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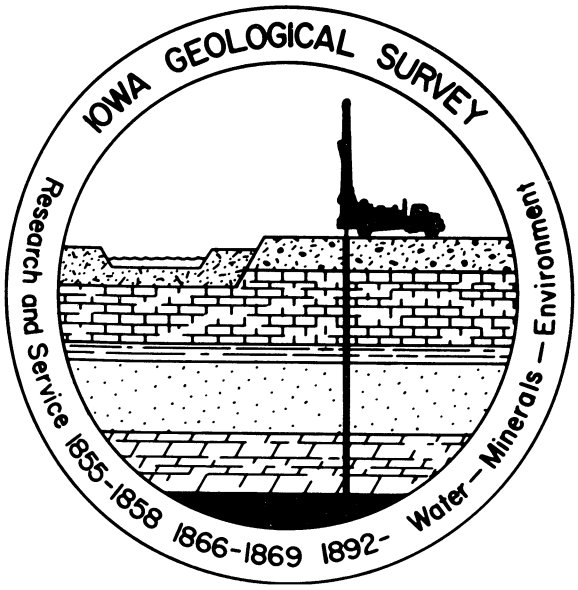

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A COOPERATIVE REPORT FROM THE IOWA COOPERATIVE SOIL SURVEY;
U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE
IOWA AGRICULTURE AND HOME ECONOMICS EXPERIMENT STATION AND
COOPERATIVE EXTENSION SERVICE, IOWA STATE UNIVERSITY
IOWA DEPARTMENT OF SOIL CONSERVATION:
IOWA DEPARTMENT OF TRANSPORTATION, IOWA GEOLOGICAL SURVEY

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FOREWORD

Data within this publication provide a basis for preliminary evaluation of soils engineering properties of an area. A less extensive but widely used data set was available in mimeograph copy several years ago. Publication of a significantly expanded data set, for use in conjunction with modern soil survey maps and reports is now warranted.

Users of this publication will want to refer to its companion publication, "Standard Procedures for Evaluation of Quaternary Materials in Iowa", Technical Information Series No. 8.

Stanley C. Grant
State Geologist and Director
Iowa Geological Survey

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HIGHWAY SOIL ENGINEERING DATA FOR MAJOR SOILS IN IOWA

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ABSTRACT

Standard highway soil engineering data are reported from tests conducted on samples from profiles representing 264 soil types in Iowa. Data are presented for most of the major horizons for each of the 264 soil types. The data are Not For Design Purposes, but can be used to indicate expected soil properties in an area, in conjunction with modern soil survey reports. It can be used for preliminary site evaluation, and to provide an understanding of material properties and problems that might be encountered in a given area.

INTRODUCTION

Not for Design Purposes. As the bold gray underprint on these pages clearly states, this report is not intended for design purposes. This is one in the series of reports summarizing the geotechnical data compiled from investigations of the Iowa Cooperative Soil Survey and the Iowa Geological Survey. The data in this report were obtained during the last 25 years, through the cooperation of the U.S.D.A., Soil Conservation Service, the Iowa Agriculture and Home Economics Experiment Station, and the Iowa Department of Transportation (formerly Iowa State Highway Commission).

This report deals with standard highway soils engineering properties; the data have been compiled by soil series, and horizon. From the extensive research which has gone into the detailed soil survey program in Iowa, it is evident that soil series, and their geologically-related parent materials, are remarkably uniform. This is evident in this report from the similarity of the data from multiple samples of the same soil series, taken over a broad geographic area. Thus, this information can be used in conjunction with the modern soil survey maps and reports. Hopefully, it will be useful for preliminary site evaluation, or for providing an understanding of material properties and problems that might be encountered in a given area. These data typify the soil types sampled, but minor local variations may be important in design. Thus,

as noted previously this report is Not For Design Purposes; it cannot eliminate the need for on-site inspection and sampling for the design of specific engineering works.

Acknowledgements

Assistance in assembling this report was given by T.E. Fenton and F.F. Riecken of the Agronomy Department, Iowa State University; by C.S. Fisher, L.I. Harmon, L.D. Lockridge, and J.R. Worster of the Soil Conservation Service; by R.P. Kollasch of the Iowa Geological Survey; and by B.K. Miller, Ames, Iowa, who key punched the data.

ENGINEERING TEST DATA

The following tables give standard highway engineering test data for most of the major soils in Iowa. Most of the soil samples were collected by soil scientists from the Soil Conservation Service during the time the soil survey of a county was in progress. Laboratory analyses were made by the Iowa Department of Transportation in accordance with standard procedures of the American Association of State Highway and Transportation Officials (AASHTO). Generally, data are available from all the major horizons. Detailed descriptions for each soil are on file at the Agronomy Laboratory, Iowa State University, Ames.

Results of mechanical analysis by AASHTO Designation T88-57 procedure frequently differ somewhat from results that would have been obtained by the Soil Conservation

Service laboratory procedure. In the AASHTO procedure, silt and clay particle size are analyzed by the hydrometer method, and the various grain-size fractions are calculated on the basis of all material, including that coarser than 2mm in diameter. In the procedure used by both the SCS and the Iowa Agriculture and Home Economics Experiment Station, silt- and clay-size particles are analyzed by the pipette method, and the material coarser than 2mm is excluded from the calculation of grain-size fractions. Therefore, the mechanical analyses listed in this report may differ slightly from those used to determine textural classes in a county soil survey report.

The Unified Soil Classification System (UNIFIED) classifies soils according to their textural and plasticity qualities and organic matter content. The soils are grouped with respect to their performance as engineering construction materials. Based on this system, the SCS and the Bureau of Public Roads have agreed to consider that all soils have plasticity indexes within 2 points of the A-line are to be given a borderline classification. Examples of such classifications are ML-CL, ML/CL, and SP-SM.

Terminology

Each term used, and each soil laboratory test has specific meaning and application and indicates certain soil properties. Care in using the correct terminology will do much to prevent confusion and misunderstanding.

Abbreviations and Definitions

AASHTO. The American Association of State Highway and Transportation Officials' system of classifying soil materials is an engineering property classification based on field performance of highways. Grouping soils of about the same general load-carrying capacity and service together results in seven basic groups that are designated A-1 through A-7. The basic soil groups of the AASHTO classification system are divided into subgroups with a group index that is devised to approximate within-group evaluations. Group indexes range from 0 for the best subgrades to 20 for the poorest subgrades. Increasing values of the group index reflect the reduction of the load-carrying capacity of subgrades. The AASHTO group index rating is obtained by the use of a group index formula based on the gradation, L.L. and P.I. of the soils.

LL. Liquid Limit. The minimum percent moisture content at which the soil passes from a plastic to a liquid state. Liquid limit is determined by the test ASTM Designation, D423-54T, or the AASHTO Designation, T89-60.

Maximum Dry Density. The maximum weight, in pounds per cubic foot of oven-dry soil, which can be attained with a specific compaction effort. The test standards of ASTM (D698-58T) or AASHTO (T99-57) use a compactive force and procedure that closely approximates densities that can be obtained on field construction with rollers now being manufactured.

Optimum Moisture. The percent of moisture content in the soil which corresponds to the maximum dry density.

PI. Plasticity Index. The numerical difference between the liquid limit and plastic limit of the soil. Determined by ASTM Designation, 424-59, or AASHTO Designation, 424-59, or AASHTO Designation, T91-54. It represents the range in moisture content within which the soil exhibits the properties of a plastic state.

PL. Plastic Limit. The minimum percent moisture content at which the soil acts as a plastic solid. Plastic limit is determined by ASTM Designation, 424-54T, or AASHTO Designation, T90-54.

Unified. The Unified Soil Classification System is based on the identification of soil materials according to their textural and plasticity qualities and their grouping with respect to their performances as engineering construction materials. (In this system soils are identified as coarse grained (8 classes), fine-grained (6 classes), or highly organic (1 class).

Soil Series. A proper name (e.g. Tama) used as a unit of soil classification which groups soils of essentially like properties and characteristics except the texture of the surface horizon.

Soil Type. A soil series name which includes the textural classification of the surface horizon; e.g., Tama silty clay loam.

Soil Mapping Unit. The basic unit used to record the soil inventory. The soil mapping unit consists of the soil type, the slope class and the erosion class e.g., Tama silty clay loam, 5 to 9 percent slopes, moderately eroded.

PARTICLE SIZE

The amount, by weight, of soil particles within a given size range is one of the major tools used in classifying and discussing soils. Unfortunately, there is no single scheme of particle size classification used among the various disciplines involved with unconsolidated materials. The various particle size definitions are shown schematically in figure 1. (Estimates or transformations from one system to the other can be made from data provided in Walter, et al., 1978, in Hallberg, Iowa Geological Survey, Tech. Inf. Series No. 8).

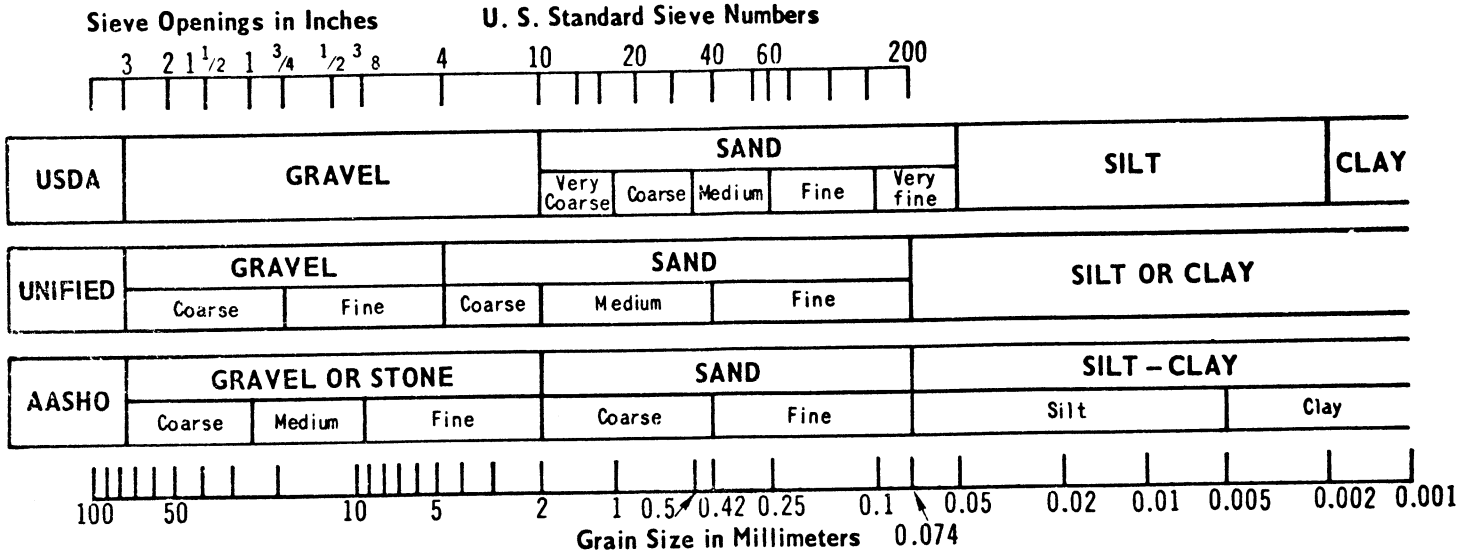

Figure 1. Comparison of Particle Size Scales

TEXTURAL CLASSIFICATION

The proportion of soil particle components (sand, silt, and clay) contained in a soil determine its textural class. The particle size percentages are determined by laboratory analyses. The range of particle size for each component of the textural class is defined differently by the agencies using them. The classification chart of the U.S. Department of Agriculture is shown in figure 2. Here clay is defined as <0.002 mm (2 micron clay). The classification chart of the American Association of State Highway Officials is shown in figure 3. Here clay is defined as <0.005 mm (5 micron clay).

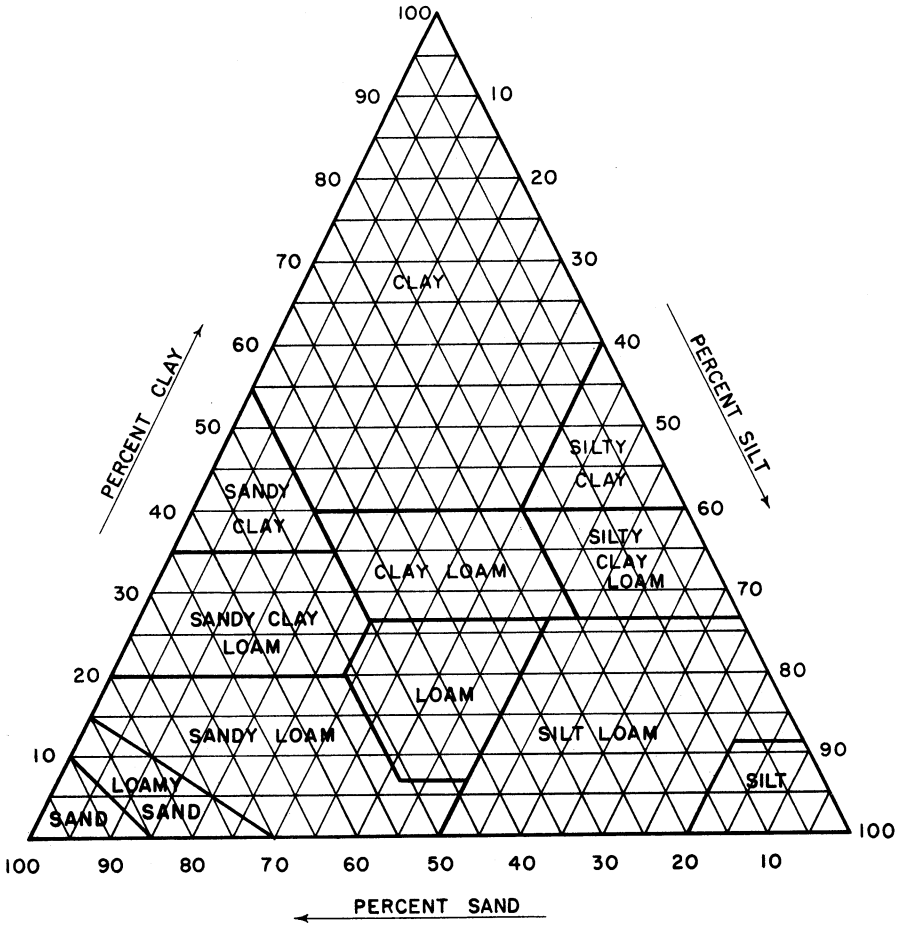

Figure 2. CHART FOR 2-MICRON CLAY

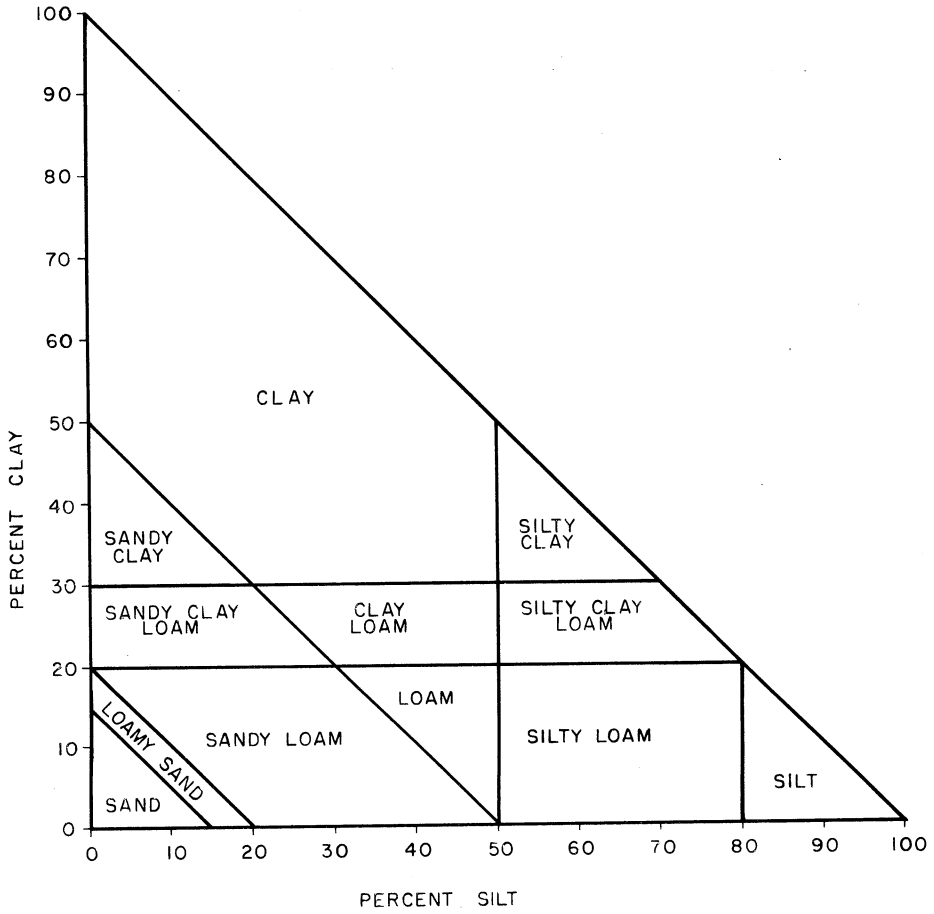

Figure 3. CHART FOR 5-MICRON CLAY

Figure 4 and 5 show the generalized relationship of the AASHTO and Unified soil groups and the USDA textural classes. The charts were prepared by plotting a large number of known engineering classifications on the textural triangle. The engineering classifications were made by standard AASHTO tests (hydrometer analyses for the finer fraction), and the USDA texture classes were determined by the pipette method. For these charts only nongravelly samples containing less than 1.5 percent organic matter and no free carbonates were used.

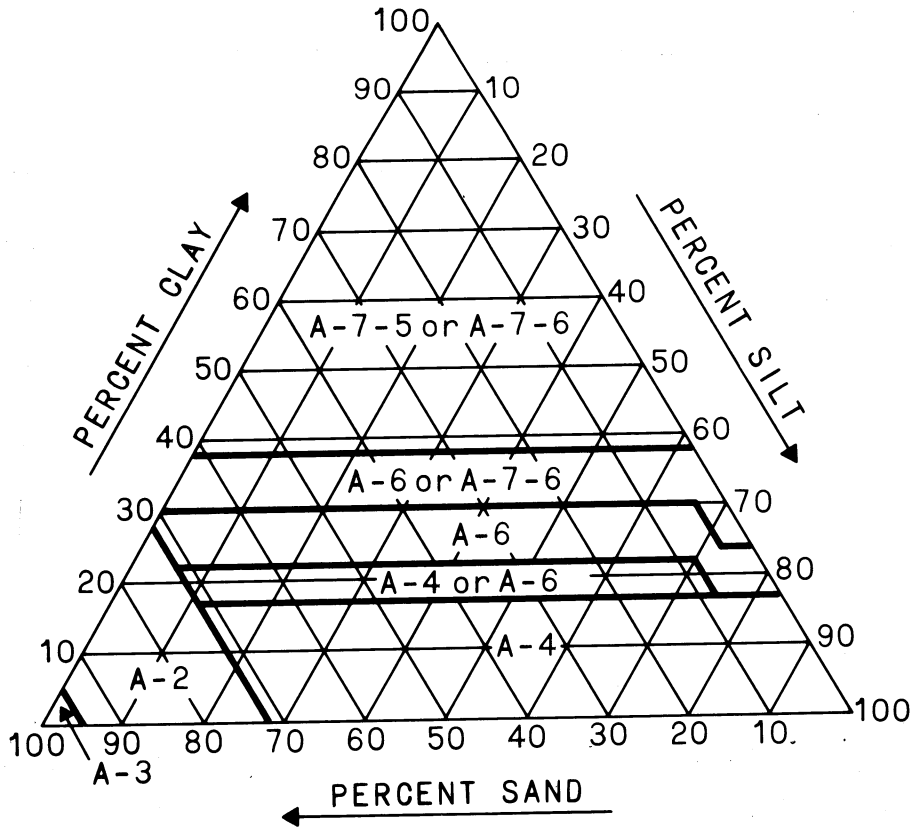

Figure 4. Generalized comparison of the AASHTO classification to USDA texture

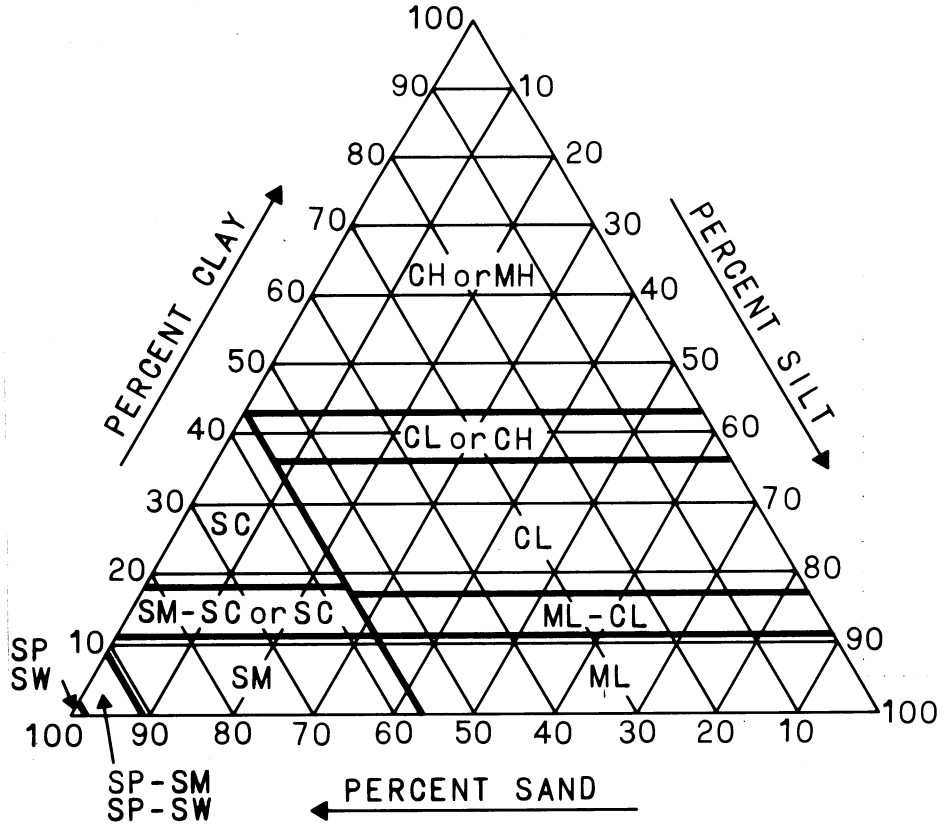

Figure 5. Generalized comparison of the Unified classification to USDA texture

Charts taken from unpublished manuscript, "Relationship between Selected Pedological Data and Two Engineering Classifications of Soils," by Rieger, et al. SCS, Oct. 1957.

Soil Legend

This report lists 264 soil data sets by soil type. Soil types are listed in alphabetic sequence. The following legend is a numerical listing of all soil types presented in the report. These numerical designations are in accordance with the state numbers used by the Iowa Cooperative Soil Survey for county soil surveys in the State of Iowa. In some cases more than one soil type is shown with the same state number. The soil type names correspond to the USDA texture classes as determined by the pipette method. Therefore, the soil type names may not correspond to the data for the AASHTO mechanical analyses.

State number	Soil type
1	Ida silt loam
2	Hamburg silt loam
3	Castana silt loam
6	Okoboji silty clay loam
7	Wiota silt loam
8	Judson silty clay loam or silt loam
9	Marshall silty clay loam or silt loam
10	Monona silt loam
12	Napier silt loam
22	Dow silt loam
24	Shelby loam
25	Chute loamy fine sand and loamy sand
27	Terril loam
33	Steinauer clay loam and loam
44	Blencoe silty clay
46	Keg silt loam
51	Vesser silt loam
52	Bode clay loam
54	Zook silty clay loam
55	Nicollet loam
62	Storden loam
63	Chelsea loamy fine sand
65	Lindley loam
66	Luton silty clay and clay
68	Napa clay
69	Clearfield silty clay loam
70	McPaul silt loam
72	Estherville loam
73	Salida sandy loam
74	Rubio silt loam
75	Givin silt loam
76	Ladoga silt loam
77	Sac silty clay loam
80	Clinton silt loam
83	Kenyon loam
84	Clyde silty clay loam or silt loam or clay loam
88	Nevin silty clay loam or silt loam
90	Okoboji mucky silt loam
91	Primghar silty clay loam or silt loam
92	Marcus silty clay loam
95	Harps loam or clay loam
99	Marshall silty clay loam, mottled subsoil
107	Webster silty clay loam
108	Wadena loam, moderately deep
109	Backbone sandy loam
110	Lamont fine sandy loam
119	Muscatine silty clay loam or silt loam

State Number	Soil Type
120	Tama silty clay loam or silt loam
131	Pershing silt loam
132	Weller silt loam
133	Colo silty clay loam
135	Coland silty clay loam and clay loam
136	Ankeny sandy loam and fine sandy loam
137	Haynie silt loam
138	Clarion loam
146	Onawa silty clay
149	Modale silt loam
152	Marshan clay loam or silty clay loam, deep
156	Albaton silty clay
158	Dorchester silt loam
159	Finchford loamy sand
163	Fayette silt loam
168	Hayden loam
171	Bassett loam
172	Wabash silty clay
174	Bolan loam
175	Dickinson fine sandy loam and sandy loam
177	Saude loam
178	Waukee silt loam and loam
179	Gara loam
184	Klinger silty clay loam
192	Adair clay loam or silt loam or silty clay loam
198	Floyd loam
202	Cylinder loam, moderately deep
211	Edina silt loam
212	Kennebec silt loam
214	Rockton loam, moderately deep
220	Nodaway silt loam

State Number	Soil Type
221	Palms muck
222	Clarinda silty clay loam
226	Lawler loam, deep
237	Sarpy loamy fine sand and fine sand
248	Wabash silty clay loam
249	Zwingle silt loam
259	Biscay clay loam, deep
260	Beckwith silt loam
261	Appanoose silt loam
269	Humeston silt loam or silty clay loam
273	Olmitz loam
274	Rolfe silt loam
279	Taintor silty clay loam
280	Mahaska silty clay loam
281	Otley silty clay loam and silt loam
284	Flagler sandy loam and fine sandy loam
288	Ottosen clay loam
291	Atterberry silt loam
310	Galva silty clay loam
312	Seymour silt loam
314	Cerdo silty clay loam
335	Harcot loam
339	Truman silt loam
352	Whittier silt loam
362	Haig silt loam or silty clay loam
364	Grundy silty clay loam
368	Macksburg silty clay loam
369	Winterset silty clay loam
370	Sharpsburg silty clay loam and silt loam
377	Dinsdale silty clay loam
383	Marna silty clay loam
385	Guckeen clay loam
387	Kamrar clay loam
388	Kossuth silty clay loam
394	Ostrander loam

State Number	Soil Type
398	Tripoli silty clay loam and clay loam
399	Readlyn loam
408	Olin fine sandy loam and sandy loam
425	Keswick loam and silt loam
426	Aredale loam
430	Ackmore silt loam
434	Arbor loam
436	Lakeport silty clay loam
444	Jacwin silty clay loam and loam
453	Tuskeego silt loam
457	Spillville loam, calcareous variant
485	Spillville loam
489	Ossian silt loam
491	Renova loam
506	Wacousta silt loam
507	Canisteo silty clay loam or clay loam
511	Blue Earth mucky silt loam or silt loam
520	Coppock silt loam
531	Kniffin silt loam
532	Rathbun silt loam
534	Carlow silty clay and silty clay loam
536	Hanlon fine sandy loam
538	Carr fine sandy loam
551	Calamine silty clay loam
559	Talcot clay loam, deep
571	Hedrick silt loam and silty clay loam
577	Everly clay loam and silt loam
587	Chequest silty clay loam
592	Mystic silt loam
606	Lanyon silty clay
612	Mottland loam
613	Rossfield loam
655	Crippin loam

State Number	Soil Type
687	Watkins silt loam
706	Donnan silt loam, dark variant
714	Winneshiek loam, moderately deep
733	Calco silty clay loam
760	Ansgar silt loam
761	Franklin silt loam
763	Exette silt loam
781	Lourdes loam
782	Donnan loam
783	Cresco loam
784	Riceville loam
792	Armstrong loam
798	Protivin loam
805	Roseville loam
809	Bertram sandy loam
828	Zenor sandy loam
836	Kilkenny silty clay loam and clay loam
977	Richwood silt loam
978	Festina silt loam

County Legend

This section lists the 99 Iowa counties and the soil unit and the state number for each soil collected in the county. Highway soil engineering data are available for 48 of the 99 counties.

County & Soil Type	State Number
Adair	
Arbor loam	434
Sharpsburg silt loam	370
Winterset silty clay loam	369
Adams	
Adair silty clay loam	192
Clarinda silty clay loam	222
Macksburg silty clay loam	368
Nodaway silt loam	220
Shelby loam	24
Wabash silty clay loam	248
Allamakee	
None	
Appanoose	
Appanoose silt loam	261
Armstrong loam	792
Beckwith silt loam	260
Chequest silty clay loam	587
Coppock silt loam	520
Tuskeego silt loam	453
Audubon	
None	
Benton	
Dinsdale silty clay loam	377
Lamont fine sandy loam	110
Muscatine silty clay loam	119
Black Hawk	
Finchford loamy sand	159
Flagler sandy loam	284

County & Soil Type	State Number
Boone	
Biscay clay loam	259
Canisteo silty clay loam (2 soil profiles)	507
Clarion loam	138B
Coland clay loam	135
Hayden loam	168B
Nicollet loam	55
Okoboji mucky silt loam	90
Palms muck	221
Zenor sandy loam	828C2
Bremer	
Clyde clay loam	84
Colo silty clay loam	133
Floyd loam	198B
Kenyon loam (2 soil profiles)	83
Klinger silty clay loam (2 soil profiles)	184
Readlyn loam (2 soil profiles)	399
Spillville loam	485
Tripoli clay loam	398
Waukee loam	178
Buchanan	
Marshan clay loam	152
Buena Vista	
None	
Butler	
Bolan loam	174B
Lawler loam, deep	226
Marshan silty clay loam	152
Richwood silt loam, variant	977
Spillville, calcareous variant	457

County & Soil Type	State Number
Calhoun	
Blue Earth silt loam	511
Canisteo clay loam	507
Clarion loam	138B
Storden loam	62D
Talcot clay loam	559
Terril loam	27C
Carroll	
Adair clay loam	192D2
Ackmore silt loam	430
Marshall silty clay loam	9C2
Marshall silty clay loam, mottled subsoil	99C2
Nicollet loam	55
Shelby loam	24E2
Cass	
Colo silty clay loam	133
Kennebec silt loam	212
Marshall silty clay loam	9B
Wabash silty clay	172
Cedar	
None	
Cerro Gordo	
Calamine silty clay loam	551
Cerdo silty clay loam	314B
Donnan silt loam	706
Hanlon fine sandy loam	536
Kilkenny clay loam	836
Rockton loam, moderately deep	214
Rossfield silty clay loam	613
Cherokee	
None	

County & Soil Type	State Number
Chickasaw	
None	
Clarke	
None	
Clay	
Dickinson fine sandy loam (2 soil profiles)	175
Everly silt loam	577
Marcus silty clay loam	92
Primghar silt loam	91
Rolfe silt loam	274
Sac silty clay loam	77
Wadena loam, moderately deep	108
Clayton	
None	
Clinton	
Atterberry silt loam	291
Tama silty clay loam	120
Zwingle silt loam	249
Crawford	
Dow silt loam	22
Dallas	
None	
Davis	
None	
Decatur	
None	
Delaware	
None	

County & Soil Type	State Number
Des Moines	
None	
Dickinson	
None	
Dubuque	
None	
Emmet	
None	
Fayette	
Exette silt loam	763D2
Floyd	
None	
Franklin	
Calamine silty clay loam	551
Coland clay loam	135
Franklin silt loam	761
Mottland loam	612C2
Wacousta silt loam	506
Fremont	
Carr fine sandy loam	538
Hamburg silt loam	2
Judson silt loam	8
Marshall silt loam	9B
McPaul silt loam	70
Nevin silt loam	88
Greene	
None	

County & Soil Type	State Number
Grundy	
Dinsdale silt loam	377
Muscatine silt loam	119
Guthrie	
Olmitz loam	273
Storden loam	62E
Hamilton	
Kamrar clay loam	387
Hancock	
None	
Hardin	
None	
Harrison	
Blencoe silty clay	44
Keg silt loam	46
Lakeport silty clay loam	436
McPaul silt loam	70
Napier silt loam	12
Henry	
None	
Howard	
Cresco loam	783
Floyd loam	198
Lourdes loam	781
Protivin loam	798
Renova loam	491
Riceville loam	784
Saude loam	177

County & Soil Type	State Number
Humboldt	
Terrill loam	27
Wacousta silt loam	506
Ida	
None	
Iowa	
Clinton silt loam	80
Fayette silt loam	163
Ladoga silt loam	76
Lindley loam	65
Mahaska silt loam	280
Nodaway silt loam	220
Otley silt loam	281
Taintor silty clay loam	279
Wabash silty clay loam	248
Watkins silt loam	687
Jackson	
None	
Jasper	
None	
Jefferson	
Grundy silty clay loam (3 soil profiles)	364
Haig silty clay loam (3 soil profiles)	362
Weller silt loam (3 soil profiles)	132
Johnson	
Tama silt loam	120
Jones	
None	

County & Soil Type	State Number
Keokuk	
Clinton silt loam	80
Givin silt loam	75
Keswick silt loam	425
Mahaska silty clay loam	280
Otley silty clay loam	281
Rubio silt loam	74
Taintor silty clay loam	279
Kossuth	
Blue Earth mucky silt loam	511
Bode clay loam	52B
Canisteo clay loam (2 soil profiles)	507
Estherville loam	72B
Kossuth silty clay loam (2 soil profiles)	388
Nicollet loam	55
Okoboji mucky silt loam	90
Okoboji silty clay loam	6
Ottosen clay loam	288
Storden loam	62D
Webster silty clay loam	107
Lee	
None	
Linn	
Aredale loam	426
Bertram sandy loam	809
Chelsea loamy fine sand	63
Colo silty clay loam	133
Dickinson sandy loam	175
Dinsdale silty clay loam	377
Klinger silty clay loam	184
Olin sandy loam	408
Ostrander loam	394
Whittier silt loam	352

County & Soil Type	State Number
Louisa	
None	
Lucas	
Weller silt loam	132
Lyon	
None	
Madison	
Clearfield silty clay loam	69
Gara loam	179
Macksburg silty clay loam	368
Nevin silt loam	88
Sharpsburg silty clay loam (2 soil profiles)	370
Winterset silty clay loam (3 soil profiles)	369
Wiota silt loam	7
Mahaska	
Flagler sandy loam	284
Hedrick silty clay loam	571
Marion	
None	
Marshall	
None	
Mills	
None	
Mitchell	
Ansgar silt loam	760
Roseville loam	805

County & Soil Type	State Number
Monona	
Albaton silty clay	156
Haynie silt loam	137
Ida silt loam (2 soil profiles)	1
Keg silt loam (2 soil profiles)	46
Luton clay	66
Modale silt loam	149
Monona silt loam	10
Napa loam	68
Napier silt loam	12
Sarpy loamy fine sand	237
Steinauer loam	33
Monroe	
Pershing silt loam	131
Montgomery	
None	
Muscatine	
None	
O'Brien	
Calco silty clay loam	733
Galva silty clay loam	310B
Sac silty clay loam	77B
Salida sandy loam	73E
Osceola	
None	
Page	
None	
Palo Alto	
Biscay clay loam	259
Crippin loam	655
Cylinder loam, moderately deep	202
Truman silt loam	339

County & Soil Type	State Number
Plymouth	
Galva silty clay loam	310
Pocahontas	
None	
Polk	
Ankeny fine sandy loam	136
Pottawattamie	
None	
Poweshiek	
None	
Ringgold	
None	
Sac	
None	
Scott	
None	
Shelby	
Marshall silt loam (2 soil profiles)	9B & 9C
Monona silt loam	10C2
Sioux	
None	
Story	
None	
Tama	
None	

County & Soil Type	State Number
Taylor	
None	
Union	
None	
Van Buren	
Adair (truncated) silt loam	192
Adair silt loam	192
Carlow silty clay loam	534
Coppock silt loam	520
Edina silt loam	211
Lindley loam	65
Seymour silt loam	312
Shelby loam	24
Wapello	
None	
Warren	
None	
Washington	
None	
Wayne	
Clarinda silt loam	222
Edina silt loam	211
Humeston silty clay loam	269
Kniffin silt loam	531
Mystic silt loam	592
Rathbun silt loam	532
Seymour silt loam	312
Vesser silt loam	51
Zook silty clay loam	54

County & Soil Type	State Number
Webster	
Clarion loam	138
Guckeen clay loam	385
Harps clay loam	95
Hayden loam	168
Lanyon silty clay	606
Marna silty clay loam	383
Nicollet loam	55
Okoboji silty clay loam	6
Webster silty clay loam	107
Winnebago	
None	
Winneshiek	
Backbone sandy loam	109
Bassett loam	171
Clyde silt loam	84
Donnan loam	782
Dorchester silt loam	158
Fayette silt loam	163
Festina silt loam	978
Floyd loam	198
Jacwin loam	444
Ossian silt loam	489
Spillville loam	485
Winneshiek loam	714
Woodbury	
Albaton silty clay	156
Castana silt loam	3
Chute loamy sand	25
Hamburg silt loam	2
Haynie silt loam	137
Ida silt loam	1
Modale silt loam	149
Onawa silty clay (2 soil profiles)	146
Steinauer clay loam	33

County & Soil Type	State Number
Worth	
Bolan loam	174
Harcot loam	335
Wright	
None	

Parent Material Legend

This list groups the soils by the materials from which the soils formed. Under each parent material heading the soils are listed alphabetically by county.

County & Soil Type	State Number
ALLUVIUM (includes alluvium, colluvium, and fine-textured terrace deposits)	
Adair	
Arbor loam	434
Adams	
Nodaway silt loam	220
Wabash silty clay loam	248
Appanoose	
Chequest silty clay loam	587
Coppock silt loam	520
Tuskeego silt loam	453
Boone	
Coland clay loam	135
Bremer	
Colo silty clay loam	133
Spillville loam	485
Butler	
Richwood silt loam, variant	977
Spillville, calcareous variant	457
Calhoun	
Terril loam	27C
Carroll	
Ackmore silt loam	430
Cass	
Colo silty clay loam	133
Kennebec silt loam	212
Wabash silty clay	172
Clinton	
Zwingle silt loam	249
Franklin	
Coland clay loam	135
Fremont	
Judson silt loam	8
McPaul silt loam	70
Nevin silt loam	88
Guthrie	
Olmitz loam	273
Harrison	
Blencoe silty clay	44
Keg silt loam	46
Lakeport silty clay loam	436
McPaul silt loam	70
Napier silt loam	12
Humboldt	
Terrill loam	27

County & Soil Type	State Number
ALLUVIUM (cont'd)	
Iowa	
Nodaway silt loam	220
Wabash silty clay loam	248
Watkins silt loam	687
Linn	
Colo silty clay loam	133
Madison	
Nevin silt loam	88
Wiota silt loam	7
Monona	
Albaton silty clay	156
Haynie silt loam	137
Keg silt loam (2 soil profiles)	46
Luton clay	66
Modale silt loam	149
Napa loam	68
Napier silt loam	12
O'Brien	
Calco silty clay loam	733
Palo Alto	
Truman silt loam	339
Van Buren	
Carlow silty clay loam	534
Coppock silt loam	520
Wayne	
Humeston silty clay loam	269
Vesser silt loam	51
Zook silty clay loam	54
Winneshiek	
Dorchester silt loam	158
Festina silt loam (over sand)	978
Ossian silt loam	489
Spillville loam	485
Woodbury	
Albaton silty clay	156
Castana silt loam	3
Haynie silt loam	137
Modale silt loam	149
Onawa silty clay (2 soil profiles)	146
SANDY ALLUVIUM	
Black Hawk	
Finchford loamy sand	159
Cerro Gordo	
Hanlon fine sandy loam	536
Fremont	
Carr fine sandy loam	538
Monona	
Sarpy loamy fine sand	237
Polk	
Ankeny fine sandy loam	136
BEDROCK	
Cerro Gordo	
Calamine silty clay loam (shale)	551
Cerdo silty clay loam (shale)	314B
Rockton loam (hard carbonate)	214
Rossfield silty clay loam (soft or shaly carbonate)	613

County & Soil Type	State Number
BEDROCK (cont'd)	
Franklin	
Calamine silty clay loam (shale)	551
Mottland loam (soft or shaly carbonate)	612C2
Linn	
Bertram sandy loam (hard carbonate)	809
Mitchell	
Roseville loam (hard carbonate)	805
Winneshiek	
Backbone sandy loam (hard carbonate)	109
Jacwin loam (shale)	444
Winneshiek loam (hard carbonate)	714
EOLIAN SAND	
Benton	
Lamont fine sandy loam	110
Butler	
Bolan loam	174B
Clay	
Dickinson fine sandy loam (2 soil profiles)	175
Linn	
Chelsea loamy fine sand	63
Dickinson sandy loam	175
Olin sandy loam (eolian sand/till)	408
Woodbury	
Chute loamy sand	25
Worth	
Bolan loam	174

County & Soil Type	State Number
LOESS	
Adair	
Sharpsburg silt loam	370
Winterset silty clay loam	369
Adams	
Macksburg silty clay loam	368
Appanoose	
Appanoose silt loam	261
Beckwith silt loam	260
Benton	
Muscatine silty clay loam	119
Carroll	
Marshall silty clay loam	9C2
Marshall silty clay loam, mottled subsoil	99C2
Cass	
Marshall silty clay loam	9B
Clay	
Marcus silty clay loam	92
Primghar silt loam	91
Rolfe silt loam	274
Clinton	
Atterberry silt loam	291
Tama silty clay loam	120
Crawford	
Dow silt loam	22
Fayette	
Exette silt loam	763D2

County & Soil Type	State Number
LOESS (cont'd)	
Fremont	
Hamburg silt loam	2
Marshall silt loam	9B
Grundy	
Muscatine silt loam	119
Iowa	
Clinton silt loam	80
Fayette silt loam	163
Ladoga silt loam	76
Mahaska silt loam	280
Otley silt loam	281
Taintor silty clay loam	279
Jefferson	
Grundy silty clay loam (3 soil profiles)	364
Haig silty clay loam (3 soil profiles)	362
Weller silt loam (3 soil profiles)	132
Johnson	
Tama silt loam	120
Keokuk	
Clinton silt loam	80
Givin silt loam	75
Mahaska silty clay loam	280
Otley silty clay loam	281
Rubio silt loam	74
Taintor silty clay loam	279
Lucas	
Weller silt loam	132
Madison	
Macksburg silty clay loam	368
Sharpsburg silty clay loam (3 soil profiles)	370
Winterset silty clay loam (3 soil profiles)	369
Mahaska	
Hedrick silty clay loam	571
Monona	
Ida silt loam (2 soil profiles)	1
Monona silt loam	10
Monroe	
Pershing silt loam	131
O'Brien	
Galva silty clay loam	310B
Plymouth	
Galva silty clay loam	310
Shelby	
Marshall silt loam (2 soil profiles)	9B, 9C
Monona silt loam	10C2
Van Buren	
Edina silt loam	211
Seymour silt loam	312
Wayne	
Edina silt loam	211
Kniffin silt loam	531
Rathbun silt loam	532
Seymour silt loam	312
Winneshiek	
Fayette silt loam	163
Woodbury	
Hamburg silt loam	2
Ida silt loam	1

County & Soil Type	State Number
GLACIAL TILL	
Adams	
Shelby loam	24
Boone (All Cary till)	
Clarion loam	138B
Hayden loam	168B
Nicollet loam	55
Zenor sandy loam (sandy till)	828C2
Bremer	
Kenyon loam (2 soil profiles)	83
Readlyn loam (2 soil profiles)	399
Tripoli clay loam	398
Calhoun (Cary till)	
Clarion loam	138B
Storden loam	62D
Carroll	
Nicollet loam (Cary till)	55
Shelby loam	24E2
Guthrie	
Storden loam (Cary till)	62E
Howard	
Cresco loam	783
Lourdes loam	781
Protivin loam	798
Renova loam	491
Riceville loam	784
Iowa	
Lindley loam	65
Kossuth (Cary till)	
Nicollet loam	55
Storden loam	62D

County & Soil Type	State Number
Linn	
Aredale loam	426
Olin sandy loam (eolian sand/till)	408
Ostrander loam	394
Madison	
Gara loam	179
Monona	
Steinauer loam	33
Palo Alto (Cary till)	
Crippin loam	655
Van Buren	
Lindley loam	65
Shelby loam	24
Webster (Cary till)	
Clarion loam	138
Hayden loam	168
Nicollet loam	55
Winneshiek	
Bassett loam	171
Woodbury	
Steinauer clay loam	33
PALEOSOLS	
Adams	
Adair silty clay loam	192
Clarinda silty clay loam	222
Appanoose	
Armstrong loam	792

County & Soil Type	State Number
PALEOSOLS (cont'd)	
Carroll	
Adair clay loam	192D2
Cerro Gordo	
Donnan silt loam	706
Keokuk	
Keswick silt loam	425
Madison	
Clearfield silty clay loam (loess/gray paleosol)	69
Van Buren	
Adair (truncated) silt loam	192
Adair silt loam	192
Wayne	
Clarinda silt loam	222
Mystic silt loam (on old alluvium)	592
Winneshiek	
Donnan loam	782
SAND AND GRAVEL SUBSTRATUM	
Black Hawk	
Flagler sandy loam	284
Boone	
Biscay clay loam	259
Bremer	
Waukee loam	178
Buchanan	
Marshan clay loam	152

County & Soil Type	State Number
Butler	
Lawler loam, deep	226
Marshan silty clay loam	152
Calhoun	
Talcot clay loam	559
Clay	
Wadena loam	108
Howard	
Saude loam	177
Kossuth	
Estherville loam	72B
Linn	
Whittier silt loam	352
Mahaska	
Flagler sandy loam	284
O'Brien	
Salida sandy loam	73E
Palo Alto	
Biscay clay loam	259
Cylinder loam, moderately deep	202
Worth	
Harcot loam	335
THIN LOESS OVER TILL	
Benton	
Dinsdale silty clay loam	377

County & Soil Type	State Number
THIN LOESS OVER TILL (Cont'd)	
Bremer	
Klinger silty clay loam (2 soil profiles)	184
Clay	
Sac silty clay loam	77
Franklin	
Franklin silt loam	761
Grundy	
Dinsdale silt loam	377
Linn	
Dinsdale silty clay loam	377
Klinger silty clay loam	184
Mitchell	
Ansgar silt loam	760
O'Brien	
Sac silty clay loam	77B
THIN SEDIMENTS OVER TILL	
Boone (Cary till)	
Canisteo silty clay loam (2 soil profiles)	507
Bremer	
Clyde clay loam	84
Floyd loam	198B
Calhoun (Cary till)	
Canisteo clay loam	507
Clay	
Everly silt loam	577
Howard	
Floyd loam	198
Kossuth	
Canisteo clay loam (2 soil profiles)	507
Webster silty clay loam	107
Webster	
Webster silty clay loam	107
Winneshiek	
Clyde silt loam	84
Floyd loam	198
DES MOINES LOBE SEDIMENTS- includes lacustrine materials and other sediments in depressions, over Cary till at depth.	
Boone	
Okoboji mucky silt loam	90
Palms muck	221
Calhoun	
Blue Earth silt loam	511
Cerro Gordo	
Kilkenny clay loam	836
Franklin	
Wacousta silt loam	506
Hamilton	
Kamrar clay loam	387
Humboldt	
Wacousta silt loam	506

County & Soil Type	State Number
DES MOINES LOBE SEDIMENTS- includes lacustrine materials and other sediments in depressions on the Des Moines lobe.	
Kossuth	
Blue Earth mucky silt loam	511
Bode clay loam	52B
Kossuth silty clay loam (2 soil profiles)	388
Okoboji mucky silt loam	90
Okoboji silty clay loam	6
Ottosen clay loam	288
Webster	
Guckeen clay loam	385
Harps clay loam	95
Lanyon silty clay	606
Marna silty clay loam	383
Okoboji silty clay loam	6

County & Soil Type	State Number

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 430 SOIL NAME: Ackmore Silt Loam REPORT NUMBER: AAD6-4011 - AAD6-4013 COUNTY: Carroll, Iowa LOCATION: NW corner sec. 34, T.82N., R.35W. PARENT MATERIAL: Silty Alluvium																						
0-8	Ap	96	23	-	-	-	-	-	-	-	-	100	99	98	89	60	26	18	44	18	A-7-6(12)	ML/CL
10-20	C	95	24	-	-	-	-	-	-	-	-	-	100	99	86	68	32	26	43	16	A-7-6(11)	ML/CL
32-42	IIA11	91	26	-	-	-	-	-	-	-	100	99	99	97	92	75	45	34	57	27	A-7-5(18)	CH
STATE SYMBOL: 192 SOIL NAME: Adair Silty Clay Loam REPORT NUMBER: AAD9-909 - AAD9-911 COUNTY: Adams, Iowa LOCATION: NE1/4SW1/4NE1/4 sec. 25, T.72N., R.34W. PARENT MATERIAL: Sediment over Reddish Paleosol																						
0-8	A1p/A3	97	22	-	-	-	-	-	-	-	100	98	92	81	75	-	34	28	39	17	A-6(11)	CL
13-39	B21/B22	95	23	-	-	-	-	-	-	-	100	97	92	81	76	-	48	43	54	32	A-7-6(19)	CH
48-60	B3/C1	107	18	-	-	-	-	-	-	-	100	93	86	70	63	-	35	31	40	23	A-6(12)	CL
STATE SYMBOL: 192 SOIL NAME: Adair (truncated) Silt Loam REPORT NUMBER: AAD9-68 - AAD9-70 COUNTY: Van Buren, Iowa LOCATION: NW1/4SW1/4 sec. 23, T.69N., R.8W. PARENT MATERIAL: Sediment over Reddish Paleosol																						
0-5	A1p	105	15	-	-	-	-	-	-	-	100	96	90	76	68	-	22	14	27	7	A-4(8)	ML-CL
17-23	B22	94	24	-	-	100	99	99	99	99	98	93	88	76	73	-	49	45	49	23	A-7-6(15)	ML-CL
42-48	C2	105	20	-	-	-	-	-	-	100	99	92	85	67	61	-	41	37	47	27	A-7-6(14)	CL
STATE SYMBOL: 192 SOIL NAME: Adair Silt Loam REPORT NUMBER: AAD8-10297 - AAD8-10299																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Van Buren, Iowa LOCATION: NW1/4SW1/4 sec. 23, T.69N., R.8W. PARENT MATERIAL: Sediment over Reddish Paleosol																						
0-5	A1	97	21	-	-	-	-	-	-	-	100	95	89	72	64	-	19	10	32	8	A-4(8)	ML-CL
18-23	B22	102	20	-	-	-	-	100	99	99	99	94	90	73	67	-	39	35	38	17	A-6(10)	CL
46-56	C	106	20	-	-	-	-	-	-	-	100	97	96	78	65	-	31	28	39	21	A-6(12)	CL
STATE SYMBOL: 192D2 SOIL NAME: Adair Clay Loam REPORT NUMBER: AAD6-4002 - AAD6-4004 COUNTY: Carroll, Iowa LOCATION: NW corner sec. 3, T.82N., R.34W. PARENT MATERIAL: Sediment over Reddish Paleosol																						
0-8	Ap	107	18	-	-	-	-	-	-	-	100	98	94	85	77	59	49	20	35	14	A-6(10)	CL
10-20	IIB22t	99	22	-	-	-	-	-	100	99	97	94	88	73	68	59	47	39	51	30	A-7-6(18)	CH
32-42	IIB3t	112	16	-	-	-	-	100	99	99	98	94	86	64	59	50	37	30	42	26	A-7-6(13)	CL
STATE SYMBOL: 156 SOIL NAME: Albaton Silty Clay REPORT NUMBER: AAD3-12827 COUNTY: Woodbury, Iowa LOCATION: NW1/4NW1/4 sec. 23, T.86N., R.47W. PARENT MATERIAL: Alluvium																						
12-18	C2	89	26	-	-	-	-	-	-	-	-	-	-	100	98	96	87	70	84	55	A-7-6(20)	CH
STATE SYMBOL: 156 SOIL NAME: Albaton Clay REPORT NUMBER: 88182 COUNTY: Monona, Iowa LOCATION: SW1/4 sec. 3, T.83N., R.46W. PARENT MATERIAL: Alluvium																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
12-20	Cg	88	27	-	-	-	-	-	-	-	-	-	100	99	98	96	80	63	78	46	A-7-5(20)	CH

STATE SYMBOL: 156 SOIL NAME: Albaton Silty Clay REPORT NUMBER: AADO-11043 - AADO-11045
COUNTY: Monona, Iowa
LOCATION: SW1/4 sec. 3, T.83N., R.46W.
PARENT MATERIAL: Alluvium

0-9	Ap	90	24	-	-	-	-	-	-	-	-	-	-	100	97	91	71	60	75	49	A-7-6(20)	CH
29-39	Cg	89	26	-	-	-	-	-	-	-	-	-	-	-	00	97	80	64	78	52	A-7-6(20)	CH
39-56	Cg	93	23	-	-	-	-	-	-	-	-	-	-	-	00	98	78	62	80	55	A-7-6(20)	CH

STATE SYMBOL: 136 SOIL NAME: Ankeny Fine Sandy Loam REPORT NUMBER: AADO-1592 - AADO-1593
COUNTY: Polk, Iowa
LOCATION: NE1/4 sec 13, T.80N., R.22W.
PARENT MATERIAL: Sandy Alluvium

7-14	A12	118	12	-	-	-	-	-	-	100	99	90	78	43	29	20	12	9	19	2	A-4(2)	SM
30-38	B1	122	12	-	-	-	-	-	-	100	99	90	73	41	29	20	12	10	17	2	A-4(1)	SM

STATE SYMBOL: 760 SOIL NAME: Ansgar Silt Loam REPORT NUMBER: AAD2-2678 - AAD2-2680
COUNTY: Mitchell, Iowa
LOCATION: SW1/4 sec. 28, T.99N., R.17W.
PARENT MATERIAL: Loess and Glacial Till

0-8	Ap	90	25	-	-	-	-	-	-	-	100	97	96	93	82	64	33	22	45	14	A-7-5(11)	ML
18-28	B21tg	101	22	-	-	-	-	-	-	-	-	100	99	97	88	69	41	31	41	15	A-7-6(10)	ML/CL
36-60	IIB3t	121	11	-	-	-	-	100	95	93	90	73	61	40	34	26	19	16	24	9	A-4(1)	SC

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 261 SOIL NAME: Appanoose Silt Loam REPORT NUMBER: AAD0-1594 - AAD0-1597																						
COUNTY: Appanoose, Iowa																						
LOCATION: NW1/4SW1/4 sec. 25, T.68N., R.19W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-8	Ap	98	21	-	-	-	-	-	-	-	-	100	99	98	86	62	28	17	32	8	A-4(8)	ML
8-14	A2	101	20	-	-	-	-	-	-	-	-	100	99	98	92	74	40	30	37	12	A-6(9)	ML
15-20	B21tg	86	29	-	-	-	-	-	-	-	-	-	-	100	96	79	49	40	56	31	A-7-6(19)	CH
41-59	B32tg	97	20	-	-	-	-	-	-	-	-	-	-	100	97	91	68	61	66	32	A-7-5(20)	MH
STATE SYMBOL: 434 SOIL NAME: Arbor Loam REPORT NUMBER: AAD0-1598 - AAD0-1600																						
COUNTY: Adair, Iowa																						
LOCATION: NW1/4SE1/4NW1/4 sec. 18, T.76N., R.31W.																						
PARENT MATERIAL: Loamy Sediments and Glacial Till																						
6-14	A12	112	14	-	-	-	-	100	99	98	97	93	84	54	42	34	21	17	28	9	A-4(4)	CL
24-32	IIB22t	107	16	-	-	-	-	-	-	100	99	95	88	70	59	46	30	25	33	12	A-6(8)	CL
44-48	IIc	105	17	-	-	-	-	-	-	100	99	96	91	76	66	56	40	34	44	22	A-7-6(14)	CL
STATE SYMBOL: 426 SOIL NAME: Aredale Loam REPORT NUMBER: AAD6-3380 - AAD6-3383																						
COUNTY: Linn, Iowa																						
LOCATION: NW1/4 sec. 20, T.85N., R.6W.																						
PARENT MATERIAL: Loamy Sediments and Glacial Till																						
0-7	A1p	109	15	-	-	-	-	-	-	-	100	96	82	60	52	33	19	14	25	9	A-4(5)	CL
22-31	B22	119	13	-	-	-	-	-	-	-	100	95	75	41	33	22	16	13	21	8	A-4(1)	CL
31-53	IIB3	118	11	-	-	-	-	-	-	-	100	92	73	34	22	15	10	9	20	6	A-2-4(0)	SM-SC
53-79	IIIC	117	12	-	-	-	-	100	99	99	98	86	75	55	49	38	27	23	33	18	A-6(7)	CL

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 792 SOIL NAME: Armstrong Loam REPORT NUMBER: AAD9-1015 - AAD9-1017 COUNTY: Appanoose, Iowa LOCATION: NW1/4SE1/4 sec. 13, T.67N., R.16W. PARENT MATERIAL: Loess Sediment/Reddish Paleosol																						
0-7	Ap	107	15	-	-	-	-	-	-	-	100	95	84	64	49	38	22	16	28	9	A-4(6)	CL
18-26	IIB22t	103	19	-	-	-	-	-	100	99	99	95	89	75	66	57	47	43	48	25	A-7-6(16)	CL
41-51	IIB3t	108	16	-	-	-	-	-	100	99	99	93	84	65	57	46	36	31	38	20	A-6(10)	CL
STATE SYMBOL: 291 SOIL NAME: Atterberry Silt Loam REPORT NUMBER: AAD5-Ia. 23-3-1 - AAD5-Ia. 23-3-4 COUNTY: Clinton, Iowa LOCATION: SE corner of sec. 36, T.82N., R.5E. PARENT MATERIAL: Wisconsin Loess																						
0-9	Ap	88	28	-	-	-	-	-	-	-	-	100	99	98	86	57	21	13	50	13	A-7-5(11)	ML
12-18	A2	99	22	-	-	-	-	-	-	-	-	100	99	98	92	65	34	23	40	15	A-6(10)	ML/CL
30-35	B22t	96	23	-	-	-	-	-	-	-	-	100	99	99	91	63	38	31	46	23	A-7-6(14)	CL
44-55	C	103	20	-	-	-	-	-	-	-	-	-	100	99	90	61	36	29	44	22	A-7-6(14)	CL
STATE SYMBOL: 109 SOIL NAME: Backbone Sandy Loam REPORT NUMBER: AAD0-1601 - AAD0-1602 COUNTY: Winneshiek, Iowa LOCATION: SW1/4SE1/4 sec. 18, T.97N., R.9W. PARENT MATERIAL: Sand/Limestone Bedrock																						
0-8	Ap	117	11	-	-	-	-	-	-	-	100	77	53	39	34	25	12	8	22	5	A-4(1)	SM
17-24	B21t	127	10	-	-	-	-	-	-	-	100	70	51	35	31	24	14	10	19	6	A-2-4(0)	SM
STATE SYMBOL: 171 SOIL NAME: Bassett Loam REPORT NUMBER: AAD0-8409 - AAD0-8411 COUNTY: Winneshiek, Iowa																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	.2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: SW1/4 sec. 34, T.97N., R.10W. PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																						
6-12	A2	109	17	-	-	-	-	-	-	-	100	93	83	70	67	-	31	26	30	12	A-6(8)	27-47
IIB22	118	13	-	-	100	98	98	97	97	96	90	78	57	51	-	32	27	32	17	7)	CL	47-72
IIB3	118	12	-	-	-	-	-	-	100	99	92	81	60	56	-	32	26	32	18			
STATE SYMBOL: 260 SOIL NAME: Beckwith Silt Loam REPORT NUMBER: AAD9-1007 - ADD9-1010 COUNTY: Appanoose, Iowa LOCATION: NE1/4SW1/4 sec. 10, T.70N., R.16W. PARENT MATERIAL: Wisconsin Loess																						
0-6	Ap	93	19	-	-	-	-	-	-	100	99	99	97	95	80	60	21	14	34	6	A-4(8)	ML
6-15	A21	104	16	-	-	-	-	-	-	-	-	100	98	96	88	62	26	16	26	5	A-4(8)	ML-CL
21-25	B22tg	95	25	-	-	-	-	-	-	-	-	-	-	100	96	81	58	51	61	36	A-7-6(20)	CH
39-45	B32tg	95	23	-	-	-	-	-	-	-	-	-	-	100	96	79	50	42	59	37	A-7-6(20)	CH
STATE SYMBOL: 809 SOIL NAME: Bertram Sandy Loam REPORT NUMBER: AAD0-11026 - AAD0-11027 COUNTY: Linn, Iowa LOCATION: SE1/4SW1/4 sec. 1, T.86N., R.6W. PARENT MATERIAL: Sandy Loam over Limestone																						
0-8	Ap	109	15	-	-	-	-	-	-	-	100	90	67	46	36	28	17	12	28	9	A-4(2)	SM
17-27	B21	117	13	-	-	-	-	-	100	99	98	85	64	41	37	27	19	16	22	7	A-4(1)	SM
STATE SYMBOL: 259 SOIL NAME: Biscay Clay Loam REPORT NUMBER: AAD4-8401 - AAD4-8403 COUNTY: Boone, Iowa LOCATION: SE1/4 sec. 29, T.84N., R.28W. PARENT MATERIAL: Loamy Sediments/Calcareous Sands and Gravels																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-13	Ap	94	24	-	-	-	-	100	99	98	97	84	77	67	61	51	33	25	50	19	A-7-5(12)	ML
17-26	B21/22	110	16	-	-	-	-	-	100	99	98	83	74	58	56	48	32	26	43	22	A-7-6(10)	CL
36-60	IIC1g	130	10	-	-	-	100	96	88	79	67	24	15	10	8	6	3	2	22	3	A-1-b(0)	SW/SM

STATE SYMBOL: 259 SOIL NAME: Biscay Clay Loam REPORT NUMBER: AAD6-3368 - AAD6-3370
COUNTY: Palo Alto, Iowa
LOCATION: NE1/4NW1/4 sec. 7, T.95N., R.32W.
PARENT MATERIAL: Loamy Sediments/Calcareous Sands and Gravels

7-16	A1	94	21	-	-	-	-	-	-	100	99	89	75	60	53	49	36	28	50	24	A-7-6(12)	ML-CL
31-39	B22g	115	13	-	-	-	-	-	-	100	99	77	53	38	35	32	23	20	36	18	A-6(3)	SC
50-60	IICg	123	12	-	-	-	100	99	95	88	76	34	18	11	9	6	2	2	-	NP	A-1-b(0)	SW-SM

STATE SYMBOL: 44 SOIL NAME: Blencoe Silty Clay REPORT NUMBER: AAD6-1479 - AAD6-1480
COUNTY: Harrison, Iowa
LOCATION: SE1/4SW1/4 sec. 16, T.78N., R.44W.
PARENT MATERIAL: Alluvium

8-16	A3	92	26	-	-	-	-	-	-	-	-	-	100	96	88	71	55	44	58	32	A-7-6(20)	CH
30-36	IIB31	103	17	-	-	-	-	-	-	-	-	-	100	86	70	41	27	22	36	15	A-6(10)	CL

STATE SYMBOL: 511 SOIL NAME: Blue Earth Mucky Silt Loam REPORT NUMBER: AAD4-3130 - AAD4-3132
COUNTY: Kossuth, Iowa
LOCATION: NE corner of sec. 10 T.100N., R.29W.
PARENT MATERIAL: Organic Enriched Fine Textured Sediments over Glacial Till

0-9	Lcop	46	65	-	-	-	-	-	-	-	-	100	99	91	63	58	27	15	22	20	A-7-5(16)	OH
18-24	Lc03	56	56	-	-	-	-	-	-	-	-	100	99	90	78	60	32	20	92	11	A-7-5(12)	OH
30-38	Lc05	65	46	-	-	-	-	-	-	-	-	100	99	94	77	44	29	18	87	22	A-7-5(17)	OH

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 511 SOIL NAME: Blue Earth Silt Loam REPORT NUMBER: AAD6-3276 - AAD6-3278 COUNTY: Calhoun, Iowa LOCATION: NE1/4SE1/4 sec. 3 T.88N., R.33W. PARENT MATERIAL: Organic Enriched Sediments over Glacial Till																							
8-13	LcD2	66	45	-	-	-	-	-	-	-	-	100	99	95	77	52	22	13	78	17	A-7-5(15)	OH
27-33	IIA1	90	27	-	-	-	-	-	-	-	100	99	97	92	84	68	42	29	51	25	A-7-6(16)	CH/CL
54-63	IIC2	98	22	-	-	-	-	-	-	-	-	100	98	95	91	73	42	31	51	29	A-7-6(18)	CH
STATE SYMBOL: 52B SOIL NAME: Bode Clay Loam REPORT NUMBER: AAD6-3317 - AAD6-3319 COUNTY: Kossuth, Iowa LOCATION: NW1/4 sec. 3, T.94N., R.29W. PARENT MATERIAL: Lucustrine Sediments over Glacial Till																							
0-9	Ap	95	24	-	-	-	-	-	-	-	100	97	89	73	64	49	26	16	39	14	A-6(9)	ML/CL
24-32	B22	105	18	-	-	-	-	-	100	98	95	88	80	60	53	43	28	22	41	20	A-7-6(9)	CL
39-60	C	110	16	-	-	-	-	-	100	99	98	91	85	66	57	44	26	18	34	15	A-6(8)	CL
STATE SYMBOL: 174 SOIL NAME: Bolan Loam REPORT NUMBER: AAD3-3158 - AAD3-3160 COUNTY: Worth, Iowa LOCATION: SW1/4 sec. 7, T.98N., R.19W. PARENT MATERIAL: Loamy Eolian Material																							
0-9	Ap	106	18	-	-	-	-	-	-	-	100	93	83	54	41	27	15	8	31	9	A-4(4)	ML-CL
19-27	B2	117	13	-	-	-	-	-	-	-	100	94	81	52	28	20	18	12	23	7	A-4(3)	ML-CL
37-55	IIC1	115	13	-	-	-	-	-	-	-	100	95	85	35	14	10	8	6	19	2	A-2-4(0)	SM

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 174B SOIL NAME: Bolan Loam REPORT NUMBER: AAD6-3329 - AAD6-3330																						
COUNTY: Butler, Iowa																						
LOCATION: SE1/4 sec. 13, T.13N., R.16W.																						
PARENT MATERIAL: Loamy Eolian Materials																						
0-9	Ap	108	17	-	-	-	-	-	-	-	100	96	90	52	38	24	12	7	23	4	A-4(3)	CL-ML
17-34	B21/22	123	12	-	-	-	-	-	-	-	100	94	87	44	31	20	11	8	19	3	A-4(2)	SM
34-52	B3	116	11	-	-	-	-	-	-	-	100	95	88	30	16	10	6	5	18	2	A-2-4(0)	SM
52-80	C	111	12	-	-	-	-	-	-	-	100	93	86	22	6	5	2	1	18	2	A-2-4(0)	SM
STATE SYMBOL: 551 SOIL NAME: Calamine Silty Clay Loam REPORT NUMBER: AAD5-Ia. 33-1-1 - AAD5-Ia. 33-1-3																						
COUNTY: Cerro Gordo, Iowa																						
LOCATION: NE1/4 of SE1/4 sec. 35, T.96N., R.19W.																						
PARENT MATERIAL: Silty Surficial Sediments/Fine Textured Shale																						
0-8	Ap	85	30	-	-	-	-	-	-	-	-	100	98	94	87	66	35	20	63	26	A-7-5(18)	MH
25-33	IIB2tg	109	17	-	-	-	-	-	-	-	-	-	100	99	98	92	65	47	48	26	A-7-6(16)	CL
33-70	IICg	110	16	-	-	-	-	-	-	-	-	-	-	-	00	92	63	47	49	26	A-7-6(16)	CL
STATE SYMBOL: 551 SOIL NAME: Calamine Silty Clay Loam REPORT NUMBER: AAD6-4016 - AAD6-4018																						
LOCATION: NW corner of SE1/4 sec. 7, T.93N., R.19W.																						
PARENT MATERIAL: Silty Sediment over Calcareous Shale																						
0-20	A12	93	25	-	-	-	-	-	-	-	100	97	91	81	75	59	31	19	51	19	A-7-5(14)	MH
24-30	B21tg	124	11	-	-	-	-	-	100	99	95	69	60	47	46	38	21	14	32	14	A-6(4)	CL
36-60	IIC1	114	15	-	-	-	-	-	-	-	100	98	97	96	94	75	44	32	36	15	A-6(10)	CL
STATE SYMBOL: 733 SOIL NAME: Calco Silty Clay Loam REPORT NUMBER: AAD6-3270 - AAD6-3272																						
COUNTY: O'Brien, Iowa																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: SW corner of sec. 10, T.97N., R.42W. PARENT MATERIAL: Calcareous Alluvium																							
0-6	A11	85	29	-	-	-	-	-	-	-	-	100	99	97	86	62	32	19	64	27	A-7-5(19)	MH
26-36	A14	98	22	-	-	-	-	-	-	-	100	99	97	92	85	62	37	27	45	25	A-7-6(15)	CL
48-60	C	96	23	-	-	-	-	-	-	-	100	99	97	88	79	60	35	23	48	23	A-7-6(15)	CL
STATE SYMBOL: 507 SOIL NAME: Canisteo Clay Loam REPORT NUMBER: AAD6-3279 - AAD6-3281 COUNTY: Calhoun, Iowa LOCATION: SW1/4NW1/4 sec. 22, T.88N., R. 33W. PARENT MATERIAL: Calcareous Sediments over Glacial Till																							
6-10	A12	97	23	-	-	-	-	100	99	97	92	89	85	72	64	52	32	24	48	24	A-7-6(14)	CL/CH
26-31	B22g	114	15	-	-	-	-	100	99	98	96	94	86	67	57	46	28	20	33	16	A-6(9)	CL
42-57	C2g	115	14	-	-	-	-	-	-	100	99	97	90	70	60	49	32	24	37	22	A-6(12)	CL
STATE SYMBOL: 507 SOIL NAME: Canisteo Silty Clay Loam REPORT NUMBER: AAD4-8412 - AAD4-8414 COUNTY: Boone, Iowa LOCATION: NW1/4 sec. 32, T.85N., R.25W. PARENT MATERIAL: Calcareous Sediments over Glacial Till																							
0-13	Ap/A12	99	22	-	-	-	-	-	-	100	99	95	88	72	66	51	32	22	44	17	A-7-6(11)	ML
26-38	B21/22	120	12	-	-	-	-	100	98	96	64	85	80	59	53	42	27	20	32	16	A-6(7)	CL
48-60	C2g	124	11	-	-	-	-	100	99	97	95	88	78	56	48	35	20	15	24	9	A-4(4)	SC
STATE SYMBOL: 507 SOIL NAME: Canisteo Silty Clay Loam REPORT NUMBER: AAD4-8398 - AAD4-8400 COUNTY: Boone, Iowa LOCATION: NW1/4 sec. 3, T.85N., R.25W. PARENT MATERIAL: Calcareous Sediments over Glacial Till																							

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-14	Ap	90	27	-	-	-	-	-	-	-	100	92	87	74	71	60	40	32	55	25	A-7-5(16)	MH/CH
38-58	B21/22	103	20	-	-	-	-	100	99	98	97	81	75	62	58	52	38	30	52	28	A-7-6(14)	CH
58-65	Cg	112	16	-	-	-	-	-	100	98	97	89	83	62	55	42	28	21	37	17	A-6(8)	CL

STATE SYMBOL: 507 SOIL NAME: Canisteo Clay Loam REPORT NUMBER: AAD6-3326 - AAD6-3328
COUNTY: Kossuth, Iowa
LOCATION: NW1/4 sec. 11, T.97N., R.27W
PARENT MATERIAL: Calcareous Sediments over Glacial Till

0-8	Ap	99	22	-	-	-	-	-	100	99	99	97	91	67	59	44	25	18	45	22	A-7-6(12)	CL
23-30	B2g	109	17	-	-	-	-	-	-	100	97	94	87	67	60	48	30	20	38	19	A-6(10)	CL
39-60	Cg	110	16	-	-	-	-	-	-	100	97	96	90	69	58	46	26	17	35	15	A-6(9)	CL

STATE SYMBOL: 507 SOIL NAME: Canisteo Clay Loam REPORT NUMBER: AAD6-3320 - AAD6-3322
COUNTY: Kossuth, Iowa
LOCATION: SE corner of sec. 29, T.95N., R.29W.
PARENT MATERIAL: Calcareous Sediments over Glacial Till

0-10	Ap	93	25	-	-	-	-	-	-	100	99	98	95	87	77	60	36	25	58	34	A-7-6(20)	CH
31-38	B22g	106	18	-	-	-	-	-	100	99	99	95	91	73	60	51	33	23	39	22	A-6(12)	CL
48-60	Cg	110	16	-	-	-	-	-	100	99	99	96	95	87	66	48	25	16	35	14	A-6(10)	CL

STATE SYMBOL: 534 SOIL NAME: Carlow Silty Clay Loam REPORT NUMBER: AAD9-74 - AAD9-76
COUNTY: Van Buren, Iowa
LOCATION: SW1/4NE1/4 sec. 17, T.68N., R.11W.
PARENT MATERIAL: Alluvium

13-18	A3/B1	85	30	-	-	-	-	-	-	-	-	100	99	97	94	64	50	40	66	35	A-7-5(20)	MH-CH
18-27	B2	85	30	-	-	-	-	-	-	-	-	100	98	96	94	66	52	43	58	28	A-7-5(19)	MH-CH

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
51-66	C2	97	22	-	-	-	-	-	-	-	-	100	99	96	94	66	53	44	62	39	A-7-6(20)	CH

STATE SYMBOL: 538 SOIL NAME: Carr Fine Sandy Loam REPORT NUMBER: AAD2-12784
COUNTY: Fremont, Iowa
LOCATION: SE1/4NE1/4 sec. 12, T.70N., R.40W.
PARENT MATERIAL: Alluvium

6-60	C	102	19	-	-	-	-	-	-	-	-	-	100	79	49	11	8	7	27	4	A-4(8)	ML-CL

STATE SYMBOL: 3 SOIL NAME: Castana Silt Loam REPORT NUMBER: AAD3-12831
COUNTY: Woodbury, Iowa
LOCATION: SW1/4NW1/4 sec. 31, T.86N., R.44W.
PARENT MATERIAL: Alluvial and Colluvium Material

18-30	A32	99	19	-	-	-	-	-	-	-	-	-	100	99	77	38	20	14	40	17	A-6(11)	CL

STATE SYMBOL: 314B SOIL NAME: Cerdo Silty Clay Loam REPORT NUMBER: AAD4-3148 - AAD4-3150
COUNTY: Cerro Gordo, Iowa
LOCATION: NW corner of SW1/4 SW1/4 sec. 2, T96N, R19W.
PARENT MATERIAL: Sediments over Calcareous Shales

0-8	Ap	106	18	-	-	-	-	-	-	-	100	97	93	87	79	63	39	28	42	14	A-7-6(10)	ML-CL
16-23	IIB22t	102	20	-	-	-	-	-	-	-	-	100	99	97	93	81	55	43	47	26	A-7-6(16)	CL
38-60	IIC2	110	18	-	-	-	-	-	-	-	-	-	100	99	95	81	50	41	43	19	A-7-6(12)	ML-CL

STATE SYMBOL: 63 SOIL NAME: Chelsea Loamy Fine Sand REPORT NUMBER: AAD0-1603 - AAD0-1605
COUNTY: Linn, Iowa
LOCATION: SE1/4 sec. 27, T.86N., R.6W.

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Eolian Sand																						
1-4	A12	109	13	-	-	-	-	-	-	-	100	97	73	16	15	8	5	3	-	NP	A-2-4(0)	SM
7-15	C1	111	11	-	-	-	-	-	-	-	100	98	77	13	11	7	4	4	-	NP	A-2-4(0)	SM
36-70	B/C	110	11	-	-	-	-	-	-	-	100	97	67	8	6	5	2	2	-	NP	A-3(0)	SM-SP
STATE SYMBOL: 587 SOIL NAME: Chequest Silty Clay Loam REPORT NUMBER: AAD9-1021 - AAD9-1023 COUNTY: Appanoose, Iowa LOCATION: NE1/4NE1/4 sec. 13, T.68N., R.17W. PARENT MATERIAL: Alluvium																						
0-7	Ap	97	23	-	-	-	-	-	-	-	-	100	99	95	94	76	48	36	44	17	A-7-6(11)	ML-CL
18-25	B22tg	99	20	-	-	-	-	-	-	-	-	100	99	93	89	70	44	34	44	20	A-7-6(13)	CL
35-43	B24tg	98	22	-	-	-	-	-	-	-	-	-	100	95	86	68	43	35	44	22	A-7-6(14)	CL
STATE SYMBOL: 25 SOIL NAME: Chute Loamy Sand REPORT NUMBER: AAD3-12829 COUNTY: Woodbury, Iowa LOCATION: SE1/4NE1/4 sec. 6, T.89N., R.44W. PARENT MATERIAL: Eolian Sand																						
7-17	C1	111	12	-	-	-	-	-	-	-	100	90	49	10	7	4	2	1	NP	NP	A-3(0)	SP-SM
STATE SYMBOL: 222 SOIL NAME: Clarinda Silt Loam REPORT NUMBER: AAD9-7490 - AAD9-7492 COUNTY: Wayne, Iowa LOCATION: NW1/4 sec. 24, T.69N., R.22W. PARENT MATERIAL: Gray Paleosol																						
0-5	A1p	93	24	-	-	-	-	-	-	-	100	99	95	88	82	-	35	27	46	20	A-7-6(16)	CL
19-34	B21	98	22	-	-	-	-	-	-	-	100	98	95	88	84	-	56	51	66	40	A-7-6(20)	CH

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm		.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
47-67	B3	113	16	-	-	-	-	-	-	100	99	96	91	79	73	-	44	38		52	32	A-7-6(18)	CH
STATE SYMBOL: 222 SOIL NAME: Clarinda Silty Clay Loam REPORT NUMBER: AAD9-912 - AAD9-913 COUNTY: Adams, Iowa LOCATION: NE1/4SE1/4 sec. 30, T.85N., R.26W. PARENT MATERIAL: Gray Paleosol																							
0-10	A1/A3	86	30	-	-	-	-	-	-	-	-	-	100	98	93	-	45	38		51	23	A-7-6(15)	MH-CH
15-44	B21/B22	94	24	-	-	-	-	-	-	-	-	-	100	99	95	-	54	47		59	35	A-7-6(20)	CH
STATE SYMBOL: 138B SOIL NAME: Clarion Loam REPORT NUMBER: AAD6-10373 - AAD6-10375 COUNTY: Webster, Iowa LOCATION: SE1/4 of sec. 19, T.90N., R.29W. PARENT MATERIAL: Glacial Till																							
0-9	Ap	102	18	-	-	-	-	-	-	-	100	90	81	57	51	38	26	19		36	15	A-6(6)	CL
17-22	B21	104	19	-	-	-	-	-	100	99	98	87	78	56	50	40	30	24		36	17	A-6(7)	CL
40-55	C2	115	14	-	-	-	-	100	98	96	92	77	69	49	41	31	19	13		27	11	A-6(3)	SC
STATE SYMBOL: 138 SOIL NAME: Clarion Loam REPORT NUMBER: AAD4-8392 - AAD4-8394 COUNTY: Boone, Iowa LOCATION: Sec. 7, T.83N., R.25W. PARENT MATERIAL: Glacial Till																							
0-12	Ap/A12	105	19	-	-	-	-	-	-	-	100	93	84	61	53	40	26	20		31	10	A-4(5)	CL
25-40	B21/B22	117	13	-	-	-	-	-	-	100	98	90	79	53	47	36	24	20		31	13	A-6(5)	CL
40-60	C1/C2	123	12	-	-	-	-	-	100	98	96	85	77	54	45	34	20	14		24	9	A-4(4)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 138B SOIL NAME: Clarion Loam REPORT NUMBER: AAD6-3287 - AAD6-3290																						
COUNTY: Calhoun, Iowa																						
LOCATION: SE1/4SE1/4 sec. 28, T.86N., R.33W.																						
PARENT MATERIAL: Glacial Till																						
0-9	A1	101	21	-	-	-	-	-	-	-	100	95	87	67	58	40	23	14	38	13	A-6(8)	ML/CL
9-14	A3	103	20	-	-	-	-	100	99	99	98	94	86	64	56	42	25	16	34	13	A-6(7)	ML/CL
22-29	B22	112	16	-	-	-	-	-	100	99	99	93	86	61	51	40	26	19	34	16	A-6(8)	CL
50-60	C2	113	15	-	-	-	-	-	-	-	100	97	95	74	58	35	16	10	24	6	A-4(8)	CL-ML
STATE SYMBOL: 69 SOIL NAME: Clearfield Silty Clay Loam REPORT NUMBER: AAD0-1606 - AAD0-1607																						
COUNTY: Madison, Iowa																						
LOCATION: SW1/4SE1/4 sec. 25, T.75N., R.26W.																						
PARENT MATERIAL: Wisconsin Loess/Gray Paleosol																						
7-12	A12	96	23	-	-	-	-	-	-	-	-	-	100	99	94	70	45	36	48	20	A-7-6(14)	ML
23-31	B22tg	101	21	-	-	-	-	-	-	-	100	99	99	99	93	73	45	39	55	31	A-7-6(19)	CH
STATE SYMBOL: 80 SOIL NAME: Clinton Silt Loam REPORT NUMBER: AAD3-12811 - AAD3-12813																						
COUNTY: Keokuk, Iowa																						
LOCATION: SE1/4SE1/4 sec. 7, T.74N., R.12W.																						
PARENT MATERIAL: Wisconsin Loess																						
4-9	A22	102	18	-	-	-	-	-	-	-	-	-	100	98	87	55	22	13	28	7	A-4(8)	ML-CL
20-27	B22	100	21	-	-	-	-	-	-	-	-	-	100	99	94	70	45	36	50	29	A-7-6(18)	CL
58-72	C1	101	20	-	-	-	-	-	-	-	-	-	-	100	89	62	33	26	43	23	A-7-6(14)	CL
STATE SYMBOL: 80 SOIL NAME: Clinton Silt Loam REPORT NUMBER: ADD9-10441 - AAD9-10443																						
COUNTY: Iowa, Iowa																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: SW1/4SE1/4 sec. 23, T.79N., R.12W. PARENT MATERIAL: Wisconsin Loess																						
0-6	A1	92	23	-	-	-	-	-	-	-	-	100	99	98	92	-	28	19	44	17	A-7-6(12)	ML-CL
10-28	B2	103	20	-	-	-	-	-	-	-	-	-	-	100	96	-	39	32	43	21	A-7-6(13)	CL
54-66	C1	104	19	-	-	-	-	-	-	-	-	100	99	98	94	-	36	26	39	18	A-6(11)	CL
STATE SYMBOL: 84 SOIL NAME: Clyde Silt Loam REPORT NUMBER: AAD0-8406 - AAD0-8408 COUNTY: Winneshiek, Iowa LOCATION: NE1/4NW1/4 sec. 5, T.96N., R.10W. PARENT MATERIAL: Local Alluvium and Glacial Till																						
0-11	A1	79	32	-	-	-	-	-	-	-	100	97	94	85	82	-	33	22	65	21	A-7-5(16)	MH
27-33	B2g	118	12	-	-	-	100	98	97	96	95	85	73	58	53	-	27	23	36	21	A-6(9)	CL
38-56	IIIC2	120	11	-	-	-	-	-	100	99	98	89	79	56	50	-	25	23	29	27	A-6(7)	CL
STATE SYMBOL: 84 SOIL NAME: Clyde Clay Loam REPORT NUMBER: AAD1-7005 - AAD1-7008 COUNTY: Bremer, Iowa LOCATION: NE1/4, sec. 10, T.92N., R.14W. PARENT MATERIAL: Local Alluvium and Glacial Till																						
5-16	A12	95	24	-	-	-	-	-	-	-	100	84	73	58	54	-	29	22	50	23	A-7-6(11)	ML-CL
23-28	B2g	122	10	-	-	-	-	100	99	99	99	75	66	51	38	-	20	17	32	19	A-6(6)	CL
33-45	C1	118	11	-	-	-	-	-	-	-	100	60	40	10	7	-	4	4	NP	NP	A-3(0)	SP-SM
45-72	C2	120	11	-	-	-	100	99	99	98	97	88	77	49	38	-	22	18	24	12	A-6(4)	SC
STATE SYMBOL: 135 SOIL NAME: Coland Clay Loam REPORT NUMBER: AAD4-8384 - AAD4-8386 COUNTY: Boone, Iowa LOCATION: SW1/4 sec. 22, T.84N., R.28W.																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Alluvium																						
0-16	A11-13	91	26	-	-	-	-	-	-	100	99	86	83	69	63	53	33	27	50	21	A-7-6(14)	ML/CL
16-34	A14-16g	102	20	-	-	-	-	-	-	-	100	95	93	74	70	58	37	30	42	20	A-7-6(12)	CL
41-60	A17g	102	20	-	-	-	-	-	-	-	100	86	81	70	68	61	41	34	53	29	A-7-6(17)	CH
STATE SYMBOL: 135 SOIL NAME: Coland Clay Loam REPORT NUMBER: AAD6-4019 - AAD6-4021 COUNTY: Franklin, Iowa LOCATION: SW corner NW1/4SW1/4 sec. 1, T.93N., R.20W. PARENT MATERIAL: Alluvium																						
0-40	A13	98	22	-	-	-	-	-	-	-	100	98	95	82	74	52	28	22	46	21	A-7-6(14)	CL
48-55	C2g	127	10	-	-	-	-	100	98	92	85	60	44	27	24	18	12	8	23	10	A-2-4(0)	SC
55-70	IIC2g	113	12	-	-	-	-	-	100	99	94	34	11	3	2	2	1	1	-	-	A-1-b(0)	SP
STATE SYMBOL: 133 SOIL NAME: Colo Silty Clay Loam REPORT NUMBER: AAD6-3390 - AAD6-3392 COUNTY: Linn, Iowa LOCATION: SW1/4SW1/4 sec. 8, T.82N., R.8W. PARENT MATERIAL: Alluvium																						
0-9	Ap	84	29	-	-	-	-	-	-	-	-	100	99	97	92	74	47	37	65	31	A-7-5(20)	MH-CH
22-34	B1	97	19	-	-	-	-	-	-	-	100	99	97	92	86	76	52	44	63	40	A-7-6(20)	CH
52-60	C1g	102	17	-	-	-	-	-	-	-	100	98	96	91	87	69	44	36	51	32	A-7-6(18)	CH
STATE SYMBOL: 133 SOIL NAME: Colo Silty Clay Loam REPORT NUMBER: AAD1-6999 - AAD1-7001 COUNTY: Bremer, Iowa LOCATION: SW1/4 sec. 4, T.91N, R.12W. PARENT MATERIAL: Alluvium																						

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
6-12	A12	96	18	-	-	-	-	-	-	-	100	99	96	85	76	-	38	31	47	24	A-7-6(15)	CL
24-35	A14	101	18	-	-	-	-	-	-	100	99	98	95	82	75	-	39	32	43	24	A-7-6(14)	CL
56-62	C3	116	12	-	-	-	-	-	-	-	100	99	92	60	49	-	21	18	26	12	A-6(6)	CL
STATE SYMBOL: 133 SOIL NAME: Colo Silty Clay Loam REPORT NUMBER: AAD1-12041 COUNTY: Cass, Iowa LOCATION: NW corner of NW1/4NW1/4 sec. 33, T.75N., R.36W. PARENT MATERIAL: Alluvium																						
18-43	A31/A32	98	23	-	-	-	-	-	-	-	-	-	100	99	97	50	43	39	57	36	A-7-6(19)	CH
STATE SYMBOL: 520 SOIL NAME: Coppock Silt Loam REPORT NUMBER: AAD9-1011 - AAD9-1014 COUNTY: Appanoose, Iowa LOCATION: SW1/4 sec. 25, T.68N., R.17W. PARENT MATERIAL: Alluvium																						
0-8	Ap	103	17	-	-	-	-	-	-	-	100	99	99	95	84	61	32	26	37	12	A-6(9)	ML-CL
14-20	A22	107	16	-	-	-	-	-	-	-	-	100	99	97	86	63	32	24	33	13	A-6(9)	ML-CL
32-37	B21tg	102	19	-	-	-	-	-	-	-	-	-	100	99	92	70	36	31	40	20	A-6(12)	CL
43-48	B3g	101	19	-	-	-	-	-	-	-	-	-	100	99	92	70	40	34	41	22	A-7-6(13)	CL
STATE SYMBOL: 520 SOIL NAME: Coppock Silt Loam REPORT NUMBER: AAD9-71 - AAD9-73 COUNTY: Van Buren, Iowa LOCATION: SW1/4NE1/4 sec. 17, T.68N., R.11W. PARENT MATERIAL: Alluvium																						
11-17	A22	106	17	-	-	-	-	-	-	-	100	99	98	90	83	-	33	24	31	11	A-6(8)	CL
27-34	B2	100	20	-	-	-	-	-	-	-	-	100	99	93	87	-	41	34	39	20	A-6(12)	CL
55-62	C2	103	19	-	-	-	-	-	-	-	-	100	99	94	88	-	44	36	42	23	A-7-6(14)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 783 SOIL NAME: Cresco Loam REPORT NUMBER: AAD4-11495 - AAD4-11497																						
COUNTY: Howard, Iowa																						
LOCATION: 3 miles west and 2 miles north of Davis Corner.																						
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																						
0-8	Ap	86	27	-	-	-	-	-	-	-	100	93	86	77	69	51	24	15	48	15	A-7-5(12)	ML
25-40	IIB22	113	14	-	-	-	-	100	99	99	98	85	77	62	56	45	33	28	37	21	A-6(10)	CL
47-60	IIC	115	15	-	-	-	-	-	100	99	98	87	80	64	55	45	32	25	35	19	A-6(9)	CL
STATE SYMBOL: 655 SOIL NAME: Crippin Loam REPORT NUMBER: AAD3-3152 - AAD3-3154																						
COUNTY: Palo Alto, Iowa																						
LOCATION: NW1/4 sec. 21, T.97N., R.32W.																						
PARENT MATERIAL: Calcareous Glacial Till																						
0-7	Ap	99	21	-	-	-	-	-	100	99	98	92	85	64	57	44	29	20	43	14	A-7-6(8)	ML-CL
20-27	B2	110	16	-	-	-	-	-	100	96	94	87	80	58	51	38	27	18	34	12	A-6(5)	CL
35-60	C	119	13	-	-	-	-	100	99	98	94	86	79	55	47	35	25	18	29	12	A-6(5)	CL
STATE SYMBOL: 202 SOIL NAME: Cylinder Loam REPORT NUMBER: AAD6-3374 - AAD6-3376																						
COUNTY: Palo Alto, Iowa																						
LOCATION: NE1/4 sec. 29, T.96N., R.31W.																						
PARENT MATERIAL: Loamy Sediments/Calcareous Sands and Gravels																						
0-7	Ap	91	23	-	-	-	-	-	-	-	100	87	73	52	35	32	23	18	52	20	A-7-5(8)	MH-CH
13-24	B2	118	13	-	-	-	-	-	100	98	90	71	60	36	31	25	17	14	32	14	A-6(1)	SC
24-28	IIC	125	11	-	-	-	100	99	92	84	77	51	38	23	18	14	8	6	25	8	A-2-4(0)	SC

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 175 SOIL NAME: Dickinson Fine Sandy Loam REPORT NUMBER: AAD9-8418 - AAD9-8420																						
COUNTY: Clay, Iowa																						
LOCATION: NW1/4 sec. 21, T.97N., R.37W.																						
PARENT MATERIAL: Windblown Sandy Materials																						
0-6	A1p	115	14	-	-	-	-	-	-	-	100	93	80	39	34	-	17	12	22	6	A-4(1)	SM-SC
22-30	B22	118	12	-	-	-	-	-	-	-	100	93	79	37	33	-	18	14	23	10	A-4(0)	SC
30-42	C	120	12	-	-	-	-	-	-	-	100	90	74	23	19	-	12	11	NP	NP	A-2-4(0)	SM
STATE SYMBOL: 175 SOIL NAME: Dickinson Fine Sandy Loam REPORT NUMBER: AAD9-8415 - AAD9-8417																						
COUNTY: Clay, Iowa																						
LOCATION: NW1/4 sec. 15, T.97N., R.38W.																						
PARENT MATERIAL: Windblown Sandy Materials																						
0-7	A1p	116	12	-	-	-	-	-	-	-	100	84	68	37	32	-	15	11	23	7	A-4(0)	SM-SC
14-20	B2	118	13	-	-	-	-	-	-	-	100	89	77	45	39	-	18	15	21	7	A-4(2)	SM-SC
30-60	C	120	12	-	-	-	-	-	-	-	100	73	59	17	13	-	8	8	NP	NP	A-2-4(0)	SM
STATE SYMBOL: 175 SOIL NAME: Dickinson Sandy Loam REPORT NUMBER: AAD6-3393 - AAD6-3395																						
COUNTY: Linn, Iowa																						
LOCATION: NW1/4NW1/4 sec. 15, T.85N., R.6W.																						
PARENT MATERIAL: Windblown Sandy Materials																						
0-6	Ap	119	10	-	-	-	-	-	-	-	100	92	69	39	31	20	13	9	18	4	A-4(1)	SM
19-28	B2	114	13	-	-	-	-	-	-	-	100	95	79	58	49	33	21	17	23	7	A-4(5)	ML-CL
33-44	C1	120	12	-	-	-	-	-	-	-	100	89	58	20	14	10	8	6	-	NP	A-2-4(0)	SM
STATE SYMBOL: 377 SOIL NAME: Dinsdale Silt Loam REPORT NUMBER: AAD1-1980 - AAD1-1983																						
COUNTY: Grundy, Iowa																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: NE1/4 sec. 20, T.88N., R.15W. PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age																						
0-6	A1p	100	19	-	-	-	-	-	-	-	100	99	97	94	85	-	35	27	29	16	A-6(10)	CL
16-21	B21	103	20	-	-	-	-	-	-	-	100	99	97	93	87	-	40	34	46	25	A-7-6(15)	CL
37-44	B32	116	13	-	-	-	-	-	100	99	99	91	84	63	56	-	31	27	34	20	A-6(10)	CL
48-58	C11	123	11	-	-	-	-	-	-	100	98	88	82	64	54	-	28	22	27	14	A-6(7)	CL
STATE SYMBOL: 377 SOIL NAME: Dinsdale Silty Clay Loam REPORT NUMBER: AAD5-Ia. 6-1-1 - AAD5-Ia. 6-1-3 COUNTY: Benton, Iowa PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age LOCATION: NW1/4 sec. 27, T.84N., R.41W.																						
0-7	Ap	98	22	-	-	-	-	-	-	-	-	-	100	99	91	60	31	20	41	15	A-7-6(10)	ML/CL
26-38	B2t	102	20	-	-	-	-	-	-	-	-	100	99	98	88	59	34	28	43	18	A-7-6(12)	CL
47-60	IIC	115	14	-	-	-	-	100	97	97	96	88	82	64	56	44	30	24	33	16	A-6(8)	CL
STATE SYMBOL: 377 SOIL NAME: Dinsdale Silty Clay Loam REPORT NUMBER: AAD6-3387 - AAD6-3389 COUNTY: Linn, Iowa LOCATION: NE1/4NE1/4 sec. 14, T.84N., R.6W. PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age																						
0-7	Ap	99	20	-	-	-	-	-	-	-	100	99	95	90	77	53	31	23	37	15	A-6(10)	CL
24-30	B2t	101	20	-	-	-	-	-	-	-	100	97	92	83	73	55	33	29	40	19	A-6(12)	CL
36-44	IIB23t	112	14	-	-	-	-	100	99	99	99	89	80	58	50	40	29	24	33	19	A-6(8)	CL
STATE SYMBOL: 706 SOIL NAME: Donnan Silt Loam, Dark Variant REPORT NUMBER: AAD5-Ia. 33-5-1 - AAD5-Ia. 33-5-3 COUNTY: Cerro Gordo, Iowa LOCATION: North of center of sec. 1, T.96N., R.21W.																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Sediments/Gray Paleosol																						
0-8	Ap	96	23	-	-	-	-	-	-	-	100	97	93	85	76	55	29	18	45	15	A-7-5(11)	ML
24-31	B21	104	19	-	-	-	-	-	-	100	99	92	85	66	58	45	28	24	34	15	A-6(8)	CL
37-54	IIB23t	104	19	-	-	-	-	-	-	-	100	98	95	89	85	72	51	44	56	33	A-7-6(19)	CH
STATE SYMBOL: 782 SOIL NAME: Donnan Loam REPORT NUMBER: AAD2-2701 - AAD2-2703 COUNTY: Winneshiek, Iowa LOCATION: NW1/4NE1/4 sec. 23, T.96N., R.10W. PARENT MATERIAL: Sediments/Gray Paleosol																						
0-7	Ap	110	15	-	-	-	-	-	-	-	100	92	83	67	64	48	27	19	29	10	A-4(6)	CL
25-29	IIB22t	114	15	-	-	-	-	-	100	99	98	86	79	61	57	45	33	28	34	17	A-6(8)	CL
40-52	IIB24t	113	15	-	-	-	-	-	-	100	98	88	81	65	61	51	36	30	35	19	A-6(10)	CL
STATE SYMBOL: 158 SOIL NAME: Dorchester Silt Loam REPORT NUMBER: AAD0-8400 - ADD0-8402 COUNTY: Winneshiek, Iowa LOCATION: NE1/4SW1/4 sec. 33, T.98N., R.8W. PARENT MATERIAL: Alluvium																						
0-20	C	102	19	-	-	-	-	-	-	-	-	100	99	97	90	-	22	16	32	9	A-4(8)	ML-CL
20-30	A1b	94	23	-	-	-	-	-	-	-	-	100	99	97	89	-	29	20	47	20	A-7-6(13)	ML-CL
48-59	B22b	102	18	-	-	-	-	-	-	-	100	99	96	93	89	-	32	26	37	17	A-6(11)	CL
STATE SYMBOL: 22 SOIL NAME: Dow Silt Loam REPORT NUMBER: AAD0-1608 - AAD0-1610 COUNTY: Crawford, Iowa LOCATION: NE1/4SE1/4 sec. 31, T.82N., R.40W. PARENT MATERIAL: Wisconsin Loess																						

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-6	Ap	99	20	-	-	-	-	-	-	-	100	99	99	99	83	51	28	22	38	13	A-6(9)	CL/ML
6-15	C1	104	18	-	-	-	-	-	-	100	99	98	98	98	82	51	27	20	35	11	A-6(8)	CL/ML
15-40	C2	106	18	-	-	-	-	-	-	100	99	99	99	98	85	48	26	20	35	12	A-6(9)	CL/ML

STATE SYMBOL: 211 SOIL NAME: Edina Silt Loam REPORT NUMBER: AAD9-7486 - AAD9-7489
COUNTY: Wayne, Iowa
LOCATION: SE1/4 sec. 1, T.69N., R.23W.
PARENT MATERIAL: Wisconsin Loess

0-7	A1p	95	22	-	-	-	-	-	-	-	-	100	99	98	89	-	31	19	37	11	A-6(8)	ML-CL
8-14	A21	101	20	-	-	-	-	-	-	-	-	100	99	97	93	-	33	21	34	12	A-6(9)	ML-CL
24-30	B22	95	26	-	-	-	-	-	-	-	-	100	99	99	96	-	61	52	72	43	A-7-6(20)	CH
48-60	C2	104	18	-	-	-	-	-	-	-	-	-	-	100	95	-	47	38	58	35	A-7-6(20)	CH

STATE SYMBOL: 211 SOIL NAME: Edina Silt Loam REPORT NUMBER: AAD8-10293 - AAD8-10296
COUNTY: Van Buren, Iowa
LOCATION: sec. 27, T.68N., R.11W.
PARENT MATERIAL: Wisconsin Loess

0-6	A1p	93	24	-	-	-	-	-	-	-	100	99	99	98	96	-	30	19	36	10	A-4(8)	ML-CL
13-18	A22	102	20	-	-	-	-	-	-	-	100	99	98	97	93	-	33	21	29	8	A-4(8)	ML-CL
21-27	B22	83	27	-	-	-	-	-	-	-	100	99	99	98	98	-	67	59	67	34	A-7-5(20)	MH-CH
47-52	C2	98	22	-	-	-	-	-	-	-	-	-	-	100	99	-	47	38	50	28	A-7-6(17)	ML-CL

STATE SYMBOL: 72B SOIL NAME: Estherville Loam REPORT NUMBER: AAD6-3302 - AAD6-3304
COUNTY: Kossuth, Iowa
LOCATION: NW1/4 sec. 32, T.95N., R.30W
PARENT MATERIAL: Glacial Sediments

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-7	Ap	110	16	-	-	-	-	100	99	98	96	86	78	45	35	26	13	8	27	6	A-4(2)	SM-SC
12-16	B2	118	13	-	-	-	-	100	99	94	84	78	72	37	25	18	8	4	24	4	A-4-(0)	SM-SC
20-60	IIC1	134	8	-	-	100	97	93	76	60	37	25	21	8	6	3	1	1	20	0	A-1-a(0)	SW-SM

STATE SYMBOL: 577 SOIL NAME: Everly Silt Loam REPORT NUMBER: AAD9-10478 - AAD9-10480
COUNTY: Clay, Iowa
LOCATION: NW1/4NW1/4 sec. 20, T.96N., R.37W.
PARENT MATERIAL: Loess or Similar Sediment overlying Glacial Till

0-7	Ap	100	20	-	-	-	-	-	-	-	100	95	85	72	65	-	27	20	40	15	A-6(9)	ML-CL
16-22	B21	101	20	-	-	-	-	-	-	-	100	97	93	83	75	-	38	30	44	20	A-7-6(13)	CL
40-50	C	109	17	-	-	100	99	99	97	95	92	88	84	73	68	-	39	29	40	20	A-6(12)	CL

STATE SYMBOL: 763D2 SOIL NAME: Exette Silt Loam REPORT NUMBER: AAD4-3166 - AAD4-3168
COUNTY: Fayette, Iowa
LOCATION: SE corner of NE1/4 NE1/4 sec. 7, T.93N., R.7W.
PARENT MATERIAL: Wisconsin Loess

0-6	Ap	102	20	-	-	-	-	-	-	-	-	-	100	99	79	46	27	22	39	14	A-6(10)	ML-CL
24-33	B22	107	18	-	-	-	-	-	-	-	-	-	100	99	82	48	23	20	34	11	A-6(8)	ML-CL
41-54	C1	109	17	-	-	-	-	-	-	-	-	-	100	99	76	40	22	18	30	10	A-4(8)	ML-CL

STATE SYMBOL: 163 SOIL NAME: Fayette Silt Loam REPORT NUMBER: AAD0-8397 - AAD0-8399
COUNTY: Winneshiek, Iowa
LOCATION: NW1/4NE1/4 sec. 21, T.100N., R.8W.
PARENT MATERIAL: Wisconsin Loess

0-7	Ap	103	18	-	-	-	-	-	-	-	-	100	99	98	89	-	23	15	32	9	A-4(8)	ML-CL
27-39	B22	103	18	-	-	-	-	-	-	-	-	-	-	100	90	-	35	30	42	21	A-7-6(13)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
46-80	C1	106	18	-	-	-	-	-	-	100	99	99	98	97	89	-	32	27	37	17	A-6(11)	CL

STATE SYMBOL: 163 SOIL NAME: Fayette Silt Loam REPORT NUMBER: ADD9-10432 - ADD9-10434
COUNTY: Iowa, Iowa
LOCATION: SW1/4NE1/4 sec. 3, R.81N., R.11W.
PARENT MATERIAL: Wisconsin Loess

0-5	Ap	101	18	-	-	-	-	-	-	-	-	-	100	99	91	-	30	16	32	8	A-4(8)	ML-CL
9-19	B1/B2	102	21	-	-	-	-	-	-	-	-	-	-	100	93	-	40	31	47	24	A-7-6(15)	CL
49-71	C1	95	20	-	-	-	-	-	-	-	-	-	-	100	92	-	33	27	42	21	A-7-6(13)	CL

STATE SYMBOL: 978 SOIL NAME: Festina Silt Loam REPORT NUMBER: AAD2-2704 - AAD2-2706
COUNTY: Winneshiek, Iowa
LOCATION: SW1/4SE1/4 sec. 4, T.97N., R.8W.
PARENT MATERIAL: Silty Alluvium

0-7	Ap	101	19	-	-	-	-	-	-	-	-	-	100	99	89	53	28	19	35	11	A-6(8)	CL/ML
28-38	B22t	108	17	-	-	-	-	-	-	-	-	-	-	100	90	54	30	26	35	14	A-6(10)	CL
47-68	C	108	18	-	-	-	-	-	-	-	-	-	-	100	91	54	31	25	35	16	A-6(10)	CL

STATE SYMBOL: 159 SOIL NAME: Finchford Loamy Sand REPORT NUMBER: AAD4-3127 - AAD4-3129
COUNTY: Black Hawk, Iowa
LOCATION: NE corner of SW1/4 NE1/4 sec.13 T.87N., R.12W.
PARENT MATERIAL: Alluvial Sediments

0-8	Ap	103	20	-	-	-	-	100	99	98	95	48	24	15	12	9	5	3	19	2	A-1-b(0)	SM
18-30	B	120	10	-	-	-	-	-	100	99	95	68	38	20	13	9	5	4	17	0	A-2-4(0)	SC
30-60	C	121	9	-	-	-	-	100	99	96	85	51	28	10	7	5	3	1	17	0	A-3(0)	SC-SW

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 284 SOIL NAME: Flagler Fine Sandy Loam REPORT NUMBER: AAD0-11028 - AAD0-11030																						
COUNTY: Mahaska, Iowa																						
LOCATION: NW1/4SW1/4 sec. 31, T.74N., R.15W.																						
PARENT MATERIAL: Stratified Sandy Alluvium																						
0-22	A	114	14	-	-	-	-	-	-	-	100	84	57	46	44	33	19	15	25	7	A-4(2)	SM
22-33	B2	121	13	-	-	-	-	-	-	-	100	76	52	38	35	25	17	14	23	7	A-4(1)	SM
36-60	IIC	120	11	-	-	-	-	100	98	95	91	59	26	12	10	9	7	6	19	2	A-2-4(0)	SM-SW
STATE SYMBOL: 284 SOIL NAME: Flagler Sandy Loam REPORT NUMBER: AAD3-3149 - AAD3-3151																						
COUNTY: Black Hawk, Iowa																						
LOCATION: NE1/4SE1/4 sec. 7, T.88N., R.12W.																						
PARENT MATERIAL: Sandy Alluvium																						
0-21	A1	122	11	-	-	-	-	-	-	-	100	77	44	31	26	19	10	8	21	5	A-2-4(0)	SM-SC
21-42	B2	123	10	-	-	-	-	-	-	100	99	73	42	26	23	16	9	7	16	2	A-2-4(0)	SM
42-60	IIC	114	13	-	-	-	-	100	98	96	91	40	12	5	3	3	2	1	-	NP	A-1-b(0)	SW-SM
STATE SYMBOL: 198 SOIL NAME: Floyd Loam REPORT NUMBER: AAD0-8412 - AAD0-8414																						
COUNTY: Winneshiek, Iowa																						
LOCATION: NW1/4SW1/4 sec. 4, T.96N., R.10W.																						
PARENT MATERIAL: Loamy Sediments over Glacial Till of Kansan and Nebraskan Age																						
0-12	A1	84	28	-	-	-	-	-	-	-	100	94	86	73	69	-	24	16	55	15	A-7-5(13)	MH
29-37	II22	-	-	-	100	97	90	87	82	80	77	63	49	27	21	-	11	10	22	10	A-2-4(0)	SC
41-64	IVB32	114	14	-	-	-	-	-	100	99	99	93	87	73	69	-	36	32	37	21	A-6(12)	CL
STATE SYMBOL: 198 SOIL NAME: Floyd Loam REPORT NUMBER: AAD4-11498 - AAD4-11500																						
COUNTY: Howard, Iowa																						

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: 3 miles east and 2 miles south of Lourdes. PARENT MATERIAL: Loamy Sediments over Glacial Till of Kansan and Nebraskan Age																					
0-8	A1p	80	30	-	-	-	-	-	-	-	100	91	81	75	68	51	23	14	60	17	A-7-5(15)	MH
25-31	IIB21	126	9	-	-	-	-	100	99	98	96	65	46	20	16	12	9	7	17	3	A-2-4(10)	SM
42-51	IIIB31	121	12	-	-	-	-	100	99	98	97	79	64	46	39	31	22	17	28	14	A-6(3)	SC
STATE SYMBOL: 198B SOIL NAME: Floyd Loam REPORT NUMBER: AAD4-3133 - AAD4-3135 COUNTY: Bremer, Iowa LOCATION: SW corner of sec. 14, T.92N., R.13W. PARENT MATERIAL: Loamy Sediments over Glacial Till of Kansan and Nebraskan Age																					
0-16	A1	105	18	-	-	-	-	-	-	100	99	91	75	53	48	36	20	14	33	12	A-6(4)	ML-CL
33-41	B21	128	9	-	-	-	-	-	-	100	98	85	66	31	21	17	12	9	17	3	A-2-4(0)	SC
50-60	IIC	127	10	-	-	-	-	-	100	99	97	88	74	48	38	29	18	13	21	7	A-4(3)	SM-SC
STATE SYMBOL: 761 SOIL NAME: Franklin Silt Loam REPORT NUMBER: AAD6-4025 - AAD6-4028 COUNTY: Franklin, Iowa LOCATION: NW corner sec. 21, T.92N., R.20W. PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age																					
0-8	A1	88	28	-	-	-	-	-	-	-	100	99	96	91	78	51	18	9	50	15	A-7-5(12)	ML/MH
8-14	A2	100	21	-	-	-	-	-	-	-	100	99	97	93	82	59	29	19	37	13	A-6(9)	CL
14-34	B22t	103	20	-	-	-	-	-	-	-	100	99	96	91	83	58	33	27	40	16	A-6(10)	CL
34-60	IIB32	116	14	-	-	-	-	-	-	100	99	91	79	53	48	37	26	21	31	16	A-6(6)	CL
STATE SYMBOL: 310 SOIL NAME: Galva Silty Clay Loam REPORT NUMBER: AAD6-445 - AAD6-447 COUNTY: Plymouth, Iowa LOCATION: NE1/4NE1/4 sec. 27, T.91N., R.43W.																					

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Wisconsin Loess																						
0-7	Ap	88	26	-	-	-	-	-	-	-	100	100	99	98	91	64	41	34	44	20	A-7-6(13)	CL
12-27	B2t	93	24	-	-	-	-	-	-	-	-	-	100	99	93	66	43	37	48	24	A-7-6(15)	CL
27-42	B3	94	21	-	-	-	-	-	-	-	-	-	100	100	90	58	37	31	42	22	A-7-6(13)	CL
STATE SYMBOL: 310B SOIL NAME: Galva Silty Clay Loam REPORT NUMBER: AAD4-3142 - AAD4-3144 COUNTY: O'Brien, Iowa LOCATION: NE corner of sec. 18, T.94N., R.41W. PARENT MATERIAL: Wisconsin Loess																						
0-11	Ap/A12	94	24	-	-	-	-	-	-	-	-	100	99	98	91	65	39	28	45	17	A-7-6(12)	ML-CL
17-31	B21/B22	100	21	-	-	-	-	-	-	-	-	-	100	99	92	68	43	33	48	24	A-7-6(15)	CL
45-50	C	106	18	-	-	-	-	-	-	-	-	-	100	99	86	54	31	24	37	16	A-6(10)	CL
STATE SYMBOL: 179 SOIL NAME: Gara Loam REPORT NUMBER: AAD7-2802 - AAD7-2804 COUNTY: Madison, Iowa LOCATION: NW1/4 sec. 29, T.75N., R.28W. PARENT MATERIAL: Kansan Till																						
0-7	A-1	107	13	-	-	-	-	100	99	99	98	91	85	69	62	42	25	19	33	12	A-6(8)	ML-CL
25-32	B22t	103	18	-	-	-	-	-	-	100	99	94	91	80	73	60	45	40	47	27	A-7-6(16)	CL
38-50	B3t	109	16	-	-	-	-	-	-	100	99	95	92	80	72	54	37	31	47	31	A-7-6(17)	CL
STATE SYMBOL: 75 SOIL NAME: Givin Silt Loam REPORT NUMBER: AAD3-3161 - AAD3-3163 COUNTY: Keokuk, Iowa LOCATION: NE1/4SW1/4 sec. 24, T.76N., R.11W. PARENT MATERIAL: Wisconsin Loess																						

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-8	Ap	104	19	-	-	-	-	-	-	-	-	100	99	97	88	59	28	16	31	10	A-4(8)	ML-CL
16-34	B21/B22	101	21	-	-	-	-	-	-	-	-	-	100	99	93	64	48	39	49	23	A-7-6(15)	ML/CL
50-60	C1	103	20	-	-	-	-	-	-	-	-	-	-	100	97	67	41	33	42	19	A-7-6(12)	CL

STATE SYMBOL: 364 SOIL NAME: Grundy Silty Clay Loam REPORT NUMBER: S-32174 - S-32176
COUNTY: Jefferson, Iowa
LOCATION: NW1/4SW1/4 sec. 10, T.71N., R.11W.
PARENT MATERIAL: Wisconsin Loess

0-7	Ap	96	22	-	-	-	-	-	-	-	100	99	98	97	96	74	40	34	44	17	A-7-6(12)	ML-CL
16-22	B2	99	22	-	-	-	-	-	-	-	100	99	99	99	97	80	47	41	60	32	A-7-6(20)	CH
41-48	C2	107	17	-	-	-	-	-	-	-	-	-	100	99	98	75	37	31	43	20	A-7-6(13)	CL

STATE SYMBOL: 364 SOIL NAME: Grundy Silty Clay Loam REPORT NUMBER: S-32177 - S-32179
COUNTY: Jefferson, Iowa
LOCATION: sec. 23, T.72N., R.9W.
PARENT MATERIAL: Wisconsin Loess

0-8	Ap	95	19	-	-	-	-	-	-	-	100	98	97	95	93	71	35	29	44	15	A-7-6(11)	ML
13-21	B21	95	19	-	-	-	-	-	-	-	100	99	99	99	97	78	48	42	58	32	A-7-6(20)	CH
48-56	C2	109	17	-	-	-	-	-	-	-	-	-	-	100	98	77	38	29	40	20	A-6(12)	CL

STATE SYMBOL: 364 SOIL NAME: Grundy Silty Clay Loam REPORT NUMBER: S-32180 - S-32182
COUNTY: Jefferson, Iowa
LOCATION: NW1/4SW1/4 sec. 23, T.71N., R.10W.
PARENT MATERIAL: Wisconsin Loess

0-4	Ap	102	19	-	-	-	-	-	-	-	100	98	97	96	95	76	38	30	36	13	A-6(9)	ML-CL
13-21	B22	94	24	-	-	-	-	-	-	-	100	99	99	98	97	81	52	45	68	40	A-7-6(20)	CH

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
39-59	C2	108	17	-	-	-	-	-	-	-	-	-	100	99	98	75	35	28	40	18	A-6(11)	CL

STATE SYMBOL: 385 SOIL NAME: Guckeen Clay Loam REPORT NUMBER: AAD6-10385 - AAD6-10387
COUNTY: Webster, Iowa
LOCATION: Sec. 26, T.86N., R.28W.
PARENT MATERIAL: Moderately Fine Textured Sediments over Glacial Till

0-9	A1p/A2p	92	21	-	-	-	-	-	-	-	100	95	92	82	73	61	44	34	48	21	A-7-6(14)	ML-CL
21-28	B21t	92	23	-	-	-	-	-	-	100	99	92	89	79	75	65	51	43	58	33	A-7-6(20)	CH
60-72	IIC	102	21	-	-	-	-	100	98	96	92	82	78	66	62	52	37	27	45	24	A-7-6(13)	CL

STATE SYMBOL: 362 SOIL NAME: Haig Silty Clay Loam REPORT NUMBER: S-32183 - S-32185
COUNTY: Jefferson, Iowa
LOCATION: SW1/4NW1/4 sec. 10, T.71N., R.11W.
PARENT MATERIAL: Wisconsin Loess

0-7	Ap	99	21	-	-	-	-	-	-	-	100	99	98	97	96	73	36	28	38	12	A-6(9)	ML-CL
18-27	B21	95	21	-	-	-	-	-	-	-	100	99	99	98	97	81	52	44	63	35	A-7-6(20)	CH
48-65	C2	109	17	-	-	-	-	-	-	-	-	-	-	100	99	78	39	32	42	22	A-7-6(13)	CL

STATE SYMBOL: 362 SOIL NAME: Haig Silty Clay Loam REPORT NUMBER: S-32186 - S-32188
COUNTY: Jefferson, Iowa
LOCATION: SW1/4NW1/4 sec. 26, T.72N., R.9W.
PARENT MATERIAL: Wisconsin Loess

0-7	Ap	94	22	-	-	-	-	-	-	-	100	99	99	98	97	75	36	28	44	16	A-7-6(11)	ML-CL
23-29	B21	94	25	-	-	-	-	-	-	-	100	99	99	98	97	78	52	46	66	38	A-7-6(20)	CH
49-64	C2	106	18	-	-	-	-	-	-	-	-	-	-	100	98	78	40	33	47	26	A-7-6(16)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 362 SOIL NAME: Haig Silty Clay Loam REPORT NUMBER: S-32189 - S-32191 COUNTY: Jefferson, Iowa LOCATION: NW1/4SW1/4 sec. 31, T.71N., R.9W. PARENT MATERIAL: Wisconsin Loess																						
0-9	Ap	99	21	-	-	-	-	-	-	-	-	-	-	100	98	75	37	29	39	14	A-6(10)	ML-CL
14-23	B21	95	25	-	-	-	-	-	-	-	-	-	-	100	98	82	54	47	66	40	A-7-6(20)	CH
52-64	C2	107	19	-	-	-	-	-	-	-	-	-	-	100	98	78	40	32	45	24	A-7-6(15)	CL
STATE SYMBOL: 536 SOIL NAME: Hanlon Fine Sandy Loam REPORT NUMBER: AAD5-Ia. 33-4-1 - AAD5-Ia. 33-4-2 COUNTY: Cerro Gordo, Iowa LOCATION: NW1/4 of SW1/4 sec. 14, T.97N., R.21W. PARENT MATERIAL: Alluvium																						
0-12	A11	102	18	-	-	-	-	-	-	100	99	91	72	38	29	17	5	2	36	4	A-4(1)	SM
37-48	A3	114	15	-	-	-	-	-	-	-	100	89	68	33	24	18	9	5	26	5	A-2-4(0)	SM/SC
STATE SYMBOL: 2 SOIL NAME: Hamburg Silt Loam REPORT NUMBER: AAD3-12832 COUNTY: Woodbury, Iowa LOCATION: SW1/4NW1/4 sec. 31, T.86N., R.44W. PARENT MATERIAL: Wisconsin Loess																						
5-30	C1	106	16	-	-	-	-	-	-	-	-	-	100	99	81	33	13	9	31	8	A-4(8)	ML-CL
STATE SYMBOL: 2 SOIL NAME: Hamburg Silt Loam REPORT NUMBER: AAD1-4411 - AAD1-4412 COUNTY: Fremont, Iowa LOCATION: SE1/4 sec. 30, T.68N., R.42W. PARENT MATERIAL: Wisconsin Loess																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
2-10	C1	105	17	-	-	-	-	-	-	-	-	-	100	99	78	-	13	11	31	7	A-4(8)	ML-CL
24-54	C3/C4	104	18	-	-	-	-	-	-	-	-	-	100	99	80	-	11	8	30	6	A-4(8)	ML-CL

STATE SYMBOL: 335 SOIL NAME: Harcot Loam REPORT NUMBER: AAD4-3124 - AAD4-3126
COUNTY: Worth, Iowa
LOCATION: SE corner of sec. 11, T.100N., R.21W.
PARENT MATERIAL: Glacial Sediment

0-8	Apca	79	33	-	-	-	-	-	-	-	-	100	94	76	67	60	41	29	55	11	A-7-5(11)	MH
20-28	B2gca	108	17	-	-	-	-	-	-	-	-	100	89	56	52	46	33	27	34	13	A-6(5)	CL
32-46	IIC1	107	13	-	-	-	-	-	-	-	100	98	85	55	8	8	7	6	N.	P.	A-4(4)	SM

STATE SYMBOL: 95 SOIL NAME: Harps Clay Loam REPORT NUMBER: AAD2-2695 - AAD2- 2697
COUNTY: Webster, Iowa
LOCATION: SE1/4 sec. 23, T.89N., R.27W.
PARENT MATERIAL: Calcareous Sediments over Glacial Till

8-12	A1ca	89	26	-	-	-	-	-	-	100	99	93	89	77	72	62	40	31	54	23	A-7-5(16)	MH/CH
26-34	B2g	105	19	-	-	-	-	-	100	99	98	90	86	73	70	62	41	29	47	24	A-7-6(15)	CL
42-60	Cg	101	20	-	-	-	-	-	-	100	99	97	95	90	86	67	38	25	42	17	A-7-6(11)	CL/ML

STATE SYMBOL: 168 SOIL NAME: Hayden Loam REPORT NUMBER: AAD6-10366 - AAD6-10369
COUNTY: Webster, Iowa
LOCATION: NW1/4 NE1/4 sec. 15, T.88N., R.28W.
PARENT MATERIAL: Glacial Till

0-3	A1	98	18	-	-	-	-	-	-	-	100	92	82	63	59	41	20	12	33	9	A-4-(6)	ML-CL
3-10	A2	109	16	-	-	-	-	-	-	100	99	88	78	59	54	38	18	10	23	6	A-4(5)	ML-CL
15-21	B21t	108	16	-	-	-	-	100	98	97	94	79	71	53	49	41	31	26	40	21	A-6(8)	CL

1ΔBVWbA3s2F41943 s1s4bs2A9bA2s9D 159bs3A7gB16fB29bB16(A4s5bG23 598EΔ
1ΔBVWbC323s2A1s4gC185bC405fC346■aC471hAEΔ
1ΔBVWbB32s3B21s7E 1320bC172bG387 159bC346gB16fB32bB23(C471bG26 651EΔ

Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	4 4.7 mm	10 2.0 mm	40 .42 mm	60 .25 mm	200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
52-60	C	107	17	-	-	-	-	100	99	98	95	85	78	59	54	42	28	21	37	19	A-6(8)	CL

STATE SYMBOL: 168B SOIL NAME: Hayden Loam REPORT NUMBER: AAD4-8395 - AAD4-8397
COUNTY: Boone, Iowa
LOCATION: NE1/4 of SE1/4 sec. 30, T.85N., R.26W.
PARENT MATERIAL: Glacial Till

2-10	A21/A22	122	12	-	-	-	-	-	100	99	97	83	71	44	38	25	14	10	20	5	A-4(2)	CL-ML
21-33	B22/B23	111	16	-	-	-	-	-	100	99	98	79	65	42	36	30	21	18	32	13	A-6(2)	CL
42-60	C1/C2	112	16	-	-	-	-	-	100	99	98	88	78	43	34	28	22	18	29	11	A-6(2)	CL

STATE SYMBOL: 137 SOIL NAME: Haynie Silt Loam REPORT NUMBER: AADO-11037 - AADO-11039
COUNTY: Monona, Iowa
LOCATION: NE1/4NW1/4 sec. 34, T.85N., R.46W.
PARENT MATERIAL: Calcareous Alluvium

0-6	Ap	98	19	-	-	-	-	-	-	-	-	-	100	99	84	47	20	14	34	7	A-4(8)	ML
23-39	C	101	17	-	-	-	-	-	-	-	-	-	100	95	68	24	14	11	32	6	A-4(8)	ML
39-49	C	103	18	-	-	-	-	-	-	-	-	-	-	100	85	47	26	19	39	16	A-6(10)	CL/ML

STATE SYMBOL: 137 SOIL NAME: Haynie Silt Loam REPORT NUMBER: 88183
COUNTY: Monona, Iowa
LOCATION: SW1/4NW1/4 sec. 34, T.85N., R.46W.
PARENT MATERIAL: Calcareous Alluvium

14-20	C12	107	17	-	-	-	-	-	-	-	-	-	100	89	85	65	19	14	30	8	A-4(8)	ML-CL

STATE SYMBOL: 137 SOIL NAME: Haynie Silt Loam REPORT NUMBER: AAD3-12820

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Woodbury, Iowa LOCATION: NW1/4 sec. 1, T.87N., R.48W. PARENT MATERIAL: Calcareous Alluvium																					
20-30	C2	98	17	-	-	-	-	-	-	-	-	-	-	100	89	52	17	12	36	12	A-6(9)	ML-CL
STATE SYMBOL: 571 SOIL NAME: Hedrick Silty Clay Loam REPORT NUMBER: AAD0-11031 - AAD0-11033 COUNTY: Mahaska, Iowa LOCATION: SW1/4 sec. 30, T.77N., R.17W. PARENT MATERIAL: Wisconsin Loess																					
0-8	Ap	102	20	-	-	-	-	-	-	-	100	99	99	98	87	59	36	27	37	14	A-6(10)	CL/ML
8-15	B1	96	23	-	-	-	-	-	-	-	-	-	100	99	95	71	47	40	47	24	A-7-6(15)	CL
36-60	B31tg	100	20	-	-	-	-	-	-	-	-	-	100	99	92	63	39	33	45	25	A-7-6(15)	CL
STATE SYMBOL: 269 SOIL NAME: Humeston Silty Clay Loam REPORT NUMBER: AAD2-2684 - AAD2-2687 COUNTY: Wayne, Iowa LOCATION: NE1/4 sec. 31, T.70N., R.22W. PARENT MATERIAL: Alluvium																					
0-7	A11	102	19	-	-	-	-	-	-	-	-	100	99	96	92	64	31	21	32	9	A-4(8)	CL/ML
13-26	A21	91	24	-	-	-	-	-	-	-	-	-	100	99	96	77	36	23	48	18	A-7-5(13)	ML
36-45	B22t	97	22	-	-	-	-	-	-	-	100	99	98	94	91	75	49	40	49	28	A-7-6(17)	CL
60-70	B31gt	105	18	-	-	-	-	-	-	-	100	99	97	90	88	71	44	34	43	24	A-7-6(14)	CL
STATE SYMBOL: 1 SOIL NAME: Ida Silt Loam REPORT NUMBER: 88184 COUNTY: Monona, Iowa LOCATION: SE1/4 sec. 5, T.84N., R.44W. PARENT MATERIAL: Wisconsin Loess																					

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
12-20	C1	107	18	-	-	-	-	-	-	-	-	-	100	99	93	68	22	18	34	10	A-4(8)	ML-CL

STATE SYMBOL: 1 SOIL NAME: Ida Silt Loam REPORT NUMBER: 88185
COUNTY: Monona, Iowa
LOCATION: NW1/4 sec. 24, T.82N., R.42W.
PARENT MATERIAL: Wisconsin Loess

14-20	C1	107	18	-	-	-	-	-	-	-	-	-	100	99	96	70	27	22	37	12	A-6(9)	ML-CL

STATE SYMBOL: 1 SOIL NAME: Ida Silt Loam REPORT NUMBER: AAD3-12830
COUNTY: Woodbury, Iowa
LOCATION: SW1/4 sec. 7, T.89N., R.44W.
PARENT MATERIAL: Wisconsin Loess

6-15	C1	104	19	-	-	-	-	-	-	-	-	-	100	99	83	44	23	15	37	15	A-6(10)	CL

STATE SYMBOL: 444 SOIL NAME: Jacwin Loam REPORT NUMBER: AAD0-1611 - AAD0-1613
COUNTY: Winneshiek, Iowa
LOCATION: NE1/4NE1/4 sec. 29, T.96N., R.9W.
PARENT MATERIAL: Loamy Material over Shale

0-6	Ap	90	25	-	-	-	-	-	-	-	100	92	74	55	48	38	21	13	45	11	A-7-5(5)	ML
19-23	B21	113	15	-	-	-	-	-	-	100	99	90	72	56	54	46	31	24	31	14	A-6(6)	CL
27-28	IIB3	108	19	-	-	-	-	-	-	100	99	98	97	92	83	75	63	49	43	24	A-7-6(14)	CL

STATE SYMBOL: 8 SOIL NAME: Judson Silt Loam REPORT NUMBER: AAD2-475 - AAD2-476
COUNTY: Fremont, Iowa
LOCATION: SE1/4NE1/4 sec. 12, T.70N., R.40W.

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Alluvium																						
0-29	A	97	22	-	-	-	-	-	-	-	-	-	100	98	90	-	35	27	43	20	A-7-6(13)	CL
45-60	C1	102	17	-	-	-	-	-	-	-	-	-	100	99	95	-	35	30	40	20	A-6(12)	CL
STATE SYMBOL: 387 SOIL NAME: Kamrar Clay Loam REPORT NUMBER: AAD6-10388 - AAD6-10390																						
COUNTY: Hamilton, Iowa																						
LOCATION: SW1/4 sec. 25, T.88N., R.25W.																						
PARENT MATERIAL: Moderately Fine Textured Sediments over Glacial Till																						
0-14	A11/A12	92	24	-	-	-	-	-	-	-	100	90	85	73	70	57	41	31	48	21	A-7-6(13)	ML-CL
22-32	B21/B22	104	18	-	-	100	99	95	93	92	88	72	67	54	51	42	32	26	47	25	A-7-6(11)	CL
67-72	IIC	110	15	-	100	98	95	94	92	90	88	82	76	62	56	47	33	25	39	23	A-6(11)	CL
STATE SYMBOL: 46 SOIL NAME: Keg Silt Loam REPORT NUMBER: AADO-11034 - AADO-11036																						
COUNTY: Monona, Iowa																						
LOCATION: SE1/4 sec. 24, T.85N., R.46W.																						
PARENT MATERIAL: Alluvium																						
0-7	Ap	99	19	-	-	-	-	-	-	-	-	-	100	94	71	42	24	19	32	8	A-4(8)	CL/ML
22-32	B3	104	18	-	-	-	-	-	-	-	-	-	100	89	66	31	19	15	30	6	A-4(8)	CL/ML
45-55	C2	107	17	-	-	-	-	-	-	-	-	-	100	97	80	39	18	14	29	5	A-4(8)	CL/ML
STATE SYMBOL: 46 SOIL NAME: Keg Silt Loam REPORT NUMBER: 88193 - 88194																						
COUNTY: Monona, Iowa																						
LOCATION: SE1/4 sec. 18, T.81N., R.39W.																						
PARENT MATERIAL: Alluvium																						
0-10	A1	100	21	-	-	-	-	-	-	-	-	-	100	97	92	64	30	25	40	14	A-6(10)	ML-CL/OL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
40-45	C	106	20	-	-	-	-	-	-	-	-	-	100	99	96	70	30	24	36	12	A-6(9)	ML-CL

STATE SYMBOL: 46 SOIL NAME: Keg Silt Loam REPORT NUMBER: AAD6-1477 - AAD6-1478
COUNTY: Harrison, Iowa
LOCATION: NE1/4 Sec.35, T.78N., R.45W.
PARENT MATERIAL: Alluvium

0-8	Ap	104	20	-	-	-	-	-	-	-	-	-	100	97	86	58	35	27	40	18	A-6(11)	CL
23-35	B2	99	21	-	-	-	-	-	-	-	-	-	100	95	83	54	27	19	40	17	A-6(11)	CL

STATE SYMBOL: 212 SOIL NAME: Kennebec Silt Loam REPORT NUMBER: AAD1-12040
COUNTY: Cass, Iowa
LOCATION: SE1/4SE1/4 sec. 34, T.75N., R.36W.
PARENT MATERIAL: Alluvium

18-40	A3/B11	96	22	-	-	-	-	-	-	-	-	-	100	96	91	33	26	21	42	21	A-7-6(13)	CL

STATE SYMBOL: 83 SOIL NAME: Kenyon Loam REPORT NUMBER: AAD1-1108 - AAD1-1110
COUNTY: Bremer, Iowa
LOCATION: SW1/4 sec. 31, T.93N., R.13W.
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age

0-5	Ap	109	15	-	-	-	-	-	-	-	100	87	75	52	45	-	23	17	31	12	A-6(4)	CL
25-33	B22	114	14	-	-	-	-	-	-	100	99	89	81	61	54	-	32	27	33	16	A-6(8)	CL
54-62	C1	118	12	-	-	-	-	-	-	100	98	91	85	67	58	-	29	24	31	17	A-6(9)	CL

STATE SYMBOL: 83 SOIL NAME: Kenyon Loam REPORT NUMBER: AAD1-1114 - AAD1-1116
COUNTY: Bremer, Iowa

				Mechanical analysis																			
				Percentage passing sieve												Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm		.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: SW1/4 sec. 6, T.93N., R.13W. PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																							
0-5	A1p	109	16	-	-	-	-	-	-	-	100	90	79	59		53	-	23	19	29	11	A-6(5)	CL
24-30	B22	118	14	-	-	-	-	100	99	98	98	87	75	52		48	-	31	28	33	19	A-6(7)	CL
45-55	B32	118	12	-	-	-	-	-	-	100	99	91	82	59		55	-	33	29	32	18	A-6(8)	CL
STATE SYMBOL: 425 SOIL NAME: Keswick Silt Loam REPORT NUMBER: AAD3-12808 - AAD3-12810 COUNTY: Keokuk, Iowa LOCATION: SW1/4SE1/4 sec. 35, T.76N., R.13W. PARENT MATERIAL: Sediment over Reddish Paleosol																							
3-6	A2	108	17	-	-	-	-	-	-	-	100	95	90	77		73	54	32	24	32	15	A-6(10)	CL
15-22	IIB22	100	21	-	-	-	-	-	100	98	96	96	84	70		66	60	53	49	65	41	A-7-6(19)	CH
45-56	IIC1	118	13	-	-	-	-	100	99	99	98	86	75	52		45	35	25	21	30	17	A-6(6)	CL
STATE SYMBOL: 836 SOIL NAME: Kilkenny Clay Loam REPORT NUMBER: AAD5-Ia. 33-6-1 - AAD5-Ia. 33-6-3 COUNTY: Cerro Gordo, Iowa LOCATION: NW1/4 of SW1/4 sec. 6, T.97N., R.22W. PARENT MATERIAL: Surficial Clayey Sediments/Glacial Till																							
0-8	Ap	110	16	-	-	-	-	-	100	99	98	91	83	62		55	40	23	16	31	11	A-6(6)	ML/CL
26-34	B22t	97	23	-	-	-	-	-	-	-	100	99	96	85		76	58	40	33	47	21	A-7-6(14)	ML/CL
41-53	B32t	89	26	-	-	-	-	-	-	-	100	99	98	97		94	86	59	45	65	34	A-7-5(20)	MH/CH
STATE SYMBOL: 184 SOIL NAME: Klinger Silty Clay Loam REPORT NUMBER: AAD1-1120 - AAD1-1122 COUNTY: Bremer, Iowa LOCATION: NE1/4SE1/4 sec. 26, T.91N., R.12W. PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age																							

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-9	A1	93	22	-	-	-	-	-	-	-	100	99	97	93	86	-	35	27	44	17	A-7-6(12)	ML-CL
19-26	B21	103	19	-	-	-	-	-	-	-	100	99	98	95	85	-	37	32	43	23	A-7-6(14)	CL
31-40	B31/B32	118	12	-	-	-	-	-	100	99	98	87	77	56	51	-	31	27	32	17	A-6(7)	CL

STATE SYMBOL: 184 SOIL NAME: Klinger Silty Clay Loam REPORT NUMBER: AAD1-1123 - AAD1-1125
COUNTY: Bremer, Iowa
LOCATION: SW1/4 sec. 33, T.91N., R.12W.
PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age

0-7	Ap	92	23	-	-	-	-	-	-	-	100	98	95	91	80	-	32	25	44	17	A-7-6(12)	ML-CL
23-28	B21	108	17	-	-	-	-	-	-	-	-	100	99	95	83	-	30	27	40	21	A-6(12)	CL
40-50	C11	122	11	-	-	-	-	-	100	99	98	88	80	60	53	-	27	23	28	14	A-6(7)	CL

STATE SYMBOL: 184 SOIL NAME: Klinger Silty Clay Loam REPORT NUMBER: AAD6-3396 - AAD6-3398
COUNTY: Linn, Iowa
LOCATION: NE1/4NE1/4SE1/4 sec. 21, T.84N., R.6W.
PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age

0-12	A1p	91	24	-	-	-	-	-	-	-	100	99	98	96	89	61	35	25	42	16	A-7-6(11)	ML-CL
22-30	B2t	95	17	-	-	-	-	-	-	-	100	99	98	96	87	60	40	34	46	22	A-7-6(14)	CL/ML
46-57	IIC1	114	14	-	-	-	-	-	100	99	98	88	78	58	50	40	29	25	33	18	A-6(8)	CL

STATE SYMBOL: 531 SOIL NAME: Kniffin Silt Loam REPORT NUMBER: AAD0-1614 - AAD0-1616
COUNTY: Wayne, Iowa
LOCATION: SE1/4SW1/4 sec. 16, T.67N., R.22W.
PARENT MATERIAL: Wisconsin Loess

0-6	A1	84	29	-	-	-	-	-	-	-	-	100	99	97	83	70	38	27	52	17	A-7-5(13)	MH

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
14-18	B21t	90	27	-	-	-	-	-	-	-	100	99	99	99	96	83	59	49	66	35	A-7-5(20)	CH/MH
45-52	B33	102	20	-	-	-	-	-	-	-	100	99	99	97	91	74	41	32	41	23	A-7-6(13)	CL
STATE SYMBOL: 388 SOIL NAME: Kossuth Silty Clay Loam REPORT NUMBER: AAD6-3323 - AAD6-3324 COUNTY: Kossuth, Iowa LOCATION: SW corner of SE1/4, sec. 29, T.95N., R.29W. PARENT MATERIAL: Lacustrine Sediments over Glacial Till																						
0-8	Ap	92	26	-	-	-	-	-	-	-	100	94	89	77	71	53	30	22	50	25	A-7-6(16)	CH
27-31	B22g	103	20	-	-	-	-	-	-	-	100	98	96	86	82	64	37	25	40	19	A-6(12)	CL
45-60	Cg	108	17	-	-	-	-	-	-	100	99	96	91	64	55	44	30	24	41	25	A-7-6(12)	CL
STATE SYMBOL: 388 SOIL NAME: Kossuth Silty Clay Loam REPORT NUMBER: AAD6-3294 - AAD6-3296 COUNTY: Kossuth, Iowa LOCATION: SE corner of sec. 33, T.95N., R.29W. PARENT MATERIAL: Lacustrine Sediments over Glacial Till																						
0-9	Ap	91	26	-	-	-	-	-	-	-	100	99	96	86	78	61	34	22	50	23	A-7-6(15)	CH
29-33	B22g	95	24	-	-	-	-	-	-	-	-	100	98	92	85	68	48	37	55	30	A-7-6(19)	CH
40-48	IIC1	110	16	-	-	-	-	-	-	100	99	98	92	74	65	55	34	22	36	18	A-6(11)	CL
STATE SYMBOL: 76 SOIL NAME: Ladoga Silt Loam REPORT NUMBER: AAD9-10451 - ADD9-10453 COUNTY: Iowa, Iowa LOCATION: SE1/4 sec. 26, T.80N., R.11W. PARENT MATERIAL: Wisconsin Loess																						
0-8	A1	94	22	-	-	-	-	-	-	-	100	99	98	97	88	-	26	17	43	13	A-7-5(10)	ML
12-32	B2	98	20	-	-	-	-	-	-	-	-	-	100	99	93	-	36	31	43	20	A-7-6(13)	CL
55-72	C1	108	16	-	-	-	-	-	-	-	-	100	99	97	92	-	31	23	34	15	A-6(10)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 436 SOIL NAME: Lakeport Silty Clay Loam REPORT NUMBER: AAD6-1481 - AAD6-1482																						
COUNTY: Harrison, Iowa																						
LOCATION: SW1/4 sec. 30, T.78N., R.44W.																						
PARENT MATERIAL: Alluvium																						
21-27	B21	97	22	-	-	-	-	-	-	-	-	-	100	98	89	71	49	39	53	30	A-7-6(19)	CH
48-48	C1	100	21	-	-	-	-	-	-	-	-	-	100	99	88	55	31	25	43	21	A-7-6(13)	CL
STATE SYMBOL: 436 SOIL NAME: Lakeport Silty Clay Loam REPORT NUMBER: AAD2-12788 - AAD2-12789																						
COUNTY: Fremont, Iowa																						
LOCATION: NW1/4 sec. 34, T.69N., R.43W.																						
PARENT MATERIAL: Alluvium																						
0-13	A	90	24	-	-	-	-	-	-	-	-	-	100	98	93	49	39	32	58	32	A-7-6(20)	CH
26-60	C2ca/C3	96	24	-	-	-	-	-	-	-	-	-	100	99	94	48	39	32	57	34	A-7-6(19)	CH
STATE SYMBOL: 110 SOIL NAME: Lamont Fine Sandy Loam REPORT NUMBER: AAD5-Ia. 6-2-1 - AAD5-Ia. 6-2-4																						
COUNTY: Benton, Iowa																						
LOCATION: SW1/4 sec. 36, T.85N., R.9W																						
PARENT MATERIAL: Eolian Sand																						
0-4	A1	106	16	-	-	-	-	-	-	100	99	95	78	51	44	25	8	3	34	9	A-4(3)	ML/CL
15-21	B22t	119	13	-	-	-	-	-	-	-	100	97	83	59	52	36	22	19	23	8	A-4(5)	CL
25-33	B31t	123	11	-	-	-	-	-	-	-	100	96	72	33	27	21	13	11	17	3	A-2-4(0)	SM
40-50	C	111	16	-	-	-	-	-	-	-	100	94	64	13	7	7	5	4	-	NP	A-2-4(0)	SM
STATE SYMBOL: 606 SOIL NAME: Lanyon Silty Clay REPORT NUMBER: AAD2-2698 - AAD2-2700																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Webster, Iowa LOCATION: NE1/4NE1/4 sec. 31, T.86N., R.28W. PARENT MATERIAL: Calcareous Lacustrine Sediments																						
7-13	Ap	98	21	-	-	-	-	-	-	-	-	-	100	98	98	91	65	51	65	36	A-7-6(20)	CH
16-20	B2g	99	22	-	-	-	-	-	-	-	-	-	100	99	99	90	63	51	64	37	A-7-6(20)	CH
37-46	C3g	98	23	-	-	-	-	-	-	100	99	97	96	91	89	83	62	46	61	33	A-7-6(20)	CH
STATE SYMBOL: 226 SOIL NAME: Lawler Loam REPORT NUMBER: AAD6-3993 - AAD6-3995 COUNTY: Butler, Iowa LOCATION: SE corner sec. 22, T.91N., R.17W. PARENT MATERIAL: Loamy Alluvium over Sand and Gravel																						
0-8	Ap	101	21	-	-	-	-	-	-	-	100	85	68	53	48	40	20	12	40	14	A-6(5)	ML/CL
19-31	B2	115	14	-	-	-	-	-	-	-	100	70	52	43	42	36	23	17	39	18	A-6(5)	CL
35-51	IIC1	118	12	-	-	-	-	-	-	100	96	47	21	10	8	3	4	6	20	2	A-1-b(0)	SM
STATE SYMBOL: 65 SOIL NAME: Lindley Loam REPORT NUMBER: AAD9-10438 - AAD9-10440 COUNTY: Iowa, Iowa LOCATION: SW1/4NE1/4 sec. 32, T.78N., R.11W. PARENT MATERIAL: Kansan Glacial Till																						
0-7	A1	104	17	-	-	-	-	-	-	100	99	90	79	51	39	-	13	8	31	7	A-4(3)	ML-CL
11-34	B21/B22	113	15	-	-	-	100	99	99	99	98	89	79	57	49	-	31	26	36	18	A-6(8)	CL
46-84	C1	121	11	-	-	-	100	99	98	98	96	86	75	52	45	-	24	19	30	16	A-6(6)	CL
STATE SYMBOL: 65 SOIL NAME: Lindley Loam REPORT NUMBER: AAD8-10290 - AAD8-10292 COUNTY: Van Buren, Iowa LOCATION: NE1/4NE1/4 sec. 17, T.70N., R.10W.																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Kansan Glacial Till																						
0-6	A1	110	14	-	-	-	-	100	97	97	96	88	79	55	47	-	15	10	24	5	A-4(4)	ML-CL
18-25	B22	103	19	-	-	-	-	-	-	100	99	91	84	66	59	-	40	36	43	23	A-7-6(12)	CL
47-53	C2	116	13	-	-	-	-	-	100	99	99	90	82	52	47	-	27	23	31	17	A-6(6)	CL
STATE SYMBOL: 781 SOIL NAME: Lourdes Loam REPORT NUMBER: AAD4-11492 - AAD4-11494																						
COUNTY: Howard, Iowa																						
LOCATION: 1 mile east and 1/2 mile north of Lourdes.																						
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																						
0-7	Ap	100	20	-	-	-	-	-	-	-	100	95	87	79	70	53	29	19	35	12	A-6(9)	ML-CL
21-31	IIB23	110	15	-	-	-	-	-	-	100	99	90	82	66	58	48	37	32	43	25	A-7-6(13)	CL
40-50	IIC1	115	14	-	-	-	-	-	-	100	98	89	81	65	58	47	35	28	36	20	A-6(10)	CL
STATE SYMBOL: 66 SOIL NAME: Luton Clay REPORT NUMBER: 88186 - 88187																						
COUNTY: Monona, Iowa																						
LOCATION: NW1/4 sec. 12, T.83N., R.45W.																						
PARENT MATERIAL: Alluvium																						
2-10	A1	90	29	-	-	-	-	-	-	-	-	-	100	99	98	89	61	50	66	37	A-7-6(20)	CH-OH
18-24	B2	92	28	-	-	-	-	-	-	-	100	99	99	99	99	96	79	66	84	54	A-7-5(20)	CH
STATE SYMBOL: 368 SOIL NAME: Macksburg Silty Clay Loam REPORT NUMBER: AAD7-2811 - AAD7-2813																						
COUNTY: Madison, Iowa																						
LOCATION: SE1/4 sec. 31, T.76N., R.28W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-6	Ap	92	24	-	-	-	-	-	-	-	-	-	100	99	90	66	38	27	44	18	A-7-6(12)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
24-30	B21	94	24	-	-	-	-	-	-	-	-	100	99	99	94	76	48	39	57	31	A-7-6(19)	CH
42-62	B3	101	21	-	-	-	-	-	-	-	-	-	-	100	93	67	39	31	49	28	A-7-6(17)	CL

STATE SYMBOL: 368 SOIL NAME: Macksburg Silty Clay Loam REPORT NUMBER: AAD9-905 - AAD9-907
COUNTY: Adams, Iowa
LOCATION: SE1/4 sec. 5, T.71N., R.33W.
PARENT MATERIAL: Wisconsin Loess

0-18	A1/A12	89	27	-	-	-	-	-	-	-	-	-	-	100	92	-	41	32	47	19	A-7-6(13)	ML-CL
18-38	B21/B22	89	26	-	-	-	-	-	-	-	-	-	-	100	93	-	46	38	53	25	A-7-6(17)	MH-CH
38-59	B3/C1	91	26	-	-	-	-	-	-	-	-	-	-	100	94	-	45	38	56	30	A-7-6(19)	CH

STATE SYMBOL: 280 SOIL NAME: Mahaska Silty Clay Loam REPORT NUMBER: AAD2-282 - AAD2-284
COUNTY: Keokuk, Iowa
LOCATION: NE1/4 sec. 34, T.77N., R.10W.
PARENT MATERIAL: Wisconsin Loess

0-7	A1p	93	21	-	-	-	-	-	-	-	-	100	99	98	92	70	38	29	43	18	A-7-6(12)	ML-CL
24-30	B21	95	24	-	-	-	-	-	-	-	-	-	100	99	94	73	50	42	60	34	A-7-6(20)	CH
51-61	B32	102	17	-	-	-	-	-	-	-	-	-	-	100	95	68	39	33	46	26	A-7-6(16)	CL

STATE SYMBOL: 280 SOIL NAME: Mahaska Silt Loam REPORT NUMBER: AAD9-10435 - AAD9-10437
COUNTY: Iowa, Iowa
LOCATION: NW1/4SE1/4 sec. 21, T.80N., R.10W.
PARENT MATERIAL: Wisconsin Loess

0-15	Ap/A1	91	25	-	-	-	-	-	-	-	-	-	100	99	93	-	38	25	45	18	A-7-6(12)	ML-CL
25-37	B2	96	23	-	-	-	-	-	-	-	-	-	100	99	95	-	46	37	53	26	A-7-6(17)	MH-CH
49-73	C1	104	18	-	-	-	-	-	-	-	-	-	100	99	93	-	33	27	43	23	A-7-6(14)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 92 SOIL NAME: Marcus Silty Clay Loam REPORT NUMBER: AAD9-10469 - AAD9-10471																						
COUNTY: Clay, Iowa																						
LOCATION: NW1/4SW1/4 sec. 12, T.95N., R.38W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-7	A1p	88	28	-	-	-	-	-	-	-	-	100	99	98	92	-	46	36	60	30	A-7-5(20)	MH-CH
17-24	B21	98	19	-	-	-	-	-	-	-	100	99	98	97	91	-	48	39	55	31	A-7-6(19)	CH
41-60	C	107	18	-	-	-	-	-	-	-	100	99	98	94	92	-	51	39	48	28	A-7-6(17)	CL
STATE SYMBOL: 383 SOIL NAME: Marna Silty Clay Loam REPORT NUMBER: AAD6-10382 - AAD6-10384																						
COUNTY: Webster, Iowa																						
LOCATION: Sec. 25, T.86N., R.28W.																						
PARENT MATERIAL: Fine Textured Sediments over Glacial Till																						
0-6	Ap1	90	23	-	-	-	-	-	-	-	100	95	91	82	77	64	46	36	49	23	A-7-6(15)	ML-CL
20-26	B21gt	96	16	-	-	-	-	-	100	99	96	90	85	74	73	61	47	39	59	35	A-7-6(20)	CH
61-67	IIC1	105	18	-	-	100	98	97	95	94	91	84	79	63	60	49	35	25	40	21	A-6(10)	CL
STATE SYMBOL: 9B SOIL NAME: Marshall Silty Clay Loam REPORT NUMBER: AAD1-12036 - AAD1-12038																						
COUNTY: Cass, Iowa																						
LOCATION: NE1/4SE1/4 sec. 23, T.75N., R.36W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-13	A	95	23	-	-	-	-	-	-	-	-	-	-	100	91	36	27	22	43	20	A-7-6(13)	CL
20-33	B22	97	22	-	-	-	-	-	-	-	-	-	-	100	91	39	33	29	45	22	A-7-6(14)	CL
45-56	B32	101	19	-	-	-	-	-	-	-	-	-	-	100	90	33	27	24	42	22	A-7-6(13)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 9C2 SOIL NAME: Marshall Silty Clay Loam REPORT NUMBER: AAD6-3996 - AAD6-3998																						
COUNTY: Carroll, Iowa																						
LOCATION: NE1/4 sec 1, T.82N., R.36W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-7	Ap	94	24	-	-	-	-	-	-	-	100	99	98	97	86	58	31	20	46	19	A-7-6(13)	CL
22-28	B22	95	24	-	-	-	-	-	-	-	100	99	99	98	90	66	39	27	51	25	A-7-6(16)	CH
54-64	C	103	20	-	-	-	-	-	-	-	-	-	100	99	92	61	32	23	43	19	A-7-6(12)	CL
STATE SYMBOL: 9B SOIL NAME: Marshall Silt Loam REPORT NUMBER: AAD2-472 - AAD2-474																						
COUNTY: Fremont, Iowa																						
LOCATION: sec. 14, T.68N., R.40W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-8	Ap	98	20	-	-	-	-	-	-	-	-	-	100	99	90	-	33	27	40	17	A-6(11)	CL
13-32	B	94	24	-	-	-	-	-	-	-	-	-	100	99	91	-	42	35	51	27	A-7-6(17)	CH
32-54	C	102	19	-	-	-	-	-	-	-	-	-	100	99	92	-	40	32	47	26	A-7-6(16)	CL
STATE SYMBOL: 9B SOIL NAME: Marshall Silt Loam REPORT NUMBER: S-31844 - S-31846																						
COUNTY: Shelby, Iowa																						
LOCATION: SW1/4SE1/4 sec. 16, T.81N., R.38W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-6	A1	99	21	-	-	-	-	-	-	-	-	-	100	99	96	68	41	34	44	17	A-7-6(12)	ML-CL
12-17	B2	102	19	-	-	-	-	-	-	-	-	-	-	100	97	68	38	32	46	20	A-7-6(13)	ML-CL
23-48	C2	104	19	-	-	-	-	-	-	-	-	-	-	100	97	67	35	30	41	17	A-7-6(11)	ML-CL
STATE SYMBOL: 9C SOIL NAME: Marshall Silt Loam REPORT NUMBER: S-31841 - S-31843																						
COUNTY: Shelby, Iowa																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: NW1/4SW1/4SW1/4 sec. 24, T.79N., R.37W. PARENT MATERIAL: Wisconsin Loess																							
0-7	A1	97	21	-	-	-	-	-	-	-	-	-	100	99	95	64	37	32	43	18	A-7-6(12)	ML-CL
11-18	B21	97	22	-	-	-	-	-	-	-	-	-	-	100	97	70	43	35	52	24	A-7-6(16)	MH-CH
29-40	C1	104	19	-	-	-	-	-	-	-	-	-	-	100	97	71	37	31	45	21	A-7-6(13)	CL
STATE SYMBOL: 99C2 SOIL NAME: Marshall Mott. Sub. Sicl. REPORT NUMBER: AAD6-4008 - AAD6-4010 COUNTY: Carroll, Iowa LOCATION: NE corner sec. 13, T.82N., R.36W. PARENT MATERIAL: Wisconsin loess																							
0-8	Ap	94	24	-	-	-	-	-	-	-	-	-	100	99	87	58	32	22	44	18	A-7-6(12)	ML/CL
12-20	B21	95	24	-	-	-	-	-	-	-	-	-	-	100	91	63	36	27	48	22	A-7-6(14)	CL
32-40	B3	102	20	-	-	-	-	-	-	-	-	-	-	100	89	58	30	23	44	21	A-7-6(13)	CL
STATE SYMBOL: 152 SOIL NAME: Marshan Clay Loam REPORT NUMBER: AAD5-Ia. 10-1-1 - AAD5-Ia. 10-1-3 COUNTY: Buchanan, Iowa LOCATION: Sec. 3, T. 89N., R.10W. PARENT MATERIAL: Loamy Sediments over Sand and Gravel																							
0-16	Ap/A3	89	28	-	-	-	-	-	-	100	99	95	90	77	70	52	26	16	49	15	A-7-5(12)	ML
26-34	B	117	13	-	-	-	-	100	97	93	89	74	65	42	36	27	17	14	29	13	A-6(2)	SC
40-60	C	127	10	-	-	100	98	98	95	89	78	48	33	7	4	3	2	1	-	NP	A-1-b(0)	SW-SM
STATE SYMBOL: 152 SOIL NAME: Marshan Silty Clay Loam REPORT NUMBER: AAD5-Ia. 12-1-1 - AAD5-Ia. 12-1-3 COUNTY: Butler, Iowa LOCATION: SE1/4 sec. 13, T.93N., R.16W. PARENT MATERIAL: Loamy Sediments over Sand and Gravel																							

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-8	Ap	91	26	-	-	-	-	-	-	-	100	95	89	77	69	48	22	11	48	12	A-7-5(10)	ML
24-32	B22g	115	14	-	-	-	-	-	-	-	100	93	87	67	56	40	23	18	32	14	A-6(8)	CL
41-60	IIC2	130	8	-	100	99	96	94	93	91	82	48	32	9	5	4	3	2	16	1	A-1-b(0)	SW-SM
STATE SYMBOL: 70 SOIL NAME: McPaul Silt Loam REPORT NUMBER: AAD2-477 - AAD2-478 COUNTY: Fremont, Iowa LOCATION: SW1/4NE1/4 sec. 11, T.70N., R.43W. PARENT MATERIAL: Alluvium																						
9-31	C2,3/4	102	16	-	-	-	-	-	-	-	-	-	100	99	82	20	17	15	33	10	A-4(8)	ML-CL
44-96	C5ca	103	19	-	-	-	-	-	-	-	-	-	-	100	85	20	18	17	33	9	A-4(8)	ML-CL
STATE SYMBOL: 70 SOIL NAME: McPaul Silt Loam REPORT NUMBER: AAD6-1476 COUNTY: Harrison, Iowa LOCATION: NE1/4 sec. 27, T.78.n., R.44W. PARENT MATERIAL: Alluvium																						
16-31	C2	98	18	-	-	-	-	-	-	-	-	-	100	99	79	31	18	14	31	7	A-4(8)	ML
STATE SYMBOL: 149 SOIL NAME: Modale Silt Loam REPORT NUMBER: AAD3-12823 - AAD3-12824 COUNTY: Woodbury, Iowa LOCATION: SW1/4SW1/4 sec. 33, T.88N., R.47W. PARENT MATERIAL: Alluvium																						
11-21	C2	102	19	-	-	-	-	-	-	-	-	-	100	77	44	25	16	11	32	12	A-6(9)	CL
40-46	C7	88	29	-	-	-	-	-	-	-	-	-	100	99	97	93	83	68	85	57	A-7-6(20)	CH
STATE SYMBOL: 149 SOIL NAME: Modale Silt Loam REPORT NUMBER: AADO-11040 - AADO-11042																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Monona, Iowa LOCATION: Sec. 8, T.84N., R.46W. PARENT MATERIAL: Silty Alluvium																						
0-7	Ap	102	21	-	-	-	-	-	-	-	-	-	-	100	92	60	29	20	39	12	A-6(9)	ML
16-24	C1	100	19	-	-	-	-	-	-	-	-	-	-	100	94	68	32	22	42	17	A-7-6(11)	CL/ML
30-43	IIC2g	91	26	-	-	-	-	-	-	-	-	-	-	-	00	97	83	66	83	57	A-7-6(20)	CH
STATE SYMBOL: 10 SOIL NAME: Monona Silt Loam REPORT NUMBER: 88188 - 88190 COUNTY: Monona, Iowa LOCATION: SE1/4NE1/4 sec. 23, T.82N., R.42W. PARENT MATERIAL: Wisconsin Loess																						
2-8	A1	97	23	-	-	-	-	-	-	-	-	-	100	99	97	69	35	28	48	20	A-7-6(14)	ML-CL
12-18	B2	102	21	-	-	-	-	-	-	-	-	-	100	99	98	84	35	29	46	20	A-7-6(13)	ML-CL
30-36	B3	107	19	-	-	-	-	-	-	-	-	-	100	99	96	77	30	23	38	14	A-6(10)	ML-CL
STATE SYMBOL: 10C2 SOIL NAME: Monona Silt Loam REPORT NUMBER: S-31847 - S-31849 COUNTY: Shelby, Iowa LOCATION: SE1/4 sec. 24, T.85N., R.46W. PARENT MATERIAL: Wisconsin Loess																						
0-5	A1	95	23	-	-	-	-	-	-	-	-	-	100	99	95	64	35	29	44	15	A-7-6(11)	ML
9-17	B3C1	98	22	-	-	-	-	-	-	-	-	-	-	100	96	65	36	31	44	16	A-7-6(11)	ML-CL
28-48	C3	105	19	-	-	-	-	-	-	-	-	-	-	100	95	62	33	25	39	15	A-6(10)	ML-CL
STATE SYMBOL: 612C2 SOIL NAME: Mottland Loam REPORT NUMBER: AAD6-4014 - AAD6-4015 COUNTY: Franklin, Iowa LOCATION: SW1/4SW1/4 sec 6, T.93N., R.15W.																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Silty Sediments overlying Arenaceous Limestone																							
0-7	Ap	108	17	-	-	-	-	-	-	100	99	96	91	74	58	37	18	10	34	9	A-4(8)	ML
11-60	C2	110	16	-	-	-	-	-	-	-	100	99	97	76	58	29	15	9	25	3	A-4(8)	ML
STATE SYMBOL: 119 SOIL NAME: Muscatine Silty Clay Loam REPORT NUMBER: AAD1-1987 - AAD1-1989 COUNTY: Benton, Iowa LOCATION: SE1/4SW1/4 sec. 7, T.85N., R.12W. PARENT MATERIAL: Wisconsin Loess																							
0-7	Ap	94	23	-	-	-	-	-	-	-	-	-	100	99	98	98	39	25	46	20	A-7-6(13)	ML
22-29	B21	99	16	-	-	-	-	-	-	-	-	100	99	99	98	98	45	34	51	26	A-7-6(17)	MH-CH
46-52	C	99	17	-	-	-	-	-	-	-	-	100	99	98	98	98	33	27	41	22	A-7-6(13)	CL
STATE SYMBOL: 119 SOIL NAME: Muscatine Silt Loam REPORT NUMBER: AAD1-1126 - AAD1-1128 COUNTY: Grundy, Iowa LOCATION: NW1/4SW1/4NE1/4Sec. 20, T.87N., R.17W. PARENT MATERIAL: Wisconsin Loess																							
0-7	A1p	90	25	-	-	-	-	-	-	-	-	100	99	98	93	-	40	30	49	21	A-7-6(14)	ML-CL
23-30	B21	98	21	-	-	-	-	-	-	-	-	-	100	99	93	-	45	39	50	28	A-7-6(17)	CL
53-60	C21	108	17	-	-	-	-	-	-	-	100	98	98	98	89	-	31	25	36	17	A-6(11)	CL
STATE SYMBOL: 592 SOIL NAME: Mystic Silt Loam REPORT NUMBER: AAD2-2692 - AAD2-2694 COUNTY: Wayne, Iowa LOCATION: SW1/4NW1/4 sec. 4, T.69N., R.22W. PARENT MATERIAL: Pre-Sangamon Alluvium																							
0-6	Ap	106	16	-	-	-	-	-	-	-	100	98	95	78	68	47	26	22	31	12	A-6(9)	CL

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
13-32	B2	110	16	-	-	-	-	-	-	-	-	100	97	80	73	54	38	33	41	24	A-7-6(14)	CL
32-54	B3	116	12	-	-	-	-	-	-	100	99	89	81	60	53	41	26	22	31	18	A-6(8)	CL
STATE SYMBOL: 68 SOIL NAME: Napa Clay REPORT NUMBER: 88191 COUNTY: Monona, Iowa LOCATION: W1/2SW1/4 sec. 3, T.85N., R.45W. PARENT MATERIAL: Alluvium																						
10-16	B	97	24	-	-	-	-	-	-	-	100	99	98	88	86	77	53	46	81	58	A-7-6(20)	CH
STATE SYMBOL: 12 SOIL NAME: Napier Silt Loam REPORT NUMBER: AAD6-1483 - AAD6-1484 COUNTY: Harrison, Iowa LOCATION: SE1/4SW1/4 sec. 11, T.78N., R.44W. PARENT MATERIAL: Alluvium																						
7-14	A12	100	20	-	-	-	-	-	-	-	-	-	-	100	85	45	25	19	39	15	A-6(10)	CL
30-40	B2	101	20	-	-	-	-	-	-	-	-	-	-	100	78	42	24	19	36	14	A-6(10)	CL
STATE SYMBOL: 12 SOIL NAME: Napier Silt Loam REPORT NUMBER: 88192 COUNTY: Monona, Iowa LOCATION: SW1/4SW1/4 sec. 29, T.84N., R.42W. PARENT MATERIAL: Alluvium																						
12-18	A3	98	23	-	-	-	-	-	-	-	-	-	100	99	96	68	29	24	44	17	A-7-6(12)	ML-CL
STATE SYMBOL: 88 SOIL NAME: Nevin Silt Loam REPORT NUMBER: AAD2-12785 - AAD2-12787 COUNTY: Fremont, Iowa LOCATION: NE1/4 sec. 35, T.69N., R.40W.																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm		.02 mm		.005 mm		.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Alluvium																									
0-17	A	94	23	-	-	-	-	-	-	-	-	-	100	99	94	-	35	27				41	18	A-7-6(11)	CL
25-42	B2	97	22	-	-	-	-	-	-	-	-	-	100	99	93	-	39	22				50	28	A-7-6(17)	CL
42-56	B3	100	20	-	-	-	-	-	-	-	-	-	100	99	93	-	35	29				44	24	A-7-6(14)	CL
STATE SYMBOL: 88 SOIL NAME: Nevin Silt Loam REPORT NUMBER: AAD7-2808 - AAD7-2810 COUNTY: Madison, Iowa LOCATION: NE1/4 sec. 11, T.75N., R.28W. PARENT MATERIAL: Alluvium																									
0-8	Ap	91	18	-	-	-	-	-	-	-	-	100	98	94	85	57	28	21				35	14	A-6(10)	CL/ML
17-29	B1	102	19	-	-	-	-	-	-	-	100	98	96	91	84	61	37	30				41	21	A-7-6(13)	CL
29-40	B2gt	103	19	-	-	-	-	-	-	-	100	98	97	90	81	64	41	35				45	27	A-7-6(16)	CL
STATE SYMBOL: 55 SOIL NAME: Nicollet Loam REPORT NUMBER: AAD6-10376 - AAD6-10378 COUNTY: Webster, Iowa LOCATION: Sec. 4, T.89N., R.28W. PARENT MATERIAL: Glacial Till																									
6-11	A12	91	24	-	-	-	-	-	-	-	100	96	91	77	73	55	36	26				46	20	A-7-6(13)	ML/CL
20-26	B2	99	20	-	-	-	-	-	-	100	99	95	90	77	71	58	37	29				43	23	A-7-6(14)	CL
42-60	C2g	104	21	-	-	-	-	-	-	100	98	92	88	76	72	56	31	21				35	16	A-6(10)	CL
STATE SYMBOL: 55 SOIL NAME: Nicollet Loam REPORT NUMBER: AAD6-3299 - AAD6-3301 COUNTY: Kossuth, Iowa LOCATION: NE1/4SE1/4 sec. 35, T.96N., R.30W. PARENT MATERIAL: Glacial till																									

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-8	Ap	97	23	-	-	-	-	-	-	-	100	98	91	80	62	48	27	15	41	15	A-7-6(9)	ML/CL
27-33	B22	101	21	-	-	-	-	-	-	100	99	95	91	70	64	50	33	23	45	22	A-7-6(13)	CL
39-60	C	110	16	-	-	-	-	-	100	99	97	91	87	66	55	42	23	15	34	14	A-6(8)	CL

STATE SYMBOL: 55 SOIL NAME: Nicollet Loam REPORT NUMBER: AAD4-8387 - AAD4-8389
COUNTY: Boone, Iowa
LOCATION: SE1/4 sec. 28, T.84N., R.25W.
PARENT MATERIAL: Glacial till

Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-14	Ap	95	24	-	-	-	-	-	-	-	100	94	88	74	68	55	33	24	39	12	A-6(4)	ML
22-32	B21/22	109	17	-	-	-	-	-	-	100	99	84	76	50	44	33	23	19	32	13	A-6(4)	CL
37-61	C2	115	14	-	-	-	-	-	-	-	100	98	92	73	66	55	34	25	37	17	A-6(10)	CL

STATE SYMBOL: 55 SOIL NAME: Nicollet Loam REPORT NUMBER: AAD6-3999 - AAD6-4001
COUNTY: Carroll, Iowa
LOCATION: S of E1/4 corner, sec. 26, T.84N., R.33W.
PARENT MATERIAL: Glacial till

Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-9	A11	104	19	-	-	-	-	-	-	100	99	94	87	66	54	37	15	7	36	13	A-6(7)	CL
22-30	B2	120	12	-	100	93	89	86	80	76	72	67	63	49	45	31	16	10	30	11	A-6(3)	CL
32-40	C2	111	16	-	-	-	-	-	-	-	100	98	97	90	75	40	13	7	25	5	A-4(8)	CL-ML

STATE SYMBOL: 220 SOIL NAME: Nodaway Silt Loam REPORT NUMBER: AAD9-908
COUNTY: Adams, Iowa
LOCATION: NE1/4SW1/4 sec. 12, T.72N., R.35W.
PARENT MATERIAL: Alluvium

Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
12-39	C	102	17	-	-	-	-	-	-	-	-	100	99	93	81	-	23	19	33	13	A-6(9)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 220 SOIL NAME: Nodaway Silt Loam REPORT NUMBER: AAD9-10447 COUNTY: Iowa, Iowa LOCATION: NW1/4NE1/4 sec. 32, T.78N., R.11W. PARENT MATERIAL: Alluvium																						
0-63	A/C	99	20	-	-	-	-	-	-	-	-	-	100	94	85	-	28	20	38	14	A-6(10)	ML-CL
STATE SYMBOL: 90 SOIL NAME: Okoboji Mucky Silt Loam REPORT NUMBER: AAD6-3308 - AAD6-3310 COUNTY: Kossuth, Iowa LOCATION: SW corner of sec. 8, T.97N., R.30W. PARENT MATERIAL: Glacial Sediments																						
0-9	Ap	72	38	-	-	-	-	-	-	-	-	100	98	90	68	51	23	12	67	16	A-7-5(14)	MH
13-19	A13	92	26	-	-	-	-	-	-	-	-	100	99	94	85	69	46	31	53	30	A-7-6(19)	CH
49-60	C-3	90	27	-	-	-	-	-	-	-	-	100	99	97	88	73	47	29	54	28	A-7-6(18)	CH
STATE SYMBOL: 6 SOIL NAME: Okoboji Silty Clay Loam REPORT NUMBER: AAD6-10370 - AAD6-10372 COUNTY: Webster, Iowa LOCATION: NW1/4 sec. 26, T.88N., R.29W. PARENT MATERIAL: Glacial Sediment																						
7-15	A1	82	25	-	-	-	-	-	-	-	-	100	99	96	91	77	54	42	63	33	A-7-5(20)	MH-CH
15-30	B1g	85	27	-	-	-	-	-	-	-	-	-	100	97	95	82	58	46	65	37	A-7-6(20)	CH
30-42	B21g	84	25	-	-	-	-	-	-	-	-	-	100	98	96	83	61	47	66	39	A-7-6(20)	CH
STATE SYMBOL: 6 SOIL NAME! Okoboji Silty Clay Loam REPORT NUMBER: AAD6-3305 - AAD6-3307 COUNTY: Kossuth, Iowa LOCATION: SW corner of sec. 8, T.97N., R.30W. PARENT MATERIAL: Glacial Sediments																						

				Mechanical analysis																			
				Percentage passing sieve												Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm		.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-9	Ap	95	24	-	-	-	-	-	-	-	100	99	97	84		74	62	39	27	49	29	A-7-6(17)	CL
35-41	B2g	100	21	-	-	-	-	-	-	-	100	99	97	87		77	62	38	25	45	23	A-7-6(14)	CL
49-53	C2	102	20	-	-	-	-	-	-	-	100	99	98	89		79	66	39	26	44	23	A-7-6(14)	CL
STATE SYMBOL: 90 SOIL NAME: Okoboji Mucky Silt Loam REPORT NUMBER: AAD4-8404 - AAD4-8407 COUNTY: Boone, Iowa LOCATION: NW1/4 sec. 22, T.83N., R.25W. PARENT MATERIAL: Glacial Sediments																							
0-9	A11/12	57	57	-	-	-	-	-	-	-	100	98	96	90		78	61	32	20	87	14	A-7-5(11)	MH
14-24	A14/15	90	27	-	-	-	-	-	-	-	-	100	99	97		93	77	51	39	54	25	A-7-6(17)	MH/CH
27-42	B21/22	94	24	-	-	-	-	-	-	-	-	100	99	97		93	78	44	28	46	17	A-7-6(12)	ML
42-57	C-1g	103	20	-	-	-	-	-	-	100	99	99	97	89		84	69	40	28	40	17	A-6(11)	CL
STATE SYMBOL: 408 SOIL NAME: Olin Sandy Loam REPORT NUMBER: AAD0-11023 - AAD0-11025 COUNTY: Linn, Iowa LOCATION: SW1/4NE1/4 sec. 1, T.86N., R.7W. PARENT MATERIAL: Sandy Material & Glacial Clay																							
0-7	Ap	114	14	-	-	-	-	-	-	-	100	90	68	46		39	31	19	13	25	6	A-2-4(0)	SM
23-31	B21	123	11	-	-	-	-	-	-	-	100	86	56	34		29	23	14	11	17	3	A-2-4(0)	SM/SP
38-52	IIB3	119	12	-	-	-	-	-	100	99	98	89	73	49		48	36	27	24	28	13	A-6(4)	SC
STATE SYMBOL: 273 SOIL NAME: Olmitz Loam REPORT NUMBER: AAD7-2737 - AAD7-2739 COUNTY: Guthrie, Iowa LOCATION: NE1/4NE1/4 sec. 3, T.78N., R.32W. PARENT MATERIAL: Local Alluvium																							
7-14	A1	98	19	-	-	-	-	-	-	100	99	95	91	80		68	50	32	24	41	18	A-7-6(11)	CL/ML

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
32-41	B2	103	17	-	-	-	-	-	-	-	100	95	91	80	71	50	33	27	39	19	A-6(12)	CL
51-61	C	105	18	-	-	-	-	100	99	99	98	93	90	82	75	51	32	27	40	22	A-6(13)	CL
STATE SYMBOL: 146 SOIL NAME: Onawa Silty Clay REPORT NUMBER: AAD3-12825 - AAD3-12826 COUNTY: Woodbury, Iowa LOCATION: SW1/4 sec. 26, T.86N., R.47W. PARENT MATERIAL: Alluvium																						
7-14	C1	89	29	-	-	-	-	-	-	-	-	-	-	100	97	92	80	64	80	53	A-7-6(20)	CH
33-45	C6	100	20	-	-	-	-	-	-	-	-	-	-	100	81	37	18	11	37	15	A-6(10)	CL
STATE SYMBOL: 146 SOIL NAME: Onawa Silty Clay REPORT NUMBER: AAD3-12821 - AAD3-12822 COUNTY: Woodbury, Iowa LOCATION: SE1/4NE1/4 sec 24, T.88N., R.49W. PARENT MATERIAL: Alluvium																						
13-20	C2	97	22	-	-	-	-	-	-	-	-	-	100	98	87	69	46	35	52	29	A-7-6(18)	CH
20-40	C3	97	20	-	-	-	-	-	-	-	-	-	100	97	69	26	7	5	30	5	A-4(8)	ML
STATE SYMBOL: 489 SOIL NAME: Ossian Silt Loam REPORT NUMBER: AAD0-8394 - AAD0-8396 COUNTY: Winneshiek, Iowa LOCATION: SW1/4NW1/4 sec. 2, T.96N., R.7W. PARENT MATERIAL: Alluvium																						
7-17	C2	104	17	-	-	-	-	-	-	-	-	-	100	99	93	-	29	22	35	13	A-6(9)	ML-CL
29-40	B21b	104	17	-	-	-	-	-	-	-	100	99	99	99	93	-	39	32	43	22	A-7-6(13)	CL
47-64	B3b	106	17	-	-	-	-	-	-	-	-	-	100	99	91	-	34	29	41	22	A-7-6(13)	CL

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 394 SOIL NAME: Ostrander Loam REPORT NUMBER: AAD6-3384 - AAD6-3386																						
COUNTY: Linn, Iowa																						
LOCATION: Sec. 34, T.82N., R.8W.																						
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																						
0-8	A1p	106	16	-	-	-	-	-	-	-	100	95	85	71	64	41	24	18	30	10	A-4(7)	CL/ML
29-35	IIB21	112	15	-	-	-	-	-	-	100	99	90	78	57	50	43	29	26	34	19	A-6(8)	CL
55-74	IIC1	118	12	-	-	-	-	100	98	98	97	88	78	56	48	40	27	23	30	17	A-6(7)	CL
STATE SYMBOL: 281 SOIL NAME: Otley Silt Loam REPORT NUMBER: AAD9-10448 - AAD9-10450																						
COUNTY: Iowa, Iowa																						
LOCATION: NE1/4NE1/4 sec. 28, T.80N., R.10W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-13	A1	91	22	-	-	-	-	-	-	-	-	-	100	99	93	-	37	27	43	16	A-7-6(11)	CL
18-43	B21/B22	99	21	-	-	-	-	-	-	-	-	-	100	99	94	-	43	34	48	23	A-7-6(15)	CL
58-74	C1	103	19	-	-	-	-	-	-	-	-	-	-	100	92	-	32	26	42	20	A-7-6(12)	CL
STATE SYMBOL: 281 SOIL NAME: Otley Silty Clay Loam REPORT NUMBER: AAD2-285 - AAD2-287																						
COUNTY: Keokuk, Iowa																						
LOCATION: SW1/4NE1/4 sec. 34, T.77N., R.10W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-12	A1	94	18	-	-	-	-	-	-	-	-	-	100	99	92	66	37	28	43	19	A-7-6(12)	CL
17-32	B2	95	23	-	-	-	-	-	-	-	-	-	100	100	94	71	45	38	52	26	A-7-6(17)	CH
46-73	B3/C1	103	18	-	-	-	-	-	-	-	-	-	-	100	94	74	37	31	44	23	A-7-6(14)	CL
STATE SYMBOL: 288 SOIL NAME: Ottosen Clay Loam REPORT NUMBER: AAD6-3314 - AAD6-3316																						
COUNTY: Kossuth, Iowa																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: W1/2SE1/4 sec. 10, T.94N., R.29W. PARENT MATERIAL: Lacustrine Sediments over Glacial Till																							
0-9	Ap	93	25	-	-	-	-	-	-	-	100	98	93	80	71	58	33	21	42	16	A-7-6(11)	CL
26-30	B22	101	21	-	-	-	-	-	-	100	99	96	89	70	64	52	36	29	43	22	A-7-6(12)	CL
39-60	C	99	22	-	-	-	-	-	-	-	100	99	96	84	78	66	40	25	43	17	A-7-6(11)	CL
STATE SYMBOL: 221 SOIL NAME: Palms Muck REPORT NUMBER: AAD4-8390 - AAD4-8391 COUNTY: Boone, Iowa LOCATION: NW1/4SW1/4 sec. 6, T.85N., R.25W PARENT MATERIAL: Organic Material/Lacustrine Sediments																							
7-23	Oa2/3	41	84	-	-	-	-	-	-	-	-	100	92	82	66	40	16	10	64	6	A-5(12)	PT
35-56	A-11b	90	27	-	-	-	-	-	-	-	100	99	96	76	65	49	24	15	40	9	A-4(8)	ML
STATE SYMBOL: 131 SOIL NAME: Pershing Silt Loam REPORT NUMBER: AAD0-1617 - AAD0-1620 COUNTY: Monroe, Iowa LOCATION: SE1/4NE1/4 sec. 6, T.72N., R.18W. PARENT MATERIAL: Wisconsin Loess																							
0-8	Ap	99	20	-	-	-	-	-	-	-	-	100	99	98	91	61	30	20	36	12	A-6(9)	CL/ML
11-15	A22	100	20	-	-	-	-	-	-	-	-	100	99	98	91	68	34	24	35	13	A-6(9)	CL
21-27	B21t	92	24	-	-	-	-	-	-	-	-	-	-	100	96	77	53	45	58	33	A-7-6(20)	CH
45-53	B32t	97	22	-	-	-	-	-	-	-	-	-	100	99	95	73	45	39	54	32	A-7-6(19)	CH
STATE SYMBOL: 91 SOIL NAME: Primghar Silt Loam REPORT NUMBER: AAD9-10472 - AAD9-10474 COUNTY: Clay, Iowa LOCATION: NW1/4NE1/4 sec. 14, T.95N., R.38W. PARENT MATERIAL: Wisconsin Loess																							

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-7	A1p	86	27	-	-	-	-	-	-	-	-	100	99	98	92	-	42	31	54	21	A-7-5(15)	MH
21-30	B22	102	21	-	-	-	-	-	-	-	-	-	100	99	93	-	40	31	49	26	A-7-6(16)	CL
47-60	C	109	18	-	-	-	-	100	99	99	97	92	84	70	66	-	35	27	37	19	A-6(11)	CL

STATE SYMBOL: 91 SOIL NAME: Primghar Silty Clay Loam REPORT NUMBER: AAD4-3145 - AAD4-3147
COUNTY: O'Brien, Iowa
LOCATION: SE1/4 sec. 34, T.97N., R.40W.
PARENT MATERIAL: Wisconsin Loess

0-11	Ap/A12	94	24	-	-	-	-	-	-	-	-	-	100	99	89	64	43	34	48	21	A-7-6(14)	ML-CL
17-35	B21/B22	102	20	-	-	-	-	-	-	-	-	100	99	98	88	63	38	31	45	20	A-7-6(13)	ML-CL
49-60	IIC2	115	14	-	-	-	-	-	-	100	99	96	87	71	62	40	34	28	29	11	A-6(8)	CL

STATE SYMBOL: 798 SOIL NAME: Protivin Loam REPORT NUMBER: AAD4-11489 - AAD4-11491
COUNTY: Howard, Iowa
LOCATION: 1 1/2 miles west and 1 1/2 miles south of Davis Corner.
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age

0-8	A1	84	29	-	-	-	-	-	-	-	100	94	86	78	69	51	25	15	54	19	A-7-5(14)	MH
21-34	IIB21	114	14	-	-	-	-	-	-	100	99	88	80	64	57	47	35	29	38	22	A-6(11)	CL
44-52	IIB3	114	14	-	-	-	-	-	100	99	97	89	82	66	55	45	33	27	36	20	A-6(10)	CL

STATE SYMBOL: 532 SOIL NAME: Rathbun Silt Loam REPORT NUMBER: AAD0-1621 - AAD0-1624
COUNTY: Wayne, Iowa
LOCATION: SW1/4 sec. 19, T.67N., R.21W.
PARENT MATERIAL: Wisconsin Loess

0-4	A1	93	24	-	-	-	-	-	-	-	-	100	99	98	90	65	31	21	40	13	A-6(9)	ML
4-7	A21	103	19	-	-	-	-	-	-	-	-	100	99	98	92	66	33	24	31	9	A-4(8)	CL/ML

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
17-25	B21t	92	24	-	-	-	-	-	-	-	-	-	-	100	98	83	59	51	62	32	A-7-5(20)	CH/MH
54-63	B33t	99	23	-	-	-	-	-	-	-	-	-	100	99	95	73	40	32	46	23	A-7-6(14)	CL

STATE SYMBOL: 399 SOIL NAME: Readlyn Loam REPORT NUMBER: AAD1-1111 - AAD1-1113
COUNTY: Bremer, Iowa
LOCATION: SE1/4 sec. 34, T.93N.,R.11W.
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age

0-8	Ap	98	20	-	-	-	-	-	-	-	100	92	79	65	57	-	27	21	39	15	A-6(8)	ML-CL
30-37	B23	118	13	-	-	-	-	-	100	99	98	85	77	57	52	-	32	28	35	20	A-6(8)	CL
44-50	C1	122	11	-	-	-	100	99	99	99	97	87	78	58	55	-	28	24	29	15	A-6(7)	CL

STATE SYMBOL: 399 SOIL NAME: Readlyn Loam REPORT NUMBER: AAD1-1117 - AAD1-1119
COUNTY: Bremer, Iowa
LOCATION: NW1/4SW1/4 sec. 2, T.91N., R.12W.
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age

0-9	Ap	100	20	-	-	-	-	-	-	-	100	94	82	67	64	-	29	23	38	16	A-6(9)	CL
23-32	B22/B23	116	13	-	-	-	-	100	99	99	98	87	78	59	55	-	35	31	37	21	A-6(9)	CL
43-58	C1	121	11	-	-	-	-	-	100	99	97	87	80	61	54	-	30	25	30	16	A-6(8)	CL

STATE SYMBOL: 491 SOIL NAME: Renova Loam REPORT NUMBER: AAD4-11501 - AAD4-11503
COUNTY: Howard, Iowa
LOCATION: 5 miles west and 1 mile north of Protivin.
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age

1-10	A2	112	12	-	-	-	-	-	-	100	99	87	75	60	54	36	15	9	22	4	A-4(5)	ML-CL
14-26	IIB2	117	14	-	-	-	-	100	99	98	96	75	64	47	39	33	23	19	30	13	A-6(3)	SC
40-49	IIB32	116	14	-	-	-	-	-	100	99	97	73	63	45	37	30	21	16	31	14	A-6(3)	SC

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 784 SOIL NAME: Riceville Loam REPORT NUMBER: AAD4-11486 - AAD4-11488																						
COUNTY: Howard, Iowa																						
LOCATION: 1 mile west of Davis Corner.																						
PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																						
0-6	Ap	91	24	-	-	-	-	-	-	-	100	95	88	81	71	55	30	21	41	13	A-7-6(9)	ML
20-27	IIB21	112	16	-	-	-	-	-	-	100	99	85	76	61	53	45	36	30	40	22	A-6(10)	CL
42-48	IIB3	113	16	-	-	-	-	-	100	99	97	85	78	62	54	45	33	28	37	22	A-6(10)	CL
STATE SYMBOL: 977 SOIL NAME: Richwood Variant Silt Loam REPORT NUMBER: AAD6-3333 - AAD6-3336																						
COUNTY: Butler, Iowa																						
LOCATION: NW1/4SE1/4 sec. 34, T.92N., R.15W.																						
PARENT MATERIAL: Silty Sediments over Stratified Sediments																						
0-8	Ap	104	19	-	-	-	-	-	-	-	100	99	97	85	65	41	19	11	30	8	A-4(8)	ML/CL
14-21	B1	109	17	-	-	-	-	-	-	-	-	100	99	89	69	39	18	12	26	6	A-4(8)	CL-ML
21-43	B1/B3	107	18	-	-	-	-	-	-	-	-	-	100	95	81	42	17	12	32	9	A-4(8)	ML/CL
43-50	C1	99	22	-	-	-	-	-	-	-	-	100	99	98	95	69	27	15	42	14	A-7-6(10)	ML/CL
STATE SYMBOL: 214 SOIL NAME: Rockton Loam REPORT NUMBER: AAD5-Ia. 33-2-1 - AAD5-Ia. 33-2-2																						
COUNTY: Cerro Gordo, Iowa																						
LOCATION: NW1/4 sec. 27, T.97N., R.19W.																						
PARENT MATERIAL: Loamy Sediments over Limestone Bedrock																						
0-7	Ap	101	21	-	-	-	-	-	-	-	100	94	88	80	70	51	25	13	36	10	A-4(8)	ML/CL
13-23	IIB2t	111	16	-	-	-	-	-	-	-	100	93	85	71	60	40	21	15	28	8	A-4(7)	CL

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 274 SOIL NAME: Rolfe Silt Loam REPORT NUMBER: AAD3-3155 - AAD3-3157 COUNTY: Clay, Iowa LOCATION: SW1/4 sec. 3, T.69N., R.35W. PARENT MATERIAL: Alluvial Sediments/Calcareous Glacial Drift																						
0-9	Ap	92	26	-	-	-	-	-	-	-	100	95	92	84	75	55	31	20	45	15	A-7-5(11)	ML/CL
14-28	B21/22g	101	21	-	-	-	-	-	-	100	99	93	90	83	79	62	48	40	51	28	A-7-6(17)	CH
45-55	Cg	113	15	-	-	-	-	100	99	97	95	87	80	62	52	39	29	22	36	17	A-6(8)	CL
STATE SYMBOL: 805 SOIL NAME: Roseville Silt Loam REPORT NUMBER: AAD4-3154 - AAD4-3156 COUNTY: Mitchell, Iowa LOCATION: SE corner of SW1/4 NW1/4 sec. 34, T100N., R18W. PARENT MATERIAL: Loamy Glacial Sediment																						
0-9	A1/A2	96	22	-	-	-	-	-	-	-	-	100	97	90	50	29	10	5	44	10	A-5(9)	ML
9-21	B1/B21t	112	16	-	-	-	-	-	-	100	99	97	95	91	76	48	27	18	27	8	A-4(8)	CL-ML
25-40	IIB3t	112	15	-	-	-	-	-	100	99	98	93	85	67	52	42	29	26	33	18	A-6(10)	CL
STATE SYMBOL: 613 SOIL NAME: Rossfield Silty Clay Loam REPORT NUMBER: AAD4-3151 - AAD4-3153 COUNTY: Cerro Gordo, Iowa LOCATION: NW corner of SW1/4 sec. 31, T.97N., R.20W. PARENT MATERIAL: Sediments over Arenaceous Limestone																						
9-13	A12	101	21	-	-	-	-	-	-	-	100	97	93	85	77	58	31	22	39	12	A-8(9)	ML-CL
19-29	B2	98	22	-	-	-	-	-	-	-	100	96	88	73	66	54	37	30	39	17	A-4(8)	CL
29-60	IIC	126	11	-	-	-	-	-	-	-	-	100	99	77	39	26	16	14	23	3	A-4(8)	SM-SC
STATE SYMBOL: 74 SOIL NAME: Rubio Silt Loam REPORT NUMBER: AAD3-3164 - AAD3-3166 COUNTY: Keokuk, Iowa																						

				Mechanical analysis																			
				Percentage passing sieve												Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm		.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: Sec. 24, T.76N., R.11W PARENT MATERIAL: Wisconsin Loess																							
0-8	Ap	103	20	-	-	-	-	-	-	-	-	100	99	98		93	67	21	16	33	10	A-2-4(8)	ML-CL
18-30	B21/B22	94	24	-	-	-	-	-	-	-	-	-	100	99		95	63	51	43	53	28	A-7-6(18)	CH
46-53	B3tg	102	20	-	-	-	-	-	-	-	-	-	100	99		94	65	42	33	48	26	A-7-6(16)	CL
STATE SYMBOL: 77 SOIL NAME: Sac Silty Clay Loam REPORT NUMBER: AAD9-10475 - AAD9-10477 COUNTY: Clay, Iowa LOCATION: NE1/4SE1/4 sec. 16, T.95N., R.38W. PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age																							
0-7	Ap	89	26	-	-	-	-	-	-	-	100	99	99	97		89	-	40	31	48	18	A-7-5(13)	ML
11-18	B1	93	24	-	-	-	-	-	-	-	100	99	98	96		92	-	41	33	48	21	A-7-6(14)	ML-CL
44-57	Cca	108	18	-	-	-	100	99	98	97	94	89	86	76		71	-	40	31	43	23	A-7-6(14)	CL
STATE SYMBOL: 77B SOIL NAME: Sac Silty Clay Loam REPORT NUMBER: AAD4-3139 - AAD4-3141 COUNTY: O'Brien, Iowa LOCATION: NW1/4 sec. 16, T.97N., R.41W. PARENT MATERIAL: Wisconsin Loess/Glacial Till of Kansan and Nebraskan Age																							
0-7	Ap	95	24	-	-	-	-	-	-	-	-	100	99	97		89	60	39	30	47	21	A-7-6(14)	ML-CL
18-25	B22	102	20	-	-	-	-	-	-	-	-	100	99	99		87	58	38	29	42	20	A-7-6(12)	ML-CL
36-60	IIC	106	18	-	-	-	-	-	-	100	99	97	92	75		66	55	36	25	30	13	A-6(9)	CL
STATE SYMBOL: 73E SOIL NAME: Salida Sandy Loam REPORT NUMBER: AAD6-3273 - AAD6-3275 COUNTY: O'Brien, Iowa LOCATION: NE1/4 sec. 9, T.96N., T.41W. PARENT MATERIAL: Glacial Sediment and Outwash																							

				Mechanical analysis																	
				Percentage passing sieve										Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-6	A	126	10	-	100	98	92	87	75	63	55	43	36	28	23	14	5	3	27	1	A-2-4(0)	SM
9-12	B	133	9	100	91	84	83	79	67	55	51	39	32	24	20	13	5	3	23	2	A-2-4(0)	SM
12-22	C	102	18	-	100	96	92	86	79	74	71	62	55	46	20	13	5	3	56	9	A-5(3)	SM
STATE SYMBOL: 237 SOIL NAME: Sarpy Loamy Fine Sand REPORT NUMBER: 88195 COUNTY: Monona, Iowa LOCATION: 270 yd. E of middle sec. 11, T.83N., R.46W. PARENT MATERIAL: Alluvium																					
14-28	C	113	12	-	-	-	-	-	-	-	-	100	91	35	30	19	8	6	NP	NP	A-2-4(0)	SM
STATE SYMBOL: 177 SOIL NAME: Saude Loam REPORT NUMBER: AAD4-3160 - AAD4-3162 COUNTY: Howard, Iowa LOCATION: SW corner of sec. 14, T.98N., R.14W.. PARENT MATERIAL: Loamy Sediments over Sand and Gravel																					
0-8	Ap	106	18	-	-	-	-	-	-	100	99	91	80	62	56	42	23	15	32	9	A-4(5)	ML-CL
17-24	B2	120	12	-	-	-	-	100	98	96	92	83	60	53	43	32	18	15	24	8	A-4(4)	CL
43-60	IIC2	126	9	-	-	-	100	96	87	78	67	34	19	7	4	2	2	2	N.	P.	A-1-b(0)	SW-SC
STATE SYMBOL: 778 SOIL NAME: Sattre Loam REPORT NUMBER: AAD4-3136 - AAD4-3138 COUNTY: Bremer, Iowa LOCATION: SW1/4 sec. 32, T.92N., R.11W. PARENT MATERIAL: Loamy Sediments over Sand and Gravel																					
0-8	Ap	106	18	-	-	-	-	-	-	-	100	92	88	57	50	40	22	14	34	10	A-4(4)	ML-CL
17-26	B21	113	15	-	-	-	-	-	-	-	100	97	86	62	49	37	22	15	24	6	A-4(5)	CL-ML
37-50	IIC1	108	13	-	-	-	-	-	-	-	100	37	13	4	2	2	1	1	N.	P.	A-1-b(0)	SW

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 312 SOIL NAME: Seymour Silt Loam REPORT NUMBER: AAD9-7493 - AAD9-7495																						
COUNTY: Wayne, Iowa																						
LOCATION: NW1/4 sec. 24, T.70N., R.23W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-8	A1p	95	22	-	-	-	-	-	-	-	-	100	99	98	92	-	37	26	45	18	A-7-6(12)	ML-CL
20-25	B22	94	25	-	-	-	-	-	-	-	-	-	100	99	96	-	52	43	63	35	A-7-6(20)	CH
39-52	C2	108	18	-	-	-	-	-	-	-	-	-	100	99	96	-	42	34	53	31	A-7-6(19)	CH
STATE SYMBOL: 312 SOIL NAME: Seymour Silt Loam REPORT NUMBER: AAD8-10300 - AAD8-10302																						
COUNTY: Van Buren, Iowa																						
LOCATION: SW1/4SW1/4 sec. 17, T.68N., R.9W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-8	A1	96	22	-	-	-	-	-	-	-	-	100	99	97	93	-	32	23	38	13	A-6(9)	ML-CL
19-27	B22	89	24	-	-	-	-	-	-	-	-	-	100	99	98	-	59	50	64	36	A-7-6(20)	CH
52-62	C2	103	19	-	-	-	-	-	-	-	-	100	99	98	97	-	41	32	44	24	A-7-6(14)	CL
STATE SYMBOL: 370 SOIL NAME: Sharpsburg Silt Loam REPORT NUMBER: S30903 - S30905																						
COUNTY: Adair, Iowa																						
LOCATION: SW1/4 sec. 15, T.77N., R.33W.																						
PARENT MATERIAL: Wisconsin Loess																						
2-10	A1p/A3	94	22	-	-	-	-	-	-	-	-	-	100	99	96	74	39	32	48	19	A-7-6(13)	ML-CL
20-32	B	98	21	-	-	-	-	-	-	-	-	-	-	100	97	75	42	35	51	22	A-7-6(15)	MH-CH
38-48	C1	104	20	-	-	-	-	-	-	-	-	-	-	100	98	75	37	31	47	23	A-7-6(15)	CL
STATE SYMBOL: 370 SOIL NAME: Sharpsburg Silty Clay Loam REPORT NUMBER: S30912 - S30914																						
COUNTY: Madison, Iowa																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: NE1/4 sec. 4, T.74N., R.27W. PARENT MATERIAL: Wisconsin Loess																						
0-8	A1p	98	20	-	-	-	-	-	-	-	-	-	100	99	98	77	46	39	40	14	A-6(10)	ML-CL
16-30	B1/B2	98	22	-	-	-	-	-	-	-	-	-	-	100	98	80	48	41	55	29	A-7-6(19)	CH
38-44	C1	104	21	-	-	-	-	-	-	-	-	-	-	100	99	81	43	35	46	21	A-7-6(14)	ML-CL
STATE SYMBOL: 370 SOIL NAME: Sharpsburg Silt Loam REPORT NUMBER: S30909 - S30911 COUNTY: Madison, Iowa LOCATION: SW1/4 sec. 2, T.76N., R.29W. PARENT MATERIAL: Wisconsin Loess																						
0-8	A1p	96	22	-	-	-	-	-	-	-	-	-	100	99	97	72	44	37	44	17	A-7-6(12)	ML-CL
16-30	B21/B22	97	22	-	-	-	-	-	-	-	-	-	-	100	97	75	47	39	56	28	A-7-6(18)	MH-CL
38-44	C1	104	20	-	-	-	-	-	-	-	-	-	-	100	98	76	42	35	49	25	A-7-6(16)	CL
STATE SYMBOL: 24 SOIL NAME: Shelby Loam REPORT NUMBER: AAD8-10287 - AAD8-10289 COUNTY: Van Buren, Iowa LOCATION: NE1/4NW1/4 sec. 5, T.67N., R.11W. PARENT MATERIAL: Kansan Glacial Till																						
0-5	A1p	111	15	-	-	-	-	-	100	99	99	92	81	52	41	-	19	14	27	9	A-4(3)	CL
17-23	B22	106	17	-	-	-	-	-	-	100	99	92	85	64	59	-	39	33	39	19	A-6(9)	CL
42-54	C2	112	16	-	-	-	-	-	100	99	99	88	80	60	54	-	33	28	37	21	A-6(9)	CL
STATE SYMBOL: 24 SOIL NAME: Shelby Loam REPORT NUMBER: AAD9-914 - AAD9-916 COUNTY: Adams, Iowa LOCATION: SW1/4NW1/4NW1/4 sec. 20, T.72N., R.32W. PARENT MATERIAL: Kansan Glacial Till																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-11	A1p/A3	99	19	-	-	-	-	-	100	99	98	93	85	61	54	-	31	24	37	16	A-6(8)	CL
16-43	B21/B22	108	16	-	-	-	-	100	98	97	95	87	79	61	57	-	36	30	39	20	A-6(9)	CL
43-52	Cca	113	15	-	100	99	99	98	98	97	96	89	83	66	59	-	36	30	39	23	A-6(11)	CL

STATE SYMBOL: 24E2 SOIL NAME: Shelby Loam REPORT NUMBER: AAD6-4005 - AAD6-4007
COUNTY: Carroll, Iowa
LOCATION: NE corner sec.4, T.82N., R.34W.
PARENT MATERIAL: Kansan Glacial Till

0-7	Ap	107	18	-	-	-	-	-	100	97	96	92	83	60	54	41	27	20	37	15	A-6(7)	CL
10-20	B22t	106	18	-	-	-	-	-	100	99	99	94	88	67	62	51	34	26	38	18	A-6(10)	CL
26-36	C2ca	112	16	-	-	-	-	-	100	99	98	95	89	69	64	53	35	26	40	23	A-6(12)	CL

STATE SYMBOL: 785 SOIL NAME: Spillco Loam REPORT NUMBER: AAD4-3157 - AAD4-3159
COUNTY: Lyon, Iowa
LOCATION: NE corner of sec. 9, T.99N., R.45W.
PARENT MATERIAL: Alluvium

0-13	Ap/A12	100	21	-	-	-	-	-	-	100	99	98	93	76	63	40	21	15	37	13	A-6(9)	ML-CL
23-38	A14/A15	114	15	-	-	-	-	-	-	100	99	97	91	57	42	27	16	11	28	11	A-6(5)	CL
50-60	C	116	14	-	-	-	-	-	-	-	-	100	98	74	53	33	19	15	30	13	A-6(9)	CL

STATE SYMBOL: 457 SOIL NAME: Spillville, Calcareous Variant REPORT NUMBER: AAD5-Ia. 12-2-1 - AAD5-Ia. 12-2-4
COUNTY: Butler, Iowa
LOCATION: NE1/4 sec. 29, T.93N., R.16W.
PARENT MATERIAL: Loamy Alluvial Sediments

0-8	Ap	99	22	-	-	-	-	-	-	-	100	99	94	73	58	43	22	13	40	13	A-6(9)	ML/CL
18-36	A13	91	26	-	-	-	-	-	-	-	-	100	99	85	72	47	18	9	48	16	A-7-5(12)	ML

				Mechanical analysis																	
				Percentage passing sieve											Percentage smaller than						
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
36-49	A14	88	28	-	-	-	-	-	-	-	100	98	97	89	76	51	24	12	51	17	A-7-5(13)	MH
56-63	A16	97	23	-	-	-	-	-	-	-	100	98	97	84	72	50	25	14	46	21	A-7-6(14)	CL/ML
STATE SYMBOL: 485 SOIL NAME: Spillville Loam REPORT NUMBER: AAD1-6997 - AAD1-6998																					
COUNTY: Bremer, Iowa																					
LOCATION: SW1/4 sec. 4, T.91N., R.12W.																					
PARENT MATERIAL: Loamy Alluvial Sediments																					
0-12	A11/A12	87	27	-	-	-	-	-	-	-	100	95	89	72	63	-	24	16	54	20	A-7-5(14)	MH
36-47	A15	96	18	-	-	-	-	-	-	100	99	94	90	68	57	-	28	23	38	18	A-6(10)	CL
STATE SYMBOL: 485 SOIL NAME: Spillville Loam REPORT NUMBER: AAD0-1625 - AAD0-1627																					
COUNTY: Winneshiek, Iowa																					
LOCATION: NW1/4NE1/4 sec. 11, T.97N., R.10W.																					
PARENT MATERIAL: Loamy Alluvial Sediments																					
0-20	A11	93	22	-	-	-	-	-	-	-	100	99	88	59	50	33	15	11	38	9	A-4(5)	ML
36-54	A13	106	17	-	-	-	-	-	-	-	100	98	90	61	51	39	25	19	29	10	A-4(5)	CL
54-60	C	121	12	-	-	-	-	-	-	-	100	98	74	40	31	24	17	13	20	5	A-4(1)	SM
STATE SYMBOL: 33 SOIL NAME: Steinauer Loam REPORT NUMBER: 88196																					
COUNTY: Monona, Iowa																					
LOCATION: Middle N. side of sec. 26, T.85N., R.44W.																					
PARENT MATERIAL: Calcareous Glacial Till of Kansan & Nebraskan Age																					
24-30	C	113	16	-	-	-	-	-	100	99	98	92	85	72	69	59	39	32	41	24	A-7-6(13)	CL
STATE SYMBOL: 33 SOIL NAME: Steinauer Light Clay Loam REPORT NUMBER: AAD3-12828																					

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Woodbury, Iowa LOCATION: NW1/4 sec. 12, T.89N., R.42W. PARENT MATERIAL: Calcareous Glacial Till of Kansan & Nebraskan Age																							
19-32	C3	115	16	-	-	-	-	-	-	100	98	93	90	76	65	52	39	29	38	23	A-6(13)	CL
STATE SYMBOL: 62D SOIL NAME: Storden Loam REPORT NUMBER: AAD6-3282 - AAD6-3283 COUNTY: Calhoun, Iowa LOCATION: SW1/4SW1/4 sec. 17, T.86N., R.32W. PARENT MATERIAL: Calcareous Loam Till																							
3-6	Ap2	97	23	-	-	-	-	-	100	99	98	94	84	58	49	36	22	15	30	12	A-6(5)	CL
18-38	C2	123	12	-	-	-	-	100	97	95	94	87	79	57	49	27	23	15	26	12	A-6(5)	CL
STATE SYMBOL: 62D SOIL NAME: Storden Loam REPORT NUMBER: AAD6-3297 - AAD6-3298 COUNTY: Kossuth, Iowa LOCATION: NW1/4SW1/4 sec. 35, T96N., R.29W. PARENT MATERIAL: Calcareous Loam Till																							
0-6	Ap	105	18	-	-	-	-	-	100	99	96	91	81	58	50	37	21	12	40	13	A-6(6)	ML/CL
6-13	C1	108	17	-	-	-	-	100	98	97	95	94	87	63	53	39	23	14	34	14	A-6(7)	CL
STATE SYMBOL: 62E SOIL NAME: Storden Loam REPORT NUMBER: AAD7-2734 - AAD7-2736 COUNTY: Guthrie, Iowa LOCATION: NW1/4NW1/4 sec. 5, T.81N., R.30W. PARENT MATERIAL: Calcareous Loam Till																							
0-5	A11	103	16	-	-	-	-	-	100	98	94	83	74	52	42	30	17	11	39	15	A-6(5)	ML-CL
9-19	C1	112	12	-	100	99	98	97	96	94	92	82	76	58	47	36	23	15	33	16	A-6(7)	CL

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
39-52	C4	117	13	-	-	-	-	-	100	98	94	86	80	63	56	38	22	15	28	13	A-6(7)	CL

STATE SYMBOL: 279 SOIL NAME: Taintor Silty Clay Loam REPORT NUMBER: AAD2-279 - AAD2-281
COUNTY: Koekuk, Iowa
LOCATION: SE1/4SW1/4 sec. 27, T.77N., R.10W.
PARENT MATERIAL: Wisconsin Loess

0-6	Ap	91	25	-	-	-	-	-	-	-	-	-	100	99	92	72	44	36	56	29	A-7-6(19)	CH
22-20	B21	100	21	-	-	-	-	-	-	-	-	-	100	99	95	75	48	40	62	39	A-7-6(20)	CH
40-50	B32	105	17	-	-	-	-	-	-	-	-	-	-	100	92	65	37	31	49	29	A-7-6(17)	CL

STATE SYMBOL: 279 SOIL NAME: Taintor Silty Clay Loam REPORT NUMBER: AAD9-10454 - AAD9-10456
COUNTY: Iowa, Iowa
LOCATION: SW1/4SE1/4 sec. 21, T.80N., R.10W.
PARENT MATERIAL: Wisconsin Loess

0-16	A1	90	27	-	-	-	-	-	-	-	-	-	100	99	91	-	40	31	47	19	A-7-6(13)	ML-CL
25-36	B2	99	21	-	-	-	-	-	-	-	-	-	100	99	94	-	48	40	59	35	A-7-6(20)	CH
47-65	C1	105	18	-	-	-	-	-	-	-	-	-	-	100	91	-	32	25	41	20	A-7-6(12)	CL

STATE SYMBOL: 559 SOIL NAME: Talcot Clay Loam REPORT NUMBER: AAD6-3291 - AAD6-3293
COUNTY: Calhoun, Iowa
LOCATION: NE corner of SW1/4 sec. 9, T.87N., R.34W.
PARENT MATERIAL: Glacial Sediment

7-11	A1	98	22	-	-	-	-	-	-	-	100	96	86	75	70	54	33	23	47	23	A-7-6(15)	CL/CH
21-27	B21g	113	22	-	-	-	-	100	99	99	97	90	75	60	56	46	31	24	39	22	A-6(10)	CL
39-48	IIC1g	117	13	-	-	-	-	-	100	98	93	60	42	29	26	20	12	8	36	16	A-2-6(1)	SC

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 120 SOIL NAME: Tama Silt Loam REPORT NUMBER: AAD5-Ia. 23-1-1 - AAD5-Ia. 23-1-3 COUNTY: Clinton, Iowa LOCATION: SE corner of sec. 35, T.81N., R.5E. PARENT MATERIAL: Wisconsin Loess																							
0-8	Ap	90	27	-	-	-	-	-	-	-	-	100	99	98	84	52	22	13	46	15	A-7-5(11)	ML
27-34	B22t	100	21	-	-	-	-	-	-	-	-	-	100	99	87	52	27	19	33	11	A-6(10)	ML/CL
54-64	C	107	18	-	-	-	-	-	-	-	-	-	100	99	87	52	27	19	33	11	A-6(8)	CL
STATE SYMBOL: 120 SOIL NAME: Tama Silt Loam REPORT NUMBER: AAD6-3399 - AAD6-3401 COUNTY: Johnson, Iowa LOCATION: NE1/4SE1/4 sec. 15, T.79N., R.5W. PARENT MATERIAL: Wisconsin Loess																							
0-8	Ap	90	25	-	-	-	-	-	-	-	-	-	100	99	92	54	32	26	40	15	A-6(10)	ML-CL
28-37	B23t	96	20	-	-	-	-	-	-	-	-	-	100	99	91	64	41	33	46	20	A-7-6(16)	ML-CL
63-75	C1	102	18	-	-	-	-	-	-	-	-	-	-	100	88	62	35	26	39	19	A-6(12)	CL
STATE SYMBOL: 27 SOIL NAME: Terril Loam REPORT NUMBER: AAD0-1628 - AAD0-1630 COUNTY: Humboldt, Iowa LOCATION: SW1/4 sec. 20, T.91N., R.28W. PARENT MATERIAL: Local Alluvium																							
8-15	A12	110	16	-	-	-	-	-	-	100	99	89	79	54	38	29	17	12	30	10	A-4(4)	CL
31-38	B1	113	15	-	-	-	-	-	100	99	99	90	80	57	42	33	21	17	27	11	A-6(5)	CL
44-60	B3	115	15	-	-	-	-	-	100	99	99	87	78	54	43	30	20	17	27	9	A-4(4)	CL
STATE SYMBOL: 27C SOIL NAME: Terril Loam REPORT NUMBER: AAD6-3284 - AAD6-3286 COUNTY: Calhoun, Iowa																							

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
LOCATION: NE corner of sec. 33, T.87N., R.33W. PARENT MATERIAL: Local Alluvium																						
6-12	A12	101	21	-	-	-	-	100	99	99	99	95	88	68	59	44	22	14	38	15	A-6(9)	ML/CL
30-41	B21	104	19	-	-	-	-	-	-	-	100	97	92	82	45	59	35	26	38	17	A-6(11)	CL
53-60	B3	114	15	-	-	-	-	-	-	100	99	91	82	55	45	35	24	19	29	13	A-6(5)	CL
STATE SYMBOL: 695 SOIL NAME: Tilfer Silty Clay Loam REPORT NUMBER: AAD4-3122 - AAD4-3123 COUNTY: Worth, Iowa LOCATION: SW corner of sec. 36, T.99N., R.20W. PARENT MATERIAL: Alluvium																						
0-8	Ap	75	34	-	-	-	-	-	-	-	100	99	98	82	69	50	26	17	70	19	A-7-5(14)	MH
19-27	B2g	114	13	-	-	-	-	-	-	-	-	-	100	59	39	24	15	11	25	6	A-4(5)	CL-ML
STATE SYMBOL: 398 SOIL NAME: Tripoli Clay Loam REPORT NUMBER: AAD1-6994 - AAD1-6996 COUNTY: Bremer, Iowa LOCATION: SW1/4 sec. 35, T.93N., R.13W. PARENT MATERIAL: Glacial Till of Kansan & Nebraskan Age																						
0-9	Ap	98	20	-	-	-	-	-	-	-	100	91	80	64	56	-	29	28	39	18	A-6(9)	CL
29-38	B22	117	12	-	-	-	-	-	-	100	99	89	81	61	56	-	34	28	35	20	A-6(9)	CL
38-66	C	118	12	-	100	99	99	99	97	96	94	86	79	62	54	-	31	25	32	17	A-6(8)	CL
STATE SYMBOL: 339 SOIL NAME: Truman Silt Loam REPORT NUMBER: AAD6-3377 - AAD6-3379 COUNTY: Palo Alto, Iowa LOCATION: NW1/4 sec. 33, T.97N., R.32W. PARENT MATERIAL: Calcareous Silts																						

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
8-15	A1	92	25	-	-	-	-	-	-	-	100	99	97	85	74	53	31	23	43	17	A-7-6(11)	ML-CL
24-33	B21	100	21	-	-	-	-	-	-	-	-	-	100	95	83	53	31	25	40	19	A-6(12)	CL
54-66	C	104	17	-	-	-	-	-	-	-	-	100	98	43	23	13	6	4	22	1	A-4(2)	SM
STATE SYMBOL: 453 SOIL NAME: Tuskeego Silt Loam REPORT NUMBER: AAD9-1018 - AAD9-1020 COUNTY: Appanoose, Iowa LOCATION: NE1/4SW1/4 sec. 1, T.68N, R.17W. PARENT MATERIAL: Alluvium																						
0-9	Ap	98	18	-	-	-	-	-	-	-	-	100	99	96	86	60	27	18	32	10	A-4(8)	ML-CL
30-35	B22tg	93	23	-	-	-	-	-	-	-	-	-	100	99	93	81	54	46	58	33	A-7-6(20)	CH
41-51	B3tg	94	23	-	-	-	-	-	-	-	-	-	100	99	94	78	52	45	61	37	A-7-6(20)	CH
STATE SYMBOL: 51 SOIL NAME: Vesser Silt Loam REPORT NUMBER: AAD2-2688 - AAD2-2691 COUNTY: Wayne, Iowa LOCATION: SE1/4 sec. 5, T.69N., R.21W. PARENT MATERIAL: Silty Alluvium																						
0-8	Ap	99	20	-	-	-	-	-	-	-	-	100	99	97	93	74	41	31	40	17	A-6(11)	CL/ML
12-20	A21	103	19	-	-	-	-	-	-	-	-	100	99	94	90	71	34	23	37	15	A-6(10)	CL
31-37	B21tg	104	18	-	-	-	-	-	-	-	-	100	98	92	87	71	44	34	41	22	A-7-6(13)	CL
46-60	B31tg	111	15	-	-	-	-	-	-	-	-	100	97	75	72	46	35	28	35	19	A-6(12)	CL
STATE SYMBOL: 248 SOIL NAME: Wabash Silty Clay Loam REPORT NUMBER: AAD9-917 - AAD9-918 COUNTY: Adams, Iowa LOCATION: NE1/4NE1/4 sec. 11, T.71N., R.35W. PARENT MATERIAL: Alluvium																						
0-13	A	91	25	-	-	-	-	-	-	-	-	-	100	99	96	-	43	32	46	20	A-7-6(13)	ML-CL

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
20-48	C	89	27	-	-	-	-	-	-	-	-	-	100	98	96	-	63	53	68	40	A-7-6(20)	CH

STATE SYMBOL: 248 SOIL NAME: Wabash Silty Clay Loam REPORT NUMBER: AAD9-10444 - AAD9-10446
COUNTY: Iowa, Iowa
LOCATION: SE1/4SE1/4 sec. 26, T.78N., R.10W.
PARENT MATERIAL: Alluvium

0-14	A11/A12	87	28	-	-	-	-	-	-	-	-	-	100	99	95	-	63	49	69	35	A-7-5(20)	MH-CH
24-39	B21g	99	19	-	-	-	-	-	-	-	-	-	100	99	97	-	63	51	67	41	A-7-6(20)	CH
57-72	B3g/C1	96	24	-	-	-	-	-	-	-	-	-	-	100	98	-	75	60	83	53	A-7-5(20)	CH

STATE SYMBOL: 172 SOIL NAME: Wabash Silty Clay REPORT NUMBER: AAD1-12039
COUNTY: Cass, Iowa
LOCATION: SE1/4NW1/4 sec. 13, T.77N., R.36W.
PARENT MATERIAL: Alluvium

15-48	A3/B1/B	95	23	-	-	-	-	-	-	-	-	-	100	98	93	59	48	37	68	42	A-7-6(20)	CH

STATE SYMBOL: 506 SOIL NAME: Wacousta Silt Loam REPORT NUMBER: AAD0-1631 - AAD0-1633
COUNTY: Humboldt, Iowa
LOCATION: SW1/4 sec. 25, T.93N., R.30W.
PARENT MATERIAL: Lacustrine Sediments

0-9	Ap	82	31	-	-	-	-	-	-	-	100	99	97	89	77	60	36	26	55	20	A-7-5(15)	MH
16-28	C1g	96	24	-	-	-	-	-	-	-	100	99	99	95	85	68	38	25	48	23	A-7-6(15)	ML-CL
28-42	C2g	98	22	-	-	-	-	-	-	-	-	100	99	96	87	69	34	21	40	13	A-6(9)	ML-CL

STATE SYMBOL: 506 SOIL NAME: Wacousta Silt Loam REPORT NUMBER: AAD6-4022 - AAD6-4024

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Franklin, Iowa LOCATION: SW1/4SW1/4 sec. 17, T.93N., R.22W. PARENT MATERIAL: Lacustrine Sediments																						
0-14	A12	56	14	-	-	-	-	-	-	-	100	98	95	89	79	58	26	14	56	14	A-7-5(13)	MH
14-40	C1g	99	22	-	-	-	-	-	-	-	100	98	98	98	95	76	41	28	49	24	A-7-6(15)	CL
40-70	C2g	104	19	-	-	-	-	-	-	-	100	99	98	98	93	71	38	26	44	20	A-7-6(13)	CL
STATE SYMBOL: 108 SOIL NAME: Wadena Loam REPORT NUMBER: AAD9-10466 - AAD9-10468 COUNTY: Clay, Iowa LOCATION: SW1/4 sec. 9, T.96N., R.37W. PARENT MATERIAL: Loamy Alluvium over Sand and Gravel																						
0-8	Ap	102	19	-	-	-	-	-	-	100	99	84	73	62	55	-	23	16	37	12	A-6(6)	ML-CL
15-22	B21	112	15	-	-	-	-	-	100	99	97	77	62	47	43	-	23	19	36	16	A-6(4)	SC
35-55	C	123	12	-	-	-	100	99	92	83	72	26	13	5	4	-	1	.5	NP	NP	A-1-b(0)	SP-SM
STATE SYMBOL: 777 SOIL NAME: Wapsie Loam REPORT NUMBER: AAD4-3163 - AAD4-3165 COUNTY: Howard, Iowa LOCATION: SE corner of NW1/4 sec. 31, T.98N., R.12W. PARENT MATERIAL: Loamy Alluvium over Sand and Gravel																						
0-8	Ap	109	17	-	-	-	-	-	-	-	100	89	76	56	47	35	15	9	26	6	A-4(4)	CL-ML
16-21	B21t	124	10	-	-	-	-	-	-	100	99	83	66	40	31	25	15	11	20	6	A-4(1)	CL-ML
38-45	IIC1	115	11	-	100	94	93	92	90	88	55	33	7	3	2	2	2	N.	P.	0)	SW-SC	
STATE SYMBOL: 687 SOIL NAME: Watkins Silt Loam REPORT NUMBER: AAD0-1634 - AAD0-1636 COUNTY: Iowa, Iowa LOCATION: NE1/4NW1/4 sec. 33, T.81N., R.10W.																						

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve: 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than: .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Silty Alluvium																						
0-7	Ap	106	16	-	-	-	-	-	-	-	-	-	100	91	75	43	19	12	29	7	A-4(8)	CL-ML
18-29	B21t	107	16	-	-	-	-	-	-	-	-	100	99	93	82	52	32	26	35	12	A-6(8)	CL/ML
35-52	B3t	102	19	-	-	-	-	-	-	-	-	-	100	94	81	53	30	25	37	16	A-6(10)	CL
STATE SYMBOL: 178 SOIL NAME: Waukee Loam REPORT NUMBER: AAD2-2675 - ADD2-2677 COUNTY: Howard, Iowa LOCATION: SE1/4 sec. 35, T.98N., R.14W. PARENT MATERIAL: Loamy Alluvium over Sand and Gravel																						
0-8	Ap	102	19	-	-	-	-	-	-	-	100	85	77	64	56	42	20	10	35	10	A-4(6)	CL/ML
20-35	B21	122	10	-	-	-	-	-	-	100	98	65	56	41	37	25	15	10	23	6	A-4(1)	SM-SC
44-66	IIC	131	8	-	-	-	100	97	93	89	67	25	20	9	8	5	3	2	19	4	A-1-b(0)	SP-SM
STATE SYMBOL: 178 SOIL NAME: Waukee Loam REPORT NUMBER: AAD1-7002 - AAD1-7004 COUNTY: Bremer, Iowa LOCATION: SE1/4NW1/4 sec. 7, T.93N., R.14W. PARENT MATERIAL: Loamy Alluvium over Sand and Gravel																						
0-9	A1	102	17	-	-	-	-	-	-	100	98	85	76	66	60	-	26	18	40	17	A-6(9)	CL
13-24	B2	103	17	-	-	-	-	-	100	98	94	83	76	65	61	-	29	22	37	15	A-6(8)	CL
28-44	C2	124	9	-	-	-	100	98	92	84	72	23	12	4	3	-	2	2	NP	NP	A-1-b(0)	SW
STATE SYMBOL: 107 SOIL NAME: Webster Silty Clay Loam REPORT NUMBER: AAD6-3311 - AAD6-3313 COUNTY: Kossuth, Iowa LOCATION: NE1/4 sec. 13, T.97N., R.30W. PARENT MATERIAL: Sediments over Glacial Till																						

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
0-8	Ap	95	24	-	-	-	-	-	-	-	100	99	94	74	63	50	33	22	47	21	A-7-6(14)	CL
23-29	B2g	108	17	-	-	-	-	-	-	100	99	97	91	66	60	47	32	24	40	23	A-7-6(11)	CL
38-60	C	99	22	-	-	-	-	-	-	100	99	98	95	81	71	57	34	21	39	18	A-7-6(11)	CL
STATE SYMBOL: 107 SOIL NAME: Webster Silty Clay Loam REPORT NUMBER : AAD6-10379 - AAD6-10381 COUNTY: Webster, Iowa LOCATION: NE1/4 sec. 4, T.87N., R.28W. PARENT MATERIAL: Sediments over Glacial Till																						
7-13	A12	95	21	-	-	-	-	-	-	-	100	95	90	78	74	58	41	33	56	30	A-7-6(19)	CH/MH
24-30	B2g	107	17	-	-	-	-	-	100	99	97	89	83	67	63	50	35	29	45	28	A-7-6(14)	CL
50-65	C2g	111	17	-	-	-	100	99	97	95	92	78	72	54	47	35	23	19	34	19	A-6(7)	CL
STATE SYMBOL: 132 SOIL NAME: Weller Silt Loam REPORT NUMBER: S-32195 - S-32197 COUNTY: Jefferson, Iowa LOCATION: SW1/4 sec. 22, T.71N., R.9W. PARENT MATERIAL: Wisconsin Loess																						
0-5	A1	92	22	-	-	-	-	-	-	-	100	99	98	97	96	72	30	21	42	11	A-7-5(9)	ML
24-35	B22	98	22	-	-	-	-	-	-	-	-	-	-	100	98	81	50	44	59	34	A-7-6(20)	CH
59-66	C2	107	18	-	-	-	-	-	-	-	-	100	99	98	97	79	40	33	40	20	A-6(12)	CL
STATE SYMBOL: 132 SOIL NAME: Weller Silt Loam REPORT NUMBER: S-32198 - S-32200 COUNTY: Jefferson, Iowa LOCATION: SW1/4SW1/4 sec. 27, T.72N., R.10W. PARENT MATERIAL: Wisconsin Loess																						
0-3	A1	102	19	-	-	-	-	-	-	-	-	-	100	99	97	72	34	26	37	11	A-6(8)	ML-CL
16-24	B21	100	22	-	-	-	-	-	-	-	-	-	-	100	98	79	48	41	56	31	A-7-6(19)	CH

				Mechanical analysis																		
				Percentage passing sieve											Percentage smaller than							
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
49-60	C2	108	18	-	-	-	-	-	-	-	-	100	99	98	97	76	40	30	36	16	A-6(10)	CL
STATE SYMBOL: 132 SOIL NAME: Weller Silt Loam REPORT NUMBER: AAD0-1637 - AAD0-1640 COUNTY: Lucas, Iowa LOCATION: NW1/4NW1/4 sec. 9, T.72N, R.20W. PARENT MATERIAL: Wisconsin Loess																						
0-7	Ap	100	20	-	-	-	-	-	-	-	-	-	100	99	87	60	28	19	31	7	A-4(8)	ML
7-12	A2	104	18	-	-	-	-	-	-	-	-	-	100	99	92	69	36	26	33	11	A-6(8)	CL
18-25	B21t	92	24	-	-	-	-	-	-	-	-	-	-	100	95	79	56	49	65	37	A-7-6(20)	CH
43-55	B32t	98	23	-	-	-	-	-	-	-	-	-	-	100	94	71	43	36	51	28	A-7-6(17)	CH
STATE SYMBOL: 132 SOIL NAME: Weller Silt Loam REPORT NUMBER: S-32192 - S-32194 COUNTY: Jefferson, Iowa LOCATION: NW1/4 sec. 31, T.71N., R.10W. PARENT MATERIAL: Wisconsin Loess																						
0-3	A1	90	26	-	-	-	-	-	-	-	100	99	98	97	95	68	27	19	38	8	A-4(8)	ML
15-28	B21	97	26	-	-	-	-	-	-	-	-	-	-	100	98	83	52	44	60	33	A-7-6(20)	CH
56-66	C2	107	18	-	-	-	-	-	-	-	-	-	100	99	98	80	38	30	40	19	A-6(12)	CL
STATE SYMBOL: 352 SOIL NAME: Whittier Silt Loam REPORT NUMBER: AAD0-11020 - AAD0-11022 COUNTY: Linn, Iowa LOCATION: SE1/4NW1/4 sec. 26, T.82N., R.6W. PARENT MATERIAL: Loamy Sediments																						
0-8	Ap	108	15	-	-	-	-	-	100	99	99	97	91	85	76	51	22	16	28	7	A-4(8)	CL/ML
21-32	B22t	103	19	-	-	-	-	-	-	-	-	100	99	98	91	66	41	36	43	20	A-7-6(13)	CL
43-55	IIC	118	10	-	-	-	-	-	-	-	100	96	61	16	13	11	11	10	15	0	A-3(0)	SM

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
STATE SYMBOL: 714 SOIL NAME: Winneshiek Loam REPORT NUMBER: AAD2-2707 - AAD2-2708																						
COUNTY: Winneshiek, Iowa																						
LOCATION: NW1/4SW1/4 sec. 22, T.98N., R.10W.																						
PARENT MATERIAL: Glacial Till/over Limestone																						
0-7	Ap	112	14	-	-	-	-	-	-	-	100	87	72	54	50	37	18	12	27	9	A-4(4)	CL
16-21	B21t	118	13	-	-	-	-	100	98	97	97	84	69	52	51	40	24	18	27	12	A-6(4)	CL
STATE SYMBOL: 369 SOIL NAME: Winterset Silty Clay Loam REPORT NUMBER: S30906 - S30908																						
COUNTY: Madison, Iowa																						
LOCATION: NW1/4 sec. 5, T.75N., R.28W.																						
PARENT MATERIAL: Wisconsin Loess																						
0-10	A1p/A12	98	22	-	-	-	-	-	-	-	100	99	99	99	96	74	42	35	44	19	A-7-6(12)	ML-CL
20-32	B21/B22	94	25	-	-	-	-	-	-	-	100	99	99	98	97	80	52	46	70	40	A-7-5(20)	CH
43-54	C1	102	21	-	-	-	-	-	-	-	-	-	-	100	98	83	47	41	59	32	A-7-6(20)	CH
STATE SYMBOL: 369 SOIL NAME: Winterset Silty Clay Loam REPORT NUMBER: S30915 - S30917																						
COUNTY: Madison, Iowa																						
LOCATION: SW1/4 sec. 34, T.75N., R.27W.																						
PARENT MATERIAL: Wisconsin Loess																						
2-12	A1p/A1	96	22	-	-	-	-	-	-	-	100	99	99	98	97	74	41	32	42	16	A-7-6(11)	ML-CL
22-36	B21/B22	95	23	-	-	-	-	-	-	-	100	99	99	98	97	79	52	45	61	32	A-7-6(20)	MH-CH
44-50	C1	101	21	-	-	-	-	-	-	-	-	-	-	100	98	79	47	40	57	33	A-7-6(19)	CH
STATE SYMBOL: 369 SOIL NAME: Winterset Silty Clay Loam REPORT NUMBER: S30900 - S30902																						

				Mechanical analysis																			
				Percentage passing sieve											Percentage smaller than								
Depth	Horizon	Max. Dry Den.	Opt. Moist.	3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	.05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
COUNTY: Adair, Iowa LOCATION: NW1/4 sec. 5, T.77N., R.30W. PARENT MATERIAL: Wisconsin Loess																							
2-12	A1p/A1	95	23	-	-	-	-	-	-	-	100	99	99	99	98	76	42	33	46	20	A-7-6(13)	ML-CL
22-34	B1g/B2	98	23	-	-	-	-	-	-	-	100	99	99	99	98	79	50	44	64	38	A-7-6(20)	CH
44-52	C1	102	21	-	-	-	-	-	-	-	100	99	99	98	97	79	46	39	57	31	A-7-6(19)	CH
STATE SYMBOL: 369 SOIL NAME: Winterset Silty Clay Loam REPORT NUMBER: AAD7-2814 - AAD7-2816 COUNTY: Madison, Iowa LOCATION: SW1/4NE1/4 sec. 4, T.75N., R.28W. PARENT MATERIAL: Wisconsin Loess																							
0-7	Ap	95	21	-	-	-	-	-	-	-	-	-	100	99	93	68	38	28	41	18	A-7-6(11)	CL/ML
24-28	B22tg	92	25	-	-	-	-	-	-	-	-	-	100	99	96	79	51	43	58	35	A-7-6(20)	CH
56-75	C	99	19	-	-	-	-	-	-	-	-	-	-	100	95	66	39	31	48	27	A-7-6(16)	CL
STATE SYMBOL: 7 SOIL NAME: Wiota Silt Loam REPORT NUMBER: AAD7-2805 - AAD7-2807 COUNTY: Madison, Iowa LOCATION: SE1/4NE1/4 sec. 36, T.76N., R.27W. PARENT MATERIAL: Alluvium																							
0-7	Ap	100	19	-	-	-	-	-	-	-	-	-	100	98	89	55	23	15	33	10	A-4(8)	ML-CL
18-29	B21t	100	20	-	-	-	-	-	-	-	-	100	99	99	93	66	39	31	41	19	A-7-6(12)	CL
29-37	B22t	95	19	-	-	-	-	-	-	-	-	-	-	100	95	73	46	38	54	30	A-7-6(19)	CH
STATE SYMBOL: 828C2 SOIL NAME: Zenor Sandy Loam REPORT NUMBER: AAD4-8408 - AAD4-8411 COUNTY: Boone, Iowa LOCATION: NW1/4 sec. 22, T.85N., R.25W.																							

Depth	Horizon	Max. Dry Den.	Opt. Moist.	Mechanical analysis: Percentage passing sieve 3- in.	2- in.	1.5 in.	1- in.	3/4 in.	3/8 in.	No. 4 4.7 mm	No. 10 2.0 mm	No. 40 .42 mm	No. 60 .25 mm	No. 200 .074 mm	Percentage smaller than .05 mm	.02 mm	.005 mm	.002 mm	LL	PI	AASHO	UNIFIED
PARENT MATERIAL: Sandy Loam/Loamy Sand Sediments																						
0-12	Ap/A3	119	13	-	-	-	-	100	95	89	82	68	58	35	29	19	10	6	25	5	A-2-4(0)	SM/SC
12-25	B21/22	115	14	-	-	-	-	100	97	95	93	85	78	57	49	33	17	11	25	8	A-4-(4)	SC
28-38	IIC2	116	14	-	-	-	-	-	100	97	94	86	78	57	47	31	16	10	24	8	A-4(4)	SC
45-68	IIC4	117	13	-	-	-	-	100	99	97	94	86	77	51	41	27	13	8	22	5	A-4(3)	SM/SC
STATE SYMBOL: 54 SOIL NAME: Zook Silty Clay Loam REPORT NUMBER: AAD2-2681 - AAD2-2683																						
COUNTY: Wayne, Iowa																						
LOCATION: SE1/4NE1/4 sec. 4, T.69N., R.21W.																						
PARENT MATERIAL: Fine Textured Alluvium																						
7-12	A12	91	27	-	-	-	-	-	-	-	-	-	100	97	95	85	60	45	60	31	A-7-6(20)	CH
26-37	A15	103	20	-	-	-	-	-	-	-	-	100	99	95	93	83	56	45	53	31	A-7-6(19)	CH
57-75	C2g	105	19	-	-	-	-	-	-	-	-	100	99	94	92	79	51	39	45	25	A-7-6(15)	CL
STATE SYMBOL: 249 SOIL NAME: Zwingle Silt Loam REPORT NUMBER: AAD5-Ia. 23-4-1 - AAD5-Ia. 23-4-4																						
COUNTY: Clinton, Iowa																						
LOCATION: NE corner of sec. 18, T.83N., R.7E.																						
PARENT MATERIAL: Lucustrine and Slack Water Deposits																						
0-4	Ap	75	35	-	-	-	-	-	-	-	-	100	99	97	87	74	56	39	72	32	A-7-5(20)	MH
18-28	B22	74	34	-	-	-	-	-	-	-	-	-	-	-	00	98	93	86	96	61	A-7-5(20)	CH
34-45	B3	82	35	-	-	-	-	-	-	-	-	-	-	-	00	96	87	70	81	47	A-7-5(20)	CH
48-65	C	95	24	-	-	-	-	-	-	-	-	100	99	96	88	71	52	37	47	23	A-7-6(15)	CL