYS AND OTHER MATERIALS ON-SITE.

2. COMPOST FILTER SOCK: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SEDIMENT AT ITS SOURCES. A SECONDARY FUNCTION WILL BE RATE AND VOLUME CONTROL.

3. SEDIMENT BASIN WITH SKIMMER: THE PRIMARY FUNCTION IS PRECIPITATION OF SEDIMENT FROM THE WATER COLUMN. A SECONDARY FUNCTION IS DETENTION AND RETENTION OF STORMWATER.

4. SEDIMENT TRAP– THE PRIMARY FUNCTION OF THIS E & S BMP IS TO RETAIN STORMWATER AT THE POINT OF ORIGIN.

5. ROCK RIPRAP: THE PRIMARY FUNCTION IS ENERGY REDUCTION AND MINIMIZATION OF SEDIMENT ENTRAINMENT INTO THE WATER COLUMN.

6. INLET PROTECTION: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SEDIMENT AT ITS SOURCES.

7. ROCK FILTER: THE PRIMARY FUNCTION OF THIS BMP IS TO RETAIN SEDIMENT AT ITS SOURCES.

8. CONCRETE WASHOUT: THE PRIMARY FUNCTION IS CONTROL OF PH LEVELS.

9. PROTECTIVE FENCE: THE PRIMARY FUNCTION IS PROTECTION OF SPECIAL FEATURES, TREES. WETLAND AND INFILTRATION AREAS.

10. SEDIMENT FILTER BAG: THE PRIMARY FUNCTION IS CONTROL OF SEDIMENT DURING PUMPING OPERATIONS.

11. ORANGE CONSTRUCTION FENCE: THE PRIMARY FUNCTION IS TO DELINEATE LIMIT OF DISTURBANCE.

12. GEOTEXTILE: THE PRIMARY FUNCTION IS TO MINIMIZE ENTRAINMENT OF SOIL WITHIN THE SWALE.

MAINTENANCE INSTRUCTIONS FOR ALL E&S BMP'S §102.4(5)(x)

INSPECTIONS MUST BE LOGGED ONTO DEP FORM 3150-FM-BWEW0083 DATED 2/2012 INDICATING THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION AND KEPT ON SITE AT ALL TIMES.

THE FOLLOWING MAINTENANCE PROGRAM HAS BEEN DEVELOPED TO PROVIDE FOR THE INSPECTION OF BMPs ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RUNOFF EVENT, AND TO INCLUDE THE REPAIR OF THE BMPs TO ENSURE THEIR EFFECTIVE AND EFFICIENT OPERATION:

UNTIL THE SITE IS STABILIZED AND DURING CONSTRUCTION ACTIVITIES, ALL BMPs MUST BE MAINTAINED PROPERLY BY THE CONTRACTOR. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY AND IN ACCORDANCE WITH THESE PROCEDURES, PLANS AND DETAILS. ANY AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.

1. COMPOST FILTER SOCK – INSPECTIONS SHALL BE CONDUCTED ON A WEEKLY BASIS AND/OR AFTER EACH RUNOFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ½ THE ABOVE GROUND SOCK. THE SEDIMENT SHALL BE DISPOSED OF ON SITE AND/OR IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER SIX (6) MONTHS; PHOTODEGRADABLE SOCKS AFTER ONE (1) YEAR. UPON STABILIZATION OF THE 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.

2. INLET PROTECTION (STONE AND CONCRETE) – INSPECT INLET PROTECTION AFTER EACH RAINFALL EVENT. REPLACE STONE IS SYSTEM IS CLOGGED OR SEDIMENT REACHES HALF THE HEIGHT OF THE STONE.

3. INLET PROTECTION (INLET FILTER BAG) – INSPECT INLET PROTECTION AFTER EACH RAINFALL EVENT. THE INLET FILTER BAG SHOULD BE EMPTIED IF THE SEDIMENT BAG IS MORE THAN HALF FILLED WITH SEDIMENT OR DEBRIS.

4. SWALES – SWALES SHALL BE INSPECTED FOR EROSION AND/OR SEDIMENT ACCUMULATION ON AN ANNUAL BASIS, AFTER A SIGNIFICANT RUNOFF EVENT OR AS DIRECTED BY THE CONSERVATION DISTRICT AND/OR TOWNSHIP ENGINEER. NEEDED MAINTENANCE SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. AREAS OF EROSION SHALL BE REGRADED AND STABILIZED, AND SEDIMENT MUST BE REMOVED TO RESTORE DESIGN CAPACITIES. ANY REMOVED SEDIMENT SHALL BE DISPOSED OF IN AN APPROVED MANNER AND IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. ALL AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.

5. SEDIMENT BASIN/TRAPS – INSPECTIONS SHALL BE CONDUCTED ON A WEEKLY BASIS AND/OR AFTER EACH RUNOFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION. WHEN SEDIMENT HAS ACCUMULATED TO THE CLEAN-OUT ELEVATION INDICATED ON THE STAKE, THE SEDIMENT MUST BE REMOVED TO RESTORE DESIGN CAPACITIES. THE SEDIMENT SHALL BE DISPOSED OF ON SITE AND/OR IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR MAY BE REQUIRED TO TREAT OR DRAIN THE SEDIMENT BASINS AND TRAPS SEVEN (7) DAYS AFTER A STORM EVENT IF DIRECTED BY THE LOCAL COUNTY HEALTH DEPARTMENT IN DEALING WITH WEST NILE VIRUS.

6. CONSTRUCTION ENTRANCES – LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE MUST BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. A STABILIZED CONSTRUCTION EXIT SHALL BE CONSTRUCTED WHERE VEHICLES ENTER AND EXIT. EXITS SHALL BE MAINTAINED OR SUPPLEMENTED AS NECESSARY TO PREVENT THE RELEASE OF SEDIMENT FROM VEHICLES LEAVING THE SITE. ANY SEDIMENT DEPOSITED ON THE ROADWAY SHALL BE SWEPT AS NECESSARY THROUGHOUT THE DAY OR AT THE END OF EVERY DAY AND DISPOSED OF IN AN APPROPRIATE MANNER. SEDIMENT SHALL NOT BE WASHED INTO STORM SEWER SYSTEMS. SEDIMENT TRACKED ONTO ANY ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORKDAY AND DISPOSED AS A MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEPT INTO ANY ROAD SIDE DITCH, STORM SEWER OR SURFACE WATER.

7. SEDIMENT BARRIERS MUST BE INSPECTED, AND THEY MUST BE CLEANED OUT AT SUCH TIME AS THEIR ORIGINAL CAPACITY HAS BEEN REDUCED BY 50 PERCENT. ALL MATERIAL EXCAVATED FROM BEHIND SEDIMENT BARRIERS SHALL BE INCORPORATED INTO ON-SITE SOILS OR SPREAD OUT ON AN UPLAND PORTION OF THE SITE AND STABILIZED. ADDITIONAL SEDIMENT BARRIERS MUST BE CONSTRUCTED AS NEEDED.

8. INSPECTIONS SHALL EVALUATE DISTURBED AREAS AND AREAS USED FOR STORING MATERIALS THAT ARE EXPOSED TO RAINFALL FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM OR DISCHARGING FROM THE SITE. IF NECESSARY, THE MATERIALS MUST BE COVERED, OR ORIGINAL COVERS MUST BE REPAIRED OR SUPPLEMENTED. ALL AREAS DISTURBED DURING THE EARTHWORK PHASE OF CONSTRUCTION MUST BE TEMPORARILY SEEDED AND STABILIZED WITH HYDRO-STRAW IF PERMANENT STABILIZATION CANNOT BE ACHIEVED WITHIN FOUR (4) DAYS. ALSO, PROTECTIVE BERMS MUST BE CONSTRUCTED, IF NEEDED, IN ORDER TO CONTAIN RUNOFF FROM MATERIAL STORAGE AREAS.

9. GRASSED AREAS SHALL BE INSPECTED TO CONFIRM THAT A HEALTHY STAND OF GRASS IS MAINTAINED. THE SITE HAS ACHIEVED FINAL STABILIZATION ONCE ALL AREAS ARE COVERED WITH BUILDING FOUNDATION OR PAVEMENT OR HAVE A STAND OF GRASS WITH AT LEAST 70 PERCENT DENSITY OR GREATER IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE VEGETATIVE DENSITY MUST BE MAINTAINED TO BE CONSIDERED STABILIZED. AREAS MUST BE WATERED, FERTILIZED, AND RESEEDED AS NEEDED TO ACHIEVE THIS REQUIREMENT.

10. ALL DISCHARGE POINTS MUST BE INSPECTED TO DETERMINE WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING DISCHARGE OF SEDIMENT FROM THE SITE OR IMPACTS TO RECEIVING WATERS.

E&S – MONITORING, INSPECTION AND REPORTING REQUIREMENTS

VISUAL INSPECTIONS

THE PERMITTEE AND CO-PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOT BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT, AND CONDUCTED BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT E&S BMPs AND PCSM BMPs ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE AT A MINIMUM:

1. A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND

2. THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

NONCOMPLIANCE REPORTING

WHERE E&S, PCSM OR PPC BMPs ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITTEE AND CO_PERMITTEE(S) SHALL, WITHIN 24 HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION;

2. THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE;

3. STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE NONCOMPLIANCE; AND

4. THE DATE OR SCHEDULE OF DATES AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

REDUCTION, LOSS, OR FAILURE OF THE BMPs

UPON REDUCTION, LOSS, OR FAILURE OF THE BMPs, THE PERMITTEE AND CO_PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPs OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPs OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPs.

TERMINATION OF COVERAGE

NOT: UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPs IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO_PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE NOT MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER, IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPs IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGEMENT OF THE NOT, THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPs AND PCSM BMPs ON THE PROJECT SITE AND WILL BE RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

COMPLETION CERTIFICATE AND FINAL PLANS

WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPs IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS.

E&S PLAN DESIGNED AND IMPLEMENTED TO BE CONSISTENT WITH PCSM PLAN §102.4(b)(5)(xiv)

REGARDING THE LOCATIONS OF EXISTING RIPARIAN BUFFERS RELATIVE TO THE LIMIT OF DISTURBANCE AND WHETHER PROPOSED INFILTRATION FACILITIES ARE OUTSIDE OF PROPOSED GRADING AREAS,NOTE THE FOLLOWING:

1. THERE ARE NO EXISTING OR PROPOSED RIPARIAN BUFFERS.

2. THERE ARE NO PROPOSED INFILTRATION BMPs OUTSIDE OF PROPOSED GRADING AREAS.

EXISTING/PROPOSED RIPARIAN FOREST BUFFERS §102.4(b)(5)(xv)

REGARDING EXISTING OR PROPOSED RIPARIAN FOREST BUFFERS, NOTE THE FOLLOWING:

1. THERE ARE NO EXISTING/PROPOSED RIPARIAN FOREST BUFFERS LOCATED WITHIN OR OUTSIDE THE LIMITS OF DISTURBANCE FOR THIS PROJECT.

RECYCLING OR DISPORAL OF MATERIALS §102.4(b)(5)(xi)

THE FOLLOWING IS A LIST THAT INCLUDES, BUT THAT IS NOT LIMITED TO, THE POTENTIAL CONSTRUCTION WASTES THAT MAY EXIST ON-SITE:

- CONCRETE CURB AND SIDEWALK
- ASPHALT
- STONE RIPRAP
- SEPTIC TANKS
- E&S BMP – COMPOST FILTER SOCKS
- E&S BMP – EROSION CONTROL MATTING
- E&S BMP – FILTER BAG INLET PROTECTION
- E&S BMP – REGULATED FILL MATERIALS

ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 Pa. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE. BELOW IS A LIST OF METHODS FOR THE PROPER RECYCLING/DISPOSAL OF VARIOUS MATERIALS:

1. DUST CONTROL – CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE AT THE STABILIZED CONSTRUCTION ENTRANCE. THE PURPOSE IS TO TRAP DUST AND MUD THAT WOULD OTHERWISE BE CARRIED OFF-SITE BY CONSTRUCTION TRAFFIC. WATER TRUCKS WILL BE USED AS NEEDED DURING CONSTRUCTION TO REDUCE DUST GENERATED ON THE SITE. DUST CONTROL MUST BE PROVIDED BY THE CONTRACTOR TO A DEGREE THAT IS ACCEPTABLE TO THE LOCAL CONSERVATION DISTRICT. AFTER CONSTRUCTION, THE SITE WILL BE STABILIZED, WHICH WILL REDUCE THE POTENTIAL FOR DUST GENERATION.

2. SOLID WASTE DISPOSAL – NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORMWATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. THE CONTAINERS WILL BE EMPTIED AS NECESSARY BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE.

3. SANITARY FACILITIES – ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS. TEMPORARY SANITARY FACILITIES WILL BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THEY MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND WILL BE SERVICED BY A LICENSED COMMERCIAL OPERATOR.

4. WATER SOURCE – NON-STORMWATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER. WATER USED FOR CONSTRUCTION WHICH DISCHARGES FROM THE SITE MUST ORIGINATE FROM A PUBLIC WATER SUPPLY OR PRIVATE WELL APPROVED BY THE STATE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE.

5. CONCRETE WASTE FROM CONCRETE READY-MIX TRUCKS – DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN SPECIFICALLY DESIGNATED DIKED AREAS PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER AND STORMWATER THAT WILL BE DISCHARGED FROM THE SITE.

6. ALL OFF-SITE WASTE AND BORROW AREA MUST HAVE AN E&S PLAN APPROVED BY THE COUNTY CONSERVATION DISTRICT OR THE UPPER PROVIDENCE TOWNSHIP FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.

7. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

8. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.

DEFINITION OF CLEAN FILL AND IMPORT/EXPORT MATERIAL NOTES – §C.3 of NOI

IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE APPLICANT.

1. 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).

2. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

3. ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

4. ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: 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".

5. FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE, AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MANAGEMENT, WHICHEVER IS APPLICABLE. THE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM. <http://WWW.PACODE.COM/>

THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN (PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

EROSION CONTROL DETAIL (1 OF 5)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

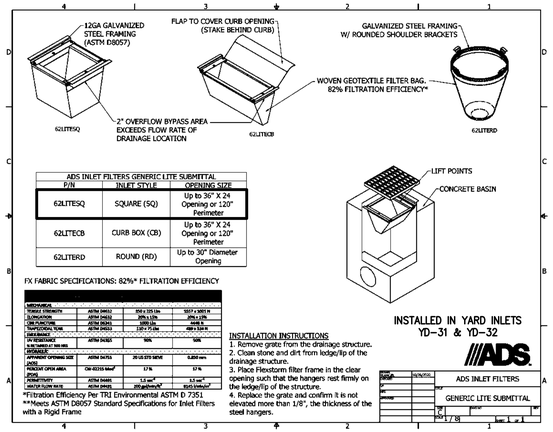
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE AS NOTED

SHEET No. 30 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



ADS INLET FILTERS GENERIC LITE SUBMITTAL		
P/N	INLET STYLE	OPENING SIZE
62LITESQ	SQUARE (SQ)	Up to 36" X 24 Opening or 120" Perimeter
62LITECB	CURB BOX (CB)	Up to 36" X 24 Opening or 120" Perimeter
62LITERD	ROUND (RD)	Up to 30" Diameter Opening

FX FABRIC SPECIFICATIONS: 82%* FILTRATION EFFICIENCY

MECHANICAL			
TENSILE STRENGTH	ASTM D4632	556 x 125 lbs	1237 x 1400 N
ELONGATION	ASTM D4632	30% x 15%	30% x 15%
MULLEN BURST	ASTM D3786	1,000 PSI	6895 kPa
PUNCTURE STRENGTH	ASTM D4833	1,201 POUNDS	5343 N
HYDRAULIC			
UV RESISTANCE	ASTM D4355	70%	70%
% RETAINED AT 500 HRS			
APPARENT OPENING SIZE (AOS)	ASTM D4751	70 US STD SIEVE	0.212 mm
PERMEABILITY	CW-02215 MOD*	0.7 in	1.8 cm
FLOW RATE (CRA AREA)		175	5,700 l/m²/min
PERMITTIVITY	ASTM D4491	1.5 sec⁻¹	1.5 sec⁻¹
WATER FLOW RATE	ASTM D4491	200 gal/min/ft²	8225 l/min/m²

*Filtration Efficiency Per TRI Environmental ASTM D 7351.
**Meets ASTM D8057 Standard Specifications for Inlet Filters with a Rigid Frame

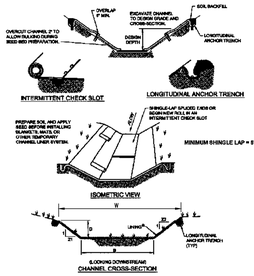
INSTALLED IN YARD INLETS YD–31 & YD–32

ADS

INSTALLATION INSTRUCTIONS
1. Remove grate from the drainage structure.
2. Clean stone and dirt from ledge/lip of the drainage structure.
3. Place Flexstorm filter frame in the clear opening such that the hangers rest firmly on the ledge/lip of the structure.
4. Replace the grate and confirm it is not elevated more than 1/8", the thickness of the steel hangers.

DRAWN	INSTR/DSN.	ADS INLET FILTERS
BY		
CHKD		GENERIC LITE SUBMITTAL
APVD		
DATE	1/18	SHEET 1 of 1

STANDARD CONSTRUCTION DETAIL # 6-1
Vegetated Channel



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, AND VEGETATIVE STABILIZATION SPECIFICATIONS FOR SEA, FERTILIZERS, SEED MIXTURES AND MULCHING INFORMATION.

Adapted from Salix Applied Earthcare - Erosion Draw 5.0

CHANNEL	B (FT)	D (FT)	W (FT)	Z1 (FT)	Z2 (FT)	LINING
SWALE #1	2	1.0	14	8	4	NAG SC150BN*
SWALE #2	2	1.0	10	4	4	NAG SC150BN*
SWALE #3	2	1.0	14	6	6	NAG SC150BN*
SWALE #4	2	1.0	12	5	5	NAG SC150BN*

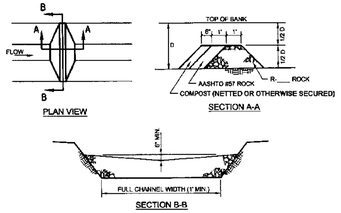
*NORTH AMERICAN GREEN SC150BN TURF REINFORCEMENT MAT

Anchor trenches shall be installed at beginning and end of channel in the same manner as longitudinal anchor trenches.

Channel dimensions shall be constantly maintained. Channel shall be cleaned whenever total channel depth is reduced by 25% at any location. Sediment deposits shall be removed within 24 hours of discovery or as soon as soil conditions permit access to channel without further damage. Damaged lining shall be repaired or replaced within 48 hours of discovery. No more than one third of the shoot (grass leaf) shall be removed in any mowing. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Excess vegetation shall be removed from permanent channels to ensure sufficient channel capacity.

–INSPECT SWALE AFTER EACH RAINFALL EVENT–

STANDARD CONSTRUCTION DETAIL # 4-14
Rock Filter



PA DEP

FOR 3' ≤ D USE R-4
FOR 2' ≤ D < 3' USE R-3
NOT APPLICABLE FOR D < 2'

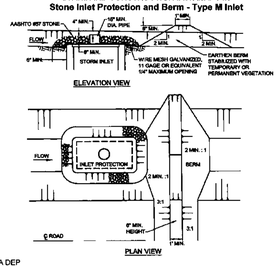
ROCK FILTER NO.	LOCATION	D (FT.)	RIPRAP SIZE
1	SWALE #1	2	R–3
2	SWALE #2	2	R–3

Sediment shall be removed when accumulations reach 1/2 the height of the filter.

Immediately upon stabilization of each channel, installer shall remove accumulated sediment, remove rock filter, and stabilize disturbed areas.

–INSPECT ROCK FILTERS AFTER EACH RAINFALL EVENT–
6" COMPOST LAYER SECURELY ANCHORED ON TOP OF FILTER
STONE ON ROCK FILTERS IS REQUIRED FOR AN ABACT E&S BMP.

STANDARD CONSTRUCTION DETAIL #4-20
Stone Inlet Protection and Berm - Type M Inlet



PA DEP

Inlet protection shall not be required for inlet tributary to sediment basin or trap. Berms shall be required for all installations not located at a low point.

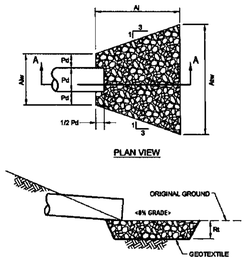
Rolled earthen berm in roadway shall be provided and maintained immediately down gradient of the protected inlet until roadway is stoned. Road subbase berm on roadway shall be maintained until roadway is paved. Earthen berm in channel shall be maintained until permanent stabilization is completed or to remain permanently

Stone inlet protection and berm for a Type M inlet can be used in one acre maximum drainage area with 15" overflow pipe and 4" head. A perforated plate welded to a metal riser may not be substituted for the wire mesh. A slotted plate welded to the riser may be used in conjunction with the wire mesh if calculations are provided to show sufficient capacity of the inlet to accept the peak runoff for a 2-year storm event from the tributary drainage area. Top of pipe shall be at least 6 inches below adjacent roadway if ponded water would pose a safety hazard to traffic. Earthen berm shall be rolled.

Sediment shall be removed when it reaches half the height of the stone. Damaged or clogged installations shall be repaired or replaced immediately. For systems discharging to HQ or EV surface water, a 6 inch thick compost layer shall be securely anchored on outside and over top of stone. Compost shall meet the standards in Table 4.2.

–INSTALLED AT PROPOSED INLET #23–
–INSPECT INLET PROTECTION AFTER EACH RAINFALL EVENT–
–REPLACE STONE IF SYSTEM IS CLOGGED OR SEDIMENT REACHES HALF THE HEIGHT OF THE STONE–
6" COMPOST LAYER SECURELY ANCHORED AROUND OUTSIDE OF THE STONE TO BE QUALIFIED AS AN ABACT E&S BMP

STANDARD CONSTRUCTION DETAIL # 9-2
Riprap Apron at Pipe Outlet without Flared Endwall



Adapted from USDOT, FHA HEC-14

OUTLET No.	PIPE DIA. (Pd) (in)	TAILWATER CONDITION (Max or Min)	MAN. "n" FOR PIPE	PIPE SLOPE (FT/FT)	Q (cfs)	V* (fps)	RIPRAP SIZE (R-4 min)	Rt (in)	Al (ft)	Alw (ft)	Atw (ft)
BMP#1	12	Max	0.012	0.018	2.40	1.97	R-3	9	5	3	5
BMP#2	30	Max	0.012	0.019	35.80	8.64	R-4	18	12	8	20
EW-18	24	Max	0.013	0.005	16.24	6.35	R-3	9	8	6	14
EW-23	18	Max	0.013	0.005	4.65	3.19	R-3	9	6	5	11
FES-33	15	Min	0.013	0.059	1.00	2.96	R-3	9	5	4	6
EW-51	24	Max	0.013	0.005	9.26	4.97	R-3	9	8	6	14
FES-43	15	Max	0.013	0.020	0.96	1.85	R-3	9	5	4	9

*: The anticipated velocity (V) should not exceed the maximum permissable shown in Table 6.6 for the proposed riprap protection. Adjust for less than full pipe flow. Use Manning's equation to calculate velocity for pipe slopes > or = 0.05 ft/ft.

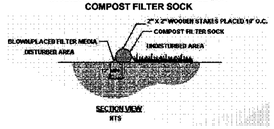
All aprons shall be constructed to the dimensions shown. Terminal widths shall be adjusted as necessary to match receiving channels.

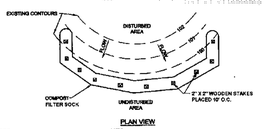
All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.

Extend riprap on back side of apron to at least ½ depth of pipe on both sides to prevent scour around the pipe.

*INSPECT ROCK RIP ON A BI–ANNUAL BASIS. REPLACE STONE & GEOTEXTILE IF 50% OR MORE STONE IS DISPLACED BY FLOOD WATER OR THE ROCK RIPRAP SETTLES DUE TO UNDERMINING.
*DISCHARGE POINT

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK





Filtrexx

Sock fabric shall meet standards of Table 4.1. Compost shall meet the standards of Table 4.2.

Compost filter sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 8 feet up slope at 45 degrees to the main sock alignment (Figure 4.1). Maximum slope length above any sock shall not exceed that shown on Figure 4.2. Stakes may be installed immediately downslope of the sock if so specified by the manufacturer.

Traffic shall not be permitted to cross filter socks.

Accumulated sediment shall be removed when it reaches half the aboveground height of the sock and disposed in the manner described elsewhere in the plan.

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 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.

SOCK NO.	DIA (IN)	LOCATION	SLOPE (%)	SLOPE LENGTH ABOVE BARRIER (FT)
1	12	BELOW LOT 10 IMPROVEMENTS	2.0	400
2	12	ALONG NORTH BOUNDARY BELOW LOT 10 IMPROVEMENTS	3.0	100
3	12	ALONG NORTH BOUNDARY BELOW LOT 8&9 IMPROVEMENTS	2.5	400
4	18	ALONG NORTH BOUNDARY BELOW SEDIMENT BASIN IMPROVEMENTS	3.0	440
5	18	ALONG NORTH BOUNDARY BELOW SEDIMENT BASIN IMPROVEMENTS	3.5	423
6	18	ALONG NORTH BOUNDARY BELOW INTERNAL ROAD IMPROVEMENTS	2.0	464
7	24	ALONG NORTH BOUNDARY BELOW INTERNAL ROAD IMPROVEMENTS	4.0	520
8	24	ALONG NORTH BOUNDARY BELOW INTERNAL ROAD IMPROVEMENTS	4.0	460
9	24	ALONG NORTH BOUNDARY BELOW INTERNAL ROAD IMPROVEMENTS	4.0	430
10	12	ALONG NORTH BOUNDARY BELOW INTERNAL ROAD IMPROVEMENTS	9.0	33
11	12	ALONG NORTH-WEST BOUNDARY BELOW LOT 7 IMPROVEMENTS	15.0	32
12	12	ALONG WEST BOUNDARY BELOW INLET-6 IMPROVEMENTS	4.0	100
13	12	ALONG EAST BOUNDARY BELOW LOT 14&15 IMPROVEMENTS	15.0	38
14	12	ALONG EAST BOUNDARY BELOW RAIN GARDEN IMPROVEMENTS	12.5	20
15	18	BELOW TOPSOIL STOCKPILE	30.0	10
16	18	BELOW TOPSOIL STOCKPILE	30.0	10

–INSPECT COMPOST FILTER SOCK AFTER EACH RAINFALL EVENT–

TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

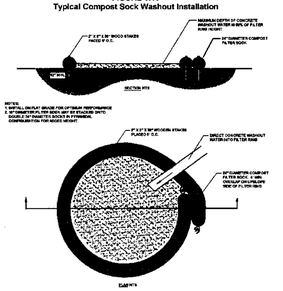
Two-ply systems	
Inner Containment Netting	**HDPE biaxial net**
	Continuously wound
	Fusion-welded junctures
	3/4" X 3/4" Max. aperture size
Outer Filtration Mesh	**Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)**
	3/16" Max. aperture size
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.	

TABLE 4.2
Compost Standards

Organic Matter Content	80% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.0
Moisture Content	35% - 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum

Filtrexx

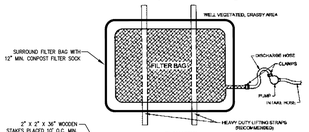
FIGURE 3.18
Typical Compost Sock Washout Installation



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

–INSPECT DAILY–
–CLEAN OUT WHEN CONCRETE WASHOUT MATERIAL EXCEEDS HALF THE HEIGHT OF THE COMPOST FILTER SOCK–

STANDARD CONSTRUCTION DETAIL # 3-16
Pumped Water Filter Bag



PA DEP

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 lbin
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 ½ 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 ½ 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.

THE FILTER BAG MUST BE SURROUNDED BY A 12" HIGH FILTER SOCK FOR AN ABACT E&S BMP

STANDARD CONSTRUCTION DETAIL # 3-2
Rock Construction Entrance with Wash Rack

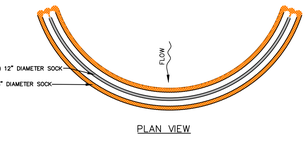
Modified from Smith Cartleguard Company

Wash rack shall be 20 feet (min.) wide or total width of access.

Wash rack shall be designed and constructed to accommodate anticipated construction vehicular traffic.

A water supply shall be made available to wash the wheels of all vehicles exiting the site.

MAINTENANCE: Rock construction entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile of rock material shall be maintained on site for this purpose. Drain space under wash rack shall be kept open at all times. Damage to the wash rack shall be repaired prior to further use of the rack. All sediment deposited on roadways shall be removed and returned to the construction site immediately. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.



DESIGN NOTES:

1. COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID–SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

SOCK MATERIAL SHALL MEET THE 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 SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

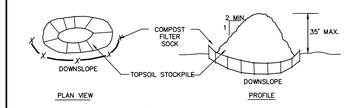
THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW–THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.

PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

STANDARD CONSTRUCTION DETAIL #3-11
COMPOST SOCK SEDIMENT TRAP
NOT TO SCALE

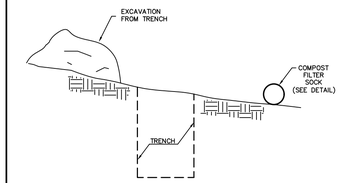
–SEE E&S REPORT FOR SEDIMENT TRAP CALCULATIONS–



TOPSOIL STOCKPILE DETAIL NTS

NOTES:

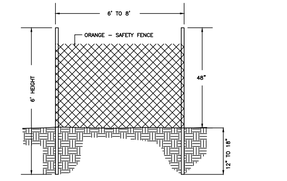
1. SILT FENCE MUST BE PLACED ON THE DOWNSLOPE SIDE OF ALL STOCKPILES.
2. IMMEDIATELY APPLY TEMPORARY SEEDING TO ALL STOCKPILES.



EROSION CONTROL FOR TRENCH CONSTRUCTION NTS

NOTES:

1. INSTALL COMPOST FILTER SOCK
2. EXCAVATE TRENCH AND PLACE EXCAVATION MATERIAL UPHILL OF TRENCH
3. CONSTRUCT UTILITY LINE
4. BACKFILL TRENCH IMMEDIATELY
5. SEED AND MULCH DISTURBED AREAS.



TREE/INFILTRATION PROTECTION FENCE DETAIL NTS

INSTALLATION NOTES

1. IT IS RECOMMENDED THAT A CONVENTIONAL METAL "T" OR "U" POST BE DRIVEN INTO THE GROUND TO A DEPTH OF 12 TO 18 INCHES. POSTS SHOULD BE SPACED EVERY 6 TO 8 FEET. NOTE: NOTCHED POSTS ARE IDEAL TO PREVENT THE FENCE FROM SLIPPING.
2. THREE WIRE TIES, WRAPPED AROUND A FENCE STRAND AND THE POST, ARE IDEAL IN SECURING THE FENCE TO THE POST. TENSION WIRE OR ROPE MAY BE USED AS A TOP STRINGER AND WOVEN THROUGH THE TOP ROW OF STRANDS TO PREVENT POTENTIAL SAGGING.
3. TWO ROLLS OF SAFETY FENCE MAY BE OVERLAPPED AT THE INTERSECTION OF A POST AND SECURED WITH WIRE TIES.
4. DAILY INSPECT AND REPAIR TREE/CONSTRUCTION PROTECTION FENCE IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.

THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN (PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK
EROSION CONTROL DETAIL (2 OF 5)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

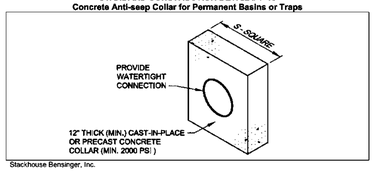
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND XREF ECP

SCALE AS NOTED

SHEET No. 31 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com

STANDARD CONSTRUCTION DETAIL # 7-16
Concrete Anti-seep Collar for Permanent Basins or Traps



Stackhouse Bensinger, Inc.

All collars shall be installed so as to be watertight.

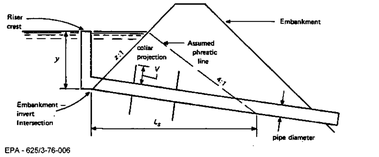
Collar size and spacing shall be as indicated below.

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

Basin or Trap No.	Pipe Size (in)	S (in)	No. of Collars	Distance Riser to 1st Collar (ft)	Collar Spacing (ft)
BMP #2	30	72	2	13	7

NOTES:
1. ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE PIPE, OR BARREL, SHOULD BE WATERTIGHT.
2. ANTI-SEEP COLLARS SHOULD BE LOCATED BELOW THE PHREATIC LINE IN THE EMBANKMENT AND SHOULD BE EVENLY SPACED.
3. THEY SHOULD NOT BE LOCATED CLOSER THAN 2 FEET TO A PIPE JOINT.
4. THERE SHOULD BE SUFFICIENT DISTANCE BETWEEN COLLARS FOR HAULING AND COMPACTING EQUIPMENT.

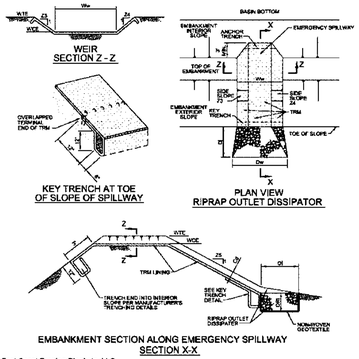
FIGURE 7.6
Anti-seep Collar Design



EPA - 625/3-76-006

BASIN NO.	TEMP. OR PERM.	Y (FT)	Z	Le (FT)	Lf (FT)	V (IN)	BARREL DIA. (IN)	COLLAR SIZE (IN)	NO. COLLARS	COLLAR SPACING (FT)	DISTANCE TO 1ST COLLAR (FT)
BMP #2	Perm	3.75	3	28	33	21	30	72	2	13	7

STANDARD CONSTRUCTION DETAIL # 7-13
Sediment Basin Emergency Spillway with TRM Lining



East Coast Erosion Blankets, LLC

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

BASIN NO.	WEIR Z3 (FT)	WEIR Z4 (FT)	WEIR TOP ELEV WTE (FT)	LINING CREST ELEV WCE (FT)	LINING WIDTH W w (FT)	LINING TRM Type	LINING STAPLE PATTERN	CHANNEL Z8 (FT)	CHANNEL DEPTH d (FT)	DISSIPATER LENGTH Ld (FT)	DISSIPATER WIDTH D (FT)	DISSIPATER RIPRAP SIZE (Ri-__)	RIPRAP THICK. DIM (IN)
SEDIMENT BASIN	3	3	460.25	458.75	75	NAG P300	8	3	5	12	20	R-4	18

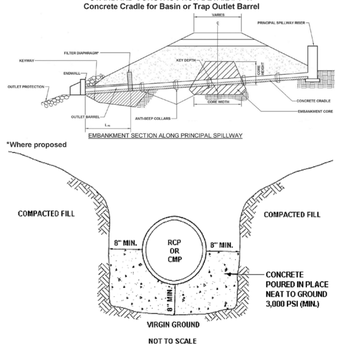
Heavy equipment shall not cross over spillway without precautions taken to protect TRM lining.

Displaced liner within the spillway and/or outlet channel shall be replaced immediately.

RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.

THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL # 7-17
Concrete Cradle for Basin or Trap Outlet Barrel



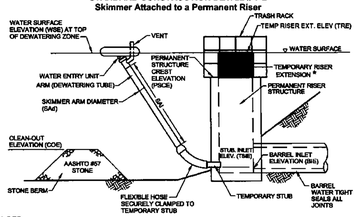
Adapted from Westmoreland Conservation District

Note: A concrete cradle may be used in conjunction with anti-seep collars and/or filter diaphragm.

Anti-seep collar number, size and spacing shall be as shown elsewhere in plan.

Filter diaphragm location (L_{FD}) shall be as shown in Figure 7.8.

STANDARD CONSTRUCTION DETAIL # 7-2
Skimmer Attached to a Permanent Riser



PA DEP

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

BASIN NO.	WATER SURFACE ELEV. WSE (FT)	SKIMMER ORIFICE DIA (IN)	SKIMMER ORIFICE HEAD (FT)	SKIMMER ARM DIA SAd (IN)	SKIMMER ARM LENGTH SAl (FT)	SKIMMER ARM MAT'L	SKIMMER FLEXIBLE HOSE DIA (IN)	SKIMMER FLEXIBLE HOSE LENGTH (IN)	SKIMMER FLEXIBLE HOSE MAT'L
SEDIMENT BASIN	458.96	3	1.22	3	4	PVC	3	24	PVC

TEMPORARY STUB INSIDE DIA (IN)	TEMPORARY STUB INVERT ELEV. TSIE (FT)	TEMPORARY STUB MAT'L	PERMANENT RISER CREST ELEV. PSCE (FT)	PERMANENT RISER HORIZ OPENING LENGTH El (IN)	PERMANENT RISER HORIZ OPENING WIDTH Ew (IN)	RISER EXTENSION CREST ELEV. TRE (FT)	RISER EXTENSION HORIZ OPENING LENGTH (IN)	RISER EXTENSION HORIZ OPENING WIDTH (IN)	BARREL INLET ELEV. BIE (FT)
SEDIMENT BASIN	454.70	PVC	458.25	72	24	--	--	--	454.50

All orifices on permanent riser below temporary riser extension shall have water-tight temporary seals provided. Temporary stub invert elevation shall be set at or below sediment clean-out elevation.

A rope shall be attached to the skimmer arm to facilitate access to the skimmer once installed.

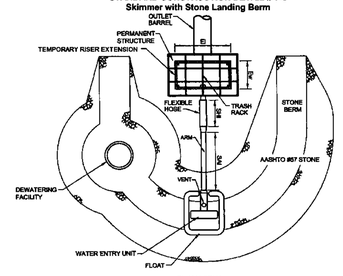
Skimmer shall be inspected weekly and after each runoff event.

Any malfunctioning skimmer shall be repaired or replaced within 24 hours of inspection.

Ice or sediment buildup around the principal spillway shall be removed so as to allow the skimmer to respond to fluctuating water elevations.

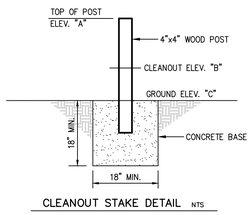
Sediment shall be removed from the basin when it reaches the level marked on the sediment clean-out stake or the top of the stone berm. See Standard Construction Detail # 7-3 for configuration of stone berm.

STANDARD CONSTRUCTION DETAIL # 7-3
Skimmer with Stone Landing Berm



PA DEP

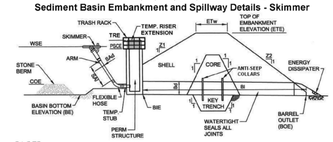
No guide rails shall be required for this installation.



BASIN OR TRAP No.	ELEV. "A" (FT)	ELEV. "B" (FT)	ELEV. "C" (FT)
SEDIMENT BASIN	458.25	457.00	456.00

INFILTRATION BASIN (BMP #2) PERMANENT OUTLET STRUCTURE (OS-2) IS TO BE INSTALLED DURING CONSTRUCTION OF SEDIMENT BASIN (BMP #2). CONNECT SKIMMER TO INFILTRATION BASIN (BMP #2) OUTLET STRUCTURE (OS-2). CIRCULAR ORIFICE FOR THE SKIMMER TO BE PRECAST TO ACCEPT THE TEMPORARY 3 INCH PVC STUB PIPE. UPON CONVERSION OF SEDIMENT BASIN (BMP #2) TO INFILTRATION BASIN (BMP #2), SEAL THE TEMPORARY 3 INCH CIRCULAR ORIFICE WITH CONCRETE PLUG.

STANDARD CONSTRUCTION DETAIL # 7-4
Sediment Basin Embankment and Spillway Details - Skimmer



PA DEP

BASIN NO.	Z1 (FT)	Z2 (FT)	TEMP RISER EXT. ELEV. TRE (FT)	EMBANKMENT TOP ELEV ETE (FT)	EMBANKMENT TOP WIDTH Etw (FT)	EMBANKMENT KEY TRENCH DEPTH (FT)	EMBANKMENT KEY TRENCH WIDTH (FT)	CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
SEDIMENT BASIN	3	3	--	458.75	10.00	4.00	10.00	457.00	456.00

SKIMMER DIA SAd (IN)	SKIMMER LENGTH SAl (FT)	SKIMMER MAT'L	OUTLET BARREL DIA Bd (IN)	OUTLET BARREL INLET ELEV BIE (FT)	OUTLET BARREL MAT'L	OUTLET BARREL LENGTH Bl (FT)	OUTLET BARREL ELEV BOE (FT)
SEDIMENT BASIN	4	PVC	3	454.50	RCP	27	454.00

Sediment basins, including all appurtenant works, shall be constructed to the detail and dimensions shown on the E&S plan drawings.

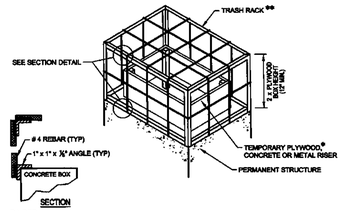
Area under embankment shall be cleared, grubbed, and stripped of topsoil to a depth of two feet prior to any placement and compaction of earthen fill. In order to facilitate maintenance and restoration, the pool area shall be cleared of all brush, trees, and objectionable material. Fill material for the embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in layered lifts of not more than 6" to 9". The maximum rock size shall be no greater than 2/3 the lift thickness.

Upon completion, the embankment shall be seeded, mulched, blanketed or otherwise stabilized according to the specifications of the E&S plan drawings. Trees shall not be planted on the embankment.

Inspect all sediment basins on at least a weekly basis and after each runoff event. Provide access for sediment removal and other required maintenance activities. A clean out stake shall be placed near the center of each basin. Accumulated sediment shall be removed when it has reached the clean out elevation on the stake and the basin restored to its original dimensions. Dispose of materials removed from the basin in the manner described in the E&S plan.

Basin embankments, spillways, and outlets shall be inspected for erosion, piping and settlement. Necessary repairs shall be immediately. Displaced riprap within the outlet energy dissipater shall be replaced immediately.

STANDARD CONSTRUCTION DETAIL # 7-10
Temporary Riser Extension and Trash Rack for Permanent Structure



PA DEP

* **¾" pressure treated plywood box with 2" x 2" pressure treated corner supports, set into 1½" grate offsets, caulk all seams to form watertight seals.**

** **Trash rack composed of 1" x 1" x 1/8" L (typ.) and #4 Bars (typ.) welded to the angles and at each intersection of the bars; #4 Bars spaced at half the diameter of the barrel max.**

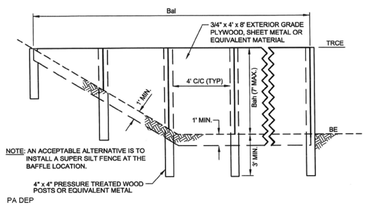
Box shall be bolted, strapped, or otherwise secured to the permanent riser.

Top of temporary riser extension shall be at least as high as sediment basin temporary riser and shall be 6" (minimum) below crest of emergency spillway.

All joints shall be water tight.

Clogged or damaged spillways shall be repaired immediately. Trash and other debris shall be removed from the basin and riser.

STANDARD CONSTRUCTION DETAIL # 7-14
Baffle



PA DEP

In pools with depths exceeding 7', the top of the plywood baffle does not need to extend to the temporary riser crest. Super Silt Fence baffles need not extend to TRCE elevation.

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

BASIN OR TRAP NO.	BAFFLE LENGTH Bal (FT)	BAFFLE HEIGHT Bah (FT)	TEMPORARY RISER CREST ELEV TRCE (FT)	BOTTOM BOTTOM ELEV BE (FT)
SEDIMENT BASIN	280	2.25	458.25	456.00

See appropriate basin detail for proper location and orientation.

Baffles shall be tied into one side of the basin unless otherwise shown on the plan drawings.

Substitution of materials not specified in this detail shall be approved by the Department or the local conservation district before installation.

Damaged or warped baffles shall be replaced within 7 days of inspection.

Baffles requiring support posts shall not be installed in basins requiring impervious liners.

THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN (PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK
EROSION CONTROL DETAIL (3 OF 5)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE AS NOTED

SHEET No. 32 OF 49

URWILER & WALTER, INC.
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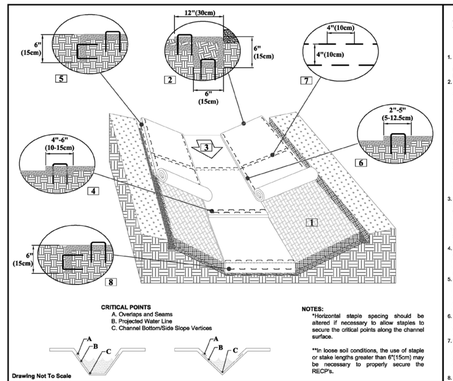

CHANNEL INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Use StormMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12"(30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" apart across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"-6" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECP's.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12"(30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 2"-5" (5-12.5cm) (Depending on RECPs type) and stapled.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 feet (9 -12m) intervals. Use a double row of staples staggered 4" apart and 4" on center to secure center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.

NOTES:
*Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

**In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

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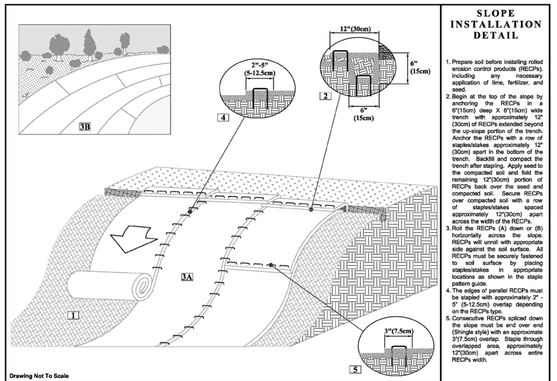
Disclaimer: The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

Drawn on: 5-4-17



SLOPE INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12"(30cm) apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. The edges of parallel RECPs must be stapled with approximately 2" - 5" (5-12.5cm) overlap depending on the RECPs type.
5. Consecutive RECPs spliced down the slope must be end over end (Shingle style) with an approximate 3'(7.5cm) overlap. Staple through overlapped area, approximately 12"(30cm) apart across entire RECPs width.

*NOTE:
In loose soil conditions, the use of staple or stake lengths greater than 6"(15cm) may be necessary to properly secure the RECP's.

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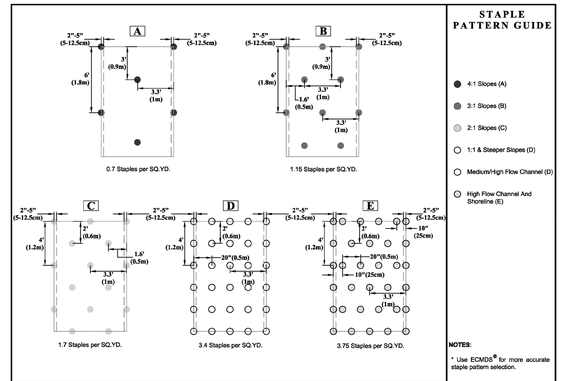

STAPLE PATTERN GUIDE

- 4:1 Slopes (A)
- 3:1 Slopes (B)
- 2:1 Slopes (C)
- 1:1 & Steeper Slopes (D)
- Medium/High Flow Channel (D)
- High Flow Channel And Shoreline (E)

NOTES:
* Use ECMDS® for more accurate staple pattern selection.

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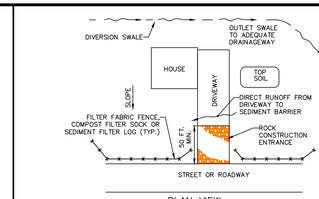
Drawn on: 5-4-17

Drawing Not To Scale

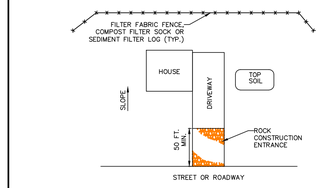


NOTES:

THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER THE LOT EXTENDS MORE THAN 150 FEET ABOVE THE ROADWAY OR WHERE RUNOFF FORM AREAS ABOVE THE LOT IS NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

STANDARD CONSTRUCTION DETAIL #10-1
TYPICAL ON-LOT BMPs FOR LOT ABOVE ROADWAY

NOT TO SCALE

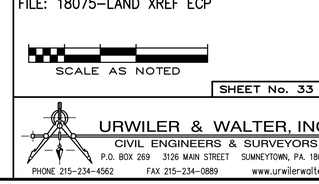


NOTES:

THE AREA DOWNSLOPE OF THE FILTER FENCE/COMPOST SOCK BARRIER/SEDIMENT FILTER LOG MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

STANDARD CONSTRUCTION DETAIL #10-2
TYPICAL ON-LOT BMPs FOR LOT BELOW ROADWAY

NOT TO SCALE



NOTES:

THE AREA DOWNSLOPE OF THE FILTER FENCE/COMPOST SOCK BARRIER/SEDIMENT FILTER LOG MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER RUNOFF FROM AREAS ABOVE THE LOT ARE NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

IN AREAS WHERE SLOPE IS AT AN OBLIQUE ANGLE TO THE ROADWAY, BMPS SHALL BE ADJUSTED ACCORDINGLY.

DIVERSION CHANNEL MAY OUTLET TO ROADSIDE DITCH OR STORM SEWER SYSTEM, BUT NOT ONTO STREET OR ROADWAY.

STANDARD CONSTRUCTION DETAIL #10-3
TYPICAL ON-LOT BMPs FOR LOT ALONG ASCENDING OR DESCENDING ROADWAY

THE SITE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PPC PLAN (PREPAREDNESS, PREVENTION AND CONTINGENCY PLAN) IN COMPLIANCE WITH PADEP REGULATIONS, AND HAVING THE APPROPRIATE PROVISIONS AVAILABLE ON SITE AT ALL TIMES.

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REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK
EROSION CONTROL DETAIL (4 OF 5)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND XREF ECP

SCALE AS NOTED

SHEET No. 33 OF 49

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ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet – BioNet® SC150BN™ Erosion Control Blanket

DESCRIPTION

The extended-term double net erosion control blanket shall be a machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 18 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw and coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a 100% biodegradable woven natural organic fiber netting. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands (commonly referred to as Leno weave) to form an approximate 0.50 x 1.0 in. (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The SC150BN shall meet Type 3 B specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.18

Material Content		
Matrix	70% Straw Fiber	0.35 lbs/sq yd (0.19 kg/sm)
	30% Coconut Fiber	0.15 lbs/sq yd (0.08 kg/sm)
Netting	Top: Leno woven 100% biodegradable jute	9.35 lb/1000 sq ft (4.5 kg/100 sm)
	Bottom: 100% biodegradable organic jute	7.7 lb/1000 sq ft (3.76 kg/100 sm)
Thread	Biodegradable	

Standard Roll Sizes			
Width	6.67 ft (2.03 m)	8.0 ft (2.4 m)	15.5 ft (4.72 m)
Length	108 ft (32.92 m)	112 ft (34.14 m)	90 ft (27.43 m)
Weight ± 10%	57.27 lbs (27.69 kg)	61.28 lbs (29.63 kg)	101.7 lbs (46.5 kg)
Area	80 sq yd (66.9 sm)	100 sq yd (83.61 sm)	155 sq yd (129.6 sm)
	Leno weave top only	Leno top and bottom	Leno top and bottom

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.75 in. (6.35 mm)
Resiliency	ECTC Guidelines	80%
Water Absorbency	ASTM D1117	397%
Mass/Unit Area	ASTM D6475	8.32 oz/sy (282.9 g/sm)
Swell	ECTC Guidelines	46%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.42 oz-in
Light Penetration	ASTM D6567	7.6%
Tensile Strength - MD	ASTM D6818	203.6 lbs/ft (2.96 kN/m)
Elongation - MD	ASTM D6818	13.4%
Tensile Strength - TD	ASTM D6818	164.4 lbs/ft (2.46 kN/m)
Elongation - TD	ASTM D6818	14.2%
Biomass Improvement	ASTM D7322	641 %

Design Permissible Shear Stress	
Unvegetated Shear Stress	2.10 psf (100 Pa)
Unvegetated Velocity	8.00 fps (2.44 m/s)

Slope Design Data: C Factors		
	Slope Gradients (S)	
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.021	0.029	0.063
20-50 ft	0.051	0.055	0.092
≥ 50 ft (15.2 m)	0.10	0.080	0.120

Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.050
0.50 – 2.0 ft	0.050/ 0.018
≥ 2.0 ft (0.60 m)	0.018

Tensar.
NORTH AMERICAN GREEN®

Tensar International Corporation
2500 Northwinds Parkway
Suite 500
Alpharetta, GA 30009
800-TENSAR-1
tensarcorp.com

Tensar International Corporation warrants that at the time of delivery the product furnished hereunder shall conform to the specification stated herein. Any other warranty including merchantability and fitness for a particular purpose, are hereby excluded. If the product furnished hereunder does not conform to the above, Tensar's sole obligation and liability will replace the product at no cost to the customer. **This product specification supersedes all prior specifications for the product described above and is not applicable to any products shipped prior to January 1, 2012.**

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ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet
EroNet™ P300® Permanent Erosion Control Blanket

DESCRIPTION

The permanent erosion control blanket shall be a machine-produced mat of 100% UV stable polypropylene fiber. The matting shall be of consistent thickness with the synthetic fibers evenly distributed over the entire area of the mat. The matting shall be covered on the top side with black heavyweight UV-stabilized polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.50 x 0.50 inch (1.27 x 1.27 cm) mesh. The bottom net shall also be UV-stabilized polypropylene with a 0.63 x 0.63 inch (1.57 x 1.57 cm) mesh size. The blanket shall be sewn together on 1.5 inch (3.81 cm) centers with non-degradable thread. All mats shall be manufactured with a colored thread stitched along both outer edges as an overlap guide for adjacent mats. The P300 shall meet Type 5A, 5B, specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.18

Material Content		
Matrix	100% UV stable Polypropylene Fiber	0.7 lbs/sq yd (0.38 kg/sm)
Netting	Top: UV-stabilized Polypropylene	5 lbs/1000 sq ft (24.4 g/sm)
	Bottom: UV-stabilized Polypropylene	3 lbs/1000 sq ft (14.7 g/sm)
Thread	Polypropylene, UV stable	

Standard Roll Sizes		
Width	6.67 ft (2.03 m)	8 ft (2.44 m)
Length	108 ft (32.92 m)	112 ft (35.34 m)
Weight ± 10%	61 lbs (27.66 kg)	76.25 lbs (34.59 kg)
Area	80 sq yd (66.0 sm)	100 sq yd (83.61 sm)

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.082
20-50 ft	0.016	0.060	0.086
≥ 50 ft (15.2 m)	0.070	0.090	0.110

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.47 in. (11.94 mm)
Resiliency	ASTM D6524	99.5%
Density	ASTM D792	0.916 g/cm³
Mass/Unit Area	ASTM 6566	13.03 oz/sy (441 g/m²)
UV Stability	ASTM D4355/ 1000 hr	90%
Porosity	ECTC Guidelines	95.89%
Stiffness	ASTM D1388	0.34 in-lb (1081.378 mg-cm)
Light Penetration	ASTM D6567	17.91%
Tensile Strength - MD	ASTM D6818	438 lbs/ft (6.49 kN/m)
Elongation - MD	ASTM D6818	28.1%
Tensile Strength - TD	ASTM D6818	295.9 lbs/ft (4.32 kN/m)
Elongation - TD	ASTM D6818	26.7%
Biomass Improvement	ASTM D7322	451%

Design Permissible Shear Stress		
	Short Duration	Long Duration
Phase 1: Unvegetated	3.0 psf (144 Pa)	2.0 psf (96 Pa)
Phase 2: Partially Veg.	8.0 psf (383 Pa)	8.0 psf (383 Pa)
Phase 3: Fully Veg.	8.0 psf (383 Pa)	8.0 PSF (383 Pa)
Unvegetated Velocity	9.0 fps (2.7 m/s)	
Vegetaged Velocity	16 fps (4.9 m/s)	

Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.034
0.50 – 2.0 ft	0.034/-0.020
≥ 2.0 ft (0.60 m)	0.020

NORTH AMERICAN GREEN

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Evansville, IN 47725
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Enka®solutions

Enkamat® 7010
Bonar Civil Products — TRM

Description

Enkamat 7010 is a 3-dimensional turf reinforcement mat (TRM) made of continuous monofilaments fused at their intersections. Ninety five (95%) percent of the Enkamat is open and available for soil, mulch and root interaction, creating the most effective root reinforcement mat (RRM) available. Enkamat is manufactured from nylon to eliminate the buoyancy factor associated with submerged conditions and provides permanent TRM protection in vegetated channels as well as on slopes.

Recommended Applications

- Permanent erosion control for vegetated channels with expected shear stresses ≤ 8 psf.
- Permanent erosion control for slight to moderate slopes (≤3H:1V).
- Support and enhance hydraulic and agronomic performance of ecosystem plants.
- Excellent substrate for hydraulically applied mulches for applications where calculated hydraulic forces exceed the threshold of the mulch by itself and/or unreinforced vegetation.
- Meets requirements for FHWA FP-03 Type 5B TRM.

Technical Data

Mechanical Properties	Test Method	Units	MARV Roll Value
Tensile Strength	ASTM D 6818	kN/m (lbs/ft)	2.2 (150)
Thickness	ASTM D 6525	mm (in)	7.5 (0.3)
Mass/Unit Area	ASTM D 6566	g/m² (oz/yd²)	220 (6.5)
Resiliency	ASTM D 6524	%	>80
UV Stability	ASTM D 4355	% strength retained	80 @ 2000 hr

Performance Properties	Test Method	Units	Typical Roll Value
Permissible Velocity			
30 minute, vegetated	Flume test[1]	m/s (ft/s)	5.8 (19)
50 hour, vegetated	Flume test[1]	m/s (ft/s)	4.2 (14)
Permissible Shear Stress			
30 minute, vegetated	Flume test[1]	kN/m (lbs/ft)	0.38 (8.0)
50 hour, vegetated	Flume test[1]	kN/m (lbs/ft)	0.29 (6.0)
Manning's n Range[2]	Flume test[1]		0.022—0.042

1. Flume test performed at independent laboratory-data and details available upon request.
2. Depending on vegetative type and height, use engineering field experience and examine range of Manning's n values during design.

Packaging

Property	Units	Nominal Value
Roll Dimensions (width x length)	m (ft)	2.4 X 51.4 (8.0 X 169)
Roll Area	m² (yd²)	123.4 (150)
Estimated Roll Diameter	m (in)	0.6 (24)
Estimated Roll Weight	kg (lb)	34 (75)
Color		Black

To the best of our knowledge, the information contained herein is accurate. However, Bonar Inc. cannot assume any liability whatsoever for the accuracy or completeness thereof. Final determination of the suitability of any information or material for the use contemplated, and for its manner of use, is the sole responsibility of the user. Unless otherwise noted, these products may be covered by patents or patents pending.

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Bonar
partners in performance

GROWINGMEDIA CHARACTERISTICS

RUNOFF DIVERSION TYPICALLY USE ONLY FILTREXX GROWINGMEDIA WHICH IS A FINE COMPOSTED MATERIAL THAT IS SPECIFICALLY DESIGNED FOR DIVERSION OF STORM WATER RUNOFF, AND ESTABLISHMENT AND SUSTAINABILITY OF PLANT VEGETATION. FOR INFORMATION ON THE PHYSICAL, CHEMICAL, AND BIOLOGICAL PROPERTIES OF FILTREXX GROWINGMEDIA REFER TO FILTREXX DESIGN MANUAL, SECTION 5.2.

INSTALLATION

1. RUNOFF DIVERSION USED FOR RUNOFF AND EROSION CONTROL SHALL MEET FILTREXX SOXX MESH MATERIAL AND FILTREXX CERTIFIED FILTERMEDIA SPECIFICATIONS.
2. CALL FILTREXX AT 877–542–7699 OR VISIT WWW.FILTREXX.COM FOR A CURRENT LIST OF INSTALLERS AND DISTRIBUTORS OF FILTREXX PRODUCTS.
3. RUNOFF DIVERSION WILL BE PLACED AT LOCATIONS INDICATED ON PLANS AS DIRECTED BY THE ENGINEER.
4. RUNOFF DIVERSION SHALL BE INSTALLED ABOVE AND ADJACENT TO AREAS OF UNPROTECTED SOIL OR AREAS PRONE TO SOIL EROSION.
5. RUNOFF DIVERSION SHALL BE INSTALLED WHERE 5 FT (1.5M) OF THE END AT HIGHEST ELEVATION SHALL BE CONSTRUCTED POINTING SLIGHTLY UPSLOPE AND INTO ANY EXISTING VEGETATION.
6. RUNOFF DIVERSION SHALL BE INSTALLED SO TRAILING END OF THE DEVICE POINTS DOWN SLOPE TO PREVENT PONDING OF RUNOFF.
7. RUNOFF DIVERSION SHALL LEAD SHEET AND SHALLOW CONCENTRATED RUNOFF FROM VEGETATED/STABILIZED SOIL AREAS TO STABILIZED CHANNELS, VEGETATED AREAS, LEVEL AREAS, HIGH INFILTRATION ZONES, OR COLLECTION PONDS.
8. RUNOFF DIVERSION SHALL BE PLACED ON SLOPES 1% OR GREATER TO ALLOW EFFECTIVE RUNOFF CONVEYANCE AND TO PREVENT PONDING.
9. RUNOFF DIVERSION INSTALLED ON SLOPES GREATER THAN 5% MAY REQUIRE EROSION CONTROL/SOIL STABILIZATION PRACTICES WHERE RUNOFF FLOW IS CONCENTRATED OR CONVEYED.
10. RUNOFF DIVERSION SHOULD NOT BE USED ON SLOPES GREATER THAN 2:1.
11. STAKES SHALL BE INSTALLED THROUGH THE MIDDLE OF THE RUNOFF DIVERSION ON 10 FT (3M) CENTERS, USING 2 IN (50MM) BY 2 IN (50MM) BY 3 FT (1M) WOODEN STAKES.
12. STAKING DEPTH FOR SAND AND SILT LOAM SOILS SHALL BE 12 IN (300MM), AND 8 IN (200MM) FOR CLAY SOILS.

INSPECTION

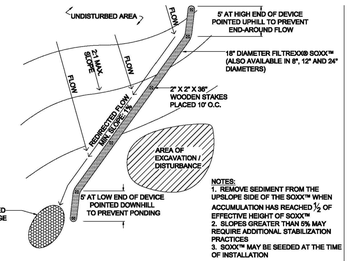
ROUTINE INSPECTION SHOULD BE CONDUCTED WITHIN 24 HRS OF A RUNOFF EVENT OR AS DESIGNATED BY THE REGULATING AUTHORITY. RUNOFF DIVERSION SHOULD BE REGULARLY INSPECTED TO MAKE SURE THEY MAINTAIN THEIR SHAPE AND ARE ADEQUATELY DIVERTING STORM RUNOFF. IF PONDING BECOMES EXCESSIVE, ADDITIONAL RUNOFF DIVERSION MAY BE REQUIRED, SEDIMENT OR DEBRIS REMOVAL MAY BE NECESSARY, OR THE DEVICE MAY NEED TO BE ADJUSTED TO ALLOW GRAVITATIONAL FLOW OF WATER DOWN SLOPE. A FREEBOARD HEIGHT OF 4 IN (100MM) BELOW THE TOP EDGE OF THE DEVICE MUST BE MAINTAINED AT ALL TIMES. RUNOFF DIVERSION SHALL BE INSPECTED UNTIL THE ENTIRE AREA HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.

MAINTENANCE

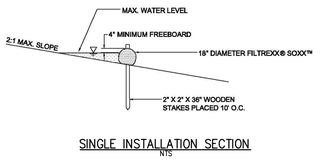
1. THE CONTRACTOR SHALL MAINTAIN THE RUNOFF DIVERSION IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
2. IF THE RUNOFF DIVERSION HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR.
3. THE CONTRACTOR SHALL REMOVE SEDIMENT AND DEBRIS AT THE BASE OF THE UPSLOPE SIDE OF THE RUNOFF DIVERSION WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SOXX OR AS DIRECTED BY THE ENGINEER.
4. A FREEBOARD HEIGHT OF 4 IN (100MM) BELOW THE TOP EDGE OF THE DEVICE MUST BE MAINTAINED THROUGHOUT THE LIFE OF THE DEVICE. RUNOFF DIVERSION SHALL BE MAINTAINED UNTIL THE HILL SLOPE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
5. THE GROWINGMEDIA WILL BE DISPERSED ON SITE ONCE DISTURBED AREA HAS BEEN PERMANENTLY STABILIZED, CONSTRUCTION ACTIVITY HAS CEASED, OR AS DETERMINED BY THE ENGINEER.
6. FOR RUNOFF DIVERSION AND EROSION CONTROL EXCEEDING 1 YEAR, RUNOFF DIVERSION CAN BE SEEDED AT THE TIME OF INSTALLATION TO CREATE A PERMANENT RUNOFF AND EROSION CONTROL SYSTEM. VEGETATION WILL ADD STABILITY TO THE DEVICE AND WILL REDUCE UV DEGRADATION OF THE SYSTEM. THE APPROPRIATE SEED MIX SHALL BE DETERMINED BY THE ENGINEER.

DISPOSAL/RECYCLING

GROWINGMEDIA IS AN ORGANIC, COMPOSTED PRODUCT MANUFACTURED FROM LOCALLY GENERATED ORGANIC, NATURAL, AND BIOLOGICALLY BASED MATERIALS. ONCE ALL SOIL HAS BEEN STABILIZED AND CONSTRUCTION ACTIVITY HAS BEEN COMPLETED, THE GROWINGMEDIA MAY BE DISPERSED WITH A LOADER, RAKE, BULLDOZER OR SIMILAR DEVICE AND MAY BE INCORPORATED INTO THE SOIL AS AN AMENDMENT OR LEFT ON THE SOIL SURFACE TO AID IN PERMANENT SEEDING OR LANDSCAPING. LEAVING THE GROWINGMEDIA ON SITE REDUCES REMOVAL AND DISPOSAL COSTS COMPARED TO OTHER TEMPORARY RUNOFF DIVERSION DEVICES. THE MESH NETTING MATERIAL WILL BE EXTRACTED FROM THE GROWINGMEDIA AND DISPOSED OF PROPERLY BY THE CONTRACTOR. THE PHOTODEGRADABLE MESH NETTING MATERIAL (SOXX) MAY DEGRADE IF LEFT ON SITE. BIODEGRADABLE MESH NETTING MATERIAL IS AVAILABLE AND MAY ELIMINATE THE NEED AND COST OF REMOVAL AND DISPOSAL. AS AN ALTERNATIVE, VEGETATED RUNOFF DIVERSION CAN BE LEFT ON–SITE AS PERMANENT RUNOFF DIVERSION AND EROSION CONTROL DEVICES USED TO REDIRECT STORM RUNOFF AND REDUCE STRESS FROM SHEET FLOW ON PERMANENT VEGETATION.



FILTREXX RUNOFF DIVERSION



SINGLE INSTALLATION SECTION
NTS

TABLES & FIGURES:

Table 6.1. Filtrexx® Soxx™ Material Specifications

Material Type	Cotton SoSoxx™	5 mil High Density Polyethylene (HDPE)	5 mil High Density Polyethylene (HDPE)	Multi-Filament Polypropylene (MFPP, previously HDPP)	Multi-Filament Polypropylene SafteySoxx™	Multi-Filament Polypropylene DuraSoxx®	Multi-Filament Polypropylene DuraSoxx® (Heavy Duty)
Material Characteristic	Biodegradable	Oxo-degradable	Photodegradable	Photodegradable	Photodegradable	Photodegradable	Photodegradable
Design Diameters	8 in (200mm), 12 in (300mm)	8 in (200mm), 12 in (300mm), 18 in (460mm)	5 in (125mm), 8 in (200mm), 12 in (300mm), 18 in (460mm)	8 in (200mm), 12 in (300mm), 18 in (460mm), 24 in (600mm), 32 in (800mm)	8 in (200mm), 12 in (300mm), 18 in (460mm)	8 in (200mm), 12 in (300mm), 18 in (460mm), 24 in (600mm), 32 in (800mm)	5 in (125mm), 8 in (200mm), 12 in (300mm), 18 in (460mm)
Mesh Opening	1/8 in (3mm)	3/16 in (10mm)	3/16 in (10mm)	3/16 in (10mm)	1/8 in (3mm)	1/8 in (3mm)	1/8 in (3mm)
Tensile Strength	NR	26 psi (1.82 kg/cm²)	26 psi (1.82 kg/cm²)	44 psi (3.09 kg/cm²)	202 psi (14.2 kg/cm²)	202 psi (14.2 kg/cm²)	242 psi (16.99 kg/cm²)
% Original Strength from Ultraviolet Exposure (ASTM G-155)	NR	NR	22% at 1000 hr	100% at 1000 hr	100% at 1000 hr	100% at 1000 hr	100% at 1000 hr
Functional Longevity/ Project Duration***	up to 12 months**	6 mo-3.5 yr	9 mo-4 yr	1-4 yr	2-5 yr	2-5 yr	2-5 yr

* Tested at Texas Transportation Institute/Texas A&M University (ASTM 5826-96).
** Functional Longevity based on continual UV exposure without vegetation.
Once vegetation is established longevity of the system is greatly increased.
*** Functional longevity ranges are estimates only. Site specific environmental conditions may result in shorter or longer time periods.

TEMPORARY FILTREXX RUNOFF DIVERSION BERM DETAILS

TABLE 11.2
Soil Amendment Application Rate Equivalents

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

RECOMMENDED SEEDING MIXTURES

1. TEMPORARY SEEDING:
   ANNUAL RYE GRASS (40 LBS/ACRE)

2. PERMANENT SEEDING:
   SEED MIXTURE:
   TALL FESCUE (PLS – 60 LBS/ACRE)
   OR
   FINE FESCUE (PLS – 35 LBS/ACRE)
   OR
   KENTUCKY BLUEGRASS (PLS – 25 LBS/ACRE)
   AND REDTOP (PLS – 3 LBS/ACRE)
   OR
   PERENNIAL RYE GRASS (PLS – 15 LBS/ACRE)

   (PLS – PURE LIVE SEED)

   SEEDING DATES:
   FEBRUARY 15 TO MAY 1 AND AUGUST 15 TO OCTOBER 15

3. SEEDING NOTES:

   A. THE LIMESTONE, FERTILIZER AND MULCHING INFORMATION APPLIES TO BOTH TEMPORARY AND PERMANENT SEEDING.

   B. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED SHALL BE MULCHED IMMEDIATELY. DURING NON–GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE SEEDED AND MULCHED WITH A PERMANENT SEED MIXTURE AND MULCH.

   C. SWALES, DETENTION BASINS, SEDIMENT TRAPS, STOCKPILES AND OTHER STRUCTURAL EROSION CONTROL DEVICES MUST BE SEEDED AND MULCHED IMMEDIATELY.

   D. ONCE SEED HAS BEEN SET, VEHICULAR TRAFFIC OR OTHER SOURCES OF COMPACTION SHOULD BE AVOIDED.

   E. NEW SEED SHOULD BE IRRIGATED ADEQUATELY WHEN VEGETATION IS 70% ESTABLISHED.

TEMPORARY STABILIZATION WITH SEED

1. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN TWELVE (12) MONTHS MUST BE SEEDED AND MULCHED IMMEDIATELY WITH A TEMPORARY COVER.

2. ALL AREAS TO BE PERMANENTLY SEEDED SHALL ALSO RECEIVE TEMPORARY SEEDING CONCURRENTLY.

3. SEEDBED PREPARATION FOR TEMPORARY SEEDING
   a) PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO SLOPE.
   b) APPLY AGRICULTURAL LIME AT A RATE OF 1 TONE PER ACRE
   c) APPLY 10–10–10 FERTILIZER A RATE OF 500 POUNDS PER ACRE
   d) WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR (4) INCHES.

TOPSOIL APPLICATION

1. TOPSOIL SHALL CONSIST OF FRIABLE SURFACE SOIL REASONABLY FREE OF GRASS, ROOTS, WEEDS, STICKS, STONES, OR OTHER FOREIGN MATERIALS. THE TOPSOIL SHALL CONSIST OF SANDY LOAM, WITH SOIL PARTICLES WITHIN THE FOLLOWING PERCENTAGES: CLAY; 0–25; SILT; 25–50; SAND; 50–70; DECOMPOSED ORGANIC MATTER; 5–10. THE SOIL SHALL HAVE A SOIL ACIDITY RANGE BETWEEN A PH 5.0 TO PH 7.0. THE SOIL SALINITY SHALL NOT EXCEED 3 MILLIMHOS PER CENTIMETER (AS DESCRIBED BY USDA CIRCULAR NO. 982).

2. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.

3. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM – 2 INCHES ON FILL OUTSLOPES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.

4. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

TABLE 11.1
Cubic Yards of Topsoil Required for Application to Various Depths

Depth (in)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

Adapted from VA DSWC

PERMANENT STABILIZATION WITH SEED

1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.

2. IMMEDIATELY PRIOR TO TOPSOIL DISTRIBUTION, THE SURFACE SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3–5 INCHES TO PROVIDE A GOOD BOND WITH THE TOPSOIL.

3. SEEDBED PREPARATION FOR PERMANENT SEEDING
   a) A SOIL TEST SHALL BE CONDUCTED TO ACCURATELY DETERMINE NECESSARY SOIL AMENDMENTS.
   b) PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO SLOPE.
   c) SOIL MODIFICATIONS:
      I. APPLY 10–10–20 RATED FERTILIZER AT A RATE OF 1000 POUNDS PER ACRE OR 25 POUNDS PER 1000 SQUARE FEET, OR AS DIRECTED BY SOIL TEST.
      II. APPLY AGRICULTURAL LIME AT A RATE OF 6 TONS PER ACRE OR 240 POUNDS PER 1000 SQUARE FEET, OR AS DIRECTED BY SOIL TEST.
   d) WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED.
   e) REMOVE FROM THE SURFACE ALL STONES ONE INCH (1") OR LARGER IN ANY DIMENSION, REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.
   f) INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RE–TILLED AND FIRMED AS ABOVE.

4. ALL NEWLY SEEDED AREAS SHALL BE STABILIZED IMMEDIATELY USING AN APPROVED TEMPORARY STABILIZATION METHOD.

UTILITY TRENCH EXCAVATION

1. 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.

2. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR A MAX. OF SIX DAYS FOR CERTAIN CASES REQUIRING TESTING OF THE INSTALLED PIPE.

3. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING TO A FACILITY FOR REMOVAL OF SEDIMENT (SEDIMENT FILTER BAG, SEE DETAIL) BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS.

4. 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 IMMEDIATELY.

5. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FORM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.

6. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

VEGETATIVE STABILIZATION

1. ALL DISTURBED AREAS THAT HAVE NOT OTHERWISE BEEN STABILIZED AND HAVE SIGNIFICANT POTENTIAL FOR EROSION SHOULD BE STABILIZED WITH VEGETATION. THIS INCLUDES GRADED AREAS WHERE IT IS ANTICIPATED THAT FUTURE EARTHMOVING WILL TAKE PLACE WITHIN THE COMING YEAR. AREAS THAT WILL BE SUBJECT TO EARTHMOVING WITHIN 12 MONTHS MAY BE STABILIZED WITH TEMPORARY SEED MIXTURES, PREDOMINANTLY ANNUAL GRASSES. ALL OTHERS SHOULD BE STABILIZED WITH PERMANENT SEED MIXTURES – PREDOMINANTLY PERENNIAL GRASSES. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED.

2. CRITICAL AREAS – ERODIBLE SOILS, WITHIN 50 FEET OF A SURFACE WATER, ETC. – SHOULD BE BLANKETED. TEMPORARY EROSION CONTROL BMPS THAT WERE INSTALLED FOR THE EARTHMOVING PHASE OF THE PROJECT MUST REMAIN IN PLACE AND BE MAINTAINED IN WORKING ORDER UNTIL PERMANENT STABILIZATION IS ACHIEVED.

3. AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN (I.E. ANTICIPATE THE COMPLETION DATE AND SCHEDULE THE SEEDER). IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE. THIS REQUIREMENT SHOULD BE CLEARLY STATED IN THE SEEDING AND MULCHING SPECIFICATIONS CONTAINED ON THE PLAN DRAWINGS.

4. BEFORE THE SEEDING BEGINS, TOPSOIL SHOULD BE APPLIED AND ANY REQUIRED SOIL AMENDMENTS WORKED INTO THE SOIL TO A DEPTH OF 4 TO 6 INCHES. IF COMPOST IS TO BE ADDED TO THE TOPSOIL, IT SHOULD BE WORKED INTO THE SOIL WITH THE OTHER SOIL AMENDMENTS UNLESS IT IS BEING APPLIED AS AN EROSION CONTROL BMP.

STABILIZATION WITH MULCH

1. MULCHING IS MOST APPLICABLE TO THOSE AREAS SUBJECT TO PERIODIC DISTURBANCE AND REWORKING IN ADDITION, STABILIZATION WITH FIBER MULCH SHALL BE USED DURING NON–GERMINATION PERIODS.

2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN TABLE 11.6.

3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR–DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL – ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.

4. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24–HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 450 F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL.

5. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON–TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

6. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

7. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

TABLE 11.6
Mulch Application Rates

Mulch Type	Application Rate (Min.)			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lb.	415	See limitations above

BCCD – STANDARD E&S NOTES

THE FOLLOWING NOTES SHOULD BE PLACED ON THE E&S PLAN DRAWINGS.

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.

3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.

4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.

5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.

6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.

7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.

8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.

9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.

10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

11. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.

12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP–001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.

14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.

15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.

18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES – 6 TO 12 INCHES ON COMPACTED SOILS – PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.

19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.

21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.

22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.

23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.

25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.

26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.

27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.

28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.

29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.

30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.

31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

STAGING OF EARTHMOVING ACTIVITIES

CONSTRUCTION SHALL BE DONE IN ONE (1) TOTAL PHASE.

A. OVERALL PROJECT/NPDES BOUNDARY– 17.40 ACRES

B. OVERALL LIMIT OF DISTURBANCE: 14.60 ACRES

C. ON–SITE LIMIT OF DISTURBANCE– 12.77 ACRES

D. OFF–SITE LIMIT OF DISTURBANCE– 0.45 ACRES (FOR INSTALLATION OF UTILITIES WITHIN LIMEKILN ROAD RIGHT–OF–WAY)

E. OFF–SITE LIMIT OF DISTURBANCE– 1.38 ACRES (FOR INSTALLATION OF UTILITIES WITHIN FERRY ROAD RIGHT–OF–WAY)

THE APPLICANT OR ASSIGNS SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROLS FOR ALL PROPOSED CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED FOUR (4) DAYS [IMMEDIATELY FOR HQ/EV WATERSHEDS], OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES INCLUDING, BUT NOT LIMITED TO: THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS AND A REPRESENTATIVE OF THE COUNTY CONSERVATION DISTRICT FOR AN ON–SITE PRE–CONSTRUCTION MEETING.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING ACT 187 (1–800–242–1776) THREE DAYS PRIOR TO EXCAVATION.

UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.

GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING OF THE TOPSOIL. THE PERMITTEE SHALL PROVIDE ENGINEERING OVERSIGHT FOR THE SCARIFYING OF THE SUBSOIL. A LICENSED PROFESSIONAL OR DESIGNEE KNOWLEDGEABLE IN THE SCARIFYING OF SUBSOIL, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

A WEEKLY INSPECTION LOG SHALL BE FORWARDED TO THE TOWNSHIP AND COUNTY CONSERVATION DISTRICT DURING CONSTRUCTION.

BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ENSURE 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 OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

NOTE– FOR A CRITICAL STAGE IDENTIFIED IN THE CONSTRUCTION SEQUENCE: A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL BE ON SITE DURING ALL CRITICAL STAGE CONSTRUCTION. THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 3 DAYS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.

DEMOLITION OF EXISTING IMPROVEMENTS AS FOLLOWS:

1. THE CONTRACTOR SHALL CLEARLY DELINEATE ALL PROPOSED DISTURBANCE LIMITS WITH CONSTRUCTION STAKING AND/OR CONSTRUCTION FENCING AS INDICATED ON THE PLANS.

2. INSTALL TREE/CONSTRUCTION PROTECTION FENCING AROUND THE TREES TO REMAIN, AND RAIN GARDEN AT THE LOCATIONS SHOWN ON THE PLANS.

3. INSTALL PERIMETER COMPOST FILTER SOCKS (1–9) AS INDICATED ON THE PLANS.

4. THE EXISTING MACADAM DRIVEWAYS ON THE SITE SHALL BE UTILIZED AS CONSTRUCTION ENTRANCE FOR THE DEMOLITION PURPOSE.

5. ALL EROSION CONTROL DEVICES SHALL BE STABILIZED AND IN WORKING ORDER PRIOR TO DEMOLITION.

6. RELOCATE EXISTING UTILITY POLES AND OVERHEAD ELECTRIC LINES ALONG LIMEKILN ROAD AS NOTED ON PLANS.

7. REMOVE ALL EXISTING STONE AREAS, MACADAM AREAS, CONCRETE PADS, UTILITY POLES, WELLS, SEPTIC TANKS, ELECTRIC BOXES, TELEPHONE BOXES, ELECTRIC PANELS, UTILITY POLES WITH GUY WIRES ASSOCIATED WITH MOBILE HOMES OUTSIDE OF LEGAL RIGHT–OF–WAY BUT WITHIN PROPERTY BOUNDARIES, AS SHOWN ON THE DEMOLITION PLAN.

   ALL CONSTRUCTION DEBRIS TO BE HAULED TO AN APPROVED CONSTRUCTION WASTE DISPOSAL SITE.

TEMPORARY GRADING FOR SEDIMENT FACILITY CONSTRUCTION AS FOLLOWS:

8. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE WITH WASH RACK AS SHOWN ON THE PLANS. ERECT SIGNAGE AT THE SAME LOCATION WITH WORKING "CONSTRUCTION ENTRANCE".

9. CLEAR AND GRUB ONLY IN AREAS NECESSARY TO CONSTRUCT SEDIMENT BASIN. STRIP TOPSOIL AND PLACE TOPSOIL IN THE DESIGNATED TOPSOIL STOCKPILE LOCATION SHOWN ON THE PLAN. TOPSOIL STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.

10. CONSTRUCT SEDIMENT BASIN WITH ALL ASSOCIATED APPURTENANCES: PERMANENT OUTLET STRUCTURE, KEY TRENCH, CONCRETE ANTI–SEEP COLLARS, OUTLET PIPE, ENDWALL, ROCK RIP RAP, TEMPORARY CLEAN–OUT STAKES AND SKIMMER. SEE SEDIMENT BASIN DETAILS FOR BOTTOM ELEVATION – DO NOT OVER EXCAVATE. SEDIMENT BASIN BERM SHALL BE CONSTRUCTED TO THE CORRECT ELEVATION AS SHOWN IN THE SEDIMENT BASIN DETAILS. SPREAD TOPSOIL OVER SEDIMENT BASIN BERM AND SEED AND MULCH WITH PERMANENT SEEDING (REFER TO SEEDING AND MULCHING RATES). INSTALL TURF REINFORCEMENT MAT OVER EMERGENCY SPILLWAY TO TOE OF THE EMBANKMENT.

11. SIMULTANEOUSLY WHILE CONSTRUCTING SEDIMENT BASIN, INSTALL COMPOST FILTER SOCK SEDIMENT TRAP AS SHOWN ON THE PLANS.

12. THE SEDIMENT BASIN AND COMPOST FILTER SOCK SEDIMENT TRAP MUST BE STABILIZED AND FUNCTIONING PROPERLY PRIOR TO ANY FURTHER EARTH DISTURBANCE ACTIVITIES IN THEIR DRAINAGE AREAS. UPON INSTALLATION OF THE SKIMMER, AN IMMEDIATE INSPECTION OF THE SKIMMER SHALL BE CONDUCTED BY A QUALIFIED SITE REPRESENTATIVE AND THE COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE PROPER SKIMMER IS INSTALLED AND SEALED, PER PLAN.

13. CLEAR AND GRUB ONLY IN AREAS NECESSARY TO INSTALL TEMPORARY DIVERSION BERM AND TEMPORARY SWALE DRAINING TO SEDIMENT BASIN. IMMEDIATELY STABILIZE DISCHARGE AREA FOR TEMPORARY DIVERSION BERM AND TEMPORARY SWALE WITH EROSION CONTROL BLANKET.

14. ONCE THE SEDIMENT BASIN AND COMPOST FILTER SOCK SEDIMENT TRAP ARE CONSTRUCTED, THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION RUNOFF IS DIRECTED TO SEDIMENT BASIN AND COMPOST FILTER SOCK SEDIMENT TRAP. A FEW AREAS MAY SHEET FLOW TO PERIMETER COMPOST FILTER SOCKS UNTIL INTERNAL ROAD IS ROUGH GRADED AND INLETS ARE INSTALLED WHICH WILL DIRECT FLOW INTO SEDIMENT BASIN.

GENERAL SITE CONSTRUCTION AS FOLLOWS:

15. PROVIDE GENERAL SITE LAYOUT.

16. CLEAR AND GRUB INTERNAL ROAD AREA, AS REQUIRED FOR GRADING AND CONSTRUCTION ACTIVITY. STRIP TOPSOIL AND PLACE TOPSOIL IN THE DESIGNATED TOPSOIL STOCKPILE LOCATION SHOWN ON THE PLAN. TOPSOIL STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.

17. INSTALL CONCRETE WASHOUT AT THE LOCATION SHOWN ON THE PLAN. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE ENTIRE LENGTH OF INTERNAL ROAD. CONSTRUCTION SHALL TAKE PLACE FROM HIGH TO LOW AREAS AS MUCH AS POSSIBLE. ALL AREAS DISTURBED DURING THE EARTHWORK PHASE OF CONSTRUCTION MUST BE TEMPORARILY SEEDED AND STABILIZED IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.

18. BEGIN TO CONSTRUCT STORMWATER CONVEYANCE PIPING AND INLET SYSTEM, GRAVITY SEWER MAIN, SANITARY FORCE MAIN, WATER MAIN AND OTHER UTILITIES WITHIN THE INTERNAL ROAD. BEGIN INSTALLATION AT THE BOTTOM OF EACH RUN. IMMEDIATELY INSTALL ROCK RIP RAP AT THE ENDWALLS AS NOTED. IMMEDIATELY STABILIZE AREAS UPON COMPLETION OF EACH SECTION OF PIPE OR AT THE END OF EACH DAY.

19. REMOVE THE TEMPORARY DIVERSION BERM AND TEMPORARY SWALE DRAINING TO SEDIMENT BASIN SINCE THE INTERNAL ROAD IS ROUGH GRADED WITH INLETS.

20. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE ENTIRE LENGTH OF LIMEKILN ROAD WIDENING. CONSTRUCTION SHALL TAKE PLACE FROM HIGH TO LOW AREAS AS MUCH AS POSSIBLE. ALL AREAS DISTURBED DURING THE EARTHWORK PHASE OF CONSTRUCTION MUST BE TEMPORARILY SEEDED AND STABILIZED IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS.

21. SIMULTANEOUSLY, CONSTRUCT SWALES # 1 AND 2 ALONG LIMEKILN ROAD WIDENING AREA AND IMMEDIATELY STABILIZE THE SWALES WITH EROSION CONTROL BLANKET.

22. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE PUMP STATION BUILDING AREA AND ASSOCIATED PARKING TO SUBGRADE ELEVATION.

23. INITIATE THE NECESSARY EARTHWORK AND ROUGH GRADE THE BUILDING PAD AND DRIVEWAYS TO SUBGRADE ELEVATION.

24. INSTALL ALL UNDERGROUND UTILITIES I.E., WATER, SANITARY SEWER, ELECTRICITY, TELEPHONE, CABLE ETC. ASSOCIATED WITH THE INDIVIDUAL BUILDING LOT. SEED, MULCH, AND STABILIZE ANY DISTURBED SOIL IMMEDIATELY.

25. BEGIN THE INSTALLATION OF PROPOSED OFF–SITE SANITARY FORCEMAIN AND CONNECT TO THE EXISTING MANHOLE IN FERRY ROAD ALONG WITH CONNECTION TO WATER MAIN AT FERRY ROAD AND LIMEKILN ROAD INTERSECTION. BEGIN INSTALLATION AT THE BOTTOM OF EACH RUN. IMMEDIATELY STABILIZE AREAS UPON COMPLETION OF EACH SECTION OF PIPE OR AT THE END OF EACH DAY.

26. FINE GRADE INTERNAL ROAD AND LIMEKILN ROAD EXTENSION AREA. PLACE STONE BASE COURSE ON INTERNAL ROAD AND LIMEKILN ROAD AND COMPACT AS SOON AS POSSIBLE TO STABILIZE SOIL.

27. CONSTRUCT CONCRETE CURB AND BACKFILL IN ALL AREAS AND STABILIZE.

28. BEGIN CONSTRUCTION OF INDIVIDUAL BUILDING PADS FOR LOTS 8–15 AND ASSOCIATED DRIVEWAYS.

29. BEGIN CONSTRUCTION OF INDIVIDUAL BUILDING PADS AND ASSOCIATED DRIVEWAYS FOR LOT 1–7 AND SIMULTANEOUSLY CONSTRUCT SWALE # 3 AND IMMEDIATELY STABILIZE THE SWALES WITH EROSION CONTROL BLANKET.

30. ONCE THE BUILDING LOTS 1–15 ARE STABILIZED, BEGIN CONSTRUCTING THE REMAINING LOTS 16–33 AND IMMEDIATELY STABILIZE.

FINAL STABILIZATION

31. INITIATE FINAL GRADING AND PLACEMENT OF TOPSOIL IN ALL LANDSCAPE AREAS. AS SOON AS SLOPES, CHANNELS, AND OTHER DISTURBED AREAS REACH FINAL GRADE, THEY MUST BE STABILIZED. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES PRIOR TO TOPSOIL PLACEMENT TO PERMIT BONDING OF THE TOPSOIL. THE PERMITTEE SHALL PROVIDE ENGINEERING OVERSIGHT FOR THE SCARIFYING OF THE SUBSOIL. A LICENSED PROFESSIONAL OR DESIGNEE KNOWLEDGEABLE IN THE SCARIFYING OF SUBSOIL, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

32. TOPSOIL TO BE REDISTRIBUTED TO A DEPTH OF EIGHT (8) INCHES, THEN PERMANENT SEEDING AND MULCHING SHALL BE APPLIED AT THE SPECIFIED RATES. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON. HOWEVER, THE AREA WILL NOT BE CONSIDERED STABILIZED UNTIL A MINIMUM UNIFORM 70% VEGETATIVE COVER OF EROSION RESISTANT PERENNIAL SPECIES HAS BEEN ACHIEVED. AS DISTURBED AREAS WITHIN A PROJECT APPROACH FINAL GRADE, PREPARATIONS SHOULD BE MADE FOR SEEDING AND MULCHING TO BEGIN (I.E. ANTICIPATE THE COMPLETION DATE AND SCHEDULE THE SEEDER). IN NO CASE SHOULD AN AREA EXCEEDING 15,000 SQUARE FEET, WHICH IS TO BE STABILIZED BY VEGETATION, REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING IS COMPLETED BEFORE MAKING PREPARATIONS FOR SEEDING AND MULCHING IS NOT ACCEPTABLE. SEEDING AND MULCHING REQUIREMENTS ARE SPECIFIED ON THE PLANS.

33. IMMEDIATELY INSTALL ALL REQUIRED EMBANKMENT GEOTEXTILE MATERIAL.

34. ONCE THE CONTRIBUTING DRAINAGE AREAS TO THE COMPOST FILTER SOCK SEDIMENT TRAP HAVE BEEN STABILIZED, AND UPON APPROVAL BY THE DESIGNATED LICENSE PROFESSIONAL, ONLY THEN SHALL THE TEMPORARY EROSION CONTROL DEVICES BE REMOVED AND THE COMPOST FILTER SOCK SEDIMENT TRAP REMOVED. FINAL STABILIZATION OF COMPOST FILTER SOCK SEDIMENT TRAP REQUIRE REMOVAL OF ACCUMULATED SEDIMENT AND STABILIZATION OF DISTURBED AREAS.

35. INITIATE INSTALLATION OF THE RAIN GARDEN AND SWALE # 3. IMMEDIATELY STABILIZE SWALE # 3 WITH AN EROSION CONTROL BLANKET. INSTALLATION MUST INCLUDE BULK EARTHWORK TO REACH GRADES INDICATED ON PLANS, PLACEMENT OF SUITABLE SOILS, AND SEEDING. THE CONSTRUCTION OF THE RAIN GARDEN MUST BE IN ACCORDANCE WITH THE RAIN GARDEN CONSTRUCTION SEQUENCE OUTLINED ON THE PCSM DETAIL SHEET. OUTLET STRUCTURE PIPE FROM STORM STRUCTURE (OS–1) TO ENDWALL (OSEW–1), SPILLWAY WITH LINER, AND ASSOCIATED GEOTEXTILE LINER SHOULD BE CONSTRUCTED.

    (A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL INSPECT THE RAIN GARDEN INSTALLATION.)

36. BEGIN CONVERTING THE SEDIMENT BASIN TO FUNCTIONING PERMANENT INFILTRATION BASIN WITH ALL INSTALLED APPURTENANCES. REMOVE ALL SEDIMENT ACCUMULATION WITHIN THE SEDIMENT BASIN. REGRADE BASIN CONFIGURATION, INSTALL ENGINEERING FILTER MEDIA IN THE BASIN BOTTOM. PERFORM ANY NECESSARY FINAL GRADING WITHIN THE BASIN. ANY AREA DISTURBED DURING THE CONVERSION OF THE BASIN SHALL BE IMMEDIATELY STABILIZED. SEE SEDIMENT BASIN SEQUENCE ON THE PLANS FOR CONSTRUCTION PROCEDURES.

    (A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL INSPECT THE CONVERSION OF SEDIMENT BASIN TO INFILTRATION BASIN INSTALLATION.)

37. INSTALL ALL DRIVEWAYS, INTERNAL ROAD, AND LIMEKILN ROAD EXTENSION AREA WITH A BINDER COURSE.

38. INSTALL FINAL VEGETATION AND LANDSCAPING SPECIFIED ON THE LANDSCAPE PLAN, INCLUDING LANDSCAPE RESTORATION.

    (A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL VERIFY THE INSTALLATION OF LANDSCAPE RESTORATION.)

39. FINAL STABILIZATION SHALL HAVE OCCURRED WHEN THE FOLLOWING CONDITIONS HAVE BEEN MET.

    A. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON–GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS, WHICH ARE AT, FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

    B. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER 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.

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

40. AFTER ALL CONSTRUCTION WORK IS COMPLETED, INCLUDING BUILDINGS THE OWNER/DEVELOPER MAY REQUEST INSTALLATION OF WEARING COURSE. AFTER WEARING COURSE INSTALLATION, INSTALL ALL PERMANENT STRIPING AND COMPLETE ALL SIGNAGE.

41. CLEAR SITE OF THE DEBRIS AND ALL UNWANTED MATERIALS. THE OPERATOR SHALL REMOVE FROM THIS SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.

42. REFER TO THE TEMPORARY EROSION CONTROL NOTES AND GENERAL EROSION CONTROL NOTES INCLUDED ON THE PLANS FOR ADDITIONAL SPECIFICATION AND REQUIREMENTS.

43. THE NPDES (PERMITEE) AND OR (CO–PERMITTEE) IS RESPONSIBLE TO FILE A 'NOTICE OF TERMINATION' WITH THE COUNTY CONSERVATION DISTRICT UPON COMPLETION AND STABILIZATION OF ALL EARTHMOVING ACTIVITIES.

LIST OF CRITICAL STAGES

THE FOLLOWING ARE CRITICAL STAGES OF CONSTRUCTION:
- INSTALLATION OF INFILTRATION BASIN
- INSTALLATION OF SWALES
- INSTALLATION OF RAIN GARDEN
- INSTALLATION OF VEGETATED SWALE
- INSTALLATION OF LANDSCAPE RESTORATION
- CONVERSION OF SEDIMENT BASIN TO INFILTRATION BASIN

SOILS DATA:

SOILS DATA OBTAINED FROM USDA–NATURAL RESOURCES CONSERVATION SERVICES–WEB SOIL SURVEY–NATURAL COOPERATIVE SOIL SURVEY.

AmA AMWELL SILT LOAM, 0 TO 3 PERCENT SLOPES
AmB AMWELL SILT LOAM, 3 TO 8 PERCENT SLOPES
DdB DOYLESTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES
RaB RARITAN SILT LOAM, 3 TO 8 PERCENT SLOPES
ReA READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES
RIB REAVILLE CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES

LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS

NOTE:
THIS IS NOT AN ALL–INCLUSIVE LIST
ABSENCE OF AN X DOSE NOT MEAN "NO POTENTIAL LIMITATION"
FOR MORE COMPREHENSIVE LIST OF SOIL LIMITATIONS, LOG ONTO THE NRCS WEBSITE AT: **http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.**

SOIL NAME	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODED	FLOODING	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH/ LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK–SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
AMWELL	X	C/S		X		X	X	X	X	X		X				
DOYLESTOWN	X	C/S	X	X		X	X	X	X	X	X	X				X
RARITAN	X	C/S				X	X		X	X	X	X				X
READINGTON	X	C/S		X		X	X	X	X	X	X	X				X
REAVILLE	X	C/S	X	X		X	X		X	X	X	X				X

SOIL RESOLUTIONS

CUTBANKS CAVE – GRADE ALL SLOPES TO 4:1 OR FLATTER.

CORROSIVE TO CONCRETE / STEEL – PROVIDE POLYMERS TO PROTECT CONCRETE AND STEEL.

DROUGHTY – IRRIGATE SOILS TO PREVENT WILTING.

EASILY ERODIBLE – STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION OR PROVIDE EROSION AND SEDIMENTATION CONTROL DEVICES AND FACILITIES TO RETAIN ENTRAINED SEDIMENT ON–SITE.

FLOODING – MINIMIZE OR ELIMINATE CONSTRUCTION WITHIN MAPPED AND ALLUVIAL SOILS.

DEPTH TO SATURATION ZONE / SEASONAL HIGH WATER TABLE – PROVIDE UNDERDRAINS TO ELIMINATE A PERSISTENT HIGH WATER TABLE. FOR OCCASIONAL HIGH WATER TABLE, PUMP WATER FROM TRENCHES / FOOTINGS TO A PUMP WATER FILTER BAG.

HYDRIC / HYDRIC INCLUSIONS – HYDRIC SOILS HAVE BEEN MAPPED BY NOVA CONSULTANTS, INC.. NO WETLAND IMPACTS ARE PROPOSED FOR THIS PROJECT.

LOW STRENGTH / LANDSLIDE PRONE – GRADE SOILS TO 4:1 OR FLATTER.

SLOW PERCOLATION – ADD SAND OR ORGANICS TO INCREASE SOIL PERCOLATION RATES.

PIPING – USE ANTI–SEEP COLLARS TO ELIMINATE PIPING.

POOR SOURCE OF TOPSOIL – IMPORT ADEQUATE TOPSOIL OR ADD ORGANIC MATERIAL (MULCH) TO CREATE A SUITABLE TOPSOIL.

FROST ACTION – MINIMIZE OR ELIMINATE COLD WEATHER CONSTRUCTION. IF POSSIBLE, ADD EXPANSION JOINTS TO MINIMIZE FROST ACTION IMPACTS.

SHRINK / SWELL – MINIMIZE CONTACT WITH WATER.

POTENTIAL SINKHOLE – PERFORM GEOLOGIC EVALUATION FOR KARST GEOLOGY AND KARST SOIL.

PONDING – PROVIDE POSITIVE GRADING WITH A 2% SLOPE, UNDERDAINS OR A STORM SEWER CONVEYANCE SYSTEM.

WETNESS – PROVIDE POSITIVE GRADING OR UNDERDRAINS.

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

EROSION CONTROL DETAIL (5 OF 5)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

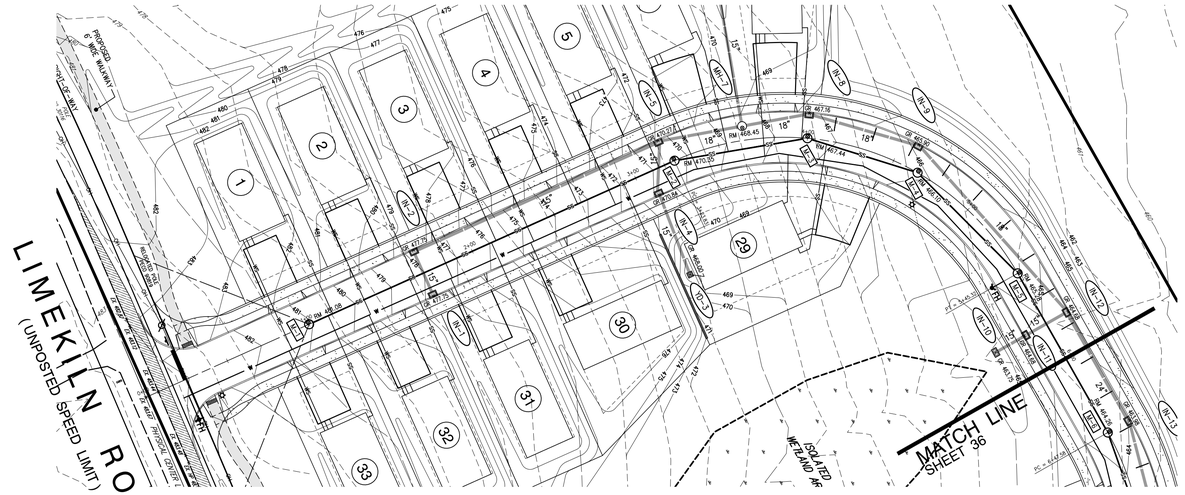
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

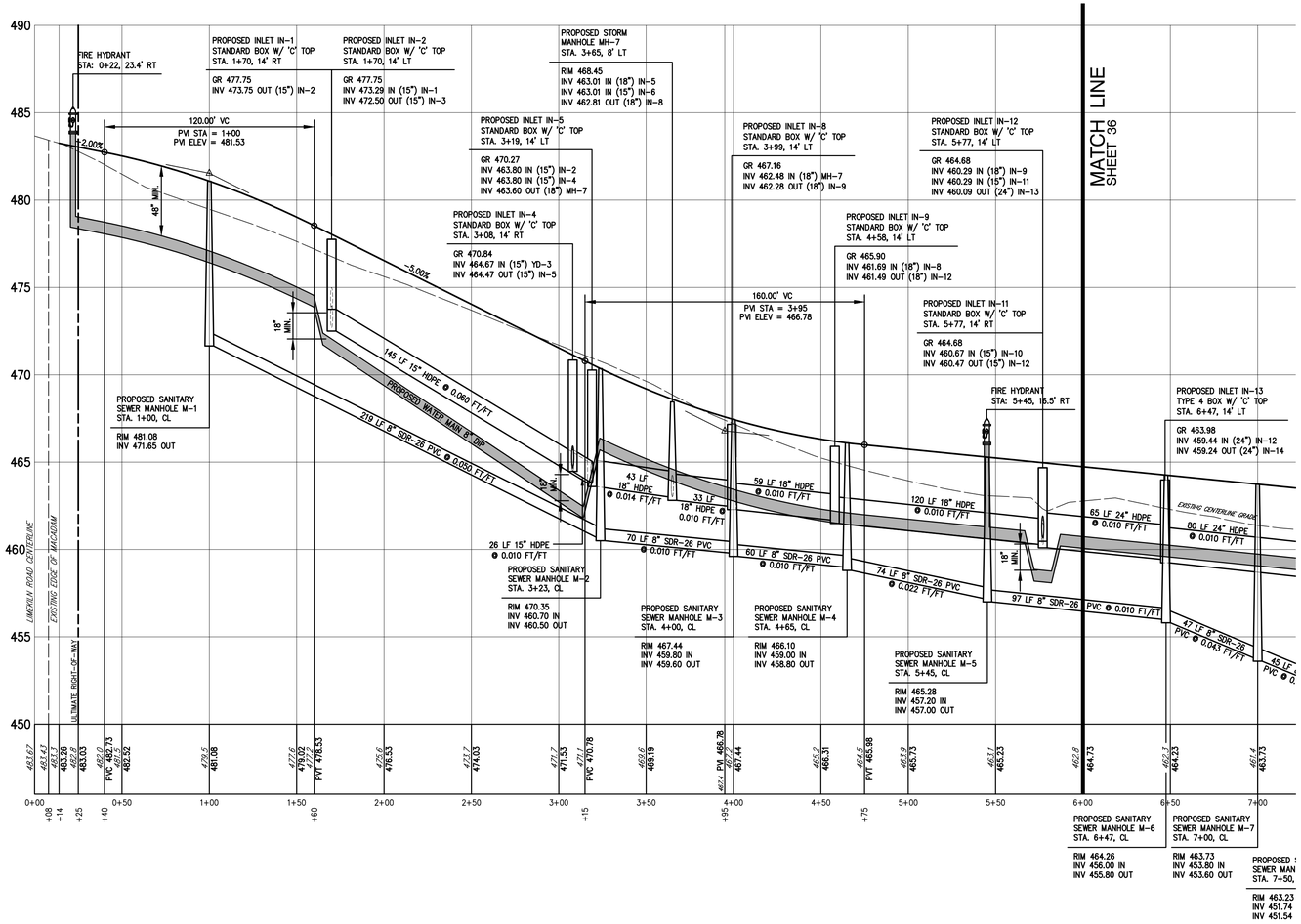
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND XREF ECP

20' 0 20' 40' 80'
SCALE: 1"= 40'

SHEET No. 34 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215–234–4562 FAX 215–234–0889 www.urwilerwalter.com





INTERNAL ROAD PROFILE

SCALE: HORZ. 1"=40'
VERT. 1"=4'

GENERAL NOTES:

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
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3. STORM SEWER AND GRAVITY SANITARY SEWER PIPE LENGTHS DETAIL DISTANCE FROM OUTSIDE EDGE OF STRUCTURE TO OUTSIDE EDGE OF STRUCTURE.

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REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

PROPOSED INTERNAL ROAD
PROFILE (1 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

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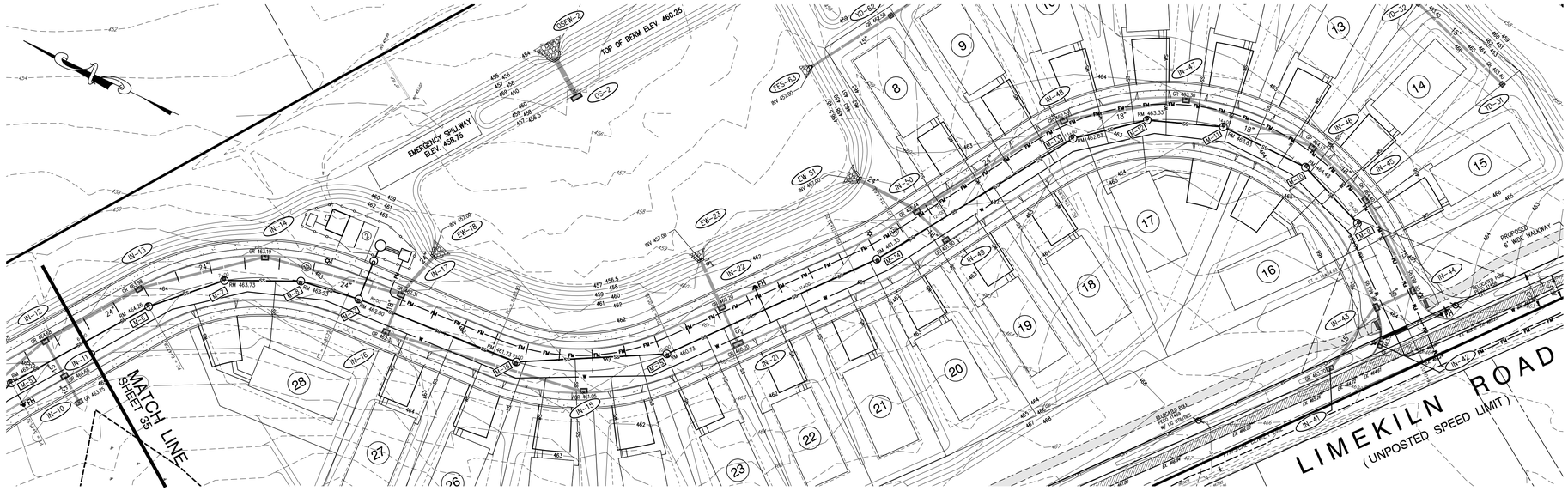

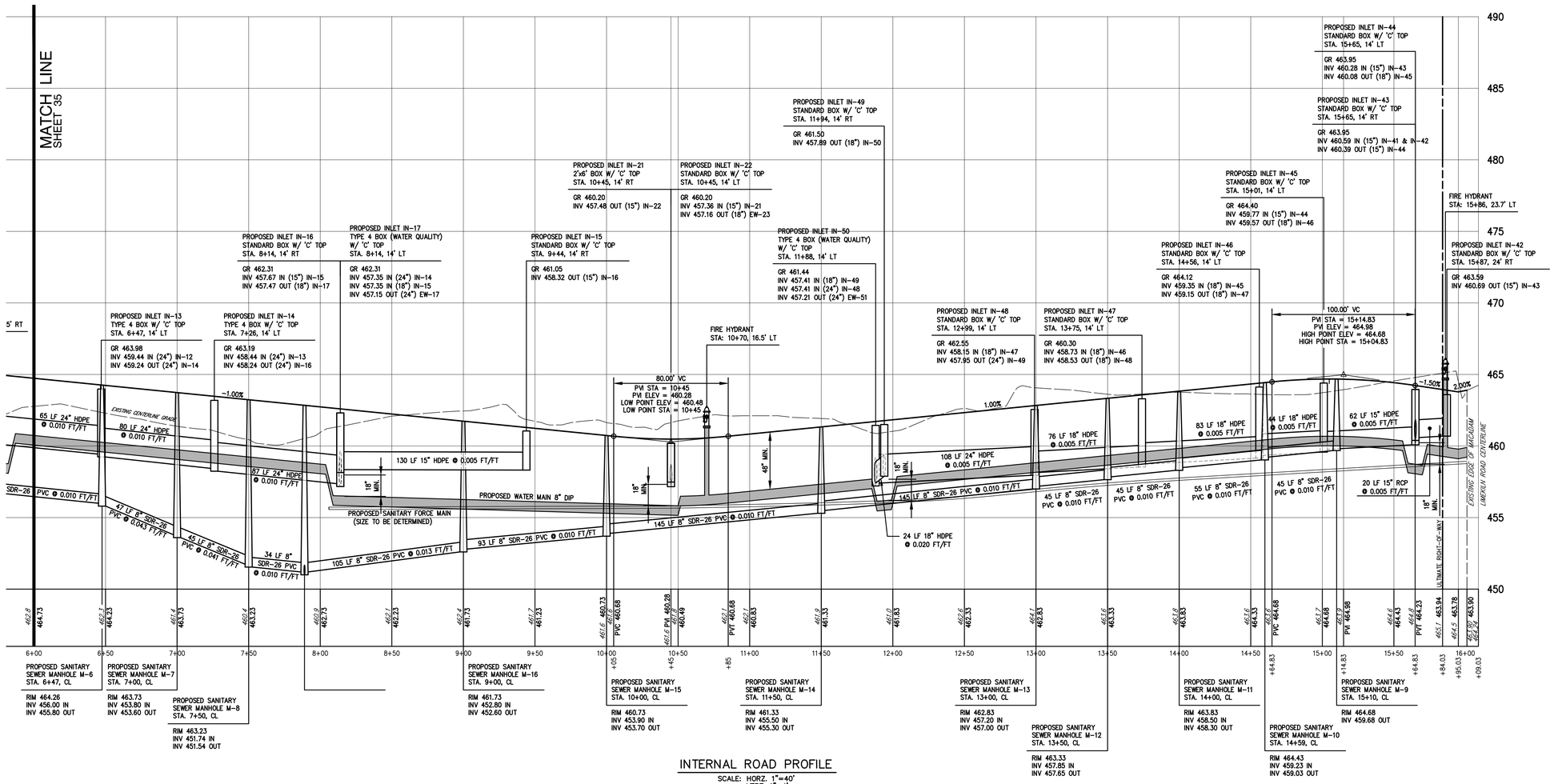

INTERNAL ROAD PROFILE

SCALE: HORZ. 1"=40'
VERT. 1"=4'

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REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

PROPOSED INTERNAL ROAD
PROFILE (2 OF 2)

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

SHEET No. 36 OF 49

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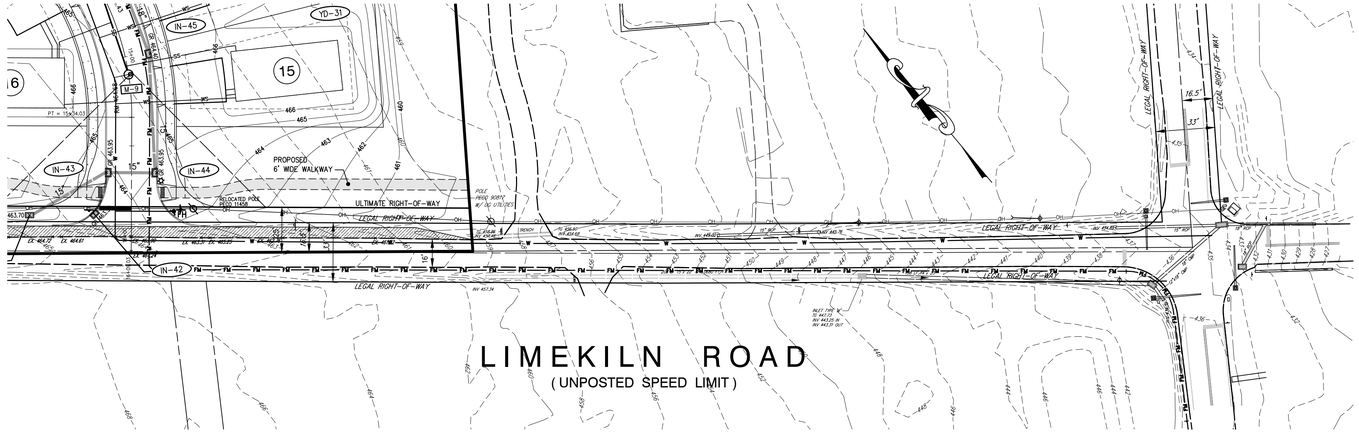

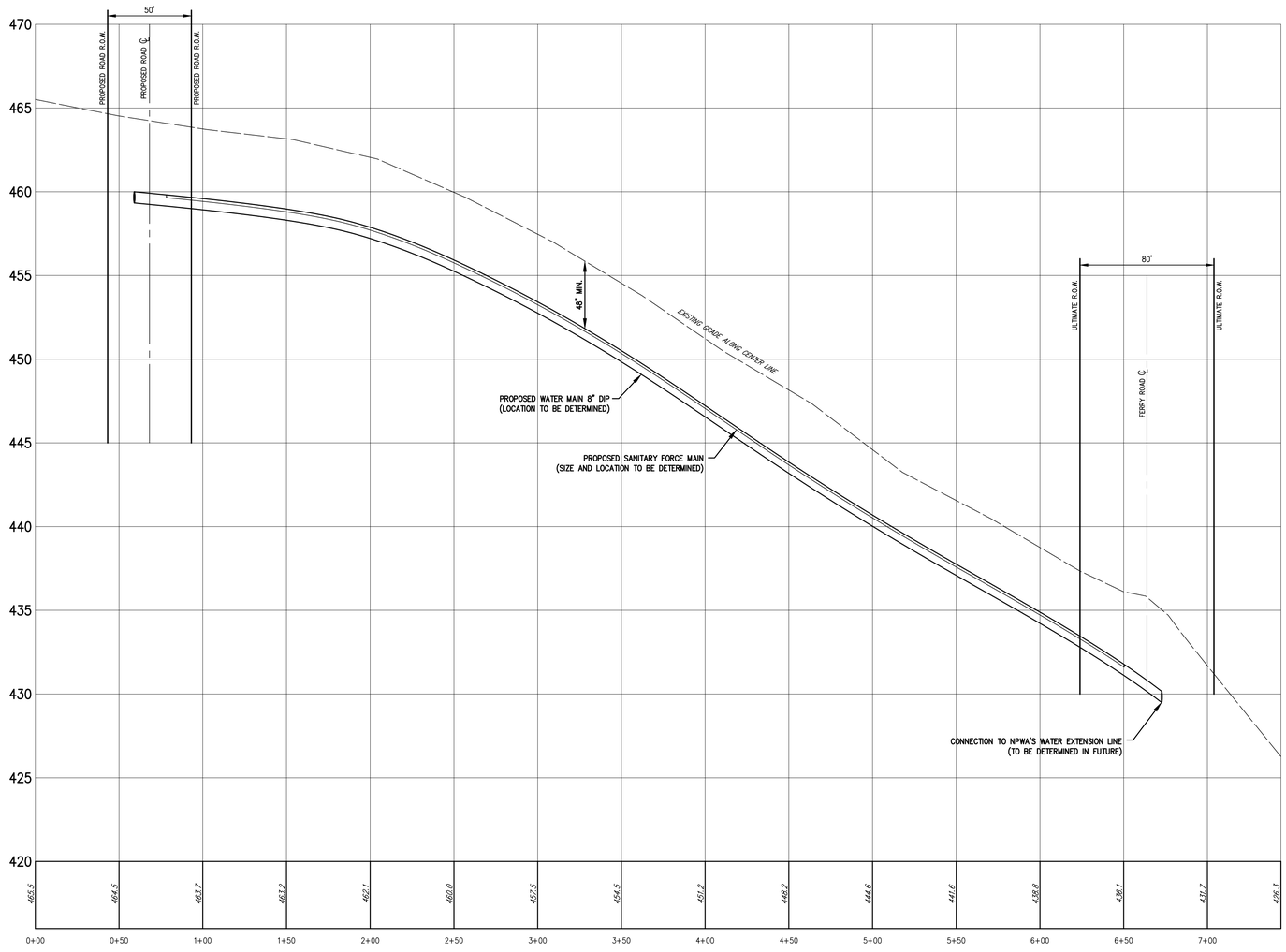

PROFILE OF LIMEKILN ROAD FROM PROPOSED INTERNAL ROAD EAST ENTRANCE TO INTERSECTION OF FERRY ROAD

SCALE: HORZ. 1"=40'
VERT. 1"=4'

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

LIMEKILN ROAD PROFILE

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

20' 0 20' 40' 80'
SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

SHEET No. 37 OF 49

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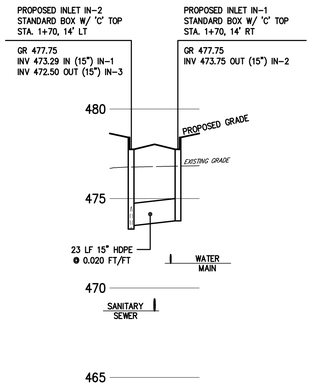
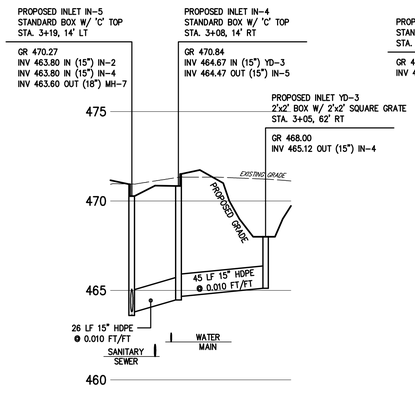


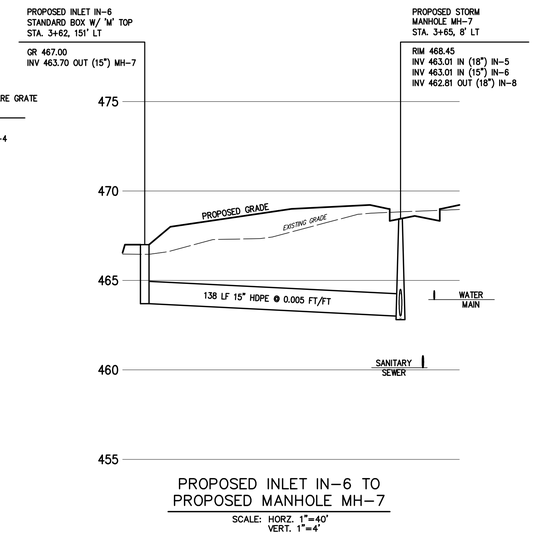
PROPOSED INLET IN-1 TO
PROPOSED INLET IN-2

SCALE: HORZ. 1"=40'
VERT. 1"=4'



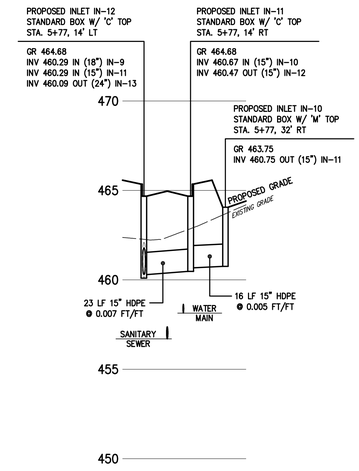
PROPOSED YARD DRAIN YD-3 TO
PROPOSED INLET IN-5

SCALE: HORZ. 1"=40'
VERT. 1"=4'



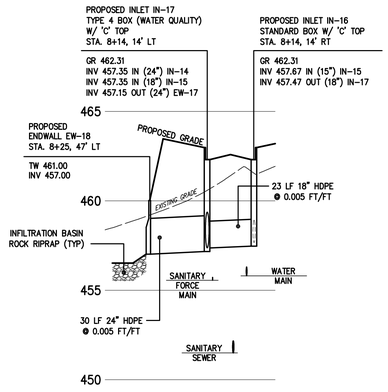
PROPOSED INLET IN-6 TO
PROPOSED MANHOLE MH-7

SCALE: HORZ. 1"=40'
VERT. 1"=4'



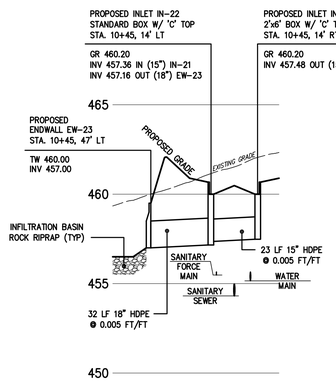
PROPOSED INLET IN-10 TO
PROPOSED INLET IN-12

SCALE: HORZ. 1"=40'
VERT. 1"=4'



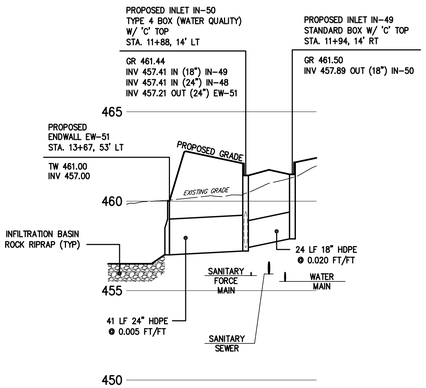
PROPOSED INLET IN-16 TO
PROPOSED ENDWALL EW-18

SCALE: HORZ. 1"=40'
VERT. 1"=4'



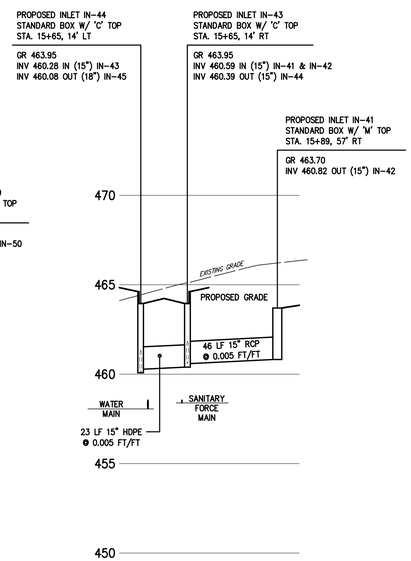
PROPOSED INLET IN-21 TO
PROPOSED ENDWALL EW-23

SCALE: HORZ. 1"=40'
VERT. 1"=4'



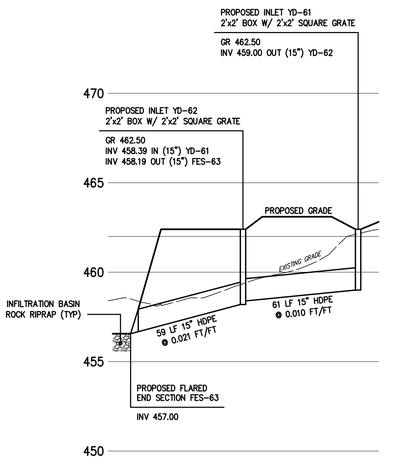
PROPOSED INLET IN-48 TO
PROPOSED ENDWALL EW-51

SCALE: HORZ. 1"=40'
VERT. 1"=4'



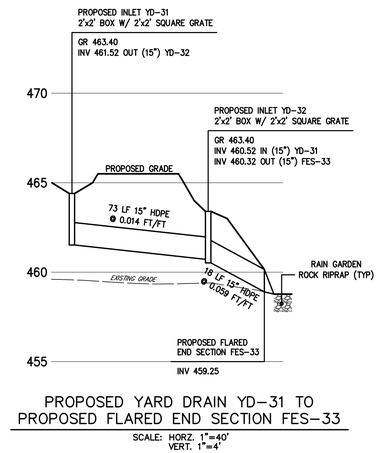
PROPOSED INLET IN-41 TO
PROPOSED INLET IN-44

SCALE: HORZ. 1"=40'
VERT. 1"=4'



PROPOSED YARD DRAIN YD-61 TO
PROPOSED FLARED END SECTION FES-63

SCALE: HORZ. 1"=40'
VERT. 1"=4'



PROPOSED YARD DRAIN YD-31 TO
PROPOSED FLARED END SECTION FES-33

SCALE: HORZ. 1"=40'
VERT. 1"=4'

GENERAL NOTES:

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REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

STORM SEWER PROFILES

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'
SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

SHEET No. 38 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

ConSeal™ CS-102

Butyl Rubber Sealant

ConSeal
Concrete Sealants Inc.
Don't Just Seal It, ConSeal It!

Butyl Rubber Sealant for All Precast Concrete Structures - Meets ASTM C990

Applications

For concrete joints in: Manholes, Concrete Pipe, Vaults, Box Culverts, Septic Tanks, and Vertical Panel Structures. **Not intended for use in expansion joints or joints that move.**

Sealing Properties

- Provides permanently flexible watertight joint.
- Low to High Temperature workability: 30°F to 120°F (-1°C to +49°C).
- Plugged service temperature: -30°F to +200°F (-34°C to +93°C).
- Excellent chemical and mechanical adhesion to clean dry surfaces. (25°C)
- Greater cohesive and adhesive strengths.
- Sealed joints will not shrink, harden or oxidize upon aging.
- Corrosive flow resistance for application sizes.
- ConSeal CS-102 meets the hydrostatic performance requirement as set forth in ASTM C990 section 10.1. (Performance requirement: 10cm for 10 minutes in straight alignment – in plant, quality control test for joint materials.)
- ConSeal CS-102 meets or exceeds all of the requirements of Federal Specification SS-S-210 (10 A) and AASHTO M-198B.
- No priming normally necessary. When confronted with difficult installation conditions, such as wet concrete or temperatures below 40°F (4°C), priming the concrete will improve the bonding action. Consult Concrete Sealants for the proper primer to meet your application.

Physical Properties & Chemical Composition

Description	Spec	Required	CS-102
Color			Black
Specific Gravity, 77°F (25°C)	ASTM D71	1.15-1.50	1.25
Ductility, 77°F (25°C)	ASTM D113	5.0 cm.	10
Penetration, cone 77°F	ASTM D217	55-100 dmm	55-60 dmm
Flash Point, C.O.C., °F	ASTM D92	350°F min.	375°F
Fire Point, C.O.C., °F	ASTM D92	375°F min.	475°F
Hydrocarbon plastic content, % by weight	ASTM D297	50% min.	51%
Inert material filler, % by weight	AASHTO 1111	30% min.	33%
Volatile Matter, % by weight	ASTM D6	3% max.	1.2%

Immersion Testing

30-Day Immersion Testing: No visible deterioration when tested in 5% Caustic Potash, 5% Hydrochloric Acid, 5% Sulfuric Acid, and 5% saturated Hydrogen Sulfide.

One Year Immersion Testing: No visible deterioration when tested in 5% Formaldehyde, 5% Formic Acid, 5% Sulfuric Acid, 5% Hydrochloric Acid, 5% Sodium Hydroxide, 5% Hydrogen Sulfide, and 5% Potassium Hydroxide.

Installation Guidelines

The following procedures should be followed for optimum sealant performance.

- Clean the upper and lower joint surface with a stiff bristle brush.
- Remove any dirt, debris, flashing, or concrete high points, which could keep the joint from coming together.
- If necessary, a joint primer can be applied to improve sealant adhesion. Allow the primer to dry before placing sealant.
- DO NOT PLACE ANY JOINTS WITHIN 12" OF A CORNER.

Reference installation instructions for **"Butyl Sealing Tapes"** for more detailed instructions.

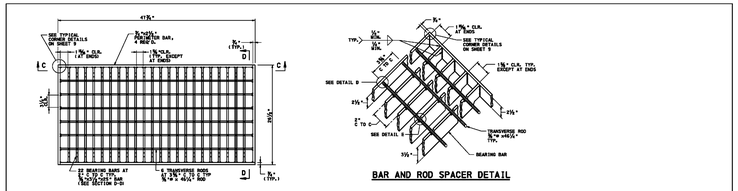
Limited Warranty

Data information is presented in good faith, but no warranty, expressed or implied is made other than the information is in conformity with the products manufactured. We assume no responsibility for consultations made by this qualified or field personnel or this data sheet or any other product, information or recommendation with other products. Users are advised to satisfy themselves by testing any suitability of each such product or product combination for their own purposes. It is the **user's responsibility** to satisfy himself as to the suitability and completeness of such information for his own particular use. We will be provided without warranty, and buyer and users assume all responsibility and liability for loss or damage arising from the handling and use of the product, whether used alone or in combination with other products.

Version: 28-Jun-20

CONCRETE SEALANTS INC. • 9328 State Route 201 • Tipp City, OH 45371, USA • **www.ConSeal.com**
Toll Free (USA): 800.352.7325 • **Phone:** +1.937.845.8778 • **Fax:** +1.937.845.3287

ISO 9001 Since 1997
Concrete Sealants, Inc.
ISO 9001:2015 Registered



STRUCTURAL STEEL GRATE BICYCLE SAFE

BAR AND ROD SPACER DETAIL

SECTION C-C

DETAIL D

DETAIL E

SECTION D-D

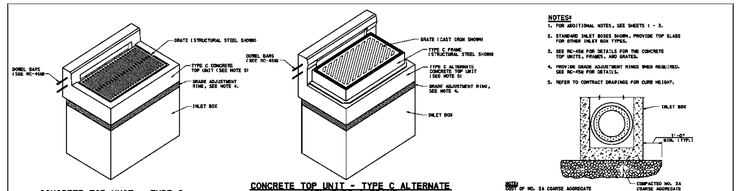
NOTES

1. FOR ADDITIONAL NOTES, SEE SHEET 1.
2. FOR STRUCTURAL STEEL GRATE NOTES, SEE SHEET 5.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

INLET TOPS, GRATES, AND FRAMES
STRUCTURAL STEEL GRATE
BICYCLE SAFE

RECOMMENDED FEB. 19, 2021 — DEPUTY MGR., RD. DELIVERY SYSTEM
RECOMMENDED FEB. 19, 2021 — GENERAL MANAGER, BUREAU OF PROJECT DELIVERY
SHT 10 OF 34
RC-45M



CONCRETE TOP UNIT - TYPE C

CONCRETE TOP UNIT - TYPE C ALTERNATE WITH TYPE C FRAME

CONCRETE TOP UNIT - TYPE M

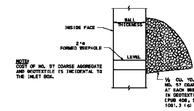
INLET BOX WITH TYPE M FRAME

CONCRETE TOP UNIT - TYPE S

NOTES

1. FOR ADDITIONAL NOTES, SEE SHEETS 1 - 3.
2. STANDARD INLET BOXES SHOWN. PROVIDE TOP SLABS FOR OTHER INLET BOX TYPES.
3. SEE RC-46M FOR DETAILS FOR THE CONCRETE TOP UNITS, FRAMES, AND GRATES.
4. FROM ONE GRADE ADJUSTMENT RINGS WHEN REQUIRED. SEE RC-46M FOR DETAILS.
5. REFER TO CONTRACT DRAWINGS FOR CURB HEIGHT.

INLET BOX SUBBASE PREPARATION DETAIL
(SEE FIELD CONSTRUCTION NOTES ON SHEET 11)

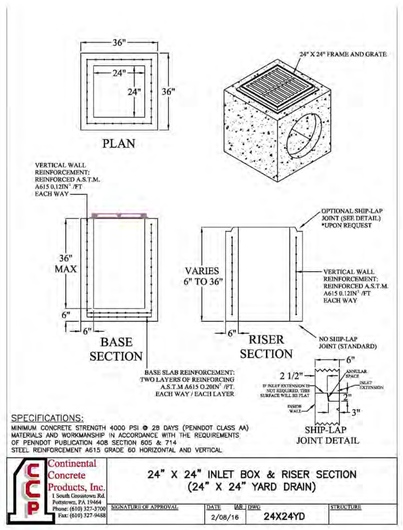


WEEPHOLE DETAIL
(SEE GENERAL NOTE 10 ON SHEET 1)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

INLET BOXES
INLET ASSEMBLIES - 1

RECOMMENDED FEB. 19, 2021 — DEPUTY MGR., RD. DELIVERY SYSTEM
RECOMMENDED FEB. 19, 2021 — GENERAL MANAGER, BUREAU OF PROJECT DELIVERY
SHT 11 OF 34
RC-46M

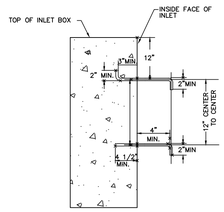


SPECIFICATIONS:
MINIMUM CONCRETE STRENGTH 4000 PSI @ 28 DAYS (PENNDOT CLASS AA) MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE REQUIREMENTS OF PENNDOT PUBLICATION 408 SECTION 605 & 714 STEEL REINFORCEMENT A615 GRADE 60 HORIZONTAL AND VERTICAL.

Continental Concrete Products, Inc.
1 South Cassatawa Rd.
Pottstown, PA 19464
Phone: (610) 327-3700
Fax: (610) 327-3688

24" X 24" INLET BOX & RISER SECTION
(24" X 24" YARD DRAIN)

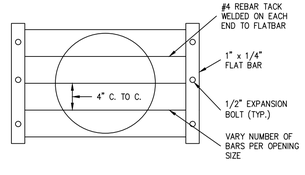
SIGNATURE OF APPROVAL	DATE	REF. DWG	STRUCTURE
	2/08/16	24X24YD	



TYPICAL STEP CONFIGURATIONS

MANHOLE/INLET STEPS DETAIL NTS

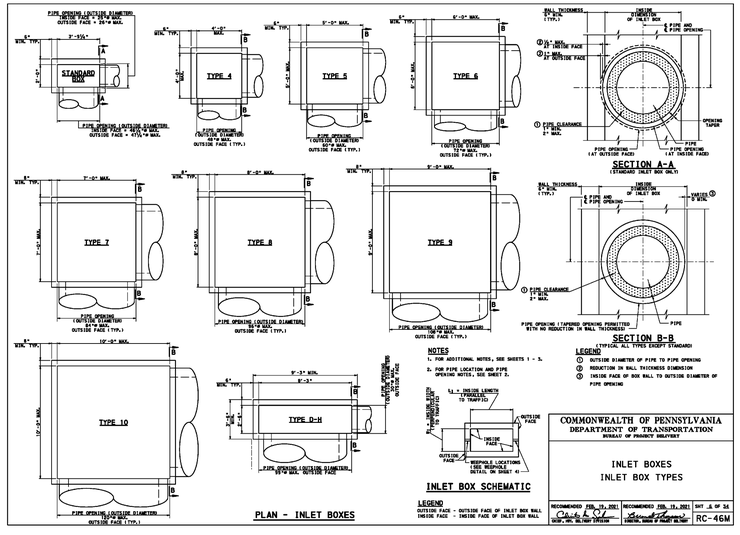
NOTES:
1. STEPS TO BE CAST IN ALL INLET BOXES OVER FOUR (4) FEET IN DEPTH.
2. STEPS SHALL BE BE POLYPROPYLENE PLASTIC COATED 1/2" DIAMETER GRADE 60 REINFORCED STEEL.
3. SECURLY EMBED STEPS INTO INSERTS CAST INTO WALLS OR PREFORMED HOLES.



NOTES:

1. THE NUMBER OF ROWS AND LENGTH OF REBAR REQUIRED DEPENDS ON OPENINGS.
2. REBAR TO COVER THE ENTIRE SIZE OF THE OPENING.
3. TYPICAL FOR ALL OUTLET OPENING SHAPES (CIRCULAR SHOWN GRAPHICALLY).
4. ALL MATERIAL TO BE EPOXY COATED.
5. CHILD SAFETY GRATES SHALL BE PROVIDED ON ALL ENDWALLS, TRASH RACKS SHALL BE PROVIDED ON ALL HEADWALLS (SEE DETAIL).

CHILD SAFETY GRATE
NOT TO SCALE



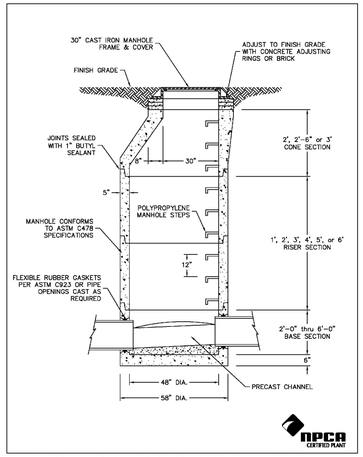
NOTES

1. FOR ADDITIONAL NOTES, SEE SHEETS 1 - 3.
2. FOR PIPE LOCATION AND PIPE OPENING NOTES, SEE SHEET 2.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

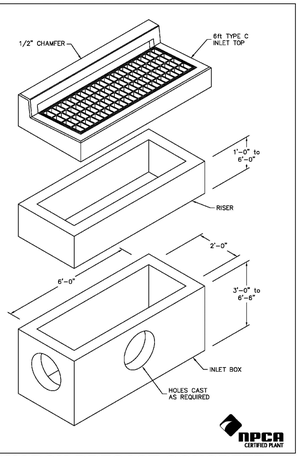
INLET BOXES
INLET BOX TYPES

RECOMMENDED FEB. 19, 2021 — DEPUTY MGR., RD. DELIVERY SYSTEM
RECOMMENDED FEB. 19, 2021 — GENERAL MANAGER, BUREAU OF PROJECT DELIVERY
SHT 36 OF 34
RC-46M



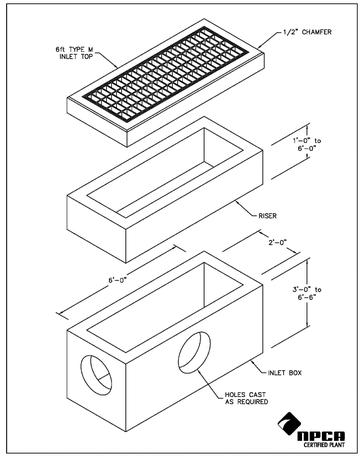
MONARCH PRECAST CONCRETE
425 NORTH DAUPHIN STREET ALLENTOWN, PA. 18109 PHONE (610) 435-6746
WWW.MONARCHPRECAST.COM FAX (610) 437-7133

48" DIA. MANHOLE w/ 30" DIA. CONE



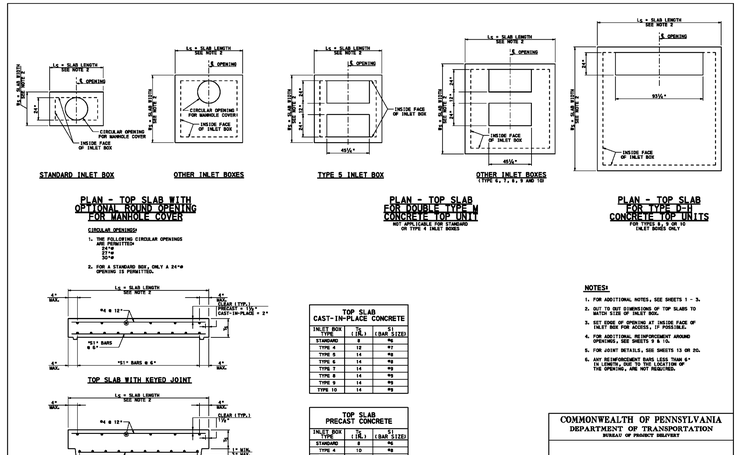
MONARCH PRECAST CONCRETE
425 NORTH DAUPHIN STREET ALLENTOWN, PA. 18109 PHONE (610) 435-6746
WWW.MONARCHPRECAST.COM FAX (610) 437-7133

24" x 72" INLET BOX w/ 6 ft TYPE C TOP



MONARCH PRECAST CONCRETE
425 NORTH DAUPHIN STREET ALLENTOWN, PA. 18109 PHONE (610) 435-6746
WWW.MONARCHPRECAST.COM FAX (610) 437-7133

24" x 72" INLET BOX w/ 6 ft TYPE M TOP



TOP SLAB CAST-IN-PLACE CONCRETE

INLET BOX TYPE	H (IN.)	S (BAR SIZE)
STANDARD	8	#6
TYPE 4	12	#7
TYPE 5	14	#8
TYPE 6	14	#8
TYPE 7	14	#8
TYPE 8	14	#8
TYPE 9	14	#8
TYPE 10	14	#8

TOP SLAB PRECAST CONCRETE

INLET BOX TYPE	H (IN.)	S (BAR SIZE)
STANDARD	8	#6
TYPE 4	10	#8
TYPE 5	12	#8
TYPE 6	12	#8
TYPE 7	14	#8
TYPE 8	14	#8
TYPE 9	14	#8
TYPE 10	14	#8

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEETS 1 - 3.
2. CUT-IN SLU DIMENSIONS OF TOP SLABS TO MATCH SIZE OF INLET BOX.
3. SEE EDGE OF OPENING AT INSIDE FACE OF INLET BOX FOR ADDITIONAL STEPS.
4. ADDITIONAL REINFORCEMENT AROUND OPENINGS NOT SHOWN.
5. FOR JOINT DETAILS, SEE SHEETS 13 OR 20.
6. ALL REINFORCEMENT BARS LESS THAN #7 SHALL BE EPOXY COATED. SECTION OF THE OPENING, ARE NOT REQUIRED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

INLET BOXES
TOP SLABS - 2

RECOMMENDED FEB. 19, 2021 — DEPUTY MGR., RD. DELIVERY SYSTEM
RECOMMENDED FEB. 19, 2021 — GENERAL MANAGER, BUREAU OF PROJECT DELIVERY
SHT 36 OF 34
RC-46M

GENERAL NOTES:

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
2. ALL CONTRACTORS PROVIDING CONSTRUCTION SERVICES AT THIS SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND REGULATIONS. URWILER AND WALTER, INC., NEW BRITAIN TOWNSHIP, ITS AGENTS AND ASSIGNS WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFIRM WITH THE APPLICABLE OSHA STANDARDS AND REGULATIONS.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK
STORM SEWER DETAIL PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

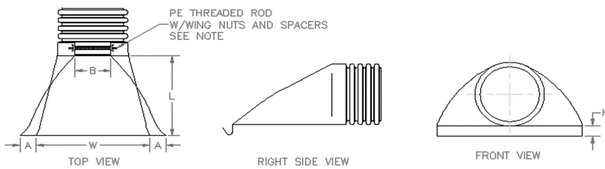
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE: AS SHOWN

SHEET No. 39 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

FLARED END SECTIONS



PART #	PIPE SIZE	A	B(MAX)	H	L	W
1015NP	10 in (250 mm)	3.8 in (95 mm)	10.0 in (254 mm)	6.5 in (165 mm)	28.0 in (711 mm)	34.5 in (876 mm)
1215NP	12 & 15 (300 & 375mm)	6.5 in (165 mm)	10.0 in (254 mm)	6.5 in (165 mm)	25.0 in (635 mm)	29.0 in (737 mm)
1810NP	18 in (450 mm)	7.5 in (191 mm)	15.0 in (381 mm)	6.5 in (165 mm)	32.0 in (813 mm)	35.0 in (889 mm)
2410NP	24 in (600 mm)	7.5 in (191 mm)	18.0 in (457 mm)	6.5 in (165 mm)	36.0 in (914 mm)	45.0 in (1143 mm)
3015NP	30 in (750 mm)	7.5 in (191 mm)	12.0 in (305 mm)	8.6 in (218 mm)	58.0 in (1473 mm)	63.0 in (1600 mm)
3615NP	36 in (900 mm)	7.5 in (191 mm)	25.0 in (635 mm)	8.6 in (218 mm)	58.0 in (1473 mm)	63.0 in (1600 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

ADS. ADVANCED DRAINAGE SYSTEMS, INC.

DRAWING #	6070	
DRAWN BY	JCB	01.17.07
APPROVED BY	JCB	06.28.07
REVISIONS:	TJR	6/7/2016

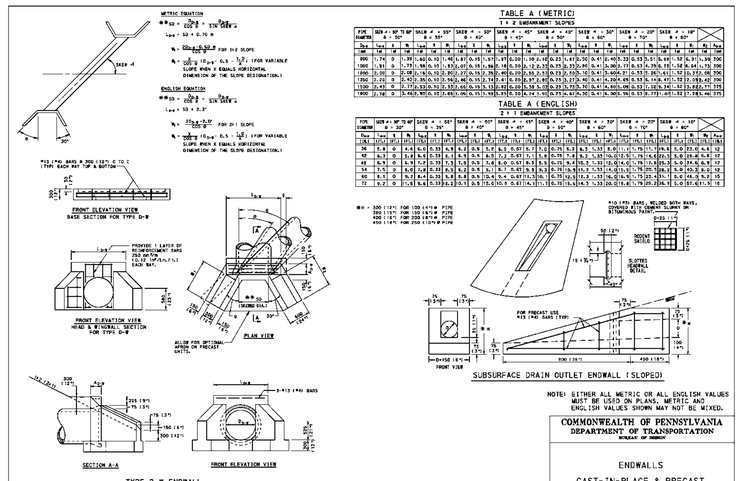


TABLE A (METRIC)
1 : 2 EMBANKMENT SLOPES

PIPE DIAMETER	SKEW = 30° TO 60° θ = 30°	SKEW = + 90° θ = 90°	SKEW = + 45° θ = 45°	SKEW = + 60° θ = 60°	SKEW = + 30° θ = 30°	SKEW = + 15° θ = 15°
Dia	Lw1	Lw2	Lw1	Lw2	Lw1	Lw2
mm	mm	mm	mm	mm	mm	mm
300	1,74	1,39	1,60	1,90	1,87	2,00
1200	2,61	2,73	1,96	2,55	2,81	3,07
1800	3,48	4,07	2,32	3,20	3,75	4,14
2400	4,35	5,41	2,68	3,85	4,69	5,21
3000	5,22	6,75	3,04	4,50	5,63	6,28
3600	6,09	8,09	3,40	5,15	6,57	7,35

TABLE A (ENGLISH)
2 : 1 EMBANKMENT SLOPES

PIPE DIAMETER	SKEW = 30° TO 60° θ = 30°	SKEW = + 90° θ = 90°	SKEW = + 45° θ = 45°	SKEW = + 60° θ = 60°	SKEW = + 30° θ = 30°	SKEW = + 15° θ = 15°
Dia	Lw1	Lw2	Lw1	Lw2	Lw1	Lw2
INCH	FEET	FEET	FEET	FEET	FEET	FEET
12	5,8	4,6	5,33	6,33	6,2	6,67
42	8,7	9,1	6,67	8,50	9,37	10,23
48	9,9	10,9	7,47	10,33	11,25	12,27
54	11,1	12,8	8,27	11,17	13,12	14,30
60	12,2	14,6	9,07	12,00	15,00	16,33
72	14,6	18,2	10,67	13,67	18,75	20,37

SUBSURFACE DRAIN OUTLET ENDWALL (SLOPED)

NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

ENDWALLS
CAST-IN-PLACE & PRECAST

RECOMMENDED JAN. 1, 2003	RECOMMENDED JAN. 1, 2018	SHT. # OF #
CHIEF, DIV. OF SYSTEMS	DIRECTOR, BUREAU OF DESIGN	RC-31M

GENERAL NOTES:

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FORM 408 OR NEW BRITAIN TOWNSHIP ORDINANCES, WHICHEVER IS GREATER. ALL INTERPRETATIONS SHALL BE MADE BY THE TOWNSHIP.
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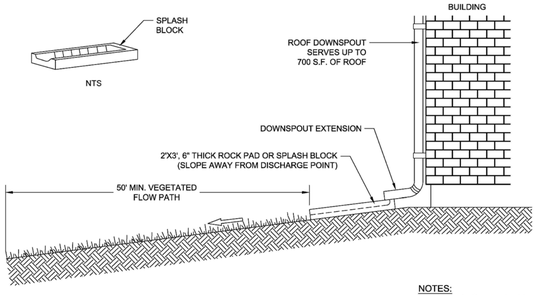
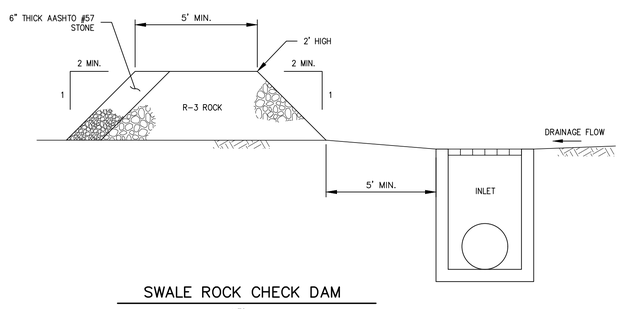
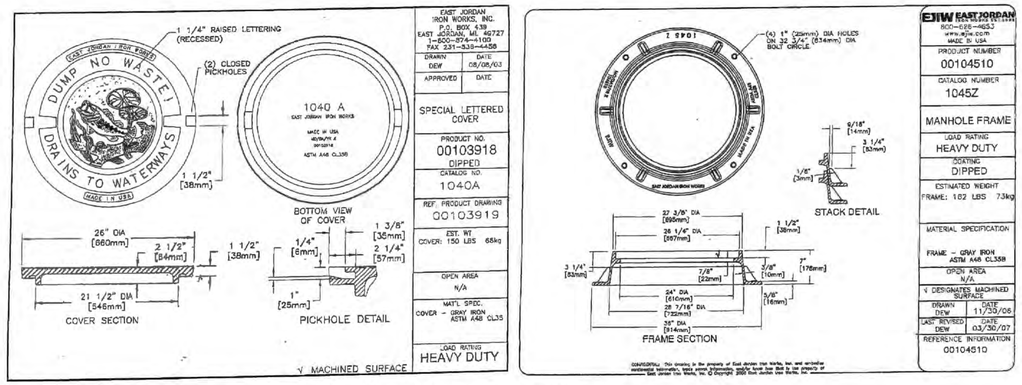


SPLASH BLOCK DETAIL
NTS

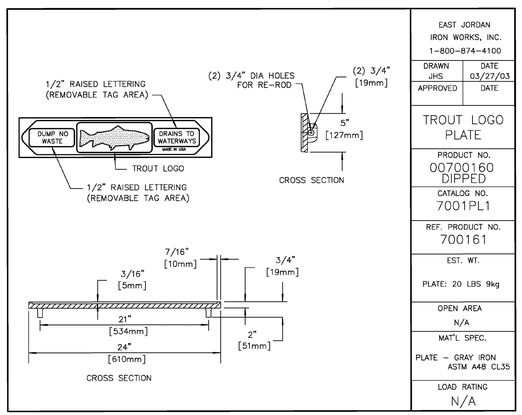
NOTES:
1. Refer to Sormwater Management Manual BMP L603.b and GSI Figure 005 for setbacks.
2. Splash block shall be concrete, plastic, or similar material. Commercially available splash blocks generally meet design criteria.
3. Rock pad shall consist of 4" cobbles per WSDOT 9-03.11(2) or ballast meeting WSDOT 9-03.9(1).

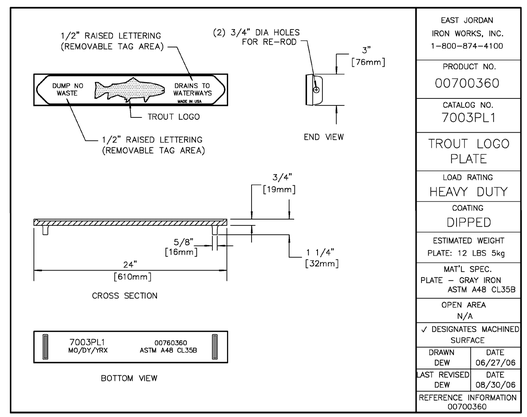


SWALE ROCK CHECK DAM
NTS



MANHOLE FRAME & COVER DETAIL
SCALE: N.T.S.





TROUT LOGO DETAIL
(TROUT LOGO TO BE CAST INTO ALL STORM SEWER INLET TOP UNITS) NTS

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK
STORM SEWER DETAIL PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

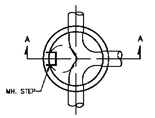
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

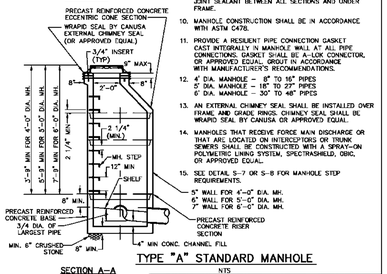
SCALE: AS SHOWM

SHEET No. 40 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



PLAN VIEW



SECTION A-A

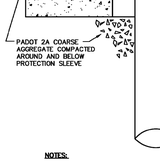
TYPE "A" STANDARD MANHOLE

NTS

NOTES:

1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF THE DIAMETER OF THE SEWER.
2. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
3. TYPE "S" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS. ALL OTHER MANHOLES TO BE TYPE "A".
4. FOR MANHOLES HAVING 5' DIA. AND 6' DIA. BASE, REDUCTION IN DIAMETER TO 4' SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL, WHERE DEPTH IS SUFFICIENT.
5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONE SECTION OR CONCRETE SLAB WITH (4)-3/4" DIA. BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 90° ON THE BOLT CIRCLE.
6. SEE THE SPECIFICATIONS FOR LENGTH OF PIPE CONNECTIONS TO MANHOLES.
7. ALL CONCRETE SHALL BE 4000 PSI MINIMUM.
8. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE TWO COATS OF BITUMINOUS COATING, COAL TAR EPOXY, OR APPROVED EQUAL.
9. INSTALL DOUBLE RING OF PLASTIC BUTYL JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER FRAME.
10. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C478.
11. PROVIDE A RESILIENT PIPE CONNECTION GASKET CAST INTEGRALLY IN MANHOLE WALL AT ALL PIPE CONNECTIONS. GASKET SHALL BE A-LOK CONNECTOR, OR APPROVED EQUAL. GROUT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
12. 4' DIA. MANHOLE — 8" TO 15" PIPES
    5' DIA. MANHOLE — 18" TO 27" PIPES
    6' DIA. MANHOLE — 30" TO 48" PIPES
13. AN EXTERNAL CHIMNEY SEAL SHALL BE INSTALLED OVER FRAME AND GRADE RINGS. CHIMNEY SEAL SHALL BE WRAPID SEAL BY CANUSA OR APPROVED EQUAL.
14. MANHOLES THAT RECEIVE FORCE MAIN DISCHARGE OR THAT ARE LOCATED ON INTERCEPTORS OR TRUNK SEWERS SHALL BE CONSTRUCTED WITH A "SPRAY-ON POLYMERIC LINING SYSTEM, SPECTRASHIELD, OBIC, OR APPROVED EQUAL.
15. SEE DETAIL S-7 OR S-8 FOR MANHOLE STEP REQUIREMENTS.

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TYPE "A" STANDARD MANHOLE
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-1



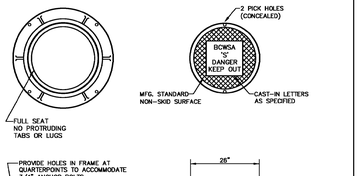
NOTES:

1. FRAME AND COVER SHALL BE NEENAH FOUNDRY COMPANY MODEL R-1976 OR APPROVED EQUAL
2. CLEANOUT PROTECTION SLEEVES ARE TO BE INSTALLED FOR CLEANOUTS LOCATED IN PAVED AREAS, OR LESS THAN 3 FEET FROM A PAVED AREA.

CLEANOUT PROTECTION SLEEVE

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		CLEANOUT PROTECTION SLEEVE (FOR USE IN OR NEAR PAVED AREAS)
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-12



FRAME COVER

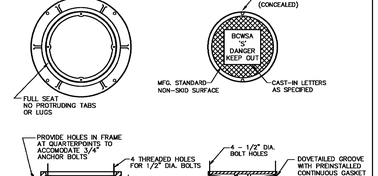
NOTES:

1. MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY CO. MODEL R-1642, WITH SELF-SEALING LID GASKET (OR APPROVED EQUAL).
2. ALL MATERIALS TO BE GRAY CAST IRON ASTM A-48, CLASS 35.
3. FRAME AND COVER SHALL BE FOR HEAVY DUTY TRAFFIC, AASHTO HS-20.
4. PROVIDE FOUR (4) STAINLESS STEEL ANCHOR BOLTS, 3/4" DIA. MINIMUM.
5. COVER SHALL HAVE THE WORDS "BCWSA SANITARY SEWER" OR "BCWSA 'S' DANGER KEEP OUT" CAST THEREON IN 2" LETTERS.
6. FRAME AND COVER SHALL BE COATED WITH BLACK ASPHALTIC PAINT.
7. THE FOLLOWING MANUFACTURER'S STANDARD CASTING, OR APPROVED EQUAL, SHALL BE USED.

STANDARD MANHOLE FRAME AND COVER

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		STANDARD MANHOLE FRAME AND COVER
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-5



FRAME COVER

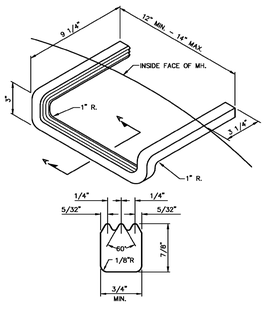
NOTES:

1. MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY CO. MODEL R-1916-F (OR APPROVED EQUAL).
2. ALL MATERIALS TO BE GRAY CAST IRON ASTM A-48, CLASS 35.
3. FRAME AND COVER SHALL BE FOR HEAVY DUTY TRAFFIC, AASHTO HS-20.
4. BOLT COVER TO FRAME WITH FOUR (4) 1/2" COUNTERSUNK STAINLESS STEEL BOLTS WHICH MAKE A SEAL WITH A RUBBER "O" RING GASKET.
5. PROVIDE FOUR (4) STAINLESS STEEL ANCHOR BOLTS, 3/4" DIA. MINIMUM.
6. COVER SHALL HAVE THE WORDS "BCWSA SANITARY SEWER" OR "BCWSA 'S' DANGER KEEP OUT" CAST THEREON IN 2" LETTERS.
7. FRAME AND COVER SHALL BE COATED WITH BLACK ASPHALTIC PAINT.

WATERTIGHT MANHOLE FRAME AND COVER

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		WATERTIGHT MANHOLE FRAME AND COVER
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-6



SECTION A-A

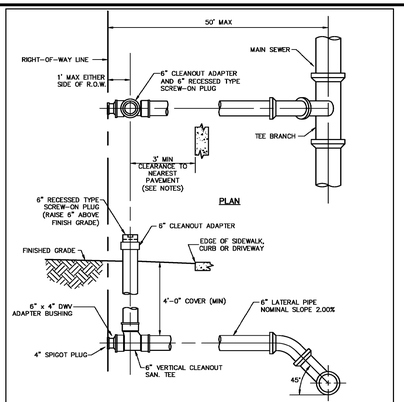
NOTES:

1. STEPS TO BE FABRICATED OF ALUMINUM ALLOY 6061-T6(EXTRUDED).
2. PORTIONS OF STEPS TO BE EMBEDDED IN WALLS OF MANHOLES OR CHAMBERS TO BE DIPPED IN HEAVY BODIED BITUMINOUS PAINT, OR PROVIDE PLASTIC INSERT.

ALUMINUM MANHOLE STEP

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		ALUMINUM MANHOLE STEP
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-7



ELEVATION

NOTE

CLEANOUTS SHOULD NOT TYPICALLY BE INSTALLED IN OR NEAR PAVED AREAS. UNDER SPECIAL CONDITIONS, A CLEANOUT LOCATED IN, OR LESS THAN 3 FEET FROM, A PAVED AREA MAY BE INSTALLED IF A PROTECTION SLEEVE AS SHOWN IN DETAIL S-12 IS PROVIDED.

LATERAL CONNECTION SHALLOW SEWER

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		LATERAL CONNECTION SHALLOW SEWER
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-9

NOTE:

PUMP STATION TO BE LOCATED ON A MINIMUM 0.5 ACRE PARCEL

TYPICAL PUMP STATION LAYOUT SKETCH

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TYPICAL PUMP STATION LAYOUT SKETCH
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-15

NOTES:

1. THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. FABRICATION OF THIS SYSTEM SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.
2. VERIFY MANUFACTURER'S DIMENSIONS.
3. ALL SUPPORTS, FRAMES, ANCHORS, AND HARDWARE TO BE STAINLESS STEEL.

TYPICAL SEWAGE GRINDER CHANNEL FRAME AND RAIL SYSTEM

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TYPICAL SEWAGE GRINDER CHANNEL FRAME AND RAIL SYSTEM
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-18

NOTE:

AIR RELEASE CHAMBER SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS S-1 AND S-2.

FORCE MAIN AIR RELEASE CHAMBER

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		FORCE MAIN AIR RELEASE CHAMBER
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-19

NOTE:

CHAMBER TO BE CONSTRUCTED IN ACCORDANCE WITH REQUIREMENTS NOTED ON STANDARD DETAIL S-18-FORCE MAIN AIR RELEASE CHAMBER.

FORCE MAIN CLEANOUT CHAMBER

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		FORCE MAIN CLEANOUT CHAMBER
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-20

PUMP STATION NOTES:

1. PUMP STATION WET WELL AND VALVE CHAMBER EXTERIOR SHALL RECEIVE (2) COATS OF COAL TAR EPOXY IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. PUMP STATION WET WELL AND VALVE CHAMBER INTERIOR SHALL RECEIVE COATING PER SPECIFICATIONS.
3. ALL PUMP STATION AND VALVE CHAMBER HARDWARE SHALL BE STAINLESS STEEL.
4. THE PUMP STATION FORCE MAIN SHALL HAVE A MINIMUM OF 4 FEET COVER AT ALL TIMES.
5. ALL PUMP STATION INTERNAL PIPING SHALL BE FLANGED CLASS 53 DIP WITH DOUBLE LINING OR APPROVED EQUAL.
6. USE STAINLESS STEEL CHAIN FOR PUMP REMOVAL AND GRINDER REMOVAL.
7. WET WELL TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478.
8. VALVE VAULT TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C913.
9. PROVIDE DIMENSIONS FOR ALL ACCESS HATCHES, PUMPS, SEWAGE GRINDER, AND TRASH BASKET. LOCATE CENTER LINE OF ACCESS HATCHES, SEWAGE GRINDER AND PUMPS RELATIVE TO THE CENTERLINE OF THE WET WELL/ VALVE CHAMBER. LOCATE HOIST RELATIVE TO CENTER OF PUMPS AND VERIFY ADEQUATE HOIST CAPACITY BY PROVIDING SEWAGE GRINDER AND PUMP WEIGHT.
10. PUMP STATION TO BE EQUIPPED WITH A GENERATOR/CONTROLS BUILDING TO HOUSE EMERGENCY GENERATOR AND ALL PUMP STATION CONTROLS.

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TYPICAL PUMP STATION PLAN VIEW AND NOTES
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-16

SECTION A-A SECTION VIEW

NTS

NOTES:

1. INTERNAL HEAD ROOM IN VALVE CHAMBER TO BE 7'-6" MIN, 8'-0" MAX.
2. PROVIDE ANTI-FLOTATION COLLAR AS REQUIRED. SUBMIT CALCULATIONS TO ENGINEER.

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TYPICAL PUMP STATION SECTION VIEW
DATE: 7-24-19	SCALE: None		
REVISION		DATE	
			STANDARD DETAIL S-17

NOTE: ALL PVC SANITARY PIPE SHALL BE SDR-26 UNLESS OTHERWISE NOTED.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

SANITARY SEWER DETAIL PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

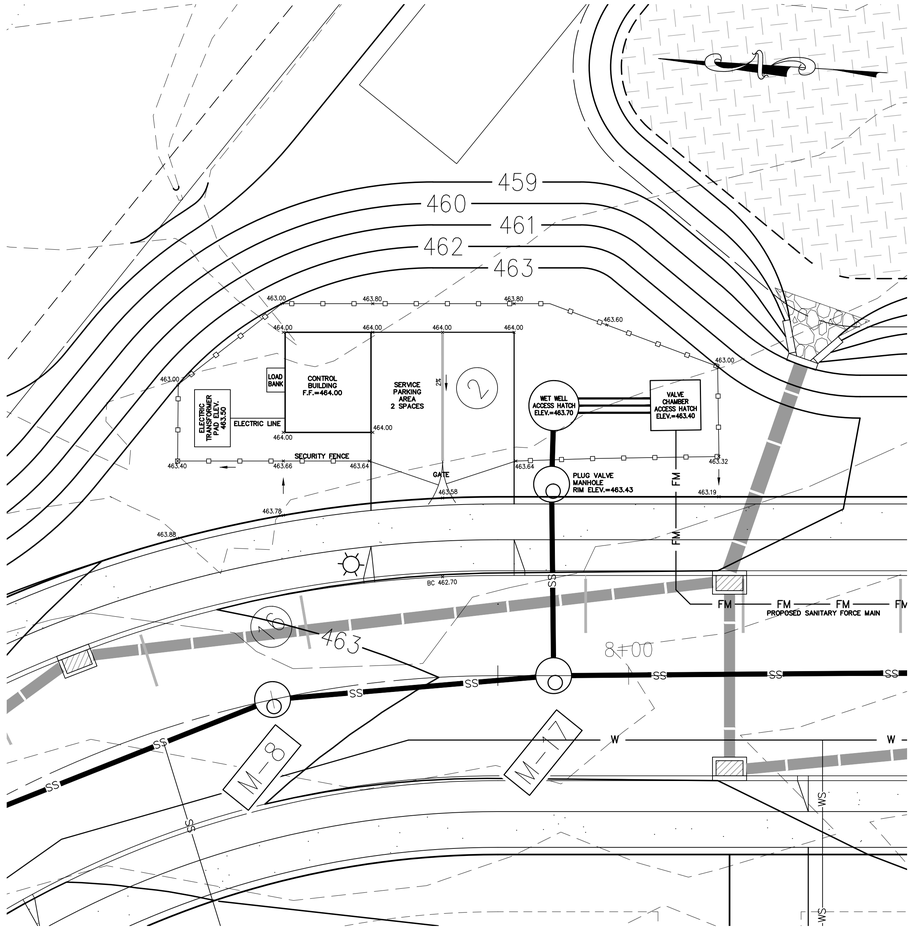
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE: AS SHOWN

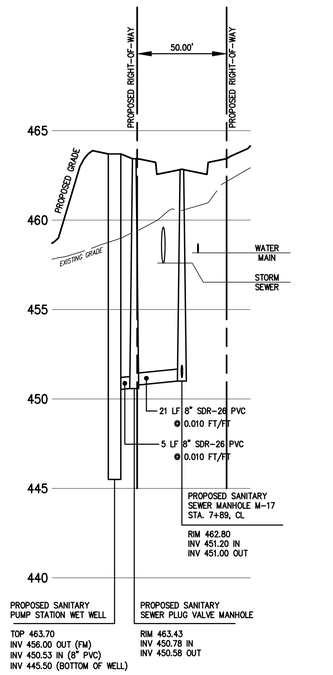
SHEET No. 41 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



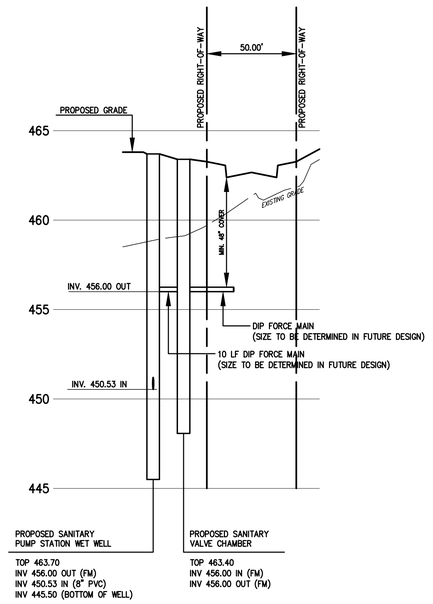
PUMP STATION ENLARGEMENT PLAN

SCALE: 1" = 10'



PROPOSED SANITARY MANHOLE MH-17 TO PROPOSED SANITARY PUMP STATION WET WELL

SCALE: HORZ. 1"=40'
VERT. 1"=4'



PROPOSED SANITARY PUMP STATION WET WELL TO PROPOSED SANITARY VALVE CHAMBER

SCALE: HORZ. 1"=40'
VERT. 1"=4'

NOTE: ALL PVC SANITARY PIPE SHALL BE SDR-26 UNLESS OTHERWISE NOTED.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

SANITARY SEWER DETAIL PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

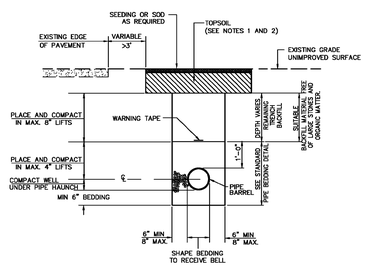
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE: AS SHOWN

SHEET No. 42 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



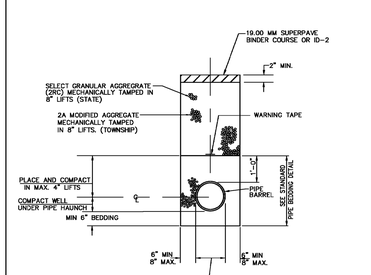
NOTES:

1. THE TOP 6" OF ALL TRENCHES IN NON-WETLAND AREAS SHALL BE BACKFILLED WITH TOPSOIL.
2. THE TOP 18" OF ALL TRENCHES IN WETLANDS SHALL BE BACKFILLED WITH PREVIOUSLY STRIPPED TOPSOIL.
3. ALL RESTORATION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408 AND PA CODE TITLE 67 CHAPTER 459.
4. SPECIAL CONDITION OF OCCUPANCY PERMIT MAY SUPERSEDE THIS DETAIL.

TRENCH RESTORATION FOR UNIMPROVED SHOULDER OF STATE HIGHWAY, TOWNSHIP ROADS OR IN EASEMENT

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TRENCH RESTORATION FOR UNIMPROVED SHOULDER OF STATE HIGHWAY, TOWNSHIP ROAD, OR IN EASEMENT
DATE: 7-24-19	SCALE: None		
REVISION	DATE		
			STANDARD DETAIL TR-1



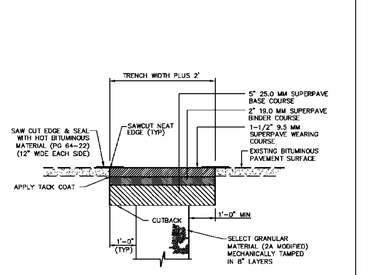
NOTES:

1. SPECIAL CONDITIONS OF THE TOWNSHIP ROAD OPENING PERMIT MAY SUPERSEDE THIS DETAIL.
2. CONTRACTOR TO MAINTAIN TEMPORARY PAVING UNTIL PREMANENT PAVING IS COMPLETED.

TEMPORARY PAVEMENT FOR TOWNSHIP ROAD AND STATE HIGHWAY

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		TEMPORARY PAVEMENT FOR TOWNSHIP ROAD AND STATE HIGHWAY
DATE: 7-24-19	SCALE: None		
REVISION	DATE		
			STANDARD DETAIL TR-3



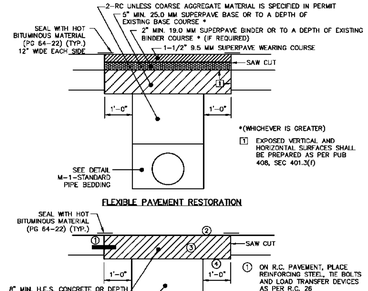
NOTES:

1. SPECIAL CONDITIONS OF THE TOWNSHIP ROAD OPENING PERMIT MAY SUPERSEDE THIS DETAIL.
2. CONTRACTOR TO MAINTAIN TEMPORARY PAVING UNTIL PERMANENT PAVING IS COMPLETED.

PERMANENT PAVEMENT, TRENCH RESTORATION AND BACKFILL FOR TOWNSHIP ROADS

NTS

BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		PERMANENT PAVEMENT, TRENCH RESTORATION AND BACKFILL FOR TOWNSHIP ROADS
DATE: 7-24-19	SCALE: None		
REVISION	DATE		
			STANDARD DETAIL TR-5



1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB 408, SEC 401.3(f)
2. ON R.C. PAVEMENT, PLACE REINFORCING STEEL, TIE BOLTS AND LOAD TRANSFER DEVICES AS PER R.C. 26
3. SURFACE TEXTURE AS PER PUB. 408, SEC 501.3(K)
4. FOR LIMITS OF CONCRETE REPLACEMENT SEE DEPT. REG. 459, SEC. 459.8(K)(4)
5. CUT BACK IS NOT REQUIRED BEYOND A TRANSVERSE OR LONGITUDINAL JOINT OR CURB

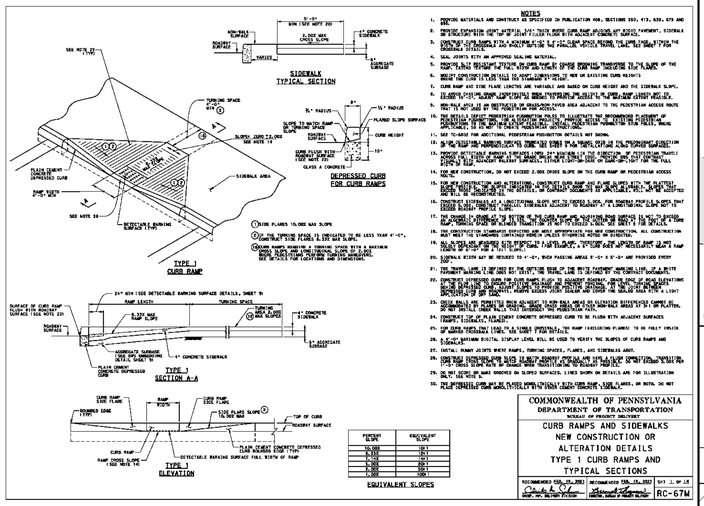
NOTES:

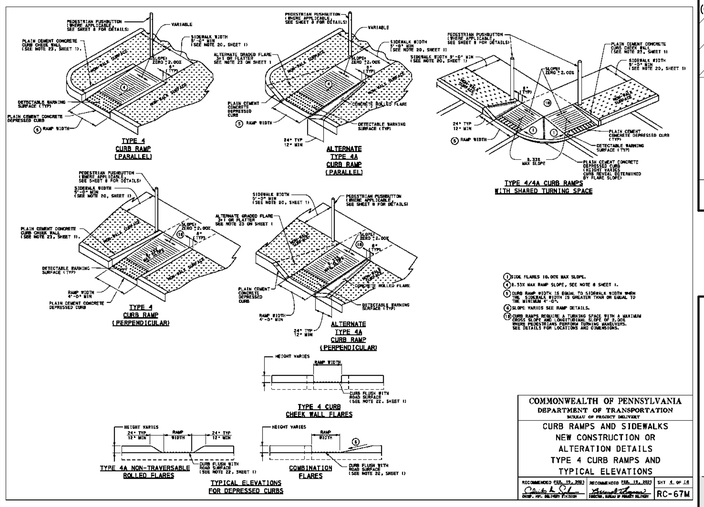
1. ALL RESTORATION TO BE IN ACCORDANCE WITH PA DOT PUBLICATION 408 AND PA CODE TITLE 67 CHAPTER 459.
2. SPECIAL CONDITIONS OF OCCUPANCY PERMIT MAY SUPERSEDE THIS DETAIL.

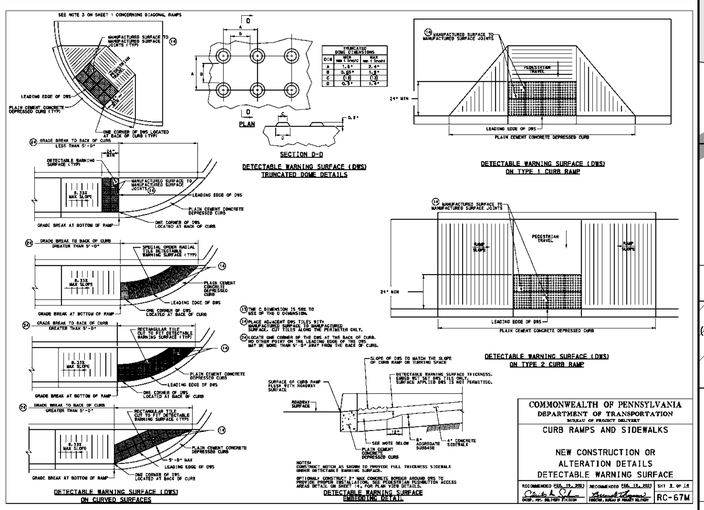
PERMANENT PAVEMENT, TRENCH RESTORATION AND BACKFILL FOR STATE HIGHWAYS

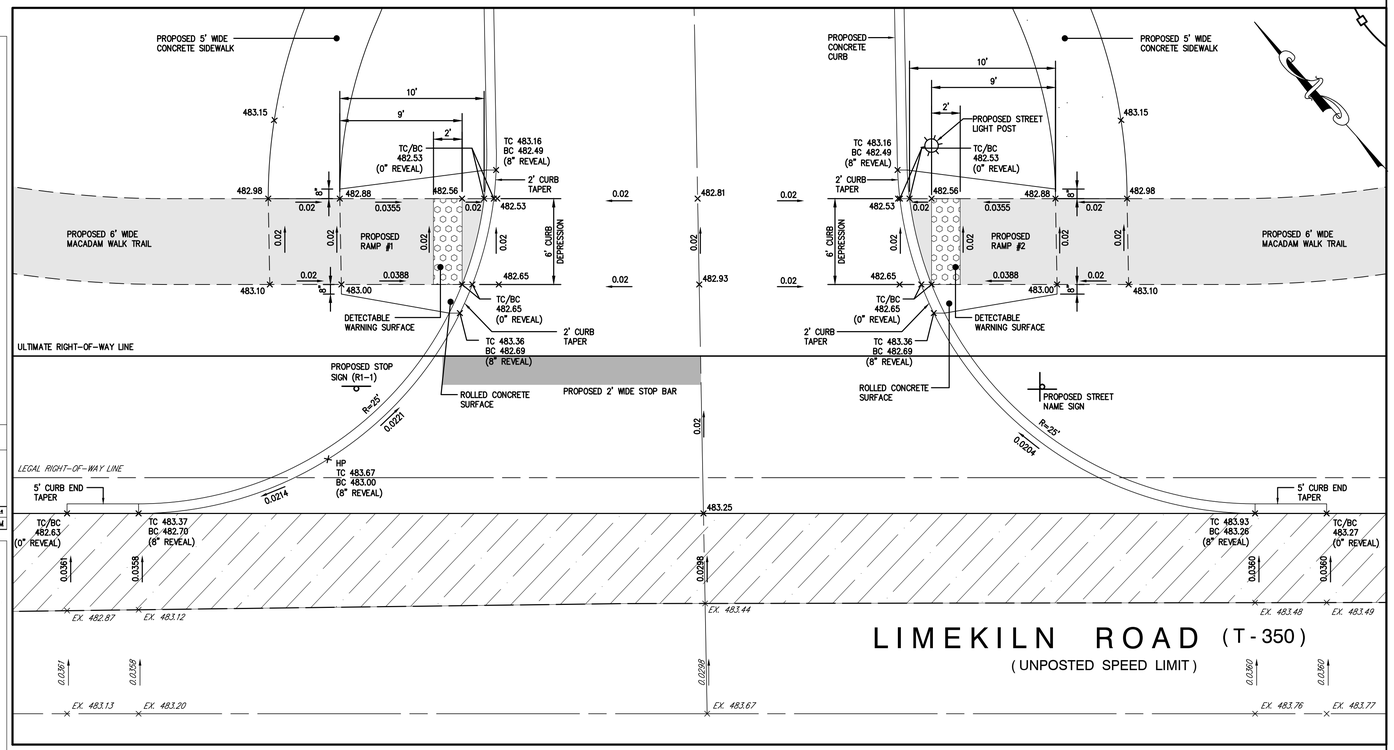
NTS

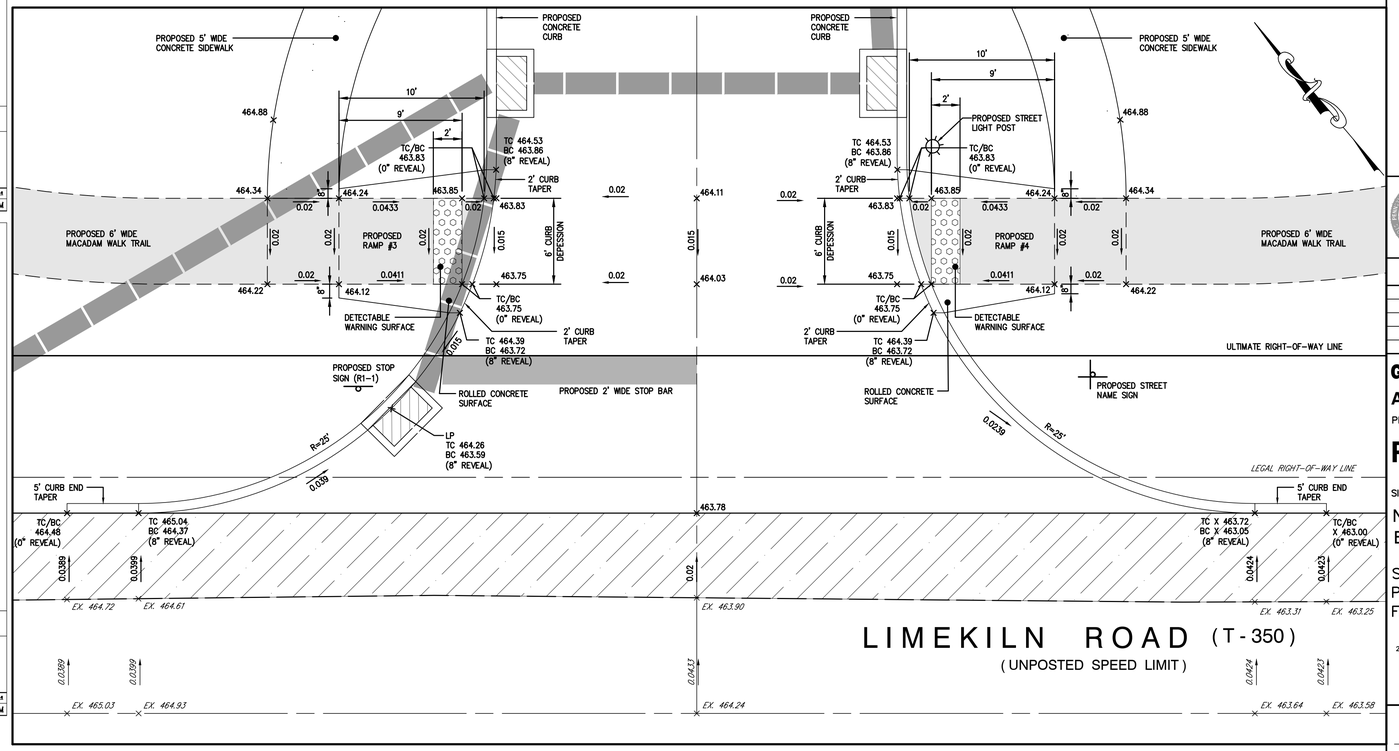
BUCKS COUNTY WATER & SEWER AUTHORITY			
DWG. BY: TSB	CKD. BY:		PERMANENT PAVEMENT, TRENCH RESTORATION AND BACKFILL FOR STATE HIGHWAYS
DATE: 7-24-19	SCALE: None		
REVISION	DATE		
			STANDARD DETAIL TR-6











ADA NOTES:

1. CONTRACTORS MUST EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA ACCESSIBLE COMPONENTS AND ACCESS ROUTES FOR THE SITE. THESE COMPONENTS, AS CONSTRUCTED, MUST COMPLY WITH THE CURRENT ADA STANDARDS AND REGULATIONS' BARRIER FREE ACCESS AND ANY MODIFICATIONS, REVISIONS OR UPDATES TO SAME. FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACE, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, INTER-BUILDING ACCESS, TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT, MUST COMPLY WITH THESE ADA CODE REQUIREMENTS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
   - A. PARKING SPACES AND PARKING AISLES – SLOPE SHALL NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
   - B. CURB RAMPS – SLOPE MUST NOT EXCEED 1:12 (8.3%)
   - C. LANDINGS – MUST BE PROVIDED AT EACH END OF RAMPS, MUST PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
   - D. PATH OF TRAVEL ALONG ACCESSIBLE ROUTE – MUST PROVIDE A 36-INCH OR GREATER UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS CANNOT REDUCE THIS MINIMUM WIDTH). THE SLOPE MUST BE NO GREATER THAN 1:20 (5.0%) IN THE DIRECTION OF TRAVEL, AND MUST NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 1:20 (5.0%), ADA RAMP MUST BE ADHERED TO. A MAXIMUM SLOPE OF 1:12 (8.3%), FOR A MAXIMUM RISE OF 2.5 FEET, MUST BE PROVIDED. THE RAMP MUST HAVE ADA HAND RAILS AND "LEVEL" LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 1:50 IN ANY DIRECTION (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE.
   - E. DOORWAYS – MUST HAVE A "LEVEL" LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1–2003 AND OTHER REFERENCES INCORPORATED BY CODE.)
   - F. WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY EXISTING ELEVATIONS SHOWN ON THE PLAN. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS, IN WRITING, BEFORE COMMENCEMENT OF WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ADA REQUIREMENTS.
2. THE CONTRACTOR MUST VERIFY THE SLOPES OF CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-CONFORMANCE IS OBSERVED OR EXISTS, CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO POURING CONCRETE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR AND REPLACE NON-CONFORMING CONCRETE.
3. IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

ADA ENLARGEMENT & DETAIL PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

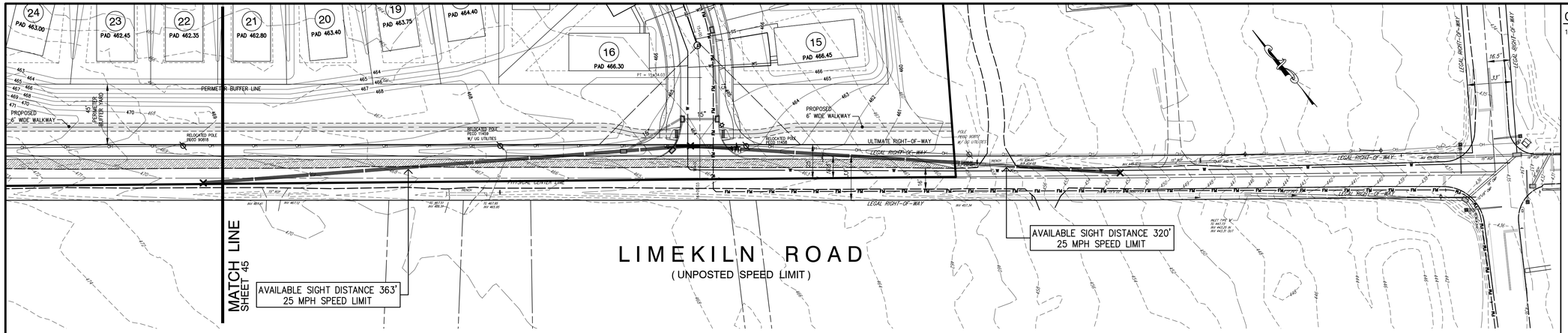
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

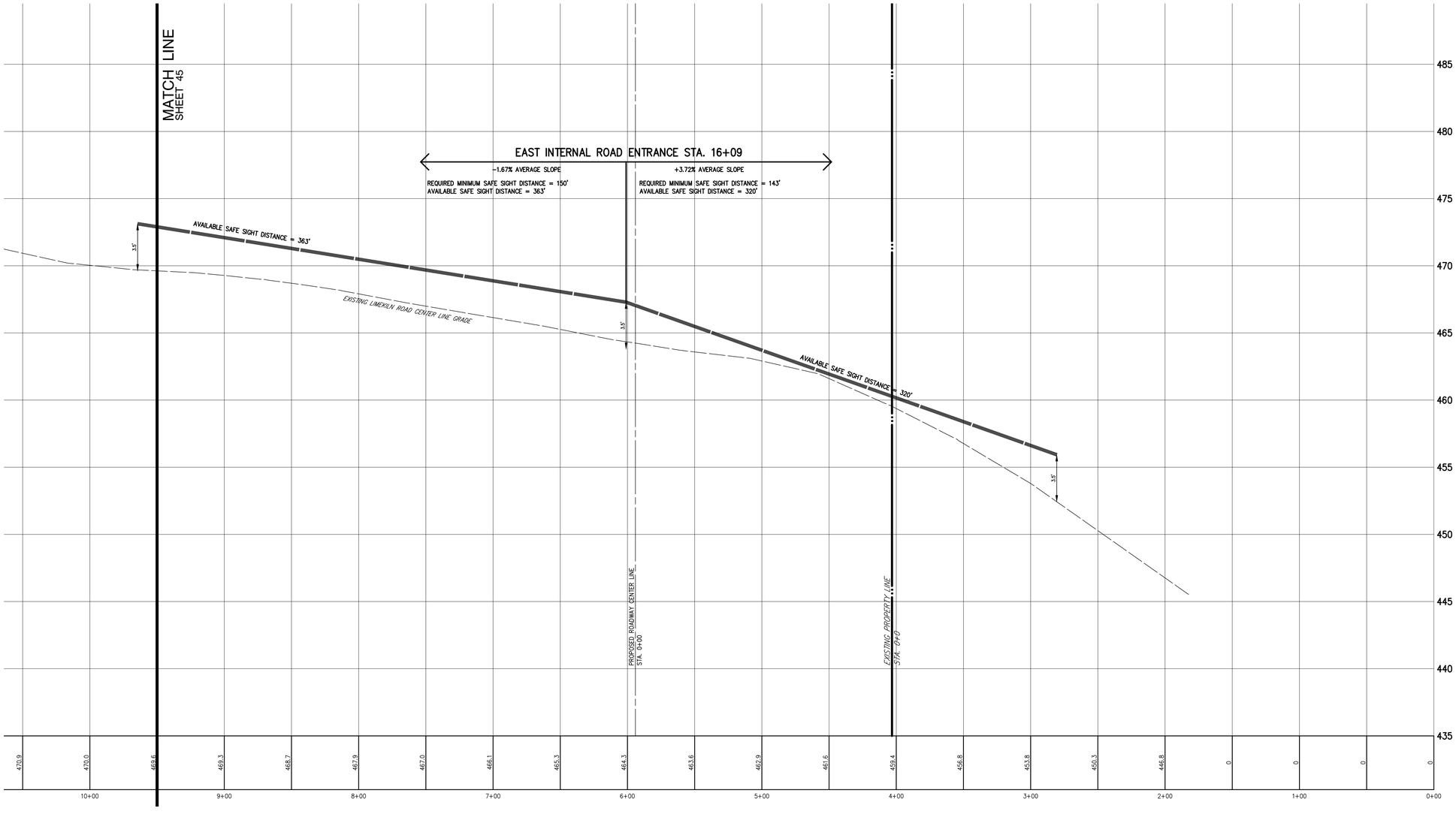
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND

SCALE: 1"= 5'

SHEET No. 43 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com





LIMEKILN ROAD PROFILE
SCALE: HORZ. 1"=40'
VERT. 1"=4'

GENERAL NOTES:

1. REFER TO SAFE SIGHT DISTANCE DETAIL PLAN FOR DRIVEWAY SAFE SIGHT DISTANCE MEASUREMENTS CHART AND NOTES.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

LIMEKILN ROAD (1 of 3)

SAFE SIGHT DISTANCE PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

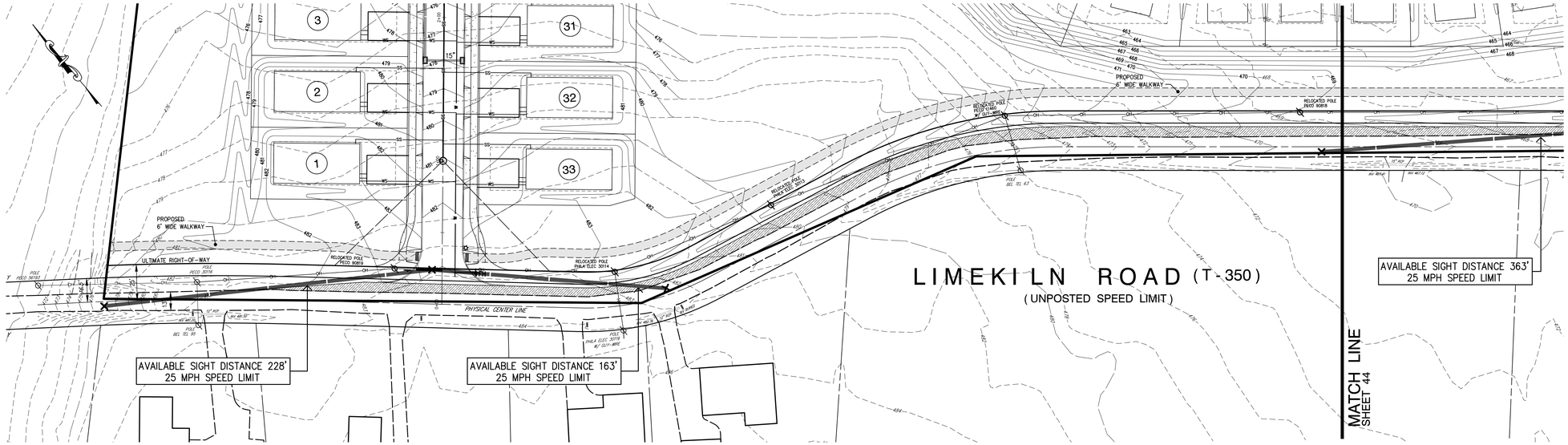
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

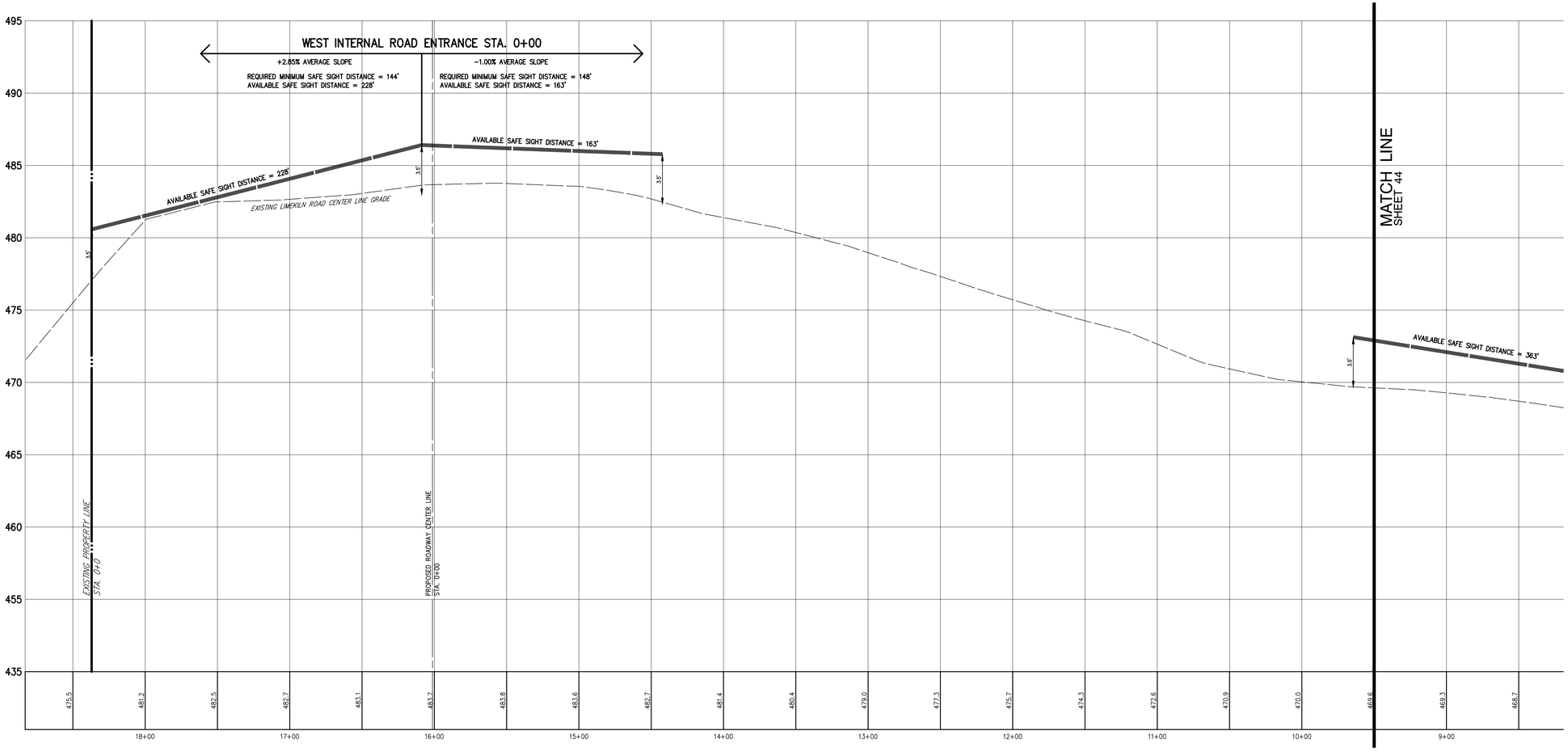
SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

20' 0 20' 40' 80'
SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

SHEET No. 44 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com





LIMEKILN ROAD PROFILE

SCALE: HORZ. 1"=40'
VERT. 1"=4'

GENERAL NOTES:

1. REFER TO SAFE SIGHT DISTANCE DETAIL PLAN FOR DRIVEWAY SAFE SIGHT DISTANCE MEASUREMENTS CHART AND NOTES.

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

LIMEKLIN ROAD (2 of 3)

SAFE SIGHT DISTANCE PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

20' 0 20' 40' 80'
SCALE: HORZ. 1"= 40'
VERT. 1"= 4'

SHEET No. 45 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

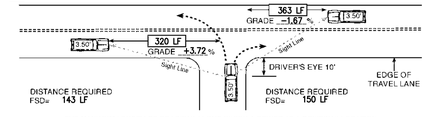
EAST INTERNAL ROAD ENTRANCE STA. 16+09

M-950S (3-04)
PENNDOT

DRIVEWAY SIGHT DISTANCE MEASUREMENTS
(FOR LOCAL ROADS, USE PENNDOT PUB 70)

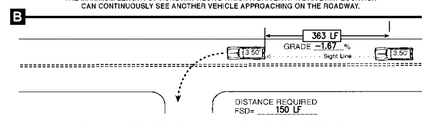
APPLICANT RHG Properties, LLC. APPLICATION NO. _____
(East and Internal Road Intersecting Limekiln Road)
S.R. _____ SEG. _____ OFFSET _____ LEGAL SPEED LIMIT 25mph (assumed, no posted limit)
MEASURED BY _____ DATE _____
FOR DEPARTMENT USE ONLY: Safe-Running Speed _____ 85th Percentile Speed _____

A



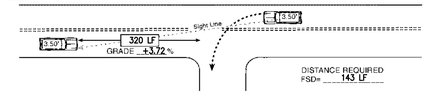
THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

B



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER ON THE ROADWAY CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.

C



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

M-950S (3-04)
PENNDOT

FORMULA SIGHT DISTANCE TABLE

Speed (V) (Miles Per Hour)	Average Grade (G) (Percent)										
	Use plus grades when approaching vehicle is travelling upgrade.										
	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0	+8.0	+9.0	+10.0
25	147	145	144	143	142	140	139	138	137	136	135
30	196	194	191	189	187	185	183	182	180	178	177
35	249	245	242	239	236	233	231	228	226	224	221
40	314	309	304	299	295	291	287	284	280	277	274
45	383	376	370	364	358	353	348	343	339	334	330
50	462	453	444	436	429	422	415	409	403	397	392
55	538	527	517	508	499	490	482	475	468	461	454
	Use negative grades when approaching vehicle is travelling downgrade.										
	0.0	-1.0	-2.0	-3.0	-4.0	-5.0	-6.0	-7.0	-8.0	-9.0	-10.0
25	147	148	150	151	153	155	157	159	161	164	166
30	196	199	201	204	207	210	214	217	221	226	230
35	249	252	256	260	265	269	275	280	286	292	299
40	314	319	325	331	338	345	352	360	369	379	389
45	383	390	398	406	415	425	435	447	459	472	487
50	462	471	481	492	504	517	531	546	563	581	600
55	538	550	562	576	590	606	622	641	661	682	706

WEST INTERNAL ROAD ENTRANCE STA. 0+00

M-950S (3-04)
PENNDOT

DRIVEWAY SIGHT DISTANCE MEASUREMENTS
(FOR LOCAL ROADS, USE PENNDOT PUB 70)

APPLICANT RHG Properties, LLC. APPLICATION NO. _____
(West and Internal Road Intersecting Limekiln Road)
S.R. _____ SEG. _____ OFFSET _____ LEGAL SPEED LIMIT 25mph (assumed, no posted limit)
MEASURED BY _____ DATE _____
FOR DEPARTMENT USE ONLY: Safe-Running Speed _____ 85th Percentile Speed _____

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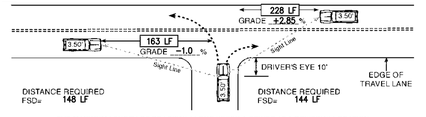
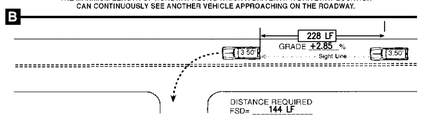


THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

B



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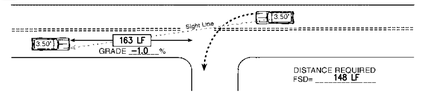
C



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

M-950S (3-04)
PENNDOT

FORMULA SIGHT DISTANCE TABLE

Speed (V) (Miles Per Hour)	Average Grade (G) (Percent)										
	Use plus grades when approaching vehicle is travelling upgrade.										
	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0	+8.0	+9.0	+10.0
25	147	145	144	143	142	140	139	138	137	136	135
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50	462	453	444	436	429	422	415	409	403	397	392
55	538	527	517	508	499	490	482	475	468	461	454
	Use negative grades when approaching vehicle is travelling downgrade.										
	0.0	-1.0	-2.0	-3.0	-4.0	-5.0	-6.0	-7.0	-8.0	-9.0	-10.0
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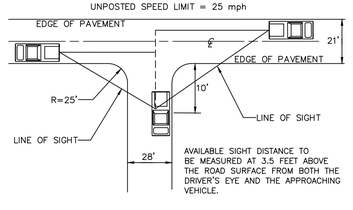
45	383	390	398	406	415	425	435	447	459	472	487
50	462	471	481	492	504	517	531	546	563	581	600
55	538	550	562	576	590	606	622	641	661	682	706

UNPOSTED SPEED LIMIT = 25 mph



LIMEKILN ROAD – SIGHT DISTANCE DETAIL NTS

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

LIMEKILN ROAD (3 of 3)

SAFE SIGHT DISTANCE DETAILS PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075–LAND XREF ECP

SCALE: AS SHOWN

SHEET No. 46 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

PATA 101-B

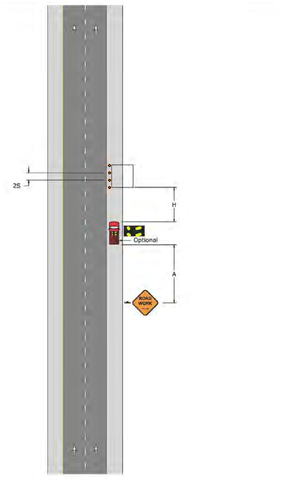
1. The shadow vehicle and TTC devices are not required if the work space is outside the highway right-of-way, behind barrier, more than 2' behind curb, or 15' or more from the edge of the roadway.

2. For operations of 60 minutes or less, all TTC devices may be eliminated if a shadow vehicle is present and the operation does not proceed against normal traffic flow.

3. When a shadow vehicle is not used, distance A is measured from the ROAD WORK sign.

Signs
ROAD WORK
W20-1

Sign Spacing, Channelizing Device Spacing, and Roll Ahead Space				
Speed	Channelizing Devices Spacing	Sign Spacing		Roll Ahead Space
		Urban	Rural	
S (MPH)	2S (Feet)	A (Feet)	A (Feet)	H (Feet)
25	50	100 - 200	500 - 800	150
30	60	100 - 200	500 - 800	150
35	70	100 - 200	500 - 800	150
40	80	350 - 500	500 - 800	150
45	90	350 - 500	500 - 800	155
50	100	350 - 500	500 - 800	250
55	110	350 - 500	500 - 800	250



PATA 101-C

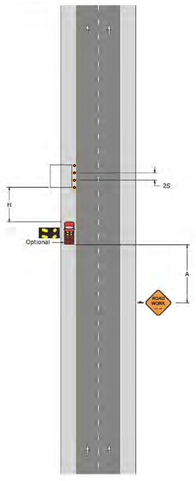
1. The shadow vehicle and TTC devices are not required if the work space is outside the highway right-of-way, behind barrier, more than 2' behind curb, or 15' or more from the edge of the roadway.

2. For operations of 60 minutes or less, all TTC devices may be eliminated if a shadow vehicle is present and the operation does not proceed against normal traffic flow.

3. When a shadow vehicle is not used, distance A is measured from the ROAD WORK sign.

Signs
ROAD WORK
W20-1

Sign Spacing, Channelizing Device Spacing, and Roll Ahead Space				
Speed	Channelizing Devices Spacing	Sign Spacing		Roll Ahead Space
		Urban	Rural	
S (MPH)	2S (Feet)	A (Feet)	A (Feet)	H (Feet)
25	50	100 - 200	500 - 800	150
30	60	100 - 200	500 - 800	150
35	70	100 - 200	500 - 800	150
40	80	350 - 500	500 - 800	150
45	90	350 - 500	500 - 800	155
50	100	350 - 500	500 - 800	250
55	110	350 - 500	500 - 800	250



PATA 107

1. Flaggers shall be clearly visible to traffic for a minimum distance of E.

2. For operations of 15 minutes or less:

   a) The ROAD WORK, ONE LANE ROAD, and FLAGGER SYMBOL signs are not required.

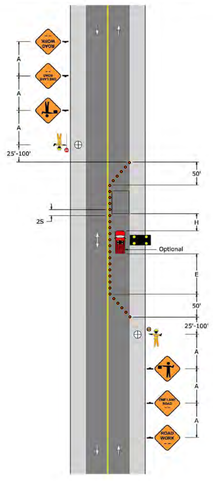
   b) All channelizing devices may be eliminated if a shadow vehicle is present and the operation does not proceed against normal traffic flow.

3. When a shadow vehicle is not used, distance E is measured from the end of the taper to the beginning of the work space.

Signs		
ROAD WORK	ROAD WORK	
W20-1	W20-4	W20-7

Sign Spacing, Channelizing Device Spacing, Buffer Space, and Roll Ahead Space					
Speed	Channelizing Devices Spacing	Sign Spacing		Buffer Space	Roll Ahead Space
		Urban	Rural		
S (MPH)	2S (Feet)	A (Feet)	A (Feet)	E (Feet)	H (Feet)
25	50	100 - 200	500 - 800	155	150
30	60	100 - 200	500 - 800	200	150
35	70	100 - 200	500 - 800	250	150
40	80	350 - 500	500 - 800	305	150
45	90	350 - 500	500 - 800	360	150
50	100	350 - 500	500 - 800	425	250
55	110	350 - 500	500 - 800	495	250

Taper Lengths and Minimum Number Of Channelizing Devices		
Speed	50' Per Lane Taper	
S (MPH)	Length (Feet)	Minimum Number Of Devices
25	50	6
30	50	6
35	50	6
40	50	6
45	50	6
50	50	6
55	50	6



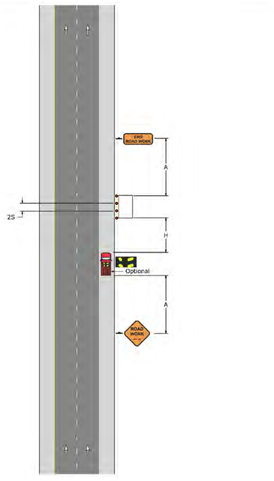
PATA 201-B

1. TTC devices are not required if the work space is outside the highway right-of-way, behind barrier, more than 2' behind curb, or 15' or more from the edge of the roadway.

2. When a shadow vehicle is not used, distance A is measured from the ROAD WORK sign location to beginning of the work space.

Signs	
ROAD WORK 1500'	END ROAD WORK
W20-1	G20-2

Sign Spacing, Channelizing Device Spacing, and Roll Ahead Space				
Speed	Channelizing Devices Spacing	Sign Spacing		Roll Ahead Space
		Urban	Rural	
S (MPH)	2S (Feet)	A (Feet)	A (Feet)	H (Feet)
25	50	100 - 200	500 - 800	150
30	60	100 - 200	500 - 800	150
35	70	100 - 200	500 - 800	150
40	80	350 - 500	500 - 800	150
45	90	350 - 500	500 - 800	150
50	100	350 - 500	500 - 800	250
55	110	350 - 500	500 - 800	250



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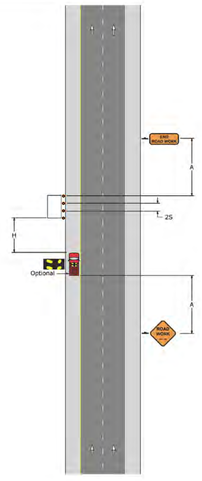
1. TTC devices are not required if the work space is outside the highway right-of-way, behind barrier, more than 2' behind curb, or 15' or more from the edge of the roadway.

2. When a shadow vehicle is not used, distance A is measured from the ROAD WORK sign location to beginning of the work space.

Signs	
ROAD WORK 1500'	END ROAD WORK
W20-1	G20-2

Sign Spacing, Channelizing Device Spacing, and Roll Ahead Space				
Speed	Channelizing Devices Spacing	Sign Spacing		Roll Ahead Space
		Urban	Rural	
S (MPH)	2S (Feet)	A (Feet)	A (Feet)	H (Feet)
25	50	100 - 200	500 - 800	150
30	60	100 - 200	500 - 800	150
35	70	100 - 200	500 - 800	150
40	80	350 - 500	500 - 800	150
45	90	350 - 500	500 - 800	150
50	100	350 - 500	500 - 800	250
55	110	350 - 500	500 - 800	250



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REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

TRAFFIC CONTROL DETAILS

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND XREF ECP

SCALE: AS SHOWN

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
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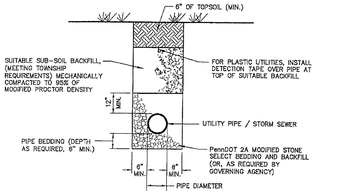
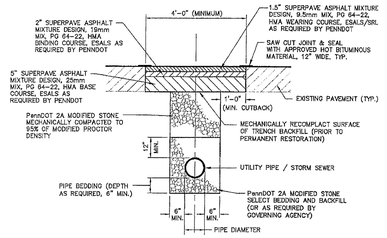


STORM SEWER & UTILITY TRENCH RESTORATION WITHIN PERVIOUS AREAS DETAIL

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.	6 OF 17



AFTER 90 DAYS RESTORATION

NOTES:

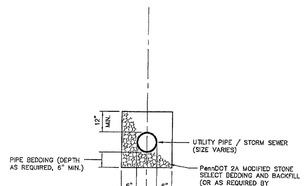
1. BEFORE 90 DAYS, ROADS SHALL BE TEMPORARILY RESTORED WITH 2A COURSE AGGREGATE AND 2" OF PennDOT ID-2 BINDER COURSE (TO GRADE) AND ALLOWED TO SETTLE 90 DAYS PRIOR TO PERMANENT RESTORATION, AS SHOWN ABOVE. PERMANENT RESTORATION OF TRENCHES SHALL BE COMPLETED ONLY AFTER APPROVAL BY TOWNSHIP ENGINEER.
2. RETAINED SUITABLE MATERIAL MAY BE USED AS BACKFILL FOR TRENCHES IN TOWNSHIP RIGHT-OF-WAY (OUTSIDE OF CARTWAY) WHEN WIDTH IS NOT MORE THAN THREE (3) FEET FROM EDGE OF EXISTING CARTWAY, CURB, AND/OR SIDEWALK.
3. MINIMUM WIDTH OF ALL RESTORATION SHALL BE FOUR (4) FEET.
4. COLD PATCH SHALL BE APPLIED ON ALL TRENCH RESTORATIONS (PRIOR TO 90 DAYS) WHEN BINDING OR BASE COURSE ARE NOT AVAILABLE DUE TO WEATHER CONDITIONS.
5. FOR PLASTIC UTILITIES, INSTALL DETECTION TAPE OVER PIPE AT TOP OF STONE BACKFILL.

STORM SEWER & UTILITY TRENCH RESTORATION WITHIN PAVED AREAS DETAIL

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.	5 OF 17

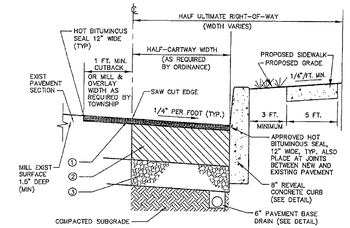


PIPE BEDDING DETAIL

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.	4 OF 17



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

THE FOLLOWING NOTES PERTAIN TO ALL PROPOSED CONSTRUCTION METHODS, MATERIALS, STRUCTURES AND FACILITIES WITHIN NEW BRITAIN TOWNSHIP. THESE CONSTRUCTION NOTES, IN A SIMILAR FORMAT, MUST BE PROVIDED ON THE RECORD PLAN. THE APPLICANT SHOULD MODIFY THE CONSTRUCTION NOTES OR PROVIDE ADDITIONAL NOTES, AS NECESSARY, WHEN THE DESIGN METHODS AND STANDARDS ARE NOT SPECIFICALLY STATED. UNLESS A MORE RESTRICTIVE DESIGN METHOD OR STANDARD IS SPECIFIED IN NEW BRITAIN TOWNSHIP'S ZONING OR SUBDIVISION AND LAND DEVELOPMENT ORDINANCES, THE FOLLOWING SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES:

1. ALL CONSTRUCTION METHODS AND MATERIALS MUST COMPLY WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, LATEST REVISION.
2. ALL PROPOSED STRUCTURES AND FACILITIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 72, "ROAD CONSTRUCTION STANDARDS", LATEST REVISION.
3. ALL PROPOSED STREETS, ACCESS DRIVES, DRIVEWAYS AND UTILITIES SHALL COMPLY WITH THE PENNSYLVANIA CODE, TITLE 67, CHAPTER 441, "ACCESS TO AND OCCUPANCY OF HIGHWAYS BY DRIVEWAYS AND LOCAL ROADS", AND CHAPTER 459, "OCCUPANCY OF HIGHWAYS BY UTILITIES", LATEST REVISION.
4. ALL PROPOSED STRUCTURES AND FACILITIES MUST COMPLY WITH THE AMERICANS WITH DISABILITY ACT, "ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES", LATEST REVISION.
5. ALL PROPOSED WATER AND SEWER FACILITIES MUST COMPLY WITH THE STANDARDS AND POLICIES OF THE APPLICABLE WATER AUTHORITY, SEWER AUTHORITY, BUCKS COUNTY HEALTH DEPARTMENT, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND NEW BRITAIN TOWNSHIP.
6. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR ENSURING ALL CONSTRUCTION ACTIVITIES ARE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND POLICIES OF THE BUCKS COUNTY CONSERVATION DISTRICT.
7. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR ENSURING ALL CONSTRUCTION ACTIVITIES ARE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND POLICIES OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
8. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL UTILITIES AND COMPLYING WITH THE PENNSYLVANIA ACT 38 AND ACT 187, AS AMENDED.
9. ALL NEW UTILITIES SHALL BE INSTALLED UNDERGROUND.
10. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, No. 287, 12/10/74, AS AMENDED 12/12/96, P.L. 1574, No. 172. CONTRACTOR MUST NOTIFY PA-1 CALL SYSTEM, INC. 3 DAYS PRIOR TO CONSTRUCTION.
11. CONTRACTOR SHALL NOT ENCROACH ONTO ABUTTING PROPERTIES UNLESS A TEMPORARY CONSTRUCTION EASEMENT HAS BEEN GRANTED BY ADJOINING PROPERTY OWNER. CONTRACTOR SHALL HAVE PROPERTY LINES CLEARLY MARKED IN AREAS WHERE GRADING WILL ENCROACH WITHIN 5 FEET OF THE PROPERTY LINE AND SHALL CONSTRUCT SUCH BARRIERS WHICH ARE NECESSARY TO PREVENT ENCROACHMENT ONTO ADJACENT PROPERTIES.
12. NO EXCAVATION OR FILL SHALL BE MADE WITH A FACE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL.

GENERAL CONSTRUCTION NOTES

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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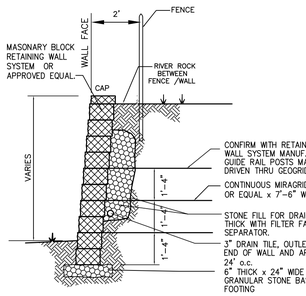
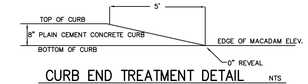


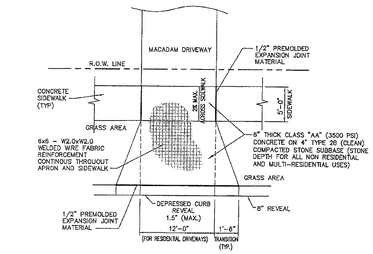
RETAINING WALL SECTION NTS

NOTES:

1) RETAINING WALL SYSTEM DESIGN SHOWN INDICATES INTENT ONLY. FINAL DESIGN AND DETAILING OF THE RETAINING WALLS IS SUBJECT TO THE REVIEW OF THE RETAINING WALL SYSTEM MANUFACTURER. DRAWINGS WILL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER AT THAT TIME AND SUBMITTED FOR TOWNSHIP REVIEW AND BUILDING PERMIT PRIOR TO START OF CONSTRUCTION.



CURB END TREATMENT DETAIL NTS



DRIVEWAY AND APRON DETAIL

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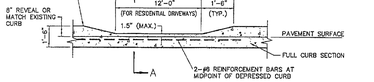

DEPRESSED CURB DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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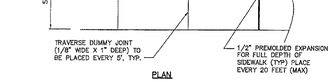

PLAN

NOTES:

1. WITH ALL PROPOSED SIDEWALK, A NON-SLIP SURFACE TEXTURE SHALL BE BROOMED TRAVERSE TO THE SLOPE OF THE SIDEWALK.
2. ALL SIDEWALK SHALL BE IN ACCORDANCE WITH ACI & PENNDOT STANDARDS.

CONCRETE SIDEWALK DETAIL

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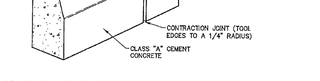

NOTES:

1. PLACE 1/2" PREMOLDED EXPANSION JOINT MATERIAL EVERY 50 FEET (MAX.) AND AT ALL DRIVEWAYS (DEPRESSED CURB CUTS), INLETS, AND CURB RADII.
2. MINIMUM 2-#6 REINFORCING BARS PER SIDE WHERE CURB ABUTS INLET HOODS, INCLUDING PREMOLDED EXPANSION JOINT MATERIAL.
3. WHERE CURB ARE INSTALLED BY A MACHINE, SAW CUTS SHALL BE 2" DEEP, EVERY 10 FEET.

PLAIN CEMENT CONCRETE CURB DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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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-H

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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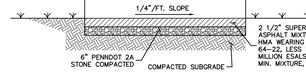


ASPHALT WALKWAY NTS.

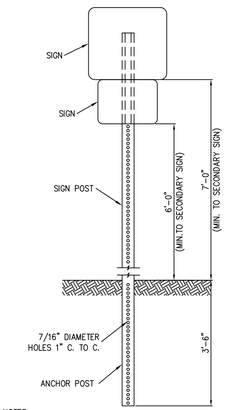
LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

SIZE: 30"x30"

(R1-1) 'STOP' SIGN DETAIL NTS

NOTES:

1. REFER TO PA. DOT PUB. 68 : OFFICIAL TRAFFIC-CONTROL DEVICES – TITLE 67, CHAPTER 211 –SECTION 211.52 FOR ADDITIONAL NOTES.
2. ALL SIGNAGE MUST BE INSTALLED ON PENNDOT STANDARD BREAKAWAY POSTS.

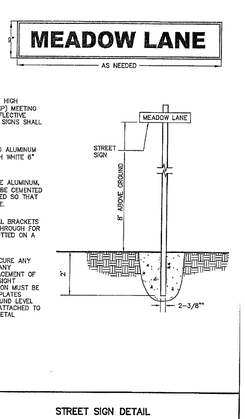


NOTES:

1. POSTS TO BE TYPE "B" BREAKAWAY CHANNEL BAR POSTS. (SEE PENNDOT TRAFFIC CONTROL SIGNING STANDARDS TC-7000 SERIES FOR INSTALLATION PROCEDURES.)
2. SIGN POST LOCATIONS TO BE SELECTED IN THE FIELD UNDER THE DIRECT SUPERVISION OF THE ENGINEER.
3. TO BE INSTALLED IN ACCORDANCE WITH PENNDOT PUB. 40B, SECTION 932

SIGN POST – PENNDOT

NTS



NOTES:

1. STREET NAME SIGNS SHALL BE OF HIGH INTENSITY PRISMATIC MATERIAL (HIP) MEETING MINIMUM ASTM TYPE III RETRO-REFLECTIVE STANDARDS. NO ENGINEER GRADE SIGNS SHALL BE ACCEPTED.
2. STREET SIGNS TO BE 9" EXTRUDED ALUMINUM SHEETED GREEN BACKGROUND WITH WHITE 6" HIP "SERIES B" LEGEND.
3. STREET NAME SIGN POST SHALL BE ALUMINUM, 2 3/8" DIAMETER, 10' LONG, AND BE EMBEDDED IN A 5 GALLON BUCKET AND BURIED SO THAT 8' REMAINS ABOVE FINISHED GRADE.
4. STREET NAME SIGN HARDWARE: ALL BRACKETS SHALL BE 12" LONG OS 12 BOLT THROUGH FOR EXTRUDED SIGNS AND SHALL BE FITTED ON A 2-3/8" DIAMETER POST.
5. LOCATION OF SIGN MUST NOT OBSCURE ANY POTENTIAL TRAFFIC HAZARD. AT ANY LOCATION WHERE THE TYPICAL PLACEMENT OF A SIGN INTERFERES WITH A SAFE SIGHT DISTANCE, AN ALTERNATIVE LOCATION MUST BE FOUND. THE LOWER EDGE OF THE PLATES SHALL BE 8 FEET ABOVE THE GROUND LEVEL OR CURB. THE PLATES SHALL BE ATTACHED TO THE STANDARD BY RUST-PROOF METAL FASTENERS.

STREET SIGN DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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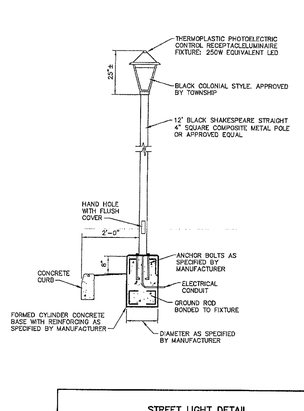

STREET LIGHT DETAIL

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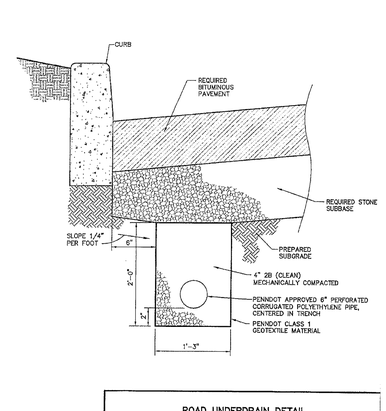

ROAD UNDERDRAIN DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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5/22/09		N.T.S.	14 OF 17

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK
GENERAL CONSTRUCTION DETAIL PLAN

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

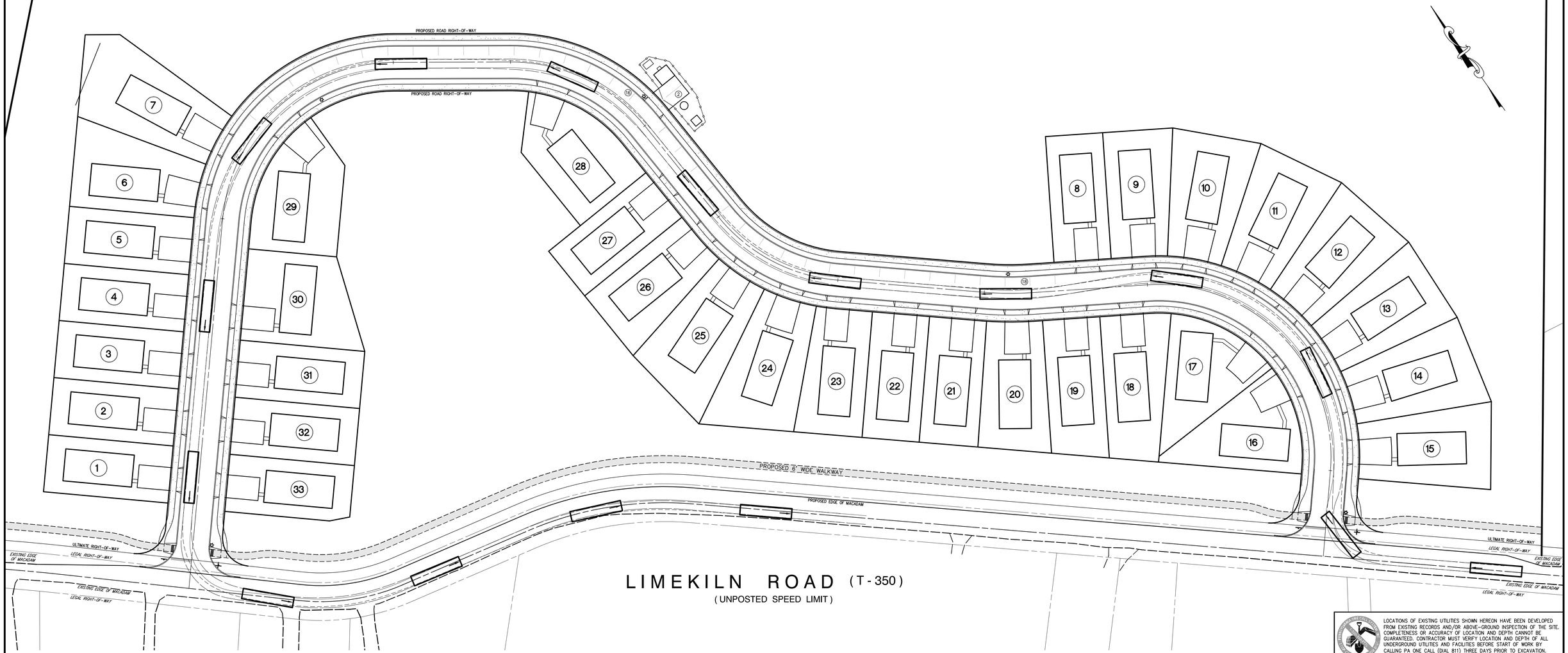
NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

SCALE AS NOTED

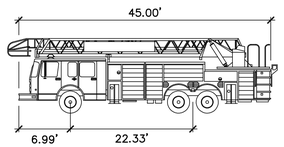
SHEET No. 48 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com



LIMEKILN ROAD (T-350)

(UNPOSTED SPEED LIMIT)



EMERGENCY RESPONSE VEHICLE

NOT TO SCALE

PARAMETERS:

LENGTH	45 FEET
WIDTH	9.07 FEET
TRACK	7.69 FEET
WHEELBASE	22.33 FEET
FRONT BUMPER OVERHANG	6.99 FEET
STEERING ANGLE	40 DEGREES

UTILIZED MINIMUM 45' OUTSIDE TURN RADIUS

LEGEND

- EXISTING EDGE OF MACADAM
- PROPOSED CONCRETE CURB
- PROPOSED EDGE OF MACADAM
- TRUCK FRONT RIGHT PATH
- TRUCK FRONT LEFT PATH
- TRUCK REAR LEFT PATH
- TRUCK REAR RIGHT PATH

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL (DIAL 811) THREE DAYS PRIOR TO EXCAVATION. REFERENCE NUMBER: 20183251500

REVISIONS

DATE	DESCRIPTION

GALENA RESERVE MOBILE HOME PARK

TRUCK TURN PATH PLAN "FIRE TRUCK"

PREPARED FOR

RHG PROPERTIES, LLC.

SITUATE IN

NEW BRITAIN TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SEPTEMBER 23, 2022
PROJECT No. 18075
FILE: 18075-LAND

20' 0 20' 40' 80'

SCALE: 1"= 40'

SHEET No. 49 OF 49

URWILER & WALTER, INC.
CIVIL ENGINEERS & SURVEYORS
P.O. BOX 269 3126 MAIN STREET SUMNEYTOWN, PA. 18084
PHONE 215-234-4562 FAX 215-234-0889 www.urwilerwalter.com

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

January 18, 2023

File No. 19-07022

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

Reference: Galena Reserve MHP, Preliminary Plan Review 1
35 Limekiln Road, TMP #26-012-051

Dear Matt:

Pursuant to your request, Gilmore & Associates, Inc. has reviewed the Land Development Plan for the above-referenced project. Upon review by our office, we offer the following comments for consideration:

I. Submission

A. Preliminary Subdivision and Land Development Plans for Galena Reserve Mobile Home Park, as prepared by Urwiler & Walter, Inc., consisting of forty-nine (49) sheets dated September 23, 2022.

B. Post Construction Stormwater Management Report for Galena Reserve Mobile Home Park, as prepared by Urwiler & Walter, Inc., dated September 23, 2022.

C. Community Impact Assessment for Galena Reserve, as prepared by Kennedy & Associates, LLC, dated August 8, 2022.

D. Waiver Request Letter for Galena Reserve Mobile Home Park, as prepared by Urwiler & Walter, Inc., dated October 31, 2022.

E. PaDEP Sewage Facilities Planning Modular Mailer for Galena Reserve Mobile Home Park.

F. Application for Water Capacity Allocation for Galena Reserve Mobile Home Park dated November 23, 2022.

II. General Information

The subject property is a 15.6-gross-acre parcel located at 35 Limekiln Road (T-350) within the MHP – Manufacturing Home Park district. The parcel is bounded by residential single-family detached homes in the WS, Watershed District to the North, East and South, and Peace Valley Park in the CR – Conservation and Recreation District to the West. The site is currently vacant but previously contained approximately 36 manufactured homes which accessed two unnamed parallel, private drives. The remainder of the property consists of overgrowth, trees, and a wetlands area. The applicant proposes a Use B9 – Mobile Home Park II (Age-Restricted) for 33 units with 28'x60' (1,680-sf) footprints (maximum 3 bedrooms). The units would access a 28-ft wide private loop street with curb and sidewalk. Frontage improvements include the widening of Limekiln Road, installation of a 6-foot-wide asphalt trail and landscape buffer. We note that a previous Sketch Plan showed 46 units with 1,456-sf footprints and was tabled at the January 27, 2020 Board of Supervisors Meeting. RHG Properties, LLC will own and maintain the lots, common facilities, private street, stormwater facilities, utilities, and open space. Stormwater management is shown through an infiltration basin and rain garden along the northern and eastern portion of the property for the maximum allowable impervious area for the site. Public water and sewer are proposed with conceptual offsite connections to an existing water main and a future sanitary force main along Ferry Road. A pump station and forcemain are proposed as well.

III. Review Comments

A. Zoning Ordinance

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

1. §27-305.B.B9.b.2.(c) – The Applicant proposes 55% (8.117 acres) of open space deed-restricted from being further subdivided. The minimum open space ratio is 30%, or 4.420 acres, where ¼ of which shall include walkways with benches. Therefore, a minimum of 1.105 acres shall include walkways and benches. Based on the 6-foot walking path along the frontage, only 0.20 acres of open space include walkways. Additional walkways and benches are required. We recommend an Open Space Plan be provided to clearly show the areas of open space on one plan, open space calculations, amount of area used for stormwater management, and to otherwise demonstrate compliance with this section. A trail through the open spaces shall be discussed.
2. §27-305.A.B9.b.2.(d) – The maximum impervious surface ratio is 25%. The plan proposes a total tract impervious of 23.39% which includes an estimate of 2,340 sf of impervious per lot. We recommend a maximum impervious area be established for each lot and noted to ensure the maximum impervious area for the site is not exceeded with future improvements.
3. §27-305.A.B9.b.8 & §22-720.2 – Public or community sewer and water services shall be provided in accordance with the Township's Act 537 Sewage Facilities Plan and Subdivision and Land Development Ordinance (SALDO). The "Act 537 Plan On-Lot Sewage Service Area" and Township Comprehensive Plan indicate that this property is within the Township's on-lot septic area, however, public water and sewer are proposed for the B9 Use. Any variation from the Township's Sewage Facilities Plan and Comprehensive Plan requires approval of the Township, Chalfont-New Britain Township Joint Sewage Authority and PADEP. We recommend that an Alternative Analysis be submitted for review to determine the feasibility of a community system.
4. §27-305.A.B9.b.9 & §27-2803.e – A buffer yard shall be provided around the perimeter of the manufactured home park in accordance with the provisions of this chapter. While the plans indicate the buffer is proposed to be met with a combination of existing trees and supplemental trees/shrubs, it is unclear if the buffer sufficiently screens the proposed use from adjacent residential zoning districts. Many of the trees are listed as a deciduous species or dead. We recommend evergreen trees be used to supplement existing trees. Regardless, a note shall be added to the plan that additional evergreen trees shall be escrowed and planted at the direction of the Township Engineer if required, once the improvements are installed to meet the buffer requirement.
5. §27-305.G1. – We defer to the Zoning Officer to determine if the pumping station meets the definition of G1 Utilities. This use is not expressly permitted within the MHP Zoning District, however, the use is incidental to the Land Development.
6. §27-2110.a. – No building or structure shall exceed a height of 35 feet. The maximum proposed building height shall be noted in the Zoning Data table.
7. §27-2400.a. & i. – The PaDEP eMapPA and the National Wetlands Inventory Map both show an watercourse and/or wetlands near the center of the northeastern property line, possibly offsite. The location of this watercourse shall be shown on the plan, Sheet 5. A riparian buffer area is required 75 feet from the edge of the watercourse in accordance with this section. No land disturbance shall be permitted within any riparian buffer except as permitted by these sections. We note that the infiltration basin berm is proposed within this area.
8. §27-2400.f.2 – No more than 50% of woodlands located upon a lot or site may be altered, regraded, cleared, or built upon. The Site Capacity Calculations list a woodlands protection ratio of 80% and may be revised to 50%. It shall be clarified whether or not the existing trees shown on the plans meet the definition of woodlands.

9. §27-2400.h. – The Applicant proposes to disturb 0.025 acres of the proposed wetlands margin for the street crossing which is permitted. While temporary tree protection fence is proposed, the BCPC recommended the wetlands margin be delineated permanently in the field to prevent future disturbance within the wetlands margin located within the common open space so that future residents are aware of the area's environmental sensitivity.
10. §27-2401.c – Restrictions meeting Township specifications must be placed in the deed for each site that has natural resource protection areas within its boundaries. The natural resource protection area is proposed within the common open space. It shall be clearly stated in the individual deed for the open space that the maintenance responsibility of the protected natural resources lies with the property owner (RHG Properties, LLC or their successors), unless the Solicitor prefers a separate conservation easement.
11. §27-2402.h – The ratio base site area is the portion of the base site area which is used to calculate the building coverage and impervious surface ratio for a site. The ratio base site area is the area of the site remaining after subtracting the following types of lands from the base site area: within the ultimate road rights-of-way of proposed roads; within proposed utility rights-of-way or easements; and/or covered by 100% protected natural resources. The calculation of the ratio base site area shall be noted on the plan to determine the maximum building coverage and impervious surface areas.
12. §27-2702.a & b, -2703 & -2704 – The use of the 8.117 acres of open space areas shall be designated in accordance with §27-2702.b and the need for additional public or private amenities shall be discussed. Furthermore, where open space abuts private property or new building lots, the edge of the open space shall be delineated by fencing and/or buffer plantings to be approved by the Board of Supervisors. The plan shall clarify how the open space area will be delineated.
13. §27-2802.a.3.(h) – The Landscape Compliance Chart, Sheet 14, indicates the Applicant proposes to meet the buffer requirement with a berm varying in height from 3 to 5 feet and 1 flowering or evergreen tree per 20 feet and 1 shrub per 10 feet. However, eastern and northern buffers do not appear to include the required berm. The berm shall be provided, or an alternate buffer option specified.
14. §27-2802.c.1– Several of the trees and shrubs proposed on the Landscaping Chart for buffers and basin plantings are not listed in this section of the Zoning Ordinance or on the Township's Required Plant Material List respectively. The Township is looking to amend this list in the future and several of the species will be permitted. However, Japanese holly, snow mound spirea and American yew shall be substituted with native varieties from the Township's lists.
15. §27-2803.e. – Every buffer yard shall be permanently protected by the placement of a conservation easement over it running with the land. The conservation easement shall be shown over the 45-foot buffer area, unless otherwise protected in a form to be approved by the Township Solicitor in conjunction with the open space documents.

B. Subdivision and Land Development Ordinance Waivers

We note that Limekiln Road is proposed to be widened to the full required width of 6 feet with a grass swale and 6-foot walkway. The following waivers have been requested by the Applicant from the Subdivision and Land Development Ordinance in a letter dated October 31, 2022:

1. §22-706.1.B – From the requirement to provide curb along Limekiln Road. We note that no curb currently exists along the roadway to the east or west of the site. We would support a waiver, conditioned on the Public Works Director's review of the of the proposed improvements.
2. §22-706.2.B – From the requirement to provide sidewalk along Limekiln Road. We note that no sidewalk currently exists along the roadway to the east or west of the site and a bituminous walkway is proposed. The feasibility of a connection to county park trails shall be discussed.
3. §22-712.2.K – From the requirement that all sump pumps and roof drains be connected to the storm sewer system or discharged directly to a stormwater detention facility, which we do not support.

4. §22-712.4.G – From the requirement that all basin outlet pipes be watertight reinforced concrete having O-ring joints with a minimum size of 18 inches. The Applicant proposes 12-inch RCP with O-ring joints for the rain garden, which we support.
5. §22-712.4.I – From the requirement to provide a minimum freeboard of one foot through the emergency spillway. The Applicant is proposing a freeboard of 6 inches in the rain garden, which we do not support.
6. §22-712.4.J – From the requirement that all portions of detention basin bottom shall be sloped towards the outlet structure at a minimum slope of 2%. The Applicant is proposing flat basin bottoms for infiltration which we would support conditioned upon underdrain systems with gate valves being installed to allow for dewatering of the basin and rain garden for inspection and maintenance purposes.
7. §22-712.4.K – From the requirement that the minimum basin berm width at the design elevation be 10 feet. The Applicant is proposing a 5-foot-wide berm for the rain garden which we do not support.
8. 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, , 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.

C. Subdivision and Land Development Ordinance (SALDO)

We have identified the following issues regarding the requirements and provisions of the current New Britain Township Zoning Ordinance:

1. §22-401.8 – The applicant for a subdivision or land development shall, with the submission of a preliminary plan, notify all surrounding property owners within 1,000 feet of the proposed development perimeter in accordance with this section.
2. §22-406.1 – The Applicant is responsible for any other required reviews, approvals, permits, etc. (i.e., BCPC, BCCD, PADEP, Fire Marshall, Township Road Opening Permit, etc.) as applicable.
3. §22-502. – The following comments related to plan notes and presentation shall be addressed:
    a. A legend shall be provided on the Record Plans.
    b. The chord bearings and distances for the arcs along the ultimate right-of-way for Limekiln Road shall be provided on the Record Plans.
    c. The zoning district of the adjacent properties shall be noted on the Record Plans.
    d. The signature line for the executive director of the Bucks County Planning Commission can be removed as they no longer physically sign the plans.
    e. The New Britain Township Planning Commission Chairmans signature is no longer required, so the signature line shall be removed.
    f. The open space area is separated into two areas by the roadway easement. The two separate open space areas shall be labeled, and areas noted on the Record Plans.
    g. The soil boundary lines and types shall be shown on the Existing Features and Natural Resource Plans.
4. §22-502.B.(11) – Legal descriptions are required for the new lots, open space parcels, natural resource conservation easements, buffer yards, right-of-way easement for Limekiln Road, access easement for the private street, and any other easements, such as water and sewer easements, which may be proposed. All easements shall be labeled with metes and bounds.

5. §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. We note that an aerial photograph plan has been provided on Sheet 4. We would support a waiver from this requirement conditioned upon the Applicant providing existing feature information for offsite water main and force main connections and any other information deemed necessary by the Township Engineer to facilitate the development such as buffers from offsite wetlands/watercourse. We note that Sheet 6 can be revised to be in a consistent format with Sheet 5 (aerial info is missing and limits of canopy are missing).
6. §22-502.D.(4) & (5) – The Existing Features Plan depicts an oil tank, existing structures, well pump pit, concrete pads, stone areas, electric boxes/utility poles, "H2O stubs" and septic lids for the previous mobile home sites, etc. The plan shall show any existing underground utilities to be removed in accordance with applicable regulations. Based on the Township Code Enforcement Officer, the septic tanks were previously removed.
7. §22-502.J. – The following details shall be added to the plans:
    a. Decorative Pedestrian Crosswalk New Britain Township Standard Detail.
    b. Proposed Bench detail.
    c. Shadowbox Fence and gate.
8. §22-505.4 – We offer the following with regard to the Community Impact Assessment (CIA):
    a. Section A.2 indicates that common elements will be owned and maintained by the Applicant/Owner. It does not appear that the plans incorporate maintenance structures/facilities onsite. If proposed, the locations shall be depicted on the plan to demonstrate the ordinance requirements are met and all impervious surfaces considered in the stormwater design.
    b. Section E.2. indicates that debris has been dumped onsite. Since the debris includes metal barrels, copies of any Environmental Site Assessments shall be submitted to the Township.
    c. Section H Community Needs Inventory indicates that existing neighbors will receive the opportunity to connect to public water and sewer. However, the adjacent residential properties are within the On-Lot Water and Sewer Areas of New Britain Township. The Assessment shall be amended to remove this sentence. We note that Section J Transportation Inventory indicates that the site previously had 36 mobile homes, which were not age-restricted. The Transportation Engineers Trip Generation Manual indicates that age restricted units will generate 1/3 of the traffic of non-age-restricted units and the peak hour number of trips generated is generally outside of the peak hour trips generated by adjacent street traffic.
9. §22-705.3 – Note 11 on Sheet 3 indicates that the ultimate right-of-way of Limekiln Road will be offered for dedication to the Township and that the proposed street is intended to be owned and maintained by a private association, RHG Properties, LLC, with an easement agreement. The Township typically accepts ultimate rights-of-way for existing streets as easements.
10. §22-705.3.A. – The Limekiln Road widening shall be extended to the westerly property line. Also, the Typical Roadway Widening Section Detail shall be removed and replaced with one specific for Limekiln Road noting the width of widening, slopes, swale cross section, etc.
11. §22-705.3.G. – Where a subdivision and/or land development abuts or contains an existing street, the applicant is required to mill and overlay the entire width of the roadway a depth of 1 ½ inches. We recommend an onsite meeting to discuss the limits of milling and overlay and to consider the utility work within the rights-of-way.
12. §22-705.4.F. – The minimum right-of-way radius at an intersection shall equal the curb radius plus 10 feet. The right-of-way radius for the private street connection to Limekiln Road shall be increased to 35 feet based on the 25-foot curb radius at these intersections.

13. §22-705.12. – All proposed street names shall be recommended by staff and reviewed by the Township Fire Marshal's office for duplication. The Applicant shall suggest a new street name in a written letter to the Township for review prior to being considered by the Board of Supervisors.
14. §22-705.15.B – Stop bars shall be placed a minimum of 4 feet in advance of and parallel to the crosswalks. The stop bar locations shall be revised.
15. §22-705.15.D – Crosswalks shall consist of brick red thermoplastic street imprint with herringbone pattern and six inch white stripes. Crosswalks shall be provided at street crossings.
16. §22-706.3.E. – Belgian block curb must be used for proposed residential streets. Belgian block curb shall be proposed for the private street and details for the Belgian block curb and depressed curb details shall be provided.
17. §22-706.3.G. – A note shall be added to the ADA Enlargement & Detail Plan specifying that all curb ramps shall be provided with "brick red" detectable warning surfaces.
18. §22-707.1.A. – The Board, upon the recommendation of the Planning Commission, may require pedestrian walkways or recreational trails. Pedestrian walkways shall be 6 feet and the minimum width of recreational trails anticipated to have bicycle traffic is 8 feet. The plans currently depict a 6-foot wide macadam walkway, however, the BCPC requested that the Township consider requiring an 8-foot recreational trail due to the proximity to Peace Valley Park.
19. §22-707.1.B.(1) – Whenever possible, the location of the walkway or trail should include natural areas, … or access to other unique areas of interest to the community and shall be located either on required open space or dedicated easements to the Township. The BCPC recommended the Applicant explore options for connecting to the County's trail system approximately 200 feet northwest of the site.
20. §22-708.6 – Based on a maximum 2% cross slope for the sidewalk crossing the driveway aprons, it appears the driveway access will have an elevation difference of 9 inches over approximately 4 feet for an apron slope of 18%. PA Code driveway requirements indicate the driveway should not exceed 8% and the difference between the cross slope of the roadway and the upward grade of the driveway approach shall not exceed 8%. The driveway and street spot elevations shall be revised as necessary to reduce the transition between the roadway and the driveway.
21. §22-710 – Parking is proposed on both sides of the new street. Based on the Fire Marshal's review dated January 17, 2023 and the width of the street, the new street shall be restricted parking on one side only. Truck-turning templates shall also be provided to demonstrate emergency vehicles can maneuver the site considering the layout and parked cars on one side.
22. §22-711.3 – The following issues related to erosion control shall be addressed:
    a. The sequence of construction shall include the flushing of all inlets and pipes to the basin to ensure all sediment is removed from the system prior to conversion of the sediment basin to an infiltration facility.
    b. Compost filter sock shall be provided around the isolated wetlands area until all upslope disturbance has been stabilized.
    c. The proposed grading on the Erosion Control Plan (Sheet 27) indicates a sediment basin elevation of 456.50. This is not consistent with the sediment basin details on Sheet 32 which list a basin elevation of 456.00. The sediment basin bottom elevation shall be clarified.
    d. The skimmer detail lists an invert connection of 454.70 at the outlet structure which is lower than the bottom of the basin and would not allow the flexible skimmer attachment to rise and fall with the water elevation. The grading around the outlet structure or the skimmer invert shall be revised as necessary.
    e. The details for the sediment basin outlet structure shall specify that orifice openings for the infiltration basin be sealed during the sediment basin phase.
    f. Erosion controls shall be provided for the installation of the forcemain, including offsite.

23. §22-711.3 – The following comments related to grading shall be addressed:
    a. The proposed grading on Lot 29 directs runoff towards the building pad. The grading shall be revised to ensure positive drainage away from the pad.
    b. Additional spot elevations shall be provided behind the Lot 28 pad to ensure drainage is directed around the pad.
    c. Spot elevations shall be provided between the proposed 468 and 469 contours to the southwest of Lots 19 through 21 to ensure positive drainage.
24. §22-713.2.B. – Tree protection fence shall be provided around the two existing trees to remain on the northern side of the basin.
25. §22-713.4.A – The Street tree calculations on the Landscape Compliance Chart subtract roadway frontage for driveways. This requirement applies to the entire roadway, including driveways. Based on a roadway length of 1,559 feet, a total of 104 street trees are required. Street trees shall be planted between three and five feet outside the ultimate right-of-way (or easement) line, and as an alternative, the same quantity of trees may be planted in an informal arrangement along the perimeter of the street, when approved by the Board.
26. §22-714.3.A. – Public streetlights shall be required for all residential subdivisions at all street intersections, along horizontal street curves, and at any other location where lighting will improve the function of the street, sidewalk or pedestrian access way where required by the Board. A lighting plan shall be provided in accordance with §22-502.1.H and lighting proposed as required. In addition, Note 22 on Sheet 3 shall be revised to include the owner as responsible for ownership and maintenance of any proposed street lighting.
27. §22-715.2.C.(1) – Park and recreation land is required at a ratio of 2,500 square feet per new dwelling unit or 82,500 square feet. The land shall be dedicated to the Township or other entity as may be approved by the Board. The proposed park and recreation land shall be designated on the plans. A fee-in-lieu of park and recreation at a rate of $2,500 per dwelling unit or **$82,500.00** for the 33 new dwellings may be provided at the Board's discretion.
28. §22-716.5 – Markers shall be set at all proposed lot corners, changes in direction and intersections with the ultimate right-of-way line, unless a concrete monument is required. Pins shall be provided at all proposed lot corners where a concrete monument is not required.
29. §22-717 – It was noted in the CIA that gas service would be provided to these lots. The type of services shall be noted. If individual tanks are proposed, the location of these tanks shall be clarified to verify adequate clearance is provided.
30. §22-718.2 & 805.2 – If approved, a public water system shall be required and approved by the Township for mobile home parks. A water supply from a public source, as approved by the Township, for domestic, auxiliary, and fire fighting uses shall be provided for all uses included in the mobile home development, including service buildings, accessory facilities, in compliance with state requirements, Township Zoning Ordinance, and SALDO.
    a. The system shall be designed to comply with the standards and requirements of the applicable water authority, North Penn Water Authority (NPWA), and shall be subject to its approval. The Will-Serve letter shall be provided to the Township prior to preliminary plan approval in order to confirm that the site can connect to the proposed transmission line.
    b. The public water supply system shall be designed with adequate capacity and fire hydrants for fire fighting purposes. The comments from the Fire Marshall related to the proposed water service shall be resolved.

31. §22-720 & 805.3. – Currently, a gravity sewer main is proposed with gravity laterals to each dwelling unit. A pump station is proposed onsite along with a forcemain to connect to an existing manhole at the Pine Run Retirement Community in New Britain Township. It is our understanding that the Chalfont New Britain Township Joint Sewer Authority (CNBJSA) does not have nearby infrastructure to service this community. Therefore, the Community Impact Assessment indicates that the gravity main, forcemain, and pump station will be dedicated to the Bucks County Water and Sewer Authority (BCWSA) after construction with treatment by the CNBJSA Wastewater Treatment Plant. We note that a Sewage Planning Module Application Mailer has been submitted. As noted above, the Act 537 Sewage Facilities Plan indicates that this property is within the Township's On-Lot Septic area whereas the plans note that public water and sewer are proposed. We recommend the plans be presented to the Board of Supervisors prior to sending the mailer to DEP. If approved, we offer the following comments related to sewage disposal:
    a. §22-805.3 – A public sanitary sewer system shall be provided in all mobile home developments for conveying and disposing of sewage from dwellings, service buildings, and accessory facilities in compliance with the state, Zoning Ordinance and SALDO.
    b. If required, a completed PADEP Sewage Facilities Planning Module shall accompany the subsequent preliminary plan application. Prior to submitting the planning module to the Township for approval, the planning module shall have been executed by the applicant, responsible engineer, CNBJSA, Department of Health and Bucks County Planning Commission. A Sewage Facilities Planning Module shall be approved by the Township, Authority, and PADEP prior to final plan approval by the Township. A copy of the "Will-Serve" letter shall also be submitted prior to Preliminary Approval and the approved sewer agreement shall be submitted to the Township prior to plan recording.
    c. Per the Community Impact Assessment, the pump station is to be dedicated to the BCWSA. The pump station area shall be excluded from designated open space and it shall be clarified if the pump station should be contained within an easement or separate parcel. (§22-704.2.A.)
32. §22-720.4 – The forcemain is proposed within the grass shoulder of Limekiln Road and approximately 3 feet from an existing storm sewer pipe. We recommend the location be reviewed in the field by the Contractor and Public Works Director prior to construction to ensure that the forcemain work does not interfere with the drainage along the road. Any damage to the forcemain could result in contamination of the flow in the storm sewer. The forcemain shall be installed a minimum of 10 feet horizontally or 18 inches vertically from existing storm sewer pipe. The forcemain shall be relocated as necessary and a profile provided to demonstrate clearances.
33. §22-720.6 – Any public sewage treatment facility or pumping station proposed to service a subdivision shall be dedicated to the Chalfont-New Britain Township Joint Sewage Authority. For any private sewage pumping station proposed to service a land development, the property owner shall execute an operation and maintenance agreement with the Township and post the required financial security. The design plans, and specifications for all facilities shall be approved by the Township and the Chalfont-New Britain Township Joint Sewage Authority prior to final plan approval.
34. §22-802 – Applicants are encouraged to arrange mobile homes in a variety of orientations and are also encouraged to have many units with their long sides facing the street rather than their ends, in order to provide variety and interest. The proposed lot layout has 30 of the 33 lots with the end on the units facing the street. The lots shall be revised with a greater variety of lot orientations.
35. §22-805.4 – Underground Utilities. Except for electric and natural gas transmission lines, all electric, natural gas, telephone and any other utility lines shall be placed underground in all mobile home developments, and each shall have the necessary shut-off valves and other safety requirements normally associated with safe operations. All utility connections shall be appropriately capped for safety purposes whenever a mobile home stand is not occupied.
36. §22-806 & 807 – The plans shall indicate if the lots are for sale or for lease. The Applicant shall comply with the requirements for permits, licenses, fees and inspections. We defer to the Code Enforcement Officer with regards to anchoring, stability, skirts, and hitches for the homes.

D. Stormwater Management Comments

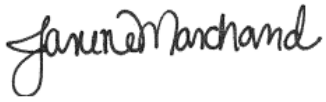
We offer the following comments related to the Township's Stormwater Ordinance:

1. §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 plan includes details for storm sewer inlets and manholes from Monarch Precast Concrete. These details shall include notes specifying structures to be constructed in accordance with PennDOT Pub 72M, RC-46M for inlets and RC-39M for manholes.
2. §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. Based on the Inlet Report, it appears Inlets IN15 and IN49 capture less than the required 80% of flow and shall be revised.
3. §22-712.6.E. – At street intersections, inlets shall be placed at the curb tangent and not in the curved portion of the curb. IN-42 is located within the curb radius at the intersection of the proposed road with Limekiln Road and shall be relocated and the grading revised as necessary.
4. §22-712.10.C. – All vegetated channels shall have maximum side slopes of four horizontal to one vertical and a minimum center-line slope of 2%. The swales between Lots 18 through 28 appear to have a slope of approximately 1%. The grading shall be revised to provide a minimum slope of 2% across all grass areas, unless perforated underdrain is provided.
5. §22-712.13.D. – The Township shall require payment of a fee in order to maintain the stormwater management facilities applicable to all storm sewers located in public rights-of-way or any easement owned by the Township. Inlets IN-41 and IN-42 are located within the Ultimate right-of-way of Limekiln Pike which will be owned by the Township. However, since these inlets drain to the onsite BMPs, we recommend they remain under the responsibility of the property owner. A note shall be added to the plan specifically identifying these inlets and pipes within the Township right-of-way as the responsibility of the property owner.
6. §26-132 – The following comments regarding the stormwater design shall be addressed:
    a. The peak flow rates were modeled using 3.45 acres of onsite impervious. Sheet 2 indicates stormwater facilities were designed to accommodate 3.683 acres of impervious (25%). The PCSM report shall be revised to include this additional impervious area.
    b. Based on the existing contours, it appears an area of BMP#2 around the outlet structure will require fill material once the topsoil is removed. Notes shall be provided specifying any fill material within the basin be amended soil to ensure the design infiltration rate is maintained.
    c. The Structure Report in the PCSM report lists a grate elevation of 466.70 for Inlet IN-6. This is not consistent with the plans and profile which list a grate elevation of 467.00. Based on the upslope swale directed towards this inlet, a sumped inlet grate would be necessary to ensure the flows do not bypass this structure. The inlet grate shall be revised as necessary.
    d. Yard Drains YD61 and YD62 are listed as drop grates on the Inlet Report in the PCSM report. This is not consistent with the plans which appear to show these inlets on grade. Additional spot elevations shall be provided as necessary to verify these inlets will be sumped to capture the required drainage area.
    e. The following comments shall be resolved regarding Water Quality IN-17, IN-22 and IN-50:
        i. Snouts require a sumped inlet to allow the snout to extend a minimum depth of half of the outlet pipe diameter. The sump depth of the inlets shall be noted in the profiles.
        ii. The notes for the snouts listed on Sheet 18 specify that the snout shall be larger than the outlet pipe size. Inlets IN-17 and IN-50 both have a 24" diameter outlet pipe and would require a larger snout size than the 24F snout detail provided.
        iii. The BMP Snout detail on Sheet 18 lists Inlet IN-16 as a water quality inlet and shall be revised to list Inlet IN-17.

7. §26-132.2.B.(2)(a)5) – The following issues related to the storm sewer profiles shall be addressed:
   a. Internal Road profile (Sheet 35) and storm sewer profile (Sheet 38) list a slope of 0.010 FT/FT for the pipe between Inlet IN-4 and IN-5. This is not consistent with the structure inverts which indicate a slope of 0.026 FT/FT.
   b. The invert out for Inlet IN-2 on the Internal Road profile (Sheet 35) is listed as IN-3 and shall be revised to list IN-5.
   c. Proposed Inlet IN-17 includes invert elevations for IN-15 and EW-17 on the Internal Road profile (Sheet 36) and storm sewer profile (Sheet 38) which appear to be IN-16 and EW-18.
   d. The slope of 0.021 FT/FT for the pipe between FES-63 and YD-62 on the storm sewer profile (Sheet 38) is not consistent with the inverts listed and should be revised.
   e. It appears the sanitary sewer pipe that crosses beneath the 18" HDPE between Inlets IN-49 and IN-50 has a separation of approximately 12 inches. We recommend concrete encasement be provided for any sewer pipe crossing within 18 inches of a storm sewer pipe.
8. §26-164.1 – The Applicant shall sign an O&M agreement with the municipality covering all stormwater and storm sewer facilities and BMPs that are to be privately owned.
9. §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 1,434 feet of frontage on Limekiln Road and 3,150 feet along both sides of the proposed road, a fee of **$11,460.00** would be required.
10. Township Resolution #2022-03 – The Applicant will be required to pay a fee for the proposed onsite BMP to provide a financial guarantee for the timely installation, proper construction and continued maintenance by the owner of the subject property. The fee shall be 5% of the total construction cost of the proposed BMP. The Applicant's professional shall submit a cost estimate once the design is finalized.

Considering the extent of the required plan revisions identified in this letter, we may have additional comments relating to compliance with the Township Ordinances upon resubmission by the Applicant and upon review of the final plan requirements. To help expedite the review process of the resubmission of the plan, the Applicant shall submit a response letter which addresses each of the above comments. Changes that have been made to the application that are unrelated to the review comments shall also be identified in the response letter.

Sincerely,



Janene Marchand, P.E.
Project Engineer
Gilmore & Associates, Inc.

JM/tw

cc: Michael Walsh, Assistant Manager
Dave Conroy, Direction of Planning and Zoning
Ryan Gehman, Assistant Planning and Zoning Officer
Randy Teschner, Code Enforcement/Fire Marshal
Ryan Cressman, Public Works Superintendent
Jeffrey P. Garton, Esq., Township Solicitor
Scott T. Camburn, Urwiler & Walter, Inc.
Michelle Wells, RHG Properties, LLC.
Craig D. Kennard, P.E., E.V.P., Gilmore & Associates, Inc.
Daniel Preston, NPWA
John Schmidt, CNBJSA

Township of New Britain

Office of Fire Marshal
Office of Code Enforcement

January 17, 2023

RE: Fire Marshal review of GALENA RESERVE PRELIMINARY SUBDIVISION PLAN 9/23/2022

Review By: Randal J. Teschner Fire Marshal, Code Enforcement Officer

The following is a list of items to be addressed:

1. Recommend No Parking on one side due to width of the roadway.
2. Supply three Fire Hydrant one at each entrance and one across from lot 27
3. Water main to be looped and install on Limekiln Road
4. Show two water services for each lot as one is for Domestic water and second for Fire Sprinkler

BCPC
Bucks County Planning Commission
The Almshouse Neshaminy Manor Center 1260 Almshouse Road
Doylestown, Pennsylvania 18901 215.345.3400 FAX 215.345.3886
E-mail: planningcommission@buckscounty.org

MEMORANDUM

To: New Britain Township Board of Supervisors
New Britain Township Planning Commission

From: Staff of the Bucks County Planning Commission

Date: January 11, 2023

Subject: BCPC #12447
Preliminary Plan of Land Development for Galena Reserve Mobile Home Park
TMP #26-12-51
Applicant: RHG Properties, LLC
Owner: Same
Plan Dated: September 23, 2022
Date Received: December 19, 2022

This proposal has been reviewed by the Bucks County Planning Commission professional staff, which prepared the following comments in accordance with the Pennsylvania Municipalities Planning Code (Section 502).

GENERAL INFORMATION

Proposal: Construct 33 double-wide (28-foot by 60-foot) age-restricted mobile home units on a 14.73-acre site for a proposed net density of 2.25 dwelling units per acre. The plan indicates a total of 8.12 acres of open space. The site is to be served by public water and public sewer.

Location: On the northern side of Limekiln Road, approximately 800 feet northwest of its intersection with Ferry Road.

Zoning: The MHP Mobile Home Park District permits Use B9 Mobile Home Park II on sites of at least 10 acres, with individual lots being at least 4,500 square feet (for double-wide units) and having setbacks of 8, 10, and 16 feet for front, side, and rear yards, respectively. A maximum density of 6.0 dwelling units per acre is permitted and a minimum open space ratio of 30 percent is required for this use.

Present Use: Vacant

COMMENTS

We have reviewed two prior sketch plan proposals submitted for this site (BCPC #12447, dated September 5, 2019, and October 25, 2019). Although several of the comments from our previous reviews have been addressed, we want to reiterate and add comments that should be considered at this stage:

1. **Requested waivers**—The plan indicates that the applicant is requesting waivers from the following requirements of the subdivision and land development ordinance (SALDO):

   Section 22-706.1.B.
   from providing curbing along the property frontage of Limekiln Road

   Section 22-706.2.B.
   from providing sidewalks along the property frontage of Limekiln Road

   Sections 22-712.2.K.
   from the requirement to connect the sump pump and roof drains to an existing or proposed storm sewer system or be discharged directly to a stormwater detention facility

   Section 22-712.4.G.
   to allow a 12-inch pipe size for the rain garden instead of the requirement that all basin outlet pipes have a minimum size of 18 inches

   Section 22-712.4.I.
   to allow the emergency spillway elevation of the rain garden to have a freeboard of 6-inches instead of the requirement that the minimum freeboard through the emergency spillway be 1-foot

   Section 22-712.4.J.
   to allow a stormwater basin bottom with no slope instead of the requirement that the basin bottom be sloped toward the outlet structure at a minimum slope of 2 percent

   Section 22-712.4.K.
   to allow the top of the berm for the rain garden to have a 5-foot width instead of the requirement that the minimum basin berm width be 10 feet

   The applicant has not provided the reasons for the waiver requests listed above. Section 512.1.(b) of the Pennsylvania Municipalities Planning Code requires applicants to state in full the grounds and facts of unreasonableness or hardship on which the request for each waiver is based and the minimum modifications necessary. The final plan should note all granted waivers.

2. **Open space designation**—Section 27-2702.b.6. of the zoning ordinance requires that no more than 30 percent of the open space provided on the site be used for stormwater detention or retention basins. The applicant has provided figures showing the total amount of open space provided, but has not shown which areas are being counted toward those totals. The plan should clearly show which areas of the site are being counted toward its required open space for purposes of showing compliance with this provision.

3. **Park and recreation land**—Section 27-715.2.C.(1) of the SALDO requires that 2,500 square feet of land per new dwelling unit be dedicated to the township for park and recreation uses in all subdivisions unless a different alternative, as outlined in this section, is approved by the board of supervisors. The plan should indicate how this requirement will be met.

4. **Pathway width**—Section 22-707.1.B.2. of the SALDO requires the width of recreational trails to be 8 feet wide with a minimum width of 6 feet for pathways. While the plan displays a 6-foot-wide pathway, the township should consider asking the applicant to widen the pathway to 8 feet to accommodate recreational bike riders traveling to Peace Valley Park.

The *Tri-Municipal Master Trail & Greenway Plan* (2010) indicates that Lake Galena and Peace Valley Park are primary destinations for trail users within the region and indicates that an 8-foot-wide trail is the minimum acceptable width for bicycle users.

5. **Trail connectivity**—A segment of the Peace Valley Park trail network runs approximately 200 feet northwest of the site's northwestern extent. As this close proximity provides future residents a unique opportunity to access parkland and recreation, it is recommended that the applicant explore options to connect the proposed pedestrian trail in the development to the existing trail network located directly to the northwest of the site.

   In an effort to facilitate the potential acquisition of an easement for this purpose, we recommend that the applicant coordinate with officials from the Bucks County Department of Parks and Recreation and the Bucks County General Services Division.

6. **Wetland area**—The plan shows an isolated wetland area in the center of the site. We recommend clear delineation be added along the area's buffer so that future residents are aware of the area's environmental sensitivity.

This review will be included in the Bucks County Planning Commission board materials for the February 1, 2023, meeting. It is not necessary for you to attend this meeting, but you are welcome to do so and to offer comments on the proposal to the BCPC board and staff.

In order that we may be more aware of your concerns, please send us a copy of all municipal decisions sent to this applicant.

JWS:emh

cc: Michelle R. Wells, RHG Properties, LLC (via email)
Scott Camburn, Urwiler & Walter, Inc. (via email)
Janene Marchand, PE, Gilmore & Associates, Township Engineer (via email)
Matt West, Township Manager (via email)
Margaret A. McKevitt, Chief Operating Officer, County of Bucks (via email)
Angela J. Nagle, Director, Bucks County Department of Parks and Recreation (via email)
Lisa Panzer, Business Manager, Bucks County General Services Division (via email)