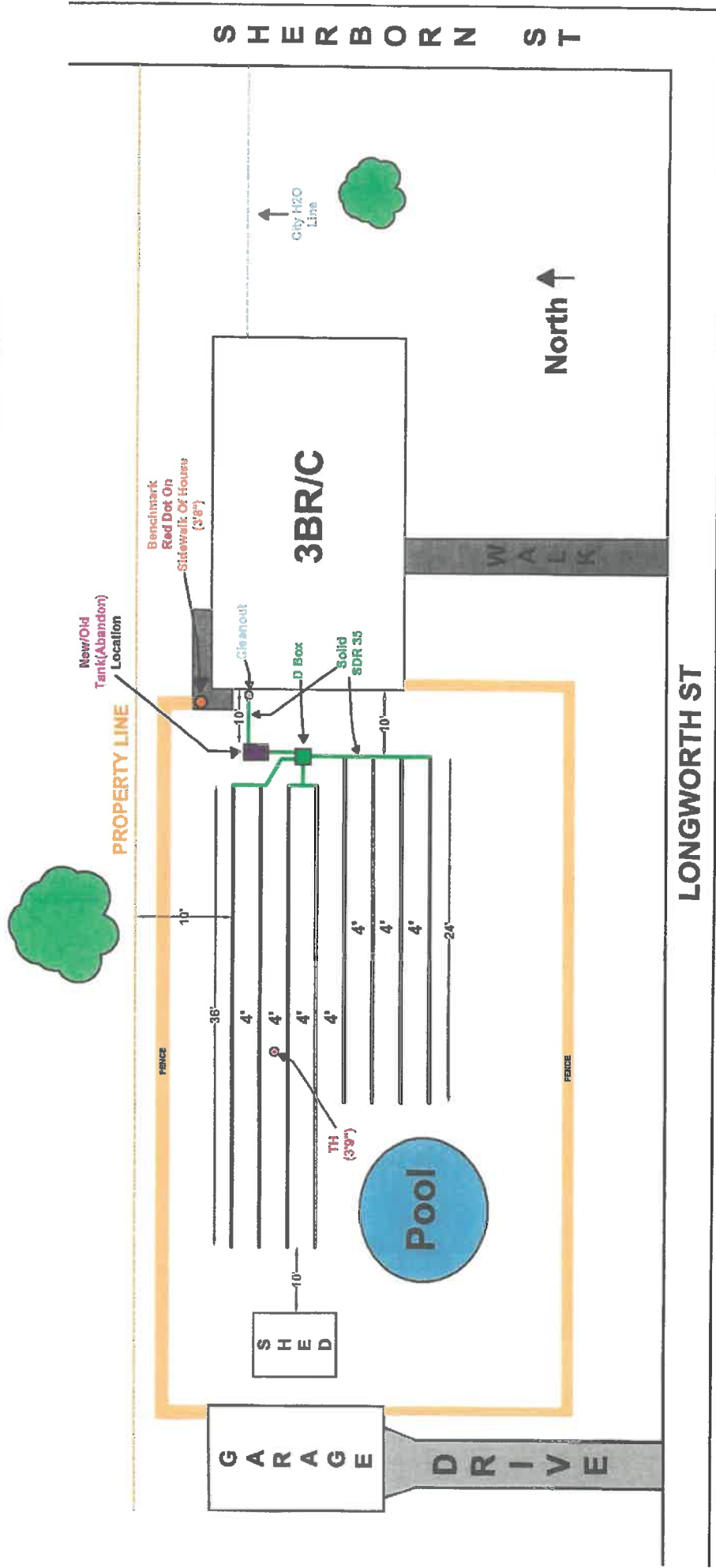

**DESIGN SPECIFICS FOR THE BUTLER SEPTIC REPLACEMENT - 3 BR/C
1922 SHERBORN - WPCLF GRANT (SPRINGFIELD TOWNSHIP – LUCAS COUNTY)**

1. STS Rules 3701-29 of the OAC shall be followed. Call OUPS (#811) PRIOR TO installation of HSTS.
2. LHD, septic installer and/or designer must discuss any questions, changes or concerns prior to/during the installation of the system as needed.
3. Make sure that all clear water (sump, downspouts, etc.) is rerouted away from the main sewer line and that all gray water (sinks, laundry etc.) is rerouted into the main sanitary line *as needed*.
4. Line from the house to the new septic tank must be **SCH 40 or SDR 35** and must maintain 1/8" to 1/4" per foot. Install an exterior cleanout with slide on cover (not threaded). Bed line in firmly packed existing in-situ soil EXCEPT for the first three to four feet (3' - 4') next to the foundation of the home which must be bedded in leach field stone to prevent settling
5. Install a new **1500-gallon septic tank** in a north to south direction as shown. Tank must be state approved with inlet and outlet risers that are flush with grade. Install tank with leach field stone on bottom of excavation and backfill with 411's/310's or in-situ soil except for areas under inlet and outlet pipes which will be bedded in leach field stone to prevent lines from settling. Install a 4" to 6" sanitary conversion tee on the tank **inlet** (cut 6" below the flow line IF baffle is not precast in the tank) and a 4" or 6" **outlet** tee (cut 18" below the flow line). Install a 4" OR 6" effluent filter on the outlet of the tank per 3701-29-12 (C) 3. *Due to extreme site limitations, new tank will be set in the same location as the existing tank.*
6. **Existing tank** must be, pumped and properly abandoned per state requirements and proper documentation submitted to the TLCHD.
7. Line from new tank to distribution box shall be 4" **SDR 35** maintaining a minimum fall of 1/2" – 1" per 10 foot of run length and must be bedded in 310's/411's or in-situ soil (**not** leach field stone).
8. Obtain a **distribution box** designed to handle the system design as shown (minimum of 3 outlets and 1 inlet line from tank). A cap or elbow is required to allow one "run"/ set of runs (72') of the system to "rest". Lines will exit the distribution box and feed each "run" independently. The lines exiting the **distribution box** must be **SDR 35** and shall be at the same elevation and bedded in in-situ soil (**not** leach field stone).
9. System design based on utilizing the **Infiltrator 36 Low Profile Chambers** (Trench width of 36"). Install three (3) runs at 72' in length per leaching trench design calculation. [NOTES: a) Two (2) sets of 36' runs and one set of three (3) 24' runs (72' total run length each) will be connected via a manifold exiting the distribution box as shown on the design proposal to allow for required resting of the trench length specified b) A variance will be needed from the local health department since the trenches cannot be installed at the required length of 72' along the length of contour although the required lineal and square footage will be maintained]. Place chamber four (4) feet between the leaching trenches walls [permitted per 34701-29-15 Appendix A III (E)].
10. Soil evaluation confirms that the chambers can be installed 25" into the in-situ soil while maintaining a VSD of 6" from the perched water table specified.
11. Maintain a minimum of 10' any area of the HSTS (including the tank) and house, all hardscapes (sidewalk, driveway etc.), property lines and road right of way/easements. Maintain 8' from any existing/proposed drain lines and 10' from the **city water line**.
12. **Bench Mark** is the red dot on the edge of the sidewalk on the north side of the house. Area of replacement leaching trenches (**test hole**) is 1" below the benchmark. No fill will be required prior to installation of the leaching trenches. The initial trench depth may vary slightly due to the uneven topography however the **bottom of each leaching trench** will maintain at least 6" from the perched water table (26" below the bench mark).
13. The **top of each chamber** will be 18" below the bench mark. The initial and **final grade** in the area of the leach field will be (+/-) 1" below the bench mark
14. Plant grass ASAP after system is backfilled.

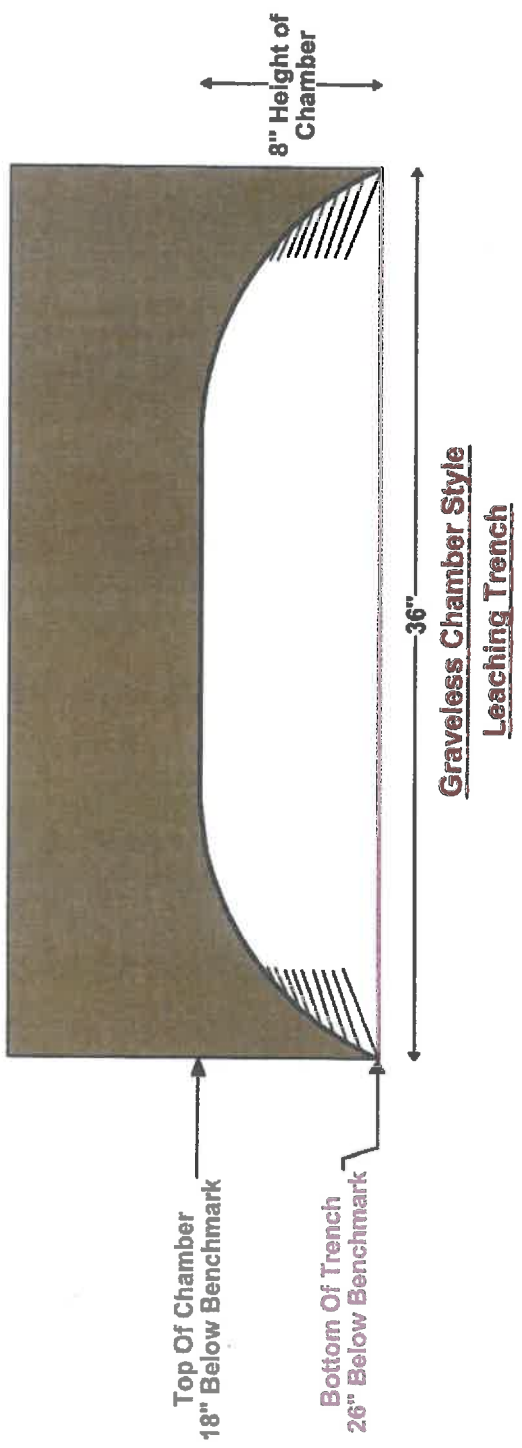
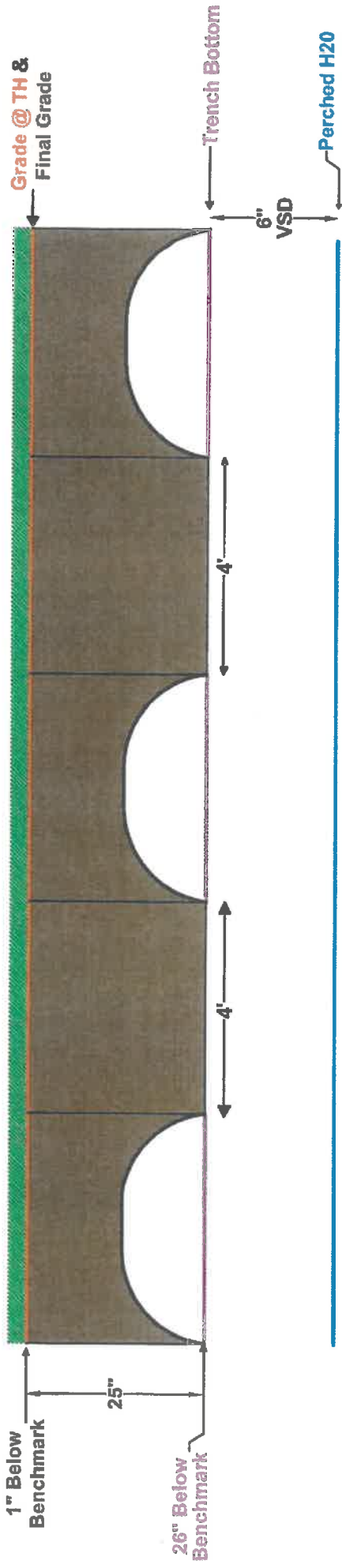
Septic Design Proposal

1922 Sherborn St (Springfield Twp)



Leach Field - Trench Detail

1922 Sherborn St (Springfield Twp)



BENCHMARK FOR 1922 SHERBORN STREET - LUCAS COUNTY – SPRINGFIELD TOWNSHIP



Red dot on northwest corner of the sidewalk

Soil Evaluation



Site and Soil Evaluation for Sewage Treatment and Dispersal



Certified Professional
 Environmental
 RICHARD L. SCHARF
 3/187

County: Lucas
 Township / Sec.: Springfield
 Property Address/Location: 1923 Silverborn St.
Holland, OH 43528
 Applicant Name: Brown & Paul Bullen
 Address: (Same)
 Phone #: _____
 Lot # _____
 Post Hole #: _____
 Latitude/Longitude: 41.6663; -83.73075
 Method: Pit Auger _____ Probe _____

Land Use / Vegetation: grass
 Landform: level
 Position on Landform: flat
 Percent Slope: 0
 Shape of Slope: level
 Date: 8/20/24
 Evaluator: Richard Scharf
 9455 Neumann Cir.
 Ypsilanti, MI 48197
 Certification Stamp or Certification #: _____
 Signature: _____
 Phone #: (734) 255-4546

Soil Profile	Estimating Soil Saturation										Estimating Soil Permeability				
	Depth (inches)	Munsell Color (hue, value, chroma)	Redoximorphic Features		Class	Texture		Structure			Other Soil Features				
			Matrix Color	Concentrations		Depletions	Approx. % Clay	Approx. % Fragments	Grade	Size		Type (shape)	Consistence		
A	0-11	10YR 3/3	-	-	S	0	0	0	0	0/5G	-	-	100%		
Bw ₁	12-31	10YR 4/4	-	-	S	0	0	0	0	↓	-	-	↓		
Bw ₂	31-36	10YR 4/6	10YR 5/6	10YR 4/3	S	0	0	0	0	↓	-	-	↓		
Bw ₃	36-45	10YR 5/8	7.5YR 3/4	10YR 5/2	S	0	0	0	0	↓	-	-	↓		
2C _g	45-61	10YR 5/1	10YR 5/6	10YR 7/2	SIL	20	0	0	0	1	f.	SBK	fr.		
Limiting Conditions															
Perched Seasonal Water Table															
Apparent Water Table															
Highly Permeable Material															
Bedrock															
Restrictive Layer															
Remarks / Risk Factors:										Too deep to influence system design.					

Note: The evaluation should include a complete site plan or site drawing.

Leaching Trench Design Calculations FOR REPLACEMENT HSTS

Information from soil evaluation	
Hydraulic Linear Loading Rate (gpd/ft)	4
Soil Infiltration Loading Rates (gpd/ft)	0.8
Number of Bedrooms	3
Depth to Limiting Layer - PVI (Inches)	31
Width of Trenches (Inches)	36
*Max. Trench Width Allowed: New-24" Replacement-36"	

Property Information	
Owner	BUTLER
Address	1922 SHERBORN STREET
Township	SPRINGFIELD
New	Replacement X

Overview of System Requirements	
Number of Trenches	3
Length of Trenches	90
Width of Trenches (feet)	3
Total Linear Feet	270
Distance Between Trench(es) center	7
Drainage	Unknown

Daily Design Flow
(120 gpd) X (Number of Bedrooms) = 360 gpd
120 gpd X 3 Bedrooms = 360 gpd

Minimum Length of Leach Lines
Daily Design Fl / Hydraulic Linear Loading Rate = 90 ft
360 / 4 = 90 ft
Minimum Length of Leach Lines Rounded To Next Whole Number = 90 ft

Total Length of Leach Lines
Minimum Absorption Area / Width of the Trench = 187.5 ft
562.5 / 3 = 187.5 ft

Number of Trenches
Total Length / Trench Length = 2.08333333
187.5 / 90 = 2.08333333
Round Number of trenches to next whole number = 3 Trenches

Minimum Absorption Area Width
Min. Absorption Area / Trench Length = 6.25 ft
562.5 / 90 = 6.25 ft

Minimum Absorption Area
Daily Design Flow / Soil Infiltration Loading Rate = 450 ft²
360 / 0.8 = 450 ft²

Additional Area Required for 25% Resting
Minimum Absorption Area X 0.25 = 112.5 ft²
450 X 0.25 = 112.5 ft²

Total Absorption Area
Minimum Absorption Area + 25% Resting = 562.5 ft²
450 + 112.5 = 562.5 ft²

Number of Trenches to Maintain Total Absorption Area	
Trench Length X Trench Width = Absorption Area Per Trench	90 X 3 = 270 ft ²
Min. Absorption Area / Absorption Area Per Trench	450 / 270 = 1.66666667 Trenches
Add 25% absorption area for resting / absorption area per trench	112.5 / 270 = 0.41666667
	1 Trench(es) to rest at all times

If Replacement System:	
Up to 20% can be cut in the length of the leach lines. BUT...the Total surface area must be maintained.	
Total Surface Area =	562.5 ft ²
Original Calculated Length =	90 ft
20% of Original Calculated Length =	18 ft
Reduced Length =	72 ft
Trench Length X Trench Width = Absorption Area Per Trench	72 X 3 = 216 ft ²
Min. Required Absorption Area / Absorption Area Per Trench = Number of trenches in use at all times	450 / 216 = 2.08333333 Trenches
	3 Trench(es) in use at all times
Add 25% absorption area for resting / absorption area per trench = Number of trenches to rest	112.5 / 216 = 0.52083333
	1 Trench(es) to rest at all times

REPLACEMENT System Overview	
Number of Trenches	4
Length of Trenches	72
Width of Trenches (Inches)	36
Total Linear Feet	288
Width Between Trenches	4 foot
Drainage	N/A

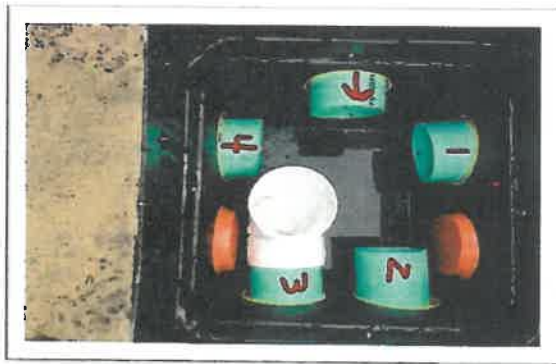
* Must be divided into two(2) sets of runs at 36' and one (1) set of three (3) runs or 24' due to site limitations
(A variance will be required from the TLCHD)

** CHAMBERS ONLY ** with * 25% Reduction*	
Number of Trenches to Maintain Total Absorption Area	
Minimum Absorption Area * 25% = Reduction for Chamber System	450 * 0.25 = 112.5 ft ²
Minimum Absorption Area - 25% Reduction = New Min. Absorption Area for Chamber System	450 - 112.5 = 337.5 ft ²
Additional Area Required for 25% Resting	337.5 X 0.25 = 84.375 ft ²
Minimum Absorption Area + 25% Resting	337.5 + 84.375 = 421.875 ft ²
NEW Min. Absorption Area / Absorption Area Per Trench	337.5 / 270 = 1.25 Trenches
Add 25% absorption area for resting / absorption area per trench	84.375 / 270 = 0.3125
	1 Trench(es) to rest at all times

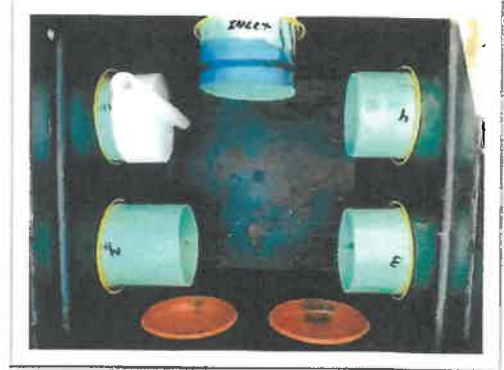
*** CHAMBERS ONLY*** (Replacement)	
[Up to 20% can be cut in the length of the leach lines. BUT...the Total surface area must be maintained]	
Chambers Total Surface Area =	337.5 ft ²
Original Calculated Length =	90 ft
20% of Original Calculated Length =	18 ft
Reduced Length =	72 ft
Trench Length X Trench Width = Absorption Area Per Trench	72 X 3 = 216 ft ²
Min. Required Absorption Area / Absorption Area Per Trench = Number of trenches in use at all times	337.5 / 216 = 1.5625 Trenches
	2 Trench(es) in use at all times
Add 25% absorption area for resting / absorption area per trench = Number of trenches to rest	84.375 / 216 = 0.390625
	1 Trench(es) to rest at all times



Poly Lock Distribution Box (Recommended)



Distribution Box with "Elbow" Style Divertor



Distribution Box with "Cap with Handle" Style Divertor

[NOTE: Four (4) runs shown. System design will only require three (3) outlets]



4" & 6" (Recommended) Effluent Outlet Filters

[Home](#) [Products](#) [Chambers](#) [Arc Series](#)

Arc 36 Low Profile Chamber



The Arc 36 Low Profile (LP) septic leaching chamber is a sturdy, lightweight plastic unit that combines maximized infiltrative surface area and storage capacity with an improved structural design to accommodate most conventional leachfield system challenges without sacrificing performance.

[Find a Distributor](#) › [Contact an Expert](#) › [Manuals, Guides & CAD Details](#) ›

Specifications:

Size

34"W x 63"L x 8"H
(864 mm x 1600 mm x 200 mm)

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