



LEGEND	
PROPERTY LINE	
ACCESS EASEMENT	
ROAD CENTERLINE	
PROPOSED CURB	
TOWNSHIP BOUNDARY	
CONCRETE SIDEWALK	

NATURAL RESOURCE LEGEND	
WETLANDS	
POUND	
STEEP SLOPES 8%-15%	
STEEP SLOPES 15%-25%	
STEEP SLOPES 25%+	
SOIL TYPE	
AGRICULTURAL SOILS	

DRAWING LIST			
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	LAST REVISED DATE
1	C1.0	OVERALL SITE PLAN	11/14/2025
2	C1.1	DETAILED SITE PLAN	11/14/2025
3	C2.0	GRADING AND DRAINAGE PLAN	11/14/2025
4	C2.1	CONSTRUCTION DETAILS	11/14/2025

APPLICANT:
ELU DELUCA SB LM LLC
370 EAST MAPLE AVENUE
SUITE 101
LANGHORNE, PA 19047

OWNER:
SHADY BROOK AT FLEMINGS INC
931 STONY HILL ROAD
YARDLEY, PA 19067

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



ZONING DATA TABLE		
ZONING DISTRICT: R/R OFFICE RESEARCH		
ITEM	REQUIRED/PERMITTED	PROPOSED
Use:		
Tract Requirements:		
Min. Net Lot Area	25 Ac.	51.118 Ac.
Max. Impervious Coverage	65%	37.9%
Max. Roadway Accesses	1/300FT (7 Total)	2 Total

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED NOVEMBER 18, 2024.
2. LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE GROUND OBSERVATION AT THE SITE. COMPLETENESS OR ACCURACY OF LOCATION CAN NOT BE GUARANTEED.
3. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO THE START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA LAWS 121.
4. THE SITE IS ZONED R/R - OFFICE RESEARCH DISTRICT.
5. ELEVATION INFORMATION IS BASED ON THE NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND HORIZONTAL DATUM IS BASED ON 1983 STATE COORDINATE SYSTEM.
6. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM, IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 2008, (800-242-1776).
7. FLOOD ZONE INFORMATION: SUBJECT PARCEL AREA IS LOCATED OUTSIDE ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 432 OF 532, COMMONLY MAP NO. 420170C032 WHICH BEARS AN EFFECTIVE DATE OF MARCH 16, 2015.
8. THE PROPOSED STORMWATER FACILITIES AND ALL STORM SEWER LOCATED ON-SITE WILL BE OWNED AND MAINTAINED BY THE OWNER.
9. ALL STORMWATER AND DRAINAGE FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED, OR MODIFIED WITHOUT PRIOR APPROVAL FROM LOWER MAKEFIELD TOWNSHIP. OWNERSHIP AND MAINTENANCE OF THE STORMWATER FACILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION.
10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOWER MAKEFIELD TOWNSHIP CONSTRUCTION STANDARDS.

STATEMENT OF PURPOSE:

THE PURPOSE OF THIS PLAN IS TO PROVIDE A DEDICATED DRIVEWAY TO THE PROPERTY LOCATED WITHIN MIDDLETON TOWNSHIP (T.M.P. # 22-031-024). THE DRIVEWAY CONNECTION TO TOWNSHIP LINE ROAD WILL BE PROVIDED VIA AN ACCESS EASEMENT TO THAT MIDDLETON PROPERTY. THE STORMWATER RUNOFF FROM THE PROPOSED WORK WILL BE CAPTURED AND TREATED WITHIN MIDDLETON TOWNSHIP.

IMPERVIOUS COVERAGE CALCULATIONS		
Site Area Calculations		
Gross Site Area	2,226,699	51.118
ROW Area	0	0.000
Total Lot Area	2,226,699	51.118
Existing Impervious Area		
Existing Buildings	57,557	1.321
Existing Asphalt & Gravel Driveways, Walkways	779,919	17.904
Total Existing Impervious	837,476	19.226
Proposed Impervious Area		
Existing Buildings To Remain	57,557	1.321
Existing Asphalt & Gravel Driveways, Walkways To Remain	753,291	17.293
Proposed Roadway & Curb	29,330	0.673
Proposed Sidewalk	4,129	0.095
Total Proposed Impervious	844,307	19.383
Total Proposed Impervious Coverage		
Total Change In Impervious		6,831

SOIL TYPES					
Sym	Name	Hydric (Y/N)	Depth to Bedrock (in.)	Depth to Water Table (in.)	HSG
CbA	Chalfont Silt Loam, 0 to 3 Percent Slopes	N	42-99	6-18	D
DuA	Duncannon Silt Loam, 0 to 3 Percent Slopes	N	60-99	> 80	B
DuB	Duncannon Silt Loam, 3 to 8 Percent Slopes	N	60-99	> 80	B
LgA	Lansdale Loam, 0 to 3 Percent Slopes	N	42-72	> 80	B
LgB	Lansdale Loam, 3 to 8 Percent Slopes	N	42-60	> 80	B
LkA	Lawrenceville Silt Loam, 0 to 3 Percent Slopes	N	48-99	18-36	C
LkB	Lawrenceville Silt Loam, 3 to 8 Percent Slopes	N	48-99	18-36	C
PnB	Pen-Lansdale Complex, 3 to 8 Percent Slopes	N	20-40	> 80	B

RESOURCE PROTECTION STANDARDS					
Resource	Min. Required Protection Ratio	Total Area of Land in Resource	Required Resource Protection Land	Actual Resource Protection Land	Actual Protection Ratio
Floodplains	% (Ac.)	(Ac.)	(Ac.)	%	
Floodplain Soils (Delaware River)	100%	0.000	0.000	0.000	N/A
Lakes and Ponds	50%	0.000	0.000	0.000	N/A
Wetlands	100%	0.887	0.887	0.887	100%
Lake and Pond Shoreslines	100%	0.133	0.133	0.133	100%
Wetland and Watercourse Buffers	100%	3.224	3.224	3.224	100%
Steep Slopes 8-15%	50%	1,586	0.793	1,580	100%
Steep Slopes 15-25%	70%	0.487	0.341	0.487	100%
Steep Slopes 25%+	100%	0.411	0.411	0.411	100%
Woodland Associations Zoned R-RP	85%	0.000	0.000	0.000	N/A
Woodland Associations Zoned R-1	80%	0.000	0.000	0.000	N/A
Woodland All Other Zoning Categories	75%	0.000	0.000	0.000	N/A
Total Land within Resources					6.63
Total Land within Required Resource Protection					5.87
Total Proposed Resource Protection					5.87
Net Buildable Site Area Calculations					
Base Site Area				51.12	Ac.
Subtract Required Resource Protection Land				5.87	Ac.
Net Buildable Site Area				45.25	Ac.
Maximum Building Coverage Calculations					
Net Buildable Site Area				45.25	Ac.
Multiply by Maximum Building Coverage Ratio				0.35	
Maximum Permitted Site Impervious Surface				15.84	Ac.

Site Capacity Calculations			
Gross Site Area Determined by Actual On-site Survey	Area (SF)	Area (AC)	
Land Within Existing Roads and Utility Transmission Rights-Of-Way	0	0.000	
Land Without Development Opportunities Due to Restrictions Such as Restrictive Covenants and Conservation easements	0	0.000	
Base Site Area			
Resource Protection Land			
Natural Resource	Protection Ratio	Acres of Land in Resources	Resource Protection Land (Ac.)
Floodplain	1.00	0.00	0.00
Floodplain Soils (Delaware River)	0.50	0.00	0.00
Lakes and Ponds	1.00	0.887	0.887
Wetlands	1.00	0.133	0.133
Lakes and Pond Shoreline	1.00	0.00	0.00
Wetland and Watercourse Buffers	1.00	3.224	3.224
Steep Slopes 8-15%	0.70	0.44	0.31
Steep Slopes 15-25%	1.00	0.35	0.35
Steep Slopes 25%+	0.85	0.00	0.00
Woodland Associations Zoned R-RP	0.80	0.00	0.00
Woodland Associations Zoned R-1	0.75	0.00	0.00
Woodland All Other Zoning Categories	0.70	0.00	0.00
Total Land within Resources			6.63
Total Land within Required Resource Protection			5.87
Total Proposed Resource Protection			5.87
Net Buildable Site Area Calculations			
Base			

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED NOVEMBER 18, 2024.
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4. THE SITE IS ZONED COMMERCIAL RECREATIONAL DISTRICT.
5. ELEVATION INFORMATION IS BASED ON THE NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAV88) AND HORIZONTAL DATUM IS BASED ON 1983 STATE COORDINATE SYSTEM.
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9. ALL STORMWATER AND DRAINAGE FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED, OR MODIFIED WITHOUT PRIOR APPROVAL FROM LOWER MAKEFIELD TOWNSHIP. OWNERSHIP AND MAINTENANCE OF THE STORMWATER FACILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION.
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NATURAL RESOURCE LEGEND	
WETLANDS	
POUND	
STEEP SLOPES 8%–15%	
STEEP SLOPES 15%–25%	
STEEP SLOPES 25%+	
SOIL TYPE	
AGRICULTURAL SOILS	

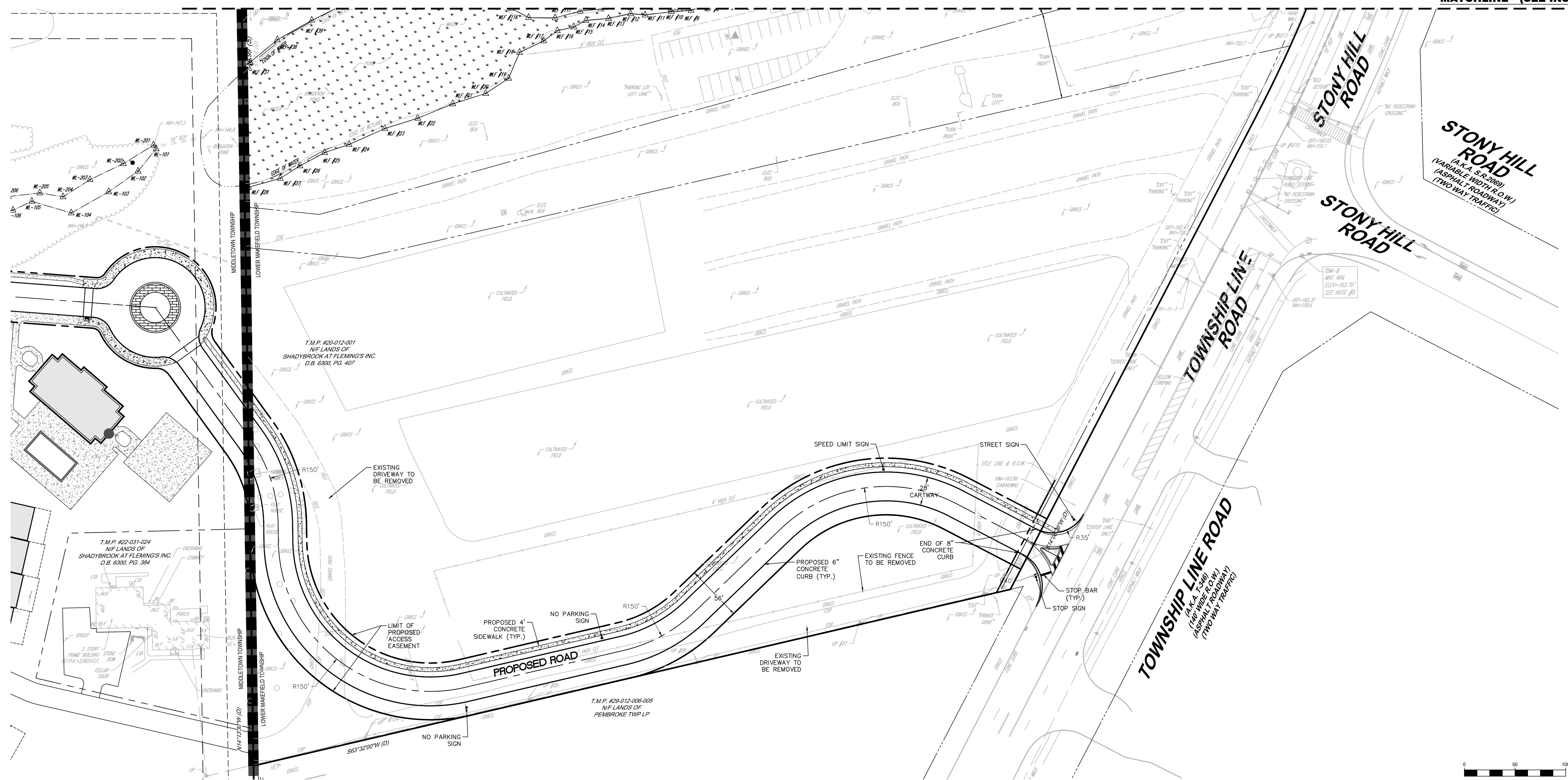
LEGEND	
PROPERTY LINE	
ACCESS EASEMENT	
ROAD CENTERLINE	
PROPOSED CURB	
TOWNSHIP BOUNDARY	
CONCRETE SIDEWALK	

TrB



KEY MAP

SCALE: 1"=400'

REVISIONS
Description

DETAILED SITE PLAN

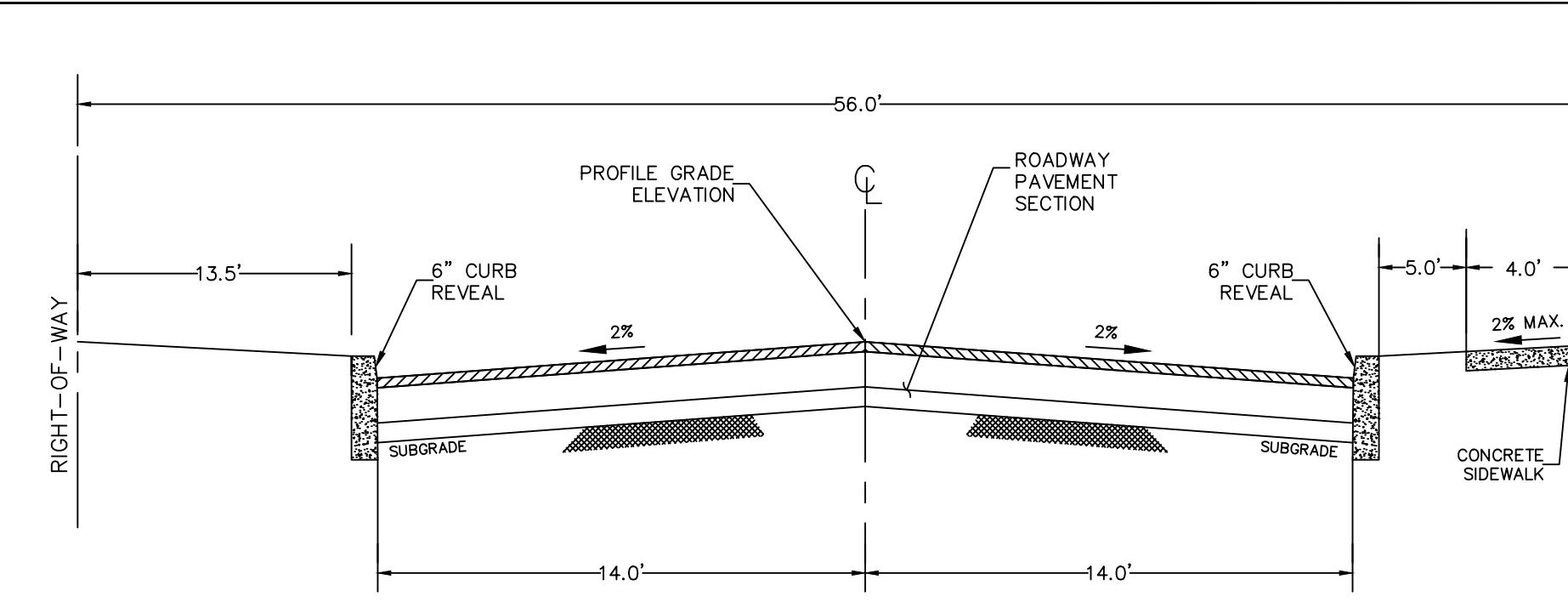
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www.hcengineering.net

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
2000_C1.1 DETAILED LM.DWG
HCE Job 2000
Date 11/14/2025
Scale 1"=50'
Designed RC
Sheet 2 of 4
Drawing No.
C1.1

0 50 100 Feet

FALL BEFORE YOU DIG!!!
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND
10 WORKING DAYS FOR DESIGN STAGE
Pennsylvania One Call
System, Inc.
Call 800-242-1776
1-800-242-1776
UTILITY LOCATIONS ON
THIS PLAN ARE APPROXIMATE AND IT
IS THE RESPONSIBILITY OF THE
CONTRACTOR TO CONTACT THE
ONE CALL COMPANY PRIOR
TO ANY EXCAVATION.



NATURAL RESOURCE LEGEND	
WETLANDS	
POD	
STEEP SLOPES 8%-15%	
STEEP SLOPES 15%-25%	
STEEP SLOPES 25%+	
SOIL TYPE	
AGRICULTURAL SOILS	

GRADING NOTES

- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES SHOULD NOT DEPEND ON READING FROM THESE PLANS. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS IN A MANNER WHICH WILL NOT NEGATIVELY AFFECT ANY EXISTING USERS OF THESE UTILITIES.
- ANY EXISTING FEATURES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE OWNER, AT NO COST TO THE TOWNSHIP.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOWER MAKEFIELD TOWNSHIP SPECIFICATIONS AND DESIGN STANDARDS UNLESS OTHERWISE WAIVED.
- COMPACTATION CRITERIA FOR FILL PLACEMENT IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF THE MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA IS GIVEN ELSEWHERE;

Fill Area	% of Max. Density
BUILDING FOOTPRINT	95%
PAVEMENT AND ROADWAYS	95%
SIDEWALKS	95%
LANDSCAPE AREAS	93%
TRENCH BACKFILL	SAME AS SURROUNDING AREA

DRAINAGE NOTES

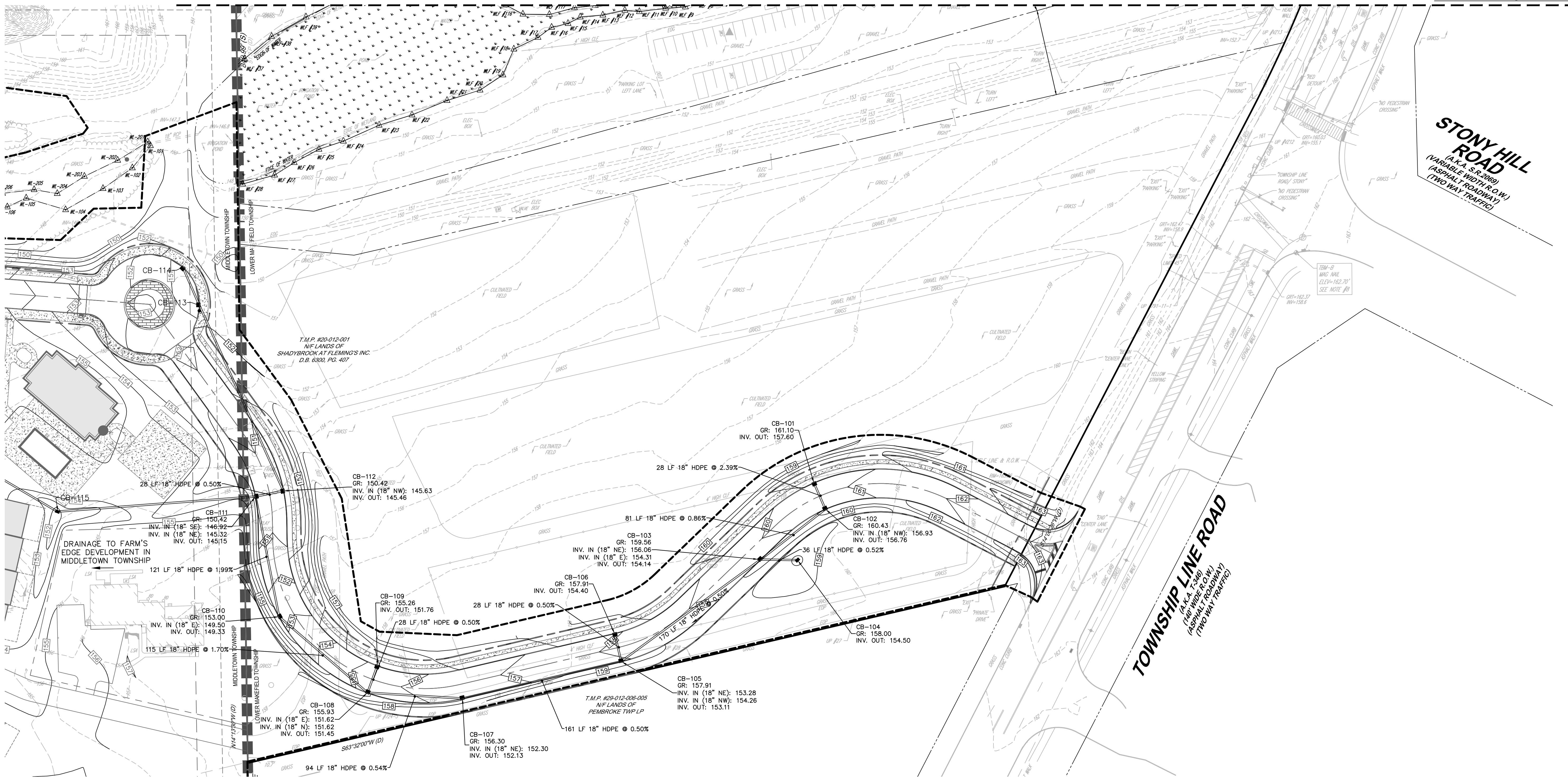
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- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408 AND THE LOWER MAKEFIELD TOWNSHIP SPECIFICATIONS AND DESIGN STANDARDS UNLESS OTHERWISE WAIVED.
- ALL STORM SEWERS AND STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH LOWER MAKEFIELD TOWNSHIP STANDARDS.
- THE CONTRACTOR SHALL REVIEW THE STORM DRAINAGE CONNECTIONS TO INLETS, MANHOLES, ETC. AND PROVIDE THE APPROPRIATE BOX SIZE, MANHOLE SIZE, ETC. AS NECESSARY TO ACCOMMODATE THE PROPOSED IMPROVEMENTS.
- CATCH BASIN GRATE ELEVATIONS WITHIN THE CARTWAY OF THE PROPOSED ROADS SHALL BE SUMPED 2-INCHES FROM THE PROPOSED ROAD ELEVATION AT THE GUTTER LINE. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER'S ENGINEER IN WRITING PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE OWNER FOR BASIN PIPES, CONNECTIONS, OUTLET STRUCTURES, CATCH BASINS, MANHOLES AND OTHER STORM STRUCTURES.
- ALL STORMWATER AND DRAINAGE FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED, OR MODIFIED WITHOUT THE APPROVAL OF LOWER MAKEFIELD TOWNSHIP.
- LOWER MAKEFIELD TOWNSHIP SHALL HAVE THE RIGHT TO ENTER PRIVATE PROPERTY TO INSPECT AND REPAIR, IF NECESSARY, ANY STORMWATER MANAGEMENT OR DRAINAGE FACILITY.
- THE STORMWATER MANAGEMENT FACILITY WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
- ALL STORM PIPES SHALL HAVE A MINIMUM OF 6" OF COVER BEHIND SUBGRADE ELEVATION.

GRADING LEGEND

EXISTING CONTOUR	185
EXISTING SPOT ELEVATION	185.2 x
EXISTING TOP/BOTTOM CURB	x TC 154.75 BC 154.25
PROPOSED CONTOUR	185
PROPOSED SPOT ELEVATION	185.2 x
PROPOSED TOP/BOTTOM CURB	x TC 154.75 BC 154.25

DRAINAGE LEGEND

EXISTING INLET	Ex.inlet
EXISTING MANHOLE	○
PROPOSED STORM PIPE	■ C-1 INV 180.00
PROPOSED YARD PIPE	■ B-1 INV 185.56
PROPOSED YARD INLET	○ INV 180.00
PROPOSED CURB INLET	● CLEANCER C-2 INV 185.56
PROPOSED CLEANOUT	



REVISIONS	
Revision	Description
KEY MAP	
SCALE: 1"=400'	
MATCHLINE - (SEE INSET)	
<p>FALL BEFORE YOU DIG!!! 2 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE, 10 WORKING DAYS FOR DESIGN STAGE</p> <p>PermitHelp.com, Inc. Call 1-800-242-1776</p> <p>THIS PLAN IS APPROPRIATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE APPROPRIATE COMPANY PRIOR TO ANY EXCAVATION.</p>	
<p>FARM'S EDGE AT SHADY BROOK ACCESS ROADWAY T.M.P. # 20-012-001 LOWER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PA</p>	
<p>GRADING AND DRAINAGE PLAN</p>	
<p>File No. 2000_C2.0 GRADING LM.DWG</p>	
<p>HCE Job 2000 Date 11/14/2025 Scale 1"=50'</p>	
<p>Designed RC Sheet 3 of 4 Drawing No. C2.0</p>	
<p>ROBERT T. CUNNINGHAM, P.E. PA PE076424</p>	

