PRESBY DESIGN WORKSHEET FOR INDIANA RESIDENTIAL SYSTEMS

Project: _____ **Date:** _____

Design Criteria: _____

1. Determine quantity of Presby Pipe required from Table A:

70 x _____ = _____ ft min.

ft/bedroom bedrooms

Table A –Pipe Required

Pipe Model	Quantity per bedroom (ft. minimum)
Advanced Enviro-Septic®	70

2. Calculate the minimum System Sand Bed Area (SSBA):

Indiana 410 IAC 6-8 Tables IV & V – Soil Loading Rates (GPD/ft²)

Texture \ Structure	Single Grain	Granular	**Strong:** Angular, Sub-Angular Blocky, Prismatic	**Moderate:** Angular, Sub-Angular Blocky, Prismatic	**Weak:** Angular, Sub-Angular Blocky, Prismatic; Platy[1]	Fragic Characteristics: Very Coarse Prismatic	Structureless, Massive, Friable, Very Friable	Structureless Massive, Compact, Firm, Very Firm; Platy[2]
Gravel, Coarse Sand	>1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loamy Coarse Sand, Medium Sand	1.20	1.20	N/A	N/A	1.20	N/A	N/A	N/A
Fine Sand, Loamy Sand, Loamy Fine Sand	0.60 / 0.75	0.60	N/A	0.60 / 0.75	0.60 / 0.75	N/A	0.60 / 0.75	N/A
Very Fine Sand, Loamy Very Fine Sand	0.50	0.50	N/A	0.50 / 0.75	0.50 / 0.60	N/A	0.50 / 0.60	N/A
Sandy Loam, Coarse Sandy Loam	N/A	0.60 / 0.75	N/A	0.60	0.60	0.00	0.60	0.00
Fine Sandy Loam, Very Fine Sandy Loam	N/A	0.60 / 0.75	N/A	0.60	0.60	0.00	0.60	0.00
Loam	N/A	0.50 / 0.75	0.50 / 0.75	0.50	0.50	0.00	0.50	0.00
Silt Loam, Silt	N/A	0.50 / 0.75	0.50 / 0.75	0.50	0.50 / 0.30	0.00	0.50 / 0.30	0.00
Sandy Clay Loam	N/A	0.50 / 0.60	0.50 / 0.60	0.50	0.50 / 0.30	0.00	0.50 / 0.30	0.00
Silty Clay Loam, Clay Loam, Sandy Clay	N/A	0.25 / 0.60	0.25 / 0.60	0.25 / 0.30	0.25	0.00	0.25	0.00
Silty Clay, Clay	N/A	0.25 / 0.60	0.25 / 0.50	0.25 / 0.30	0.25	N/A	0.25	0.00
Organic Soil Material	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A
Limnic Soil Materials	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00
Bedrock	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Upper left of diagonally split cells = above ground systems, Lower right value in split cells = subsurface systems.

[1] Naturally occurring platy structure.

[2] Platy structure caused by compaction has a soil loading rate of 0.00 GPD/ft² unless broken up by methods approved by ISDH.

Indiana Soil Loading Rate (IN-SLR) from Tables IV & V = _____ = _____ Presby loading rate (Table B)

Design Daily Flow = _____ bedrooms, System Sand Bed Area (Table A) = _____ ft² min

Table B - System Sand Bed Area (SSBA) required, minimum (ft²)

Indiana Soil Loading Rate (IN-SLR) Class	Presby Soil Loading Rate (PR-SLR) (GPD/ft²)	Bedrooms / Gallons per Day								
		2	3	4	5	6	7	8	9	10
		300	450	600	750	900	1,050	1,200	1,350	1,500
1.20	1.79	168	252	336	419	503	587	671	755	838
0.75	1.12	268	402	536	670	804	938	1,072	1,206	1,340
0.60	0.90	334	500	667	834	1,000	1,167	1,334	1,500	1,667
0.50	0.75	400	600	800	1,000	1,200	1,400	1,600	1,800	2,000
0.30	0.45	667	1,000	1,334	1,667	2,000	2,334	2,667	3,000	3,334
0.25	0.37	811	1,217	1,622	2,028	2,433	2,838	3,244	3,649	4,055
		System Sand Bed Area minimum (ft²)								

3. Calculate the number of serial sections required (skip if using Parallel distribution):

Design Daily Flow = _____ bedrooms x 150 GPD/bedroom = _____ GPD ÷ 750 GPD/section

= _____ sections minimum (round up to nearest whole number) = _____ sections minimum

4. Select Presby Pipe row length and number of rows required:

Pipe required (from Step #1) = _____ ft ÷ _____ row length ft = _____ rows

(round up to nearest whole number) ÷ _____ serial sections (from Step #3) = _____

(must be whole number, increase number of rows or change row length if necessary)

5. Find Pipe Layout Width (PLW) from Table D for row length and spacing:

Row Center-to-Center spacing being used = _____ ft, PLW = _____ ft

TABLE C: Total Linear Feet of Presby Pipe

Row Length (ft)															
	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300
	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375
	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450
	35	70	105	140	175	210	245	280	315	350	385	420	455	490	525
	40	80	120	160	200	240	280	320	360	400	440	480	520	560	600
	45	90	135	180	225	270	315	360	405	450	495	540	585	630	675
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750
	55	110	165	220	275	330	385	440	495	550	605	660	715	770	825
	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900
	65	130	190	260	325	390	455	520	585	650	715	780	845	910	975
	70	140	210	280	350	420	490	560	630	700	770	840	910	980	1050
	75	150	225	300	375	450	525	600	675	750	825	900	975	1050	1125
	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200
	85	170	255	340	425	510	595	680	765	850	935	1020	1105	1190	1275
	90	180	270	360	450	540	630	720	810	900	990	1080	1170	1260	1350
	95	190	285	380	475	570	665	760	855	950	1045	1140	1235	1330	1425
	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
# of Rows		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
C/L Spacing (ft)	1.50	2.50	4.00	5.50	7.00	8.50	10.00	11.50	13.00	14.50	16.00	17.50	19.00	20.50	22.00
	1.75	2.75	4.50	6.25	8.00	9.75	11.50	13.25	15.00	16.75	18.50	20.25	22.00	23.75	25.50
	2.00	3.00	5.00	7.00	9.00	11.00	13.00	15.00	17.00	19.00	21.00	23.00	25.00	27.00	29.00
	2.25	3.25	5.50	7.75	10.00	12.25	14.50	16.75	19.00	21.25	23.50	25.75	28.00	30.25	32.50
	2.50	3.50	6.00	8.50	11.00	13.50	16.00	18.50	21.00	23.50	26.00	28.50	31.00	33.50	36.00
	2.75	3.75	6.50	9.25	12.00	14.75	17.50	20.25	23.00	25.75	28.50	31.25	34.00	36.76	39.50
	3.00	4.00	7.00	10.00	13.00	16.00	19.00	22.00	25.00	28.00	31.00	34.00	37.00	40.00	43.00
	Pipe Layout Width ft														

Ex: select a row length and move right until the minimum amount of pipe is found (more is allowed). Then move down to find the number of rows required; continue downward in the same column to find the pipe layout width for your spacing.

6. Calculate System Sand Bed Width (SSBW):
a) For beds sloping 10% or less –

SSBA (from Step #2) = _____ ft² ÷ _____ (row length from Step #4 + 2 ft) = _____ ft

If (6a) is less than (_____PLW + 2 ft = _____ ft) then the minimum SSBW = PLW + 2 ft = _____ ft
Note: If (6a) is larger than PLW + 2 ft then there will be System Sand extension(s)

b) For beds sloping over 10% -

SSBA (from Step #2) = _____ ft² ÷ (_____ row length from Step #4 + 2 ft) = _____ ft

If this is less than (_____PLW + 5 ft = _____ ft) then the minimum SSBW = PLW + 5 ft = _____ ft
Note: There will always be a System Sand extension for beds sloping over 10%.

7. System Sand extensions (SSE):

a) Level beds –

System Sand extension = _____ SSBW ft – _____ (PLW + 2 ft) ÷ 2 = _____ ft min. each

Final System Sand bed width = _____ SSE x 2 = _____+ _____ (PLW + 2 ft) = _____ ft

Note: the Presby pipes are centered in the middle of the sand bed area with a System Sand extension on each side. There will be no System Sand extensions if SSBW is equal to (PLW + 2 ft).

b) Sloping beds -

System Sand extension = _____ SSBW ft – _____ PLW + 2 ft = _____ ft min.

Note: the System Sand extension is always placed on down slope side of the field (pipes grouped at high side)

8. System Sand below Presby Pipes:

a) Infiltrative surface (bottom of System Sand bed) equal to or greater than 4" below original grade –

☐ System Sand below pipes = 6 inches minimum, this is considered a subsurface system.

b) Infiltrative surface (bottom of System Sand bed) less than 4" below original grade –

☐ System Sand below Presby pipes = 12 inches minimum

Notes:

Designed by: _____