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Series: ABBOTTSTOWN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	100			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	100			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in material weathered from red and brown shale and sandstone. Drainage problems: perched water table, seeps. Use shallow ditches to pick up seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	30	36	200			Smooth
3+	Cropland-Pasture	C	1	3	30	36	Random			
0-3	Turf	B	1	3	30	36	200			Smooth
3+	Turf	B	1	3	30	36	Random			
Land smoothing may be needed for surface drainage on flatter slopes. Depth to fragipan ranges from 15 to 30 inches. Fragipan is about 20 inches in thickness.										
Subsurface Drain										
	Cropland-Pasture	3/8			30	36	Random			Smooth
	Turf	3/4			30	36	Random			Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps.										

Series: ADELPHIA

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Blueberries	C	4	10	10	24	60	180		Smooth
0-3	Cropland-Pasture	C	4	10	10	24	60	180		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	50	150		Smooth
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in unconsolidated marine deposits in which glauconite is common. Drainage problem: seasonal high water table. Use shallow ditches to pick up depressions.										
Surface Drainage – Main or Lateral										
0-3	Blueberries	C	2	3	18		135	270		Smooth
0-3	Cropland-Pasture	C	2	3	24		180	270		Smooth
3+	Cropland-Pasture	C	2	3	24		Random			
0-3	Turf-Vegetables	B	2	3	24		150	225		Smooth
3+	Turf-Vegetables	B	2	3	24		Random			
Surface drainage is important. Flatter slopes may need land smoothing..										
Subsurface Drain										
0-3	Blueberries	3/8			30	48	70	100	Check	Smooth
0-3	Cropland-Pasture	3/8			30	48	70	100	Check	Smooth
3+	CroplandPasture	3/8			30	48	Random		Check	
0-3	Turf-Vegetables	3/4			30	48	40	70	Check	Smooth
3+	Turf-Vegetables	3/4			30	48	Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries, cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filters may be needed.										

Series: ADRIAN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Vegetables-Turf	B	4	10	10	24		100		
This soil was formed in material deposited in extinct lake basins found in outwash plains or lake plains. Typically, this soil is 16 to 50 inches of muck over gray sand. Drainage problems: high water table, subsidence, outlet.										
Surface Drainage – Main or Lateral										
0-2	Vegetables-Turf	B	0.25	3	24	36	150	200		
Precautions need to be taken when ditch bottom extends into the sand subsoil as the sand will flow into the ditch causing the sides to slough creating maintenance problems.										
Subsurface Drain										
0-2	Vegetables-Turf	3/4			36	48	100	200	Check	
Coefficient = 1.00 cfs per 1000 feet of drain for vegetables or turf. In deep muck, drain tubing should not be used until 3 years after initial drainage. Pumps may be needed where outlet is not available. When tubing is placed in the fine sand subsoil, a filter is needed.										

Series: ATHERTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	75	100		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	65	90		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed on glacial outwash terraces from water sorted material. Drainage problems: perched water table, seeps. Use shallow ditches to pick up seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	24		150	200		Smooth
3+	Cropland-Pasture	C	2	3	24		Random			
0-3	Turf	B	2	3	24		140	190		Smooth
3+	Turf	B	2	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	60	140		Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	30	80		Smooth
3+	Turf	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Use subsurface drains to pick up seeps.										

Series: ATSION

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-1	Blueberries	C	4	10	10	24	60	140		
0-1	Cropland	C	4	10	10	24	80	200		
0-1	Pasture	D	4	10	10	24	120	300		
0-1	Turf-Vegetables	B	4	10	10	24	50	120		
This soil formed in coastal plain sediments. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-1	Blueberries	C	1	3	24		140			
0-1	Cropland	C	1	3	24		200			
0-1	Pasture	D	1	3	24		300			
0-1	Turf-Vegetables	B	1	3	24		120			
Water level control is needed for blueberries.										
Subsurface Drain										
0-1	Blueberries	3/8			30	48	150		Check	
0-1	Cropland	3/8			30	48	200		Check	
0-1	Pasture	3/8			30	48	250		Check	
0-1	Turf-Vegetables	3/4			30	48	100		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for pasture. Coefficient = 0.15 cfs per 1000 feet of drain for blueberries, cropland, turf and vegetables. Filters may be needed.										

Series: BERRYLAND

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope		Depth Inches		Spacing Feet		Filter	Surface Treatment
			Min	Rec	Min	Max	Min	Max		
Surface Drainage – Field Ditch										
0-1	Blueberries	C	4	10	10	24	60	140		
0-1	Cropland	C	4	10	10	24	80	200		
0-1	Pasture	D	4	10	10	24	120	300		
0-1	Turf-Vegetables	B	4	10	10	24	50	120		
This soil formed in sandy coastal plain sediments. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-1	Blueberries	C	1	3	24		140	230		
0-1	Cropland	C	1	3	24		200	250		
0-1	Pasture	D	1	3	24		300	400		
0-1	Turf-Vegetables	B	1	3	24		120	225		
Water level control is needed for blueberries.										
Subsurface Drain										
0-1	Blueberries	3/8			30	48	100	250	Check	
0-1	Cropland	3/8			30	48	150	200	Check	
0-1	Pasture	3/8			30	48	250	350	Check	
0-1	Turf-Vegetables	3/4			30	48	70	225	Check	
Coefficient = 0.10 cfs per 1000 feet of drain for pasture. Coefficient = 0.15 cfs per 1000 feet of drain for blueberries, cropland, turf and vegetables. Filters may be needed.										

Series: BERTIE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	60	120		Smooth
2+	Cropland-Pasture	C	4	10	10	24	Random			
0-2	Turf-Vegetables	B	4	10	10	24	50	100		Smooth
2+	Turf-Vegetables	B	4	10	10	24	Random			
This soil developed from unconsolidated and somewhat stratified sediments in the coastal plain. Drainage problem: seasonal high water table. Use shallow field ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1	3	24		90	200		Smooth
2+	Cropland-Pasture	C	1	3	18		Random			
0-2	Turf-Vegetables	B	1	3	24		60	150		Smooth
2+	Turf-Vegetables	B	1	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	50	175		Smooth
2+	Cropland-Pasture	3/8			30	48	Random			
0-2	Turf-Vegetables	3/4			30	48	50	100		Smooth
2+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables.										

Series: BIDDEFORD

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	25			Smooth
0-2	Turf-Vegetables	B	4	10	10	24	20			Smooth
This soil formed in stratified glacial lucstrine deposits and have a thin mantle of silty and mucky sediment washed from surrounding soils. Drainage problems: ponding, slow percolation, outlet.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1.5	3	24		75			Smooth
0-2	Turf-Vegetables	B	1.5	3	24		50			Smooth
Land smoothing may be needed for surface drainage on flatter slopes										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	Random			Smooth
0-2	Turf-Vegetables	3/4			30	48	Random			Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Subsurface drains are not recommended due to slow permeability of the soil.										

Series: BOWMANSVILLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	50			Smooth
0-2	Turf	B	4	10	10	24	30			Smooth
This soil formed in alluvium washed from nearby uplands which are underlain by red and Brown shale and sandstone, or by granite gneiss. Drainage problems: high water table, flooding. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	24		50			Smooth
0-2	Turf	B	2	3	24		40			Smooth
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	60	175		Smooth
0-2	Turf	3/4			30	48	30	100		Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: BRACEVILLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	30	75		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	25	50		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed on glacial outwash terraces in material derived predominately from gray Sandstone and slate with smaller amounts of siltstone or sandstone. Drainage problems: perched water table, seeps. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		60	150		Smooth
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf	B	1.5	3	24		50	120		Smooth
3+	Turf	B	1.5	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Use ditches to pick up seeps. The depth to the fragipan varies from 15 to 30 inches. Fragipan is 8 to 30 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	75	175		Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	40	100		Smooth
3+	Turf	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Dense pan restricts vertical drainage. Use cross slope drains to intercept seeps. Provide surface inlets to drain depressions.										

Series: CALIFON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	25	45		
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	20	35		
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in colluvium or in deeply weathered till derived mainly from granite gneiss. Drainage problems: perched water table, seeps. Use shallow surface ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		30	50		
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf-Vegetables	B	1.5	3	24		25	40		
3+	Turf-Vegetables	B	1.5	3	24		Random			
Ditches are needed at toe of slopes to pick up seeps. The fragipan is at a depth of 20 to 30 inches and is about 25 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30		25	45		
3+	Cropland-Pasture	3/8			30		Random			
0-3	Turf-Vegetables	3/4			30		20	35		
3+	Turf-Vegetables	3/4			30		Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Dense pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps at fragipan depth.										

Series: CARLISLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Vegetables-Turf	B	4	10	10	24	50	100		
This soil was formed in the organic residue of plant remains accumulated over a period of thousands of years. The organic layer is about 60 inches in thickness. Drainage problems: high water table, surface runoff is slow.										
Surface Drainage – Main or Lateral										
0-2	Vegetables-Turf	B	0.25	3	24		100	200		
On-site investigations of shrinkage and permeability should be made when extensive drainage is involved.										
Subsurface Drain										
0-2	Vegetables-Turf	3/4			30	48	100	200		
Coefficient = 1.00 cfs per 1000 feet of drain for all crops. Subsurface drain tubing should not be used until 3 years after initial drainage. Pumps may be needed where outlets are not available.										

Series: CATDEN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Vegetables-Turf	B	4	10	10	24	50	100		
This soil was formed in the organic residue of plant remains in depressions on lake plains, Moraines and flood plains. The organic layer is about 60 inches in thickness. Drainage problems: high water table, surface runoff is slow.										
Surface Drainage – Main or Lateral										
0-2	Vegetables-Turf	B	0.25	3	24		100	200		
On-site investigations of shrinkage and permeability should be made when extensive drainage is involved.										
Subsurface Drain										
0-2	Vegetables-Turf	3/4			30	48	100	200		
Coefficient = 1.00 cfs per 1000 feet of drain for all crops. Subsurface drain tubing should not be used until 3 years after initial drainage. Pumps may be needed where outlets are not available.										

Series: CHALFONT

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24				Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24				Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in a loess mantle overlying residuum that is predominately free from shale and sandstone. Drainage problems: perched water table, seeps. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	30					Smooth
3+	Cropland-Pasture	C	1	3	30		Random			
0-3	Turf	B	1	3	30					Smooth
3+	Turf	B	1	3	30		Random			
Use ditches to pick up seeps. The depth to the fragipan varies from 15 to 30 inches. Fragipan is between 20 to 30 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48				Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48				Smooth
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Dense pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps.										

Series: CHICONE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	75	120		Smooth
0-2	Turf-Vegetables	B	4	10	10	24	50	100		Smooth
This soil formed in recent deposits of mineral soil eroded from adjoining locations.. Drainage problems: high water table, flooding. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	24		80	200		Smooth
0-2	Turf-Vegetables	B	2	3	24		60	150		Smooth
Land smoothing may be needed for surface drainage on flatter slopes Use ditches to divert seepage water..										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	65	170	Check	Smooth
0-2	Turf-Vegetables	3/4			30	48	30	100	Check	Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: COKESBURY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24				Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24				Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in weathered glacial till and colluvium derived mainly from granitic gneiss And is underlain by weathered granitic gneiss. Drainage problems: perched water table, seeps. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24					Smooth
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf	B	1.5	3	24					Smooth
3+	Turf	B	1.5	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	36				Smooth
3+	Cropland-Pasture	3/8			30	36	Random			
0-3	Turf	3/4			30	36				Smooth
3+	Turf	3/4			30	36	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Use subsurface drains placed across slope to pick up seeps.										

Series: COLEMANTOWN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24		120		Smooth
0-3	Turf	B	4	10	10	24		100		Smooth
This soil formed in highly glauconitic clay marine sediments. Drainage problems: perched water table, outlet. Use smoothing and shallow ditches for surface drainage..										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	12			150		Smooth
0-3	Turf	B	1.5	3	12			120		Smooth
Water may be present below the subsoil under pressure.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30			Random		Smooth
0-3	Turf	3/4			30			Random		Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Subsurface drains generally work too slowly to benefit the surface, but can be used to drain the substratum.										

Series: CROTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24				Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24				Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in residuum weathered from fine-grained silty sandstone, argillite, or red shale. Drainage problems: perched water table, seeps, outlets. Use land smoothing and shallow ditches where soil is shallow over pan.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	24					Smooth
3+	Cropland-Pasture	C	1	3	24		Random			
0-3	Turf	B	1	3	24					Smooth
3+	Turf	B	1	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Depth to fragipan ranges from 18 to 36 inches. Fragipan is about 18 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30					Smooth
3+	Cropland-Pasture	3/8			30		Random			
0-3	Turf	3/4			30					Smooth
3+	Turf	3/4			30		Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Dense pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps.										

Series: DONLONTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	45			Smooth
3+	Cropland-Pasture	C	4	10	10	24		200		
0-3	Turf-Vegetables	B	4	10	10	24	30			Smooth
3+	Turf-Vegetables	B	4	10	10	24		180		
This soil formed in old marine sediments containing moderate amounts of glauconite. Drainage problems: perched water table, seeps. Use land smoothing and shallow ditches where soil is shallow over pan..										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		45			Smooth
3+	Cropland-Pasture	C	1.5	3	24			200		
0-3	Turf-Vegetables	B	1.5	3	24		30			Smooth
3+	Turf-Vegetables	B	1.5	3	24			200		
Land smoothing may be needed for surface drainage on flatter slopes. Ditches can be used to pick up seeps.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35	65		Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20	40		Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Use subsurface drains placed across slope to pick up seeps.										

Series: DOYLESTOWN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	150			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	100			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in a mantle of silty material that was weathered from red shale or, possibly deposited by wind. Drainage problems: perched water table, seeps. Use land smoothing and shallow for surface drainage..										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	24		175			Smooth
3+	Cropland-Pasture	C	1	3	24		Random			
0-3	Turf	B	1	3	24		150			Smooth
3+	Turf	B	1	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. The depth to the fragipan varies from 18 to 30 inches and it extends to bedrock.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	150			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	125			Smooth
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Use subsurface drains to pick up seeps over the pan.										

Series: ELKTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	75	150		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	50	100		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in clayey coastal plain sediments. Drainage problems: perched water table, seeps. Use shallow ditches and land smoothing where soil is shallow over clay subsoil.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		150			Smooth
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf	B	1.5	3	24		75	100		Smooth
3+	Turf	B	1.5	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Use ditches to pick up seeps.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	125			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	100			Smooth
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Use subsurface drains to intercept seeps.										

Series: ELLINGTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	50	100		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	40	75		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in somewhat gravelly material derived from shale, siltstone and sandstone underlain by finer textured residual material. Drainage problems: depressions, seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		100	150		Smooth
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf	B	1.5	3	24		75	100		Smooth
3+	Turf	B	1.5	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	36	60	100		Smooth
3+	Cropland-Pasture	3/8			30	36	Random			
0-3	Turf	3/4			30	36	50	75		Smooth
3+	Turf	3/4			30	36	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: FALLSINGTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Blueberries	C	4	10	10	24	50	100		Smooth
0-2	Cropland	C	4	10	10	24	60	80		Smooth
0-2	Turf-Vegetables	B	4	10	10	24	50	75		Smooth
This soil formed in marine and old alluvial sediments that are predominantly sandy and characteristically low in silt. Drainage problem: high water table. Surface drainage is important.										
Surface Drainage – Main or Lateral										
0-2	Blueberries	C	1.5	3	18		75	100		Smooth
0-2	Cropland	C	1.5	3	24		90	100		Smooth
0-2	Turf-Vegetables	B	1.5	3	24		50	60		Smooth
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-2	Blueberries	3/8			30	48	60	80	Check	Smooth
0-2	Cropland	3/8			30	48	60	90	Check	Smooth
0-2	Turf-Vegetables	3/4			30	48	50	75	Check	Smooth
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries and cropland.. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: FREDON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	50	100		
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	45	75		
3+	Turf	B	4	10	10	24	Random			
This soil formed in glacial outwash material derived predominately from gray sandstone, shale and siltstone. Drainage problems: high water table, seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		70	150		
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf	B	1.5	3	24		50	100		
3+	Turf	B	1.5	3	24		Random			
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	75	150	Check	
3+	Cropland-Pasture	3/8			30	48	Random		Check	
0-3	Turf	3/4			30	48	50	100	Check	
3+	Turf	3/4			30	48	Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Filter may be needed. Use random subsurface drains to pick up seeps.										

Series: HALSEY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	70	120		
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	50	100		
3+	Turf	B	4	10	10	24	Random			
This soil formed in glacial outwash material derived predominately from gray sandstone, shale, and siltstone. Drainage problems: high water table, seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		50	175		
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf	B	1.5	3	24		40	100		
3+	Turf	B	1.5	3	24		Random			
Deep ditches can be used effectively.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	30	150	Check	
3+	Cropland-Pasture	3/8			30	48	Random		Check	
0-3	Turf	3/4			30	48	25	120	Check	
3+	Turf	3/4			30	48	Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Filter may be needed. Use random subsurface drains to pick up seeps.										

Series: HAMMONTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland	C	4	10	10	24	60			Smooth
0-2	Turf-Vegetables	B	4	10	10	24	50			Smooth
This soil formed in sandy coastal plain sediments. Drainage problem: high water table. Use shallow field ditches and land smoothing for surface drainage. Surface drainage is important.										
Surface Drainage – Main or Lateral										
0-2	Cropland	C	1	3	24		90			Smooth
0-2	Turf-Vegetables	B	1	3	24		75			Smooth
Subsurface Drain										
0-2	Cropland	3/8			30	48	60		Check	
0-2	Turf-Vegetables	3/4			30	48	50		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland.. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: HIBERNIA

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	50	70		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	50	100		Smooth
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in glacial till primarily of granite gneiss and small amounts of quartzite. Drainage problems: seasonal high water table, perched water table, seeps. Use land smoothing and shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		50	75		Smooth
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf-Vegetables	B	1.5	3	24		40	60		Smooth
3+	Turf-Vegetables	B	1.5	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Use ditches to drain depressions.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	25	45		
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20	35		
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables.										

Series: HOLMDEL

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Blueberries	C	4	10	10	24	50	150		Smooth
0-3	Cropland-Pasture	C	4	10	10	24	50	150		Smooth
3+	Cropland-Pasture	C	4	10	10	18	Random			
0-3	Turf-Vegetables	B	4	10	10	24	40	120		Smooth
3+	Turf-Vegetables	B	4	10	10	18	Random			
This soil formed in marine deposits containing glauconite. Drainage problem: high water table. Grade for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Blueberries	C	1.5	3	18		160	180		Smooth
0-3	Cropland-Pasture	C	1.5	3	24		150	175		Smooth
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf-Vegetables	B	1.5	3	24		150	220		Smooth
3+	Turf-Vegetables	B	1.5	3	18		Random			
Water level control is needed for blueberries. Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Blueberries	3/8			30	48	50	150	Check	Smooth
0-3	Cropland-Pasture	3/8			30	48	50	120	Check	Smooth
3+	Cropland-Pasture	3/8			30	48	Random		Check	
0-3	Turf-Vegetables	3/4			30	48	40	90	Check	Smooth
3+	Turf-Vegetables	3/4			30	48	Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries, cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filters may be needed.										

Series: JADE RUN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	45			Smooth
0-2	Turf-Vegetables	B	4	10	10	24	30			Smooth
This soil formed from unconsolidated silts and very fine sands of marine origin. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	24		75	120		Smooth
0-2	Turf-Vegetables	B	2	3	24		50	100		Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	60	100	Check	Smooth
0-2	Turf-Vegetables	3/4			30	48	30	60	Check	Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: KEANSBURG

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope		Depth Inches		Spacing Feet		Filter	Surface Treatment
			Min	Rec	Min	Max	Min	Max		
Surface Drainage – Field Ditch										
0-2	Blueberries	C	4	10	10	24	50	150		Smooth
0-2	Cropland	C	4	10	10	24	60	125		Smooth
0-2	Turf-Vegetables	B	4	10	10	24	50	100		Smooth
This soil formed in sandy sediments containing low or moderate amounts of glauconite. The sediments were eroded and redeposited with a mixture of other materials. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-2	Blueberries	C	1.5	3	18		75	225		Smooth
0-2	Cropland	C	1.5	3	24		90	200		Smooth
0-2	Turf-Vegetables	B	1.5	3	24		75	125		Smooth
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-2	Blueberries	3/8			30	48	60	200	Check	Smooth
0-2	Cropland	3/8			30	48	60	175	Check	Smooth
0-2	Turf-Vegetables	3/4			30	48	50	125	Check	Smooth
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries and cropland.. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed. An iron cemented layer just below the plow layer may interfere with construction.										

Series: KEYPORT

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	45			Smooth
3+	Cropland-Pasture	C	4	10	10	24		200		
0-3	Turf-Vegetables	B	4	10	10	24	30			Smooth
3+	Turf-Vegetables	B	4	10	10	24		200		
This soil formed on clay beds which are thick marine deposits containing variable amounts of glauconite. Drainage problems: perched water table, seeps. Use land smoothing and shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		45			Smooth
3+	Cropland-Pasture	C	1.5	3	24			200		
0-3	Turf-Vegetables	B	1.5	3	24		30			Smooth
3+	Turf-Vegetables	B	1.5	3	24			200		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20			Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Subsurface drains can be used to intercept seeps.										

Series: KLEJ

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	75			
0-3	Turf-Vegetables	B	4	10	10	24	50			
This soil formed in old, coarse textured highly siliceous sediments. Drainage problems: seasonal high water table.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	24		150			
0-3	Turf-Vegetables	B	1	3	24		100			
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	120		Check	
0-3	Turf-Vegetables	3/4			30	48	100		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filters may be needed. Water level control should be considered.										

Series: KRESSON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	45			Smooth
3+	Cropland-Pasture	C	4	10	10	24		200		
0-3	Turf-Vegetables	B	4	10	10	24	30			Smooth
3+	Turf-Vegetables	B	4	10	10	24		200		
This soil formed in marine deposits containing large amounts of glauconite. Drainage problems: perched water table, seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		45			Smooth
3+	Cropland-Pasture	C	1.5	3	24			200		
0-3	Turf-Vegetables	B	1.5	3	24		30			Smooth
3+	Turf-Vegetables	B	1.5	3	24			200		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20			Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Use subsurface drains to intercept seeps.										

Series: LAKEHURST

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland	C	4	10	10	24	50			
0-3	Turf-Vegetables	B	4	10	10	24	35			
This soil formed in unconsolidated, very sandy, quartzose coastal plain sediments. Drainage problem: seasonal high water table.										
Surface Drainage – Main or Lateral										
0-3	Cropland	C	1	3	24		150			
0-3	Turf-Vegetables	B	1	3	24		125			
Subsurface Drain										
0-3	Cropland	3/8			30	48	120		Check	
0-3	Turf-Vegetables	3/4			30	48	100		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland.. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed. Water level control should be considered.										

Series: LAMINGTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland	C	4	10	10	24		75		
0-2	Turf-Vegetables	B	4	10	10	24		75		
This soil formed in old sediments derived from red and gray sandstone and shale. Drainage problems: perched water table, outlet. Use land smoothing and shallow ditches to provide surface drainage..										
Surface Drainage – Main or Lateral										
0-2	Cropland	C	1.5	3	12			150		
0-2	Turf-Vegetables	B	1.5	3	12			150		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-2	Cropland	3/8			30	48	Random			
0-2	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland.. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Subsurface drains are not recommended due to the slow permeability of the soil.										

Series: LAWRENCEVILLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	45			
3+	Cropland-Pasture	C	4	10	10	24		200		
0-3	Turf-Vegetables	B	4	10	10	24	30			
3+	Turf-Vegetables	B	4	10	10	24		200		
This soil formed in weathered shale. Drainage problems: perched water table, seeps. Use shallow surface ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	30	48	45			
3+	Cropland-Pasture	C	2	3	30	48		200		
0-3	Turf-Vegetables	B	2	3	30	48	30			
3+	Turf-Vegetables	B	2	3	30	48		200		
Ditches may be needed at the toe of slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20			Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Depth to fragipan ranges from 24 to 38 inches and is about 12 inches in thickness.										

Series: LEHIGH

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	100			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	100			Smooth
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in material weathered from shale and siltstone. Drainage problems: perched water table, seeps. Use shallow surface ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	30	36	200			Smooth
3+	Cropland-Pasture	C	1.5	3	30	36	Random			
0-3	Turf-Vegetables	B	1.5	3	30	36	200			Smooth
3+	Turf-Vegetables	B	1.5	3	30	36	Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	36	100			Smooth
3+	Cropland-Pasture	3/8			30	36	Random			
0-3	Turf-Vegetables	3/4			30	36	100			Smooth
3+	Turf-Vegetables	3/4			30	36	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Use subsurface drains to intercept seeps. In places, bedrock may interfere with installation of drain lines.										

Series: LENNI

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	75	150		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	50	100		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in clayey coastal plain sediments. Drainage problem: seasonal high water table. Use shallow ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		150			Smooth
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf	B	1.5	3	24		75	100		Smooth
3+	Turf	B	1.5	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	125			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	100			Smooth
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: LENOIR

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	45			Smooth
3+	Cropland-Pasture	C	4	10	10	24		200		
0-3	Turf-Vegetables	B	4	10	10	24	30			Smooth
3+	Turf-Vegetables	B	4	10	10	24		200		
This soil formed in stratified marine sediments of clayey texture. Drainage problems: seasonal high water table, seeps. Use shallow ditches and land smoothing to provide surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		50			Smooth
3+	Cropland-Pasture	C	1.5	3	24			200		
0-3	Turf-Vegetables	B	1.5	3	24		40			Smooth
3+	Turf-Vegetables	B	1.5	3	24			200		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20	100		Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Subsurface drainage is generally not recommended due to slow soil permeability.										

Series: LIVINGSTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24		75		Smooth
0-3	Turf	B	4	10	10	24		50		Smooth
This soil formed in calcareous estuarine or lacustrine clay deposits. Drainage problems: perched water table, outlet. Use smoothing and shallow ditches for surface drainage..										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	12			150		Smooth
0-3	Turf	B	2	3	12			120		Smooth
Land smoothing may be needed for surface drainage on flatter slopes. Use ditches to drain depressions.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	Random			Smooth
0-3	Turf	3/4			30	48	Random			Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Subsurface drains are not recommended due to slow permeability of the soil.										

Series: LYONS

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	Random			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	Random			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in calcarious glacial till derived from limestone, calcarious shale, and calcarious sandstone. Drainage problems: perched water table, seeps. Use shallow ditches to pick up seeps and depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		Random			Smooth
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf	B	1.5	3	24		Random			Smooth
3+	Turf	B	1.5	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30		Random			Smooth
3+	Cropland-Pasture	3/8			30		Random			
0-3	Turf	3/4			30		Random			Smooth
3+	Turf	3/4			30		Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Sinkholes are likely to form. Surface grading is important on fields with subsurface drains.										

Series: MANAHAWKIN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Blueberries	C	4	10	10	24	50	100		
0-2	Vegetables-Turf	B	4	10	10	24	35	75		
This soil was formed in the organic remains of vegetation in submerged valleys of the coastal Plain and basins once occupied by ponds and lakes. Drainage problems: high water table, outlet.										
Surface Drainage – Main or Lateral										
0-2	Blueberries	C	0.25	1	24		75	150		
0-2	Vegetables-Turf	B	0.25	1	24		50	100		
On-site investigations of shrinkage and permeability should be made when extensive drainage is involved.										
Subsurface Drain										
0-2	Blueberries	3/8			30	48	50	300		
0-2	Vegetables-Turf	3/4			30	48	35	200		
Coefficient = 1.00 cfs per 1000 feet of drain for all crops. Pumps may be needed where outlets are not available.										

Series: MARLTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	25			Smooth
3+	Cropland-Pasture	C	4	10	10	24		100		
0-3	Turf-Vegetables	B	4	10	10	24	20			Smooth
3+	Turf-Vegetables	B	4	10	10	24		100		
This soil formed in marine deposits that contain large amounts of glauconite. Drainage problems: seasonal high water table, perched water table, seeps. Use shallow ditches and land smoothing to provide surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		45			Smooth
3+	Cropland-Pasture	C	1.5	3	24			200		
0-3	Turf-Vegetables	B	1.5	3	24		30			Smooth
3+	Turf-Vegetables	B	1.5	3	24			200		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35			Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	30			Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables.										

Series: MATAWAN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland	C	4	10	10	24	25			Smooth
3+	Cropland	C	4	10	10	24		100		
0-3	Turf-Vegetables	B	4	10	10	24	20			Smooth
3+	Turf-Vegetables	B	4	10	10	24		100		
This soil formed in a mantle of sandy marine sediments over older, finer textured marine sediments. Drainage problem: seasonal and perched water table. Use shallow ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland	C	1.5	3	24		45			Smooth
3+	Cropland	C	1.5	3	18			200		
0-3	Turf-Vegetables	B	1.5	3	24		30			Smooth
3+	Turf-Vegetables	B	1.5	3	18			200		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland	3/8			30	48	35			Smooth
3+	Cropland	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48	20			Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables. Use subsurface drains to intercept seeps.										

Series: MATTAPEX

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	35	90		Smooth
2+	Cropland-Pasture	C	4	10	10	24	Random			
0-2	Turf-Vegetables	B	4	10	10	24	25	60		Smooth
2+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in a mantle of highly silty sediments over older coarser sediments of marine or alluvial origin. Drainage problem: seasonal high water table. Use land smoothing and shallow ditches for surface drainage.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	24		90			Smooth
2+	Cropland-Pasture	C	2	3	24		Random			
0-2	Turf-Vegetables	B	2	3	24		60			Smooth
2+	Turf-Vegetables	B	2	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Use ditches along toe of slopes to pick up seeps..										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	35	50		Smooth
2+	Cropland-Pasture	3/8			30	48	Random			
0-2	Turf-Vegetables	3/4			30	48				Smooth
2+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Use subsurface drains at toe of slopes to pick up seeps.										

Series: MIDDLEBURY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	75	150		
0-2	Turf	B	4	10	10	24	50	100		
This soil formed in post glacial alluvium predominately from areas of shale and sandstone. Drainage problems: high water table, flooding. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	24		100	200		
0-2	Turf	B	2	3	24		75	150		
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	60	175		
0-2	Turf	3/4			30	48	30	100		
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: MINOA

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	120			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	100			Smooth
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in lacustrine sediment along the edge of former glacial lakes. Drainage problems: seasonal high water table. Use shallow surface ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	24		140			Smooth
3+	Cropland-Pasture	C	2	3	24		Random			
0-3	Turf-Vegetables	B	2	3	24		120			Smooth
3+	Turf-Vegetables	B	2	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	175		Check	Smooth
3+	Cropland-Pasture	3/8			30	48	Random		Check	
0-3	Turf-Vegetables	3/4			30	48	100		Check	Smooth
3+	Turf-Vegetables	3/4			30	48	Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables.										

Series: MOUNT LUCAS

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24				
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24				
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in material weathered from dark igneous diabase and basalt bedrock. Drainage problems: high water table, seeps, very slow permeability. Use shallow surface ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	24					
3+	Cropland-Pasture	C	2	3	24		Random			
0-3	Turf-Vegetables	B	2	3	24					
3+	Turf-Vegetables	B	2	3	24		Random			
Use ditches at toe of slopes to pick up seeps.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48				Smooth
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48				Smooth
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Use subsurface drains to pick up seeps.										

Series: MULLICA

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-1	Blueberries	C	4	10	10	24	35	150		
0-1	Pasture	D	4	10	10	24	35	175		
0-1	Turf-Vegetables	B	4	10	10	24	35	150		
This soil formed in stratified coarse to medium textured marine or fluvial sediments. Drainage problems: high water table, outlet.										
Surface Drainage – Main or Lateral										
0-1	Blueberries	C	1.5	3	24		55	150		
0-1	Pasture	D	1.5	3	24		75	175		
0-1	Turf-Vegetables	B	1.5	3	24		45	100		
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-1	Blueberries	3/8			30	48	75	175		
0-1	Pasture	3/8			30	48	100	225		
0-1	Turf-Vegetables	3/4			30	48	40	100		
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Pumps may be needed if an outlet is not available.										

Series: NORWICH

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24		150		Smooth
0-2	Turf	B	4	10	10	24		150		Smooth
This soil formed in glacial till deposits high in reddish sandstone, siltstone and shale. Drainage problems: seasonal high water table, seeps, outlet.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1	3	12			150		Smooth
0-2	Turf	B	1	3	12			150		Smooth
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	Random			
0-2	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Outlet for drainage tubing is difficult to obtain.										

Series: OTHELLO

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	45			
0-3	Turf-Vegetables	B	4	10	10	24	30			
This soil formed in a mantle of highly silty sediments over older, coarser sediments of marine or alluvial origin. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	24		45			
0-3	Turf-Vegetables	B	2	3	24		30			
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	35			
0-3	Turf-Vegetables	3/4			30	48	20			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables.										

Series: PARSIPPANY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24		150		Smooth
0-3	Turf	B	4	10	10	24		150		Smooth
This soil formed in stratified sediment on the nearly level bottom of former glacial lakes. Drainage problems: seasonal perched water table, seeps. Use shallow ditches and land smoothing to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	12			150		Smooth
0-3	Turf	B	1.5	3	12			150		Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Outlet for drainage tubing is difficult to obtain. Subsurface drainage not recommended due to slow soil permeability.										

Series: PEMBERTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Blueberries	C	4	10	10	24	60	180		Smooth
0-3	Cropland-Pasture	C	4	10	10	24	60	180		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	50	150		Smooth
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in old alluvium from marine sediments that contained glauconite. Drainage problem: seasonal high water table. Use shallow field ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Blueberries	C	1	3	24		135			Smooth
0-3	Cropland-Pasture	C	1	3	24		180	220		Smooth
3+	Cropland-Pasture	C	1	3	18		Random			
0-3	Turf-Vegetables	B	1	3	24		135	150		Smooth
3+	Turf-Vegetables	B	1	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Blueberries	3/8			30		135		Check	Smooth
0-3	Cropland-Pasture	3/8			30		130	200	Check	Smooth
3+	Cropland-Pasture	3/8			30		Random		Check	
0-3	Turf-Vegetables	3/4			30		75	140	Check	Smooth
3+	Turf-Vegetables	3/4			30		Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries, cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filters may be needed.										

Series: PLUMMER

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-1	Blueberries	C	4	10	10	24	80	200		
0-1	Cropland	C	4	10	10	24	120	300		
0-1	Pasture	D	4	10	10	24	60	140		
0-1	Turf-Vegetables	B	4	10	10	24	50	120		
This soil formed in sandy and loamy sediments of marine terraces. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-1	Blueberries	C	1	3	24		200			
0-1	Cropland	C	1	3	24		300			
0-1	Pasture	D	1	3	24		140			
0-1	Turf-Vegetables	B	1	3	24		120			
Water level control is desirable for blueberries.										
Subsurface Drain										
0-1	Blueberries	3/8			30	48	190		Check	
0-1	Cropland	3/8			30	48	250	300	Check	
0-1	Pasture	3/8			30	48	125		Check	
0-1	Turf-Vegetables	3/4			30	48	70		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries, cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filters may be needed.										

Series: POMPTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	75			
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	50			
3+	Turf	B	4	10	10	24	Random			
This soil formed in glacial water sorted, sandy and gravelly materials dominated by granitic gneiss. Drainage problems: depressions, seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	24		100			
3+	Cropland-Pasture	C	1	3	24		Random			
0-3	Turf	B	1	3	24		75			
3+	Turf	B	1	3	24		Random			
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	75	300		
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	40	250		
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: PORTSMOUTH

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	45			Smooth
0-2	Turf-Vegetables	B	4	10	10	24	30			Smooth
This soil formed in a mantle of highly silty sediments over older, coarser sediments of marine or alluvial origin. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1.5	3	24		75	120		Smooth
0-2	Turf-Vegetables	B	1.5	3	24		50	75		Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	60	100		
0-2	Turf-Vegetables	3/4			30	48	30	60		
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables.										

Series: PREAKNESS

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	60			Smooth
0-2	Turf-Vegetables	B	4	10	10	24	50			Smooth
This soil formed in stratified coarse textured material. Drainage problem: high water table, outlet.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1	3	24		90	200		Smooth
0-2	Turf-Vegetables	B	1	3	24		75	150		Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	60	170	Check	
0-2	Turf-Vegetables	3/4			30	48	30	100	Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: RARITAN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	75			Smooth
2+	Cropland-Pasture	C	4	10	10	24	Random			
0-2	Turf-Vegetables	B	4	10	10	24	50			Smooth
2+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in sediments washed from red shale, siltstone, and sandstone uplands. Drainage problem: seasonal high water table. Use shallow field ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	24		90			Smooth
2+	Cropland-Pasture	C	2	3	18		Random			
0-2	Turf-Vegetables	B	2	3	24		60			Smooth
2+	Turf-Vegetables	B	2	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Use ditches along toe of slopes to pick up seeps..										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	40	165		Smooth
2+	Cropland-Pasture	3/8			30	48	Random			
0-2	Turf-Vegetables	3/4			30	48	40			Smooth
2+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables.										

Series: READINGTON

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	200			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	200			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in medium textured residuum largely from red shale, siltstone, and fine grained sandstone. Drainage problems: perched water table, seeps. Use shallow field ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	18		200			Smooth
3+	Cropland-Pasture	C	2	3	18		Random			
0-3	Turf	B	2	3	18		200			Smooth
3+	Turf	B	2	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Depth to fragipan ranges from 24 to 36 inches. Fragipan is about 20 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	200			
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	200			
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Pan restricts vertical drainage.										

Series: REAVILLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	200			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	200			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in residuum weathered from red shale and siltstone. Drainage problems: perched water table, seeps, shallow to bedrock. Use shallow ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	18		200			Smooth
3+	Cropland-Pasture	C	1	3	18		Random			
0-3	Turf	B	1	3	18		200			Smooth
3+	Turf	B	1	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	200			
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	200			
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: RIDGEBURY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	30	60		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	25	50		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in glacial till derived mainly from granite. Drainage problem: perched water table. Use shallow ditches to pick up seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	24		75	150		Smooth
3+	Cropland-Pasture	C	2	3	24		Random			
0-3	Turf	B	2	3	24		50	100		Smooth
3+	Turf	B	2	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes. The depth to the fragipan is about 16 inches. Fragipan is about 10 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	30	60		
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	20	40		
3+	Turf	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Dense pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps.										

Series: ROWLAND

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	30	100		Smooth
0-2	Turf	B	4	10	10	24	25	75		Smooth
This soil formed in mixed alluvium derived from red shales and sandstone washed from uplands. Drainage problems: high water table, flooding. Use land smoothing and shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	18		75	150		Smooth
0-2	Turf	B	2	3	18		50	100		Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	50	100		Smooth
0-2	Turf	3/4			30	48	40	60		Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Outlet for drainage tubing is difficult to obtain.										

Series: SHREWSBURY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Blueberries	C	4	10	10	24	50	150		Smooth
0-2	Cropland-Pasture	C	4	10	10	24	60	120		Smooth
0-2	Turf-Vegetables	B	4	10	10	24	50	100		Smooth
This soil formed in redeposited sediments containing glauconite. Drainage problem: high water table. Surface drainage is important.										
Surface Drainage – Main or Lateral										
0-2	Blueberries	C	1.5	3	18		75	200		Smooth
0-2	Cropland-Pasture	C	1.5	3	24		90	175		Smooth
0-2	Turf-Vegetables	B	1.5	3	24		75	120		Smooth
Land smoothing may be needed for surface drainage. Water table varies between 1 and 4 feet.										
Subsurface Drain										
0-2	Blueberries	3/8			30	48	60	175	Check	
0-2	Cropland-Pasture	3/8			30	48	60	150	Check	
0-2	Turf-Vegetables	3/4			30	48	50	100	Check	
Coefficient = 0.10 cfs per 1000 feet of drain for blueberries, cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: TIMAKWA

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Vegetables-Turf	B	4	10	10	24		100		
This soil was formed in material deposited in extinct lake basins found in outwash plains or lake plains. Typically, this soil is 16 to 50 inches of muck over gray sand. Drainage problems: high water table, subsidence, outlet.										
Surface Drainage – Main or Lateral										
0-2	Vegetables-Turf	B	0.25	3	24	36	150	200		
Precautions need to be taken when ditch bottom extends into the sand subsoil as the sand will flow into the ditch causing the sides to slough creating maintenance problems.										
Subsurface Drain										
0-2	Vegetables-Turf	3/4			36	48	100	200	Check	
Coefficient = 1.00 cfs per 1000 feet of drain for vegetables or turf. In deep muck, drain tubing should not be used until 3 years after initial drainage. Pumps may be needed where outlet is not available. When tubing is placed in the fine sand subsoil, a filter is needed.										

Series: TURBOTVILLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24				
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24				
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in glacial till or marine deposits derived mainly from granitic material. Drainage problems: perched water table, seeps. Shallow field ditches may be needed..										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	2	3	24					
3+	Cropland-Pasture	C	2	3	24		Random			
0-3	Turf-Vegetables	B	2	3	24					
3+	Turf-Vegetables	B	2	3	24		Random			
Depth to fragipan ranges from 20 to 30 inches which is about 18 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48				
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf-Vegetables	3/4			30	48				
3+	Turf-Vegetables	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Dense pan restricts vertical drainage. Subsurface drains are generally too slow to be effective, unless used to intercept seeps.										

Series: VENANGO

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	100			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	80			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in glacial till material weathered from shale, sandstone and slate. Drainage problems: perched water table, seeps. Use shallow field ditches to pick up seeps.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1	3	20		200			Smooth
3+	Cropland-Pasture	C	1	3	20		Random			
0-3	Turf	B	1	3	20		180			Smooth
3+	Turf	B	1	3	20		Random			
Land smoothing may be needed for surface drainage on flatter slopes. Depth to fragipan ranges from 12 to 25 inches. Fragipan is about 25 inches in thickness.										
Subsurface Drain										
	Cropland-Pasture	3/8			30	48	Random			Smooth
	Turf	3/4			30	48	Random			Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps.										

Series: WALLKILL

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24				Smooth
0-2	Turf-Vegetables	B	4	10	10	24				Smooth
This soil formed in alluvium overlaying organic soil material. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	2	3	18	48				Smooth
0-2	Turf-Vegetables	B	2	3	18	48				Smooth
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48				Smooth
0-2	Turf-Vegetables	3/4			30	48				Smooth
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables.										

Series: WATCHUNG

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24		150		Smooth
0-2	Turf	B	4	10	10	24		100		Smooth
This soil formed in material weathered from dark gray or black igneous rock. Drainage problems: seasonal high water table, flooding. Use shallow field ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1.5	3	12			150		Smooth
0-2	Turf	B	1.5	3	12			100		Smooth
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48		Random		
0-2	Turf	3/4			30	48		Random		
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf. Outlet for drainage tubing is difficult to obtain. Use subsurface drain to pick up seeps.										

Series: WAYLAND

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Cropland-Pasture	C	4	10	10	24	Random			Smooth
0-2	Turf	B	4	10	10	24	Random			Smooth
This soil formed in recent alluvium that was derived mostly from limestone. Drainage problems: perched water table, flooding. Use shallow field ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-2	Cropland-Pasture	C	1.5	3	24		Random			Smooth
0-2	Turf	B	1.5	3	24		Random			Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-2	Cropland-Pasture	3/8			30	48	Random			Smooth
0-2	Turf	3/4			30	48	Random			Smooth
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf.										

Series: WEEKSVILLE

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-2	Blueberries	C	4	10	10	24	45			Smooth
0-2	Cropland-Pasture	C	4	10	10	24	45			Smooth
0-2	Turf-Vegetables	B	4	10	10	24	30			Smooth
This soil formed in very fine sediments of marine origin. Drainage problem: high water table.										
Surface Drainage – Main or Lateral										
0-2	Blueberries	C	1	3	18		50			Smooth
0-2	Cropland-Pasture	C	1	3	18		50			Smooth
0-2	Turf-Vegetables	B	1	3	18		45			Smooth
Land smoothing may be needed for surface drainage.										
Subsurface Drain										
0-2	Blueberries	3/8			30	48	55	200	Req'd	Smooth
0-2	Cropland-Pasture	3/8			30	48	50	175	Req'd	Smooth
0-2	Turf-Vegetables	3/4			30	48	30	100	Req'd	Smooth
Coefficient = 0.08 cfs per 1000 feet of drain for blueberries, cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf and vegetables.										

Series: WHIPPANY

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	200			Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	200			Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in thick deposits of lacustrine sediment derived from red and brown shale and sandstone, basalt and granite. Drainage problems: perched water table, seeps, shallow to bedrock. Use shallow ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		200			Smooth
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf	B	1.5	3	24		200			Smooth
3+	Turf	B	1.5	3	24		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	Random			
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	Random			
3+	Turf	3/4			30	48	Random			
Coefficient = 0.08 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.10 cfs per 1000 feet of drain for turf.										

Series: WHITMAN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	25	50		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	20	45		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in glacial till derived mostly from granite, gneiss, and schist. Drainage problems: seasonal perched water table, seeps. Use shallow ditches to pick up seeps and drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		25	75		Smooth
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf	B	1.5	3	24		20	60		Smooth
3+	Turf	B	1.5	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	20	60		
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	15	40		
3+	Turf	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Use subsurface drains to intercept seeps.										

Series: WOODSTOWN

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	60	180		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf-Vegetables	B	4	10	10	24	50	150		Smooth
3+	Turf-Vegetables	B	4	10	10	24	Random			
This soil formed in sandy marine and older alluvial sediments. Drainage problem: seasonal high water table. Use shallow field ditches and land smoothing for surface drainage.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		150	300		Smooth
3+	Cropland-Pasture	C	1.5	3	24		Random			
0-3	Turf-Vegetables	B	1.5	3	24		100	200		Smooth
3+	Turf-Vegetables	B	1.5	3	24		Random			
Surface drainage is important.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	75	175	Check	Smooth
3+	Cropland-Pasture	3/8			30	48	Random		Check	
0-3	Turf-Vegetables	3/4			30	48	50	100	Check	Smooth
3+	Turf-Vegetables	3/4			30	48	Random		Check	
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf and vegetables. Filter may be needed.										

Series: WURTSBORO

Average Land Slope	Crop or Landuse	Drain Coef.	Side Slope Min	Side Slope Rec	Depth Inches Min	Depth Inches Max	Spacing Feet Min	Spacing Feet Max	Filter	Surface Treatment
Surface Drainage – Field Ditch										
0-3	Cropland-Pasture	C	4	10	10	24	25	50		Smooth
3+	Cropland-Pasture	C	4	10	10	24	Random			
0-3	Turf	B	4	10	10	24	25	40		Smooth
3+	Turf	B	4	10	10	24	Random			
This soil formed in a medium of coarse textured glacial till derived from quartzite, conglomerate, and sandstone. Drainage problems: perched water table, seeps. Use shallow ditches to drain depressions.										
Surface Drainage – Main or Lateral										
0-3	Cropland-Pasture	C	1.5	3	24		30	50		Smooth
3+	Cropland-Pasture	C	1.5	3	18		Random			
0-3	Turf	B	1.5	3	24		20	35		Smooth
3+	Turf	B	1.5	3	18		Random			
Land smoothing may be needed for surface drainage on flatter slopes. The depth to the fragipan varied from 17 to 28 inches. Fragipan varies from 12 to 30 inches in thickness.										
Subsurface Drain										
0-3	Cropland-Pasture	3/8			30	48	25	45		
3+	Cropland-Pasture	3/8			30	48	Random			
0-3	Turf	3/4			30	48	20	35		
3+	Turf	3/4			30	48	Random			
Coefficient = 0.10 cfs per 1000 feet of drain for cropland and pasture. Coefficient = 0.15 cfs per 1000 feet of drain for turf. Dense pan restricts vertical drainage. Subsurface drains are generally too slow to be effective unless used to intercept seeps.										