

APPANOOSE COUNTY
GPS CONTROL
SURVEY MARK DESCRIPTIONS

APPANOOSE COUNTY IOWA

GPS SURVEY CONTROL

October 1998

**Horizontal Datum:
IOWA HARN
NAD88 (1996), Iowa South Zone**

**Vertical Datum:
NAVD88 (Geoid96, GPS Derived Elevations)**

**Appanoose County Engineer's Office
Centerville, Iowa 52544
515 856-6193**

APPANOOSE COUNTY, IOWA GPS PROJECT

ADJUSTMENT DATE APRIL 22, 1999

HORIZONTAL DATUM: IOWA HARN, NAD 83(1996), IOWA SOUTH ZONE

VERTICAL DATUM: NAVD 88 (GPS DERIVED, GEOID96, ELEVATIONS)

Name	Number	Latitude	Longitude	Ellipsoid Height(m)	SP North Meters	SP East Meters	Elevation Meters	Scale Factor	Convergence Angle
712036 2	6010	N 40° 53' 59.70221"	N 93° 05' 52.75290"	267.793	100012.426	533873.151	299.57	0.99996209	+ 0° 15' 53.30"
711831 3	6023	N 40° 54' 07.20139"	N 92° 58' 59.51957"	272.409	100294.829	543543.497	304.29	0.99996190	+ 0° 20' 25.50"
711836 2	6036	N 40° 54' 02.71522"	N 92° 52' 07.10938"	271.330	100220.153	553196.575	303.36	0.99996202	+ 0° 24' 57.16"
701701 1	6049	N 40° 53' 54.85624"	N 92° 45' 37.79661"	231.343	100049.540	562310.225	263.54	0.99996221	+ 0° 29' 13.60"
93-01	6062	N 40° 53' 55.64907"	N 92° 38' 20.06191"	250.490	100168.259	572555.075	282.86	0.99996219	+ 0° 34' 01.93"
701613 3	8001	N 40° 51' 29.28452"	N 92° 39' 18.86273"	249.227	95640.136	571222.713	281.58	0.99996616	+ 0° 33' 23.20"
691601 4	8002	N 40° 48' 42.25239"	N 92° 38' 58.67530"	256.484	90492.640	571745.852	288.84	0.99997130	+ 0° 33' 36.50"
691613 3	8003	N 40° 46' 09.61193"	N 92° 39' 26.96402"	247.110	85778.004	571128.497	279.45	0.99997656	+ 0° 33' 17.86"
691636 2	8004	N 40° 43' 32.06010"	N 92° 38' 20.18857"	263.271	80933.682	572742.523	295.64	0.99998256	+ 0° 34' 01.85"
681624 1	8005	N 40° 40' 55.34600"	N 92° 38' 51.92141"	256.562	76092.533	572045.242	288.93	0.99998910	+ 0° 33' 40.95"
671506 4	8006	N 40° 38' 16.11675"	N 92° 38' 17.24710"	264.658	71189.171	572908.111	297.04	0.99999634	+ 0° 34' 03.79"
671519 4	8007	N 40° 35' 37.41239"	N 92° 38' 16.01030"	263.158	66294.264	572985.698	295.54	1.00000413	+ 0° 34' 04.60"
671621 1	8008	N 40° 35' 36.43972"	N 92° 41' 59.87717"	246.594	66213.966	567722.232	278.92	1.00000418	+ 0° 31' 37.14"
671604 1	8009	N 40° 38' 09.80275"	N 92° 41' 43.61785"	252.947	70947.964	568060.781	285.27	0.99999663	+ 0° 31' 47.85"
681616 2	8010	N 40° 40' 55.31952"	N 92° 41' 43.13362"	263.561	76053.424	568024.928	295.87	0.99998911	+ 0° 31' 48.17"
691634 3	8011	N 40° 43' 32.83476"	N 92° 41' 43.52178"	268.338	80911.891	567970.872	300.63	0.99998253	+ 0° 31' 47.91"
691616 2	8012	N 40° 46' 07.61970"	N 92° 41' 45.28627"	261.542	85685.850	567885.330	293.83	0.99997664	+ 0° 31' 46.75"
701633 2	8013	N 40° 48' 46.02608"	N 92° 41' 45.59804"	259.977	90571.837	567832.854	292.27	0.99997118	+ 0° 31' 46.55"
701616 3	8014	N 40° 51' 32.73691"	N 92° 42' 36.30086"	248.851	95703.176	566597.923	281.12	0.99996606	+ 0° 31' 13.15"
701603 4	8015	N 40° 53' 49.74798"	N 92° 41' 46.42681"	246.658	99940.015	567726.861	278.95	0.99996234	+ 0° 31' 46.00"
701724 1	8016	N 40° 51' 21.72217"	N 92° 45' 13.96480"	264.301	95330.820	562908.525	296.51	0.99996638	+ 0° 29' 29.29"
701631 3	8017	N 40° 48' 45.56278"	N 92° 44' 53.50336"	224.352	90518.163	563429.365	256.57	0.99997119	+ 0° 29' 42.77"
691713 2	8018	N 40° 46' 07.57920"	N 92° 45' 25.65199"	268.823	85638.646	562717.568	301.03	0.99997664	+ 0° 29' 21.60"
681701 1	8019	N 40° 43' 30.84730"	N 92° 45' 28.33482"	253.540	80803.683	562695.901	285.76	0.99998261	+ 0° 29' 19.83"
681619 4	8020	N 40° 40' 50.93995"	N 92° 45' 10.82686"	224.400	75874.834	563149.109	256.64	0.99998930	+ 0° 29' 31.36"
671701 1	8021	N 40° 38' 13.77810"	N 92° 45' 16.18864"	236.984	71026.078	563064.752	269.24	0.99999645	+ 0° 29' 27.83"
671724 1	8022	N 40° 35' 34.10791"	N 92° 45' 28.37380"	259.831	66098.581	562820.450	292.08	1.00000430	+ 0° 29' 19.80"
671716 2	8023	N 40° 35' 41.63181"	N 92° 48' 35.76037"	273.601	66294.384	558412.508	305.79	1.00000391	+ 0° 27' 16.37"

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Name	Number	Latitude	Longitude	Ellipsoid Height(m)	SP North Meters	SP East Meters	Elevation Meters	Scale Factor	Convergence Angle
681734 3	8024	N 40° 38' 18.04081"	N 92° 48' 23.95008"	268.520	71121.071	558651.744	300.70	0.99999624	+ 0° 27' 24.15"
681716 2	8025	N 40° 40' 54.44068"	N 92° 48' 42.60989"	264.613	75941.788	558175.121	296.78	0.99998914	+ 0° 27' 11.86"
681704 1	8026	N 40° 43' 31.11292"	N 92° 48' 45.82530"	254.951	80773.796	558061.432	287.11	0.99998260	+ 0° 27' 09.74"
691721 4	8027	N 40° 46' 07.81817"	N 92° 49' 12.32921"	228.125	85602.541	557401.695	260.26	0.99997663	+ 0° 26' 52.28"
691704 4	8028	N 40° 48' 41.27466"	N 92° 49' 13.50928"	255.180	90335.757	557337.039	287.29	0.99997133	+ 0° 26' 51.51"
701715 3	8029	N 40° 51' 23.83805"	N 92° 48' 40.02797"	272.552	95356.276	558081.992	304.67	0.99996632	+ 0° 27' 13.56"
701704 1	8030	N 40° 53' 47.66682"	N 92° 48' 41.60481"	270.469	99792.466	558009.949	302.59	0.99996240	+ 0° 27' 12.52"
701718 3	8031	N 40° 51' 23.16578"	N 92° 52' 05.37472"	264.285	95299.028	553272.924	296.32	0.99996634	+ 0° 24' 58.30"
691801 1	8032	N 40° 48' 42.12010"	N 92° 52' 31.92251"	230.309	90326.978	552686.835	262.35	0.99997130	+ 0° 24' 40.81"
691813 2	8033	N 40° 46' 07.79639"	N 92° 52' 05.33534"	266.756	85571.276	553344.510	298.83	0.99997663	+ 0° 24' 58.32"
681706 4	8034	N 40° 43' 24.62836"	N 92° 51' 49.83179"	273.504	80540.927	553744.897	305.59	0.99998286	+ 0° 25' 08.54"
681813 2	8035	N 40° 40' 56.88930"	N 92° 52' 04.66068"	275.290	75981.311	553430.017	307.38	0.99998904	+ 0° 24' 58.77"
681836 3	8036	N 40° 38' 19.04734"	N 92° 53' 11.12600"	272.658	71101.423	551903.634	304.75	0.99999620	+ 0° 24' 14.99"
671719 1	8037	N 40° 35' 35.88130"	N 92° 51' 10.60249"	232.054	66089.023	554773.058	264.19	1.00000421	+ 0° 25' 34.38"
671822 1	8038	N 40° 35' 29.50636"	N 92° 54' 28.96476"	278.431	65859.165	550110.215	310.50	1.00000453	+ 0° 23' 23.72"
671804 1	8039	N 40° 38' 12.02313"	N 92° 55' 28.89258"	276.538	70862.634	548667.908	308.58	0.99999653	+ 0° 22' 44.24"
681821 1	8040	N 40° 40' 53.95599"	N 92° 55' 32.46232"	277.947	75856.993	548551.045	309.97	0.99998917	+ 0° 22' 41.89"
681804 1	8041	N 40° 43' 30.14355"	N 92° 55' 39.06979"	265.237	80673.671	548364.179	297.24	0.99998264	+ 0° 22' 37.54"
691816 2	8042	N 40° 46' 07.53902"	N 92° 55' 31.66479"	256.152	85529.782	548505.882	288.14	0.99997664	+ 0° 22' 42.41"
691803 4	8043	N 40° 48' 43.74796"	N 92° 55' 24.66485"	269.012	90349.242	548638.106	300.99	0.99997125	+ 0° 22' 47.03"
701804 4	8044	N 40° 53' 53.19513"	N 92° 56' 07.32328"	266.982	99887.845	547576.404	298.92	0.99996226	+ 0° 22' 18.93"
701923 1	8045	N 40° 51' 16.24054"	N 93° 00' 08.28628"	258.008	95011.977	541964.243	289.88	0.99996654	+ 0° 19' 40.20"
691806 4	8046	N 40° 48' 43.27733"	N 92° 58' 43.06021"	274.158	90305.383	543988.605	306.06	0.99997127	+ 0° 20' 36.34"
691819 4	8047	N 40° 46' 05.45001"	N 92° 58' 55.45488"	275.585	85435.333	543727.111	307.50	0.99997671	+ 0° 20' 28.18"
691936 2	8048	N 40° 43' 37.45605"	N 92° 58' 57.42158"	281.646	80870.070	543708.142	313.58	0.99998235	+ 0° 20' 26.88"
681913 2	8049	N 40° 40' 53.28607"	N 92° 59' 04.20879"	285.311	75805.180	543578.883	317.26	0.99998919	+ 0° 20' 22.41"
681936 2	8050	N 40° 38' 17.23460"	N 92° 59' 03.44808"	282.939	70991.766	543625.286	314.89	0.99999628	+ 0° 20' 22.91"
671819 4	8051	N 40° 35' 29.44161"	N 92° 58' 48.44328"	286.393	65818.173	544008.799	318.36	1.00000453	+ 0° 20' 32.80"

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Name	Number	Latitude	Longitude	Ellipsoid Height(m)	SP North Meters	SP East Meters	Elevation Meters	Scale Factor	Convergence Angle
671922 4	8052	N 40° 35' 34.84346"	N 93° 02' 04.63149"	291.336	65958.670	539394.678	323.23	1.00000426	+ 0° 18' 23.57"
671903 4	8053	N 40° 38' 16.14823"	N 93° 02' 13.13132"	291.225	70933.180	539168.329	323.11	0.99999633	+ 0° 18' 17.97"
681922 4	8054	N 40° 40' 53.16581"	N 93° 02' 22.18964"	286.731	75775.387	538929.835	318.61	0.99998920	+ 0° 18' 12.00"
691934 2	8055	N 40° 43' 32.85150"	N 93° 01' 48.01796"	279.046	80705.317	539705.655	310.92	0.99998253	+ 0° 18' 34.51"
691921 1	8056	N 40° 46' 05.52724"	N 93° 02' 41.45742"	282.189	85408.068	538426.963	314.03	0.99997671	+ 0° 17' 59.31"
701933 2	8057	N 40° 48' 43.51610"	N 93° 02' 24.68063"	273.953	90283.453	538794.646	305.79	0.99997126	+ 0° 18' 10.36"
701921 1	8058	N 40° 51' 19.99497"	N 93° 02' 44.96764"	273.528	95107.708	538293.994	305.36	0.99996643	+ 0° 17' 57.00"
701903 4	8059	N 40° 53' 53.89776"	N 93° 02' 25.50393"	274.569	99857.405	538724.765	306.40	0.99996224	+ 0° 18' 09.82"
701919 1	8060	N 40° 51' 15.47003"	N 93° 04' 43.92478"	278.361	94954.113	535508.604	310.16	0.99996656	+ 0° 16' 38.64"
691906 1	8061	N 40° 48' 42.64730"	N 93° 04' 59.40205"	273.442	90238.382	535168.698	305.24	0.99997129	+ 0° 16' 28.45"
691918 3	8062	N 40° 46' 05.94708"	N 93° 05' 32.64617"	285.150	85401.108	534412.229	316.95	0.99997670	+ 0° 16' 06.55"
681906 1	8063	N 40° 43' 24.81082"	N 93° 04' 40.73680"	285.825	80436.512	535653.708	317.65	0.99998285	+ 0° 16' 40.74"
681919 4	8064	N 40° 40' 52.54483"	N 93° 05' 23.29755"	293.088	75734.947	534677.059	324.91	0.99998923	+ 0° 16' 12.71"
671906 4	8065	N 40° 38' 16.15563"	N 93° 05' 32.38495"	290.327	70909.975	534486.273	322.15	0.99999633	+ 0° 16' 06.72"
671918 3	8066	N 40° 35' 39.74118"	N 93° 05' 50.04203"	287.542	66083.294	534093.707	319.37	1.00000401	+ 0° 15' 55.09"
701815 3	8067	N 40° 51' 30.71100"	N 92° 55' 28.61435"	264.728	95498.735	548511.478	296.69	0.99996612	+ 0° 22' 44.42"
X 7	9663	N 40° 37' 46.22556"	N 92° 55' 06.25763"	282.520	70070.430	549205.108	314.57	0.99999776	+ 0° 22' 59.15"
2 KEE	9868	N 40° 53' 29.80250"	N 93° 00' 07.83060"	266.768	99131.895	541951.336	298.63	0.99996286	+ 0° 19' 40.50"
2 KED	9869	N 40° 50' 47.02381"	N 93° 00' 07.42433"	272.503	94110.874	541989.590	304.37	0.99996740	+ 0° 19' 40.77"
TT 31 E	9870	N 40° 44' 29.72428"	N 93° 01' 49.33339"	262.086	82459.440	539665.315	293.96	0.99998030	+ 0° 18' 33.64"
TT 23 L	9871	N 40° 36' 07.02940"	N 92° 53' 12.05569"	274.523	67029.111	551910.503	306.62	1.00000263	+ 0° 24' 14.38"
22 HK	9872	N 40° 53' 45.63911"	N 92° 46' 16.27948"	256.816	99757.631	561411.917	289.00	0.99996245	+ 0° 28' 48.25"
J 120	9873	N 40° 37' 33.63289"	N 92° 38' 34.25460"	270.633	69874.817	572521.397	302.98	0.99999836	+ 0° 33' 52.58"

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Name	Number	SP North US Feet	SP East US Feet	Elevation US Feet	SP North Meters	SP East Meters	Elevation Meters	Scale Factor	Convergence Angle
712036 2	6010	328124.10	1751548.83	982.85	100012.426	533873.151	299.57	0.99996209	+ 0° 15' 53.30"
711831 3	6023	329050.62	1783275.62	998.33	100294.829	543543.497	304.29	0.99996190	+ 0° 20' 25.50"
711836 2	6036	328805.62	1814945.77	995.28	100220.153	553196.575	303.36	0.99996202	+ 0° 24' 57.16"
701701 1	6049	328245.87	1844846.13	864.64	100049.540	562310.225	263.54	0.99996221	+ 0° 29' 13.60"
93-01	6062	328635.36	1878457.78	928.00	100168.259	572555.075	282.86	0.99996219	+ 0° 34' 01.93"
701613 3	8001	313779.35	1874086.52	923.81	95640.136	571222.713	281.58	0.99996616	+ 0° 33' 23.20"
691601 4	8002	296891.27	1875802.85	947.64	90492.640	571745.852	288.84	0.99997130	+ 0° 33' 36.50"
691613 3	8003	281423.33	1873777.41	916.84	85778.004	571128.497	279.45	0.99997656	+ 0° 33' 17.86"
691636 2	8004	265529.92	1879072.76	969.96	80933.682	572742.523	295.64	0.99998256	+ 0° 34' 01.85"
681624 1	8005	249646.92	1876785.10	947.92	76092.533	572045.242	288.93	0.99998910	+ 0° 33' 40.95"
671506 4	8006	233559.81	1879616.03	974.54	71189.171	572908.111	297.04	0.99999634	+ 0° 34' 03.79"
671519 4	8007	217500.43	1879870.58	969.63	66294.264	572985.698	295.54	1.00000413	+ 0° 34' 04.60"
671621 1	8008	217236.99	1862602.02	915.07	66213.966	567722.232	278.92	1.00000418	+ 0° 31' 37.14"
671604 1	8009	232768.45	1863712.75	935.91	70947.964	568060.781	285.27	0.99999663	+ 0° 31' 47.85"
681616 2	8010	249518.61	1863595.12	970.69	76053.424	568024.928	295.87	0.99998911	+ 0° 31' 48.17"
691634 3	8011	265458.43	1863417.77	986.33	80911.891	567970.872	300.63	0.99998253	+ 0° 31' 47.91"
691616 2	8012	281120.99	1863137.12	964.01	85685.850	567885.330	293.83	0.99997664	+ 0° 31' 46.75"
701633 2	8013	297151.10	1862964.96	958.88	90571.837	567832.854	292.27	0.99997118	+ 0° 31' 46.55"
701616 3	8014	313986.17	1858913.35	922.31	95703.176	566597.923	281.12	0.99996606	+ 0° 31' 13.15"
701603 4	8015	327886.53	1862617.21	915.18	99940.015	567726.861	278.95	0.99996234	+ 0° 31' 46.00"
701724 1	8016	312764.53	1846809.05	972.79	95330.820	562908.525	296.51	0.99996638	+ 0° 29' 29.29"
701631 3	8017	296975.01	1848517.84	841.75	90518.163	563429.365	256.57	0.99997119	+ 0° 29' 42.77"
691713 2	8018	280966.13	1846182.56	987.63	85638.646	562717.568	301.03	0.99997664	+ 0° 29' 21.60"
681701 1	8019	265103.42	1846111.47	937.53	80803.683	562695.901	285.76	0.99998261	+ 0° 29' 19.83"
681619 4	8020	248932.69	1847598.37	842.00	75874.834	563149.109	256.64	0.99998930	+ 0° 29' 31.36"
671701 1	8021	233024.72	1847321.61	883.32	71026.078	563064.752	269.24	0.99999645	+ 0° 29' 27.83"
671724 1	8022	216858.43	1846520.09	958.28	66098.581	562820.450	292.08	1.00000430	+ 0° 29' 19.80"
671716 2	8023	217500.82	1832058.37	1003.24	66294.384	558412.508	305.79	1.00000391	+ 0° 27' 16.37"
681734 3	8024	233336.38	1832843.26	986.56	71121.071	558651.744	300.70	0.99999624	+ 0° 27' 24.15"

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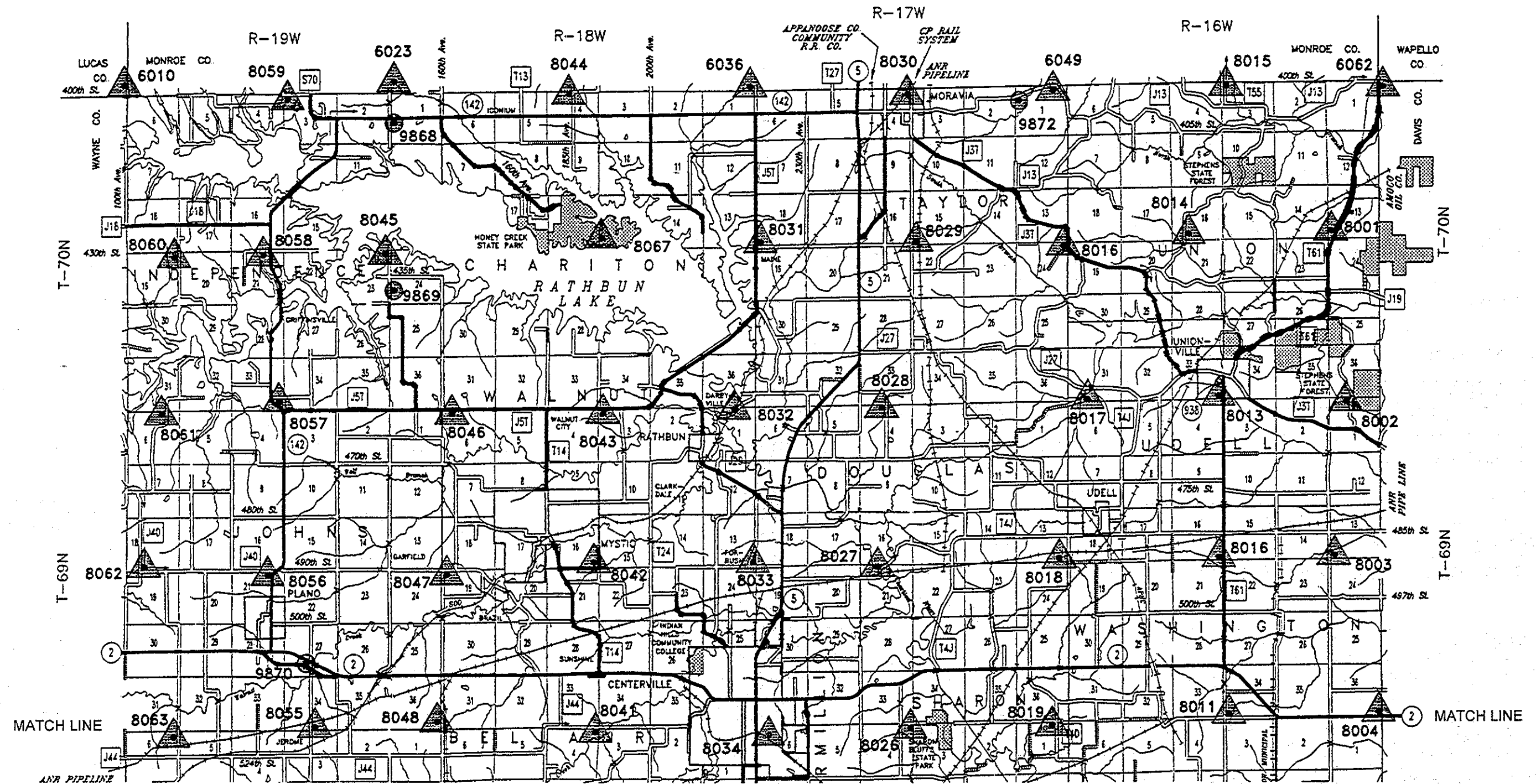
Name	Number	SP North US Feet	SP East US Feet	Elevation US Feet	SP North Meters	SP East Meters	Elevation Meters	Scale Factor	Convergence Angle
681716 2	8025	249152.35	1831279.54	973.68	75941.788	558175.121	296.78	0.99998914	+ 0° 27' 11.86"
681704 1	8026	265005.36	1830906.55	941.95	80773.796	558061.432	287.11	0.99998260	+ 0° 27' 09.74"
691721 4	8027	280847.67	1828742.06	853.86	85602.541	557401.695	260.26	0.99997663	+ 0° 26' 52.28"
691704 4	8028	296376.56	1828529.94	942.56	90335.757	557337.039	287.29	0.99997133	+ 0° 26' 51.51"
701715 3	8029	312848.05	1830974.00	999.57	95356.276	558081.992	304.67	0.99996632	+ 0° 27' 13.56"
701704 1	8030	327402.45	1830737.64	992.74	99792.466	558009.949	302.59	0.99996240	+ 0° 27' 12.52"
701718 3	8031	312660.23	1815196.25	972.17	95299.028	553272.924	296.32	0.99996634	+ 0° 24' 58.30"
691801 1	8032	296347.76	1813273.39	860.73	90326.978	552686.835	262.35	0.99997130	+ 0° 24' 40.81"
691813 2	8033	280745.09	1815431.11	980.40	85571.276	553344.510	298.83	0.99997663	+ 0° 24' 58.32"
681706 4	8034	264241.36	1816744.72	1002.59	80540.927	553744.897	305.59	0.99998286	+ 0° 25' 08.54"
681813 2	8035	249282.02	1815711.65	1008.47	75981.311	553430.017	307.38	0.99998904	+ 0° 24' 58.77"
681836 3	8036	233271.92	1810703.84	999.82	71101.423	551903.634	304.75	0.99999620	+ 0° 24' 14.99"
671719 1	8037	216827.07	1820117.94	866.77	66089.023	554773.058	264.19	1.00000421	+ 0° 25' 34.38"
671822 1	8038	216072.95	1804819.93	1018.70	65859.165	550110.215	310.50	1.00000453	+ 0° 23' 23.72"
671804 1	8039	232488.49	1800087.96	1012.39	70862.634	548667.908	308.58	0.99999653	+ 0° 22' 44.24"
681821 i	8040	248874.15	1799704.55	1016.95	75856.993	548551.045	309.97	0.99998917	+ 0° 22' 41.89"
681804 i	8041	264676.87	1799091.48	975.19	80673.671	548364.179	297.24	0.99998264	+ 0° 22' 37.54"
691816 2	8042	280608.96	1799556.38	945.35	85529.782	548505.882	288.14	0.99997664	+ 0° 22' 42.41"
691803 4	8043	296420.81	1799990.19	987.49	90349.242	548638.106	300.99	0.99997125	+ 0° 22' 47.03"
701804 4	8044	327715.37	1796506.92	980.72	99887.845	547576.404	298.92	0.99996226	+ 0° 22' 18.93"
701923 1	8045	311718.46	1778094.35	951.05	95011.977	541964.243	289.88	0.99996654	+ 0° 19' 40.20"
691806 4	8046	296276.91	1784735.95	1004.14	90305.383	543988.605	306.06	0.99997127	+ 0° 20' 36.34"
691819 4	8047	280299.09	1783878.03	1008.86	85435.333	543727.111	307.50	0.99997671	+ 0° 20' 28.18"
691936 2	8048	265321.22	1783815.80	1028.79	80870.070	543708.142	313.58	0.99998235	+ 0° 20' 26.88"
681913 2	8049	248704.16	1783391.72	1040.86	75805.180	543578.883	317.26	0.99998919	+ 0° 20' 22.41"
681936 2	8050	232912.15	1783543.96	1033.11	70991.766	543625.286	314.89	0.99999628	+ 0° 20' 22.91"
671819 4	8051	215938.46	1784802.20	1044.48	65818.173	544008.799	318.36	1.00000453	+ 0° 20' 32.80"
671922 4	8052	216399.40	1769664.04	1060.46	65958.670	539394.678	323.23	1.00000426	+ 0° 18' 23.57"
671903 4	8053	232719.94	1768921.43	1060.08	70933.180	539168.329	323.11	0.99999633	+ 0° 18' 17.97"

APPANOOSE COUNTY, IOWA GPS PROJECT

ADJUSTMENT DATE APRIL 22, 1999

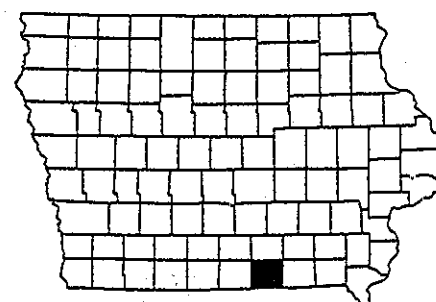
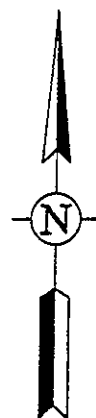
HORIZONTAL DATUM: IOWA HARN, NAD 83(1996), IOWA SOUTH ZONE
VERTICAL DATUM: NAVD 88 (GPS DERIVED, GEOID96, ELEVATIONS)

Name	Number	SP North US Feet	SP East US Feet	Elevation US Feet	SP North Meters	SP East Meters	Elevation Meters	Scale Factor	Convergence Angle
681922 4	8054	248606.42	1768138.97	1045.30	75775.387	538929.835	318.61	0.99998920	+ 0° 18' 12.00"
691934 2	8055	264780.69	1770684.30	1020.08	80705.317	539705.655	310.92	0.99998253	+ 0° 18' 34.51"
691921 1	8056	280209.64	1766489.13	1030.29	85408.068	538426.963	314.03	0.99997671	+ 0° 17' 59.31"
701933 2	8057	296204.96	1767695.43	1003.25	90283.453	538794.646	305.79	0.99997126	+ 0° 18' 10.36"
701921 1	8058	312032.54	1766052.88	1001.82	95107.708	538293.994	305.36	0.99996643	+ 0° 17' 57.00"
701903 4	8059	327615.50	1767466.17	1005.23	99857.405	538724.765	306.40	0.99996224	+ 0° 18' 09.82"
701919 1	8060	311528.62	1756914.48	1017.57	94954.113	535508.604	310.16	0.99996656	+ 0° 16' 38.64"
691906 1	8061	296057.09	1755799.30	1001.44	90238.382	535168.698	305.24	0.99997129	+ 0° 16' 28.45"
691918 3	8062	280186.80	1753317.46	1039.86	85401.108	534412.229	316.95	0.99997670	+ 0° 16' 06.55"
681906 1	8063	263898.79	1757390.54	1042.15	80436.512	535653.708	317.65	0.99998285	+ 0° 16' 40.74"
681919 4	8064	248473.74	1754186.32	1065.97	75734.947	534677.059	324.91	0.99998923	+ 0° 16' 12.71"
671906 4	8065	232643.81	1753560.38	1056.92	70909.975	534486.273	322.15	0.99999633	+ 0° 16' 06.72"
671918 3	8066	216808.28	1752272.44	1047.79	66083.294	534093.707	319.37	1.00000401	+ 0° 15' 55.09"
701815 3	8067	313315.43	1799574.74	973.39	95498.735	548511.478	296.69	0.99996612	+ 0° 22' 44.42"
X 7	9663	229889.40	1801850.42	1032.06	70070.430	549205.108	314.57	0.99999776	+ 0° 22' 59.15"
2 KEE	9868	325235.23	1778052.01	979.76	99131.895	541951.336	298.63	0.99996286	+ 0° 19' 40.50"
2 KED	9869	308762.09	1778177.51	998.60	94110.874	541989.590	304.37	0.99996740	+ 0° 19' 40.77"
TT 31 E	9870	270535.68	1770551.95	964.42	82459.440	539665.315	293.96	0.99998030	+ 0° 18' 33.64"
TT 23 L	9871	219911.34	1810726.37	1005.96	67029.111	551910.503	306.62	1.00000263	+ 0° 24' 14.38"
22 HK	9872	327288.16	1841898.93	948.17	99757.631	561411.917	289.00	0.99996245	+ 0° 28' 48.25"
J 120	9873	229247.63	1878347.29	994.02	69874.817	572521.397	302.98	0.99999836	+ 0° 33' 52.58"



10560' 0 10560' 21120'
2 MILES 0 2 MILES 4 MILES

SCALE 1" = 2 MILES (10560')



PROJECT DIAGRAM

Geodetic Control Station Location

APPANOOSE COUNTY, IOWA
GPS CONTROL NETWORK 1998

FILE APPANOOSE.DWG

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF THE
COUNTY ENGINEER
MONROE COUNTY, IOWA

DESIGNATION 712036 2 GPS No. 6010 COUNTY LUCAS STATE IOWA

LOCATED IN SECTION 36 TWP 71 N RGE 20 W USGS QUAD MAP MELROSE

TO REACH FROM THE INTERSECTION OF COUNTY ROAD S70 (TRAGEE STREET) AND COUNTY ROAD H44 (ERIN AVE.), IN MELROSE; GO SOUTH 4.45 MILES ON S70 TO COUNTY ROAD H54; THEN WEST ON H54 FOR 2.0 MILES TO GRAVEL ROAD AT LUCAS - MONROE COUNTY LINE; THEN SOUTH 0.9 MILE TO MARK AT TOP OF SLOPE.

SET ON PRIVATE PROPERTY WITH OWNER'S PERMISSION

TYPE OF MARK 3-1/4" ALUMINUM DISK SET IN 12" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT.

☐ RECOVERED ☒ SET BY DENI ASSOCIATES, INC., FT. MYERS, FL DATE OCTOBER 1996

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE GRID

SCALE FACTOR: 0.99996209

COORDINATES (US FEET)

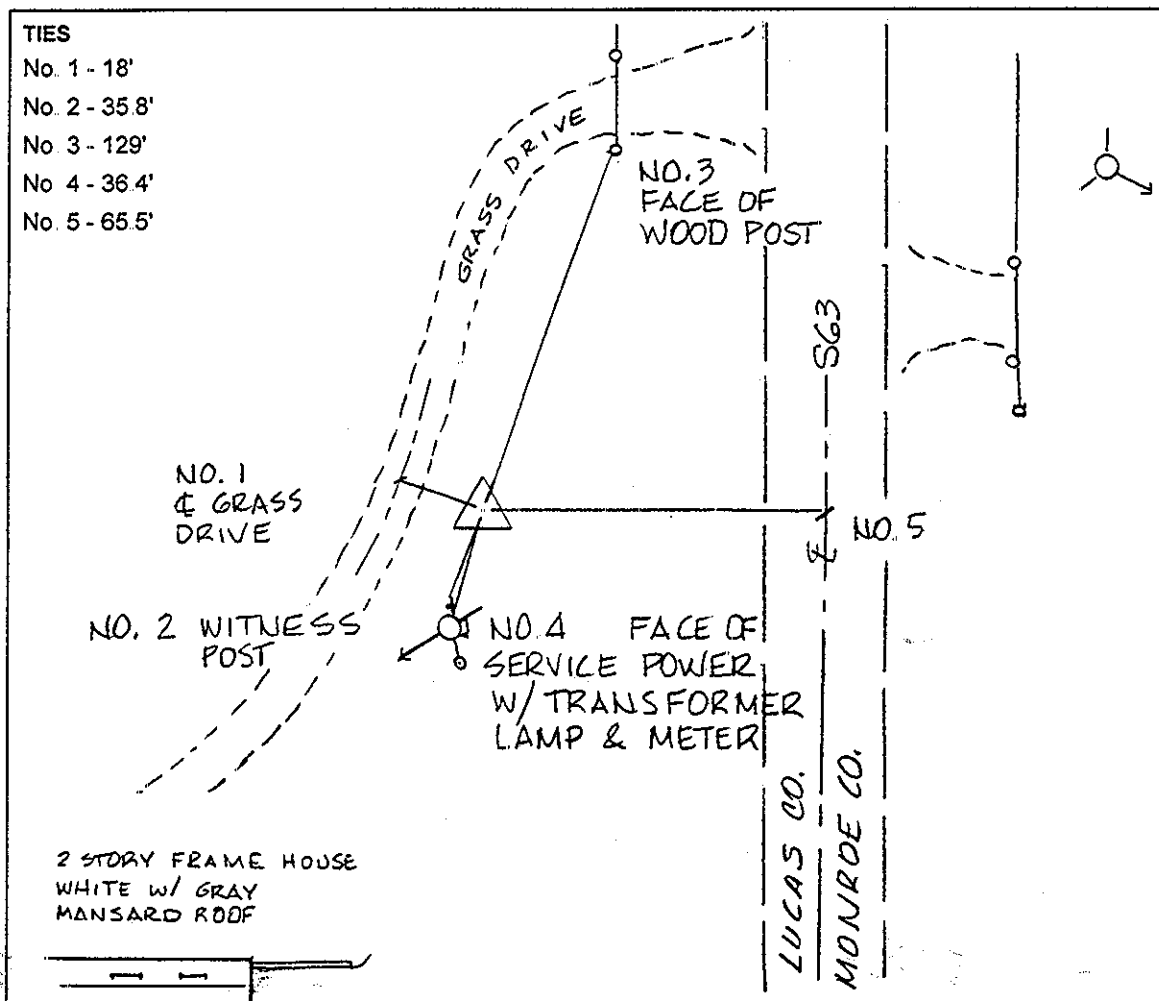
COORDINATES (METERS)

NORTHING (Y) 328124.10

NORTHING (Y) 100012.426

EASTING (X) 1751548.83

EASTING (X) 533873.151



SKETCH
BY DSW
DENI 9609001

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF THE
COUNTY ENGINEER
MONROE COUNTY, IOWA

DESIGNATION 711831 3 GPS No. 6023 COUNTY MONROE STATE IOWA

LOCATED IN SECTION 31 TWP 71 N RGE 18 W USGS QUAD MAP ICONIUM

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND STATE HIGHWAY 142, WEST OF MORAVIA;

GO WEST FOR 7.95 MILES ON HIGHWAY 142; THEN NORTH 0.7 MILE ON GRAVEL ROAD TO MARK.

TYPE OF MARK 3-1/4" ALUMINUM DISK SET IN 12" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT.

☐ RECOVERED ☒ SET BY DENI ASSOCIATES, INC., FT. MYERS, FL DATE OCTOBER 1996

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE GRID

SCALE FACTOR: 0.99996190

COORDINATES (US FEET)

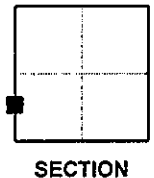
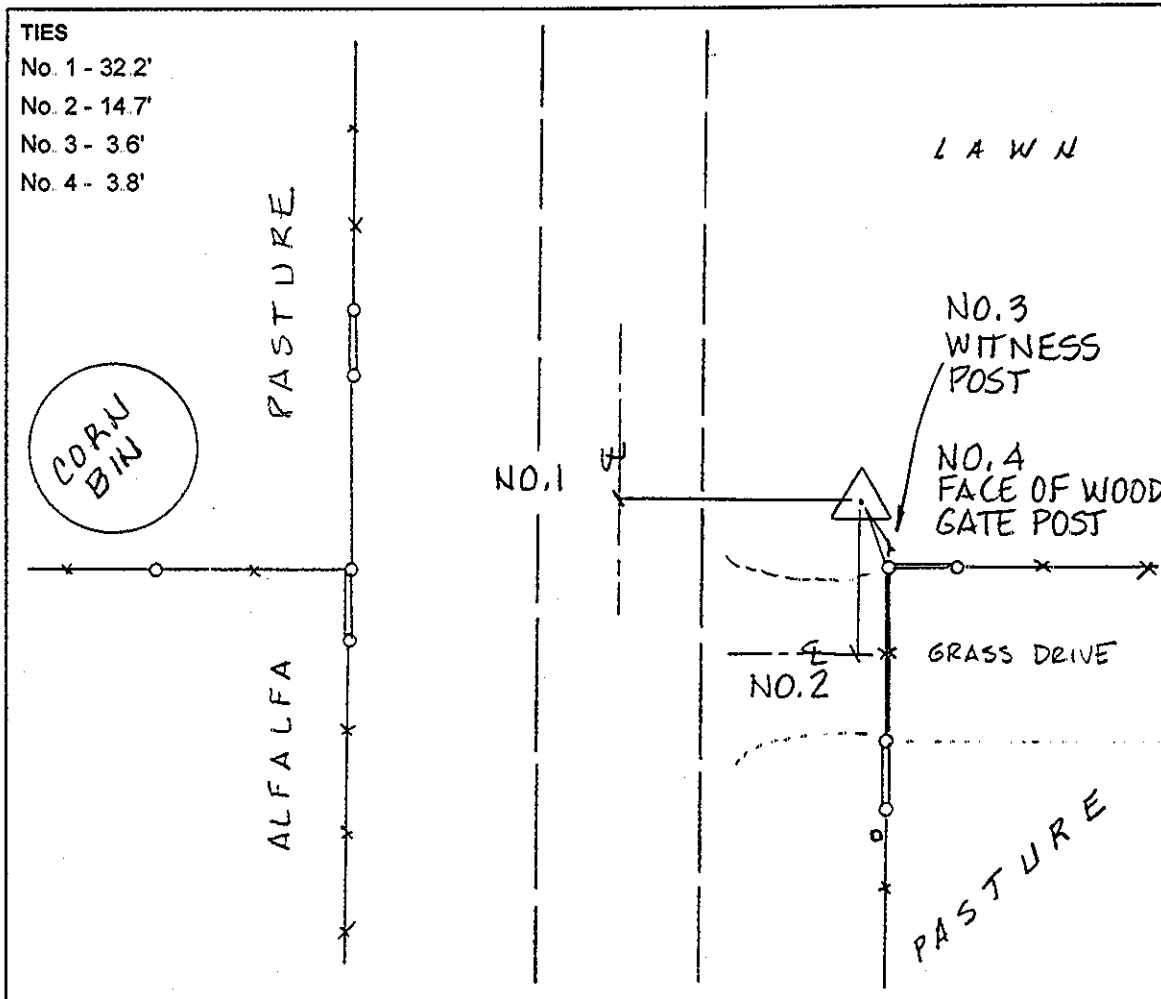
COORDINATES (METERS)

NORTHING (Y) 329050.62

NORTHING (Y) 100294.829

EASTING (X) 1783275.62

EASTING (X) 543543.497



SKETCH
BY DSW

DENI 9609001

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF THE
COUNTY ENGINEER
MONROE COUNTY, IOWA

DESIGNATION 711836 2 GPS No. 6036 COUNTY MONROE STATE IOWA

LOCATED IN SECTION 36 TWP 71 N RGE 18 W USGS QUAD MAP MORAVIA

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND STATE HIGHWAY 142, WEST OF MORAVIA;

GO WEST FOR 2.0 MILES ON HIGHWAY 142 TO THE INTERSECTION WITH COUNTY ROAD J52 TO THE SOUTH

AND GRAVEL ROAD TO THE NORTH; THEN NORTH 0.6 MILE TO MARK, 0.1 MILE SOUTH OF A GRAVEL ROAD WEST.

TYPE OF MARK 3-1/4" ALUMINUM DISK SET IN 12" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT.

☐ RECOVERED ☒ SET BY DENI ASSOCIATES, INC., FT. MYERS, FL DATE OCTOBER 1996

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE GRID

SCALE FACTOR: 0.99996201

COORDINATES (US FEET)

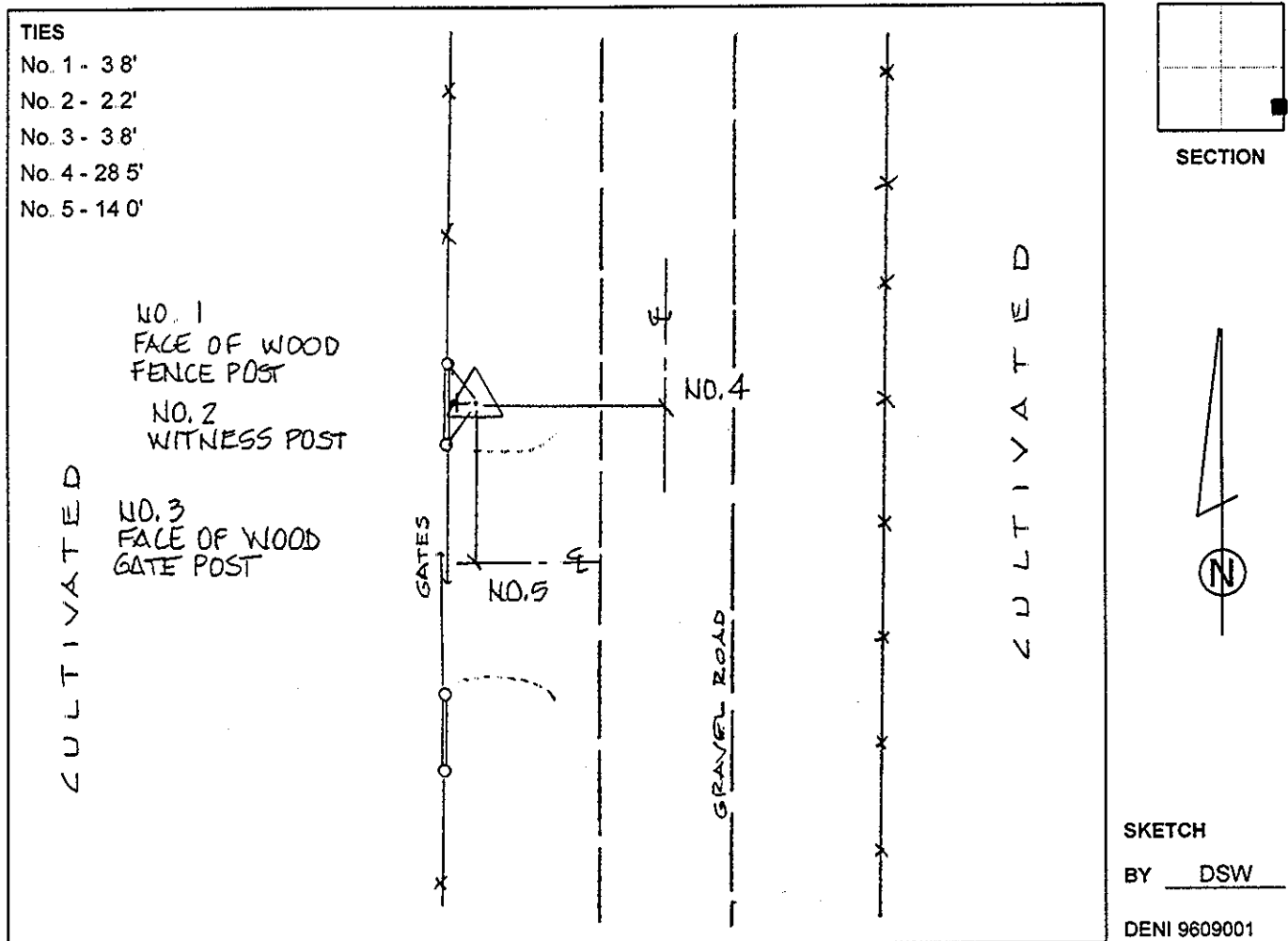
COORDINATES (METERS)

NORTHING (Y) 328805.62

NORTHING (Y) 100220.153

EASTING (X) 1814945.77

EASTING (X) 553196.575



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF THE
COUNTY ENGINEER
MONROE COUNTY, IOWA

DESIGNATION 701701 1 GPS No. 6049 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 16 TWP 70 N RGE 17 W USGS QUAD MAP MORAVIA
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND STATE HIGHWAY 142, WEST OF MORAVIA;
GO EAST ON NORTH STREET, THROUGH MORAVIA, FOR 3.95 MILES TO MARK.

TYPE OF MARK 3-1/4" ALUMINUM DISK SET IN 12" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT.

☐ RECOVERED ☒ SET BY DENI ASSOCIATES, INC., FT. MYERS, FL DATE OCTOBER 1996

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE GRID

SCALE FACTOR: 0.99996221

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 328245.87

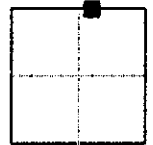
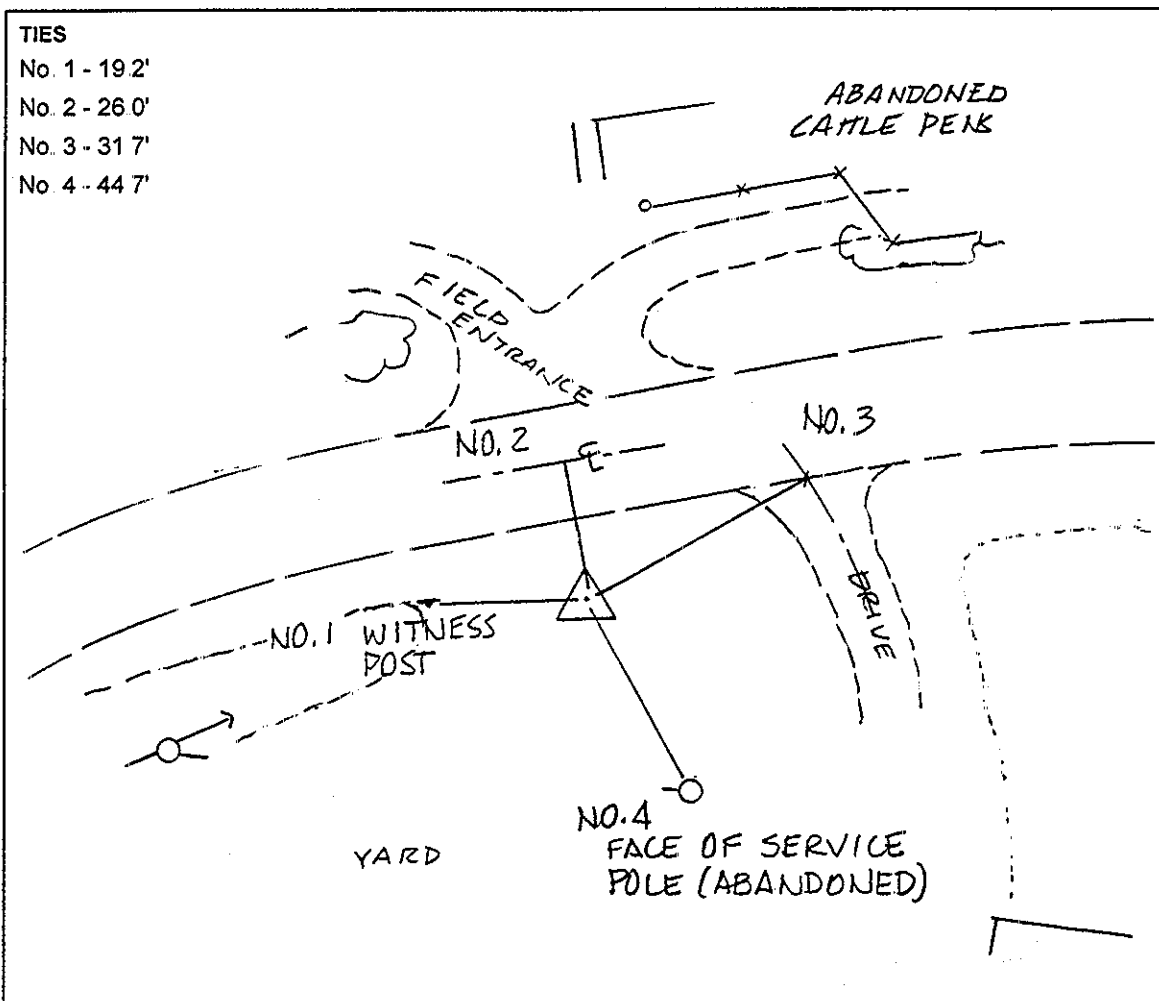
NORTHING (Y) 100049.540

EASTING (X) 1844846.13

EASTING (X) 562310.225

TIES

- No. 1 - 19.2'
- No. 2 - 26.0'
- No. 3 - 31.7'
- No. 4 - 44.7'



SECTION

SKETCH

BY DSW

DENI 9609001

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF THE
COUNTY ENGINEER
MONROE COUNTY, IOWA

DESIGNATION 93-01 GPS No. 6062 COUNTY DAVIS STATE IOWA

LOCATED IN SECTION 6 TWP 70 N RGE 15 W USGS QUAD MAP BLAKESBURG

TO REACH FROM AT THE SOUTHEAST CORNER OF MONROE COUNTY; IN THE SOUTHEAST QUADRANT OF
THE INTERSECTION OF COUNTY ROADS T61 AND J13.

CAP IS STAMPED "WAPELLO CO. GPS CONTROL PT. 93-01 DO NOT DISTURB"

ALUMINUM ACCESS COVER IS MISSING AND A CRIMP IN THE NORTH SIDE OF THE PVC PIPE.

TYPE OF MARK 2-1/2" ALUM. CAP ON ROD W/ MAGNET IN 5" PVC PIPE, 3" BELOW GROUND.

☒ RECOVERED ☐ SET BY DENI ASSOCIATES, INC., FT. MYERS, FL DATE OCTOBER 1996

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE GRID

SCALE FACTOR: 0.99996219

COORDINATES (US FEET)

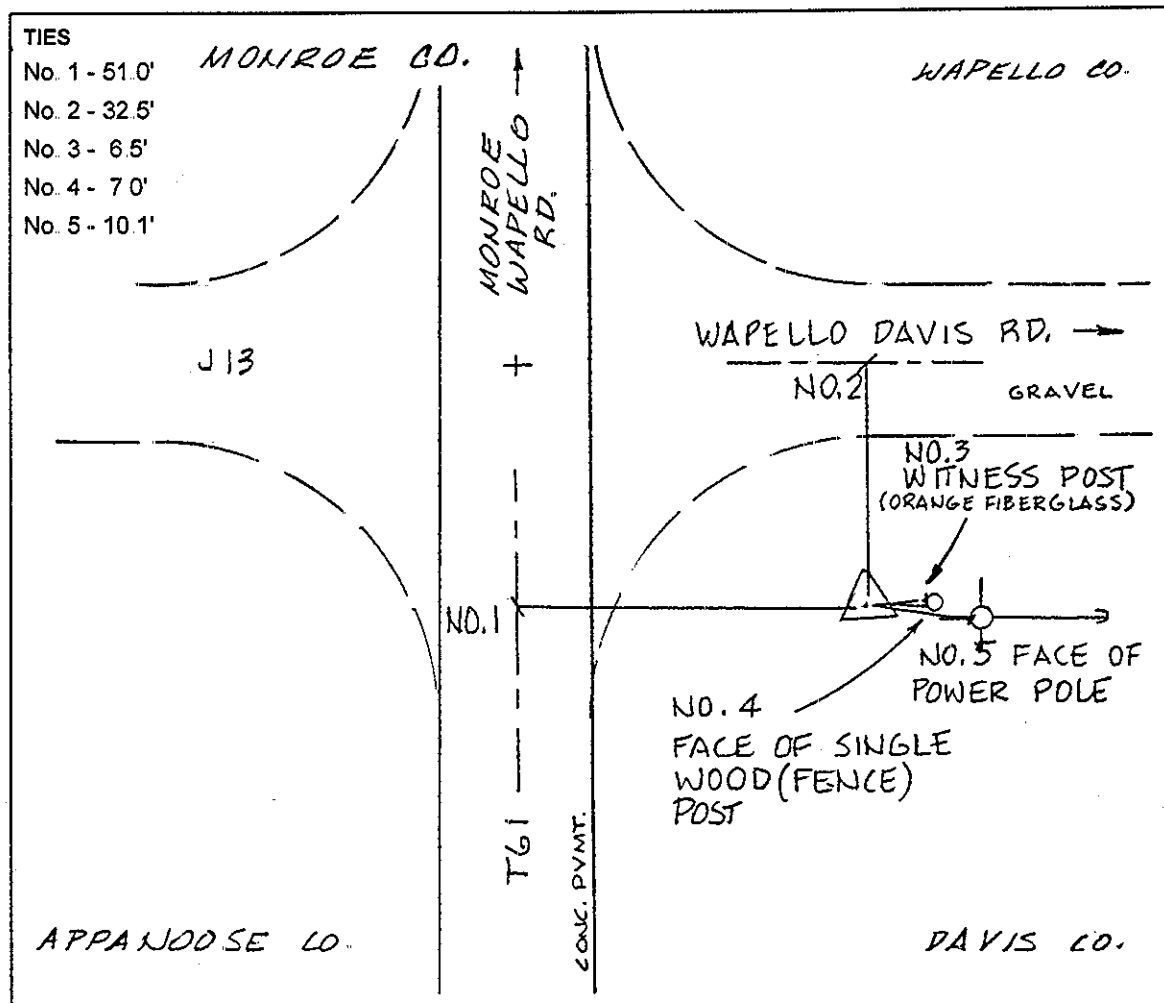
COORDINATES (METERS)

NORTHING (Y) 328635.36

NORTHING (Y) 100168.259

EASTING (X) 1878457.78

EASTING (X) 572555.075



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701613 3 GPS No. 8001 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 13 TWP 70 N RGE 16 W USGS QUAD MAP UNIONVILLE
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY T61 AND 437th STREET, NORTHEAST OF
UNIONVILLE; GO NORTHERLY 0.9 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996616

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 313779.35

NORTHING (Y) 95640.136

EASTING (X) 1874086.52

EASTING (X) 571222.713

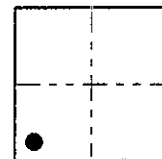
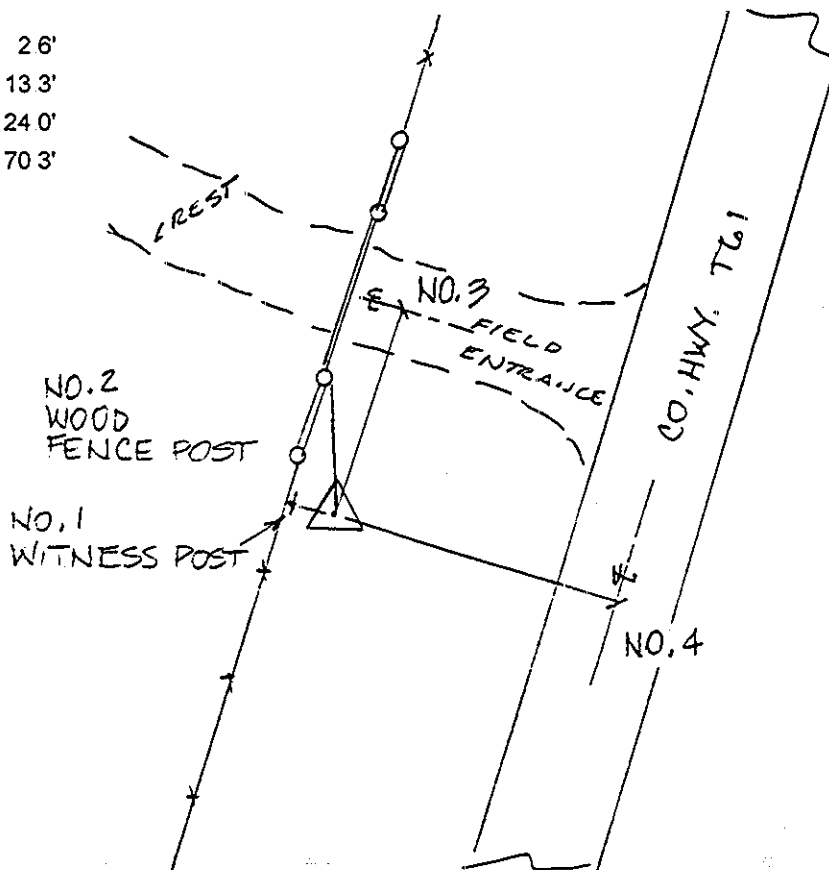
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 923.81

ELEVATION (METERS) 281.58

TIES

- No 1 - 26'
- No 2 - 133'
- No 3 - 240'
- No 4 - 703'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691601 4 GPS No. 8002 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 1 TWP 69 N RGE 16 W USGS QUAD MAP UNIONVILLE
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J3T AND 331st AVENUE, EAST-SOUTHEAST OF
UNIONVILLE; GO NORTHERLY 0.55 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997130

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 296891.27

NORTHING (Y) 90492.640

EASTING (X) 1875802.85

EASTING (X) 571745.852

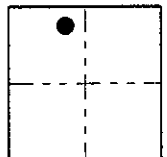
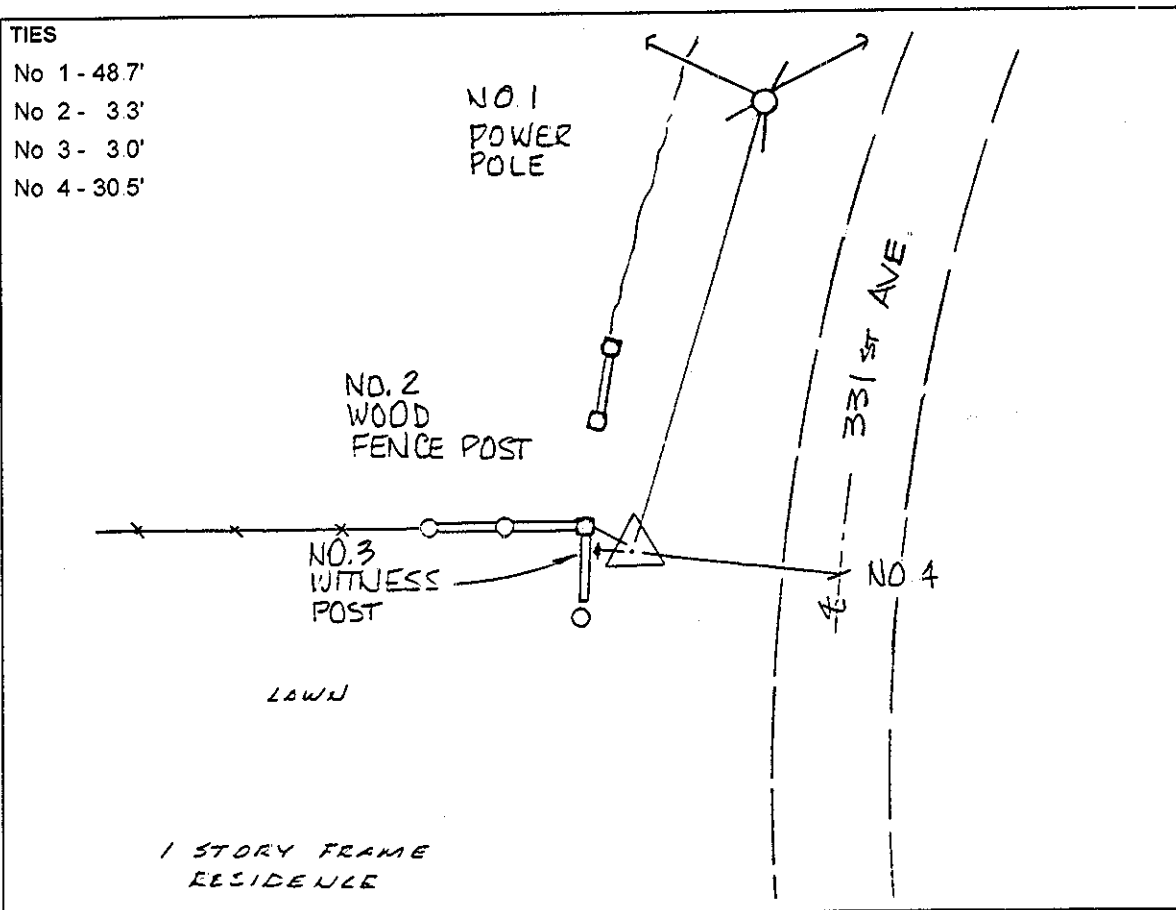
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 947.64

ELEVATION (METERS) 288.84

TIES

- No 1 - 48.7'
- No 2 - 3.3'
- No 3 - 3.0'
- No 4 - 30.5'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691613 3 GPS No. 8003 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 13 TWP 69 N RGE 16 W USGS QUAD MAP UNIONVILLE
TO REACH FROM THE INTERSECTION OF 485th STREET AND 330th AVENUE, SOUTHEAST OF UNIONVILLE;
GO SOUTH 0.5 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

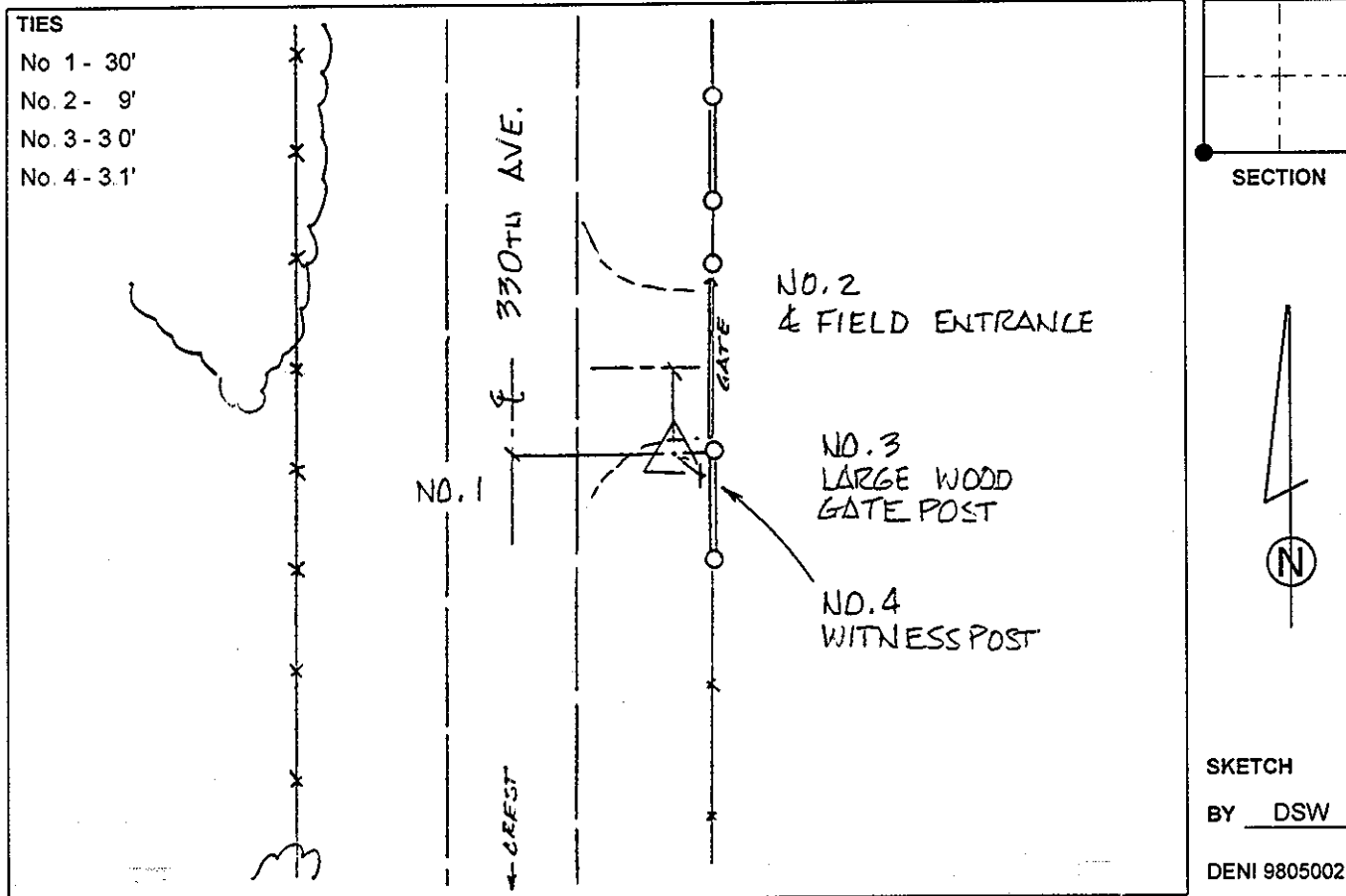
☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE	SCALE FACTOR: <u>0.99997656</u>
COORDINATES (US FEET)	COORDINATES (METERS)
NORTHING (Y) <u>281423.33</u>	NORTHING (Y) <u>85778.004</u>
EASTING (X) <u>1873777.41</u>	EASTING (X) <u>571128.497</u>

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) <u>916.84</u>	ELEVATION (METERS) <u>279.45</u>
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GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691636 2 GPS No. 8004 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 36 TWP 69 N RGE 16 W USGS QUAD MAP MOULTON
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 2 AND 330th AVENUE, NORTHEAST OF MOULTON;
GO EAST 1.0 MILE TO THE DAVIS COUNTY LINE AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998256

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 265529.92

NORTHING (Y) 80933.682

EASTING (X) 1879072.76

EASTING (X) 572742.523

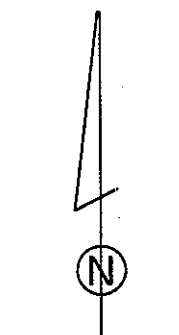
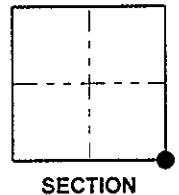
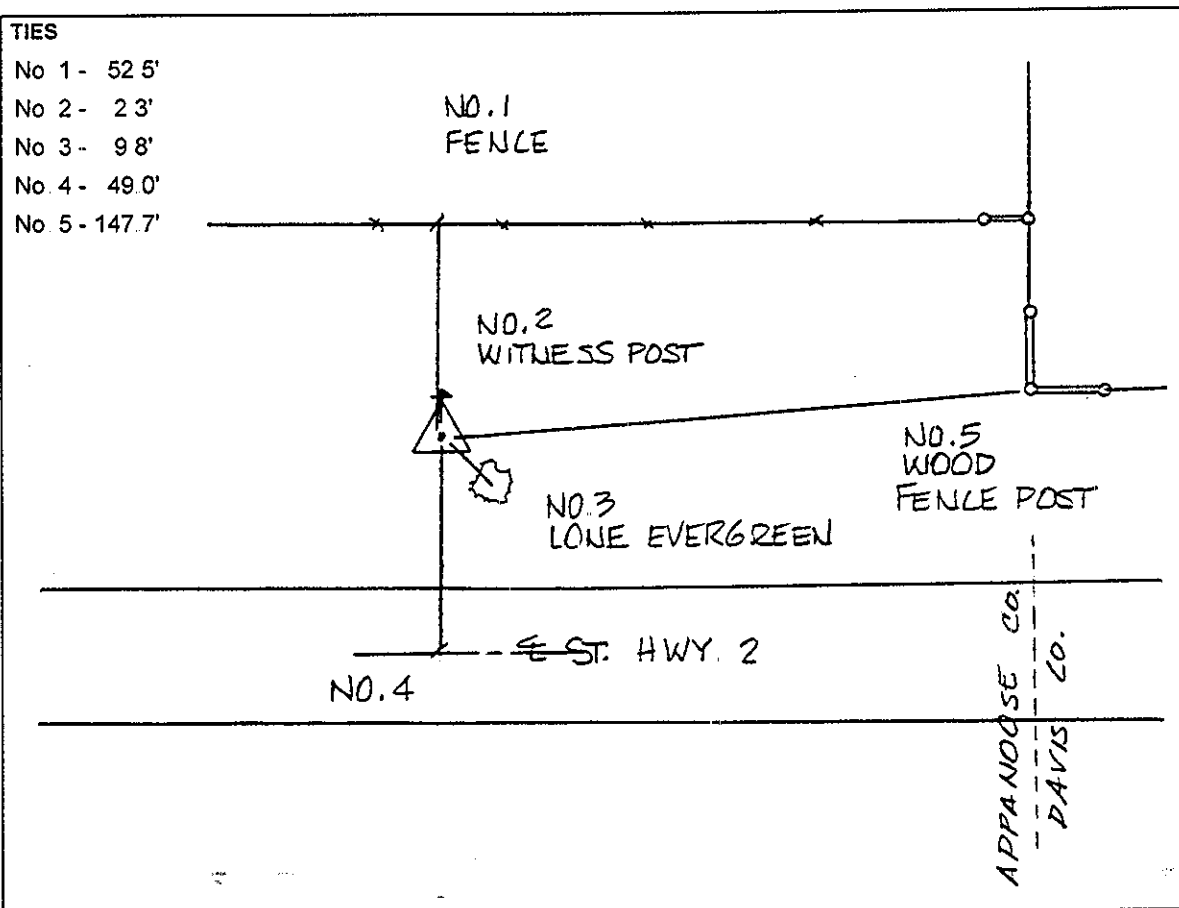
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 969.96

ELEVATION (METERS) 295.64

TIES

- No 1 - 52.5'
- No 2 - 2.3'
- No 3 - 9.8'
- No 4 - 49.0'
- No 5 - 147.7'



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681624 1 GPS No. 8005 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 24 TWP 68 N RGE 16 W USGS QUAD MAP MOULTON
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 202 / S. MAIN STREET AND E. 1st STREET, IN MOULTON;
GO EAST ON E. 1st STREET / 550th STREET 1.55 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998910

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 249646.92

NORTHING (Y) 76092.533

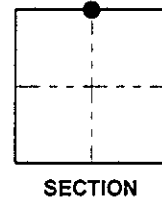
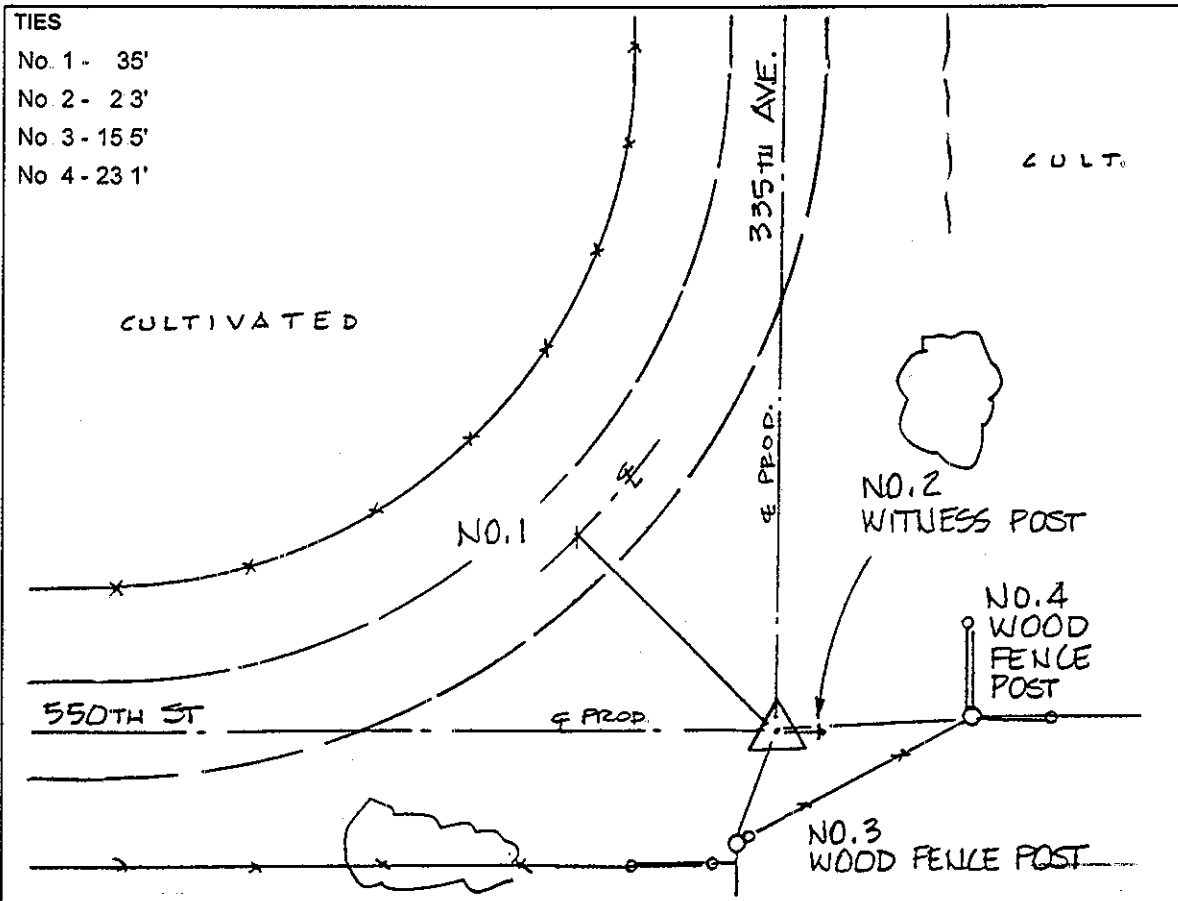
EASTING (X) 1876785.10

EASTING (X) 572045.242

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 947.92

ELEVATION (METERS) 288.93



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671506 4 GPS No. 8006 COUNTY DAVIS STATE IOWA
LOCATED IN SECTION 6 TWP 67 N RGE 15 W USGS QUAD MAP MOULTON
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 202 AND 582nd STREET, SOUTH-SOUTHEAST OF
MOULTON; GO EAST 0.85 MILE TO DAVIS-APPANOOSE ROAD AT THE COUNTY LINE; GO NORTH
0.2 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999634

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 233559.81

NORTHING (Y) 71189.171

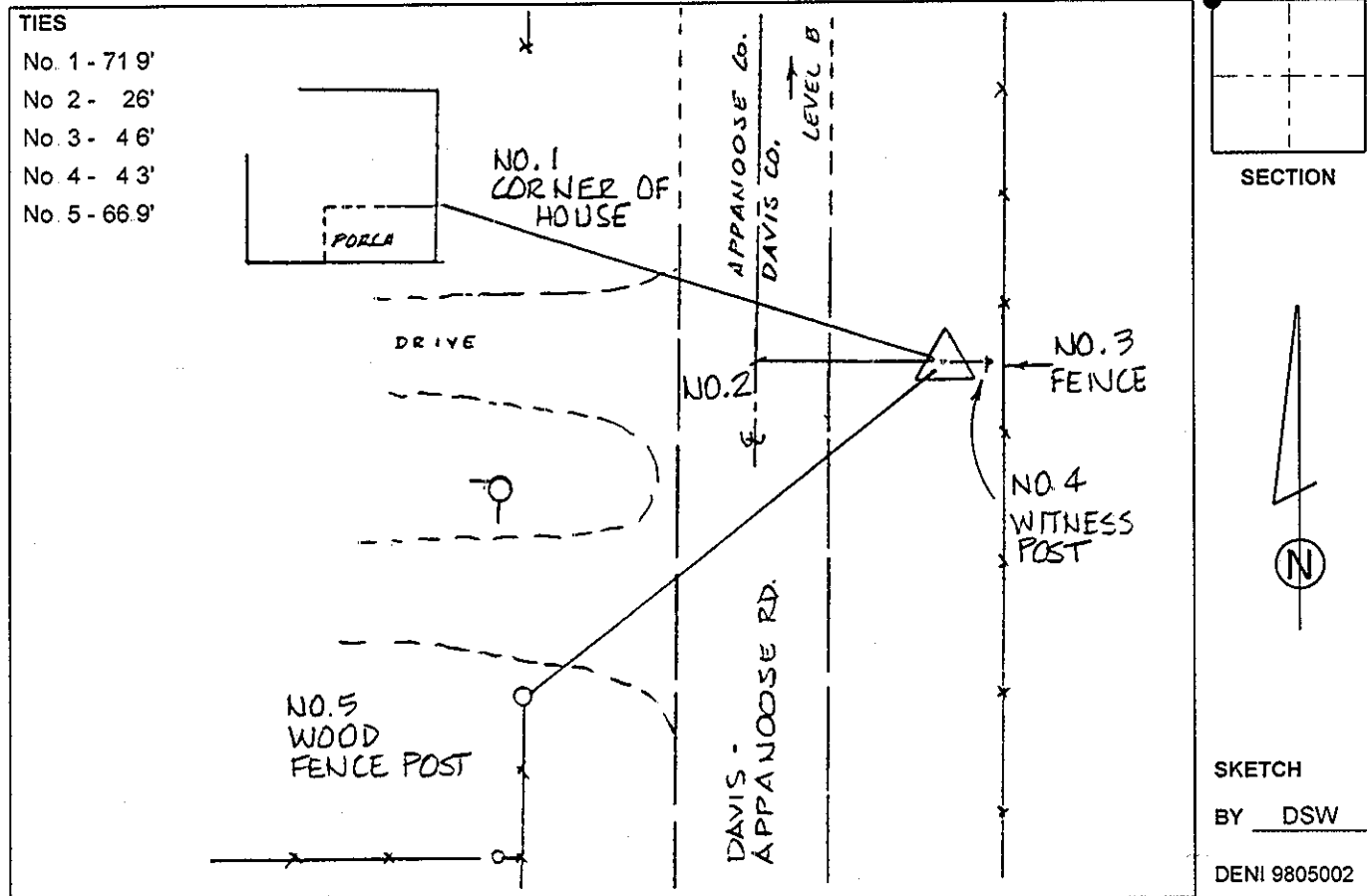
EASTING (X) 1879616.03

EASTING (X) 572908.111

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 974.54

ELEVATION (METERS) 297.04



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671519 4 GPS No. 8007 COUNTY DAVIS STATE IOWA
LOCATED IN SECTION 19 TWP 67 N RGE 15 W USGS QUAD MAP COATSVILLE
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 202 AND 336th AVENUE AT COATSVILLE,
0.3 MILE SOUTHEAST OF THE SOUTHEAST CORNER OF APPANOOSE COUNTY; GO NORTHWEST 0.35 MILE
ON 336th AVENUE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000413

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 217500.43

NORTHING (Y) 66294.264

EASTING (X) 1879870.58

EASTING (X) 572985.698

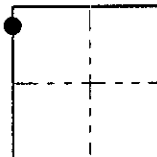
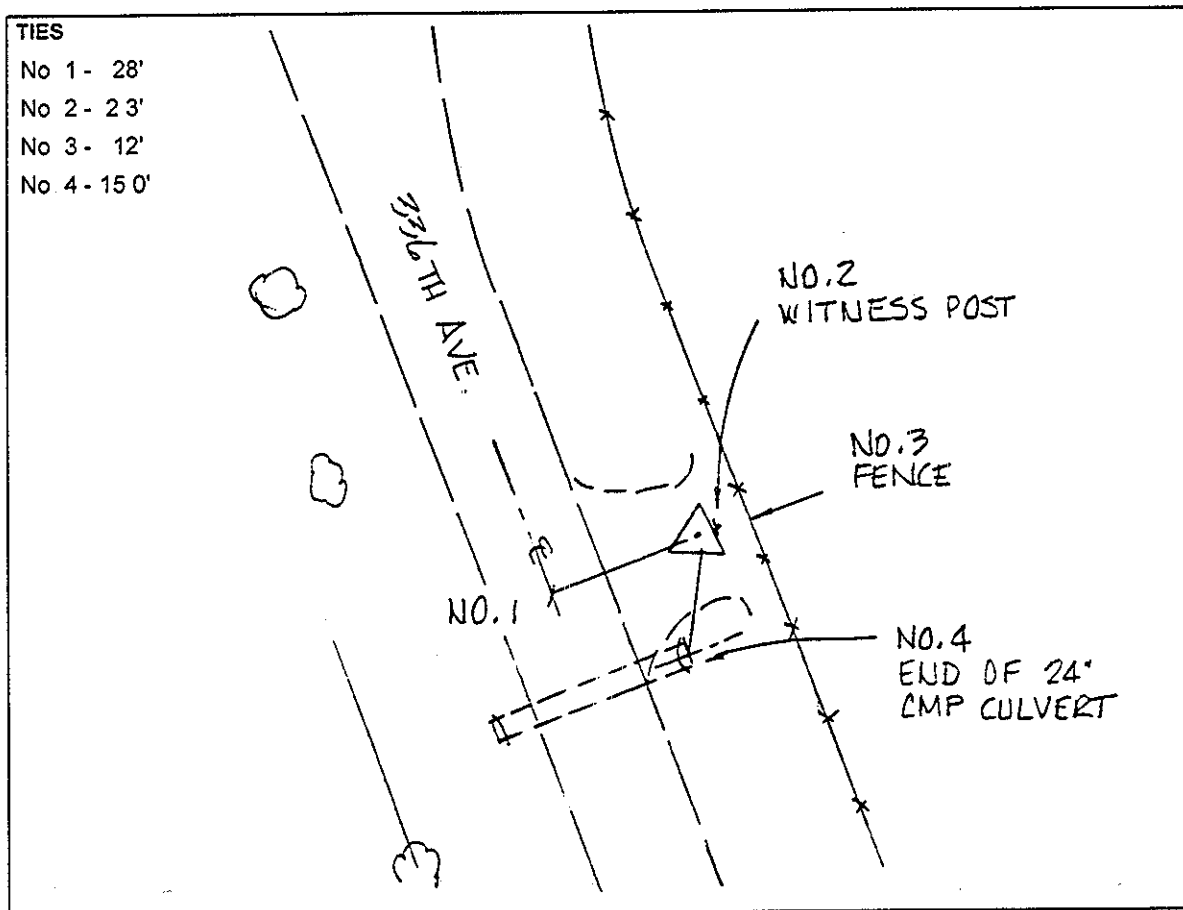
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 969.63

ELEVATION (METERS) 295.54

TIES

- No 1 - 28'
- No 2 - 23'
- No 3 - 12'
- No 4 - 15 0'



SECTION

SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671621 1 GPS No. 8008 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 21 TWP 67 N RGE 16 W USGS QUAD MAP COATSVILLE

TO REACH FROM THE INTERSECTION OF 590th STREET AND 308th AVENUE, SOUTH-SOUTHWEST OF
MOULTON; GO SOUTHERLY ON 308th AVENUE, THEN CONTINUE THROUGH A TURN WEST FOR A TOTAL OF
1.9 MILES TO 307th AVENUE; THEN SOUTHERLY 0.4 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 1.00000418

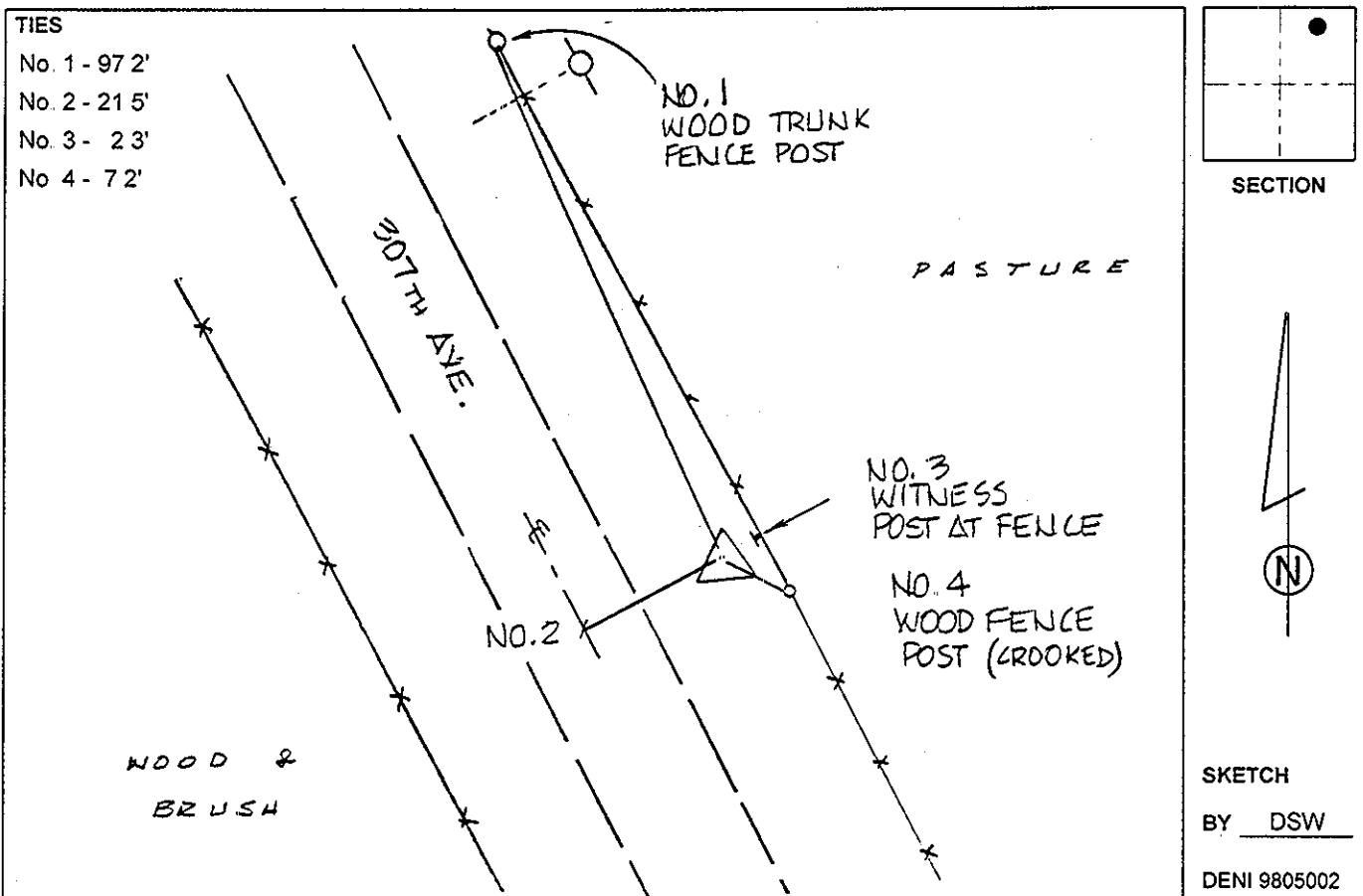
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 217236.99 NORTHING (Y) 66213.966

EASTING (X) 1862602.02 EASTING (X) 567722.232

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 915.07 ELEVATION (METERS) 278.92



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671604 1 GPS No. 8009 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 4 TWP 67 N RGE 16 W USGS QUAD MAP MOULTON
TO REACH FROM THE INTERSECTION OF 570th STREET AND 310th STREET, SOUTH-SOUTHWEST OF
MOULTON; GO SOUTH 1.2 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999663

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 232768.45

NORTHING (Y) 70947.964

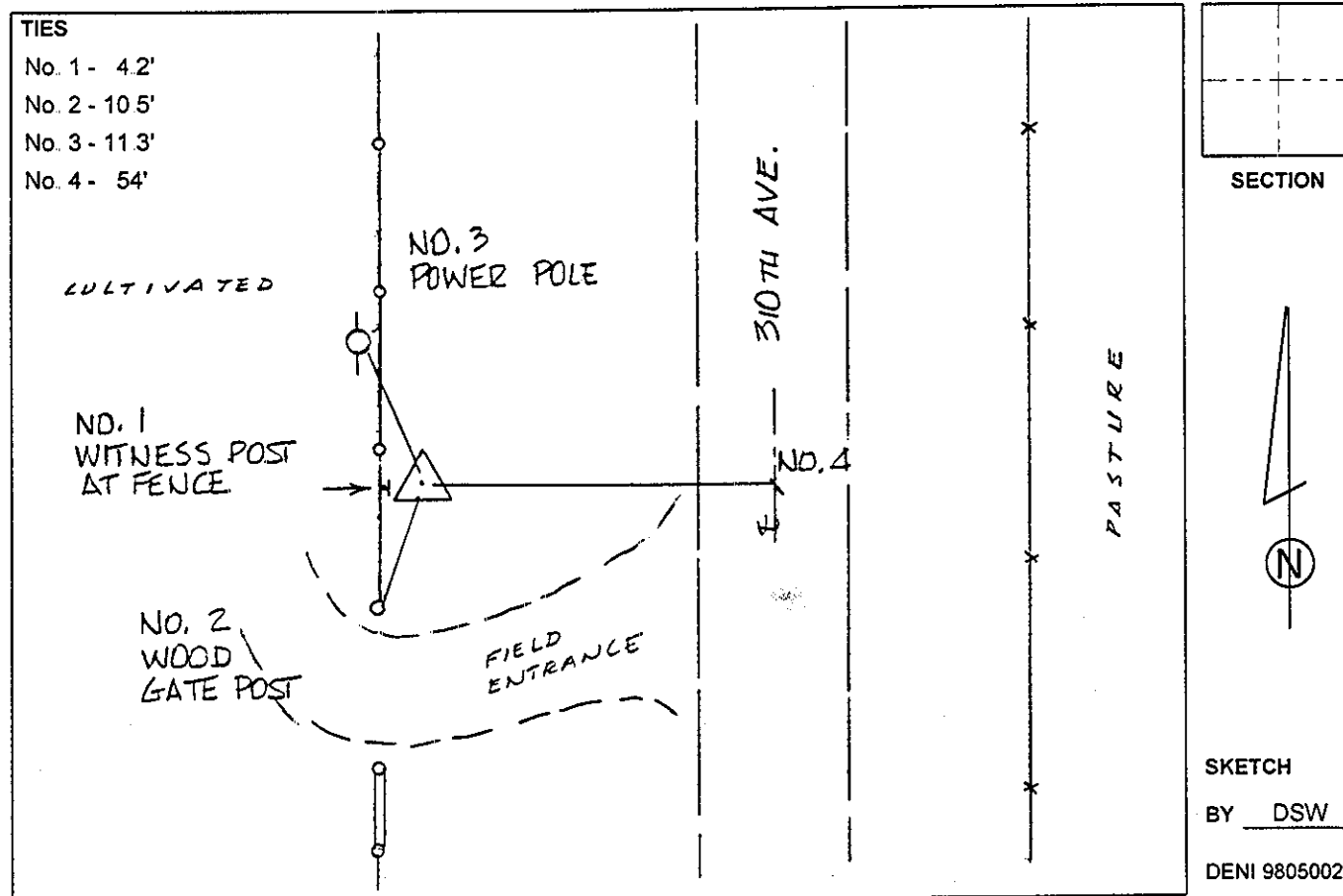
EASTING (X) 1863712.75

EASTING (X) 568060.781

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 935.91

ELEVATION (METERS) 285.27



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681616 2 GPS No. 8010 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 16 TWP 68 N RGE 16 W USGS QUAD MAP MOULTON
TO REACH FROM THE INTERSECTION OF 550th STREET AND STATE HIGHWAY 202 IN MOULTON;
GO WEST 0.95 MILE TO 310th AVENUE AND MARK, NORTHWEST OF INTERSECTION, NEAR SOUTHEAST
CORNER OF OAKLAND CEMETERY.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998911

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 249518.61

NORTHING (Y) 76053.424

EASTING (X) 1863595.12

EASTING (X) 568024.928

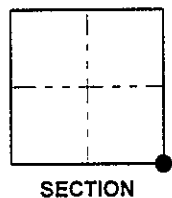
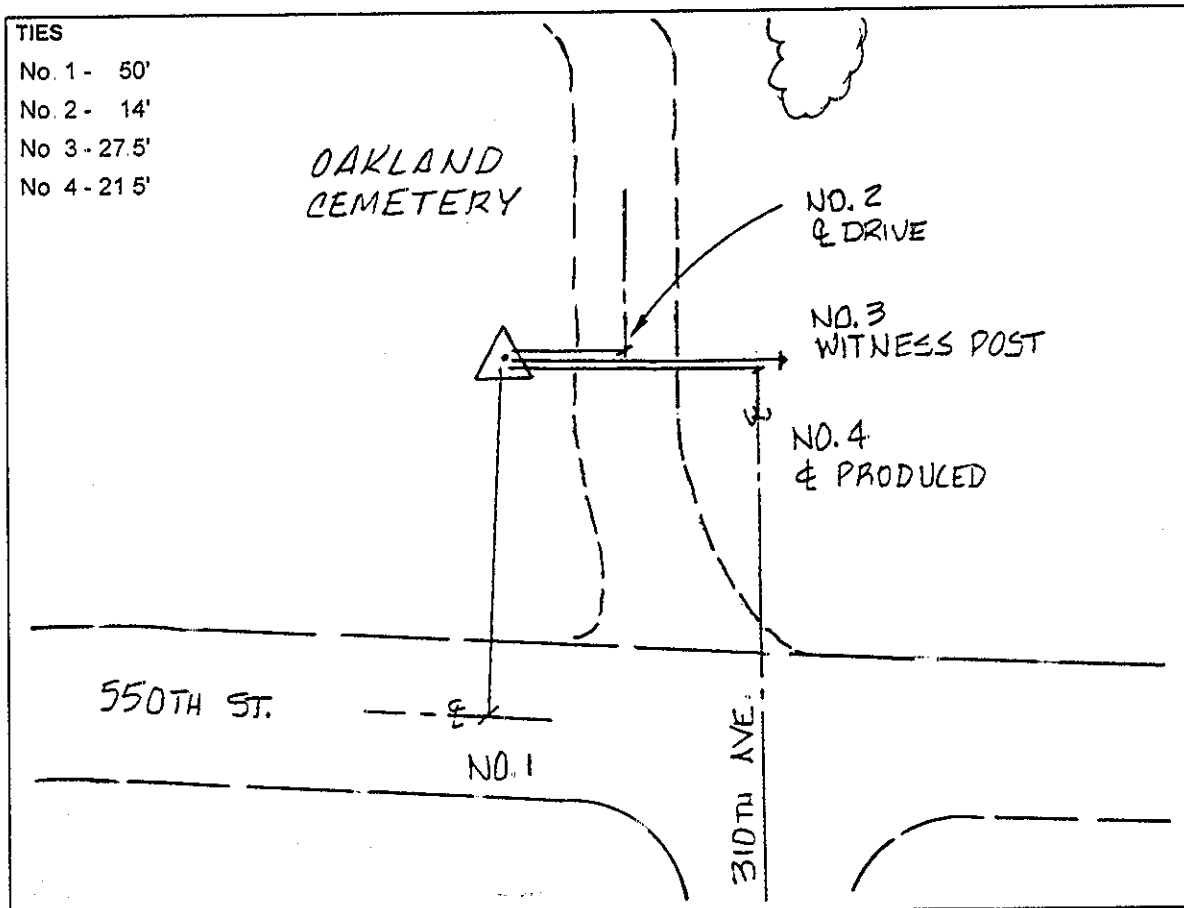
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 970.69

ELEVATION (METERS) 295.87

TIES

- No. 1 - 50'
- No. 2 - 14'
- No. 3 - 27.5'
- No. 4 - 21.5'



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691634 3 GPS No. 8011 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 34 TWP 69 N RGE 16 W USGS QUAD MAP MOULTON
TO REACH FROM THE INTERSECTION OF 520th STREET AND 310th AVENUE, NORTH-NORTHWEST OF MOULTON;
GO NORTH 165 FEET, MORE OR LESS, TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998253

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 265458.43

NORTHING (Y) 80911.891

EASTING (X) 1863417.77

EASTING (X) 567970.872

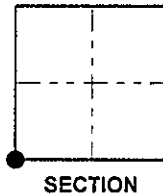
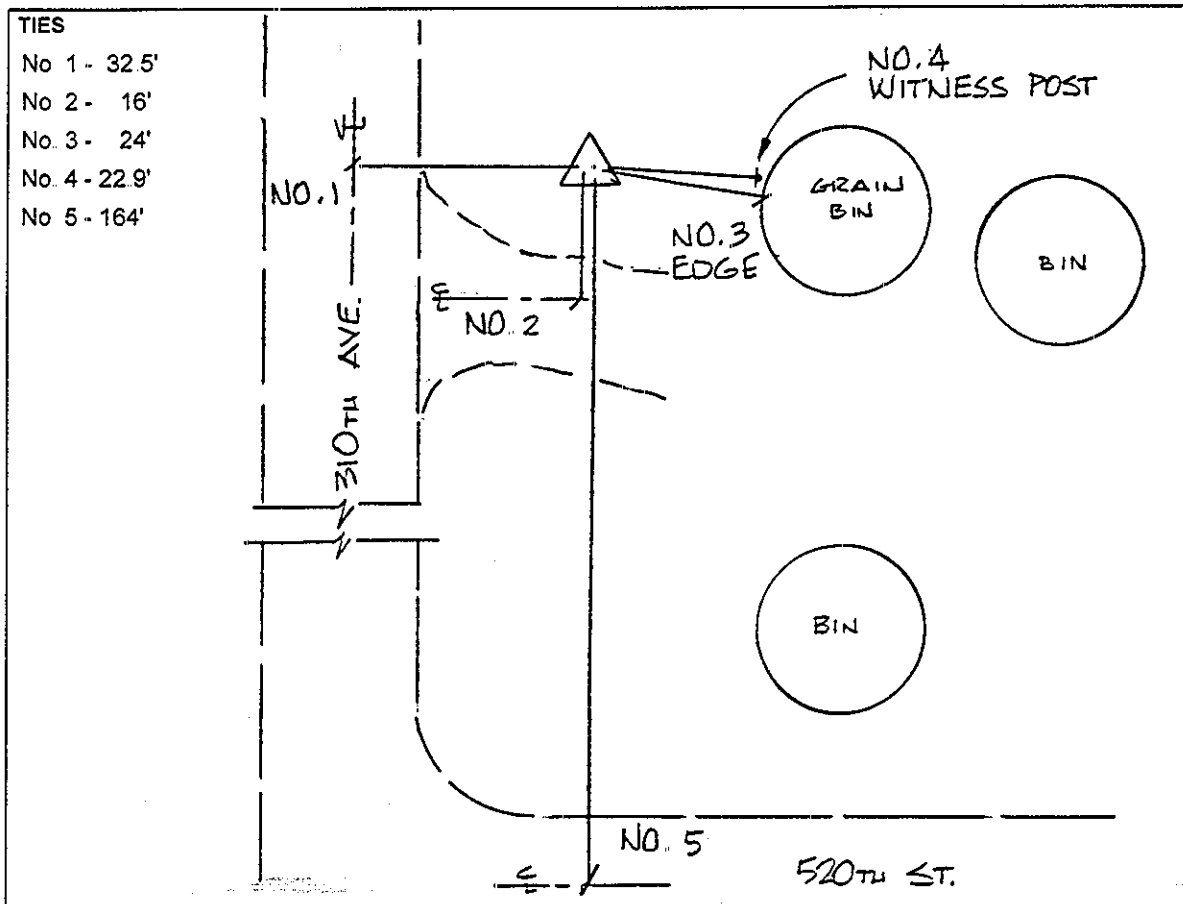
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 986.33

ELEVATION (METERS) 300.63

TIES

- No 1 - 32.5'
- No 2 - 16'
- No 3 - 24'
- No 4 - 22.9'
- No 5 - 164'



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691616 2 GPS No. 8012 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 16 TWP 69 N RGE 16 W USGS QUAD MAP UNIONVILLE
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY T61 AND 485th STREET, SOUTH OF UNIONVILLE;
GO SOUTH 0.5 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997664

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 281120.99

NORTHING (Y) 85685.850

EASTING (X) 1863137.12

EASTING (X) 567885.330

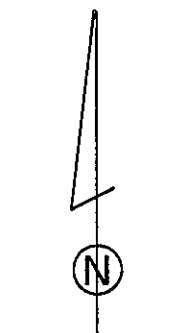
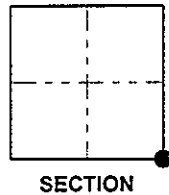
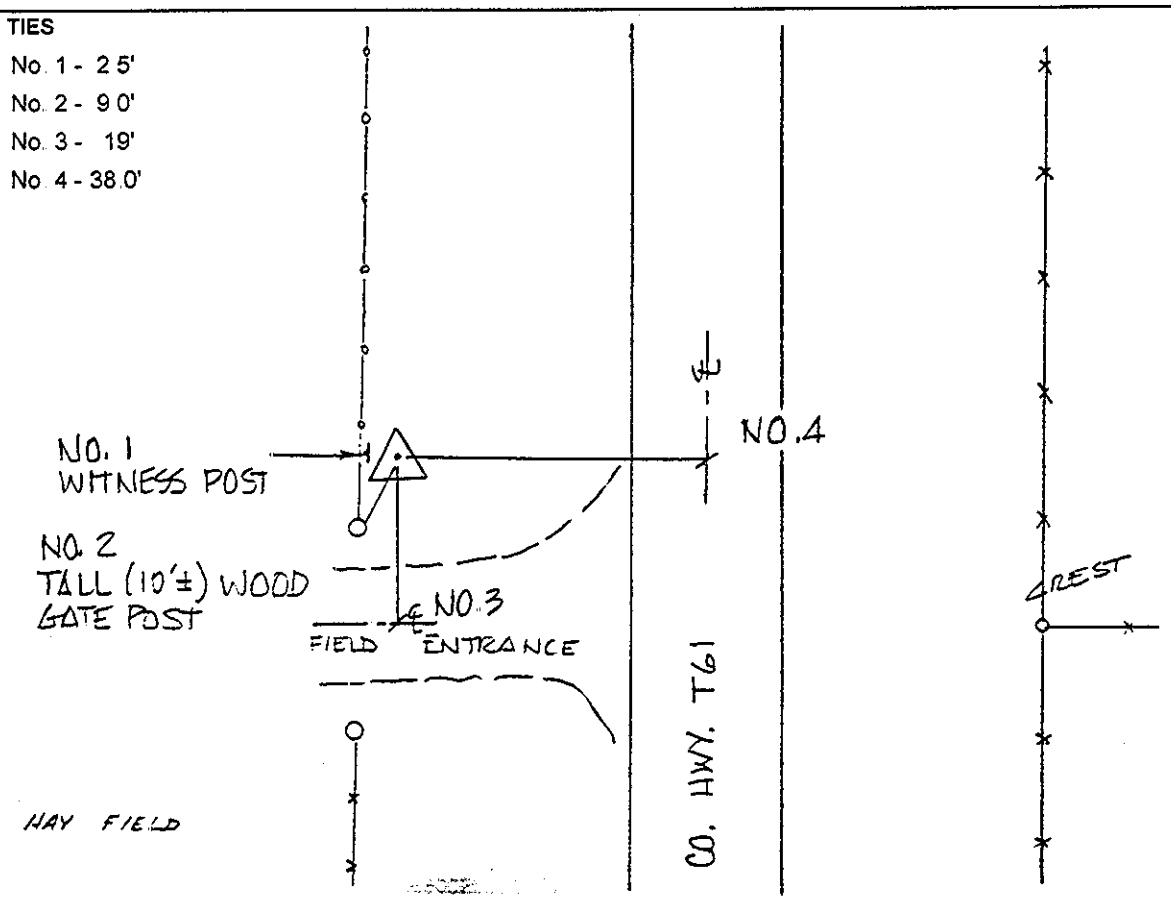
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 964.01

ELEVATION (METERS) 293.83

TIES

- No. 1 - 25'
- No. 2 - 90'
- No. 3 - 19'
- No. 4 - 38.0'



SKETCH
BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701633 2 GPS No. 8013 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 33 TWP 70 N RGE 16 W USGS QUAD MAP UNIONVILLE

TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY JT3 / UNION STREET AND
SOUTH STREET / COUNTY HIGHWAY T61, IN UNIONVILLE; GO SOUTH ON COUNTY HIGHWAY T61
0.45 MILE TO MARK.

DIRECTLY UNDER POWER LINES.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997118

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 297151.10

NORTHING (Y) 90571.837

EASTING (X) 1862964.96

EASTING (X) 567832.854

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 958.88

ELEVATION (METERS) 292.27

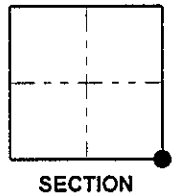
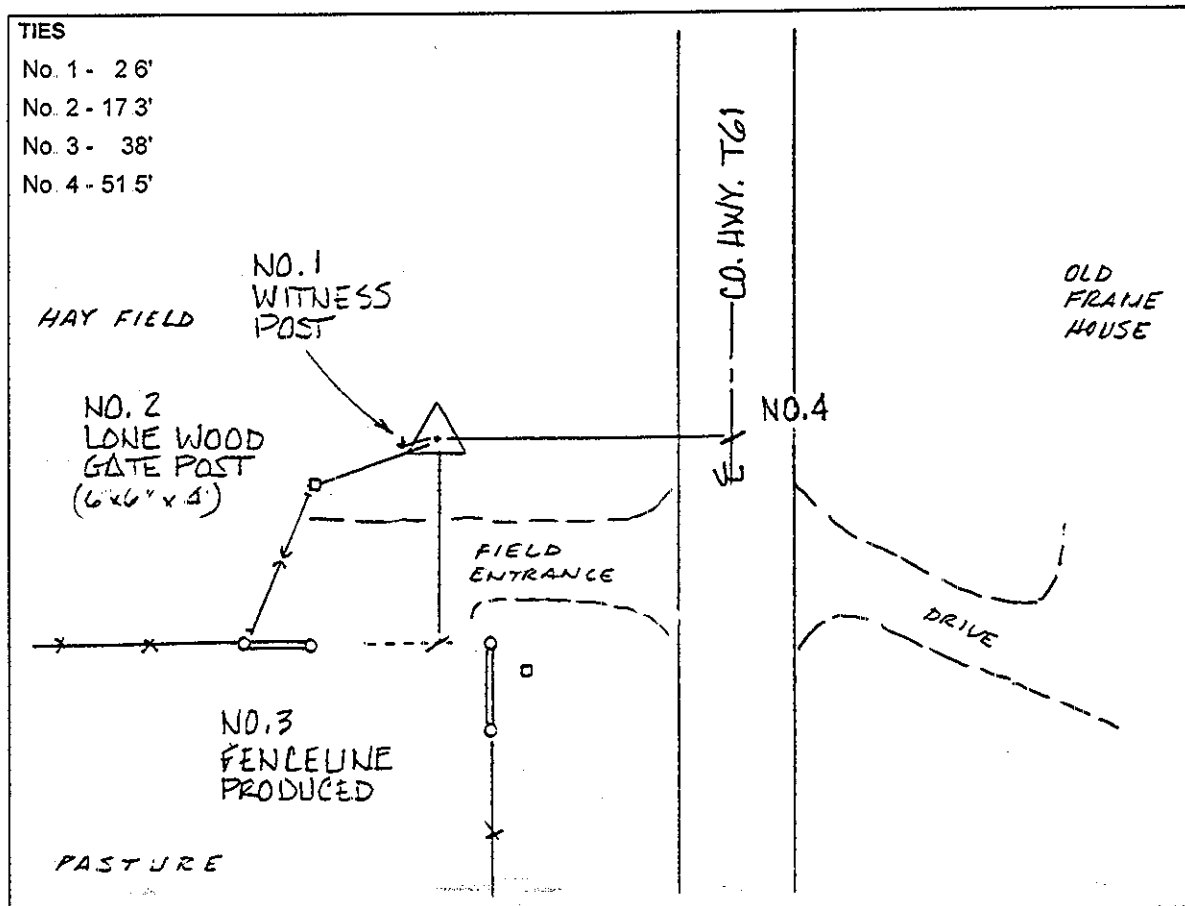
TIES

No. 1 - 26'

No. 2 - 17.3'

No. 3 - 38'

No. 4 - 51.5'



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701616 3 GPS No. 8014 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 16 TWP 70 N RGE 16 W USGS QUAD MAP UNIONVILLE
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J3T AND 437th STREET, NORTHWEST OF
UNIONVILLE NEAR CENTER OF SECTION 20-70-16; GO EASTERLY 0.35 MILE TO 302nd AVENUE; THEN
NORTHERLY 0.9 MILE ON 302nd AVENUE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996606

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 313986.17

NORTHING (Y) 95703.176

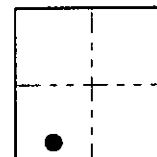
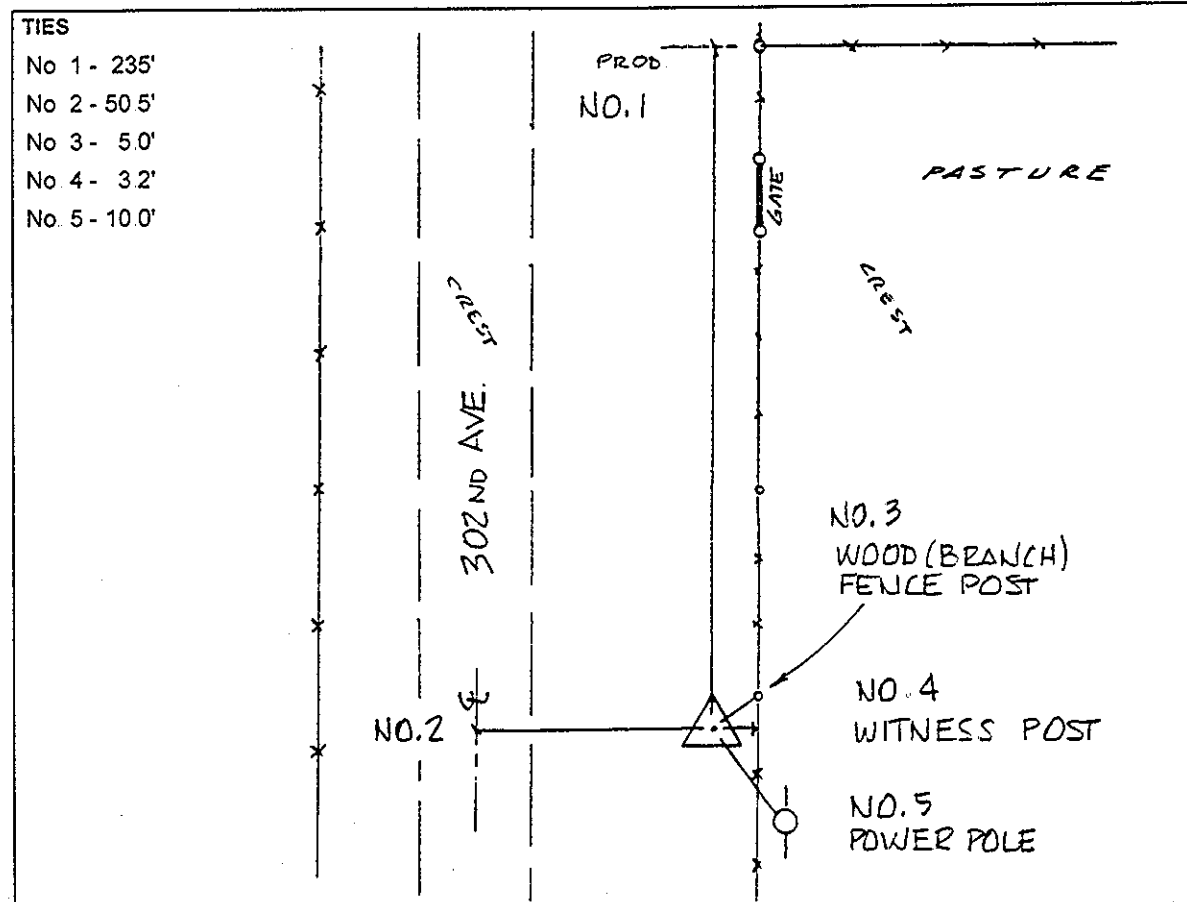
EASTING (X) 1858913.35

EASTING (X) 566597.923

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 922.31

ELEVATION (METERS) 281.12



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701603 4 GPS No. 8015 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 3 TWP 70 N RGE 16 W USGS QUAD MAP BLAKESBURG

TO REACH FROM THE INTERSECTION OF 402nd STREET AND 310th AVENUE; GO NORTH 0.45 MILE TO MARK,
SOUTH OF MONROE COUNTY LINE AND 3.0 MILE WEST OF NORTHEAST CORNER OF APPANOOSE COUNTY.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996234

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 327886.53

NORTHING (Y) 99940.015

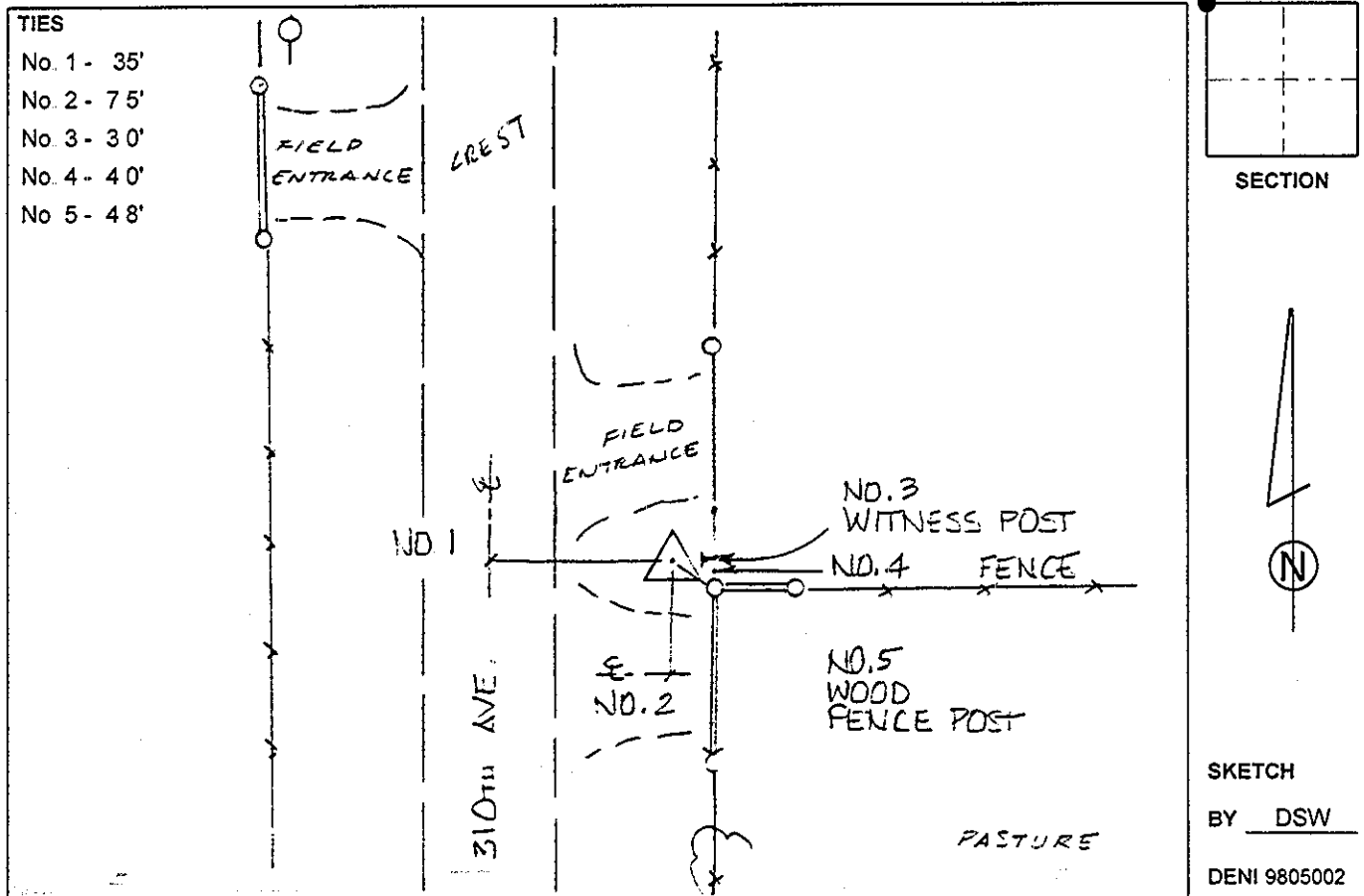
EASTING (X) 1862617.21

EASTING (X) 567726.861

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 915.18

ELEVATION (METERS) 278.95



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701724 1 GPS No. 8016 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 24 TWP 70 N RGE 17 W USGS QUAD MAP HIATTSVILLE
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J3T AND 420th STREET, APPROXIMATELY
3 MILES SOUTHEAST OF MORAVIA; GO SOUTHEASTERLY 1.65 MILES ON COUNTY HIGHWAY J3T TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996638

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 312764.53

NORTHING (Y) 95330.820

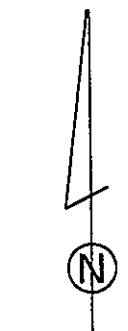
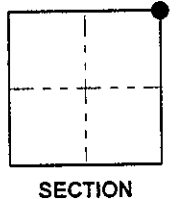
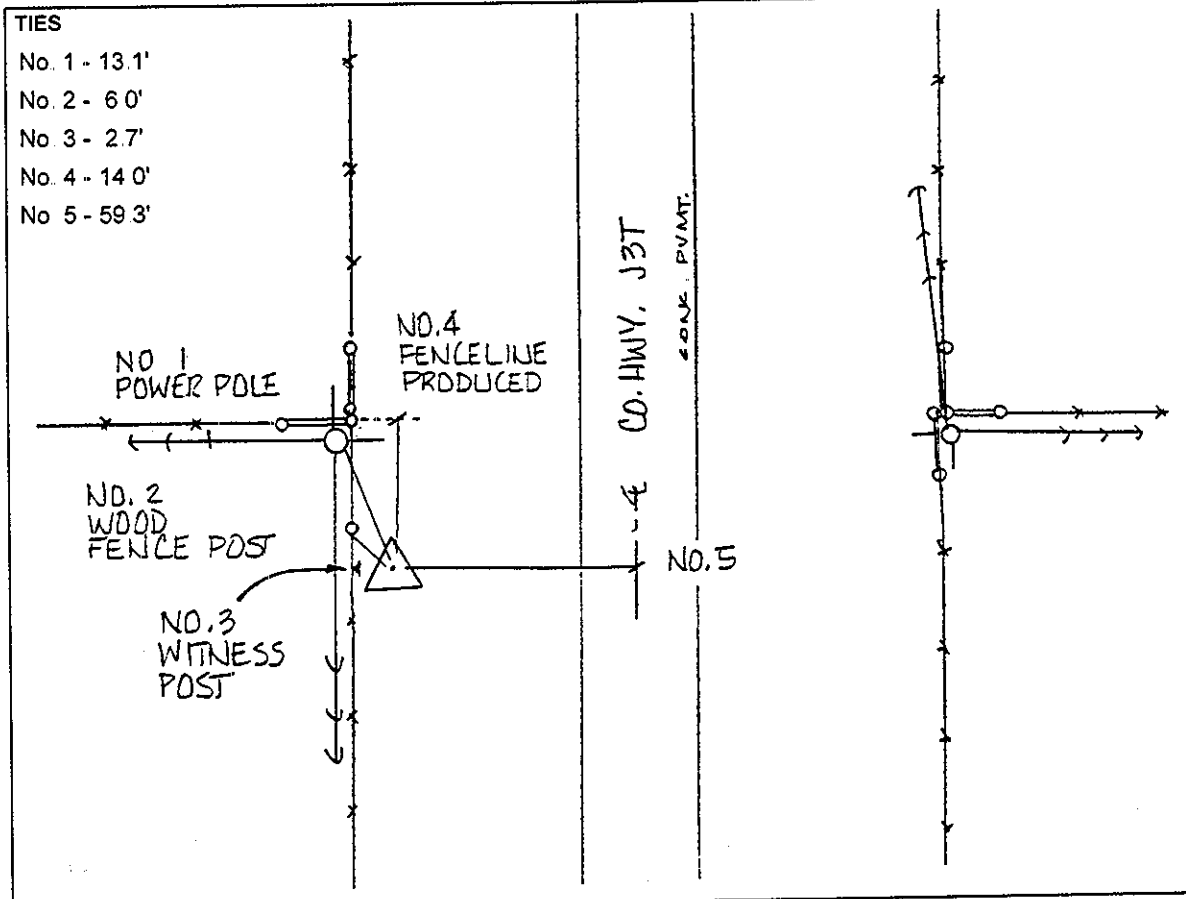
EASTING (X) 1846809.05

EASTING (X) 562908.525

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 972.79

ELEVATION (METERS) 296.51



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701631 3 GPS No. 8017 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 31 TWP 70 N RGE 16 W USGS QUAD MAP UNIONVILLE

TO REACH FROM THE INTERSECTION OF 450th STREET AND 294th STREET, WEST OF UNIONVILLE;

CONTINUE WESTERLY ON 450th STREET 1.15 MILES TO 284th AVENUE; THEN GO SOUTH 0.25 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997119

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 296975.01

NORTHING (Y) 90518.163

EASTING (X) 1848517.84

EASTING (X) 563429.365

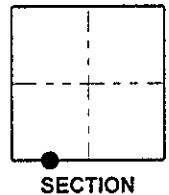
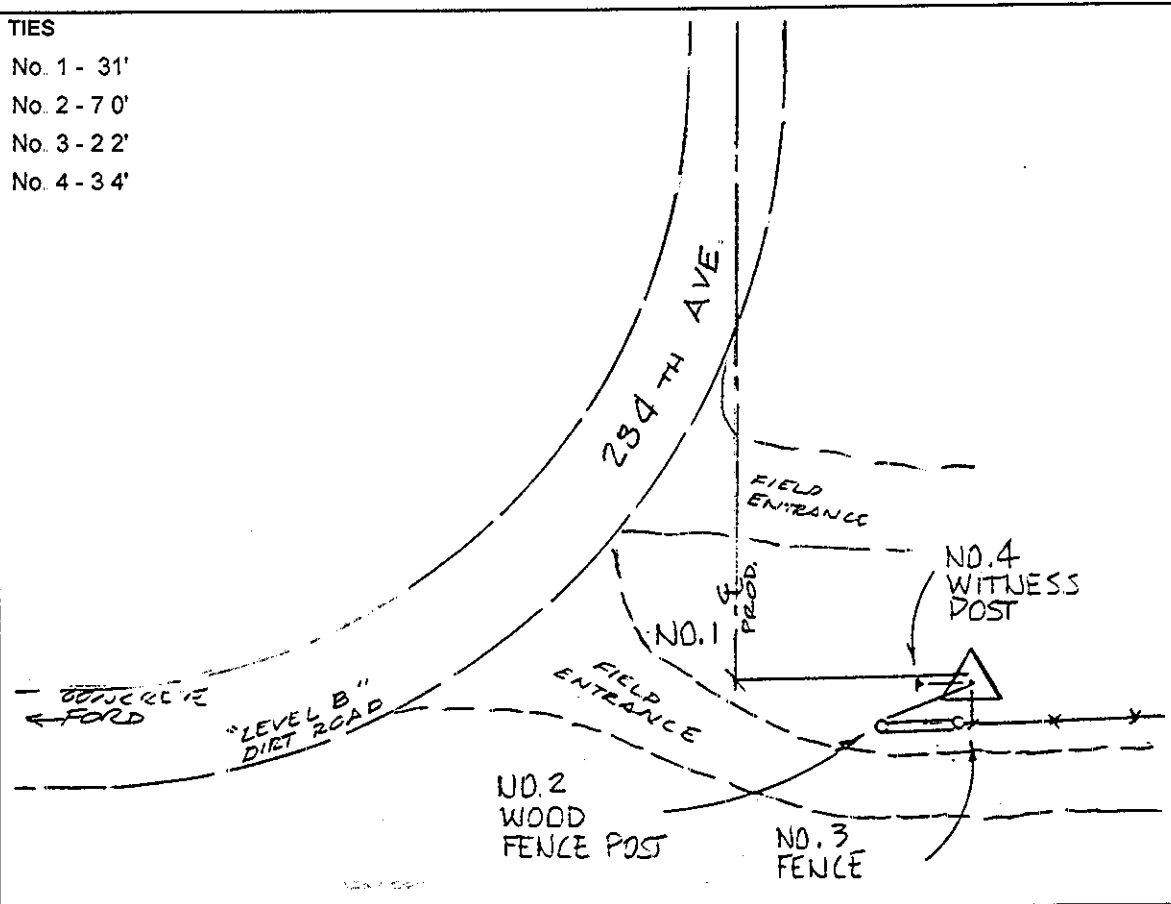
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 841.75

ELEVATION (METERS) 256.57

TIES

- No. 1 - 31'
- No. 2 - 70'
- No. 3 - 22'
- No. 4 - 34'



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691713 2 GPS No. 8018 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 13 TWP 69 N RGE 17 W USGS QUAD MAP HIATTSVILLE
TO REACH FROM THE INTERSECTION OF COUNTY ROAD T4J / 485th STREET AND 280th AVENUE, SOUTHWEST
OF UDELL; GO SOUTH 0.5 MILE TO 490th STREET; THEN GO WEST 0.1 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997664

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 280966.13

NORTHING (Y) 85638.646

EASTING (X) 1846182.56

EASTING (X) 562717.568

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 987.63

ELEVATION (METERS) 301.03

TIES

No. 1 - 119'
No. 2 - 117'
No. 3 - 92'
No. 4 - 24'

HAY FIELD

NO. 2
TELEPHONE
CABLE WARNING
WOOD SIGN POST

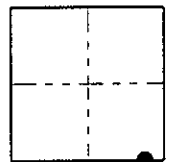
NO. 3
WITNESS
SIGN

NO. 1

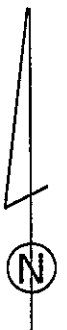
490TH ST.

NO. 4

POWER POLE
W/ TRANSFORMER



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681701 1 GPS No. 8019 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 1 TWP 68 N RGE 17 W USGS QUAD MAP CENTERVILLE EAST

TO REACH FROM _____

IN THE SOUTHWEST QUADRANT OF THE INTERSECTION OF 520th STREET AND 278th AVENUE,

6.0 MILES EAST OF CENTERVILLE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99998261

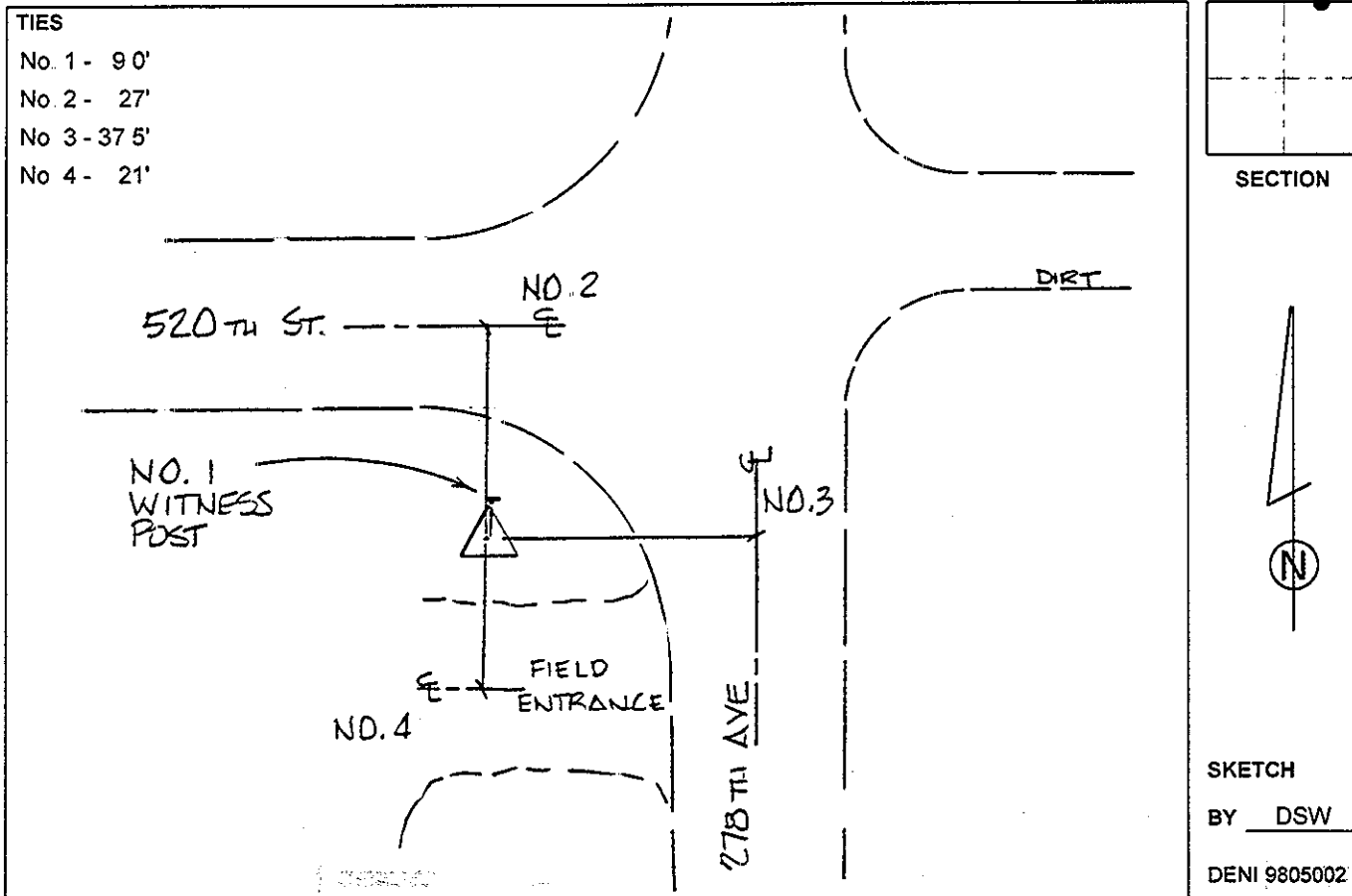
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 265103.42 NORTHING (Y) 80803.683

EASTING (X) 1846111.47 EASTING (X) 562695.901

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 937.53 ELEVATION (METERS) 285.76



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681619 4 GPS No. 8020 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 19 TWP 68 N RGE 16 W USGS QUAD MAP CENTERVILLE EAST
TO REACH FROM THE 285th STREET BRIDGE OVER CHARITON RIVER; GO NORTHEAST 0.5 MILE TO
555th STREET; THEN WEST 0.2 MILE TO DOGLEG TURN TO NORTH / 284th AVENUE; THEN NORTH
0.4 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

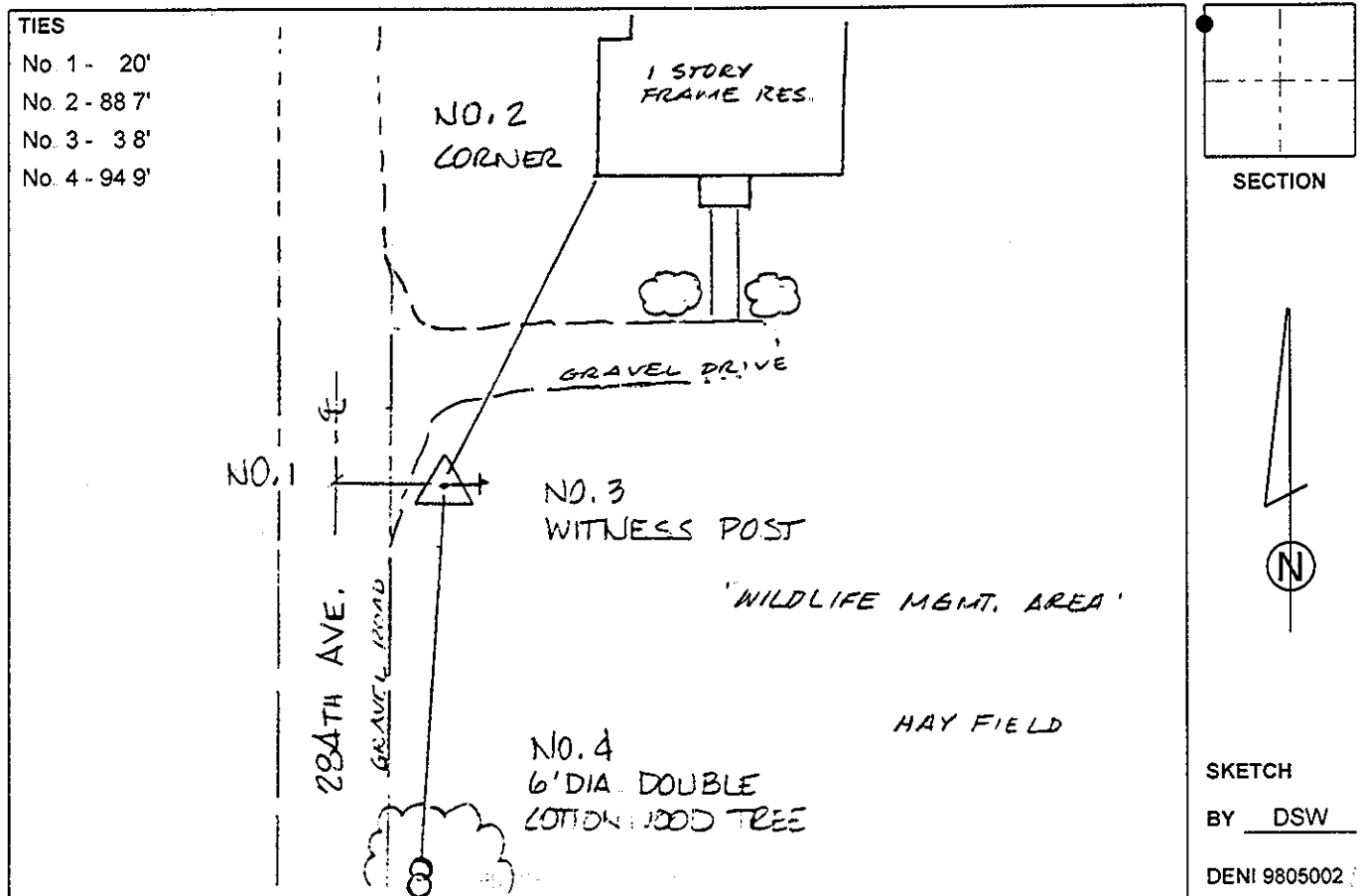
☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE	SCALE FACTOR: <u>0.99998930</u>
COORDINATES (US FEET)	COORDINATES (METERS)
NORTHING (Y) <u>248932.69</u>	NORTHING (Y) <u>75874.834</u>
EASTING (X) <u>1847598.37</u>	EASTING (X) <u>563149.109</u>

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 842.00 ELEVATION (METERS) 256.64



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671701 1 GPS No. 8021 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 1 TWP 67 N RGE 17 W USGS QUAD MAP CENTERVILLE EAST
TO REACH FROM THE INTERSECTION OF 590th STREET AND 268th AVENUE; GO NORTHERLY 0.35 MILE TO
BRIDGE OVER PACKARD CREEK; THEN CONTINUE NORTHERLY 0.35 MILE TO FIELD ENTRANCE TO EAST
AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999645

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 233024.72

NORTHING (Y) 71026.078

EASTING (X) 1847321.61

EASTING (X) 563064.752

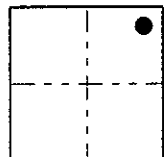
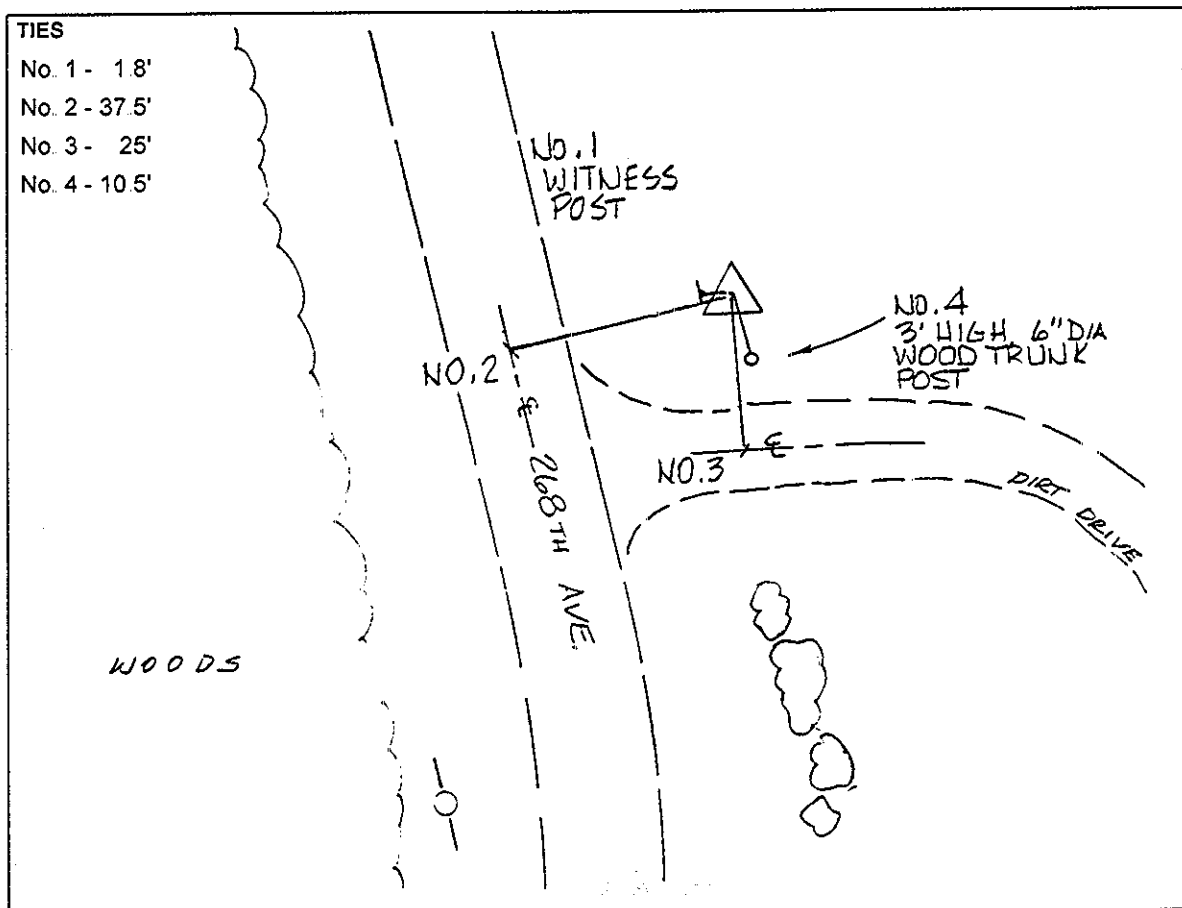
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 883.32

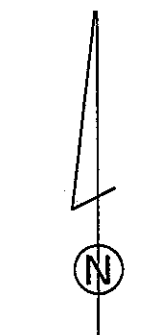
ELEVATION (METERS) 269.24

TIES

- No. 1 - 1.8'
- No. 2 - 37.5'
- No. 3 - 25'
- No. 4 - 10.5'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671724 1 GPS No. 8022 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 24 TWP 67 N RGE 17 W USGS QUAD MAP OMAHA

TO REACH FROM _____

AT THE INTERSECTION OF 610th STREET AND 611th STREET IN THE

GRASS MEDIAN TRIANGLE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 1.00000430

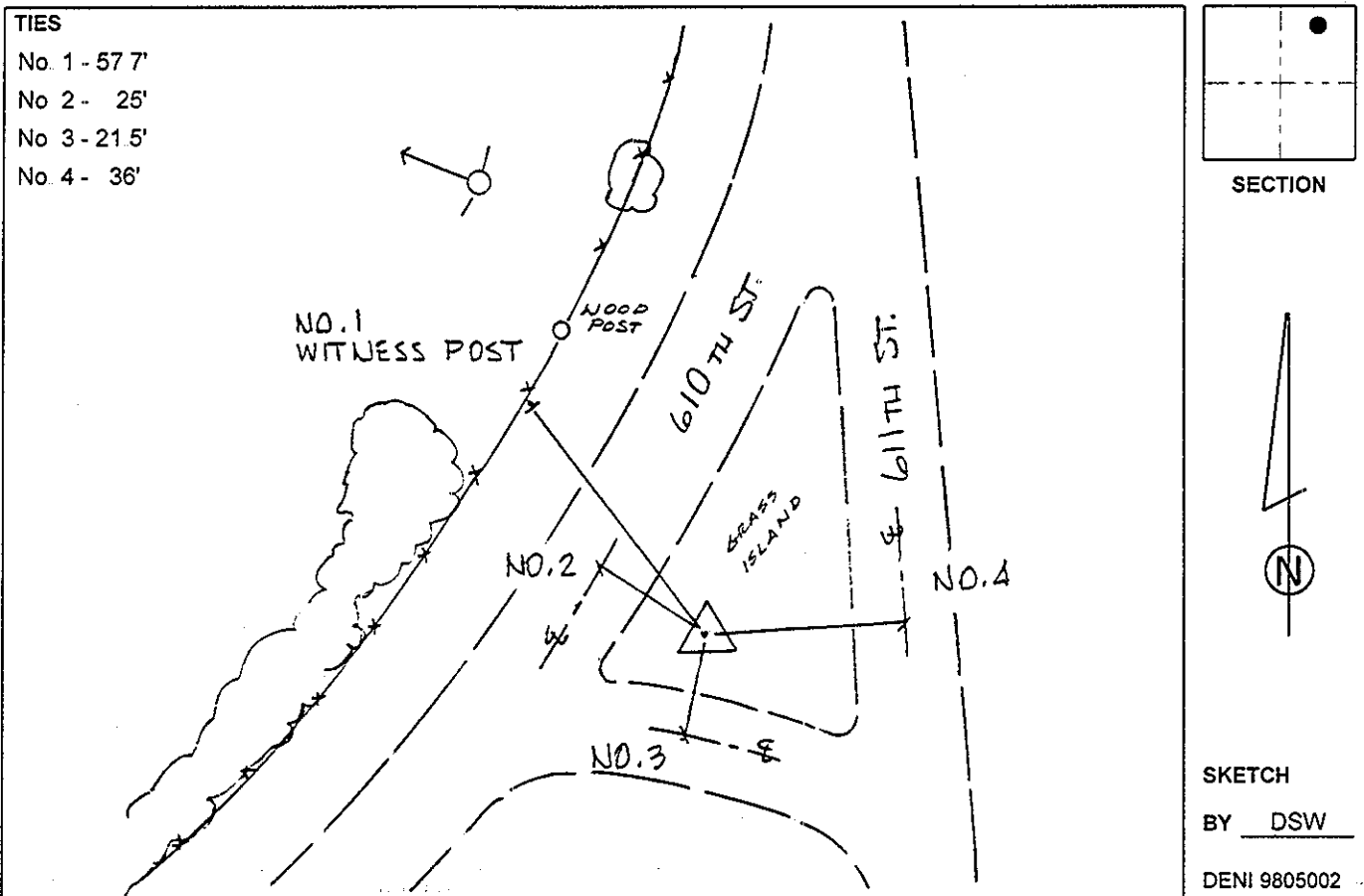
COORDINATES (US FEET): COORDINATES (METERS)

NORTHING (Y) 216858.43 NORTHING (Y) 66098.581

EASTING (X) 1846520.09 EASTING (X) 562820.450

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 958.28 ELEVATION (METERS) 292.08



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671716 2 GPS No. 8023 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 16 TWP 67 N RGE 17 W USGS QUAD MAP OMAHA
TO REACH FROM THE INTERSECTION OF 610th STREET AND 247th AVENUE: GO EAST 0.25 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000391

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 217500.82

NORTHING (Y) 66294.384

EASTING (X) 1832058.37

EASTING (X) 558412.508

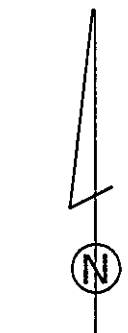
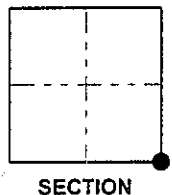
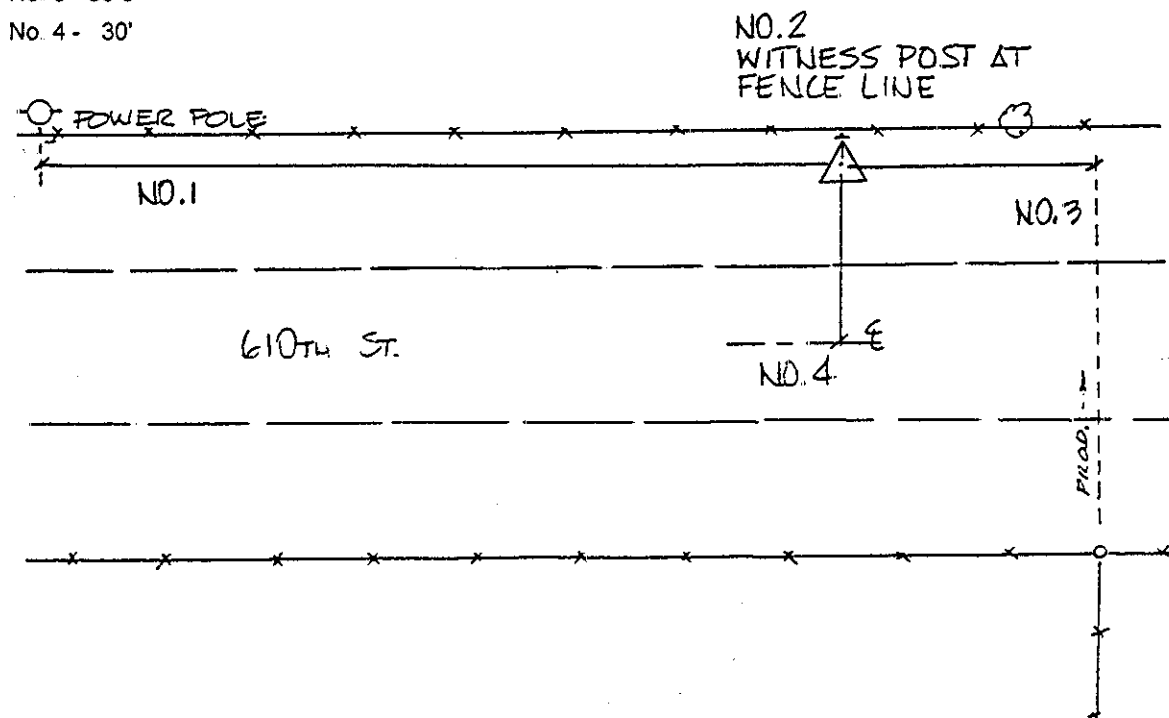
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1003.24

ELEVATION (METERS) 305.79

TIES

- No. 1 - 134'
- No. 2 - 30'
- No. 3 - 35.5'
- No. 4 - 30'



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681734 3 GPS No. 8024 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 34 TWP 68 N RGE 17 W USGS QUAD MAP CENTERVILLE EAST

TO REACH FROM _____

AT THE INTERSECTION OF 580th STREET / 252nd AVENUE AND 251st AVENUE, NEAR THE

WESTERLY POINT OF GRASS MEDIAN.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999624

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 233336.38

NORTHING (Y) 71121.071

EASTING (X) 1832843.26

EASTING (X) 558651.744

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 986.56

ELEVATION (METERS) 300.70

TIES

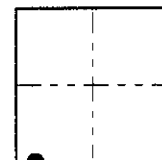
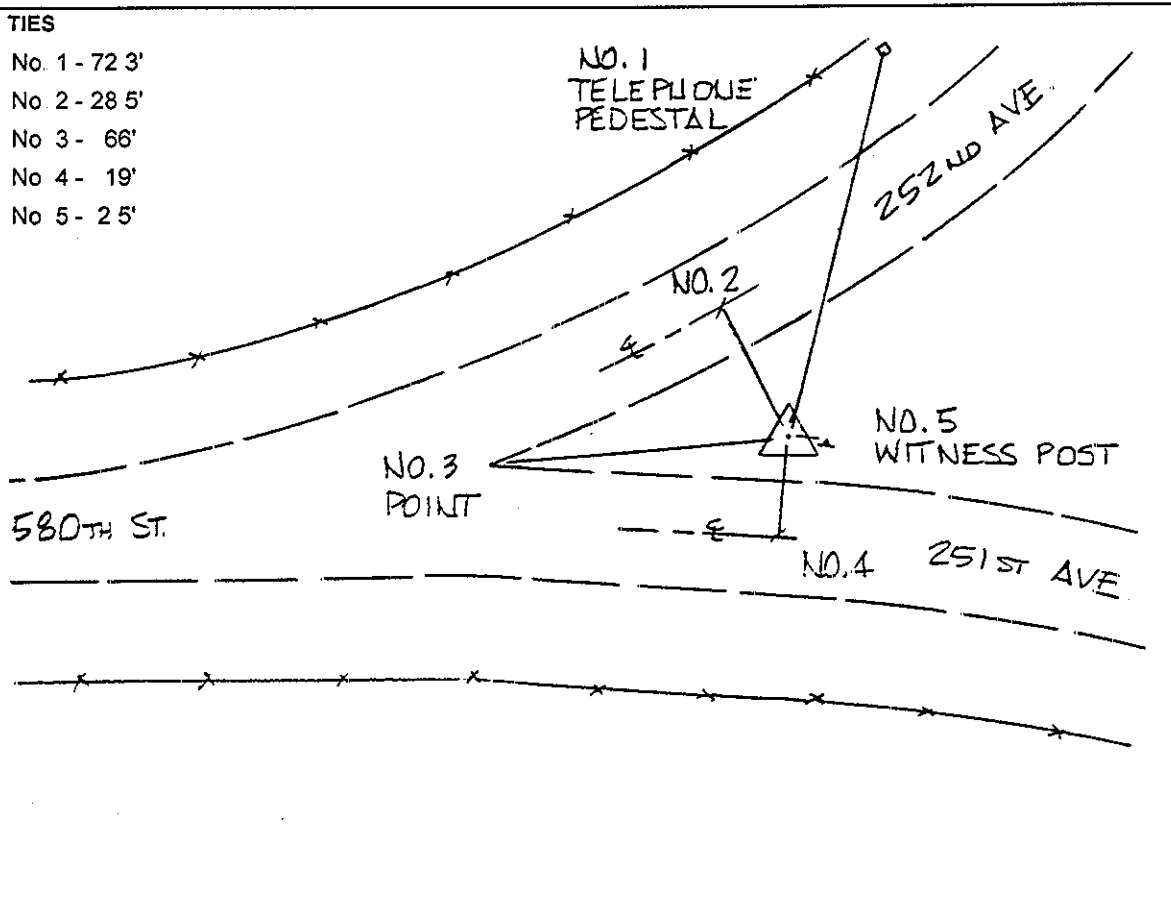
No. 1 - 72.3'

No. 2 - 28.5'

No. 3 - 66'

No. 4 - 19'

No. 5 - 2.5'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681716 2 GPS No. 8025 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 16 TWP 68 N RGE 17 W USGS QUAD MAP CENTERVILLE EAST

TO REACH FROM THE INTERSECTION OF 550th STREET AND 250th AVENUE; GO WEST 0.1 MILE TO
UNUSED FIELD ENTRANCE TO NORTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998914

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 249152.35

NORTHING (Y) 75941.788

EASTING (X) 1831279.54

EASTING (X) 558175.121

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 973.68

ELEVATION (METERS) 296.78

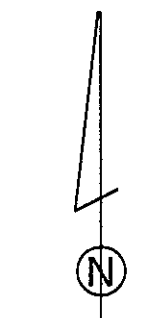
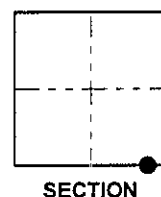
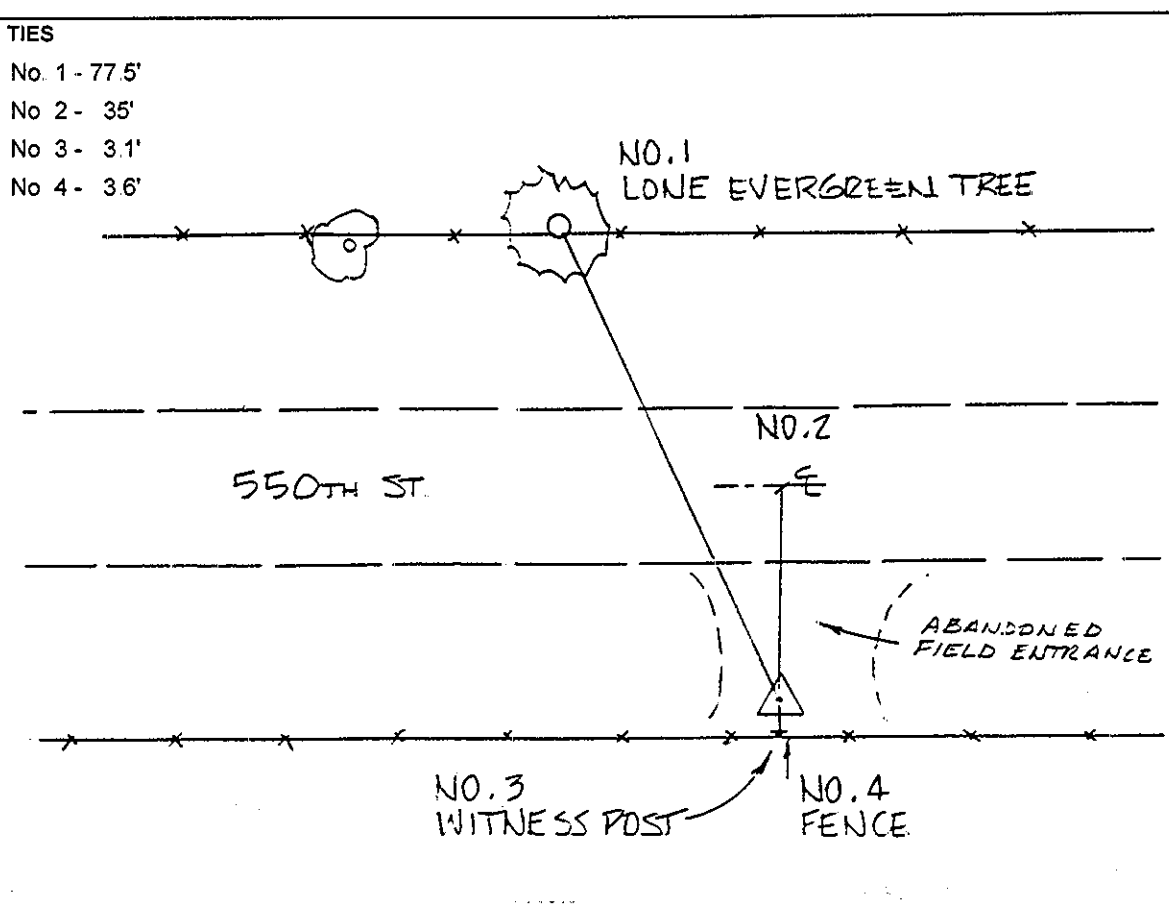
TIES

No 1 - 77.5'

No 2 - 35'

No 3 - 3.1'

No 4 - 3.6'



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681704 1 GPS No. 8026 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 4 TWP 68 N RGE 17 W USGS QUAD MAP CENTERVILLE EAST
TO REACH FROM THE INTERSECTION OF 520th STREET AND 248th AVENUE; GO EAST 0.2 MILE TO
FIELD ENTRANCE TO SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998260

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 265005.36

NORTHING (Y) 80773.796

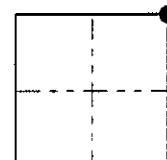
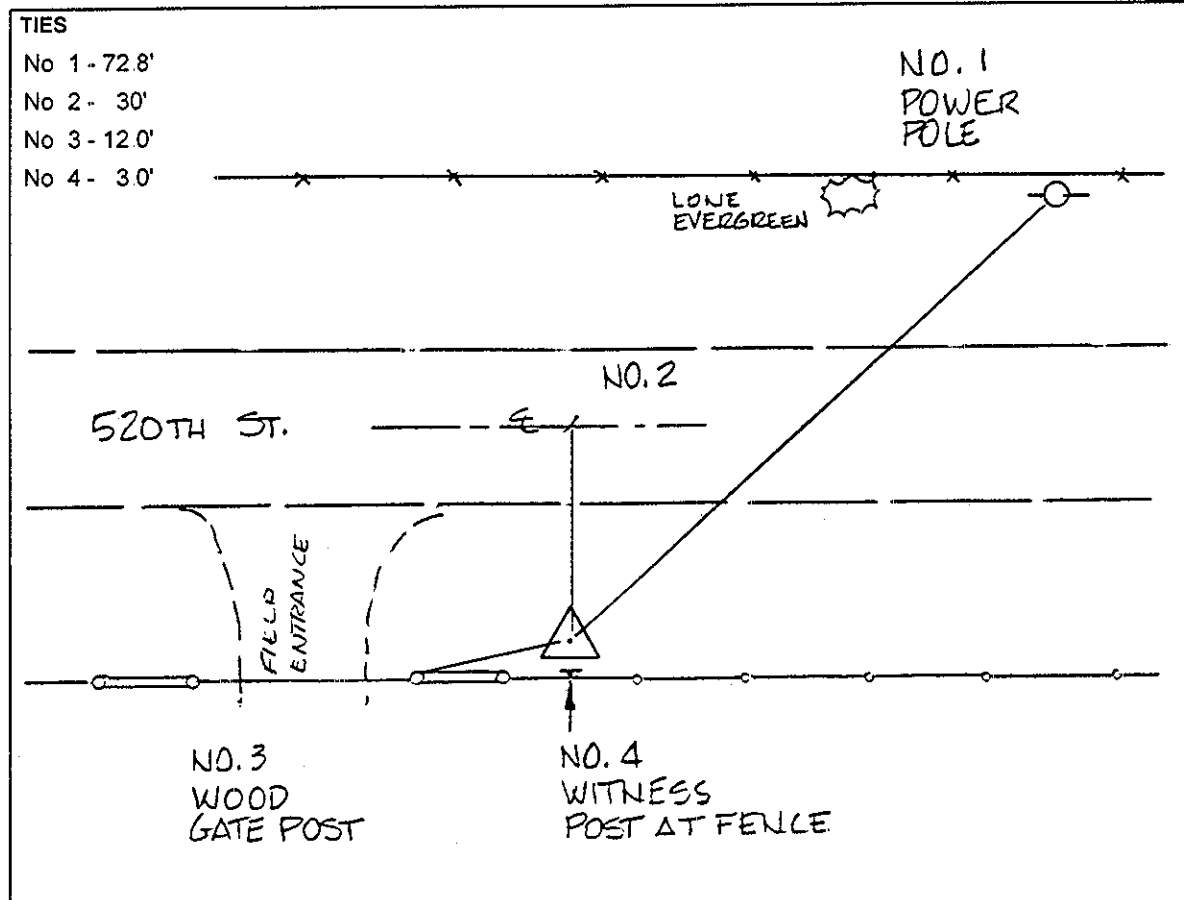
EASTING (X) 1830906.55

EASTING (X) 558061.432

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 941.95

ELEVATION (METERS) 287.11



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691721 4 GPS No. 8027 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 21 TWP 69 N RGE 17 W USGS QUAD MAP HIATTSVILLE

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND 493rd STREET; GO EAST 1.9 MILES TO DOGLEG TO NORTH; THEN GO NORTHERLY AND NORTHEASTERLY 0.15 MILE TO BRIDGE; CONTINUE NORTHEASTERLY 0.2 MILE TO EAST POINT OF GROVE AND FIELD ROAD NORTHWESTERLY AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99997663

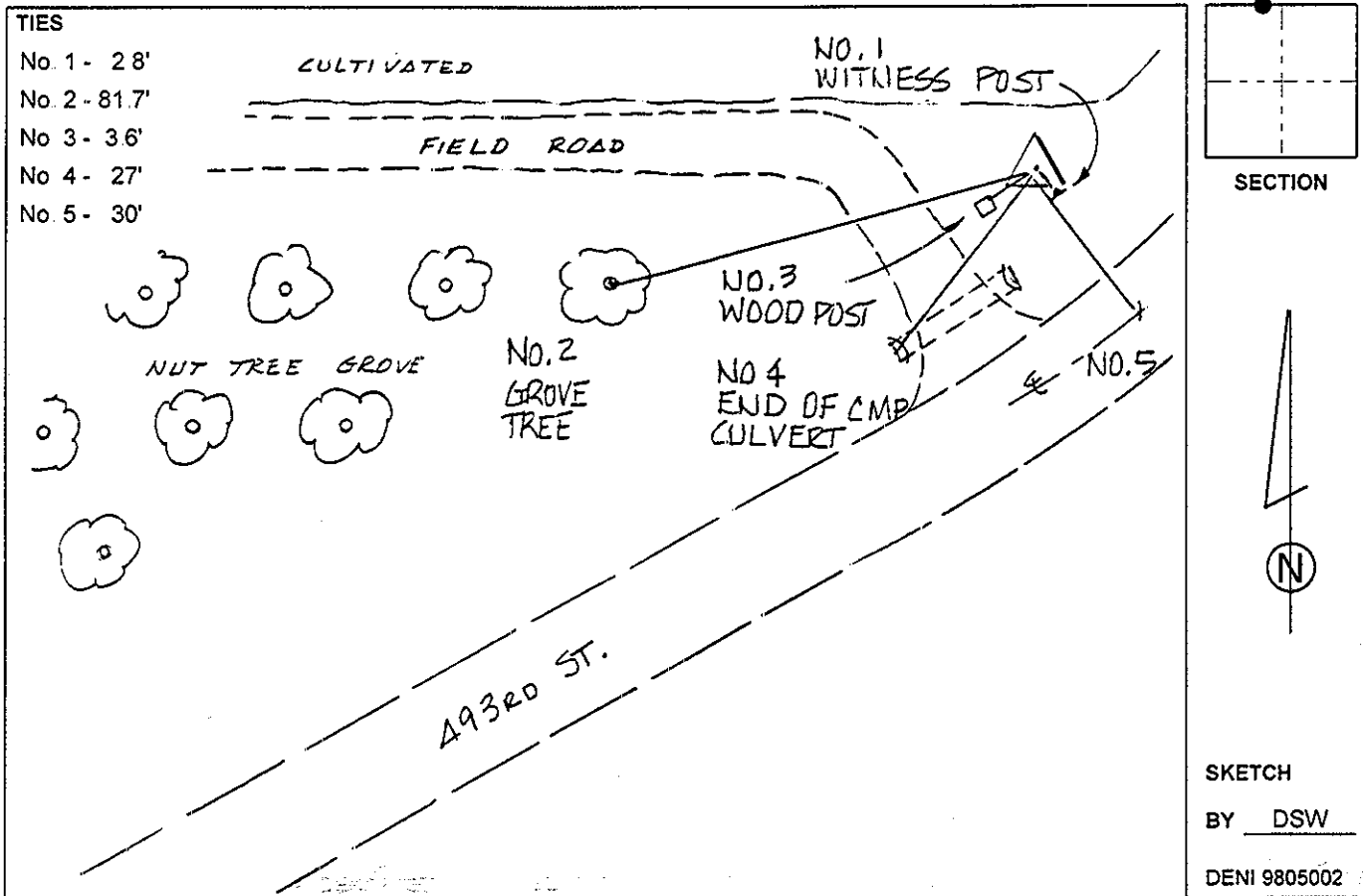
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 280847.67 NORTHING (Y) 85602.541

EASTING (X) 1828742.06 EASTING (X) 557401.695

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 853.86 ELEVATION (METERS) 260.26



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691704 4 GPS No. 8028 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 4 TWP 69 N RGE 17 W USGS QUAD MAP HIATTSVILLE

TO REACH FROM THE INTERSECTION OF 458th STREET AND 244th AVENUE; GO SOUTH 0.3 MILE TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99997133

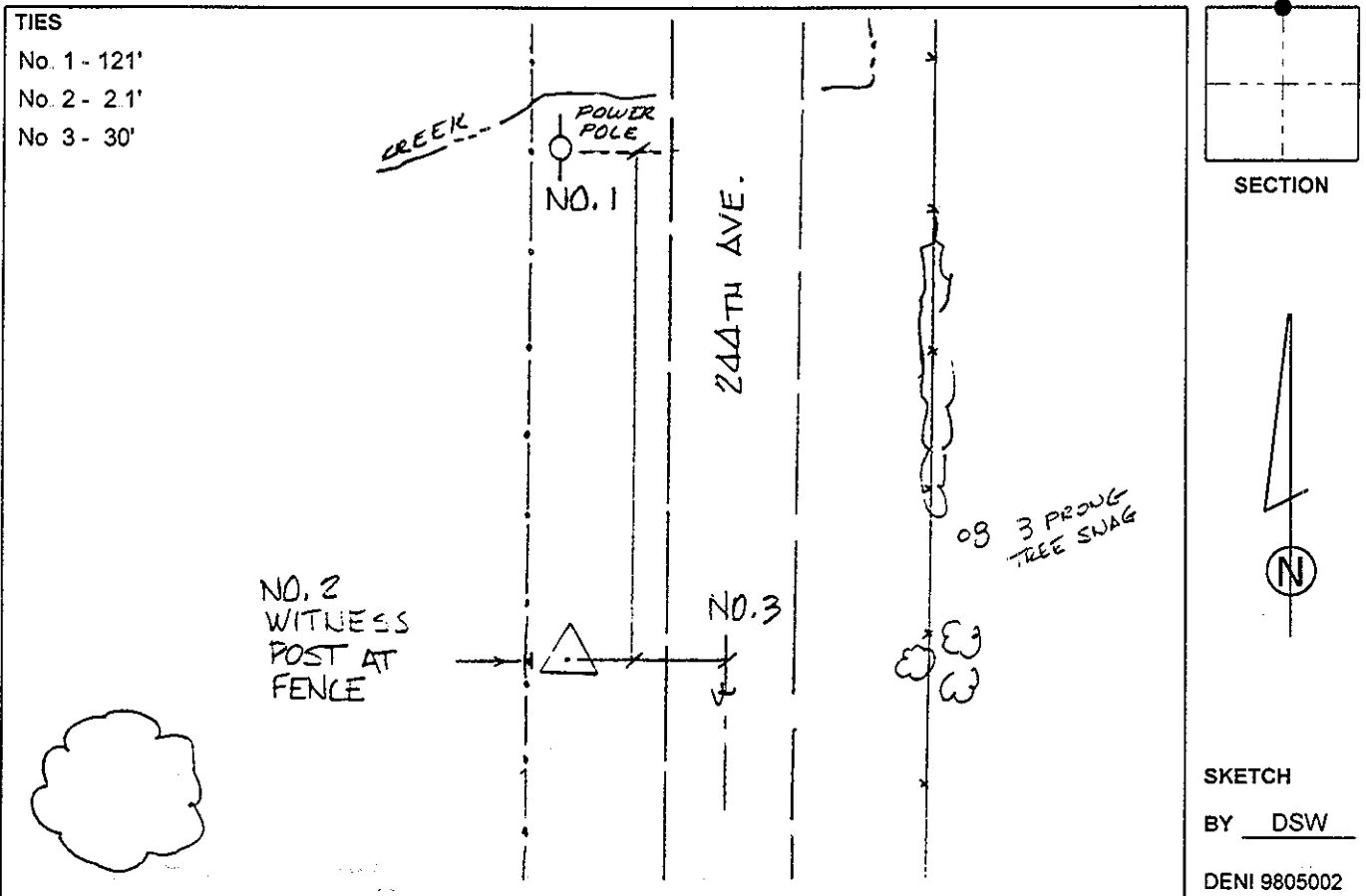
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 296376.56 NORTHING (Y) 90335.757

EASTING (X) 1828529.94 EASTING (X) 557337.039

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 942.56 ELEVATION (METERS) 287.29



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701715 3 GPS No. 8029 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 15 TWP 70 N RGE 17 W USGS QUAD MAP HIATTSVILLE

TO REACH FROM _____

168 FEET NORTH OF THE INTERSECTION OF 430th STREET AND 250th AVENUE,

AT FIELD ENTRANCE TO EAST.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996632

COORDINATES (US FEET)

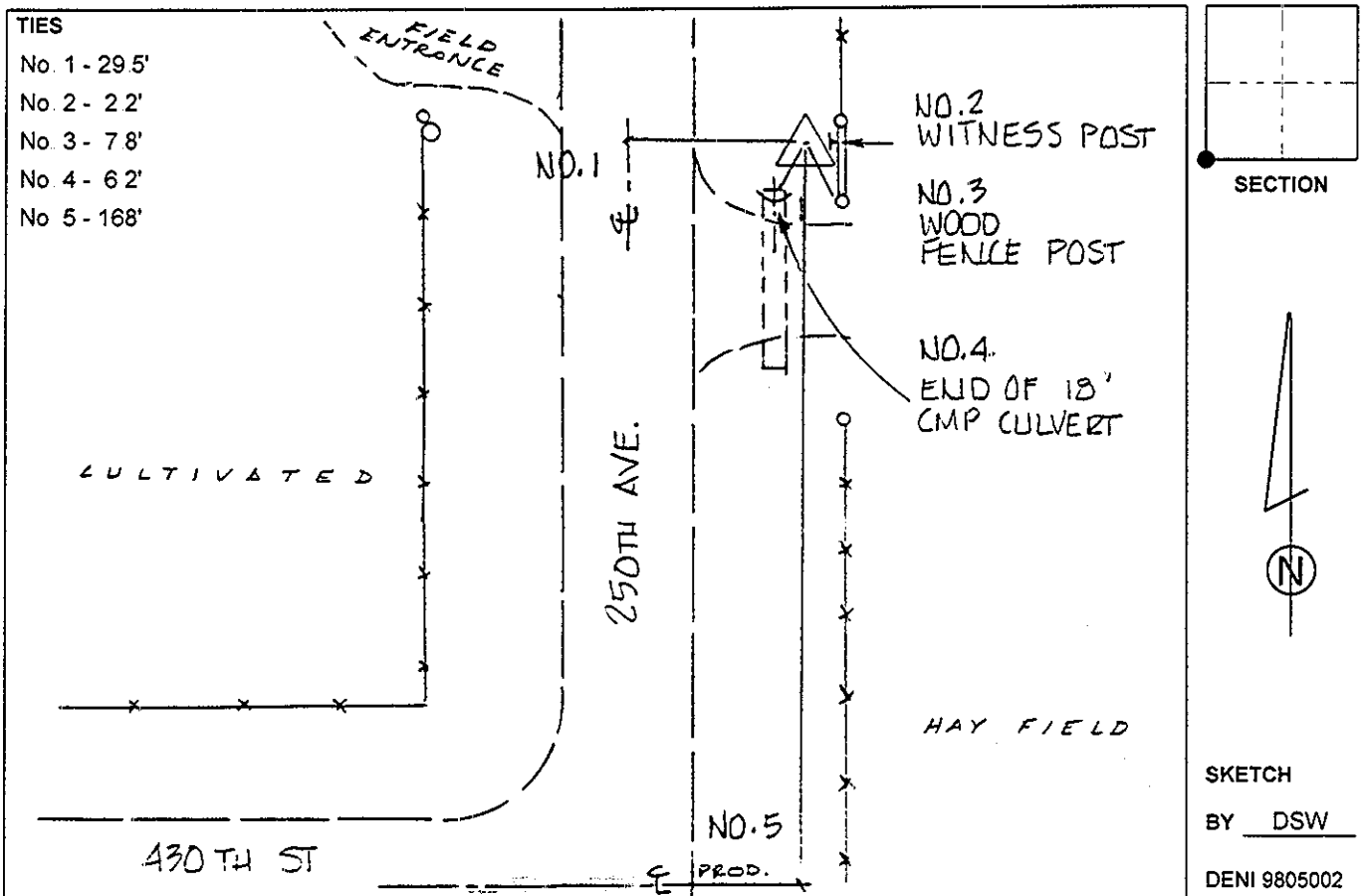
COORDINATES (METERS)

NORTHING (Y) 312848.05 NORTHING (Y) 95356.276

EASTING (X) 1830974.00 EASTING (X) 558081.992

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 999.57 ELEVATION (METERS) 304.67



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701704 1 GPS No. 8030 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 4 TWP 70 N RGE 17 W USGS QUAD MAP MORAVIA

TO REACH FROM THE INTERSECTION OF N. EAST STREET AND E. NORTH STREET IN MORAVIA;

GO NORTH 0.25 MILE TO END OF PAVEMENT; THEN CONTINUE NORTH 180 FEET TO MARK, NEAR

NORTHEAST CORNER OF MORAVIA.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99996240

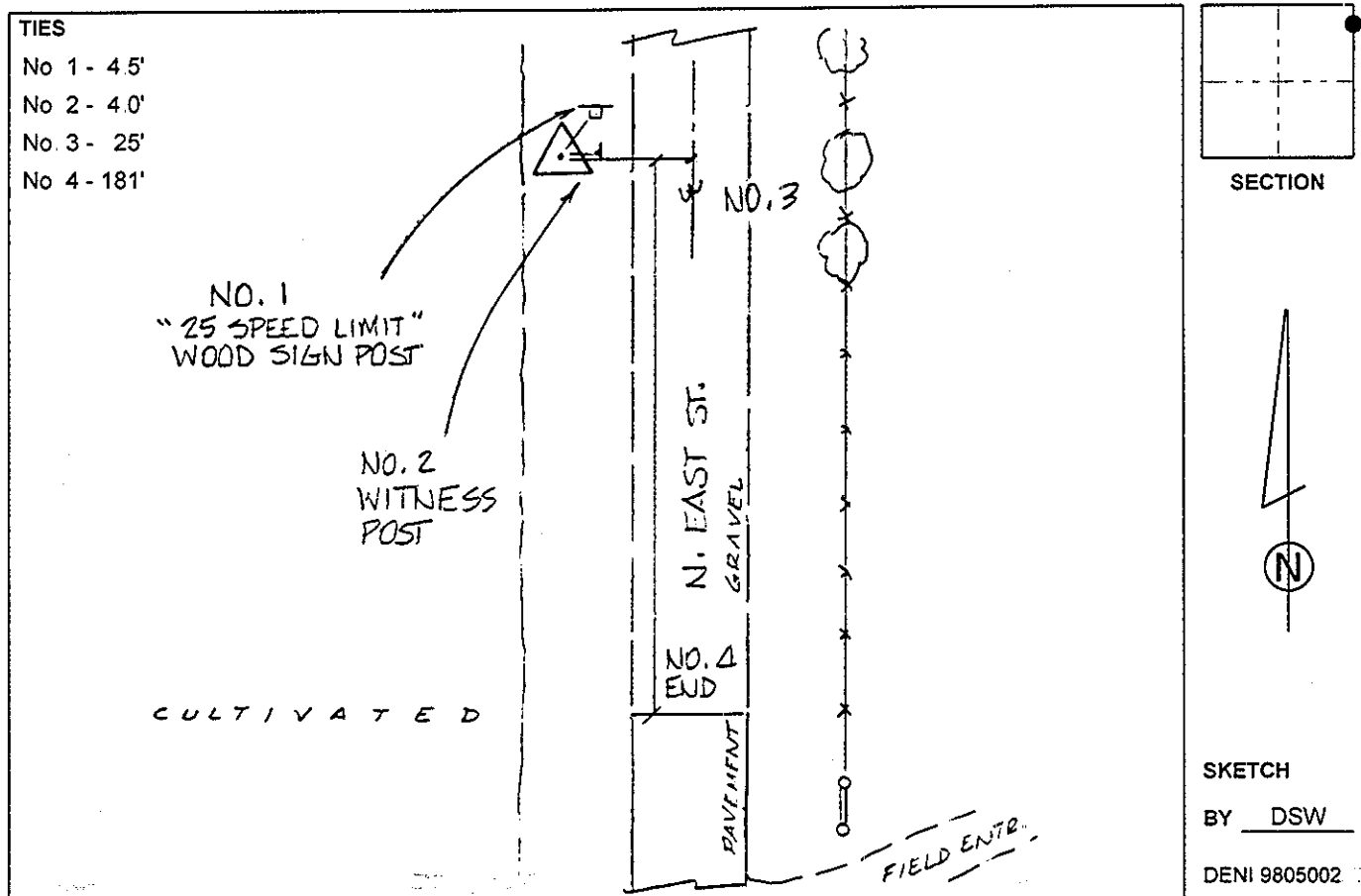
COORDINATES (US FEET): COORDINATES (METERS)

NORTHING (Y) 327402.45 NORTHING (Y) 99792.466

EASTING (X) 1830737.64 EASTING (X) 558009.949

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 992.74 ELEVATION (METERS) 302.59



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701718 3 GPS No. 8031 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 18 TWP 70 N RGE 17 W USGS QUAD MAP HIATTSVILLE

TO REACH FROM _____

AT THE INTERSECTION OF HIGHWAY J5T AND 430th STREET, NEAR THE NORTHWEST

CORNER OF CEMETERY.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99996634

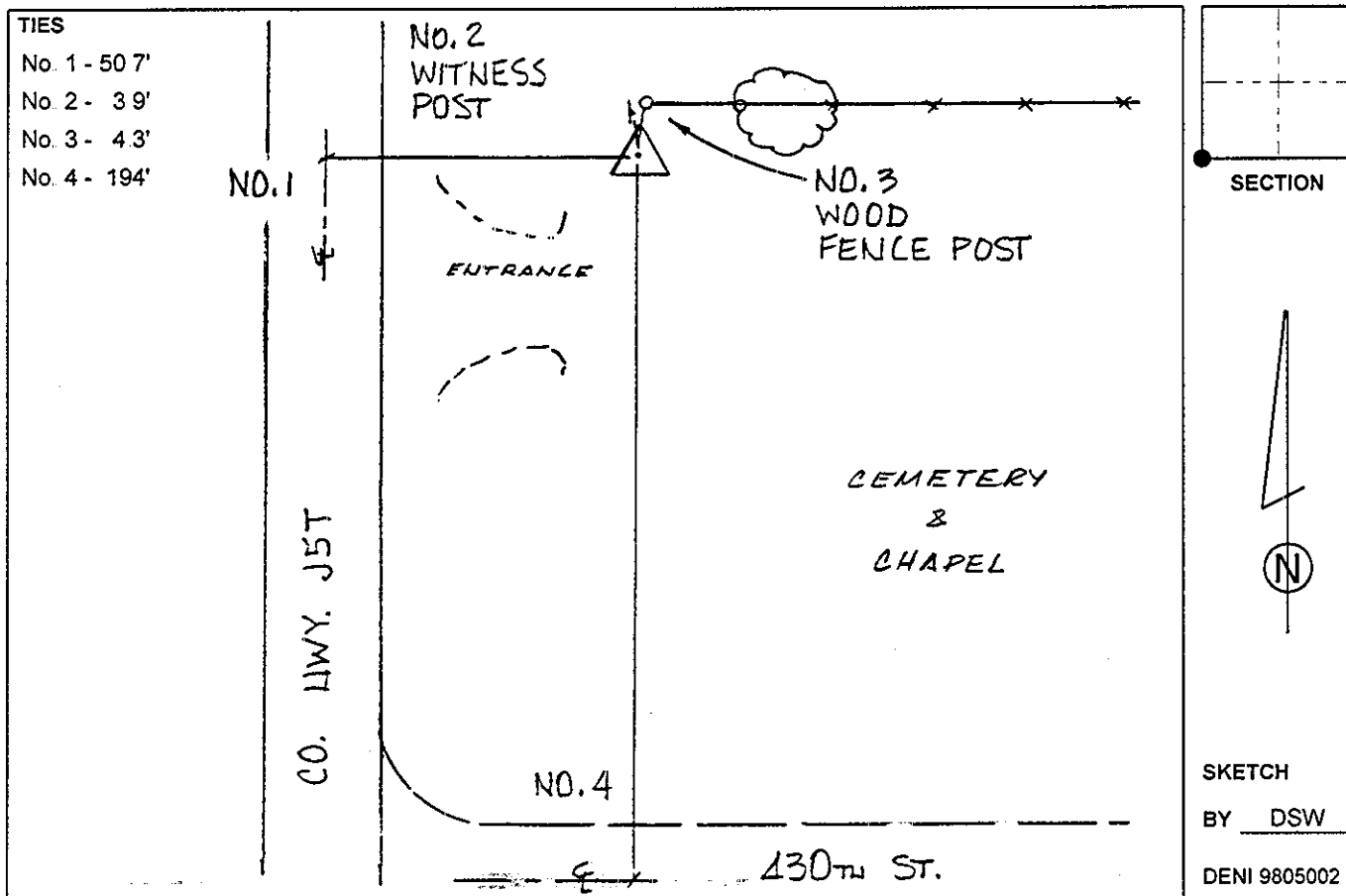
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 312660.23 NORTHING (Y) 95299.028

EASTING (X) 1815196.25 EASTING (X) 553272.924

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 972.17 ELEVATION (METERS) 296.32



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691801 1 GPS No. 8032 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 1 TWP 69 N RGE 18 W USGS QUAD MAP MYSTIC
TO REACH FROM THE INTERSECTION OF 461st STREET AND 458th STREET; GO SOUTHWESTERLY 0.5 MILE
TO MARK. ALSO, 500 FEET, MORE OR LESS, NORTHEASTERLY OF RAILROAD CROSSING.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997130

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 296347.76

NORTHING (Y) 90326.978

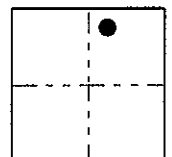
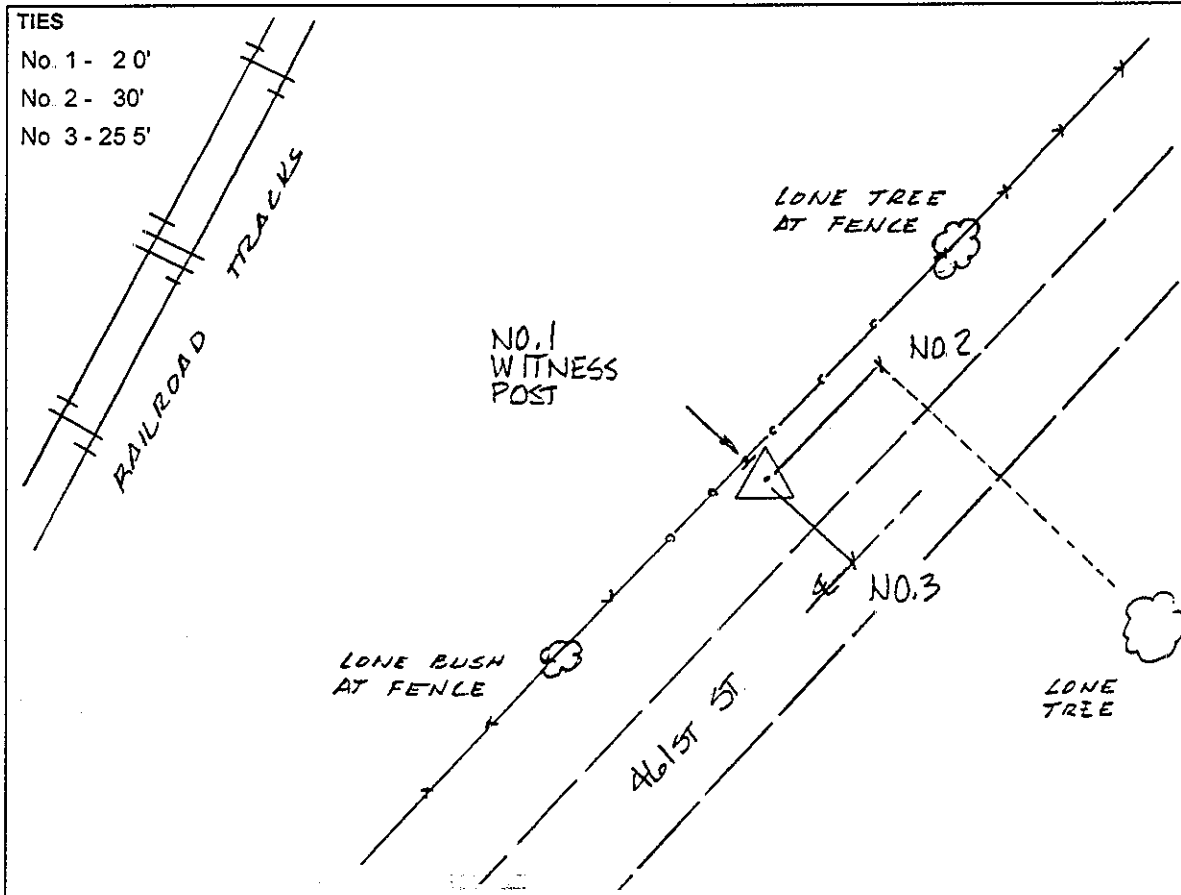
EASTING (X) 1813273.39

EASTING (X) 552686.835

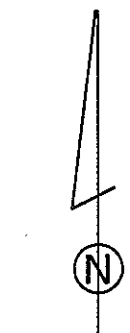
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 860.73

ELEVATION (METERS) 262.35



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691813 2 GPS No. 8033 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 13 TWP 69 N RGE 18 W USGS QUAD MAP HIATTSVILLE
TO REACH FROM THE INTERSECTION OF 490th STREET AND 220th AVENUE; GO EAST 0.15 MILE TO MARK,
NORTH OF "HARRY DENINGER" RESIDENCE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997663

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 280745.09

NORTHING (Y) 85571.276

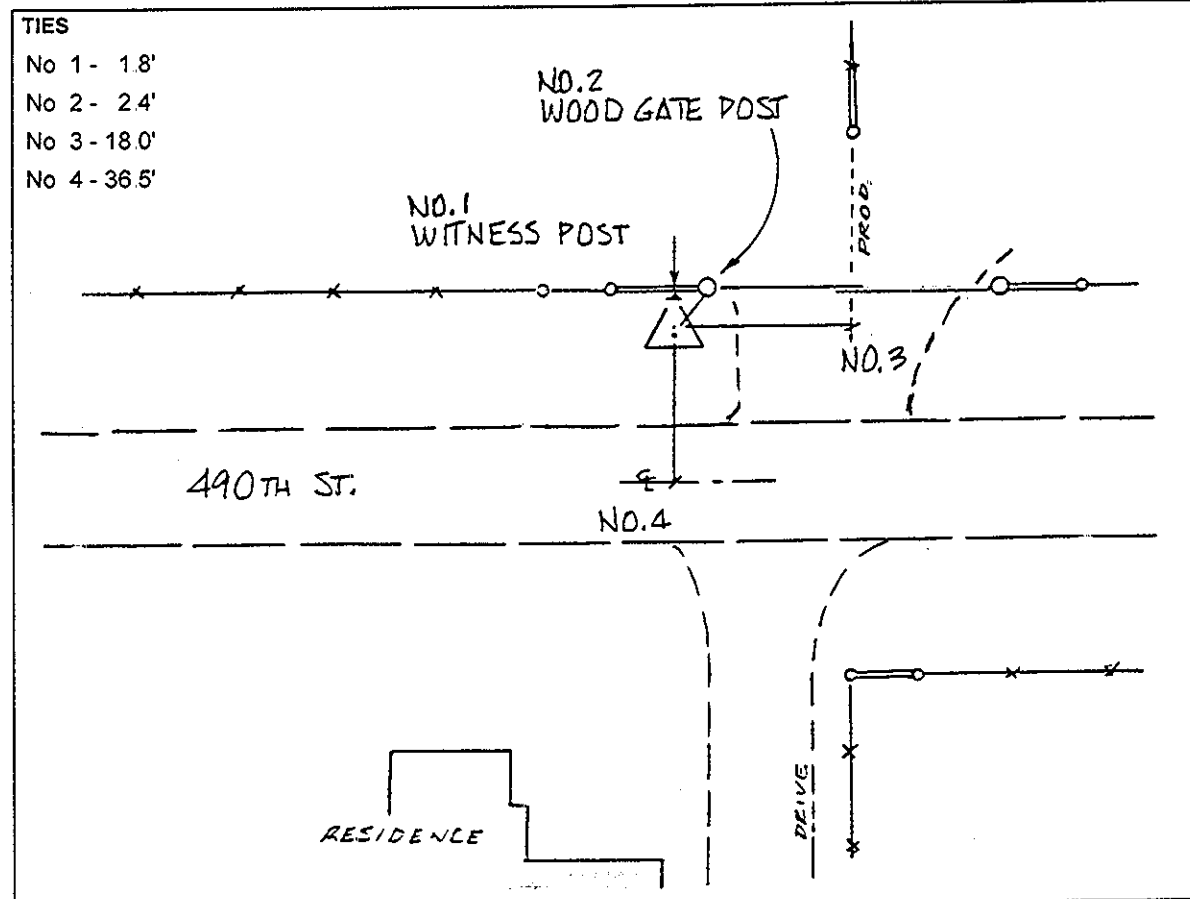
EASTING (X) 1815431.11

EASTING (X) 553344.510

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 980.40

ELEVATION (METERS) 298.83



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681706 4 GPS No. 8034 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 6 TWP 68 N RGE 17 W USGS QUAD MAP CENTERVILLE EAST
TO REACH FROM THE INTERSECTION OF S. 21st STREET AND E. WALSH, IN SOUTHEAST CENTERVILLE;
GO SOUTH 200 FEET TO MARK, NEAR SOUTHWEST CONER OF WATER TOWER PROPERTY.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998286

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 264241.36

NORTHING (Y) 80540.927

EASTING (X) 1816744.72

EASTING (X) 553744.897

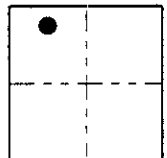
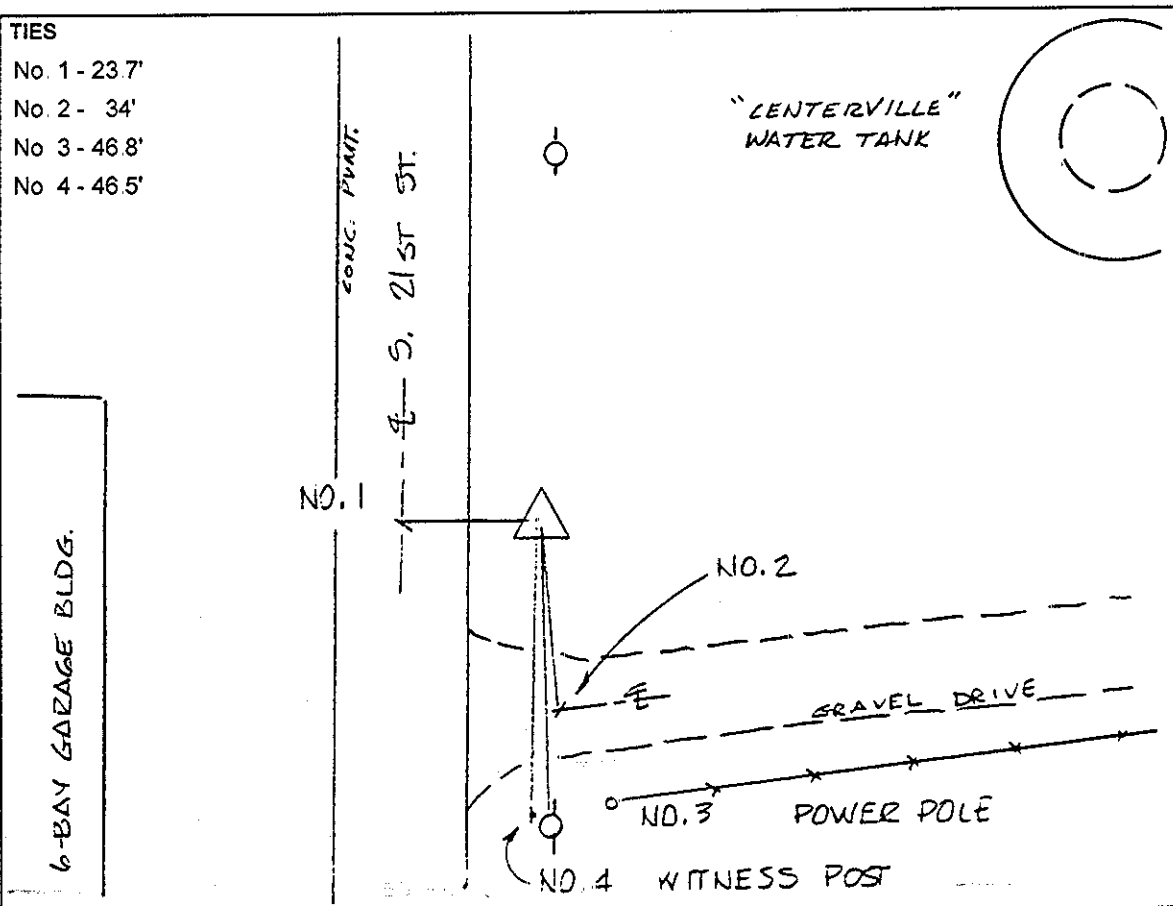
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1002.59

ELEVATION (METERS) 305.59

TIES

- No. 1 - 23.7'
- No. 2 - 34'
- No. 3 - 46.8'
- No. 4 - 46.5'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681813 2 GPS No. 8035 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 13 TWP 68 N RGE 18 W USGS QUAD MAP CENTERVILLE EAST

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND 550th STREET; GO NORTH 265 FEET TO MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998904

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y)	249282.02
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NORTHING (Y)	75981.311
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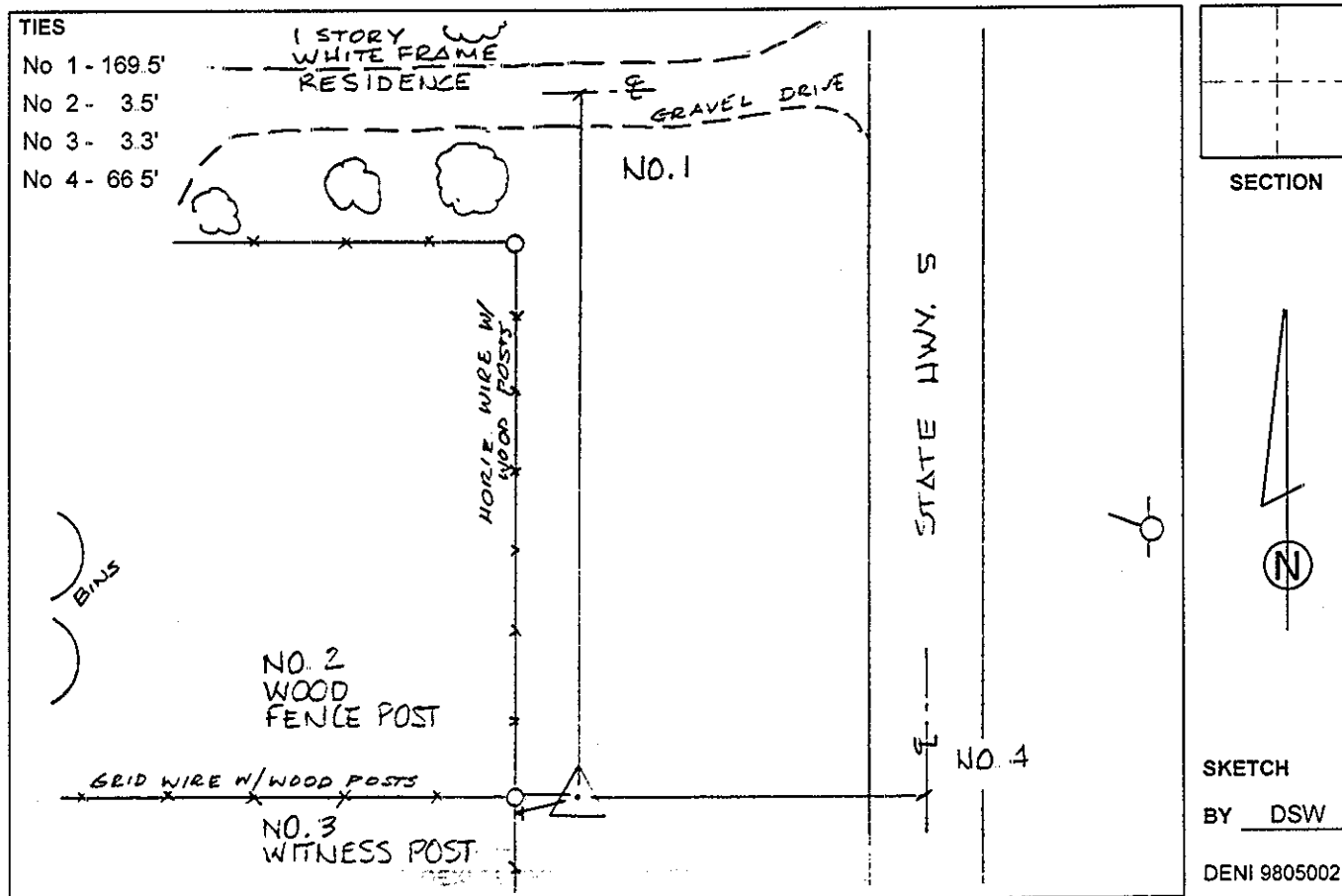
EASTING (X) 1815711.65

EASTING (X) 553430.017

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET)	1008.47
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ELEVATION (METERS)	307.38
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GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681836 3 GPS No. 8036 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 36 TWP 68 N RGE 18 W USGS QUAD MAP CENTERVILLE WEST
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND 210th AVENUE; GO SOUTH 0.15 MILE TO
MARK, AT FIELD ENTRANCE GATE NEAR NORTHWEST CORNER OF RESIDENCE YARD.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

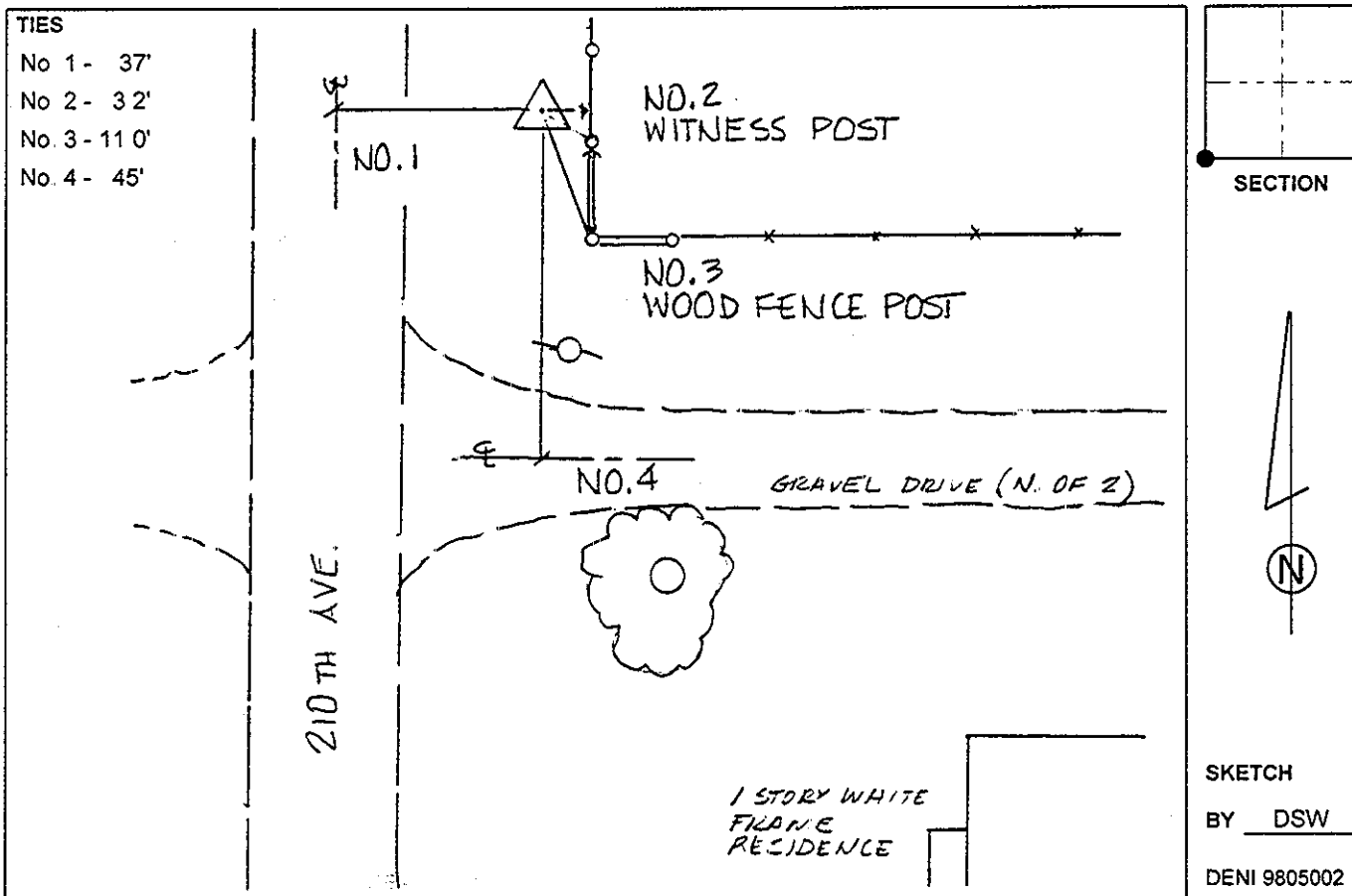
☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE	SCALE FACTOR: <u>0.99999620</u>
COORDINATES (US FEET)	COORDINATES (METERS)
NORTHING (Y) <u>233271.92</u>	NORTHING (Y) <u>71101.423</u>
EASTING (X) <u>1810703.84</u>	EASTING (X) <u>551903.634</u>

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) <u>999.82</u>	ELEVATION (METERS) <u>304.75</u>
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GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671719 1 GPS No. 8037 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 19 TWP 67 N RGE 17 W USGS QUAD MAP OMAHA

TO REACH FROM _____

AT THE INTERSECTION OF 605th STREET AND 226th AVENUE, IN THE SOUTHEAST QUADRANT.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000421

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 216827.07

NORTHING (Y) 66089.023

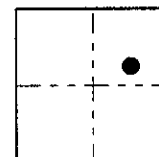
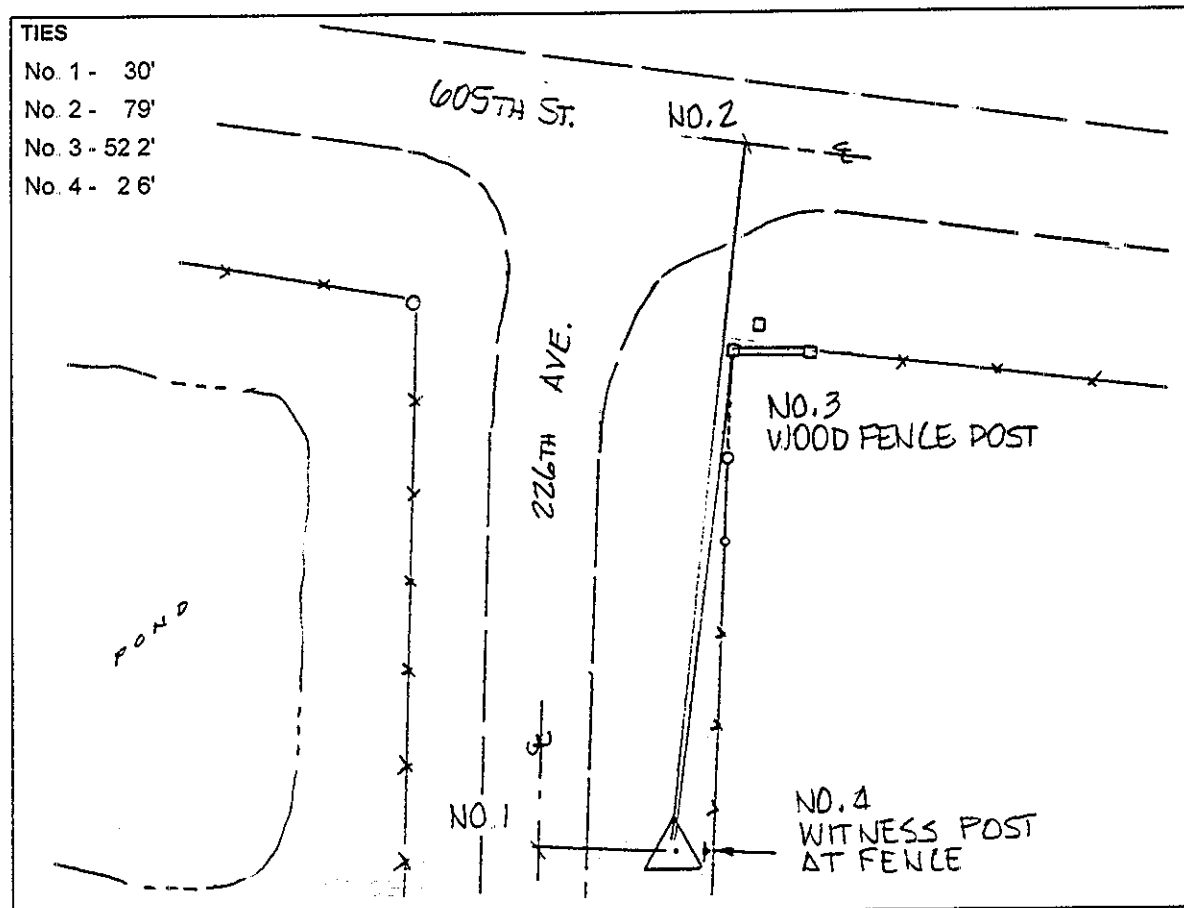
EASTING (X) 1820117.94

EASTING (X) 554773.058

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 866.77

ELEVATION (METERS) 264.19



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671822 1 GPS No. 8038 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 22 TWP 67 N RGE 18 W USGS QUAD MAP MENDOTA

TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY T20 AND 614th STREET, NEAR THE
MISSOURI BORDER; GO NORTHERLY 0.3 MILE TO FIELD ENTRANCE TO WEST AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000453

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 216072.95

NORTHING (Y) 65859.165

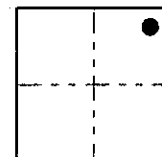
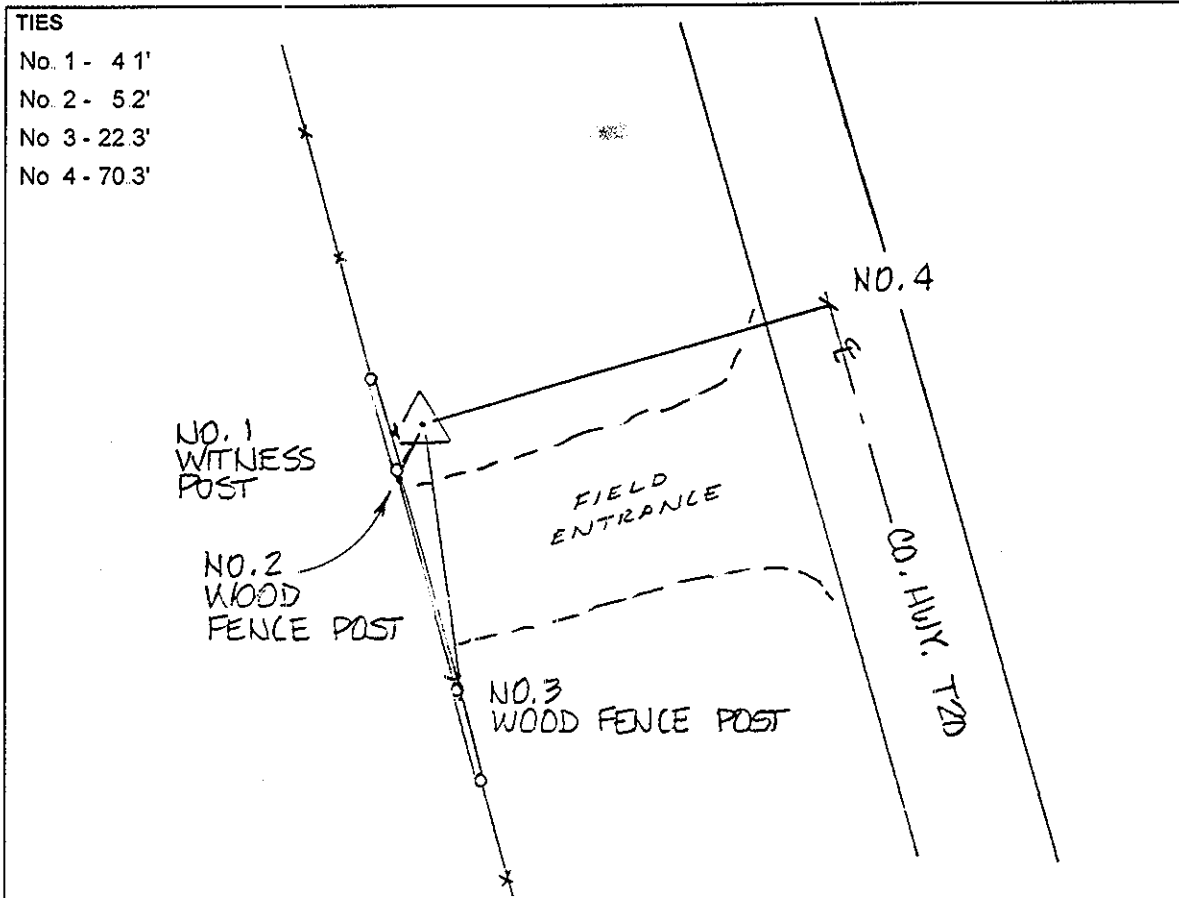
EASTING (X) 1804819.93

EASTING (X) 550110.215

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1018.70

ELEVATION (METERS) 310.50



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671804 1 GPS No. 8039 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 4 TWP 67 N RGE 18 W USGS QUAD MAP CENTERVILLE WEST

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND 195th AVENUE, IN THE CENTER OF
CINCINNATI; GO NORTH 0.4 MILE TO MARK, SOUTH OF SOUTHWEST CORNER OF CEMETERY, 400 FEET,
MORE OR LESS.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999653

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 232488.49

NORTHING (Y) 70862.634

EASTING (X) 1800087.96

EASTING (X) 548667.908

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1012.39

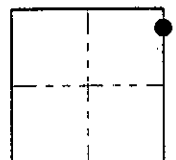
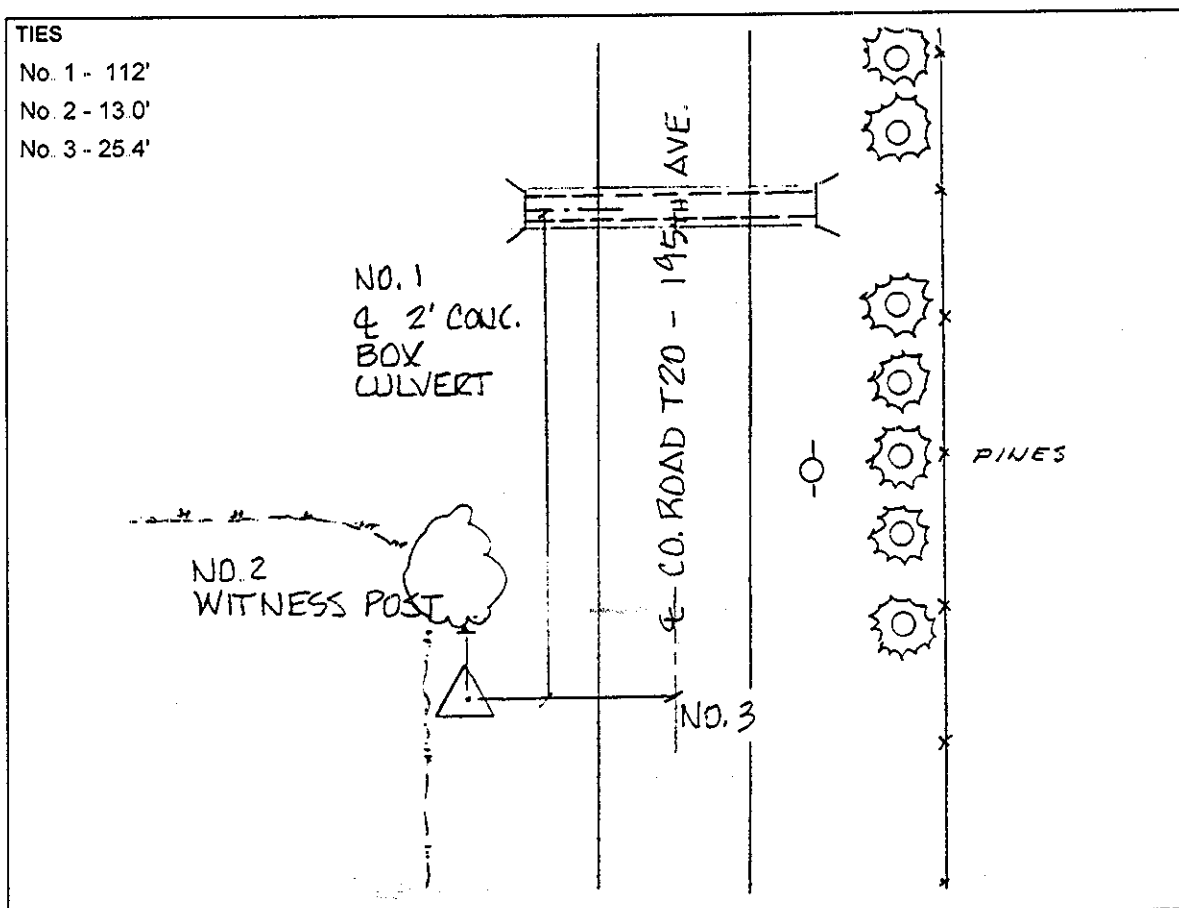
ELEVATION (METERS) 308.58

TIES

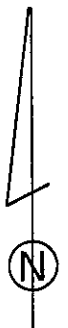
No. 1 - 112'

No. 2 - 13.0'

No. 3 - 25.4'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681821 1 GPS No. 8040 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 21 TWP 68 N RGE 18 W USGS QUAD MAP CENTERVILLE WEST
TO REACH FROM THE INTERSECTION OF 550th STREET AND 195th AVENUE; GO WEST 0.5 MILE TO
FIELD ENTRANCE SOUTH 25 FEET WEST OF NORTH-SOUTH SECTION LINE FENCE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998917

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 248874.15

NORTHING (Y) 75856.993

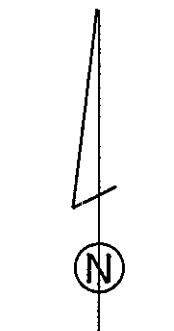
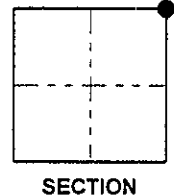
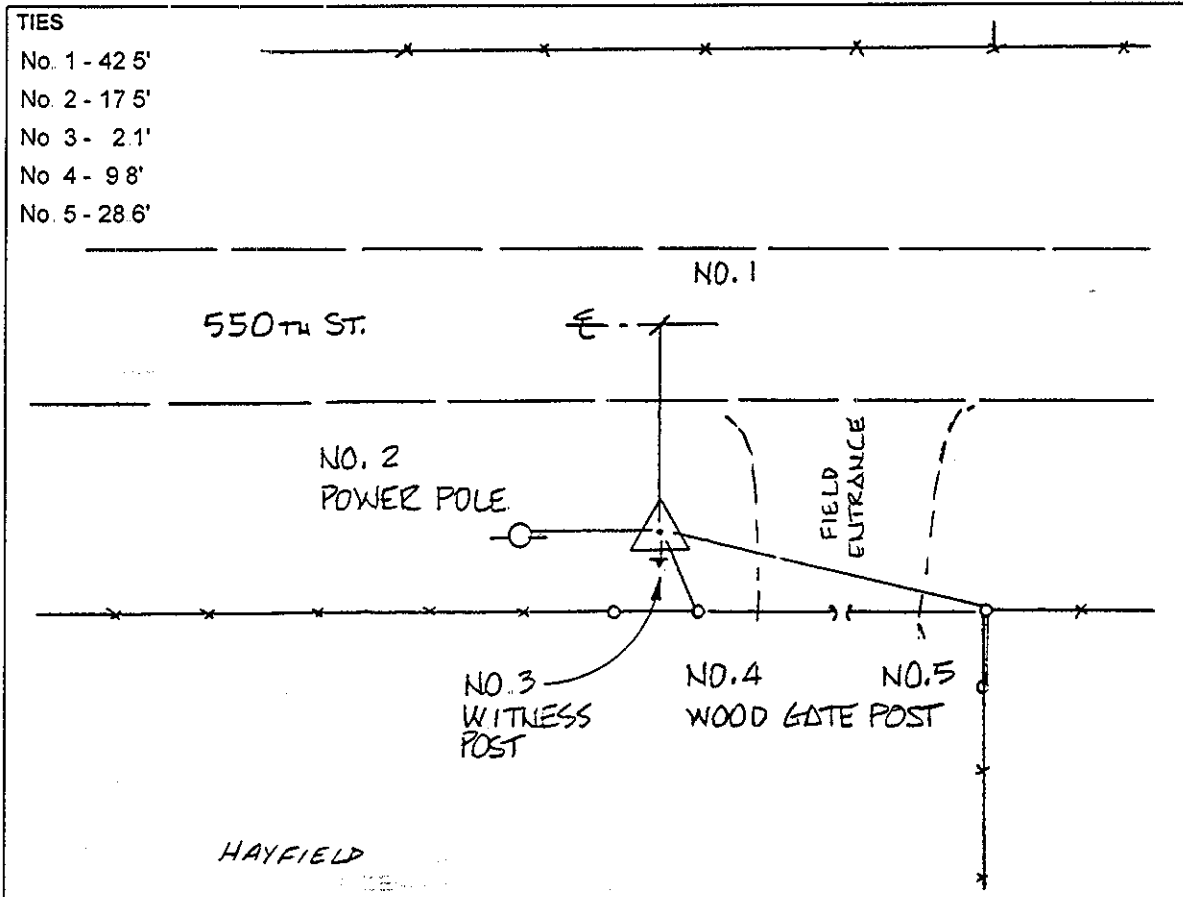
EASTING (X) 1799704.55

EASTING (X) 548551.045

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1016.95

ELEVATION (METERS) 309.97



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681804 1 GPS No. 8041 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 4 TWP 68 N RGE 18 W USGS QUAD MAP CENTERVILLE WEST
TO REACH FROM THE INTERSECTION OF 520th STREET AND 183rd AVENUE; GO EAST 0.6 MILE TO
FIELD ENTRANCE TO SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998264

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 264676.87

NORTHING (Y) 80673.671

EASTING (X) 1799091.48

EASTING (X) 548364.179

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 975.19

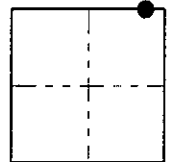
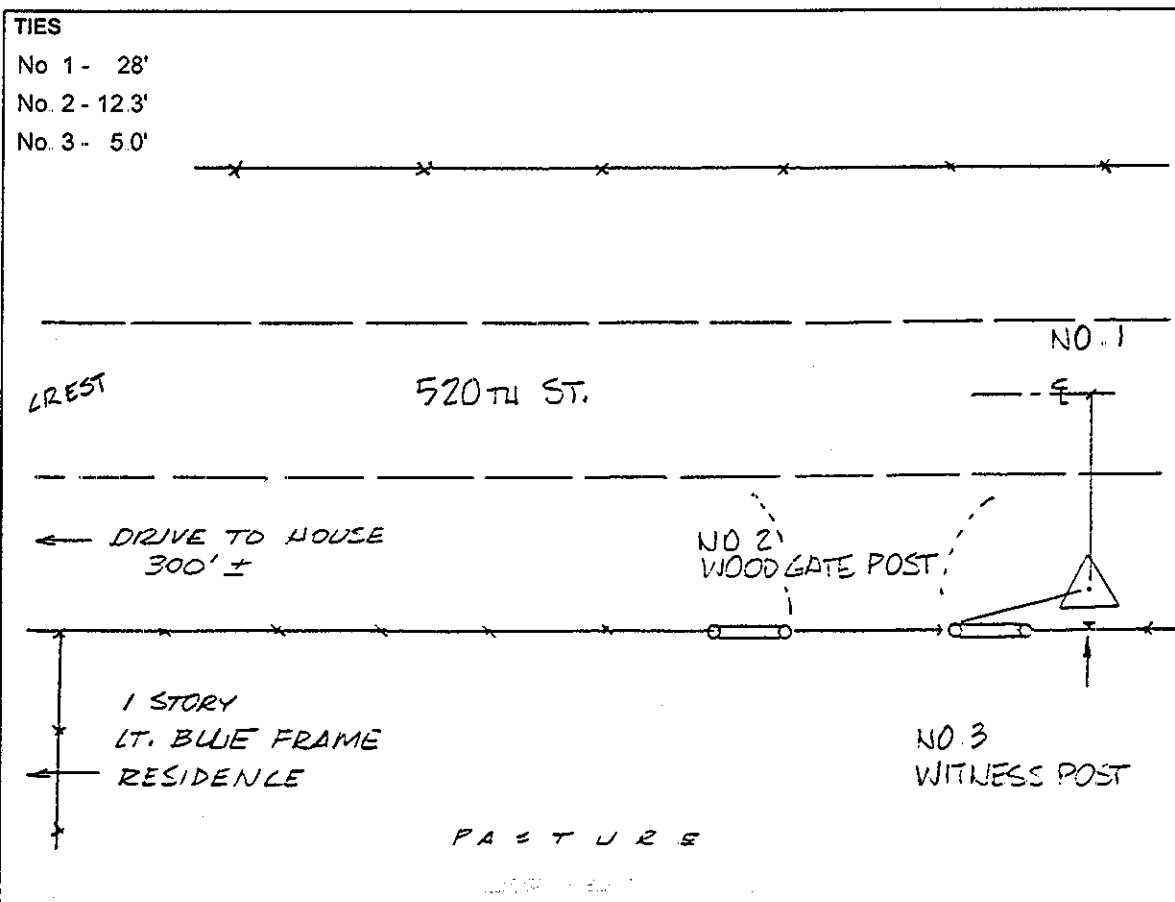
ELEVATION (METERS) 297.24

TIES

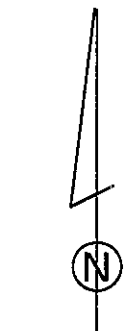
No 1 - 28'

No. 2 - 12.3'

No. 3 - 5.0'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691816 2 GPS No. 8042 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 16 TWP 69 N RGE 18 W USGS QUAD MAP MYSTIC

TO REACH FROM _____

AT THE INTERSECTION OF 490th STREET AND 190th AVENUE, NEAR

SOUTHEAST CORNER OF MYSTIC.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997664

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 280608.96

NORTHING (Y) 85529.782

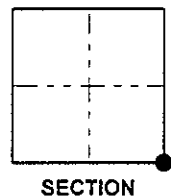
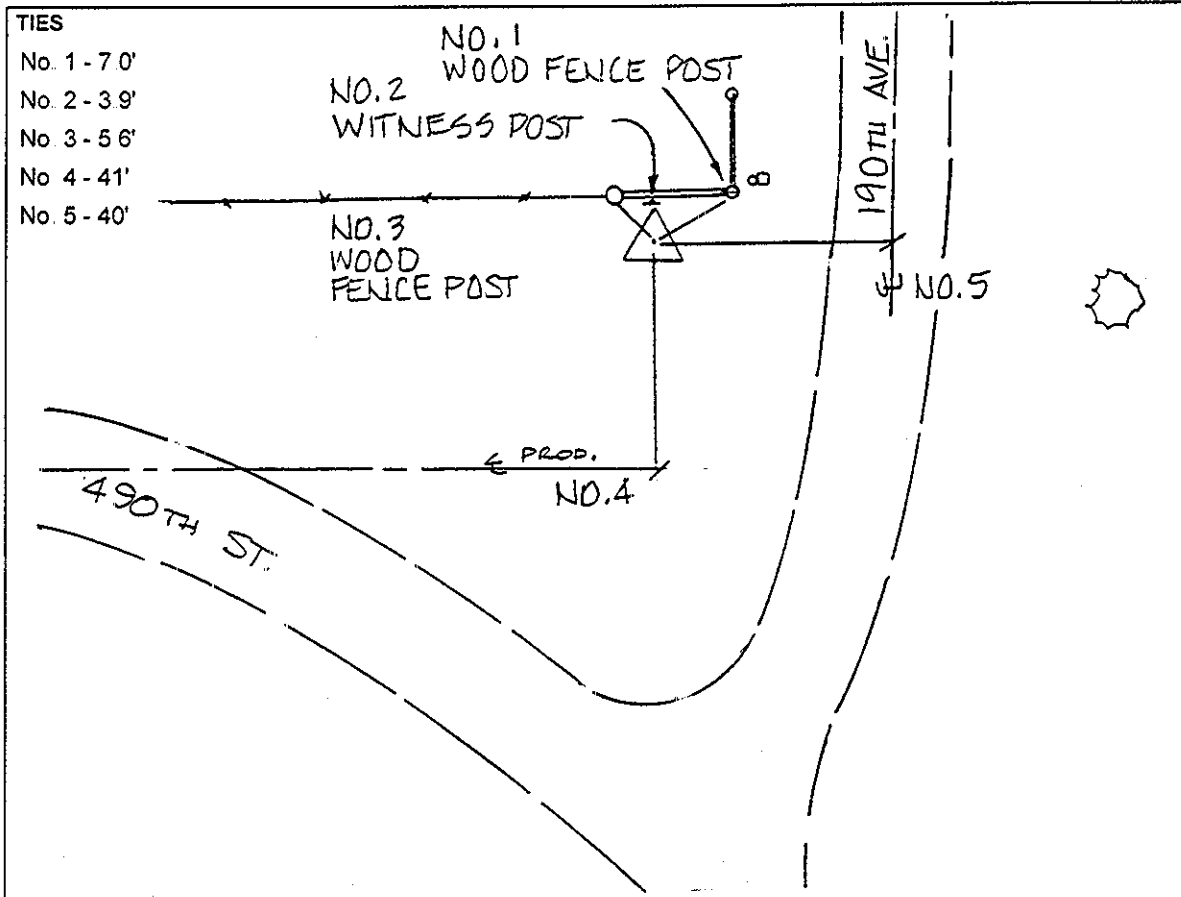
EASTING (X) 1799556.38

EASTING (X) 548505.882

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 945.35

ELEVATION (METERS) 288.14



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691803 4 GPS No. 8043 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 3 TWP 69 N RGE 18 W USGS QUAD MAP MYSTIC

TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J5T AND 190th AVENUE; GO EAST
0.1 MILE TO FIELD ENTRANCE NORTH AND SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997125

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 296420.81

NORTHING (Y) 90349.242

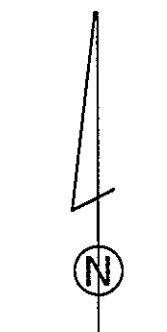
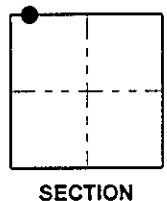
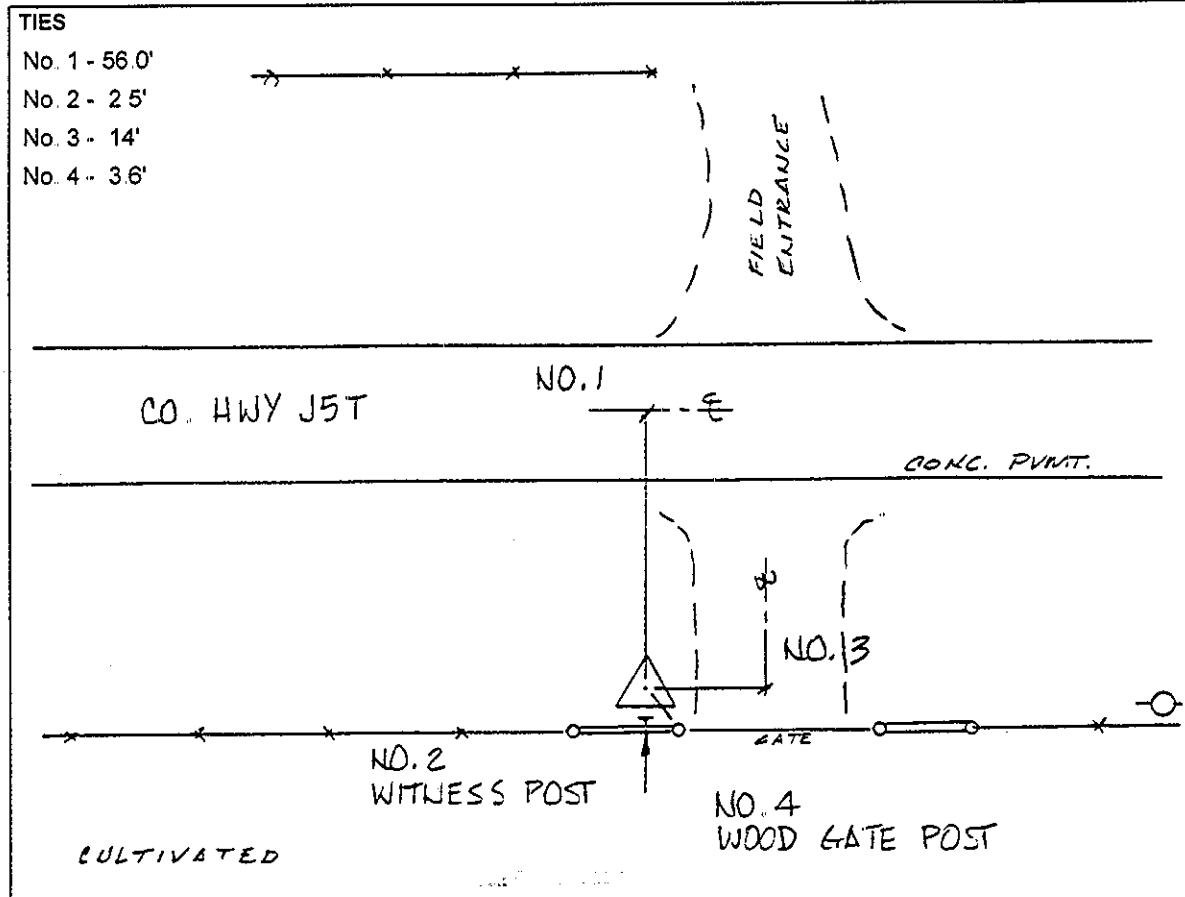
EASTING (X) 1799990.19

EASTING (X) 548638.106

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 987.49

ELEVATION (METERS) 300.99



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION	701804 4	GPS No.	8044	COUNTY	APPANOOSE	STATE	IOWA
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LOCATED IN SECTION 4 TWP 70 N RGE 18 W USGS QUAD MAP ICONIUM

TO REACH FROM _____

AT THE INTERSECTION OF 400th STREET AND 185th AVENUE, SOUTH OF MONROE-APPANOOSE COUNTY LINE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996226

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 327715.37

NORTHING (Y) 99887.845

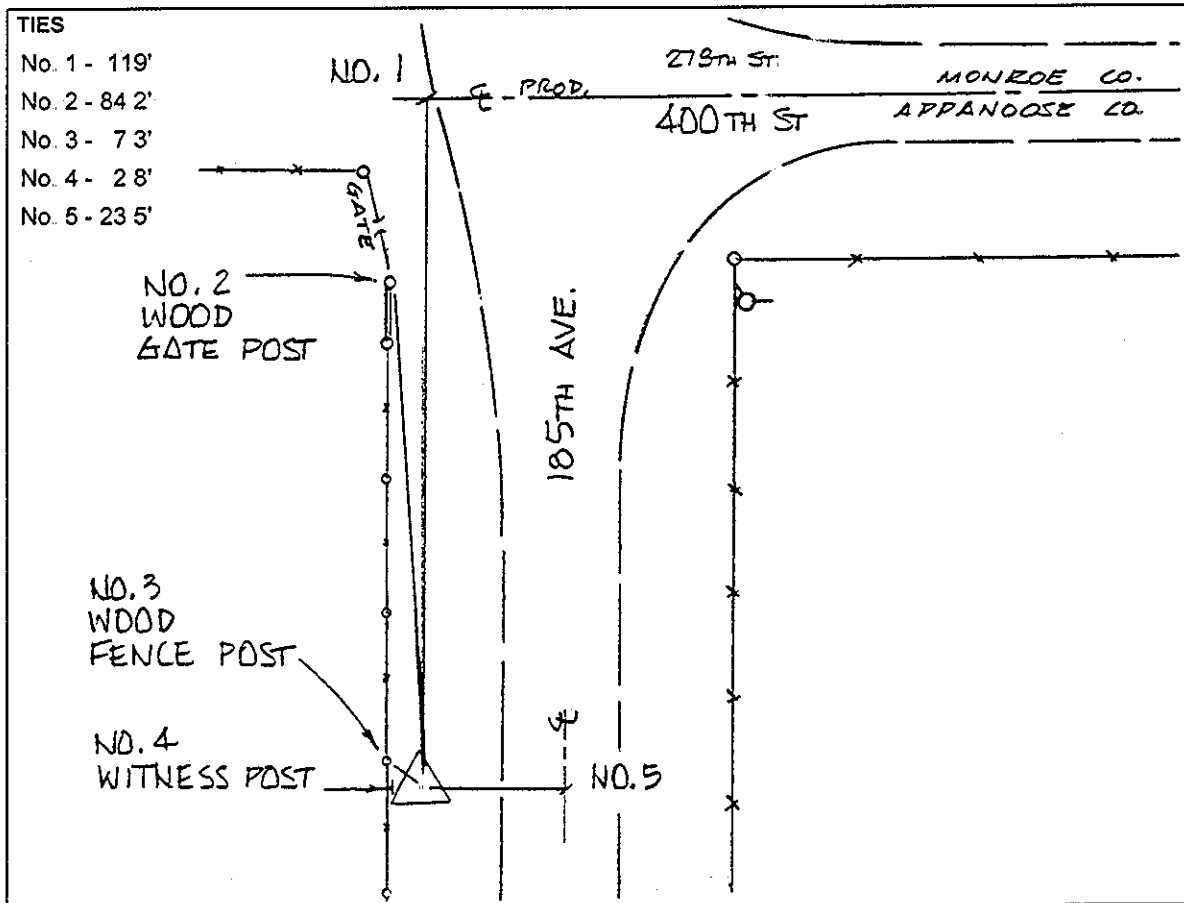
EASTING (X) 1796506.92

EASTING (X) 547576.404

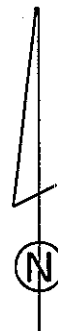
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET)	980.72
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ELEVATION (METERS) 298.92



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701923 1 GPS No. 8045 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 23 TWP 70 N RGE 19 W USGS QUAD MAP PLANO
TO REACH FROM THE INTERSECTION OF 135th STREET AND 150th AVENUE; GO NORTH 0.4 MILE TO
A FIELD ENTRANCE TO WEST AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996654

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 311718.46

NORTHING (Y) 95011.977

EASTING (X) 1778094.35

EASTING (X) 541964.243

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 951.05

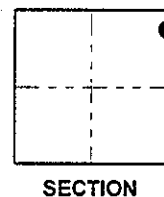
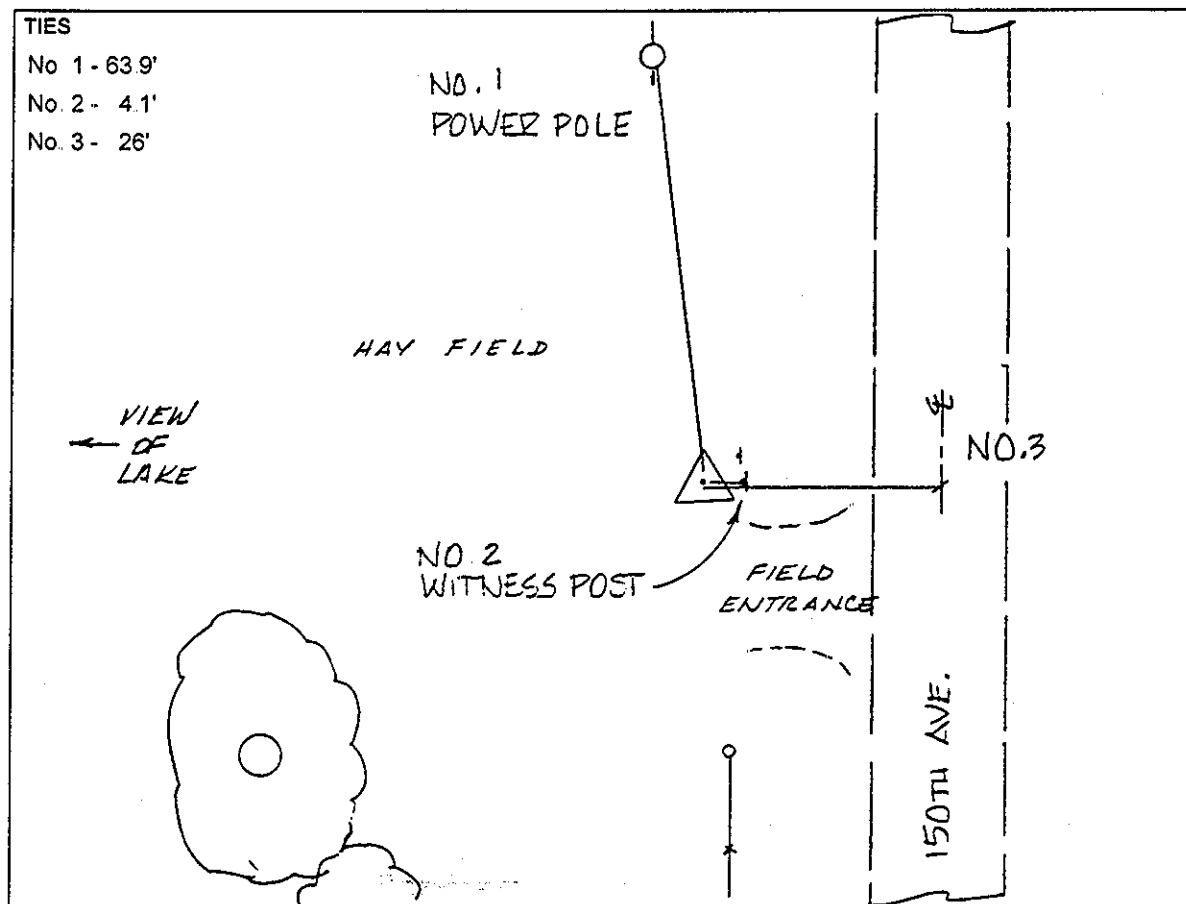
ELEVATION (METERS) 289.88

TIES

No 1 - 63.9'

No 2 - 4.1'

No 3 - 26'



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691806 4 GPS No. 8046 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 6 TWP 69 N RGE 18 W USGS QUAD MAP MYSTIC
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J5T AND 160th AVENUE; GO EAST 0.2 MILE
TO FIELD ENTRANCE TO SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997127

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 296276.91

NORTHING (Y) 90305.383

EASTING (X) 1784735.95

EASTING (X) 543988.605

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET)	1004.14
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ELEVATION (METERS) 306.06

TIES

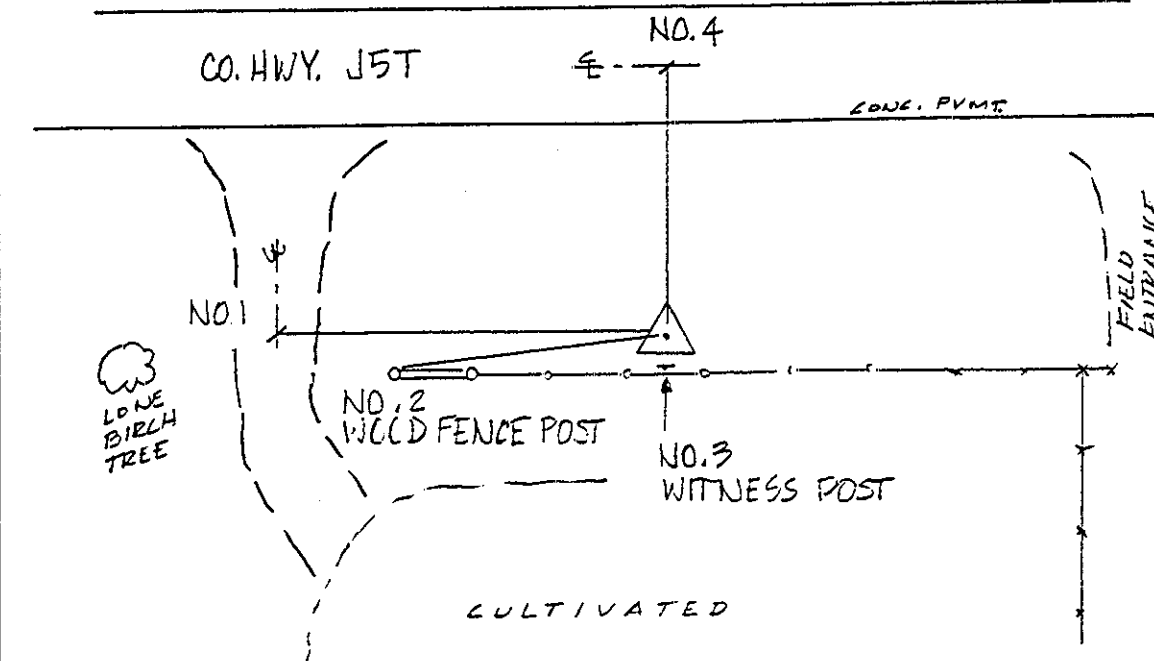
No 1 - 42'

No 2 - 24 7'

No. 3 - 43'

No 4 - 55 0'

SECTION



SKETCH

BY DSW

DEN1 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691819 4 GPS No. 8047 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 19 TWP 69 N RGE 18 W USGS QUAD MAP MYSTIC

TO REACH FROM _____

AT THE INTERSECTION OF 490th STREET AND 160th AVENUE IN THE SOUTHEAST QUADRANT.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997671

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 280299.09

NORTHING (Y) 85435.333

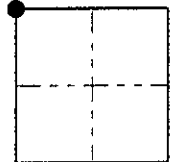
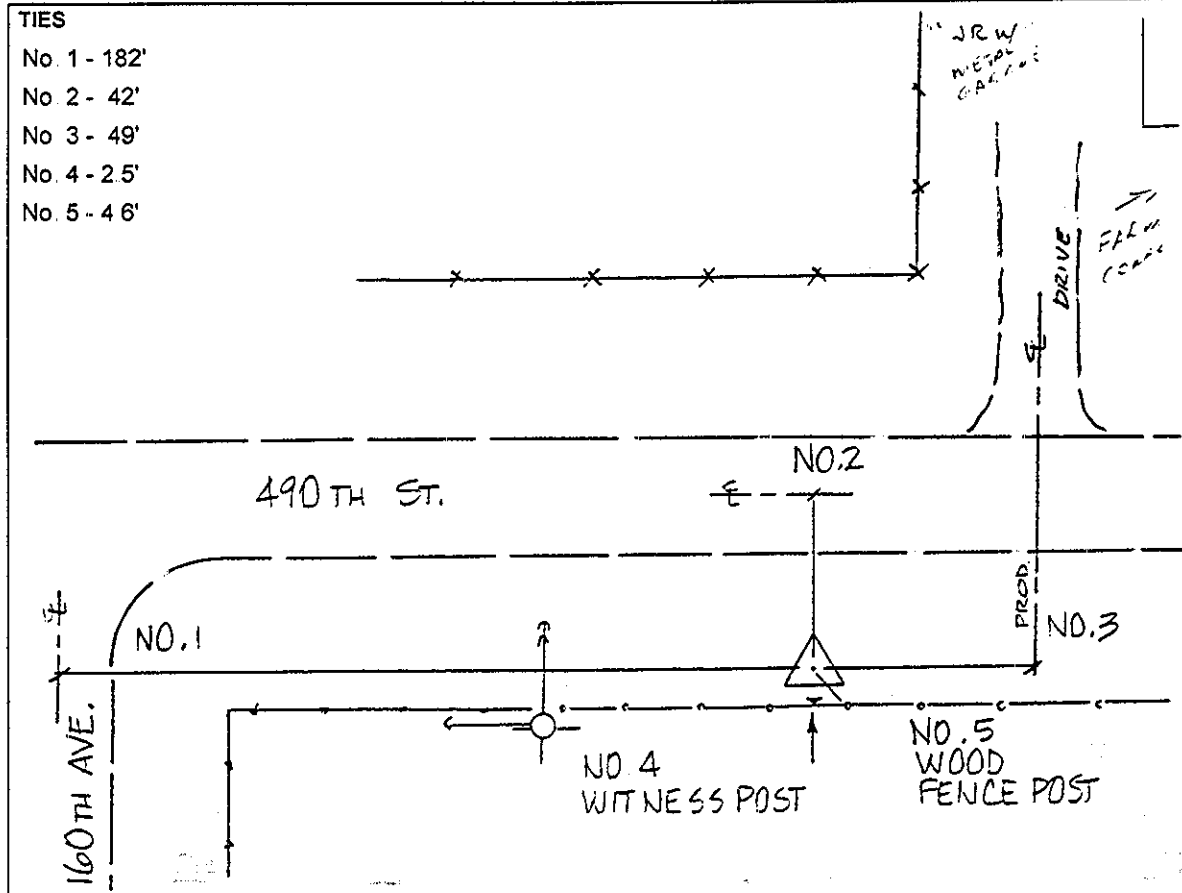
EASTING (X) 1783878.03

EASTING (X) 543727.111

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1008.86

ELEVATION (METERS) 307.50



SECTION



SKETCH
BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691936 2 GPS No. 8048 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 36 TWP 69 N RGE 19 W USGS QUAD MAP CENTERVILLE WEST

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 2 AND 160th AVENUE; GO SOUTH 0.9 MILE

TO FIELD ENTRANCE TO WEST AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99998235

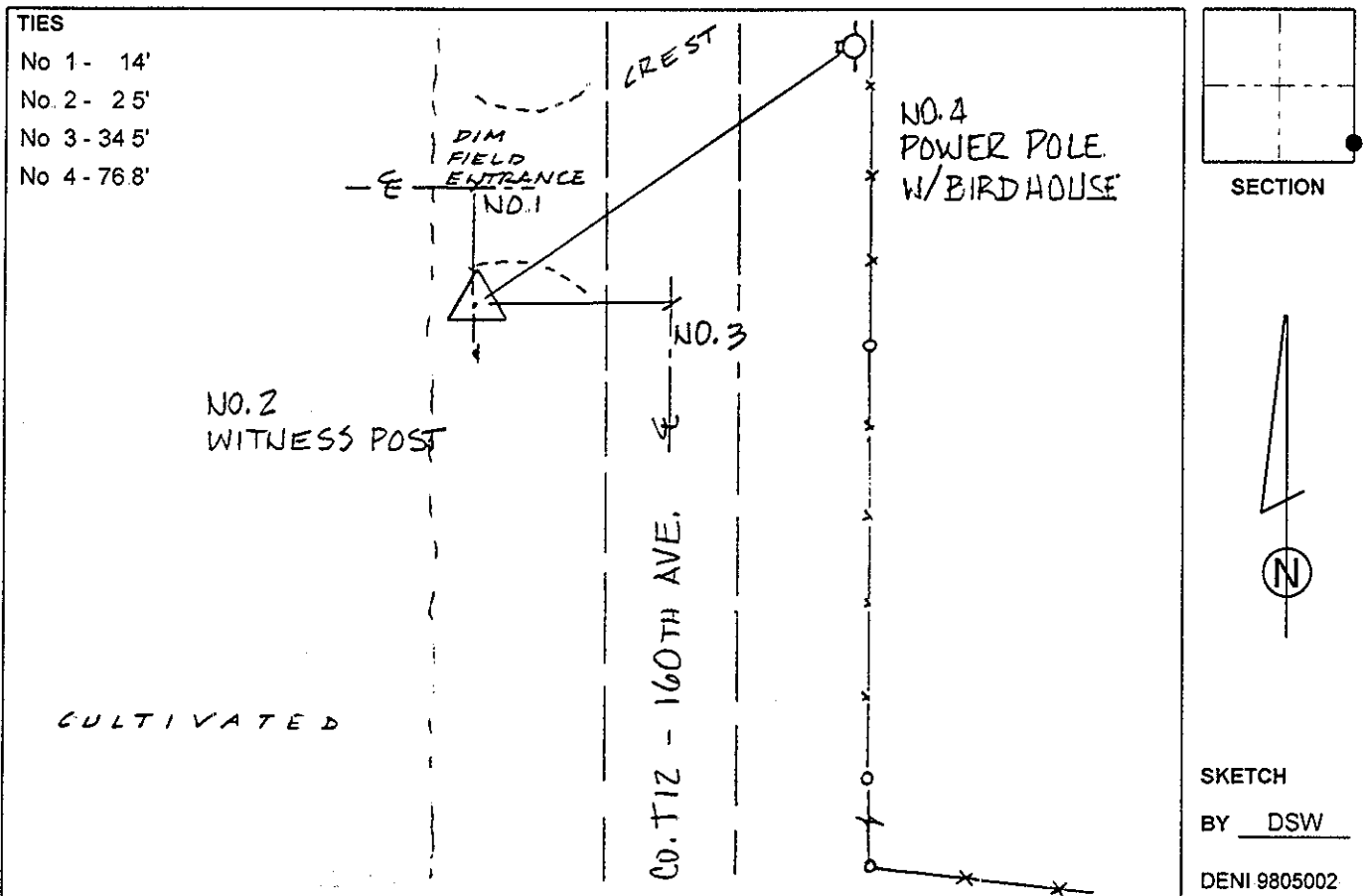
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 265321.22 NORTHING (Y) 80870.070

EASTING (X) 1783815.80 EASTING (X) 543708.142

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1028.79 ELEVATION (METERS) 313.58



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681913 2 GPS No. 8049 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 13 TWP 68 N RGE 19 W USGS QUAD MAP CENTERVILLE WEST

TO REACH FROM _____

AT THE INTERSECTION OF COUNTY HIGHWAY J46 / MAIN STREET AND BRICK,

NEAR THE SOUTHWEST CORNER OF NUMA.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99998919

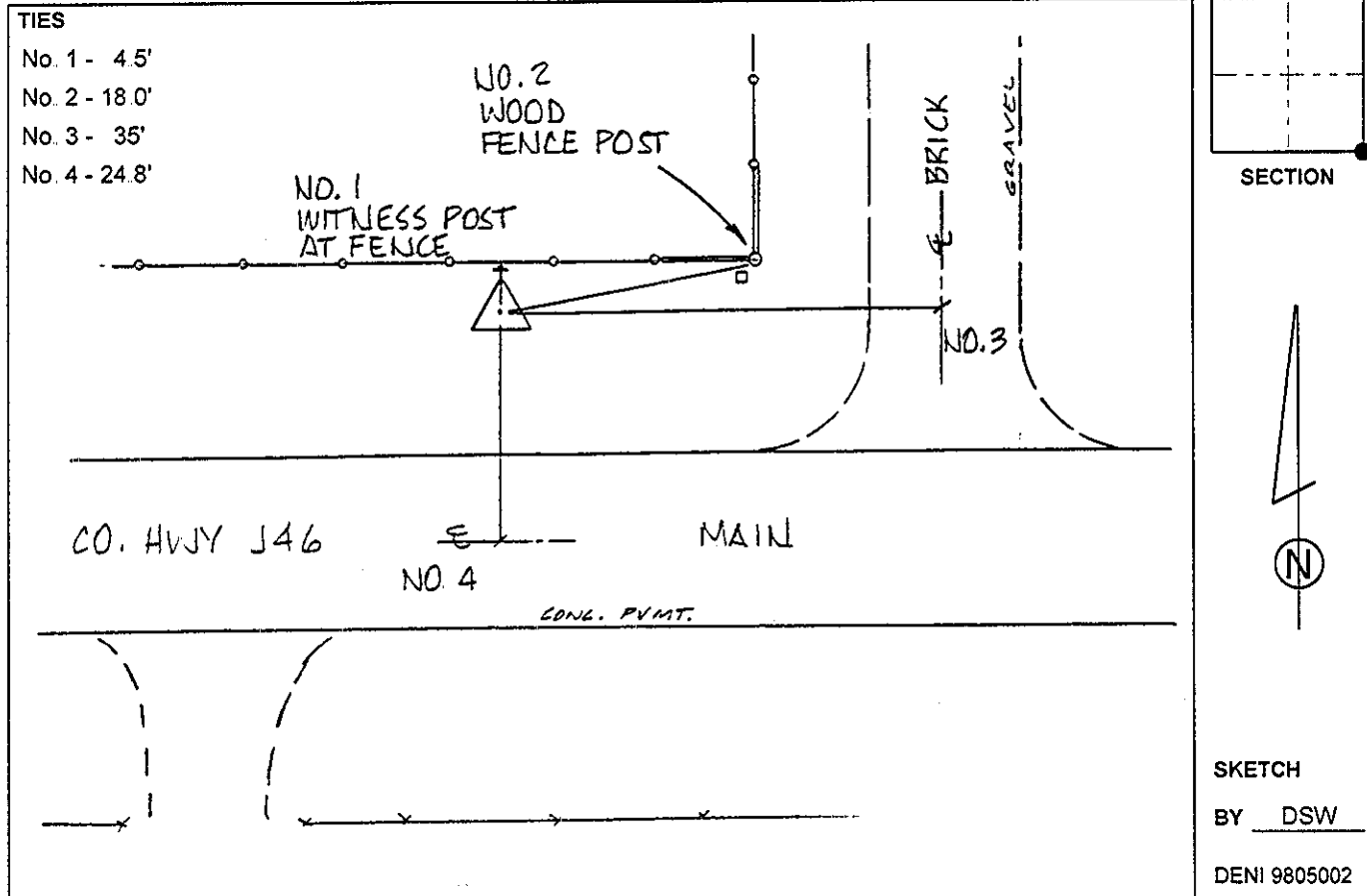
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 248704.16 NORTHING (Y) 75805.180

EASTING (X) 1783391.72 EASTING (X) 543578.883

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1040.86 ELEVATION (METERS) 317.26



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681936 2 GPS No. 8050 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 36 TWP 68 N RGE 19 W USGS QUAD MAP CENTERVILLE WEST

TO REACH FROM THE INTERSECTION OF 580th STREET AND 153rd AVENUE; GO EAST 0.4 MILE

TO FIELD ENTRANCE TO NORTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999628

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 232912.15

NORTHING (Y) 70991.766

EASTING (X) 1783543.96

EASTING (X) 543625.286

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1033.11

ELEVATION (METERS) 314.89

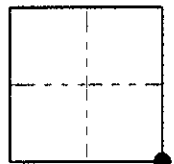
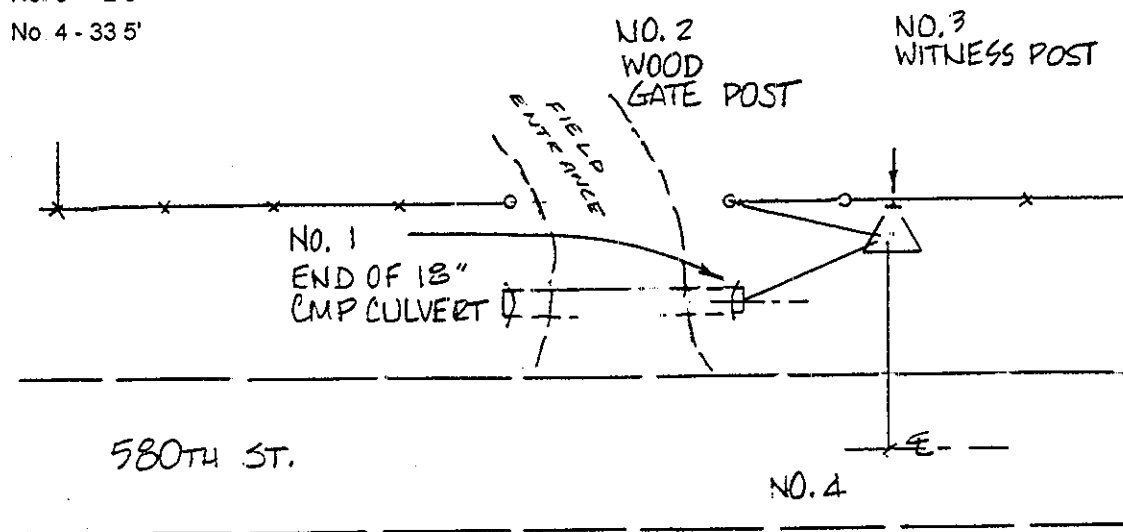
TIES

No. 1 - 12.5'

No. 2 - 9.3'

No. 3 - 2.0'

No. 4 - 33.5'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671819 4 GPS No. 8051 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 19 TWP 67 N RGE 18 W USGS QUAD MAP MENDOTA
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 5 AND 610th STREET; GO SOUTHERLY 0.2 MILE
TO FIELD ENTRANCE WEST AND EAST AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000453

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 215938.46

NORTHING (Y) 65818.173

EASTING (X) 1784802.20

EASTING (X) 544008.799

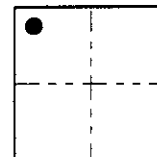
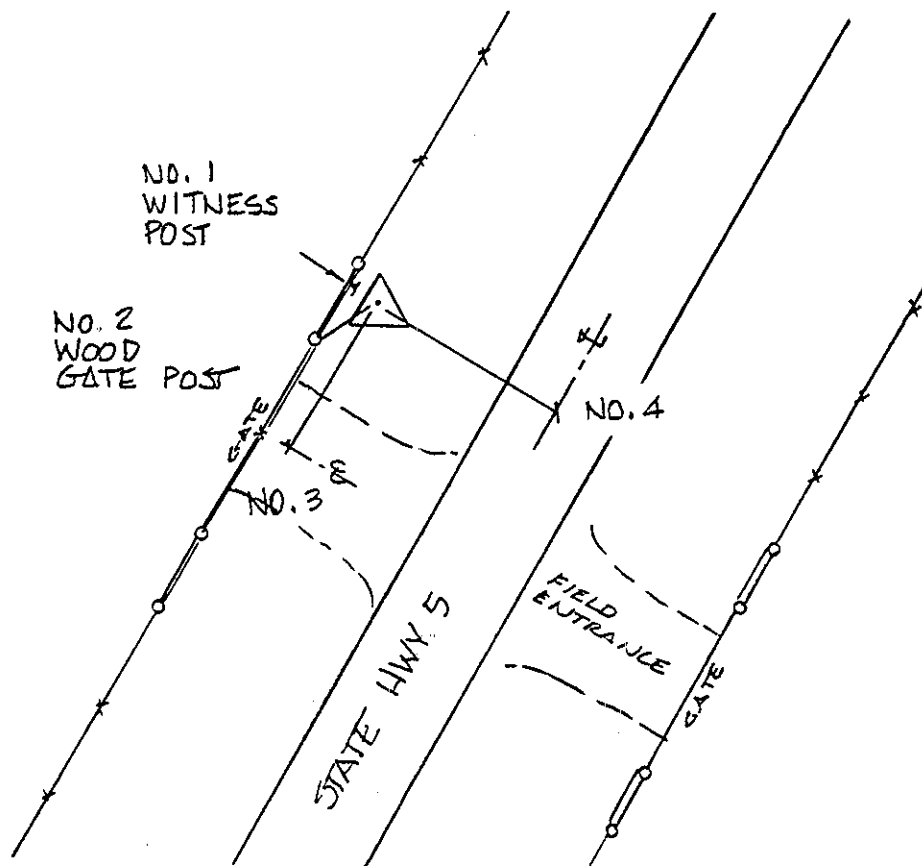
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1044.48

ELEVATION (METERS) 318.36

TIES

- No 1 - 3.2'
- No 2 - 7.0'
- No 3 - 18.0'
- No 4 - 68.2'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671922 4 GPS No. 8052 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 22 TWP 67 N RGE 19 W USGS QUAD MAP LAKE THUNDERHEAD
TO REACH FROM THE INTERSECTION OF 614th STREET AND 135th AVENUE; GO NORTH 0.5 MILE TO
SOUTH END OF FENCE AT CREST OF HILL AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000426

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 216399.40

NORTHING (Y) 65958.670

EASTING (X) 1769664.04

EASTING (X) 539394.678

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1060.46

ELEVATION (METERS) 323.23

TIES

- No 1 - 7.7'
- No 2 - 2.4'
- No 3 - 39.4'
- No 4 - 37'

CULTIVATED

No. 1
WOOD TRUNK
FENCE POST

NO. 2
WITNESS
POST

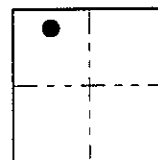
NO. 3
POWER POLE

135TH AVE.

FIELD
ENTRANCE

NO. 4

FIELD
ENTRANCE



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671903 4 GPS No. 8053 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 3 TWP 67 N RGE 19 W USGS QUAD MAP SEYMOUR EAST
TO REACH FROM THE INTERSECTION OF 580th STREET AND 135th AVENUE; GO WEST 0.4 MILE TO
FIELD ENTRANCE TO SOUTH, ACROSS FROM CORN BIN AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999633

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 232719.94

NORTHING (Y) 70933.180

EASTING (X) 1768921.43

EASTING (X) 539168.329

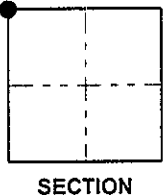
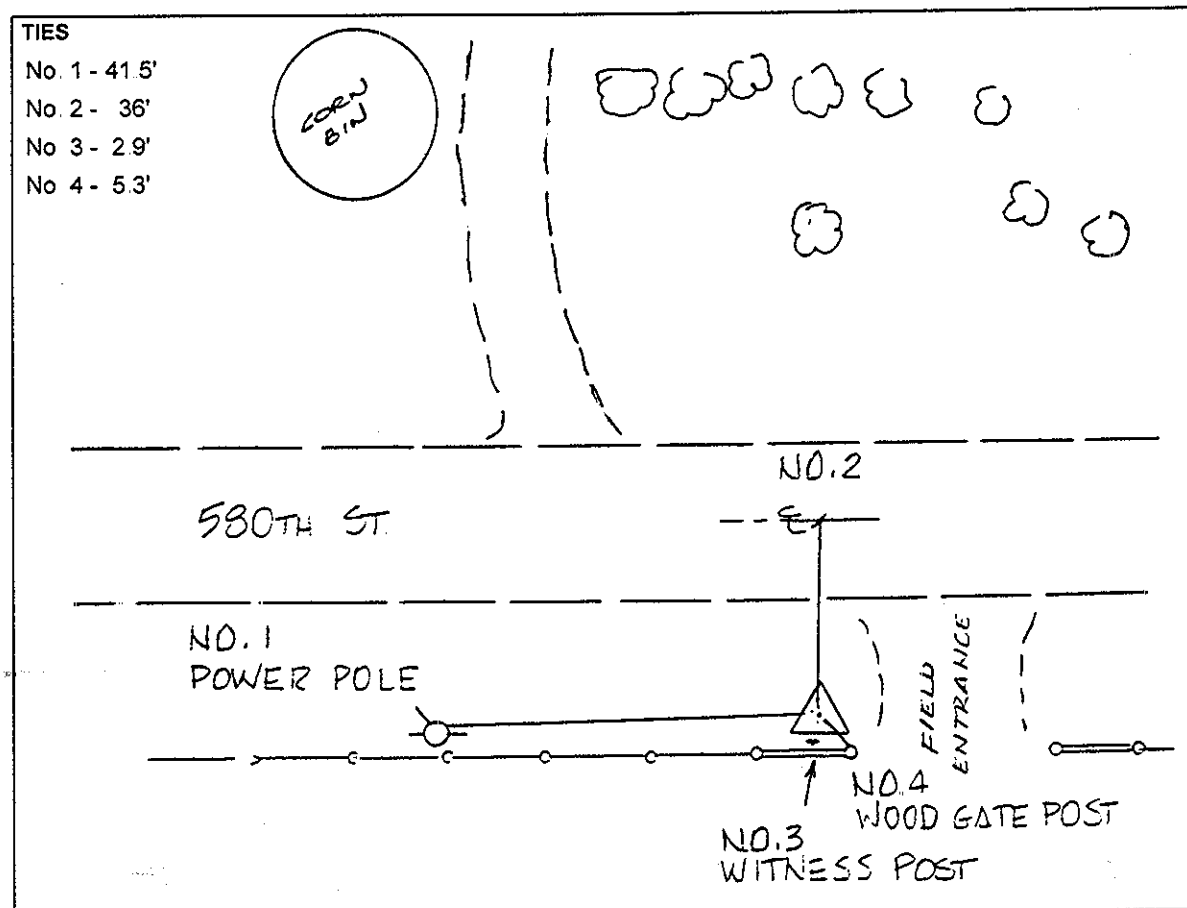
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1060.08

ELEVATION (METERS) 323.11

TIES

- No. 1 - 41.5'
- No. 2 - 36'
- No. 3 - 2.9'
- No. 4 - 5.3'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681922 4 GPS No. 8054 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 22 TWP 68 N RGE 19 W USGS QUAD MAP SEYMOUR EAST

TO REACH FROM _____

AT THE INTERSECTION OF COUNTY HIGHWAY J46 AND 130th AVENUE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99998920

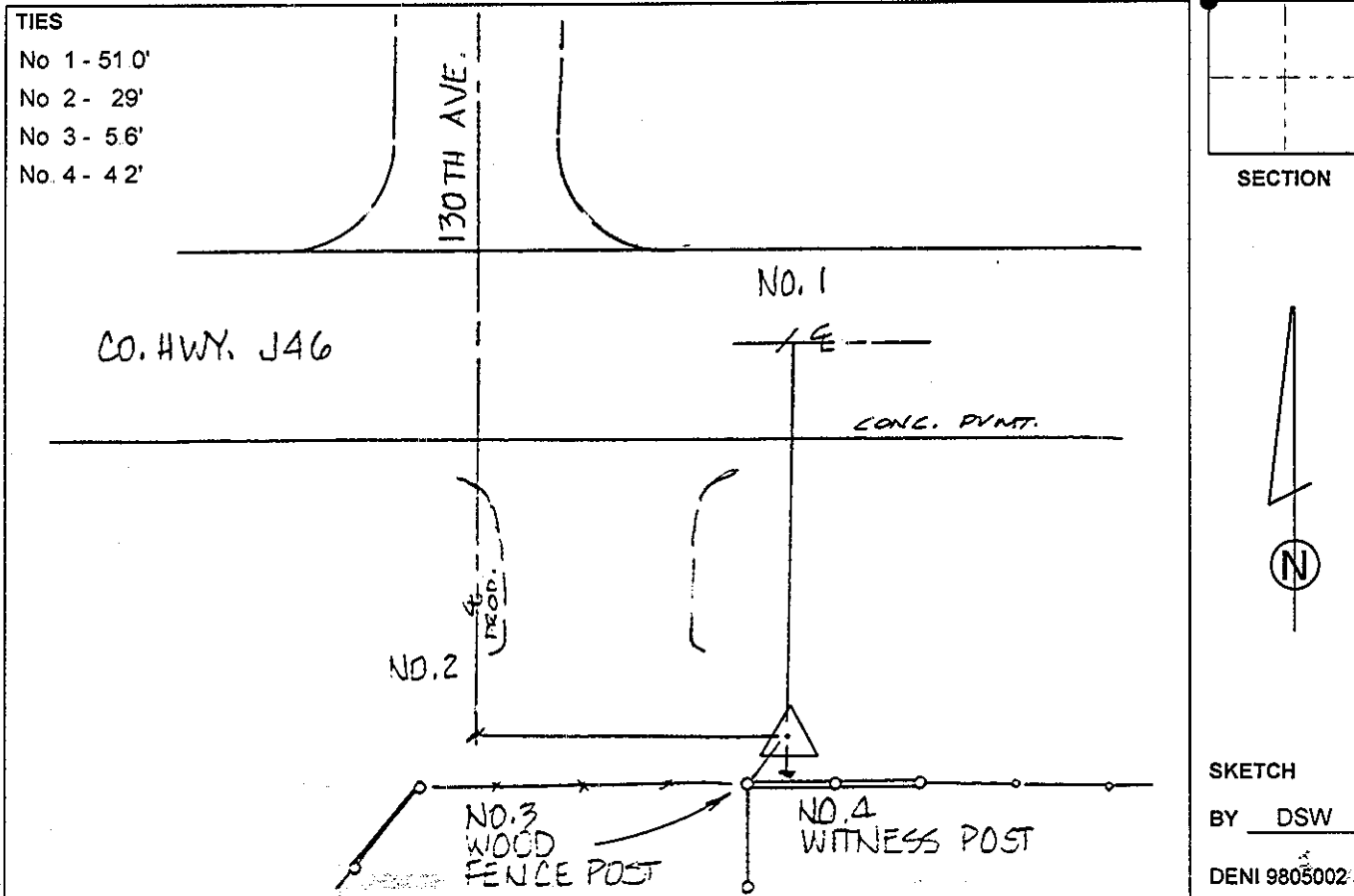
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 248606.42 NORTHING (Y) 75775.387

EASTING (X) 1768138.97 EASTING (X) 538929.835

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1045.30 ELEVATION (METERS) 318.61



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691934 2 GPS No. 8055 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 34 TWP 69 N RGE 19 W USGS QUAD MAP SEYMOUR EAST

TO REACH FROM THE INTERSECTION OF 524th STREET AND 135th AVENUE; GO NORTH 0.6 MILE TO
FIELD ENTRANCE TO EAST, NORTHEAST OF BARN AND SILOS. 350 FEET, MORE OR LESS, NORTH OF
ENTRANCE WEST TO RED BARN AND BUTLER CORN BINS. 300 FEET, MORE OR LESS, NORTH OF
CONCRETE CULVERT CROSSING.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99998253

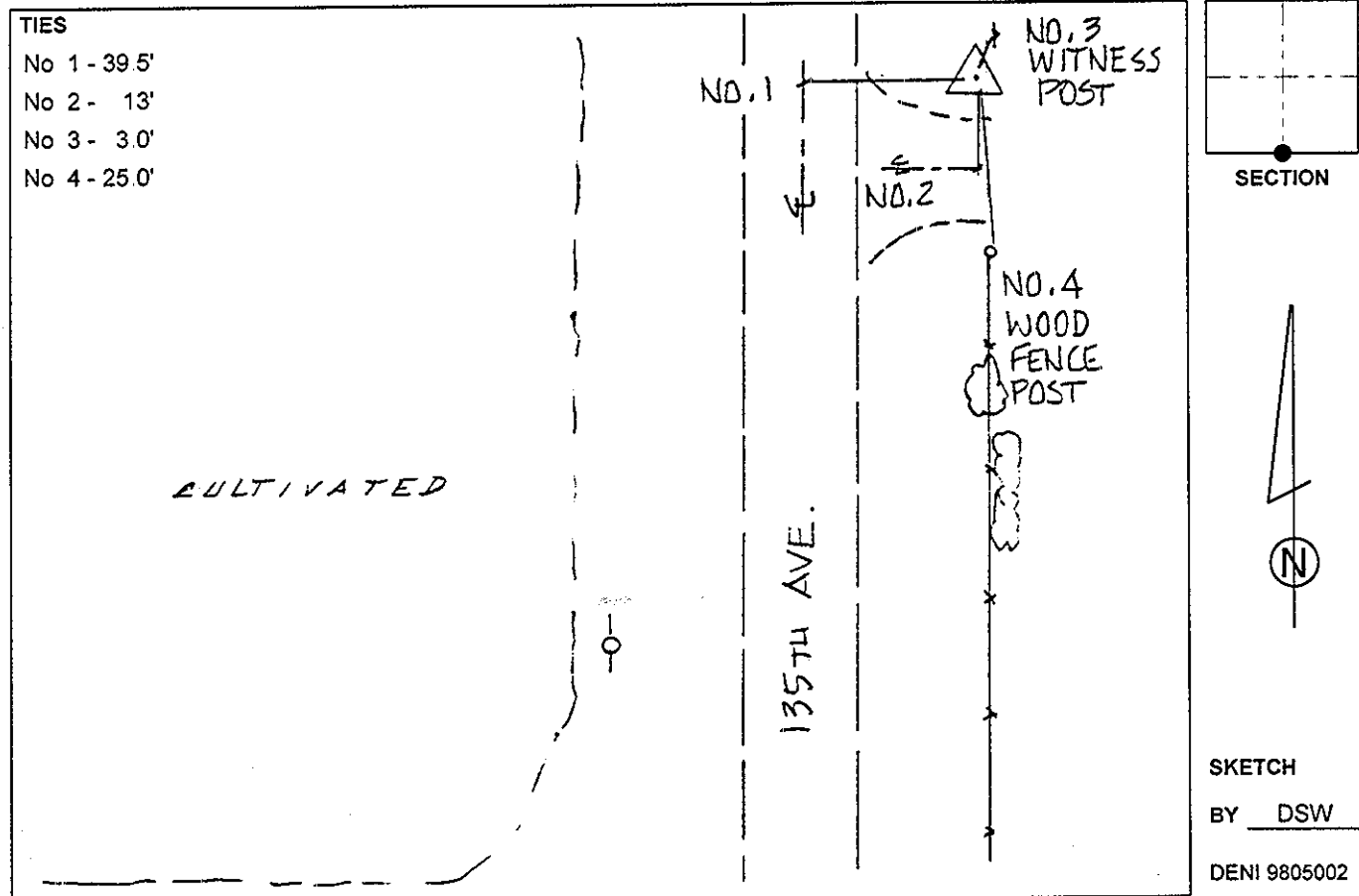
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 264780.69 NORTHING (Y) 80705.317

EASTING (X) 1770684.30 EASTING (X) 539705.655

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1020.08 ELEVATION (METERS) 310.92



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691921 1 GPS No. 8056 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 21 TWP 69 N RGE 19 W USGS QUAD MAP PLANO

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 142 AND 490th STREET, NORTH OF PLANO;
GO WEST 0.1 MILE TO FENCE CORNER AND FIELD ENTRANCE TO SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997671

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 280209.64

NORTHING (Y) 85408.068

EASTING (X) 1766489.13

EASTING (X) 538426.963

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1030.29

ELEVATION (METERS) 314.03

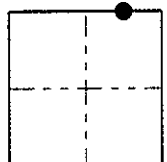
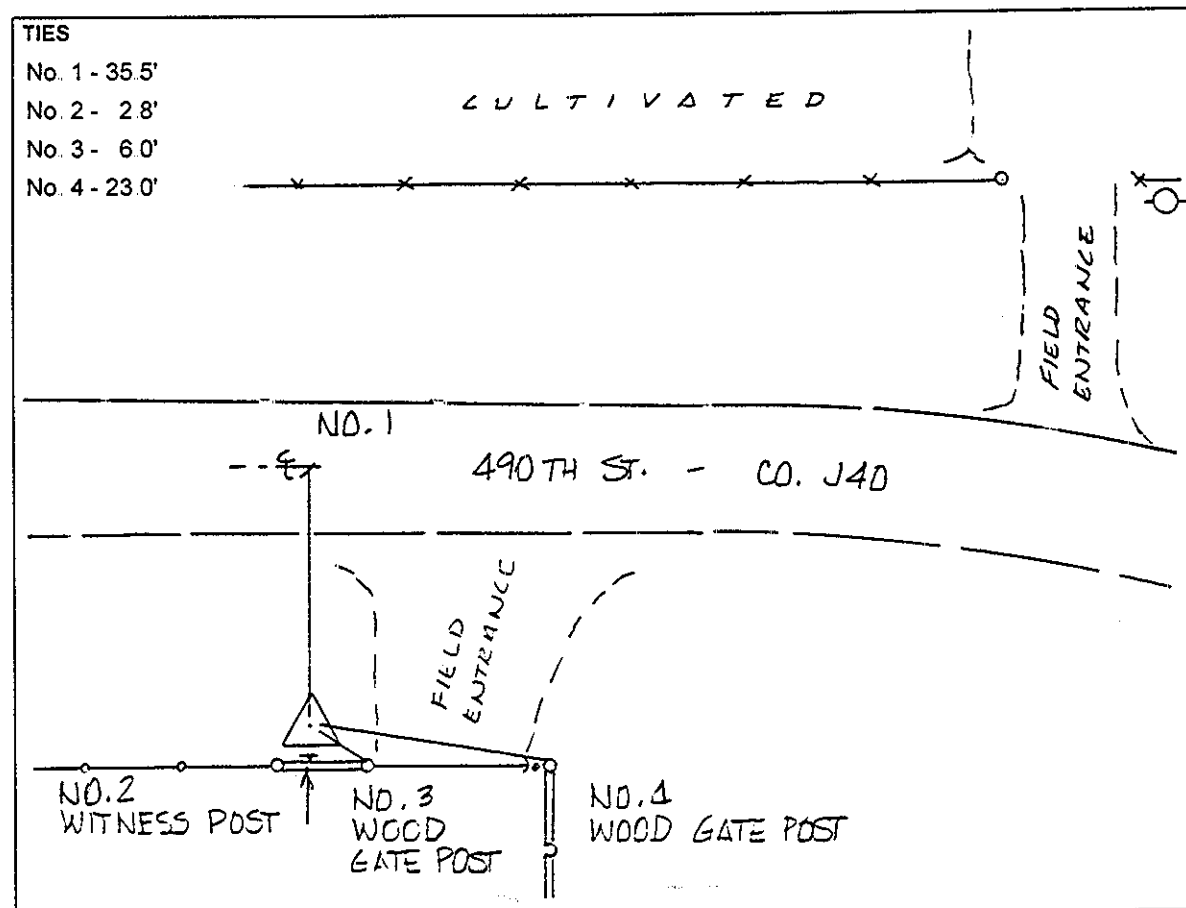
TIES

No. 1 - 35.5'

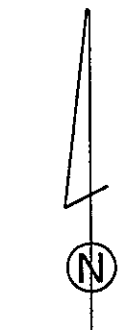
No. 2 - 28'

No. 3 - 6.0'

No. 4 - 23.0'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701933 2 GPS No. 8057 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 33 TWP 70 N RGE 19 W USGS QUAD MAP PLANO
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 142 / COUNTY HIGHWAY J5T AND 127th AVENUE;
GO NORTH 130 FEET, MORE OR LESS, ON 127th AVENUE TO A FIELD ENTRANCE TO WEST AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997126

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 296204.96

NORTHING (Y) 90283.453

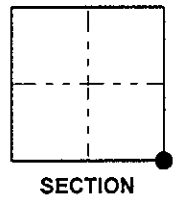
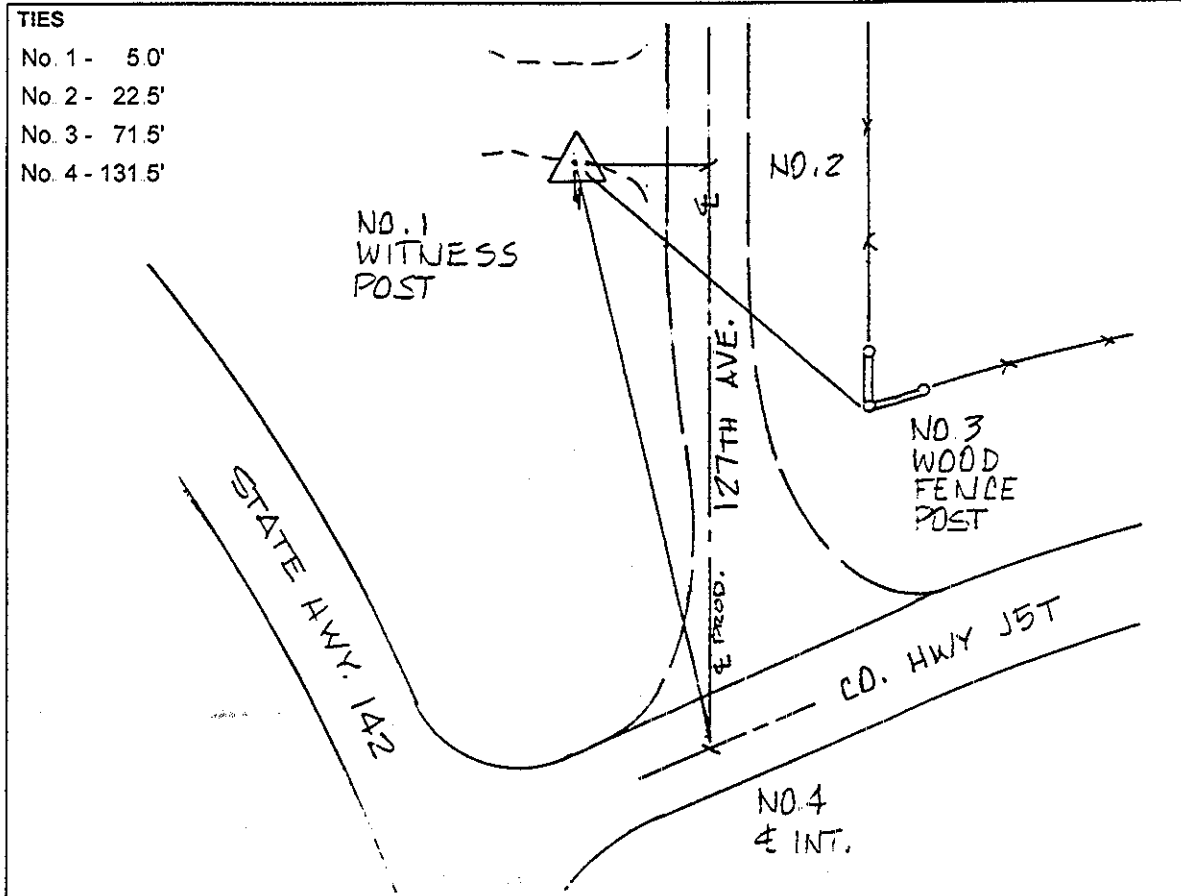
EASTING (X) 1767695.43

EASTING (X) 538794.646

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1003.25

ELEVATION (METERS) 305.79



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701921 1 GPS No. 8058 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 21 TWP 70 N RGE 19 W USGS QUAD MAP PLANO

TO REACH FROM _____

AT THE INTERSECTION OF STATE HIGHWAY 142 AND 430th STREET, NEAR THE NORTHWEST

CORNER OF LAWN SOUTHWEST OF CHURCH.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996643

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 312032.54

NORTHING (Y) 95107.708

EASTING (X) 1766052.88

EASTING (X) 538293.994

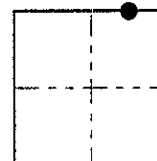
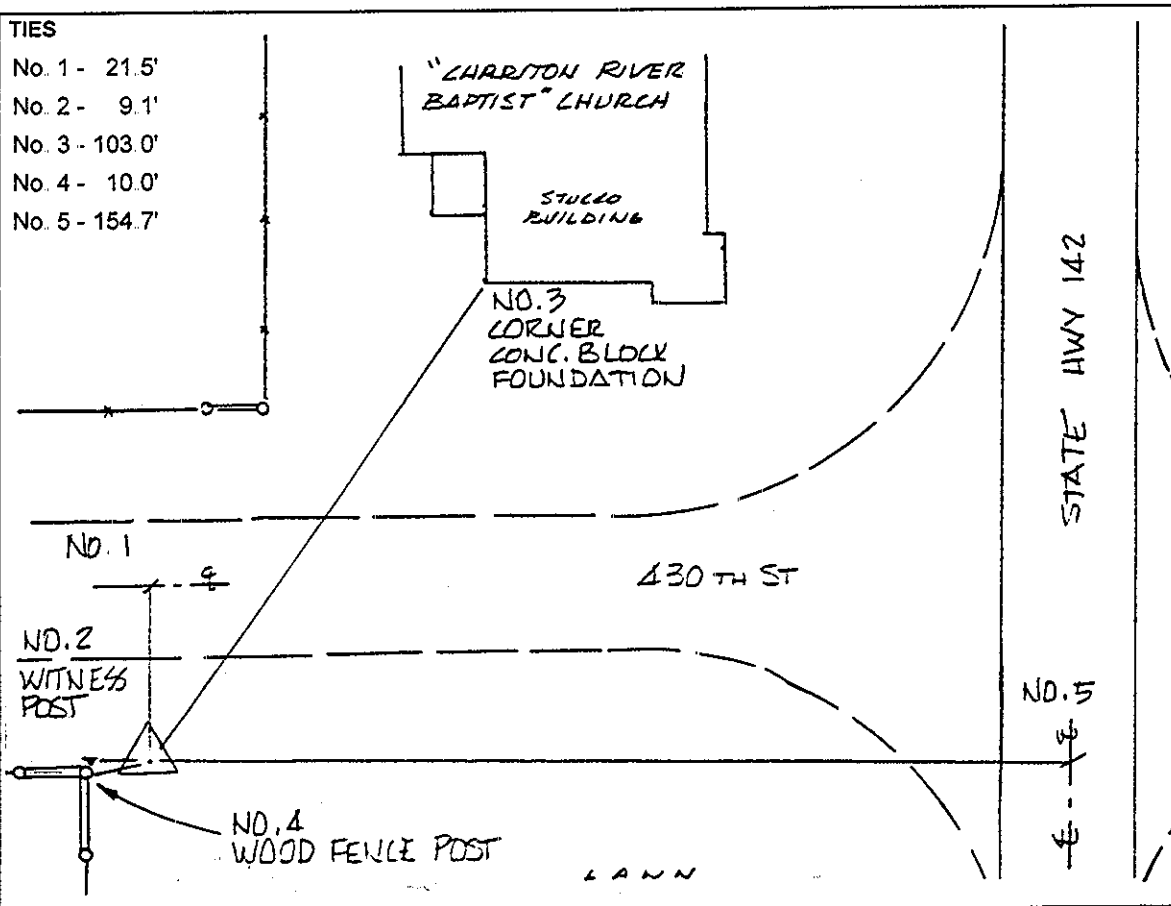
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1001.82

ELEVATION (METERS) 305.36

TIES

- No. 1 - 21.5'
- No. 2 - 9.1'
- No. 3 - 103.0'
- No. 4 - 10.0'
- No. 5 - 154.7'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701903 4 GPS No. 8059 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 3 TWP 70 N RGE 19 W USGS QUAD MAP MELROSE

TO REACH FROM _____

AT THE INTERSECTION OF 400th STREET AND 527th AVENUE (MONROE COUNTY)

0.5 MILE WEST OF STATE HIGHWAY 142 AT MONROE-APPANOOSE COUNTY LINE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99996224

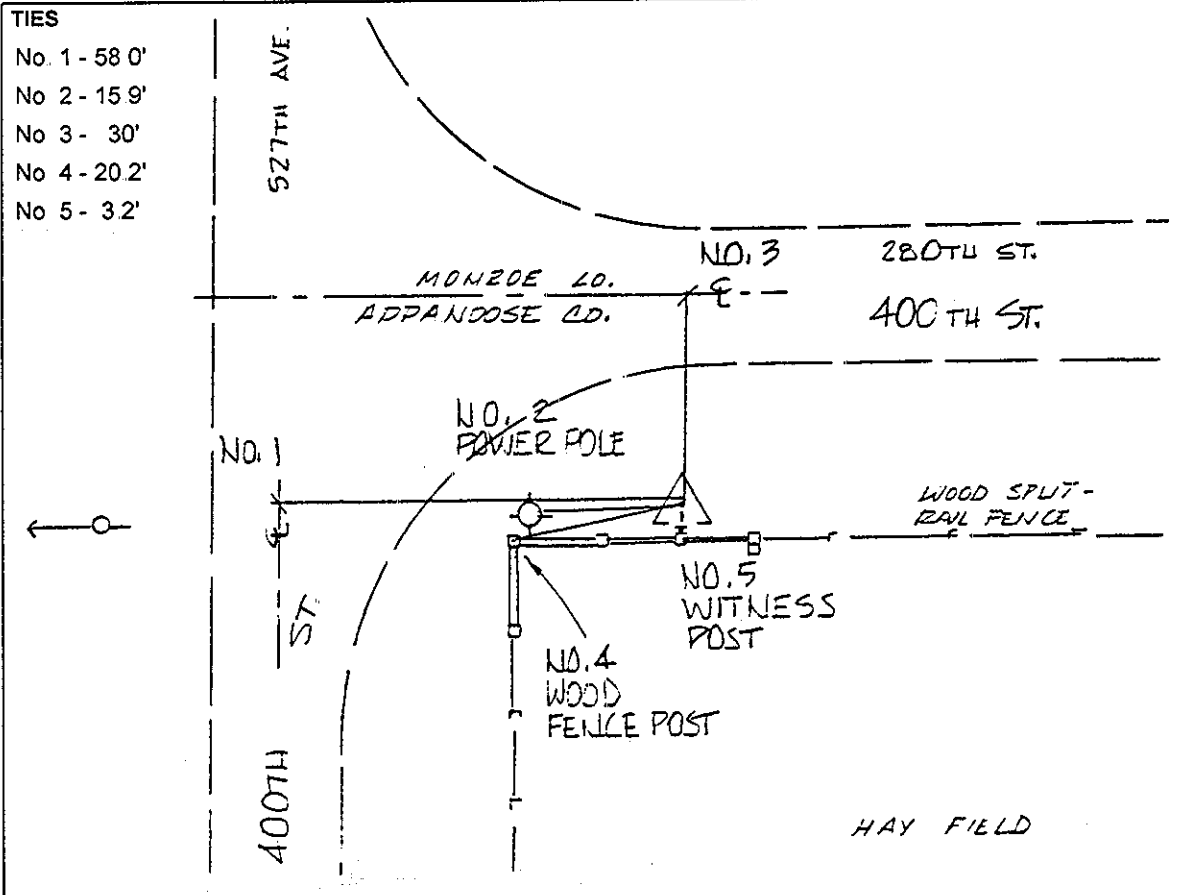
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 327615.50 NORTHING (Y) 99857.405

EASTING (X) 1767466.17 EASTING (X) 538724.765

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1005.23 ELEVATION (METERS) 306.40



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701919 1 GPS No. 8060 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 19 TWP 70 N RGE 19 W USGS QUAD MAP PLANO
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J18 AND 110th AVENUE; GO SOUTH 0.6 MILE
TO GATED ENTRANCE TO BARN AND BINS

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996656

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 311528.62

NORTHING (Y) 94954.113

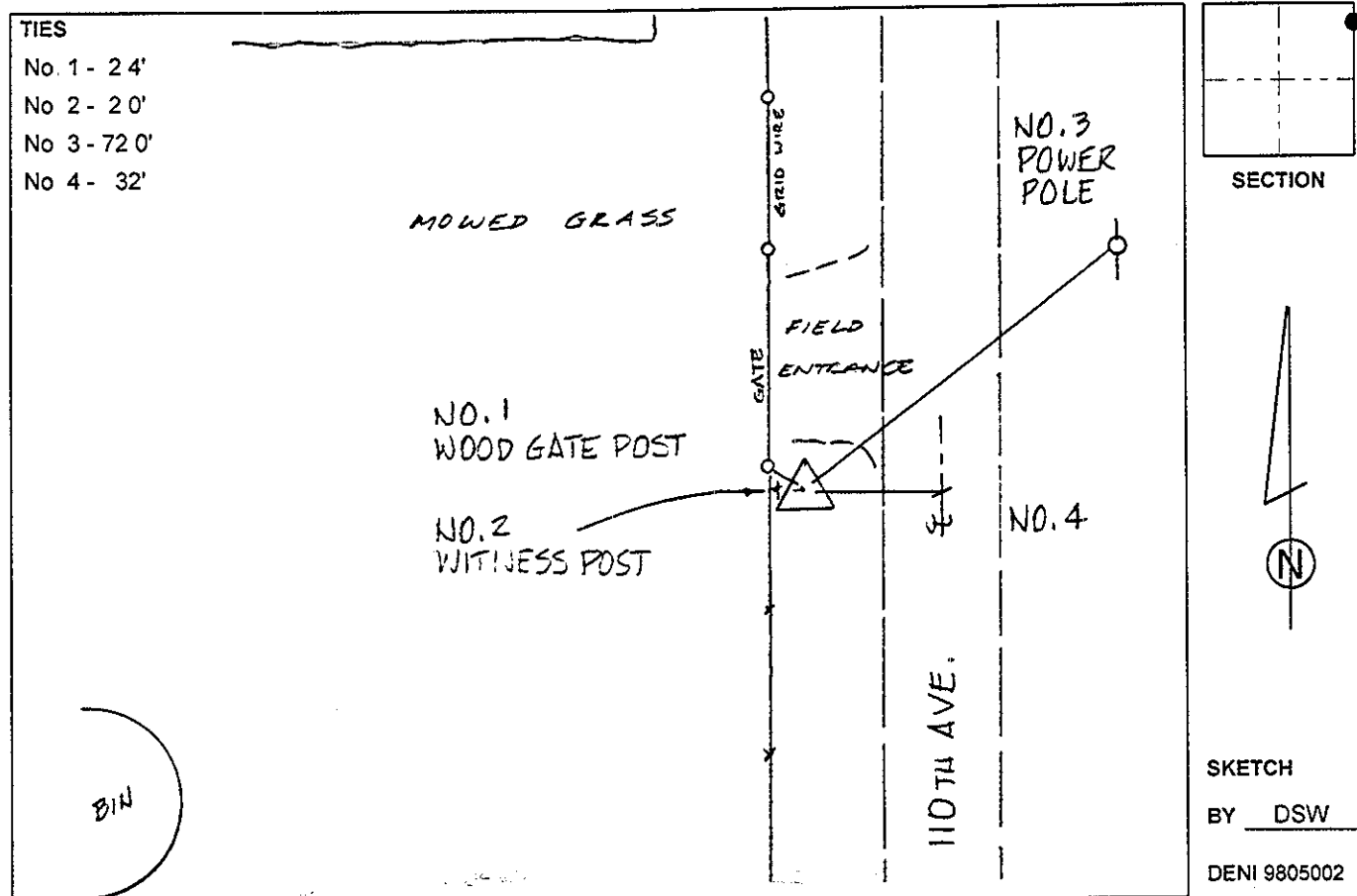
EASTING (X) 1756914.48

EASTING (X) 535508.604

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1017.57

ELEVATION (METERS) 310.16



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691906 1 GPS No. 8061 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 6 TWP 69 N RGE 19 W USGS QUAD MAP PLANO
TO REACH FROM THE INTERSECTION OF 458th STREET AND 113th AVENUE, AT THE DOGLEG; GO SOUTH
0.25 MILE TO FIELD ENTRANCE TO WEST WITH TALL GATE POSTS AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99997129

COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 296057.09 NORTHING (Y) 90238.382

EASTING (X) 1755799.30 EASTING (X) 535168.698

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1001.44 ELEVATION (METERS) 305.24

TIES

No. 1 - 12.0'
No. 2 - 4.5'
No. 3 - 23'
No. 4 - 37.5'

NO. 1
15' TALL WOOD BRANCH
GATE POST

NO. 2
WITNESS POST

CREST

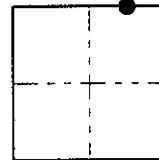
NO. 3

FIELD
ENTRANCE

113TH AVE.

NO. 4

CREST
OF
HILL



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 691918 3 GPS No. 8062 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 18 TWP 69 N RGE 19 W USGS QUAD MAP PLANO

TO REACH FROM _____

AT THE INTERSECTION OF 490th STREET AND 102nd AVENUE, IN THE GRASS MEDIAN TRIANGLE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT..

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99997670

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 280186.80

NORTHING (Y) 85401.108

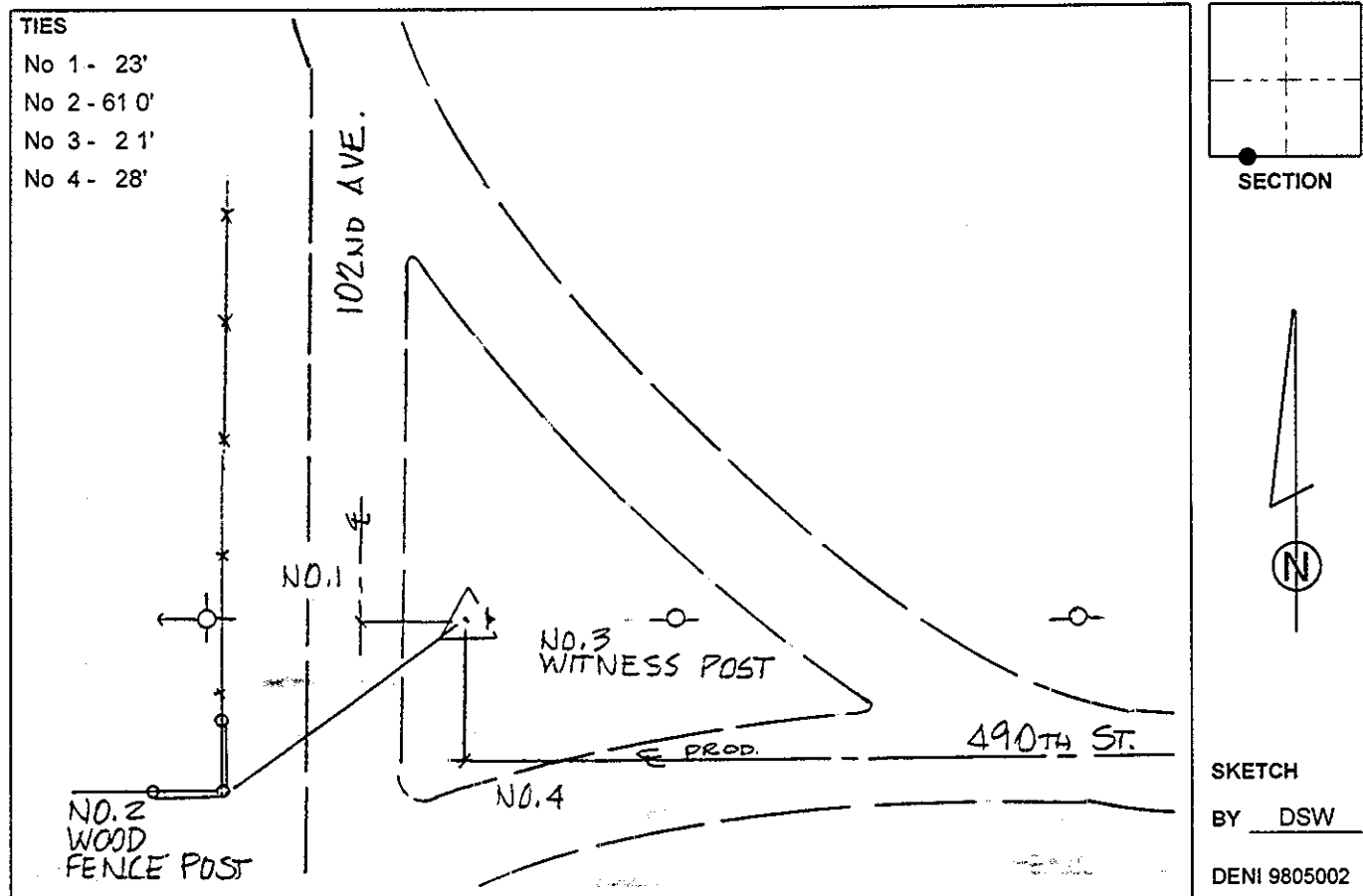
EASTING (X) 1753317.46

EASTING (X) 534412.229

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET)	1039.86
---------------------	---------

ELEVATION (METERS) 316.95



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681906 1 GPS No. 8063 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 6 TWP 68 N RGE 19 W USGS QUAD MAP SEYMOUR EAST

TO REACH FROM THE INTERSECTION OF 524th STREET AND 110th AVENUE; GO NORTH 0.4 MILE

TO A POINT 500 FEET, MORE OR LESS, SOUTH OF EAST-WEST SECTION LINE AND 150 FEET NORTH OF

A "T" FENCE TO WEST.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99998285

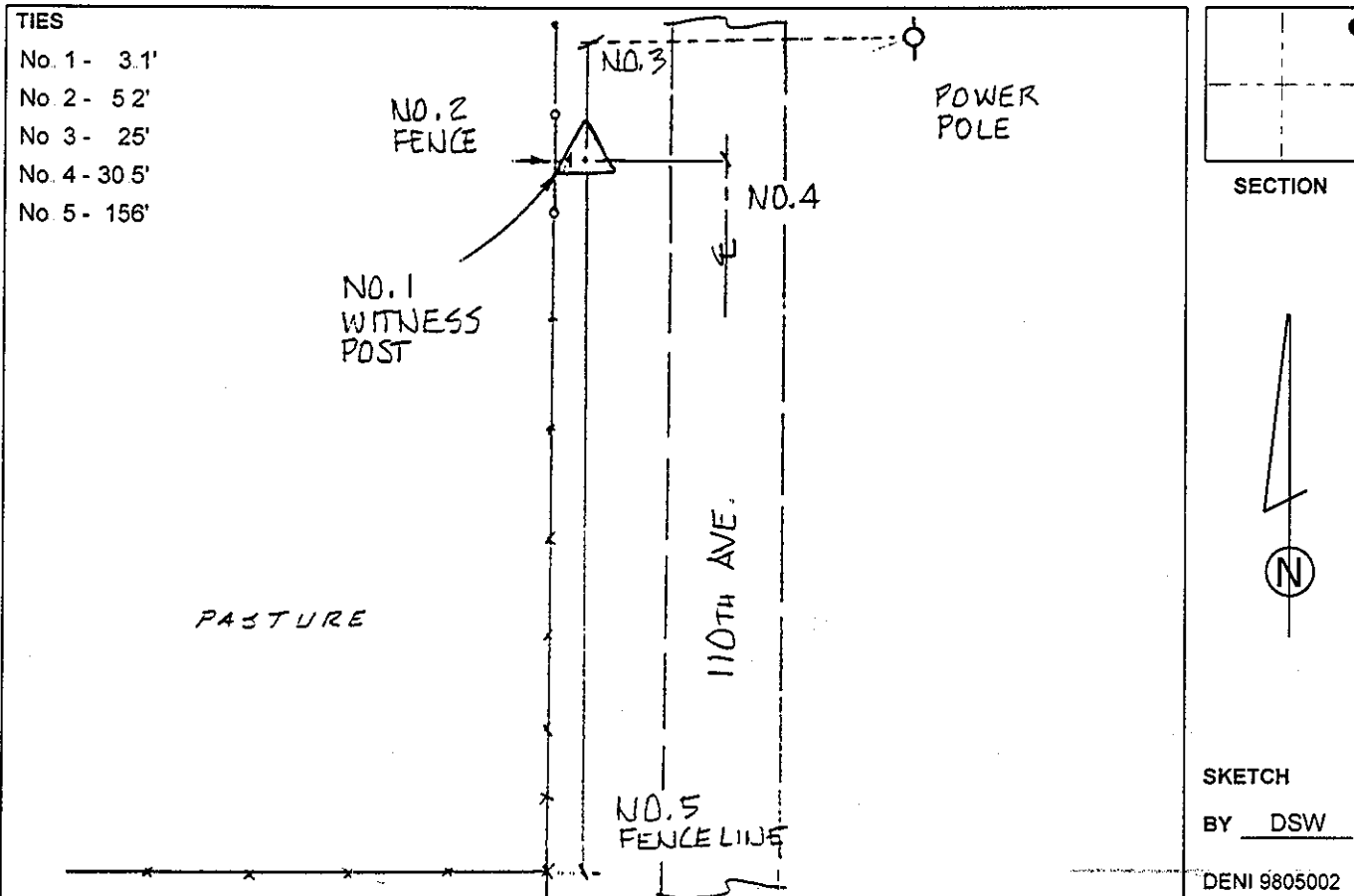
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 263898.79 NORTHING (Y) 80436.512

EASTING (X) 1757390.54 EASTING (X) 535653.708

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1042.15 ELEVATION (METERS) 317.65



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 681919 4 GPS No. 8064 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 19 TWP 68 N RGE 19 W USGS QUAD MAP SEYMOUR EAST
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J46 AND 102nd AVENUE; GO EAST 0.1 MILE
TO FIELD ENTRANCE NORTH AND SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998923

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 248473.74

NORTHING (Y) 75734.947

EASTING (X) 1754186.32

EASTING (X) 534677.059

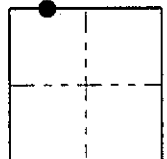
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1065.97

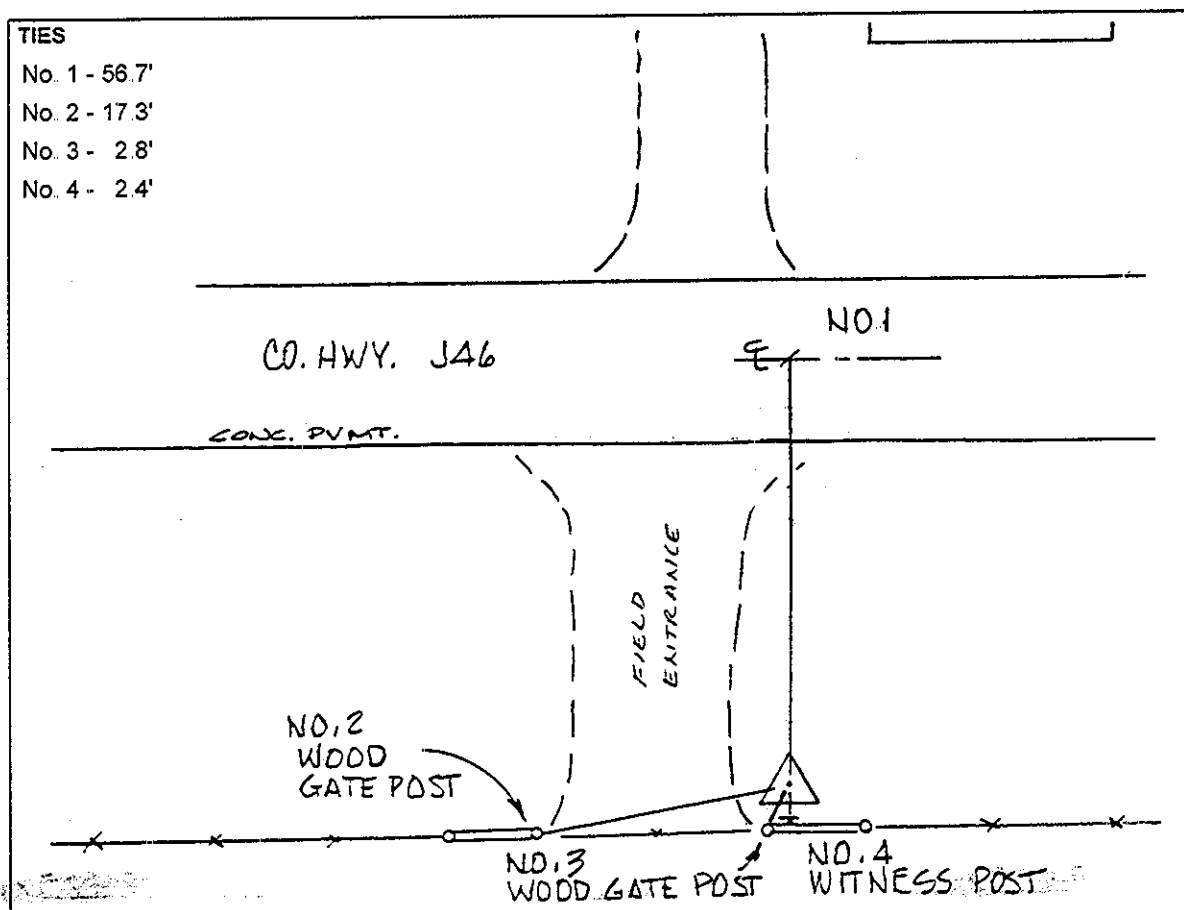
ELEVATION (METERS) 324.91

TIES

No. 1 - 56.7'
No. 2 - 17.3'
No. 3 - 2.8'
No. 4 - 2.4'



SECTION



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671906 4 GPS No. 8065 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 6 TWP 67 N RGE 19 W USGS QUAD MAP SEYMOUR EAST
TO REACH FROM THE INTERSECTION OF 580th STREET AND 100th AVENUE; GO EAST 0.2 MILE
TO THE NORTHEAST CORNER OF RESIDENCE YARD AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999633

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 232643.81

NORTHING (Y) 70909.975

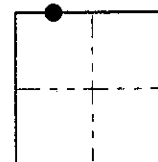
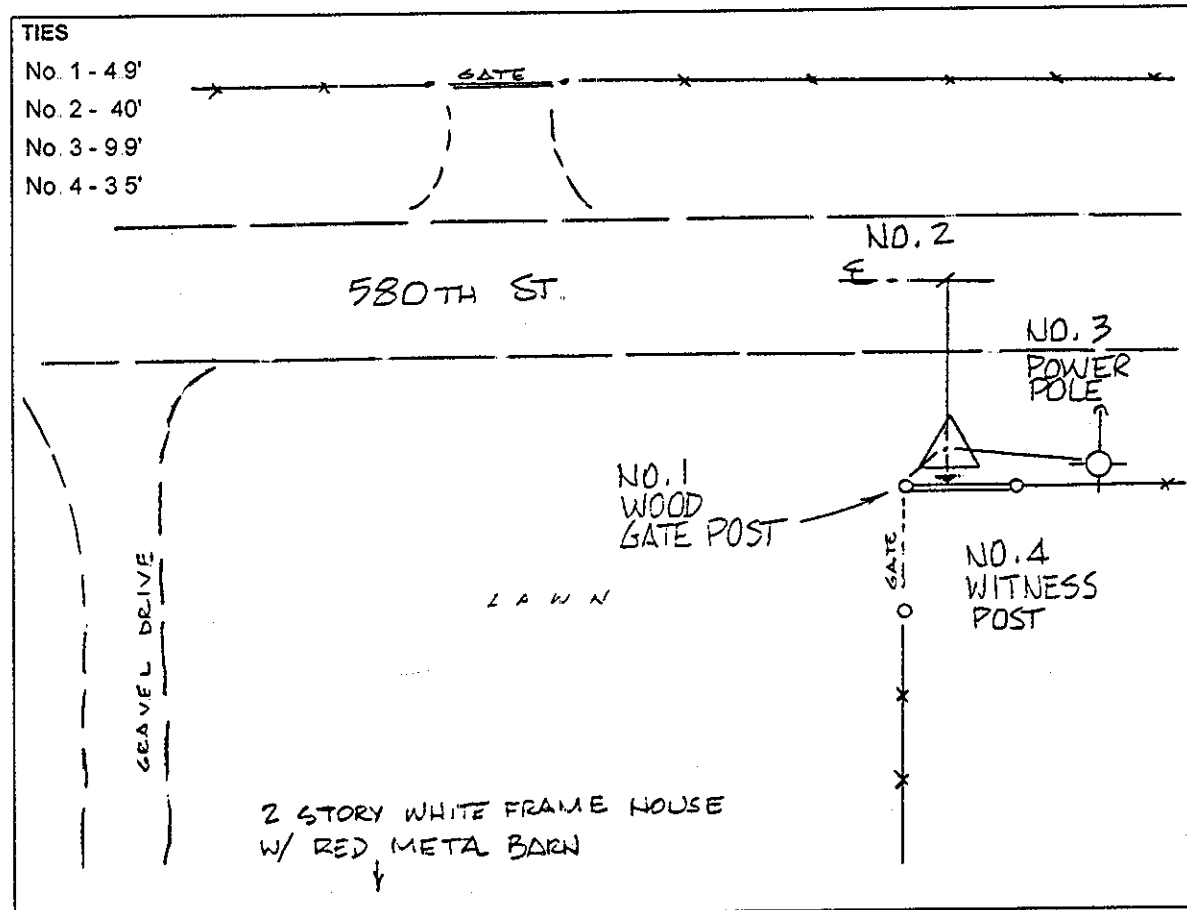
EASTING (X) 1753560.38

EASTING (X) 534486.273

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1056.92

ELEVATION (METERS) 322.15



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 671918 3 GPS No. 8066 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 18 TWP 67 N RGE 19 W USGS QUAD MAP LAKE THUNDERHEAD

TO REACH FROM _____

AT THE INTERSECTION OF 610th STREET AND 100th AVENUE, IN THE GRASS MEDIAN TRIANGLE.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000401

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 216808.28

NORTHING (Y) 66083.294

EASTING (X) 1752272.44

EASTING (X) 534093.707

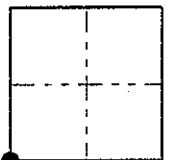
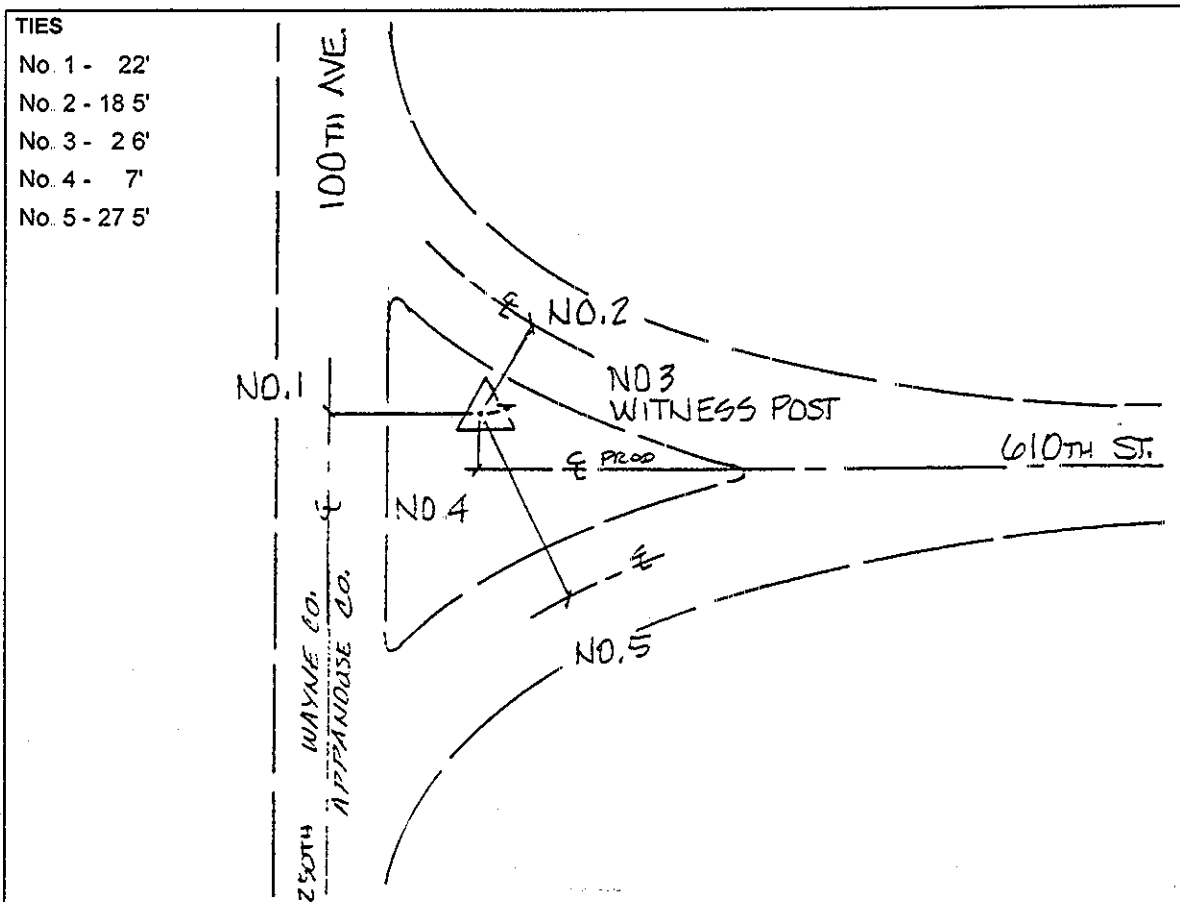
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1047.79

ELEVATION (METERS) 319.37

TIES

- No. 1 - 22'
- No. 2 - 18.5'
- No. 3 - 26'
- No. 4 - 7'
- No. 5 - 27.5'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 701815 3 GPS No. 8067 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 15 TWP 70 N RGE 18 W USGS QUAD MAP MYSTIC

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 142 AND 160th AVENUE; GO SOUTHEASTERLY
ALONG 160th AVENUE FOR 3.2 MILES TO HONEY CREEK STATE PARK HEADQUARTERS; THEN SOUTHERLY
0.5 MILE TO STOP SIGN AT "T" INTERSECTION; THEN EASTERLY 0.25 MILE TO CAMPGROUND; THEN CONTINUE
EASTERLY 0.5 MILE TO DRIVE INTERSECTION TO SOUTH AND MARK.

MARK 3-1/4" ALUMINUM DISK SET IN 10" DIAMETER POURED-IN-PLACE CONCRETE MONUMENT

☐ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☒ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996612

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 313315.43

NORTHING (Y) 95498.735

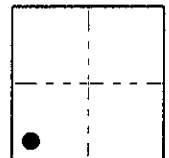
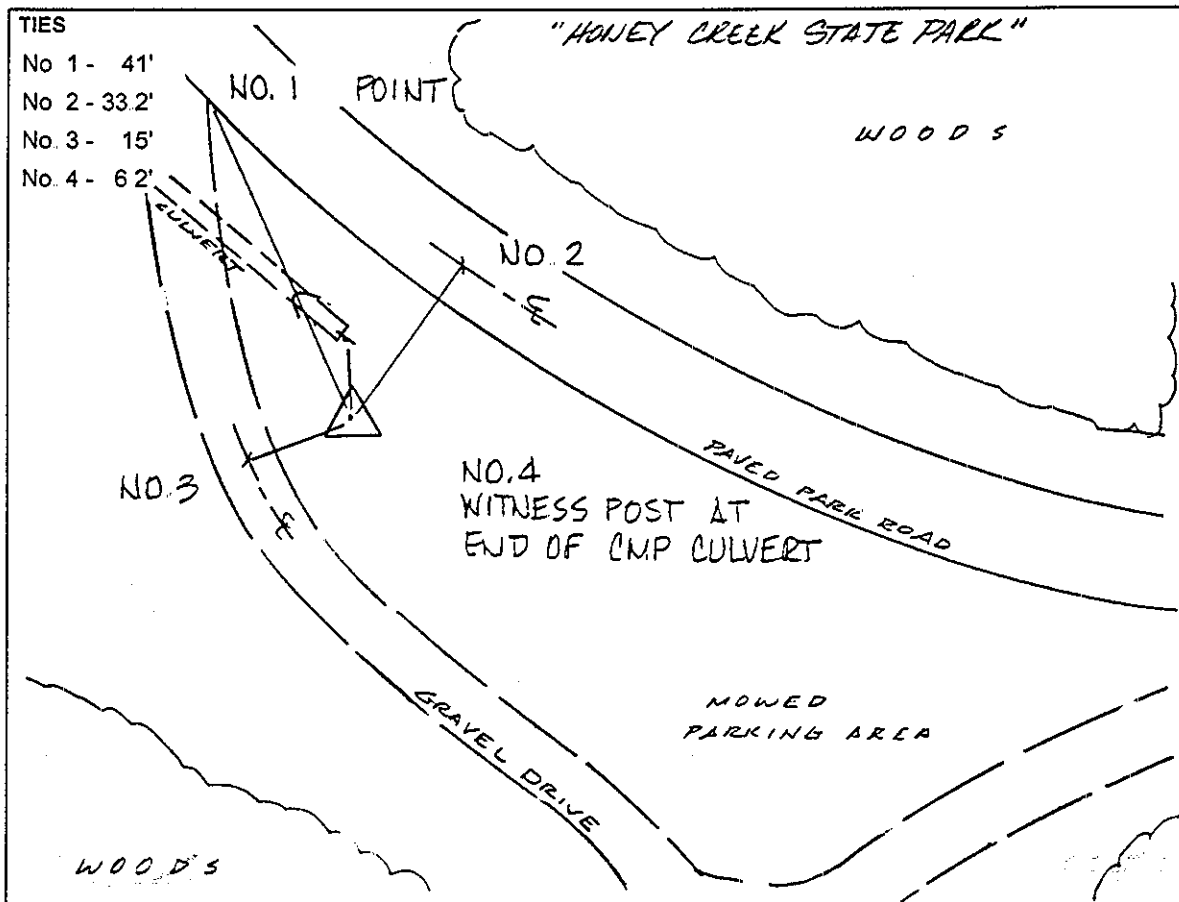
EASTING (X) 1799574.74

EASTING (X) 548511.478

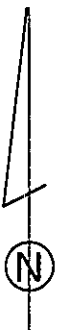
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 973.39

ELEVATION (METERS) 296.69



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION X 7 GPS No. 9663 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 3 TWP 67 N RGE 18 W USGS QUAD MAP CENTERVILLE WEST
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY T20 / S. LIBERTY STREET AND STATE HIGHWAY 5,
IN CINCINNATI; GO EAST 0.35 MILE TO WISCONSIN STREET; THEN SOUTH 0.1 MILE TO MARK.

MARK U.S.C. & G.S. BRASS DISK IN 12" x 12" CONCRETE MONUMENT, STAMPED "X-7 1930 1031.865 FT"

☒ MARK EXISTING ☒ VALUES AS PUBLISHED BY N.G.S.
☐ MARK SET ☐ VALUES ESTABLISHED BY _____ DATE _____

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999776

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 229889.40

NORTHING (Y) 70070.430

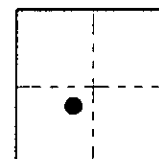
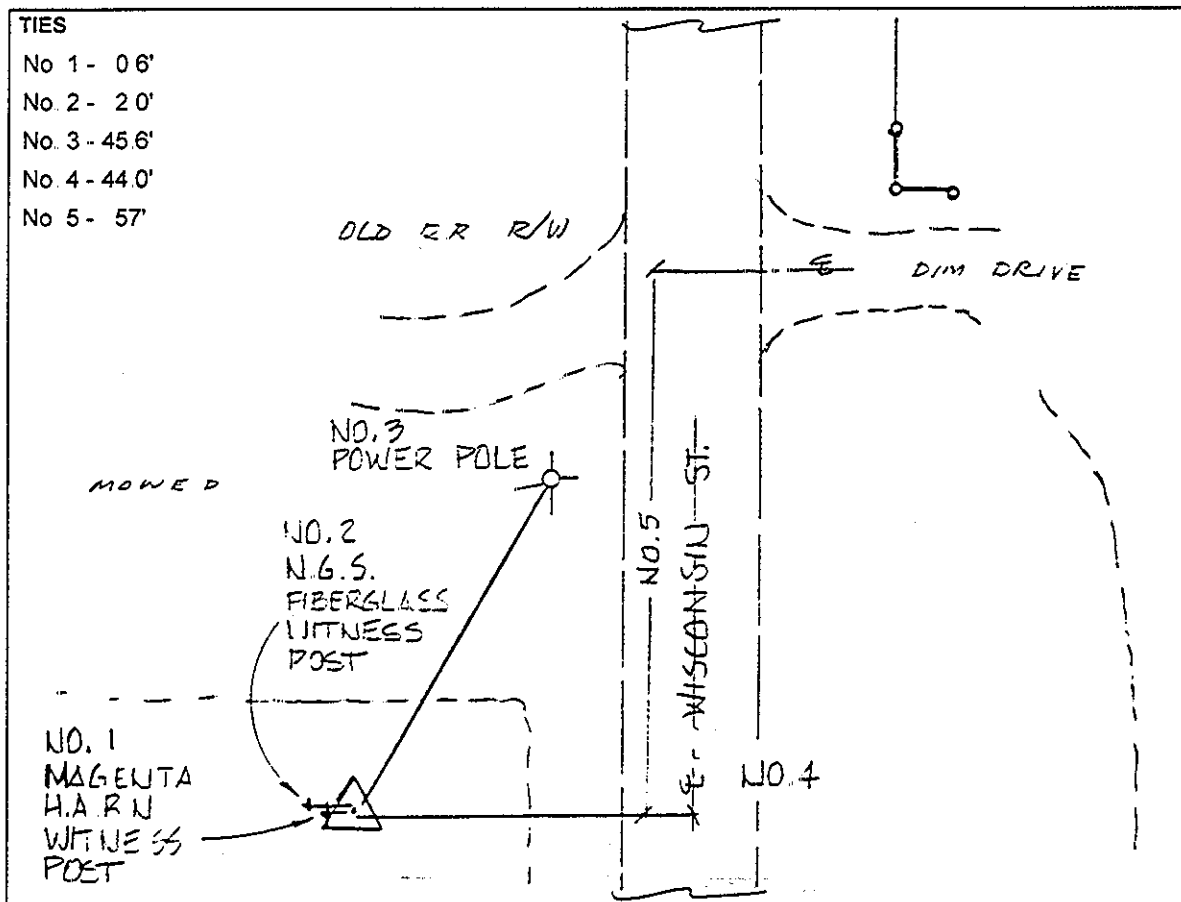
EASTING (X) 1801850.42

EASTING (X) 549205.108

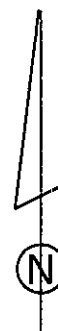
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1032.06

ELEVATION (METERS) 314.57



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 2 KEE GPS No. 9868 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 1 TWP 70 N RGE 19 W USGS QUAD MAP MELROSE

TO REACH FROM _____

AT THE INTERSECTION OF STATE HIGHWAY 142 AND 150th AVENUE, IN THE SOUTHEAST QUADRANT.

MARK 4" U.S.G.S. DISK ON A ROD IN A CLAY PIPE, STAMPED "2 KEE 1979"

☒ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☐ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE SCALE FACTOR: 0.99996286

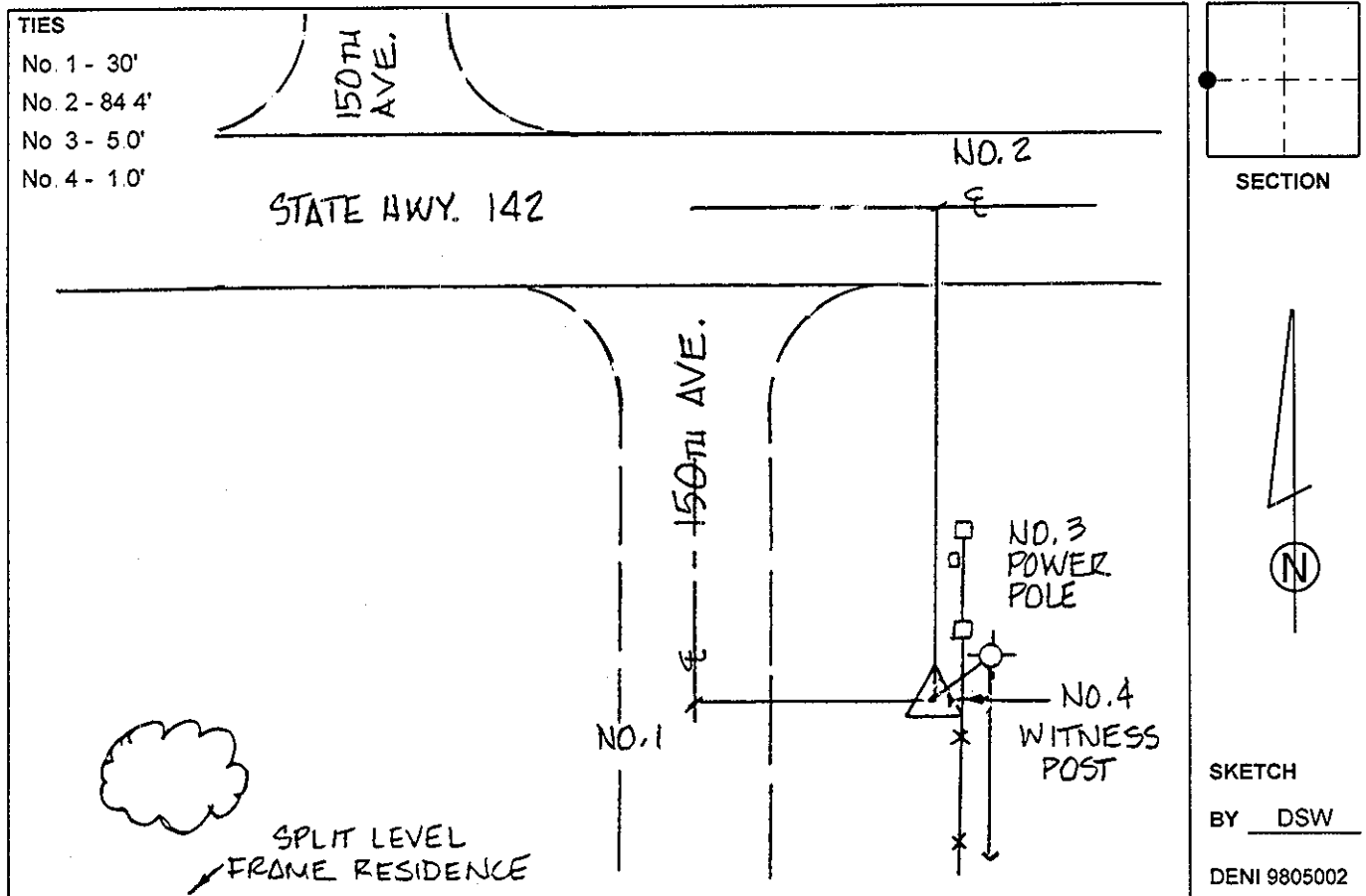
COORDINATES (US FEET) COORDINATES (METERS)

NORTHING (Y) 325235.23 NORTHING (Y) 99131.895

EASTING (X) 1778052.01 EASTING (X) 541951.336

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 979.76 ELEVATION (METERS) 298.63



GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 2 KED GPS No. 9869 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 24 TWP 70 N RGE 19 W USGS QUAD MAP PLANO
TO REACH FROM THE INTERSECTION OF 435th STREET AND 150th AVENUE; GO SOUTH 0.15 MILE TO
NORTHWEST CORNER OF RESIDENCE YARD AND MARK.

MARK U.S.G.S. ALUMINUM DISK IN 7" x 7" CONCRETE POST, STAMPED "2 KED 1965"

☒ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☐ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996740

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 308762.09

NORTHING (Y) 94110.874

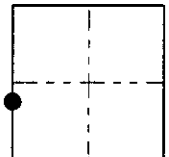
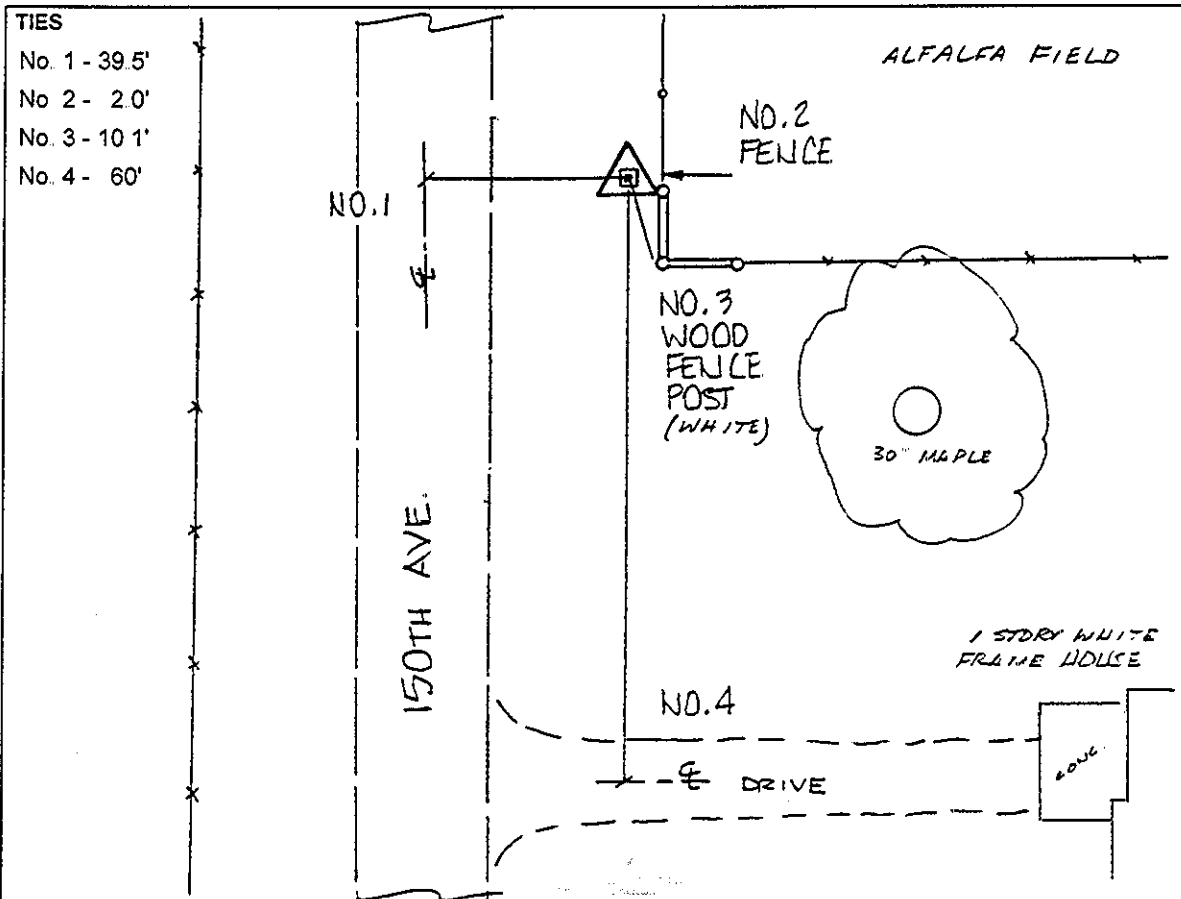
EASTING (X) 1778177.51

EASTING (X) 541989.590

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 998.60

ELEVATION (METERS) 304.37



SECTION



SKETCH
BY DSW
DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION TT 31 E GPS No. 9870 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 27 TWP 69 N RGE 19 W USGS QUAD MAP SEYMOUR EAST
TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 2 AND 135th AVENUE, SOUTHEAST OF PLANO;
GO SOUTH 0.15 MILE TO 510th STREET AND MARK.

STAMPED "TT 31 E 1933 964"

MARK U.S.G.S. BRASS DISK IN 9" x 9" CONCRETE POST, PROJECTS 4" ABOVE GROUND, W/SOME CONC. DAMAGE

☒ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☐ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99998030

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 270535.68

NORTHING (Y) 82459.440

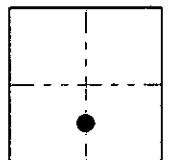
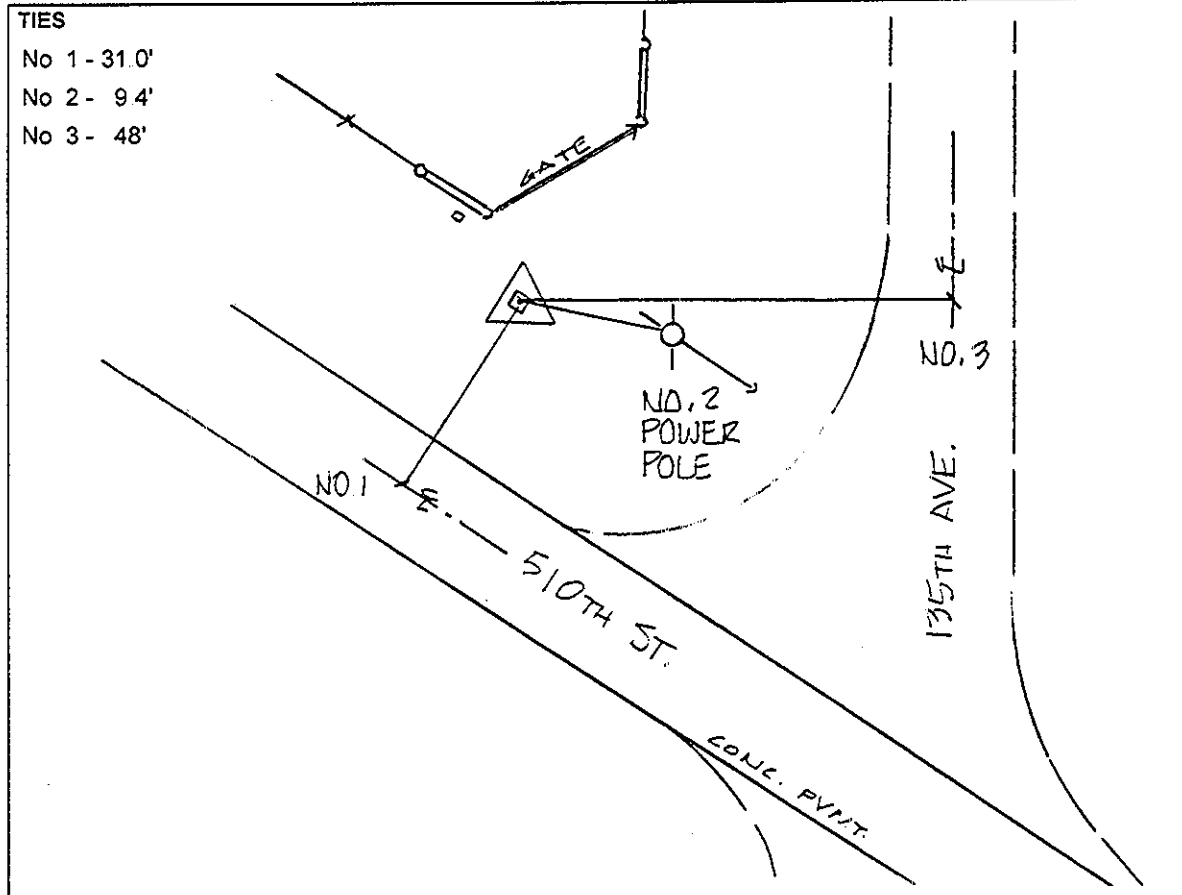
EASTING (X) 1770551.95

EASTING (X) 539665.315

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 964.42

ELEVATION (METERS) 293.96



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION TT 23 L GPS No. 9871 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 14 TWP 67 N RGE 18 W USGS QUAD MAP MENDOTA

TO REACH FROM _____

AT THE INTERSECTION OF 650th STREET AND 210th AVENUE, SOUTHEAST OF CINCINNATI.

MARK U.S.G.S. METAL DISK IN 7" x 7" CONCRETE POST, PROJECTS 5", STAMPED "TT 23 L 1938 1006"

☒ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____

☐ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 1.00000263

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 219911.34

NORTHING (Y) 67029.111

EASTING (X) 1810726.37

EASTING (X) 551910.503

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 1005.96 ELEVATION (METERS) 306.62

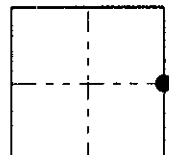
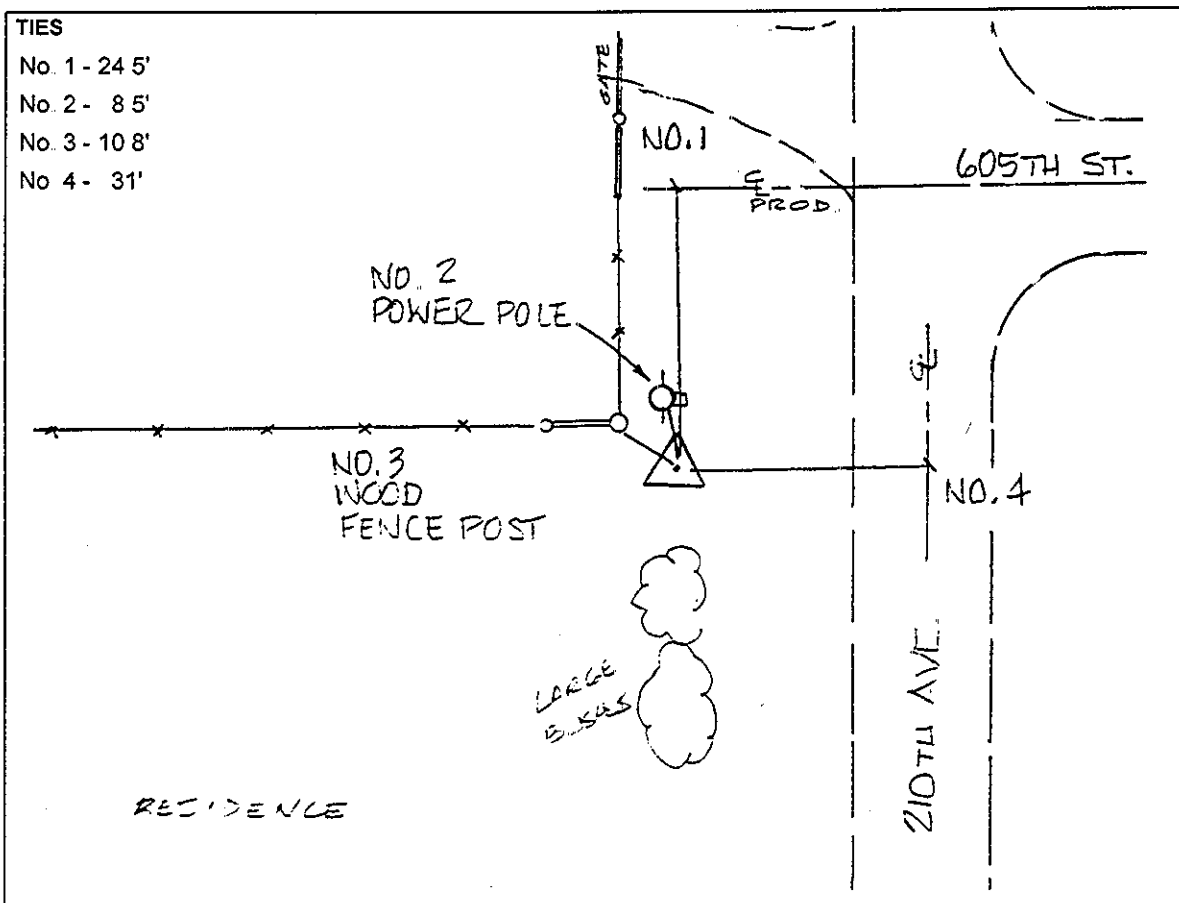
TIES

No. 1 - 24 5'

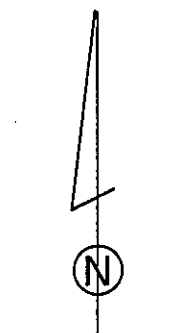
No. 2 - 8 5'

No. 3 - 10 8'

No. 4 - 31'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION 22 HK GPS No. 9872 COUNTY APPANOOSE STATE IOWA
LOCATED IN SECTION 1 TWP 70 N RGE 17 W USGS QUAD MAP MORAVIA
TO REACH FROM THE INTERSECTION OF COUNTY HIGHWAY J3T AND 405th STREET, 0.5 MILE EAST OF MORAVIA;
GO EASTERLY ALONG 405th STREET 2.3 MILES TO GATED FIELD ENTRANCE TO SOUTH AND MARK.

MARK U.S.G.S. ALUMINUM DISK IN A CONCRETE POST, STAMPED "22 HK 1966"

☒ MARK EXISTING ☐ VALUES AS PUBLISHED BY _____
☐ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99996245

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 327288.16

NORTHING (Y) 99757.631

EASTING (X) 1841898.93

EASTING (X) 561411.917

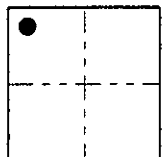
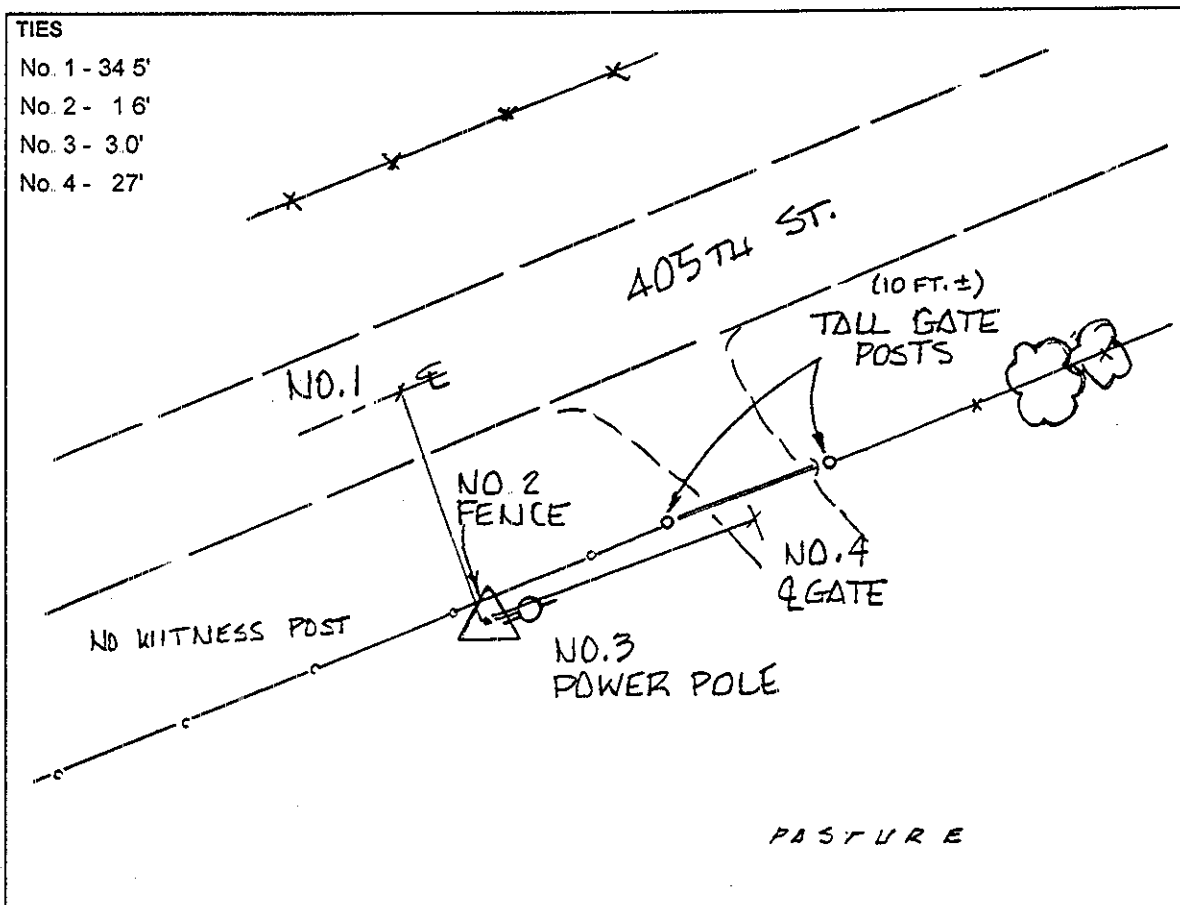
VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND / OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 948.17

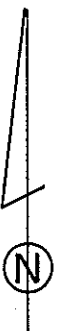
ELEVATION (METERS) 289.00

TIES

- No. 1 - 34.5'
- No. 2 - 16'
- No. 3 - 30'
- No. 4 - 27'



SECTION



SKETCH

BY DSW

DENI 9805002

GPS SURVEY MARK DESCRIPTION

GIS MAPPING BY:
THE SIDWELL COMPANY
WEST CHICAGO, ILLINOIS

THE OFFICE OF
THE COUNTY ENGINEER
APPANOOSE COUNTY, IOWA

DESIGNATION J 120 GPS No. 9873 COUNTY APPANOOSE STATE IOWA

LOCATED IN SECTION 1 TWP 67 N RGE 16 W USGS QUAD MAP MOULTON

TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 202 AND 582nd STREET; GO SOUTHEASTERLY
0.9 MILE TO DRIVE TO NORTH AND MARK.

MARK U.S.G.S. METAL DISK IN 6" x 6" CONCRETE POST, PROJECTS 16", STAMPED "J 120 1935"

☒ MARK EXISTING ☒ VALUES AS PUBLISHED BY N.G.S., VERTICAL ONLY

☐ MARK SET ☒ VALUES ESTABLISHED BY DENI ASSOCIATES, INC. DATE 1998

HORIZONTAL VALUES ORIGINATED ON ORDER "B" IOWA HIGH ACCURACY REFERENCE NETWORK (HARN) CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND BASED ON THE NORTH AMERICAN DATUM OF 1983, 1996 ADJUSTMENT.

IOWA COORDINATE SYSTEM, SOUTH ZONE

SCALE FACTOR: 0.99999836

COORDINATES (US FEET)

COORDINATES (METERS)

NORTHING (Y) 229247.63

NORTHING (Y) 69874.817

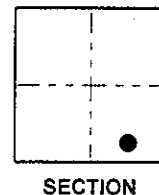
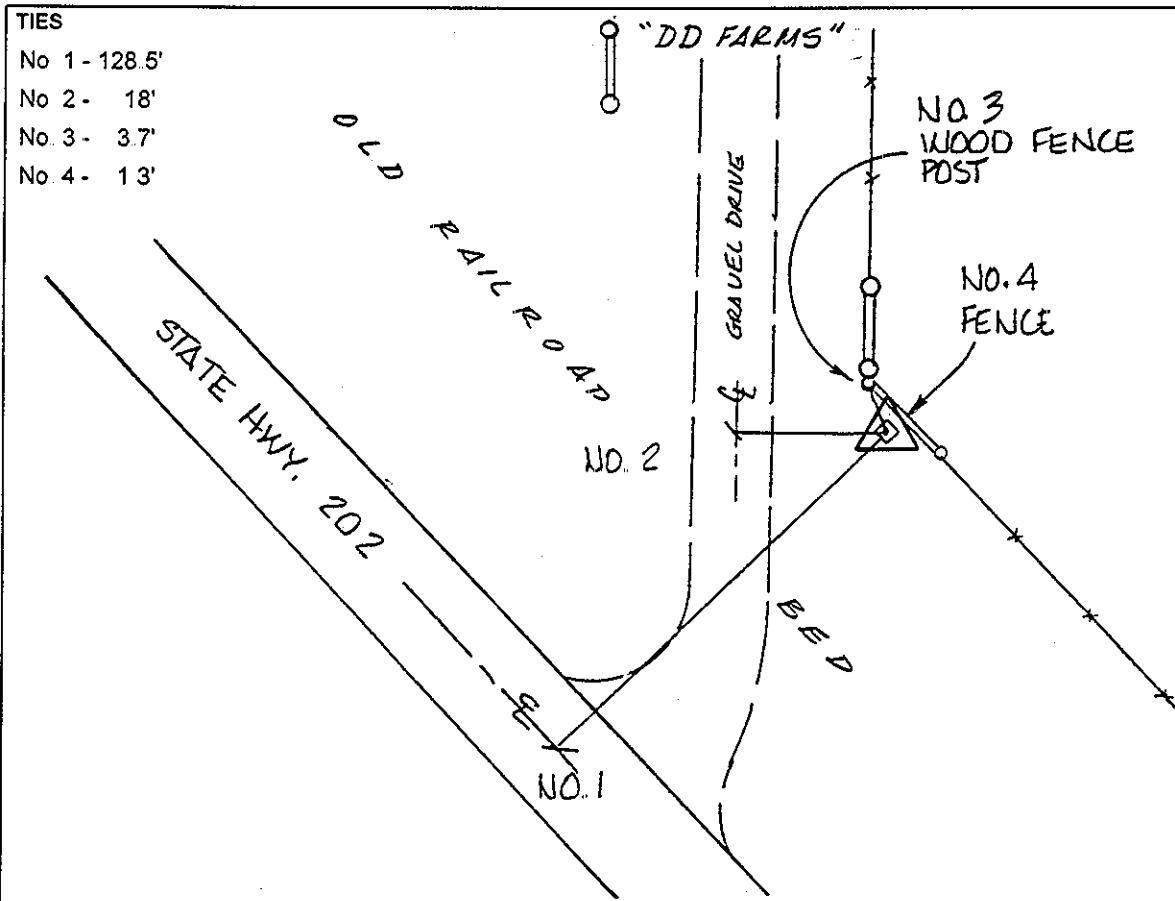
EASTING (X) 1878347.29

EASTING (X) 572521.397

VERTICAL VALUES ORIGINATED ON VERTICAL CONTROL ESTABLISHED BY THE NATIONAL GEODETIC SURVEY AND/OR THE U.S. GEOLOGICAL SURVEY AND BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

ELEVATION (US FEET) 994.02

ELEVATION (METERS) 302.98



SKETCH
BY DSW
DENI 9805002