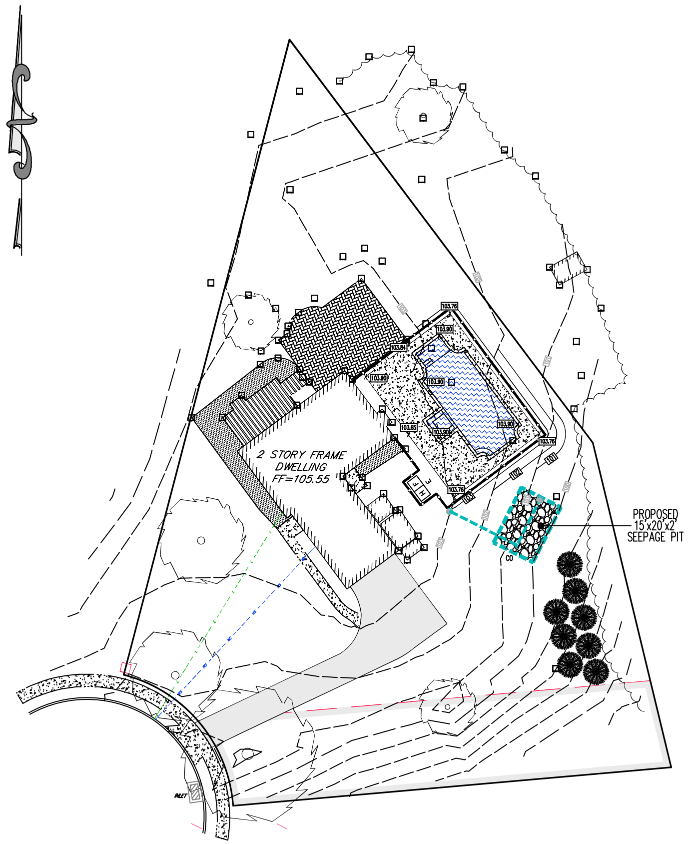


NRCS SOILS MAP
N.T.S.

USGS LOCATION MAP
N.T.S.

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Sheet: 1

SOILS LEGEND AND TABLE OF LIMITATIONS & RESOLUTIONS
BASED ON U.S.D.A. N.R.C.S. SOILS SURVEY

SYMBOL	MAPPING UNITS	SLOPE	LAND CAPABILITY	HYDRIC SOIL	HYDROLOGIC GROUP	LIMITATIONS FOR SITE DEVELOPMENT: DEPTH TO BEDROCK	DWELLINGS WITH BASEMENTS	DRAINAGE CLASS
DuB	DUNCANNON SILT LOAM	3-8%	2e	NO	B	60-99 in.	SOMEWHAT LIMITED SHRINK-SWELL	WELL DRAINED
LgB	LANSDALE SILT LOAM	3-8%	2e	NO	B	42-60 in.	SOMEWHAT LIMITED SHRINK-SWELL	WELL DRAINED

RESOLUTIONS:

1. CUT BANKS CAVE, EASILY ERODABLE, LANDSLIDE PRONE – STABILIZE ANY CUT AND FILL SLOPES IMMEDIATELY. INSPECT CUT AND FILL SLOPE AFTER EACH RAIN EVENT AND REPAIR AS NEEDED.
2. FROST ACTION – DURING WINTER MONTHS, THE CONTRACTOR SHALL NOT GRADE THESE SOILS DURING FROSTING OR ICING CONDITIONS. IF GRADING IS NECESSARY, STABILIZE IMMEDIATELY.
3. HIGH WATER TABLE, HYDRIC INCLUSION, WETNESS – CONTRACTOR SHALL KEEP A PUMP AND FILTER BAG ONSITE WHEN EXCAVATING. ANY PUMPED WATER SHALL DISCHARGE VIA A FILTER BAG.
4. PIPING – AVOID RUNNING HEAVY EQUIPMENT OVER THE SOIL AFTER A RAINFALL EVENT.
5. SLOW PERCOLATION – INFILTRATION TESTING TO BE PERFORMED FOR ANY INFILTRATION PRACTICE PROPOSED.

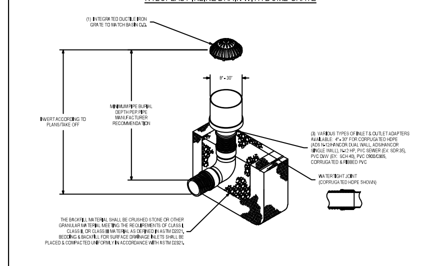
SCALE: 1" = 20'

IMPERVIOUS BREAKDOWN

EXISTING FEATURES:		
DWELLING:	2,009 S.F.	
SHEDS:	140 S.F.	
FRONT WALK & PORCH:	156 S.F.	
PATIOS:	936 S.F.	
DECK:	331 S.F.	
DRIVEWAY:	1,356 S.F.	
TOTAL EX. IMPERVIOUS:	4,928 S.F.	(0.113 AC)
PROPOSED POOL:		
POOL (WATER AREA):	720 S.F.*	
DECKING (PATIO):	1,130 S.F.	
EQUIPMENT:	32 S.F.	
PROP. NET IMPERVIOUS:	1,162 S.F.	
TOTAL PROP. IMPERVIOUS:	6,090 S.F.	(0.140 AC)
ZONING IMPERVIOUS TOTAL:	5,074 S.F.	
LOT AREA:	28,190 S.F.	(0.647 AC)
EXISTING % OF IMPERVIOUS:	17.5%	
PROPOSED % OF IMPERVIOUS:	21.6%	

*NOT INCLUDED IN ZONING IMPERVIOUS CALCULATION

NYLOPLAST INLINE DRAIN WITH DOME GRATE



OWNER INFORMATION

FRANK & KELLY BRENNAN
730 SALEM COURT
YARDLEY, PA 19067

SURVEY DATA

1. TOPOGRAPHY AND NEIGHBORING PHYSICAL FEATURES DERIVED FROM A FIELD SURVEY IN AUGUST 2026. BOUNDARY INFORMATION SHOWN HEREON PLOTTED BY DEED AND ORIENTED BY EVIDENCE FOUND IN THE FIELD.
2. AREAS: TO TITLE LINE = 28,190 S.F. OR 0.647 ACRE.
3. LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARK OUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY.
4. ELEVATIONS BASED ON A STARTING ELEVATION TAKEN FROM GOOGLE EARTH. GOOGLE EARTH IMPLEMENTS COORDINATE SYSTEM AS DEFINED IN THE OGC KML 2.2 STANDARD. THE VERTICAL COMPONENT (ALTITUDE) IS MEASURED FROM THE VERTICAL DATUM, WHICH IS THE WGS84 EGM96 GEOID.
5. SUBJECT PROPERTY SERVICED BY PUBLIC SEWER AND WATER. BY OBSERVATION THE WATER AND SEWER LINE ENTER THE FRONT OF THE DWELLING.

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 Irwin Run Road
West Mifflin, Pennsylvania
15122 – 1078

POCS SERIAL NUMBER
2026 090 3845

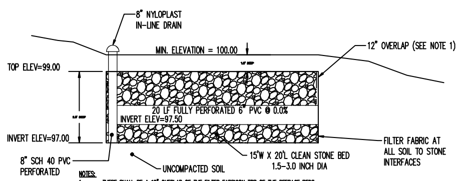
BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776
NON-MEMBERS MUST BE CONTACTED DIRECTLY
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH

LANDSCAPE SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
PM	8	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	6' HT	B+B

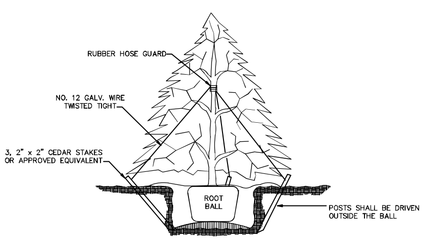
STORMWATER NOTES

1. THIS PROJECT PROPOSES TO CONSTRUCT 1,882 SF OF NEW IMPERVIOUS.
2. 2 INCHES OVER 1,882 SF = (2/12)*1882 = 314 CF.
3. 25% TO BE MITIGATED BY DECIDUOUS PINE TREES: 314 * 0.25 = 78/10CF PER TREE = 8 TREES.
4. SEEPAGE BED TO MITIGATE REMAINDER: 314–80 = 234 CF
5. PROPOSED SEEPAGE BED: 15 FT WIDE x 20 FT LONG x 2 FT DEEP = 600 * 0.4 VOID RATIO = 240 CF

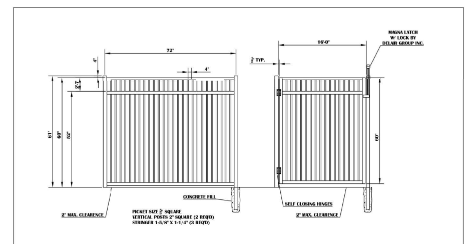


NOTES:
1. THERE SHALL BE A 12" OVERLAP OF THE FILTER FABRICON TOP OF THE SEEPAGE BEDS.
2. ALL STONE FOR THE CONSTRUCTION OF THE INFILTRATION BMP SHOULD BE UNIFORMLY GRADED AND CLEAN WASHED AGGREGATE.
3. THE BOTTOM OF ALL INFILTRATION BMPS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.
4. THE SEPARATION BETWEEN THE LAYERS OF FABRIC IS EXAGGERATED FOR CLARITY. THE FABRIC BARRIER SHALL BE CONTINUOUS.
5. 6" PIPE MUST BE PERFORATED BY THE MANUFACTURE. HAND DRILLED PIPE IS NOT ACCEPTABLE.

SEEPAGE PIT DETAIL
NOT TO SCALE



EVERGREEN TREE PLANTING AND STAKING DETAIL
EVERGREEN TREES 4' – 10' HIGH
NOT TO SCALE



NOTES: All GATES TO OPEN OUT AWAY FROM SWIMMING POOL AND SHALL BE SELF CLOSING AND LATCHING.
- HINGES TO BE TRU-CLOSE SELF-CLOSING SAFETY GATE HINGES/LATCHES SHALL BE MAGNA-LATCH V.P.
- M.F.G. FENCE TO BE DELGARD "XTRA" - 60" HIGH
8600 RIVER RD, DELAIR, NJ 08110

IF DUAL GATES - ONE GATE SHALL BE FIXED IN PLACE BY A DROP ROD AND THE ADJOINING GATE SHALL BE SELF CLOSING AND LATCHING SECURING TO FIXED GATE.

CARLTON POOLS
415 CONSTANCE DRIVE
WARMINSTER, PA. 18974
(215) 674-8185

PROPOSED LEGEND

LINE TYPE	DESCRIPTION	LINE TYPE	DESCRIPTION
	TREE PROTECTION FENCING	296	PROPOSED CONTOURS
	PROPOSED FENCING		LIMIT OF DISTURBANCE
	SILT FENCE (18")		SOIL STOCKPILE

EXISTING LEGEND

LINE TYPE	DESCRIPTION	LINE TYPE	DESCRIPTION
	EDGE OF PAVED ROAD	E	ELECTRIC
	EDGE OF UNPAVED ROAD	OH/W	OVER HEAD WIRE
	ADJOINING PROPERTY LINES	UGW	UNDER GROUND WIRE
	TRACT BOUNDARY	T	TELEPHONE
	BUILDING SETBACK LINE	CATV	CABLE TELEVISION
	CENTERLINE OF ROADS		CONCRETE WALLS
	EASEMENT		WATERS OF THE US
	FENCE	WB	WETLAND DELINEATION & FLAG IDENTIFIERS
	FEMA FLOOD PLAIN		SOIL BOUNDARY LINE
	GUIDE RAIL		TOWNSHIP/MUNICIPAL LINES
	RIGHT-OF-WAY		INTERMEDIATE CONTOURS
	STREAM	530	INDEX CONTOURS
	TRAIL		WOODS LINE
G	GAS		
S	SANITARY PIPE		
FM	SANITARY FORCE MAIN		
L	SANITARY LATERAL		
	STORM SEWER PIPE		
W "SIZE"	WATER PIPE		
WS	WATER SERVICE		
FS	FIRE SERVICE		

SYMBOLS & DESCRIPTIONS

	DECIDUOUS TREE		VALVE
	EVERGREEN TREE	FH	FIRE HYDRANT
	LIGHT		MANHOLE
	WELL		INLET
	UTILITY POLE		ENDWALL
	SIGN		MONUMENT (FOUND)
			IRON PIN (FOUND)

* SLANTED TEXT DENOTES EXISTING.

REV.	DATE	COMMENT	BY

INTEGRATED ENGINEERING, LLC
516 TRAPPE LN; LANGHORNE, PA 19047; PHONE: 215-534-1207

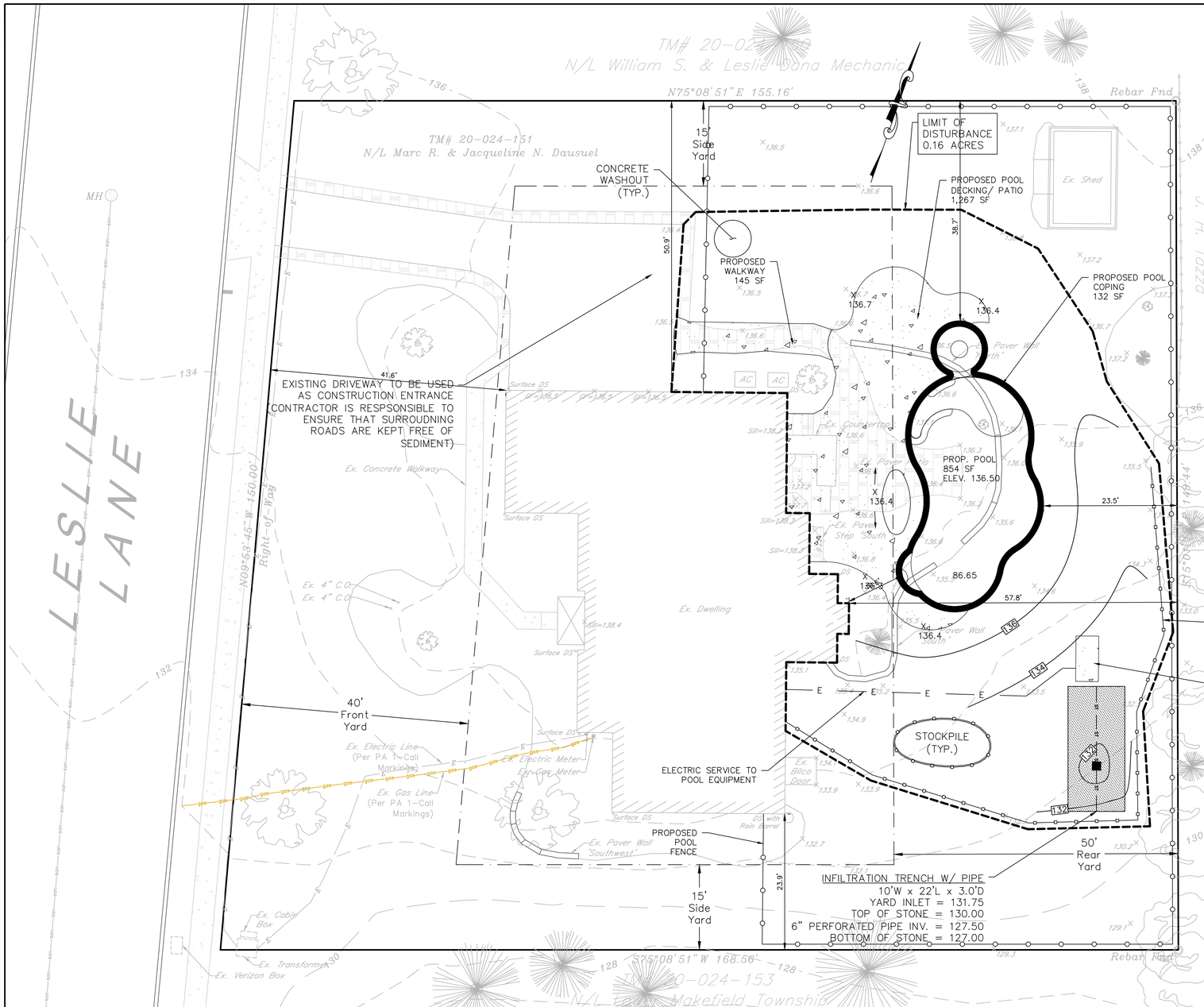
PROJECT:
BRENNAN RESIDENCE
POOL PLOT PLAN
730 SALEM COURT; YARDLEY PA 19067
LOWER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

PLAN:
POOL PLOT PLAN

DATE: 3/29/2026	SCALE (H): 1" = 20' (V):	SHEET NO: 1 OF 2
GROSS AREA: 0.481 AC	TAX MAP NUMBER: 20-068-093	
MUNICIPAL FILE #: - - -	PROJECT No: 26-7006	

DESIGNED BY: BDS
DRAWN BY: BDS

B. D. SPRAY
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE062154
NEW JERSEY LICENSE No. GE04599000
NEW YORK LICENSE No. 099319



GENERAL NOTES:

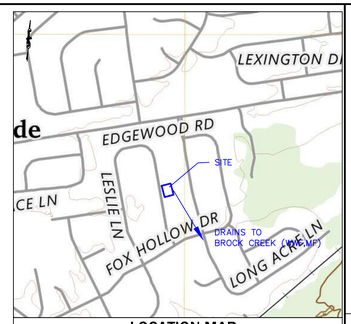
1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS FROM A 'EXISTING FEATURES PLAN' PREPARED BY CAVANAUGH'S SURVEYING SERVICES DATED FEBRUARY 3, 2025.
2. VERTICAL DATUM NAVD 88. HORIZONTAL DATUM IS 1983 STATE PLANE COORDINATES
3. SUBJECT PROPERTY AND SURROUNDING PROPERTIES ARE WITHIN R2-RESIDENTIAL ZONING DISTRICT.
4. FLOOD ZONE INFORMATION: SUBJECT PARCEL AREA IS LOCATED OUTSIDE SPECIAL FLOOD HAZARD AREAS AS PER THE FLOOD INSURANCE RATE MAP, PANEL NO. 452 OF 532, COMMUNITY MAP NO.42017C0452J WHICH BEARS AN EFFECTIVE DATE OF MARCH 16, 2015.
5. PROVISION SHALL BE MADE FOR DRAINAGE OF THE POOL AND BACKWASH WATER DISPOSAL. THE USE OF OPEN FIELDS, LAWNS, OR DRY WELLS SHALL BE PERMITTED FOR THIS PURPOSE, PROVIDED THAT THEY MEET THE REQUIREMENTS OF THE PENNSYLVANIA DEPARTMENT OF HEALTH. WATER SHALL NOT BE EMPTIED ONTO PUBLIC ROADS OR ADJOINING LAND BELONGING TO OTHERS OR INTO THE PUBLIC SANITARY SEWER SYSTEM.
6. THE POOL SHALL BE REQUIRED TO HAVE A COVER, CAPABLE OF BEING LOCKED, FOR PURPOSES OF SAFETY AND TO COVER THE WATER SURFACES DURING THE OFF-SEASON OR SUCH PERIODS OF NONUSE.
7. THE POOL COVER SHALL BE REQUIRED TO BE LOCKED WHEN NOT IN USE.
8. EACH DWELLING DOOR THAT DIRECTLY ACCESSES THE POOL SHALL BE EQUIPPED WITH AN ALARM THAT SOUNDS AT LEAST THIRTY (30) SECONDS WHEN THE DOOR IS OPENED AND IS AUDIBLE THROUGHOUT THE DWELLING (PENNSYLVANIA UNIFORM CONSTRUCTION CODE – SWIMMING POOL).

BMP MAINTENANCE/RESTRICTIONS PLAN

THE OWNER OF EACH INDIVIDUAL LOT IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER CONVEYANCE SYSTEM AND ALL PROPOSED STORMWATER BMP'S ON THEIR RESPECTIVE LOT.

INFILTRATION TRENCH

- INSPECT INFILTRATION TRENCH AT LEAST FOUR TIMES A YEAR, AS WELL AS AFTER EVERY STORM EXCEEDING 1 INCH.
- DISPOSE OF SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WASTE MATERIAL REMOVED FROM A DRY WELL AT SUITABLE DISPOSAL/RECYCLING SITES AND IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL WASTE REGULATIONS.
- EVALUATE THE DRAIN-DOWN TIME OF THE PIT TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOT BEING EXCEEDED. IF DRAIN-DOWN TIMES ARE EXCEEDING THE MAXIMUM, DRAIN THE DRY WELL VIA PUMPING AND CLEAN OUT PERFORATED PIPING, IF INCLUDED. IF SLOW DRAINAGE PERSISTS, THE SYSTEM MAY NEED REPLACING.
- REGULARLY CLEAN OUT GUTTERS AND ENSURE PROPER CONNECTIONS TO FACILITATE THE EFFECTIVENESS OF THE DRY WELL.
- REPLACE FILTER SCREEN THAT INTERCEPTS ROOF RUNOFF AS NECESSARY.
- IF AN INTERMEDIATE SUMP BOX EXISTS, CLEAN IT OUT AT LEAST ONCE PER YEAR.
- NO STRUCTURES OR LANDSCAPING SHALL BE INSTALLED OVER ANY INFILTRATION TRENCH.



LOCATION MAP

REF: U.S.G.S. TRENTON QUADRANGLE SCALE: 1"=1000'

SEQUENCE OF CONSTRUCTION

1. CONTACT BUCKS COUNTY CONSERVATION DISTRICT AND MUNICIPALITY AT LEAST THREE WORKING DAYS PRIOR TO SITE DISTURBANCE.
2. INSTALL SILT SOCK, TREE PROTECTION FENCING, CONSTRUCTION FENCE, AND TIRE CLEANER IN ALL AREAS SHOWN ON THE PLAN.
3. CLEAR AND GRUB AREA IN LIMIT OF DISTURBANCE.
4. COMMENCE STRIPPING OF TOPSOIL AND STORE IN STOCKPILE AREA.
5. CONSTRUCT POOL, POOL DECKING AND APPURTENANCES.
6. FINISH GRADE, SEED, MULCH AND/OR LANDSCAPE ALL DISTURBED AREAS.
7. INSTALL ROOF LEADERS FROM DOWNSPOUTS.
8. INSTALL INFILTRATION TRENCHES.
9. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED IN THE FOLLOWING MANNER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM 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 OR OTHER MOVEMENTS.

LIMIT OF DISTURBANCE = 0.16 ACRES

APPLICANT / OWNER

MARC & JACQUELINE DAUSEL
681 LESLIE LANE
YARDLEY, PA 19067

UTILITY PROVIDER CONTACTS

LOWER MAKEFIELD SEWER AUTHORITY
PHONE: 215-493-4011

PA AMERICAN WATER
PHONE: 800-565-7292

PECO Gas & Electric
PHONE: 800-841-4141
ALT. GAS PHONE: 844-841-4151

COMCAST
PHONE: 800-391-3000

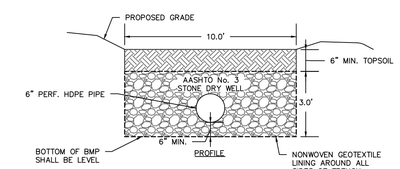
VERIZON
PHONE: 855-391-9359

AQUA PA
762 LANCASTER AVENUE
BRYN MAWR, PA 19010
(877) 987-2782

LOWER MAKEFIELD TOWNSHIP ZONING DATA TABLE		
ZONING DISTRICT: R-2 Residential Medium Density		
ITEM	REQUIRED/ PERMITTED	PROPOSED
Min. Lot Area	15,000 SF	24,188 SF
Min. Lot Width	110 FT	130 FT
Min. Building Front Yard Setback	40 FT	41.6 FT
Min. Building Side Yard Setback	15 FT	23.9 FT
Min. Bldg Rear Yard Setback	50 FT	57.8 FT
Max. Building Height	35 FT	< 35 FT
Max. Impervious Coverage	24%	**28.2% (V)**
Min. Pool Setback From Dwelling	10 FT	10.6 FT
Min. Pool Side Yard Setback	10 FT	38.7 FT
Min. Pool Rear Yard Setback	10 FT	23.5FT
(V) Variance Required		

VOLUME CONTROL CALCULATIONS	
Stormwater facilities shall capture the runoff volume from at least the first two inches of runoff from all new impervious surfaces.	
Volume (CF) = (2" Runoff / 12 inches) * New Impervious Area (SF)	
New Impervious Area (SF) =	**1,576**
Total Required Volume (CF) =	**263**
Total Proposed Volume (CF) =	**264**
INFILTRATION TRENCHES	
Volume = Depth x Width x Length x 40% Void Space of gravel bed	
Set Depth (FT) =	3.0
Set Width (FT) =	22.0
Length (FT) =	10.0
Provided Storage Volume (CF) =	**264**

LOT AREA CALCULATIONS	
	S.F.
Gross Area to Property Lines	24,188
Land Within Street R.O.W.	0
Gross Lot Area	24,188
IMPERVIOUS COVERAGE CALCULATIONS	
Existing Impervious Area	
Existing Dwelling and Covered Porches	3,088
Existing Sheds	164
Existing Walkways and pads	282
Existing Driveway	1,564
Existing Walls	85
Existing Rear Patio	625
Total Existing Impervious	5,808
Existing Impervious Coverage	24.0%
Existing Building Coverage	13.4%
Proposed Impervious Area	
Existing Impervious to Remain	5,246
Proposed Pool Decking	1,267
Proposed Pool Coping	132
Proposed Walkway	145
Proposed Equipment Pad	32
Total Proposed Impervious	6,822
Proposed Impervious Coverage	28.2%
Proposed Building Coverage	13.4%
New Impervious Area	**1,576**



NOTES:
1. MAINTAIN MINIMUM 10 FOOT SEPARATION BETWEEN BMP AND BUILDING FOUNDATION WALL.
2. DO NOT CONSTRUCT THE BMP UPSLOPE OF SEWAGE DRAIN FIELD.
3. THE PROPERTY OWNER IS RESPSONSIBLE FOR THE PROPER OPERATION AND MAINTENANCE OF THE STORMWATER BMP. THE OWNER SHALL INSPECT, CLEAN, REMOVE SILT OR OTHER DEBRIS AND OTHERWISE MAINTAIN THE BMP IN PROPER WORKING ORDER.

INFILTRATION TRENCH DETAIL

CONSTRUCTION SEQUENCE FOR PCSM BMPS

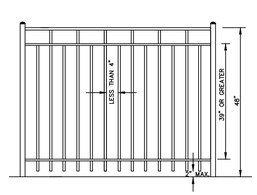
INFILTRATION TRENCH

1. PROTECT INFILTRATION AREA FROM COMPACTION PRIOR TO INSTALLATION.
2. IF POSSIBLE, INSTALL DRY WELL DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY.
3. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION AS PER THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (MARCH 2000, OR LATEST EDITION).
4. EXCAVATE DRY WELL BOTTOM TO A UNIFORM, LEVEL UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE. TO THE GREATEST EXTENT POSSIBLE, EXCAVATION SHOULD BE PERFORMED WITH THE LIGHTEST PRACTICAL EQUIPMENT. EXCAVATION EQUIPMENT SHOULD BE PLACED OUTSIDE THE LIMITS OF THE DRY WELL.
5. COMPLETELY WRAP DRY WELL WITH NONWOVEN GEOTEXTILE. (IF SEDIMENT AND/OR DEBRIS HAVE ACCUMULATED IN DRY WELL BOTTOM, REMOVE PRIOR TO GEOTEXTILE PLACEMENT.) GEOTEXTILE ROLLS SHOULD OVERLAP BY A MINIMUM OF 24 INCHES WITHIN THE TRENCH. FOLD BACK AND SECURE EXCESS GEOTEXTILE DURING STONE PLACEMENT.
6. INSTALL CONTINUOUSLY PERFORATED PIPE, OBSERVATION WELLS, AND ALL OTHER DRY WELL STRUCTURES. CONNECT ROOF LEADERS TO STRUCTURES AS INDICATED ON PLANS.
7. PLACE UNIFORMLY GRADED, CLEAN-WASHED AGGREGATE IN 6-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
8. FOLD AND SECURE NONWOVEN GEOTEXTILE OVER TRENCH, WITH MINIMUM OVERLAP OF 12-INCHES.
9. PLACE 12-INCH LIFT OF APPROVED TOPSOIL OVER TRENCH, AS INDICATED ON PLANS.
10. SEED AND STABILIZE TOPSOIL.
11. CONNECT SURCHARGE PIPE TO ROOF LEADER AND POSITION OVER SPLASHBOARD.
12. INSTALL IRON PINS AT THE CORNERS OF EACH PIT TO DENOTE AREA OF RESTRICTIONS.
13. DO NOT REMOVE EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

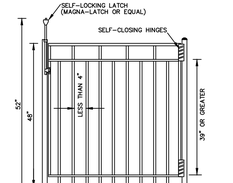
LEGEND

EXISTING CONTOUR 285
PROPERTY/R.O.W. LINE
ADJOINING PROPERTY LINE
EXISTING BUILDING LINE
PROPOSED POOL & DECKING
PROPOSED CONTOUR 185
PROPOSED SPOT ELEVATION 185.2 x
12" COMPOST FILTER SOCK
LIMIT OF DISTURBANCE
EXISTING FENCE -x-
PROPOSED POOL FENCE -o-

0 10 20 Feet



ALUMINUM FENCE SECTION DETAIL
SCALE: N.T.S.



GATE DETAIL
SCALE: N.T.S.

SOIL TYPES					
Sym	Name	Hydric (Y/N)	Depth to Bedrock (in.)	Depth to Water Table (in.)	HSG
LgB	Lansdale loam, 3 to 8 percent slopes	N	42-60	>80	B
UrB	Urban land-Lansdale complex, 0 to 8 percent slopes	N	42-60	>80	B

SOIL LIMITATIONS AND RESOLUTION:

THE SOILS FOUND WITHIN THE PROJECT LIMITS HAVE LIMITATIONS DUE TO SHALLOW DEPTH TO GROUNDWATER AND POSSIBLE SHALLOW DEPTH TO BEDROCK. IN ORDER TO RESOLVE THIS ISSUE, ANY STANDING WATER SHOULD BE PUMPED THROUGH A SEDIMENT FILTER BAG DURING CONSTRUCTION, AND THE CONTRACTOR SHALL ENSURE THAT THE DWELLINGS ARE PROPERLY WATERPROOFED TO AVOID GROUNDWATER ISSUES POST-CONSTRUCTION. FOR AREAS WHERE SHALLOW BEDROCK IS A LIMITATION, CONTRACTOR SHALL DETERMINE WHETHER ROCK IS RIPPABLE. IF ROCK IS NOT RIPPABLE, BLASTING WILL BE REQUIRED. ALL BLASTING SHALL MEET LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.

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

holmes cunningham ENGINEERING

REVISIONS		
	Description	Date

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

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

681 LESLIE LANE

TMP# 20-024-151

LOWER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

POOL PERMIT PLAN



KRISTIN R. HOLMES, P.E.
PA Lic. No. PA073604

File No.
2269_Permit Plan.DWG

HCE Job	2269	Scale	1"=10'	Designed	RC	Sheet	1 of 2
Date	10/8/2026						

Drawing No.
C1.0

PROPOSED 64.76' SETBACK

PROPOSED 23'x17'=391 SqFt EXPANSION

QUARRY ROAD (40' HALF R.O.W.)

10' WIDE BIKE PATH

SIGHT TRIANGLE

R = 25.00'
L = 39.51'

N82°23'00"E 139.77'

PROPOSED 64.76' SETBACK

S08°10'00"E 184.79'

N/L APC ASSOCIATES TMP 20-16-10

"DEVONSHIRE"

1

30,483.39 SF

80.00' SETBACK

40.00' SETBACK

15.00' SETBACK

10.00' SETBACK

81.76'

81.89'

56.51'

N 00°01'80"W 165.00'

DEED RESTRICTED AREA = 6,583.83 S.F. FLOODPLAIN

OLDS RESTRICTION LINE

WINDOW OVERHANG

EXISTING DWELLING FF=172.13 GF=170.31

MACADAM SIDEWALK

IRON PIN SET (TYP.)

INLET TC=165.48

INLET TC=164.8

H.W. INV.=160.9 TW=164.0

STOP SIGN

4" CONC. SW.

3" CONC. SW.

STUCCO DRIVEWAY MONUMENTS (TYP.)

BRIDLE ESTATES DRIVE (56' R.O.W.)

2

BOUNDARY ENLARGE LINE

PROPOSED ELEVATIONS

ARROWS INDICATE REQUIRED GRADING FOR SURFACE DRAINAGE FLOW

FOUNDATION LOCATION: 8/5/98
PROPOSED HOUSE LOCATION: 11/21/97
EXISTING CONTOURS
INDICATE CONCRETE MONUMENT
INDICATES IRON PIN TO BE SET

REV: 7/8/02, UPDATE CURRENT CONDITIONS-- V.Y.

Byron W. Rimmer DATE 7/9/02

BYRON W. RIMMER, P.L.S.

PA. LICENSE #014709-E

PLAN OF LOT NO. 1

"FINAL AS-BUILT"

BRIDLE ESTATES

LOWER MAKEFIELD TOWNSHIP

BUCKS COUNTY, PENNSYLVANIA

E S E EASTERN STATES ENGINEERING, INC.

P.O. BOX 38
HUNTINGDON VALLEY
215-914-203

DESIGNED:	DRAWN: LF	CHE
SCALE: 1"=40'	DATE: 8/10/98	DWG

HACIENDA DESIGN INCORPORATED

Architect
Hacienda Design, Inc
401 Washington Street
Morrisville, PA 19067
Phone: 215.736.8255
Fax: 215.736.8589

Owner
Chris and Leslie D'Amato
8 Oak Avenue
Yardley, PA 19067

Project Data

Lower Makefield Township Zoning Code
Residential District R-2

Commonwealth of Pennsylvania Uniform Construction Code
2021 International Residential Code

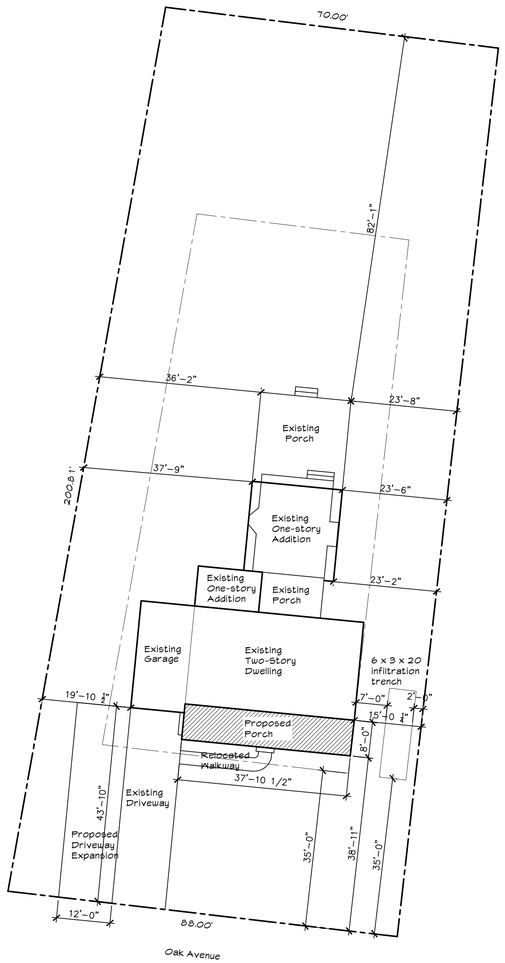
Lot Area:
16,272 square feet
Existing Dwelling Area:
1783 square feet
Existing Porch area:
404 square feet
Existing Shed Area:
120 square feet
Proposed Front Porch area:
304 square feet
Building Cover:
Existing: 2307 square feet
11.7 percent
Proposed: 2611 square feet
16.0 percent
Existing Driveway Area:
528 square feet
Existing Walkway Area to be relocated:
74 square feet
Proposed Additional Driveway Area:
526 square feet

Total Impervious Cover:
Existing: 2909 square feet
17.9 percent
Proposed: 3739 square feet
23.0 percent

Minimum Yard Setbacks:
Front:
Required: 35'-0"
Provided: 38'-11" to new porch

Side:
Required: 15'-0"
Provided: As indicated on plot plan

Rear:
Required: 45'-0"
Provided : 82'-1"



1 PLOT PLAN
ST-1 SCALE: 1/16" = 1'-0"

Drawing List

ST-1 Site Plan and Project Information

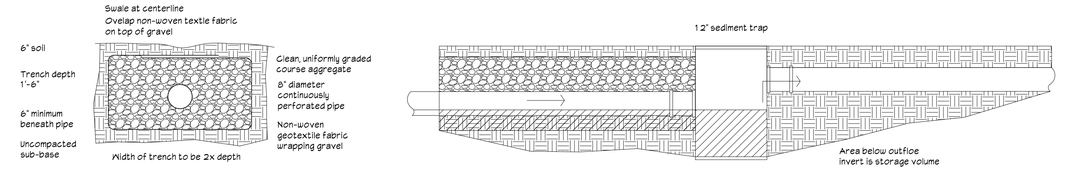
Impervious Surface Breakdown Calculation

Address: 8 Oak Avenue

16,272	S.F.	**Lot Size** (to convert acres to square feet, multiply by 43,560 S.F.)
IMPERVIOUS SURFACE		Surfaces which do not absorb water, including all buildings and paved or hard surfaces. In addition, other areas determined by the Township Engineer to be impervious within the meaning of this definition shall also be classified as impervious. For purposes of this definition, that area of a swimming pool located inside the coping shall not be classified as impervious.
2,187	S.F.	House Size
528	S.F.	Driveway
74	S.F.	Walkways
	S.F.	Patios
120	S.F.	Accessory structures (sheds, detached garages)
2,909	S.F.	Total Existing Impervious Surface
IMPERVIOUS SURFACE RATIO		The total area of all impervious surfaces within a lot divided by the gross lot area.
17.9%		**Existing Impervious Surface Ratio**
2,909	S.F.	Total Existing Impervious Surface
830	S.F.	Proposed Impervious Surfaces to be constructed
0	S.F.	Impervious Surface to be removed
3,739	S.F.	Total Proposed Impervious Surface
23.0%		**Proposed Impervious Surface Ratio**

Stormwater Management Small Project Volume Control < 5,000 S.F. of New Impervious Surfaces

Step 1		Appendix I
830	S.F.	Impervious Surface Area to be controlled to mitigate
Step 2		
138	**C.F.**	Required Control Volume: (ISA in S.F. x 2 inches runoff)/12 inches
Step 3		For Step 3, you need to select a Best Management Practice technique from Appendix I and provide a calculation that demonstrates this requirement is met. This can consist of structural measures such as an infiltration trench, dry well or rain garden, or non-structural measures such as tree planting, preservation or minimization of soil compaction.
Stone infiltration trench facility (Volume of Facility = Depth x Width x Length)		
3	Feet	Set Depth of trench and determine required surface area of trench.
6	Feet	Width of the trench should be greater than 2 times its depth (2 x D
20	Feet	Set Trench Length
144	C.F.	Trench Volume = Depth x Length x Width x 40% voids in stone
Determine the number of tree plantings:		
	Trees	A newly planted deciduous tree can reduce runoff volume by 6 cu. ft.
	Trees	A newly planted evergreen tree can reduce runoff volume by 10 cu. ft.
0	C.F.	Runoff Volume for trees planted
Calculate the volume reduction credit by preserving existing trees:		
	S.F.	Approximate Area of Trees within 20 feet of impervious cover:
0	C.F.	Volume Reduction = (Existing Tree Canopy sq. ft. x 1 inch)/12
	S.F.	Approximate Area of Trees > 20 feet and within 100 feet of impervious cover:
0	C.F.	Volume Reduction = (Existing Tree Canopy sq. ft. x 0.5 inch)/12
144	**C.F.**	**Total Runoff Volume Controlled**
		Redo if Total Runoff Volume Controlled < Required Control Volume



3 INFILTRATION TRENCH DETAIL
ST-1 SCALE: NTS



2 RENDERING
ST-1 SCALE: NTS

Seal:

Tracy L. Miller
PA R.A. 016689

HACIENDA DESIGN INCORPORATED
401 Washington Street
Morrisville, PA 19067
Phone: 215.736.8255
Fax: 215.736.8589

Project: D'Amato residence
8 Oak Avenue
Yardley, PA 19067

Drawing Title: Cover Sheet

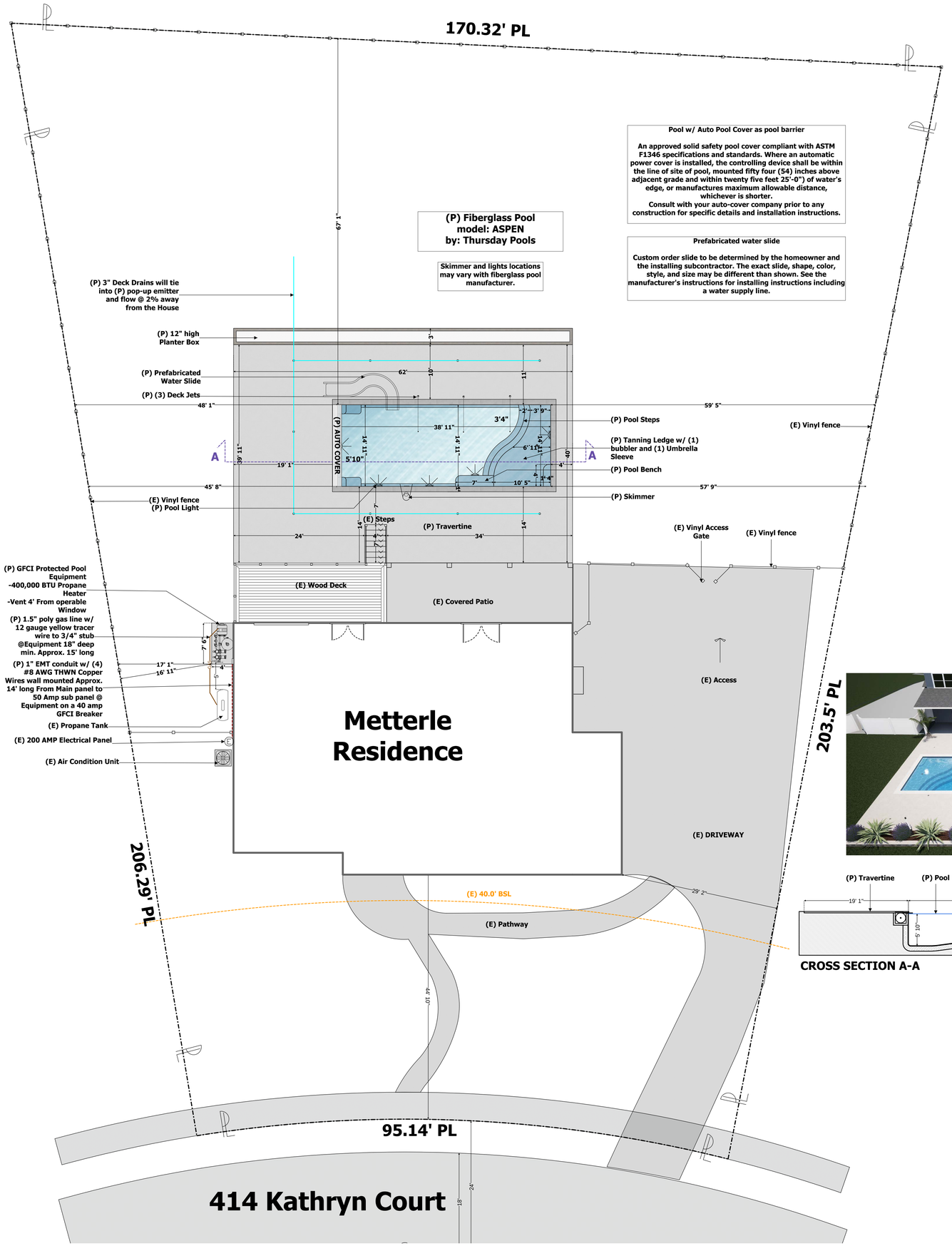
Date:

Revisions:
Change:

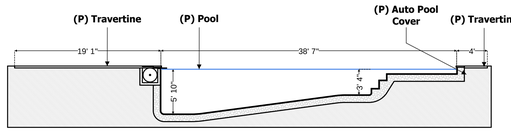
Date: 26 October 2024
Scale: As Noted
CAD file: C: 2412 D'Amato residence
Drawn by: TLM
Reviewed by: TLM

ST-1
Drawing Number:

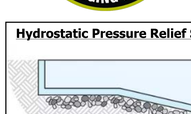
1 of 5
Sheet Number:





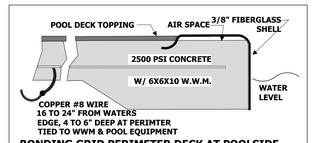


CROSS SECTION A-A

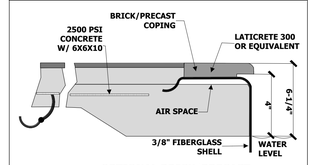


Follow manufactures recommendations

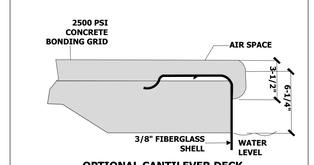
No construction within any easements.



BONDING GRID PERIMETER DECK AT POOLSIDE



OPTIONAL BRICK/PRECAST AT POOLSIDE



OPTIONAL CANTILEVER DECK AT POOLSIDE

Leveling Notes:

1. After excavation is completed, a bed of gravel is laid on the floor to give a base for the pool. Screed bars are set up as guides for the slope to make the screeding process simple. The gravel (minimum of 3") should then be compacted to ensure that the floor is stable.
2. Use clean crushed 3/4"- 1" in size. stone for backfill (this size rock has several distinct advantages over sand or even round pea gravel).
3.pour a 10"x8" locking concrete collar around the pool perimeter to give it structural support and lock it into place.
4.Water bonding is required per code such as Perma-cast 2" pool bond

MUST MAINTAIN EXISTING DRAINAGE: TO DRAIN AWAY FROM HOUSE AND POOL

CONTRACTORS SHALL PROVIDE, IMPLEMENT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION

1. This is a conceptual construction drawing does not detail all construction items. The property owner and/or contractor shall determine all final dimensions and construction details. Homeowner or contractors are responsible for all necessary building permits.

2. This is not a surveyed plan and only shows dimensions given by homeowner. Property measurements should be confirmed with a licensed land surveyor if required.

3. In field adjustments may be required verify any changes with homeowner

4.Prior to start of every phase of construction verify with homeowner materials, locations, and options

Safety

1. Exit alarms on the private single family home's doors that provide direct access to the swimming pool or spa Compliant With UL2017 and or follow all local code pool barrier requirements

2.Pool area to be fenced / barriered a minimum height of 60" and be non climbable per local ordinance. Gates to be self closing and self latching , gate latch to be min. of 54" above grade per local codes.

. Any new or replacement gas or electric swimming pool heater system in a residential occupancy shall be equipped with all of the following:

. An On-Off switch mounted on the outside of the heater for easy access

. A permanent weatherproof plate or card, easily readable, giving instruction for the efficient operation of the swimming pool.

. Pool and spa heaters may not have continuously burning pilot lights.

Contractors shall meet or exceed all local codes and engineering

2021 International Residential Code (IRC) — One- and two-family residential construction
2021 International Building Code (IBC) — Commercial and other non-residential construction
2021 International Plumbing Code (IPC)
2021 International Mechanical Code (IMC)
2021 International Fuel Gas Code (IFGC)
2021 International Existing Building Code (IEBC)
2021 International Energy Conservation Code (IECC), subject to Pennsylvania amendments
2021 International Fire Code (IFC) — adopted by reference where applicable
2021 International Swimming Pool and Spa Code (ISPSC) — swimming pools, spas, barriers, circulation systems, safety, etc.
NFPA 70 / National Electrical Code (NEC) — electrical requirements as incorporated through the Pennsylvania UCC

Design by: DIY Pools and Spas.com

scope of work

Fiberglass Pool Information

Model # ASPEN
Color:
Depth: 3'4" to 5'10"
Size: 14'11" X 38'11"

Est Total Gallons: 13,090
Perimeter: 109'8"
Sq. Ft:

Lights: (4) Min
Skimmers: Waterway fiberglass pool or similar
Auto Fill Unit: Optional
Overflow: Yes (Tie into back of skimmer)

Important notes:

See homeowner for pool light locations min. of 1 light(s)
See homeowner for pool coping to determine height of forms at time of dig
Dirt to be removed to legal dump site
Grading/ Storm management / BMP - Plan if required by H.O.

Spa Information

Size: Interior Material: Lights:
Spillway: Depth:
Spa notes: Sq. Ft:
Perimeter:

Deck/Masonry

Total Deck Sq. Ft: 1757 Compaction required prior to pour of pool decking Raised Beam: None
Deck Type: Travertine
Coping Type: Travertine See homeowner, prior to excavation to set elevation, follow manufactures recommendations for proper installation
Drains: Min. 3" PVC pipe @2% flow away from house and pool to tie into existing positive drainage or cored out to street
Deck/Masonry: Equipotential grounding grid may be required per code, separate inspection required
See homeowner for material's and locations of any walls, BBQ's, firepits, or masonry items on plan
Prior to any work being performed.
Use city standard plan or H.O. to supply extra. engineering For all walls proposed on plans
See manufactures recommendations for waterline tile options
Decks shall be slip resistant and cleanable per ISPSC 306.2
"See Homeowner for optional Sleeves for: Umbrellas, Basketball Hoops, Volleyball nets, etc."

HAYWARD POOL EQUIPMENT

Cartridge Filter: 5030 Swimclear
Purification: Salt system
Main Pump: VS 950 2.7 hp
Suction Cleaner: TracVac suction drive
Heater: - 400,000 BTU- HDF propane
LED Lights with 100-foot cords Pool (3), Spa (/), Fountain Feature (1),
Step/ledge: (1) Total of: (5) lights
Fountain Pump size: VS 950 2.7hp (all fountains and slide) Use valves to separate each item
Fountain Feature : (3) Deck jets, (1) Bubbler, (1) Custom order slide
Remote control: 4 function with smart phone app. and 2 auto valves.

Important notes:

1. See order sheet for salt and remote bundled together.
2.Plumbing contractor to supply/install approve for fiberglass Skimmer(s), Auto-fill unit, pre-cast pads, and any required valves.
3.Final equipment location per homeowner to meet local codes

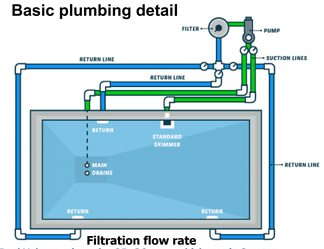
Electrical

Siemens 2-Pole or panel manufacturers' GFCI breakers are recommended and will be needed for each pump installed. You can tie in the Heater with the filter pump breaker if need be. The OmniPL Panel has the capacity of 100 Amps.
Recommended For a two pump system:
(1) 2-Pole 20 Amp Gfci Breaker - Filter Pump/Heater
(1) 2-Pole 15 Amp Gfci Breaker - Additional Pump
(1) Single Pole 15 Amp Breaker - Pool Lights
(1) Single Pole 15 Amp Breaker - OmniPL Panel
(4) - Nichless multi colored LED lights with 100 foot cord, (1) Bubblers Light
J-box to be located within 50' of pool/spa lights
L.V. lights use 1 1/2" PVC pipe a min. of 12" to a 1" conduit running to the J- box
No bonding wire, wet niche or grounding wire required for (L.V. lights)
Minimum of 30" working clearance at the pool sub panel board
Standard 50 amp panel with overcurrent protective device (circuit breaker) at least equal to or greater than the circuit voltage
One outlet at equipment, all outlets to be GFCI protected, Tamper Resistant, Weather Resistant, and provided with an "in-use" type cover.
14 volts to LED transformer for low voltage lights, supply & install 300 watt transformer & Label breakers when applicable
A 12" separation must be maintained between the gas line and electric conduit runs.

Plumbing

Use sweep elbows 10" minimum prior to pump Pool equipment shall be anchored to concrete pad
Propane Line runs to Pool Equipment
Exposed PVC pipes should be painted to protect them from ultraviolet rays
"Shade" plumbing trenches after inspection if rocky soil is present
A gas shut-off valve is required outside of, and within 3 feet of the heater
A length of plumbing (36" min.) between the filter and the heater to allow for future solar heating
2" suction and 2" return lines min. for pool with directional inlets that adequately mix the pool water
See H.O. for separate suction line and valve for pool cleaner in zero elevation .
All gas lines under slabs, and/or foundations, shall be sleeved per the 2021 IPC
Gas line installed underground under roof structure shall be installed as per 2021 IPC
For auto fill unit-Hose bib must comply with ISPSC, Water supply must be protected from backflow ISPSC
Fountain pumps will require a separate suction line with 2 suction inlets in the wall of the pool separated by three feet to meet the VGBA code. The return will be the fountain feature.
Make sure all plumbing fixtures are made for specifically fiberglass pools like return line fittings by Waterway (part # 25523-701 -000) available in white and grey and a skimmer like, Waterway Plastics fiberglass pool skimmer (part # 540-8620). It also has a 1/2" socket in the back for an overflow pipe.
Use 100% waterproof silicone for installing most fixtures to the fiberglass pool.
Note that silicone caulk is NOT the same thing as 100% silicone and will not work as a thread sealant for pool equipment installations.
Where additional tightening may be required use thread sealant tape, so you can simply tighten the connection further.
Use all Schedule 40 rigid PVC pipes, sweep 90 couplings, and use straps to secure the plumbing to the pool shell.
Install a Sump pipe for monitoring/removing groundwater (see attached detail).
Pressure-test the plumbing to check for any leaks continue to check the pressure during backfill to ensure there are no leaks.
Use a water bond lug at the equipment per code.

Basic plumbing detail



Filtration flow rate
Pool Volume =(gpm) OR, 36 gpm, whichever is Greater
360

Notes

Patios, Screen Enclosures, outdoor kitchens, BBQ/Bars, Fireplace or fire pits, walls, Footings, all items outside of the pool - details, specifications and engineering if required by other than DIY Pools & Spas.

Soil report or additional engineering that may be required - By H.O.
BMP/Storm Management Plan Prepared Required - By H.O., See local codes for possible P-Trap
Tractor Access- See homeowner, rebuild walls or replace fence & reverse gates to meet local codes
Variable speed pump operates at below 50 decibels
All elevations are approximate. Verify heights and elevations prior to building
Outdoor pools/spas equipped with gas or electric heater shall also be equipped with a pool/spa cover. The cover should be fitted and installed during the final inspection
A time switch or similar control mechanism shall be installed as part of a pool water circulation control system that will allow all pumps to be set or programmed to run only during the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standard
All metal within 5' of water edge must be bonded

Customer Info

Name: Stephanie Metterle
Address: 414 Kathryn Court
City: Yardley State: PA Zip: 19067
Phone: (215) 669-6145
Email: s.metterle@outlook.com

Tract:
Lot:
Block:
APN: 20039321
Customer Approval:
Date:

Plans By: diy POOLS AND SPAS

Scale 1/8"= 1'

SHEET TITLE: A-2

STORM MANAGEMENT / BMP / DRAINAGE AND EROSION CONTROL PLAN BY OTHER

NO PROPOSED LANDSCAPE