

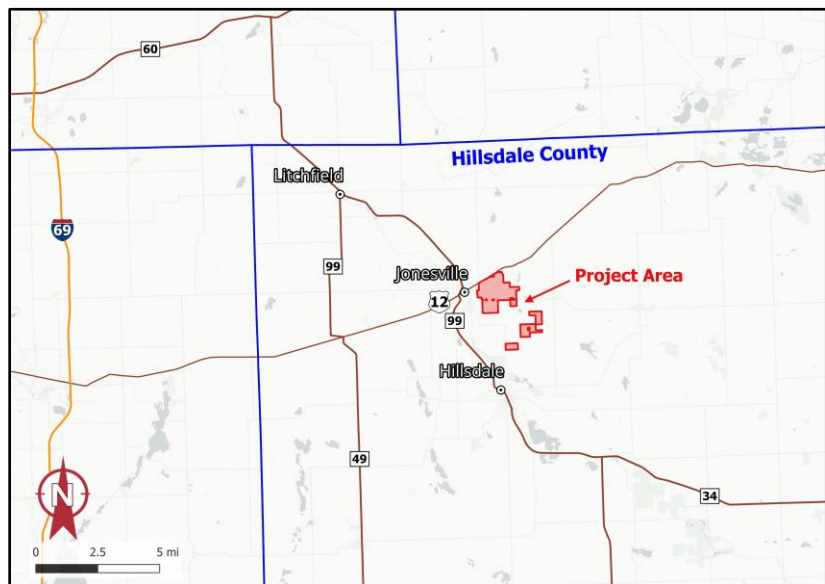
Pre-Construction Noise Analysis

for the

Heartwood Solar II Project

Fayette Township, Hillsdale County, Michigan

November 19, 2025



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Executive Summary

Ranger Power LLC is proposing to construct and operate the Heartwood Solar II Project (Project, Facility), a 140-megawatt (MW) solar energy facility to be located in Fayette Township in Hillsdale County, Michigan. At the request of Ranger Power, Hankard Environmental conducted an analysis of noise emissions from the Facility and their potential impact on surrounding land uses. The following summarizes the methods and results of the analysis.

- While Fayette Township has a solar ordinance in place, there is no numerical noise limit set for solar facilities. In lieu of this, the Project was designed to minimize audible sound at neighboring receptors to the degree possible.
- Using satellite and aerial imagery, Hankard Environmental identified 328 noise-sensitive receptors within approximately 0.5 miles of the Project. Receptors are located on all sides of the Facility, with the nearest being approximately 420 feet directly east of the substation.
- An acoustic model of noise emissions from the operation of the Facility was developed and used to predict noise levels off-site. Noise levels were predicted at each identified receptor, as well as in the form of noise level contours. The model is based on noise emission data from equipment manufacturers, and the Institute of Electrical and Electronics Engineers Standard C57.12.90-2021. The primary noise sources associated with the Facility are the inverter cooling systems and the main step-up power transformer at the substation.
- As currently designed, predicted noise levels at receptors range from 30 dBA to 48 dBA.

1. Introduction and Description of Project

This report documents the results of a noise analysis conducted for the Heartwood Solar II Project (Project, Facility), located in Fayette Township in Hillsdale County, Michigan. The Facility is located to the north of the city of Hillsdale, east of the city of Jonesville. The Project is located south of Highway 12, west of Milnes Road, east of Maumee Street, and north of Moore Road. Figure 1-1 shows the Project site, including the locations of the solar panels and inverters, the on-site substation, and the Project Boundary. The Project consists of an array of 42 Sungrow 4400UD inverters located throughout the Project site, and a substation with one primary step-up transformer. The primary noise sources associated with Project operations include the cooling fans at each inverter, and the primary step-up transformer at the substation.

Hankard Environmental identified 328 noise-sensitive receptors within approximately 0.5 miles of the Project. Figure 1-1 shows the receptors, which consist of 326 non-participating receptors and two participating receptors.

The terrain surrounding the Project is relatively flat, consisting primarily of open fields, farmland, residential neighborhoods, commercial areas, and some wooded areas.

A primer on acoustic terminology and noise levels can be found in Appendix A.

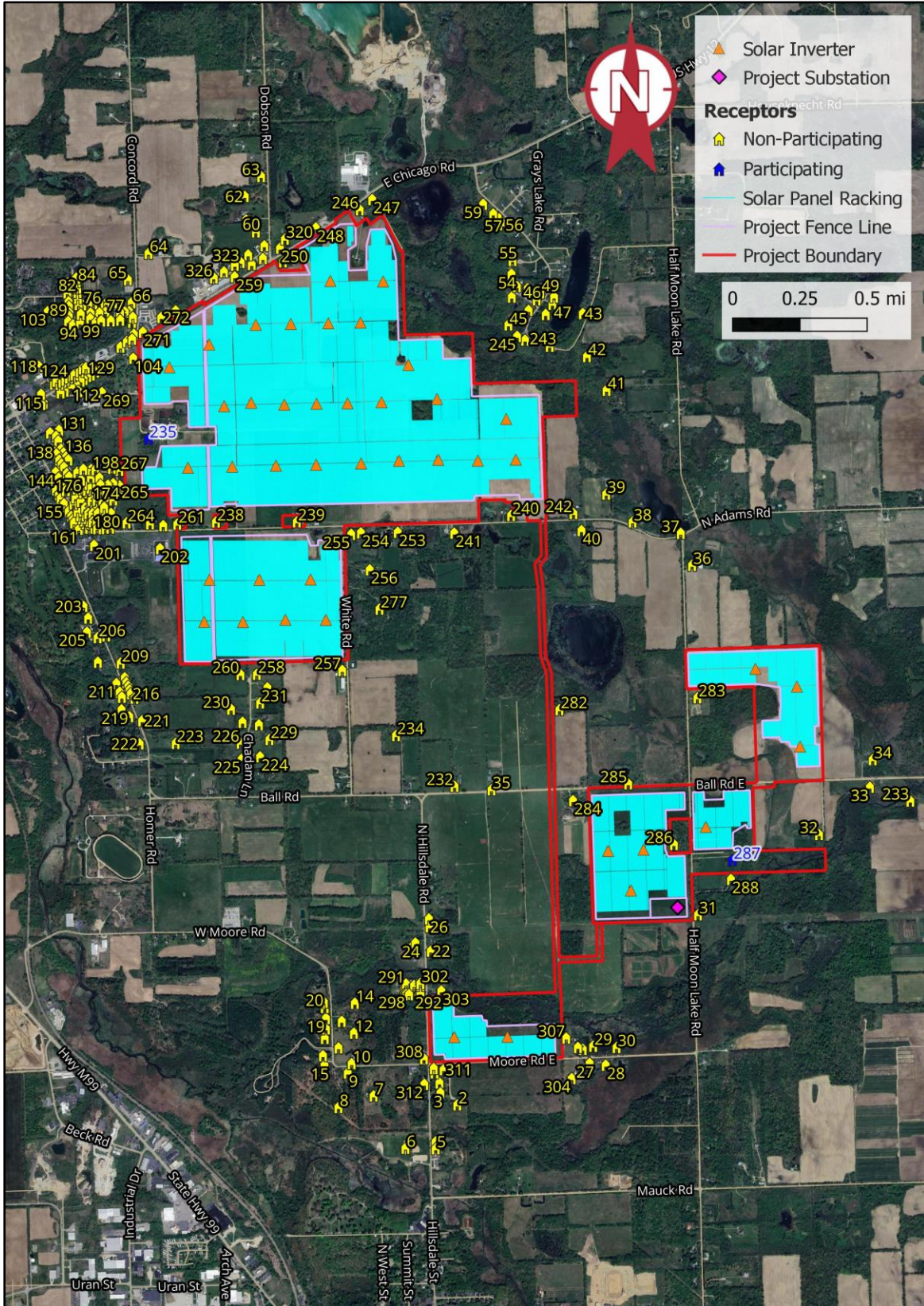


Figure 1-1. Heartwood Solar II Project Layout and Environs

2. Applicable Regulations and Laws

There are no federal laws or regulations that apply to noise emissions from the Project. The Project is located in Fayette Township in Hillsdale County, Michigan. While Fayette Township has a solar ordinance in place, there are no specific noise requirements set for solar facilities. In lieu of this, the Project was designed to minimize audible sound at neighboring receptors to the degree possible.

3. Noise Modeling Method

Noise levels from the operation of the proposed Project were predicted using the International Organization for Standardization (ISO) Standard 9613-2:2024, *Attenuation of Sound During Propagation Outdoors - Part 2: Engineering method for the prediction of sound pressure levels outdoors*. The calculations were implemented using the SoundPLAN v9.1 acoustical modeling software program. The ISO method assumes optimal acoustic propagation in all directions, specifically that a “well-developed, moderate ground-based temperature inversion” is present or, equivalently, that all receptors are downwind of all noise sources at all times.

Terrain and Ground Effect

The terrain in the acoustic model was defined using Digital Elevation Model (DEM) data from the U.S. Geological Survey (USGS) National Elevation Dataset. The acoustical effect of the ground was modeled using the ISO 9613-2:2024 General Method. This method requires the selection of ground factors for the ground near the source, near the receiver, and in between. A ground factor of 0.0 represents a completely reflective surface such as pavement, which would result in a higher level of sound reaching a receiver. A ground factor of 1.0 represents absorptive ground such as thick grass or fresh snow, resulting in a lower level of sound reaching the receiver. For this Project a ground factor of 0.5 (partially reflective) was assumed, which is representative of ground cover in the Project area that consists of grass, gravel, open fields, and very low percentages of pavement or other reflective surfaces. This factor, when used in noise prediction models, has been shown to accurately predict noise levels from facilities such as this.

Atmospheric Conditions

The air temperature, relative humidity, and atmospheric pressure were set to standard conditions of 10°C, 70%, and 1 atmosphere, respectively. Per ISO 9613-2:2024, these values result in the least amount of atmospheric sound absorption and the highest levels of sound reaching the receivers.

Operational Noise Sources

The model of noise emissions from the Project included 42 Sungrow 4400UD solar inverters and one 160 megavolt-ampere (MVA) step-up transformer located at the Project substation. Table 3-1 lists the sound power levels for each source. The noise emission data for the proposed Sungrow 4400UD solar inverter, including frequency data, was given by the manufacturer. The sound power levels of the 160 MVA step-up transformer were estimated using the procedures outlined in the Institute of Electrical and Electronics Engineers Standard C57.12.90-2021. The solar inverters were modeled as point sources 2.9 meters above the ground. The step-up transformer was modeled as a point source at a height of 3 meters above the ground. Predicted noise levels assume all sources are producing maximum noise emissions, i.e., all sources operating at 100% duty cycle and therefore represent worst-case noise emissions from the Facility.

Table 3-1. Noise Emission Factors Used in Acoustic Model

Equipment Description And Quantity	Sound Power Level (dBA)	Octave Band Sound Emission Levels (dBA)								
		31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz	8,000 Hz
Sungrow 4400UD Solar Inverter (42)	100.6	50.3	71.8	78.2	82.9	89.8	90.5	98.7	92	61.1
160 MVA Step-Up Transformer (1)	101.2	58.4	77.6	89.7	92.2	97.6	94.8	91.0	85.8	76.7

Receptors

In the SoundPLAN model, prediction points were placed at each of the 328 noise-sensitive receptors identified within approximately 0.5 miles of the Project. This includes 313 residences, 10 commercial buildings, three schools and their outdoor fields, one public sports field, and one cemetery. Of the 328 receptors, 326 are non-participating and two are participating. Receptor heights were set to 5 feet above ground level in accordance with ISO 9613:2-2024.

4. Predicted Operational Noise Levels

Although Fayette Township's solar ordinance does not include specific noise level limits, the Project was designed to minimize audible sound at neighboring receptors to the degree possible. Table 4-1 lists the predicted noise levels at the top non-participating receptors. Predicted noise levels at all receptors range from 30 to 48 dBA. The highest noise level (48 dBA) is predicted at two receptors, receptor 31 which is approximately 420 feet from the Project substation, and receptor 286, which is approximately 600 feet from the nearest Project inverter. Approximately 84% of receptors have predicted noise levels lower than 40 dBA. For context, a quiet library or bedroom has a noise level around approximately 40 dBA. A full list of predicted noise levels at each receptor is provided in Appendix B.

The predicted noise level contours are shown in Figure 4-1. All receptors are outside of the 50 dBA contour line, and the majority are outside of the 45 dBA contour line. Detailed noise level contour figures are provided in Appendix C.

These levels represent worst-case daytime levels with cooling equipment operating at full capacity. During the nighttime only the substation is expected to operate, and therefore levels are likely to be lower than those shown here.

Table 4-1. Predicted Noise Levels at Non-Participating Receptors

Receptor	Receptor Type	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
		Easting (m)	Northing (m)		
31	residence	697920	4647723	345	48
286	residence	697776	4648144	352	48
239	residence	695518	4650074	350	46
238	residence	695034	4650073	345	45
249	residence	695435	4651630	340	44
255	residence	695844	4650000	350	44
104	cemetery	694539	4651053	345	44
311	residence	696397	4646796	336	44
254	residence	695902	4650008	350	44
273	commercial	694793	4651336	345	44
258	residence	695279	4649162	355	43
260	residence	695181	4649161	352	43
261	residence	694803	4650060	348	43
259	commercial	695146	4651540	340	43
272	commercial	694707	4651297	345	43
271	commercial	694597	4651209	345	43
310	residence	696338	4646803	335	43
256	residence	695955	4649787	355	43
308	residence	696280	4646862	335	43
253	residence	696123	4650012	350	43
252	commercial	695248	4651614	340	43
240	residence	696801	4650112	350	43
251	commercial	695316	4651650	340	43
250	residence	695418	4651711	340	42
288	residence	698118	4647935	345	42
262	residence	694719	4650052	350	42
276	commercial	694533	4651167	345	42
309	residence	696343	4646778	335	42
325	residence	695082	4651570	340	42
326	residence	695021	4651534	341	42
202	high school	694699	4649914	347	42
236	residence	694543	4651196	345	42
277	residence	696013	4649552	356	42
257	residence	695791	4649185	360	42
323	residence	695182	4651626	340	42
324	residence	695147	4651609	340	42
248	residence	695632	4651833	348	42
241	residence	696461	4650007	350	42
275	commercial	694501	4651153	343	42

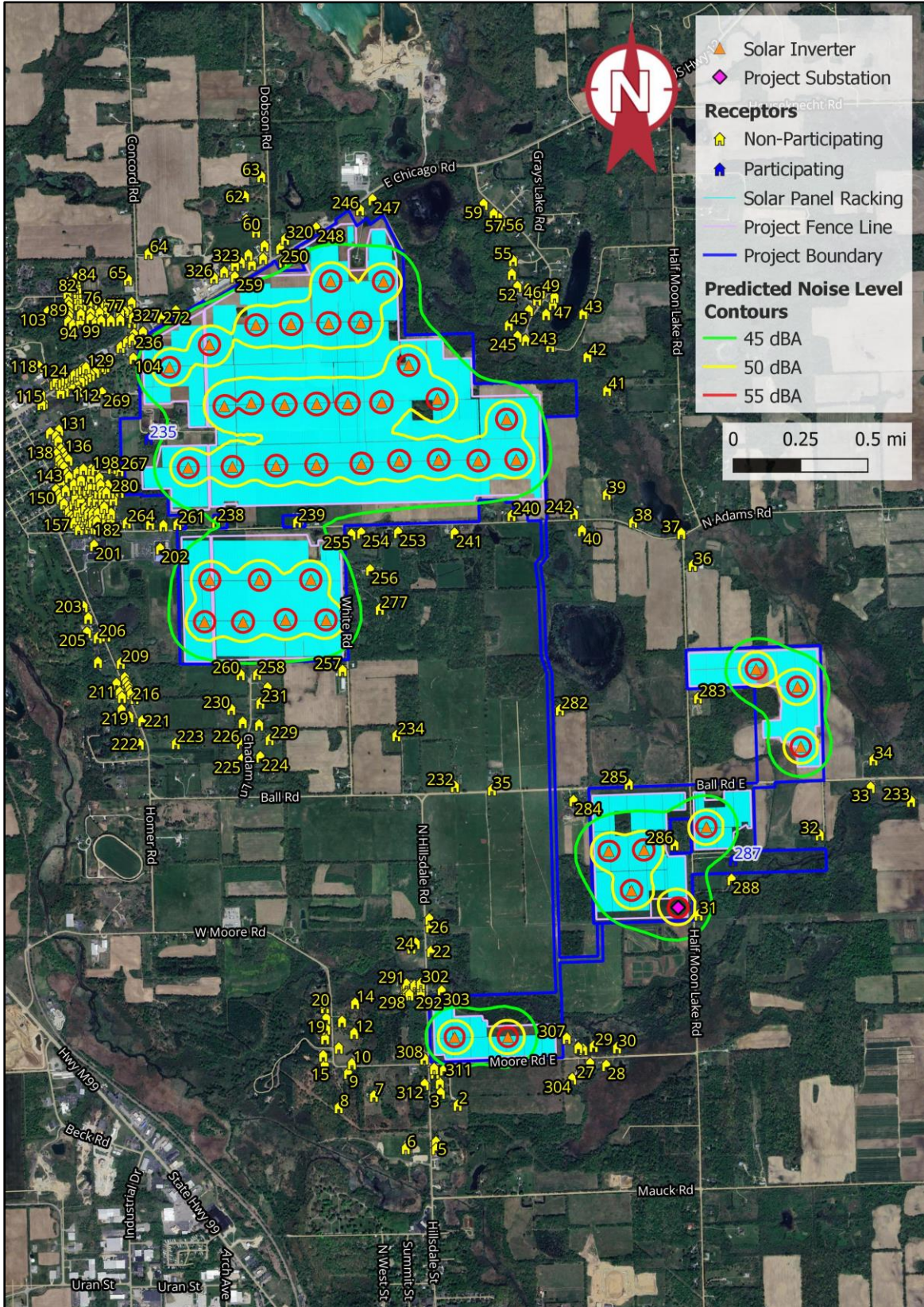


Figure 4-1. Predicted Noise Level Contours

Appendix A

Noise Terminology and Primer

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that interferes with or disrupts normal human activities, such as talking and sleeping. Although exposure to high noise levels has been demonstrated to cause hearing loss, annoyance is the principal human response to environmental noise. The reaction of individuals to similar noise events is diverse and is influenced by a number of factors, such as the type of noise, its perceived importance, the time of day during which the noise occurs, and its duration, frequency, and level.

Decibel (dB) is a logarithmic unit of any measured physical quantity and commonly used in quantifying sound and vibration. Whenever the word “level” is used (e.g., “sound level” versus just “sound”), this logarithmic quantity is implied. The logarithmic scale is used to compress an otherwise very large range of numbers into a more manageable and relatable range. For example, humans are capable of detecting a very wide range of pressure fluctuations in the air, from 20×10^{-6} to 200 Pascals. When expressed on the logarithmic scale this reduces to approximately 0 to 140 dB. Figure A-1 shows the relative decibel levels of some familiar sources of sound (note that the levels in the figure are A-weighted, which is discussed below).

Weighted Decibels (dBA and dBC): Human hearing is more sensitive to high frequency sound (e.g., 1,000 Hz) than to low frequency sound. However, microphones are designed to measure sound at all frequencies equally (within their stated range). To approximate human hearing the A-weighting scale was developed to mimic human hearing at moderate levels and can be applied to both measured and predicted noise levels. Most sound level meters have the capability to measure both un-weighted (also called “linear” and sometimes “Z-weighted”) noise levels and A-weighted noise levels. Similarly, measured or predicted noise levels can be expressed on a C-weighted scale. This scale represents human hearing at higher levels, where sensitivity to low frequency noise becomes greater. This metric is often used to assess the potential impact of low frequency noise.

The weighting process is illustrated in Figure A-2, which shows a representative measured environmental noise frequency spectrum. The black trace represents the unweighted levels measured in each of nine standard octave bands (defined bands of frequency). The area under the black trace represents the total energy of the sound. The blue trace shows the octave band levels after being adjusted by the C-weighting filter, and the orange trace shows the levels adjusted by the A-weighting filter. The overall sound level (representative of the total energy across the entire audible frequency spectrum) for each weighting can be calculated by logarithmically adding the noise level in the individual octave band levels. In this example, the overall levels are 61 dB (unweighted), 59 dBC, and 45 dBA. Table A-1 below shows the octave band weighting values (specified by the American National Standards Institute, ANSI) and the weighted and unweighted octave band levels for this example.

Equivalent Level (L_{eq}): The L_{eq} is the most commonly used metric for predicting, regulating, and measuring noise. It is the quantity referenced or required by relevant acoustic standards, such as ANSI S12.9 Part 3 and ISO 9613-2:2024. It can be expressed on any of the weighting scales discussed above (but typically A-weighted) and requires a stated time interval, with one hour being common. The L_{eq} has the same acoustic energy as the time-varying sound level over the interval. The L_{eq} accounts for noise fluctuations from moment to moment by averaging the louder and quieter moments and giving more weight to the louder moments.

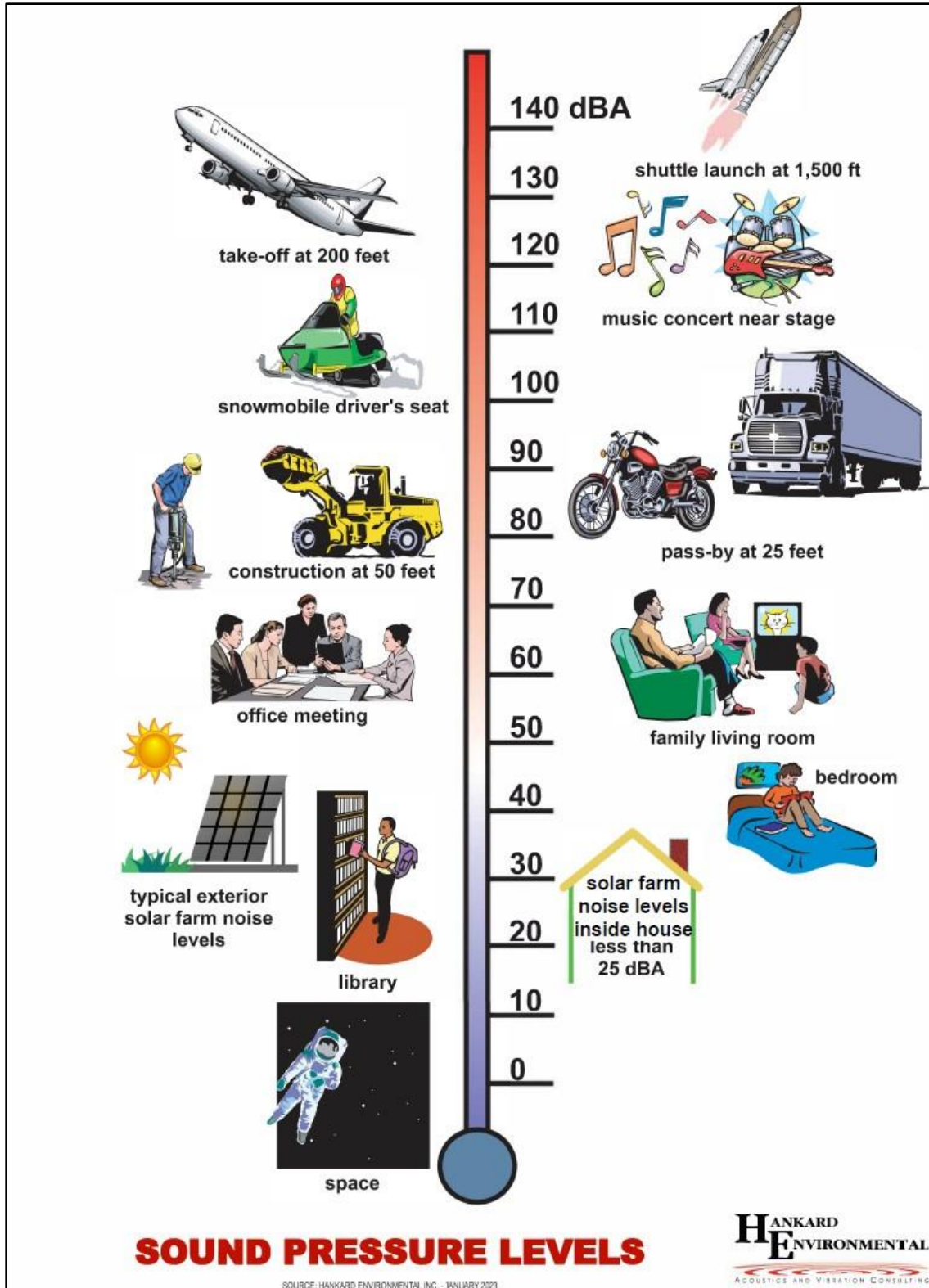


Figure A-1. Noise Levels of Typical Sources (dBA)

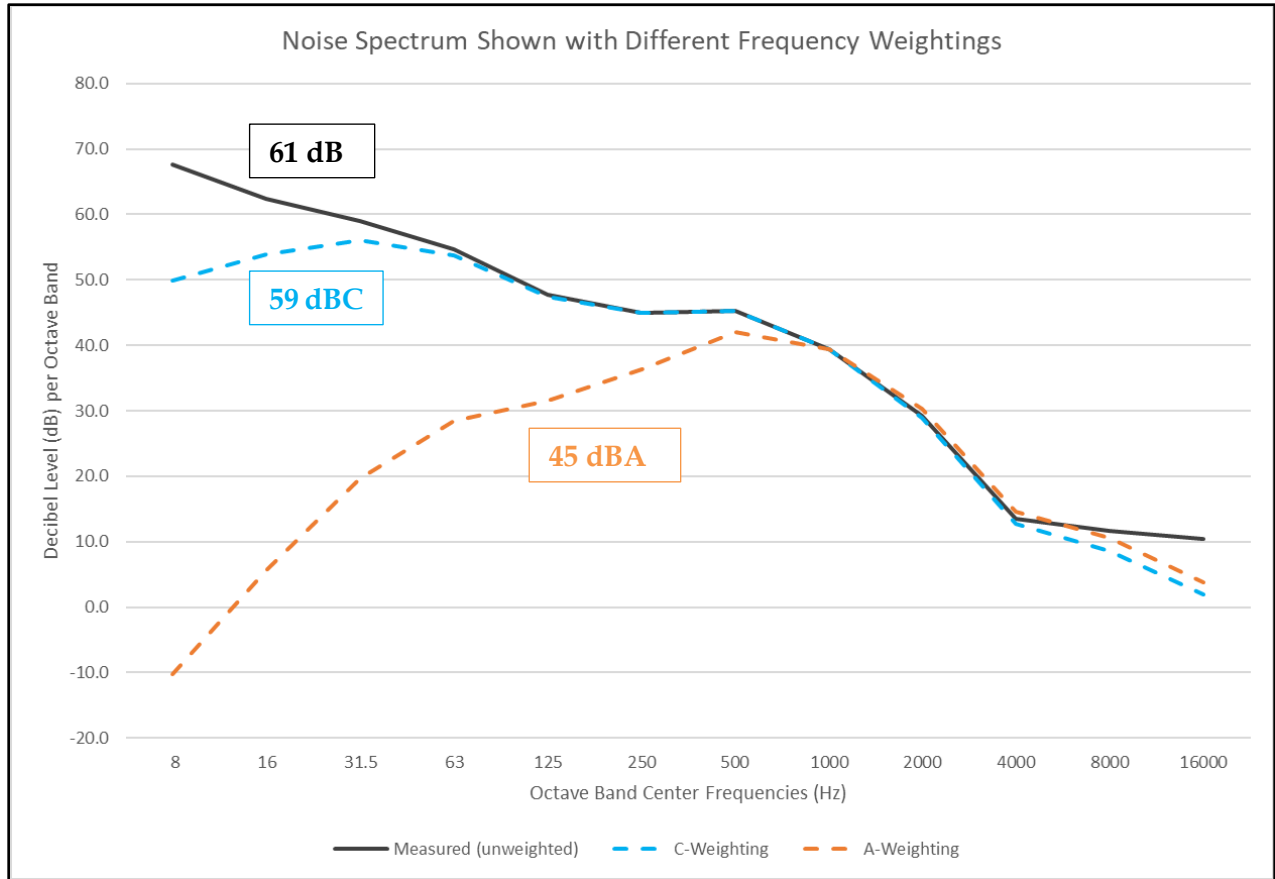


Figure A-2. Example of A- and C-weighting

Table A-1. Octave Band A- and C-Weighting Factors

	Overall Level	Octave Band Center Frequency (Hz)								
		31.5	63	125	250	500	1000	2000	4000	8000
A-Weight Filter	-	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1
C-Weight Filter	-	-3.0	-0.8	-0.2	0.0	0.0	0.0	-0.2	-0.8	-3.0
Measured (unweighted)	61 dB	59	55	48	45	45	39	29	14	12
A-Weighting	45 dBA	20	28	32	36	42	39	30	15	11
C-Weighting	59 dBC	56	54	47	45	45	39	29	13	9

Statistical Descriptors: The most commonly employed statistical descriptors are the L_{10} , L_{50} , and L_{90} , which are the level exceeded 10, 50, and 90% of the time, respectively, over a stated interval, respectively. These too can be expressed using any weighting scale and over any time interval.

- The L_{90} is representative of the lower, constant noise levels in an environment. It is often used to quantify the ambient or background noise level. It is used mainly as a noise measurement tool, in that it can filter the higher, varying noises in an environment. It is not often used as a standard.
- The L_{50} is the median level and is used as a standard in some applications or jurisdictions (e.g., Minnesota).
- The L_{10} is representative of the louder sounds in an environment, such as passing cars, barking dogs, gusts of wind, etc. This is often used in local regulations.

Frequency-Specific Descriptors: Almost all noise standards in the U.S. are inclusive of all frequencies across the human audible spectrum, such as the overall A-weighted noise level (dBA). Noise levels can also be predicted, measured, and assessed in individual bands of frequency.

- ANSI has divided the human hearing range into nine standard octave bands, with center frequencies as shown in Figure A-2, above. Octave band noise levels are most commonly expressed as unweighted decibels but can also be expressed on any scale (e.g., A or C).
- Octave bands can be divided into one-third octave band noise levels. One-third octave band levels can also be expressed on any scale.

Appendix B

Predicted Noise Levels

Table B-1. Receptor Locations and Predicted Noise Levels

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
1	residence	NP	696372	4646717	336	41
2	residence	NP	696479	4646585	336	38
3	residence	NP	696378	4646657	336	39
4	residence	NP	696349	4646364	331	33
5	residence	NP	696350	4646323	330	32
6	public sports fields	NP	696169	4646326	328	31
7	residence	NP	695978	4646639	335	33
8	residence	NP	695768	4646570	330	30
9	residence	NP	695823	4646776	329	32
10	residence	NP	695847	4646832	330	32
11	residence	NP	695768	4646927	330	31
12	residence	NP	695860	4647015	330	33
13	residence	NP	695787	4647086	330	32
14	residence	NP	695866	4647194	330	33
15	residence	NP	695684	4646822	329	30
16	residence	NP	695675	4646880	330	30
17	residence	NP	695686	4646983	330	30
18	residence	NP	695693	4647040	330	30
19	residence	NP	695693	4647103	330	30
20	residence	NP	695686	4647169	330	30
21	residence	NP	695681	4647200	330	30
22	residence	NP	696321	4647505	332	35
23	residence	NP	696203	4647525	332	34
24	residence	NP	696228	4647554	334	34
25	residence	NP	696313	4647651	344	34
26	residence	NP	696309	4647698	345	33
27	residence	NP	697272	4646834	332	36
28	residence	NP	697368	4646823	331	34
29	residence	NP	697292	4646937	331	36
30	residence	NP	697433	4646929	330	35
31	residence	NP	697920	4647723	345	48
32	residence	NP	698645	4648203	335	37
33	residence	NP	698950	4648486	335	36
34	residence	NP	698966	4648651	335	37
35	residence	NP	696684	4648471	350	34
36	residence	NP	697885	4649814	348	33
37	residence	NP	697817	4650005	336	32
38	residence	NP	697529	4650074	343	34
39	residence	NP	697371	4650240	350	36
40	residence	NP	697223	4650022	350	36

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
41	residence	NP	697373	4650862	350	36
42	residence	NP	697255	4651063	355	36
43	residence	NP	697231	4651321	350	34
44	residence	NP	697008	4651315	346	36
45	residence	NP	696906	4651339	350	37
46	residence	NP	696955	4651402	350	36
47	residence	NP	697049	4651376	350	35
48	residence	NP	697058	4651419	349	35
49	residence	NP	696976	4651445	350	35
50	residence	NP	696805	4651419	350	37
51	residence	NP	696901	4651470	350	36
52	residence	NP	696836	4651482	350	36
53	residence	NP	696785	4651253	350	39
54	residence	NP	696803	4651556	350	36
55	residence	NP	696810	4651638	345	35
56	residence	NP	696756	4651852	340	34
57	residence	NP	696721	4651897	340	34
58	residence	NP	696694	4651916	340	34
59	residence	NP	696634	4651974	340	34
60	residence	NP	695273	4651809	340	40
61	residence	NP	695215	4651880	340	38
62	residence	NP	695207	4652022	340	36
63	residence	NP	695305	4652140	340	35
64	residence	NP	694630	4651680	345	37
65	residence	NP	694507	4651523	345	37
66	residence	NP	694529	4651386	345	39
67	residence	NP	694515	4651333	345	40
68	residence	NP	694489	4651330	345	39
69	residence	NP	694460	4651327	345	39
70	residence	NP	694443	4651386	345	38
71	residence	NP	694418	4651385	345	38
72	residence	NP	694377	4651382	345	37
73	residence	NP	694336	4651380	345	37
74	residence	NP	694299	4651379	345	36
75	residence	NP	694270	4651375	345	36
76	residence	NP	694233	4651373	345	35
77	residence	NP	694372	4651328	345	37
78	residence	NP	694337	4651324	345	37
79	residence	NP	694284	4651323	345	36
80	residence	NP	694212	4651374	345	35
81	residence	NP	694207	4651412	345	35
82	residence	NP	694205	4651448	345	34

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
83	residence	NP	694204	4651474	345	34
84	residence	NP	694201	4651512	346	34
85	residence	NP	694198	4651532	347	34
86	residence	NP	694147	4651505	346	33
87	residence	NP	694152	4651476	345	34
88	residence	NP	694144	4651444	345	34
89	residence	NP	694152	4651390	345	34
90	residence	NP	694154	4651363	345	34
91	residence	NP	694157	4651324	345	35
92	residence	NP	694153	4651304	345	35
93	residence	NP	694149	4651272	345	35
94	residence	NP	694178	4651253	345	35
95	residence	NP	694220	4651264	345	36
96	residence	NP	694085	4651338	345	34
97	residence	NP	694225	4651316	345	35
98	residence	NP	694281	4651290	345	36
99	residence	NP	694314	4651265	345	37
100	residence	NP	694347	4651277	345	38
101	residence	NP	694405	4651277	345	38
102	residence	NP	694461	4651281	345	39
103	residence	NP	694027	4651332	345	33
104	cemetery	NP	694539	4651053	345	44
105	residence	NP	694351	4650991	339	39
106	residence	NP	694311	4650971	337	38
107	residence	NP	694284	4650953	337	38
108	residence	NP	694264	4650945	336	38
109	residence	NP	694242	4650927	335	37
110	residence	NP	694224	4650917	335	37
111	residence	NP	694197	4650896	335	37
112	residence	NP	694167	4650881	334	36
113	residence	NP	694128	4650857	331	36
114	residence	NP	694104	4650846	330	35
115	residence	NP	694003	4650785	330	34
116	residence	NP	693990	4650777	330	34
117	residence	NP	693987	4650837	330	34
118	baseball field - middle school	NP	693973	4651005	329	33
119	residence	NP	694065	4650898	330	35
120	residence	NP	694098	4650898	330	35
121	residence	NP	694079	4650915	330	35
122	residence	NP	694115	4650910	331	35
123	residence	NP	694133	4650922	332	36
124	residence	NP	694154	4650935	333	36

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
125	residence	NP	694175	4650947	333	36
126	residence	NP	694187	4650955	333	36
127	residence	NP	694219	4650974	334	37
128	residence	NP	694236	4650990	335	37
129	residence	NP	694256	4650996	335	37
130	residence	NP	694210	4650855	335	37
131	residence	NP	694095	4650622	330	35
132	residence	NP	694041	4650607	335	34
133	residence	NP	694077	4650585	335	35
134	residence	NP	694090	4650557	335	35
135	residence	NP	694107	4650509	335	35
136	residence	NP	694122	4650486	335	35
137	residence	NP	694137	4650462	336	35
138	residence	NP	694071	4650490	335	35
139	residence	NP	694079	4650480	336	35
140	residence	NP	694151	4650445	337	35
141	residence	NP	694096	4650444	337	35
142	residence	NP	694110	4650420	337	35
143	residence	NP	694124	4650400	338	35
144	residence	NP	694074	4650370	337	34
145	residence	NP	694093	4650336	337	35
146	residence	NP	694109	4650303	337	35
147	residence	NP	694141	4650363	338	35
148	residence	NP	694155	4650343	339	35
149	residence	NP	694204	4650370	339	36
150	residence	NP	694077	4650266	336	34
151	residence	NP	694094	4650236	336	34
152	residence	NP	694105	4650215	336	35
153	residence	NP	694135	4650261	338	35
154	residence	NP	694143	4650159	337	35
155	residence	NP	694124	4650182	336	35
156	residence	NP	694153	4650138	337	35
157	residence	NP	694168	4650106	337	35
158	residence	NP	694178	4650088	337	35
159	residence	NP	694198	4650058	336	35
160	residence	NP	694184	4650069	336	35
161	residence	NP	694213	4650030	336	35
162	residence	NP	694275	4650036	338	36
163	residence	NP	694253	4650064	337	36
164	residence	NP	694244	4650079	337	36
165	residence	NP	694232	4650095	338	36
166	residence	NP	694221	4650111	338	36

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
167	residence	NP	694206	4650138	338	36
168	residence	NP	694181	4650182	338	35
169	residence	NP	694193	4650218	339	36
170	residence	NP	694225	4650196	339	36
171	residence	NP	694251	4650158	339	36
172	residence	NP	694281	4650160	339	37
173	residence	NP	694307	4650159	340	37
174	residence	NP	694289	4650203	340	37
175	residence	NP	694320	4650204	340	37
176	residence	NP	694238	4650249	340	36
177	residence	NP	694262	4650264	340	37
178	residence	NP	694283	4650276	340	37
179	residence	NP	694270	4650124	339	36
180	residence	NP	694295	4650124	339	37
181	residence	NP	694326	4650124	339	37
182	residence	NP	694295	4650074	338	37
183	residence	NP	694320	4650076	338	37
184	residence	NP	694375	4650076	340	38
185	residence	NP	694355	4650205	340	38
186	residence	NP	694386	4650204	340	38
187	residence	NP	694329	4650249	340	37
188	residence	NP	694404	4650076	342	38
189	residence	NP	694323	4650034	339	37
190	residence	NP	694374	4650034	341	37
191	residence	NP	694401	4650037	343	38
192	residence	NP	694320	4650297	340	37
193	residence	NP	694285	4650340	340	37
194	residence	NP	694239	4650299	340	36
195	residence	NP	694201	4650271	340	36
196	residence	NP	694183	4650297	340	36
197	residence	NP	694226	4650324	340	36
198	residence	NP	694287	4650387	340	37
199	residence	NP	694240	4650388	340	37
200	residence	NP	694313	4650386	339	38
201	elementary school	NP	694304	4649934	338	36
202	high school	NP	694699	4649914	347	42
203	residence	NP	694241	4649568	340	35
204	residence	NP	694269	4649498	341	35
205	residence	NP	694262	4649414	345	35
206	residence	NP	694326	4649382	345	35
207	residence	NP	694377	4649392	342	36
208	residence	NP	694327	4649235	345	35

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
209	residence	NP	694464	4649229	340	37
210	residence	NP	694488	4649141	340	36
211	residence	NP	694438	4649106	340	35
212	residence	NP	694498	4649112	340	36
213	residence	NP	694458	4649055	341	35
214	residence	NP	694509	4649089	340	36
215	residence	NP	694518	4649068	340	36
216	residence	NP	694525	4649047	340	36
217	residence	NP	694547	4649019	340	35
218	residence	NP	694471	4649025	341	35
219	residence	NP	694469	4648950	343	34
220	residence	NP	694516	4648909	342	34
221	residence	NP	694592	4648884	338	34
222	residence	NP	694577	4648746	341	33
223	residence	NP	694793	4648749	340	34
224	residence	NP	695298	4648668	355	35
225	residence	NP	695189	4648654	351	34
226	residence	NP	695182	4648750	351	36
227	residence	NP	695194	4648875	352	38
228	residence	NP	695292	4648860	355	37
229	residence	NP	695355	4648772	355	36
230	residence	NP	695125	4648953	350	39
231	residence	NP	695298	4648991	355	40
232	residence	NP	696463	4648491	350	32
233	residence	NP	699192	4648404	335	32
234	residence	NP	696112	4648796	369	34
235	residence	P	694630	4650570	347	43
236	residence	NP	694543	4651196	345	42
237	residence	NP	695342	4649081	355	42
238	residence	NP	695034	4650073	345	45
239	residence	NP	695518	4650074	350	46
240	residence	NP	696801	4650112	350	43
241	residence	NP	696461	4650007	350	42
242	residence	NP	697175	4650124	350	38
243	residence	NP	697032	4651125	353	38
244	residence	NP	696885	4651162	350	39
245	residence	NP	696837	4651184	350	39
246	residence	NP	695895	4651941	343	40
247	residence	NP	695970	4652003	342	39
248	residence	NP	695632	4651833	348	42
249	residence	NP	695435	4651630	340	44
250	residence	NP	695418	4651711	340	42

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
251	commercial	NP	695316	4651650	340	43
252	commercial	NP	695248	4651614	340	43
253	residence	NP	696123	4650012	350	43
254	residence	NP	695902	4650008	350	44
255	residence	NP	695844	4650000	350	44
256	residence	NP	695955	4649787	355	43
257	residence	NP	695791	4649185	360	42
258	residence	NP	695279	4649162	355	43
259	commercial	NP	695146	4651540	340	43
260	residence	NP	695181	4649161	352	43
261	residence	NP	694803	4650060	348	43
262	residence	NP	694719	4650052	350	42
263	residence	NP	694640	4650062	348	41
264	residence	NP	694499	4650069	345	39
265	residence	NP	694457	4650252	340	39
266	residence	NP	694457	4650289	340	40
267	residence	NP	694456	4650382	341	40
268	residence	NP	694411	4650395	338	39
269	residence	NP	694352	4650848	339	39
270	commercial	NP	694371	4651004	340	40
271	commercial	NP	694597	4651209	345	43
272	commercial	NP	694707	4651297	345	43
273	commercial	NP	694793	4651336	345	44
274	commercial	NP	694463	4651120	341	41
275	commercial	NP	694501	4651153	343	42
276	commercial	NP	694533	4651167	345	42
277	residence	NP	696013	4649552	356	42
278	residence	NP	694420	4650206	340	39
279	residence	NP	694419	4650302	340	39
280	residence	NP	694401	4650248	340	39
281	residence	NP	694387	4650294	340	38
282	residence	NP	697091	4648950	350	34
283	residence	NP	697917	4649021	347	39
284	residence	NP	697172	4648406	351	40
285	residence	NP	697503	4648507	348	41
286	residence	NP	697776	4648144	352	48
287	residence	P	698127	4648049	345	43
288	residence	NP	698118	4647935	345	42
289	residence	NP	696181	4647279	331	37
290	residence	NP	696164	4647283	331	37
291	residence	NP	696172	4647308	330	37
292	residence	NP	696219	4647245	333	39

Receptor	Receptor Type	Status	UTM 17N		Ground Elevation (m asl)	Overall Noise Level (dBA)
			Easting (m)	Northing (m)		
293	residence	NP	696219	4647262	333	38
294	residence	NP	696217	4647274	332	38
295	residence	NP	696218	4647286	331	38
296	residence	NP	696220	4647299	331	38
297	residence	NP	696162	4647246	333	37
298	residence	NP	696174	4647247	333	38
299	residence	NP	696190	4647245	334	38
300	residence	NP	696259	4647254	332	39
301	residence	NP	696260	4647300	330	38
302	residence	NP	696258	4647312	330	38
303	residence	NP	696383	4647267	330	41
304	residence	NP	697164	4646743	335	36
305	residence	NP	697230	4646918	332	37
306	residence	NP	697201	4646929	332	37
307	residence	NP	697131	4646985	334	39
308	residence	NP	696280	4646862	335	43
309	residence	NP	696343	4646778	335	42
310	residence	NP	696338	4646803	335	43
311	residence	NP	696397	4646796	336	44
312	residence	NP	696282	4646709	332	39
313	residence	NP	694337	4650337	340	38
314	residence	NP	694343	4650295	340	38
315	residence	NP	694353	4650247	340	38
316	residence	NP	694377	4650249	340	38
317	residence	NP	694375	4650129	340	38
318	residence	NP	694406	4650125	341	38
319	residence	NP	694365	4650161	340	38
320	residence	NP	695447	4651766	340	42
321	residence	NP	695324	4651726	340	41
322	residence	NP	695227	4651671	340	42
323	residence	NP	695182	4651626	340	42
324	residence	NP	695147	4651609	340	42
325	residence	NP	695082	4651570	340	42
326	residence	NP	695021	4651534	341	42
327	residence	NP	694531	4651268	345	41
328	residence	NP	694537	4651298	345	40

Appendix C

Predicted Noise Level Contour Figures

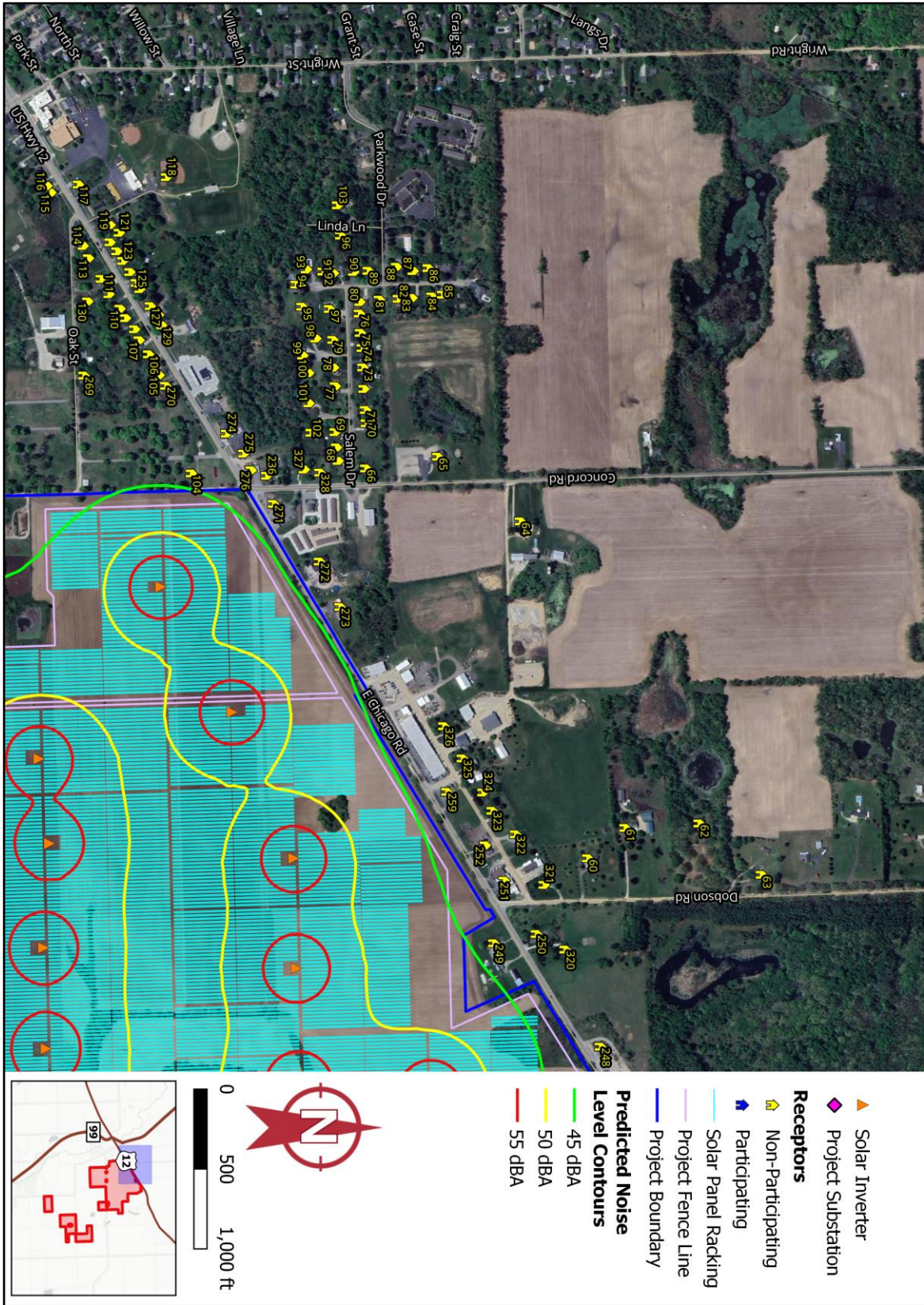


Figure C-1. Predicted Noise Level Contours – Northwest Corner Area

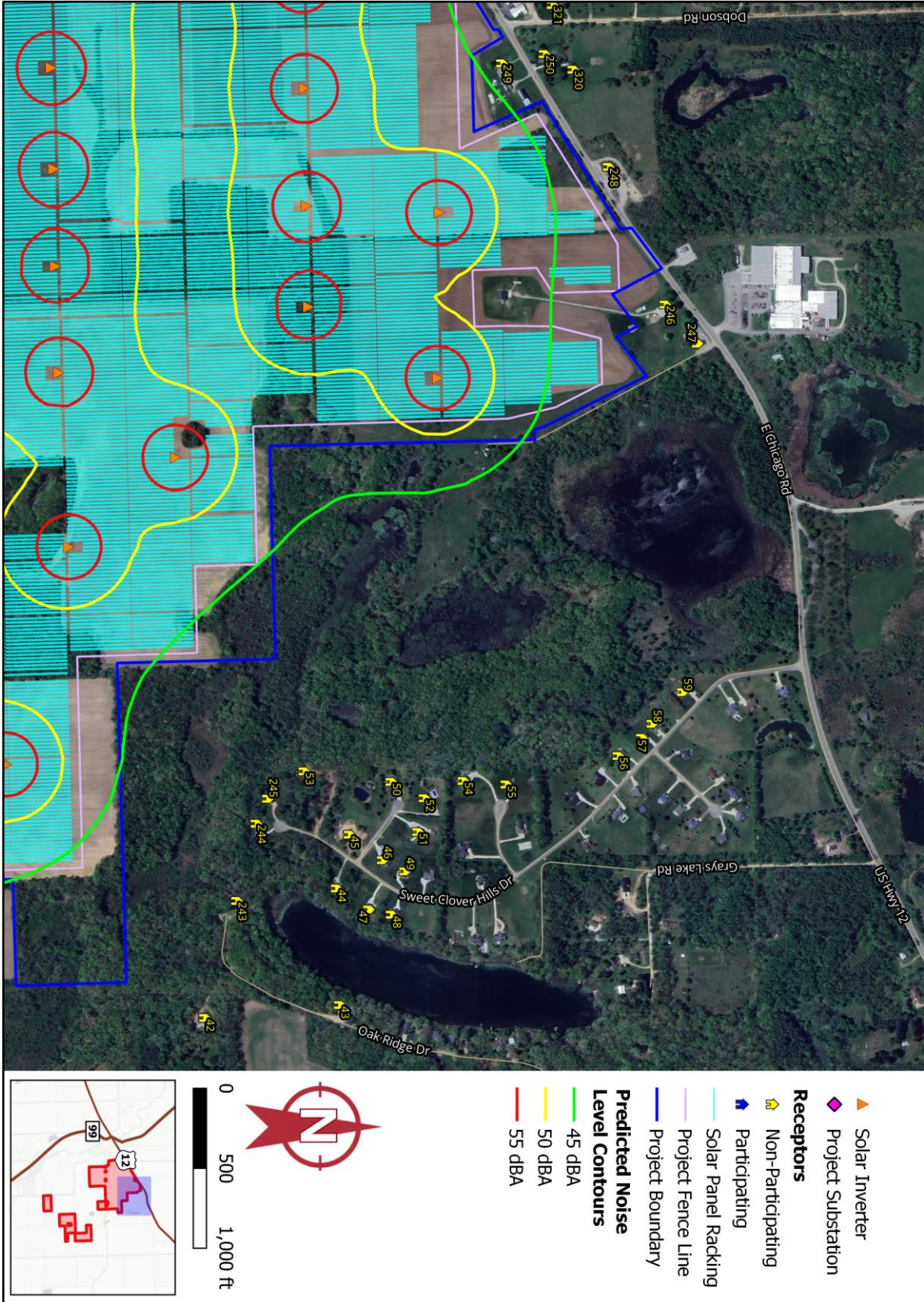


Figure C-2. Predicted Noise Level Contours – Northeast Corner Area

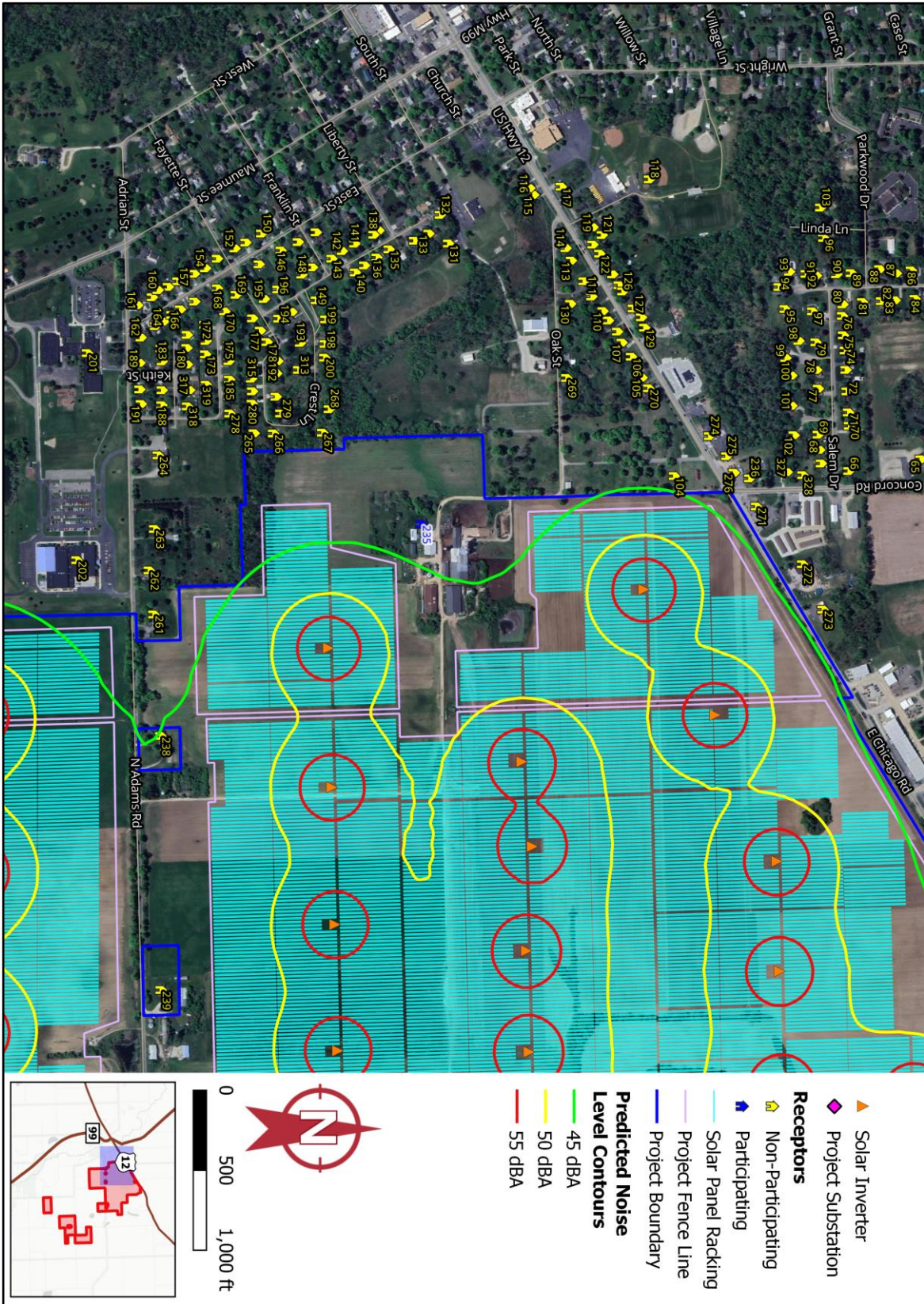


Figure C-3. Predicted Noise Level Contours – Central Northwest Area

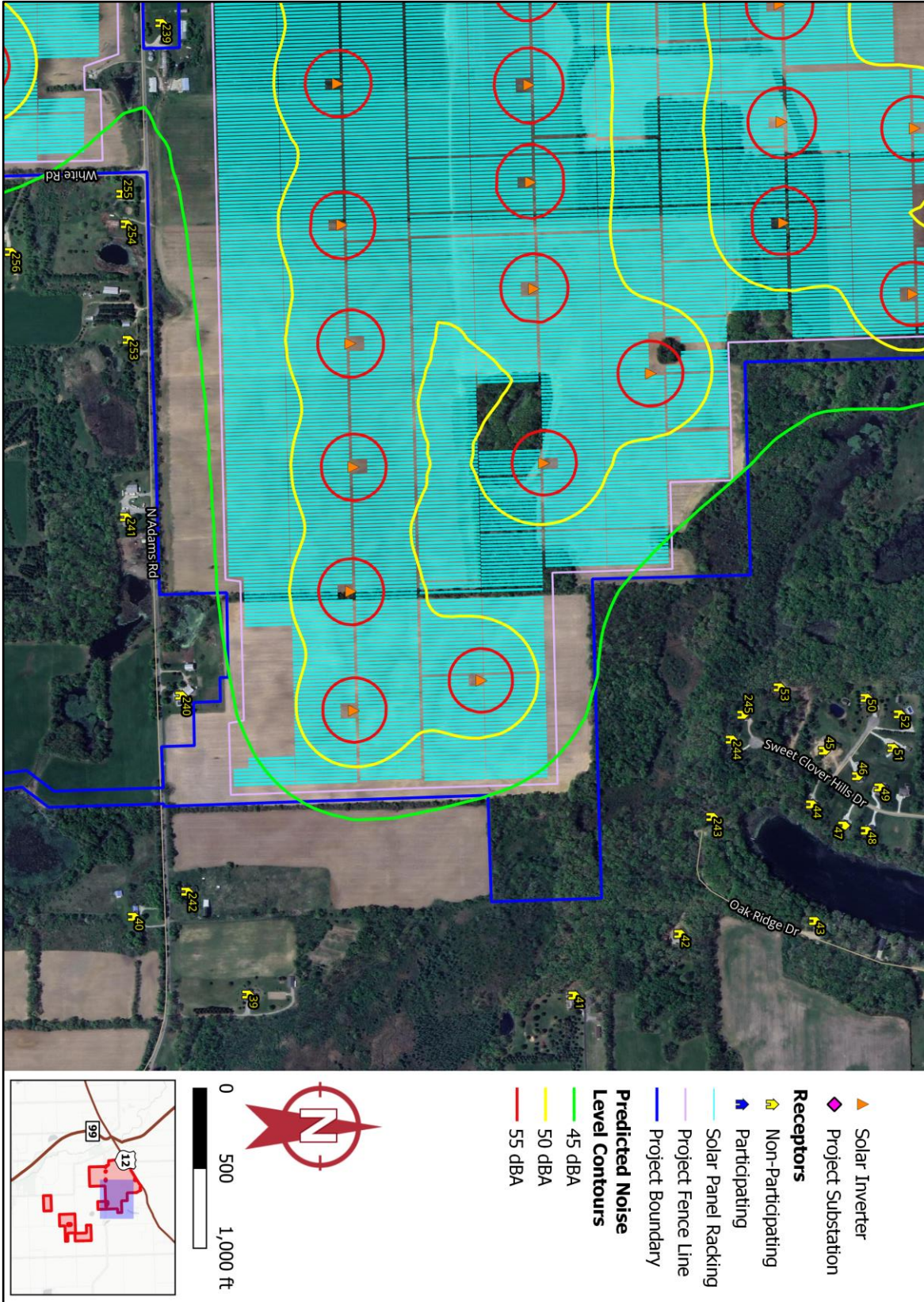


Figure C-4. Predicted Noise Level Contours – Central Northeast Area

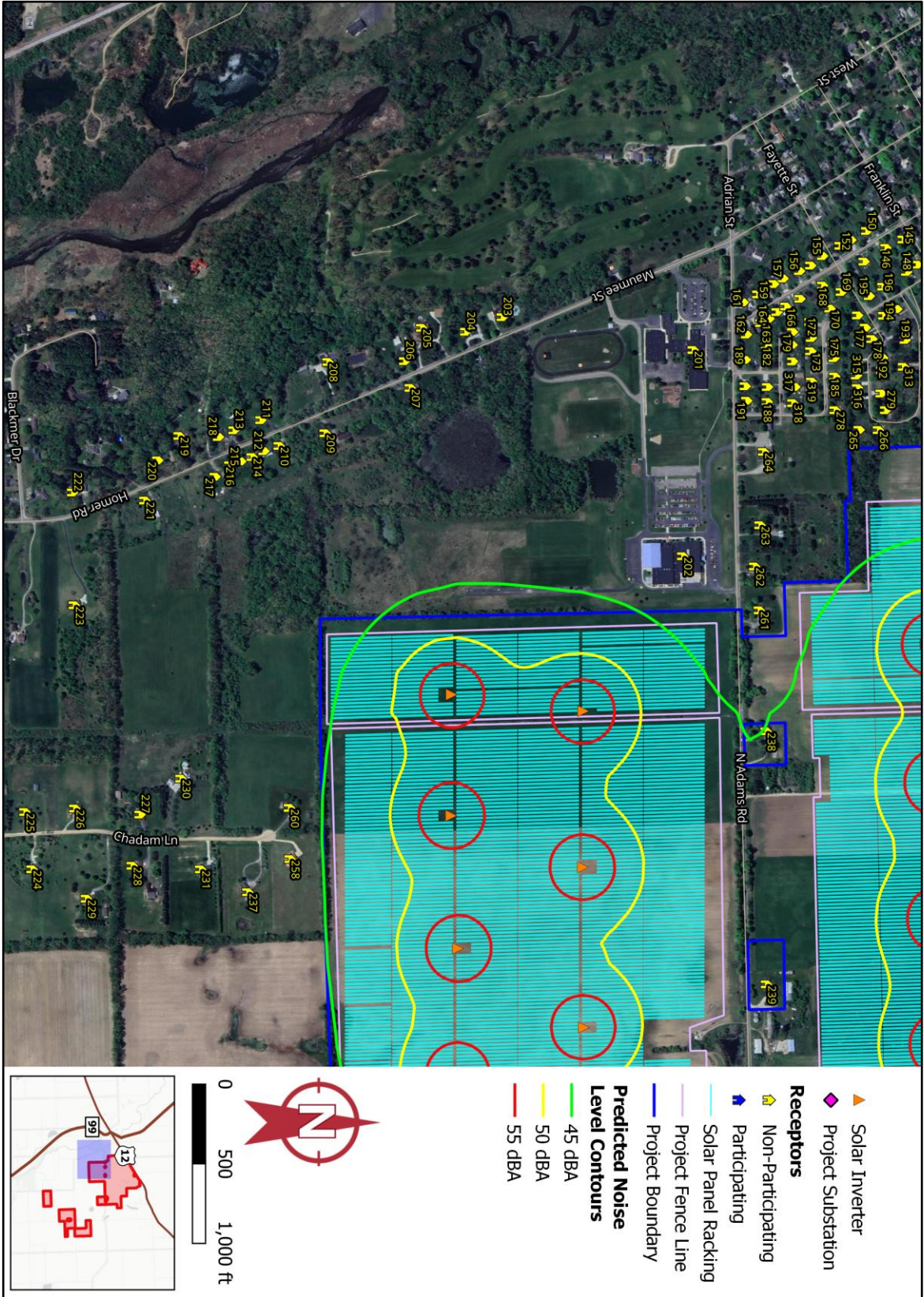


Figure C-5. Predicted Noise Level Contours – Central West Area

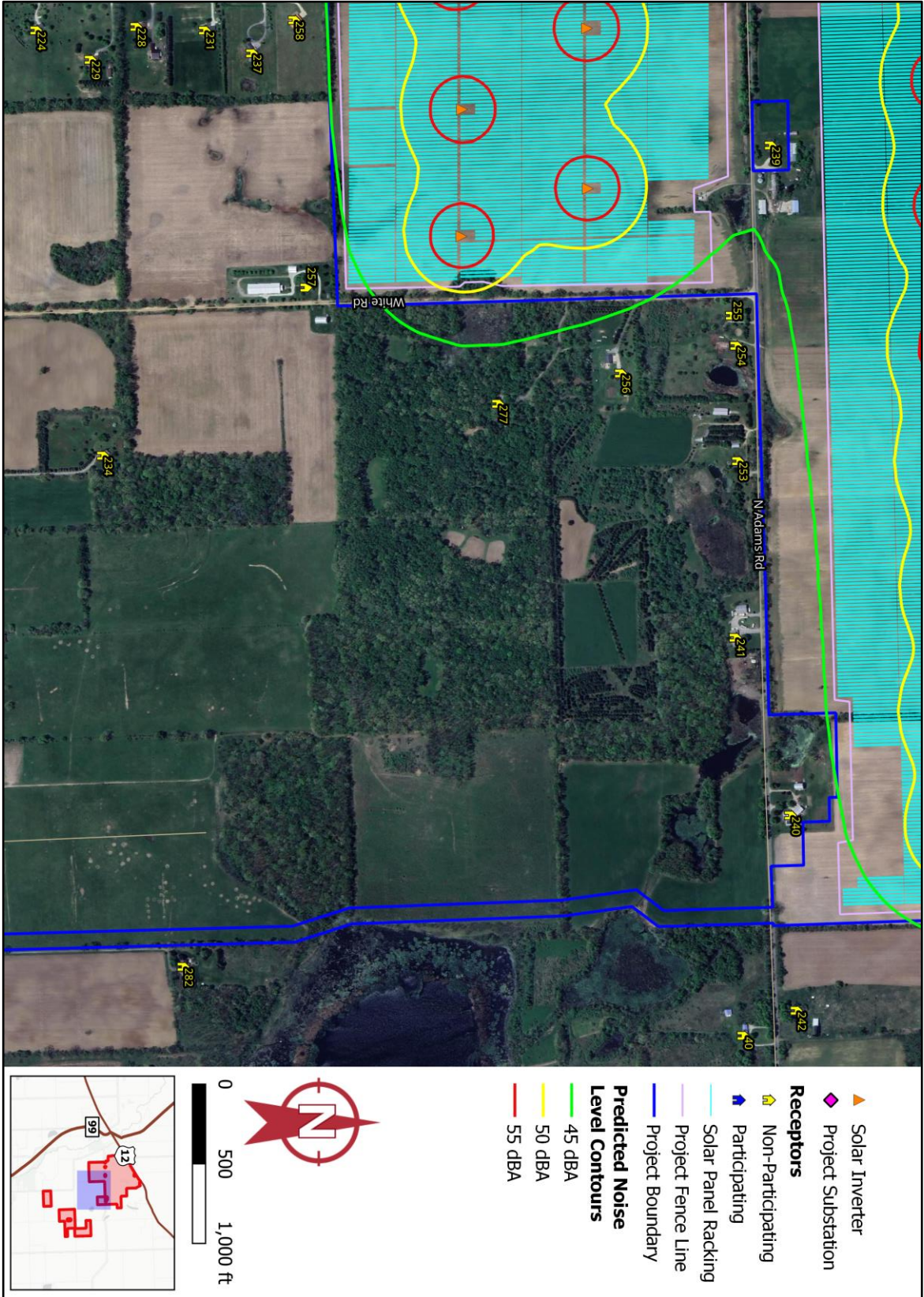


Figure C-6. Predicted Noise Level Contours – Central Area

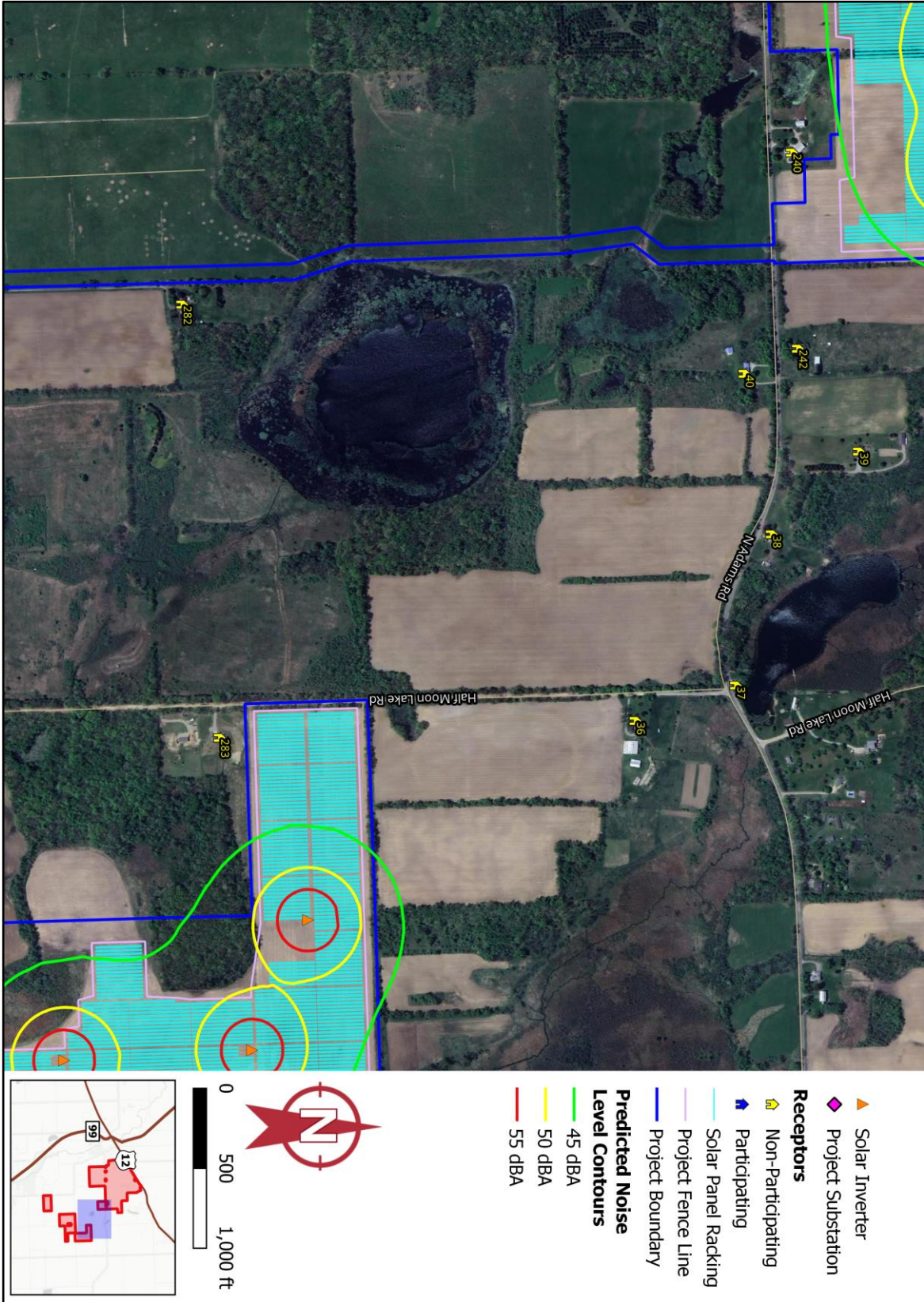


Figure C-7. Predicted Noise Level Contours – Central East Area

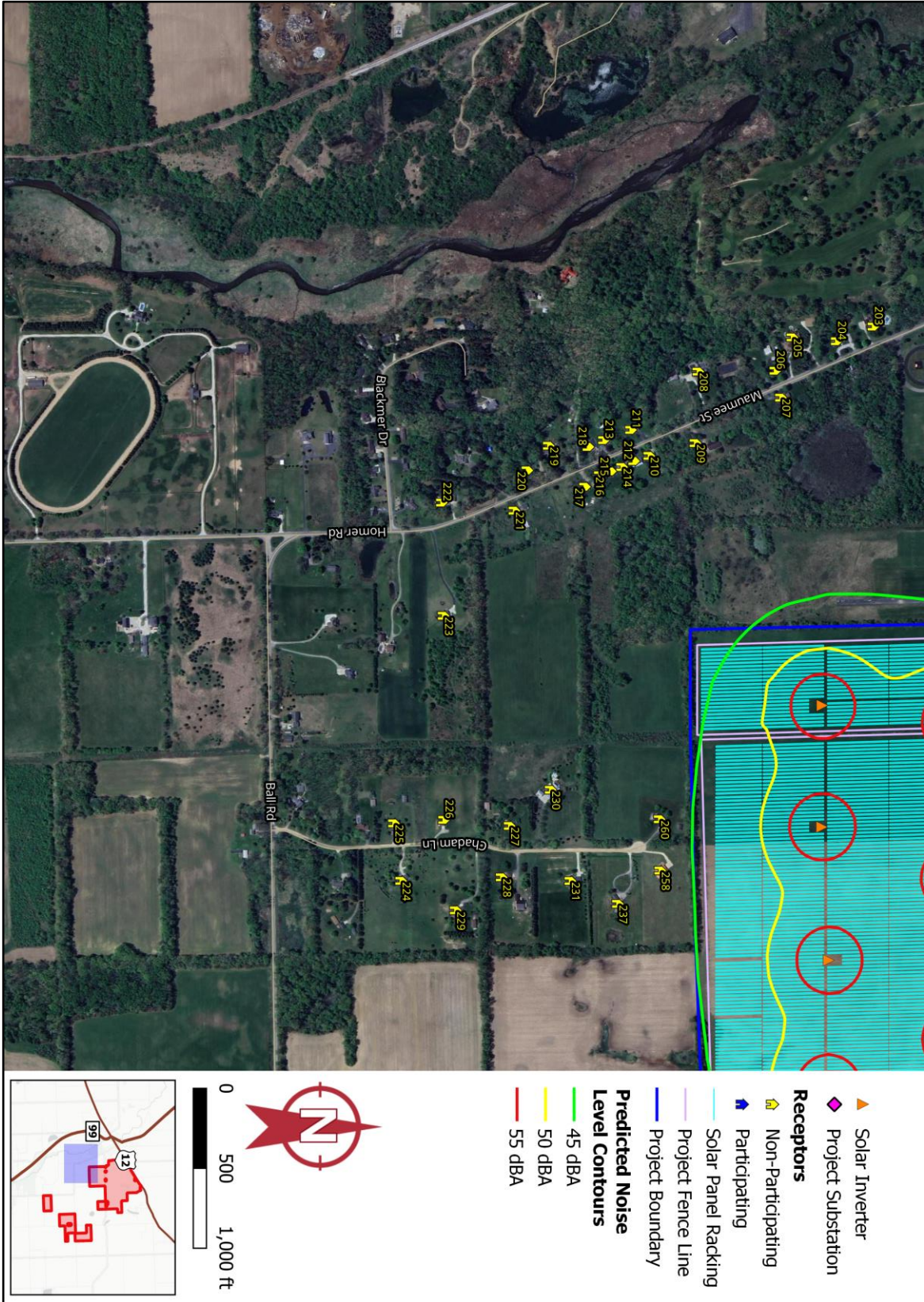


Figure C-8. Predicted Noise Level Contours – Central Southwest Area

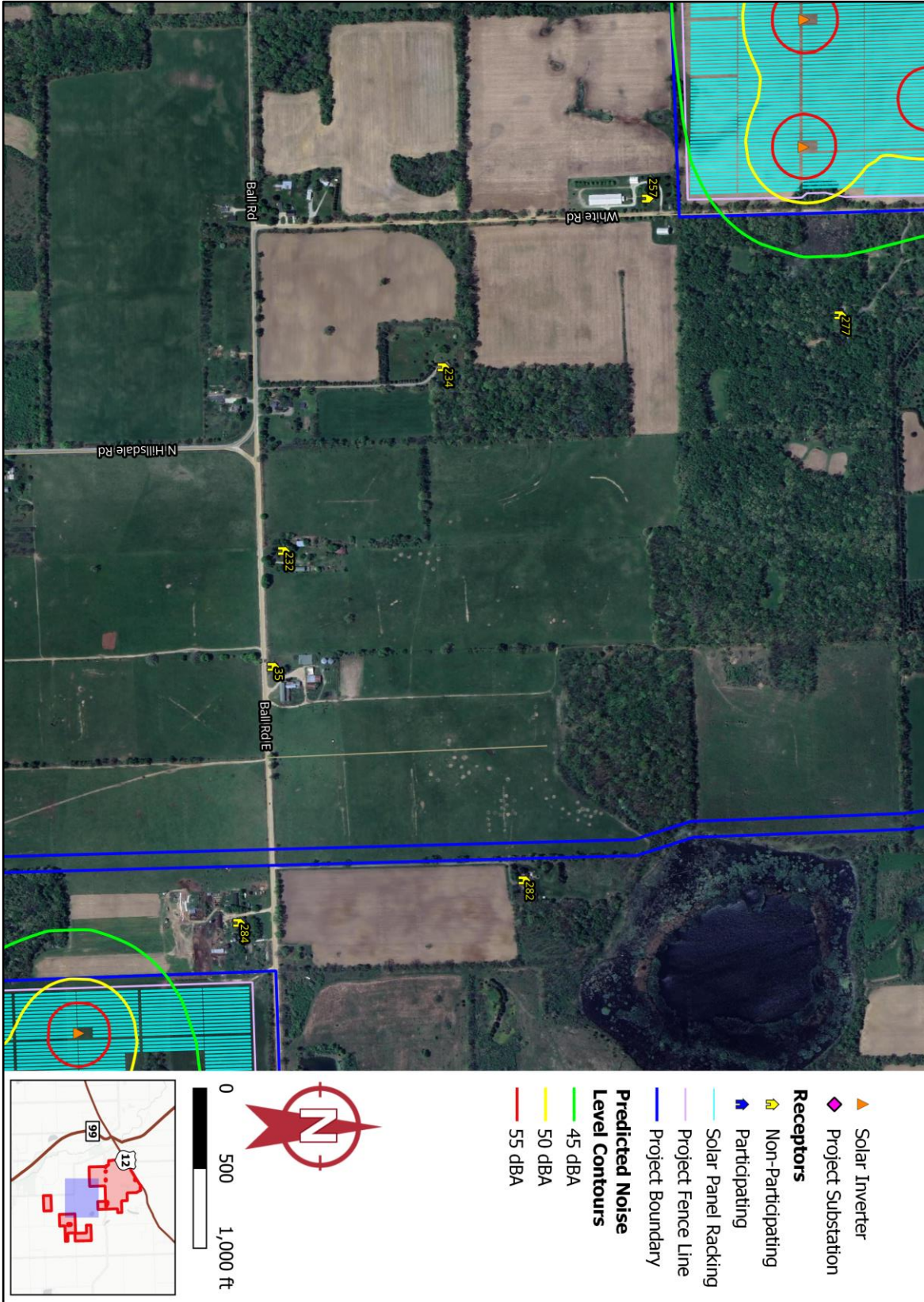


Figure C-9. Predicted Noise Level Contours – Central South Area

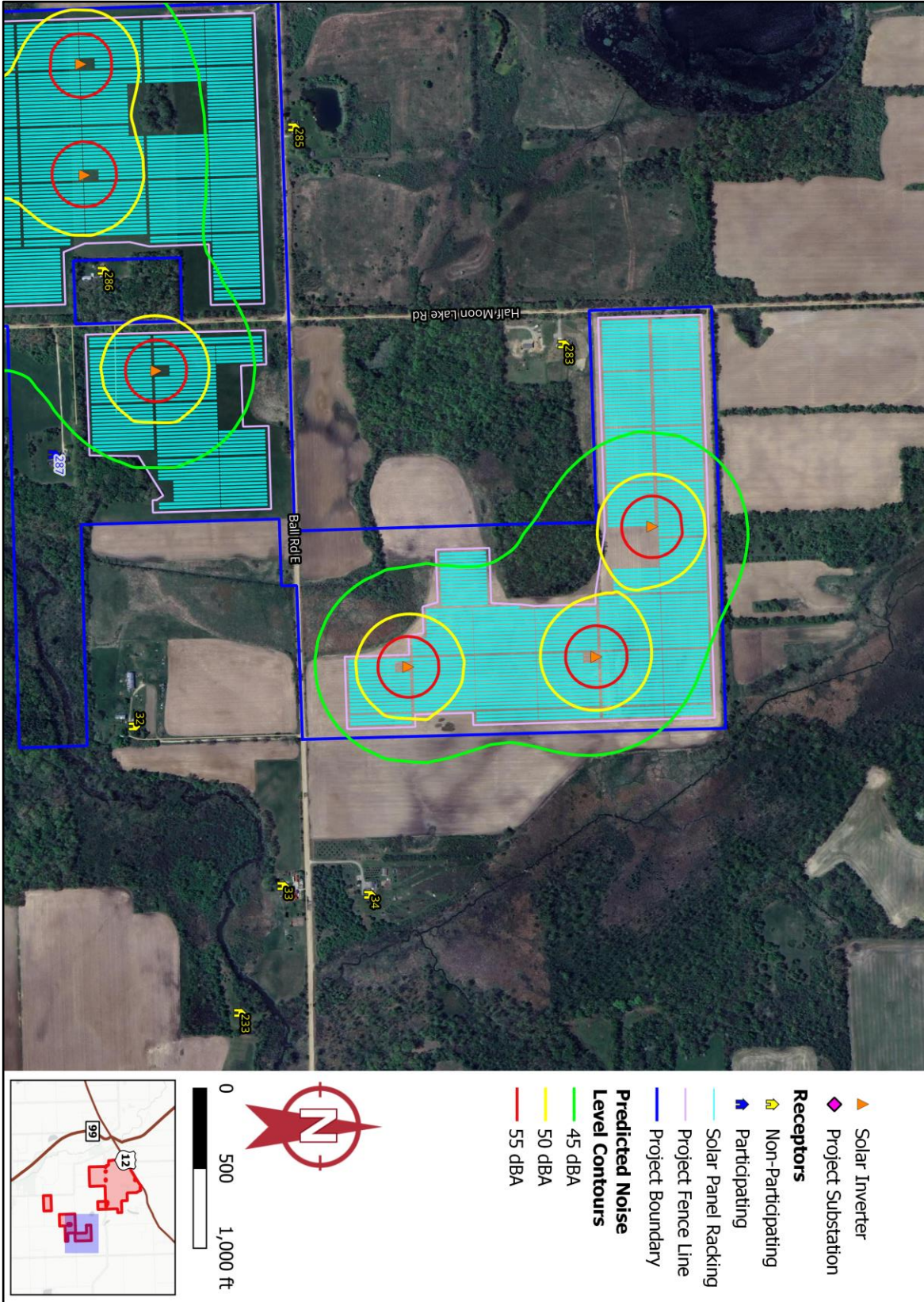


Figure C-10. Predicted Noise Level Contours – Central Southeast Area

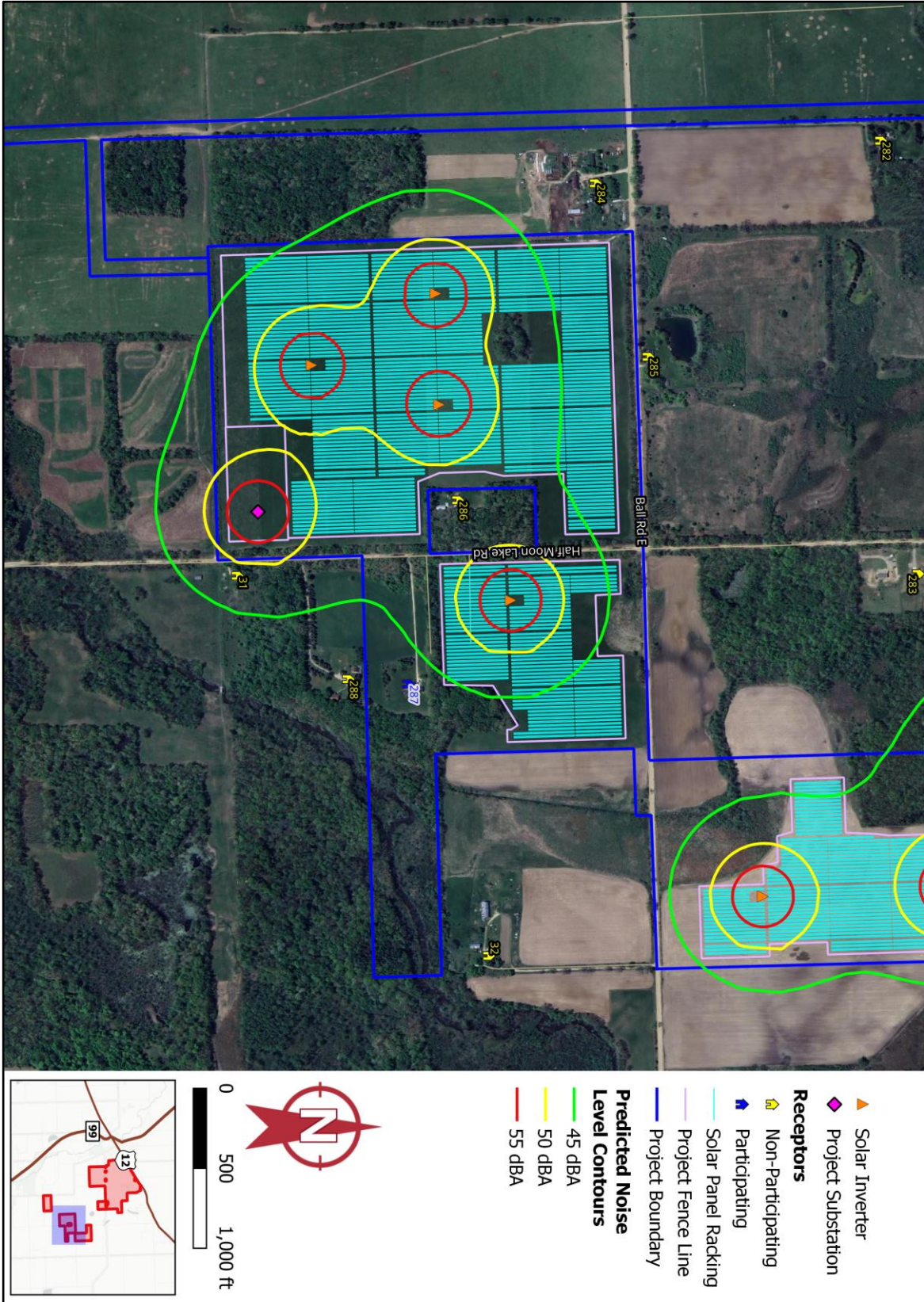


Figure C-11. Predicted Noise Level Contours – Southeast Area

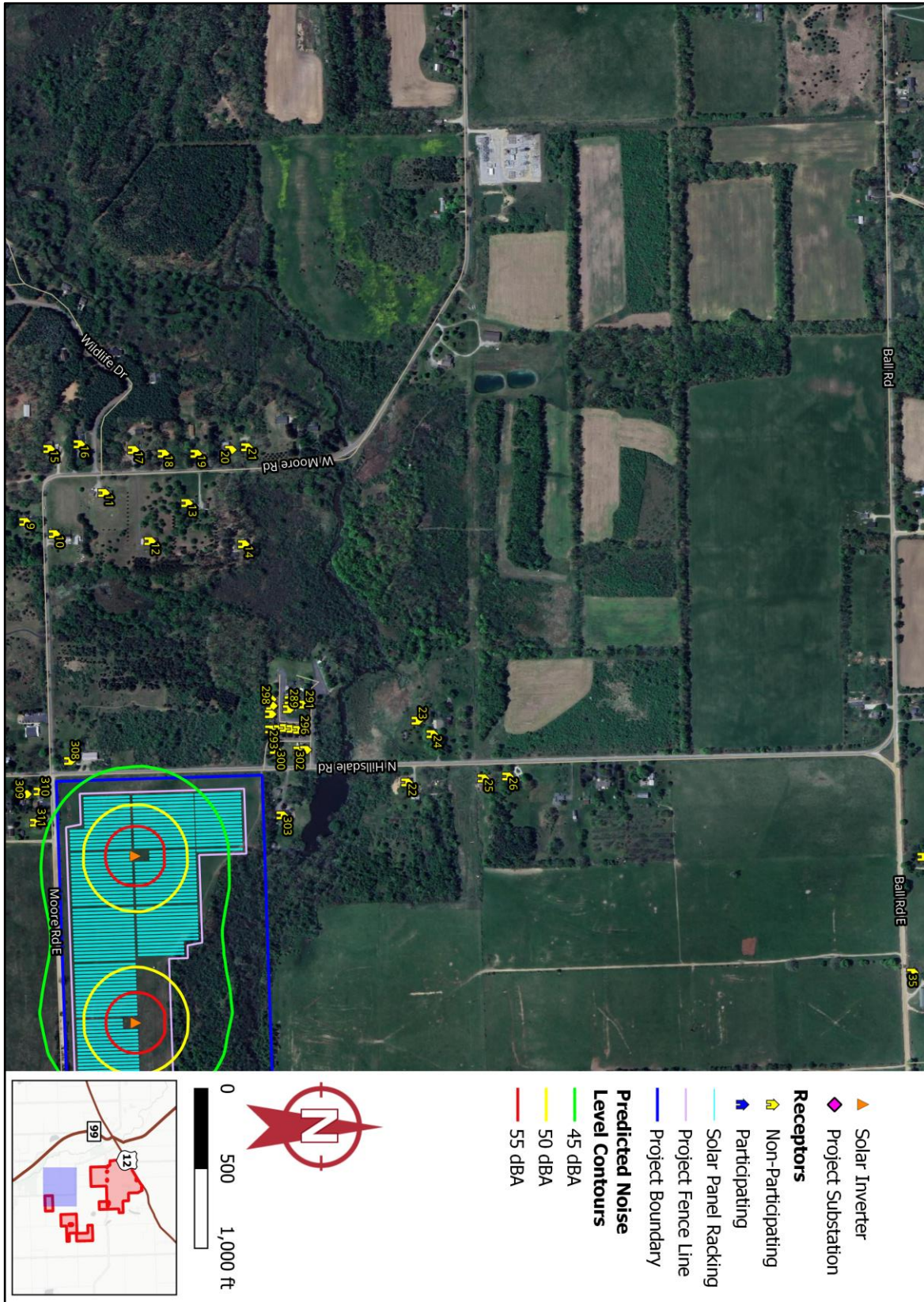


Figure C-12. Predicted Noise Level Contours – Southwest Area

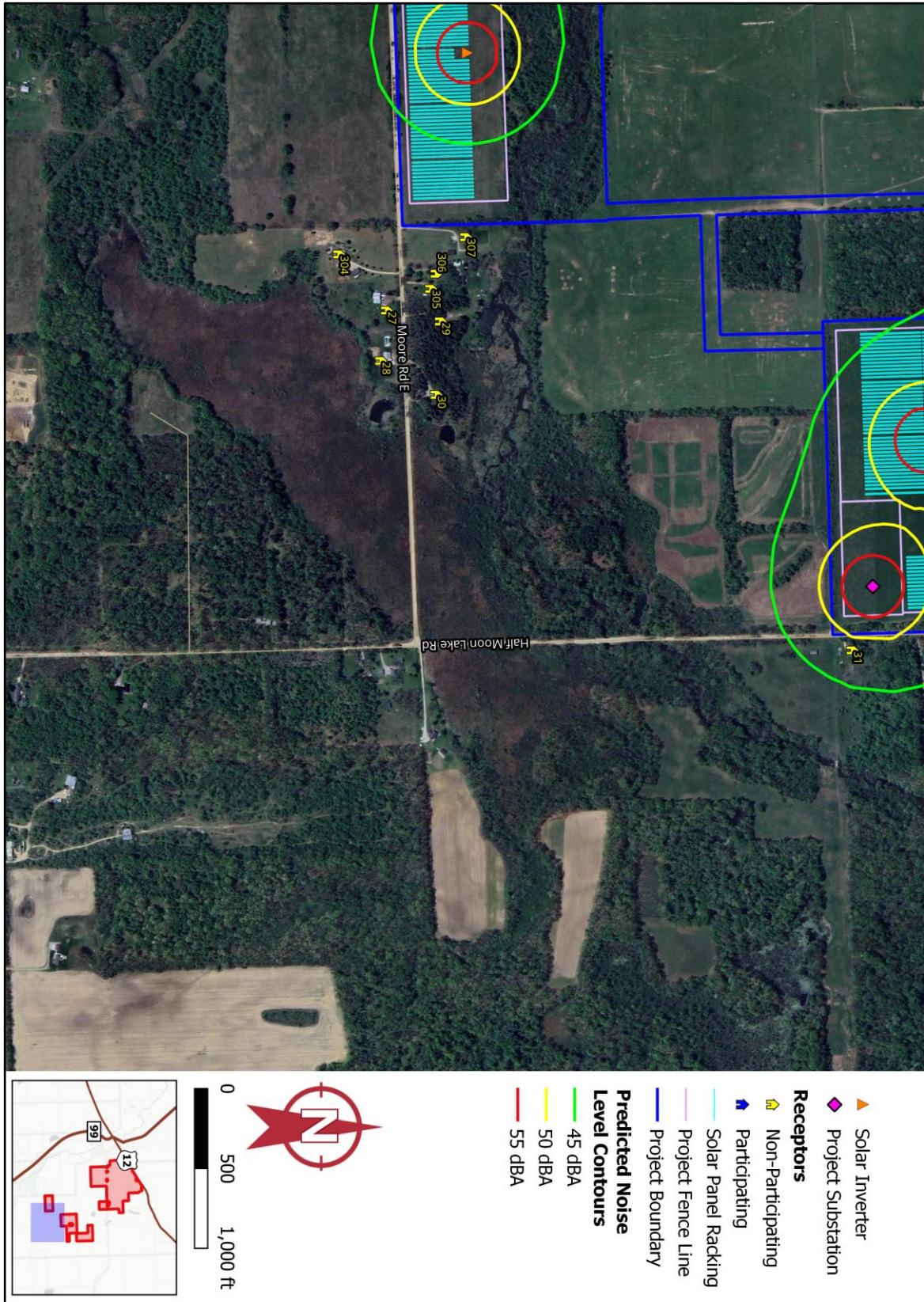


Figure C-13. Predicted Noise Level Contours – Southeast Corner Area

