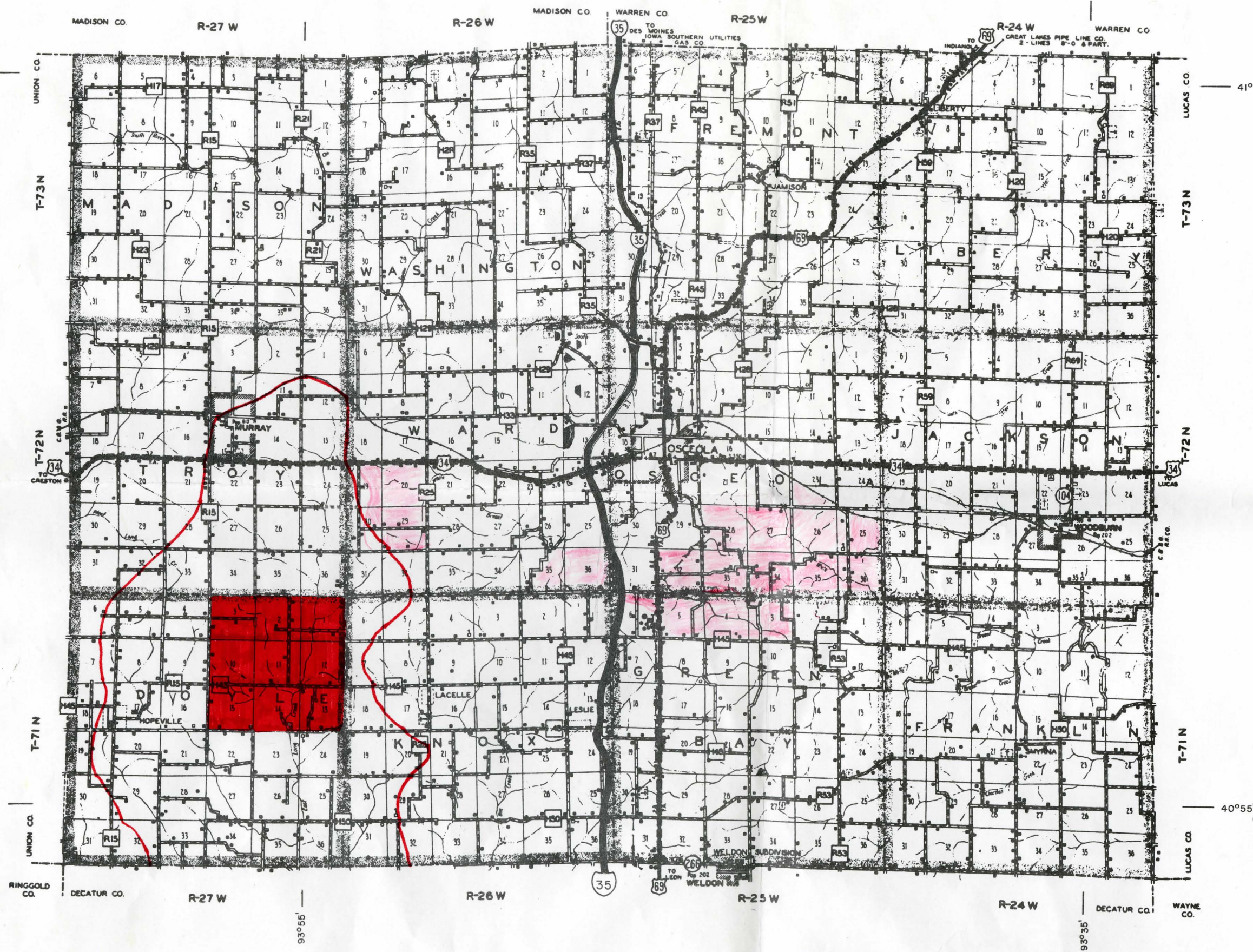


CLARKE COUNTY SOIL CONSERVATION DISTRICT IOWA

Total acreage approximate 274,560

SOURCE:
1968 COUNTY HIGHWAY MAP
AND INFORMATION FROM FIELD TECHNICIANS
A.C.F.C.I. INDIAN, NEBR. 1972

POLYCONIC PROJECTION

REV. 10-20-72
8-14-68
5.0-26 345

EDINA Soil Series					LRA : 109																																																							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA					Soil association areas of Iowa: ASE, AGH, GH																																																							
Soil Type No. 211		Soil Type Name Edina silt loam			Date 1972																																																							
<u>Soil Description:</u> The Edina series consists of level, dark colored, poorly drained soils in the uplands. They are developed in loess under grass vegetation. They have a very dark gray silt loam surface layer about 9 inches thick, a dark gray to gray silt loam sub-surface layer, or A2 horizon, 8 to 10 inches thick, and a black to very dark gray silty clay subsoil. The substratum is olive gray silty clay loam. Because of the slow permeability, these soils respond better to surface drainage systems than to tile. In years of above normal rainfall, planting of crops is generally delayed. Corn and soybeans are the dominant crops grown. Artificial drainage and proper fertility management are important in the use and management of these soils for crop production. These soils are locally referred to as "claypan" soils because of the compacted, very slowly permeable subsoils.																																																												
Percent Slope: Typical 0-1% Range 0-2% Drainage Class Poorly drained Landscape Position Upland flats Parent Material Loess Permeability Very slow Native Vegetation Prairie Available water capacity Moderate Depth to Water Table Seasonally 1-3 ft. Flooding Potential Produces slow runoff; low spots may pond water Organic Matter Moderate Subsoil phosphorus Very low Subsoil potassium Very low																																																												
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="3">Map symbols</th> <th rowspan="3">Land Capability Class & Subclass</th> <th colspan="2" rowspan="2">Soil loss factors</th> <th rowspan="3">CSR*</th> <th colspan="8">Yield predictions - High management</th> </tr> <tr> <th colspan="8">Hay and pasture</th> </tr> <tr> <th>Corn Bu/Ac</th> <th>Soybeans Bu/Ac</th> <th>Oats Bu/Ac</th> <th colspan="2">Alfalfa-brome</th> <th>Bluegrass</th> <th>Brome-grass</th> <th>Trefoil</th> </tr> <tr> <th>T</th> <th>K</th> <th>T/Ac</th> <th>AJD</th> <th>AUD</th> <th>AUD</th> <th>AUD</th> <th>AUD</th> <th>AUD</th> </tr> <tr> <td>211</td> <td>IIIw</td> <td>-</td> <td>-</td> <td>60</td> <td>86</td> <td>33</td> <td>47</td> <td>3.6</td> <td>180</td> <td>100</td> <td>135</td> <td>155</td> </tr> </table>										Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management								Hay and pasture								Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Alfalfa-brome		Bluegrass	Brome-grass	Trefoil	T	K	T/Ac	AJD	AUD	AUD	AUD	AUD	AUD	211	IIIw	-	-	60	86	33	47	3.6	180	100	135	155
Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management																																																							
					Hay and pasture																																																							
		Corn Bu/Ac	Soybeans Bu/Ac		Oats Bu/Ac	Alfalfa-brome		Bluegrass	Brome-grass	Trefoil																																																		
T	K	T/Ac	AJD	AUD	AUD	AUD	AUD	AUD																																																				
211	IIIw	-	-	60	86	33	47	3.6	180	100	135	155																																																
*CSR and yield data represent average figures for these soils in Iowa. Conservation Practices and Drainage Needs This soil is poorly drained and tends to pond water due to the very slow permeability of the subsoil. Use of tile is generally not recommended. Shallow surface drains are generally beneficial on these soils.																																																												
WOODLAND																																																												
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="2">Species</th> <th rowspan="2">Estimated site index</th> <th rowspan="2">Estimated board feet per acre per year</th> <th rowspan="2">Ordination group</th> <th colspan="3">Estimated Suitability for Trees</th> </tr> <tr> <th>Upland Hardwoods</th> <th>Conifers</th> <th>Cottonwoods</th> </tr> <tr> <td>Upland Hardwoods 0-18% slope</td> <td>-</td> <td>-</td> <td>5w3</td> <td>0-18% Low</td> <td>Low</td> <td>Mod.-high</td> </tr> </table>										Species	Estimated site index	Estimated board feet per acre per year	Ordination group	Estimated Suitability for Trees			Upland Hardwoods	Conifers	Cottonwoods	Upland Hardwoods 0-18% slope	-	-	5w3	0-18% Low	Low	Mod.-high																																		
Species	Estimated site index	Estimated board feet per acre per year	Ordination group	Estimated Suitability for Trees																																																								
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Upland Hardwoods 0-18% slope	-	-	5w3	0-18% Low	Low	Mod.-high																																																						
Remarks: The information contained on this sheet are estimates based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil. Slopes: 7 or none - 0-2%, 13-2-5%																																																												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group D

Edina Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-9	Silt loam	ML-CL	A-6 (6-8)	-	100	95-100	0.63-2.0	0.18	6.1-7.0	Low to moderate
9-18	Silt loam	ML-CL	A-6 (4-10)	-	100	95-100	0.63-2.0	0.18	5.6-6.0	Low to moderate
18-54	Silty clay	CH	A-7-6 (20)	-	100	95-100	0.06	0.12	5.6-6.0	High
54-60	Silty clay loam	CH or CL	A-7-6 (12-16)	-	-	100	0.06-0.2	0.15	6.1-6.8	High

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Surface layer fair to good, subsoil poor.

Sand and gravel: Not suitable.

Road fill suitability: Unsuitable; poor shear strength, high plasticity and large volume change when wet.

Major soil features affecting use for:

Highway location: Level topography, low borrow potential, high plasticity and large volume change.

Pond reservoir area: Suitable sites unlikely; level topography on high elevation.

Agricultural drainage: Seasonal high water table, surface drains are suitable, tile drainage not recommended.

Terraces and diversions: Not required due to topography.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; poor shear strength and high compressibility, uniform consolidation, high shrink-swell potential.

Septic tank disposal fields: Severe limitations; very slowly permeable subsoil, seasonal high water table, unsatisfactory percolation rate.

Sewage lagoons: Slight limitations; very slowly permeable.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations if drained, severe if not; poorly drained, very slowly permeable.

Residential development with public sewer: Severe limitations; very slowly permeable, poorly drained.

Residential development without public sewer: Very severe limitations; very slowly permeable, poorly drained.

Buildings for light industrial and commercial use: Severe limitations; very slowly permeable, high shrink-swell potential, poorly drained.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Severe limitations; poorly drained, subject to ponding, high water table.

Intensive camp sites: Severe limitations; poorly drained, subject to ponding, slow permeability, slow to dry after rains.

Picnic areas: Severe limitations; poorly drained, subject to ponding, slow to dry after rains, poor trafficability.

Intensive play areas: Severe limitations; poorly drained, subject to ponding, slow permeability, muddy and slippery when wet.

Paths and trails: Severe limitations; poorly drained, subject to ponding.

Golf fairways: Severe limitations; poorly drained, subject to ponding.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

LINDLEY Soil Series					LRA : 108, 109							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA					Soil association areas of Iowa: CKL, LKW, OMT, ASE							
Soil Type No. 65		Soil Type Name Lindley loam			Date 1972							
Soil Description: The Lindley series consists of light colored, moderately well drained, loamy soils. These soils formed in loamy glacial till under a native vegetation of trees. They commonly occupy strongly sloping to steep dissected uplands near major streams and rivers. They are usually downslope from Keswick, Clinton, and Weller soils and upslope from major drainageways. Lindley soils typically have a very dark grayish brown loam surface layer about 4 inches thick. The subsurface layer is acid, dark grayish brown loam about 5 inches thick. The subsoil from 9 to about 46 inches is yellowish brown clay loam. The sub-stratum below about 46 inches is yellowish brown clay loam that may be calcareous in places. Lindley soils are used for pasture and woodland. Some less sloping soils are cultivated to corn, soybeans, and small grains; however, high level management is required if crop growth is satisfactory. Erosion hazard is severe, and in places side-hill drainageways form gullies.												
Percent Slope: Typical 14-25% Range 5-30% Drainage Class Moderately well drained Landscape Position Dissected uplands -- sideslopes and narrow ridgetops Parent Material glacial till Permeability Moderately slow Native Vegetation Forest Available water capacity High Depth to Water Table > 5 feet Flooding Potential Produces rapid runoff Organic Matter Low to very low Subsoil phosphorus Medium Subsoil potassium Very low												
Map symbols	Land Capability Class & subclass	Soil loss factors			Yield predictions - High management							
		T	K	CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome T/Ac	Alfalfa-brome AUD	Bluegrass AUD	Bromegrass AUD	Trefoil AUD
65C	IIIe	3	.43	50	81	31	44	3.4	170	100	145	160
65C2	IIIe	3	.43	48	78	30	43	3.3	165	95	140	160
65D	IVe	3	.43	40	72	27	40	3.0	150	80	130	150
65D2	IVe	3	.43	38	69	26	38	2.9	145	70	125	145
65E	VIe	3	.43	30	-	-	-	2.0	100	60	85	125
65E2	VIe	3	.43	28	-	-	-	1.5	75	60	70	100
65E3	VIIe	2	.43	25	-	-	-	1.0	50	50	50	80
65F2	VIIe	3	.43	10	-	-	-	1.0	50	50	50	75
*CSR and yield data represent average figures for these soils in Iowa.												
Conservation Practices and Drainage Needs Contour and terrace practices may be needed. Individual areas suitable for cultivation are generally small. More sloping areas best suited as woodland or pasture.												
WOODLAND												
Species	Estimated site index	Estimated board feet per acre per year	Ordination group	Estimated Suitability for Trees								
Upland Hardwoods				Upland Hardwoods	Conifers	Cottonwoods						
0-18% slope	66-75	200-249	2o1	0-18% High	Very high	Very high						
18-40% slope, N-NE	56-65	100-199	3r1	18-40% N-NE Mod. high	Mod. high	High						
18-40% slope, S-SW	46-55	100-149	4r1	18-40% S-SW Moderate	Mod. high	Mod. high						
Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.												
Slopes: A or none - 0-2%, B - 2-5%, C - 5-9%, D - 9-14%, E - 14-18%, F - 18-25%												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Lindley Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-9	Loam	CL	A-4 (3) to A-6 (8)	85-95	80-90	55-65	0.63-2.0	.17	4.5-6.0	Moderate
9-46	Clay loam	CL	A-6 (9) to A-7-6 (14)	85-95	80-90	50-65	0.2-0.63	.16	4.5-6.5	Moderate
46-60	Loam or clay loam	CL	A-6 (6-10)	85-95	80-90	50-65	0.2-0.63	.16	6.1-7.8	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in surface layer, poor in subsoil; low fertility, high density in subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Good; fair to good bearing capacity, slight compressibility, easily compacted to high density.

Major soil features affecting use for:

Highway location: Rolling and steep topography; good source of borrow material, some cuts may be seepy.

Pond reservoir area: Good sites likely, ^{Moderately} slow permeability.

Agricultural drainage: Generally not needed.

Terraces and diversions: Low-fertility, high-density subsoil; difficult to vegetate where exposed.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Slight limitations; fair to good bearing capacity, possible uneven consolidation.

Septic tank disposal fields: Severe limitations on all slopes; moderately slow permeability; marginal percolation rate.

Sewage lagoons: Moderate limitations on 2-9% slopes, severe on > 9%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations on slopes 9-14%, severe on 14-18%, very severe on 18-25%.

Residential development with public sewer: Moderate limitations on 9-14% slopes, moderate to severe on 14-18%, severe on 18-25%.

Residential development without public sewer: Severe limitations on 9-18% slopes, very severe on 18-25%; moderately slow permeability.

Buildings for light industrial and commercial use: Moderate limitations on slopes 9-14%, moderate to severe on 14-18%, very severe on 18-25%.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations on 5-14% slopes, severe on > 14%.

Intensive camp sites: Slight limitations on 5-9% slopes, moderate on 9-14%, severe on > 14%.

Picnic areas: Slight limitations on 5-9% slopes, moderate on 9-14%, severe on > 14%.

Intensive play areas: Severe limitations on slopes > 5%.

Paths and trails: Slight limitations on slopes < 14%, moderate on 14-25%, severe on > 25%.

Golf fairways: Slight limitations on slopes < 14%, moderate on 14-25%.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

PERSHING					LRA : 108, 109	
Soil Series					Soil association areas of Iowa:	
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA					AGH,	
Soil Type No. <u>131</u>	Soil Type Name <u>Pershing silt loam</u>			Date <u>1972</u>		

Soil Description:

The Pershing series consists of moderately dark colored, somewhat poorly drained and moderately well drained soils with clayey subsoils. These soils formed in loess under a native vegetation of mixed grasses and deciduous trees. They are on convex slopes bordering nearly level interstream divides and are on benches in a few places.

Pershing soils typically have a very dark gray silt loam surface layer about 6 inches thick. The subsurface layer is dark grayish brown silt loam about 3 inches thick. The upper part of the subsoil is mottled grayish brown and yellowish brown silty clay loam. The middle part below 13 inches and extending to about 36 inches is slowly permeable silty clay. The lower subsoil is mottled yellowish brown and gray silty clay loam.

Pershing soils are mainly cultivated or are in hay or pasture. Some areas are in woodland. The sloping ridgetops and side-slopes are subject to erosion and require conservation practices for erosion control. Areas suitable for cultivation are generally small in size and irregular in shape.

Percent Slope: Typical <u>2 - 5%</u> Range <u>2-9%</u> Drainage Class <u>Moderately well drained to somewhat poorly drained</u>
Landscape Position <u>Convex slopes on upland</u> Parent Material <u>Loess</u>
Permeability <u>Slow</u> Native Vegetation <u>Forest-prairie</u> Available water <u>High</u>
Depth to Water Table <u>Seasonally 1-3 ft.</u> Flooding Potential <u>Produces runoff</u>
Organic Matter <u>Moderate to low</u> Subsoil phosphorus <u>High</u> Subsoil potassium <u>Very low</u>

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
		T	K					T/Ac	AJD	Alfalfa-brome AUD	Bluegrass AUD	Brome grass AUD
131B	IIIe	3	.43	65	101	38	56	4.2	210	115	180	200
131C	IIIe	3	.43	45	96	36	53	4.0	200	110	170	190
131C2	IIIe	3	.43	40	91	35	50	3.8	190	105	165	185
131D2	I VE	3	.43	25	80	30	44	3.4	170	100	165	165

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs The sloping ridge crests and sideslopes are subject to erosion and require conservation practices for erosion control. Areas suitable for cultivation are generally small in size and irregular in shape. Contouring and terracing may be needed.

WOODLAND				
Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees
Upland Hardwoods				Upland Hardwoods
0-18% slope	46-55	100-149	4w1	0-18% Moderate
				Conifers
				Cottonwoods
				Mod. high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

SLOPES: A OR NONE - 0-2%, B - 2-5%, C - 5-9%, D - 9-14%.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Pershing Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-9	Silt loam	ML or CL	A-4 (18) to A-6 (10)	-	100	95-100	0.63-2.0	.18	5.1-7.3	Moderate
9-37	Silty clay loam and silty clay	CH	A-6 (12) to A-7-6 (20)	-	100	95-100	0.06-0.2	.15	4.5-6.0	High
37-60	Silty clay loam	CL or CH	A-6 (10) to A-7-6 (14)	-	100	95-100	0.2-0.63	.16	5.1-6.0	Moderate to high

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in upper foot, poor below; limited material, clayey subsoil.

Sand and gravel: Not suitable.

Road fillsuitability: Very poor; highly elastic, high volume change and low bearing capacity when wet.

Major soil features affecting use for:

Highway location: Low borrow potential, high moisture can be expected in cuts.

Pond reservoir area: Good; good sites common, uniform material of low permeability.

Agricultural drainage: May be seepy at times; interceptor tile can be utilized to reduce seepage.

Terraces and diversions: Subsoil has low fertility and is fine textured, cuts must be held to minimum to prevent exposure of subsoil.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings : Severe limitations; high compressibility, high shrink-swell potential.

Septic tank disposal fields: Severe limitations; slow permeability; unsatisfactory percolation rate

Sewage lagoons: Moderate limitations; gentle to moderate slopes.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations; slowly permeable, erosion hazard on 5-9% slopes.

Residential development with public sewer : Moderate limitations; slow permeability, somewhat poorly drained, occasionally wet and seepy, high shrink-swell potential.

Residential development without public sewer: Severe limitations; slow permeability, somewhat poorly drained, occasionally wet and seepy, high shrink-swell potential.

Buildings for light industrial and commercial use: Moderate limitations; slow permeability, somewhat poorly drained, high shrink-swell potential, difficult to compact to high density.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations; high shrink-swell potential, somewhat poorly drained.

Intensive camp sites: Moderate limitations; somewhat poorly drained.

Picnic areas : Slight to moderate limitations; somewhat poorly drained.

Intensive play areas : Moderate limitations on 2-5% slopes, severe on > 5%.

Paths and trails : Slight to moderate limitations; somewhat poorly drained.

Golf fairways : Slight to moderate limitations; somewhat poorly drained, some seepy wet areas during spring.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

<u>ADAIR</u> Soil Series					LRA : <u>107, 108, 109</u> Soil association areas of Iowa: AGH, ASE, GH, M, MIH, OMT, SSM, TM							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA												
Soil Type No. <u>192</u>		Soil Type Name <u>Adair clay loam</u>			Date <u>1972</u>							
Soil Description: The Adair series consists of dark colored, moderately well drained to somewhat poorly drained soils with clayey subsoils. These soils formed in reddish, clayey, Late Sangamon paleosols under a native vegetation of tall prairie grasses. They are on convex ridgetops and commonly in bands at the shoulders of sideslopes. Adair soils typically have a black to very dark gray clay loam surface layer 17 inches thick. A stone line is at the base of the surface layer. The subsoil from 17 to 25 inches is mottled dark brown and dark reddish brown clay. Below this is a mottled dark yellowish brown clay loam to a depth of 60 inches. A few concretions of lime are in the lower part. Adair soils are used for cultivation and pasture. These soils have severe erosion hazard. The clayey subsoil, where exposed to the surface by erosion, is difficult to till, will crust and seal following rains, and is of low fertility. Seepy, wet spots are common near the contact with loess soils upslope.												
Percent Slope: Typical <u>9-14%</u> Range <u>5-18%</u> Drainage Class <u>Moderately well drained to somewhat poorly drained</u> Landscape Position <u>Upland sideslopes and extended ridges</u> Parent Material <u>Reddish clayey paleosol, till</u> Permeability <u>Slow</u> Native Vegetation <u>Prairie grasses</u> Available water capacity <u>high</u> Depth to Water Table <u>Seasonally 1 1/2-2 feet**</u> Flooding Potential <u>Produces runoff and is subject to erosion</u> Organic Matter <u>Low to high</u> Subsoil phosphorus <u>Very low</u> Subsoil potassium <u>Very low to low</u>												
Yield predictions - High management												
Map symbols	Land Capability Class & Subclass	Soil loss factors			CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture			
									Alfalfa-brome		Bluegrass	Bromegrass
		T	K	T/Ac					AUD	AUD	AUD	AUD
192C	IIIe	3	.43	35	73	28	40	3.1	155	80	120	175
192C2	IIIe	3	.43	30	65	25	36	2.7	135	70	105	160
192D	IVe	3	.43	20	62	23	34	2.6	130	60	100	150
192D2	IVe	3	.43	15	54	20	30	2.3	115	55	85	136
192D3	VIe	2	.43	5	-	-	-	1.6	80	45	60	110
*CSR and yield data represent average figures for these soils in Iowa. Conservation Practices and Drainage Needs <u>Erosion control and interceptor tile drainage are important management practices which are needed.</u>												
** Seasonally perched water table at 1 1/2 to 2 feet above clay subsoil. Water moves more rapidly in the loam upper part and tends to accumulate at the paleosol contact which gives rise to a seasonally perched water table and side-hill seeps. WOODLAND												
Species		Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees							
Upland Hardwoods					Upland Hardwoods		Conifers	Cottonwoods				
0-18% slope		< 45	< 100	Sc1	0-18% Low		Moderate	Moderate				
Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil. <u>1/CSR and crop yields will be somewhat higher or lower than the average, depending on climatic conditions in each county.</u> <u>Slope: A or none, 0-2%; B, 2-5%; C, 5-9%; D, 9-14%; E, 14-18%</u>												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group D

Adair Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-17	Clay loam	CL	A-6 (8-12)	95-100	80-95	60-80	0.2-0.63	.17-.19	5.6-6.5	Moderate
17-34	Clay or heavy clay loam	CH or CL	A-7-6 (15-20)	95-100	80-95	55-80	0.06-0.20	.13-.16	5.6-6.5	High
34-60	Clay loam	CL	A-7-6 (16)	95-100	80-95	55-80	0.2-0.63	.14-.16	6.1-7.3	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in upper 12-18 inches, poor below 18 inches; thin layer of suitable material; clayey subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Very poor in subsoil, highly elastic and has high shrink-swell potential; fair or good in substratum.

Major soil features affecting use for:

Highway location: Rolling topography; seepage can be expected in cuts, difficult to vegetate.

Pond reservoir area: Slow permeability when compacted; moderate to high shrink-swell potential; easily compacted.

Agricultural drainage: Seasonally wet and seepy; interceptor tile placed above the seepy areas help reduce wetness.

Terraces and diversions: High density, low fertility, difficult to vegetate, terrace channels likely to be seepy and wet.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; slight compressibility, high shrink-swell potential, often seepy and wet.

Septic tank disposal fields: Severe limitations; unsatisfactory percolation rate.

Sewage lagoons: Moderate limitations on slopes < 9%, severe on > 9%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Severe limitations; slow permeability, severe erosion hazard, poor workability.

Residential development with public sewer: Moderate to severe limitations; somewhat seepy, high shrink-swell potential.

Residential development without public sewer: Severe limitations; seepy and wet in places, slow permeability.

Buildings for light industrial and commercial use: Moderate to severe limitations; moderate to high shrink-swell potential, seepy and wet in places.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations on slopes < 14%, severe on > 14%; high shrink-swell potential, somewhat poorly drained.

Intensive camp sites: Moderate limitations on slopes < 14%, severe on > 14%; remains wet for short periods, somewhat poorly drained.

Picnic areas: Moderate limitations on slopes < 14%, severe on > 14%; slippery when wet.

Intensive play areas: Severe limitations on slopes > 5%; seepy wet spots.

Paths and trails: Moderate limitations, surface sticky and slippery when wet, seepy spots common.

Golf fairways: Moderate limitations; difficult to establish vegetation, remains wet for short periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

CLARINDA Soil Series					LRA : <u>107, 108, 109</u>									
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA										Soil association areas of Iowa: M, SSM, AGH, ASE, OMT, TM, GH				
Soil Type No. <u>222</u>		Soil Type Name <u>Clarinda silty clay loam</u>					Date <u>1970</u>							
Soil Description: The Clarinda series consists of dark colored, very poorly drained soils. They formed in highly weathered clayey glacial till under prairie grasses tolerant to wetness. They occupy heads of drainageways, narrow bands on sideslopes, and narrow convex ridges on uplands. They occur in positions downslope and adjacent to loess-derived soils and upslope from the more permeable soils developed in less weathered till, such as the Lamoni, Adair, and Shelby. Clarinda soils typically have a very dark gray, friable silty clay loam surface layer 11 inches thick. The dark gray or gray, weathered, very slowly permeable clay subsoil ranges from 3 to 8 feet thick. Some brown mottles, fine sand, and pebbles occur in the lower part. Clarinda soils are not well suited for cropland, because of their very slow permeability and poor natural drainage.														
Percent Slope: Typical <u>5-9%</u> Range <u>5-14%</u> Drainage Class <u>Very poorly drained</u> Landscape Position <u>Convex sideslopes and coves at heads of drainageways</u> Parent Material <u>Gray, highly weathered glacial till "paleosol"</u> Permeability <u>Very slow</u> Native Vegetation <u>Prairie</u> Available water capacity <u>High</u> Depth to Water Table <u>Seasonally wet be-Flooding Potential</u> Produces runoff cause of seepage from more permeable soils upslope Organic Matter <u>Low to high</u> Subsoil phosphorus <u>Low</u> Subsoil potassium <u>Low to medium</u>														
Yield predictions - High management														
Map symbols		Land Capa- bility Class & Subclass	Soil loss factors T K		CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and Pasture					
									Alfalfa-brome	Bluegrass	Brome	Trefoil		
									T/Ac	AUD	AUD	AUD	AUD	
222C		IVw	3	.49	30	63	24	34	2.6	130	80	110	150	
222C2		IVw	3	.49	25	55	21	30	2.2	110	70	100	140	
222D		IVe	3	.49	15	54	20	30	2.1	105	65	95	135	
222D2		IVe	3	.49	10	46	17	25	1.8	90	50	85	120	
*CSR and yield data represent average figures for these soils in Iowa. Conservation Practices and Drainage Needs <u>These soils require artificial drainage as well as erosion control measures. Tile does not function well in these soils, however, interceptor tile in more permeable soils upslope is beneficial in reducing the wetness conditions in some areas.</u>														
WOODLAND														
Species		Estimated site index	Estimated board feet per acre/ per year		Ordination group	Estimated Suitability for Trees								
Upland Hardwoods						Upland hardwoods	Conifers	Cottonwoods						
0-18% slope		< 45	< 100		5w1	0-18%	Low	Low	Low					
Remarks: <u>Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.</u>														

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group D

Clarinda Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-11	Silty clay loam	CL or ML	A-6 (6-10) to A-7-6 (14)	100	95-100	85-100	0.2-0.63	0.18	5.1-6.5	Moderate to high
11-36	Silty clay and clay	CH	A-7-6 (20)	100	95-100	85-100	< 0.06	0.15	5.1-6.5	High
36-52	Clay	CH	A-7-6 (20)	95-100	90-100	75-90	< 0.06	0.15	5.6-7.3	High

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair upper 11 inches, poor below; high clay content and low natural fertility.

Sand and gravel: Not suitable.

Road fill suitability: Unsuitable; highly elastic, high volume change with moisture, low bearing capacity when wet, low stability at high moisture content, difficult to compact properly.

Major soil features affecting use for:

Highway location: Low borrow potential, seepage often occurs in cuts, surface layer high in organic matter.

Pond reservoir area: Very low permeability when compacted, high shrink-swell potential.

Agricultural drainage: Very slow permeability, will not tile satisfactorily but location of interceptor tile upslope is critical in controlling seeps.

Terraces and diversions: Subsoil very low in fertility and difficult to vegetate when exposed in terraces.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; poor shearing strength, fair to poor bearing capacity; high shrink-swell potential, uneven consolidation.

Septic tank disposal fields: Severe limitations; very slow permeability.

Sewage lagoons: Moderate limitations on slopes < 9%, severe on > 9%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Severe limitations; very wet, fine texture, receives excess water from seepage from permeable soils upslope, fine clay hinders root penetration.

Residential development with public sewer: Very severe limitations; dries very slowly, rapid surface runoff, very poorly drained.

Residential development without public sewer: Very severe limitations; very poorly drained, high shrink-swell potential, very slowly permeable.

Buildings for light industrial and commercial use: Very severe limitations; high shrink-swell potential, dries out very slowly.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Very severe limitations; very poor drainage, remains saturated for long periods.

Intensive camp sites: Severe limitations; very slow permeability, dries out very slowly.

Picnic areas: Severe limitations; dries slowly and remains muddy and slippery for long periods, very hard if dry, water stands in all imprints and very small depressions, "oozes" when wet.

Intensive play areas: Severe limitations; very poor internal drainage, dries very slowly.

Paths and trails: Severe limitations; muddy and slippery for long periods of time.

Golf fairways: Severe limitations; dries very slowly, grass difficult to establish.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

WELLER Soil Series				LRA : 108, 109	
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA				Soil association areas of Iowa: LKW	
Soil Type No. 132	Soil Type Name Weller silt loam			Date 1972	

Soil Description:

The Weller series consists of light colored, moderately well drained, silty soils. These soils formed in moderately fine textured loess under a native vegetation of trees. They are on gently to moderately sloping sideslopes and gently sloping convex ridges. They are commonly upslope from Keswick and Lindley soils.

Weller soils typically have a dark grayish brown silt loam surface layer about 7 inches thick. The subsurface layer consists of about 5 inches of brown silt loam with platy structure. Below 12 inches the subsoil is yellowish brown silty clay loam containing some mottles in the lower part. The lower subsoil is yellowish brown, leached, silty clay loam.

Weller soils are used for cultivated crops, pasture, and woodland. The sloping crests and sideslopes are subject to severe erosion and require conservation practices for erosion control. The surface and subsurface layers may be mixed through cultivation, and in places are partially or completely removed by erosion.

Percent Slope: Typical 2-5% Range 2-14% Drainage Class Moderately well drained
Landscape Position Convex ridge crests and side-valley slopes Parent Material Loess
Permeability Slow Native Vegetation Forest Available water capacity High
Depth to Water Table Seasonally 1-3 ft. Flooding Potential Produces medium runoff
Organic Matter Low to moderately low Subsoil phosphorus Medium Subsoil potassium Very low

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Hay and pasture							
		T	K		Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Alfalfa-brome T/Ac	Alfalfa-brome AUD	Bluegrass AUD	Brome grass AUD	Trefoil AUD
132B	IIIe	3	.43	55	95	36	52	4.0	200	115	170	170
132B2	IIIe	3	.43	50	90	34	49	3.8	190	105	160	160
132C	IIIe	3	.43	35	90	34	50	3.8	190	105	160	160
132C2	IIIe	3	.43	30	85	32	46	3.2	160	100	155	155
132D2	IVe	3	.43	15	76	29	42	2.8	140	80	135	135

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs The sloping crests and sideslopes are subject to severe erosion and require conservation practices for erosion control. Contouring and terracing may be needed.

WOODLAND				
Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees
Upland Hardwoods				Upland Hardwoods Conifers Cottonwoods
0-18% slope	46-55	100-149	4w1	0-18% Moderate Moderate Mod. high
Bottomland Hardwoods				

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

SLOPES: A OR NONE - 0-2%, B - 2-5%.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Weller Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHO	4	10	200				
0-12	Silt loam	ML	A-4 (8) to A-6 (10)	-	100	95-100	0.63-2.0	.18	5.1-6.5	Moderate
12-43	Silty clay or silty clay loam	CH	A-7-6 (18-20)	-	100	95-100	0.06-0.2	.15	4.5-6.0	High to moderate
43-60	Silty clay loam	CL	A-6 (12) to A-7-6 (14)	-	100	95-100	0.2-0.63	.15	4.5-6.5	Moderate to high

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair to good in upper foot, poor below; low fertility, clayey subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Very poor, highly elastic, high volume change and large loss of bearing capacity when wet.

Major soil features affecting use for:

Highway location : Low borrow potential, generally high moisture can be expected in cuts.

Pond reservoir area : Suitable sites likely; uniform material of low permeability.

Agricultural drainage : Interceptor tile properly placed reduces seepage.

Terraces and diversions : Cuts should be held to a minimum to prevent exposure of low-fertility, fine-textured subsoils.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings : Severe limitations; highly expansive if subject to wide fluctuation of moisture content.

Septic tank disposal fields : Severe limitations; slowly permeable subsoil, seasonally wet and seepy; *unsatisfactory percolation rate.*

Sewage lagoons : Moderate limitations; 2-14% slopes.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops : Moderate limitations; slow permeability, erosion hazard on 5-14% slopes.

Residential development with public sewer: Moderate limitations; slow permeability, high shrink-swell potential.

Residential development without public sewer: Severe limitations; slow permeability.

Buildings for light industrial and commercial use : Severe limitations; high shrink-swell potential, difficult to compact to high density.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings : Moderate limitations; high shrink-swell potential, slow permeability.

Intensive camp sites : Moderate limitations; slow permeability.

Picnic areas : Slight limitations on slopes < 9%, moderate on 9-14%.

Intensive play areas : Moderate limitations on 2-5% slopes, severe on > 5%.

Paths and trails : Slight limitations; moderately well drained.

Golf fairways : Moderate limitations; low fertility, slow permeability.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Weller Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHO	4	10	200				
0-12	Silt loam	ML	A-4 (8) to A-6 (10)	-	100	95-100	0.63-2.0	.18	5.1-6.5	Moderate
12-43	Silty clay or silty clay loam	CH	A-7-6 (18-20)	-	100	95-100	0.06-0.2	.15	4.5-6.0	High to moderate
43-60	Silty clay loam	CL	A-6 (12) to A-7-6 (14)	-	100	95-100	0.2-0.63	.15	4.5-6.5	Moderate to high

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair to good in upper foot, poor below; low fertility, clayey subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Very poor, highly elastic, high volume change and large loss of bearing capacity when wet.

Major soil features affecting use for:

Highway location: Low borrow potential, generally high moisture can be expected in cuts.

Pond reservoir area: Suitable sites likely; uniform material of low permeability.

Agricultural drainage: Interceptor tile properly placed reduces seepage.

Terraces and diversions: Cuts should be held to a minimum to prevent exposure of low-fertility, fine-textured subsoils.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; highly expansive if subject to wide fluctuation of moisture content.

Septic tank disposal fields: Severe limitations; slowly permeable subsoil, seasonally wet and seepy; ~~unsatisfactory~~ percolation rate.

Sewage lagoons: Moderate limitations; 2-14% slopes.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations; slow permeability, erosion hazard on 5-14% slopes.

Residential development with public sewer: Moderate limitations; slow permeability, high shrink-swell potential.

Residential development without public sewer: Severe limitations; slow permeability.

Buildings for light industrial and commercial use: Severe limitations; high shrink-swell potential, difficult to compact to high density.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations; high shrink-swell potential, slow permeability.

Intensive camp sites: Moderate limitations; slow permeability.

Picnic areas: Slight limitations on slopes < 9%, moderate on 9-14%.

Intensive play areas: Moderate limitations on 2-5% slopes, severe on > 5%.

Paths and trails: Slight limitations; moderately well drained.

Golf fairways: Moderate limitations; low fertility, slow permeability.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

HAIG Soil Series					LRA : 108, 109							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA					Soil association areas of Iowa: AGH, GH							
Soil Type No. 362		Soil Type Name Haig silty clay loam			Date 1972							
<u>Soil Description:</u> The Haig series consists of dark colored, poorly drained soils with clayey subsoils. These soils formed in loess under a native vegetation of tall prairie grasses. Haig soils are on nearly level to flat upland divides, usually less than 1 mile wide. Some depressions are common. Haig soils typically have a black silty clay loam surface layer about 15 inches thick. The upper part of the subsoil is very dark gray silty clay loam. Below 19 inches the subsoil is very dark gray silty clay that becomes olive gray with depth. The lower subsoil beginning at about 41 inches is light olive gray silty clay loam. Haig soils are largely under cultivation, and corn and soybeans are the major crops. They are seasonally wet because the water table is high. Artificial drainage is needed to reduce surface ponding of water.												
Percent Slope: Typical 0-1% Range 0-2% Drainage Class Poorly drained Landscape Position Upland flats Parent Material Loess Permeability Slow to very slow Native Vegetation Tall prairie grasses Available water capacity High Depth to Water Table Seasonally 1-3 ft. Flooding Potential Surface runoff very slow to none Organic Matter High Subsoil phosphorus Low Subsoil potassium Low												
Yield predictions - High management												
Map symbols	Land Capability Class & Subclass	Soil loss factors T K		CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome		Bluegrass	Brome-grass	Trefoil
								T/Ac	AUD	AUD	AUD	AUD
362	IIw	4	.43	70	105	40	58	4.2	210	115	170	210
*CSR and yield data represent average figures for these soils in Iowa. Conservation Practices and Drainage Needs A drainage system is needed for increasing the growth of crops. Shallow ditches are used to remove surface water during wet periods. Tile may not drain all areas satisfactorily.												
WOODLAND												
Species		Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees							
Upland Hardwoods 0-18% slope		-	-	5w3	Upland Hardwoods 0-18% Low		Conifers Low	Cottonwoods Moderate				
Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil. Slopes: 17 or none - 0-2%, 13-2-5%												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Haig Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHO	4	10	200				
0-19	Silty clay loam or silt loam	ML or CL	A-7-6 (10-12)	-	100	95-100	0.63-0.20	0.20	5.6-6.5	Moderate to high
19-41	Silty clay	CH	A-7-6 (20)	-	100	95-100	0.06-0.20	0.15	5.6-6.5	High
41-60	Silty clay loam	CL	A-7-6 (15)	-	100	95-100	0.2-0.63	0.17	6.1-7.3	High

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in upper 1-1/2 feet, poor below; clayey subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Very poor; highly elastic, high shrink-swell potential, poor bearing capacity when wet.

Major soil features affecting use for:

Highway location: Poor potential as borrow material; seasonal high water table, nearly level topography.

Pond reservoir area: Suitable sites unlikely; slow permeability when compacted.

Agricultural drainage: Tile may not drain all areas satisfactorily, surface drainage needed in depressional areas.

Terraces and diversions: Not needed due to topography.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; high water table, high compressibility, high shrink-swell potential.

Septic tank disposal fields: Severe limitations; slowly permeable, seasonally wet and seepy; *unsatisfactory percolation rates.*

Sewage lagoons: Moderate limitations; high organic matter in surface, slow permeability.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations when drained, slowly permeable, severe limitations when not drained.

Residential development with public sewer: Severe limitations; high water table, slow permeability.

Residential development without public sewer: Severe to very severe limitations; slow permeability, high water table.

Buildings for light industrial and commercial use: Severe limitations; slow permeability, high water table, high shrink-swell potential, difficult to compact to high density.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Severe limitations; high shrink-swell potential, seasonally wet.

Intensive camp sites: Severe limitations; poorly drained, remains wet for extended periods.

Picnic areas: Severe limitations; poorly drained, remains wet for extended periods.

Intensive play areas: Severe limitations; poorly drained, ponding of surface water.

Paths and trails: Severe limitations; poorly drained; seasonally high water table, slippery when wet.

Golf fairways: Severe limitations; poorly drained, slow permeability, ponding of surface water.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

OLMITZ ^{1/}

Soil Series

LRA : 107, 108, 109

SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA

Soil association areas of Iowa:
AGH, ASE, GH, SSM, M, OMT

Soil Type No. 273 Soil Type Name Olmitz loam Date 1970

Soil Description:

The Olmitz series consists of dark colored, well to moderately drained, loamy soils. These soils have formed in loamy local alluvium and colluvium from glacial till. Olmitz soils are on alluvial fans and on slightly concave to straight footslopes.

Olmitz soils typically have a black loam upper 7 inches. Below is a very dark brown clay loam. Beginning at about 30 inches and extending to 60 inches or more is brown, friable clay loam that is slightly acid.

Olmitz soils are used for pasture and cultivation. Areas associated with steeply sloping uplands are commonly used for native bluegrass pasture. Other areas adjacent to wide valleys or less sloping uplands are used for corn, soybeans, small grains, and alfalfa. The Olmitz soils receive runoff and some overwash from the uplands.

Percent Slope: Typical 2-5% Range 2-9% Drainage Class Well drained to moderately well drained
Landscape Position Footslopes and alluvial fans Parent Material Loamy colluvium and alluvium
Permeability Moderate Native Vegetation Prairie grasses Available water capacity High
Depth to Water Table More than 5 ft. Flooding Potential Produces runoff; overhead water from adjoining higher lands
Organic Matter High Subsoil phosphorus Very low Subsoil potassium Very low

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome T/Ac	Alfalfa-brome AUD	Bluegrass AUD	Brome-grass AUD	Trefoil AUD
273B	IIe	5	.32	72	100	38	55	4.2	210	115	180	180
273C	IIIe	5	.32	57	95	36	52	4.0	200	110	170	170
273D	IIIe	5	.32	47	86	33	47	3.6	180	100	155	155

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs These soils are subject to erosion. In many places a diversion terrace is constructed above this soil so that the hazard of sheet erosion is reduced by diverting water that runs in from higher areas.

WOODLAND

Species	Estimated site index	Estimated board feet per acre per year	Ordination group	Estimated Suitability for Trees		
				Upland hardwoods	Conifers	Cottonwoods
Upland Hardwoods 0-18% slope	66-75	200-249	2o1	0-18% High	High	Very high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

^{1/} CSR and crop yields will be somewhat higher or lower than the average depending on climatic conditions in each county.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group B

Olmitz Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-30	Loam or clay loam	CL	A-6 (6-10)	100	90-100	60-80	.063-2.0	.18	5.6-6.5	Moderate
30-60	Clay loam	CL	A-6 (8) to A-7-6 (12)	100	90-100	60-80	0.63-2.0	.17	5.1-6.5	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Good; a thick surface layer that is high in organic matter.

Sand and gravel: Not suitable.

Road fill suitability: Poor; high in organic matter to 2 to 3 feet, fair to poor bearing capacity.

Major soil features affecting use for:

Highway location: High organic matter to depth of 2 to 3 feet, subject to local runoff.

Pond reservoir area: Moderately permeable, fair to good stability, high in organic matter.

Agricultural drainage: Not needed; well to moderately well drained.

Terraces and diversions: Soil properties are favorable; no limitations.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Moderate limitations; fair bearing capacity and shear strength, moderate compressibility.

Septic tank disposal fields: Moderate limitations; moderate permeability.

Sewage lagoons: Moderate limitations; moderate permeability.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Slight limitations on slopes less than 5%, moderate on slopes greater than 5%.

Residential development with public sewer: Moderate limitations; subject to runoff from upper slopes, moderate permeability.

Residential development without public sewer: Moderate limitations; subject to runoff from upper slopes; moderate permeability.

Buildings for light industrial and commercial use: Moderate limitations; subject to runoff from upper slopes; fair to poor bearing capacity.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Slight limitations on slopes 2-5%, moderate on 5-14%.

Intensive camp sites: Slight limitations on slopes 2-9%, moderate on 9-14%.

Picnic areas: Slight limitations on slopes 2-9%, moderate on 9-14%.

Intensive play areas: Moderate limitations on slopes 2-5%, severe on 5-14%.

Paths and trails: Slight limitations.

Golf fairways: Slight limitations.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

GRUNDY Soil Series					LRA : 108, 109	
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA					Soil association areas of Iowa: AGH, CH	
Soil Type No.	364	Soil Type Name	Grundy silt loam		Date	1972

Soil Description:

The Grundy series consists of dark colored, somewhat poorly drained soils. These soils formed in leached loess under a native vegetation of grasses. They occupy gently to moderately sloping sideslopes and ridgetops that surround nearly level upland flats. They are usually downslope from the Haig soils and upslope from the Clarinda soils.

Grundy soils typically have a black silty clay loam surface layer about 11 inches thick. The subsoil is very dark gray to grayish brown silty clay loam in the upper part, is silty clay from 17 to 34 inches, and is heavy silty clay loam in the lower part. Dark yellowish brown mottles are in the lower subsoil. Below about 47 inches the substratum is mottled grayish brown silty clay loam.

Grundy soils are suited to row crops, but cultivated areas erode readily. Most areas are cultivated. Corn soybeans, small grains, hay and pasture are the major crops. Terracing, residue management, and contour tillage help to reduce erosion.

Percent Slope:	Typical	2-5%	Range	1-9%	Drainage Class	Somewhat poorly drained	
Landscape Position	Upland ridges and sideslopes adjacent to upland flats				Parent Material	Loess	
Permeability	Slow		Native Vegetation	Prairie grasses		Available water capacity	High
Depth to Water Table	Seasonally 1-3 ft		Flooding Potential	Produces runoff; slow to rapid runoff.			
Organic Matter	Moderate to high		Subsoil phosphorus	Very low to low		Subsoil potassium	Low to medium

Map symbols	Land Capability Class & Subclass	Soil loss factors			Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome	Bluegrass	Brome	Trefoil	
		T	K	CSR*				T/Ac	AJD	AUD	AUD	AUD
364B	Ile	4	.37	75	107	41	59	4.5	190	115	195	195
364C	IIle	4	.37	55	102	39	56	4.3	185	110	190	190
364C2	IIIle	4	.37	50	97	37	53	4.1	175	100	175	175

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs Contouring and terracing are needed to reduce soil loss on slopes. Artificial
drainage of less sloping areas reduces seasonal wetness.

WOODLAND

Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees		
				Upland Hardwoods	Conifers	Cottonwoods
Upland Hardwoods 0-18% slope	46-55	100-149	4w1	0-18% Moderate	Moderate	Moderately high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

Slopes: A-0-2%, B-2-5%, C-5-9%.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Grundy Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-11	Silty clay loam	ML or CL	A-7-6 (10-12)	-	100	95-100	0.63-2.0	0.20	5.1-6.5	Moderate to high
11-17	Silty clay loam	CH or CL	A-7-6 (12-18)	-	100	95-100	0.20-0.63	0.17	4.8-5.0	Moderate to high
17-34	Silty clay	CH	A-7-6 (20)	-	100	95-100	< 0.06	0.15	5.1-6.8	High
34-60	Silty clay loam	CL or CH	A-7-6 (12-18)	-	100	95-100	0.2-0.63	0.16	5.6-7.3	Moderate to high

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in surface layer; poor in subsoil

Sand and gravel : Not suitable.

Road fill suitability: Very poor.

Major soil features affecting use for:

Highway location : Moderate; fair to poor bearing capacity, slow permeability, moderate to high shrink-swell potential; difficult to compact to high density.

Pond reservoir area : Rolling topography.

Agricultural drainage : Heavy clay subsoil limits tile drainage.

Terraces and diversions : High density subsoil and terraces should be graded.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings : Severe limitations; highly expansive if subject to wide fluctuation of moisture content.

Septic tank disposal fields : Severe limitations; slowly permeable, seasonally wet and seepy; *unsatisfactory percolation rates.*

Sewage lagoons : Slight limitations on slopes less than 2%, moderate on slopes more than 2%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops : Moderate limitations; somewhat poorly drained, slowly permeable.

Residential development with public sewer: Moderate limitations; somewhat poorly drained, slowly permeable.

Residential development without public sewer : Severe limitations; slowly permeable, somewhat poorly drained.

Buildings for light industrial and commercial use : Moderate limitations; fair to poor bearing capacity, slow permeability, high shrink-swell potential, difficult to compact to high density.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings : Moderate limitations; high shrink-swell potential, somewhat poorly drained.

Intensive camp sites : Moderate limitations; slow permeability, somewhat poorly drained.

Picnic areas : Moderate limitations; somewhat poorly drained, slippery and wet for short periods.

Intensive play areas : Moderate limitations; somewhat poorly drained, slow permeability, sticky when wet.

Paths and trails : Moderate limitations; somewhat poorly drained, remains wet for short periods.

Golf fairways : Moderate limitations; somewhat poorly drained, wet and slippery for short periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

SHELBY

Soil Series

LRA : 107, 108, 109

SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA

Soil association areas of Iowa:

AGH, ASE, GH, M, MH, OMT, SSM,
TM

Soil Type No. 24

Soil Type Name Shelby loam

Date 1972

Soil Description: The Shelby series consists of dark colored, moderately well drained, loamy soils. They have formed in clay loam glacial till of Kansan or Nebraskan age. Shelby soils are typically on convex sideslopes, but some are on summits or narrow ridgetops. In places where the landscape is strongly dissected, they occupy the entire sideslope. Shelby soils typically have a very dark brown loam or clay loam surface layer about 11 inches thick. The subsoil, extending to a depth of 48 inches, is brown firm clay loam. The substratum is mottled grayish brown and yellowish brown, calcareous clay loam. Strongly sloping Shelby soils are used mainly for pasture. The less strongly sloping areas are largely under cultivation. Corn, small grains, and hay are the principal crops. These soils are subject to severe erosion when cultivated.

Percent Slope: Typical 9-18% Range 5-25% Drainage Class Well to moderately well drained

Landscape Position Upland sideslopes and narrow ridgetops. Parent Material Glacial till

Permeability Moderately slow Native Vegetation Prairie Available water capacity High

Depth to Water Table 5-10 feet Flooding Potential Produces rapid runoff.

Organic Matter Moderate Subsoil phosphorus Low Subsoil potassium High

Map symbols	Land Capability Class & Subclass	Soil loss factors			Yield predictions - High management							
		T	K	CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and Pasture				
								Alfalfa-brome T/Ac	Alfalfa-brome A/D	Bluegrass AUD	Brome grass AUD	Grassland A/D
24C	IIIe	4	.37	60	93	35	51	3.9	195	110	160	195
24C2	IIIe	4	.37	58	90	34	50	3.8	190	105	160	190
24D	IIIe	4	.37	50	84	32	46	3.5	175	100	150	175
24D2	IIIe	4	.37	48	81	31	44	3.4	170	100	145	170
24D3	IVe	3	.37	45	75	29	41	3.2	160	80	135	160
24E	IVe	4	.37	40	69	26	38	2.9	145	70	125	145
24E2	IVe	4	.37	38	66	25	36	2.7	135	65	120	135
24E3	VIe	3	.37	35	-	-	-	-	-	50	-	125
24F2	VIe	4	.37	18	-	-	-	-	-	50	-	125
24F3	VIe	3	.37	15	-	-	-	-	-	40	-	100

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs Erosion control practices to reduce runoff and reduce soil losses are needed when these soils are row cropped. Short, irregular slopes complicate the layout and application of conservation practices in places.

WOODLAND

Species	Estimated site index		Estimated board feet per acre/ per year		Ordination group		Estimated Suitability for Trees					
							Upland hardwoods		Conifers		Cottonwoods	
	W. Iowa	E. Iowa	W. Iowa	E. Iowa	W. Iowa	E. Iowa	W. Iowa	E. Iowa	W. Iowa	E. Iowa	W. Iowa	E. Iowa
Upland hardwoods												
0-18% slope	46-55	66-75	100-149	200-249	4m1	2o1	Mod.	High	M. high	High	High	V. high
18-40% slope, N-NE	46-55	56-65	100-149	150-199	4m2	3r1	Mod.	M. high	M. high	M. high	M. high	High
18-40% slope, S-SW	46-55	46-55	100	100-149	5m1	4r1	Low	Mod.	Mod.	M. high	Mod.	M. high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

1/CSR and crop yields will be somewhat higher or lower than the average, depending on climatic conditions in each county.

Slopes: A or none - 0-2%, B - 2-5%, C - 5-9%, D - 9-14%, E - 14-18%,
F - 18-25%.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group _____

Shelby loam

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-11	loam or clay loam	CL	A-6 (8) to A-7-6 (16)	90-100	85-98	55-70	0.63-2.0	.19-.21	5.6-6.0	Moderate
11-48	Clay loam	CL	A-6 (8) to A-7-6 (16)	90-100	85-98	55-70	0.2-0.63	.15-.19	5.6-6.0	Moderate
48-60	Clay loam	CL	A-6 (8) to A-7-6 (12)	90-100	85-98	55-70	0.2-0.63	.14-.16	6.6-7.8	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in surface layer, poor below; thin layer high in organic matter.

Sand and gravel: Not suitable.

Road fill suitability: Good, good shear strength, slight compressibility, good workability and compaction.

Major soil features affecting use for:

Highway location: Rolling topography; seepage can be expected in some cuts, good embankment, contains some stones and boulders.

Fond reservoir area: Moderately slow permeability; good sites are common, sand pockets and stones in a few places.

Agricultural drainage: Practice not applicable.

Terraces and diversions: High density subsoils, low fertility, backslopes and channels are difficult to vegetate in places and are subject to erosion.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Slight limitations; good bearing capacity, low compressibility, possible uneven consolidation.

Septic tank disposal fields: Severe limitations; unsatisfactory percolation rates.

Sewage lagoons: Moderate limitations on slopes 5-9°, severe on slopes > 9°.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations on slopes < 14°, severe on slopes > 14°; erosion hazard on slopes.

Residential development with public sewer: Slight limitations on slopes 5-9°, moderate on slopes 9-14°, moderate to severe on slopes 14-18°.

Residential development without public sewer: Moderate limitations on slopes 5-9°, severe on slopes 9-18°, moderate to moderately slow permeability.

Buildings for light industrial and commercial use: Slight limitations on slopes 5-9°, moderate on slopes 9-14°, moderate to severe on slopes 14-18°; moderate to moderately slow permeability, good bearing capacity.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Slight limitations on slopes 5-9°, moderate on slopes 9-14°, severe on slopes > 14°.

Intensive camp sites: Slight limitations on slopes < 9°, moderate on slopes 9-14°, severe on slopes > 14°.

Picnic areas: Slight limitations on slopes < 9°, moderate on slopes 9-14°, severe on slopes > 14°.

Intensive play areas: Severe limitations on slopes < 5°; dries readily following heavy rains.

Paths and trails: Slight limitations on slopes < 14°, moderate on slopes > 14°.

Golf fairways: Slight limitations on slopes less than 14°, moderate on slopes 14-25°.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

<u>CLARINDA</u> Soil Series					LRA : <u>107, 108, 109</u> Soil association areas of Iowa: M, SSM, AGH, ASE, OMT, TM, GH							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA												
Soil Type No. <u>222</u>		Soil Type Name <u>Clarinda silty clay loam</u>					Date <u>1972</u>					
Soil Description: The Clarinda series consists of dark colored, poorly drained soils. They formed in highly weathered clayey glacial till under prairie grasses tolerant to wetness. They occupy heads of drainageways, narrow bands on sideslopes, and narrow convex ridges on uplands. They occur in positions downslope and adjacent to loess-derived soils and upslope from the more permeable soils developed in less weathered till, such as the Lamoni, Adair, and Shelby. Clarinda soils typically have a very dark gray, friable silty clay loam surface layer 11 inches thick. The dark gray or gray, weathered, very slowly permeable clay subsoil ranges from 3 to 8 feet thick. Some brown mottles, fine sand, and pebbles occur in the lower part. Clarinda soils are not well suited for cropland, because of their very slow permeability and poor natural drainage.												
Percent Slope: Typical <u>5-9%</u> Range <u>5-14%</u> Drainage Class <u>poorly drained</u> Landscape Position <u>Convex sideslopes and coves at heads of drainageways</u> Parent Material <u>Gray, highly weathered glacial till "paleosol"</u> Permeability <u>Very slow</u> Native Vegetation <u>Prairie</u> Available water capacity <u>High</u> Depth to Water Table <u>Seasonally wet be-Flooding Potential</u> Produces runoff cause of seepage from more permeable soils upslope Organic Matter <u>Low to high</u> Subsoil phosphorus <u>Low</u> Subsoil potassium <u>Low to medium</u>												
Yield predictions - High management												
Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and Pasture				
								Alfalfa-brome		Bluegrass	Brome	Trefoil
		T	K					T/Ac	AUD	AUD	AUD	AUD
222C	IVw	3	.49	30	63	24	34	2.6	130	80	110	150
222C2	IVw	3	.49	25	55	21	30	2.2	110	70	100	140
222D	IVe	3	.49	15	54	20	30	2.1	105	65	95	135
222D2	IVe	3	.49	10	46	17	25	1.8	90	50	85	120
*CSR and yield data represent average figures for these soils in Iowa. Conservation Practices and Drainage Needs <u>These soils require artificial drainage as well as erosion control measures. Tile does not function well in these soils, however, interceptor tile in more permeable soils upslope is beneficial in reducing the wetness conditions in some areas.</u>												
WOODLAND												
Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees								
Upland Hardwoods				Upland Hardwoods	Conifers	Cottonwoods						
0-18% slope	< 45	< 100	5w1	0-18% Low	Low	Low						
Remarks: <u>Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.</u> <u>Slopes: A - none - 0-2%, B - 2-5%, C - 5-9%, D - 9-14%, E - 14-18%.</u>												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group D

Clarinda Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-11	Silty clay loam	CL or ML	A-6 (6-10) to A-7-6 (14)	100	95-100	85-100	0.2-0.63	0.18	5.1-6.5	Moderate to high
11-36	Silty clay and clay	CH	A-7-6 (20)	100	95-100	85-100	< 0.06	0.15	5.1-6.5	High
36-52	Clay	CH	A-7-6 (20)	95-100	90-100	75-90	< 0.06	0.15	5.6-7.3	High

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair upper 11 inches, poor below; high clay content and low natural fertility.

Sand and gravel: Not suitable.

Road fill suitability: Unsuitable; highly elastic, high volume change with moisture, low bearing capacity when wet, low stability at high moisture content, difficult to compact properly.

Major soil features affecting use for:

Highway location: Low borrow potential, seepage often occurs in cuts, surface layer high in organic matter.

Pond reservoir area: Very low permeability when compacted, high shrink-swell potential.

Agricultural drainage: Very slow permeability, will not tile satisfactorily but location of interceptor tile upslope is critical in controlling seeps.

Terraces and diversions: Subsoil very low in fertility and difficult to vegetate when exposed in terraces.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; poor shearing strength, fair to poor bearing capacity; high shrink-swell potential, uneven consolidation.

Septic tank disposal fields: Severe limitations; very slow permeability; unsatisfactory percolation rates.

Sewage lagoons: Moderate limitations on slopes < 9%, severe on > 9%; very slowly permeable.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Severe limitations; very wet, fine texture, receives excess water from seepage from permeable soils upslope, fine clay hinders root penetration.

Residential development with public sewer: Very severe limitations; dries very slowly, rapid surface runoff, very poorly drained.

Residential development without public sewer: Very severe limitations; very poorly drained, high shrink-swell potential, very slowly permeable.

Buildings for light industrial and commercial use: Very severe limitations; high shrink-swell potential, dries out very slowly.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Very severe limitations; very poor drainage, remains saturated for long periods.

Intensive camp sites: Severe limitations; very slow permeability, dries out very slowly.

Picnic areas: Severe limitations; dries slowly and remains muddy and slippery for long periods, very hard if dry, water stands in all imprints and very small depressions, "oozes" when wet.

Intensive play areas: Severe limitations; very poor internal drainage, dries very slowly.

Paths and trails: Severe limitations; muddy and slippery for long periods of time.

Golf fairways: Severe limitations; dries very slowly, grass difficult to establish.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

DOUDS Soil Series					LRA : 108, 109							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA										Soil association areas of Iowa: ASE, AGH, L		
Soil Type No. 58		Soil Type Name Douds Loam				Date 1974						
Soil Description: The Douds series consists of sloping, light colored, moderately well drained soils. They have developed in pre-Sangamon erosional sediments which occur in valley fills consisting of loamy material of glacial origin. These soils occur on bench positions along major streams and tributaries. They have a very dark grayish brown loam surface layer 5 inches thick and a brown sandy loam subsurface layer, or A2 horizon, 6 to 9 inches thick. The subsoil is brown clay loam. The substratum is quite variable. Douds soils are better suited to hay and pasture than to cultivated crops. Erosion control and fertility management are recommended.												
Percent Slope: Typical 9-18% Range 5-24% Drainage Class Moderately well drained.												
Landscape Position High benches along primary streams. Parent Material Pre-Sangamon erosional sediments.												
Permeability Moderately slow** Native Vegetation Grass and trees Available water capacity Moderate												
Depth to Water Table Seasonally perched Flooding Potential Produces runoff. at 1-3 feet but generally > 5 feet.												
Organic Matter Low to very low Subsoil phosphorus Very low Subsoil potassium Very low												
Yield predictions - High management												
Map symbols	Land Capability Class & Subclass	Soil loss factors T K		CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome		Bluegrass	Brome	Trefoil
								T/Ac	AUD	AUD	AUD	AUD
58C2	IIIe	3	.37	35	72	28	40	3.0	150	80	135	135
58D	IVe	3	.37	30	70	27	38	2.9	145	70	125	125
58D2	IVe	3	.37	28	65	25	36	2.7	135	60	115	115
58D3	VIe	2	.37	25	-	-	29	1.9	95	50	100	100
58E	VIe	3	.37	21	-	-	25	2.2	110	60	110	110
58E2	VIe	3	.37	18	-	-	20	1.5	75	50	75	75
58E3	VIIe	2	.37	15	-	-	-	1.0	50	40	50	50
*CSR and yield data represent average figures for these soils in Iowa.												
Conservation Practices and Drainage Needs These soils are very erosive when planted to row crops, and they need conservation practices to reduce soil losses. In places interceptor tile drains may be needed to control side-hill seepage water. These soils have low inherent fertility.												
WOODLAND												
Species	Estimated site index	Estimated board feet per acre/ per year	State woodland suitability group	Ordination group	Estimated Suitability for Trees							
Upland Hardwoods					Upland Hardwoods		Conifers		Cottonwoods			
0-18% slope	66-75	200-249		201	0-18%	High	High	Very high				
18-40% slope, N-NE					18-40% N-NE							
18-40% slope, S-SW					18-40% S-SW							
Bottomland Hardwoods												
Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.												
**Permeability is variable in the lower part of the profile, ranging from moderately rapid to slow. Thin layers of sandy loam to loamy sand are common.												
Slopes: A or none - 0-2%, B - 2-5%, C - 5-9%, D - 9-14%, E - 14-18%, F - 18-25%.												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group B

Estimated Physical and Chemical Properties

Douds Series

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-8	Loam	CL	A-6 (6-10)	90-100	80-100	60-80	0.63-2.0	.14	5.1-6.0	Low
8-35	Clay loam	CL or CH	A-6 (8) to A-7-6 (10)	85-100	80-100	50-75	0.2-0.6	.16	5.1-6.0	Moderate to high
35-60	Sandy loam	SC or SM	A-4 (4) to A-2	85-100	80-100	35-45	2.0-6.3	.12	6.1-6.5	Low

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil Fair to poor: low in organic matter; clayey; low fertility.

Sand and gravel Fair: pockets of well graded sand may be in substratum and also pockets of poor gravel.

Road fill Good: fair to good bearing capacity and shear strength; low compressibility; low shrink-swell potential; easily compacted to high density.

Major soil features affecting use for:

Highway location Good borrow potential; low organic matter in surface layer; high need for cuts and fills; difficult to vegetate cuts.

Pond reservoir area Variable permeability (moderately rapid to slow); coarse material encountered below 4 feet; easily compacted.

Agricultural drainage Generally not needed.

Terraces and diversions Sand pockets in substrata are common; low fertility subsoil.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings Slight limitations; good bearing capacity and shear strength; low compressibility; uneven consolidation.

Septic tank disposal fields Severe limitations: slopes commonly exceed 9%; poor filtering material below 4 feet.

Sewage lagoons Severe limitations: moderately rapid permeability in substratum.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops Moderate limitations on slopes 5-14%, severe on slopes > 14%; erosion hazard; low natural fertility

Residential development with public sewer Slight limitations on slopes 5-9%, moderate on slopes 9-18%; seasonally seepy.

Residential development without public sewer Moderate limitations on slopes 5-9%, severe on slopes 9-18%; moderately slow permeability.

Buildings for light industrial and commercial use Slight to moderate limitations on slopes 5-14%, moderate to severe on slopes 14-18%.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings Moderate limitations on slopes 5-14%, severe on slopes > 14%; seasonally seepy; low fertility.

Intensive camp sites Moderate limitations on slopes 5-14%, severe on slopes > 14%; sites remain wet for moderate periods after rain.

Picnic areas Moderate limitations on slopes 5-14%, severe on slopes > 14%; sites remain wet for moderate periods after rain.

Intensive play areas Severe limitations on all slopes; seasonally seepy; sites remain wet for moderate periods after rain

Paths and trails Slight limitations on slopes < 14%, moderate on slopes > 14%; slippery when wet; erosive on slopes.

Golf fairways Slight to moderate limitations on slopes < 14%, moderate on slopes > 14%; low fertility; difficult to maintain turf.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

KESWICK Soil Series					LRA : 108, 109				
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA					Soil association areas of Iowa: CKL, LKW				
Soil Type No. 425		Soil Type Name Keswick loam			Date 1972				

Soil Description:
 The Keswick series consists of light colored, moderately well drained soils with clayey subsoils. Keswick soils formed mostly in reddish colored Late Sangamon paleosols, but the horizons above the pebble band formed partly in loess or loess and pediment. The native vegetation was forest. These soils occur on shoulders of sideslopes and lower convex ridgetops in the uplands.
 Keswick soils typically have a very dark gray loam surface layer about 3 inches thick. The subsurface layer extending from 3 to 11 inches is grayish brown or brown loam. The upper part of the subsoil at 11 to 18 inches is reddish brown clay loam. Between 18 and 32 inches the subsoil is mottled yellowish red and brown clay. Below about 32 inches the subsoil is mottled yellowish brown to gray clay loam.
 Keswick soils are used mostly for pasture or open woods. Some areas are used for cropland. When cultivated they are subject to severe soil loss, and gullies form in drainageways readily. Soil fertility is low, and the clayey subsoil is difficult to farm.

Percent Slope:	Typical 9-14%	Range 5-14%	Drainage Class	Moderately well drained
Landscape Position	Convex sideslopes on uplands		Parent Material	Reddish clayey paleosol till developed in
Permeability	Slow	Native Vegetation	Forest	Available water capacity Moderate
Depth to Water Table	Seasonally 1½-2 ft		Flooding Potential	Produces runoff
Organic Matter	Low	Subsoil phosphorus	Very low	Subsoil potassium Very low

Map symbols	Land Capability Class & Subclass	Soil loss factors T K		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome T/Ac	AUD	Bluegrass AUD	Brome grass AUD	Trefoil AUD
425C	IIIe	3	.43	25	61	23	33	2.6	130	65	110	150
425C2	IIIe	3	.43	20	53	20	29	2.2	110	55	95	130
425D	IVe	3	.43	10	52	20	29	2.2	110	55	95	130
425D2	IVe	3	.43	5	44	17	24	1.8	90	40	80	110
425D3	VIe	2	.43	5	-	-	-	1.2	60	30	50	100

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs These soils are erosive when planted to row crops, and they need conservation practices to reduce soil loss. The use of contouring and terraces is effective in reducing soil loss.

**Seasonally perched water table at 1½ to 2 feet above clay subsoil. Water moves more rapidly in the loam upper part and tends to accumulate at the paleosol contact which gives rise to a seasonally perched water table and side-hill seeps.

WOODLAND				
Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees
Upland Hardwoods				Upland Hardwoods Conifers Cottonwoods
0-18% slope	< 45	< 100	5cl	0-18% Low Moderate Moderate

Remarks: The information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

Slopes: A-none, B-2-5%, C-5-9%, D-9-14%

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group D

Keswick Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-11	Loam	CL	A-6 (8-12)	95-100	80-100	60-80	0.63-2.0	.16	5.1-6.0	Moderate
11-32	Heavy clay loam or clay	CH	A-7-6 (14-20)	95-100	80-100	55-80	0.06-2.0	.13	5.1-6.0	High
32-60	Clay loam	CL	A-6 (6-12)	95-100	80-100	40-70	0.20-0.63	.14	5.1-6.0	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in surface layer, poor below; low fertility, high clay content subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Very poor to depth of about 4 feet, good to fair in substratum; high shrink-swell potential.

Major soil features affecting use for:

Highway location: Rolling topography; may have seepage in some cuts, difficult to establish vegetative cover on slopes.

Pond reservoir area: Slow permeability, low seepage.

Agricultural drainage: Artificial drainage normally not needed, however, interceptor tile or surface drains may be beneficial in some areas to control seepage.

Terraces and diversions: Subsoil unfavorable for crop growth, terrace channel may be wet and seepy, cuts should be held to a minimum.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; slight compressibility, high shrink-swell potential, often seepy and wet, possible uneven consolidation.

Septic tank disposal fields: Severe limitations; slow permeability, unsatisfactory percolation rate.

Sewage lagoons: Moderate limitations on slopes less than 9%, severe on slopes more than 9%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Severe limitations; slow permeability, poor tilth, severe erosion hazard.

Residential development with public sewer: Moderate to severe limitations; high shrink-swell potential, seasonally wet and seepy.

Residential development without public sewer: Severe limitations; slow permeability.

Buildings for light industrial and commercial use: Moderate to severe limitations; moderate to high shrink-swell potential difficult to compact to high density, seasonally wet and seepy areas.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations on slopes 5-14%, severe on 14-25%; high shrink-swell potential.

Intensive camp sites: Moderate limitations on slopes less than 14%, severe on slopes more than 14%; remains wet for short periods.

Picnic areas: Moderate limitations on slopes 5-14%, severe on greater than 14%; slippery when wet.

Intensive play areas: Severe limitations on slopes greater than 5%; seepy wet spots.

Paths and trails: Moderate limitations; surface sticky and slippery when wet, seep wet spots common.

Golf fairways: Moderate limitations; difficult to maintain good turf, remains wet for short periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

OLMITZ ^{1/}

Soil Series

SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA

LRA : 107, 108, 109

Soil association areas of Iowa:
AGH, ASE, GH, SSM, M, OMT

Soil Type No. 273 Soil Type Name Olmitz loam Date 1972

Soil Description:

The Olmitz series consists of dark colored, well to moderately drained, loamy soils. These soils have formed in loamy local alluvium and colluvium from glacial till. Olmitz soils are on alluvial fans and on slightly concave to straight footslopes.

Olmitz soils typically have a black loam upper 7 inches. Below is a very dark brown clay loam. Beginning at about 30 inches and extending to 60 inches or more is brown, friable clay loam that is slightly acid.

Olmitz soils are used for pasture and cultivation. Areas associated with steeply sloping uplands are commonly used for native bluegrass pasture. Other areas adjacent to wide valleys or less sloping uplands are used for corn, soybeans, small grains, and alfalfa. The Olmitz soils receive runoff and some overwash from the uplands.

Percent Slope: Typical 2-5% Range 2-9% Drainage Class Well drained to moderately well drained
Landscape Position Footslopes and alluvial fans Parent Material Loamy colluvium and alluvium
Permeability Moderate Native Vegetation Prairie grasses Available water capacity High
Depth to Water Table More than 5 ft. Flooding Potential Produces runoff; overhead water from adjoining higher lands
Organic Matter High Subsoil phosphorus Very low Subsoil potassium Very low

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
		T	K					Alfalfa-brome T/Ac	Alfalfa-brome AUD	Bluegrass AUD	Brome-grass AUD	Trefoil AUD
273B	IIe	5	.32	72	100	38	55	4.2	210	115	180	180
273C	IIIe	5	.32	57	95	36	52	4.0	200	110	170	170
273D	IIIe	5	.32	47	86	33	47	3.6	180	100	155	155

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs These soils are subject to erosion. In many places a diversion terrace is constructed above this soil so that the hazard of sheet erosion is reduced by diverting water that runs in from higher areas.

WOODLAND

Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees		
Upland Hardwoods				Upland Hardwoods	Conifers	Cottonwoods
0-18% slope	66-75	200-249	2o1	0-18% High	High	Very high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

1/ CSR and crop yields will be somewhat higher or lower than the average depending on climatic conditions in each county.

Slopes: A-0-2%, B-2-5%, C-5-9%, D-9-14%

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group B Drained
C Undrained

Colo Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in./hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHO	4	10	200				
0-16	Silty clay loam	CL or OH or OL	<u>A-7-5 or</u> A-7-6 (14-18)	-	100	95-100	0.20-0.63	<u>.21-.23</u>	6.0-7.3	High
36-60	Silty clay loam	CL or CH	A-7-6 (14-18)	-	100	90-100	0.20-0.63	<u>.18-.20</u>	6.0-7.8	High

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair to good; high organic matter; seasonal high water table; slightly high in clay.

Sand and gravel: Not suitable.

Road fill suitability: Very poor; high organic matter; poor bearing capacity and shear strength; high volume change.

Major soil features affecting use for:

Highway location: Seasonally high water table; subject to flooding; high organic matter; highly elastic.

Pond reservoir area: Moderately slow permeability; high in organic matter.

Agricultural drainage: Moderately slow permeability; seasonal high water table; tile drainage feasible.

Terraces and diversions: Generally not needed due to topography; little or no limitation of soil material for diversions.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; seasonally high water table; poor bearing capacity and shear strength; high volume change.

Septic tank disposal fields: Severe limitations; seasonally high water table; subject to flooding; MARGINAL percolation rates.

Sewage lagoons: Severe limitations; moderately slow permeability; seasonally high water table; subject to flooding; high in organic matter.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Slight limitations when drained and protected from flooding, moderate if not.

Residential development with public sewer: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

Residential development without public sewer: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

Buildings for light industrial and commercial use: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

Intensive camp sites: Severe limitations; poorly drained; subject to flooding; slow to dry after rain.

Picnic areas: Moderate to severe limitations; occasionally flooded during use period; slow to dry after rains; poorly drained.

Intensive play areas: Moderate to severe limitations; occasionally flooded during use period; slow to dry after rains; poorly drained.

Paths and trails: Moderate limitations; occasionally flooded during use period; slow to dry after rains; poorly drained.

Golf fairways: Moderate to severe limitations; occasionally flooded during use period; remain soft and wet for moderate periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

COLO 1/ Soil Series					102, 103, 104, 105, 107, LRA : 108, 109							
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA										Soil association areas of Iowa: Statewide		
Soil Type No. 133		Soil Type Name Colo silty clay loam				Date 1972						
Soil Description: The Colo series consists of dark colored, poorly drained, bottomland soils which have developed in moderately fine textured alluvium. They occupy stream bottoms throughout Iowa and are subject to flooding. Some Colo soils occur on gentle slopes at the base of upland slopes. The Colo soils have thick, black, silty clay loam surface layers and moderately slowly permeable, very dark gray, silty clay loam subsoils. They are typically neutral in reaction and are underlain with coarser textured sediment at a depth of 4 feet or more in some places. The Colo soils are well suited to intensive row cropping and are very productive, although artificial drainage and flood protection may be needed in some areas.												
Percent Slope: Typical 0-2% Range 0-5% Drainage Class Poorly drained Landscape Position First bottom land, footslopes Parent Material Alluvium Permeability Moderately slow Native Vegetation Prairie Available water capacity High or very high Depth to Water Table 1-3 feet Flooding Potential Subject to flooding Organic Matter High Subsoil phosphorus Medium Subsoil potassium Very low - Eastern Iowa Medium - Western Iowa												
†Yield predictions - High management												
Map symbols		Land Capa- bility Class & Subclass	Soil loss factors T K		CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and Pasture			
									Alfalfa-brome		Bluegrass	Brome
									T/Ac	AUD	AUD	AUD
133	IIw	-	-	80	104	40	88	4.2	210	125	165	185
133B	IIw	-	-	75	102	39	86	4.0	200	125	160	180
*CSR and yield data represent average figures for these soils in Iowa. Conservation Practices and Drainage Needs : Some areas benefit from tile drainage. Flood protection is beneficial in most areas. Tile will function properly if properly installed with suitable outlets. †The Colo soils are mapped statewide, and yields may vary from one part of the state to another with variation in rainfall. The figures given are for central Iowa conditions. Also, flooding may reduce these yields considerably in some years. The CSR ratings may need to be adjusted to some local conditions where flooding or channeling affects the land use.												
WOODLAND:		Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees							
Species					Upland Hardwoods	Conifers	Cottonwoods					
Upland Hardwoods												
0-5% SLOPE		--	--	5w3	0-5%	Low	Low Moderate to high					
Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil. 1/ CSR and crop yields will be somewhat higher or lower than the average depending on climatic conditions in each county. SLOPE: A OR NONE - 0-2%, B - 2-5%.												

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group B Drained
C Undrained

Colo Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHO	4	10	200				
0-36	Silty clay loam	CL or OH or OL	A-7-5 or A-7-6 (14-18)	-	100	95-100	0.20-0.63	.21-.23	6.0-7.3	High
36-60	Silty clay loam	CL or CH	A-7-6 (14-18)	-	100	90-100	0.20-0.63	.18-.20	6.0-7.8	High

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair to good; high organic matter; seasonal high water table; slightly high in clay.

Sand and gravel: Not suitable.

Road fill suitability: Very poor; high organic matter; poor bearing capacity and shear strength; high volume change.

Major soil features affecting use for:

Highway location: Seasonally high water table; subject to flooding; high organic matter; highly elastic.

Pond reservoir area: Moderately slow permeability; high in organic matter.

Agricultural drainage: Moderately slow permeability; seasonal high water table; tile drainage feasible.

Terraces and diversions: Generally not needed due to topography; little or no limitation of soil material for diversions.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; seasonally high water table; poor bearing capacity and shear strength; high volume change.

Septic tank disposal fields: Severe limitations; seasonally high water table; subject to flooding; MARGINAL percolation rates.

Sewage lagoons: Severe limitations; moderately slow permeability; seasonally high water table; subject to flooding; high in organic matter.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Slight limitations when drained and protected from flooding, moderate if not.

Residential development with public sewer: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

Residential development without public sewer: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

Buildings for light industrial and commercial use: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Severe limitations; poorly drained; subject to flooding; seasonally high water table.

Intensive camp sites: Severe limitations; poorly drained; subject to flooding; slow to dry after rain.

Picnic areas: Moderate to severe limitations; occasionally flooded during use period; slow to dry after rains; poorly drained.

Intensive play areas: Moderate to severe limitations; occasionally flooded during use period; slow to dry after rains; poorly drained.

Paths and trails: Moderate limitations; occasionally flooded during use period; slow to dry after rains; poorly drained.

Golf fairways: Moderate to severe limitations; occasionally flooded during use period; remain soft and wet for moderate periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

GARA
Soil Series

LRA : 107, 108, 109

SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA

Soil association areas of Iowa:
AGH, ASE, CKL, GH, LKW, SSM

Soil Type No. 179 Soil Type Name Gara loam Date 1972

Soil Description:

The Gara series consists of moderately dark colored, moderately well drained to well drained, loamy soils. These soils formed in clay loam glacial till of Kansas or Nebraskan age under a mixed native vegetation of grasses and trees. Gara soils are on summits of low convex ridgetops and moderate to steep sideslopes dissected by few to many side-valley drainageways.

Gara soils typically have a very dark gray loam surface layer about 7 inches thick. The subsurface layer, extending to a depth of 12 inches, is dark grayish brown loam. The subsoil is dark yellowish brown loam in the upper part; below about 17 inches it is clay loam. The substratum beginning at about 45 inches is mottled yellowish brown, calcareous clay loam.

The Gara soils are used for growing native pasture, woodland, and cultivated crops. Corn, soybeans, oats, and grass-legume meadows are on less sloping areas. Steeper areas are in pasture. They are highly erosive where used for row crops. If these soils are used for row crops, terracing and cultivating on the contour are needed.

Percent Slope: Typical 9-18% Range 5-30% Drainage Class Well to moderately well drained

Landscape Position Upland sideslopes and convex ridgetops Parent Material Clay loam glacial till

Permeability Moderately slow Native Vegetation Prairie-forest Available water capacity High

Depth to Water Table > 5 feet Flooding Potential Produces medium to rapid runoff

Organic Matter Mod. low to low Subsoil phosphorus Very low to low Subsoil potassium Very low

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
		T	K					Alfalfa-brome T/Ac	Alfalfa-brome AUD	Bluegrass AUD	Brome grass AUD	Trefoil AUD
179C	IIIe	3	.37	55	87	33	50	3.7	185	100	155	155
179C2	IIIe	3	.37	53	84	32	46	3.5	175	95	150	150
179D	IVe	3	.37	45	78	30	43	3.3	165	80	140	140
179D2	IVe	3	.37	43	75	28	41	3.1	155	75	135	135
179E	VIe	3	.37	35	-	-	-	2.5	125	50	100	100
179E2	VIe	3	.37	33	-	-	-	2.2	110	45	-	-
179F2	VIe	3	.37	13	-	-	-	1.5	75	40	-	-
179F3	VIIe	2	.37	10	-	-	-	1.2	60	40	-	-

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs Sloping areas require erosion control practices such as terraces and contouring.

Also, cropping systems with a high percentage of meadow are needed for adequate erosion control and suitable production.

Drainage is not required.

WOODLAND												
Species	Estimated site index		Estimated board feet per acre/ per year		Ordination group		Estimated Suitability for Trees					
							Upland hardwoods		Conifers		Cottonwoods	
	W.Iowa	E.Iowa	W.Iowa	E.Iowa	W.Iowa	E.Iowa	W.Iowa	E.Iowa	W.Iowa	E.Iowa	W.Iowa	E.Iowa
Upland hardwoods												
0-18% slope	46-55	66-75	100-149	200-249	4m1	2o1	Mod.	High	M.high	High	High	V.high
18-40% slope, N-NE	46-55	56-65	100-149	150-199	4m2	3r1	Mod.	M.high	M.high	M.High	M.high	High
18-40% slope, S-SW	< 45	46-55	< 100	100-149	5m1	4r1	Low	Mod.	Mod.	M.high	Mod.	M.high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

1/ CSR and crop yields will be somewhat higher or lower than the average, depending on climatic conditions in each county.

Slopes: A or none, 0-2%; B, 2-5%; C, 5-9%; D, 9-14%; E, 14-18%; F, 18-25%.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Estimated Physical and Chemical Properties

Gara Series

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-12	Loam	CL	A-4 (3) to A-6 (8)	85-95	80-90	55-70	0.63-2.0	.20-.22	5.6-6.0	Moderate
12-45	Clay loam	CL or CH	A-6 (9) to A-7-6 (14)	85-95	80-90	55-75	0.2-0.63	.16-.18	5.1-6.5	Moderate
45-60	Loam or clay loam	CL	A-6 (10) to A-7-6 (14)	85-95	80-90	55-75	0.2-0.63	.16-.18	6.6-7.8	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair to good in upper foot; poor below; surface layer is thin.

Sand and gravel: Not suitable.

Road fill suitability: Good; good shear strength and bearing capacity, slight compressibility.

Major soil features affecting use for:

Highway location: Rolling topography; seepage can be expected in some cuts, good embankment material.

Pond reservoir area: Moderately slowly permeable, good stability, sand pockets and stones in a few places, easily compacted to high density.

Agricultural drainage: Not needed; well and moderately well drained.

Terraces and diversions: Channels and backslopes difficult to vegetate and erode readily, construction difficult on steep slopes.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Slight limitations; good bearing capacity and shear strength, possible uneven consolidation.

Septic tank disposal fields: Severe limitations; *unsatisfactory percolation rate.*

Sewage lagoons: Moderate limitations on slopes 5-9%, severe on slopes more than 9%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate on slopes 5-14%, severe on slopes > 14%; subject to erosion.

Residential development with public sewer: Slight limitations on slopes 5-9%, moderate on 9-14%, moderate to severe on slopes 14-18%, severe on slopes > 18%; moderate to moderately slow permeability.

Residential development without public sewer: Moderate limitations on slopes 5-9%, severe on slopes > 9%; moderate to moderately slow permeability.

Buildings for light industrial and commercial use: Slight limitations on slopes 5-9%, moderate on 9-14%, moderate to severe on 14-18%, severe on slopes 18-25%.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations on slopes 5-14%, severe on slopes greater than 14%.

Intensive camp sites: Moderate limitations on slopes < 14%, severe on > 14%; moderately slow permeability.

Picnic areas: Slight limitations on slopes < 9%, moderate on 9-14%, severe on > 14%.

Intensive play areas: Moderate limitations on slopes of 2-5%; severe on slopes > 5%.

Paths and trails: Slight limitations on slopes < 14%, moderate on 14-25%.

Golf fairways: Slight limitations on slopes < 14%, moderate on slopes 14-25%.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

ADAIR

Soil Series

LRA : 107, 108, 109

SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA

Soil association areas of Iowa:
AGH, ASE, GH, M, MIH, OMT, SSM, TM

Soil Type No. 192 Soil Type Name Adair clay loam Date 1972

Soil Description:

The Adair series consists of dark colored, moderately well drained to somewhat poorly drained soils with clayey subsoils. These soils formed in reddish, clayey, late Sangamon paleosols under a native vegetation of tall prairie grasses. They are on convex ridgetops and commonly in bands at the shoulders of sideslopes.

Adair soils typically have a black to very dark gray clay loam surface layer 17 inches thick. A stone line is at the base of the surface layer. The subsoil from 17 to 25 inches is mottled dark brown and dark reddish brown clay. Below this is a mottled dark yellowish brown clay loam to a depth of 60 inches. A few concretions of lime are in the lower part.

Adair soils are used for cultivation and pasture. These soils have severe erosion hazard. The clayey subsoil, where exposed to the surface by erosion, is difficult to till, will crust and seal following rains, and is of low fertility. Seepy, wet spots are common near the contact with loess soils upslope.

Percent Slope: typical 9-14% Range 5-18% Drainage Class Moderately well drained to somewhat poorly drained
Landscape Position Upland sideslopes and extended ridges Parent Material Reddish clayey paleosol, till
Permeability Slow Native Vegetation Prairie grasses Available water capacity high
Depth to Water Table Seasonally 14-2 feet** Flooding Potential Produces runoff and is subject to erosion
Organic Matter Low to high Subsoil phosphorus Very low Subsoil potassium Very low to low

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome T/Ac	Alfalfa-brome AUD	Bluegrass AUD	Brome-grass AUD	Trefoil AUD
192C	IIIe	3	.43	35	73	28	40	3.1	155	80	120	170
192C2	IIIe	3	.43	30	65	25	36	2.7	135	70	105	160
192D	IVe	3	.43	20	62	23	34	2.6	130	60	100	150
192D2	IVe	3	.43	15	54	20	30	2.3	115	55	85	130
192D3	VIe	2	.43	5	-	-	-	1.6	80	45	60	110

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs Erosion control and interceptor tile drainage are important management practices which are needed.

** Seasonally perched water table at 14 to 2 feet above clay subsoil. Water moves more rapidly in the loam upper part and tends to accumulate at the paleosol contact which gives rise to a seasonally perched water table and side-hill seeps.

WOODLAND

Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees		
				Upland Hardwoods	Conifers	Cottonwoods
Upland Hardwoods 0-18% slope	< 45	< 100	Sc1	0-18% Low	Moderate	Moderate

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

1/CSR and crop yields will be somewhat higher or lower than the average, depending on climatic conditions in each county.

Slope: A or none, 0-2%; B, 2-5%; C, 5-9%; D, 9-14%; E, 14-18%

ENGINEERING INFORMATION AND INTERPRETATIONS

Adair Series

Hydrologic Group D

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-17	Clay loam	CL	A-6 (8-12)	95-100	80-95	60-80	0.2-0.63	.17-.19	5.6-6.5	Moderate
17-34	Clay or heavy clay loam	CH or CL	A-7-6 (15-20)	95-100	80-95	55-80	0.06-0.20	.13-.16	5.6-6.5	High
34-60	Clay loam	CL	A-7-6 (16)	95-100	80-95	55-80	0.2-0.63	.14-.16	6.1-7.3	Moderate

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in upper 17-18 inches, poor below 18 inches; thin layer of suitable material; clayey subsoil.

Sand and gravel: Not suitable.

Road fill suitability: Very poor in subsoil, highly elastic and has high shrink-swell potential; fair or good in substratum.

Major soil features affecting use for:

Highway location: Rolling topography; seepage can be expected in cuts, difficult to vegetate.

Pond reservoir area: Slow permeability when compacted; moderate to high shrink-swell potential; easily compacted.

Agricultural drainage: Seasonally wet and seepy; interceptor tile placed above the seepy areas help reduce wetness.

Terraces and diversions: High density, low fertility, difficult to vegetate, terrace channels likely to be seepy and wet.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; slight compressibility, high shrink-swell potential, often seepy and wet.

Septic tank disposal fields: Severe limitations; unsatisfactory percolation rate.

Sewage lagoons: Moderate limitations on slopes < 9%, severe on > 9%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Severe limitations; slow permeability, severe erosion hazard, poor workability.

Residential development with public sewer: Moderate to severe limitations; somewhat seepy, high shrink-swell potential.

Residential development without public sewer: Severe limitations; seepy and wet in places, slow permeability.

Buildings for light industrial and commercial use: Moderate to severe limitations; moderate to high shrink-swell potential, seepy and wet in places.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations on slopes < 14%, severe on > 14%; high shrink-swell potential, somewhat poorly drained.

Intensive camp sites: Moderate limitations on slopes < 14%, severe on > 14%; remains wet for short periods, somewhat poorly drained.

Picnic areas: Moderate limitations on slopes < 14%, severe on > 14%; slippery when wet.

Intensive play areas: Severe limitations on slopes > 5%; seepy wet spots.

Paths and trails: Moderate limitations, surface sticky and slippery when wet, seepy spots common.

Golf fairways: Moderate limitations; difficult to establish vegetation, remains wet for short periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

MYSTIC Soil Series					LRA : <u>108, 109</u>								
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA										Soil association areas of Iowa: <u>ASE, AGH, LKW, CKL</u>			
Soil Type No. <u>592</u>		Soil Type Name <u>Mystic silt loam</u>					Date <u>1970</u>						
Soil Description: The Mystic series consists of moderately sloping to moderately steep, moderately dark colored, moderately well to somewhat poorly drained soils. They have developed in Sangamon alluvium of mixed origin during Late Sangamon time. They have a very dark grayish brown silt loam surface layer 5 to 8 inches thick and a brown, gritty silt loam subsurface layer, or A2 horizon, 2 to 6 inches thick. The subsoil is dark reddish brown to brown clay loam with reddish mottles. These soils are of minor extent and occur on bench positions along major streams and tributaries. Erosion control and proper fertility management are recommended.													
Percent Slope: Typical <u>5-14%</u> Range <u>5-18%</u> Drainage Class <u>Somewhat poorly drained</u> Landscape Position <u>High benches along primary streams</u> Parent Material <u>Pre-Sangamon alluvium</u> Permeability <u>Slow</u> Native Vegetation <u>Grass and forest</u> Available water capacity <u>Moderate</u> Depth to Water Table <u>Seasonally 1-3 ft.</u> Flooding Potential <u>Produces runoff</u> Organic Matter <u>Low to very low</u> Subsoil phosphorus <u>Very low</u> Subsoil potassium <u>Very low</u>													
Yield predictions - High management													
Map symbols		Land Capa- bility Class & Subclass	Soil loss factors T K		CSR*	Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
									Alfalfa-brome		Bluegrass	Brome	Trefoil
									T/Ac	AUD	AUD	AUD	AUD
592C2		IIIe	3	.43	20	60	23	33	2.5	125	65	90	145
592C3		IVe	2	.43	5	44	17	24	2.0	100	55	60	125
592D		IVe	3	.43	10	59	29	33	2.3	115	60	85	135
592D2		IVe	3	.43	5	51	19	28	2.0	100	55	70	120
592D3		VIe	2	.43	5	-	-	20	1.5	75	40	50	100
592E2		VIe	3	.43	5	-	-	15	1.5	75	40	60	100
592E3		VIIe	2	.43	5	-	-	-	1.0	50	30	40	80
*CSR and yield data represent average figures for these soils in Iowa.													
Conservation Practices and Drainage Needs <u>These soils are very erosive when planted to row crops, and they need conservation practices to reduce soil losses. When terracing these soils, cuts should be held to a minimum to prevent the exposure of</u> <u>low-fertility, clayey subsoil material. These soils are seasonally wet and seepy.</u>													
WOODLAND													
Species		Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees								
Upland Hardwoods					Upland Hardwoods		Conifers		Cottonwoods				
0-18% slope		< 45	< 100	5cl	0-18% Low		Moderate		Moderate				
Remarks: <u>Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.</u>													

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group D

Mystic Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-10	Silt loam	ML or CL	A-4 or A-6	100	100	90-100	0.63-2.0	.17	5.0-6.0	Low to moderate
10-43	Clay loam	CL or CH	A-6 or A-7-6	100	95-100	65-80	0.06-0.20	.15	5.4-6.4	Moderate to high
43-54	Sandy clay loam	SC or CL	A-6, A-2 or A-4	100	95-100	40-55	0.63-2.0	.14	6.1-6.5	Low to moderate
54-60	Sandy loam	SM or SC	A-2 or A-4	100	95-100	35-45	2.0-6.3	.10	6.6-7.0	Low

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Good in surface layer, poor below; clayey and low in organic matter.

Sand and gravel: Gravel, unsuitable; sand, fair to poor; some areas have pockets and strata of well-graded sand in the subsoil.

Road fill suitability: Fair to poor in subsoil, poor bearing capacity, high shrink-swell potential, substratum has low volume change, easily compacted to high density.

Major soil features affecting use for:

Highway location: Footslopes of uplands; good borrow potential in substratum in places, seasonally wet and seepy, difficult to vegetate cuts.

Pond reservoir area: Low permeability when compacted, coarse textured below 4 or 5 feet.

Agricultural drainage: Generally not needed, but interceptor tile properly placed can reduce seepy condition.

Terraces and diversions: Very low fertility subsoil with poor tilth where exposed, seasonally seepy.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Moderate limitations; good bearing capacity in substratum, seasonally seepy.

Septic tank disposal fields: Severe limitations; slowly permeable subsoil, poor filtering material below 5 feet.

Sewage lagoons: Moderate limitations on slopes 5-9%, severe on slopes > 9%; slowly permeable, coarse textures below 4 to 5 feet in places.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Severe limitations; slowly permeable, erosion hazard, low fertility, poor tilth.

Residential development with public sewer: Moderate limitations; seepy and wet, slowly permeable.

Residential development without public sewer: Severe limitations; slowly permeable, moderately seepy.

Buildings for light industrial and commercial use: Moderate limitations; seepy and wet, moderate to high shrink-swell potential.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations; somewhat poorly drained, slow to dry after rain.

Intensive camp sites: Moderate limitations on slopes 5-14%, severe on slopes > 14%; surface slow to dry after rain, somewhat poorly drained.

Picnic areas: Moderate limitations on slopes 5-14%, severe on slopes > 14%; somewhat poorly drained, surface slow to dry after rain.

Intensive play areas: Severe limitations on all slopes; somewhat poorly drained, surface slow to dry after rain.

Paths and trails: Moderate limitations; somewhat poorly drained, slipper when wet, slow to dry after rain.

Golf fairways: Moderate to severe limitations; somewhat poorly drained, surface slow to dry after rain, turf easily damaged, low fertility, difficult to maintain vegetation.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

GRUNDY
Soil Series
SOIL SURVEY INFORMATION AND INTERPRETATIONS - IOWA

LRA : 108, 109
Soil association areas of Iowa:
ACH, CH

Soil Type No. 364 Soil Type Name Grundy silt loam Date 1972

Soil Description:

The Grundy series consists of dark colored, somewhat poorly drained soils. These soils formed in leached loess under a native vegetation of grasses. They occupy gently to moderately sloping sideslopes and ridgetops that surround nearly level upland flats. They are usually downslope from the Haig soils and upslope from the Clarinda soils.

Grundy soils typically have a black silty clay loam surface layer about 11 inches thick. The subsoil is very dark gray to grayish brown silty clay loam in the upper part, is silty clay from 17 to 34 inches, and is heavy silty clay loam in the lower part. Dark yellowish brown mottles are in the lower subsoil. Below about 47 inches the substratum is mottled grayish brown silty clay loam.

Grundy soils are suited to row crops, but cultivated areas erode readily. Most areas are cultivated. Corn soybeans, small grains, hay and pasture are the major crops. Terracing, residue management, and contour tillage help to reduce erosion.

Percent Slope: Typical 2-5% Range 1-9% Drainage Class Somewhat poorly drained
Landscape Position Upland ridges and sideslopes adjacent to upland flats Parent Material Loess
Permeability Slow Native Vegetation Prairie grasses Available water capacity High
Depth to Water Table Seasonally 1-3 ft Flooding Potential Produces runoff; slow to rapid runoff.
Organic Matter Moderate to high Subsoil phosphorus Very low to low Subsoil potassium Low to medium

Map symbols	Land Capability Class & Subclass	Soil loss factors		CSR*	Yield predictions - High management							
					Corn Bu/Ac	Soybeans Bu/Ac	Oats Bu/Ac	Hay and pasture				
								Alfalfa-brome	Bluegrass	Brome	Trefoil	
		T	K					T/Ac	AJD	AJD	AJD	AJD
364B	Ile	4	.37	75	107	41	59	4.5	190	115	195	195
364C	IIle	4	.37	55	102	39	56	4.3	185	110	190	190
364C2	IIIle	4	.37	50	97	37	53	4.1	175	100	175	175

*CSR and yield data represent average figures for these soils in Iowa.

Conservation Practices and Drainage Needs Contouring and terracing are needed to reduce soil loss on slopes. Artificial drainage of less sloping areas reduces seasonal wetness.

WOODLAND

Species	Estimated site index	Estimated board feet per acre/ per year	Ordination group	Estimated Suitability for Trees		
				Upland hardwoods	Conifers	Cottonwoods
Upland Hardwoods 0-18% slope	46-55	100-149	4wl	0-18% Moderate	Moderate	Moderately high

Remarks: Information contained on this sheet is estimated, based on the best judgment of agronomists and other specialists who have a good knowledge of the characteristics, use, and management requirements of this soil.

Slopes: A-0-2%, B-2-5%, C-5-9%.

ENGINEERING INFORMATION AND INTERPRETATIONS

Hydrologic Group C

Grundy Series

Estimated Physical and Chemical Properties

Depth from surface (inches)	Classification			% of Material passing sieve no.			Permeability (in/hr.)	Available water capacity (in./in.)	Soil reaction (pH)	Shrink-swell potential
	USDA texture	Unified	AASHTO	4	10	200				
0-11	Silty clay loam	ML or CL	A-7-6 (10-12)	-	100	95-100	0.63-2.0	0.20	5.1-6.5	Moderate to high
11-17	Silty clay loam	CH or CL	A-7-6 (12-18)	-	100	95-100	0.20-0.63	0.17	4.8-5.0	Moderate to high
17-34	Silty clay	CH	A-7-6 (20)	-	100	95-100	< 0.06	0.15	5.1-6.8	High
34-60	Silty clay loam	CL or CH	A-7-6 (12-18)	-	100	95-100	0.2-0.63	0.16	5.6-7.3	Moderate to high

SUITABILITY OF SOIL AS RESOURCE MATERIAL

Topsoil suitability: Fair in surface layer; poor in subsoil

Sand and gravel: Not suitable.

Road fill suitability: Very poor.

Major soil features affecting use for:

Highway location: Moderate; fair to poor bearing capacity, slow permeability, moderate to high shrink-swell potential; difficult to compact to high density.

Pond reservoir area: Rolling topography.

Agricultural drainage: Heavy clay subsoil limits tile drainage.

Terraces and diversions: High density subsoil and terraces should be graded.

Degree of limitation and major soil features affecting use for:

Foundations for low buildings: Severe limitations; highly expansive if subject to wide fluctuation of moisture content.

Septic tank disposal fields: Severe limitations; slowly permeable, seasonally wet and seepy; *unsatisfactory percolation rates.*

Sewage lagoons: Slight limitations on slopes less than 2%, moderate on slopes more than 2%.

Degree of limitation and soil features affecting Land Use planning:

Agricultural farm crops: Moderate limitations; somewhat poorly drained, slowly permeable.

Residential development with public sewer: Moderate limitations; somewhat poorly drained, slowly permeable.

Residential development without public sewer: Severe limitations; slowly permeable, somewhat poorly drained.

Buildings for light industrial and commercial use: Moderate limitations; fair to poor bearing capacity, slow permeability, high shrink-swell potential, difficult to compact to high density.

RECREATION

Degree of limitation and soil features affecting use for:

Cottages and utility buildings: Moderate limitations; high shrink-swell potential, somewhat poorly drained.

Intensive camp sites: Moderate limitations; slow permeability, somewhat poorly drained.

Picnic areas: Moderate limitations; somewhat poorly drained, slippery and wet for short periods.

Intensive play areas: Moderate limitations; somewhat poorly drained, slow permeability, sticky when wet.

Paths and trails: Moderate limitations; somewhat poorly drained, remains wet for short periods.

Golf fairways: Moderate limitations; somewhat poorly drained, wet and slippery for short periods.

The soil is evaluated only to a depth of five feet or less. Soils are rated on the basis of three classes of soil limitations: Slight - relatively free of limitations or limitations are easily overcome; Moderate - limitations need to be recognized, but can be overcome with good management and careful design; Severe - limitations are severe enough to make use questionable. (Severe may be further subdivided into Severe and Very Severe where needed.)

Hand-drawn map of a farm with various fields and pastures labeled. The map includes names like "Hexman", "Neal Comm", "Luce Inc", "Paul Wood's Permanent Pasture", and "Galen Benbow". It also features numerous numerical annotations and circled numbers (1, 2, 3, 4) indicating specific areas or measurements.

Labels and annotations on the map include:

- Hexman** (top left)
- Neal Comm** (top left)
- Bottom** (top left)
- COM** (top center)
- 4** (circled, top center)
- Luce Inc** (top right)
- seeded most of time** (top right)
- 1 Row crop out of 6 or 7** (top right)
- stave** (middle left)
- Pasture** (middle left)
- Bottom** (middle left)
- CM COM** (middle center)
- Chew** (middle center)
- Pasture** (middle right)
- Paul Wood's Permanent Pasture** (center)
- bottom** (bottom left)
- Pasture** (bottom center)
- COM** (bottom center)
- Pasture** (bottom right)
- Galen Benbow** (bottom left)

Numerical annotations and circled numbers (1, 2, 3, 4) are scattered throughout the map, often with arrows pointing to specific areas.

Doyle
 See 1
 Sheet 1 of 3

Iowa-WS-5
 4-6-72
 (File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
 Soil Conservation Service
 Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
 (Sheet Erosion)

Watershed Long Creek
 Structure Site # _____
 Acres of _____
 Sediment Source _____
 Drainage Area _____

Date 12/73
 Prepared by D.L. Chidester
 Checked by _____
 (R) Rainfall Factor 180

Present Conditions _____
 Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	192	.43	100	7	St. Rowl	Common	.047	63.5	3	19	19			
	2	24	.37	100	15	St. Rowl	Common	.038	171.5	7	16	—			
	3	87	.37	200	1	St. Rowl	Cent. Rowl	.36	10.0	4	7	7			
	4	103	.37	200	3	St. Rowl	Cent. Rowl	.36	30.0	11	7	—			
	4	192	.43	100	7	St. Rowl	Com	.06	51.9	3	6	6			
		192	.43	100	11	St. Rowl	Com	.06	121.9	7	5	—			
	5	24	.37	100	11	Pasture		.013	109.9	1	10	10			
		11	.32	200	3	W. 1/4 1/4		.02	26.0	1	5	5			
		192	.43	100	7	Pasture		.042	63.5	3	15	15			
	2	364	.37	200	3	St. Rowl	Common	.032	30.0	1	20	20			
2		93	.43	200	7	St. Rowl	Common	.032	90.2	3	60	60			
		93	.43	100	11	St. Rowl	Common	.032	121.9	4	56	40			
		11	.32	200	3	St. Rowl	Common	.032	26.0	1	40	40			
	3	87	.37	200	1	St. Rowl	Cent. Rowl	.36	10.0	4	10	10			
3		103	.32	200	3	St. Rowl	Cent. Rowl	.36	26.0	9	20	—			
	2	192	.43	200	7	St. Rowl	Com	.06	90.2	5	8	—			
		192	.43	200	11	St. Rowl	Com	.06	174.1	10	5	—			

Erosive Land Total 309
 Percent 80

Other Land
 Total _____
 Grand Total _____

(Over)

1 Herman O'Neal
 2 Luce Inc.
 3 C.M. Chew

Doyle
Sec. 1
sheet 2 of 3

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 12/73
Prepared by D.L. Chidester
Checked by _____
(R) Rainfall Factor 180

Present Conditions _____
Projected Conditions _____

														Engr. Complete)	
Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Terr. Fac.	Sed. Removed Tot. Tons
		Type	"K" Factor	Length	%										
3	2	132	.43	200	4	St. Row	Com	.06	46.4	3	14	14			
		132	.43	100	7	St. Row	Com	.06	63.5	4	3	3			
		132	.43	100	10	St. Row	Com	.06	104.5	6	3	—			
		93	.43	100	4	St. Row	Com	.06	31.0	2	4	4			
		65	.43	100	7	St. Row	Com	.06	63.5	4	11	11			
	3	364	.37	100	6	Pasture		.011	44.6	1	7	7			
		93	.43	100	10	Pasture		.011	104.5	1	13	13			
		24	.37	100	12	Pasture		.011	119.9	1	16	16			
		11	.32	200	3	Wildlife		.013	26.0	1	8	8			
		4	364	.37	100	3	St. Row	Com	.06	20.0	1	6	6		
364	.37		200	6	St. Row	Com	.06	61.9	4	12	12				
192	.43		200	7	St. Row	Com	.06	90.2	5	26	—				
93	.43		100	7	St. Row	Com	.06	90.2	5	6	—				
3	24		.37	100	15	Woodland		.01	171.5	2	5	5			
4	1	103	.37	200	4	Pasture		.036	40.0	1	14	14			
		93	.43	200	8	Pasture		.012	108.4	1	20	20			
		93	.43	100	15	Pasture		.012	199.3	2	14	14			
Erosive Land Total											182	147			
Percent											81				
3 C.M. Chew															

3 C.M. Chew

4 Paul Woods

Other Land
Total
Grand Total

(Over)

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

Doyle
Sec 1
Sheet 3 of 3

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 12/73
Prepared by D.L. Chidester
Checked by _____
(R) Rainfall Factor 180

Present Conditions _____

Protected Conditions _____

[illegible]

4 Paul Woods
5 Galen Benbow

Erosive Land Total	149	125
Percent		84

Other Land	
Total	
Grand Total	

(Over)

Orville Carson
CCOM accros slope
Pasture

Paul Woods
Permanent Pasture

Kenneth Dugger
Permanent Pasture

COM accros slope
George Wolfe
Permanent Pasture
COM

Marvin Brown
Permanent Pasture
CCCOM contour
CCCOM contour

COM
Permanent Pasture
O'Neal
COM

Permanent Pasture
Galen
Benbow Permanent Pasture

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

DISTRICT COUNSEL Soil Conservation Service

Des Moines, Iowa

Doyle
Section 2
Sheet 1 of 3

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 12/73
Prepared by D.L. Chidester
Checked by _____
(R) Rainfall Factor 180

Present Conditions _____
Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Appld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	6	192	.43	200	7	St Row	Panna	.032	90.2	3	4	4			
	7	192	.43	200	7	St Row	Com	.06	90.2	5	5	-			
		93	.43	100	10	St Row	Com	.06	104.5	6	5	-			
	8	364	.37	200	6	St Row	Com	.06	61.9	4	10	10			
		192	.43	100	10	St Row	Com	.06	104.5	6	8	-			
	5	192	.43	100	7	Pasture		.036	63.5	2	15	15			
		24	.37	200	11	Pasture		.036	149.8	5	15	-			
		11	.32	200	3	Woodland		.02	26.0	1	13	13			
2		24	.37	100	15	Wildlife		.012	199.3	2	5	5			
		192	.43	100	7	Pasture		.013	63.5	1	15	15			
		24	.37	200	11	Pasture		.036	149.8	5	26	-			
		24	.37	100	15	Woodland		.013	199.3	3	28	28			
		11	.32	200	3	Wildlife		.02	26.0	1	7	7			
3	1	93	.43	100	7	Pasture		.013	63.5	1	48	48			
		93	.43	200	15	Pasture		.013	286.3	4	49	49			
	3	11	.32	200	3	Wildlife		.02	26.0	1	5	5			

Erosive Land Total 258
Percent 77

Other Land
Total _____
Grand Total _____

(Over)

- 1 Herman O'Neal
- 2 Galen Benbow
- 3 Martin Brown

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UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

Doyle

See 2

sheet 2 of 3

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek

Structure Site # _____

Acres of _____

Sediment Source _____

Drainage Area _____

Date 12/73Prepared by DL Chidester

Checked by _____

(R) Rainfall Factor 180

Present Conditions _____

Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
3	2	364	.37	200	3	Contour	CCOM	.17	16.1	3	24	24			
		364	.37	200	6	Contour	CCOM	.17	31.0	5	21	-			
		93	.43	100	10	Contour	CCOM	.17	62.5	11	7	-			
4	1	364	.37	100	6		Pasture	.11	49.6	1	8	8			
		192	.43	100	8		Pasture	.040	75.9	3	9	9			
		24	.37	100	15		Pasture	.013	171.5	2	23	23			
5	1	364	.37	100	5		Pasture	.036	34.6	1	8	8			
		192	.43	100	7		Pasture	.036	63.5	2	10	10			
		93	.43	200	11		Pasture	.036	174.1	6	22	-			
		24	.37	200	15		Pasture	.036	246.4	9	18	-			
6	1	11	.32	300	3		Pasture	.036	32.5	1	18	18			
		93	.43	200	11		Pasture	.040	174.1	7	4	-			
		2	192	.43	100	6	Contour	CCOM	.12	25.4	3	12	12		
	3	93	.43	200	8	Contour	CCOM	.12	65.0	8	20	-			
		93	.43	200	8	Wildlife		.04	108.4	4	1	1			

Erosive Land Total

208

Percent

116

56

Other Land

Total

Grand Total

(Over)

3-Martin Brown

4-Kenneth Dagger

5-Paul Woods

6-Orville Parson

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

Doyle
section 2
sheet 3 of 3

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 11/79
Prepared by _____
Checked by _____
(R) Rainfall Factor

Present Conditions _____

Protected Conditions _____

[illegible]

Erosive Land Total	174	132
Percent		76

Other Land	
Total	
Grand Total	

(Over)

7 George Wolf

L.L. Gonseth

Permanent
Pasture ①

W (Bill) Gonseth

Permanent
Pasture ①

3

23.9 ccom ① 9 121.8 ccom
across slope

2A 2B
COMMON SLOPE
across ③
COMMON SLOPE ②

MRS. J. E. Gonseth
Permanent
Pasture ②

Kenneth
DUGGER

10. 22.0 ③
cccom ccom ①
across slope

Permanent
Pasture ②

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WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek

Date 1/9/74

Present Conditions ✓

Structure Site #

Prepared by

Acres of

Checked by

Sediment Source

Protected Conditions

Drainage Area

(R) Rainfall Factor

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
3	3	222	.49	100	7	Contour	Commm	.032	40.7	1	21	21			
		192	.43	100	7	Contour	Commm	.032	35.7	1	12	12			
4	1	364	.37	200	3	Contour	CCom	.12	16.0	2	5	5			
		364	.37	200	5	Contour	CCom	.12	25.5	3	14	14			
		222	.49	200	7	Contour	CCom	.12	33.7	4	18	18			
		192	.43	200	7	Contour	CCom	.12	50.5	6	20	—			
		11	.32	200	3	Contour	CCom	.12	13.8	2	6	6			
		11	.32	300	3	Pasture		.013	32.5	1	20	20			
	2	192	.43	200	7	Pasture		.013	90.2	1	18	18			
		222	.49	200	7	Pasture		.013	102.8	1	25	25			
		362	.37	300	1	Contour	CCCom	.23	8.0	2	7	7			
		364	.37	300	3	Contour	CCCom	.23	20.1	5	8	—			
		364	.37	300	6	Contour	CCCom	.23	38.9	9	7	—			
		364	.37	200	5	Building Roads			50.7	4	8	8			
										5	13	—			

Erosive Land Total 202
Percent 76

Other Land
Total
Grand Total

(Over)

3 Kenneth Dugger

4 Mrs. J.E. Gonsert

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UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long CreekDate 1/9/74Present Conditions Structure Site # Prepared by Acres of Checked by Sediment Source Projected Conditions Drainage Area (R) Rainfall Factor

															Engr. Complete)	
Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Terr. Fac.	Sed. Removed Tot. Tons	
		Type	"K" Factor	Length	%											
1	1	364	.37	200	5		Pasture	.013	50.9	1	39	39				
		24	.37	100	11		Pasture	.013	104.9	1	30	30				
		222	.49	100	7		Pasture	.013	72.3	1	31	31				
		11	.32	200	3		Pasture	.012	26.0	1	30	30				
2	1	364	.37	200	5		Pasture	.013	50.9	1	70	70				
		192	.43	200	7		Pasture	.013	90.2	1	41	41				
		24	.37	200	12		Pasture	.013	171.2	2	35	35				
		11	.32	200	3		Pasture	.012	26.0	1	35	35				
3	1	222	.49	200	7	Contour	Comm.	.038	57.5	2	2	2				
		11	.32	200	2	Contour	Comm.	.038	10.4	1	4	4				
	2	364	.37	200	5		Pasture	.013	50.9	1	20	20				
		222	.49	200	7		Pasture	.013	102.8	1	25	25				
		24	.37	200	15		Pasture	.013	246.4	3	18	18				
		192	.43	200	7		Pasture	.013	90.2	1	26	26				
		11	.32	200	3		Pasture	.012	26.0	1	14	14				
	3	364	.37	100	3	Contour	Comm.	.032	10.6	1	4	4				
		364	.37	200	5	Contour	Comm.	.032	26.5	1	14	14				
Erosive Land Total											438	438				
											Percent	100				

1 L.L. Ganseth

2 W. (B.I.) Ganseth

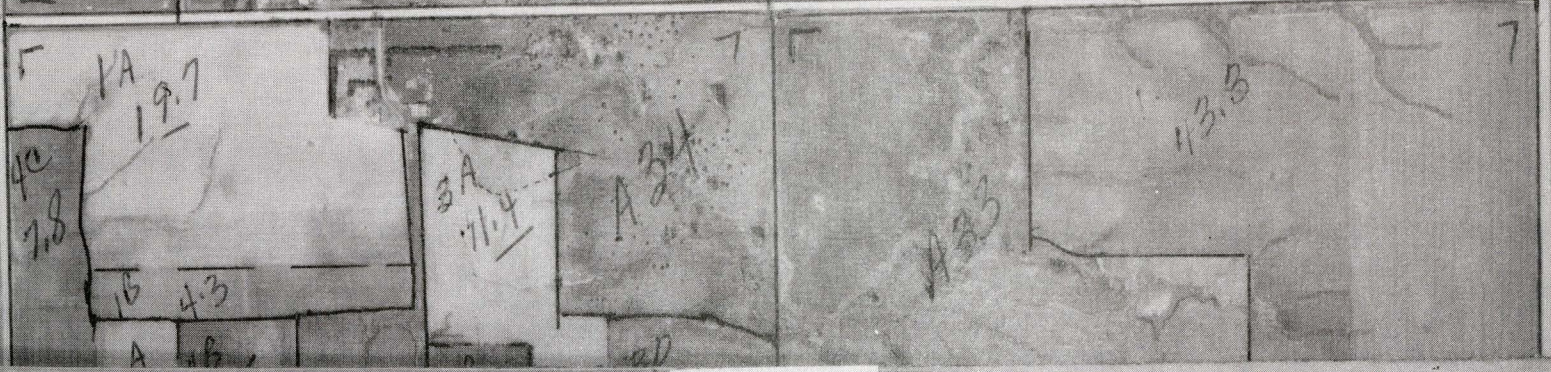
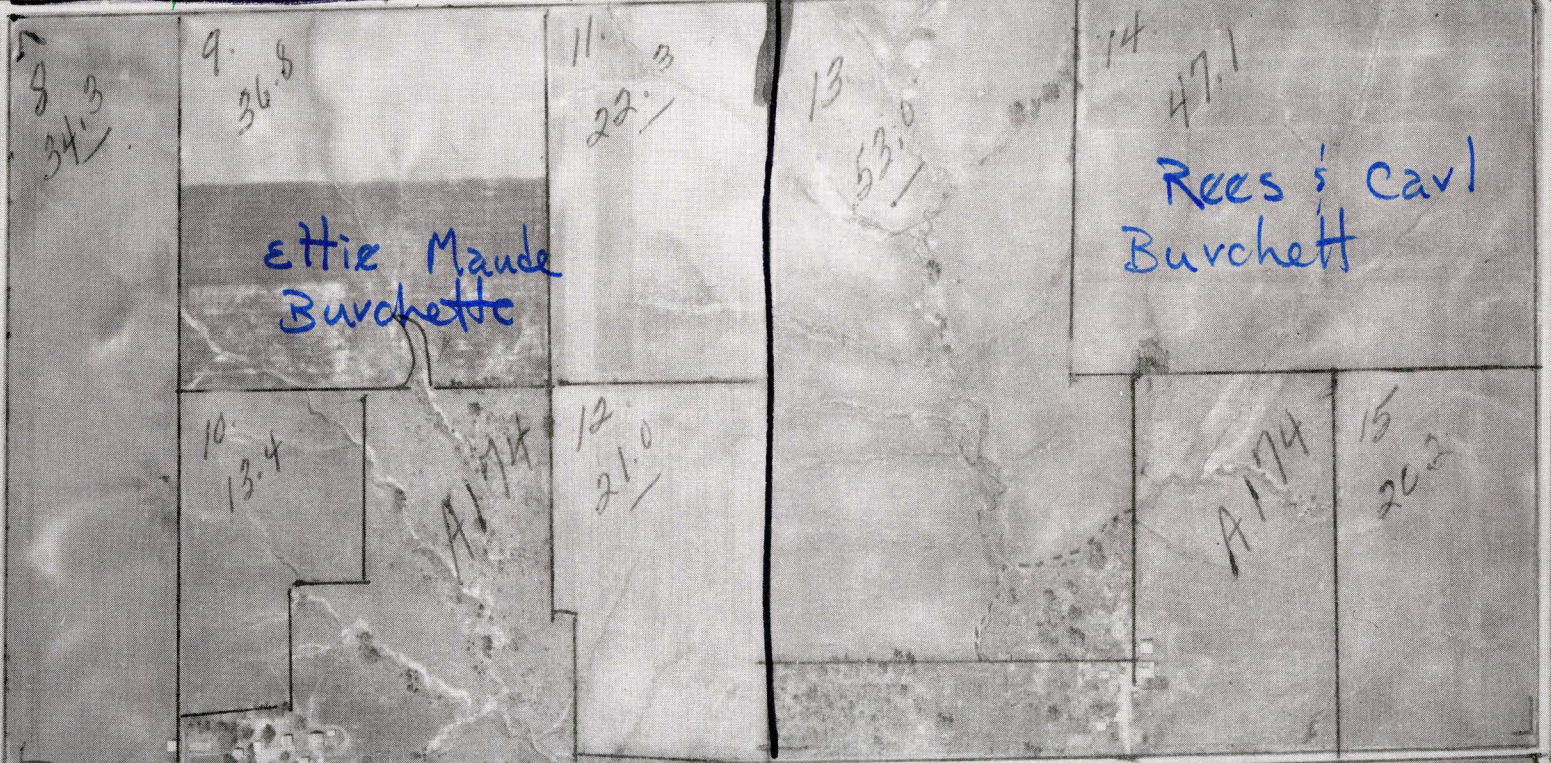
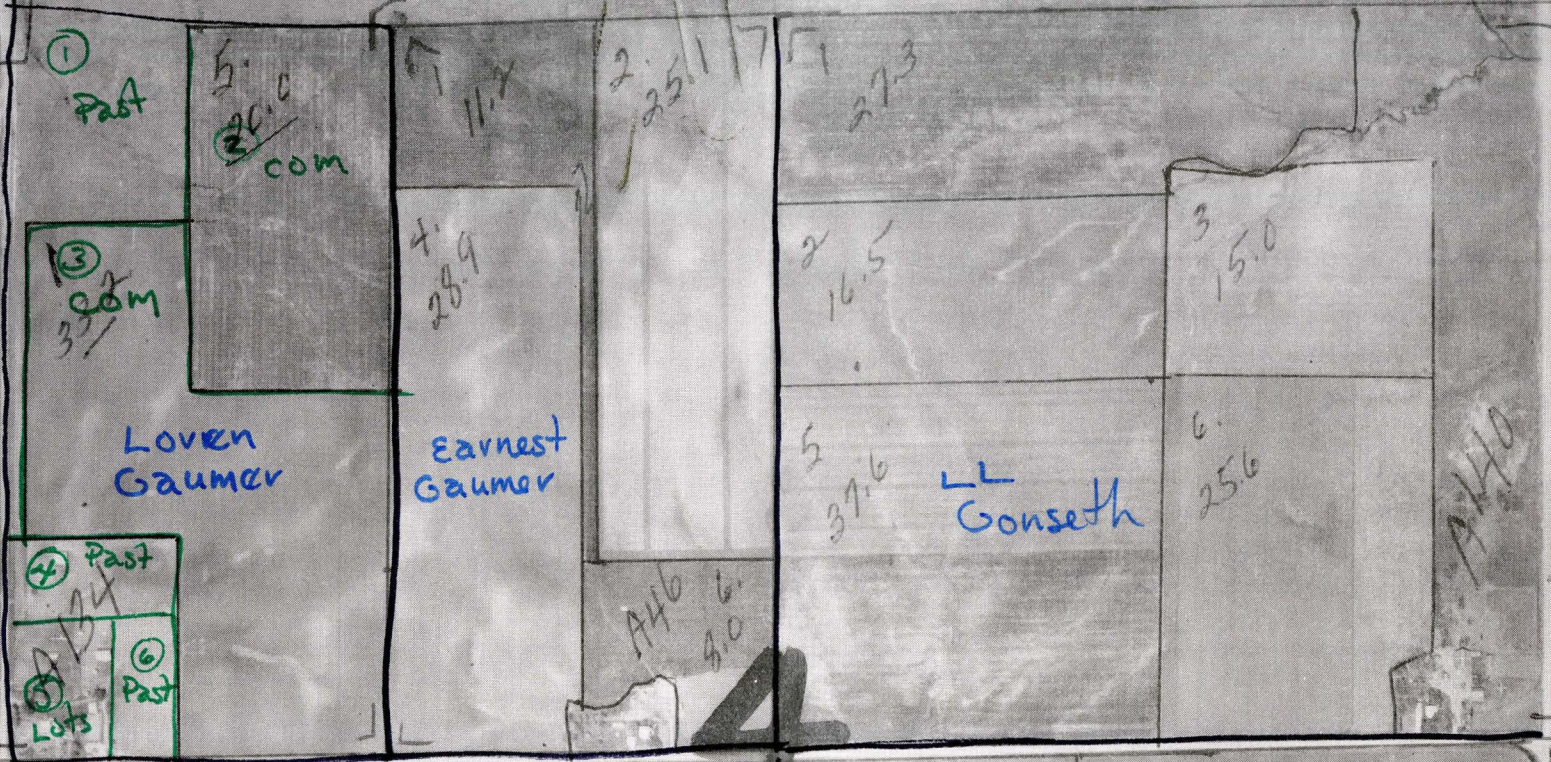
3 Kenneth Dugger

Other Land

Total

Grand Total

(Over)



4-6-72

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Date 5/17/74

Present Conditions

Prepared by T. Waite

Checked by _____

Protected Conditions

(R) Rainfall Factor

Drainage Area

(R) Rainfall Factor

[illegible]

① Loren Gaumer

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

TWP.



(File Code WS-PL-566-20)

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed _____
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date _____
Prepared by _____
Checked by _____
(R) Rainfall Factor

Present Conditions _____

Protected Conditions _____

[illegible]

② Grace Gripp
③ Wayne Creech

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

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(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

DIRECTOR'S OFFICE Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long CreekDate 5/17/74

Present Conditions _____

Structure Site # _____

Prepared by T. Waide

Acres of _____

Checked by _____

Protected Conditions _____

Sediment Source _____

(R) Rainfall Factor _____

Drainage Area _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	222		200	7						9				
		24		100	11						10				
	2	364		100	3						10				
		304		200	6						10				
		222		200	7						2				
	3	222		200	7						16				
		24		100	11						5				
2	1	93		100	10		Pasture				5				
	2	11		100	3		Pasture				4				
		93		100	10		Pasture				4				
		103		100	3		Pasture				4				
	3	103		100	4		Pasture				4				
		93		100	15		Pasture				4				
		93		200	7		Pasture				4				
	4						wildlife				12				
	5	93		100	14		Pasture				2				
		93		100	12		Pasture				3				

① Loren Gaumer

② Grace Gripp

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

7R07

Donna m.
Snider

A6

A114

A175

9.1
7.2

40.4

Roy & Mabel
Bedier

6

7

Sadie
Newman

A94

Laviece
Fletcher

A178

A35

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UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Date _____

Prepared by

Checked by

(R) Rainfall Factor

Drainage Area

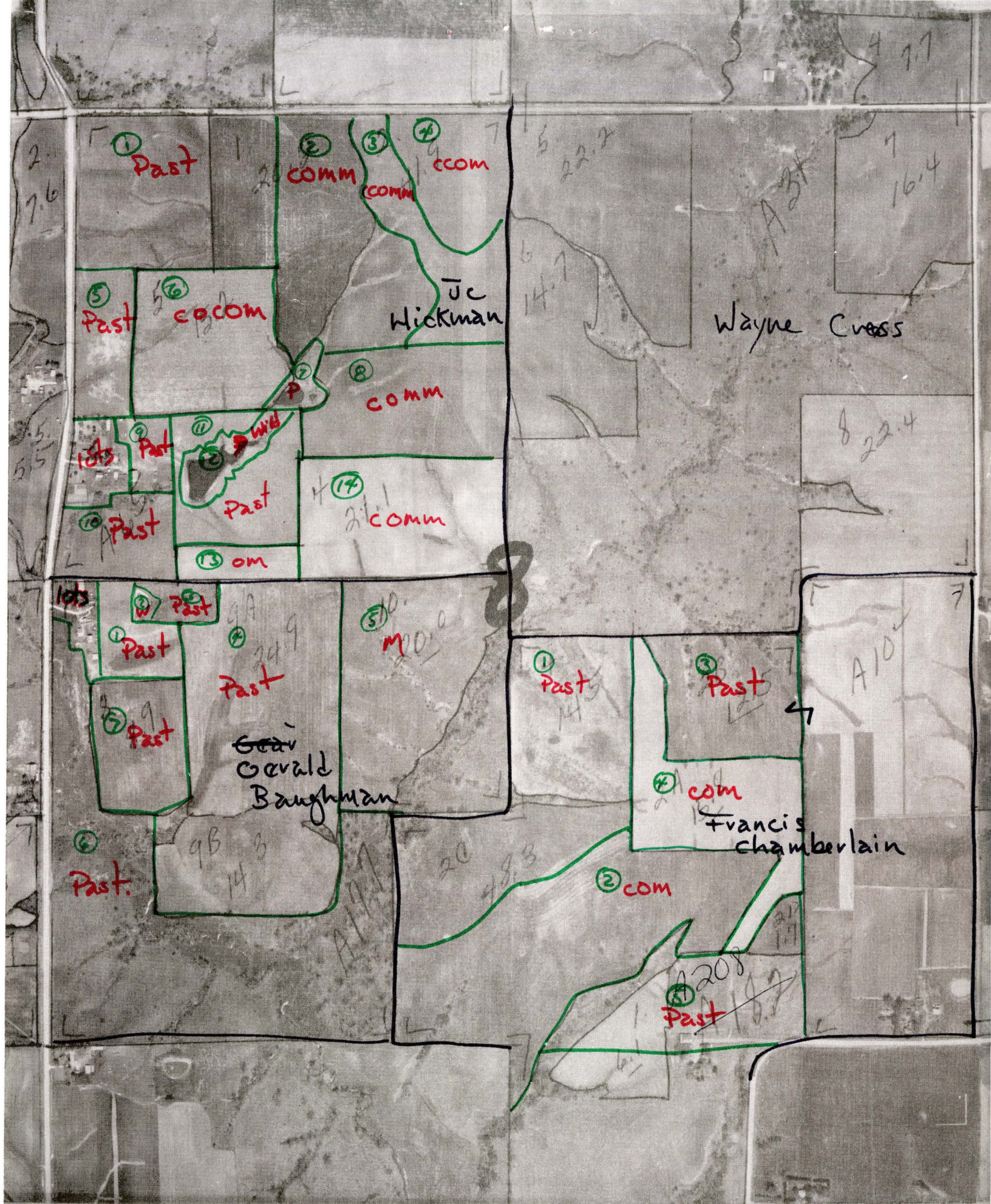
Present Conditions

Protected Conditions

Engr. Complete

Erosive Land Total

Percent



(File Code WS-PL-566-20)

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # 8
Acres of
Sediment Source _____
Drainage Area _____

Date Aug 5 - 21 - 74
Prepared by T. Waite
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

[illegible]

④ Wayne Creech

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

(File Code WS-PL-566-20)

Present Conditions _____

Projected Conditions _____

(Over)

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UNITED STATES DEPARTMENT OF AGRICULTURE

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WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
 Structure Site # _____
 Acres of _____
 Sediment Source _____
 Drainage Area _____

Date 5/17/74
 Prepared by T. Waite
 Checked by _____
 (R) Rainfall Factor _____

Present Conditions _____

Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Appld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	24	.37	200	14	—	Pasture	.013	219.8	2.9	11	11			
		192	.43	100	9	—	Pasture	.013	90.6	1.1	10	10			
	2	192	.43	100	9	St Row	COMM	.047	90.6	4.3	4	—			
		364	.37	100	6	St Row	COMM	.047	44.6	2.1	8	8			
		364	.37	100	3	St Row	COMM	.047	20.0	1	4	4			
		222	.49	100	7	St Row	COMM	.047	72.3	3.4	5	—			
	3	364	.37	100	3	St Row	CCOMM	.08	20.0	1.6	4	4			
		362	.37	100	1	St Row	CCOMM	.08	10.0	.8	5	5			
	4	364	.37	100	3	St Row	CCOM	.12	20.0	.2	4	4			
		362	.37	100	1	St Row	CCOM	.12	10.0	.1	5	5			
	5	24	.37	200	14	—	Pasture	.013	219.8	2.9	3	3			
		192	.43	200	9	—	Pasture	.013	120.0	1.5	3	3			
	6	192	.43	100	8	St Row	CCOMM	.08	90.6	7.2	5	—			
		364	.37	100	6	St Row	CCOMM	.08	44.6	3.6	6	6			
		364	.37	100	3	St Row	CCOMM	.08	20.0	1.6	4	4			
	7	192	.43	100	8	—	Pasture	.003	75.9	.2	2	2			
	8	192	.43	100	8	St Row	COMM	.047	75.9	3.6	3	—			

① J.C. Hickman

Erosive Land Total

86

Percent

69

80%

Other Land

Total

Grand Total

(Over)

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UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long CreekStructure Site # Acres of Sediment Source Drainage Area Date 5/21/74Prepared by T. WaiteChecked by (R) Rainfall Factor Present Conditions Projected Conditions

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
	3	364	.27	100	7	—	Pasture	.013	54.6	.7	2	2			
	4	192	.43	200	11	—	Pasture	.013	175.5	2.3	14	14			
		364	.37	100	7	—	Pasture	.011	54.6	.6	10	10			
		24	.37	200	11	—	Pasture	.011	150.0	1.6	7	7			
		192	.43	100	7	—	Pasture	.011	63.5	.7	5	5			
		11	.32	200	3	—	Pasture	.013	25.0	.3	3	3			
5	11	.32	.32	200	3	—	Pasture	.012	25.0	.3	10	10			
		192	.43	100	11	—	Pasture	.012	120.0	1.4	4	4			
		24	.37	100	11	—	Pasture	.003	100.0	.3	10	10			
		192	.43	100	7	—	Pasture	.012	63.5	.7	6	6			
6	11	.32	.32	100	3	—	Pasture	.003	17.3	.05	31	31			
		24	.37	200	11	—	Pasture	.003	273.0	.8	10	10			
		24	.37	200	11	—	Pasture	.012	150.0	1.8	4	4			
		93	.43	100	12	—	Pasture	.012	139.3	1.6	5	5			
3	1	93	.43	100	14	—	Pasture	.013	178.0	2.3	12	12			
		93	.43	100	7	—	Pasture	.013	63.5	.8	9	9			
		93	.43	100	12	—	Pasture	.013	139.3	1.8	7	7			

③ Francis Chamberlain

Erosive Land Total

185
Percent 100%

Other Land

Total

Grand Total

(Over)

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WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long CreekStructure Site # 9

Acres of

Sediment Source

Drainage Area

Date 5/21/74Prepared by T. W. Wade

Checked by

(R) Rainfall Factor

Present Conditions

Projected Conditions

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
	8	364	.37	100	6	st Row	comm	.047	44.6	2	7	7			
		364	.37	100	3	st Row	comm	.047	20.0	1	5	5			
	9	192	.43	100	8	—	Pasture	.003	75.9	.2	3	3			
	10	24	.37	100	14	—	Pasture	.003	153.2	.5	5	5			
		192	.43	100	12	—	Pasture	.003	139.3	.4	2	2			
	11	24	.37	100	14	—	Pasture	.013	153.2	2	6	6			
		192	.43	100	8	—	Pasture	.013	75.9	1	3	3			
		364	.37	100	6	—	Pasture	.013	44.6	.6	3	3			
	12	24	.37	100	14	—	Wild life				3	3			
	13	364	.37	100	3	st Row	com	.06	20.0	1	2	2			
		364	.37	100	3	st Row	com	.06	20.0	1	2	2			
	14	192	.43	100	11	st Row	comm	.047	120.0	.6	10	10			
		192	.43	100	8	st Row	comm	.047	75.9	3.6	5	—			
		364	.37	100	6	st Row	comm	.047	44.6	2.1	2	2			
2	1	24	.37	100	11	—	Pasture	.003	120.0	.3	2	2			
		192	.43	100	7	—	Pasture	.003	63.5	.2	2	7			
	2	24	.37	100	11	—	Wild life				1	1			

Erosive Land Total

68

Percent

63

92%

Other Land

Total

Grand Total

(Over)

② Gerald Baughman



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WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
 Structure Site # _____
 Acres of _____
 Sediment Source _____
 Drainage Area _____

Date 5-21-74
 Prepared by T. White
 Checked by _____
 (R) Rainfall Factor _____

Present Conditions _____

Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	192	.43	100	7	—	Pasture	.011	63.5	.7	7	7			
		24	.37	100	11	—	Pasture	.011	110.0	.1	5	5			
		11	.32	100	3	—	Pasture	.011	17.3	.2	30	30			
		24	.37	100	12	—	Pasture	.011	119.9	1.3	18	18			
		192	.43	100	7	—	Pasture	.011	63.5	.7	4	4			
2	364	364	.37	200	3	St Row	COM	.06	30.0	.2	45	45			
		362	.37	100	1	St Row	COM	.06	10.0	.6	7	7			
		192	.43	100	7	St Row	COM	.06	63.5	3.8	15	—			
		364	.37	100	6	St Row	COM	.06	44.6	2.7	15	15			
		222	.49	100	7	St Row	COM	.06	72.3	4.3	5	—			
		364	.37	100	3	St Row	COM	.06	20.0	1.0	25	25			
3	192	192	.43	100	7	St Row	COM	.06	63.5	3.9	12	—			
		24	.37	100	12	St Row	COM	.06	119.9	7.2	8	—			
		364	.37	200	6	St Row	COM	.06	61.9	3.7	6	6			
		222	.49	100	7	—	Past	.013	72.3	1	8	8			
4	364	364	.37	100	6	—	Past	.013	44.6	.6	5	5			
		24	.37	100	15	—	Past	.013	170.0	2.2	2	2			

Erosive Land Total

Percent

177
81%

Other Land

Total

Grand Total

(Over)

① Harry Crittenden

(File Code WS-PL-566-20)

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 5-21-74
Prepared by T. Inzide
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	4	11	.32	100	3		Pasture	.013	17.3	.2	2	2			
							lots & Buildings				3	3			
2	1	364	.37	100	5	—	Mazda	.013	34.6	.4	6	6			
		192	.43	100	7	—	Mazda	.013	63.5	.8	5	5			
		24	.37	100	12	—	Mazda	.013	119.5	1.6	3	3			
	2	364	.37	200	3	st Row	CCOM	.12	30.0	3.6	12	12			
		364	.37	100	5	st Row	ccom	.12	34.6	4.2	6	—			
	3	364	.37	100	3	st. Row	ccomm	.08	20.0	1.6	12	12			
		364	.37	100	5	st Row	ccomm	.08	34.6	2.8	7	7			
		192	.43	100	7	st Row	ccomm	.08	63.5	5.0	3	—			
	4	192	.43	200	11	—	Pasture	.011	175.0	2.0	11	11			
		192	.43	200	7	—	Pasture	.011	85.0	1	6	6			
	5						Buildings & lots				6	6			

- ① Harry Crittenden
- ② Larry Gonseth

[illegible]

82	73
Percent	89%

Other Land

Total

Grand Total

(Over)

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 5-21-74
Prepared by T. Waite
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

[illegible]

Erosive Land Total

Percent

Other Land

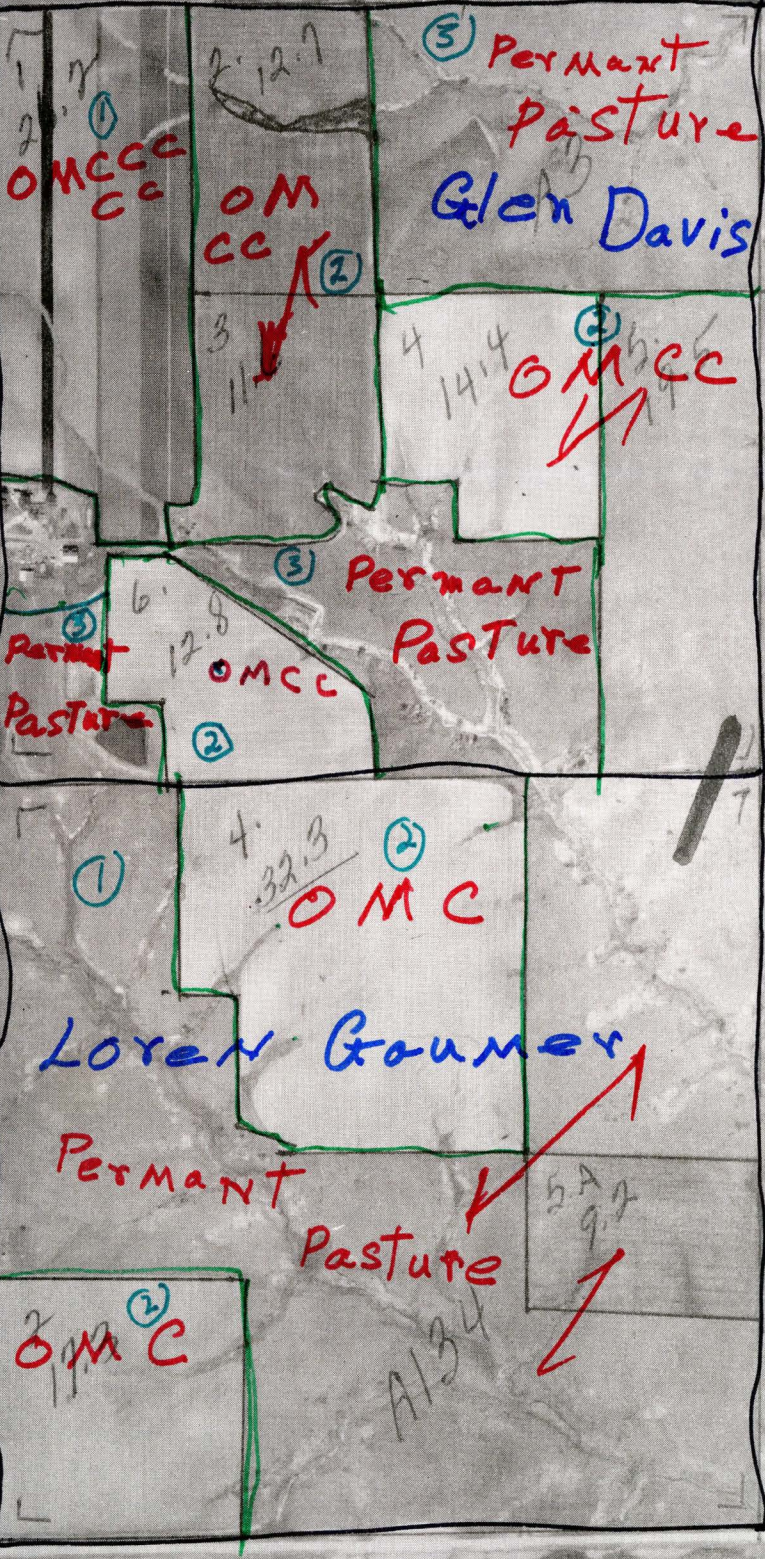
Total

Grand Total

(Over)

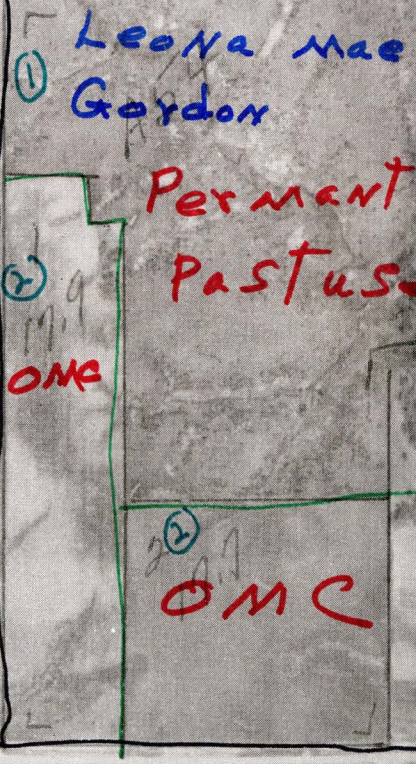
10.
22.0

17.5



A129

E. K. Jones Jr.
Permant Pasture ①



Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

DISTRICT COUNSEL Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
 Structure Site # _____
 Acres of _____
 Sediment Source _____
 Drainage Area _____

Date 11/9/74
 Prepared by _____
 Checked by _____
 (R) Rainfall Factor _____

Present Conditions _____

Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Appld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	362	.37	200	1	St Row	CCC	.36	10.0	3	14	14			
		364	.37	100	4	St Row	CCC	.36	26.6	9	8	—			
		364	.37	100	6	St Row	CCC	.36	44.6	16	4	—			
	2	364	.37	100	3	St Row	CCOM	.12	20.0	2	32	32			
		364	.37	100	6	St Row	CCOM	.12	44.6	5	24	—			
		222	.49	100	7	St Row	CCOM	.12	72.3	9	15	—			
	3	364	.37	200	6	Pasture		.013	61.9	1	8	8			
		222	.49	100	7	Pasture		.013	72.3	1	26	26			
		24	.37	200	11	Pasture		.013	149.8	2	26	26			
2	1	222	.49	100	7	Pasture		.12	72.3	1	25	25			
		24	.37	200	11	Pasture		.013	149.8	2	25	25			
		24	.37	100	15	Pasture		.013	171.5	2	28	28			
		11	.32	100	3	Pasture		.013	17.3	1	24	24			
		364	.37	100	6	Pasture		.013	44.6	1	10	10			
3	2	364	.37	200	3	St Row	COM	.36	30.0	10	13	—			
		364	.37	100	6	St Row	COM	.36	44.6	16	17	—			
		222	.49	100	7	St Row	COM	.36	72.3	26	16	—			

1. Glen Davis
 2. Loren Gaumer

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

see sheet 2

Iowa-WS-5
4-6-72
(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 1/10/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Appld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
3	1	11	.32	200	3		Pasture	.013	26.0	1	20	20			
		364	.37	100	3		Pasture	.013	20.0	1	7	7			
		24	.37	200	11		Pasture	.013	149.8	2	44	44			
4	1	11	.32	100	3		Pasture	.013	17.3	1	7	7			
		222	.49	200	7		Pasture	.013	102.8	1	13	13			
		24	.37	100	15		Pasture	.013	171.5	2	20	20			
	2	131	.43	100	6	St. Row	COM	.06	51.9	3	12	12			
		192	.43	100	7	St. Row	COM	.06	63.5	4	14	14			
		93	.43	100	11	St. Row	COM	.06	121.9	7	7	—			
3	1	24	.37	100	15	1	Pasture	.013	171.5	2	65	65			
		222	.49	200	7		Pasture	.12	102.8	12	70	—			
		364	.37	200	6		Pasture	.013	61.9	1	34	34			
		364 Roads	.37	200	3					5	7	—			
		364	.37	200	3		Buildings			4	5	5			
Erosive Land Total											325	241			
Percent												74			

3. E.K Jones
4. Leona Mae Gordon

Other Land

Total

Grand Total

(Over)

Kenneth
Dugger

Section 2

Marvin
Brown

Permanent
Pasture

across
slope
CCCOM

Permanent
Pasture

across
slope
COMM

Section 2

Permanent
Pasture

Permanent
Pasture

W.V. Fuller

COM
Across
Slope

Terraced

Permanent
Pasture

Galen
Benbow

Hay

most
of time
bottom

Dale
Dunfee

Permanent
Pasture

across
slope
bottom
COMM

across
slope
COMM

bottom

Permanent
Pasture

Permanent
Pasture

Joseph
Bailey

across
slope
COMM

Permanent
Pasture

bottom
Terrace

bottom

Iowa-WS-5
4-6-72
(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 11/11/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	192	.43	200	11		Pasture	.012	227.1	3	11	11			
		192	.43	200	7		Pasture	.011	90.2	1	8	8			
		179	.37	200	15		Pasture	.003	246.4	1	41	41			
		11	.32	200	3		Pasture	.003	26.0	1	20	20			
2	1	93	.43	200	8		Pasture	.013	108.4	1	4	4			
		93	.43	200	11		Pasture	.013	174.1	2	28	28			
		93	.43	200	15		Pasture	.013	286.3	4	15	15			
		104	.32	200	3		Pasture	.013	26.0	1	24	24			
	2	364	.37	300	3	Terraced	Corn	.06	11.2	1	18	18			
		364	.37	200	6	Terraced	Corn	.06	24.6	1	15	15			
		93	.43	200	8	Terraced	Corn	.06	50.2	3	8	8			
	3	364	.37	200	6	Contoured	Corn	.06	22.3	1	7	7			
		93	.43	200	8	Pantoured	Corn	.06	45.5	3	4	4			
		364	.37	100	6	Pasture	.013	44.6	1	10	10				
		93	.43	200	11	Pasture	.013	174.1	2	10	10				
		93	.43	100	14	Pasture	.013	178.0	2	7	7				
	5	364	.37	200	3	Contoured	Corn	.06	22.3	1	5	5			

Erosive Land Total 235
Percent 100

Other Land _____
Total _____
Grand Total _____

(Over)

1 Kenneth Dugger
2 W.V. Fuller

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 11/11/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
3	1	192	.43	200	7		Pasture	.012	90.2	1	19	19			
		24	.37	200	15		Pasture	.012	246.4	3	31	31			
		93	.43	100	16		Pasture	.012	220.6	3	11	11			
	2	87	.37	300	1	St. Row	Cont. Corn	.36	9.1	3	11	11			
		103	.37	300	3	St. Row	Cont. Corn	.36	43.7	16	8	-			
4	1	93	.43	100	11	Contour	Comm	.06	73.0	4	7	7			
		103	.37	200	3	St. Row	Cont. Corn	.36	30.0	11	28	-			
		87	.37	200	1	St. Row	Cont. Corn	.36	9.1	3	34	34			
	3	364	.37	200	6	Contour	Comm	.047	61.9	3	19	19			
		192	.43	200	7	Contour	Comm	.047	90.2	4	27	27			
		93	.43	200	11	Contour	Comm	.047	174.1	8	22	-			
4	93	.43	100	8			Pasture	.040	75.9	3	31	31			
		.43	100	12			Pasture	.040	139.3	6	30	-			
		.43	100	6			Pasture	.013	51.9	1	14	14			
5	131	.43	100	6			Pasture	.013	51.9	1	14	14			
		.43	200	7			Pasture	.042	90.2	4	18	18			
		.37	200	15			Pasture	.09	246.4	22	23	-			
		11	.32	100	3		Pasture	.013	17.3	1	13	13			

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

3 Galen Benbow
4 Joseph Bailey

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4-6-72
(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 11/11/74
Prepared by _____
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

[illegible]

5 Dale Dunfee

Erosive Land Total

59	43
Percent	31

Other Land

Total

Grand Total

(Over)

Hand-drawn map of a farm with various fields and pastures. The map is divided into several sections, some of which are labeled with names and descriptions. The top section is labeled "Permanent Pasture" and "Contoured Row crop most of time". The middle section is labeled "Galen Benbow" and "Permanent Pasture". The bottom section is labeled "Seeded Most of Time" and "CCOMM Across Slope". The map also includes various numbers and letters, such as "1", "2", "3", "4", "5", "6", "7", "8", "9", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21", "22", "23", "24", "25", "26", "27", "28", "29", "30", "31", "32", "33", "34", "35", "36", "37", "38", "39", "40", "41", "42", "43", "44", "45", "46", "47", "48", "49", "50", "51", "52", "53", "54", "55", "56", "57", "58", "59", "60", "61", "62", "63", "64", "65", "66", "67", "68", "69", "70", "71", "72", "73", "74", "75", "76", "77", "78", "79", "80", "81", "82", "83", "84", "85", "86", "87", "88", "89", "90", "91", "92", "93", "94", "95", "96", "97", "98", "99", "100". The map is drawn on a grid of 10x10 units.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 1/14/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	364	.37	100	5	Contoured	Cont. Corn	.36	17.8	6	8	—			
		93	.43	100	7	Contoured	Cont. Corn	.36	35.7	13	19	—			
		93	.43	100	11	Contoured	Cont. Corn	.36	173.0	26	22	—			
		11	.32	200	3	Contoured	Cont. Corn	.36	13.8	5	14	—			
	2	93	.43	100	14	Woodland	Pasture	.013	178.0	2	47	47			
		103	.32	200	3	Woodland	Pasture	.013	26.0	1	26	26			
		93	.43	100	16	Woodland	Pasture	.013	220.6	3	22	22			
	3	364	.37	200	5	Contoured	Cont. Corn	.36	25.5	9	18	—			
		93	.43	100	12	Contoured	Cont. Corn	.36	83.5	30	21	—			
		93	.43	100	14	Contoured	Cont. Corn	.36	142.4	51	19	—			
	4	364	.37	200	5	St. Row	Common	.038	50.9	2	7	7			
		93	.43	200	8	St. Row	Common	.038	108.4	4	5	5			
2	2	93	.43	100	16	Wildlife		.011	220.6	2	16	16			
		11	.32	200	3	Wildlife		.011	26.0	1	9	9			
	1	87	.37	300	1	Pasture		.013	13.3	1	37	37			
		103	.32	200	3	Pasture		.013	26.0	1	29	29			
		192	.43	200	7	Pasture		.013	90.2	1	41	41			
Erosive Land Total											360	239			
Percent												66			
1 Less Burqus															

1 Jess Burgess
2 Galen Benbow

Other Land

Total

Grand Total

(Over)

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek

Structure Site # _____

Acres of _____

Sediment Source _____

Drainage Area _____

Date 1/14/74

Prepared by _____

Checked by _____

(R) Rainfall Factor _____

Present Conditions _____

Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
2	1	93	.43	100	12	Woodland	Pasture	.013	139.3	2	45	45			
		65	.43	100	21	Woodland	Pasture	.013	356.1	5	31	—			
		93	.43	100	16		Wildlife	.013	220.6	3	12	12			
		24	.37	200	15		Pasture	.012	246.4	3	34	34			
2	2	87	.37	300	1	St. Row	Pent Barn	.36	13.3	5	27	—			
		226	.32	300	2	St. Row	Pent Barn	.36	23.0	8	24	—			
	3	364	.37	200	4		Meadow	.003	40.0	1	10	10			
		273	.32	100	3		Meadow	.003	17.3	1	6	6			
4	3	93	.43	200	12		Meadow	.003	198.9	1	27	27			
		192	.43	200	7		Meadow	.003	90.2	1	14	14			
		93	.43	200	6	Contour	Comm	.09	36.0	3	14	14			
		65	.43	200	8	Contour	Comm	.09	65.0	6	12	—			
	4	65	.43	100	11	Contour	Comm	.09	73.0	6	9	—			
		364	.37	200	4		Buildings			4	3	3			
		93	.43	200	7		Buildings			4	4	4			
							Roads			5	8	—			

Erosive Land Total 280
Percent 60

Other Land
Total _____
Grand Total _____

(Over)

2 Galen Benbow

Tahir
Farr

Galen
Ben bow ①
Permanent
Pasture

CCOMM
396
Pentour

Seeded
Most of
Time 3

Richie
Sklenar
Pasture ①

2A ① 0.5 COMM

1A 9.0 COM	2B 7 CO
------------------	---------------

Co M

Co M

Permian
Pasture

Verlin
Siefkas

COMM
(4)

virgil
csieffkas
(5)

COM

PASTURE

Verlin
Siefkas
(2)

Lowell
Cochran

Pasture

Perment
Pasture

John M^a Neal

Larry
Siefkas

Perment
Pasture

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek

Structure Site # _____

Acres of _____

Sediment Source _____

Drainage Area _____

Date 1/14/74

Prepared by _____

Checked by _____

(R) Rainfall Factor _____

Present Conditions _____

Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)		
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons	
1	1	87	.37	300	1	st. Row	Cont. Agr	.36	13.3	5	9	-				
		103	.37	300	3	st. Row	Cont. Agr	.36	37.6		8	-				
		364	.37	100	6	Contour	CCCom	.17	22.3	4	6	6				
		364	.37	200	10	Contour	CCCom	.17	77.2	13	7	-				
		93	.43	100	7	Contour	CCCom	.17	35.7	6	12	-				
		93	.43	100	11	Contour	CCCom	.17	73.0	12	7	-				
		93	.43	100	15		Wildlife		.012	199.3	2	3	3			
		11	.32	100	4		Wildlife		.012	23.0	1	3	3			
		93	.43	100	8		Pasture		.013	75.9	1	8	8			
		93	.43	100	12		Pasture		.013	139.3	2	12	12			
2	1	65	.43	100	11		Pasture	.013	121.9	2	12	12				
		93	.43	100	16		Pasture	.013	220.6	3	16	16				
		11	.32	100	4		Wildlife	.012	23.0	1	3	3				
		364	.37	200	4	Contour	CCCom	.09	20.0	2	18	18				
		364	.37	100	6	Contour	CCCom	.09	22.3	2	7	7				
		93	.43	100	9	Contour	CCCom	.09	54.0	5	4	-				
3	93	.43	100	6		Meadow	.003	51.9	1	5	5					
Erosive Land Total											140	93				
											Percent	66				

John Farr

NOT COMPLETED BY SPONSOR

1 John Farr
2 Galen Benbow

(Over)

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek

Structure Site # _____

Acres of _____

Sediment Source _____

Drainage Area _____

Date 11/15/74

Prepared by _____

Checked by _____

(R) Rainfall Factor _____

Present Conditions _____

Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
4	1	11	.32	200	3	Wildlife	Pasture	.013	26.0	1	8	8			
		65	.43	100	16		Pasture	.013	220.6	3	12	12			
5	1	192	.43	200	7		Pasture	.011	90.2	1	25	25			
		451	.37	100	11		Pasture	.011	104.9	1	27	27			
		24	.37	100	16		Pasture	.011	189.8	2	22	22			
		93	.43	100	15	Wildlife	Pasture	.011	199.3	2	19	19			
		11	.32	300	3	Wildlife	Pasture	.011	32.5	1	12	12			
6	1	131	.43	200	3		Pasture	.013	34.9	1	16	16			
		93	.43	100	8		Pasture	.013	63.5	1	11	11			
		93	.43	100	15		Pasture	.012	199.3	2	17	17			
		65	.43	200	20	Wildlife	Pasture	.003	459.0	1	14	14			
7	1	103	.37	200	5	Wildlife	Pasture	.003	50.9	1	7	7			
		93	.43	100	18		Pasture	.013	270.9	4	9	9			
		93	.43	100	15		Pasture	.013	199.3	3	6	6			
		93	.43	100	7		Pasture	.013	63.5	1	8	8			
		2	364	.37	200	3		Meadow	.012	30.0	1	7	7		
		192	.43	200	7		Meadow	.012	90.2	1	11	11			
Erosive Land Total											231	231			
Percent												100			

4 Larry Sieftas
- 1. McNeal

4 Larry Sieftas
5 John McNeal
6 Lowell Bohran
7 Verlin Sieftas

(Over)

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 1/14/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
2	3	93	.43	100	9		Meadow	.003	90.6	1	7	7			
3	1	93	.43	100	7	St. Row	Common	.038	63.5	2	5	5			
		93	.43	100	9	St. Row	Common	.038	90.6	3	6	6			
	2	364	.37	200	4	St. Row	Common	.06	40.0	2	11	11			
		131	.43	200	7	St. Row	Common	.06	90.2	5	14	14			
		93	.43	100	10	St. Row	Common	.06	104.5	6	13	13			
3		192	.43	100	7		Pasture	.013	63.5	1	10	10			
		192	.43	100	11		Pasture	.013	121.9	2	10	10			
4		364	.37	200	6	St. Row	Common	.032	72.0	2	10	10			
5		364	.37	200	3	St. Row	Common	.047	30.0	1	6	6			
		364	.37	200	6	St. Row	Common	.047	72.0	3	11	11			
		192	.43	100	7	St. Row	Common	.047	63.5	3	6	6			
		93	.43	100	11	St. Row	Common	.047	121.9	6	9	9			
4	1	131	.43	200	7		Pasture	.013	90.2	1	13	13			
		451	.37	200	11		Pasture	.013	149.8	2	14	14			
		192	.43	100	7		Pasture	.013	63.5	1	17	17			
		192	.43	100	11		Pasture	.013	121.9	2	15	15			
Erosive Land Total											177	141			
Percent											80				

2 Glen Benbow
3 Virgil Siefkas
4 Larry Siefkas

Other Land
Total
Grand Total

(Over)

(Over)

Doyle

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 11/15/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
1	1	87	.37	400	1	St. Row	Cont. Corn	.36	15.0	5	39	—			
		103	.37	300	2	St. Row	Cont. Corn	.36	26.6	9	7	—			
	2	87	.37	200	1	Wildlife	Pasture	.003	10.0	1	8	8			
		93	.43	200	7	Wildlife	Pasture	.003	90.2	1	5	5			
		93	.43	100	12	Wildlife	Pasture	.003	139.3	1	9	9			
2	1	93	.43	100	17	Wildlife	Pasture	.003	245.7	1	11	11			
		87	.37	300	1	St. Row	Cont. Corn	.36	13.3	5	18	—			
		65	.43	200	16	Wildlife	Pasture	.003	317.3	1	10	10			
		103	.32	200	5	Wildlife	Pasture	.003	49.1	1	3	3			
		87	.37	300	1	Woodland		.003	13.3	1	5	5			
3	1	131	.43	200	3	Contour	Corn	.06	34.9	2	18	18			
		192	.43	200	7	Contour	Corn	.06	90.2	5	8	—			
		192	.43	100	11		Pasture	.013	158.6	2	36	36			
		93	.43	100	7		Pasture	.013	63.5	1	15	15			
		93	.43	100	15		Pasture	.013	199.3	3	29	29			
4	1	65	.43	100	18		Pasture	.013	270.9	4	27	27			
		87	.37	400	1	St. Row	Cont. Corn	.36	15.0	5	24	—			
		Erosive Land Total										272	176		
		Percent										65			
		Other Land Total													

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

- 1 John W Farr
- 2 Robert Siefkas
- 3 V. Roberts
- 4 Carl Siefkas

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 1/15/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
4	3	103	.37	300	2	St. Row	Cont. Corn	.36	26.6	10	27	—			
5	1	362	.37	300	1		CCorn	.12	13.3	2	11	11			
		131	.43	200	3	Contoured	CCorn	.12	34.9	4	39	39			
		192	.43	200	7	Contoured	CCorn	.12	90.2	11	15	—			
		93	.43	100	11	Contour	CCorn	.12	121.9	15	9	—			
		93	.43	100	15	Wildlife		.003	199.3	1	6	6			
6	1	192	.43	200	7	Contour	Corn	.06	90.2	5	19	—			
		93	.43	100	11	Contour	Corn	.06	121.9	7	16	—			
	2	192	.43	100	7		Pasture	.013	63.5	1	38	38			
		93	.43	100	11		Pasture	.013	121.9	2	49	49			
		65	.43	100	16	Wildlife	Pasture	.012	220.6	3	41	41			
		65	.43	100	24	Wildlife	Pasture	.003	448.9	1	47	47			
7	1	87	.37	300	1	Wildlife	Pasture	.012	13.3	1	10	10			
		87	.37	400	1	Wildlife	Pasture	.012	15.0	1	30	30			
		192	.43	200	7	Buildings				4	5	5			
						Roads				5	6	—			

Erosive Land Total 368 276
Percent 75

Other Land
Total _____
Grand Total _____

(Over)

4 Carl Siefkos
5 Charles Daily
6 Arthur Stetzel
7 Joseph Bailey

Hommer Permant Reasoner Pasture ①

Arther Stetzel

COM ①

COM ②

COM ①

Permant Pasture ①

COM ③

Permant Pasture ①

COM ①

Permant Pasture ②

Paul & Cleota

① James

COM ①

COM ②

① Permant Pasture

② Charles com

Daily

Permant Pasture ③

Pasture ③

Black Dress Past.

Larry O'neal

COM ③

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UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 1/15/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)		
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons	
1	1	364	.37	200	3	St. Row	Com	.06	30.0	2	4	4				
		364	.37	100	6	St. Row	Com	.06	44.6	3	8	8				
		93	.43	100	2	St. Row	Com	.06	63.5	4	11	11				
		93	.43	100	14	St. Row	Com	.06	178.0	11	13	—				
		24	.37	100	16	St. Row	Com	.06	189.8	11	11	—				
		24	.37	100	19	St. Row	Com	.06	256.4	15	13	—				
		192	.43	100	8	St. Row	Com	.06	75.9	5	12	—				
		223	.32	100	5	St. Row	Com	.06	30.0	2	8	8				
		2	192	.43	100	7		Pasture	.013	63.5	1	7	7			
		93	.43	100	11		Pasture	.013	121.9	2	14	14				
2	1	24	.37	100	14	Wildlife	Pasture	.012	153.2	2	9	9				
		11	.32	100	3	Wildlife	Pasture	.003	17.3	1	6	6				
		192	.43	100	7		Pasture	.013	63.5	1	21	21				
		93	.43	100	11		Pasture	.013	121.9	2	22	22				
		11	.32	100	3		Pasture	.012	17.3	1	7	7				
		2	364	.37	300	3	St. Row	Com	.06	37.6	2	10	10			
		192	.43	200	2	St. Row	Com	.06	90.2	5	5	—				
		Erosive Land Total										181	127			
		Percent											70			
		Other Land Total														

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

1 Arthur Stetzel
2 Charles Daily

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 1/16/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Projected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)	
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons
2	3	131	.43	300	3	St. Row	CCorn	.12	43.7	5	16	—			
		362	.37	300	1	St. Row	CCorn	.12	13.3	2	2	2			
		192	.43	200	7	St. Row	CCorn	.12	90.2	11	11	—			
		24	.37	200	11	St. Row	CCorn	.12	149.8	18	7	—			
3	1	364	.37	200	3	St. Row	Corn	.06	30.0	2	22	22			
		364	.37	100	6	St. Row	Corn	.06	44.6	3	17	17			
		93	.43	100	8	St. Row	Corn	.06	75.9	5	11	11			
	2	364	.37	200	3		Meadow	.003	30.0	1	9	9			
		192	.43	100	7		Meadow	.003	63.5	1	11	11			
		93	.43	100	11	Wildlife	Meadow	.012	121.9	1	10	10			
	3	364	.37	100	3		Pasture	.013	20.0	1	8	8			
		192	.43	100	7		Pasture	.013	63.5	1	17	17			
4	1	93	.43	100	11		Pasture	.013	121.9	2	15	15			
		364	.37	300	1	St. Row	CCorn	.12	13.3	2	11	11			
		364	.37	300	3	St. Row	CCorn	.12	37.6	5	19	—			
		364	.37	200	6	St. Row	CCorn	.12	61.9	7	14	—			
		93	.43	200	9	St. Row	CCorn	.12	128.9	15	10	—			

Erosive Land Total 210
Percent 63

Other Land
Total _____
Grand Total _____

(Over)

2 Charles Daily
3 Larry O'Neal
4 Paul & Jo James

Iowa-WS-5

4-6-72

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I

(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 11/16/74
Prepared by _____
Checked by _____
(R) Rainfall Factor _____

Present Conditions _____
Protected Conditions _____

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	Engr. Complete)		
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons	
4	2	364	.37	200	3		Pasture	.013	30.0	1	9	9				
		364	.37	200	6		Pasture	.013	61.9	1	17	17				
		93	.43	200	13		Pasture	.013	227.1	3	16	16				
5	1	364	.37	200	3		Pasture	.013	30.0	1	13	13				
		364	.37	100	6		Pasture	.013	44.6	1	19	19				
		93	.43	100	8		Pasture	.013	75.9	1	31	31				
		93	.43	100	11		Pasture	.013	121.9	2	24	24				
		93	.43	100	19	Wild/Co	Pasture	.012	298.0	4	23	23				
		2	364	.37	200	1	St. Row	Corn	.06	10.0	1	11	11			
			364	.37	200	3	St. Row	Corn	.06	30.0	2	12	12			
364	.37		100	6	St. Row	Corn	.06	44.6	3	6	6					
		93	.43	100	7	St. Row	Corn	.06	63.5	4	7	7				
		93	.43	100	11	St. Row	Corn	.06	121.9	7	5	—				
	3	364	.37	300	1	St. Row	Plasm	.09	13.3	1	17	17				
		364	.37	200	3	St. Row	Plasm	.09	30.0	3	16	16				
Buildings		364	.37	200	6		Buildings			4	11	11				
Roads							Roads			5	12	—				

Erosive Land Total 249
Percent 93

Other Land
Total _____
Grand Total _____

(Over)

4 Paulakoto James
5 Hammer Reasoner

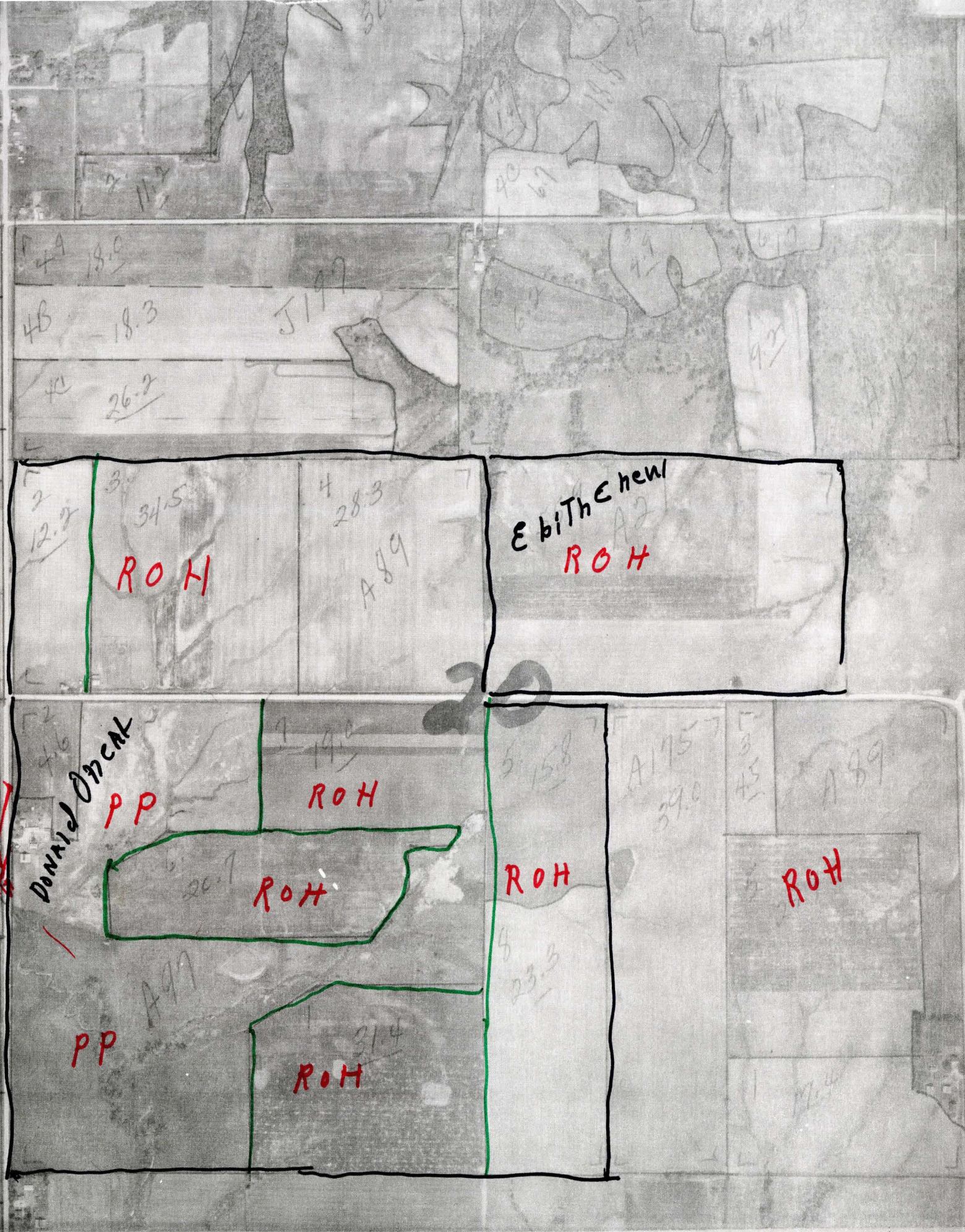






1-9

③







(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed Long Creek
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date 5-21-74
Prepared by T. W. Zite
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

Owner Or Plan No.	Field No.	Soil		Slope		Prac. Apld.	Crop Rot.	"C" Value	RKLSP Value	Soil Loss T/Ac/Yr	Acres	Acres Tolerant Soil Loss	Soil Loss Tons Per Year	(Engr. Complete)		
		Type	"K" Factor	Length	%									Terr. Fac.	Sed. Removed Tot. Tons	
1	1	65	.43	200	20	—	Pasture	.011	459.0	1.0	10	10				
		11	.32	300	3	—	Pasture	.011	30.0	.03	10	10				
		93	.43	100	7	—	Pasture	.011	63.5	.7	8	8				
		65	.43	200	15	—	Pasture	.011	285.0	3.0	13	13				
		192	.43	100	7	—	Pasture	.011	63.5	.7	2	2				
	2	269	.32	200	1	st Row	ccommm	.08	15.0	1.2	20	20				
		273	.32	100	3	st Row	ccommm	.08	17.3	1.3	7	7				
	3	65	.43	100	11	con Row	ccommm	.08	120.0	9.6	10	—				
		93	.43	100	7	con Row	ccommm	.08	63.5	5.0	14	—				
		131	.43	100	6	con Row	ccommm	.08	51.9	4.1	2	—				
	4	65	.43	100	14	—	Pasture	.013	178.0	2.3	11	11				
		93	.43	100	8	—	Pasture	.013	75.9	1	2	2				
		11	.32	100	3	—	Pasture	.013	17.3	.2	3	3				
		—	—	—	—	—	Wildlife	—	—	—	3	3				
							lots & buildings	—	—	—	5	5				

① Dennis Deveny

Erosive Land Total	120	94
Percent		78%

Other Land	
Total	
Grand Total	

(Over)

4-6-72

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed _____
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date _____
Prepared by _____
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

[illegible]

② Larry Oneil

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)

F19

A91✓

A131✓

3.8.9

11.9
16.9

3.27

F14

A131

4

28.6

2.5.1

A66

F14

4.7.8

3.1

4.1

24

2.38.2

Gerald
Siefkas

Stewart
? Davis

8.19.6

F155

17.3

1.1.4

4.1

18.3.1

10.1.8

(File Code WS-PL-566-20)

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Des Moines, Iowa

WATERSHED LAND TREATMENT ANALYSIS-TABLE I
(Sheet Erosion)

Watershed _____
Structure Site # _____
Acres of _____
Sediment Source _____
Drainage Area _____

Date _____
Prepared by _____
Checked by _____
(R) Rainfall Factor

Present Conditions

Projected Conditions

[illegible]

Erosive Land Total

Percent

Other Land

Total

Grand Total

(Over)





Christ
mukien



30

22.6

4
48.6

6
22.5

A108

A107

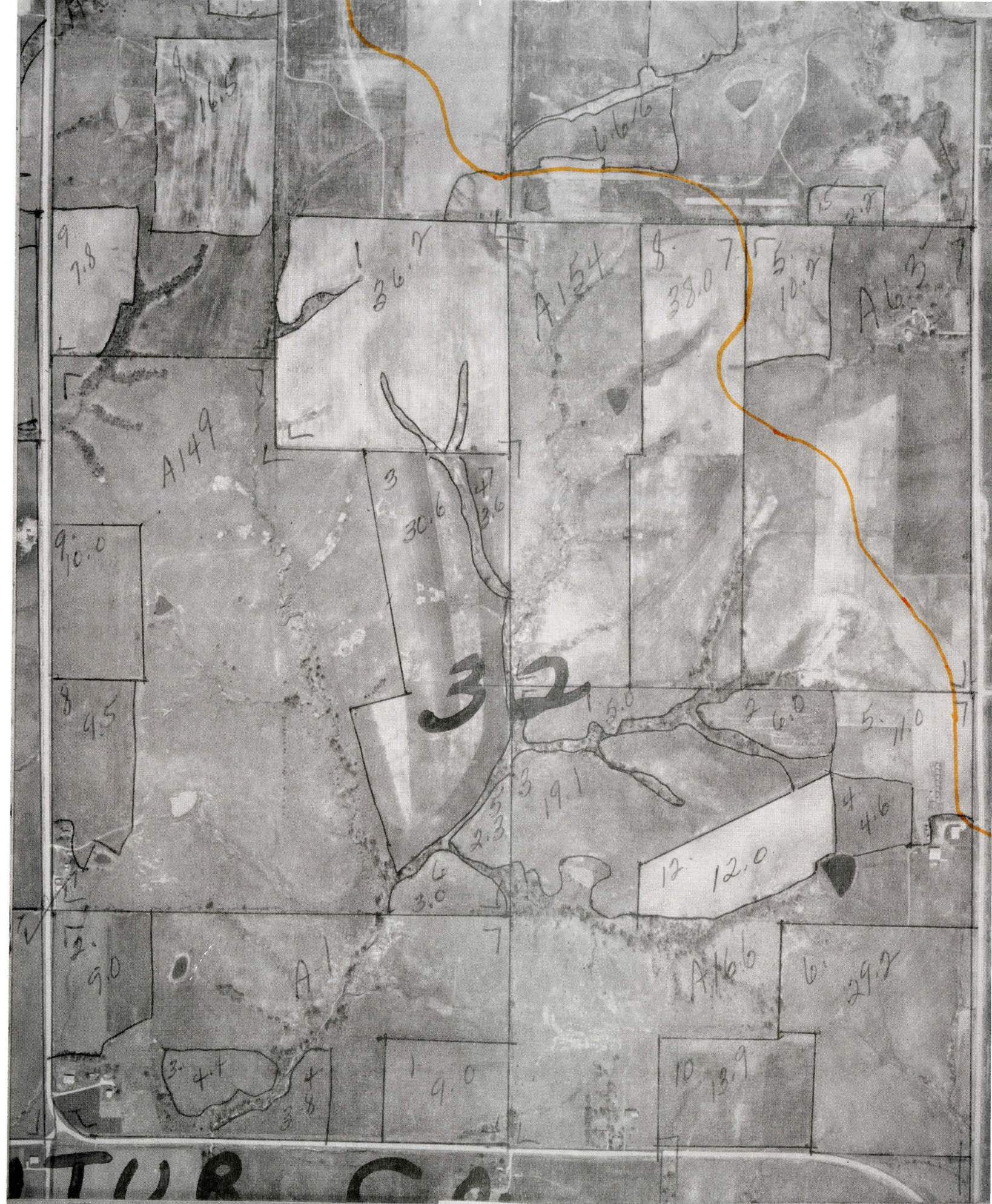
23.5

CLARKE CROP YEAR

1-10

Doyle







ATUR CO.



