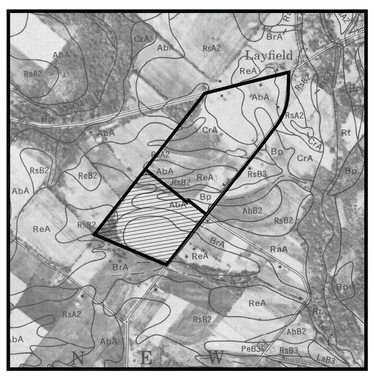
TABLE 7. – INTERPRETATIONS OF ENGINEERING PROPERTIES OF SOILS

SOILS SERIES AND MAP SYMBOL	SUITABILITY OF MATERIAL FOR---				SOIL FEATURES THAT AFFECT ENGINEERING PRACTIES						
	WINTER GRADING	SAND AND GRAVEL	WINTER GRADING	SAND AND GRAVEL	HIGHWAY LOCATION	CONSTRUCTION AND MAINTENANCE OF PIPELINES	PONDS	PONDS, DIKES, AND LEVEES	TERRACES, DIVERSIONS, AND WATERWAYS	AGRICULTURAL DRAINAGE	IRRIGATION
							RESERVOIR AREA	EMBANKMENTS *			
ABBOTTSTOWN (AbA, AbB2)	POOR_____	POOR_____	FAIR_____	FAIR_____	SEASONAL HIGH WATER TABLE; SUSCEPTIBLE TO FROST ACTION; SEEPS.	SEASONAL HIGH WATER TABLE_____	SLOW PERMEABILITY_____	IMPERMEABLE BUT LACKS STABILITY; USE FOR CORE.	SEEPS_____	SLOW PERMEABILITY; SEEPS; FRAGIPAN; SEASONAL HIGH WATER TABLE.	MODERATE AVAILABLE MOISTURE CAPACITY; SLOW PERMEABILITY; SHALLOW TO FRAGIPAN.
BOWMANSVILLE SILT LOAM (Bo)	POOR_____	POOR_____	POOR_____	POOR_____	SUBJECT TO FREQUENT FLOODING; HIGH WATER TABLE.	FLUCTUATING HIGH WATER TABLE; FLOODING.	MODERATE PERMEABILITY; HIGH WATER TABLE; VARIABLE RATE OF SEEPAGE.	IMPERMEABLE BUT LACKS STABILITY; USE FOR CORE.	GENERALLY NOT NEEDED, BECAUSE OF NEARLY LEVEL TOPOGRAPHY; HIGH WATER TABLE; FLOODING.	SEASONAL HIGH WATER TABLE AT OR ABOVE THE SURFACE; MODERATE PERMEABILITY; LACK OF SUITABLE OUTLETS.	MODERATE AVAILABLE WATER CAPACITY; MODERATE PERMEABILITY; SEASONAL HIGH WATER TABLE AT OR ABOVE THE SURFACE; SLOW SURFACE DRAINAGE.
BOWMANSVILLE SILT LOAM, LOCAL ALLUVIUM (BrA, Br6)	POOR_____	POOR_____	POOR_____	GOOD_____	HIGH WATER TABLE; LOCAL FLOODING.	FLUCTUATING HIGH WATER TABLE.	MODERATE PERMEABILITY_____	UPPER LAYERS PERMEABLE; LACKS STABILITY.	SEEPS; HIGH WATER TABLE; LOCAL FLOODING AND PONDING.	MODERATE PERMEABILITY; SEEPS; HIGH WATER TABLE.	MODERATE TO HIGH AVAILABLE WATER CAPACITY; MODERATE PERMEABILITY; HIGH WATER TABLE.
RARITAN (RaA, RaB2)	POOR_____	FAIR_____	GOOD_____	FAIR_____	SEASONAL HIGH WATER TABLE; SEEPS.	FLUCTUATING WATER TABLE_____	SLOW PERMEABILITY; VARIABLE RATE OF SEEPAGE.	IMPERMEABLE; VARIABLE STABILITY; USE OF CORE.	NO LIMITING FACTORS_____	SLOW PERMEABILITY; SEASONAL HIGH WATER TABLE.	MODERATE AVAILABLE WATER CAPACITY; SLOW PERMEABILITY.
READINGTON (ReA, ReB2, ReC2)	POOR_____	POOR_____	FAIR_____	FAIR_____	BEDROCK AT A DEPTH OF 3 TO 5 FEET; SEASONAL HIGH WATER TABLE WITHIN 2 TO 3 FEET OF THE SURFACE; SEEPS.	SEASONAL HIGH WATER TABLE_____	MODERATELY SLOW PERMEABILITY; BEDROCK AT A DEPTH OF 3 TO 5 FEET; VARIABLE RATE OF SEEPAGE.	VARIABLE STABILITY; USE OF CORE.	NO LIMITING FACTORS_____	MODERATELY SLOW PERMEABILITY; SEASONAL MODERATELY HIGH WATER TABLE.	MODERATE AVAILABLE WATER CAPACITY; MODERATELY SLOW PERMEABILITY.
READVILE (RsA2, RsB2, RsB3, RsC3)	POOR_____	POOR_____	FAIR_____	POOR_____	BEDROCK AT A DEPTH OF 1 TO 3 FEET; SEASONAL HIGH WATER TABLE; SEEPS.	BEDROCK AT A DEPTH OF 1 TO 3 FEET; FLUCUATING WATER TABLE.	SLOW PERMEABILITY; BEDROCK AT A DEPTH OF 1 TO 3 FEET.	CONTAINS MANY COARSE FRAGMENTS, SOME LARGER THAN 6 INCHES IN DIAMETER.	BEDROCK AT A DEPTH OF 1 TO 3 FEET; SLOW PERMEABILITY; LOW AVAILABLE WATER CAPACITY; DIFFICULT TO ESTABLISH VEGETATION.	BEDROCK AT A DEPTH OF 1 TO 3 FEET; VERY SLOW PERMEABILITY; SEASONAL HIGH WATER TABLE.	SLOW PERMEABILITY; LOW AVAILABLE WATER CAPACITY; SHALLOW TO UNDERLYING MATERIAL.

TABLE 8. – MAJOR SOIL PROPERTIES AND ESTIMATED DEGREE OF LIMITATION THAT INFLUENCE USE OF THE SOILS FOR COMMUNITY DEVELOPMENTS

MAP SYMBOL	SOIL	COMMUNITY DEVELOPMENT GROUP	ESTIMATED DEGREE OF LIMITATION FOR---										
			RESIDENTIAL DEVELOPMENTS OF THREE STORIES OR LESS (DISPOSAL OF SEPTIC TANK EFFLUENT NOT CONSIDERED)	LIGHT INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL DEVELOPMENT OF THREE STORIES OR LESS	SEWAGE LAGOONS	ON-SITE DISPOSAL OF EFFLUENT FROM SEPTIC TANKS	LANDSCAPING AND LAWNS AT HOMESITES	ROADS AND PARKING LOTS FOR SUBDIVISIONS	INTENSIVELY USED ATHLETIC FIELDS	EXTENSIVELY USED PLAY AREAS	SANITARY LAND FILL WHERE TRENCH METHOD IS USED	CEMETERIES
AbA	ABBOTTSTOWN SILT LOAM, 0 TO 3 PERCENT SLOPES.	11	SEVERE; SEASONAL HIGH WATER TABLE.	SEVERE; SEASONAL HIGH WATER TABLE.	SLIGHT_____	SEVERE; SLOW PERMEABILITY; SEASONAL HIGH WATER TABLE.	MODERATE; WETNESS_____	MODERATE; WETNESS_____	SEVERE; WETNESS_____	MODERATE; WETNESS_____	SEVERE; WETNESS_____	SEVERE; WETNESS.
Bp	BOWMANSVILLE SILT LOAM_____	12	SEVERE; FLOODING AND HIGH WATER TABLE.	SEVERE; FLOODING; HIGH WATER TABLE.	SEVERE; FLOODING_____	SEVERE; FLOODING; HIGH WATER TABLE.	SEVERE; HIGH WATER TABLE.	SEVERE; WETNESS; FLOODING.	SEVERE; WETNESS; FLOODING.	SEVERE; WETNESS; FLOODING.	SEVERE; WETNESS; FLOODING.	SEVERE; WETNESS; FLOODING.
BrA	BOWMANSVILLE SILT LOAM, LOCAL ALLUVIUM, 0 TO 3 PERCENT SLOPES.	12	SEVERE; HIGH WATER TABLE AND PONDING.	SEVERE; HIGH WATER TABLE AND PONDING.	SEVERE; LOCAL FLOODING_____	SEVERE; HIGH WATER TABLE AND PONDING.	SEVERE; WETNESS_____	SEVERE; WETNESS_____	SEVERE; WETNESS_____	SEVERE; WETNESS_____	SEVERE; HIGH WATER TABLE.	SEVERE; HIGH WATER TABLE.
RaA	RARITAN SILT LOAM, 0 TO 3 PERCENT SLOPES.	9	MODERATE; SEASONAL HIGH WATER TABLE.	MODERATE; SEASONAL HIGH WATER TABLE.	SLIGHT_____	SEVERE; SLOW PERMEABILITY; SEASONAL HIGH WATER TABLE.	SLIGHT_____	MODERATE; SEASONAL HIGH WATER TABLE.	MODERATE; SEASONAL HIGH WATER TABLE.	SLIGHT_____	SEVERE; SEASONAL HIGH WATER TABLE.	SEVERE; SEASONAL HIGH WATER TABLE.
ReA	READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES.	9	MODERATE; SEASONAL HIGH WATER TABLE.	MODERATE; SEASONAL HIGH WATER TABLE.	SLIGHT_____	SEVERE; MODERATELY SLOW PERMEABILITY; SEASONAL HIGH WATER TABLE.	SLIGHT_____	MODERATE; SEASONAL HIGH WATER TABLE.	MODERATE; SEASONAL HIGH WATER TABLE.	SLIGHT_____	SEVERE; SEASONAL HIGH WATER TABLE.	SEVERE; SEASONAL HIGH WATER TABLE.
RsA2	REAVILLE SHALY SILT LOAM, 0 TO 3 PERCENT SLOPES, MODERATELY ERODED.	9	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK.	SEVERE; SLOW PERMEABILITY; SHALLOW TO BEDROCK.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	MODERATE; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	MODERATE; SHALLOW TO BEDROCK.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.
RsB2	REAVILLE SHALY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED.	9	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SLOPE.	SEVERE; SLOW PERMEABILITY; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	MODERATE; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	MODERATE; SHALLOW TO BEDROCK.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.	SEVERE; SHALLOW TO BEDROCK; SEASONAL HIGH WATER TABLE.



SOIL MAP
1"=1,000'
500' 0 1,000'

NOTES:

1. SHOULD GROUNDWATER BE ENCOUNTERED DURING FOUNDATION OR UTILITY EXCAVATIONS, WATER SHALL BE PUMPED FROM TRENCH INTO FILTER BAG.

2. DUE TO GRADING LIMITATIONS OF SOILS DURING WINTER MONTHS, THE CONTRACTOR SHALL NOT GRADE THESE SOILS DURING FROSTING OR ICING CONDITIONS.

3. SHOULD BEDROCK BE ENCOUNTERED DURING FOUNDATION OR UTILITY EXCAVATION, ROCK SHALL BE REMOVED AND DISPOSED OF IN A LEGAL MANNER.

REAVILLE SHALY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED (RsB2). – THIS SOIL IS MORE SLOPING THAN THE SOIL FOR WHICH A PROFILE IS DESCRIBED AS TYPICAL FOR THE SERIES. ALSO, IN MANY PLACES IT HAS A THINNER SUBSOIL THAT IS DISTINCTLY MOTTLED WITH GRAY IN THE LOWER 1 TO 3 INCHES, JUST OVER THE SUBSTRATUM. THIS SOIL IS ON UNDULATING AND ROLLING UPLANDS SCATTERED THROUGHOUT THE NORTHERN TWO-THIRDS OF THE COUNTY.

A LAYER OF LEAVES AND ORGANIC MATTER COVERS THE SURFACE IN WOODED AREAS. IT IS UNDERLAIN BY A LAYER OF VERY DARK REDDISH-BROWN SILT LOAM, 1 TO 2 INCHES THICK. BENEATH THIS LAYER IS A LAYER OF FRIABLE, REDDISH-BROWN SHALY SILT LOAM ABOUT 4 INCHES THICK. IN A FEW PLACES, BEDROCK IS AS DEEP AS 3 TO 5 FEET. THE SUBSOIL IN A FEW AREAS IS 10 TO 15 INCHES THICK, CONTAINS ONLY A FEW PIECES OF SHALE, AND IS PROMINENTLY MOTTLED WITH GRAY THROUGHOUT.

INCLUDED WITH THIS SOIL IN MAPPING ARE AREAS IN WHICH THE SURFACE LAYER IS LESS SHALY THAN TYPICAL, HAS A DARK REDDISH-BROWN COLOR, AND IS AS MUCH AS 1 FOOT THICK. ALSO INCLUDED ARE AREAS UNDERLAIN BY A THICK, VERY FIRM, VERY SHALY SUBSTRATUM AT A DEPTH OF 6 TO 20 INCHES.

PERMEABILITY IS SLOW, AND THE WATER TABLE IS AT THE SURFACE OR WITHIN A FOOT OF THE SURFACE IN WINTER AND EARLY IN SPRING. THE SOIL IS TOO WET EARLY IN SPRING TO BE WORKED WITH THE ADJACENT WELL-DRAINED SOILS. IT DRIES RAPIDLY, HOWEVER, AND BY MAY IT IS OFTEN TOO DRY FOR PROPER PREPARATION OF A SEEDBED. IN MOST YEARS CROP YIELDS ARE REDUCED BY LACK OF MOISTURE. SPRINGS AND SEEPS REMAIN WET WELL INTO THE GROWING SEASON. THE AVAILABLE MOISTURE CAPACITY IS MODERATE TO LOW. SURFACE RUNOFF IS MEDIUM TO RAPID, AND THE HAZARD OF EROSION IS MODERATE TO SEVERE.

THIS SOIL IS USED FOR THE COMMONLY GROWN FIELD CROPS, HAY, AND PASTURE. ALSO, PART OF THE ACREAGE IS IN GRASS, TREES, WEEDS, AND BRUSH WITHIN PARKS, GOLF COURSES, AND ESTATES, AND IN AREAS SURROUNDING DEVELOPMENTS. THIS SOIL IS WELL SUITED TO HAY AND PASTURE CONSISTING OF GRASSES AND LEGUMES THAT RESISTS DROUGHT AND THAT ALSO TOLERATE WETNESS. IT IS FAIRLY WELL SUITED TO BIRDSFOOT TREFOIL, RED CANARYGRASS, AND TALL FESCUE. THIS SOIL IS FAIR TO POOR FOR CORN AND SPRING-SOWN SMALL GRAINS. GENERALLY, BECAUSE OF EXCESSIVE WINTERKILL, IT IS POORLY SUITED TO ALFALFA AND WINTER SMALL GRAINS.

IF THIS SOIL IS INCLUDED IN A REGULAR CROPPING SYSTEM, FIELD OR CONTOUR STRIPCROPPING IS NEEDED AND THE CROPPING SYSTEM OUGHT TO BE NO MORE INTENSIVE THAN 1 YEAR OF A ROW CROP, 1 YEAR OF A SPRING-SOWN SMALL GRAIN, AND AT LEAST 3 YEARS OF GRASS-LEGUME HAY. IN WINTER THE SOIL NEEDS TO BE PROTECTED BY A COVER CROP, AND CROP RESIDUE SHOULD BE INCORPORATED INTO IT. IN MOST PLACES TILE DRAINS ARE NOT FEASIBLE, BECAUSE BEDROCK IS TOO NEAR THE SURFACE.

BEDROCK NEAR THE SURFACE AND THE HIGH CONTENT OF SHALE, HIGH WATER TABLE, AND SLOW PERMEABILITY ARE SEVERE HAZARDS IF THIS SOIL IS USED FOR RESIDENTIAL, LIGHT INDUSTRIAL, COMMERCIAL, OR INSTITUTIONAL DEVELOPMENTS. ALSO, PROBLEMS CAN BE EXPECTED IF THIS SOIL IS USED AS A DISPOSAL FIELD FOR THE EFFLUENT FROM SEPTIC TANKS. (CAPABILITY UNIT IIIW-5, WOODLAND SUITABILITY GROUP 10, COMMUNITY DEVELOPMENT GROUP 9)

REAVILLE SHALY SILT LOAM, 0 TO 3 PERCENT SLOPES, MODERATELY ERODED (RsA2). – THIS SOIL IS ON FLATS AND IN DEPRESSIONS ON UNDULATING AND ROLLING UPLANDS IN THE NORTHERN TWO-THIRDS OF THE COUNTY. IN MOST PLACES ITS PROFILE IS THE ONE DESCRIBED AS TYPICAL FOR THE SERIES. IN A FEW PLACES, HOWEVER, THE SUBSOIL IS 10 TO 15 INCHES THICK AND HAS PROMINENT GRAY MOTTLES 12 TO 18 INCHES BENEATH THE SURFACE.

IN WOODED AREAS A LITTER OF LEAVES AND ORGANIC MATTER COVERS THE SURFACE AND IS UNDERLAIN BY A LAYER OF VERY DARK REDDISH-BROWN SILT LOAM, 1 TO 2 INCHES THICK. BENEATH THE LAYER OF VERY DARK REDDISH-BROWN SHALY SILT LOAM 6 TO 8 INCHES THICK.

INCLUDED WITH THIS SOIL IN MAPPING ARE AREAS IN WHICH THE SURFACE LAYER IS DARK REDDISH BROWN AND IS AS MUCH AS 1 FOOT THICK. ALSO INCLUDED ARE AREAS WHERE A THICK, VERY FIRM, VERY SHALY SUBSTRATUM IS AT A DEPTH BETWEEN 6 AND 20 INCHES AND BEDROCK IS AT A DEPTH OF 3 TO 5 FEET.

THIS SOIL IS SLOWLY PERMEABLE AND HAS A HIGH WATER TABLE. THE WATER TABLE IS AT THE SURFACE OR WITHIN A FOOT OF THE SURFACE LATE IN FALL, IN WINTER, AND EARLY IN SPRING. SURFACE DRAINAGE IS SLOW, AND THE HAZARD OF EROSION IS SLIGHT. THIS SOIL IS TOO WET EARLY IN SPRING TO BE WORKED WITH THE ADJACENT WELL-DRAINED SOILS. IT DRIES VERY RAPIDLY, HOWEVER, AND CROP YIELDS ARE REDUCED IN MOST YEARS BY LACK OF AVAILABLE MOISTURE. THE AREAS NEAR SPRINGS AND SEEPS REMAIN WET UNTIL EARLY IN SUMMER, AND THE EXCESS MOISTURE HINDERS TILLAGE. THE AVAILABLE MOISTURE CAPACITY IS MODERATE TO LOW.

THIS SOIL IS USED FOR THE COMMONLY GROWN FIELD CROPS AND FOR HAY AND PASTURE. ALSO, PART OF THE ACREAGE IS IN GRASS, WEEDS, AND BRUSH AND IS IN ESTATES AND IN AREAS SURROUNDING DEVELOPMENTS. THIS SOIL IS WELL SUITED TO HAY AND PASTURE CONSISTING OF GRASSES AND LEGUMES THAT ARE DROUGHT RESISTANT AND THAT TOLERATE WETNESS. IT IS FAIR TO POOR FOR CORN, SOYBEANS, AND SPRING-SOWN SMALL GRAINS. BECAUSE OF EXCESSIVE WINTERKILL, THE SOIL IS GENERALLY POORLY SUITED TO WINTER SMALL GRAINS AND ALFALFA.

IF THIS SOIL IS INCLUDED IN A REGULAR CROPPING SYSTEM, THE CROP NEEDS TO BE PLANTED IN GRADED ROWS. A SATISFACTORY CROPPING SYSTEM CONSISTS OF 1 YEAR OF A ROW CROP, 1 YEAR OF A SPRING-SOWN SMALL GRAIN, AND AT LEAST 3 YEARS OF GRASS-LEGUME HAY OF ADAPTED VARIETIES. A COVER CROP OUGHT TO BE SEEDED IN THE ROW CROP TO PROVIDE PROTECTION OVER WINTER, AND CROP RESIDUE SHOULD BE INCORPORATED INTO THE SOILS. OPEN DRAINS HELP TO REMOVE THE SURPLUS WATER FROM LOW-LYING FLATS AND DEPRESSIONS. WETNESS CAUSED BY SPRINGS AND SEEPS CAN SOMETIMES BE REDUCED BY INSTALLING TILE DRAINS IF THE DEPTH TO BEDROCK IS ADEQUATE.

THE HIGH CONTENT OF SHALE, BEDROCK NEAR THE SURFACE, HIGH WATER TABLE, AND SLOW PERMEABILITY ARE SEVERE HAZARDS IF THIS SOIL IS USED FOR RESIDENTIAL, LIGHT INDUSTRIAL, COMMERCIAL, OR INSTITUTIONAL DEVELOPMENTS. THIS SOIL ALSO HAS SEVERE LIMITATIONS IF USED AS A DISPOSAL FIELD FOR THE EFFLUENT FROM SEPTIC TANKS. (CAPABILITY UNIT IIW-4, WOODLAND SUITABILITY GROUP 10, COMMUNITY DEVELOPMENT GROUP 9)

READINGTON SILT LOAM, 0 TO 3 PERCENT SLOPES (ReA). – THIS SOIL IS IN DEPRESSIONS AND ON FLATS ON SMOOTH OR UNDULATING UPLANDS. THE AREAS ARE LARGE AND SCATTERED AND OCCUR THROUGHOUT THE NORTHERN TWO-THIRDS OF THE COUNTY. THE PROFILE OF THIS SOIL IS THE ONE DESCRIBED AS TYPICAL FOR THE SERIES.

IN THE AREA EXTENDING FROM AUDUBON THROUGH NORRISTOWN AND AMBLER TO HATBORO, THIS SOIL IS BROWNER AND MORE SANDY THAN TYPICAL. FARTHER NORTH, IN A BROAD BAND THAT EXTENDS FROM MONT CLARE IN THE WEST TO PROSPECTVILLE IN THE EAST, THIS SOIL IS BROWNER AND MORE SHALY THAN TYPICAL.

IN THE AREAS OF THIS SOIL IN DEPRESSIONS, THE SURFACE LAYER IS AS MUCH AS 2 FEET THICK. IN WOODED AREAS LEAF LITTER ON THE SURFACE COVERS A LAYER OF VERY DARK BROWN SILT LOAM ABOUT 2 INCHES THICK. BENEATH THE VERY DARK BROWN SILT LOAM ABOUT 2 INCHES THICK. BENEATH THE VERY DARK BROWN SILT LOAM IS A LAYER OF FRIABLE, DARK-BROWN OR BROWN SILT LOAM, ABOUT 8 INCHES THICK.

INCLUDED WITH THIS SOIL IN MAPPING ARE AREAS WHERE EROSION HAS REMOVED AS MUCH AS THREE-FOURTHS OF THE ORIGINAL SURFACE LAYER. ALSO INCLUDED ARE A FEW AREAS WHERE THE SOIL IS FREE OF GRAY MOTTLING BUT CONTAINS BLACK CONCRETIONS AND HAS BLACK COATINGS ON THE SURFACE OF THE FRAGMENTS OF SHALE. IN SOME SMALL AREAS, GRAYISH STREAKS AND MOTTLES ARE WITHIN 15 INCHES OF THE SURFACE, ALTHOUGH MOTTLING IS BELOW A DEPTH OF 22 INCHES IN MOST PLACES.

PERMEABILITY IS MODERATELY RAPID IN THE SURFACE LAYER. IT IS MODERATELY SLOW BELOW A DEPTH OF 12 INCHES IN THE SUBSOIL. SURFACE DRAINAGE IS SLOW OR VERY SLOW, AND THE WATER TABLE IS WITHIN 18 INCHES OF THE SURFACE LATE IN FALL, IN WINTER, AND EARLY IN SPRING. THIS SOIL IS SLOW TO DRY OUT IN SPRING, BUT A SEEDBED CAN BE PREPARED IN MOST YEARS IN TIME FOR PLANTING CORN. SOME AREAS IN DEPRESSIONS AND IN SEEPAGE SPOTS, HOWEVER, REMAIN WET WELL INTO THE GROWING SEASON. THE AVAILABLE MOISTURE CAPACITY IS HIGH, BUT ROOTS RARELY REACH ALL OF THE MOISTURE AVAILABLE BECAUSE OF THEIR RESTRICTED GROWTH IN THE VERY FIRM SUBSOIL. THE HAZARD OF EROSION IS SLIGHT.

THIS SOIL IS USED FOR THE COMMONLY GROWN FIELD CROPS, FRUIT, VEGETABLES, HAY, AND PASTURE. ALSO, A FEW AREAS ARE IN GOLF COURSES AND ESTATES AND SURROUNDING INSTITUTIONS AND RESIDENTIAL AND INDUSTRIAL DEVELOPMENTS. THIS SOIL IS WELL SUITED TO CORN, SOYBEANS, VEGETABLES PLANTED LATE IN SPRING, SPRING-SOWN SMALL GRAINS, LADINO CLOVER, AND ORCHARDGRASS. THE HIGH WATER TABLE AND FROST HEAVING MAKE ALFALFA, WINTER GRAINS, AND FRUIT SUBJECT TO SOME WINTER DAMAGE. GRADED ROWS AND CROSS-SLOPE CULTIVATION AREA NEEDED. A SUITABLE CROPPING SYSTEM IS NO MORE INTENSIVE THAN 1 YEAR OF A ROW CROP AND A COVER CROP, 1 YEAR OF A SPRING-SOWN SMALL GRAIN, AND 1 YEAR OF GRASS LEGUME HAY. ROW CROPS CAN BE GROWN FOR 2 OR 3 YEARS IN SUCCESSION IF THEY ARE PLANTED IN GRADED ROWS AND IF CROSS-SLOPE CULTIVATION IS PRACTICED.

THE SOIL NEEDS TO BE PROTECTED BY A COVER CROP OVER WINTER, AND CROP RESIDUE OUGHT TO BE INCORPORATED INTO IT. TILE DRAINS HELP TO RELIEVE WETNESS IN THE DEPRESSIONS AND SEEPAGE AREAS. OPEN DRAINS ALSO HELP TO REMOVE THE EXCESS SURFACE WATER FROM THE DEPRESSIONS.

THIS SOIL HAS MODERATE LIMITATIONS FOR RESIDENTIAL, LIGHT INDUSTRIAL, INSTITUTIONAL, AND COMMERCIAL DEVELOPMENTS. IT HAS SEVERE LIMITATIONS FOR USE AS A DISPOSAL FIELD FOR THE EFFLUENT FROM SEPTIC TANKS. THE SEASONAL HIGH WATER TABLE, MODERATELY SLOW PERMEABILITY, AND SLOW SURFACE DRAINAGE ARE HAZARDS TO BE CONSIDERED IF A DEVELOPMENT IS PLANNED. (CAPABILITY UNIT IIW-2, WOODLAND SUITABILITY GROUP 6, COMMUNITY DEVELOPMENT GROUP 9)

ABBOTTSTOWN SILT LOAM, 0 TO 3 PERCENT SLOPES, MODERATELY ERODED (AbA). – THIS SOIL IS ON LOW-LYING FLATS AND IN DEPRESSIONS SCATTERED THROUGHOUT THE NORTHERN TWO-THIRDS OF THE COUNTY. IN MOST PLACES IT HAS A PROFILE LIKE THE ONE DESCRIBED AS TYPICAL FOR THE SERIES.

IN SOME AREAS OF THIS SOIL IN THE CENTRAL PART OF THE COUNTY, THE UPPER PART OF THE SUBSOIL IS VERY SILTY, IS YELLOWISH BROWN AND GRAY, AND IS ALMOST FREE OF SHALE. THE SUBSOIL IN THOSE AREAS IS SHALY AT A DEPTH OF 24 TO 30 INCHES, AND IT CONTAINS MORE CLAY THAN THE SOIL MATERIAL AT A COMPARABLE DEPTH IN THE PROFILE DESCRIBED AS TYPICAL FOR THE SERIES. IN THE SOUTH-CENTRAL PART OF THE COUNTY, ESPECIALLY SOUTH OF NORRISTOWN AND AMBLER, THIS SOIL CONTAINS CONSIDERABLE SAND AND HAS PIECES OF SANDSTONE BELOW A DEPTH OF 18 TO 30 INCHES. IN SOME PLACES IN DEPRESSIONS AND IN SHALLOW DRAINGEWAYS, THIS SOIL HAS A DARK-COLORED SURFACE LAYER AS THIS AS 18 INCHES.

INCLUDED WITH THIS SOIL IN MAPPING ARE VERY SMALL AREAS OF CROTON SILT LOAM, 0 TO 3 PERCENT SLOPES, AND OF ABBOTTSTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES.

PERMEABILITY IS VERY SLOW, AND THE WATER TABLE IS WITHIN A FOOT OF THE SURFACE LATE IN FALL, IN WINTER, AND EARLY IN SPRING. SURFACE DRAINAGE IS SLOW, AND PONDING IS COMMON IN LOW-LYING POCKETS LATE IN WINTER. THIS SOIL DRIES SLOWLY IN SPRING. AFTER A LONG PERIOD OF HEAVY RAINFALL, IT IS WET FRO SEVERAL DAYS AT A TIME DURING THE GROWING SEASON. THE HAZARD OF EROSION IS SLIGHT. THIS SOIL HAS HIGH MOISTURE-HOLDING CAPACITY, BUT PLANTS CANNOT USE ALL OF THE MOISTURE, BECAUSE THEIR ROOTS ARE RESTRICTED BY THE DENSE SUBSOIL.

THIS SOIL IS USED FOR THE COMMONLY GROWN FIELD CROPS AND FOR HAY AND PASTURE. ALSO, IN OPEN RESIDENTIAL AREAS NEAR TOWNS, MUCH OF IT IS ELE OR IS IN TURF ASSOCIATED WITH GOLF COURSES, INDUSTRIES, INSTITUTIONS, AND ESTATES. THIS SOIL IS ONLY FAIR FOR CORN, SOYBEANS, AND SPRING-PLANTED SMALL GRAINS. ALFALFA AND WINTER GRAINS ARE LIKELY TO BE SERIOUSLY INJURED BY THE HIGH WATER TABLE AND BY FROST HEAVING.

A SUGGESTED CROPPING SYSTEM IS 1 YEAR OF A ROW CROP, 1 YEAR OF A SPRING-SEEDED SMALL GRAIN, AND AT LEAST 3 YEARS OF GRASS-LEGUME HAY OF ADAPTED VARIETIES. SUCH A CROPPING SYSTEM, WHERE GRADED-ROW CULTIVATION IS PRACTICED, IMPROVES SURFACE DRAINAGE, REDUCES LOSSES FROM EROSION, AND MAINTAINS GOOD TILTH. CONSTRUCTING A DIVERSION TERRACE ON THE SLOPE ABOVE AREAS OF THIS SOIL MAY REDUCE WETNESS CAUSED BY SEEPS, SPRINGS, OR EXCESS SURFACE WATER. OPEN DRAINS HELP TO REMOVE THE EXCESS WATER FROM LOW-LYING POCKETS.

THIS SOIL HAS SEVERE LIMITATIONS FOR RESIDENTIAL, LIGHT INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL DEVELOPMENTS. IT ALSO HAS SEVERE LIMITATIONS IF IT IS USED AS A DISPOSAL FIELD FOR THE EFFLUENT FROM SEPTIC TANKS. (CAPABILITY UNIT IIW-2, WOODLAND SUITABILITY GROUP 7, COMMUNITY DEVELOPMENT GROUP 11)

BOWMANSVILLE SILT LOAM (Bo). – THIS IS THE SOIL DESCRIBED AS TYPICAL FOR THE SERIES. IT IS IN SMALL AREAS ON FLOOD PLAINS AT THE BASE OF SLOPES AND IS WIDELY SCATTERED THROUGHOUT THE NORTHERN TWO-THIRDS OF THE COUNTY.

THIS SOIL IS ON THE SAME FLOOD PLAINS AS THOSE ON WHICH THE ROWLAND SOILS OCCUR. WHERE THIS SOIL LIES ALONG THE EDGES OF THE FLOOD PLAINS, IT MERGES WITH THE CROTON AND ABBOTTSTOWN SOILS THAT HAVE SIMILAR SLOPES. IT IS ADJACENT TO UPLANDS OCCUPIED BY THE STEEPER PENN AND KLINESVILLE SOILS. INCLUDED WITH THIS SOIL IN MAPPING ARE SMALL AREAS IN WHICH BEDROCK IS WITHIN TWO (2) TO THREE (3) FEET OF THE SURFACE. SOME SMALL AREAS ARE MORE SANDY THROUGHOUT THAN THE TYPICAL SOIL.

PERMEABILITY IS MODERATE, AND THIS SOIL HAS SLOW SURFACE DRAINAGE AND IS FREQUENTLY FLOODED. THE AVAILABLE MOISTURE CAPACITY IS HIGH. THE WATER TABLE IS NEAR THE SURFACE OR WATER IS PONDED ON THE SURFACE LATE IN FALL, IN WINTER, AND IN SPRING. THE WATER TABLE IS ALSO HIGH FOR SEVERAL DAYS FOLLOWING FLOODS OR EXTENDED WET PERIODS DURING THE GROWING SEASON. THE HAZARD OF EROSION IS SLIGHT.

THIS SOIL IS USED PRIMARILY FOR PASTURE. IT IS POORLY SUITED TO SMALL GRAINS AND ALFALFA AND IS ALSO POORLY SUITED TO CORN, UNLESS THE SURFACE WATER CAN BE REMOVED READILY BY INSTALLING OPEN DRAINS. EVEN AFTER SURFACE DRAINS ARE INSTALLED, FLOODING IS STILL A HAZARD DURING THE GROWING SEASON. THIS SOIL IS WELL SUITED TO PERMANENT PASTURE OF BIRDSFOOT TREFOIL, RED CANARYGRASS, AND OTHER SHALLOW-ROOTED GRASSES AND LEGUMES.

THIS SOIL HAS SEVERE LIMITATIONS FOR RESIDENTIAL, LIGHT INDUSTRIAL, COMMERCIAL, OR INSTITUTIONAL DEVELOPMENTS. (CAPABILITY UNIT VIW-1, WOODLAND SUITABILITY GROUP 8, COMMUNITY DEVELOPMENT GROUP 12)

BOWMANSVILLE SILT LOAM, LOCAL ALLUVIUM, 0 TO 3 PERCENT SLOPES (BrA). – IN PLACES THIS SOIL HAS A THICKER, DARKER SURFACE LAYER THAN THE ONE IN THE PROFILE DESCRIBED AS TYPICAL FOR THE SERIES. IT OCCUPIES SMALL, SCATTERED AREAS AT THE HEADS OF STREAMS AND IN DRAINGEWAYS ABOVE THE NORMAL LEVEL OF THE FLOODPLAIN (FIG. 16). THIS SOIL IS SELDOM FLOODED FOR ANY SIGNIFICANT LENGTH OF TIME. FLOODING GENERALLY OCCURS FOR ONLY A SHORT PERIOD AFTER A STORM OF HIGH INTENSITY. THIS SOIL FORMED IN MATERIAL ERODED FROM THE ADJACENT UPLANDS AND DEPOSITED ON LOW-LYING FLATS AND IN DEPRESSIONS AND DRAINGEWAYS.

THE SOIL HAS MODERATE PERMEABILITY. SURFACE DRAINAGE IS SLOW OR PONDED, AND A SEASONAL HIGH WATER TABLE IS AT THE SURFACE OR ABOVE THE SURFACE LATE IN FALL, IN WINTER, AND EARLY IN SPRING.

THIS SOIL GENERALLY OCCURS IN SMALL AREAS; THEREFORE THE CROPPING SYSTEM IS NORMALLY THE SAME AS THAT USED FOR SURROUNDING SOILS. THE SOIL IS WELL SUITED TO PERENNIAL HAY OR PASTURE CONSISTING OF BIRDSFOOT TREFOIL, RED CANARYGRASS, AND OTHER SHALLOW-ROOTED GRASSES AND LEGUMES. IT IS FAIR TO POOR FOR CORN AND POOR FOR ALFALFA AND SMALL GRAINS. DRAINAGE CAN BE IMPROVED BY INSTALLING OPEN DRAINS AND TILE DRAINS IF OUTLETS ARE AVAILABLE. IF PLANTING I