SCS-40
(1-56)

Extra

SOIL AND WATER
CONSERVATION
PLAN

DWIGHT D. EISENHOWER
Cooperator

ADAMS COUNTY
SOIL CONSERVATION DISTRICT
Assisted by
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

U. S. GOVERNMENT PRINTING OFFICE 16—72808-1

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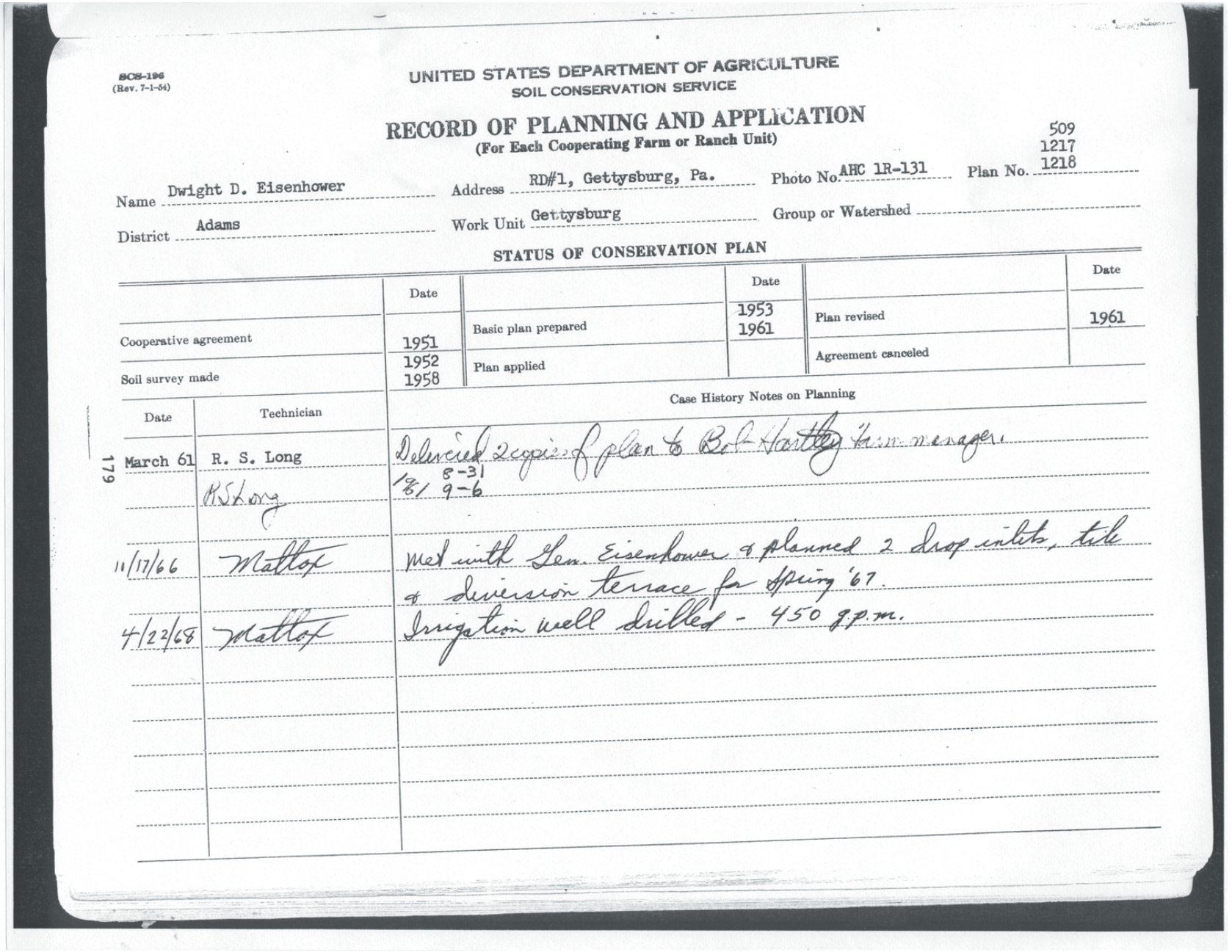

SCS-196
(Rev. 7-1-54)

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

RECORD OF PLANNING AND APPLICATION

(For Each Cooperating Farm or Ranch Unit)

509
1217
1218

Name Dwight D. Eisenhower Address RD#1, Gettysburg, Pa. Photo No. AHC 1R-131 Plan No.

District Adams Work Unit Gettysburg Group or Watershed

STATUS OF CONSERVATION PLAN

	Date		Date		Date
Cooperative agreement	1951	Basic plan prepared	1953 1961	Plan revised	1961
Soil survey made	1952 1958	Plan applied		Agreement canceled	

Date	Technician	Case History Notes on Planning
March 61	R. S. Long	Delivered 2 copies of plan to Bob Hartley farm manager.
	RS Long	8-31 18/ 9-6
11/17/66	Mattox	Met with Gen. Eisenhower & planned 2 drop inlets, tile & diversion terrace for Spring '67.
4/22/68	Mattox	Irrigation well drilled - 450 g.p.m.

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LAND USE

Before Planning: Acres; Cropland 367 Grassland 89 Woodland 18 Wildlife 0 Other 12 Total 486

Planned Use: Acres; Cropland 290 Grassland 166 Woodland 18 Wildlife 1 Other 11 Total 486

LAND-USE ADJUSTMENTS AND CONSERVATION PRACTICES PLANNED AND APPLIED

	Field Nos.	Total Conservation Needs: Adjustments and Practices	Unit	Amount	Already Applied	Amount Planned	Amounts Applied Each Year: 19 53	19 67	19 68	19	19
Conversions		Cropland to grassland	Acres	77	X X X						
		Cropland to woodland	Acres		X X X						
		Grass and woods to cropland	Acres		X X X						
Cropland	2,6,7,11,12,18	Conser. Crop Systms	Ac.	290	125	165					
	2,6,7,11,12,18	Crop Residue Use	Ac.	290		290					
	2,6,7,11,12,18	Strip Crop. Systems	Ac.	290	125	165					
Grassland	2,6,7,11,12,18	Hayland Planting	Ac.								
	5,5a,8,9,13,15,16,17	Past. Renovation	Ac.	166		166	125				
	3	Pasture Planting	Ac.	3		3	20				
		" Improvement	Ac.				20				
Woodland	1	Tree Planting	Ac.	1		1					
	1,4,10,11a,14	Woodland Imp.	Ac.	18		18					
Wildlife	17	Wildlife	No.	1	1						
	1,10,11a,14	Wildlife area treatment	Ac.	1		1					
Structural Practices	2,3	Obstruction Rem.	Ac.	2		2					
	3,5,7	Diversion Const.	Lf.	2550		2550			650		
	2,7,11,12	Grassed Waterways	Lf.	5600		5600			0.6 Ac.		
	2,3,5,5a,6,7,11,17	Drainage Imp.	Ac.	52		52					
	2,5,5a,6,7,11,17	Tile Drains	Lf.	12,425		12,425			1670		
		Drop Inlets							2		
		Irrig. Well								1	

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Woodland
Long Term Hay
Strip Cropping
Pasture
Strip Cropping
Pasture
Pasture
Strip Cropping
Long Term Hay
Pasture
Long Term Strip Cropping Hay
Rotation Pasture
Pasture
Strip cropping
Long Term Hay
Hay Pasture
Pasture

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Pa-5
(11-15-54)

LAND USE CAPABILITY CLASSES SHOWN IN COLOR

CHECK THE COLORED MAP OF YOUR FARM WITH THE COLOR DESCRIPTION BELOW.

The capability class shown by color is normally the most intensive use that should be made of the land if it is to remain productive.

GREEN I Land that is suitable for intensive cultivation with no special conservation hazards. Nearly level, deep well-drained soils which need only ordinary farming practices to maintain soil structure and organic matter.

YELLOW II Land that is suitable for fairly intensive cultivation but needs some simple conservation treatment or has some natural limitation on its use. One example is gently sloping land that needs strip-cropping and simple water management practices. Another is land with fairly good drainage but not good enough for best yields of crops which require good drainage. Good rotations, proper fertilization and maintenance of organic matter are essential.

RED III Land that is suitable for cultivation but needs intensive conservation practices. For example, moderately sloping land that needs strip-cropping supplemented by diversions and with a fairly long rotation; or wet land which requires intensive drainage systems for good crop production; or shallow land which limits crop production due to low moisture capacity.

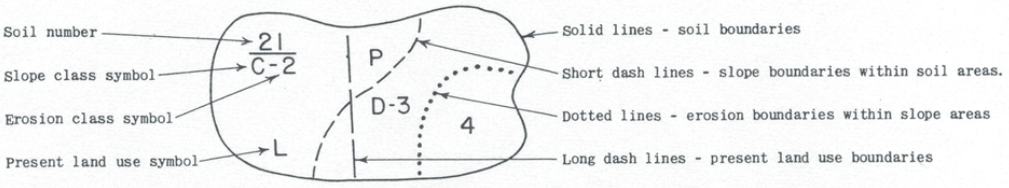
BLUE IV Land that is suitable for hay or pasture and for limited cultivation. An example is steep eroded land which needs thorough protection from erosion. Other land in this class includes wet land that can be drained sufficiently for some hay crops but not for cultivation in most years. It may have enough stones to make plowing difficult.

ORANGE VI Land that, because of its severe natural limitations such as steepness, stoniness, wetness or erosion, is not suitable for cultivation, but can be best used for pasture or woodland with moderate use of conservation practices.

BROWN VII Land that is suitable for woodland or wildlife but usually not suitable or easy to use as pasture. It includes very steep land, very badly eroded land, and very stony land.

PURPLE VIII Land that is suitable in some cases for wildlife production or recreational uses. It is not suitable for cropland, pasture land or commercial woodland production. Some examples are rocky upper slopes of mountains, coal mining wastes which do not support vegetation, large quarries, and gravel bars along rivers and creeks.

MEANING OF BLACK SYMBOLS AND LINES ON YOUR COLORED MAP



SOIL - Number above line or first part of three part symbol. *See soils description below.

SLOPE - Letter below line or letter in two part symbol.

- A - Level or nearly level
- B - Gently sloping
- C - Moderately sloping
- D - Strongly sloping
- E - Steep
- F - Very steep

EROSION - Number below line or number alone.

- 1 - Slight erosion
- 2 - Moderate erosion
- 3 - Severe erosion
- 4 - Very severe erosion

THE PRESENT USE OF THE LAND ON YOUR FARM IS INDICATED BY THE FOLLOWING LETTERS:

L - Cultivated land. P - Pasture land. F - Woodland. X - Idle land. H - Homestead.

*DESCRIPTION OF THE SOILS FOUND ON YOUR FARM.

3a - Legore channery silt loam: - 18 to 24" in depth (20" average), well drained. Occurs mainly on low ridges with fairly smooth tops and gentle to steeply sloping sides. Low in natural fertility and moderate water holding capacity. Good for general farm crops where stoniness not a problem; otherwise best suited for pasture or woodland.

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3b - Penn silt loam: - Moderately deep to shallow (18 to 30"), well drained. Generally occurs on gentle slopes. Moderate in fertility and moderately low water holding capacity. Good for general farm crops. Moderate use of high analysis fertilizer pays.

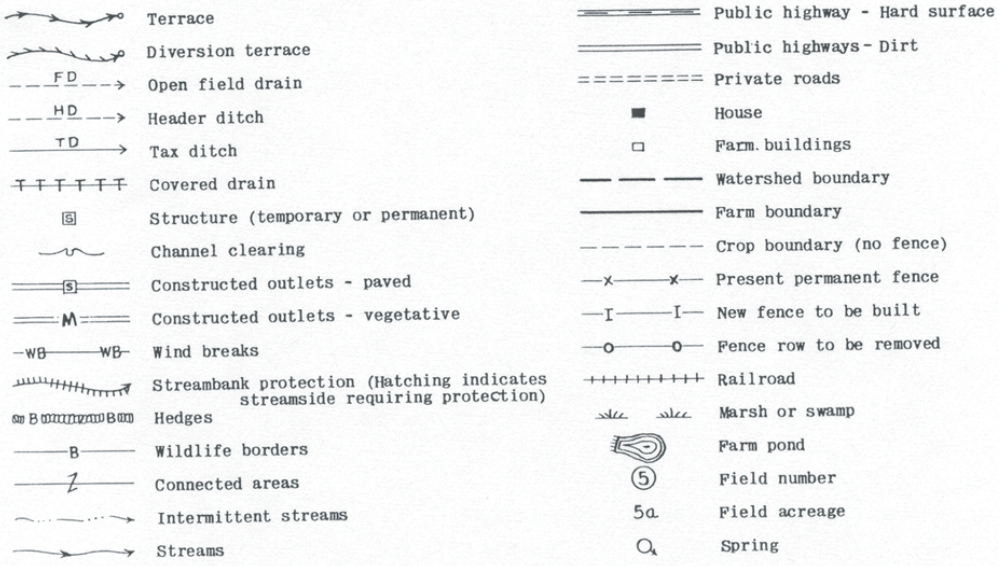
5b - Readington silt loam (Imperfect drainage phase): - Moderately deep (12 to 15" to moderate claypan), somewhat poorly drained. Occurs on gentle to moderate slopes in natural drainageways and depressions. Acid in reaction with a moderately low water holding capacity. Limited in its use for general farm crops; hay and pasture being best. Use high nitrogen fertilizer. Side and topdress crops with nitrogen.

6b - Readington silt loam (Deep phase): - Deep (over 30") moderately well drained, showing signs of impeded drainage 18 to 24". Occurs on gentle to moderate slopes, and borders of natural drainageways. Moderate in natural fertility and water holding capacity. Good for general farm crops, but limited for alfalfa use. Liberal use of fertilizer pays. Top and side dress crops with nitrogen.

7 - Rowland silt loam: - Deep, over 36", moderately well or somewhat poorly drained. Occurs along streams and subject to occasional flooding. Areas are flat to almost level with gradual slope toward and in direction of stream flow. Fair in natural fertility and water holding capacity. Best suited for pasture. Moderate use of complete fertilizer pays.

8a - Iredell silt loam: - 18 to 30" in depth with drainage moderately good to somewhat poor. Occurs on gentle to moderate slopes in natural drainage ways or adjacent to small streams. Has a waxy feel, and is very sticky or plastic when wet. Low in fertility and water holding capacity. If drained by a system of shallow ditches it can be used for general crops, but hay or pasture are its more common uses.

LEGEND FOR REVISED LAND USE MAP



8b - Lehigh silt loam: 24 to 30" in depth with a compacted silt pan at 18 to 24". Somewhat poorly drained and fairly susceptible to erosion. Acid in reaction. Low in natural fertility and water holding capacity.

8c - Croton silt loam: A soil over 24" in depth but shallow for rooting with a clay pan or compacted layer near the surface. Drainage problem noticeable in first 8 inches. Drainage is poor and surface soil is gray in color. Fertility and water holding capacity is low. Best drained by bedding. Best use is for hay and pasture, and where drained is limited for crop use. High analysis fertilizer with top and side dressing of corn and wheat with nitrogen.

8e - Readington silt loam (shallow to bedrock phase): Shallow (8 to 12"), excessive to poorly drained redshale and sandstone origin. A definite drainage problem, due to problem in bed shale. Occurs on moderate to steep slopes. Locally too wet in winter and too dry in summer. Low in natural fertility and water holding capacity. Best used for hay or pasture. Shallowness and low water hiding capacity limits the amount of fertilizer that should be used.

11 - Bowmansville silt loam: Deep, over 36", poorly drained. Occurs along streams, and subject to frequent flooding. Area flat or nearly level with gradual slope toward and in direction of stream flow. Low in natural fertility and water holding capacity. Best suited for pasture. Liberal use of complete fertilizer pays.

12a - Penn shaly silt loam: Shallow to very shallow (12 to 15" to bed shale), well drained. Occurs on gentle to steep slopes where it has a tendency to be droughty. Low in natural fertility. Acid in reaction and low water holding capacity. Suited to general farm crops on the gentler slopes with extensive conservation practices. Steeper slopes suited to hay, pasture or woody vegetation. Moderate use of high analysis fertilizer pays.

12b - Brecknock channery silt loam: 8 to 15" in depth. Usually well drained. Signs of impeded drainage just above bedrock. Occurs on moderate to steep slopes. Is moderate in fertility and has a tendency to be droughty. On moderate slopes it is a fairly good soil for general farm crops when used in a rotation with 2 to 3 years of grasses out of 5.

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2/19/60

PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
			CROPLAND
2 6 7 11 12 18	49 ac. 21 48 96 23 53		Fields 2, 6, 7, 11, 12, and 18 - Use a rotation of Row crop, small grain, hay, hay - OR Row crop, small grain, hay, hay, hay For hay mixture suggest Red Clover 6 lbs. (Pennscott), Alfalfa 2 lbs., Ladino Clover 1/8 lb. with 4 lbs. Timothy (Climax) or - 3 lbs. Orchardgrass (Pennlate). Encourage use of deep rooted legumes coupled with deep tillage to help open up tight or compact subsoil. For 2 or more years of hay - Lime according to lime test. Work in lime at seedbed preparation. Plow down or drill in deeply on prepared seedbed - 500 lbs. 0-15-30 or 0-20-20. Band seed with 300 lbs. of 5-10-10. After first cutting broadcast 200 to 300 lbs. 0-15-30 or 0-20-20. Repeat with 200 to 300 lbs. 0-15-30 or 0-20-20 first part of September. On alfalfa mixtures use borax on alternate years.
			CROP RESIDUE USE
2 6 7 11 12 18	49 ac. 21 48 96 23 53		All crop residues should be incorporated into the soil preferably throughout the upper 6 inches so a trashy residue remains on top. Never burn a heavy growth of crop residues, such as grass, weeds, straw or corn stalks that may present a problem to incorporate into the soil by disking or plowing. Use a stalk cutter or shredder to chop this material fine enough so it is more readily handled. This operation will reduce the air pockets created in plowing under a heavy growth of organic matter.
			STRIP CROPPING SYSTEM
2 6 7 11 12 18	49 ac. 21 48 96 23 53		Contour strip cropping - Where soils have a drainage problem: For generally level land, use open ditches. For sloping land lay out both sides of the strip about 80 feet wide and have the finishing furrow along the edge on 0.5 to 1.0 per cent grade. Strive to have as many crop rows as possible on grade. Utilize tiled sod waterways to empty drainage. Sod waterways should average not over 400 feet to

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Soil Conservation Service
Harrisburg, Pennsylvania

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PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
			STRIP CROPPING SYSTEM - Continued
			600 feet apart. May be wise to place 4 inch drain tile under sod waterway in order to keep sod waterway erossible.
			Field strip cropping - Strips are laid out as near the level as practical (about 05 feet wide). Suggest a long rotation to help reduce soil loss.
			PASTURE RENOVATION
5	18 ac.		Where stand is thin it is best to disk and reseed. When reseeding becomes necessary, use seeding mixtures as suggested under Pasture Planting.
5a	7 ac.		
8	21		
9	48		
13	7		Use the following seed mixture for Fields 3, 5, 5a, 8, 13, 17, 25 - Birdsfoot Trefoil 6 lbs. heavily inoculated, 2 lbs. Timothy, and 6 lbs. Kentucky Bluegrass.
15	25		
16	29		
17	11		For Fields 9, 16 - use Ladino Clover 1 lb., Red Clover 2 lbs., Orchardgrass, late heading variety, 3 lbs., and Timothy 4 lbs.
			Lime according to lime requirement test. Work in lime at seedbed preparation. Plow down or drill in deeply on the prepared seedbed 500 lbs. per acre of 0-20-20 or 0-15-30 or equivalent. Hand seed with 300 lbs. of 5-10-10. May use one bushel oats at seeding time to help reduce erosion hazard. Now oats for hay or silage.
			To maintain, check lime requirement every 5 years. Lime as per test. Broadcast annually 400 lbs. per acre of 0-15-30 or 0-20-20 or equivalent. This is best applied in two applications - 200 lbs. after the first harvest and 200 lbs. during late August or early September. For mixtures containing alfalfa use fertilizer carrying borax on alternate years.
			0-15-30 or high potash ratio fertilizers appears to pay off better on these soils.
			MAPLAND PLANTING
2			The wet areas should have the drainage problem corrected
6			before seeding to a perennial hay mixture
7			
11			For moderately deep, well drained or moderately well drained
12			soils which may have the rooting zone improved by deep rooted
18			

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PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
			HAYLAND PLANTING - Continued
			crops, use seed mixture (inoculated and band seeded) - Alfalfa 10 lbs. (Vernal), Timothy 6-8 lbs., or 4 lbs. of Timothy (Climax), and 4 lbs. Orchardgrass (Pennlate). Good sod with alfalfa helps reduce winter loss through heaving. If winter heaving is not a problem, reduce poundage of grass. For soils with mixed drainage, use seed mixture (inoculated and band seeded) - Birdsfoot Trefoil (Upright type) 6 lbs. heavily inoculated and Orchardgrass (Pennlate) 3 lbs. For seeding lime according to lime requirement test. Work in lime at seedbed preparation. Plow down or drill in deeply on prepared seedbed 500 lbs. of 0-20-20 or 0-15-30. Band seed with 300 lbs. of 5-10-10. For maintenance: Check lime requirement every 5 years. Lime as needed. Broadcast annually 400 lbs. per acre of 0-15-30 or 0-20-20 or equivalent. This is best applied in two applications - 200 lbs. after the first harvest and 200 lbs. during late August or early September. If applied as a single application - apply during late August or early September. For alfalfa mixtures - fertilizers containing borax should be used on alternate years.
			PASTURE PLANTING
3	7 ac.		Remove trees, brush and other obstructions to facilitate seedbed preparation, treatment, and maintenance. For poorly drained soils use seed mixture (inoculated and band seeded) - Birdsfoot trefoil 6 lbs., heavily inoculated; Timothy 2 lbs., and Kentucky Bluegrass 6 lbs.. For seeding, lime according to lime requirement test. Work in lime at seedbed preparation. Plow down or drill in deeply on the prepared seedbed - 300 lbs. per acre of 0-20-20 or 0-15-30 or equivalent. Inoculate and band seed with 300 lbs. of 5-10-10. For maintenance, check lime requirement every 5 years. Lime as needed. Broadcast annually 400 lbs. per acre of 0-15-30 or 0-20-20 or equivalent. This is best applied in two applications - 200 lbs. after the first harvest and 200 lbs.

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Field No.	Amount Unit	Year	Cooperator Decisions
			PASTURE PLANTING - Continued
			during late August or early September. If applied in a single application - apply during late August or early September. For alfalfa mixtures - fertilizers containing borax should be used on alternate years.
			Seed the seed mixture with one bushel of oats in the spring, mowed for silage or hay. If rye is sown in the fall and used as a nurse crop, remove rye before heads are formed in the sheath. Removal of small grain, for hay or silage, permits seedings to thrive better.
			WOODLAND
1	1 ac.		Tree Planting - On somewhat poorly drained to poorly drained soils, plant White Pine, Austrian Pine, White Spruce, Hemloc and Tulip Poplar in the following mixtures - White Spruce an White Pine; Pine and Red Pine; White Pine and Larch; Larch and Red Pine.
			The spacing of trees will vary. For badly eroded areas spac trees closer together (5'x5') to speed up erosion control. For Christmas trees 5'x6' with alternate bands of 8 tree row Normal planting 8'x8' recommended. Approximately 1,000 tree needed per acre.
			Trees suggested for underplanting - Norway Spruce, White Pin White Spruce, and Hemlock.
1	7 ac.		Harvest Cutting - From time to time remove mature trees wher needed to speed up growth of desirable species.
4 10 11a 14	4 ac. 2 3 2		Thinning - Remove trees of low or no commercial value from an immature woodland or from overstocked stands, or diseased dying or wolf type species.
			WILDLIFE
17	1 No.		Fish Pond Treatment and Stocking - Average farm pond - low recharge of water. Recommend 100 large mouth bass and 1000 blue gill or bream per acre of water surface, stocked about the same time. Ponds with good flow of spring water OR 10 t 15 feet deep may be stocked with other fish. Consult your district representatives.

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PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
			WILDLIFE - Continued
17	Number 1		Fish Pond Fertilising - Fertilize with 8-8-4 or equivalent two weeks before fish are stocked. Add fertilizer as needed at the rate of 100 lbs. per acre surface during normal pasture season. IMPORTANT: Maintain a green color to water to prevent growth of undesirable pond weeds and scum. When white plate or object disappears 14" to 16" below surface due to green color of water, pond needs no fertilizer. Try to reduce need to fertilize during dry, hot spells by treating during cold wet weather. For weeds and managing farm fish ponds for bass and blue gills see Farmers Bulletin No. 2094.
			WILDLIFE AREA TREATMENT
1 10 11a 14	1 ac.		Pond area planting - Low shrubs - Bayberry, Rugosa Rose, Gray Dogwood. Tall shrubs - Autumn Olive, Hazelnut or Filbert, Highbush Cranberry, Silky Dogwood, Tatarian or American Honeysuckle, Crabapple, Hatch Lespedeza. Plant several rows of low and tall shrubs around pond. Wildlife Food Planting - Plant odd corners and rock breaks in cropland to wildlife food and shelter. In areas not to be farmed nor planted to pulpwood, plant Christmas or timber trees and tall wildlife plants. Idle areas having a partial cover, plant wildlife shrubs as Coralberry, Bayberry, Hazelnut or Hybrid Filbert, Silky Cornel, tatarian or American Honeysuckle, Highbush Cranberry, Shrub Lespedeza, Autumn Olive and Crabapple.
			OBSTRUCTION REMOVAL
2 3	1 ac. 1 ac.		Remove trees, brush, stones and other obstructions to facilitate establishment of strip cropping, diversion terraces sod waterways, and seedbed preparation for pasture or long term grass.

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PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
	L.F.		**STRUCTURAL**
3 5 7	1400 550 600		Diversion Terraces - Construct diversion terraces and outlets according to map, sketch, or design and channel grade as furnished by the district and concurred with by the landowner. Check soil for lime requirement. Seed to the following seed mixture: Reed Canarygrass 8 lbs., Timothy 4 lbs., Alsike Clover 2 lbs., and Ladino Clover 1 lb.. Pasture - Seed to - Timothy 4 lbs., Birdsfoot Trefoil 6 lbs., If seeded in the spring, use one bushel of oats as a companion crop mowed for hay. Band seed mixture and inoculate legumes. Work into seedbed, required lime. Plow down or drill in deeply on the prepared seedbed - 1000 lbs. of 0-20-0 or equivalent. At seeding time, work into the surface 1000 lbs. per acre of 5-10-10 or equivalent, or 500 lbs. of 5-10-10 per acre or equivalent plus 10 tons of phosphated manure per acre. Suggest mulch channel and lower half of back slope next to channel with one - two tons of straw per acre rate. If seeded alone in the first part of August, mulch as above. For maintenance, satisfy lime requirement every 3 to 4 years. Broadcast annually in first part of September - 500 lbs. of 0-20-20 or 0-15-30 or equivalent per acre. If split application 200 lbs. to 250 lbs. after first cutting, and 200 to 250 lbs. last of August or first part of September. For alfalfa use borax - 80 lbs. per ton on alternate years.
2 7 11 12	1400 L.F. 1700 1200 1300		Grassed Waterways - Leave areas in sod as indicated on plan map. Strive for a cross section of 12 inches in depth and about 20 feet wide. Maintain by raising equipment during tillage operations. Where width of sod waterway would be excessive in order to get one foot of depth, you may wish to construct a waterway. Construct sod waterway channel according to design furnished by the district, as indicated on the plan map.

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PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
			Grassed Waterways continued - Divert water from area where new constructed waterway is planned, by use of temporary diversion terraces. For seeding use one of the following seed mixtures inoculated and band seeded: For well drained or mixed drainage use - Kentucky Bluegrass 25 lbs., Redtop 10 lbs., and Birdsfoot Trefoil 7 lbs., OR Creeping Red Fescue 40 lbs., Redtop 10 lbs., Birdsfoot Trefoil 7 lbs. If seeded in the spring, use one bushel of oats as a companion crop mowed for hay. Band seed mixture and inoculate legumes. Work into seedbed required lime. Plow down or drill in deeply on the prepared seedbed 1,000 lbs. 0-20-0 or equivalent. At seeding time, work into the surface 1,000 lbs. 5-10-10 per acre or equivalent, or 500 lbs. 5-10-10 per acre or equivalent, plus 10 tons phosphated manure per acre. Suggest mulch channel and side slopes next to channel with two to four tons of straw or old hay per acre rate. If seeded alone in the first part of August, mulch as above. Where possible use some method of tying down, especially on steeper slopes. For maintenance, satisfy lime requirement every 4 years. Broadcast early in the spring 400 lbs. per acre of 10-10-10 or equivalent. If fertilized in August, use 500 lbs. 5-10-10 or equivalent. **FARM DRAINAGE** These fields will have the necessary drainage practices installed as it helps to reduce trampling action by cattle and improves travel conditions for farm equipment.
2	20 ac.		
3	2		
5	2		
5a	3		
6	5		
7	8		
11	10		
17	2		

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PLAN OF CONSERVATION OPERATIONS

Field No.	Amount Unit	Year	Cooperator Decisions
			FARM DRAINAGE-continued
	L.F.		
2	5100 4"		**Tile Drains - Install tile according to the plan and survey prepared by the technician and farmer and as indicated on the plan map. Read over sheet on "Hints on Tile Drainage."**
5	175 4"		
5a	700 4"		
6	950 4"		**Note - In Field 11, 1300 feet slightly northwest of main barn on original tract, area could be subsoiled to lower water table and reduce winter heaving of crops.**
	1300 6"		
7	950 4"		
11	2700 4"		
17	550 4"		
			When necessary the U. S. Soil Conservation Service will be contacted for designs, plans and other engineering assistance in establishing the planned conservation practices.

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FARM ORGANIZATION SUMMARY

GRAIN, HAY & SILAGE

Crop	Acres	Yield	Amount

PASTURE

Kind of Pasture	Acres	Yield-A.U. Ac.	Animal Units

FEED REQUIREMENTS

Livestock	No.	Grain (Bu. C.E.)	Hay (tons)	Silage (tons)	Pasture (A.U.)
Total Feed Requirements					
Total Feed Available					
Difference (+ or -)					

Remarks:
Livestock is beef cattle. Numbers vary.

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PA-4 (Reverse)

SUGGESTED GUIDE TO CALCULATE FEED REQUIREMENTS
(Average Requirements)

Kind of Livestock	Animal Unit	Feed Requirement per Animal Unit		
		Hay (Tons)	Silage (Tons)	Grain C.E. (Bu.)
Horse or Mules	1 Horse 2 Colts	2¼		30
Dairy Cows	1 Cow	2-3	5-7	25-40
Young Dairy	2 Replacements	1½-3	2-3	10-25
Beef Feeding	1 Steer 12 Mo.; base on No. of mos.fed	½-1	2-3	25-40
Sheep	7 Sheep 14 Lambs	1-2		5-15
Hogs	1400 lbs.			85
Poultry	100 Hens			120-140

Pasture Yields (Rotation Grazing)*		
Type of Pasture	**Animal Units Per Acre	
	Ave.	Good
Perm. Pasture	.64	.92
Ladino & Grass	1.16	1.70
Birdsfoot Trefoil	.74	.98
Alfalfa Grass Clover Mix	.88	1.20
Hay Aftermath	.30	.44
Sudangrass	.80	1.18
Rye	.72	.98

CONVERSIONS

Corn (shelled) = 2 bushels oats - 1 bu. wheat - 1 bu. barley
Three tons of grass or corn silage = 1 ton hay
*Decrease productivity by 1/3 for continuous grazing
Increase productivity by 1/3 for ration grazing
**Based on 5 months (May through September except aftermath which includes October and Rye which includes April and October.)

Silo Capacity (Tons)

Silage in feet (Depth)	Silo Diameter				
	10 Feet	12 Feet	14 Feet	16 Feet	18 Feet
20	26	38	51	68	86
25	37	52	71	93	117
30	47	68	92	120	153
35	59	85	115	151	190
40	71	102	140	183	232
45	83	119	163	216	274
50	95	139	189	251	323

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