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Exploration drill cores in the Wisconsin magmatic terrane

by

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EXPLORATION DRILL CORES IN THE WISCONSIN MAGMATIC TERRANE

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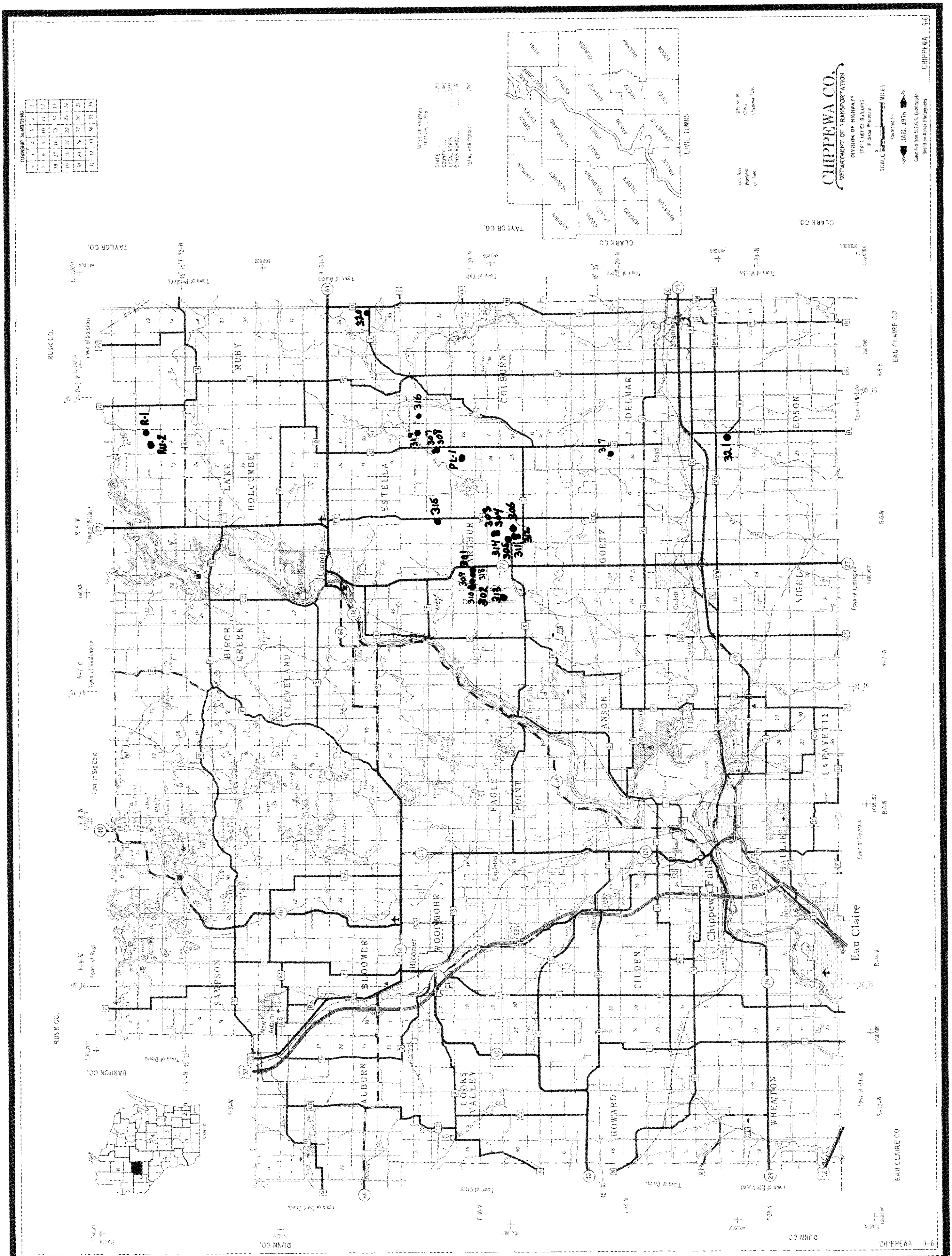
WI 54901, and U.S. Geological Survey

Hundreds of exploration holes have been drilled in northern Wisconsin by various companies in the search for mineral deposits in the Wisconsin magmatic terrane. Because the area is covered by thick glacial deposits, outcrops are extremely scarce over most of the magmatic terrane. Therefore, the drill cores provide almost the only information on the bedrock in large parts of northern Wisconsin. This information is helpful in interpreting aeromagnetic and gravity maps of the area and the tectonic environment of magmatic terrane of the Penokean fold belt in the southern Lake Superior region. However, because a majority of the cores are from exploration targets and presumably were drilled on magnetic and/or electromagnetic anomalies, the extent to which they are representative of the major rock types in the magmatic terrane is unknown.

Most of the drill cores have been donated to the State of Wisconsin, and have been catalogued and assigned a reference number by the Wisconsin Geological and Natural History Survey. The donated cores are presently housed at the State Core facility in Milwaukee, Wisconsin, where they are available for inspection and further study. Cores without systematic county numbers are still the property of the mining companies.

The following report is organized by county, with a county map showing the location of the cores. The logs as presented, are a very brief summary of the lithologies encountered. A complete list of catalogued drill cores that have been donated to the State is available from the Wisconsin Geological Survey.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Eau Claire
CHIPPEWA 9-6

CHIPPEWA COUNTY

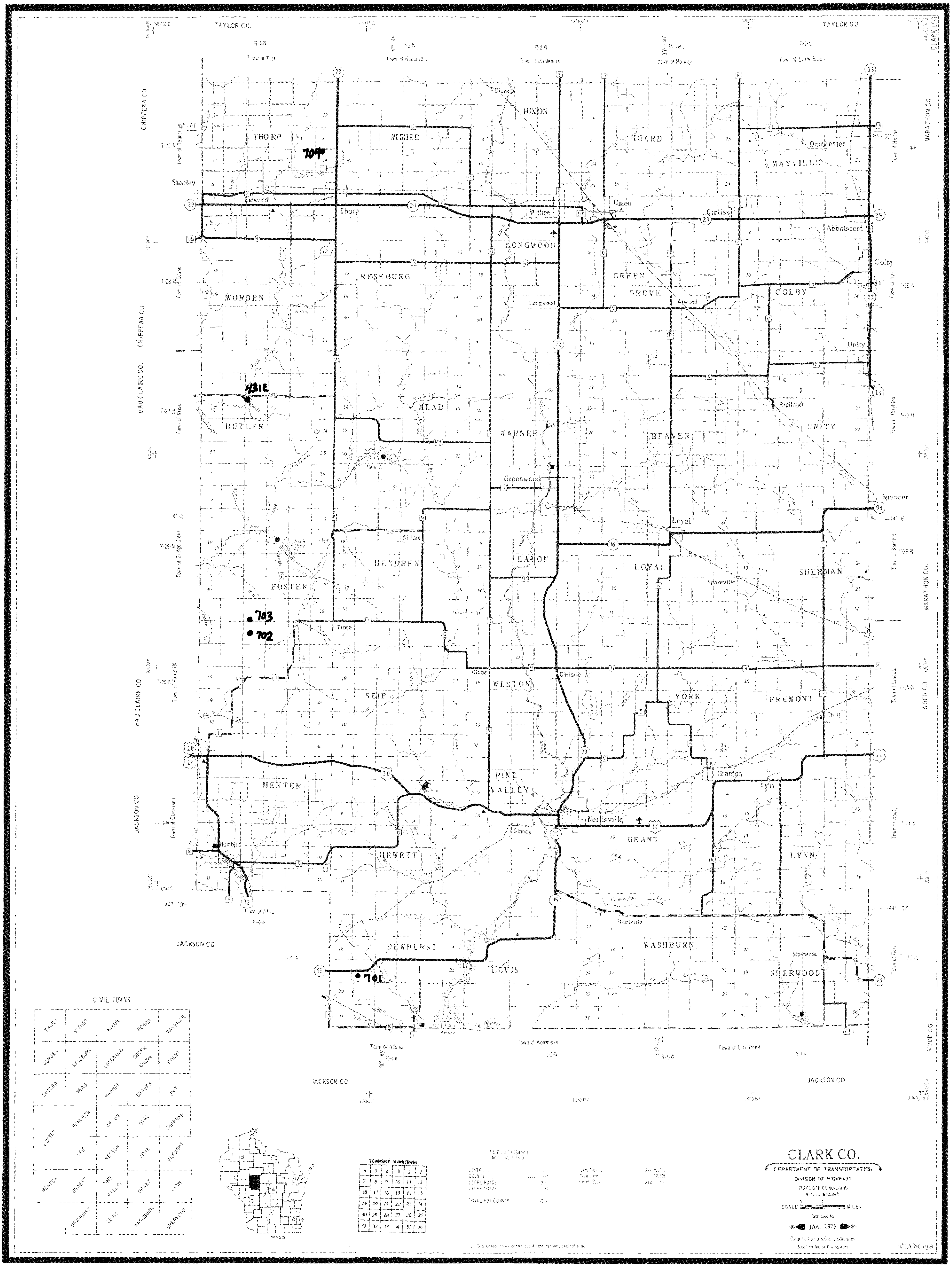
Core	Location	Location
Ch-301	SE4SE4,Sec.18,T.30N.,R6W.	111'-118' Coarse grained, irregularly layered amphibolite. Below 118' the rock is mainly a biotitic gneiss, with biotite and quartz-feldspar clots suggesting derivation from a felsic tuff. Graphitic, pyrrhotitic zones with volcanic fragments are present, some associated with quartz-oligoclase-biotite pegmatites.
Ch-302	SW4SW4,Sec.18,T.30N.,R6W.	Vaguely banded granodiorite gneiss with zones of amphibolite. Banding and mottling suggests a volcanic protolith. Pyrrhotitic zones contain volcanic clasts. Garnets to 2 cm present locally. Granitic veins and dikes of red K-feldspar, albite-quartz are mainly undeformed. Brecciated, altered zones 450'-525' overlies a 20' red pegmatite. Below the pegmatite the core is sheared, altered, and locally well foliated.
Ch-303	SE4SW4,Sec.21,T.30N.,R6W.	104'-290' Mainly a banded amphibolite with isocline hinges. Lighter color lensoidal patches to 2" may be flattened volcanic clasts. 290'-412' Pyrrhotitic zone (layering nearly parallel to core). 412'-490', Complexly folded amphibolite. 490'-615' Core is more felsic with mottling, banding, foliation, and local isoclines.
Ch-304	SE4SE4,Sec.21,T.30N.,R6W.	119'-325' Banded, mottled, complexly-folded amphibolite, with some felsic layers. 325'-550' Massive biotite schist with deformed garnets and two distinct foliations. 550'-654'

	Mottled, vaguely layered amphibolite containing garnetiferous, biotitic layers.
Ch-305 SW4NW4,Sec.28,T.30N.,R6W.	68'-358' Coarsely-recrystallized metabasalt w/weak foliation and random actinolitic amphiboles. Carbonate-rich seams may be pillow rinds; some zones appear amygdaloidal. Most of the core is layered,, 358'-380', Banded, mottled quartzofeldspathic gneiss (felsic tuff?) 380'-600', Layered, blotchy amphibolite with zones of quartzofeldspathic gneiss.
Ch-306 NW4SE4,Sec.28,T.30N.,R6W.	91'-250' Coarsely-recrystallized layered biotite schist (metagraywacke) w/granodiorite dikes. 250'-500' Mottled texture and actinolite-chlorite-biotite suggests intermediate mafic tuff. 500'-904'. Biotite schist w/quartz-feldspar dikes. Some zones are mostly chlorite with white lensoidal clots.
Ch-307 SE4NE4,Sec.12,T.30N.,R6W.	106'-600' Biotite schist w/prominent foliation and broad layering parallel to foliation. Several foliated quartz-feldspar-muscovite-garnet dikes cut the layering in the biotite schist. Garnets seem to be restricted to the dikes.
Ch-308 SE4NE4,Sec.12,T.30N.,R6W.	110'-140' Layered biotite schist w/foliated granitic dikes. 148'-170' Unmetamorphosed diabase dike. 170'-461' Layered biotite schist and gneiss numerous foliated granitic zones. Occassional isocline hinges. 461'-502' Mostly foliated quartz-K-feldspar-muscovite granite w/scattered xenoliths of mafic schist.
Ch-309 SE4SW4,Sec.18,T.30N.,R6W.	88'-704' Coarse-grained, banded mafic and felsic gneiss. Felsic zones are very lenticular,

	contain "eyes" of qtz-feldspar, and are biotitic. Zones w/ 50-60% pyrrhotite and felsic "clots" are present at several horizons.
Ch-310 SW4SW4,Sec.18,T.30N.,R6W.	113'-225' Interbedded amphibolite and quartzofeldspathic gneiss, w/granodiorite dikes cutting layering. 215'-226' Pyrrhotitic zone. '226-'614 Qtzofeldspathic gneiss w/quartz feldspar clasts in biotitic matrix (Probably a felsic tuff protolith).
Ch-311 NE4SW4,Sec.28,T.30N.,R6W.	58'-223' Greenschist facies metagraywacke w/well-preserved primary features and weak foliation. Random actinolite and chlorite. 223'-500'. Abrupt break into more massive,mottled felsic/intermediate volcanic w/some garnetiferous, biotitic layers. 500'-694' more layered meta sediments w/quartz-feldspar dikes 4'-6' wide and pea-sized cordierite (?) porphyroblasts.
Ch-312 NE4SW4,Sec.28,T.30N.,R6W.	59'-418'. Banded amphibolite with numerous 1-5 cm epidote layers at various angles to core. Below 225' the core is more layered and more felsic with isocline hinges. Pyrrhotitic zone 340'-365'. 418'-654' Quartzofeldspathic gneiss w/little mica, but interbedded w/biotite schist w/garnets and possible staurolite.
Ch-313 NW4NE4,Sec.25,T.30N.,R7W.	81'-180' Massive, coarse-grained mottled granodiorite w/vague layering and weak foliation. 180'-220' Pyrrhotitic amphibolite. 220'-524' Interbedded banded amphibolite and mottled, gneissic granodiorite. (Probably volcanic protoliths)

Ch-314 SE4SW4,Sec.21,T.30N.,R6W.	108'774' Mottled amphibole schist w/zones of mottled felsic rock and interbedded garnetiferous biotite schist. Foliated granitic dikes cut the layering. Appears to be upper greenschist grade.
Ch-315 SE4NE4,Sec.9,T.30N.,R6W.	138'-684' Amphibolite w/small and large scale compositional layering. Some layers are well-bedded, others have vague layering with mafic "clasts" to 5 cm. (Looks like a bedded mafic tuff).
Ch-316 NE4SW4,Sec.5,T.30N.,R5W.	108'407' Interbedded amphibolite and biotite schist w/prominent compositional layering. Some zones are mottled, suggesting derivation from a bedded tuff.
Ch-317 NW4SE4,Sec.13,T.29N.,R6W.	91'-165' Cambrian sandstone. 165'-260' Weathered interlayered mafic and felsic schists. 260'-265' Massive medium-grained pink granite. 265'-951' Interlayered amphibolite and mottled felsic gneiss with local complex folding cut by non-foliated pink granite dikes.
Ch-318 SW4SE4,Sec.18,T.30N.,R6W.	90'-694' Thickly-layered, medium- to coarse-grained amphibolite interlayered with vaguely foliated granodiorite gneiss. Quarttz-albite-biotite pegmatite viens are common.
Ch-319 NW4SE4,Sec.6,T.30N.,R5W.	103'-500' Coarse-grained, banded amphibolite with isocline hinges. Some zones are breccias. Pyrrhotitic zones are common. 500'-516' Unmetamorphosed diabase dike.
CH-320 NW4NE4SE4,Sec.25,T.31N., R5W.	59'-190' Serpentinite, talcose and foliated to 130'. Much carbonate veining cuts foliation to 180'. 180'-487' Interbedded greenschist facies

	intermediate/mafic tuff and graywacke. Some black, pyritic argillite zones.
Ch-321 SW4NE4,Sec.7,T.28N.,R5W.	50′-510′ Banded amphibolite and felsic gneiss w/highly contorted layering several pyrrhotitic layers. 510′-544′ Metagabbro with pyroxene altered to hornblende.
PL-1 Center Sec. 13, T.30N R6W	173′-423′ Coarse-grained, foliated metagraywacke, w/biotite-quartz-feldspar and no index minerals. Several pyrrhotitic zones.
R-1 NE4SE4 Sec. 7, T32N R5W	123′-224′ Fine-grained chlorite-actinolite-epidote. meta basalt w/some biotitic meta-chert. 224′-325′ Fine grained felsic crystal-lithic tuff, 329′-405′ Biotite-quartz-garnet-feldspar metagraywacke. Graphitic pyrrhotitic zone at 329′.
RU-2 NE4SW4 Sec. 7, T32N R5W	72′-252′ Fine-grained, poorly-foliated chlorite-actinolite-epidote metabasalt. 252′-270′ Pyrite-pyrrhotite-graphitic tuff. 270′-292′ Basaltic tuff. 292′-427′ Fine-grained felsic tuff w/scattered pyrrhotitic layers.



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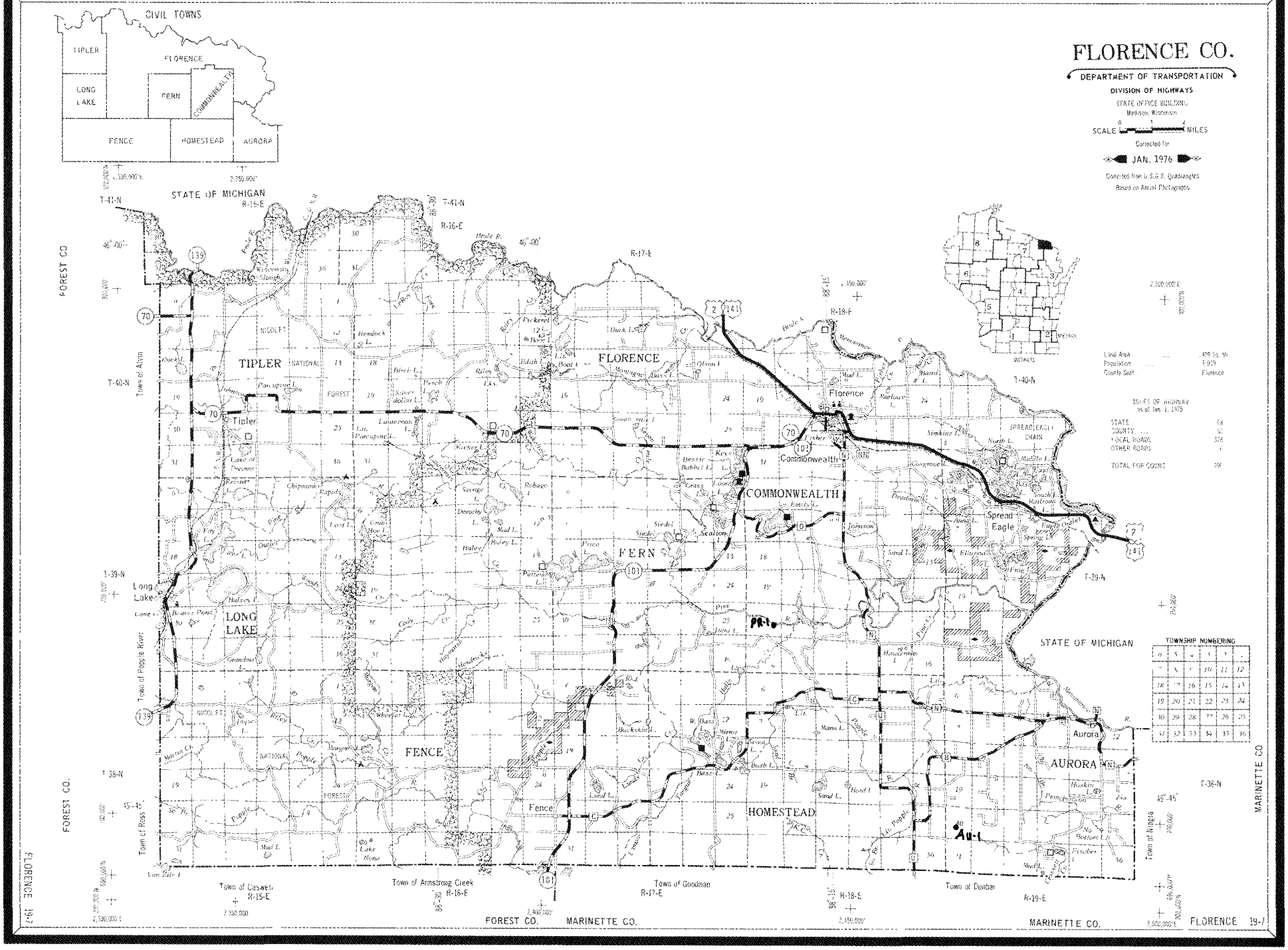
CLARK COUNTY

Core	Location	Lithology
Ck-431E	NW4NW4NW4,Sec.16,T.27N.,R4W.	25'-29' Non-foliated coarse-grained hornblende/biotite quartz monzonite similar to Wolf River granite.
Ck-701	Center SW4,Sec.20,T.23N.,R3W.	74'-504' Medium- to coarse-grained biotite-chlorite-quartz schist (with meta-graywacke) with good layering. Kink bands and tight folds are common in the meta-graywacke.
Ck-702	SE4SW4NW4,Sec.4,T.25N.,R4W.	130'-850' Greenschist facies metagraywacke with interbedded graphitic/pyrite zones. Garnets at 524'. 850'-1000' Highly folded, contorted zone (large slump or tectonic). 1000'-1022' fault breccia zone with cavities lined by quartz crystals and pyrite. 1022'-1074' metagraywacke with much less graphite than above the breccia zone.
Ck-703	NE4SE4SW4,Sec.33.T.26N.,R4W.	80'-180' Cambrian sandstone. 180'-415' Highly weathered low-grade metagraywacke. Weathering gradually decreases to 415'. 415'-800' Garnet-bearing metagraywacke w/little graphite. Scattered complexly deformed zones that may be slumps. Many garnets appear to be deformed. 800'-1080' many small-scale folds, some isoclinal, abundant garnets.
Ck-704	NE4NW4,Sec.24,T.29N.,R4W.	0'-116' Cambrian sandstone. 116'-320' Coarse-grained,

well-foliated granodiorite gneiss. 320-'522' Granodiorite gneiss becomes more layered and grades into actinolitic (?) amphibolite interbedded w/felsic gneiss. Fragmental texture is prominent, Pyrrhotite-bearing zones contain mafic clasts. Looks like interbedded intermediate and mafic tuff.

DUNN COUNTY

Core	Location	Lithology
D-1	NW4NE4,Sec.21,T.26N.,R12W.	Metagabbro (amphibolite gneiss)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Aurora
Town of Alvin
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Town of Goodman
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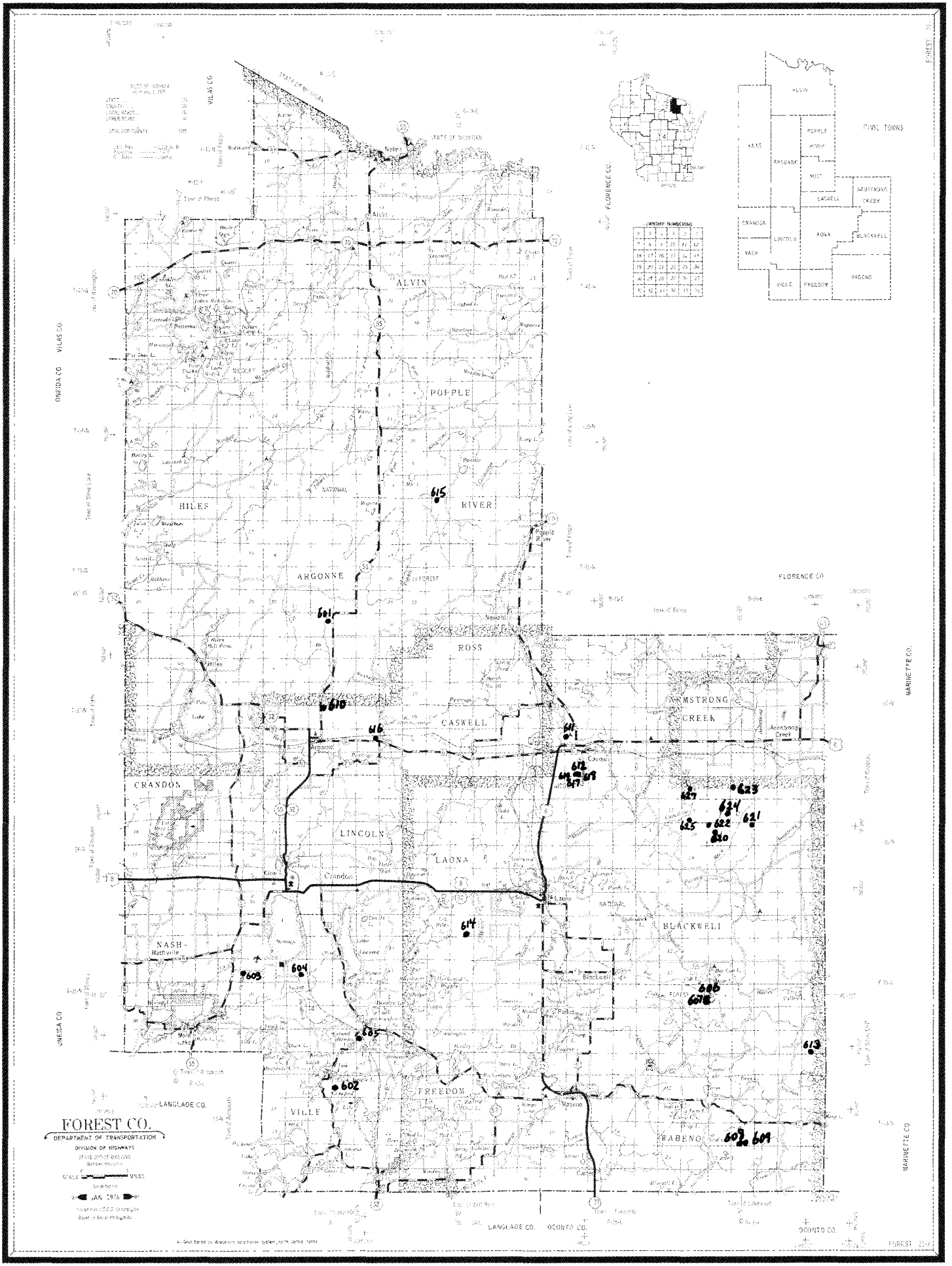
Town of Niagara
FOREST CO
MARINETTE CO
Land Area 499 Sq. Mi.
Population 3,879
County Seat Florence
MILES OF HIGHWAY
as of Jan. 1, 1975
STATE 68
COUNTY 90
LOCAL ROADS 378
OTHER ROADS 1
TOTAL FOR COUNT 397
TOWNSHIP NUMBERING
PR-1
AU-1
FLORENCE 19-1

FLORENCE COUNTY

Core	Location	Lithology
PR-1	N/2SE4,Sec.30,T.39N.,R18E.	16'-315' Upper greenschist (?) grade well-foliated quartz-biotite-feldspar metagraywacke w/graphitic sulfide horizons and cummingtonite quartz-graphite schist (lean Iron-Formation ?). Several foliated metagabbro zones, some feldspar megacrysts.
AU-1	NE4,SW4,Sec.30,T.38N.,R19E.	43'-466' Light apple green, fine grained, fractured serpentinite w/magnetite octahedra and talcose zones. Becomes darker green w/depth.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FOREST COUNTY

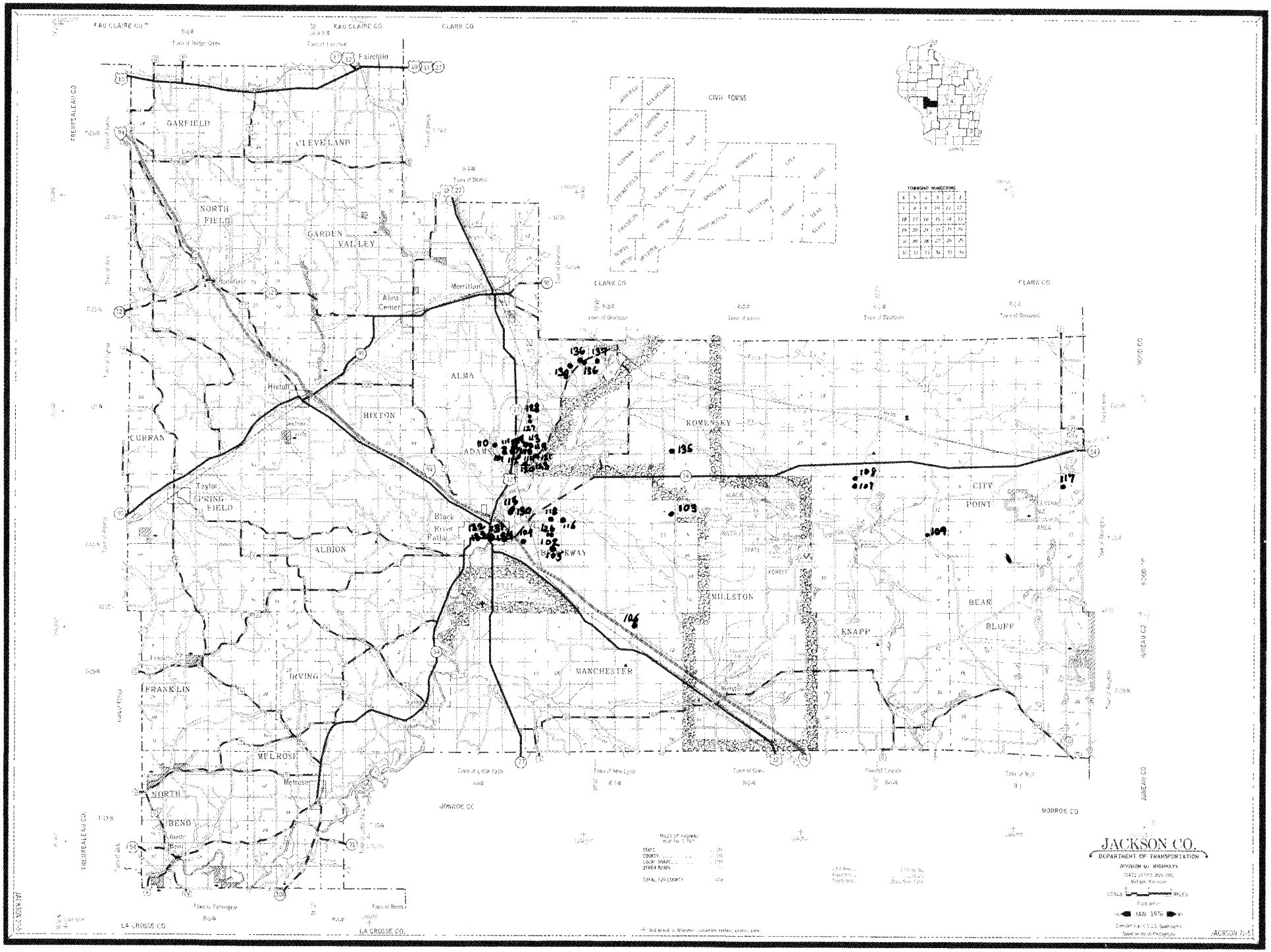
Core	Location	Lithology
Fr-601	Sec 3,T.37N.,R13E.	59'-406'Coarse metaperidotite with gabbroic zones. (Appears to be a layered mafic intrusion.) Xenoliths consist of biotite-garnet-quartz-plagioclase schist.
Fr-602	NW4SW4,Sec.10,T.34N.,R13E.	294'-694' Greenschist-facies well-bedded, intensely folded, graphitic metagraywacke. Some isocline hinges. Minor sulfides parallel to bedding.
Fr-603	NW4SW4,Sec.13,T.35N.,R12E.	153'-250'. Greenschist facies, massive, porphyritic andesite. Plagioclase phenocrysts 3-10 mm in aphanitic matrix. 250'-600' Interbedded fragmental andesite w/clasts to 10cm and massive porphyritic andesite flows. 600'-694' Well bedded turbidites.
Fr-604	NW4SE4,Sec.20,T.35N.,R13E.	248'-524' Alternating layers of massive porphyritic and fragmental andesite w/flattened clasts, w/some interbedded metagraywacke. Greenschist facies. Upper part of core is well foliated, lower portion has much less foliation.
Fr-605	SW4NW4,Sec.35,T.35N.,R13E.	240'-700' Mainly fragmental andesite w/flattened fragments interbedded w/massive porphyritic andesite (flows) and metagraywackes. Greenschist facies w/prominent foliation.
Fr-606	NE4SE4,Sec.19,T.35N.,R16E.	211'-400' Greenschist facies, well-foliated, black graphitic slate interbedded w/sandy or pebbly metagraywacke. Some zones have very flattened volcanic (?) clasts.
Fr-607	NE4SE4,Sec.19,T.35N.,R16E.	97'-475' Greenschist facies, fine grained actinolitic massive

		meta basalt w/amygdules and blotchy quartz-carbonate zones. 260'-375' Tuffaceous metagraywacke. 375'-475' Well-foliated intermediate to felsic tuff w/flattened clasts.
Fr-608	SE4SW4,Sec.21,T.34N.,R16E.	20'-211' Greenschist facies fine-grained, weakly-foliated, intermediate to felsic tuff. May be silicified tuff.
Fr-609	SW4SE4,Sec.21,T.34N.,R16E.	23'-285' Greenschist facies porphyritic and fragmental andesite grading downward into a felsic lapilli tuff in a gray, siliceous matrix.
Fr-610	NW4NE4,Sec.20,T.37N.,R13E.	185'-392 Very coarse-grained meta (?) peridotite w/very poikilitic pyroxene crystals to 2 cm surrounding cumulus olivine. (Harzburgite?). Zones of andesitic tuff and metagraywacke may be xenoliths. 388'-392' Massive granodiorite.
Fr-611	SW4NW4,Sec.29,T.37N.,R15E.	158'-605' Greenschist facies metagraywacke w/graphitic pyrite-pyrrhotite-chalcopyrite-sphalerite-bearing zones. The graywacke is interbedded w/weakly foliated massive porphyritic andesite.
Fr-612	SW4SE4,Sec.32,T.37N.,R15E.	110'-753'. Greenschist facies metagraywacke w/little slate. Generally quite siliceous. 600'-630' Zone of lapilli-sized chlorite-actinolite fragments. Generally weakly foliated.
Fr-613	SE4SW4,Sec.36,T.35N.,R16E.	167'-354' Greenschist facies, chlorite-actinolite andesitic tuff w/clasts to 10 cm and a crude layering. Massive porphyritic zones may be flows. 310'-354' silicified zone with stringers of sulfides.
Fr-614	SW4SE4,Sec.4,T.35N.,R14E.	20'-410' Greenschist facies thick-bedded, sandy, volcanogenic, tuffaceous

		graywacke. 340'-345' Highly deformed graphitic zone. 345'-400' Massive porphyritic amygdaloidal andesite.
Fr-615	NE4NW4,Sec.5,T.38N.,R14E.	110'-160' Coarse-grained marble w/interbedded actinolitic layers. 162'-168' Foliated pink granitic dike. 168'-195' Vuggy chlorite-pyrite zone. 240'-275' Massive pink foliated granite. 275'-350' Interbedded mafic and felsic gneiss. Generally an intimate mixture of granitic material, mafic gneiss, biotite schist and very epidotic zones.
Fr-616	SE4NE4,Sec.26,T.37N.,R13E.	39'-271' Very coarse-grained peridotite w/poikilitic pyroxenes to 3 cm enclosing ± 5 mm olivine. Minor plagioclase in upper part of core. No apparent serpentinization.
Fr-617	SW4SE4,Sec.32,T.37N.,R15E.	36'-320' Very coarse-grained hornblende-rich meta(?) gabbro w/zones of hornblendite. Well-preserved igneous texture suggests that this is not deformed. 250'-320' Fine-grained amphibolite cut by scattered granitic veins. Granite veins also cut hornblendite.
Fr-618	SW4SE4,Sec.32,T.37N.,R15E.	39'-453' Very coarse-grained (crystals 2 cm x 6 cm) hornblende (meta?) gabbro w/veins and dikes (?) of gneissic granite. Mafic rock is locally pegmatitic. Some zones of fine-grained amphibolite w/granitic veins are present.
Fr-619	SW4SE4,Sec.32,T.37N.,R15E.	61'-442' Medium- to coarse-grained metagabbro with scattered granitic veins. Hornblende is main mafic mineral. Scattered sulfide-rich zones.

Fr-620 SE4NW4,Sec.17,T.36N.,R16E.	194'-560' Upper greenschist facies fragmental intermediate volcanic rock w/interbedded garnetiferous biotite schist zones. Clasts are very flattened but foliation is weak. Siliceous-pyrrhotite-chalcopyrite zones.
Fr-621 NE4NE4,Sec.16,T.36N.,R16E.	62'-336' Medium-grained, coarsely layered, weakly foliated garnetiferous rock. Garnets very lenticular. Some zones may contain sillimanite and staurolite. Pyrrhotitic zones at 270'-290'
Fr-622 NW4NW4,Sec.17,T.36N.,R16E.	131'-624' Hard, medium to fine grained, siliceous intermediate (?) metavolcanic. Grades downward into massive porphyritic and fragmental andesite. Generally has little foliation. Appears to be a hornfels.
Fr-623 SW4NW4,Sec.4,T.36N.,R16E.	113'-192 Greenschist facies, bedded andesitic crystal lithic tuff. 192'-198' metapyroxenite w/relict enstatite and olivine. 198'-662' Interbedded andesitic crystal-lithic lapilli tuff, massive porphyritic andesite and minor tuffaceous graywacke. 662'-762' Unmetamorphosed diabase dike.
Fr-624 NE4SE4,Sec.8,T.36N.,R16E.	122'-478' Greenschist facies (actinolite-chlorite) intermediate volcanic interbedded with felsic volcanics and garnetiferous metagraywacke. Some felsic zones are very massive and featureless (flows?)
Fr-625 SE4SW4,Sec.7,T.36N.,R16E.	132'-470' Fine-grained light gray porphyritic andesite (?) w/interbedded tuffaceous horizons. Probably greenschist facies.

Fr-626 NW4NW4,Sec.27,T.36N.,R16E.	88'-422' Greenschist facies weakly foliated, fine grained felsic-intermediate tuff, interbedded w/biotitic metagraywacke.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JACKSON 27-5

JACKSON COUNTY

Core	Location	Lithology
Ja-101	SW4SE4,Sec.26,T.22N.,R04W.	0'-128' Cambrian sandstone. 128'-197' Highly oxidized banded magnetite-chert iron-formation with minor chlorite schist layers (mafic tuff?). Greenschist facies.
Ja-102	NW4SE4,Sec.18,T.21N.,R03W.	39'-105' Cambrian sandstone. 105'-194' Highly oxidized, hematitic, weathered, strongly foliated rock. Appears to be a mafic tuff with minor iron-formation. Greenschist facies with coarse chlorite
Ja-103	NE4SE4,Sec.12,T.21N.,R03W.	104'-167' Highly oxidized and leached, strongly foliated coarse grained chlorite and muscovite schist. Minor chert-magnetite iron-formation. Much slickensides. Greenschist facies.
Ja-104	SE4SW4,Sec.13,T.21N.,R04W.	47'-68' Cambrian sandstone 68'-105' Saprolitized granite with prominent foliation. 102'-145' Well foliated chlorite-epidote-actinolite-carbonate greenstone with interbedded magnetite-chert iron-formation.
Ja-105	NW4NE4,Sec.24,T.21N.,R04W.	109'-167' Highly oxidized, strongly foliated chloritic schist with abundant qtz veins parallel to foliation. Greenschist facies.
Ja-106	SE4NE4,Sec.3,T.20N.,R03W.	189'-255' Strongly foliated chlorite-quartz schist with possible flattened volcanic clasts preserved. Mineralogy is chlorite-actinolite-epidote-quartz. Minor cherty horizons. Greenschist facies.
Ja-107	SE4NE4,Sec.5,T.21N.,R01W.	69'-133' Cambrian sandstone. 133'-180' Highly oxidized and

		weathered, corase, well-foliated mafic (?) tuff with flattened clasts to 5 cm. 180'-240' Chloritic schist with epidotic zones. 240'-290' Metagraywacke.
Ja-108	NE4NE4,Sec.5,T.21N.,R01W.	156'-200' Highly weathered metagraywacke (?) with alternating sandy and finer grained layers. Chlorite-epidote is common and coarse biotite that is $\pm$ 30° to bedding. 200'-210' Greenschist facies mafic tuff.
Ja-109	NW4SW4,Sec.13,T.21N.,R01W.	82'-165' Cambrian sandstone. 165'-225' Weathered coarse grained chlorite-biotite-schist. 225'-239' Felsic tuff with clasts to 5 cm. 239'-260' Coarse-grained actinolite (?)-bearing amphibolite with scattered felsic clots.
Ja-110	NW4SW4,Sec.26,T.22N.,R04W.	66'-143' Cambrian sandstone. 143'-181' Highly foliated chlorite-actinolite schist. 181'-261' Highly oxidized and weathered tuffaceous greenstone. Greenschist facies.
Ja-111	SW4SE4,Sec.26,T.22N.,R04W.	167'-272. Highly weathered, oxidized, well-foliated, coarse-grained chloritic greenstone. Less weathered zones look like foliated tuffaceous greenstone with highly flattened fragments.
Ja-112	SE4SE4,Sec.26,T.22N.,R04W.	56'-142' Cambrian sandstone. 142'-210' Highly weathered, oxidized, well foliated, coarse-grained schist. Less weathered zones are typical tuffaceous greenstone with quartz-feldspar "eyes" in a coarse chloritic matrix.
Ja-113	SW4SE4,Sec.25,T.22N.,R04W.	54'-120' Cambrian sandstone. 120'-239' Coarse-grained, well-foliated, chloritic greenstone. Clasts appear to be more felsic

		and are highly flattened. Minor graphitic zones.
Ja-114	NW4SW4,Sec.25,T.22N.,R04W.	55'-141 Cambrian sandstone. 141'-200' Highly weathered, foliated, medium-grained chlorite-actinolite schist. Fresher (deeper) material appears to be a tuffaceous greenstone.
Ja-115	SE4NE4,Sec.11,T.21N.,R04W.	21'-85' Highly oxidized and leached hematite-chert iron-formation.
Ja-116	SW4SW4,Sec.8,T.21N.,R03W.	60'-90' Cambrian sandstone. 90'-100' Highly weathered, strongly foliated, coarse-grained chloritic greenstone. 100'-117' Well foliated, coarse muscovite schist--probably a felsic tuff.
Ja-117	SW4NW4,Sec.1,T.22N.,R01E.	17'-38' Saprolitized granite with mafic zones. 38'-60' Diorite/quartz-diorite with pink granite zones. Diorite has distinct foliated zones, but most of it appears isotropic.
Ja-118	SW4SE4,Sec.7,T.21N.,R03W.	110'-136' Cambrian sandstone. 136'-155' Fine-grained, weathered, chlorite schist with some epidote-rich zones.
Ja-119	NW4SE4,Sec.25,T.22N.,R04W.	15'-120' Cambrian sandstone. 120'-178' Coarse, strongly-foliated chloritic mafic tuff with some felsic zones. 178'-200' Felsic tuff with flattened clasts to 10 cm. 270'-285' Mainly chloritic mafic tuff.
Ja-120	NW4NE4,Sec.31,T.22N.,R03W.	38'-100' Highly oxidized cherty iron-formation. Becomes magnetic about 70', with minor foliated chlorite zones. 100'-120' Chloritic greenstone with quartz lenses and veins. 120'-265' Magnetite-chert iron-formation with interbedded mafic tuff.

Ja-121	SE4NW4,Sec.31,T.22N.,R03W.	71'-107' Highly weathered, coarse-grained chloritic schist. 107'-125' Coarse tuffaceous greenstone with felsic clasts to 10 cm. in a more chloritic matrix.
Ja-122	SE4NW4,Sec.31,T.22N.,R03W.	79'-175' Highly oxidized, green chloritic schist with interbedded laminated hematite-chert iron formation. Below oxidized zone the rock is a mafic tuff. Iron formation appears to be martite-rich.
Ja-123	NW4NW4,Sec.31,T.22N.,R03W.	23'-74' Cambrian sandstone. 74'118' Coarse, highly foliated chlorite schist with weathered zones. 118'-154' Oxidized magnetite-chert iron-formation. 154'-177' Coarse, highly foliated chlorite-garnet schist. 177'-180' iron-formation. 180'-183' Chlorite schist.
Ja-124	SE4SE4,Sec.26,T.22N.,R04W.	54'-220' Cambrian sandstone. 220'-395' Highly weathered, coarse chlorite-actinolite-quartz schist. 396'-450' Oxidized magnetite-chert iron-formation 454'-464' Fine-grained, massive metadiabase. 464'-615' Layered, foliated greenstone with magnetite-chert iron formation 615--718' Vaguely layered mafic schist w/graphitic sulfide zones.
Ja-125	SE4NW4,Sec.31,T.22N.,R03W.	29'-53' Cambrian sandstone. 53'-145' Highly weathered, foliated, coarse-grained chlorite-actinolite schist interbedded with magnetite-chert iron-formation.
Ja-126	NW4SE4,Sec.18,T.21N.,R03W.	52'-107' Cambrian sandstone. 107'-175' Highly weathered, foliated, coarse-grained chloritic greenstone. 175'-197' Fresh chlorite-actinolite schist with good clasts (tuff). 197'-204' Graphitic zone. 204'-249'

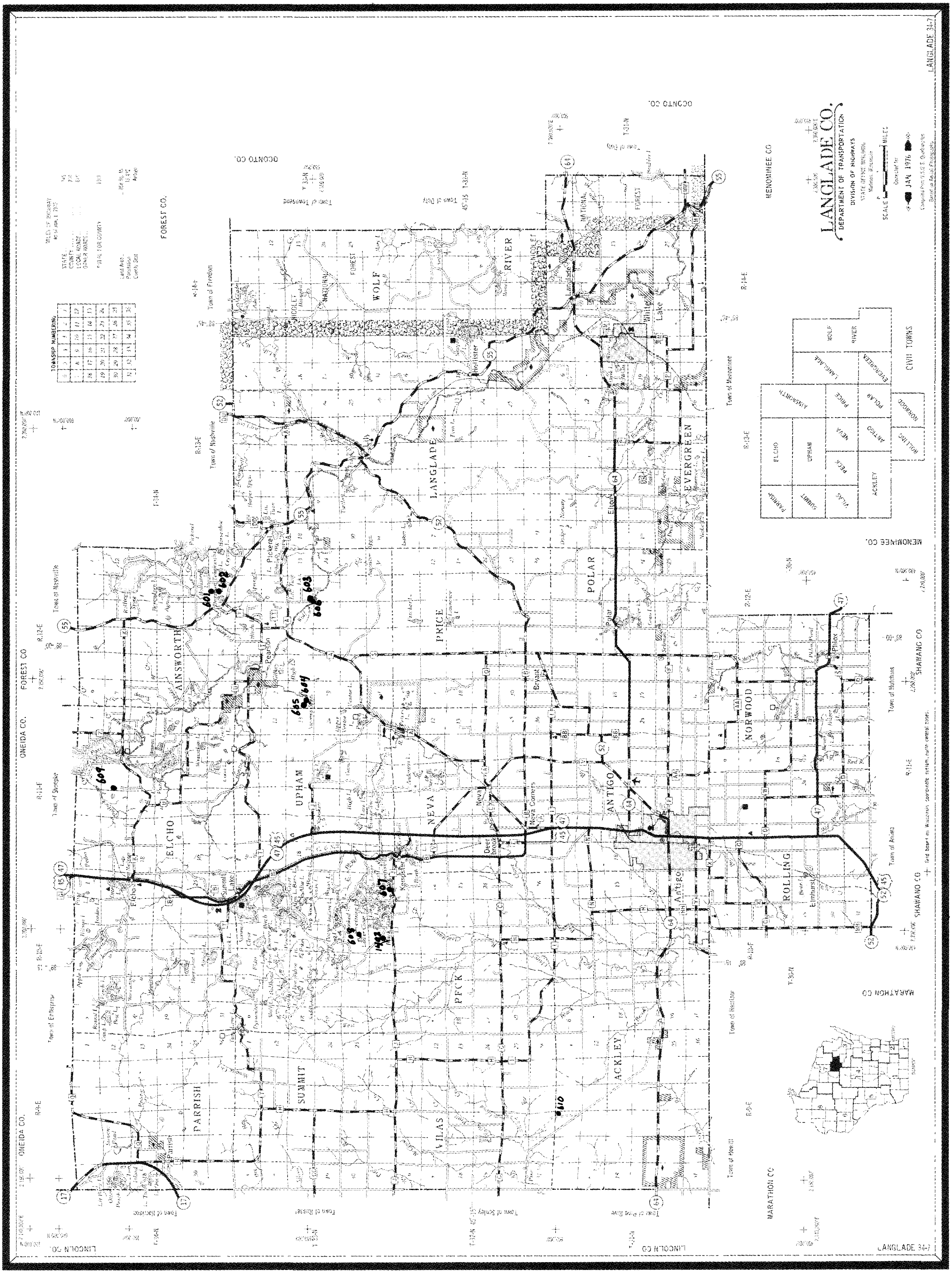
		Graphitic sulfidic material with fragmental texture and chlorite-rich zones.
Ja-127	NW4SE4,Sec.24,T.22N.,R04W.	68'-110' Cambrian sandstone. 110'-120' Highly weathered, fine-grained, bedded chloritic schist. 120'-204' Fresh, fine-grained, well-bedded chloritic greenstone. Looks like bedded tuff. Core nearly parallel to bedding.
Ja-128	SW4NE4,Sec.24,T.22N.,R04W.	43'-100' Cambrian sandstone. 100'-173' Fine-grained, moderately foliated, chloritic mafic tuff. Mainly a massive rock w/scattered layered zones.
Ja-129	SE4NW4,Sec.31,T.22N.,R03W.	82'-109' Highly weathered, oxidized, coarse chlorite schist. 109'-203' Magnetite-chert iron-formation w/chloritic zones. 230'-252' Coarse-grained, foliated chloritic tuff w/flattened reddish clasts. 252'-256' Magnetite-chert iron-formation 256'-280' Coarse-grained felsic tuff. 280'-284' Magnetite-chert iron-formation 284'-291' Chloritic tuff. 291'-377' Magnetite-chert iron-formation 377'-481' Felsic to intermediate tuff w/clasts to 12 cm contains pale green amphibole.
Ja-130	SE4Ne4,Sec.11,T.21N.,R04W.	61'-129' Cambrian sandstone. 129'-210' Highly weathered, well-foliated, felsic tuff with flattened clasts to 3 cm. 210'-290' Chloritic mafic tuff with isocline hinges fairly common. 290'-320' Oxidized ferruginous chert w/minor graphite, 320'-440' Magnetite-chert iron-formation w/chlorite layers. Isoclines common, slickensides and breccia zones w/graphite zones. 440'-533' Strongly foliated, crenulated medium

	grained felsic tuff with clasts to 5 cm. clasts very flattened.
Ja-131 SE4SE4,Sec.15,T.21N.,R04W.	52'-55' Massive, red, biotitic non-foliated granite.
Ja-132 SE4SE4,Sec.15,T.21N.,RO4W.	(Main St. Black River Falls) (No footage given. About 5 feet of core.) Foliated red granite.
Ja-133 SE4SE4,Sec.15,T.21N.,R04W.	(Main St. Black River Falls) (No footage given. About 5 feet of core.) Non-foliated red biotitic granite
Ja-134 SE4SE4,Sec.15,T.21N.,R04W.	(No footage given. About 5 feet of core.) Non-foliated red, biotitic granite
Ja-135 SE4SE4,Sec.25,T.22N.,R03W.	(No footage given. About 5 feet of core.) Non-foliated red biotitic granite
Ja-136 SE4SE4,Sec.5,T,22N.,R03W.	(East Main St., Black River Falls) (No footage given. About 5 feet of core.) Granite gneiss with isoclinal folds. Gneiss is very biotitic with prominent, thin layering.
Ja-131 SW4NE4,Sec.17,T.22N.,R03W	70'-281' Interbedded, coarsely crystalline, well-foliated mafic and felsic tuff, w/minor sulfides; chlorite/actinolite. 281'-298' Possible ultramafic. 298'-389' Bedded mafic tuff. 389'-563' Well-bedded, strongly foliated and flattened intermediate tuff or tuffaceous graywacke with graded bedding: rather chloritic.
Ja-132 SW4NE4,Sec.17,T.22N.,R3W	69'-122' Highly weathered, coarsely recrystallized, strongly foliated and flattened chlorite-actinolite "tuff" w/abundant felsic "eyes". 122'-185' Fairly fine grained chloritic bedded tuff w/flattened clasts to $\pm$ 5 cm. Some zones have prominent isoclinal folds. 185'-550'

	Alternating massive & bedded mafic/intermediate tuff.
Ja-133 SE4NE4,Sec.17,T.22N.,R3W	18′-330′ Coarse grained banded gneiss w/alternating granitic and mafic units like that at Arbutus dam. 330′-370′ Thinly laminated, siliceous, lineated mylonite 370′-610′. Bedded chlorite-actinolite tuff w/flattened felsic clasts. Some pyrite-pyrrhotite-magnetite-chlorite.
Ja-134 SW4NE4,Sec.,17,T.22N.,R3W	50′-108′ Highly weathered, oxidized chlorite schist. 108′-125′ Fresh foliated, flattened chlorite-actinolite mafic tuff. 125′-137′ Fine-grained metadiabase dike. 137′-220′ Greenschist facies metagraywacke w/gradded beds and slumps. 220′-347′ Quartz-grunerite-magnetite iron-formation with graphitic and chloritic interbeds. 347′-502′ Biotite-chlorite-actinolite bedded tuff.
Ja-135 SE4NE4,Sec.25,T.22.,R3W	150′-184′ Highly weathered and oxidized, strongly foliated tuff (?) 184′-214′ Highly carbonaceous felsic (?) tuff. 214′-242′ Highly oxidized mafic (?) tuff w/cherty zones; highly contorted and foliated. 242′-248′ Graphitic tuff w/flattened clasts to 3 cm. 248′-258 Highly oxidized zone. 258-291′ Intermediate mafic tuff w/very flattened clasts and much slickensides. 291′-300′ Graphitic tuff with greenish flattened clasts to 3 cm. 300′-380′ Gine grained strongly foliated and flattened tuff w/clasts to 4 cm. minor cpy in cherty zones. 380′-396′ Highly foliated, slickensided talc-serpentine rock. 396′-405′ Graphitic tuff w/minor chalcophyrite-pyrite. 405′-450′ Mainly serpentine w/little

	foliation, but scattered brecciated zones.
Ja-136 SE4SE4,Sec.5,T.22.,R3W	40'-73' Highly weathered strongly foliated felsic tuff 73'-101' Highly foliated chloritic schist. 101'-105' Fresh felsic tuff w/very flattened fragments. 105'-109' Highly foliated talc (?)--chlorite schist. 109'-113' Fresh felsic tuff w/much biotite and some horblende, and a weak foliation. 113'-215' Massive non-foliated biotate-hornblend-quartz-plagioclase rock (looks intrusive). 215'-232' Foliated mafic tuff w/flattened clasts. 232'-318' Distinctly layered felsic/intermediate tuff w/foliation parallel to layering and w/graphitie and pyrite/pyrrohite/ 318'-340' Meta-diabase 340'-485 Intermediate/mafic tuff w/prominent fragments. Chlorite-actinolite-plagioclase-quartz much carbonate indicate greenschist facies. 485'-513' Interbedded intermediate and felsic tuff.
Ja-137 SW4SE4,Sec.4,T.22N.,R03W.	70'-78' Weathered and oxidized metagabbro (?). 78'-232' Medium grained, non-foliated metagabbro or diorite. 232'-357' Foliated and flattened mafic tuff (chlorite-actinolite-quartz-carbonate). 357'-371' Medium grained pink granitoid with blotchy texture (dike?) 371'-392' Highly-foliated chloritic mafic tuff w/abundant irregular white qtuarz streaks. 392'-393' Foliated pink granite.
Ja-138 NE4NW4,Sec.8,T.22N.,R03W.	90'-113' Highly weathered mafic schist. 113'-130' Coarse-grained chlorite-actinolite-biotite schist w/prominent foliation and complex folding. 130'-148' Massive, fine grained,

slightly foliated greenish black rock (sepentinite?). 148'-342' Coarse, highly foliated chlorite-actinolite schist w/carbonate seams and minor pyrite/chalcopyrite. Looks like mafic tuff. 342'-365' Massive graywacke unit grading through a convolute-bedded layer into a highly graphitic zone. 365'-403' Coarse, foliated mafic tuff. 403'-511' Another turbiditic, graphitic zone w/highly contorted bedding in fine-grained zones. Graywacke shows little foliation and no obvious metamorphic minerals.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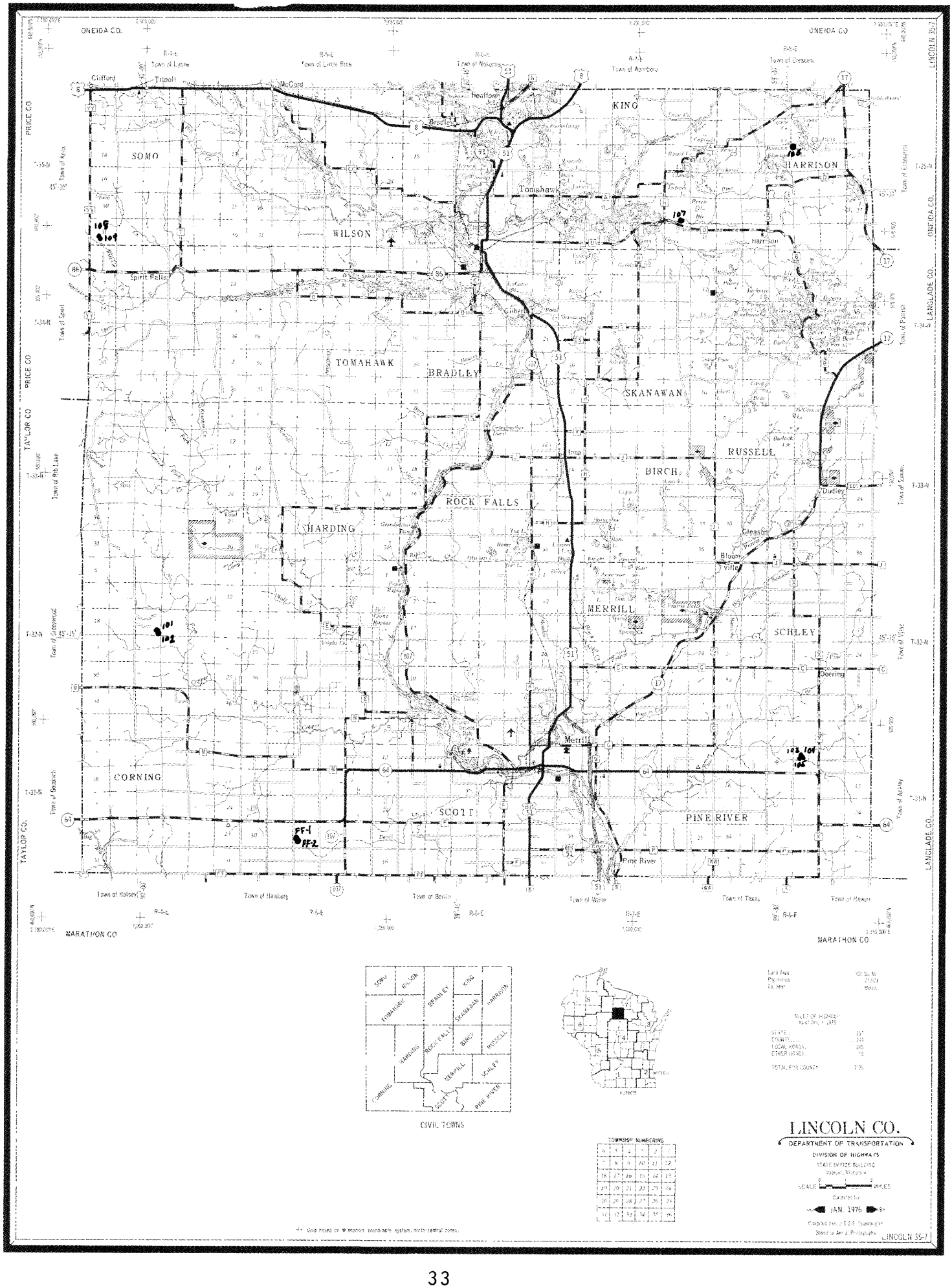
LANGLADE COUNTY

Core	Location	Lithology
La-601	NE4NW4,Sec.35,T.34N.,R12E.	118'-503' Coarse grained (5-10 mm) foliated amphibolite grade, massive and mottled meta volcanic w/mafic and felsic layers. Some felsic layers are pyrrhotite-rich.
La-602	SE4NE4,Sec.35,T.34N.,R12E.	104'-656' Mainly a coarse-grained pyroxenite w/± 1 cm enstatite (?) the main mineral. Phlogopite is common & plag. is minor. Some enstatite is poikilitic, w/olivine?. "Zones" or xenoliths of gneissic granitoid.
La-603	SW4SW4,Sec.14,T.33N.,R12E.	105'-403' Weakly foliated, medium-grained, well-layered, epidote-actinolite-rich metasediments, w/biotite-rich zones and possible garnets. Upper greenschist facies(?).
La-604	SW4,Sec.18,T.33N.,R12.	194'-543' Coarse-grained, mottled, banded granodiorite gneiss interbedded w/coarse-grained amphibolite. Layering and foliation are consistent throughout core. At 395' is a 2-foot quartz-feldspar porphyry dike.
La-605	NW4SW4,Sec.18,T.33N.,R12E.	218'-721' Coarse grained, weakly foliated, granodiorite gneiss interlayered w/amphibolite. No garnets or other metamorphic minerals. 480'-510' Fine-grained porphyritic diabase dike.
La-606	SW4SW4,Sec.14,T.33N.,R12E.	58'-503' Coarse grained, vaguely layered hornblende gneiss interlayered w/felsic gneiss. Blotchy texture suggests a tuffaceous volcanic protolith. Some relict garnets and local

	chlorite suggest retrograde metamorphism.
La-607 SE4SW4,Sec.36,T.33N.,R10E.	
La-608 NW4SE4,Sec.27,T.33N.,R10E.	278'-883' Medium-grained, well-foliated, crenulated, garnet-chlorite-muscovite biotite-quartz-feldspar schist w/prominent layering. There is a general lenticular mottling w/quartz feldspar "eyes" surrounded by micas.
La-609 SW4NW4,Sec.10,T.34N.,R11E.	93'-674' Massive- to thin-bedded graywacke w/minor slumps in laminated units. No foliation or metamorphic minerals present. Some zones are very carbonaceous argillite. Many fractures healed w/carbonate.
LA-610 NE4NE4,Sec.4,T.32N.,R9E.	55'-136' Foliated metagabbro w/mafic-rich and plagioclase-rich zones. 136'-449' Well-bedded, somewhat foliated metagraywacke w/prominent graded beds, some very graphitic, others tuffaceous. Biotite is the only visible metamorphic mineral present.
La-1402 NW4SE4,Sec.34,T.33N.,R10E.	231'-849' Coarse-grained, well foliated muscovite-biotite-quartz-plagioclase-garnet-sillimanite schist w/graphic sulfide-bearing zones. Some zones are amphibolite. 626'-628' Massive, gray, granitoid dike.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FF-1
FF-2
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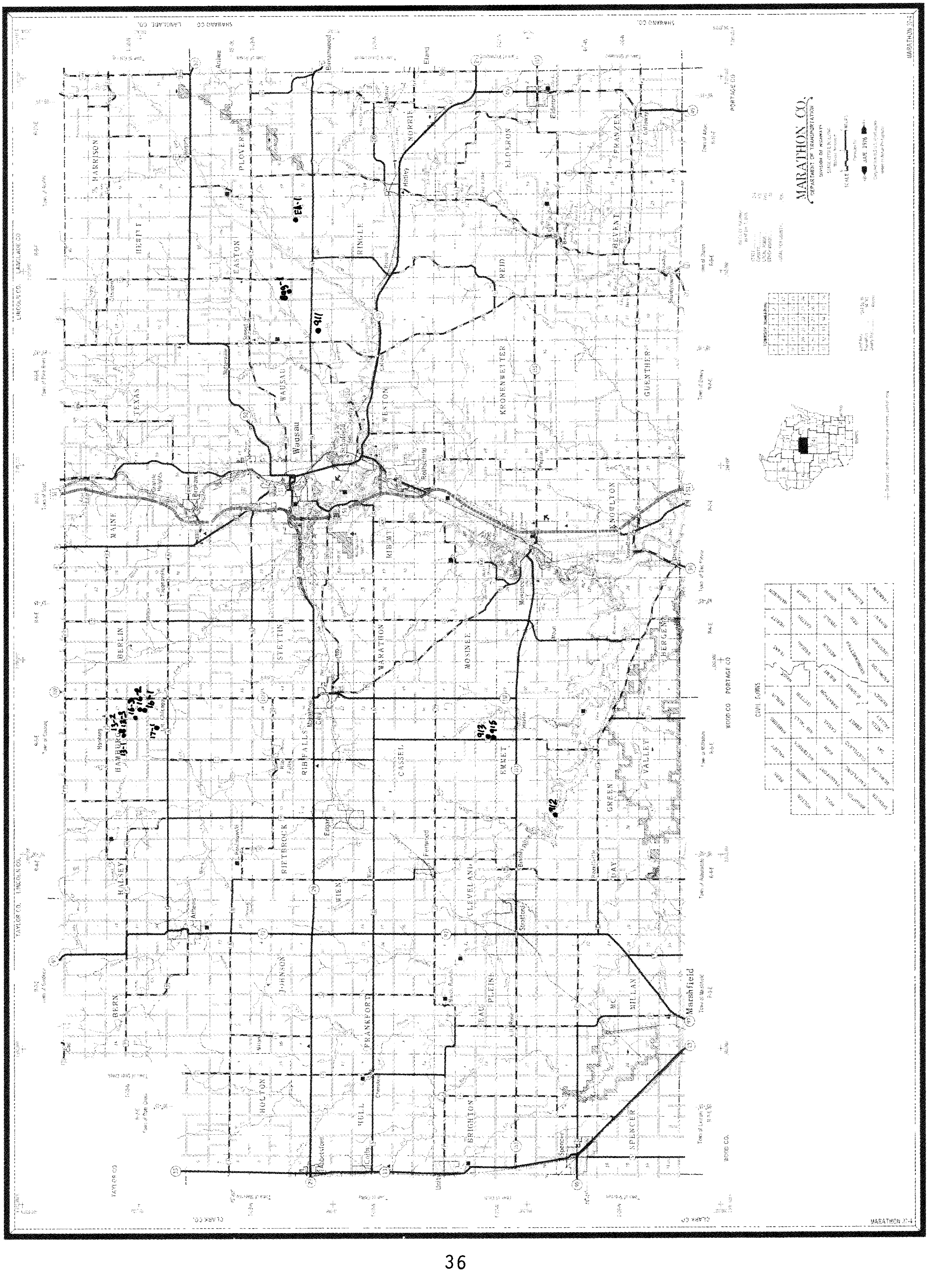
LINCOLN COUNTY

Core	Location	Lithology
Ln-101	SE4SE4,Sec.16,T.32N.,R4E.	520'-540' Foliated quartzofeldspathic gneiss w/blotchy texture suggesting a volcanic protolith. Minor pyrrhotitic zones.
Ln-102	SE4SE4,Sec.16,T.32N.,R4E.	0'-278' Greenschist grade metagraywacke w/prominent foliation parallel to layering. Some layers contain angular volcanic fragments.
Ln-103	SE4NW4,Sec.10,T.31N.,R8E.	
Ln-104	SE4NW4,Sec.10,T.31N.,R8E.	0-248' Highly metamorphosed, non-foliated felsic tuff w/clasts to at least 3 cm. Appears to be a hornfels.
Ln-105	SE4NW4,Sec.10,T.31N.,R8E.	221'-607' Massive, non-foliated porphyritic (or porphyroblastic?) rock w/layered zones. Some layers contain wollastonite and grossularite. Generally a high grade hornfelsed graywacke.
Ln-106	NW4NW4,Sec.15,T.35N.,R8E.	262'-453' Greenschist facies, fine-grained, massive, non-foliated pillowed (?) metabasalt. Mainly chlorite-actinolite quartz-carbonate mineralogy. Lower portion of core is brecciated.
Ln-107	SW4SE4,Sec.26,T.35N.,R7E.	24'-128' Coarse grained (1 cm) non-foliated metagabbro.
Ln-108	NE4SW4,Sec.31,T.35N.,R4E.	91'-310' Greenschist facies, foliated mafic volcanic. Mostly fragmental w/flattened clasts, but some massive pillowed (?) and porphyritic zones. 310'-403' Massive, slightly foliated rock with fine grained zones (Appears to be a meta-peridotite.)

Ln-109	NE4SW4,Sec.31,T.35N.,R4E.	110'-235' Virtually non-foliated greenschist facies, massive, pillowed, amygdaloidal basalt. 235'-255' Actinolite-chlorite-rich bedded volcanogenic graywacke. 255'-287' Mottled vesicular (?) meta basalt, w/porphyritic zones w/hornblende phenocrysts.
FF-1	NW4SW4,Sec.28,T.31N.,R5E.	64'-586' Actinolite-chlorite-epidote schist (metabasalt) interbedded with layered biotite-quartz-feldspar-garnet schist (metagraywacke). Minor sulfides parallel to foliation.
FF-2	NW4SW4,Sec,28,T.31N.,R5E.	54'-630' Well-foliated biotite-muscovite-quartz-feldspar schist (metagraywacke) w/good graded beds preserved. Minor sulfides in slaty layers. Some interbedded chloritic zones.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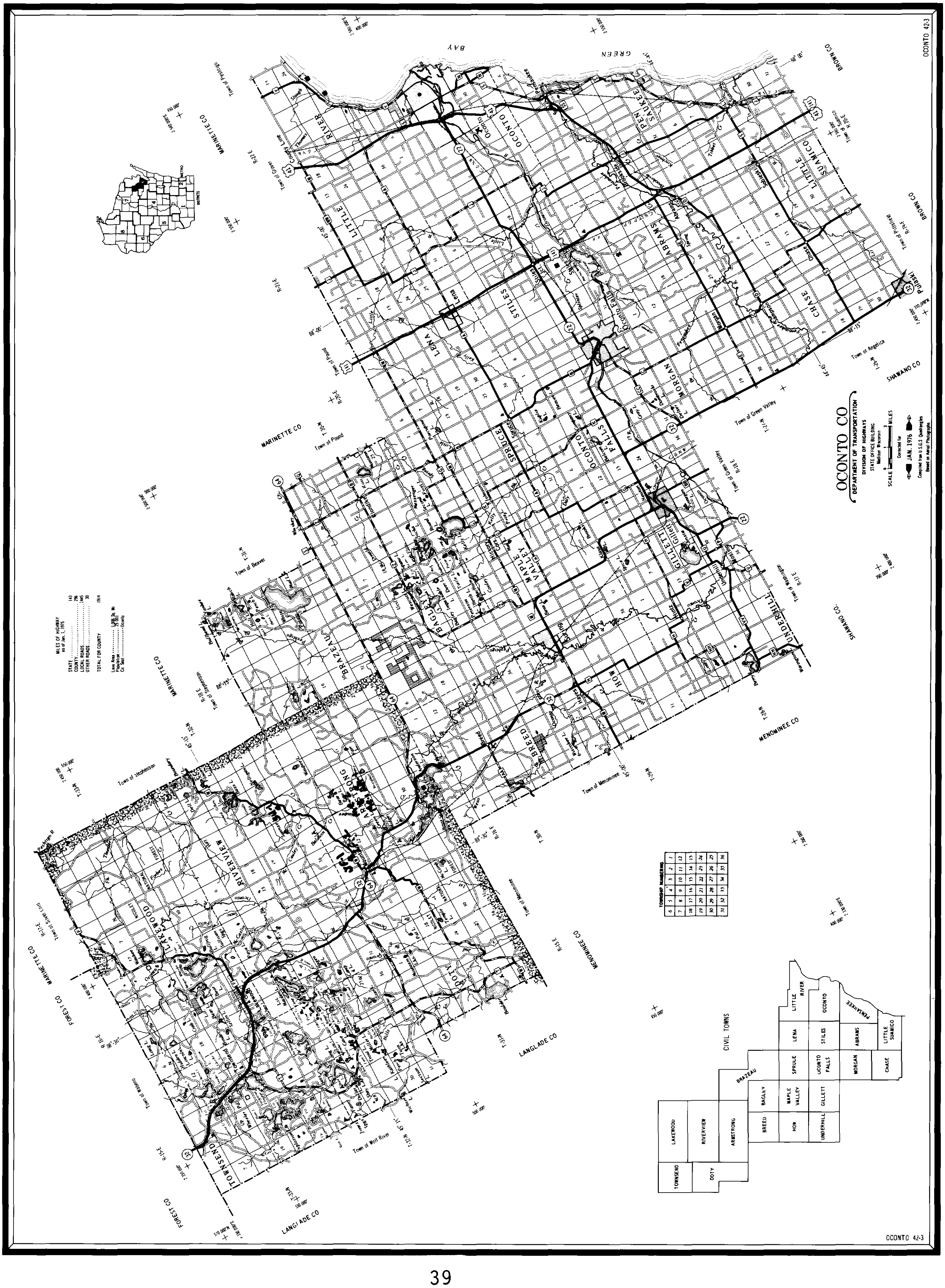
		volcanics w/some massive, porphyritic beds, pyrite and pyrrhotite in matrix to some felsic clasts.
H-13-3	SW4SE4,Sec.14,T.30N.,R5E.	69'-194' Greenschist facies, foliated felsic tuff or breccia w/interbedded chlorite-actinolite-quartz schist (andesite?). Pyrite in matrix to some felsic clasts.
H-16-1	SE4SW4,Sec.24,T.30N.,R5E.	65'-551' Fine-grained, foliated greenschist facies, metagraywacke w/slate dominant. Biotite porphyroblasts. Some graphitic-pyritic horizons. Some interbedded felsic tuff.
H-16-2	NE4SW4,Sec.24,T.30N.,R5E.	39'-517' Greenschist facies, felsic tuff interbedded with graywacke. Some of the volcanics are breccias, others are massive (flows?). Several graphitic pyritic and pyrrhotitic zones.
H-16-3	SW4NW4,Sec.24,T.30N.,R5E	139'-363' Greenschist facies, foliated, fine-grained interbedded felsic and intermediate massive and fragmental volcanics.
H-17-1	SW4NE4,Sec 26,T.30N.,R5E.	84'-317' Greenschist facies, foliated, fine-grained, interbedded metagraywacke and felsic and intermediate tuff. Several graphitic-pyritic horizons. A sheared metadiabase dike cuts seds.
EA-5	NE4NE4,Sec.35,T.29N.,R9E.	18'-240'? Upper greenschist facies, foliated, sheared metabasalt w/much metadiabase. Disseminated pyrite-pyrrhotite-chalcopyrite is present in much of core.
Bag-1	SE4SW4,Sec.29,T.29N.,R9E.	29'-282' Greenschist facies, fine-grained, green, granular metabasalt interbedded w/graphitic-pyritic slate.

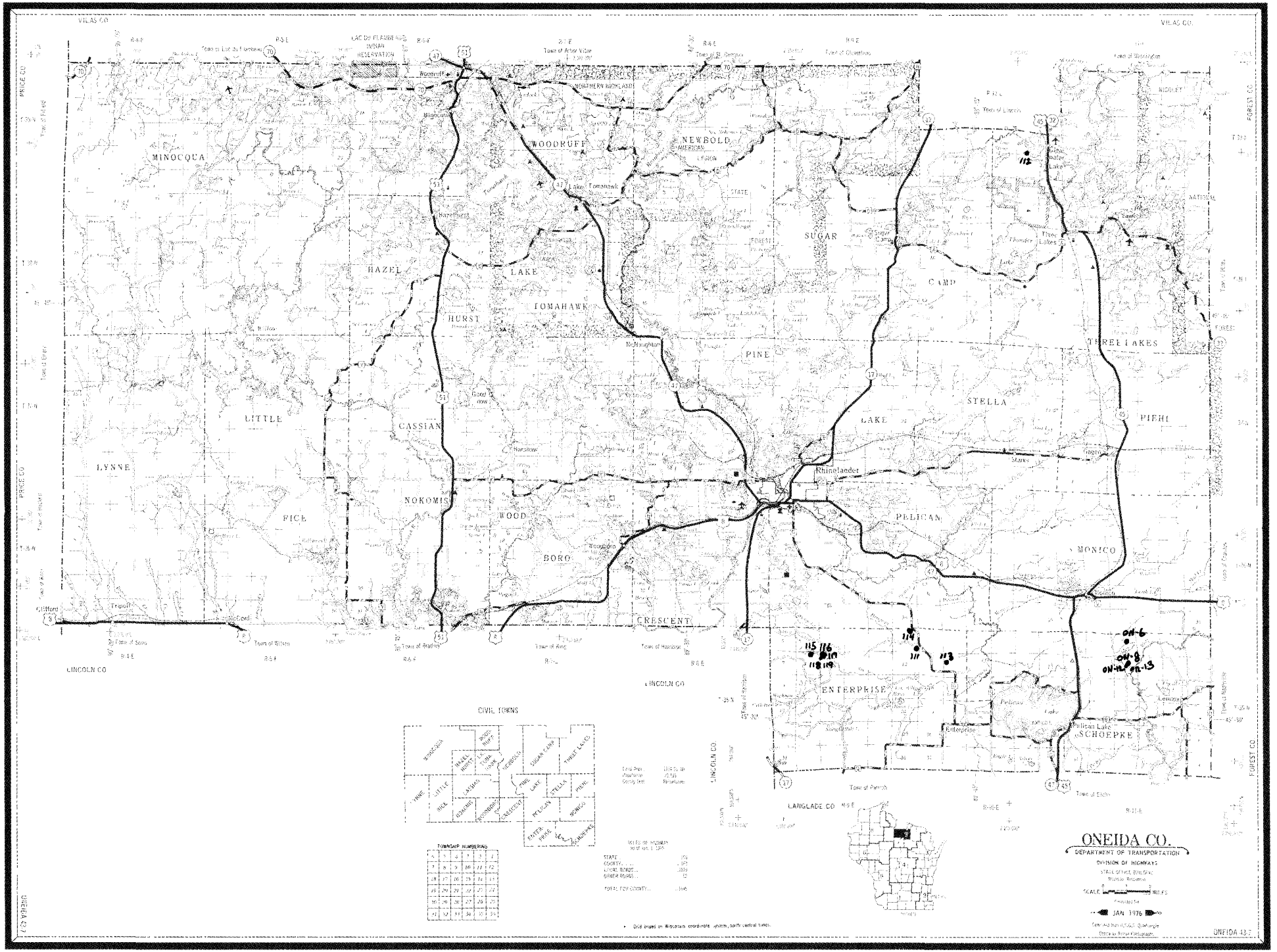
MARATHON COUNTY

Core	Location	Lithology
Mr 911	SE4NE4W2,Sec.6,T.28N.,R9E	31'390' Greenschist facies, fine grained, vaguely layered, pyrrhotitic, felsic tuff grading downward into massive rhyolite w/wavy, discontinuous, layering that changes orientation markedly over 2-3 meter intervals. Interbedded metasediments contain garnets to 1 cm.
Mr 912	SW4SW4,Sec.31,T.27N.,R5E	0'-176' Greenschist facies, weakly foliated chlorite-actinolite, mafic/intermediate tuff, w/sulfide-bearing zones.
Mr 913	NW4SW4,Sec.14,T.27N.,R5E	0'-248' Greenschist facies, foliated, actinolite-quartz-biotite-plagioclase schist. Probably from mafic-intermediate tuff. Some zones contain pyrrhotite-chalcopyrite. Some zones are intensely crenulated and contorted.
Mr 915	NW4SW4,Sec.14,T.27N.,R5E	Greenschist facies, foliated, actinolite-quartz-biotite-plagioclase-calcite schist derived from a mafic to intermediate volcanic w/interbedded tuff and massive, porphyritic flows. Some zones are highly crenulated and contorted.
H-13-1	SE4SW4,Sec.14,T.30N.,R5E.	50'-363' Greenschist facies, well-foliated, interbedded, fragmental felsic and intermediate volcanics w/flattened fragments. Bedded graphitic, pyrrhotitic zones; some very siliceous.
H-13-2	SW4SE4,Sec.14,T.30N.,R5E.	54'-257' Greenschist facies, foliated, brecciated, interbedded fragmental intermediate and felsic


OCONTO CO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
JAN. 1976
CIVIL TOWNS
LAKEWOOD
RIVERVIEW
ARMSTRONG
TOWNSEND
DOTY
BRAZEAU
BAGLEY
BREED
HOW
MAPLE VALLEY
GILLETT
UNDERHILL
SPRUCE
OCONTO FALLS
LENA
STILES
LITTLE RIVER
OCONTO
MORGAN
ABRAMS
PENSAUKEE
LITTLE SUAMICO
CHASE
OCONTO 42-3

OCONTO COUNTY

Core	Location	Lithology
JF-1	SE4SE4,Sec.2,T.31N.,R16E.	Fine-grained, non-foliated quartz-biotite metagraywacke w/several graphite-pyritic zones. Andalusite porphyroblasts are abundant in some layers. Hornfelsed graywacke.
ME-1	SE4NE4,Sec.18,T.31N.,R17E.	54'-484' Fine-grained, non-foliated, quartz-biotite andalusite-garnet-hornfelsed metagraywacke w/graphitic-pyrrhotitic zones. Metagraywacke is cut by several unmetamorphosed pyroxene diabase dikes.
ME-2	SE4NE4,Sec.18,T.31N.,R17E.	45'-124' Fine-grained, non-foliated, bedded, quartz-biotite-garnet-andalusite metagraywacke w/unmetamorphosed diabase dikes.
AR-1	NW4SE4,Sec.17,T.31N.,R17E.	144'-403' Black, fine-grained, non-foliated, pyrrhotite-graphite-rich argillite w/graywacke and felsic tuff interbeds. Coarse pink and gray granitoid dikes cut the metasediments. The rock appears to be mainly a hornfels.
IF-1	SE4SE4,Sec.2,T.31N.,R16E.	44'-198' Foliated quartz-biotite-feldspar metagraywacke. Deeper parts of core are non-foliated argillite and graywacke with andalusite porphyroblasts. Appears to be a hornfels.
SU-1	SW4SE4,Sec.28,T.32N.,R17E.	45'-160' Greenschist facies, very fine grained, strongly foliated, interbedded mafic (actinolitic) and felsic tuff.


ONEIDA CO.
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
JAN 1976
MINOCQUA
WOODRUFF
NEWBOLD
SUGAR CAMP
HAZELHURST
LAKE TOMAHAWK
PINE LAKE
THREE LAKES
STELLA
PIEHL
LITTLE CASSIAN
LYNNE
NOKOMIS
PICE
WOODBORO
PELICAN
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CRESCENT
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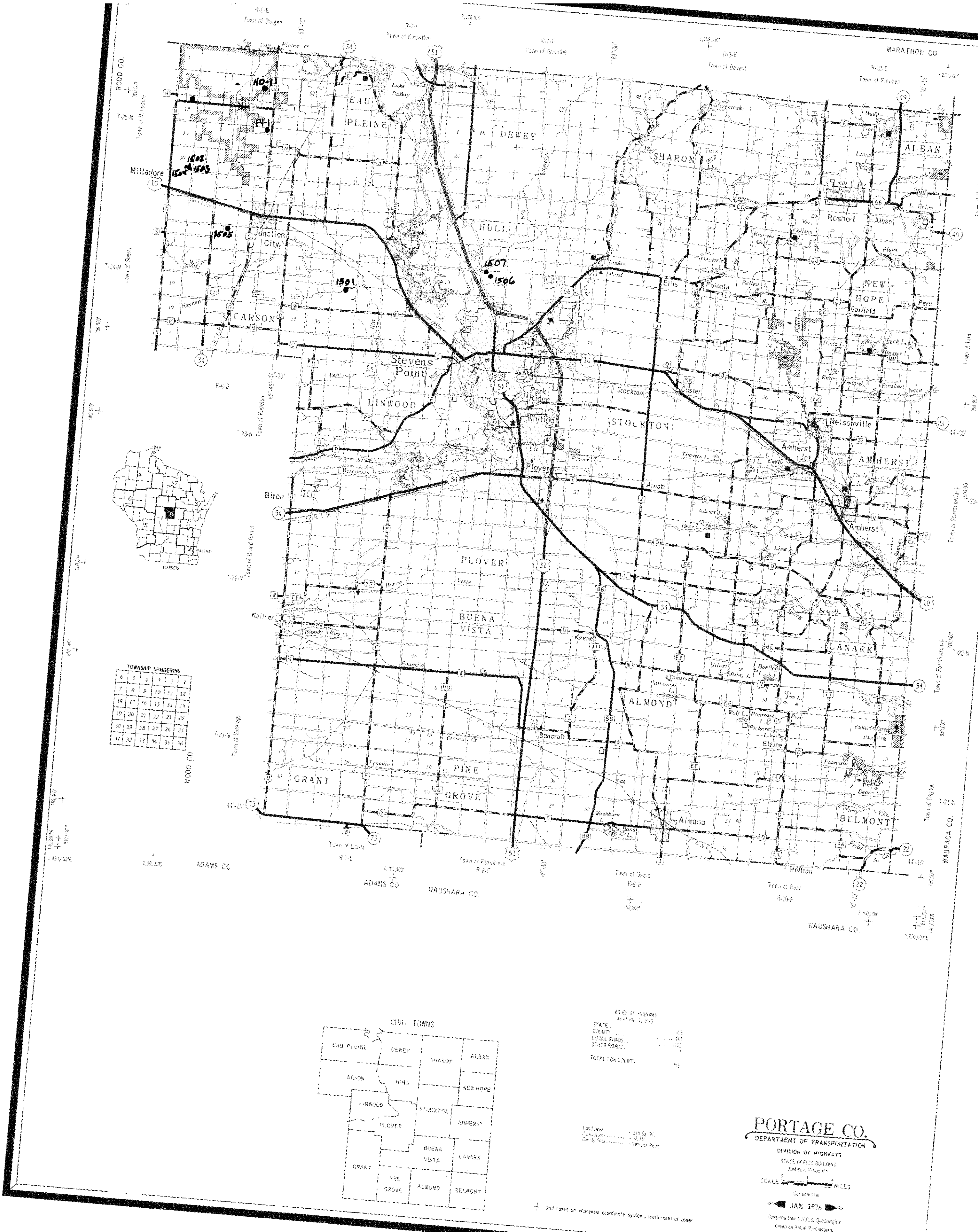
FOREST CO
PRICE CO
LANGLADE CO
CIVIL TOWNS
TOWNSHIP NUMBERING
ROUTES OF HIGHWAYS

ONEIDA COUNTY

Core	Location	Lithology
On-4A	Sec.4,T.35N.,R11E.	Greenschist facies, weakly foliated basaltic greenstone. Interbedded massive and fragmental zones.
On-6	Sec.4,T.35N.,R11E.	Greenschist facies, fine-grained, weakly foliated felsic tuffs intruded by coarse metadiabase and diorite dikes.
On-8	Sec.9,T.35N.,R11E.	Greenschist facies, fine-grained, weakly foliated interbedded mafic and felsic tuffs. Felsic tuffs have clasts to 15 cm. Fragments are very flattened. Chlorite and sericite are common.
On-12	Sec.9,T.35N.,R11E.	Greenschist facies, fine-grained, weakly foliated, interbedded mafic and felsic tuffs and massive flows. Sulfides occur in the felsic tuffs.
On-13	Sec.9,T.35N.,R11E.	Greenschist facies. Alternating zones of coarse- and fine-grained mafic rocks w/numerous strongly foliated zones. Appears to be basalt flows w/mafic dikes cut by numerous shear zones.
On-111	SE4SE4,Sec.1,T.35N.,R9E.	93'-340' Greenschist facies, weakly foliated, Chlorite-actinolite-carbonate-quartz, thick-bedded tuffaceous metagraywacke. Deeper parts of core are more felsic tuff w/somewhat flattened clasts to ± 7 cm.
On-112	SE4SW4,Sec.23,T.39N.,R10E.	125'-438' Coarse-grained, highly foliated and lineated, thick-banded amphibolite w/mottling suggesting a tuff protolith. 292'-322' Grunerite garnet-

		quartz-magnetite iron-formation w/actinolitic interbeds. 322'-362' Massive quartz-biotite schist. 362'-438' Interbedded amphibolite and biotite schist.
On-114	NW4NE4,Sec.1,T.35N.,R9E.	42'-322' Very fine-grained, weakly foliated greenschist facies, massive amygdaloidal metabasalt (probably pillow lava). Deeper levels are chloritic tuffaceous metagraywacke. 200'-230' Metadiabase.
On-115	NW4NE4,Sec.8,T.35N.,R9E.	51'-260' Greenschist facies, weakly foliated, interbedded massive (pillowed?) and fragmental metabasalt. 260'-398' Coarse, (1 cm) massive metagabbro.
On-116	NW4NW4,Sec.9,T.35N.,R9E.	76'-315' Greenschist facies, weakly foliated, massive amygdaloidal (pillowed?) metabasalt with tuffaceous zones w/clasts to 5 cm.
On-117	NW4NW4,Sec.9,T.35N.,R9E.	60'-320' Greenschist facies, weakly foliated, massive, metabasalt w/amygdaloid zones interbedded w/fragmental graphitic, sulfide-bearing metabasalt. Mainly pillow lavas.
On-118	NW4NW4,Sec.9,T.35N.,R9E.	45'-225' Greenschist facies, weakly foliated, massive, amygdaloidal metabasalt w/carbonate zones (pillow lava). Fragmental zones several feet thick may be interbedded tuff, or flow-top breccias.
On-119	NW4NW4,Sec.9,T.35N.,R9E.	60'-168' Greenschist facies, weakly foliated, fragmental andesitic (?) metavolcanics interbedded tuffaceous metagraywackes. 143'-168' Medium grained metadiabase.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LANARK
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Nelsonville
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Amherst
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Almond
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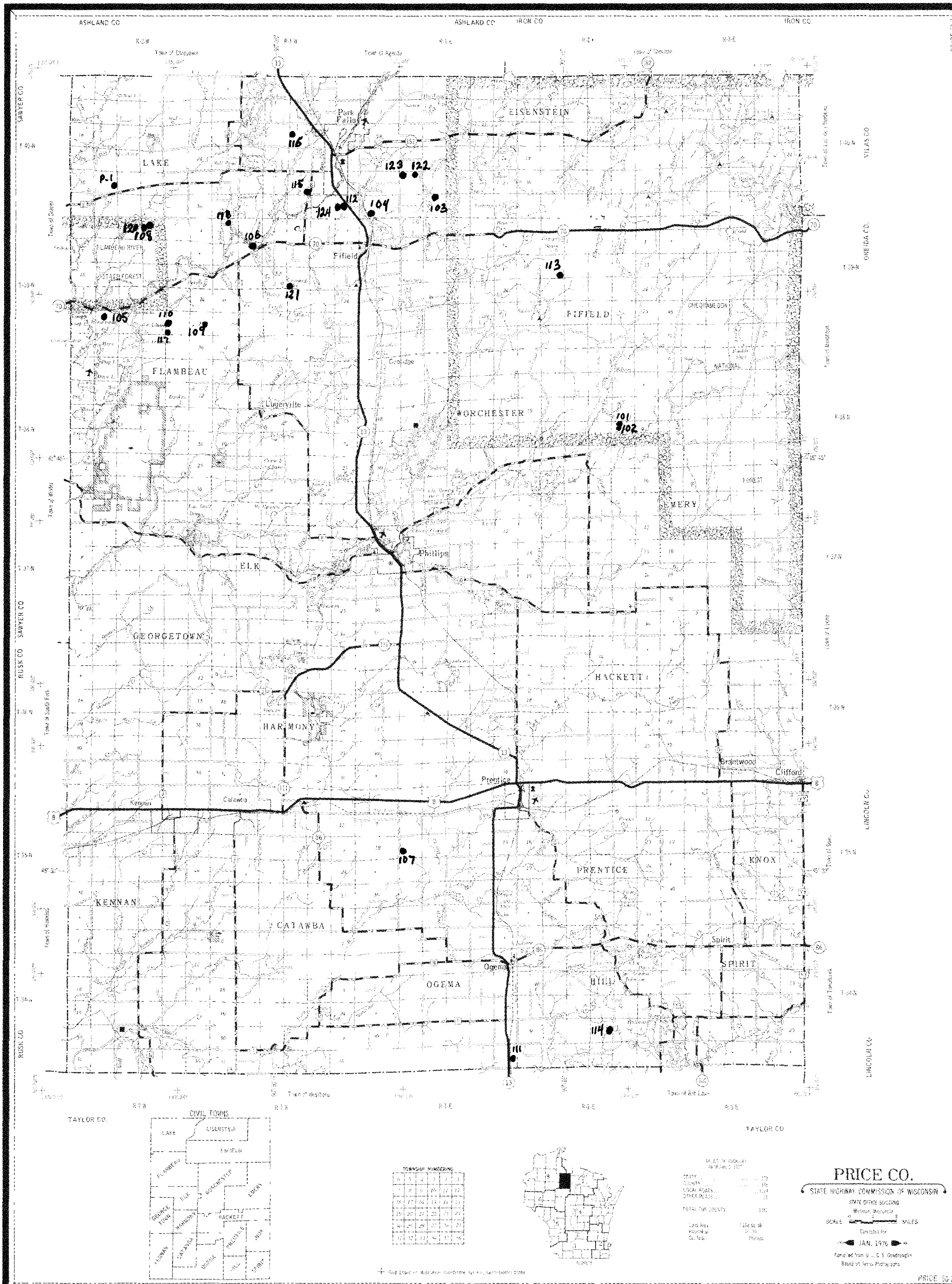
Kellner
Garfield
Peru
Stockton
Ellis
TOWNSHIP NUMBERING
CIVIL TOWNS
JAN 1976
1501
1503
1505
1506
1507
1508
H0-11
PORTAGE 49-1

PORTAGE COUNTY

Core	Location	Lithology
Pt-1501	NW4NE4,Sec.20,T.24N.,R.7E.	50'-125' Mainly layered amphibolite with magnetite-pyrite bearing fragmental zones. 125'-165' Well-foliated biotite schist w/"eyes" of K-feldspar-quartz to 5 cm. (Looks like felsic tuff) 165'-222' Intermediate tuff. 222'-275' Felsic tuff with sulfide zones and abundant epidote. 275'-500' Banded mafic amphibolite. 500'-559' Felsic/intermediate tuff w/clasts to 5 cm, prominent layering. Some zones strongly magnetic w/some pyrite. 597'-622' Felsic tuff becomes very epidote- and chlorite-rich downward into an andesitic (?) tuff. 622'-763' Felsic tuff w/clasts to 5 cm.
Pt-1502	SE4,Sec.30,T.24N.,R.6E.	10'-128' Metagraywacke interbedded with intermediate tuff. Little or no foliation. 128'-133' Pyrite-rich siliceous/chloritic zone. 133'-288' Sand-size intermediate tuff (or volcanogenic gw) w/vague layering and little foliation. 288'-295' Graphitic pyrite-pyrrhotite-chalcopyrite zone, highly chloritized, but w/clasts visible. 298'-309. Intermediate tuff. 309'-326' Graphitic pyrite-pyrrohotite-chalcopyrite zone w/much chlorite. 326'-450' Ultramafic rock w/foliated carbonate-veined margins and massive central zone. Many slickensided zones in serpentinite. In places the texture is pseudomorphed dunite. 450'-502' Massive, contorted mafic tuff.
PT-1503	SE4,Sec.30,T.24N.,R.6E.	26'-260' Serpentinite. Highly fractured and viened serpentine

		w/little talc. Scattered strongly foliated zones. Some massive zones have pseudomorphed-olivine textures. 260'-403' Fine-grained gray basaltic (?) tuff with foliated/flattened clasts visible on wetted surfaces.
PT-1504	SE4,Sec.30,T.24N.,R.6E.	17'-148' Mainly black, massive serpentine w/varigated zones. 148'440' Massive, unfoliated basalt or diabase. Much appears to be fragmental. Carbonate veins w/pyrite-pyrrhotite. 440'-453' Well foliated mafic tuff with flattened clasts.
PT-1505	NW4NE4,Sec.16,T.24N.,R.6E.	78'-160' Massive mafic tuff w/vague layering and little foliation. 160'-170' Felsic tuff interbedded w/mafic layers. 170'-266' Felsic tuff w/some mafic zones. Matrix tends to be chloritic. 266'553' Bedded mafic tuff w/zones of felsic tuff. Clasts flattened. Minor sulfides.
PT-1506	SW4NE4NW4,Sec.17,T.24N.,R.7E.	19'-315' Fine-grained, weakly foliated massive and tuffaceous basalt. Actinolite needles are random. Alternating massive and breccia zones w/carbonate may be pillows. 315'-391' Mafic tuff w/scattered granite dikes. 391'-437' Medium grained unfoliated gray granodiorite. Greenstone may be hornfelsed.
PT-1507	NW4NE4NW4,Sec.17,T.24N.,R07E.	21'-210' Fine grained, non-foliated, mafic volcanic w/some fragmental zones. Chlorite-actinolite-epidote-quartz-minor biotite. 210'-483' Bedded tuff or volcanogenic graywacke interbedded w/mafic tuff. 483'-511' Pink granite pegmatite w/microcline xtals to 10 cm. intrusive into volcanics.

	N/2NE4,Sec.18,T.25N.,R.6E.	Talc-serpentine
Pt-1	NE4NE4,Sec.22,T.25N.,R6E.	18'-282' Well-foliated biotite-chlorite-actinolite feldspar-quartz schist, with graphitic-sulfide zones. Mainly a mafic tuff w/some felsic zones, and some bedded (graywacke) zones.
HO-1	SW4NE4,Sec.14,T.25N.,R6E.	Weathered down to 52'. 52'-134' Biotitic, graphitic metagraywacke interbedded w/actinolite-chlorite mafic tuff. Soft-sediment deformation zones common. 134'-145' Meta diabase. 145'-324' Biotitic metagraywacke interbedded w/mafic tuff. Some sulfides.


PRICE CO.
STATE HIGHWAY COMMISSION OF WISCONSIN
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Fifield
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Lugerville
Phillips
Prentice
Brantwood
Clifford
Kennan
Catawba
Ogema
Spirit
CIVIL TOWNS
TOWNSHIP NUMBERING
P-1
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PRICE COUNTY

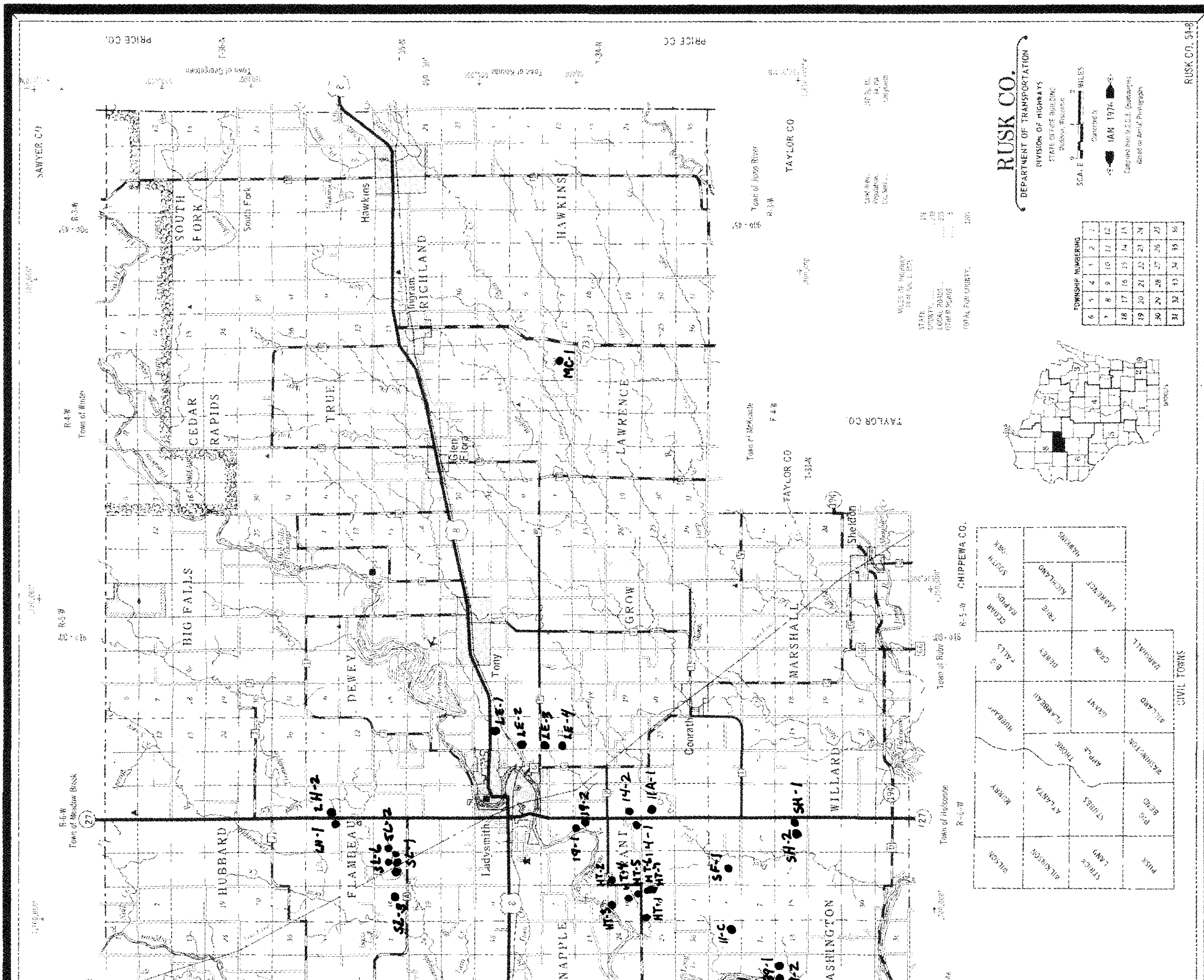
Core	Location	Lithology
Pr-101	NE4NW4,Sec.23,T.38N.,R2E.	160'-170' Well-foliated actinolite-chlorite schist w/little layering. 270'-330' Compositionally-layered amphibolite w/some garnetiferous biotitic zones. 330'-533' Qtz-biotite-garnet schist w/prominent layering.
Pr-102	NE4NW4,Sec.23,T.38N.,R2E.	71'-216' Well-layered actinolite-chlorite schist w/quartz feldspar or carbonate layers, some layers of recrystallized chert. 216'-603' Thin magnetite-chert iron-formations interbedded w/actinolite schist.
Pr-103	NW4NE4,Sec.33,T.40N.,R1E.	82'-124' Fresh diabase dike w/xenoliths(?) of porphyritic andesite and granodiorite gneiss. 124'-300 Garnetiferous quartz-biotite-feldspar schist w/biotite-rich and quartz-rich layering.
Pr-104	SE4SW4,Sec.31,T.40N.,R1E.	90'-402' Well-layered, foliated biotite-muscovite-sillimanite-garnet-quartz schist w/numerous thin granitic dikes. Some zones have crenulations and deformed garnets. Graphite occurs in zones throughout core.
Pr-105	SE4NW4,Sec.29,T.39N.,R2W.	169'-320' Coarse-grained, layered, biotite-quartz-plagioclase-sillimanite-garnet schist w/numerous non-foliated leucocratic, pink, pegmatitic granitic dikes. 320'-325' Fresh, fine-grained diabase dike. 325'-453' Garnetiferous biotite schist w/graphitic-pyritic zones and granitic dikes.
Pr-106	NW4NE4,Sec.8,T.39N.,R1W.	69'-95' Well-foliated, layered biotite-sillimanite-garnet-quartz-plagioclase schist. 95'-

		118′ Somewhat foliated coarse grained pink granite. 118′-323′ Well-foliated coarse biotite-garnet-sillimanite-quartz-plagioclase schist w/minor granitic dikes. Some graphitic zones.
Pr-107	NW4SW4,Sec.17,T.35N.,R1E.	180′-220′ Greenschist facies actinolite-chlorite schist from intermediate/mafic tuff w/some graphitic sulfide zones. 220′-421′ Graywacke w/good graded beds, sandy to pebbly at base and very graphitic at top. At 317′ is an Anthraxolite-bearing "graphitic" sulfide horizon. 421′-444′ Very chloritic graywacke and mafic tuff.
Pr-108	SW4NW4,Sec.3,T.39N.,R2W.	119′-208′ Weakly foliated gray medium grained quartz-monzonite w/polygonized quartz. Chilled contact at 208′. 208′-225′ Pyrrhotitic layered biotite schist. 226′-235′ Granitoid, as above. 235′-477′ Mainly sillimanite-garnet-biotite-quartz-plagioclase schist w/numerous granitoid zones up to 6′ feet thick.
Pr-109	NW4SE4,Sec.25,T.39N.,R2W.	119′-297′ Medium-grained, gray weakly foliated biotite-bearing granite. Quartz not polygonized. 297′-650′ Biotite-quartz schist w/compositional layering and scattered garnets and hornblende porphyroblasts. Schist is cut by numerous microcline-muscovite-quartz pegmatites.
Pr-110	SW4NW4,Sec.26,T.39N.,R2W.	155′-168′ Well-foliated, banded biotite-garnet-sillimanite-quartz-plagioclase schist with microcline-muscovite-quartz granite dikes. 268′-298′ Coarse non-foliated granite interlayed w/biotite schist. 298′-454′ Undeformed red muscovite-microcline-quartz granite w/numerous muscovite-rich

		pegmatites alternating w/biotite-muscovite quartz schist w/minor graphitic sulfides.
PR-111	NE4SE4,Sec.36,T.34N.,R1E.	160'-294' Massive, black fine-grained metabasalt w/common zones of ± 5mm round mottling (amygdules?). Appears to be a pillow lava w/some interflow sediments. Fine actinolite suggests greenschist facies.
Pr-112	SW4NW4,Sec.36,T.40N.,R1W.	125'-304' Well-foliated, banded amphibolite and biotite-garnet-sillimanite-quartz-plagioclase schist cut by dikes of undeformed red microcline-quartz-muscovite-biotite granite w/scattered pegmatitic zones.
PR-113	SE4SE4,Sec.17,T.39N.,R2E.	139'-372' Serpentinite w/± 1-2 mm round grains of serpentine pseudomorphs after olivine. Minor talcose zones. A major altered, broken, slickensided zone 240'-272' blue Mn oxides (?) coat fractures in deeper parts of hole.
Pr-114	NE4SE4,Sec.27,T.34N.,R2E.	243'-365' Fine grained, massive, non-foliated, felsic to intermediate tuff. Clasts not flattened. Some zones are andesitic crystal-lithic tuff. 361'-335' Sulfide zone (chalcopyrite-pyrrhotite) w/note of visible gold. 365'-440' Phaneritic rock-quartz diorite w/many mafic volcanic or ultramafic blocks 335'-365' Mainly felsic volcanics w/disseminated sulfides. Sub-greenschist facies, undeformed.
Pr-115	SW4NW4,Sec.15,T.40N.,R1W.	129'-350' Coarse-grained, strongly foliated banded muscovite-biotite-garnet-sillimanite-quartz-plagioclase schist w/minor sulfides.

Pr-116	SW4NW4,Sec.26,T.40N.,R1W.	119'-303' Coarse-grained, well-foliated, banded, biotite-garnet-sillimanite-quartz-plagioclase schist cut by several undeformed granitic dikes.
Pr-117	SW4SW4,Sec.26,T.39N.,R2W.	221'-604 Well-foliated, layered biotite-rich garnet-sillimanite-staurolite-quartz-plagioclase schist w/numerous granitic dikes and veins. Sillimanite is in lenticular clots as well as disseminated.
Pr-118	NW4NE4,Sec.6,T.39N.,R1W.	130'-663' Interlayered amphibolite and biotite-garnet-sillimanite-quartz-plagioclase schist cut by numerous granitic veins and dikes. 322'-330 Metadiabase dike w/garnets.
PR-119	NW4NW4,Sec.32,T.40N.,R.2E.	
Pr-120	SW4NW4,Sec.3,T.39.,R2W.	220'-403' Medium-grained biotite-sillimanite-garnet-quartz-plagioclase schist interbedded w/actinolitic (?) amphibolite.
Pr-121	SW4SW4,Sec.15,T.39N.,R1W.	156'-361' Well-foliated, bedded biotite-chlorite schist and actinolite-chlorite schist. Graded beds in graywacke (biotitic) and flattened clasts in andesitic tuff are well preserved. 252'-320' Siliceous felsic tuff and breccia. 320'-361' Bedded chlorite-actinolite schist.
Pr-122	NW4NE4,Sec.29,T.40N.,R1E.	119'-321' Coarse-grained biotite-garnet-staurolite-sillimanite-quartz-plagioclase schist w/prominent layering and a graphitic sulfide-bearing zone. Undeformed pink, leucocratic, pegmatitic granite dikes cut the schist.
Pr-123	NW4NW4,Sec.29,T.40N.,R1E.	149'-303' Coarse-grained, well-foliated biotite-muscovite-

		quartz-garnet-sillimanite schist interbedded w/amphibolite cut by undeformed leucocratic, pegmatitic granite. Pegmatites are muscovite-rich.
Pr-124	SW4NW4,Sec.36,T.40N.,R1W.	139'-300' Coarse-grained, well-foliated biotite-muscovite-quartz-garnet-sillimanite schist w/zones of sulfides and graphite. Veins and dikes of red, leucocratic, undeformed granite cut the schist.
P-1	NE4SE4,Sec.29,T.40N.,R1W.	205'-600' Coarse-grained, well-foliated biotite-garnet-quartz-plagioclase-schist w/graphitic sulfide horizons and interbedded w/amphibolite. Numerous undeformed pink, leucocratic granite dikes cut the schist.


RUSK CO.
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
TOWNSHIP NUMBERING
CIVIL TOWNS
SAWYER CO.
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RUSK CO. 54-8
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Ladysmith
Bruce
Weyerhaeuser
Hawkins
Ingram
Glen Flora
Tony
Conrath
Sheldon
Island Lake
LE-1
LE-2
LE-3
LE-4
MC-1
LH-1
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SL-1
SL-2
SL-3
SC-1
SH-1
SH-2
SF-1
HT-1
HT-2
HT-3
HT-5
II-C
39-1
39-2
GS-1
GS-4
FL-1
W-1
W-2
W-3

RUSK COUNTY

Core	Location	Lithology
FL-1	W1/4 corner,Sec.25,T.33N.,R8W.	191'-497' Mainly a highly graphitic argillite w/interbeds of bedded tuff or metagraywacke. Some zones are coarse felsic tuff breccia, others are conglomeratic. Sericite is dominant, but some zones are chlorite-actinolite. Locally garnetiferous.
GS-1	SE4NE4,Sec.30,T.36N.,R7W.	20'-200' Highly foliated chlorite-actinolite-epidote schist w/ 20% pyrite. Mainly mafic tuff w/clasts to 3 cm. 200'- Sericite-chlorite schist w/crenulated cleavage and abundant pyrite cubes. Volcanic clasts to 3 cm are sericitic; matrix is more chloritic.
GS-2	NW4NE4,Sec.30,T.36N.,R7W.	Greenschist grade intermediate/mafic tuffs and breccia w/pyrite common.
GS-3	SE4NE4,Sec.30,T.36N.,R7W.	Greenschist grade intermediate/mafic tuffs and breccias w/pyrite common.
GS-9	NE4SW4,Sec.30,T.36N.,R7W.	30'-640' Greenschist grade, well-foliated interbedded felsic and mafic tuffs w/cubes and thin seams of pyrite.
HT-1	NW4NW4,Sec.30,T.34N.,R6W.	103'-165' Fine- to medium-grained pink granite, locally granophyric and w/cataclastic foliation. 165'-172' Metagraywacke. 172'-220' Well-foliated granitic gneiss. 224'-235' Metagraywacke w/blue quartz eyes. 240'-265' Well foliated granite. 265'-320' Quartz-eye schist and biotite schist. 320'-395' Banded granitic gneiss. 395'-764' Gray quartz monzonite w/some foliation.

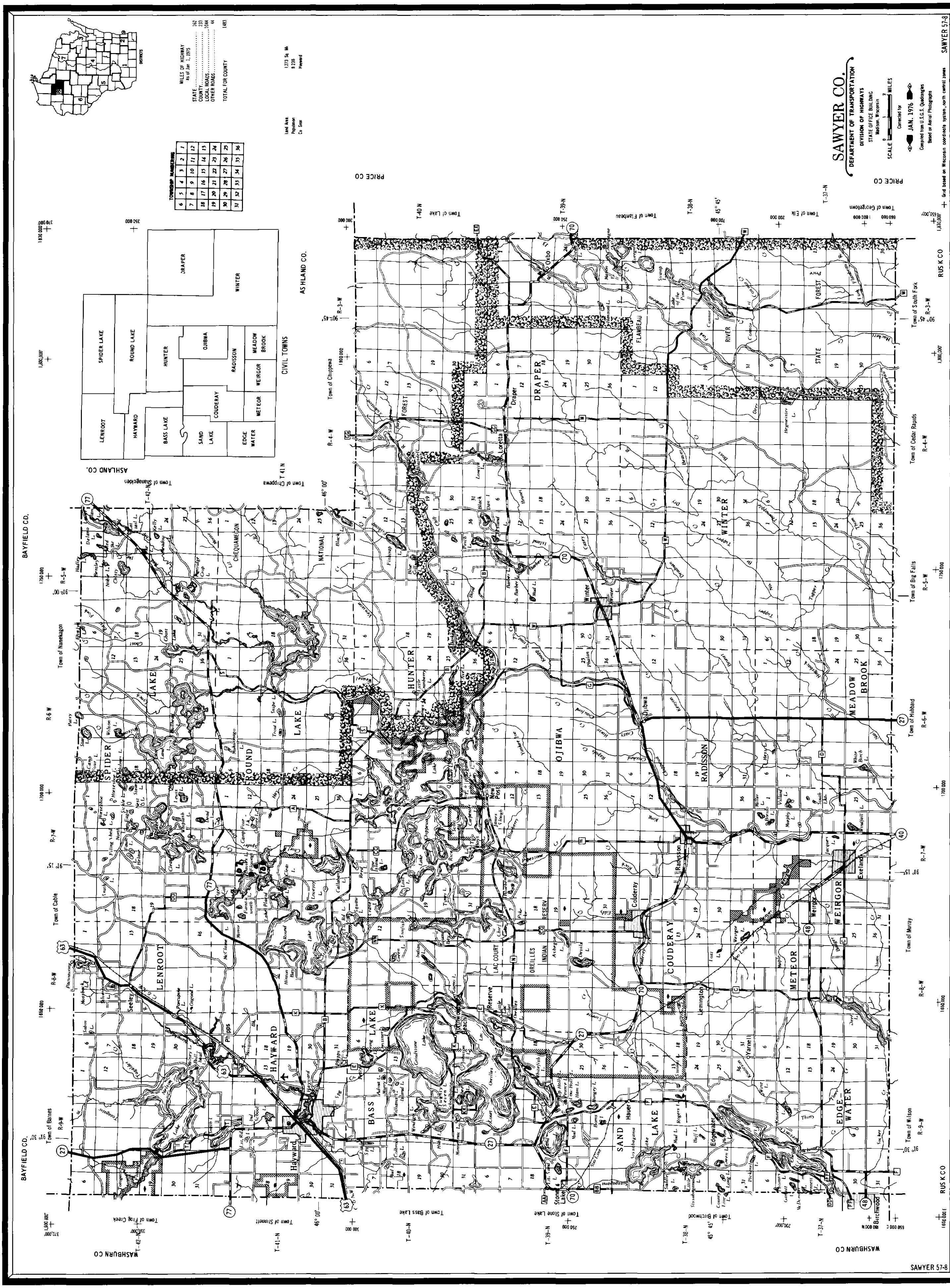
HT-2 NW4NW4,Sec.20,T.34N.,R6W.	243'-360' Greenschist facies, well-foliated intermediate/felsic crystal-lithic tuff. 360'-945' Foliated felsic tuff w/abundant blue quartz eyes. 945'-966' Highly sheared granite (?).
HT-3 NW4NW4,Sec.20,T.34N.,R6W.	97'- Non-foliated medium to coarse grained, pink to gray biotite-quartz monzonite. (Appears to be post-tectonic).
HT-4 NW4SE4,Sec.19,T.34N.,R6W	65'-100' Non-foliated medium- to coarse-grained biotite quartz monzonite.
HT-5 SW4SE4,Sec.19,T.34N.,R6W	Non-foliated quartz monzonite as in HT-3 and HT-4
HT-6 NW4NE4,Sec.30,T.34N.,R6W.	Non-foliated quartz monzonite as above. (Post tectonic pluton).
HT-7 SE4NE4,Sec.30,T.34N.,R6W.	56'-105' Cambrian sandstone. 105'-220' Weathered, foliated andesitic tuff. 220'-257' Foliated blue quartz-feldspar porphyry.
LE-1 Center,Sec.36,T.35N.,R6W.	160'-175' Non-foliated quartz-plagioclase. porphyry. 175'-414' Interlayered blue quartz-plagioclase porphyry and medium- to fine-grained quartz diorite.
LE-2 SW4NW4,Sec.1,T.34N.,R6W.	252'-652' Fine-grained chlorite-sericite, porphyritic andesitic/dacitic tuff w/flattened clasts and good foliation.
LE-3 NW4NW4,Sec.12,T.34N.,R6W.	170'-635' Greenschist facies, strongly foliated crystal-lithic andesitic tuff w/flattened clasts. (Rock appears to be altered to sericite-chlorite.)
LE-4 NW4SW4,Sec.12,T.34N.,R6W.	111'-641' Greenschist facies, chlorite-sericite foliated crystal-lithic andesitic tuff w/minor disseminated pyrite.

LH-1 SW4SW4,Sec.3,T.35N.,R6W.	61'-126' Laminated quartz-actinolite-biotite-chlorite schist. 126'-390' Quartz-magnetite-grunerite or quartz-hematite iron-formation w/actinolitic interbeds. 390'-402' Unmetamorphosed diabase dike.
LH-2 SE4SE4,Sec.4,T.35N.,R6W.	34'-140' Laminated, banded gneiss/schist w/chlorite-biotite-quartz-feldspar-garnet mineralogy. 140'-310' Quartz-magnetite-grunerite iron-formation w/much interbedded quartz-actinolite-biotite-feldspar-schist. Amphiboles are very lineated. (tuffaceous iron-formation)
MC-1 NW4SE4,Sec.11,T.34N.,R4W.	70'-280' Serpentinized peridotite-dunite w/oxidized, red serpentine. Well-preserved primary texture, although olivine is mostly serpentinized. At 230' is coarse amphibole after pyroxene (?). Relict olivine appears near the bottom of the hole.
SF-1 NE4SW4,Sec.5,T.33N.,R6W.	91'-595' Greenschist facies highly foliated quartz-sericite schist drived from felsic tuff. Clasts to 7-10 cm are very flattened. Some interbedded metagraywacke. 595'-615' Siliceous, graphitic, sulfide-bearing felsic tuff.
SH-2 NW4SE4,Sec.16,T.33N.,R6W.	90'-705' Fine grained, well-foliated sericite-quartz-feldspar schist derived from felsic tuff. Variable concentration of disseminated pyrite. Some zones contains flattened clasts.
SH-9 NW4SE4,Sec.16,T.33N.,R6W	100'-470' Greenschist facies, fine-grained sericitic schist derived from felsic tuff. Some zones are quartz-eye tuffs, others are crystal-lithic

	lapilli tuffs. 470'-740' Tuff is more chloritic w/clasts to 7-10 cm. (andesitic?). 740'-1160' Tuff w/felsic clasts in more chloritic matrix. Some zones porphyritic.
SL-1 NE4SE4,Sec.17,T.35N.,R6W.	184'-226' Fine-grained, green metadiabase. 226'-233' Very fine-grained, pinkish gray, strongly lineated, siliceous rock. 233'-304 Quartz-feldspar-biotite-pyrrhotite schist (metagraywacke?) 304'-313' Strongly lineated, fine-grained actinolitic rock w/isoclines, 313'-357' Sheared actinolitic metagabbro. 357'-445' Sheared, fine grained metabasalt w/siliceous sulfide-bearing zones.
SL-3 NE4SE4,Sec.18,T.35N.,R6W.	113'-920' Alternating zones about 100' thick of actinolitic schist, commonly well-lineated in zones, and granophyric medium to coarse grained quartz-microcline-muscovite granite or quartz monzonite.
SL-4 NW4SE4,Sec.17,T.35N.,R6W.	345'-565' Alternating zones of strongly lineated greenschist facies (chlorite-actinolite-epidote) metabasalt and quartz-biotite-feldspar metagraywacke w/pyrrhotite and chalcopyrite. Bottom of hole is foliated felsic feldspar-blue quartz. crystal tuff.
SL-5 NE4SW4,Sec.17,T.35N.,R6W.	112'-397' Well-foliated and lineated biotite-quartz-feldspar metagraywacke (?) w/much very fine-grained gray to pink siliceous, streaky mylonite. 397'-478' Streaky, lineated, banded actinolitic-biotitic metabasalt (?).
SL-6 NE4SW4,Sec.17,T.35N.,R6W,	112'-1202' Mainly a foliated, lineated metadiabase w/zones of unmetamorphosed diabase. These

	rocks cut a foliated greenschist grade felsic tuff w/blue quartz eyes and clasts to 3 cm.
T-7-1 NW4NW4,Sec.17,T.35N.,R6W	48'-295' Well-foliated, layered muscovite-biotite schist with some chloritic layers. (metagraywacke)
W-1 SE4SE4,Sec.9,T.34N.,R8W.	86'-137' Cambrian sandstone 137'-359' Highly foliated, kaolinized, sericitic pyritic white, altered felsic (?) volcanic. 359'-439' Unmetamorphosed diabase.
W-2 SE4NE4,Sec.16,T.34N.,R8W.	125'-170' Well-foliated, fine-grained, white quartz-sericite-kaolinite schist w/quartz eyes and pyrite cubes (altered felsic volcanic).
W-3 SE4NE4,Sec.16,T.34N.,R8W.	112'-142' Cambrian sandstone 142'-393' Well-foliated white quartz-sericite-kaolinite rock w/hematite casts after pyrite. Below 223' there is less kaolinite and more fine grained chloritic layers and pyrite. Quartz eyes are present suggesting volcanic rock.
11A-1 NW4NW4,Sec.27,T.34N.,R6W.	105'-605' Non-foliated, fresh, fine-grained, massive, plagioclase-phyric felsic volcanic. 605'-630' Graphitic argillite. 630'-646' Tuff breccia w/felsic clasts in graphitic matrix. 646'-737' Interbedded graphitic argillite & felsic tuff. 737'-794' Welded felsic tuff. 794'-812' Porphyritic andesite flow. 812'-816' Welded (?) felsic tuff.
11C-1 NE4SW4,Sec.1,T.33N.,R7W.	147'-228' Felsic crystal tuff, w/very graphitic quartz veins at 203'. 228'-397' Fresh, unmetamorphosed diabase dike w/altered margins. 397'-56' Black carbonaceous pyritic argillite. 556'-563' Coarse

	graywacke w/felsic volcanic clasts. 563'-612' Fine black to gray laminated argillite. 612'-641' Felsic crystal-lithic tuff quartz eyes.
14-1 SE4SE4,Sec.21,T.34N.,R6W.	203'-254' Non-foliated quartz-feldspar crystal tuff. 254'-262' Black carbonaceous argillite. 262'-269' Serpentinite w/slickensides. 269'-390' Fresh unmetamorphosed diabase. 390'-470' Black graphitic argillite, brecciated near diabase. 470'-479' Fresh diabase.
14-2 NW4SW4,Sec.22,T.34N.,R6W.	Subgreenschist facies black argillite and felsic tuff cut by fresh, unmetamorphosed diabase dike (very similar to 14-1)
19-1 SE4NE4,Sec.16,T.34N.,R6W.	129'-233' Fine-grained, foliated greenschist grade crystal-lithic andesitic tuff. 233'-600' Strongly foliated sericitic felsic tuff, some zones w/blue quartz eyes. Fragments flattened. Minor pyrite in some zones.
19-2 NE4NE4,Sec.16,T.34N.,R6W.	163'-650' Foliated sericitic quartz eye tuff w/chloritic clots in matrix. 650'-801' Foliated actinolite-chlorite-epidote schist. 801'-1004' Foliated sericitic quartz-feldspar prophyry and tuff.
39-1 NW4NE4,Sec.14,T.33N.,R7W.	171'-433' Fine grained, gray, porphyritic, unmetamorphosed diabase w/sheared margin. 433'-681' Very fine grained graphitic (?) pyritic argillite w/weal cleavage interbedded w/coarse graywacke. Local slumps.
39-2 NE4NW4,Sec.14,T.33N.,R7W.	180'-243' Sericitic quartz-eye tuff or porphyry. 243'-734' Black graphitic argillite w/scattered pyritic layers interbedded w/thin felsic tuffs and coarse-grained graywacke.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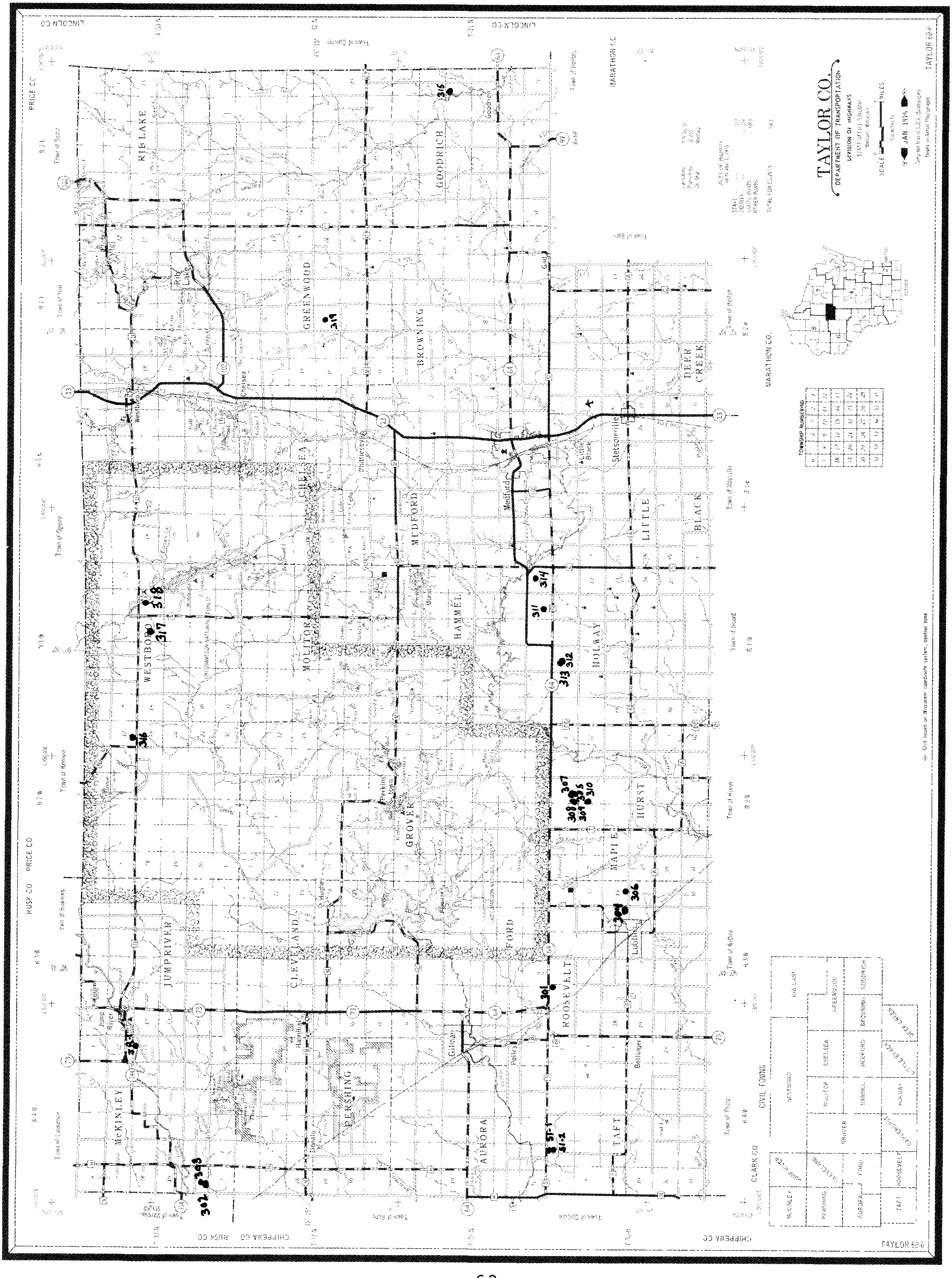
SAWYER COUNTY

Core	Location	Lithology
SW-107	NWNWSW4,Sec.15,T.41N.,R7W.	70'-250'. Highly contorted migmatitic gneiss and amphibolite with dikes of pink leucocratic granite with weak cataclastic (?) foliation.
SW-106	Center,SE4SW4,Sec.15,T.41N.,R7W.	69'-250'. Massive diorite (hornblende and pink feldspar) cut by basaltic dikes. At 141' core enters pink biotitic granitic gneiss.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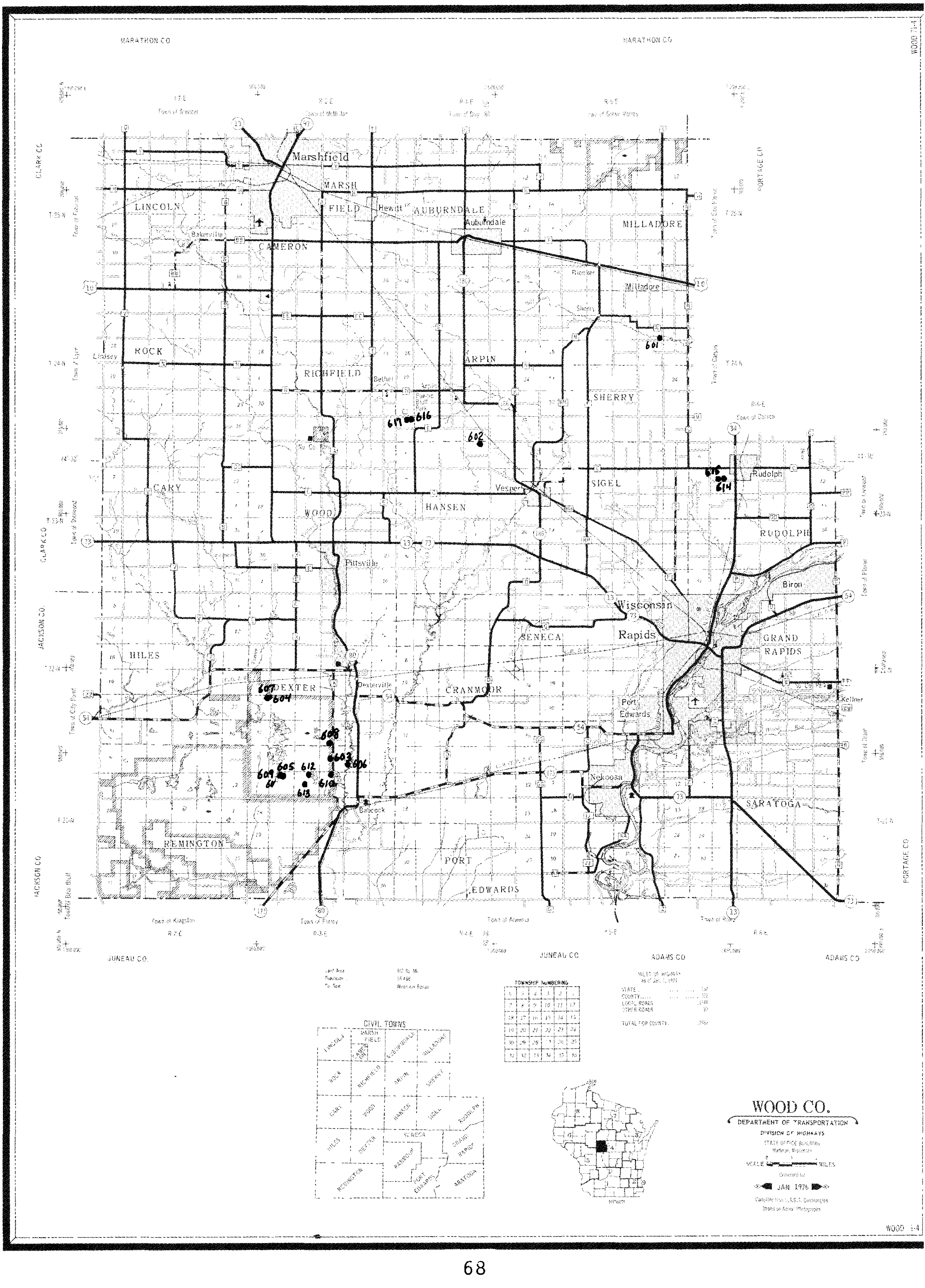
TAYLOR COUNTY

TA-301	NE4NE4,Sec.5,T.30N.,R03W.	120'-446' Greenschist facies mafic/intermediate tuff with lapilli size fragments and a carbonate- rich matrix. Generally well-bedded w/well-preserved primary features.
TA-302	SE4SW4,Sec.30,T.33N.,R4W.	130'-600' Greenschist facies, bedded, intermediate crystal-lithic lapilli tuff w/interbedded tuffaceous graywacke. Some zones have almost no foliation and equant clasts. Other zones are highly foliated and slickensided w/very flattened clasts and phenocrysts. 600'-628' Sheared, slickensided, unmetamorphosed diabase dike. 628'-692' Foliated, crenulated, graphitic pyritic graywacke and slate.
TA-303	NE4SW4,Sec.30,T.33N.,R4W.	185-276' Greenschist facies, vaguely foliated and layered mafic tuff interbedded w/tuffaceous graywacke. 276'-426' Highly foliated slickensided zone. 420'-455' Highly sheared graphitic zone. 455'-597' Interbedded felsic (sericitic) and intermediate/mafic tuff w/flattened clasts.
TA-304	SE4SE4SE4,Sec.14,T.30N.,R03W.	89'-220' Very weathered, greenschist facies metagraywacke and mafic tuff w/pyrite. 220'-704' Bedded intermediate tuff w/considerable graphitic-pyrrhotitic matrix to clasts. Below 530' the core is finer grained and more prominently layered.
TA-305	NE4SE4SW4,Sec.3,T.30N.,R02W.	104'-524' Well-foliated, chloritic bedded tuff interbedded w/volcanogenic graywacke w/scattered sulfide-bearing zones. Numerous small

		scale isoclinal folds. Well-preserved cross-bedding.
TA-306	SW4SW4SE4,Sec.13,T.30N.,R3W.	90'-503' Greenschist facies chloritic metagraywacke w/well-preserved primary features. Thin zones have complex folds. Graphitic zones. 375'-390' Garnetiferous zone.
TA-307	SE4SW4,Sec.3,T.30N.,R2W.	80'-274' Well-bedded greenschist facies metagraywacke. 274'-382' Unmetamorphosed disbase dike. 232'-487' Greenschist facies, chloritic metagraywacke w/minor sulfide zone at 390'-398'.
TA-308	SW4SW4,Sec.3,T.30N.,R2W.	79'-286' Greenschist facies turbidites w/some layers conglomeratic, some sandy, others graphitic slate. 286'-390' Unmetamorphosed diabase dike w/good chilled margins. 390'-473' Greenschist facies metagraywacke w/good graded bedding.
TA-309	SE4SW4SW4,Sec.3,T.30N.,R2W.	95'-508' Greenschist facies metagraywacke with numerous thin tightly folded horizons (slumps?) Some deformed zones are 20' thick and have crenulated cleavage.
TA-310	NW4SW4NW4,Sec.10,T.30N.,R02W.	71'-603' Greenschist facies, well-bedded metagraywacke interbedded w/intermediate tuff. Graphitic sulfidic tuff at 569'-587'.
TA-311	SE4NE4SW4,Sec.35,T.31N.,R01W.	135'-466'Bedded, chlorite-epidote rich tuff with volcanic clasts to 3 cm preserved in epidote. Graphitic sulfidic layers at 329'-340' and 360'-376'. Mainly a greenschist facies mafic bedded tuff.
TA-312	SE4NE4NW4,Sec.4,T.30N.,R1W.	151'-485' Greenschist facies (chlorite/actinolite) interbedded mafic/intermediate tuff and metagraywacke. Small

		garnets are present in sedimentary layers.
TA-313	SE4NW4NW4,Sec.4,T.30N.,R1W.	133'-735' Greenschist facies metagraywacke w/interbedded intermediate/mafic tuffs w/lapilli size clasts. Graphitic zones are 2' to 4' thick.
TA-314	SW4SW4NE4,Sec.36,T.31N.,R01W.	93'-140' Massive, fine-grained, non-foliated greenschist facies basaltic greenstone. 140'-180' Intermediate, bedded tuff w/very flattened clasts. Some zones have graphitic-sulfidic matrix to clasts. 180'-300' Diabase dike. 300'-400' Bedded felsic tuff, becoming coarser downward. 400'-521' Fine-grained, bedded andesitic tuff.
TA-315	NW4NW4,Sec.13,T.31N.,R3E.	0'-297' Well-foliated and layered, coarse-grained garnetiferous biotite schist. (Metagraywacke).
TA-316	SE4NW4,Sec.15,T.33N.,R1W.	213'-365' Highly-foliated, greenschist facies metagraywacke, with thick bedding. Fine layers are excellent phyllite, some with considerable graphite.
TA-317	SE4SW4,Sec.12,T.33N.,R1W.	139'-310' Greenschist-facies felsic tuff w/good foliation and flattened clasts, and some interbedded graywacke. 310'-318' Highly sheared, slickensided zone w/graphite. 318'-463' Moderately foliated chloritic metagraywacke.
TA-318	Lot 11,Sec.7,T.33N.,R1E.	200'-412' Greenschist facies, andesitic volcanic breccia w/somewhat foliated and flattened fragments to 10 cm. 412'-455' Graphitic, pyrrhotite-pyrite-chalcopyrite zone. 455'-472' Graywacke argillite w/excellent graded bedding. 472'-500' Andesitic lapilli tuff

		w/flattened fragments. 500'-505' Metagraywacke. 505'-523' Massive metabasaltic tuff or flow, w/plagioclase and pyroxene (now hornblende) phenocrysts.
TA-319	SE4NW4,Sec.21,T.32N.,R2E.	160'-426' Fine-grained, turbiditic, chlorite-actinolite-rich metagraywacke. Minor sulfides disseminated throughout. Carbonate veins are common.
JR-1	NW4NE4,Sec.13,T.33N.,R4W.	151'-280' Very fine-grained, well-foliated chlorite-actinolite-epidote schist (possible tuff). Local folded foliation. 280'-423' Very fine-grained sericitic felsic tuff w/minor pyrite-chalcopyrite.
SI-1	NW4NE4,Sec.5,T.30N.,R4W.	137'-438' Quartz-biotite-chlorite-plagioclase-garnet metagraywacke-slate. Minor pyrrhotite-chalcopyrite along foliation. Some very siliceous zones.
SI-2	NW4NE4,Sec.5,T.30N.,R4W.	120'-300' Highly sheared quartz-sericite schist w/chlorite-epidote zones and numerous quartz stringers. 300'-350' Foliated mafic volcanic. 350'-450' Well-foliated quartz-biotite-feldspar-garnet metagraywacke.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WD-601 SE4SE4SE4,Sec.11,T.24N.,R.5E. 40'-65' Highly-foliated rock w/lensoidal granitic pods in a chloritic envelope (looks very sheared). 65'-275' Coarse felsic tuff w/foliated and flattened clasts to 5 cm in more chloritic matrix. Graphitic zones w/sulfides and silicified zones, some associated w/strongly chloritized zones.

WD-602 NW4NE4NE4,Sec.3,T.23N.,R.4E. 30'-293' Interbedded mafic and felsic tuff with clasts to 5cm. Greenschist facies. Several graphitic, sulfide-bearing zones w/silicified zones. Bottom of hole is chloritic tuff w/10 cm fragments and abundant carbonate veining.

WD-603 NE4SW4,Sec.3,T.21N.,R.3E. 108'-192' Mainly a thin bedded chlorite-sericite phyllite. Mainly a greenish color, but some zones are purplish.

WD-604 NE4NE4,Sec.30,T.22N.,R.3E. 15'-68' Fine grained moderately foliated chlorite-actinolite-quartz schist with layering. Bedded mafic tuff or graywacke.

WD-605 NW4NE4,Sec.8,T.21N.,R.3E. 43'-75' Highly weathered, oxidized cloritic saprolite. 75'-152' Coarse, well foliated chloritic-actinolitic greenstone interbedded w/thin mgt-cht I.F. 152'-167' Fine-grained oxidized pink granite. 167'-247' Mgt-cht I.F. lenses in chlorite-actinolite schist.

WD-606 NW4SE4,Sec.2,T.21N.,R.3E. 13'-75' Highly weathered, oxidized fine-grained bedded rock. 75'-85' Fine grained black carbonaceous (not graphitic) argillite with weak foliation. 85'-114' Oxidized zones with pyritic, carbonaceous argillite.

WD-607 NE4NE4,Sec.30,T.22N.,R.3E.	10'-68' Highly-weathered, oxidized laminated iron-formation. 68'-91' Well-bedded, strongly foliated, chlorite-actinolite schist. Probably a tuffaceous greenstone.
WD-608 SE4SW4,Sec.34,T.22N.,R.3E.	40'-80' Highly weathered, foliated, chloritic schist. 80'-86' Fresh, foliated, flattened mafic tuff (chlorite-actinolite). 86'-102' Weathered well foliated tuffaceous greenstone. 102'-116' Somewhat foliated metadiabase. 116'-124' Coarse-grained mafic tuff.
WD-609 NW4NE4,Sec.8,T.21N.,R.3E.	35'-102' Highly weathered, oxidized felsic/intermediate tuff. 102'-246' Interbedded felsic/intermediate tuff, highly foliated w/flattened clasts and coarse muscovite/chlorite and 1-2 meter beds of magnetite-chert iron-formation in lower part. 246'-276' Massive medium-grained pink granite w/chilled margins on lower contact. 276'-343' Interbedded mafic tuff and magnetite-chert iron-formation. 343'-347' Massive granite. 347'-557' Interbedded iron-formation, felsic and mafic tuff.
WD-610 NE4NW4,Sec.10,T.21N.,R.3E.	60'-90' Highly weathered, oxidized, chloritic schist. 90'-197' Coarsely crystalline, well-foliated, actinolite-muscovite-quartz schist. Textures suggest andesitic meta-tuff.
WD-611 NW4NE4,Sec.8,T.21N.,R.3E.	36'-131' Highly weathered and oxidized, well-foliated, coarse-grained chlorite-actinolite schist. 131'-341' Fine-grained homogenous pink granite w/zones of foliated, layered amphibolitic greenstone. 340'-441' Coarse muscovite-biotite schist w/abundant felsic "eyes"

		and layers of felsic gneiss, and foliated tonalite gneiss.
WD-612	NW4NE4,Sec.9,T.21N.,R.3E.	30'-60' Cambrian sandstone 60'-70' Highly weathered, oxidized, coarse-grained, well-foliated chloritic schist. 70'-150' coarse grained, highly foliated, muscovite-quartz schist. Looks like felsic tuff w/little layering. 150'-170' Highly foliated chloritic schist. 170'-277' Magnetite-chert iron-formation w/thin interbeds of chlorite-actinolite schist.
WD-613	SW4NW4,Sec.9,T.21N.,R.3E.	45'-147' Highly weathered, coarse-grained, foliated felsic tuff. 147'-210' Strongly foliated, flattened felsic "tuff" (or sheared granite) 210'-293' Interbedded mafic and felsic tuff. 293'-610' Banded magnetite-chert iron-formation with chlorite-actinolite schist zones.
WD-614	SW4SW4NE4,Sec.8,T.23N.,R.6E.	29'-99' Serpentinite with numerous highly sheared horizons. Talcose patches in weathered zones. 99'-180' Bedded, foliated mafic tuff. 180'-310' Massively bedded mafic tuff w/graywacke interbeds. 310'-330' Highly foliated magnetitic serpentinite w/actinolite. 330'-420' Massive magnetitic serpentinite. 410'-596' Bedded mafic tuff w/graywacke interbeds.
WD-615	SE4SE4NW4,Sec.8,T.23N.,R.6E.	20'-301' Serpentinite with numerous foliated and brecciated zones. Local concentrations of magnetite/chromite, and local carbonate. 301'-384' Bedded, fragmental mafic tuff w/some graywacke w/carbonate cemented breccias.
WD-616	N2NE4,Sec.31,T.24N.,R04E.	90'-212' Strongly foliated Intermediate/mafic tuff

	interbedded siliceous zones. 212'-235' Massive brecciated chert w/scattered layers of andesitic tuff. 235'-284' Mainly andesitic tuff w/scattered brecciated zones. 284'-290' Brecciated rehealed chert zone. 290'-292' Graphite. 292'-320' Coarse felsic tuff w/5 cm clasts and silicified zones w/pyrite. 320'-408' Cherty graphitic zone. (Appears to be a silicified tuff that was shattered and re-healed w/qtz) 408'-465' Very silicified graphitic felsic tuff.
WD-617 N2E1/4,Sec.31,T.24N.,R04E.	40'-501' Alternating felsic tuff w/graphite and highly silicied, sulfide-bearing zones. Volcanic clasts to 8 cm. Cherty zones are commonly brecciated and re-healed (sinter?) w/pyrite-chalcopyrite-sphalerite and much associated graphite. Some zones are highly sericitized, others highly chloritic.