

Annexure D – Construction airborne L_{Aeq} maps

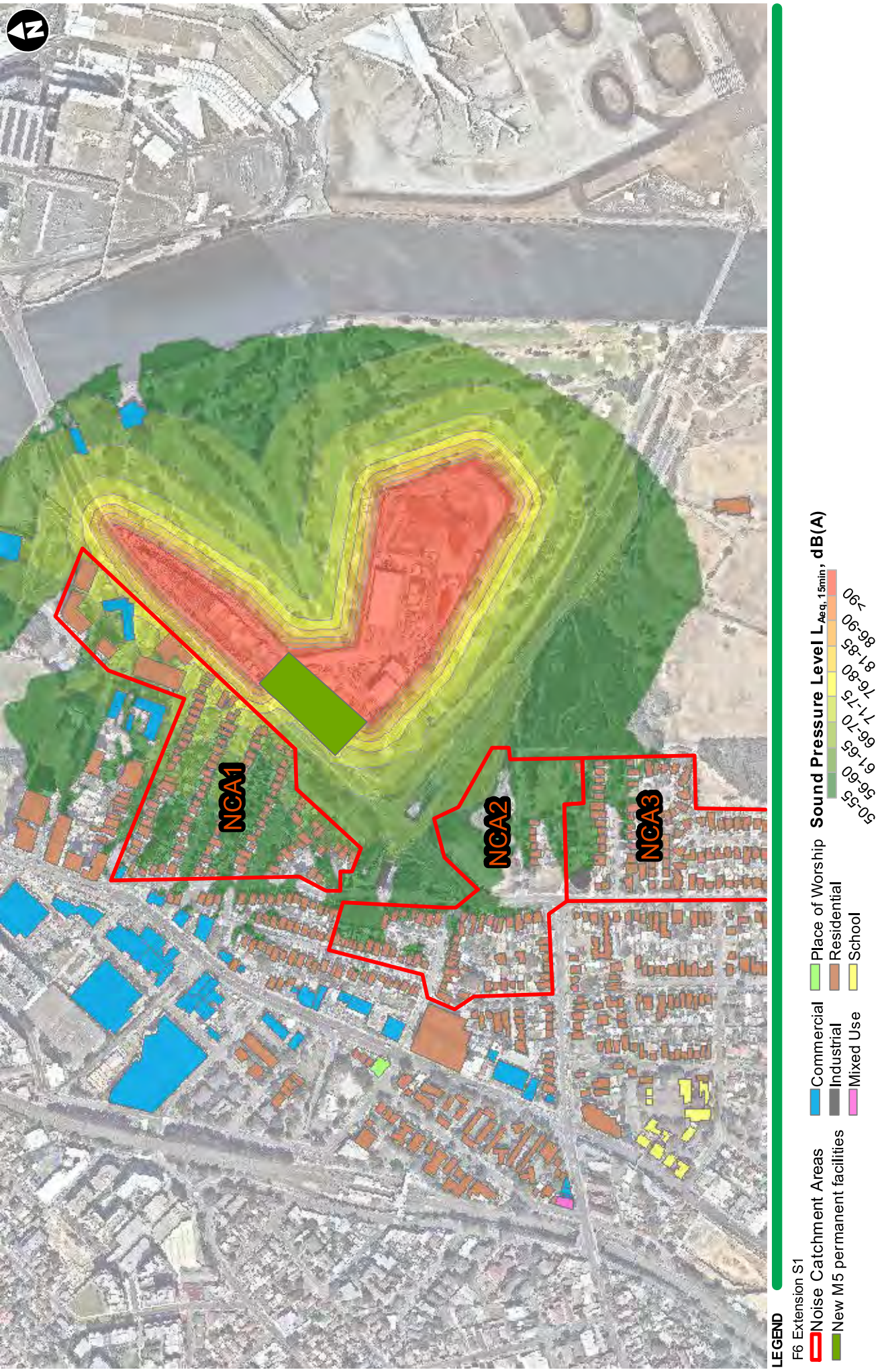


Figure D-1 Construction Noise Contour Maps - C1 - Establishment of temporary noise attenuation measures

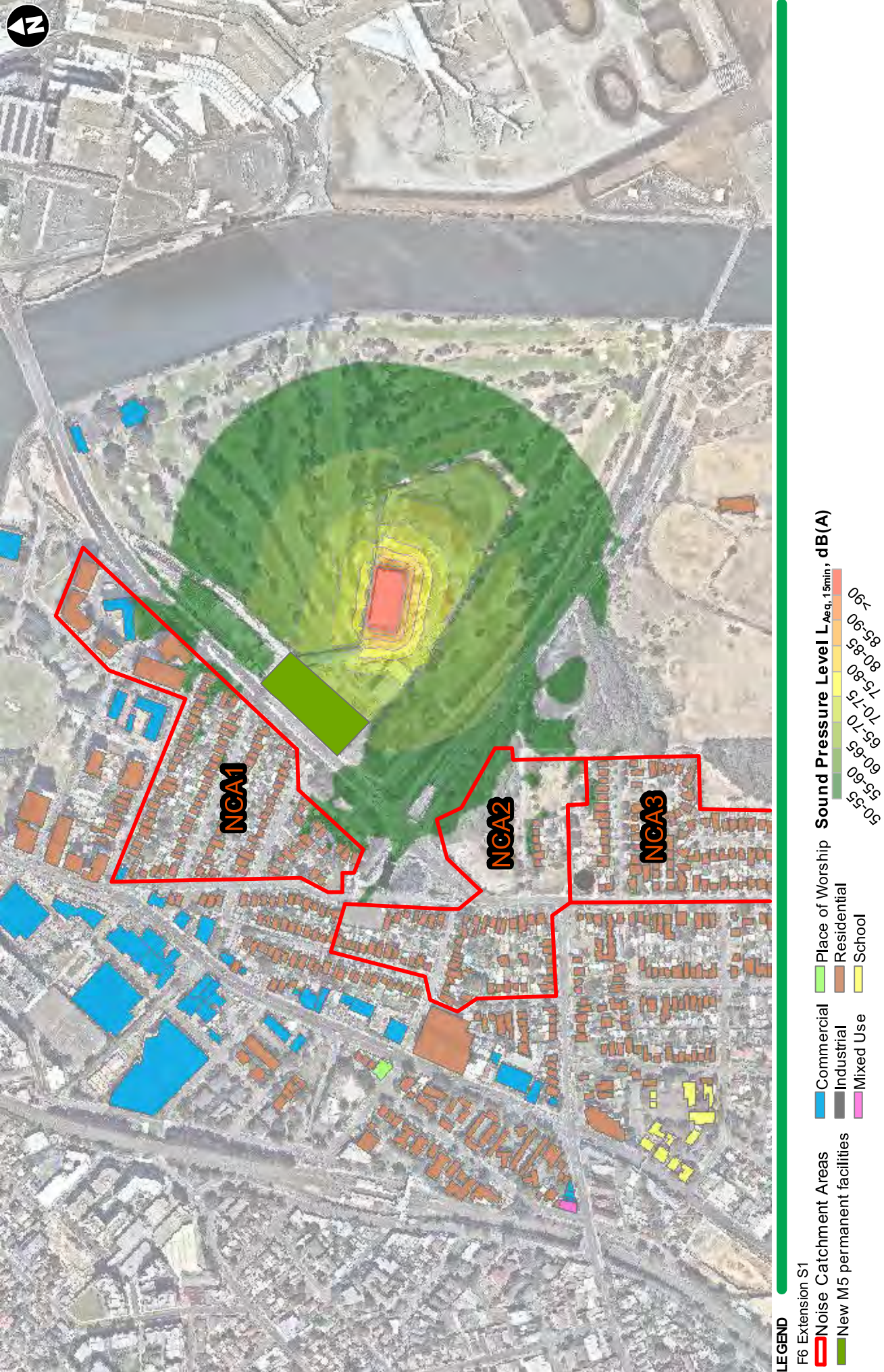


Figure D-2 Construction Noise Contour Maps - C1 - Construction of stockpiling shed

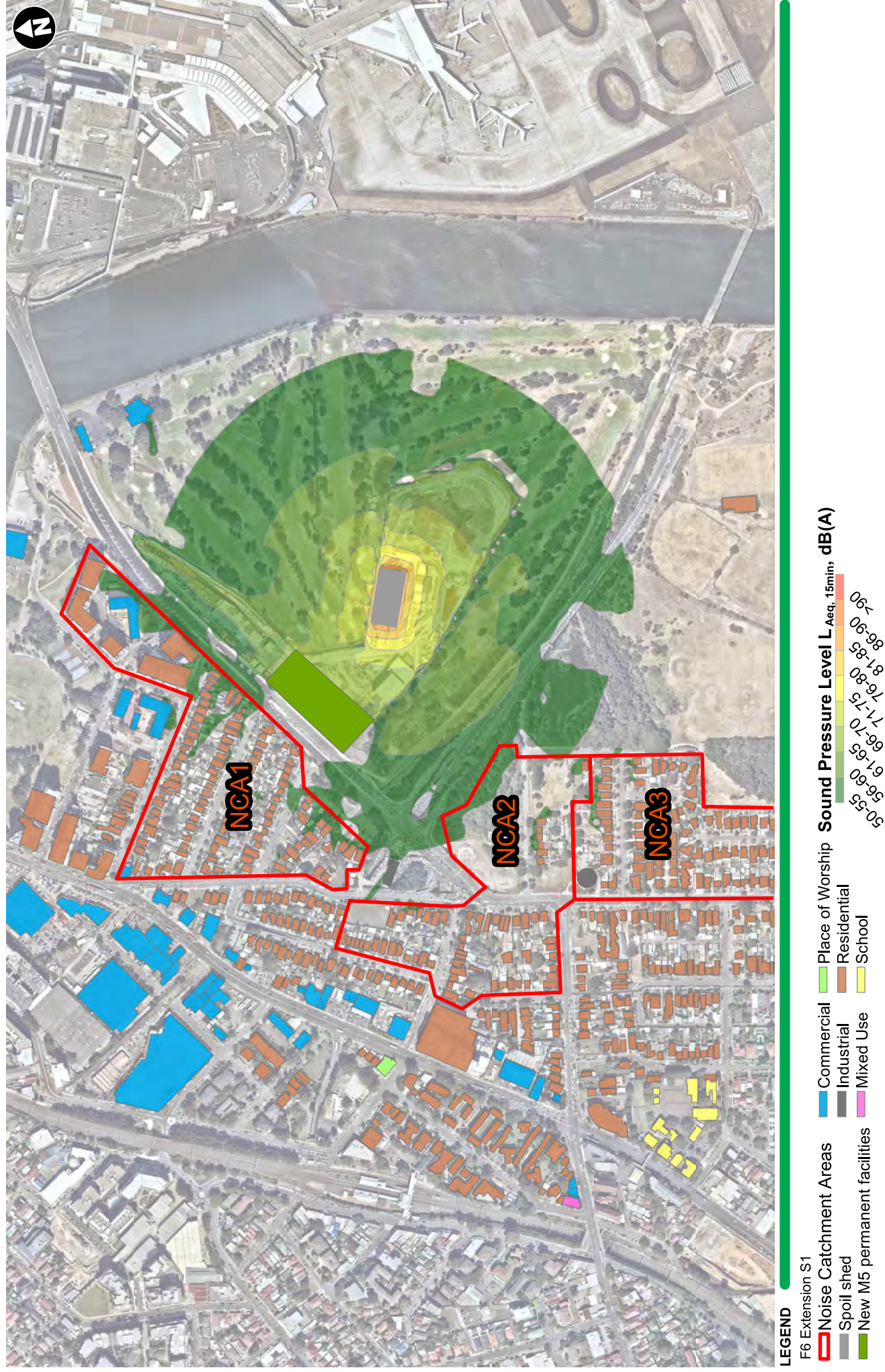


Figure D-3 Construction Noise Contour Maps - C1 - Tunnelling works and spoil handling (Day time)

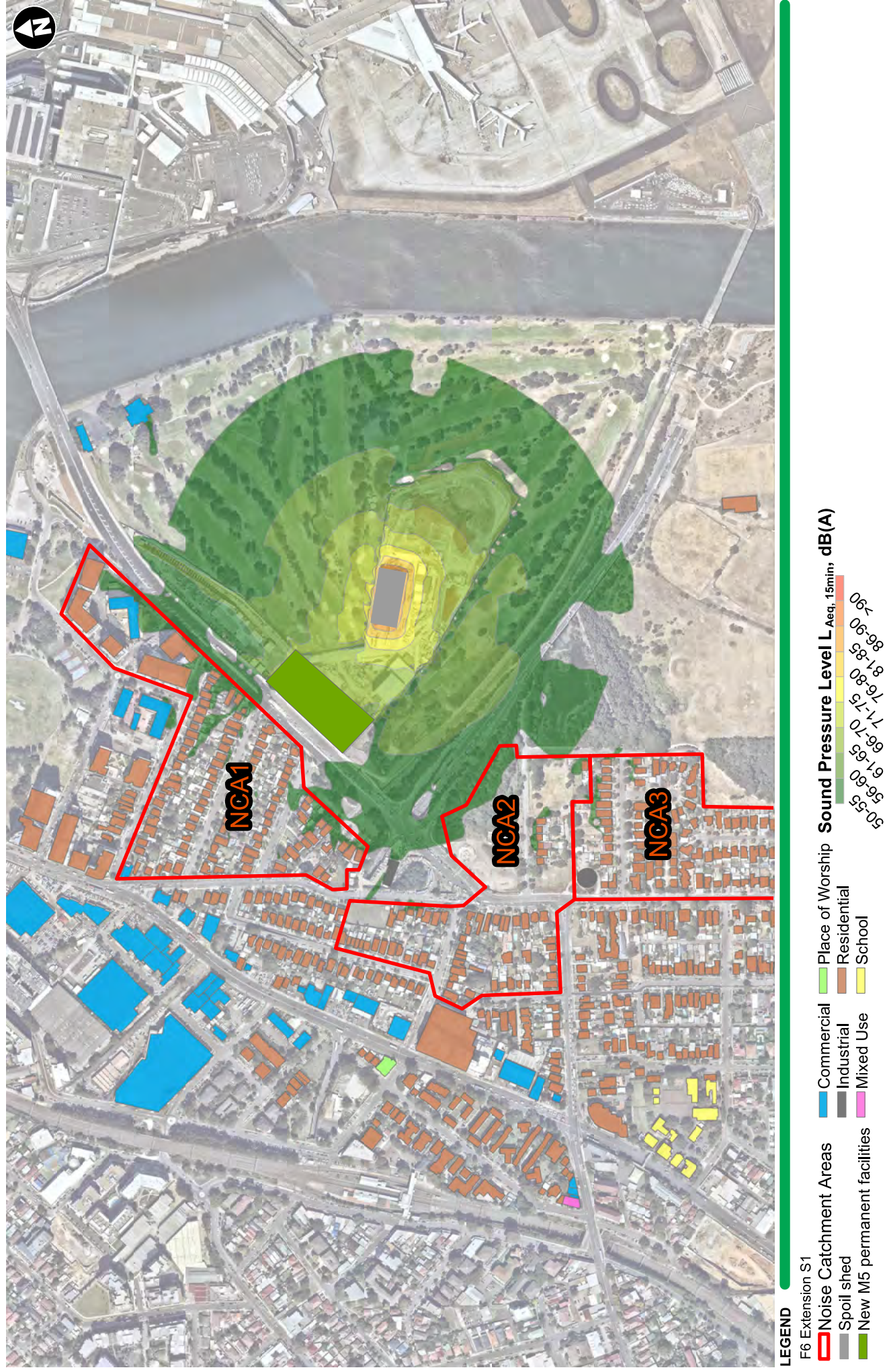


Figure D-3 Construction Noise Contour Maps - C1 - Tunnelling works and spoil handling (Night time)

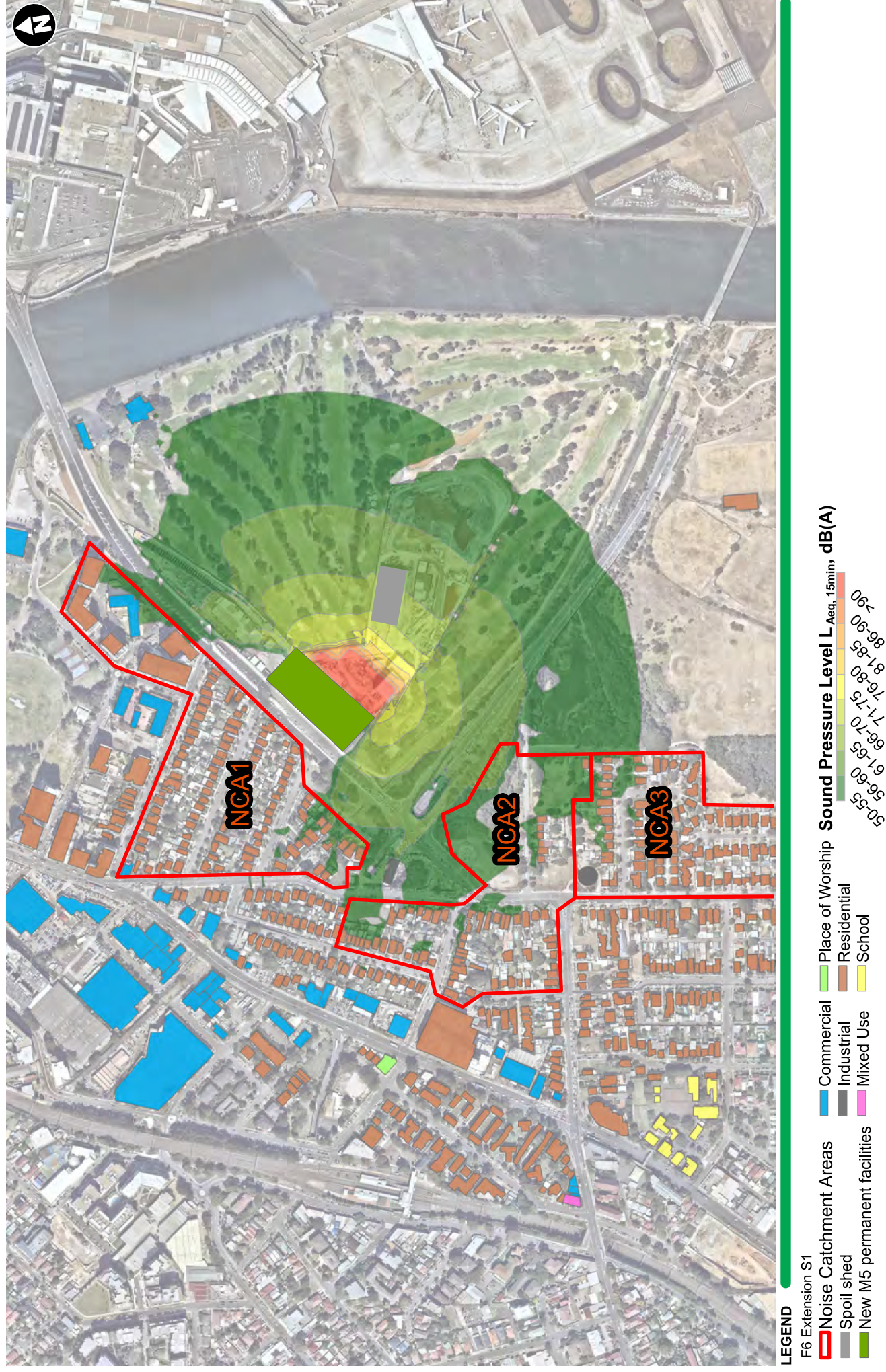


Figure D-4 Construction Noise Contour Maps - C1 - Construction of the MOC

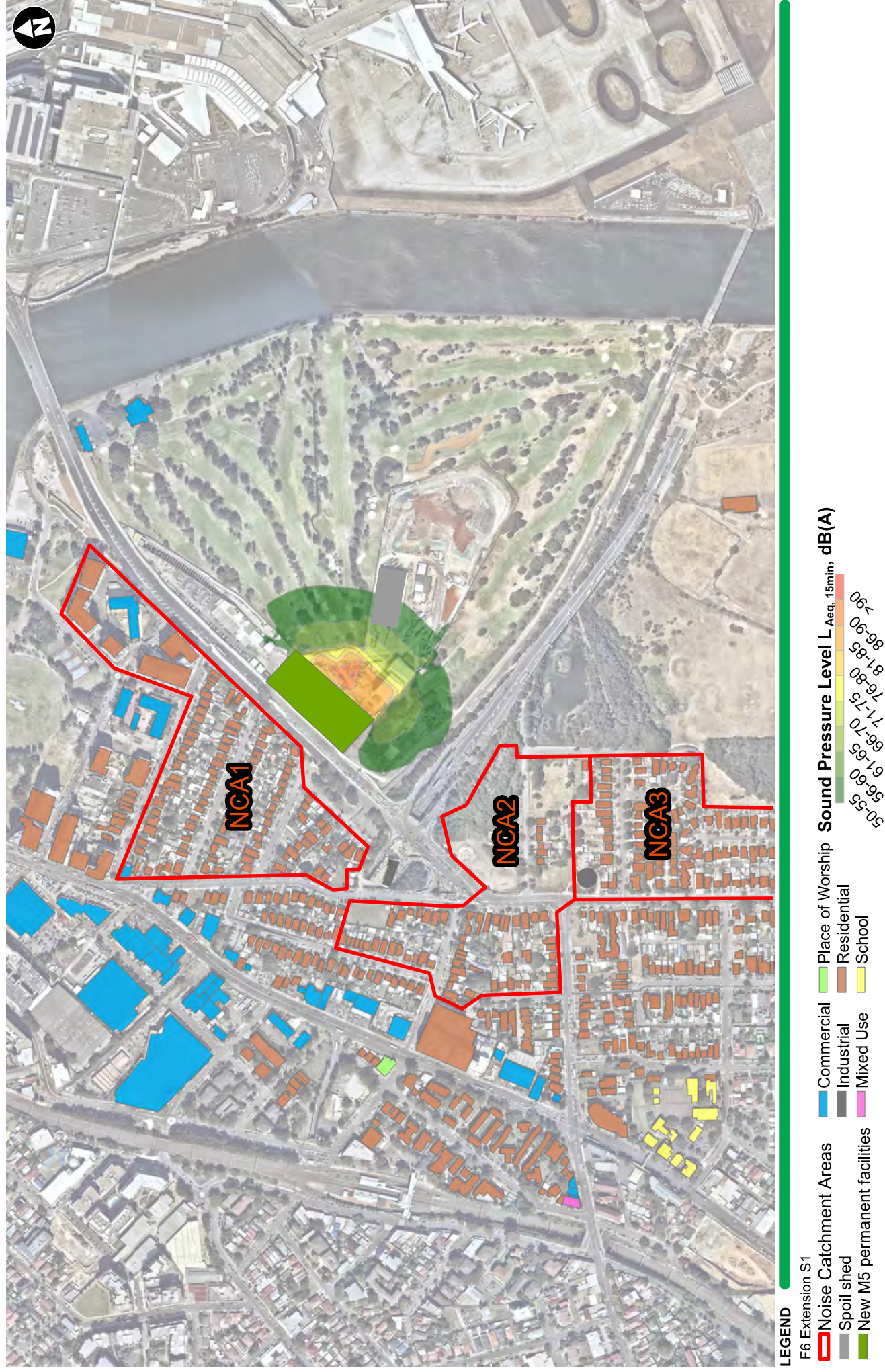


Figure D-5 Construction Noise Contour Maps - C1 - Fitout, testing, and commissioning of the MOC

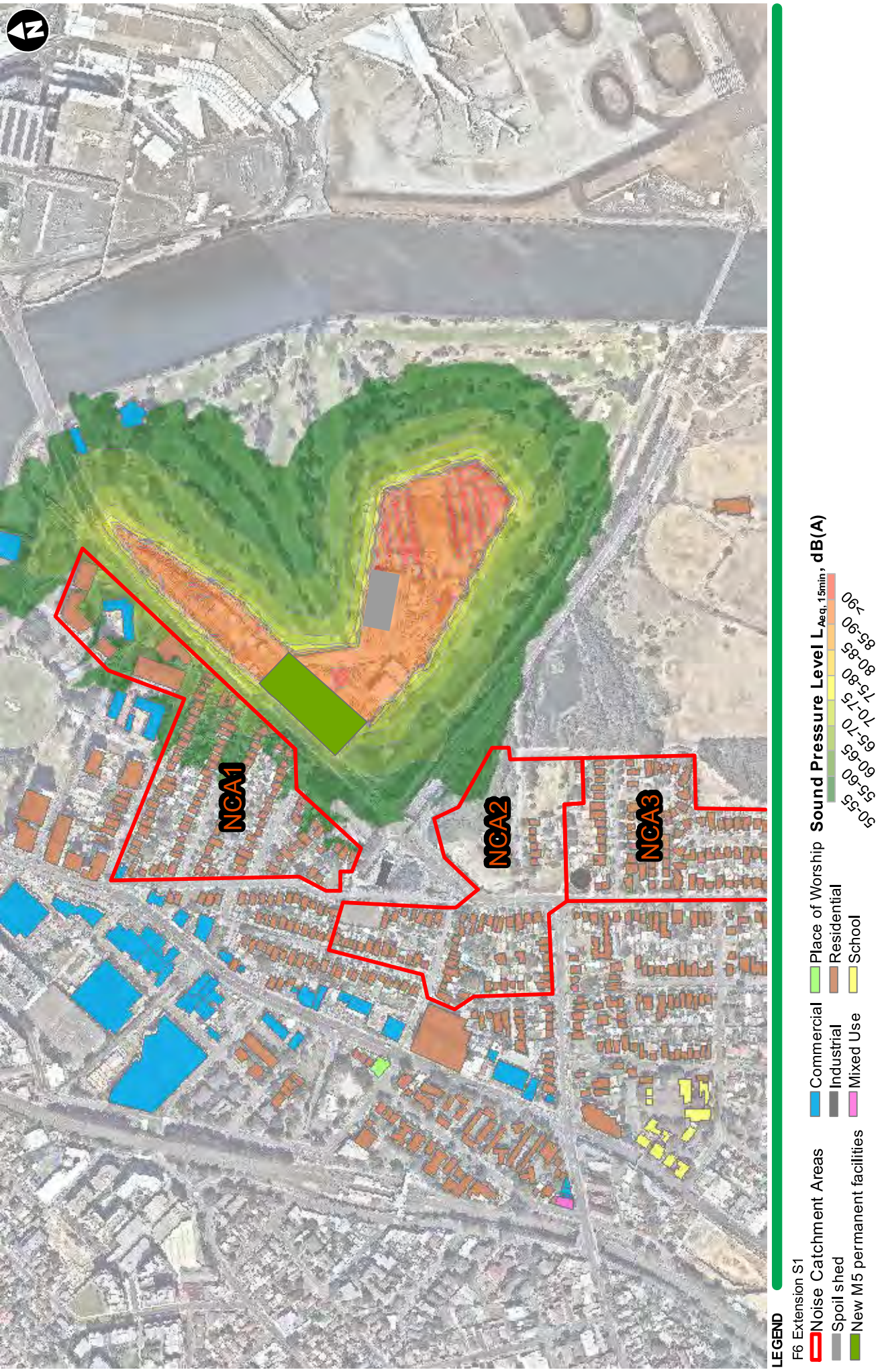


Figure D-6 Construction Noise Contour Maps - C1 - Rehabilitation and landscaping

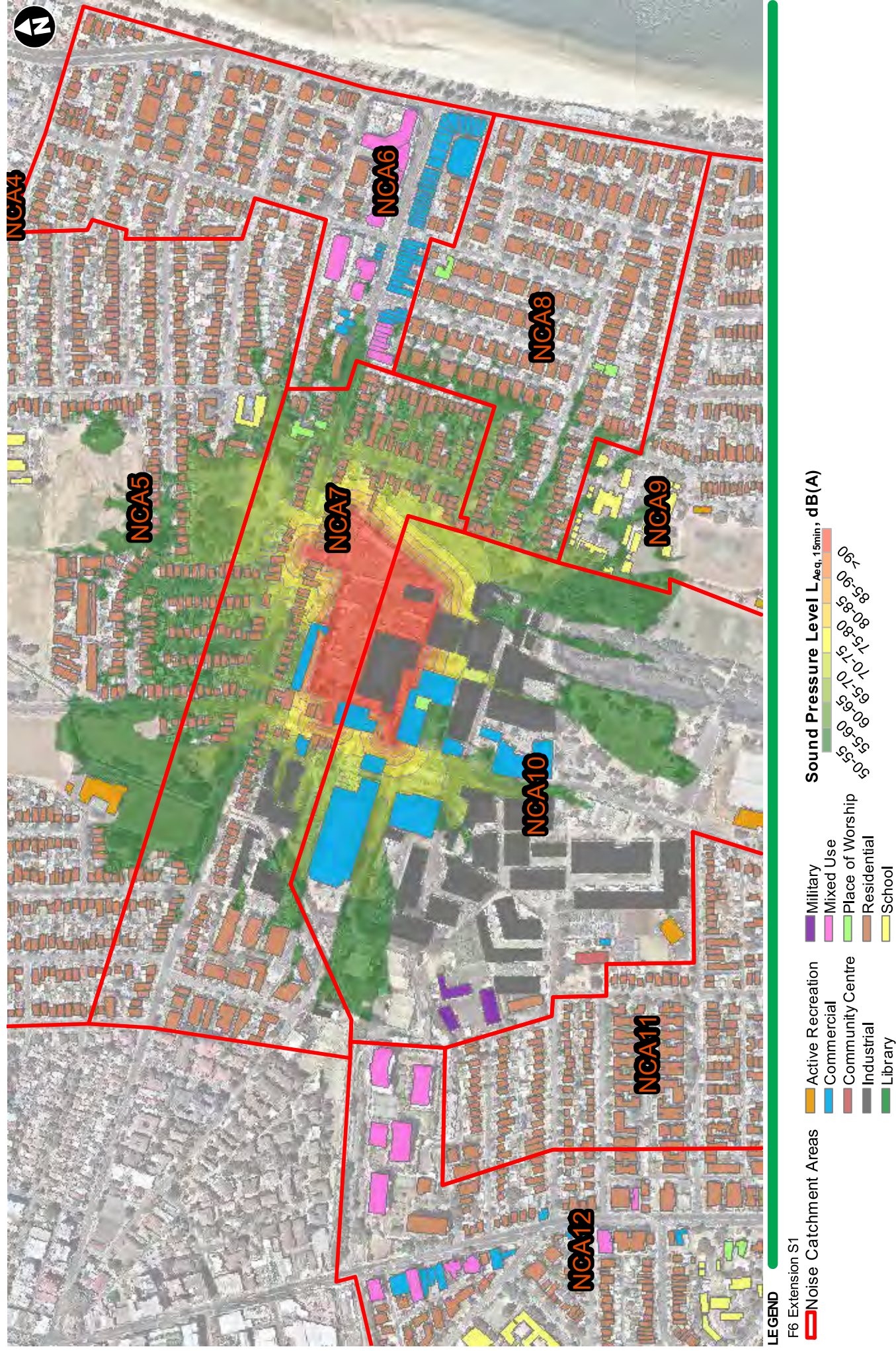


Figure D-7 Construction Noise Contour Maps - C2 - Establishment of temporary noise attenuation measures

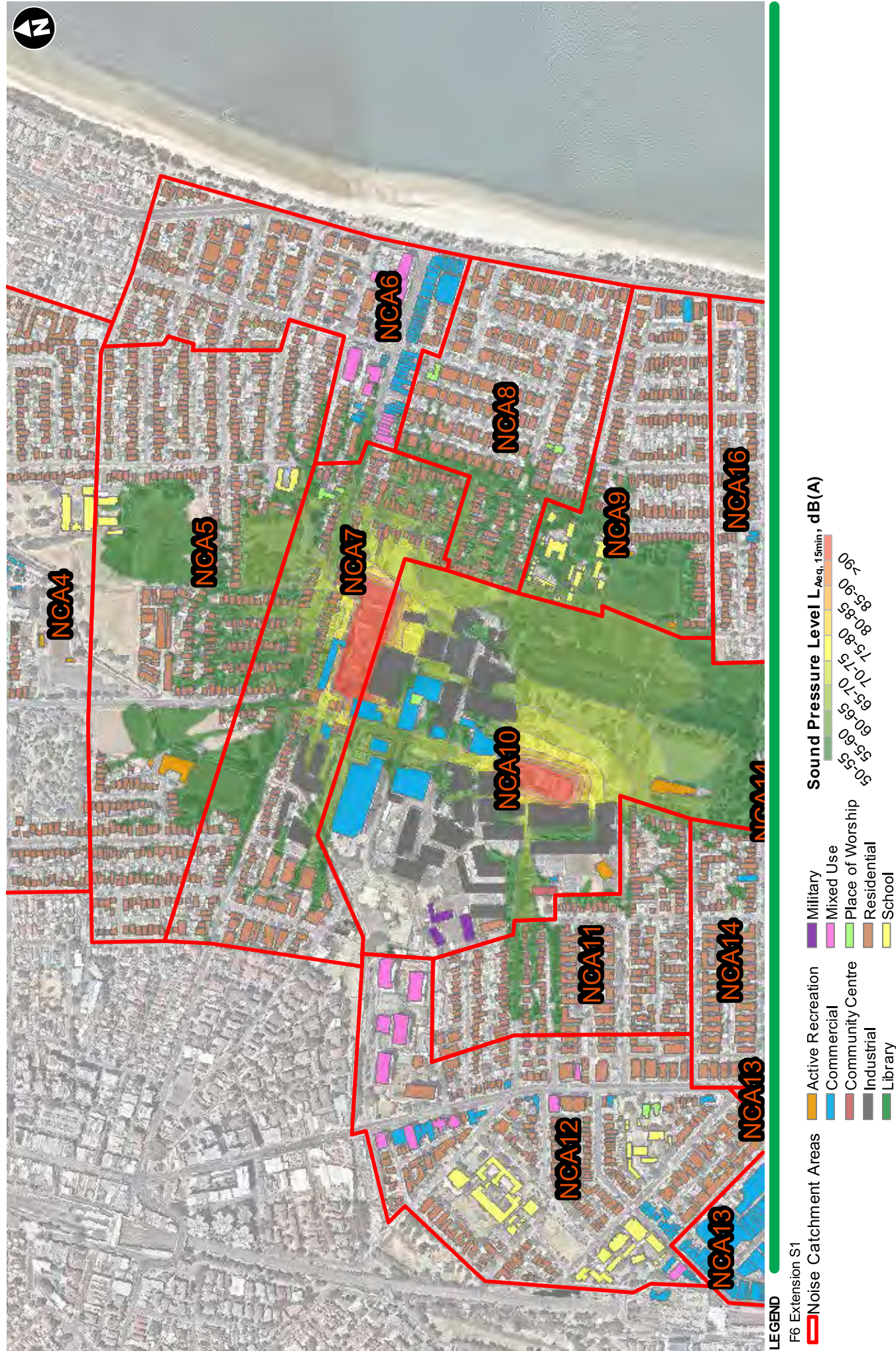


Figure D-8 Construction Noise Contour Maps - C2 - Demolition and clearing of structures, including buildings



Figure D-9 Construction Noise Contour Maps - C2 - Construction of stockpiling acoustic shed

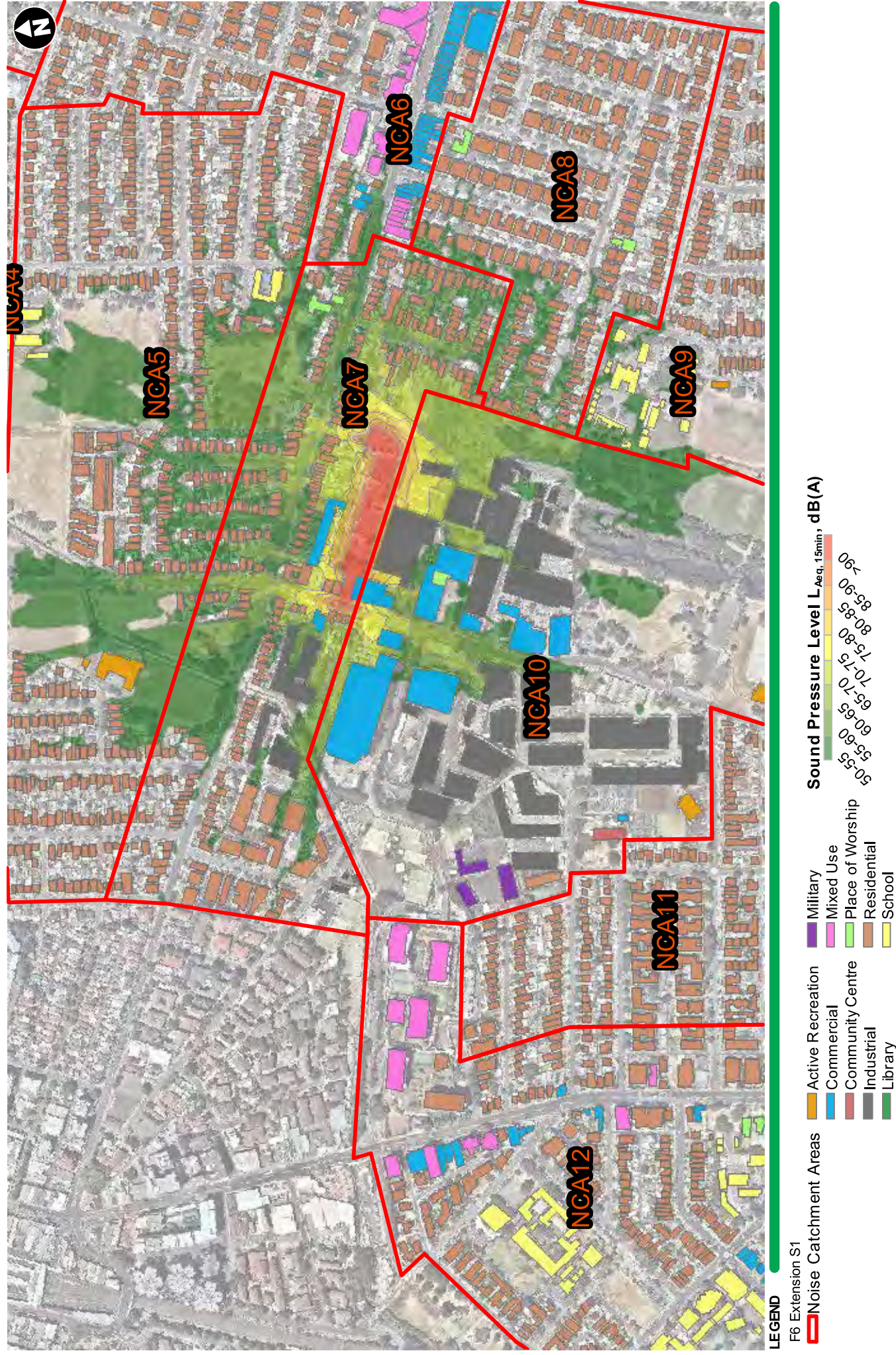


Figure D-10 Construction Noise Contour Maps - C2 - Construction of the decline tunnel

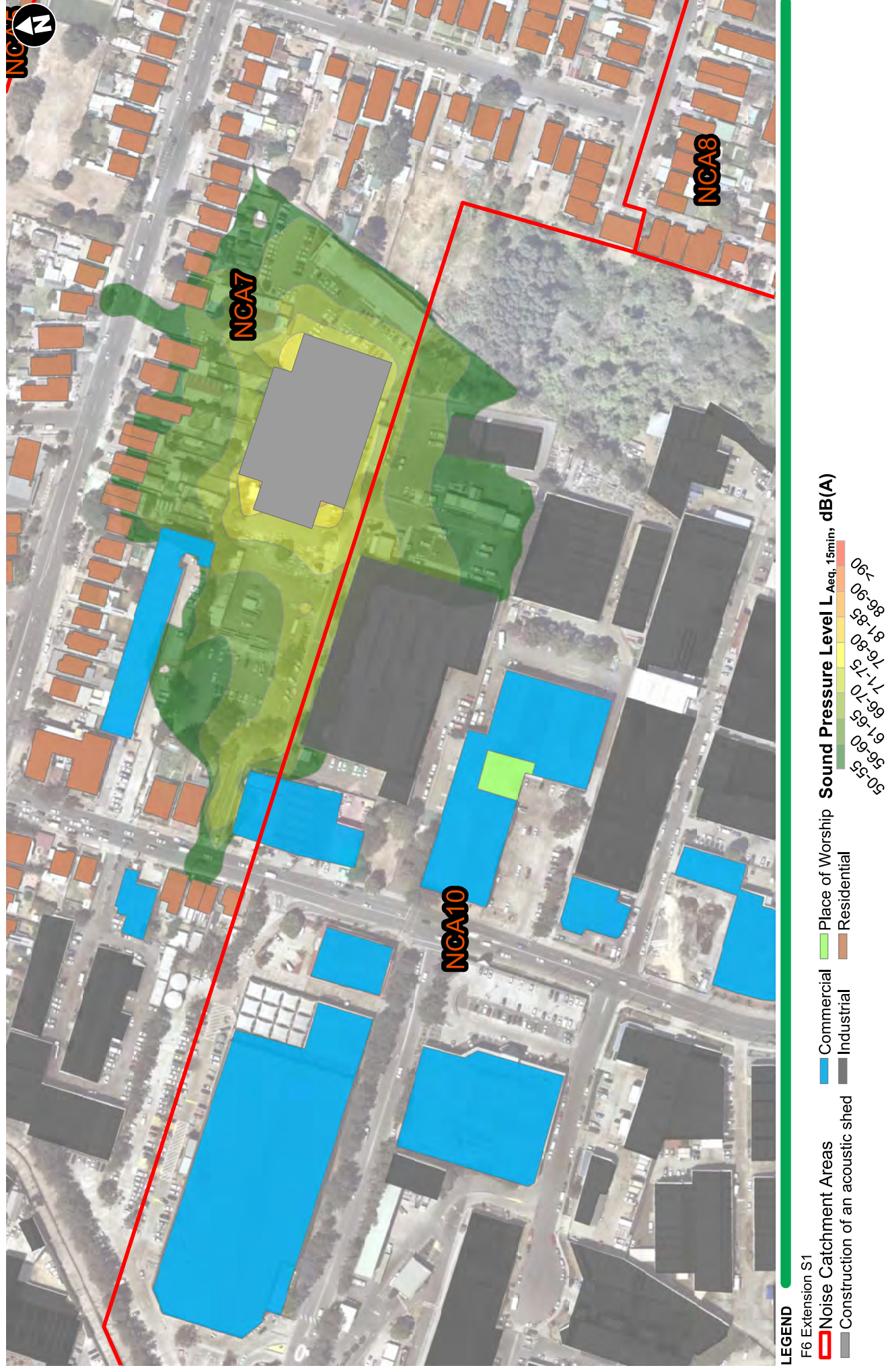


Figure D-11 Construction Noise Contour Maps - C2 - Tunelling works and spoil handling (Day time)

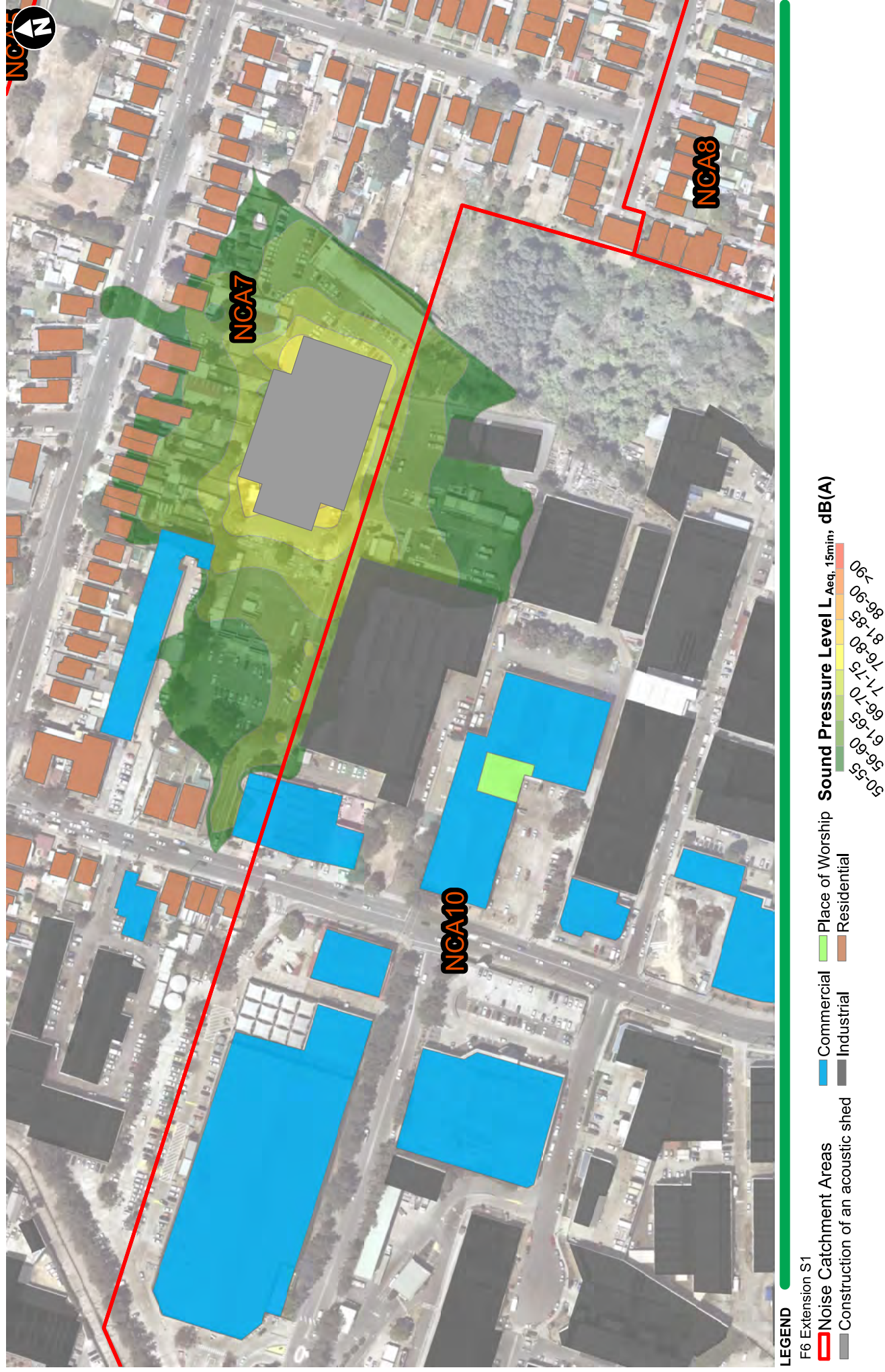


Figure D-11 Construction Noise Contour Maps - C2 - Tunelling works and spoil handling (Night time)

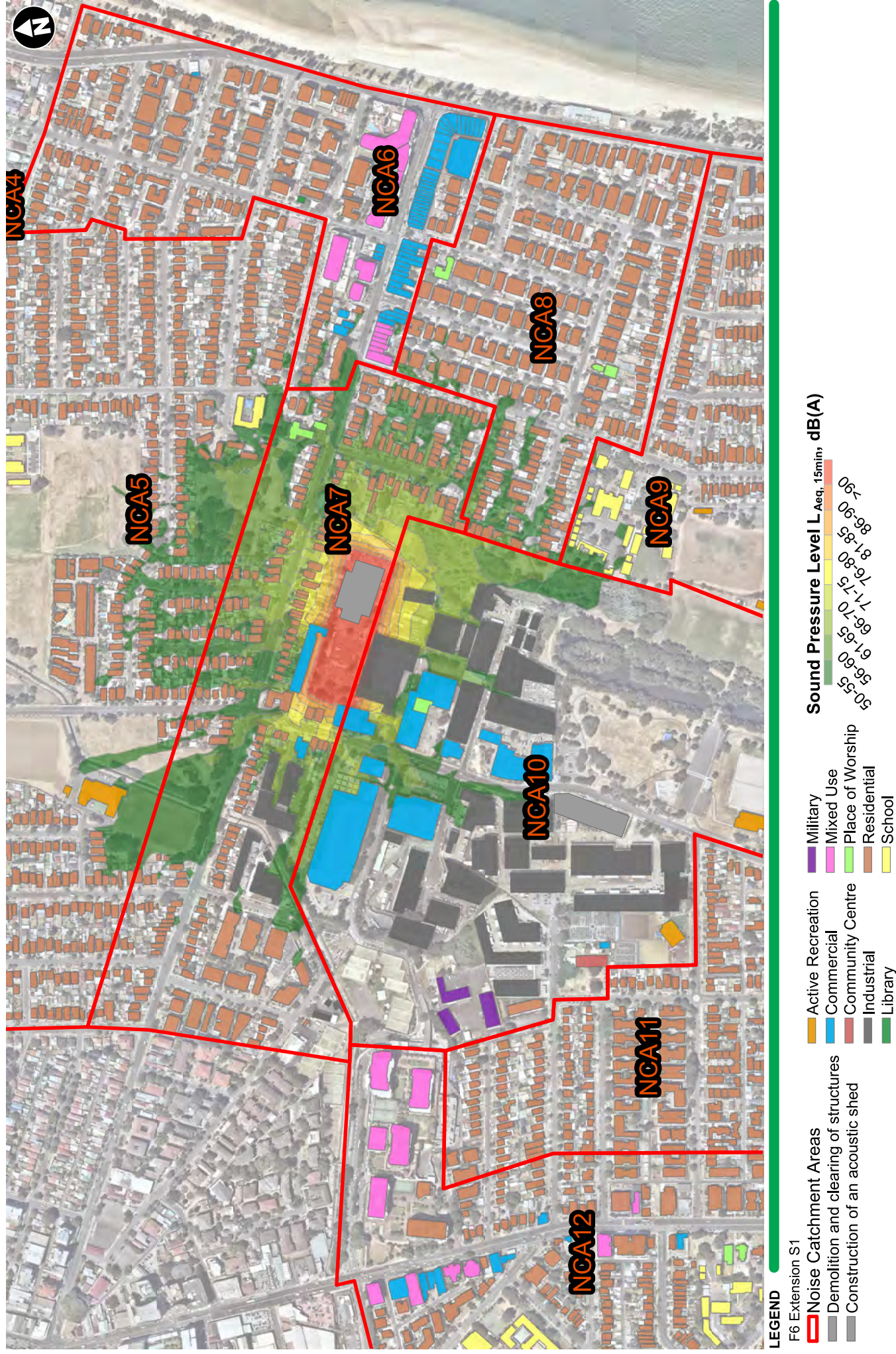


Figure D-12 Construction Noise Contour Maps - C2 - Construction of the MOC / MCC

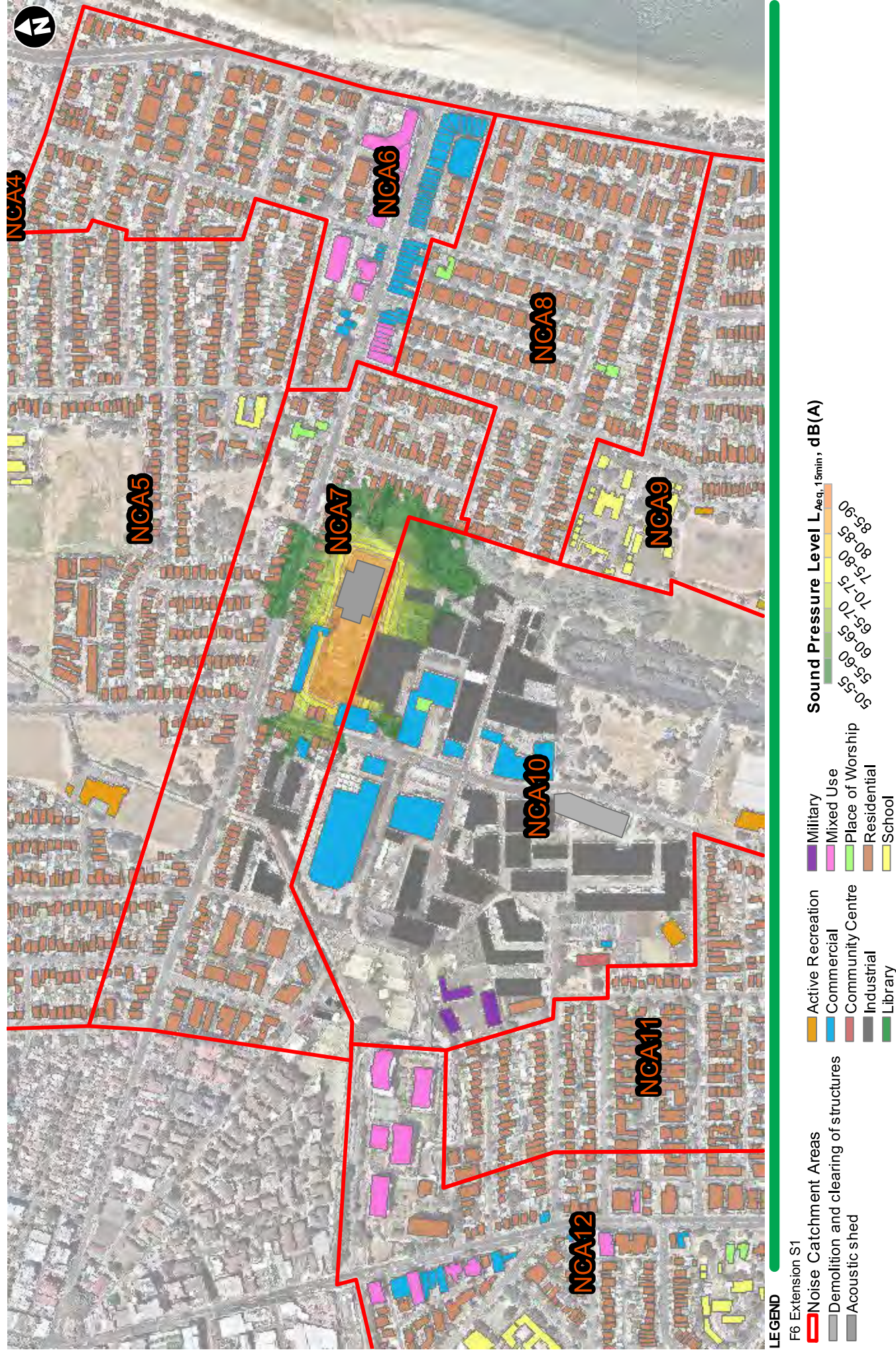


Figure D-13 Construction Noise Contour Maps - C2 - Fitout, testing, and commissioning of the MOC / MCC



Figure D-14 Construction Noise Contour Maps - C2 - Rehabilitation and landscaping

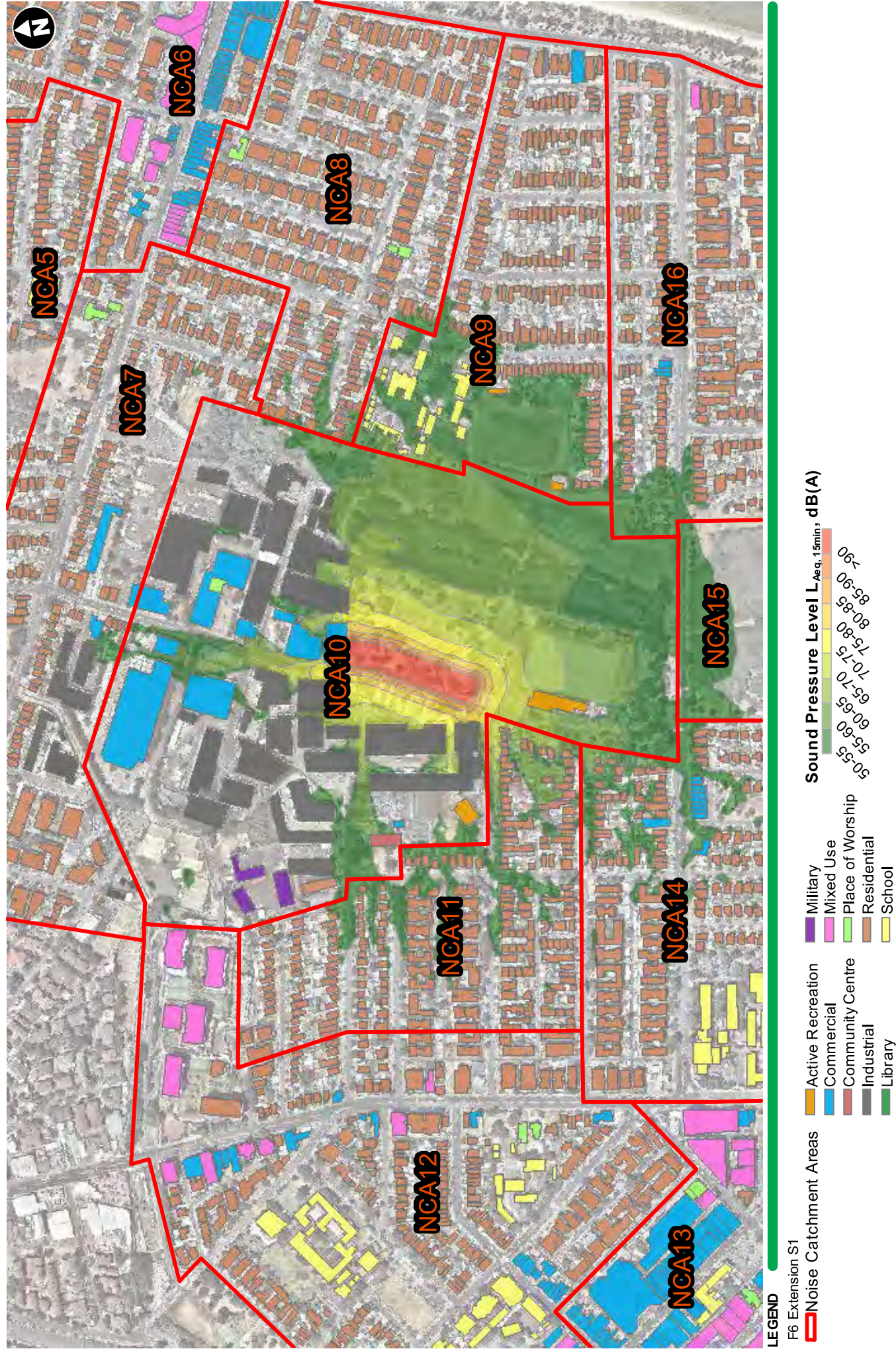


Figure D-15 Construction Noise Contour Maps - C3 - Cut and cover construction - Relocation of utilities

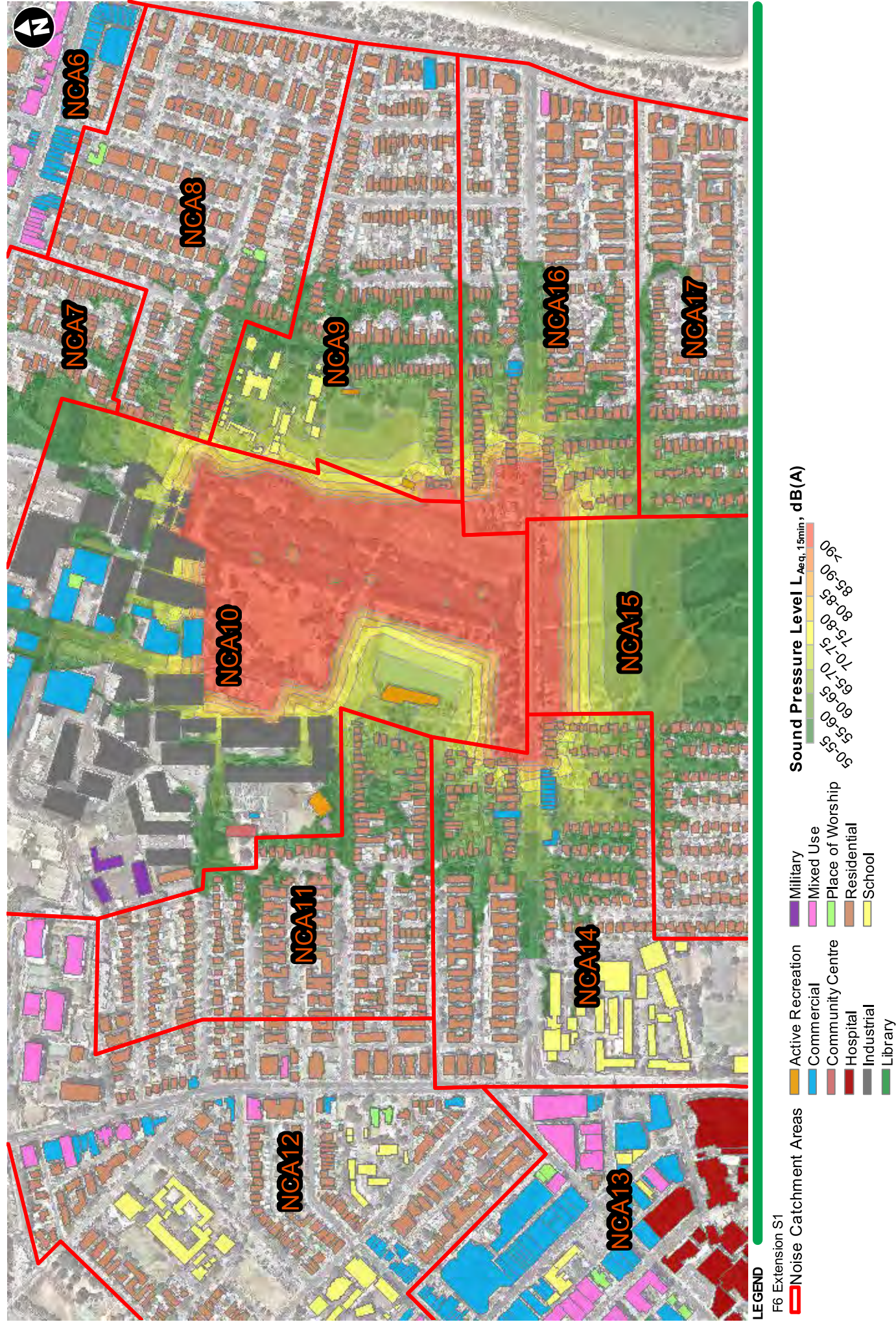


Figure D-16 Construction Noise Contour Maps - C3 - Cut and cover construction - Site establishment

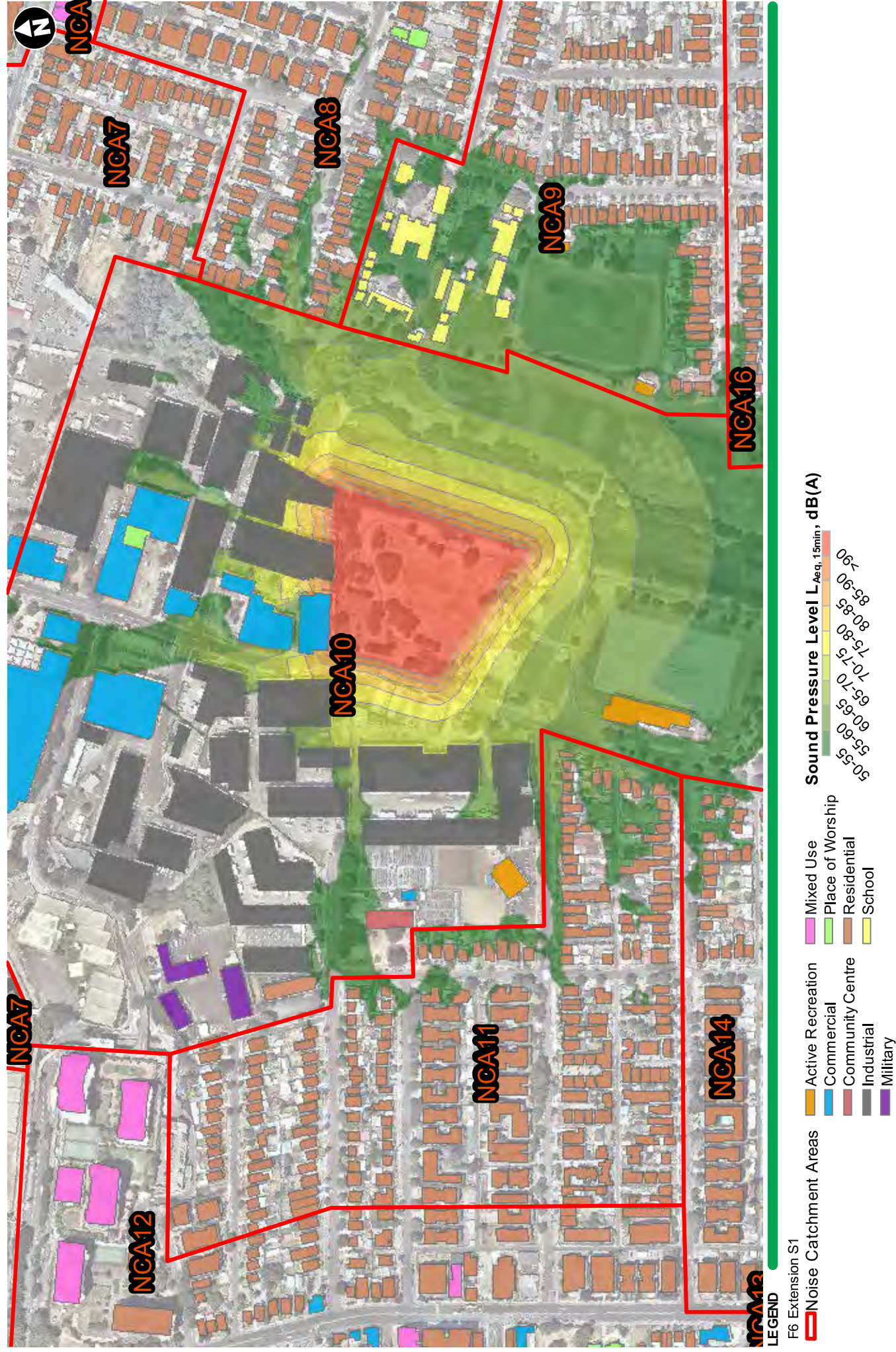


Figure D-17 Construction Noise Contour Maps - C3 - Cut and cover construction - Establish and commission bentonite plant



Figure D-18 Construction Noise Contour Maps - C3 - Cut and cover construction - Temporary stockpiling of spoil and fill materials

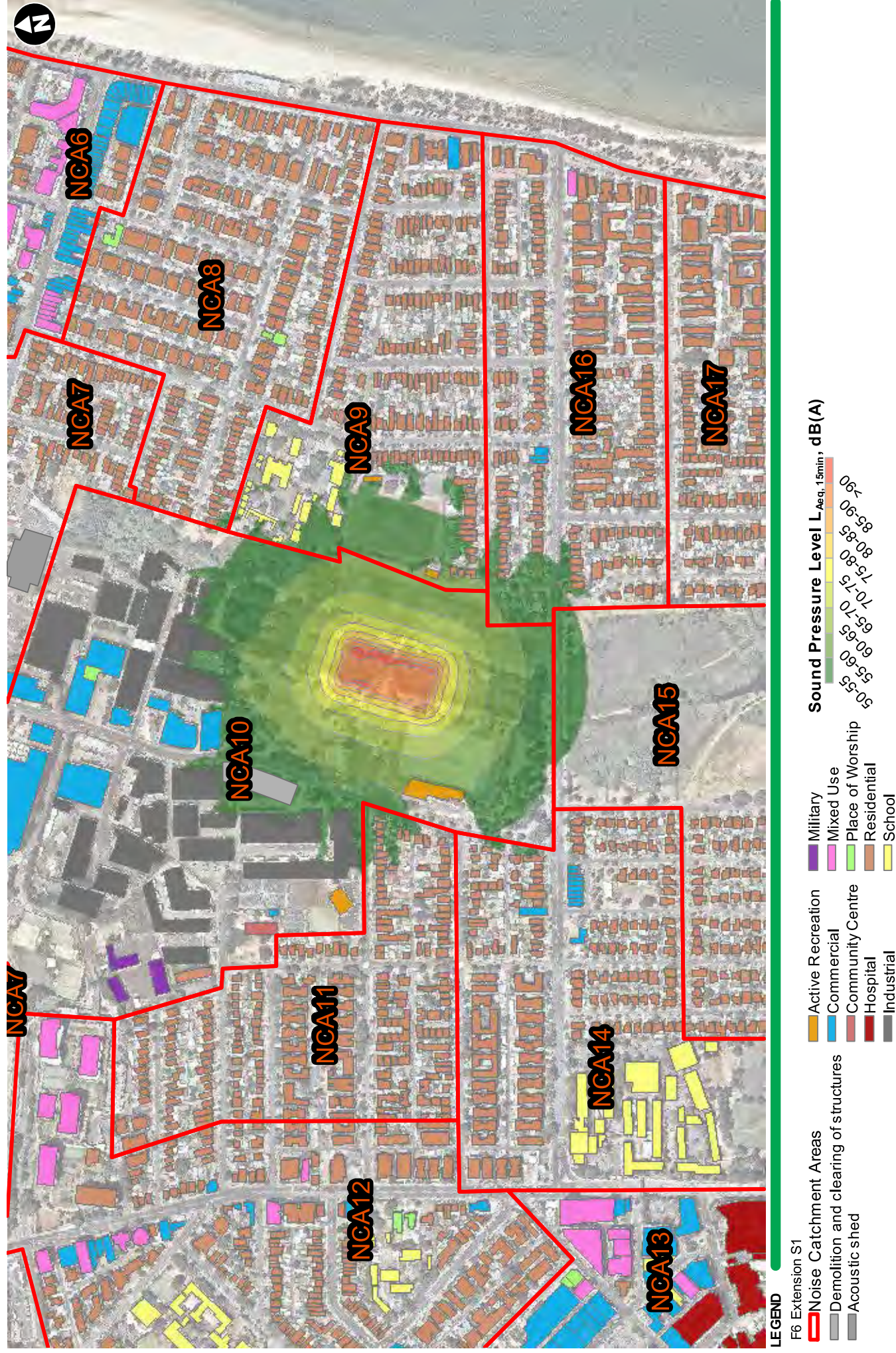


Figure D-19 Construction Noise Contour Maps - C3 - Cut and cover construction - Excavate a temporary creek deviation and build working platform

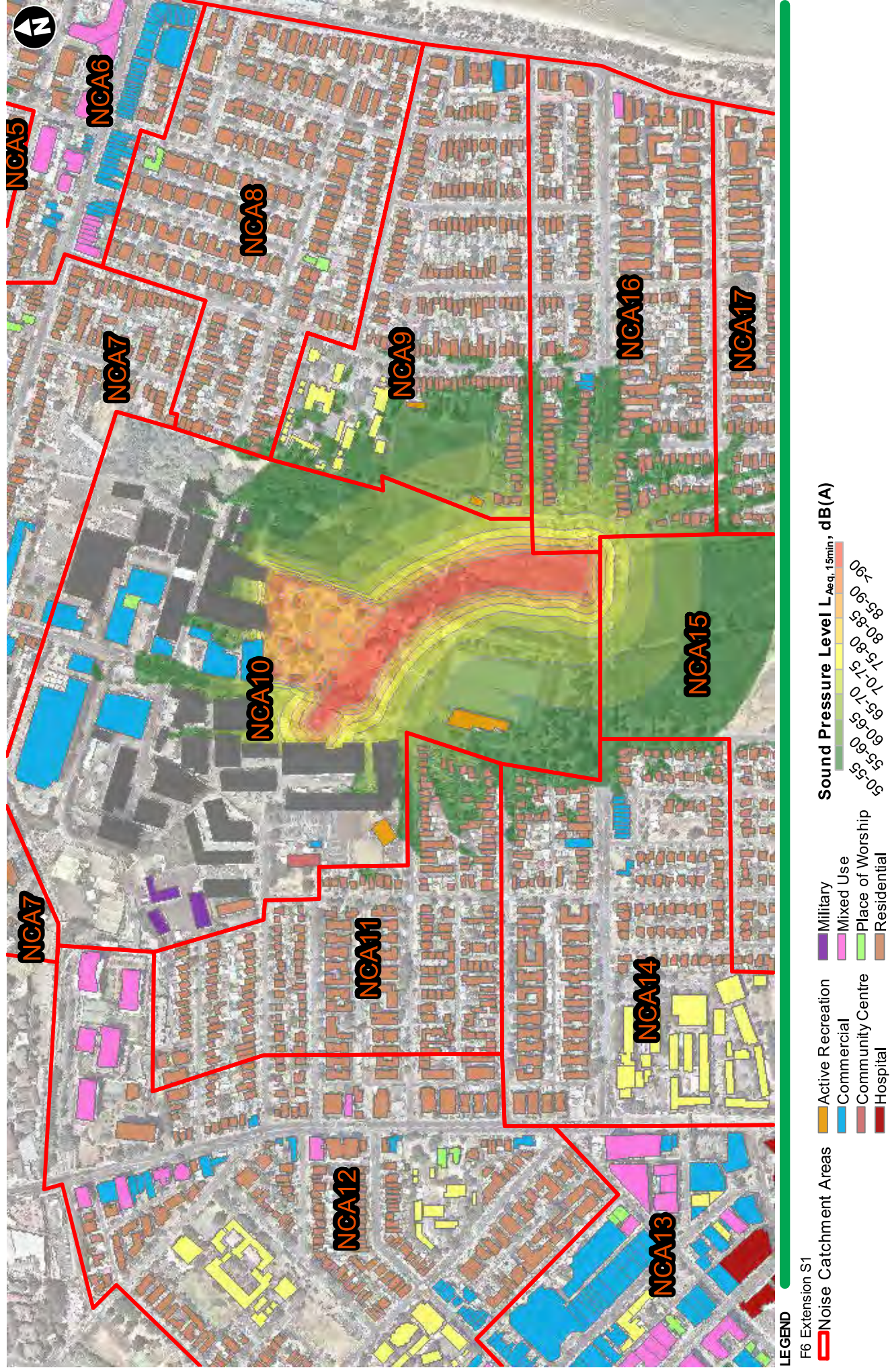


Figure D-20 Construction Noise Contour Maps - C3 - Cut and cover construction - Construct diaphragm wall guide-walls and panels

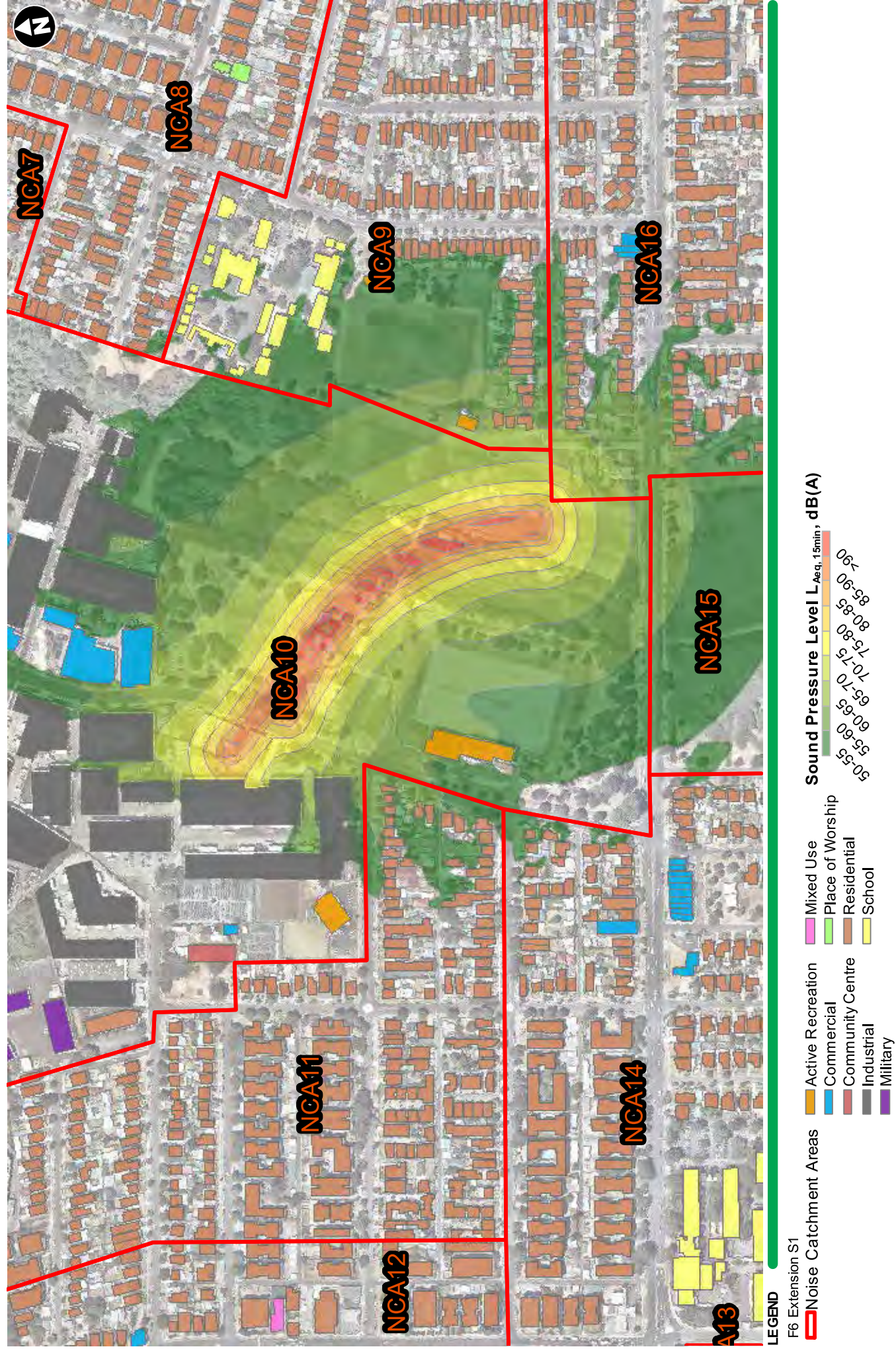
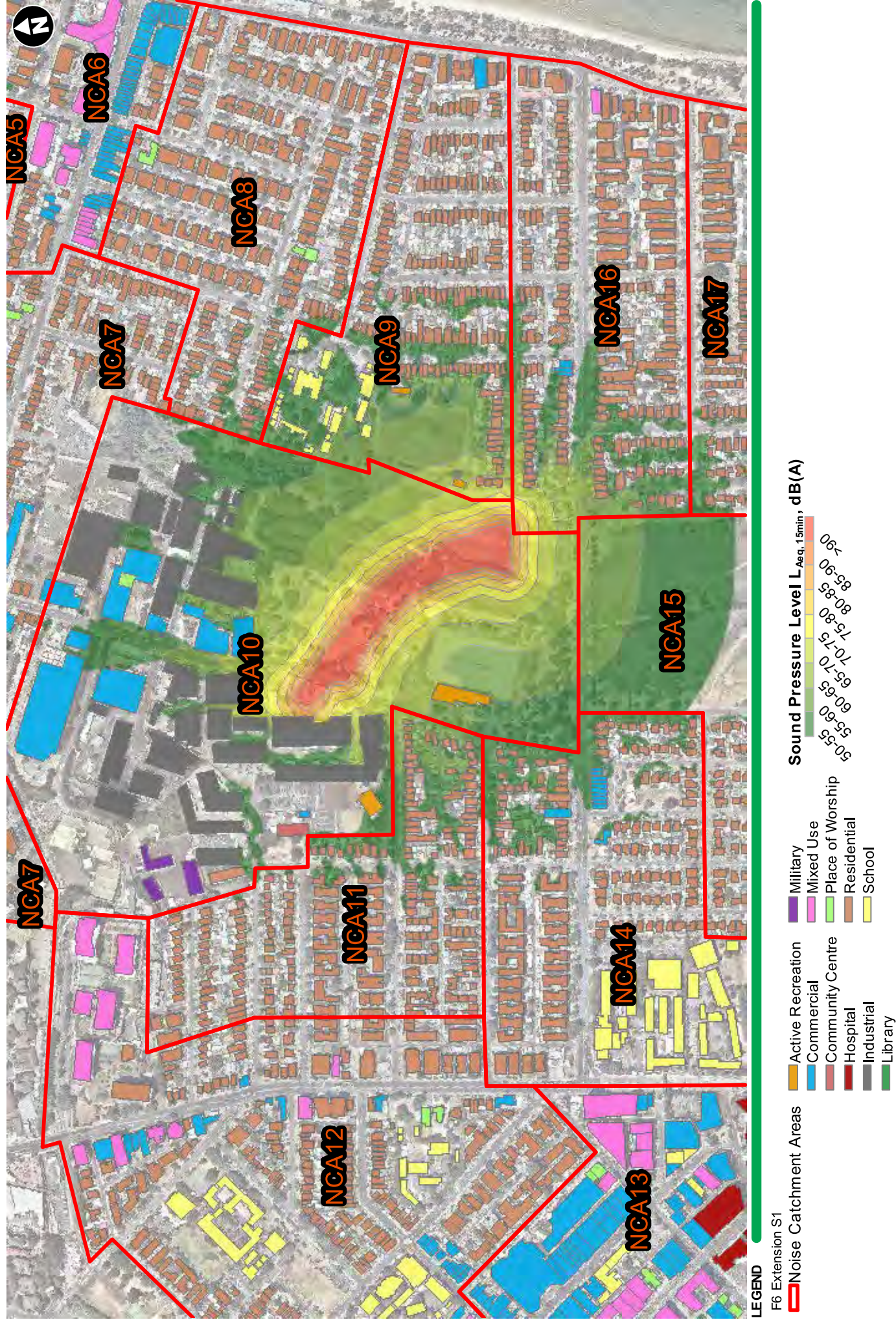


Figure D-21 Construction Noise Contour Maps - C3 - Cut and cover construction - Installation of bored piles



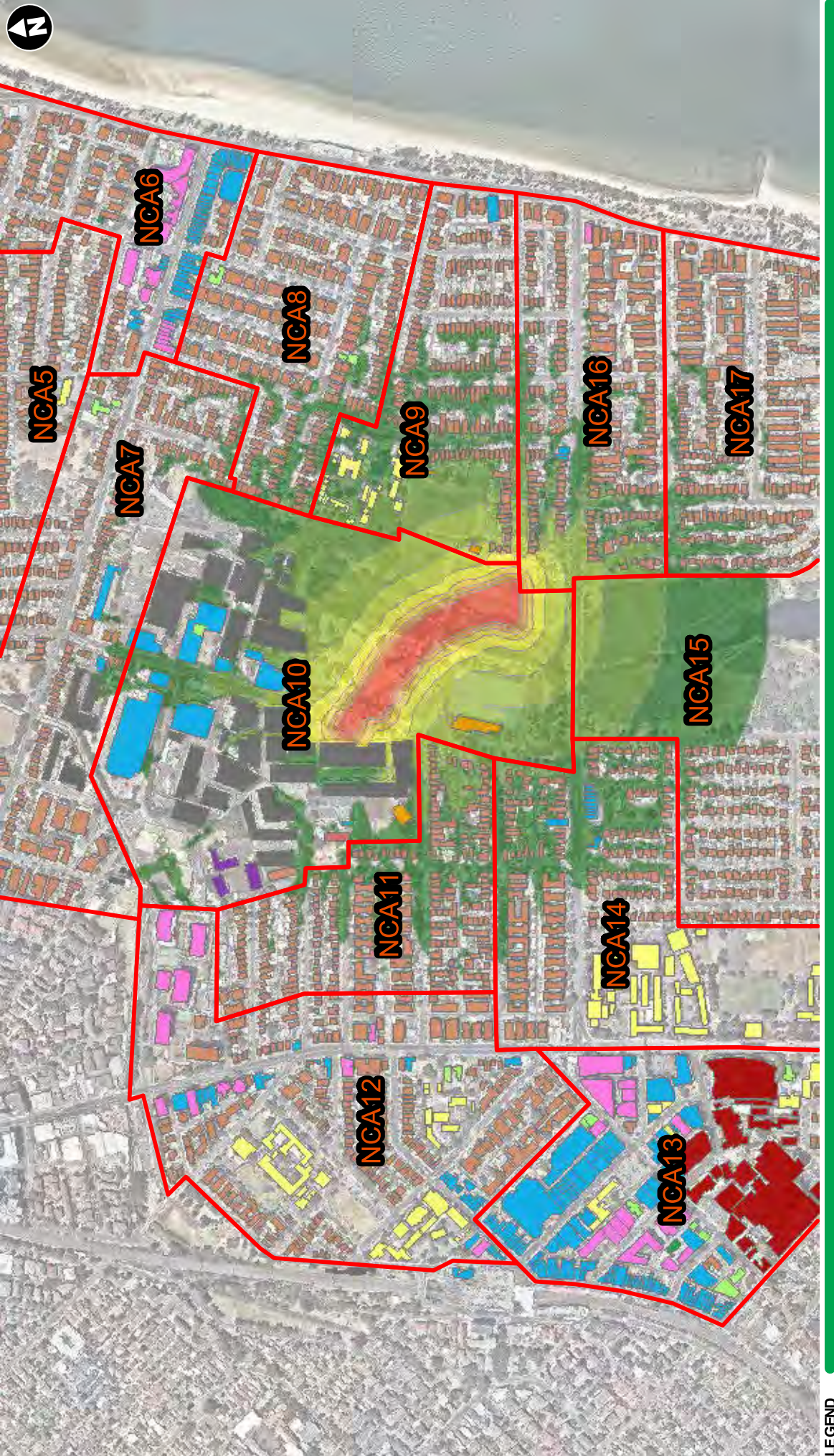


Figure D-23 Construction Noise Contour Maps - C3 - Cut and cover construction - Construction of the cut and cover structure

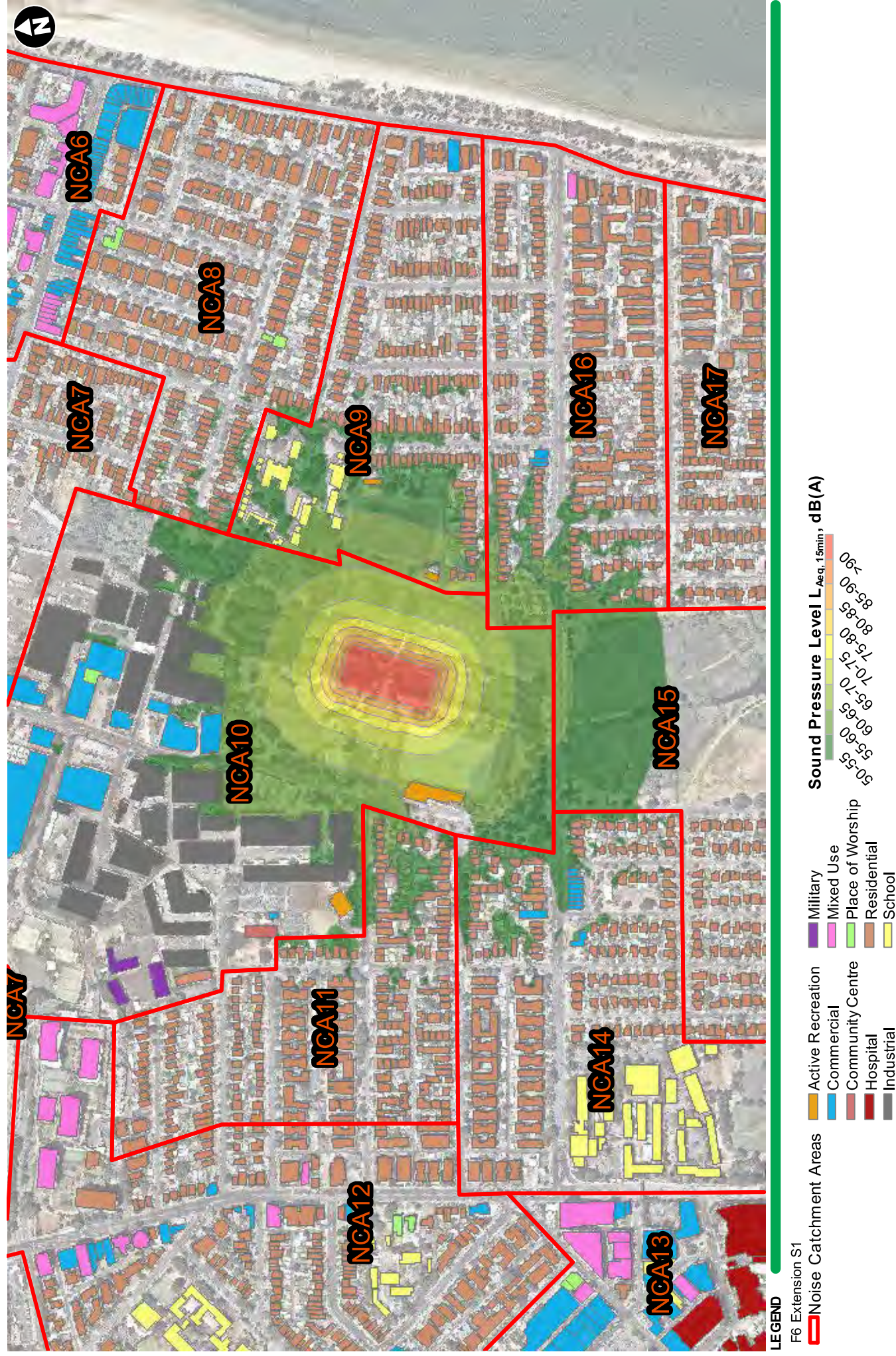


Figure D-24 Construction Noise Contour Maps - C3 - Cut and cover construction - Return creek to original alignment

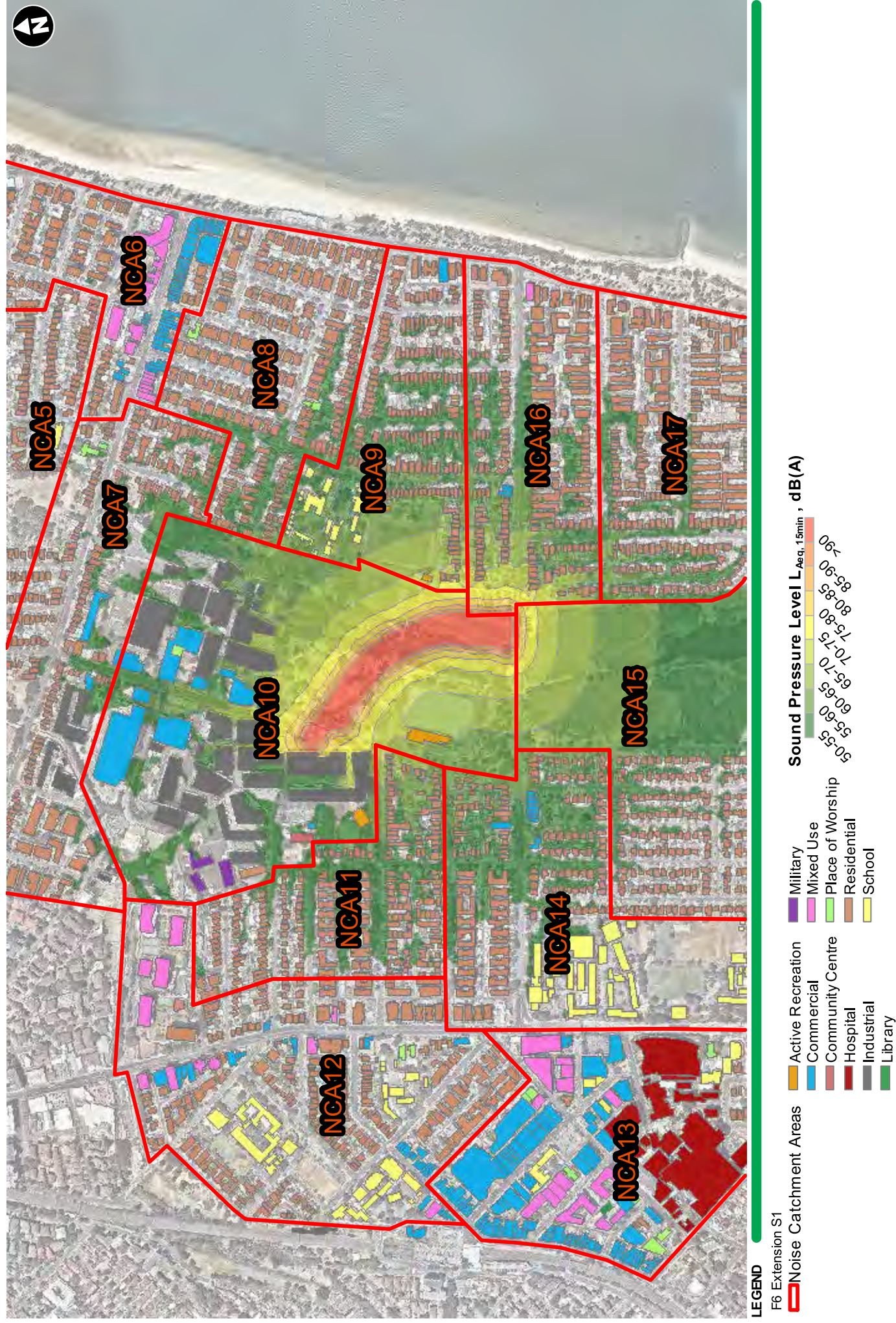


Figure D-25 Construction Noise Contour Maps - C3 - Cut and cover construction - Install / modify stormwater and / or pavement

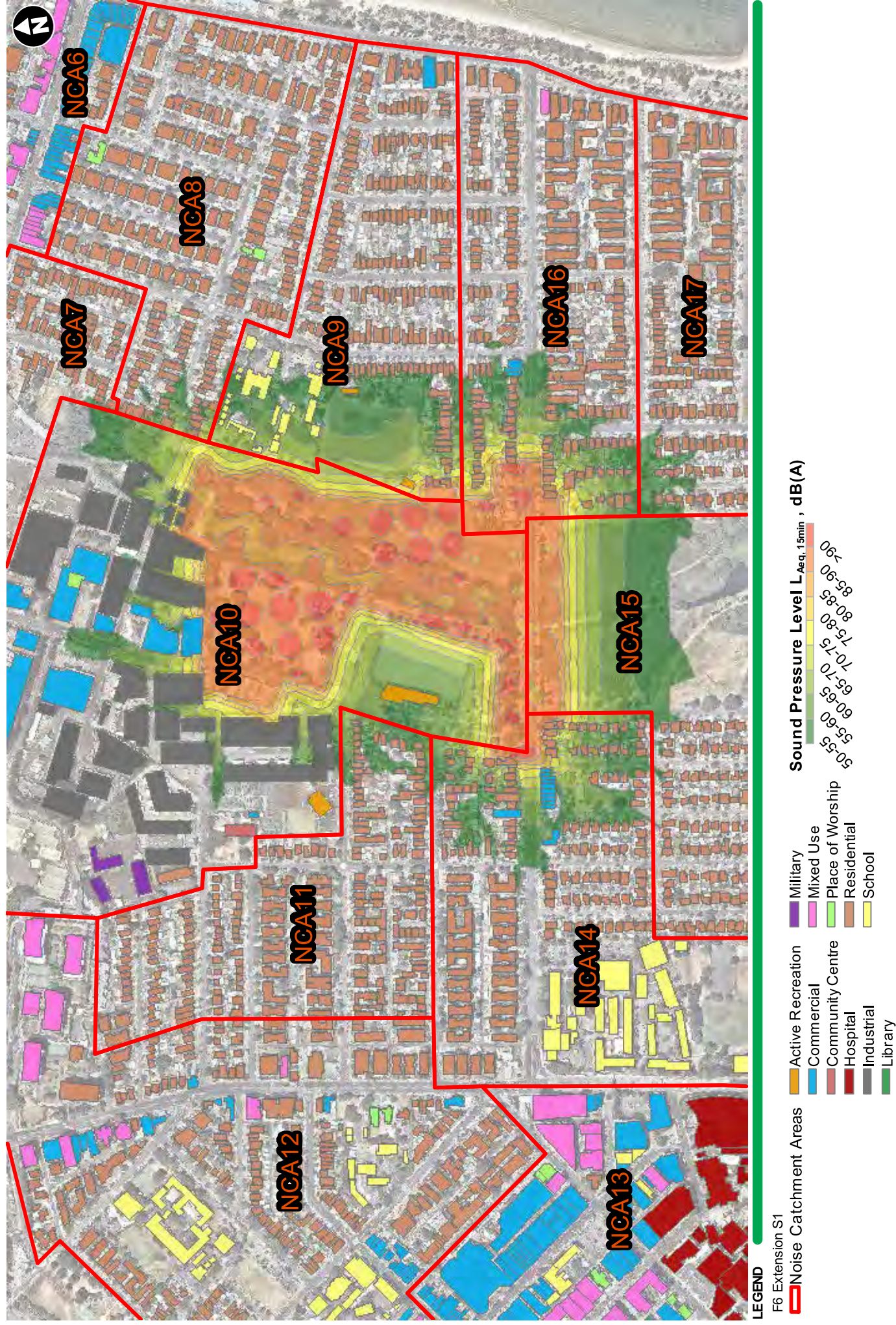


Figure D-26 Construction Noise Contour Maps - C3 - Cut and cover construction - Rehabilitation and landscaping

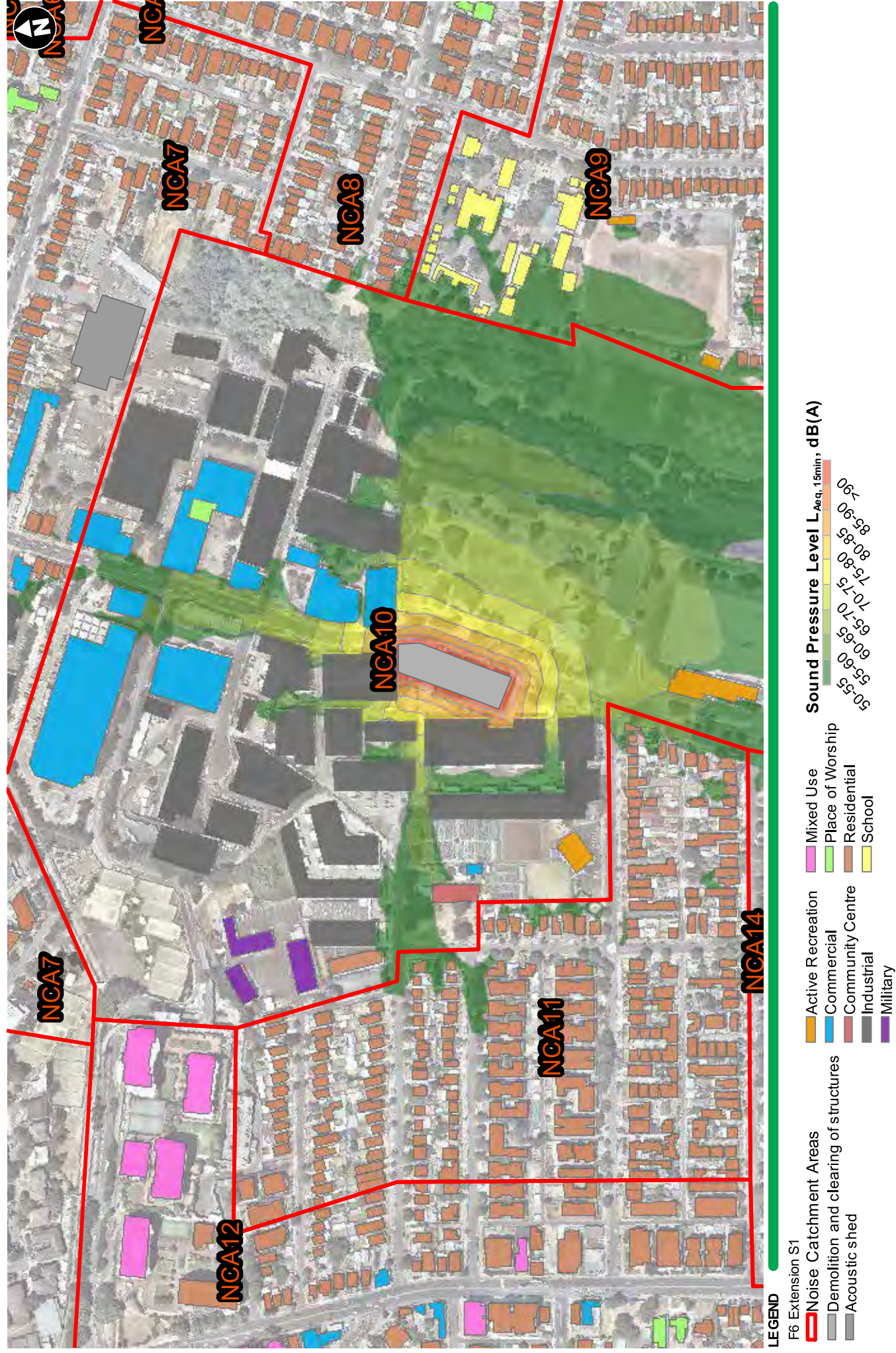


Figure D-27 Construction Noise Contour Maps - C3 - MOC Facility Construction - Construction of the MOC

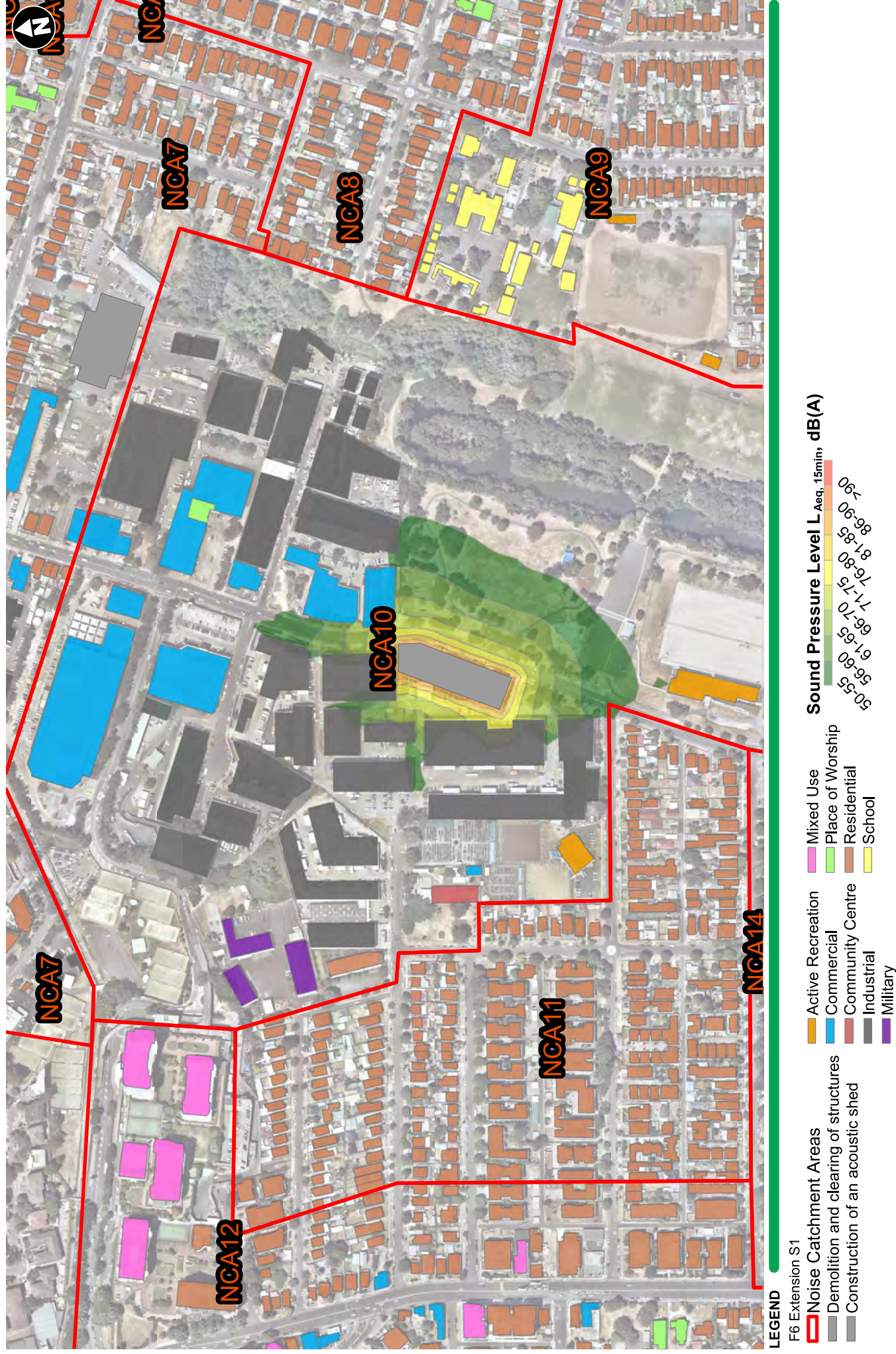


Figure D-28 Construction Noise Contour Maps - C3 - MOC Facility Construction - Fitout, testing, and commissioning of the MOC

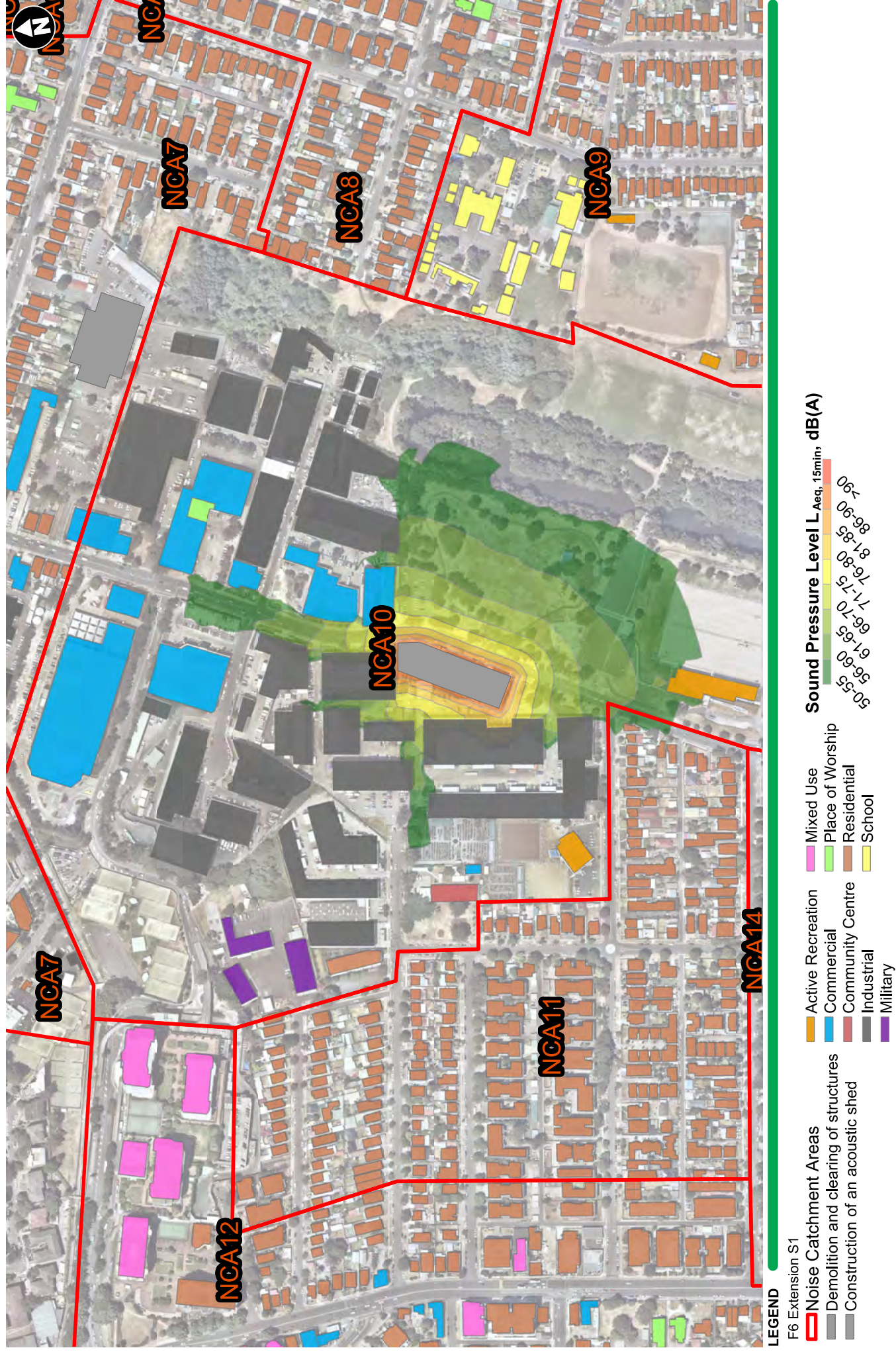


Figure D-29 Construction Noise Contour Maps - C3 - MOC Facility Construction - Rehabilitation and landscaping

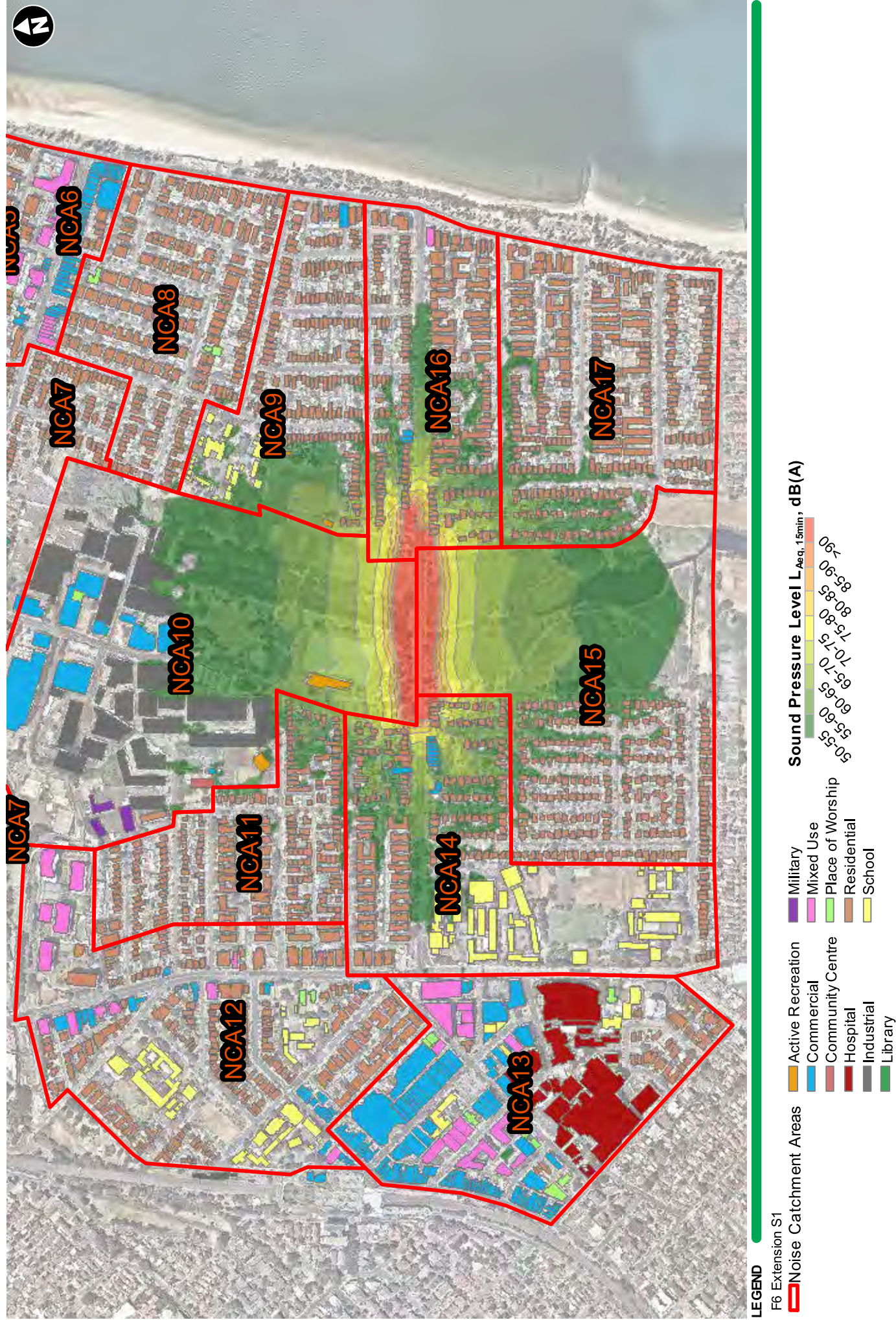




Figure D-31 Construction Noise Contour Maps - C3 - President Avenue Roadworks - Demolish houses

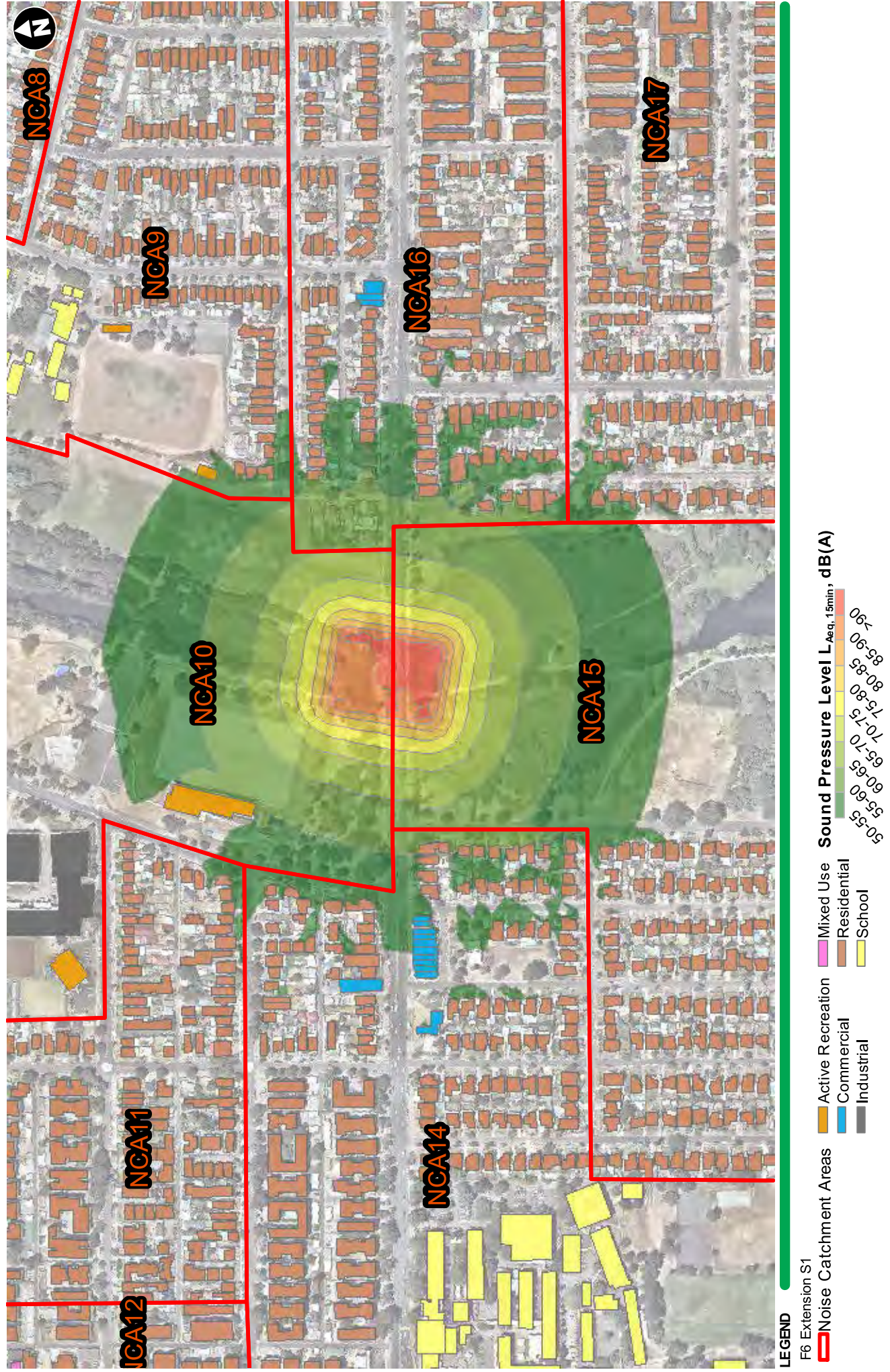


Figure D-32 Construction Noise Contour Maps - C3 - President Avenue Roadworks - Install culverts

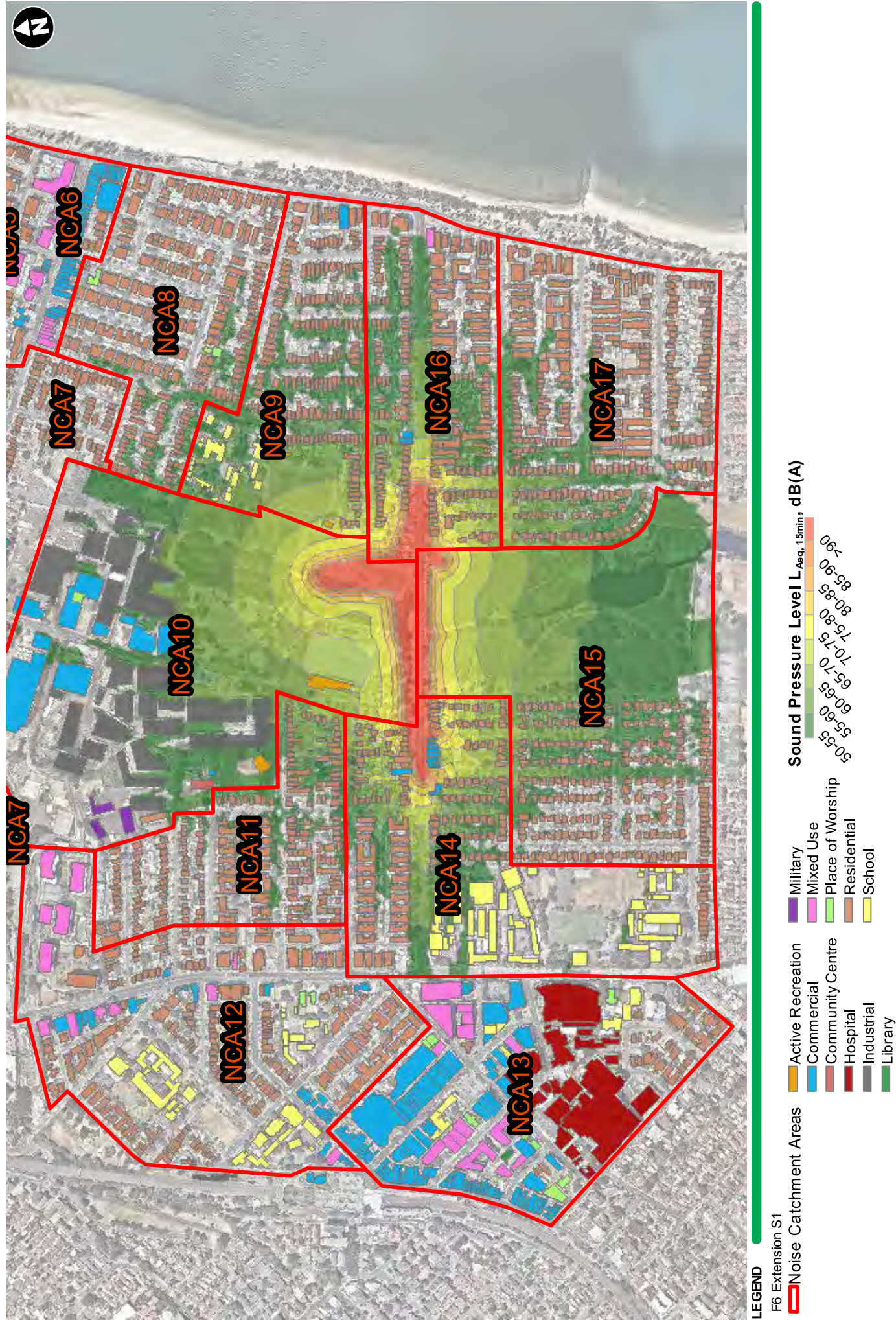


Figure D-33 Construction Noise Contour Maps - C3 - President Avenue Roadworks - Install stormwater

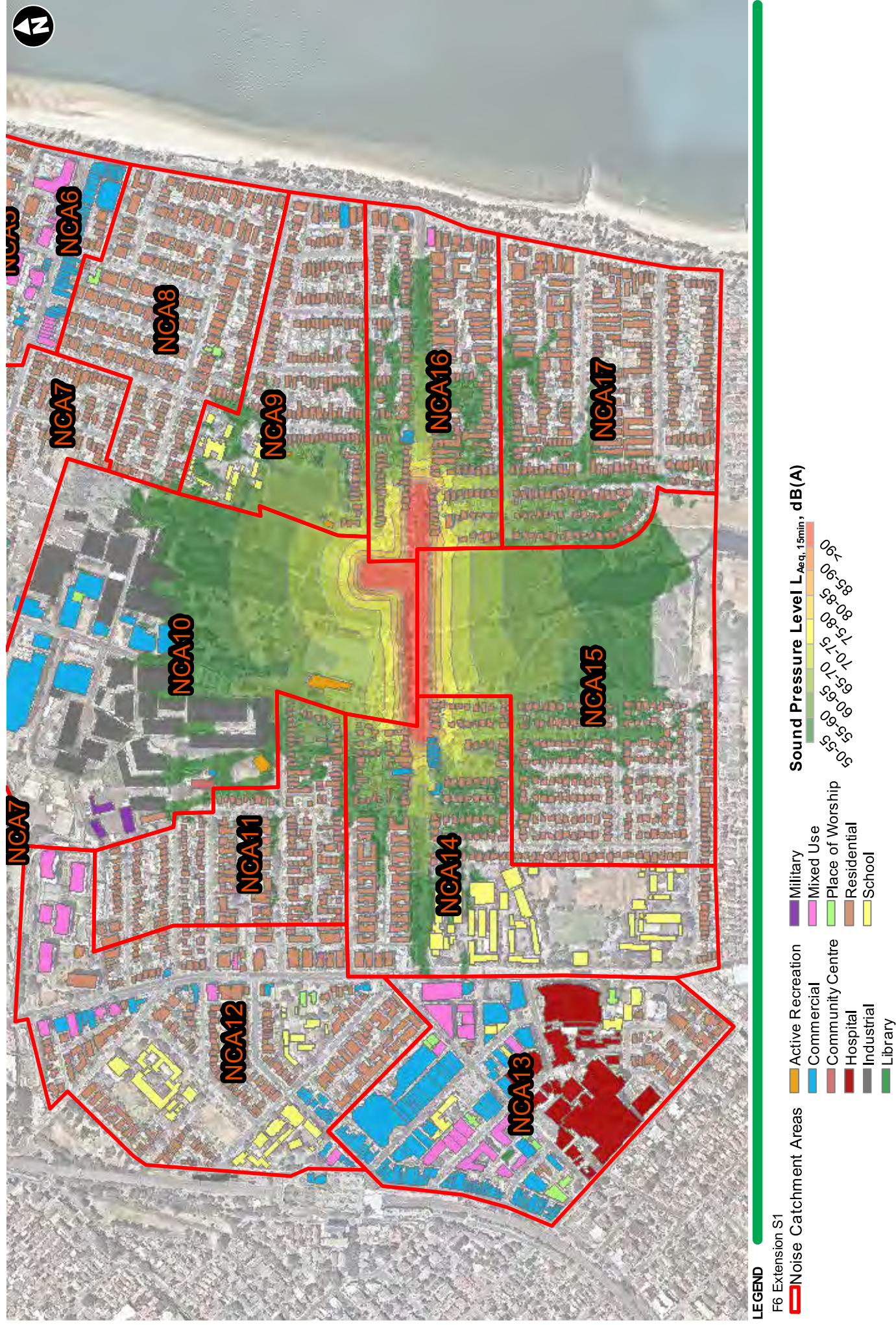
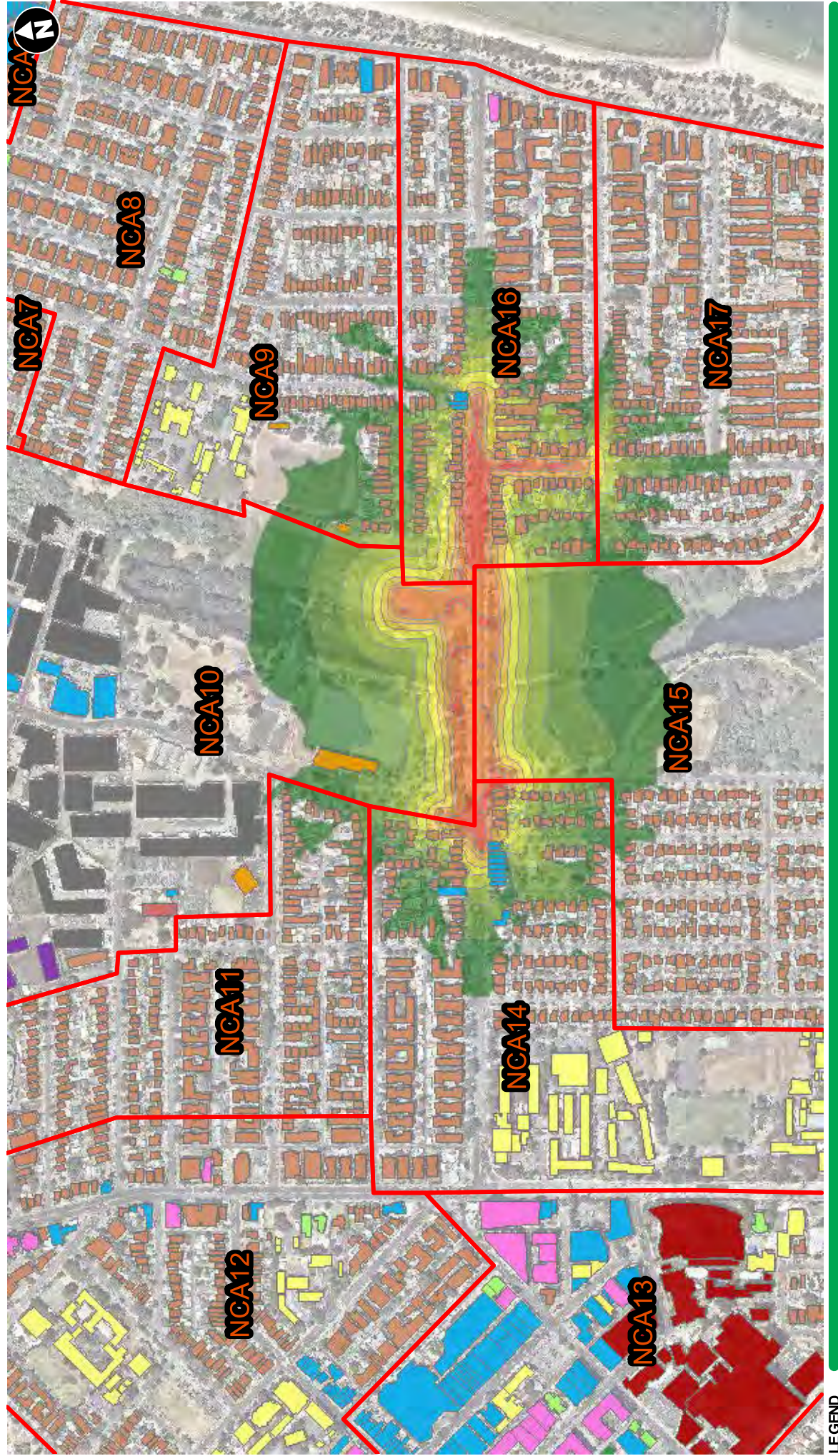


Figure D-34 Construction Noise Contour Maps - C3 - President Avenue Roadworks - Pavement works



LEGEND

F6 Extension S1

 Noise Catchment Areas

Active Recreation
 Commercial
 Community Centre
 Hospital
 Industrial
 Library
 Military
 Mixed Use
 Place of Worship
 Residential
 School

Sound Pressure Level $L_{Aeq, 15min}$, dB(A)

50-55
 55-60
 60-65
 65-70
 70-75
 75-80
 80-85
 85-90
 >90

Figure D-35 Construction Noise Contour Maps - C3 - President Avenue Roadworks - Final asphaltting and line marking

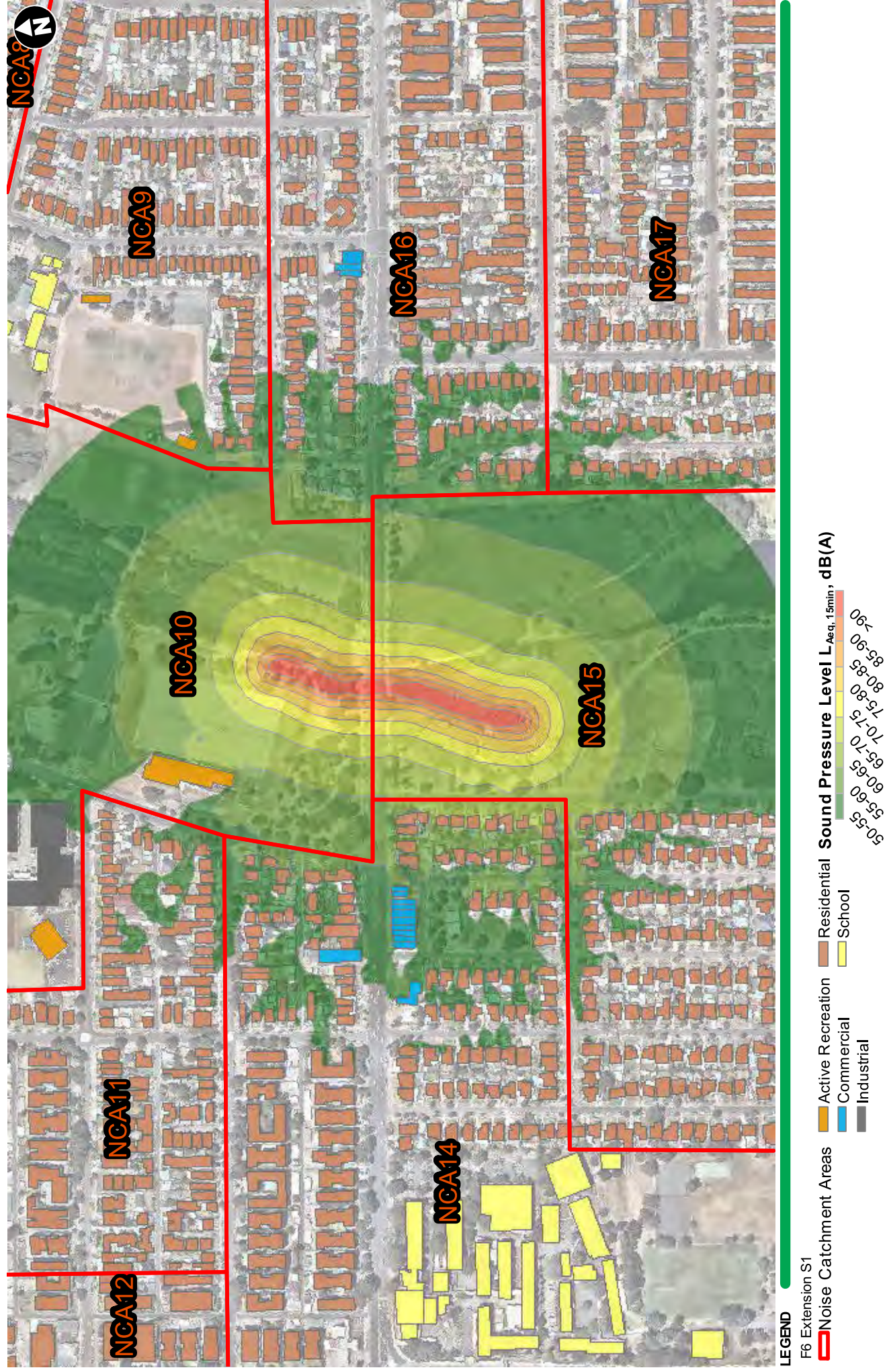


Figure D-36 Construction Noise Contour Maps - C3 - President Avenue Roadworks - Construction of ATC bridge over President Avenue

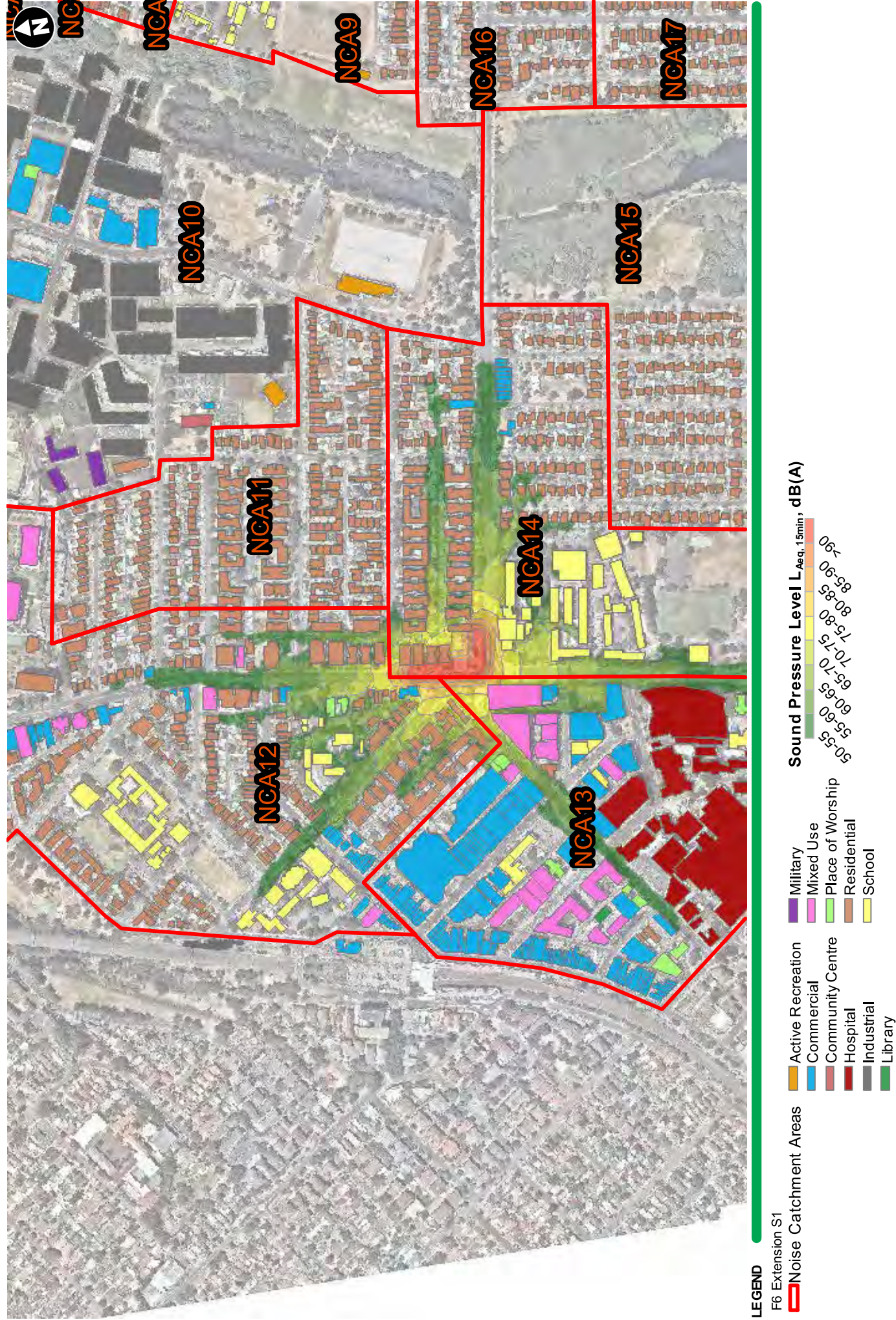


Figure D-37 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Relocation of utilities / services

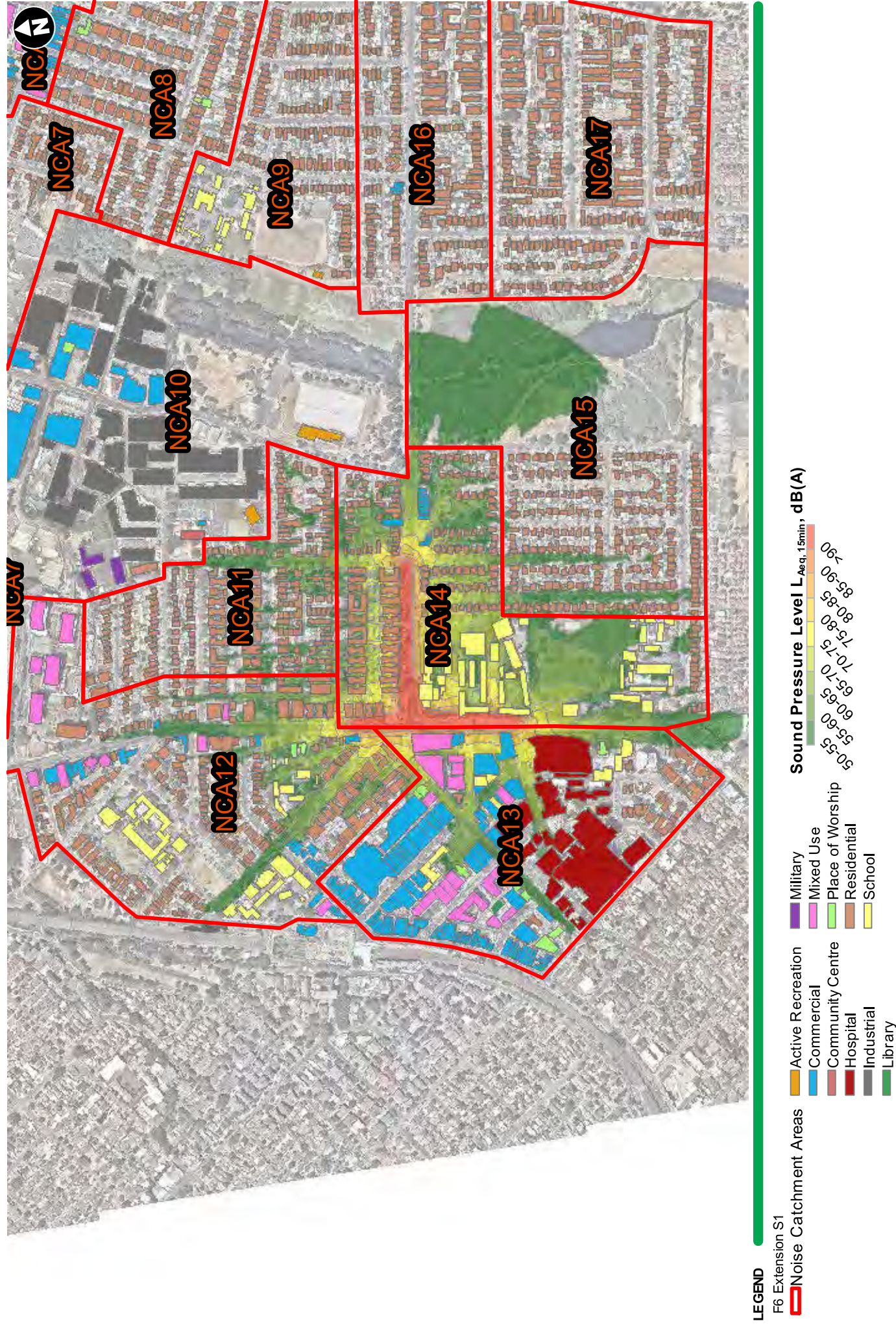


Figure D-38 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Property adjustments

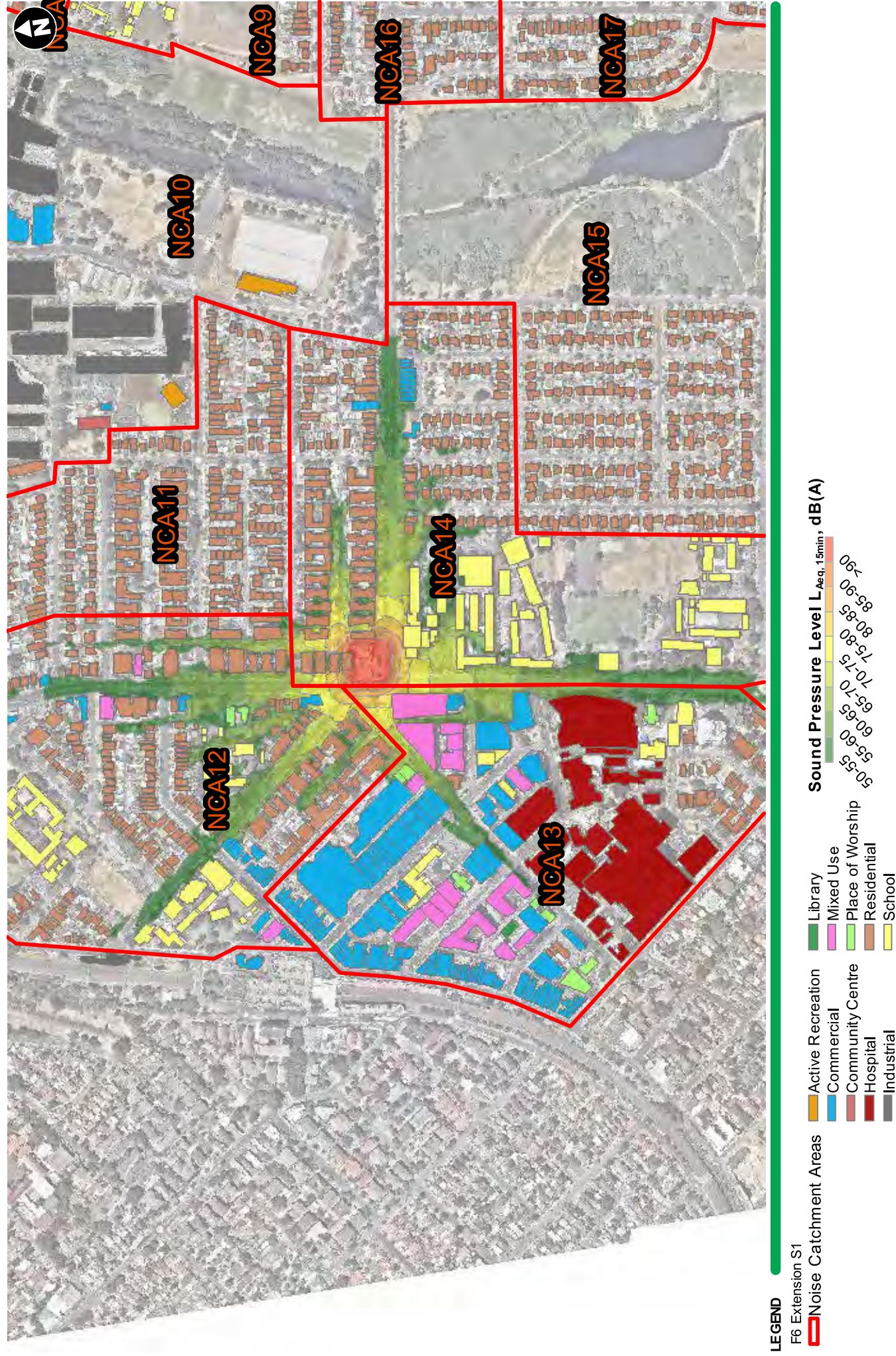


Figure D-39 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Demolition and clearing of structures, including buildings

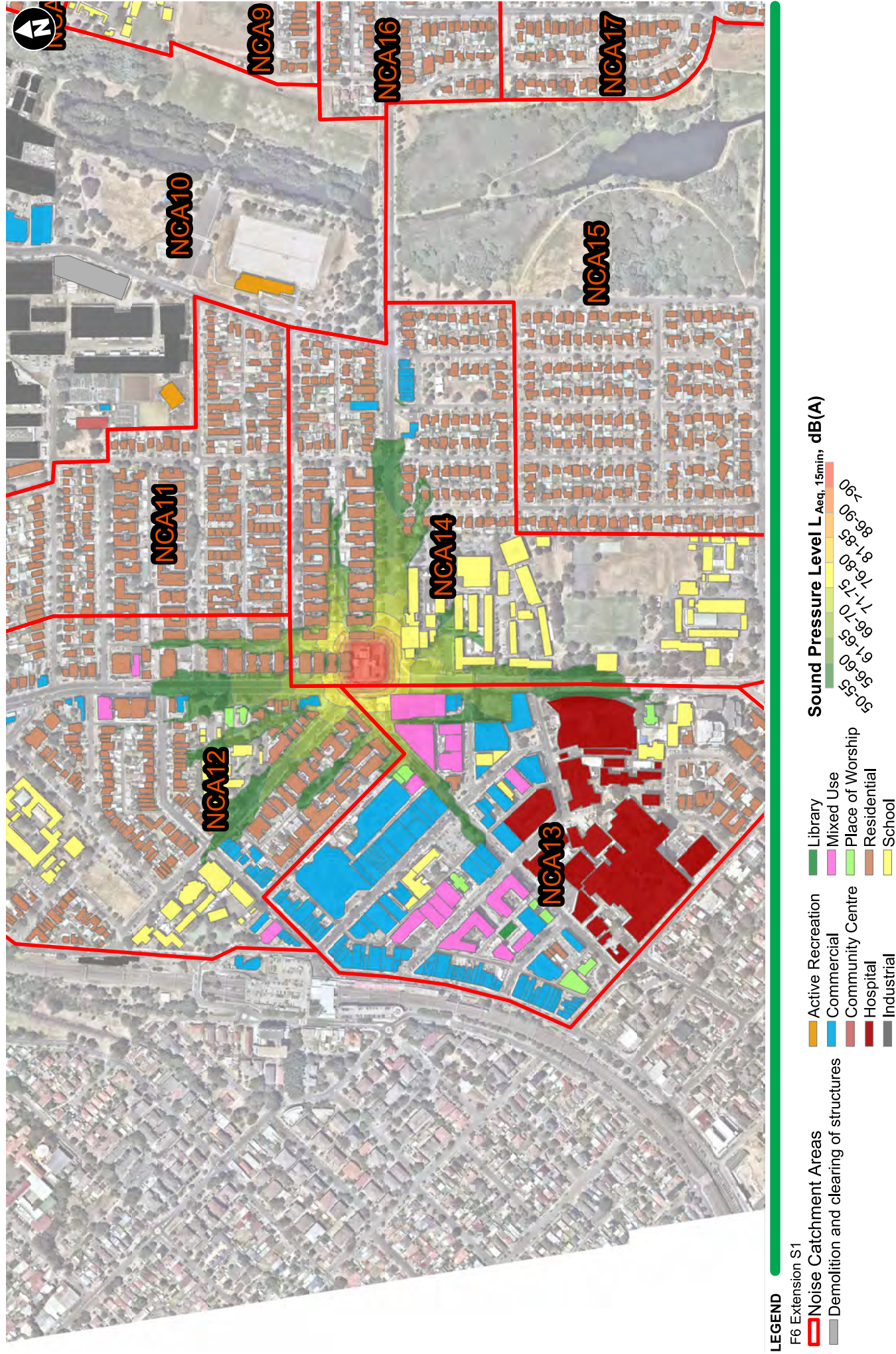


Figure D-40 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Site compound establishment

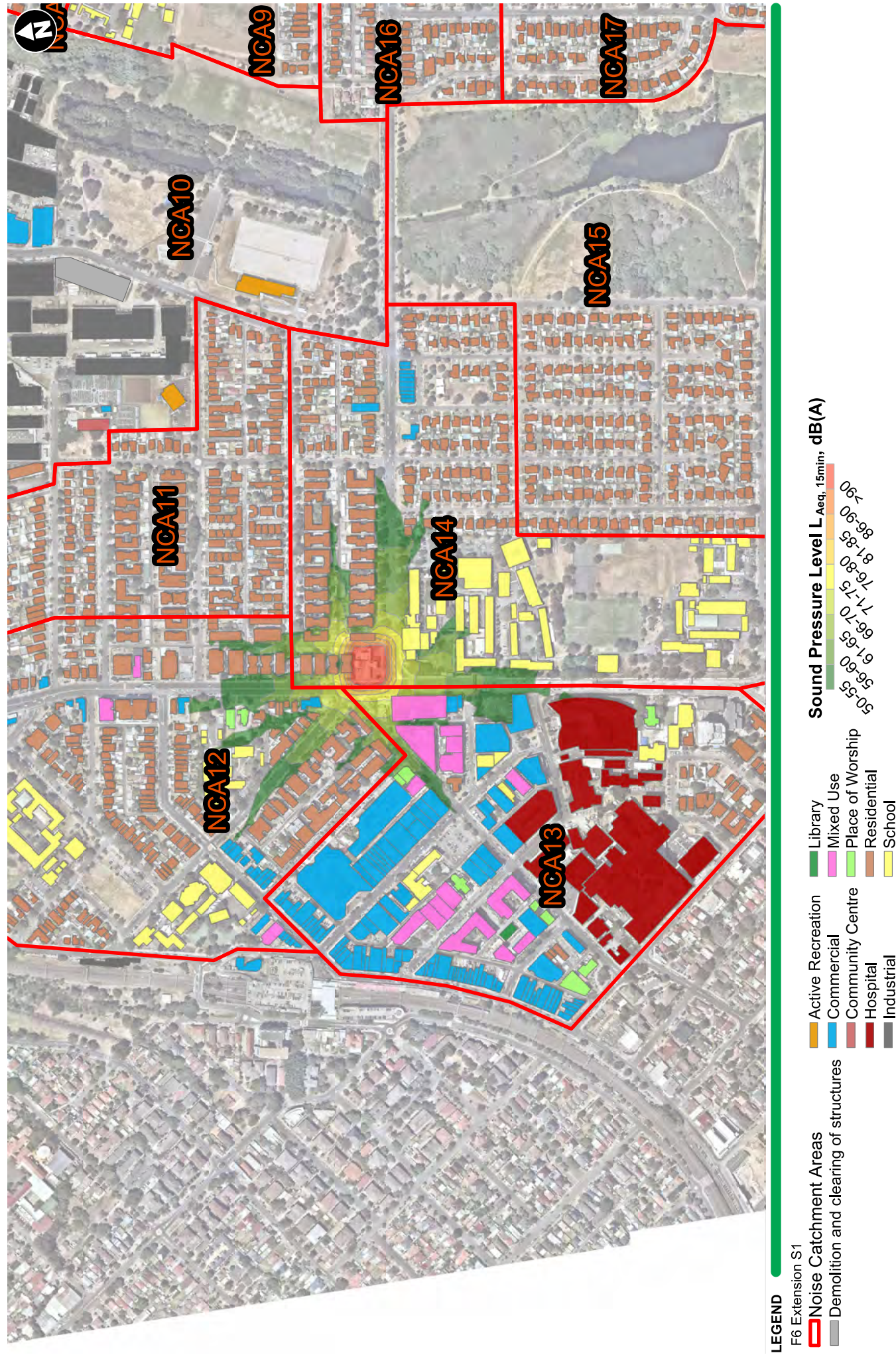


Figure D-41 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Site compound operation

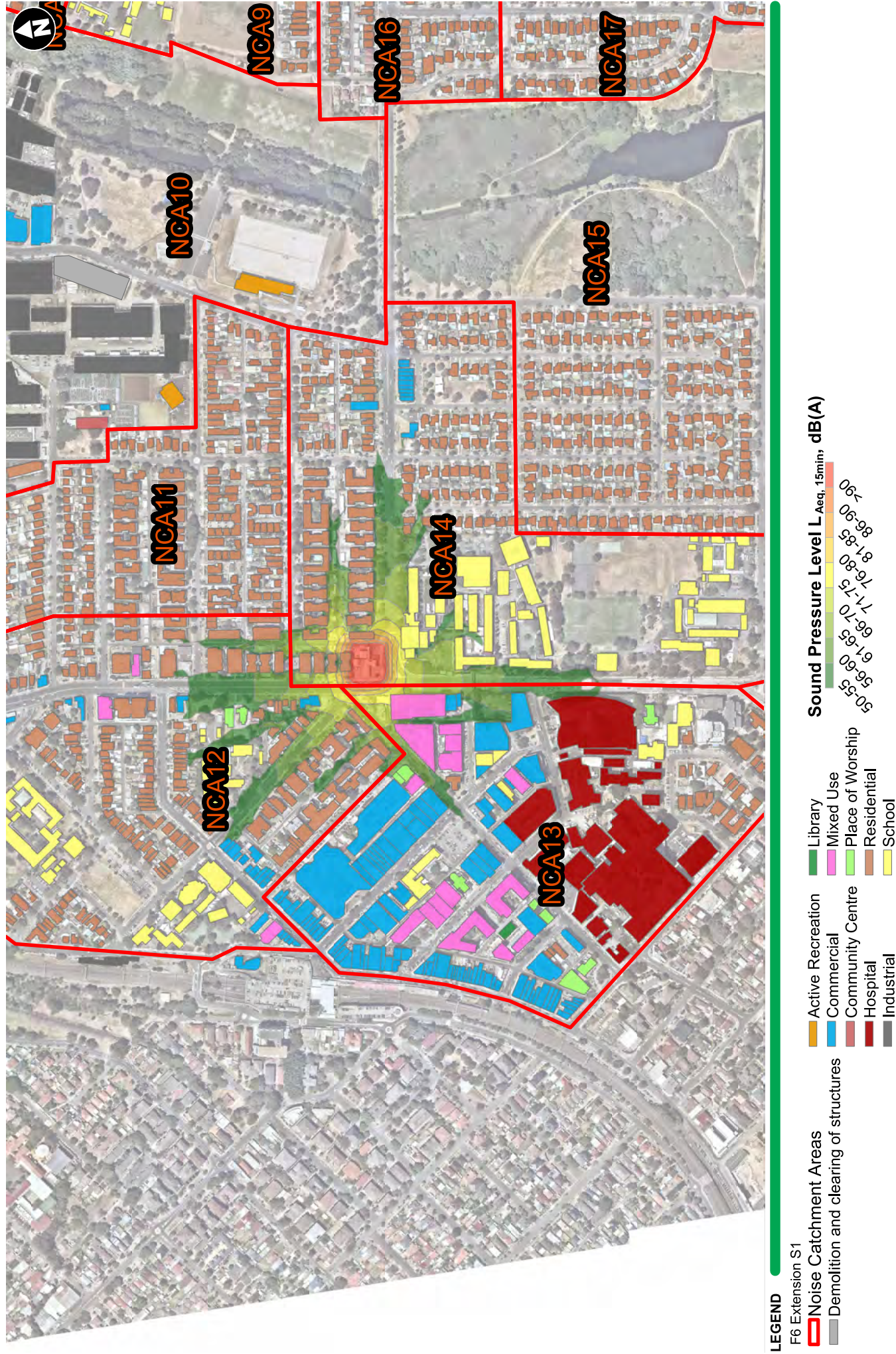


Figure D-42 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Site compound rehabilitation

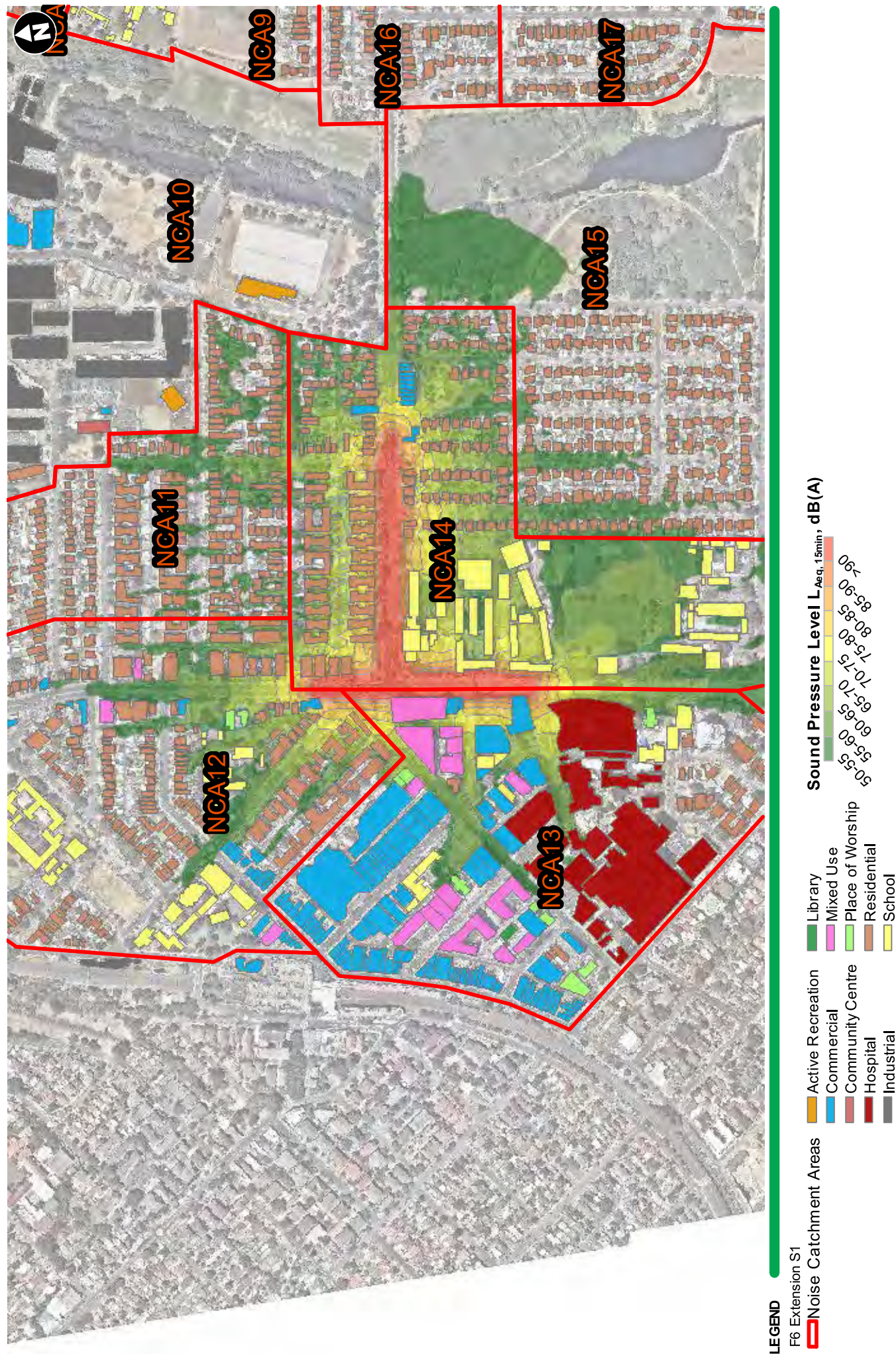


Figure D-43 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Excavate to subgrade level

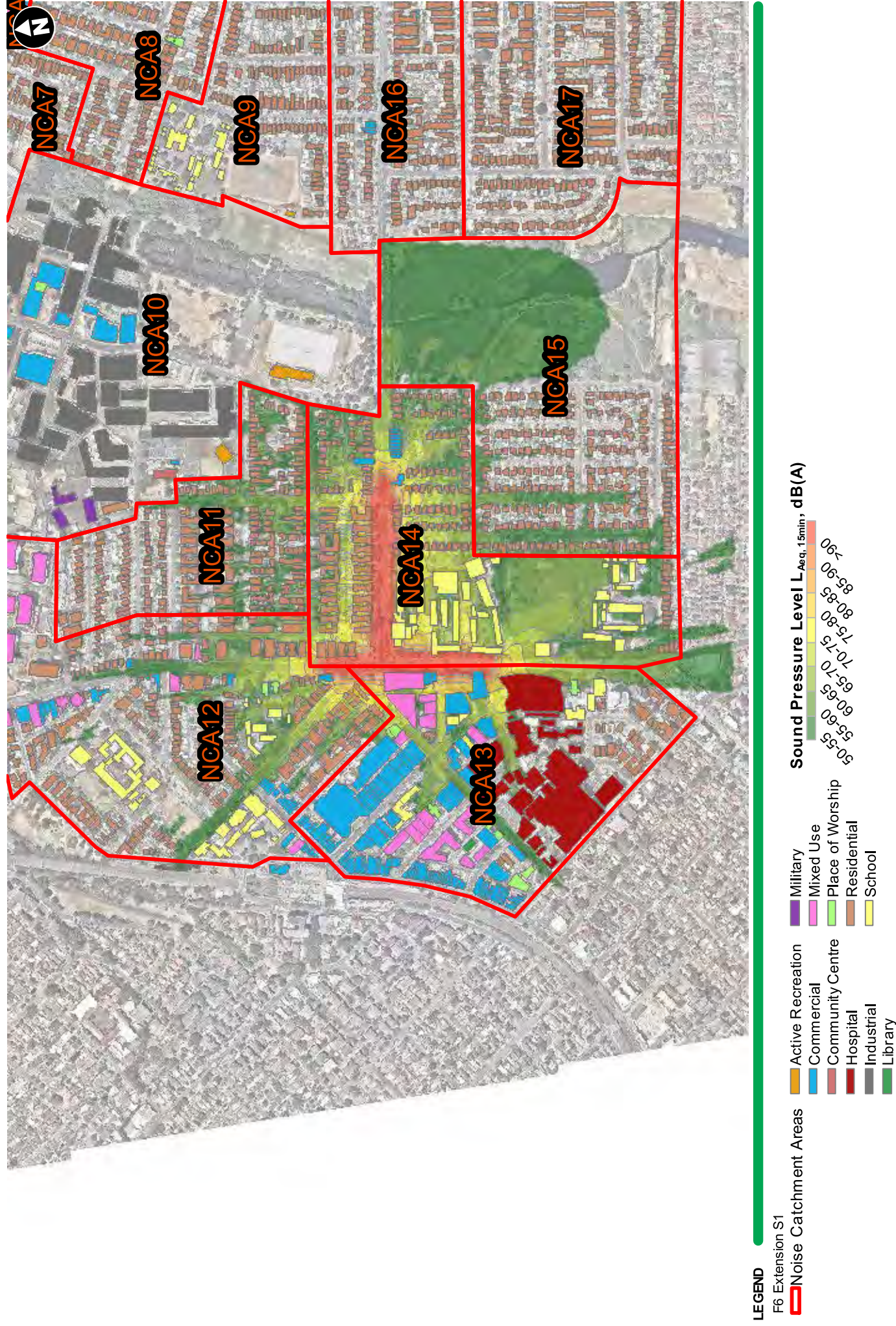


Figure D-44 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Install / modify stormwater and footpath pavement

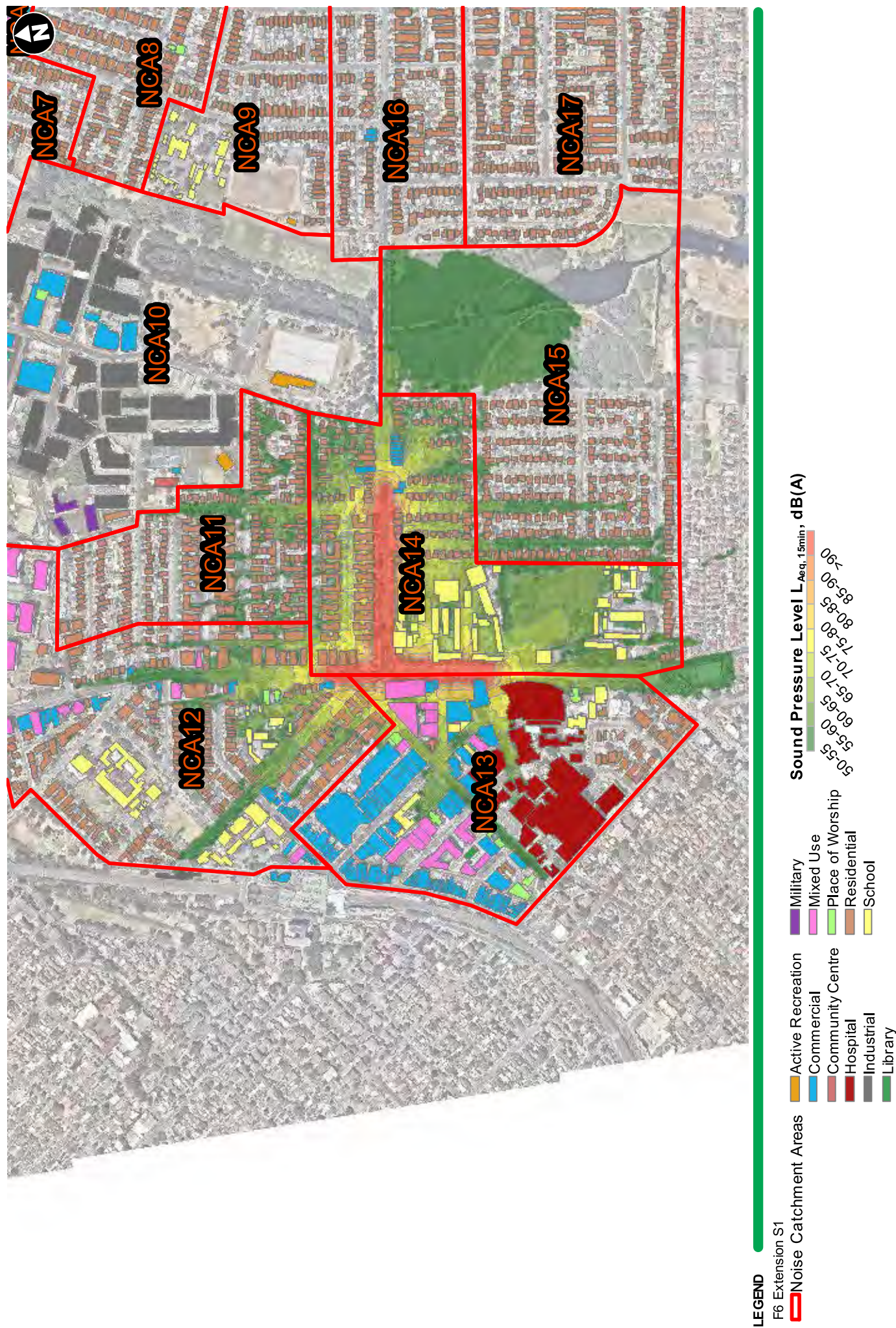


Figure D-45 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Pavement works

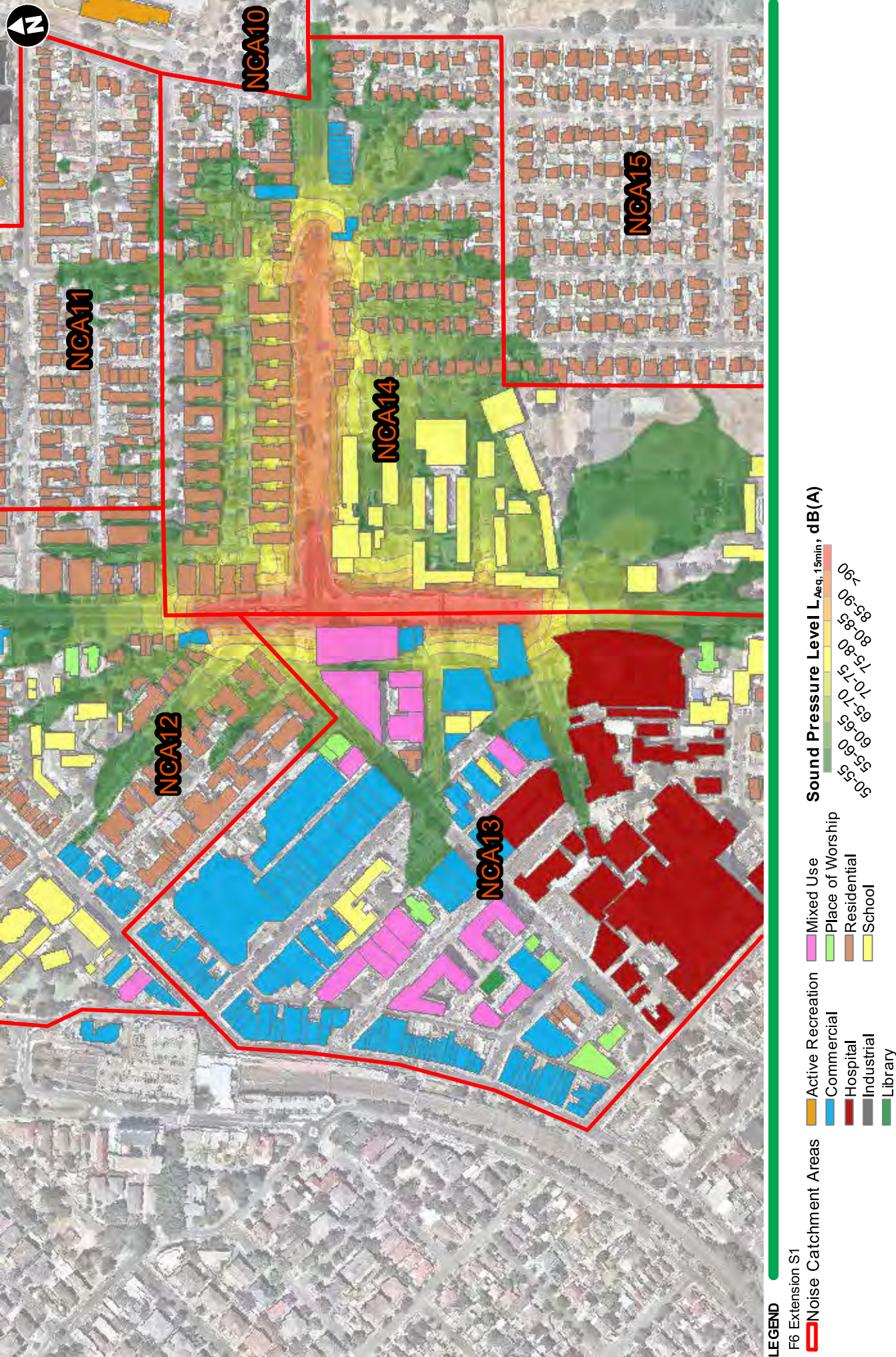


Figure D-46 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Final asphalt and line marking

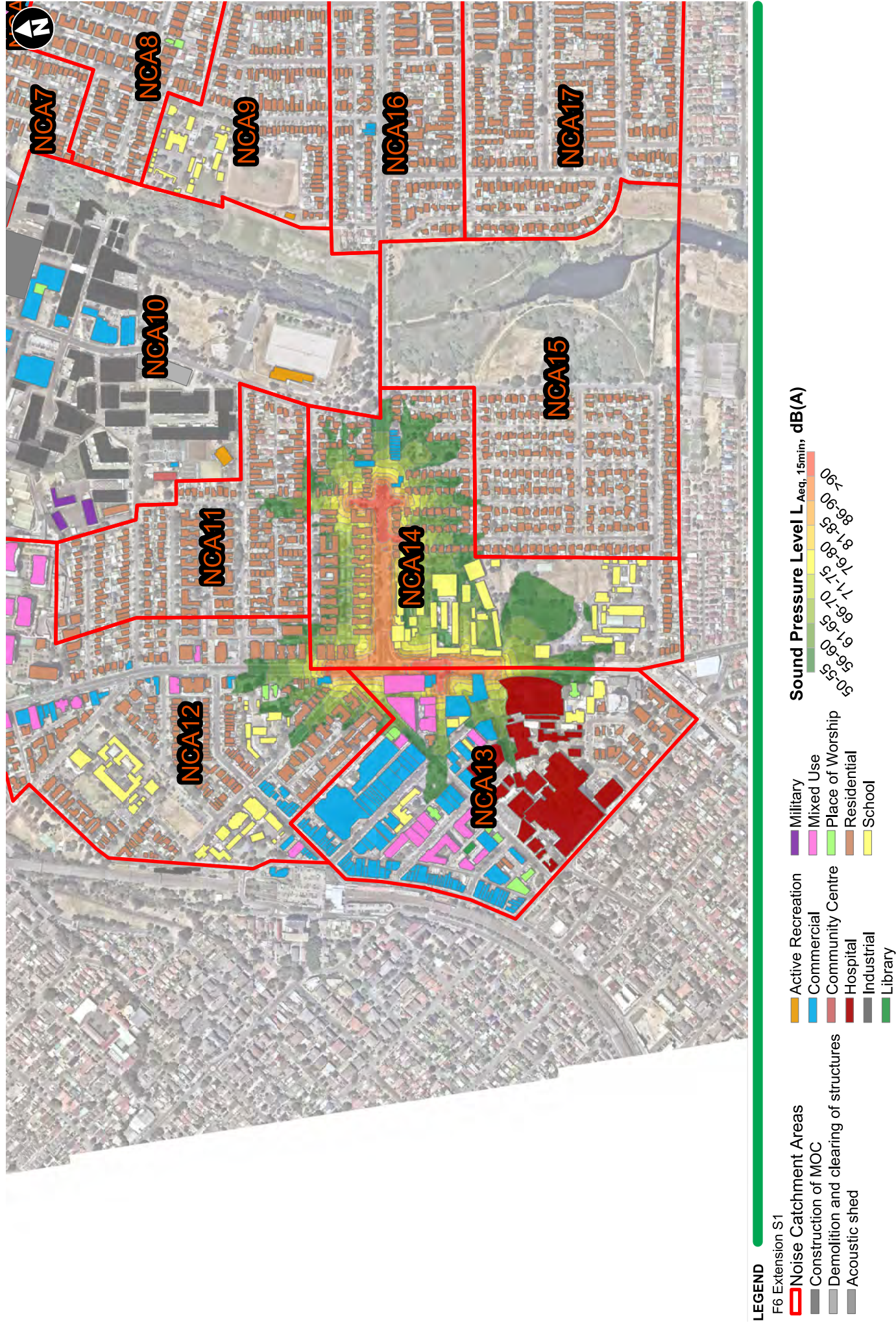


Figure D-47 Construction Noise Contour Maps - C3 - Princes Highway intersection works - Rehabilitation and line marking

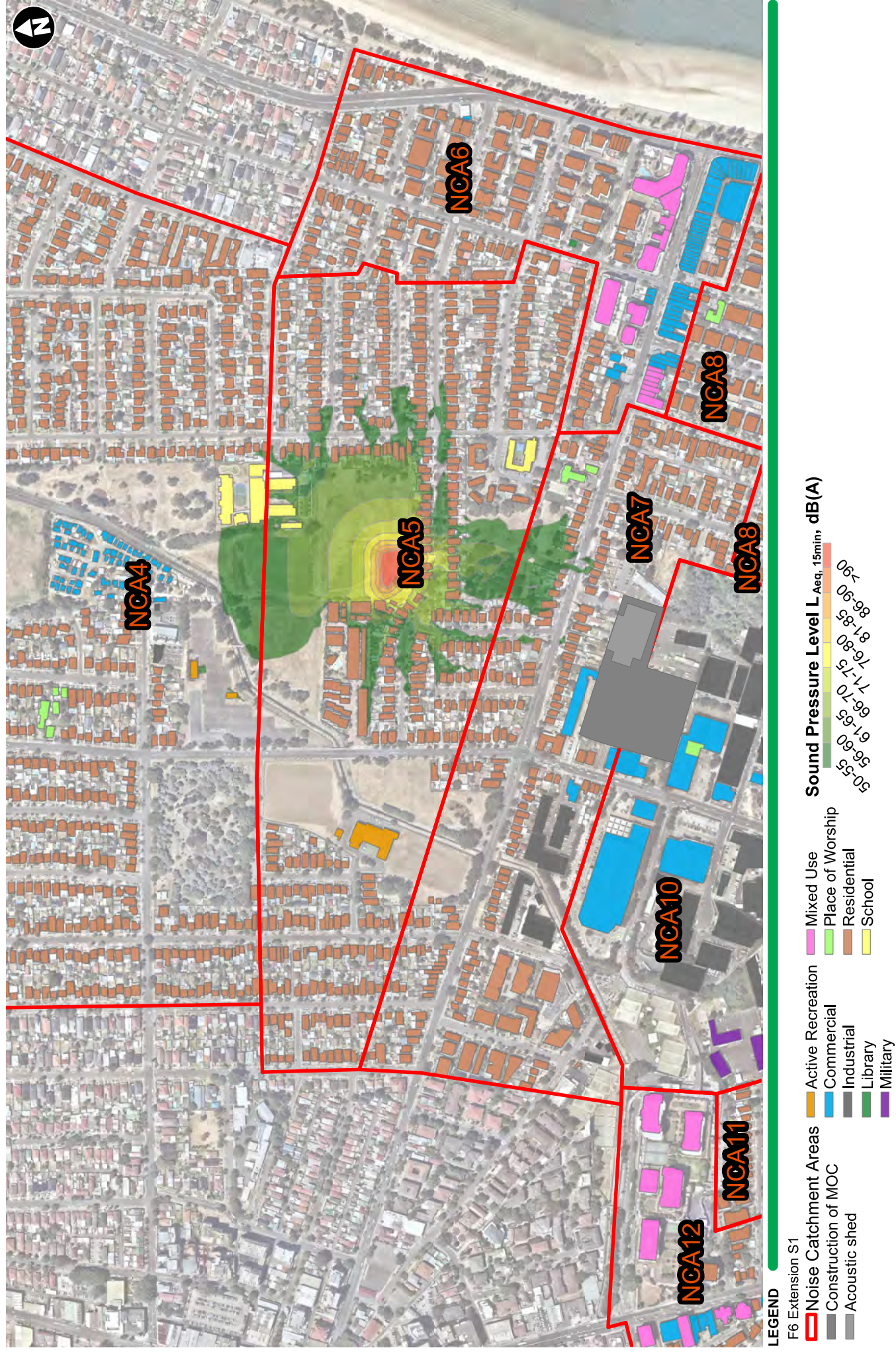


Figure D-48 Construction Noise Contour Maps - C4 - Site establishment (no saw)

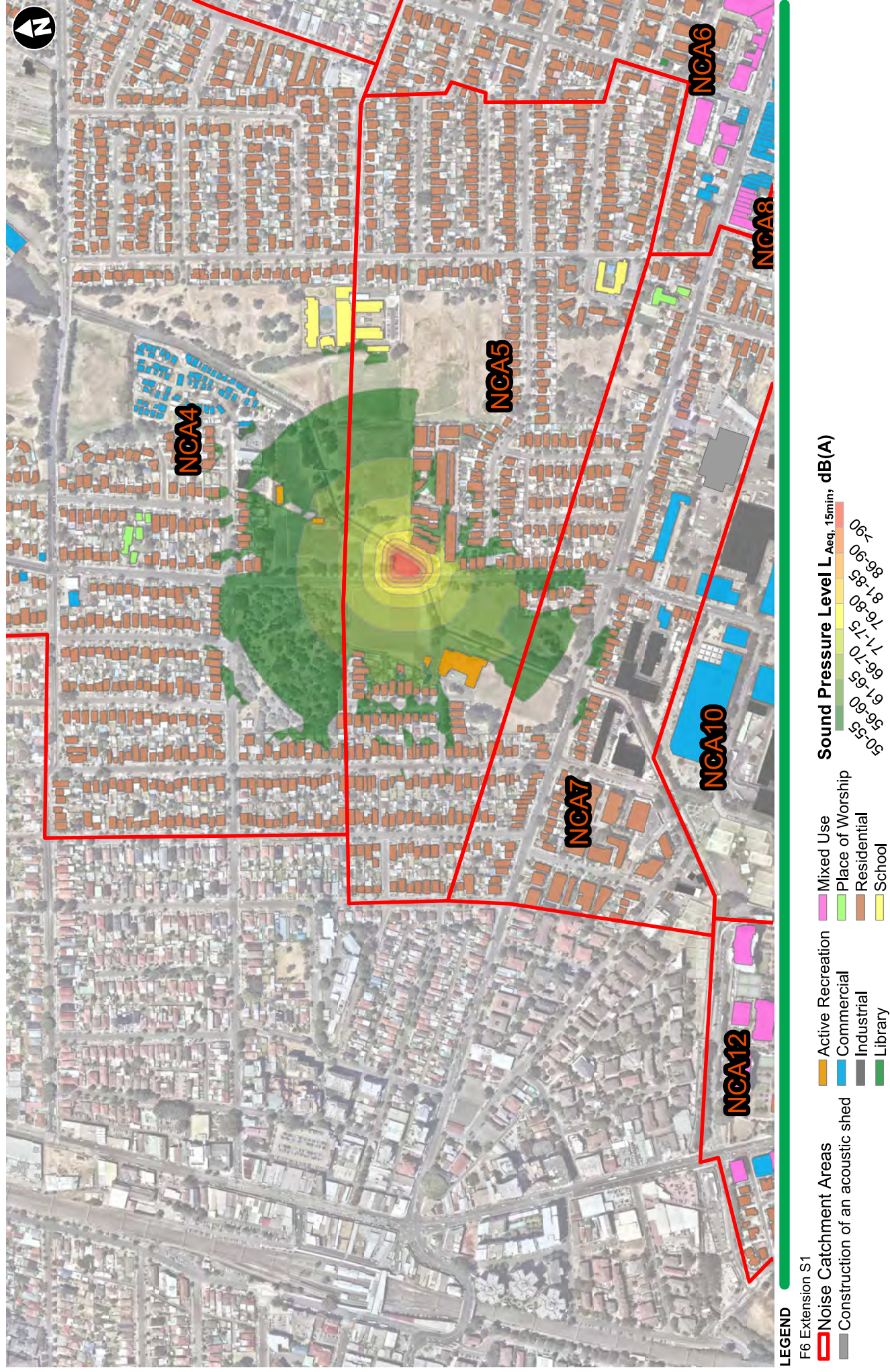


Figure D-49 Construction Noise Contour Maps - C5 - Site establishment (no saw)

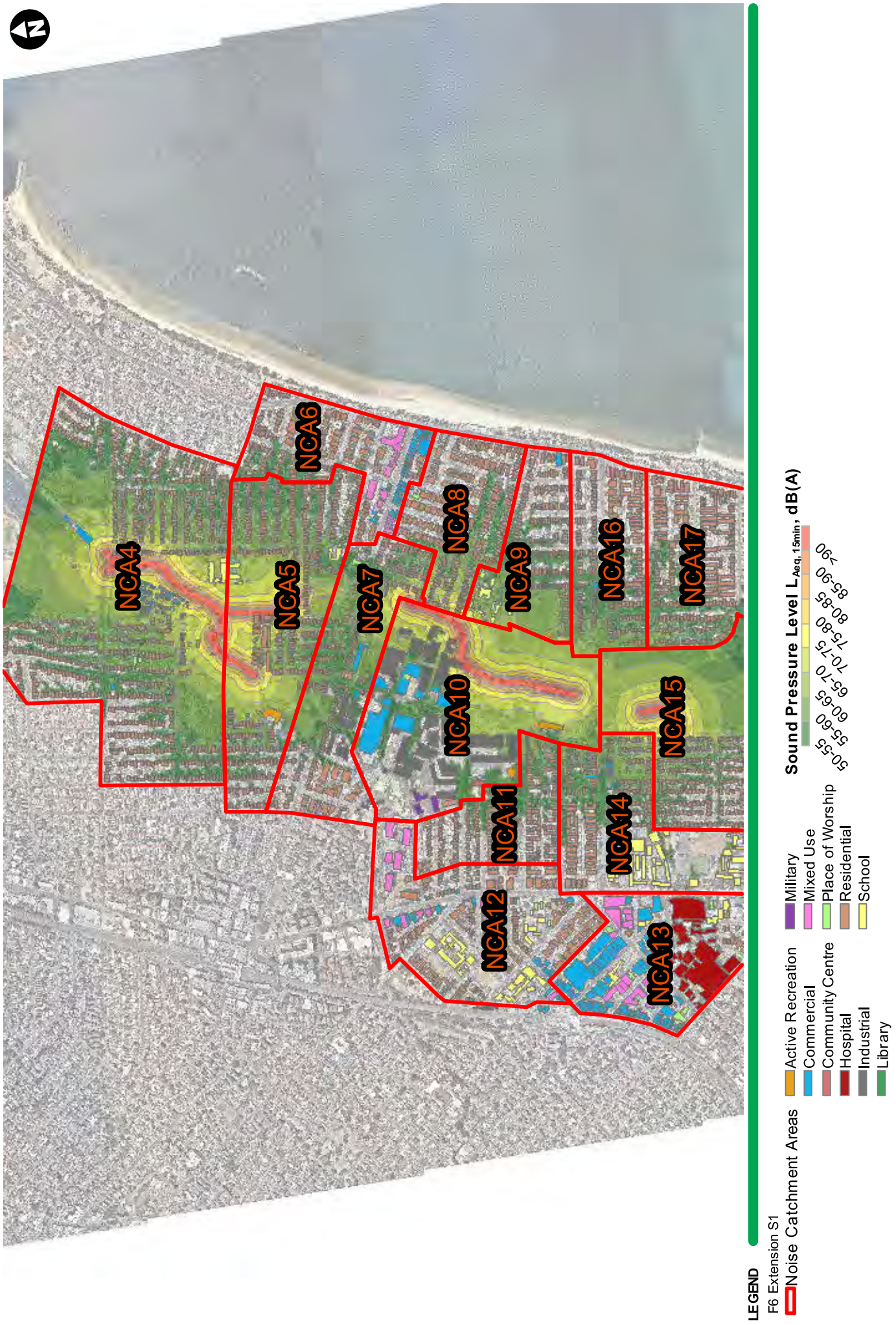


Figure D-50 Construction Noise Contour Maps - C4 & C5 - Construction of the POP



LEGEND

F6 Extension S1

- Noise Catchment Areas
- Demolition and clearing of structures
- Construction of an acoustic shed

- Active Recreation
- Commercial
- Community Centre
- Hospital
- Industrial
- Library
- Military
- Mixed Use
- Place of Worship
- Residential
- School

Sound Pressure Level $L_{Aeq, 15min}$, dB(A)



Figure D-51 Construction Noise Contour Maps - C4 & C5 - Construction of the PCP (no concrete saw)



LEGEND

F6 Extension S1

- Noise Catchment Areas
- Demolition and clearing of structures
- Construction of an acoustic shed

- Active Recreation
- Commercial
- Community Centre
- Hospital
- Industrial
- Library
- Military
- Mixed Use
- Place of Worship
- Residential
- School

Sound Pressure Level $L_{Aeq, 15min}$, dB(A)



Figure D-52 Construction Noise Contour Maps - C4 & C5 - Rehabilitation and landscaping

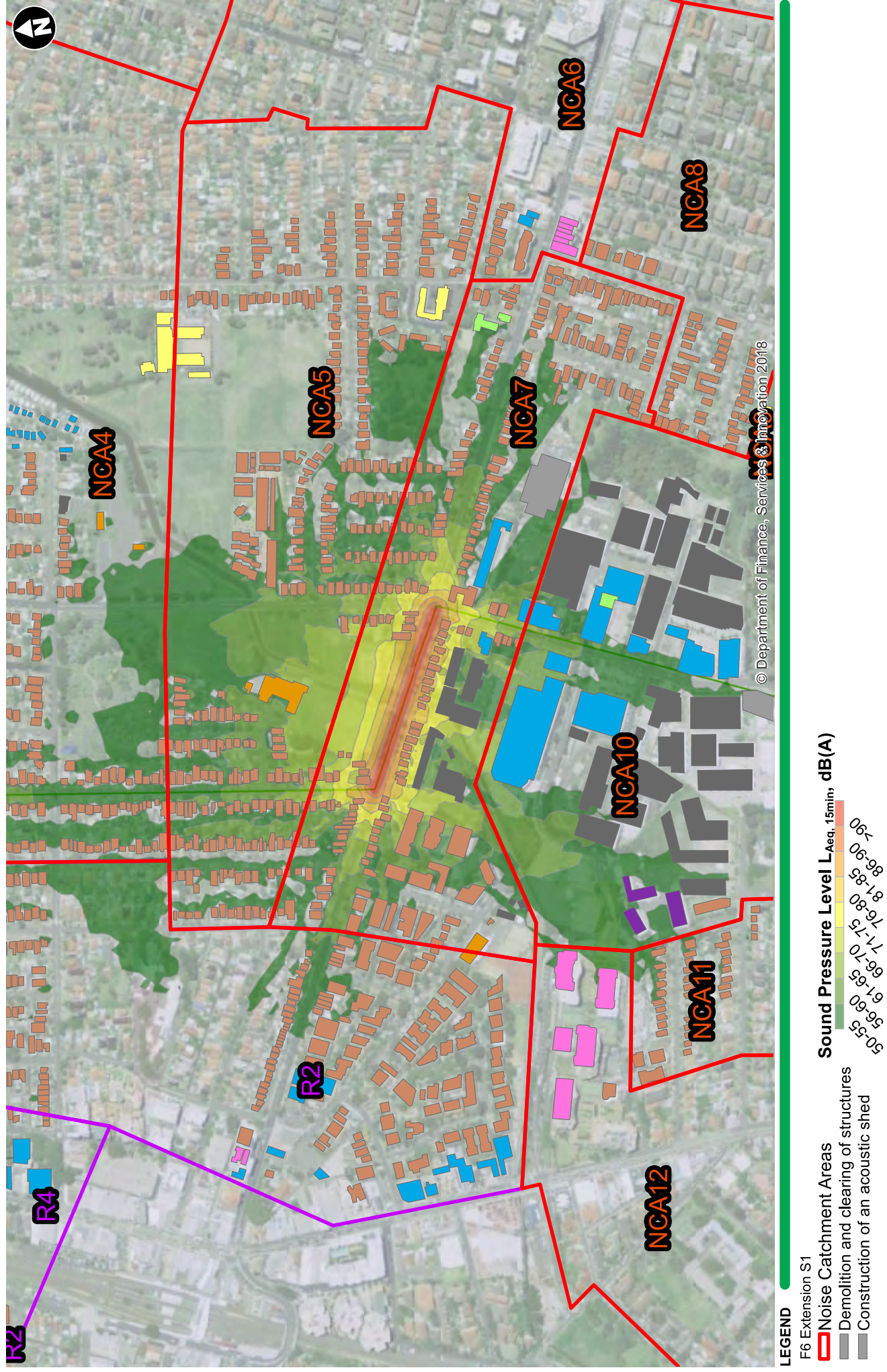


Figure D-53 Construction Noise Contour Maps - Powerline - Site Establishment

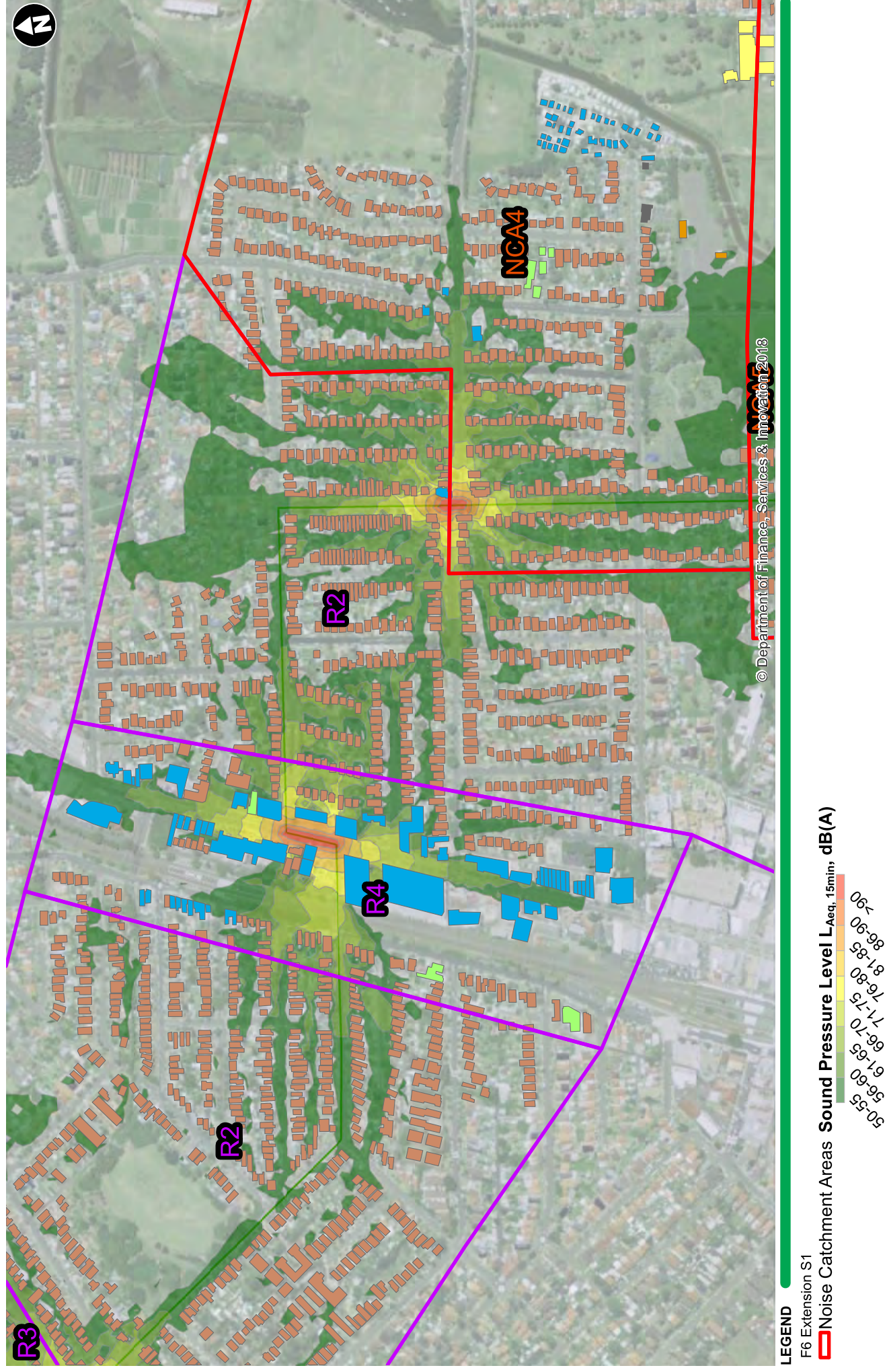


Figure D-54 Construction Noise Contour Maps - Powerline - Site Establishment

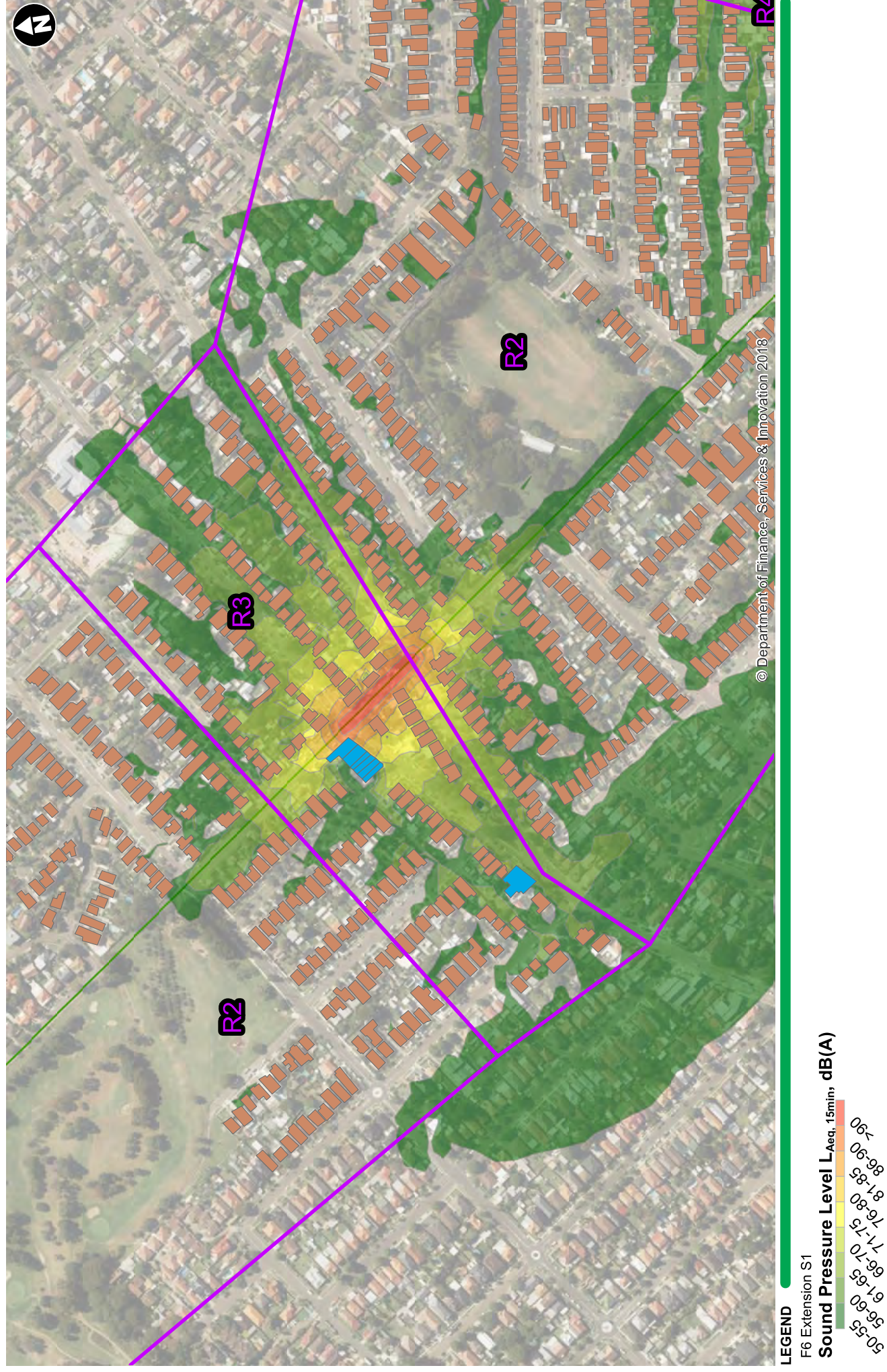


Figure D-55 Construction Noise Contour Maps - Powerline - Site Establishment

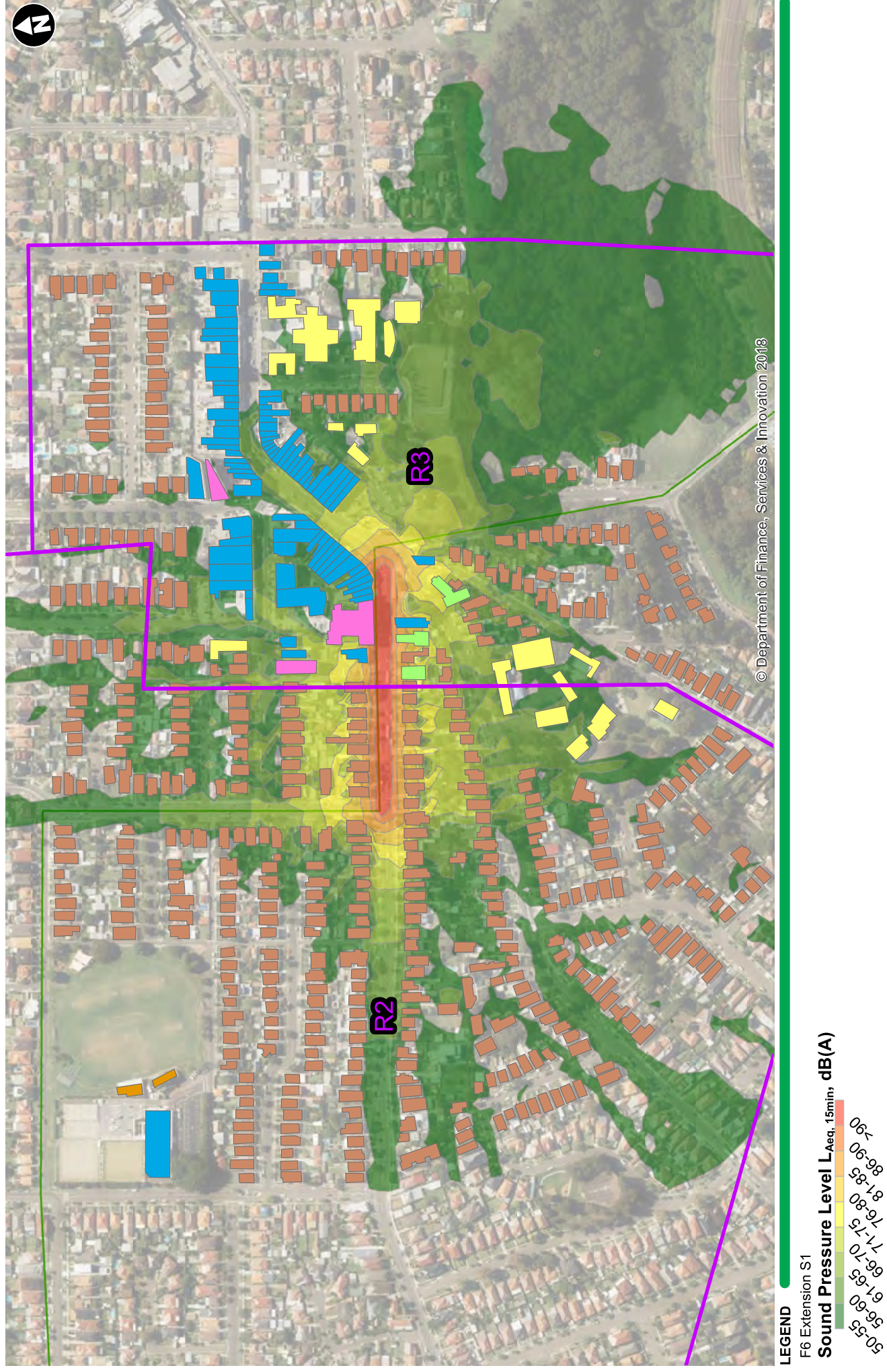


Figure D-56 Construction Noise Contour Maps - Powerline - Site Establishment

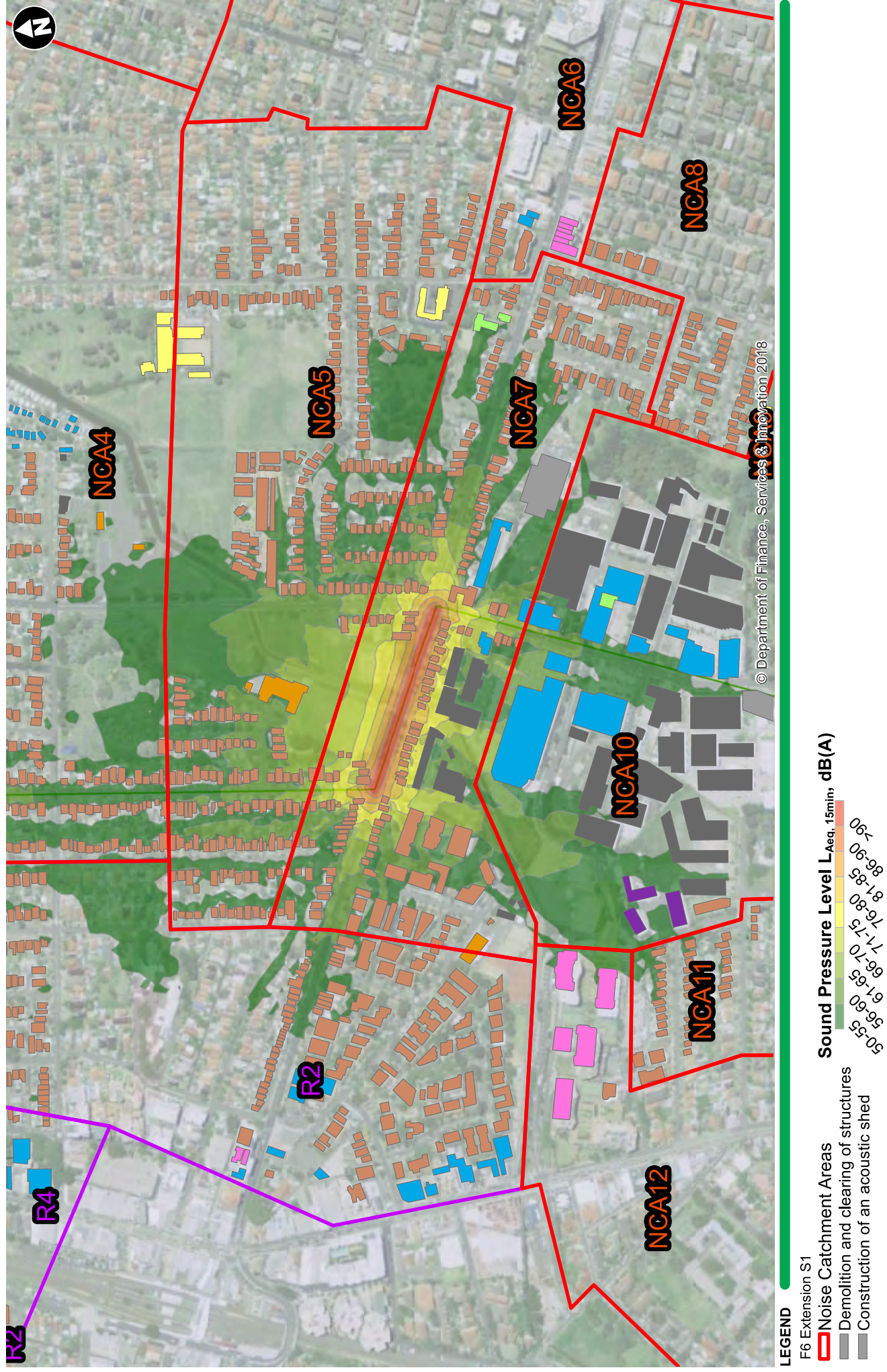


Figure D-57 Construction Noise Contour Maps - Powerline - Trenching

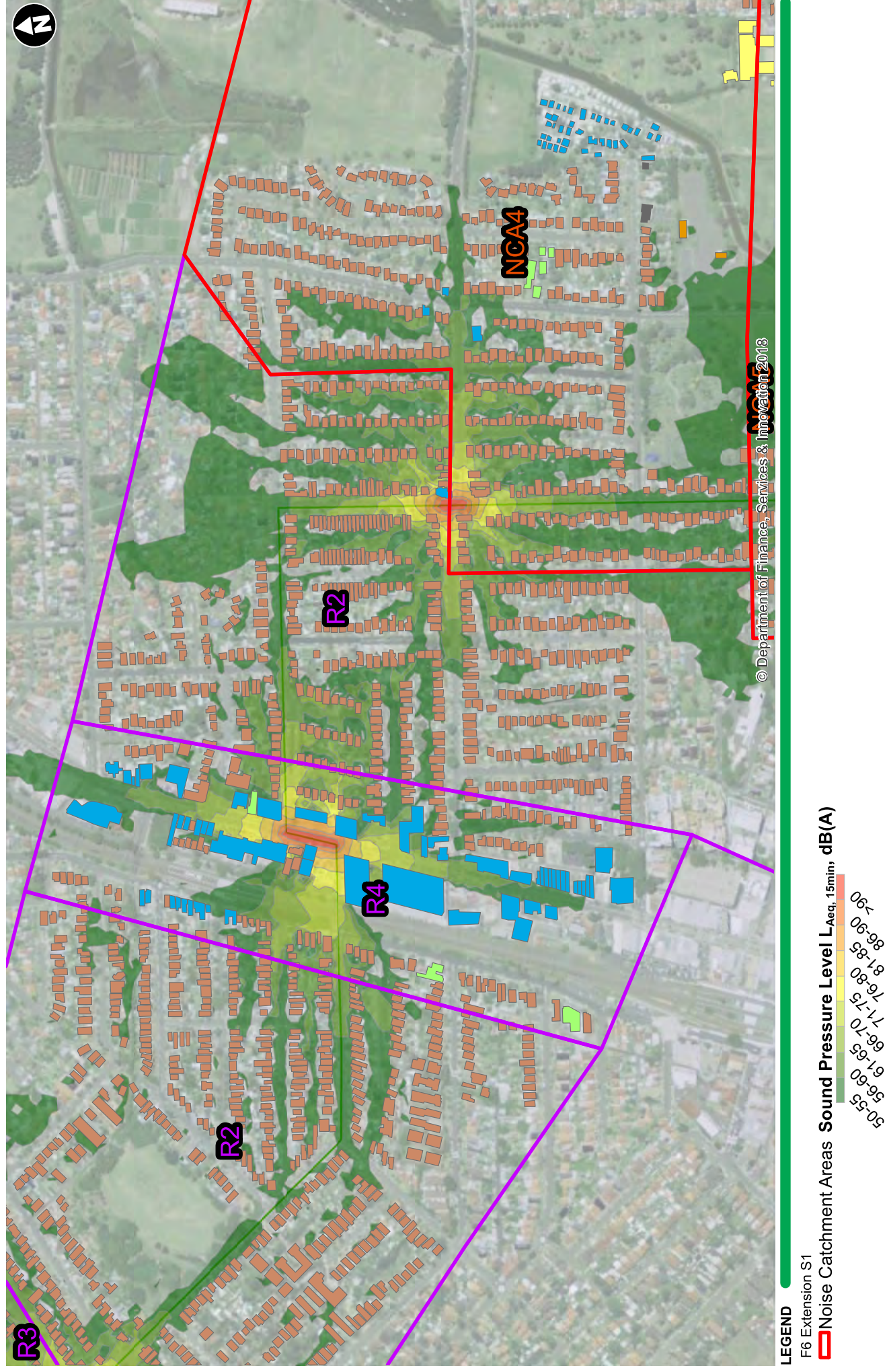


Figure D-58 Construction Noise Contour Maps - Powerline - Trenching

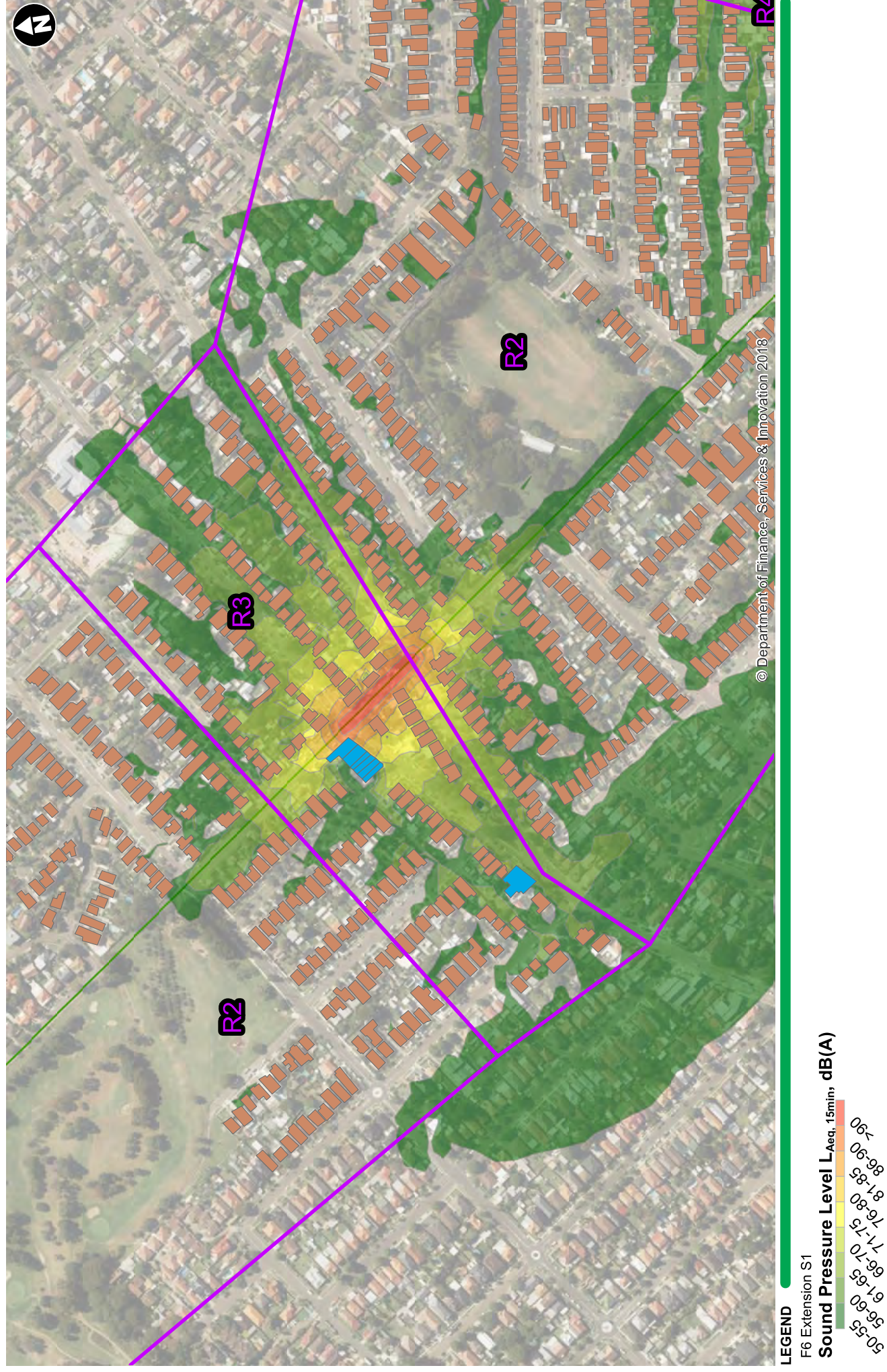


Figure D-59 Construction Noise Contour Maps - Powerline - Trenching

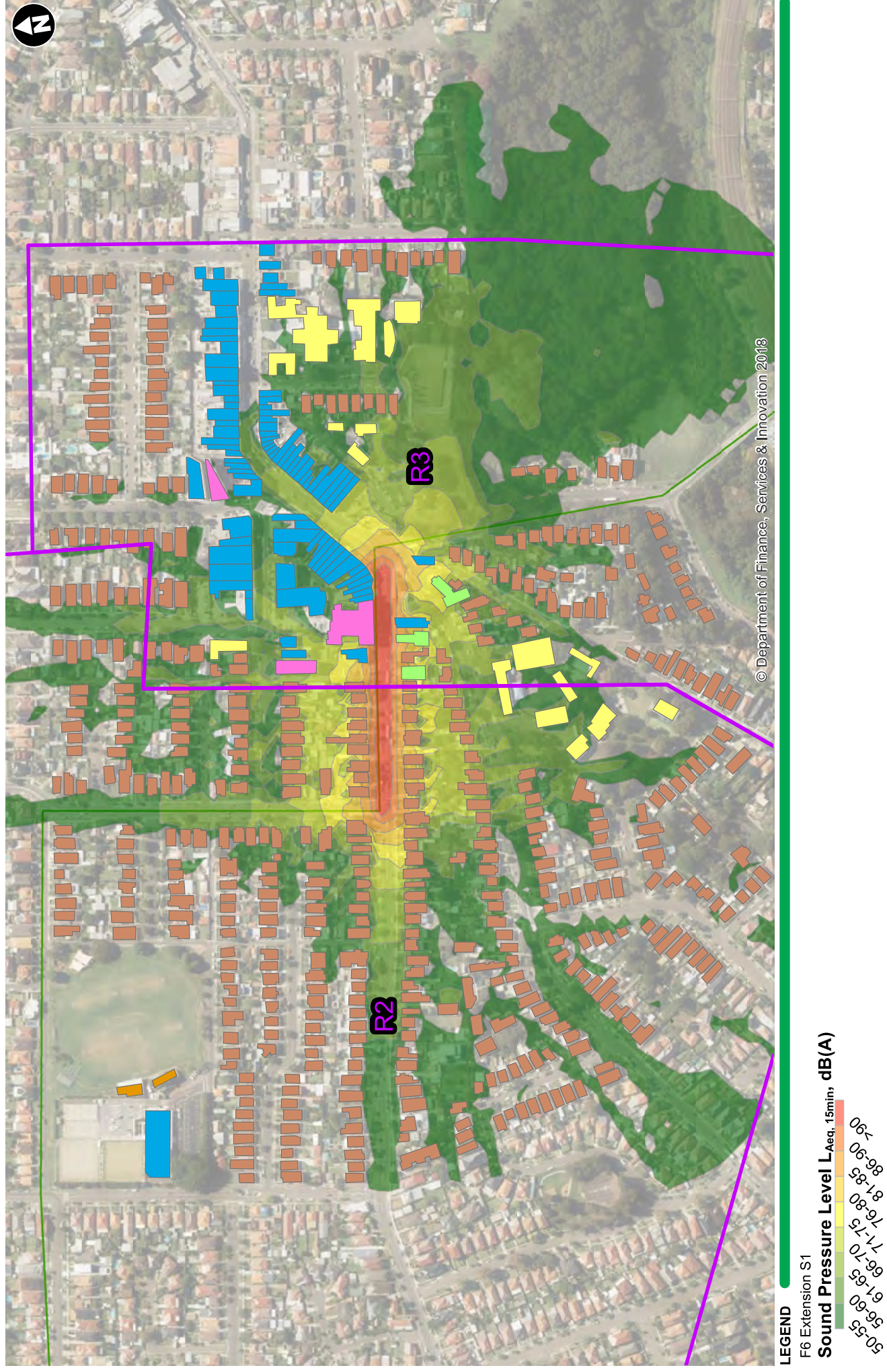


Figure D-60 Construction Noise Contour Maps - Powerline - Trenching

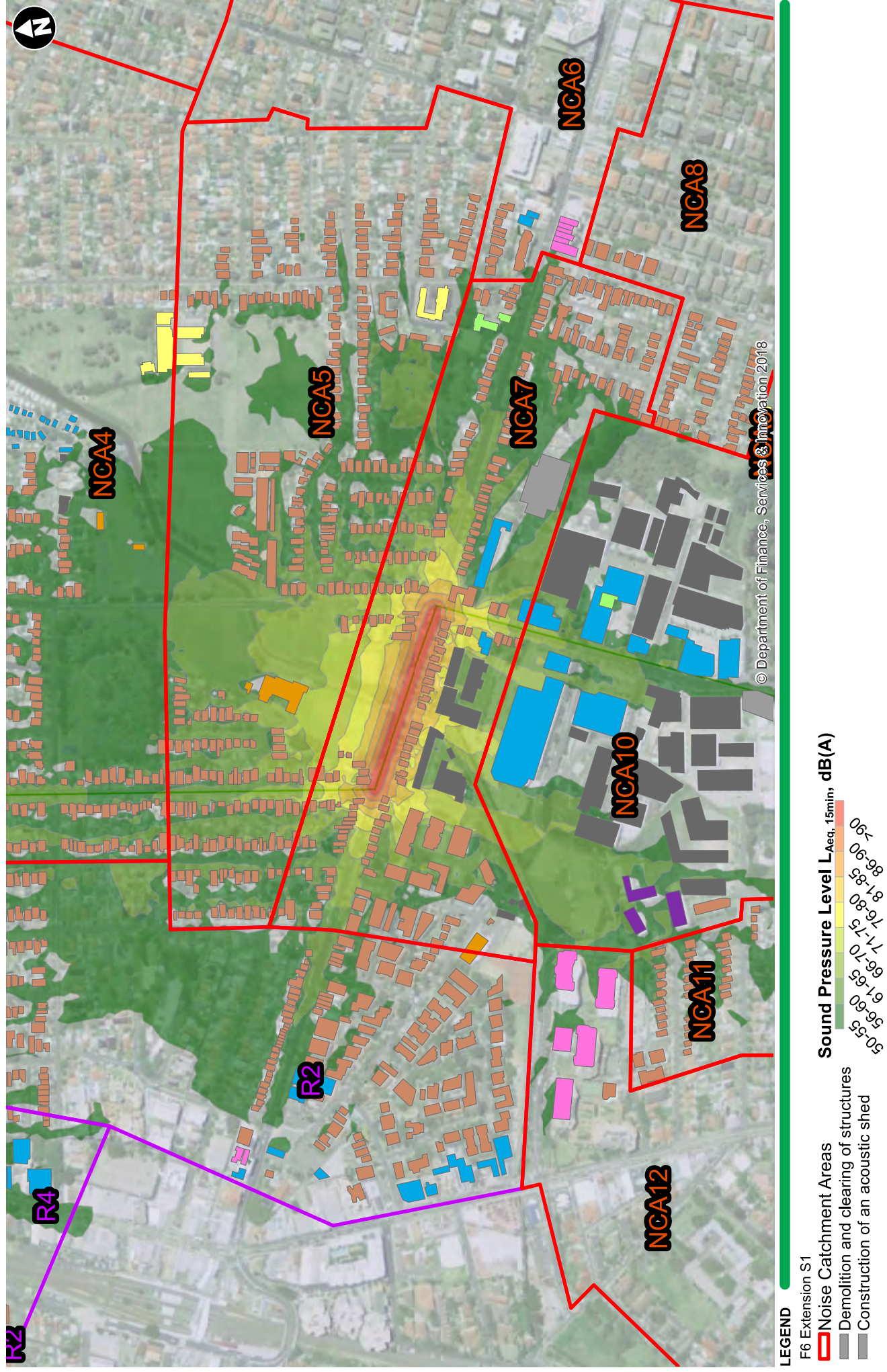


Figure D-61 Construction Noise Contour Maps - Powerline - Paving/Asphalting

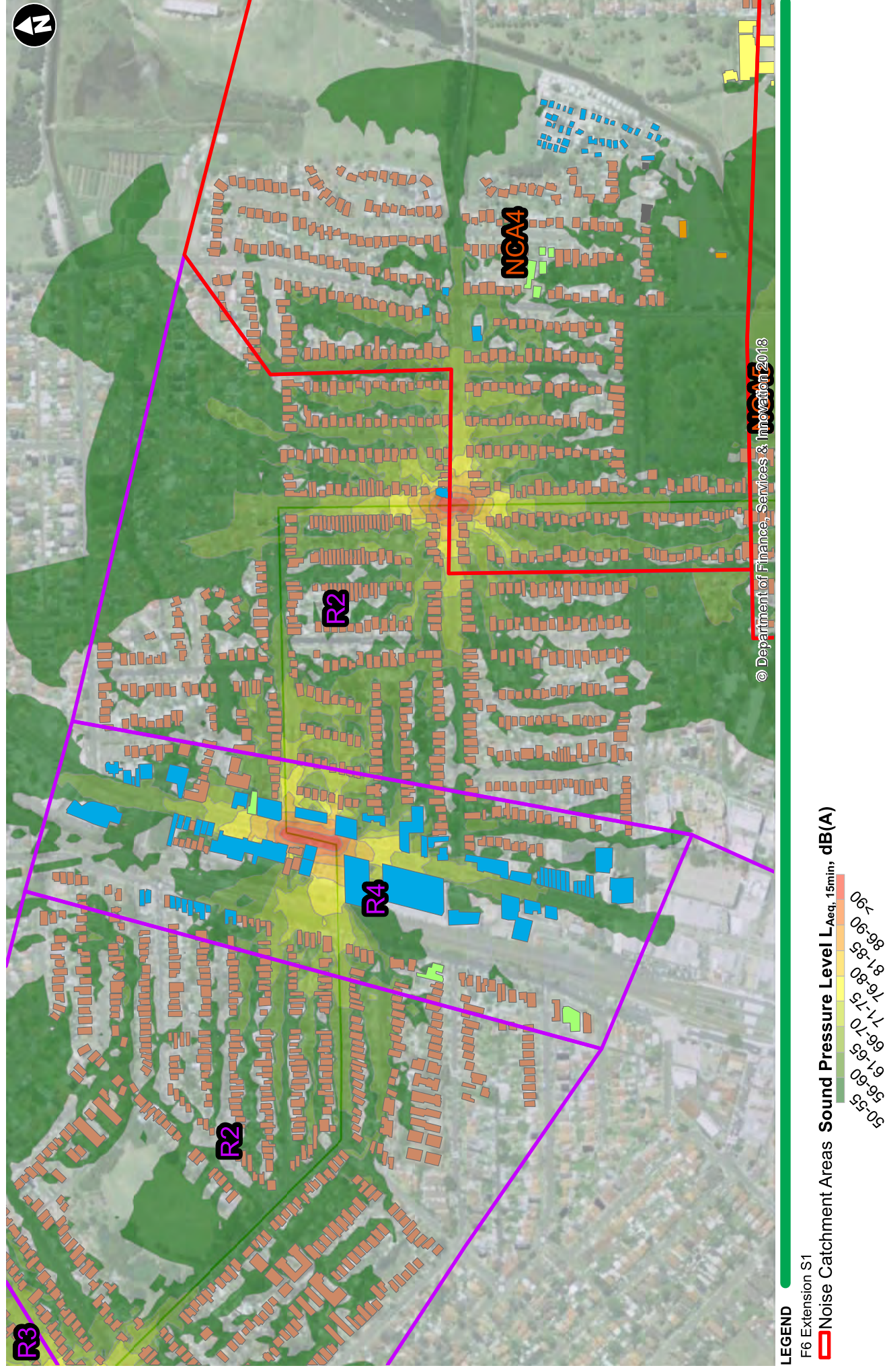


Figure D-62 Construction Noise Contour Maps - Powerline - Paving/Asphalting

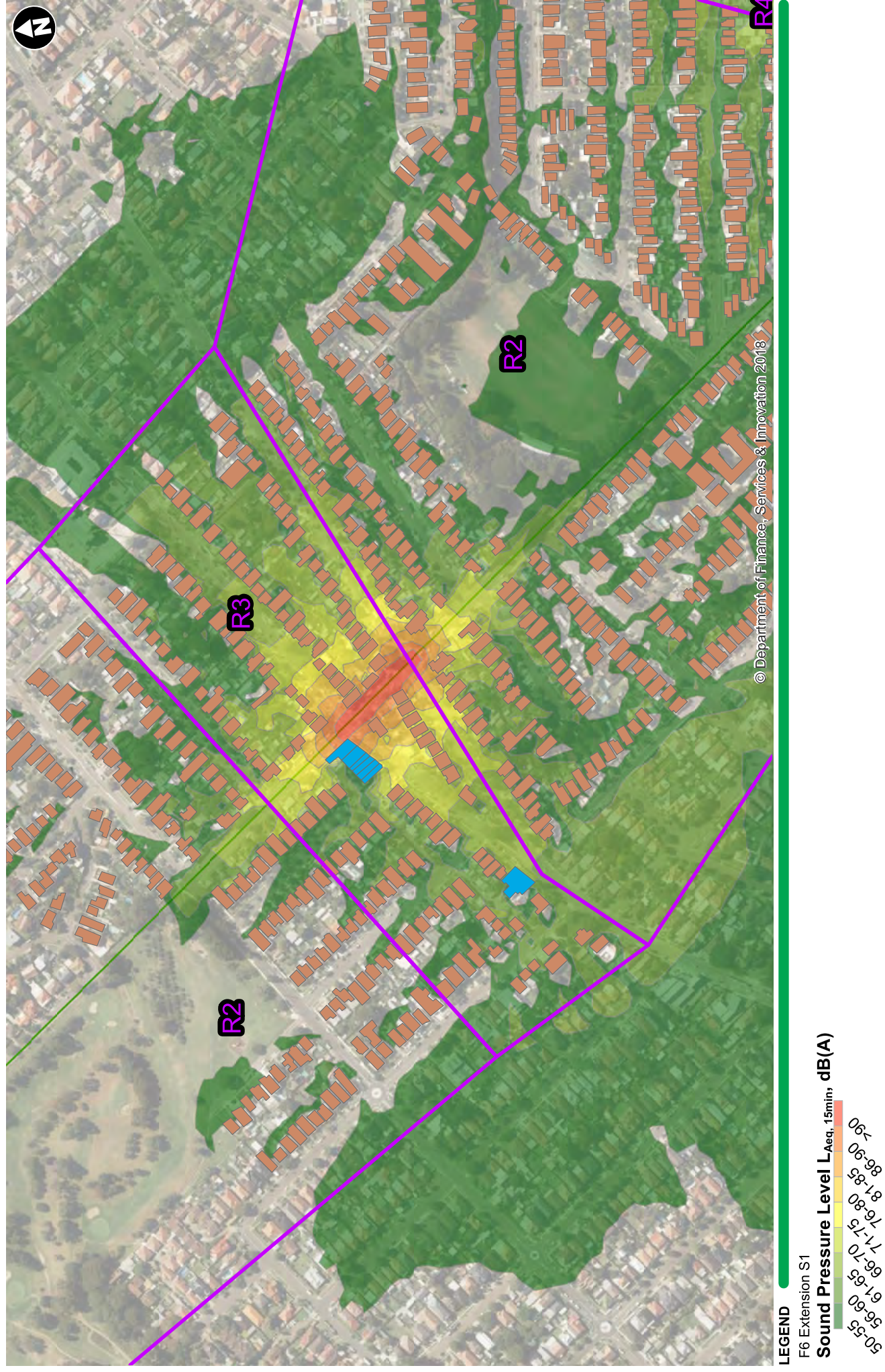


Figure D-63 Construction Noise Contour Maps - Powerline - Paving/Asphalting

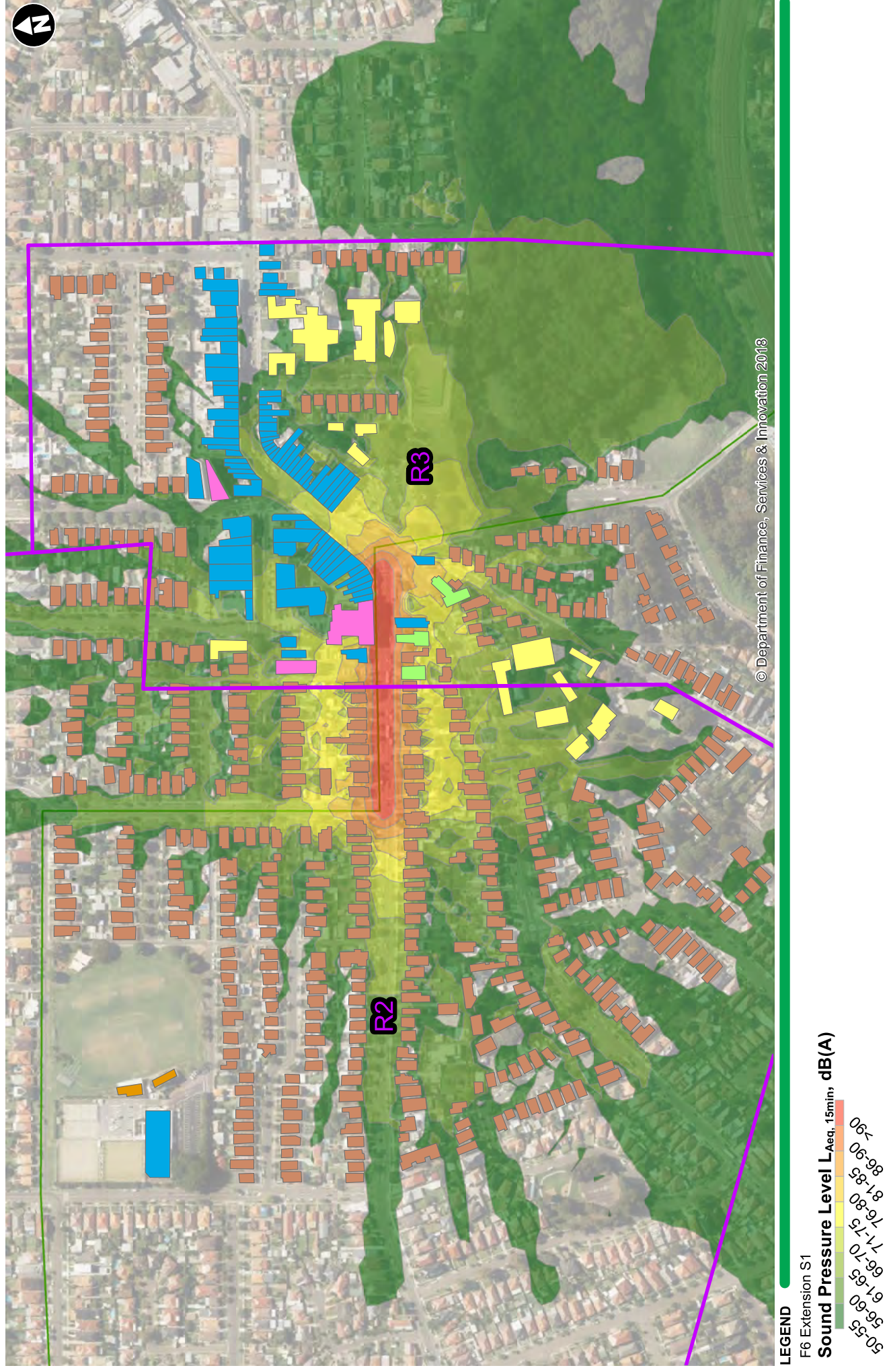


Figure D-64 Construction Noise Contour Maps - Powerline - Paving/Asphalting

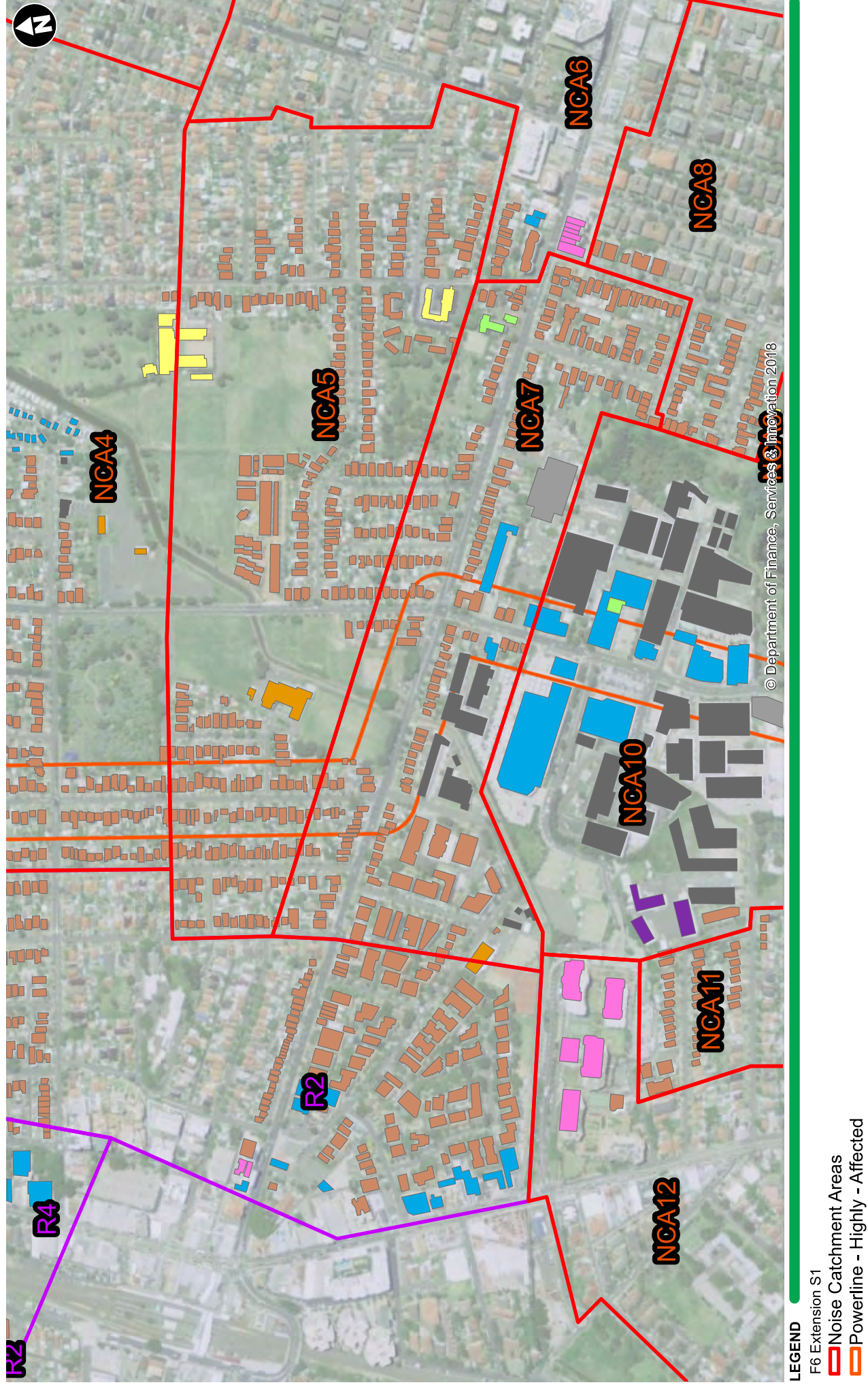


Figure D-65 Construction Noise Contour Maps - Powerline - Highly Affected Receivers

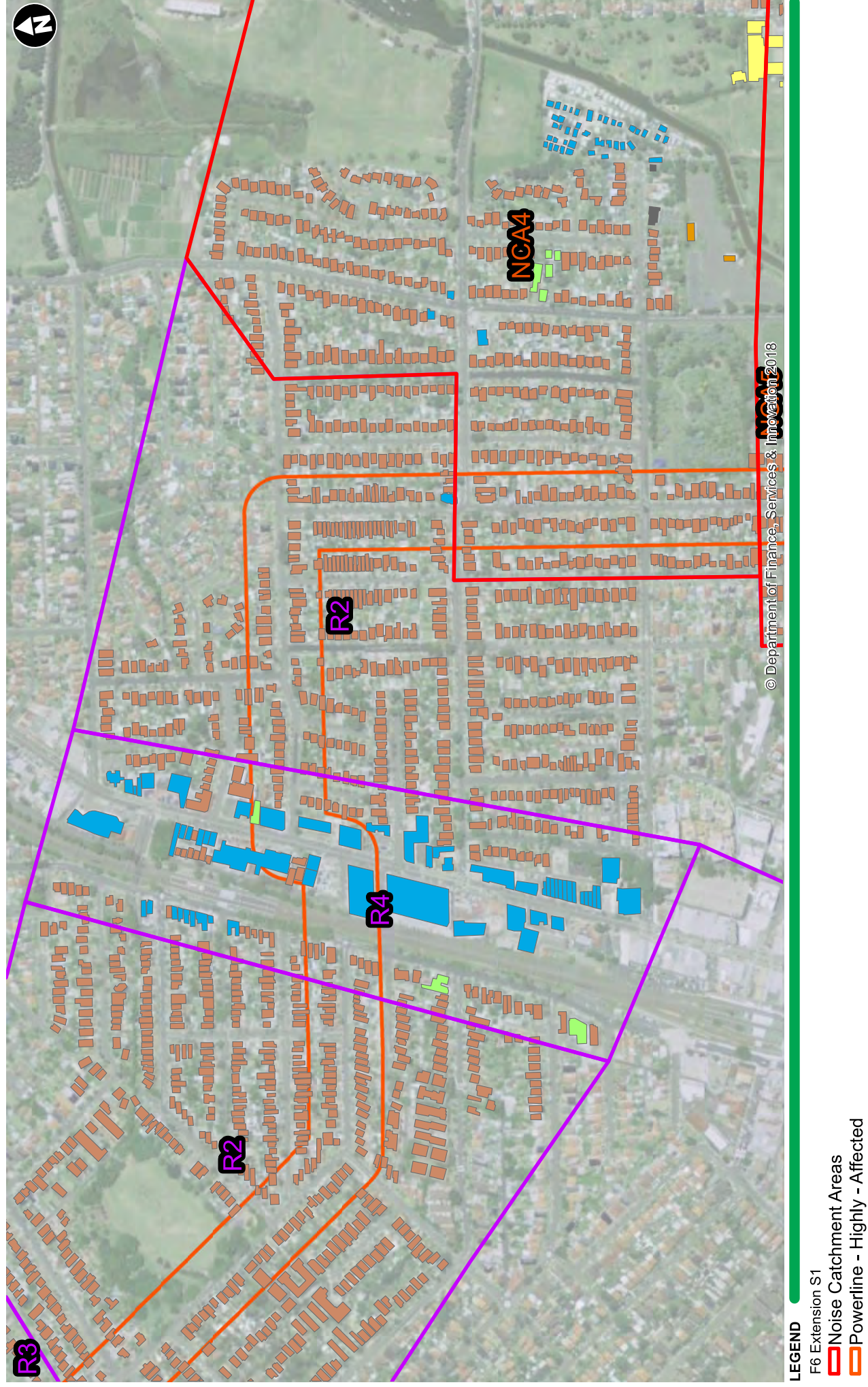


Figure D-66 Construction Noise Contour Maps - Powerline - Highly Affected Receivers

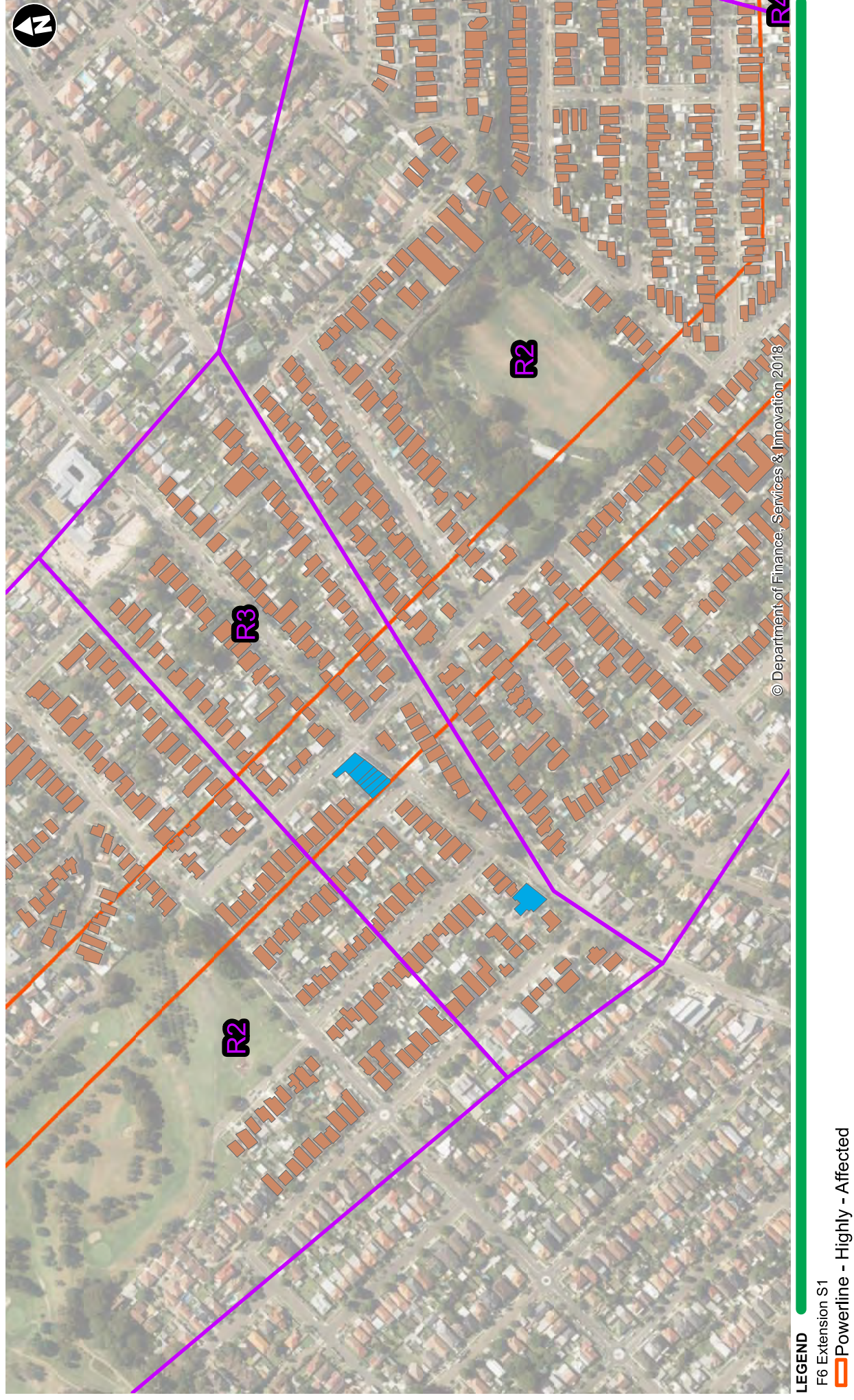


Figure D-67 Construction Noise Contour Maps - Powerline - Highly Affected Receivers

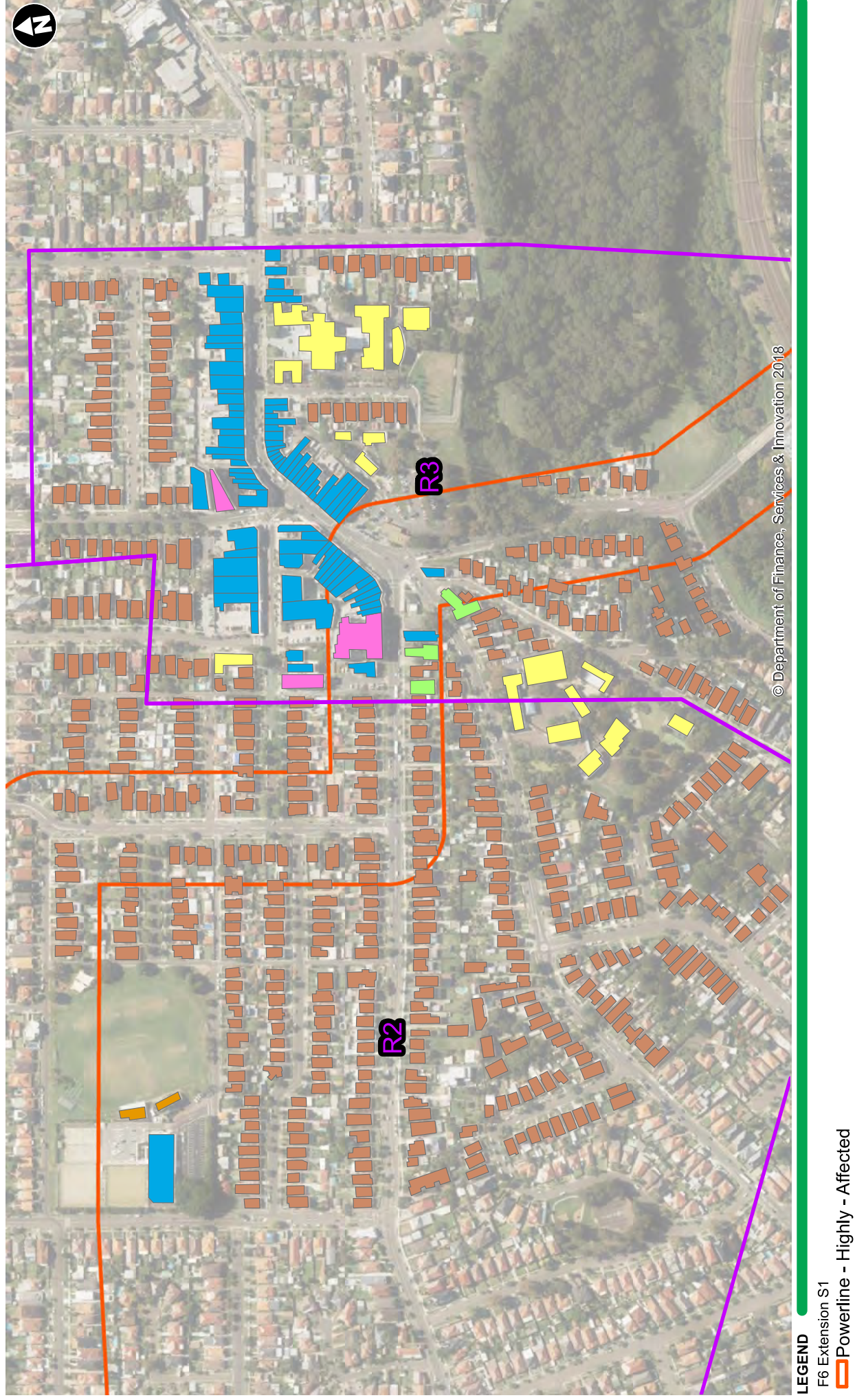
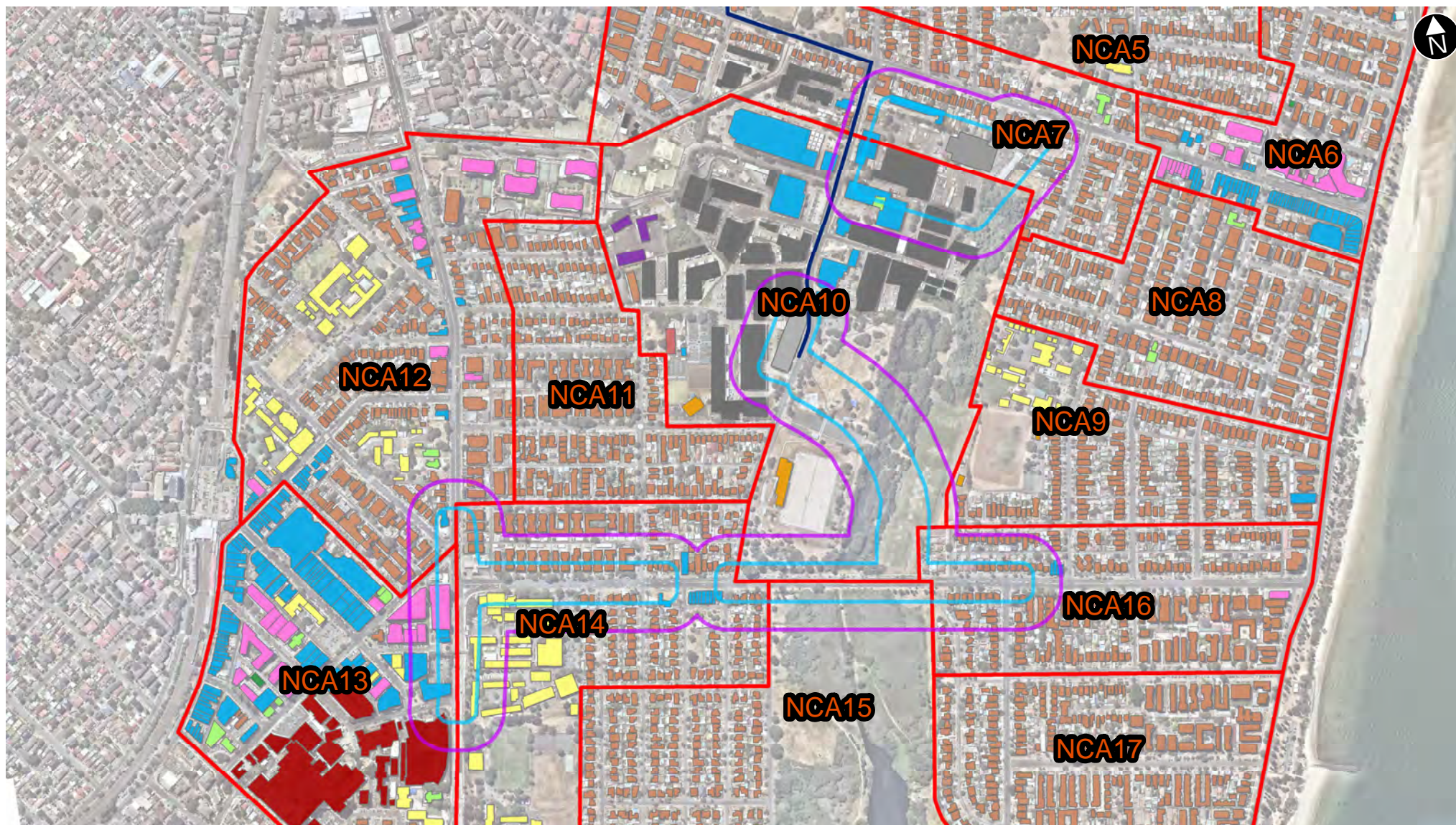


Figure D-68 Construction Noise Contour Maps - Powerline - Highly Affected Receivers

Annexure E – Surface vibration minimum working distances



LEGEND

F6 Extension S1

Minimum working distance - structural damage

Minimum working distance - human comfort

Noise Catchment Areas

Demolition and clearing of structures

Acoustic shed

Active Recreation

Commercial

Community Centre

Hospital

Industrial

Library

Military

Mixed Use

Place of Worship

Residential

School

Figure E-1 Minimum Working Distance Map - Heavy Rockbreaker

Annexure F – Construction ground-borne noise L_{Aeq} maps



LEGEND

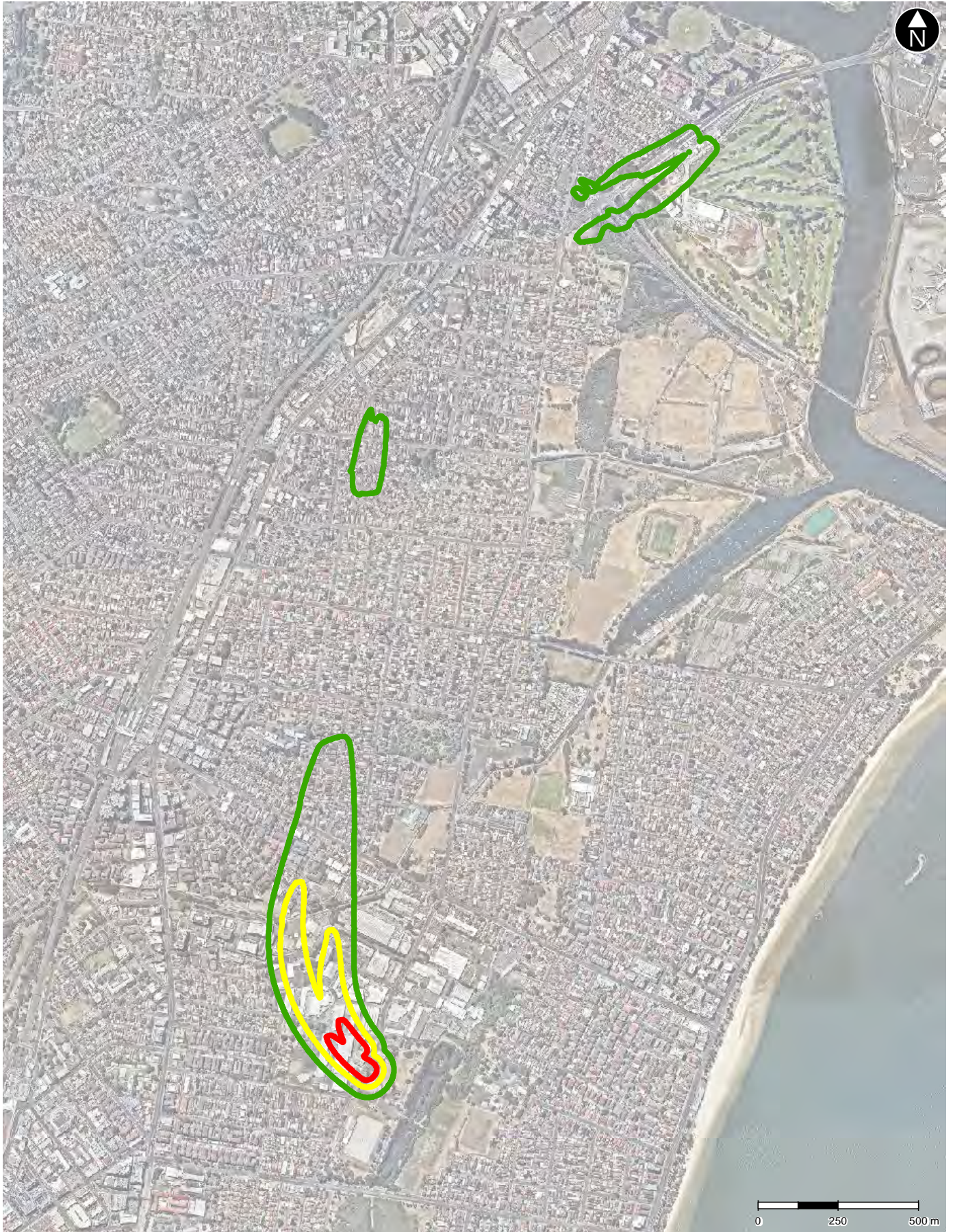
F6 Extension S1

Ground-borne noise L_{Aeq} , dB(A)

20-25
25-30
30-35
35-40
> 40

Figure F-1 Roadheader Ground-borne Noise Impact

Annexure G – Construction tunnelling vibration maps



LEGEND

F6 Extension S1
Peak Particle Velocity, mm/s
0.05 0.1 0.15

Figure G-1 Roadheader Vibration Impact

Annexure H – Transition zones



LEGEND

F6 Extension S1

Noise contribution difference (new minus redeveloped)

-3 dB to -1.5 dB

-1.5 dB to 0 dB

0 dB to 1.5 dB

1.5 dB to 3 dB

>3 dB

Figure H-1 Transition Zone Contours

Annexure I – Operational noise results – road traffic tables

Provided below is a summary of the sensitive receivers within the project area which are exposed to noise levels which are predicted to exceed the noise criteria.

Table 10-7 Do something scenario daytime $L_{Aeq(15hr)}$ noise levels, dB(A)

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1056	17 President Ave, Kogarah	Residential	60	72	74	1.9	Include	73	75	2.0	Include
1057	21 President Ave, Kogarah	Residential	60	72	74	1.8	Include	73	75	2.0	Include
1058	23 President Ave, Kogarah	Residential	60	73	74	1.8	Include	73	75	1.9	Include
1060	1 Traynor Ave, Kogarah	Residential	60	62	63	1.5	Include	62	64	1.7	Include
1075	59 President Ave, Kogarah	Residential	60	73	74	1.4	Include	73	75	1.5	Include
1076	61 President Ave, Kogarah	Residential	60	72	74	1.4	Include	73	74	1.5	Include
1077	3 Civic Ave, Kogarah	Residential	60	61	63	1.8	Include	61	63	1.9	Include
1133	750 Princes Hwy, Kogarah	School	53	60	61	0.7	Include	61	61	0.8	Include
1135	750 Princes Hwy, Kogarah	School	53	58	59	0.6	Include	58	59	0.7	Include
1136	750 Princes Hwy, Kogarah	School	53	60	61	1.5	Include	60	62	1.6	Include
1137	750 Princes Hwy, Kogarah	School	53	57	58	0.7	Include	57	58	0.8	Include
1138	750 Princes Hwy, Kogarah	School	53	65	65	0.8	Include	65	66	0.8	Include
1139	750 Princes Hwy, Kogarah	School	53	66	67	0.9	Include	67	68	0.9	Include
1140	750 Princes Hwy, Kogarah	School	53	72	74	1.8	Include	72	74	1.9	Include
1141	750 Princes Hwy, Kogarah	School	53	74	75	1.6	Include	74	76	1.7	Include
1144	800 Princes Hwy, Kogarah	School	53	64	64	0.6	Include	64	65	0.6	Include
1162	732 Princes Hwy, Kogarah	Residential	60	72	72	0.3	Include	72	72	0.4	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1163	2 President Ave, Kogarah	Residential	60	73	74	1.3	Include	73	74	1.5	Include
1164	4-6 President Ave, Kogarah	Residential	60	72	73	1.3	Include	72	74	1.5	Include
1165	12-14 President Ave, Kogarah	Residential	60	72	74	1.5	Include	73	74	1.7	Include
1166	18 President Ave, Kogarah	Residential	60	72	74	1.5	Include	72	74	1.8	Include
1167	20 President Ave, Kogarah	Residential	60	72	74	1.5	Include	72	74	1.7	Include
1168	22-24 President Ave, Kogarah	Residential	60	72	74	1.5	Include	73	74	1.7	Include
1169	34-36 President Ave, Kogarah	Residential	60	72	74	1.7	Include	73	74	1.8	Include
1170	38-40 President Ave, Kogarah	Residential	60	73	74	1.7	Include	73	75	1.9	Include
1171	42 President Ave, Kogarah	Residential	60	72	74	1.7	Include	73	74	1.9	Include
1172	7-9 Cross St, Kogarah	Residential	60	72	74	1.6	Include	73	74	1.8	Include
1173	74 President Ave, Kogarah	Residential	60	74	75	1.8	Include	74	76	1.9	Include
2302	35 Crawford Rd, Brighton-Le-Sands	School	53	49	52	2.9	Include	50	53	3.1	Include
2329	146 President Ave, Brighton-Le-Sands	Residential	60	72	74	1.1	Include	73	74	1.2	Include
2330	156 President Ave, Brighton-Le-Sands	Residential	60	72	73	1.1	Include	72	74	1.2	Include
2331	160 President Ave, Brighton-Le-Sands	Residential	60	72	73	0.8	Include	72	73	0.9	Include
2332	162 President Ave, Brighton-Le-Sands	Residential	60	72	72	0.5	Include	72	72	0.6	Include
2334	62 O'Neill St, Brighton-Le-Sands	Residential	60	58	64	5.6	Include	58	64	5.8	Include
2335	52 O'Neill St, Brighton-Le-Sands	Residential	60	56	60	4.6	Include	56	61	4.7	Include
2336	50 O'Neill St, Brighton-Le-Sands	Residential	60	55	60	4.8	Include	55	60	5.0	Include
2516	137 President Ave, Monterey	Residential	60	72	71	-0.7	Include	72	72	-0.6	Include
2517	139 President Ave, Monterey	Residential	60	72	71	-0.6	Include	72	72	-0.5	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
2518	141 President Ave, Monterey	Residential	60	72	71	-0.5	Include	72	72	-0.4	Include
2519	143 President Ave, Monterey	Residential	60	72	71	-0.4	Include	72	72	-0.3	Include
2520	145 President Ave, Monterey	Residential	60	72	72	-0.3	Include	72	72	-0.3	Include
2521	147 President Ave, Monterey	Residential	60	72	72	-0.2	Include	72	72	-0.1	Include
2522	149 President Ave, Monterey	Residential	60	72	72	-0.3	Include	72	72	-0.2	Include
2523	151 President Ave, Monterey	Residential	60	72	72	-0.3	Include	72	72	-0.2	Include
2524	153 President Ave, Monterey	Residential	60	70	70	-0.4	Include	71	70	-0.2	Include
2525	155 President Ave, Monterey	Residential	60	71	71	-0.4	Include	71	71	-0.3	Include
2526	157-159 President Ave, Monterey	Residential	60	70	70	-0.2	Include	71	70	-0.1	Include
2527	157-159 President Ave, Monterey	Residential	60	71	71	-0.2	Include	71	71	-0.1	Include
2528	161-163 President Ave, Monterey	Residential	60	71	71	-0.1	Include	71	71	-0.1	Include
2529	165-169 President Ave, Monterey	Residential	60	72	72	-0.2	Include	72	72	-0.1	Include
2893	1A Civic Ave, Kogarah	Residential	60	65	66	1.6	Include	65	67	1.7	Include
3127	1 Lachal Ave, Kogarah	Residential	60	61	63	1.4	Include	62	63	1.5	Include
3128	19 President Ave, Kogarah	Residential	60	72	74	1.8	Include	73	75	2.0	Include
3129	25 President Ave, Kogarah	Residential	60	73	75	1.7	Include	73	75	1.9	Include
3130	27 President Ave, Kogarah	Residential	60	72	74	1.5	Include	73	74	1.7	Include
3158	2 Traynor Ave, Kogarah	Residential	60	64	65	1.4	Include	64	66	1.6	Include
3161	1 Oakdale Ave, Kogarah	Residential	60	64	65	1.5	Include	64	66	1.6	Include
3170	57 President Ave, Kogarah	Residential	60	72	73	1.5	Include	72	74	1.6	Include
3171	63 President Ave, Kogarah	Residential	60	73	74	1.4	Include	73	75	1.6	Include
3173	1 Civic Ave, Kogarah	Residential	60	62	63	1.7	Include	62	64	1.9	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3302	750 Princes Hwy, Kogarah	School	53	75	76	1.0	Include	76	77	1.0	Include
3303	750 Princes Hwy, Kogarah	School	53	59	60	1.2	Include	59	61	1.4	Include
3304	750 Princes Hwy, Kogarah	School	53	73	74	1.4	Include	73	74	1.6	Include
3314	8-10 President Ave, Kogarah	Residential	60	72	74	1.3	Include	72	74	1.6	Include
3315	30-32 President Ave, Kogarah	Residential	60	72	74	1.7	Include	73	74	1.8	Include
3316	48 President Ave, Kogarah	Residential	60	72	74	1.6	Include	72	74	1.8	Include
3317	50 President Ave, Kogarah	Residential	60	71	73	1.6	Include	72	73	1.8	Include
3318	52 President Ave, Kogarah	Residential	60	72	73	1.7	Include	72	74	1.9	Include
3319	54 President Ave, Kogarah	Residential	60	73	74	1.7	Include	73	75	1.9	Include
3320	56 President Ave, Kogarah	Residential	60	72	73	1.7	Include	72	74	1.9	Include
3321	58 President Ave, Kogarah	Residential	60	72	73	1.7	Include	72	74	1.9	Include
3323	62 President Ave, Kogarah	Residential	60	71	72	1.6	Include	71	73	1.8	Include
3324	64 President Ave, Kogarah	Residential	60	75	76	1.8	Include	75	77	1.9	Include
3325	66 President Ave, Kogarah	Residential	60	73	74	1.7	Include	73	75	1.8	Include
3326	68 President Ave, Kogarah	Residential	60	73	74	1.7	Include	73	75	1.9	Include
3327	70 President Ave, Kogarah	Residential	60	73	75	1.8	Include	73	75	2.0	Include
3328	72 President Ave, Kogarah	Residential	60	73	75	1.9	Include	73	75	2.0	Include
3332	730 Princes Hwy, Kogarah	Residential	60	72	72	0.1	Include	72	72	0.0	Include
3333	726-728 Princes Hwy, Kogarah	Residential	60	72	72	-0.1	Include	73	73	-0.1	Include
3648	35 Crawford Road, Brighton-Le-Sands	School	53	49	51	2.3	Include	50	52	2.4	Include
3649	35 Crawford Rd, Brighton-Le-Sands	School	53	50	52	2.2	Include	50	52	2.4	Include
3650	35 Crawford Rd, Brighton-Le-Sands	School	53	50	52	2.2	Include	50	53	2.4	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3651	35 Crawford Rd, Brighton-Le-Sands	School	53	49	52	2.7	Include	49	52	2.9	Include
3664	49 O'Neill St, Brighton-Le-Sands	Residential	60	55	60	4.7	Include	56	61	4.9	Include
3665	51 O'Neill St, Brighton-Le-Sands	Residential	60	57	61	4.5	Include	57	62	4.7	Include
3666	51 O'Neill St, Brighton-Le-Sands	Residential	60	56	60	4.2	Include	56	61	4.5	Include
3667	51 O'Neill St, Brighton-Le-Sands	Residential	60	55	59	4.1	Include	56	60	4.4	Include
3671	148 President Ave, Brighton-Le-Sands	Residential	60	73	74	1.3	Include	73	74	1.5	Include
3672	150 President Ave, Brighton-Le-Sands	Residential	60	72	74	1.3	Include	72	74	1.4	Include
3673	152 President Ave, Brighton-Le-Sands	Residential	60	72	74	1.2	Include	73	74	1.3	Include
3674	154 President Ave, Brighton-Le-Sands	Residential	60	72	73	1.2	Include	72	74	1.3	Include
3675	158 President Ave, Brighton-Le-Sands	Residential	60	72	73	1.0	Include	72	73	1.1	Include
3676	164 President Ave, Brighton-Le-Sands	Residential	60	71	71	0.3	Include	71	71	0.4	Include
3677	166 President Ave, Brighton-Le-Sands	Residential	60	72	72	0.3	Include	72	72	0.3	Include
3680	66 O'Neill St, Brighton-Le-Sands	Residential	60	60	65	5.4	Include	60	66	5.5	Include
3681	64 O'Neill St, Brighton-Le-Sands	Residential	60	58	64	6.4	Include	58	64	6.6	Include
3682	60 O'Neill St, Brighton-Le-Sands	Residential	60	55	62	6.4	Include	55	62	6.6	Include
3683	58 O'Neill St, Brighton-Le-Sands	Residential	60	57	63	5.8	Include	57	63	5.9	Include
3684	56 O'Neill St, Brighton-Le-Sands	Residential	60	55	61	6.4	Include	55	62	6.6	Include
3685	54 O'Neill St, Brighton-Le-Sands	Residential	60	56	61	5.2	Include	56	61	5.3	Include
3686	48 O'Neill St, Brighton-Le-Sands	Residential	60	56	60	3.6	Include	57	61	3.9	Include
3827	38 Gladstone St, Kogarah	Residential	60	65	65	0.0	Include	66	66	0.0	Include
3886	1-5 Hogben St, Kogarah	Other	60	64	64	0.4	Include	64	64	0.3	Include
3903	69 Gladstone St, Kogarah	Residential	60	69	69	-0.1	Include	69	69	0.0	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3904	58 Premier St, Kogarah	Residential	60	63	64	0.4	Include	64	64	0.6	Include
3907	63-67 Gladstone St, Kogarah	Residential	60	66	66	-0.1	Include	66	66	-0.1	Include
3936	79-103 Princes Hwy, Kogarah	Other	60	77	77	0.3	Include	77	78	0.4	Include

Notes:

- Schools have an internal noise criteria of $L_{Aeq(1\text{ hr})}$ 45 dB(A) when in use. Noise logging undertaken as part of this project showed the $L_{Aeq(1\text{ hr})}$ noise level did not change significantly from the $L_{Aeq(15\text{ hr})}$. Conservatively they have been assumed to be identical. The internal criterion has had a correction of 12.5 dB(A) applied to it to account for the removal of façade reflection from the prediction and an industry accepted 10 dB(A) external to internal correction, assuming windows open.

Table 10-8 Do something scenario night-time $L_{Aeq(9\text{ hr})}$ noise levels

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1056	17 President Ave, Kogarah	Residential	55	69	71	1.6	Include	70	71	1.5	Include
1057	21 President Ave, Kogarah	Residential	55	70	71	1.5	Include	70	72	1.4	Include
1058	23 President Ave, Kogarah	Residential	55	70	71	1.5	Include	70	72	1.4	Include
1060	1 Traynor Ave, Kogarah	Residential	55	59	60	1.2	Include	60	61	1.1	Include
1075	59 President Ave, Kogarah	Residential	55	70	71	1.0	Include	70	71	1.0	Include
1076	61 President Ave, Kogarah	Residential	55	70	71	1.0	Include	70	71	1.1	Include
1077	3 Civic Ave, Kogarah	Residential	55	58	59	1.3	Include	58	60	1.4	Include
1133	750 Princes Hwy, Kogarah	School	0	57	58	0.5	Include	58	58	0.5	Include
1135	750 Princes Hwy, Kogarah	School	0	55	56	0.5	Include	56	56	0.4	Include
1136	750 Princes Hwy, Kogarah	School	0	57	58	1.1	Include	58	59	1.1	Include
1137	750 Princes Hwy, Kogarah	School	0	54	55	0.6	Include	55	55	0.5	Include
1138	750 Princes Hwy, Kogarah	School	0	62	62	0.6	Include	62	63	0.6	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1139	750 Princes Hwy, Kogarah	School	0	63	64	0.8	Include	64	65	0.8	Include
1140	750 Princes Hwy, Kogarah	School	0	69	71	1.5	Include	69	71	1.5	Include
1141	750 Princes Hwy, Kogarah	School	0	71	72	1.2	Include	71	72	1.1	Include
1144	800 Princes Hwy, Kogarah	School	0	61	61	0.5	Include	61	62	0.5	Include
1162	732 Princes Hwy, Kogarah	Residential	55	68	69	0.3	Include	69	69	0.2	Include
1163	2 President Ave, Kogarah	Residential	55	70	71	1.1	Include	70	71	1.0	Include
1164	4-6 President Ave, Kogarah	Residential	55	69	70	1.0	Include	70	71	1.0	Include
1165	12-14 President Ave, Kogarah	Residential	55	70	71	1.2	Include	70	71	1.2	Include
1166	18 President Ave, Kogarah	Residential	55	69	71	1.3	Include	70	71	1.2	Include
1167	20 President Ave, Kogarah	Residential	55	69	71	1.1	Include	70	71	1.1	Include
1168	22-24 President Ave, Kogarah	Residential	55	70	71	1.2	Include	70	71	1.1	Include
1169	34-36 President Ave, Kogarah	Residential	55	70	71	1.3	Include	70	71	1.3	Include
1170	38-40 President Ave, Kogarah	Residential	55	70	71	1.4	Include	70	72	1.4	Include
1171	42 President Ave, Kogarah	Residential	55	70	71	1.4	Include	70	71	1.4	Include
1172	7-9 Cross St, Kogarah	Residential	55	70	71	1.2	Include	70	71	1.2	Include
1173	74 President Ave, Kogarah	Residential	55	71	72	1.5	Include	71	73	1.5	Include
2302	35 Crawford Rd, Brighton-Le-Sands	School	0	46	49	2.4	Include	47	49	2.4	Include
2329	146 President Ave, Brighton-Le-Sands	Residential	55	70	70	0.8	Include	70	71	0.7	Include
2330	156 President Ave, Brighton-Le-Sands	Residential	55	69	70	0.8	Include	70	70	0.7	Include
2331	160 President Ave, Brighton-Le-Sands	Residential	55	69	70	0.5	Include	70	70	0.3	Include
2332	162 President Ave, Brighton-Le-Sands	Residential	55	69	69	0.2	Include	69	69	0.2	Include
2334	62 O'Neill St, Brighton-Le-Sands	Residential	55	55	60	5.2	Include	55	61	5.2	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
2335	52 O'Neill St, Brighton-Le-Sands	Residential	55	53	57	4.2	Include	53	57	4.2	Include
2336	50 O'Neill St, Brighton-Le-Sands	Residential	55	52	56	4.3	Include	53	57	4.3	Include
2516	137 President Ave, Monterey	Residential	55	69	68	-1.0	Include	69	68	-1.1	Include
2517	139 President Ave, Monterey	Residential	55	69	68	-1.0	Include	70	68	-1.1	Include
2518	141 President Ave, Monterey	Residential	55	69	68	-0.8	Include	69	68	-0.9	Include
2519	143 President Ave, Monterey	Residential	55	69	68	-0.7	Include	69	69	-0.8	Include
2520	145 President Ave, Monterey	Residential	55	69	68	-0.6	Include	69	69	-0.7	Include
2521	147 President Ave, Monterey	Residential	55	69	68	-0.5	Include	69	69	-0.6	Include
2522	149 President Ave, Monterey	Residential	55	69	69	-0.6	Include	70	69	-0.7	Include
2523	151 President Ave, Monterey	Residential	55	69	69	-0.6	Include	70	69	-0.7	Include
2524	153 President Ave, Monterey	Residential	55	68	67	-0.7	Include	68	67	-0.7	Include
2525	155 President Ave, Monterey	Residential	55	68	68	-0.7	Include	69	68	-0.8	Include
2526	157-159 President Ave, Monterey	Residential	55	67	67	-0.5	Include	68	67	-0.6	Include
2527	157-159 President Ave, Monterey	Residential	55	68	67	-0.5	Include	68	68	-0.6	Include
2528	161-163 President Ave, Monterey	Residential	55	68	68	-0.5	Include	69	68	-0.6	Include
2529	165-169 President Ave, Monterey	Residential	55	69	69	-0.4	Include	69	69	-0.5	Include
2893	1A Civic Ave, Kogarah	Residential	55	62	63	1.2	Include	62	63	1.2	Include
3127	1 Lachal Ave, Kogarah	Residential	55	59	60	1.0	Include	59	60	1.0	Include
3128	19 President Ave, Kogarah	Residential	55	69	71	1.5	Include	70	71	1.5	Include
3129	25 President Ave, Kogarah	Residential	55	70	72	1.5	Include	71	72	1.3	Include
3130	27 President Ave, Kogarah	Residential	55	69	71	1.2	Include	70	71	1.2	Include
3158	2 Traynor Ave, Kogarah	Residential	55	61	62	1.1	Include	62	63	1.0	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3161	1 Oakdale Ave, Kogarah	Residential	55	61	62	1.1	Include	61	62	1.1	Include
3170	57 President Ave, Kogarah	Residential	55	69	70	1.1	Include	69	70	1.2	Include
3171	63 President Ave, Kogarah	Residential	55	70	71	1.0	Include	70	71	1.0	Include
3173	1 Civic Ave, Kogarah	Residential	55	59	60	1.2	Include	59	60	1.3	Include
3302	750 Princes Hwy, Kogarah	School	0	72	73	0.9	Include	73	74	0.9	Include
3303	750 Princes Hwy, Kogarah	School	0	56	57	0.9	Include	56	57	0.9	Include
3304	750 Princes Hwy, Kogarah	School	0	70	71	1.1	Include	70	71	1.1	Include
3314	8-10 President Ave, Kogarah	Residential	55	69	71	1.1	Include	70	71	1.1	Include
3315	30-32 President Ave, Kogarah	Residential	55	70	71	1.3	Include	70	71	1.3	Include
3316	48 President Ave, Kogarah	Residential	55	69	71	1.3	Include	70	71	1.3	Include
3317	50 President Ave, Kogarah	Residential	55	69	70	1.4	Include	69	70	1.3	Include
3318	52 President Ave, Kogarah	Residential	55	69	70	1.4	Include	69	71	1.3	Include
3319	54 President Ave, Kogarah	Residential	55	70	71	1.3	Include	70	72	1.3	Include
3320	56 President Ave, Kogarah	Residential	55	69	70	1.4	Include	69	71	1.4	Include
3321	58 President Ave, Kogarah	Residential	55	69	70	1.4	Include	69	71	1.4	Include
3323	62 President Ave, Kogarah	Residential	55	68	69	1.3	Include	68	70	1.3	Include
3324	64 President Ave, Kogarah	Residential	55	72	73	1.4	Include	72	74	1.4	Include
3325	66 President Ave, Kogarah	Residential	55	70	71	1.3	Include	70	72	1.3	Include
3326	68 President Ave, Kogarah	Residential	55	70	71	1.4	Include	70	72	1.3	Include
3327	70 President Ave, Kogarah	Residential	55	70	71	1.5	Include	70	72	1.4	Include
3328	72 President Ave, Kogarah	Residential	55	70	71	1.5	Include	70	72	1.5	Include
3332	730 Princes Hwy, Kogarah	Residential	55	69	69	0.1	Include	69	69	0.0	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3333	726-728 Princes Hwy, Kogarah	Residential	55	69	69	0.0	Include	69	69	-0.1	Include
3648	35 Crawford Road, Brighton-Le-Sands	School	0	46	48	1.9	Include	47	48	1.8	Include
3649	35 Crawford Rd, Brighton-Le-Sands	School	0	46	48	1.9	Include	47	49	1.9	Include
3650	35 Crawford Rd, Brighton-Le-Sands	School	0	47	49	1.8	Include	47	49	1.8	Include
3651	35 Crawford Rd, Brighton-Le-Sands	School	0	46	48	2.2	Include	46	49	2.2	Include
3664	49 O'Neill St, Brighton-Le-Sands	Residential	55	53	56	3.9	Include	53	57	4.0	Include
3665	51 O'Neill St, Brighton-Le-Sands	Residential	55	54	57	3.8	Include	54	58	3.8	Include
3666	51 O'Neill St, Brighton-Le-Sands	Residential	55	53	56	3.5	Include	53	57	3.5	Include
3667	51 O'Neill St, Brighton-Le-Sands	Residential	55	52	56	3.3	Include	53	56	3.4	Include
3671	148 President Ave, Brighton-Le-Sands	Residential	55	70	71	1.1	Include	70	71	1.0	Include
3672	150 President Ave, Brighton-Le-Sands	Residential	55	69	70	1.0	Include	70	71	1.0	Include
3673	152 President Ave, Brighton-Le-Sands	Residential	55	69	70	1.0	Include	70	71	0.8	Include
3674	154 President Ave, Brighton-Le-Sands	Residential	55	69	70	0.9	Include	70	71	0.9	Include
3675	158 President Ave, Brighton-Le-Sands	Residential	55	69	70	0.7	Include	70	70	0.7	Include
3676	164 President Ave, Brighton-Le-Sands	Residential	55	68	68	0.0	Include	68	68	-0.1	Include
3677	166 President Ave, Brighton-Le-Sands	Residential	55	69	69	-0.1	Include	69	69	-0.1	Include
3680	66 O'Neill St, Brighton-Le-Sands	Residential	55	57	62	4.9	Include	57	62	4.9	Include
3681	64 O'Neill St, Brighton-Le-Sands	Residential	55	55	61	5.9	Include	55	61	5.9	Include
3682	60 O'Neill St, Brighton-Le-Sands	Residential	55	52	58	6.0	Include	53	59	6.0	Include
3683	58 O'Neill St, Brighton-Le-Sands	Residential	55	54	59	5.3	Include	54	60	5.3	Include
3684	56 O'Neill St, Brighton-Le-Sands	Residential	55	52	58	6.0	Include	52	58	6.0	Include
3685	54 O'Neill St, Brighton-Le-Sands	Residential	55	53	57	4.7	Include	53	58	4.7	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3686	48 O'Neill St, Brighton-Le-Sands	Residential	55	53	57	3.3	Include	54	57	3.2	Include
3827	38 Gladstone St, Kogarah	Residential	55	62	62	0.0	Include	62	62	0.0	Include
3886	1-5 Hogben St, Kogarah	Other	55	61	61	0.3	Include	61	62	0.2	Include
3903	69 Gladstone St, Kogarah	Residential	55	65	65	0.0	Include	66	66	-0.1	Include
3904	58 Premier St, Kogarah	Residential	55	60	61	0.4	Include	61	61	0.3	Include
3907	63-67 Gladstone St, Kogarah	Residential	55	62	62	0.0	Include	63	63	-0.1	Include
3936	79-103 Princes Hwy, Kogarah	Other	55	74	74	0.2	Include	75	75	0.2	Include

Notes:

- 1 Schools are not operational during the night-time period.

Table 10-9 Cumulative scenario daytime $L_{Aeq(15hr)}$ noise levels

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1056	17 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.9	Include
1057	21 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.9	Include
1058	23 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	75	0.8	Include
1060	1 Traynor Ave, Kogarah	Residential	60	-	-	-	Exclude	64	65	0.6	Include
1075	59 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	76	1.0	Include
1076	61 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	1.0	Include
1077	3 Civic Ave, Kogarah	Residential	60	-	-	-	Exclude	63	64	1.4	Include
1133	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	62	62	-0.4	Include
1135	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	60	59	-0.6	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1136	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	62	63	0.5	Include
1137	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	59	59	-0.5	Include
1138	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	67	66	-0.5	Include
1139	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	69	68	-0.4	Include
1140	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	74	75	0.8	Include
1141	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	76	76	0.6	Include
1144	800 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	66	65	-0.7	Include
1162	732 Princes Hwy, Kogarah	Residential	60	-	-	-	Exclude	74	74	-0.1	Include
1163	2 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	75	0.4	Include
1164	4-6 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	74	0.4	Include
1165	12-14 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.6	Include
1166	18 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.7	Include
1167	20 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.6	Include
1168	22-24 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.6	Include
1169	34-36 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.7	Include
1170	38-40 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	75	0.8	Include
1171	42 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.8	Include
1172	7-9 Cross St, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.7	Include
1173	74 President Ave, Kogarah	Residential	60	-	-	-	Exclude	76	77	1.3	Include
2302	35 Crawford Rd, Brighton-Le-Sands	School	53	-	-	-	Exclude	51	54	2.6	Include
2329	146 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	76	1.4	Include
2330	156 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	76	1.5	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
2331	160 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	75	1.1	Include
2332	162 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	74	0.9	Include
2334	62 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	60	66	5.8	Include
2335	52 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	58	62	4.5	Include
2336	50 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	57	62	4.7	Include
2516	137 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	-0.2	Include
2517	139 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.0	Include
2518	141 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.1	Include
2519	143 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.2	Include
2520	145 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.3	Include
2521	147 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.4	Include
2522	149 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.3	Include
2523	151 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.3	Include
2524	153 President Ave, Monterey	Residential	60	-	-	-	Exclude	72	73	0.3	Include
2525	155 President Ave, Monterey	Residential	60	-	-	-	Exclude	73	73	0.2	Include
2526	157-159 President Ave, Monterey	Residential	60	-	-	-	Exclude	72	73	0.4	Include
2527	157-159 President Ave, Monterey	Residential	60	-	-	-	Exclude	73	73	0.4	Include
2528	161-163 President Ave, Monterey	Residential	60	-	-	-	Exclude	73	73	0.4	Include
2529	165-169 President Ave, Monterey	Residential	60	-	-	-	Exclude	74	74	0.3	Include
2893	1A Civic Ave, Kogarah	Residential	60	-	-	-	Exclude	67	68	1.3	Include
3127	1 Lachal Ave, Kogarah	Residential	60	-	-	-	Exclude	64	64	0.4	Include
3128	19 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.9	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3129	25 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	76	0.7	Include
3130	27 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.6	Include
3158	2 Traynor Ave, Kogarah	Residential	60	-	-	-	Exclude	66	66	0.5	Include
3161	1 Oakdale Ave, Kogarah	Residential	60	-	-	-	Exclude	66	66	0.5	Include
3170	57 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	1.1	Include
3171	63 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	76	1.1	Include
3173	1 Civic Ave, Kogarah	Residential	60	-	-	-	Exclude	64	65	1.4	Include
3302	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	77	77	-0.2	Include
3303	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	61	61	0.3	Include
3304	750 Princes Hwy, Kogarah	School	53	-	-	-	Exclude	75	75	0.5	Include
3314	8-10 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.5	Include
3315	30-32 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.7	Include
3316	48 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	75	0.7	Include
3317	50 President Ave, Kogarah	Residential	60	-	-	-	Exclude	73	74	0.7	Include
3318	52 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	74	0.7	Include
3319	54 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	75	0.7	Include
3320	56 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	74	0.8	Include
3321	58 President Ave, Kogarah	Residential	60	-	-	-	Exclude	74	74	0.8	Include
3323	62 President Ave, Kogarah	Residential	60	-	-	-	Exclude	73	73	0.7	Include
3324	64 President Ave, Kogarah	Residential	60	-	-	-	Exclude	77	77	0.9	Include
3325	66 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	75	0.8	Include
3326	68 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	75	0.9	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3327	70 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	76	1.0	Include
3328	72 President Ave, Kogarah	Residential	60	-	-	-	Exclude	75	76	1.1	Include
3332	730 Princes Hwy, Kogarah	Residential	60	-	-	-	Exclude	74	74	-0.3	Include
3333	726-728 Princes Hwy, Kogarah	Residential	60	-	-	-	Exclude	74	74	-0.4	Include
3648	35 Crawford Road, Brighton-Le-Sands	School	53	-	-	-	Exclude	51	53	2.1	Include
3649	35 Crawford Rd, Brighton-Le-Sands	School	53	-	-	-	Exclude	52	54	2.2	Include
3650	35 Crawford Rd, Brighton-Le-Sands	School	53	-	-	-	Exclude	52	54	2.1	Include
3651	35 Crawford Rd, Brighton-Le-Sands	School	53	-	-	-	Exclude	51	53	2.4	Include
3664	49 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	57	62	4.1	Include
3665	51 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	59	63	4.0	Include
3666	51 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	58	61	3.7	Include
3667	51 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	57	61	3.6	Include
3671	148 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	76	1.7	Include
3672	150 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	76	1.6	Include
3673	152 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	76	1.6	Include
3674	154 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	76	1.5	Include
3675	158 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	75	1.3	Include
3676	164 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	73	73	0.7	Include
3677	166 President Ave, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	74	74	0.6	Include
3680	66 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	62	67	5.3	Include
3681	64 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	59	66	6.4	Include
3682	60 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	57	64	6.7	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3683	58 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	59	65	5.8	Include
3684	56 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	57	63	6.4	Include
3685	54 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	58	63	5.1	Include
3686	48 O'Neill St, Brighton-Le-Sands	Residential	60	-	-	-	Exclude	58	62	3.7	Include
3827	38 Gladstone St, Kogarah	Residential	60	-	-	-	Exclude	67	67	-0.5	Include
3886	1-5 Hogben St, Kogarah	Other	60	-	-	-	Exclude	66	65	-0.7	Include
3903	69 Gladstone St, Kogarah	Residential	60	-	-	-	Exclude	71	70	-0.4	Include
3904	58 Premier St, Kogarah	Residential	60	-	-	-	Exclude	65	65	-0.2	Include
3907	63-67 Gladstone St, Kogarah	Residential	60	-	-	-	Exclude	68	67	-0.5	Include
3936	79-103 Princes Hwy, Kogarah	Other	60	-	-	-	Exclude	79	78	-0.8	Include

Notes:

- Schools have an internal noise criteria of $L_{Aeq(1\text{ hr})}$ 45 dB(A) when in use. Noise logging undertaken as part of this project showed the $L_{Aeq(1\text{ hr})}$ noise level did not change significantly from the $L_{Aeq(15\text{ hr})}$. Conservatively they have been assumed to be identical. The internal criterion has had a correction of 12.5 dB(A) applied to it to account for the removal of façade reflection from the prediction and an industry accepted 10 dB(A) external to internal correction, assuming windows open.

Table 10-10 Cumulative scenario night-time $L_{Aeq(9\text{ hr})}$ noise levels

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1056	17 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.6	Include
1057	21 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.6	Include
1058	23 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.6	Include
1060	1 Traynor Ave, Kogarah	Residential	55	-	-	-	Exclude	60	60	0.2	Include
1075	59 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.5	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1076	61 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.5	Include
1077	3 Civic Ave, Kogarah	Residential	55	-	-	-	Exclude	58	59	0.9	Include
1133	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	58	57	-0.4	Include
1135	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	56	55	-0.7	Include
1136	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	58	58	0.2	Include
1137	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	55	54	-0.5	Include
1138	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	62	62	-0.4	Include
1139	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	64	64	-0.2	Include
1140	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	69	70	0.7	Include
1141	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	71	72	0.3	Include
1144	800 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	61	60	-0.6	Include
1162	732 Princes Hwy, Kogarah	Residential	55	-	-	-	Exclude	69	69	-0.2	Include
1163	2 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.0	Include
1164	4-6 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.0	Include
1165	12-14 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.1	Include
1166	18 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.1	Include
1167	20 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.1	Include
1168	22-24 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.1	Include
1169	34-36 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.2	Include
1170	38-40 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.3	Include
1171	42 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.3	Include
1172	7-9 Cross St, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.2	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
1173	74 President Ave, Kogarah	Residential	55	-	-	-	Exclude	71	72	0.7	Include
2302	35 Crawford Rd, Brighton-Le-Sands	School	0	-	-	-	Exclude	47	49	2.0	Include
2329	146 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.0	Include
2330	156 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.1	Include
2331	160 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	70	0.7	Include
2332	162 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	69	70	0.6	Include
2334	62 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	55	61	5.3	Include
2335	52 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	57	4.1	Include
2336	50 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	57	4.2	Include
2516	137 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	69	-0.6	Include
2517	139 President Ave, Monterey	Residential	55	-	-	-	Exclude	70	69	-0.5	Include
2518	141 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	69	-0.3	Include
2519	143 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	69	-0.2	Include
2520	145 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	69	-0.1	Include
2521	147 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	69	0.0	Include
2522	149 President Ave, Monterey	Residential	55	-	-	-	Exclude	70	70	0.0	Include
2523	151 President Ave, Monterey	Residential	55	-	-	-	Exclude	70	69	-0.1	Include
2524	153 President Ave, Monterey	Residential	55	-	-	-	Exclude	68	68	-0.1	Include
2525	155 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	68	-0.2	Include
2526	157-159 President Ave, Monterey	Residential	55	-	-	-	Exclude	68	68	0.0	Include
2527	157-159 President Ave, Monterey	Residential	55	-	-	-	Exclude	68	68	0.0	Include
2528	161-163 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	69	0.0	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
2529	165-169 President Ave, Monterey	Residential	55	-	-	-	Exclude	69	70	0.1	Include
2893	1A Civic Ave, Kogarah	Residential	55	-	-	-	Exclude	62	63	0.7	Include
3127	1 Lachal Ave, Kogarah	Residential	55	-	-	-	Exclude	59	59	0.1	Include
3128	19 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.6	Include
3129	25 President Ave, Kogarah	Residential	55	-	-	-	Exclude	71	71	0.5	Include
3130	27 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.4	Include
3158	2 Traynor Ave, Kogarah	Residential	55	-	-	-	Exclude	62	62	0.1	Include
3161	1 Oakdale Ave, Kogarah	Residential	55	-	-	-	Exclude	61	62	0.2	Include
3170	57 President Ave, Kogarah	Residential	55	-	-	-	Exclude	69	70	0.7	Include
3171	63 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.5	Include
3173	1 Civic Ave, Kogarah	Residential	55	-	-	-	Exclude	59	60	0.8	Include
3302	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	73	73	0.0	Include
3303	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	56	56	0.0	Include
3304	750 Princes Hwy, Kogarah	School	0	-	-	-	Exclude	70	70	0.2	Include
3314	8-10 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.0	Include
3315	30-32 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.3	Include
3316	48 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	70	0.2	Include
3317	50 President Ave, Kogarah	Residential	55	-	-	-	Exclude	69	69	0.2	Include
3318	52 President Ave, Kogarah	Residential	55	-	-	-	Exclude	69	70	0.3	Include
3319	54 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.3	Include
3320	56 President Ave, Kogarah	Residential	55	-	-	-	Exclude	69	70	0.3	Include
3321	58 President Ave, Kogarah	Residential	55	-	-	-	Exclude	69	70	0.3	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3323	62 President Ave, Kogarah	Residential	55	-	-	-	Exclude	68	68	0.2	Include
3324	64 President Ave, Kogarah	Residential	55	-	-	-	Exclude	72	73	0.3	Include
3325	66 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.3	Include
3326	68 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.4	Include
3327	70 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.5	Include
3328	72 President Ave, Kogarah	Residential	55	-	-	-	Exclude	70	71	0.5	Include
3332	730 Princes Hwy, Kogarah	Residential	55	-	-	-	Exclude	69	69	-0.3	Include
3333	726-728 Princes Hwy, Kogarah	Residential	55	-	-	-	Exclude	69	69	-0.4	Include
3648	35 Crawford Road, Brighton-Le-Sands	School	0	-	-	-	Exclude	47	48	1.5	Include
3649	35 Crawford Rd, Brighton-Le-Sands	School	0	-	-	-	Exclude	47	49	1.7	Include
3650	35 Crawford Rd, Brighton-Le-Sands	School	0	-	-	-	Exclude	47	49	1.6	Include
3651	35 Crawford Rd, Brighton-Le-Sands	School	0	-	-	-	Exclude	46	48	1.8	Include
3664	49 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	56	3.4	Include
3665	51 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	54	57	3.3	Include
3666	51 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	56	3.0	Include
3667	51 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	56	2.8	Include
3671	148 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.4	Include
3672	150 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.3	Include
3673	152 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.2	Include
3674	154 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.2	Include
3675	158 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	70	71	1.0	Include
3676	164 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	68	69	0.4	Include

ID	Address	Use	Criteria	Year of Opening			Design Year			Exceeds Cumulative	Eligible for Mitigation
				Do Minimum	Do Something	Increase	Do Minimum	Do Something	Increase		
3677	166 President Ave, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	69	70	0.3	Include
3680	66 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	57	62	4.9	Include
3681	64 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	55	61	5.9	Include
3682	60 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	59	6.2	Include
3683	58 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	54	60	5.4	Include
3684	56 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	52	58	6.0	Include
3685	54 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	53	58	4.7	Include
3686	48 O'Neill St, Brighton-Le-Sands	Residential	55	-	-	-	Exclude	54	57	3.1	Include
3827	38 Gladstone St, Kogarah	Residential	55	-	-	-	Exclude	62	62	-0.5	Include
3886	1-5 Hogben St, Kogarah	Other	55	-	-	-	Exclude	61	61	-0.8	Include
3903	69 Gladstone St, Kogarah	Residential	55	-	-	-	Exclude	66	65	-0.5	Include
3904	58 Premier St, Kogarah	Residential	55	-	-	-	Exclude	61	60	-0.5	Include
3907	63-67 Gladstone St, Kogarah	Residential	55	-	-	-	Exclude	63	62	-0.5	Include
3936	79-103 Princes Hwy, Kogarah	Other	55	-	-	-	Exclude	75	74	-1.0	Include

Notes:

- 1 Schools are not operational during the night-time period.

Annexure J – Operational noise results – road traffic maps



LEGEND

F6 Extension S1

Excluded - outside highly urban boundary

Daytime LAeq(15hour) dB(A)

< 45
45 to 50
50 to 55
55 to 60
60 to 65
> 65

Figure J-1 Operational Road Traffic Noise - Year 2026 Build Daytime Noise Levels

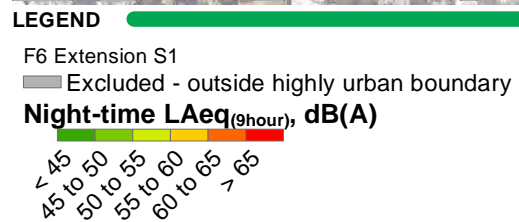


Figure J-2 Operational Road Traffic Noise - Year 2026 Build Night-time Noise Levels

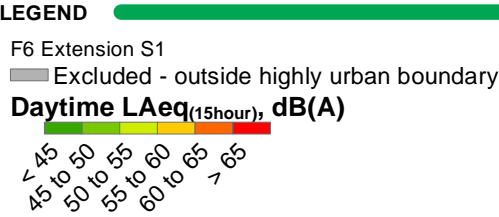
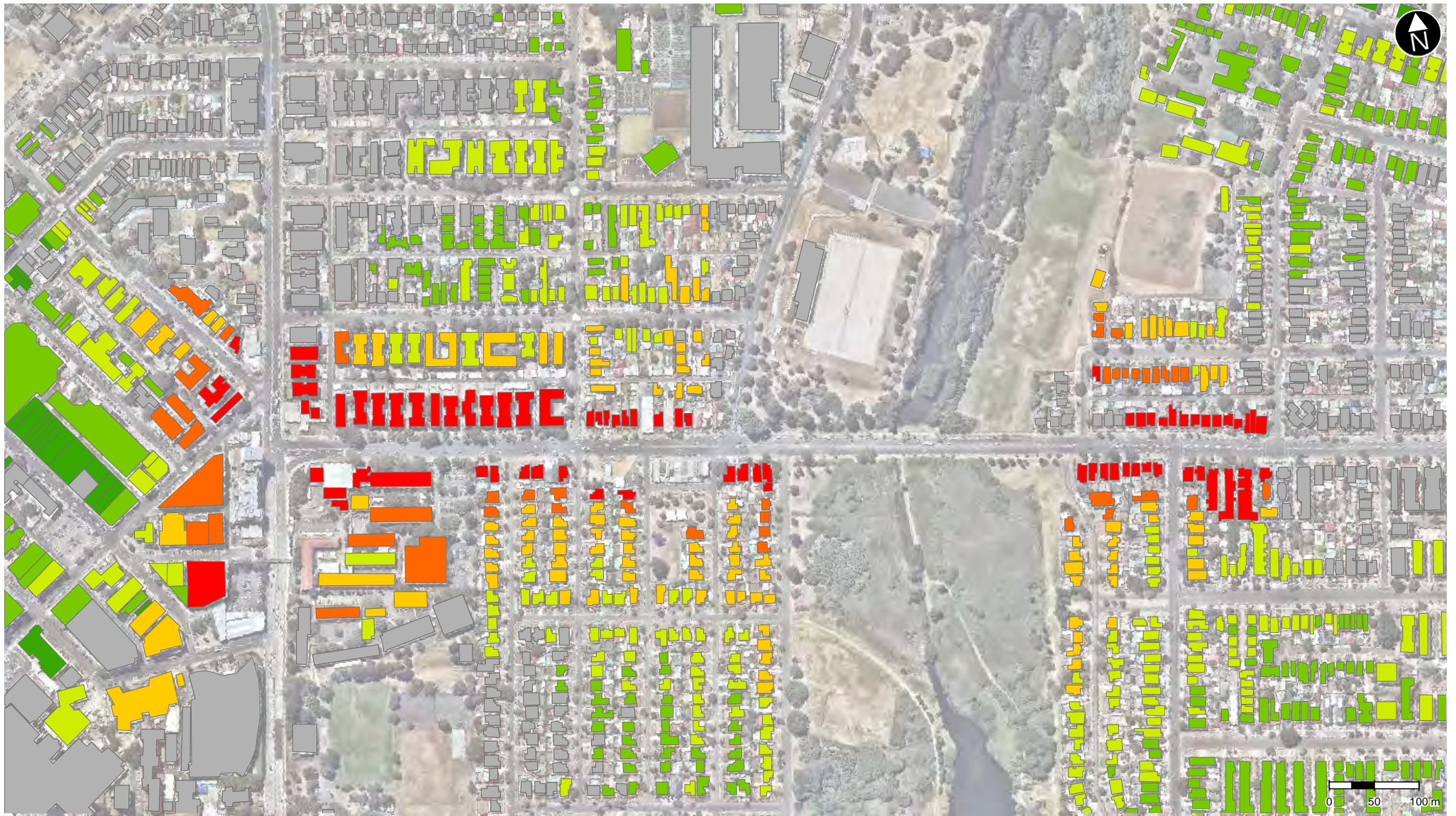


Figure J-3 Operational Road Traffic Noise - Year 2036 Build Daytime Noise Levels



LEGEND

F6 Extension S1

Excluded - outside highly urban boundary

Night-time $L_{Aeq}(9\text{hour})$, dB(A)

< 45
 45 to 50
 50 to 55
 55 to 60
 60 to 65
 > 65

Figure J-4 Operational Road Traffic Noise - Year 2036 Build Night-time Noise Levels

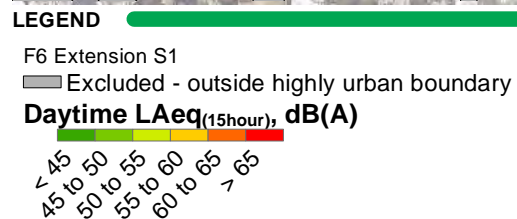
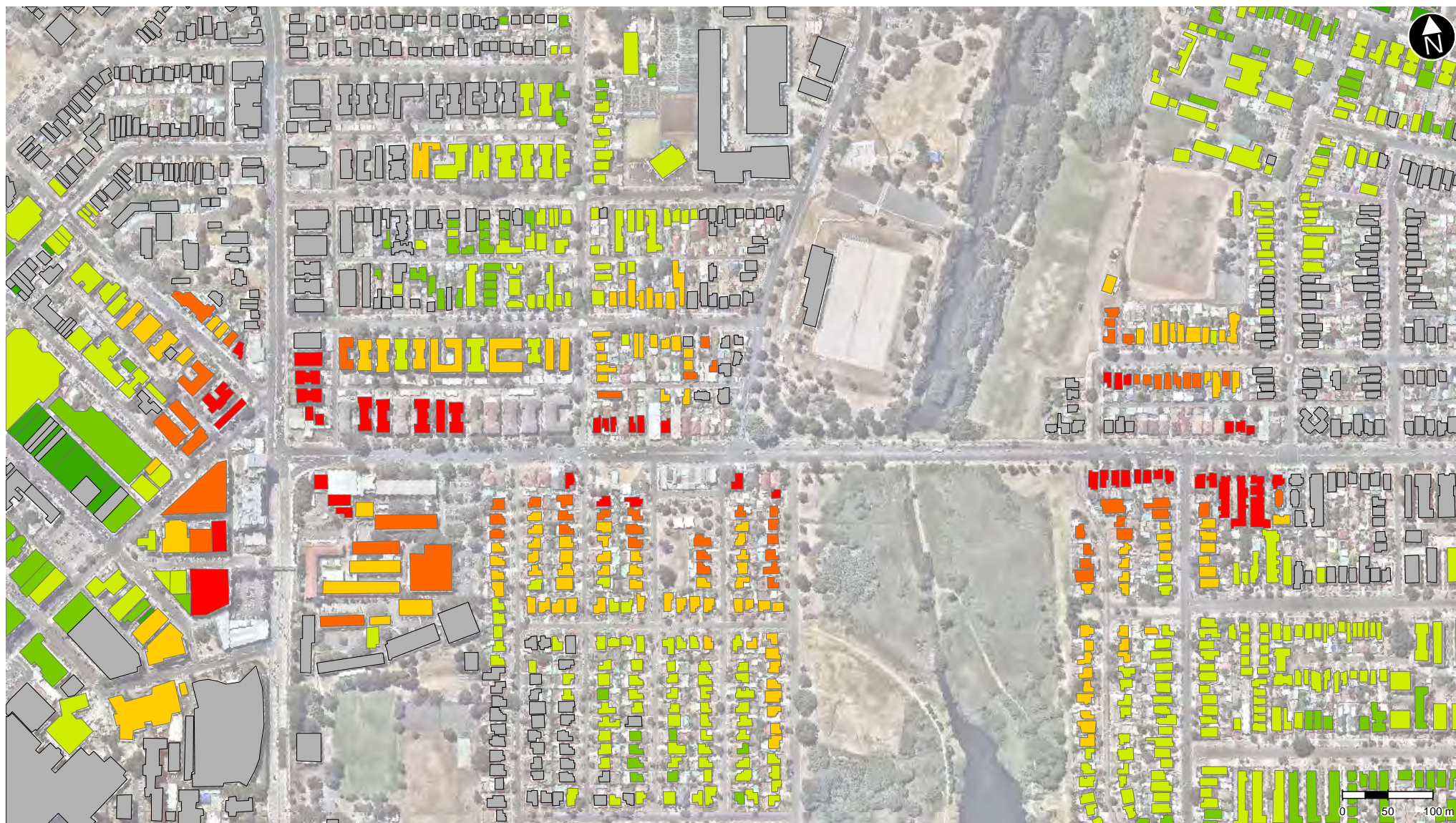


Figure J-5 Operational Road Traffic Noise - Year 2036 Cumulative Daytime Noise Levels



LEGEND

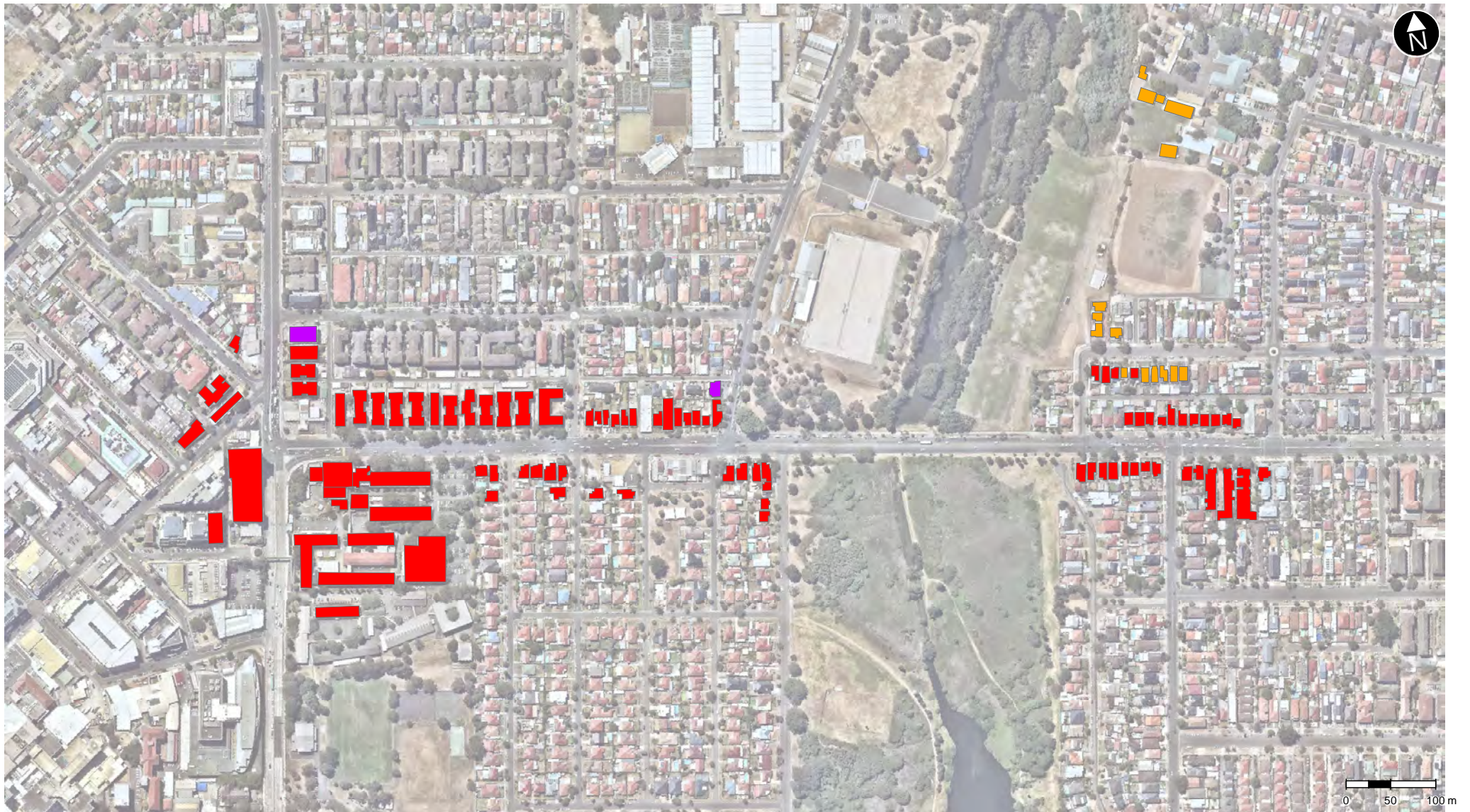
F6 Extension S1

Excluded - outside highly urban boundary

Night-time $L_{Aeq(9hour)}$, dB(A)

< 45
 45 to 50
 50 to 55
 55 to 60
 60 to 65
 > 65

Figure J-6 Operational Road Traffic Noise - Year 2036 Cumulative Night-time Noise Levels



LEGEND

F6 Extension S1

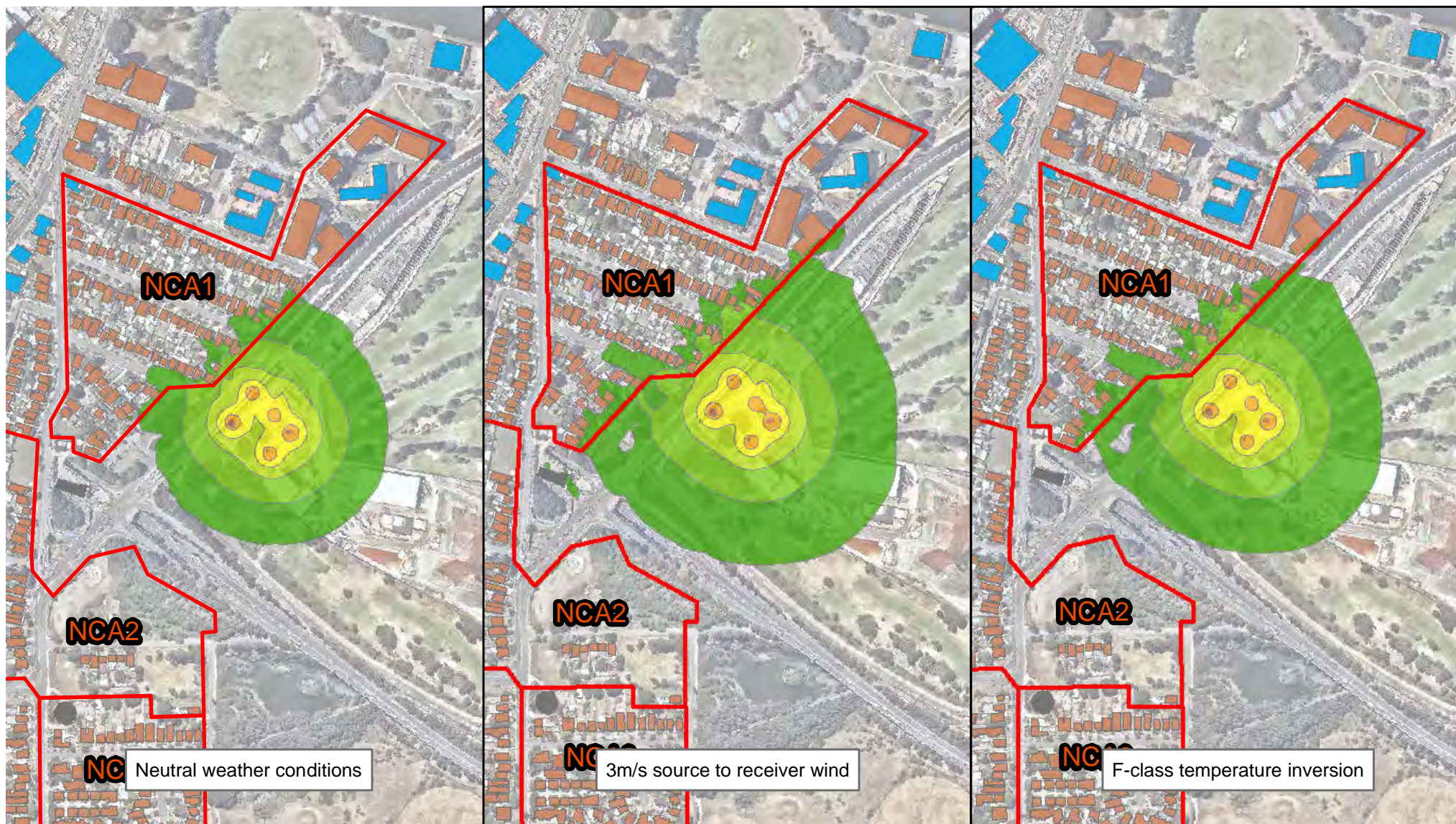
■ Receiver exceeds the Cumulative Noise Limit in any scenario

■ Receiver exceeds the RNP Criteria and Increases >2dB(A) in any scenario

■ Acute

Figure J-7 Operational Road Traffic Noise - Receivers eligible for the consideration of noise mitigation

Annexure K – Operational noise results – operational facilities maps



LEGEND

F6 Extension S1

Active Recreation
Commercial
Community Centre
Hospital

Industrial
Library
Military
Mixed Use

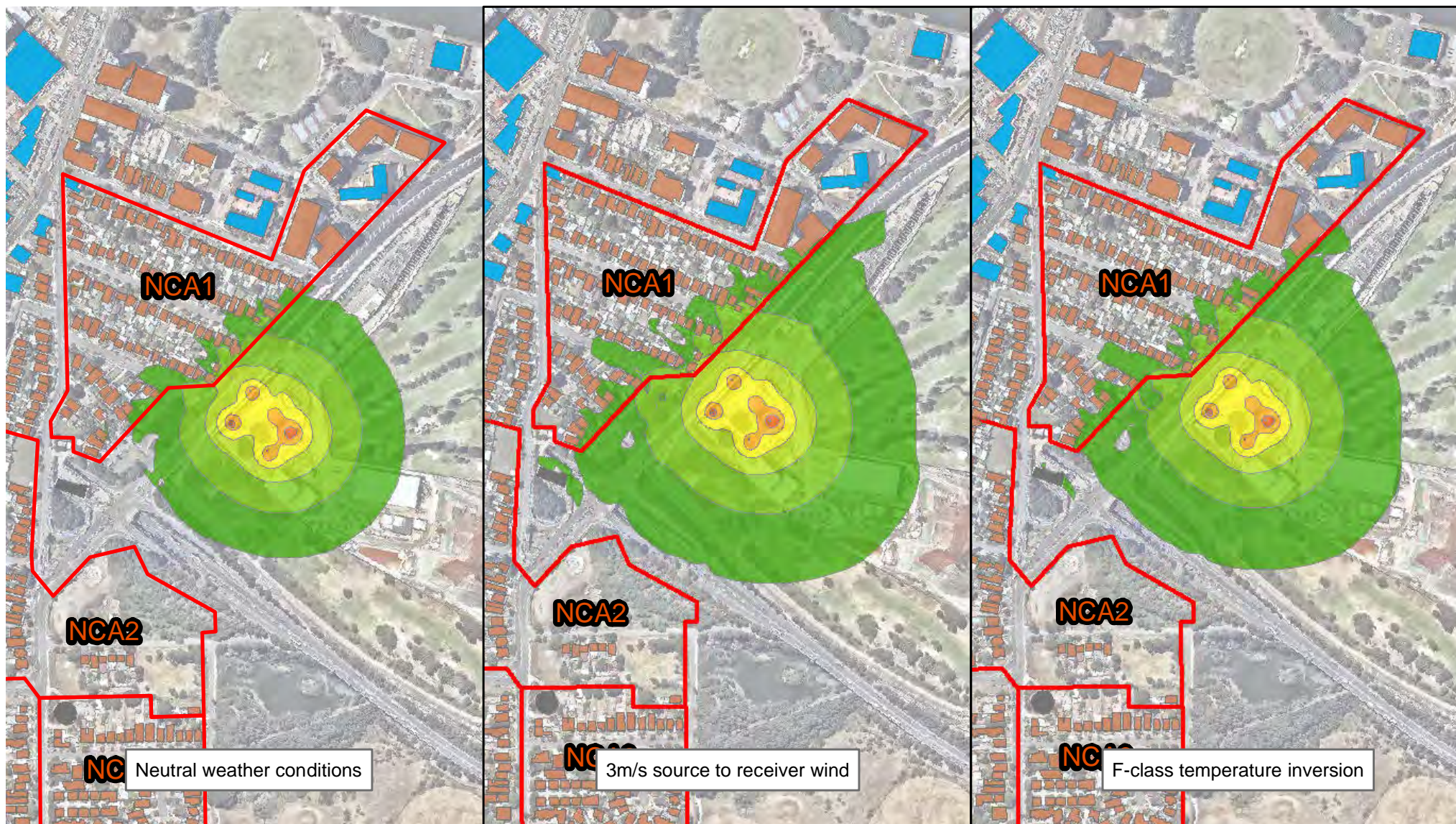
Place of Worship
Residential
School

$L_{Aeq(15min)}$

noise levels, dB(A)

Noise Catchment Areas

Figure K-1 Arncliffe Normal Traffic Operating Condition



LEGEND

F6 Extension S1

Active Recreation
Commercial
Community Centre
Hospital

Industrial
Library
Military
Mixed Use

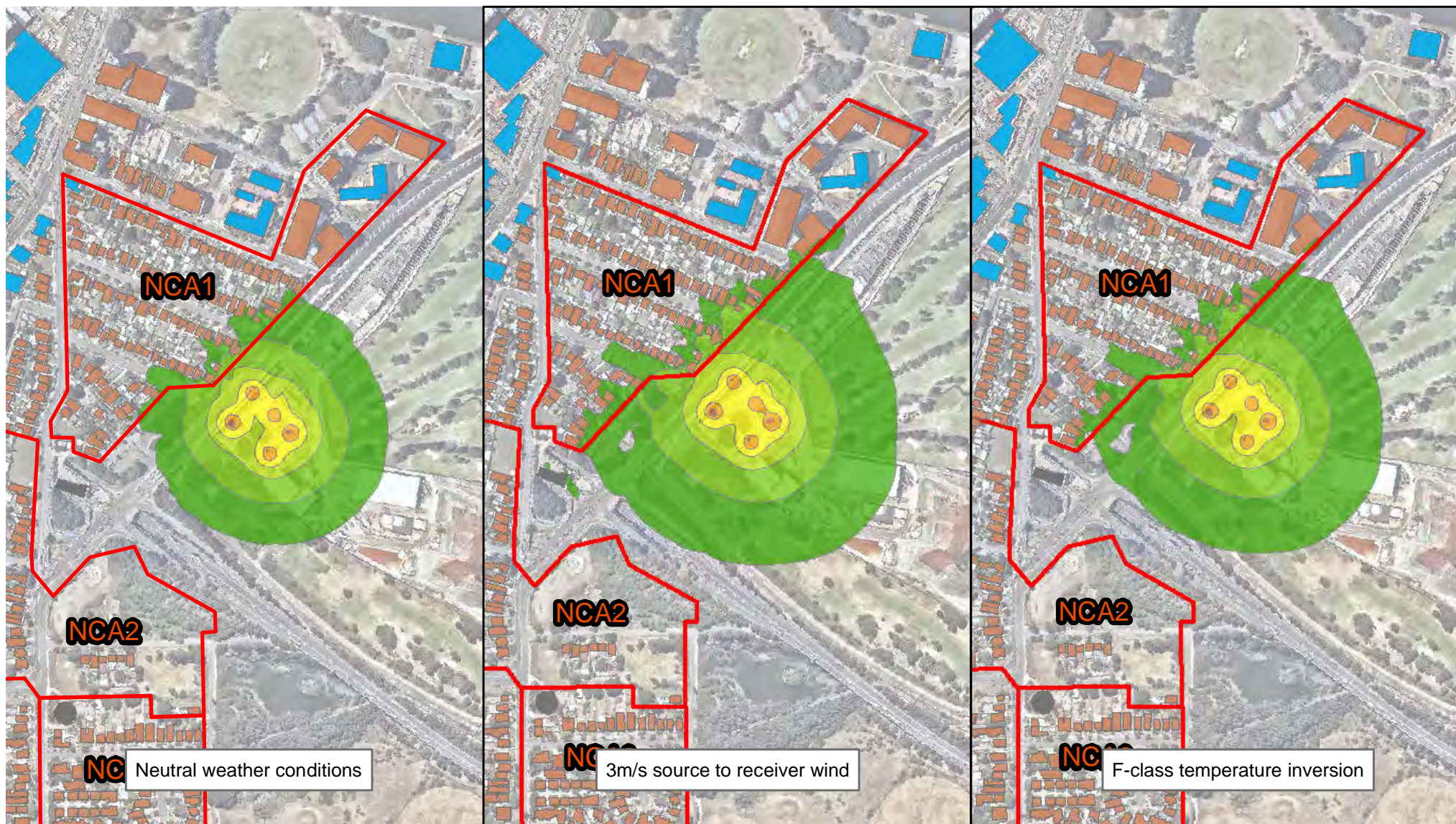
Place of Worship
Residential
School

$L_{Aeq(15min)}$

noise levels, dB(A)

Noise Catchment Areas

Figure K-2 Arncliffe Low Flow Operating Condition



LEGEND

F6 Extension S1

Active Recreation
Commercial
Community Centre
Hospital

Industrial
Library
Military
Mixed Use

Place of Worship
Residential
School

$L_{Aeq(15min)}$

noise levels, dB(A)

Noise Catchment Areas

35-40
40-45
45-50
50-55
55-60
60-65
65-70

Figure K-3 Arncliffe Emergency Operating Condition

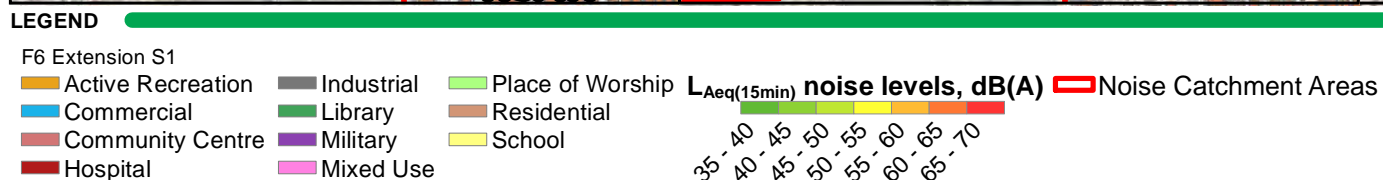
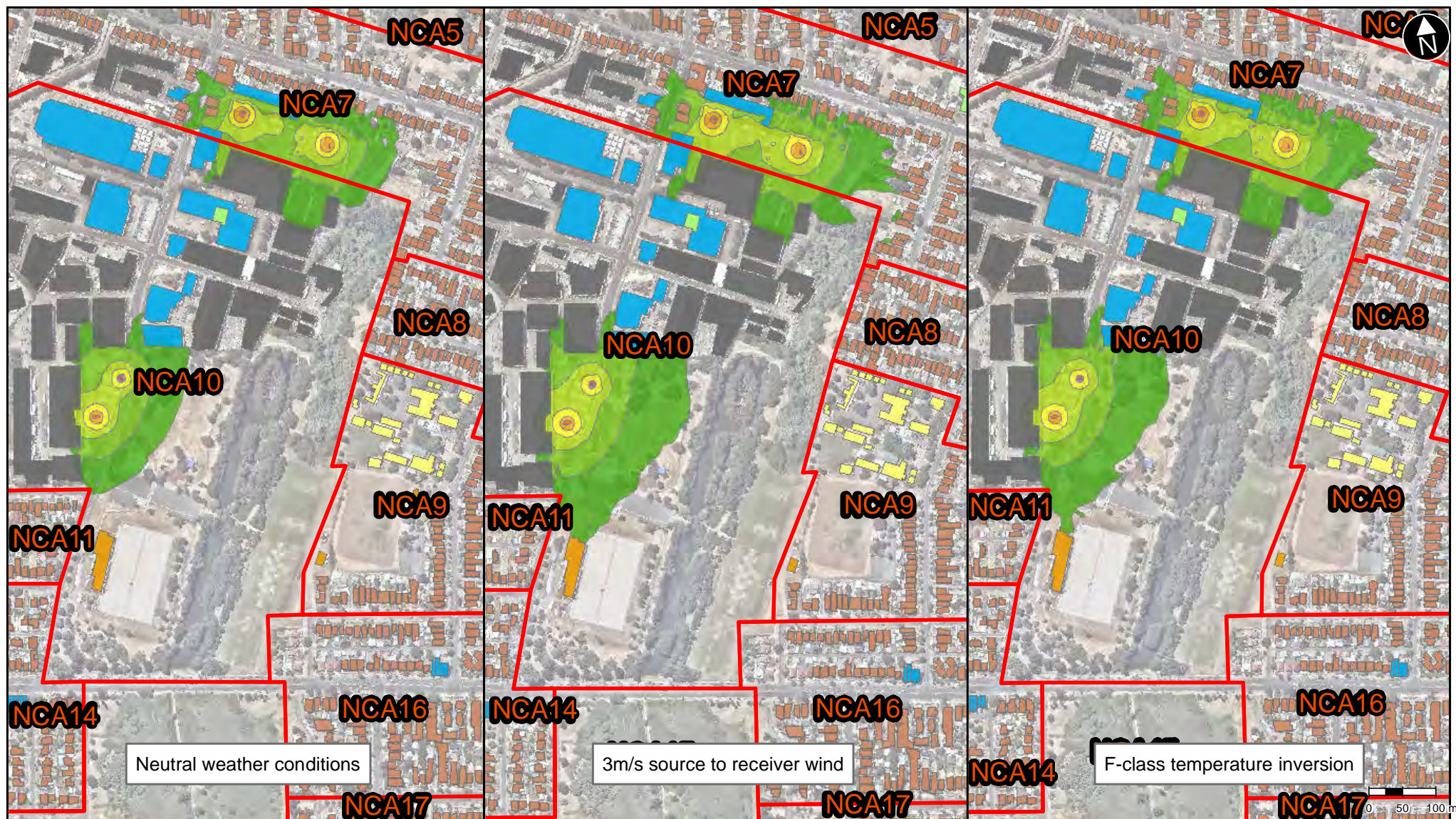


Figure K-4 Rockdale Normal Traffic Operating Condition

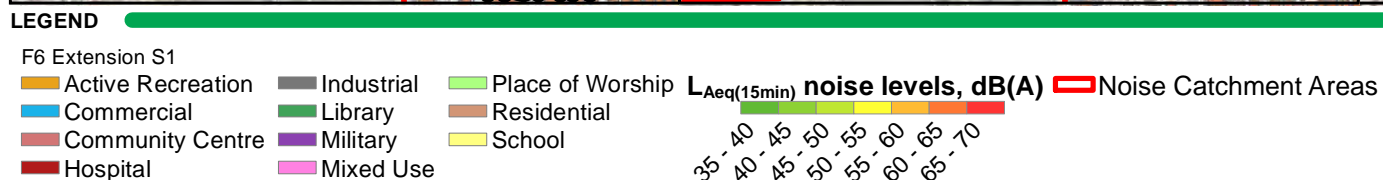
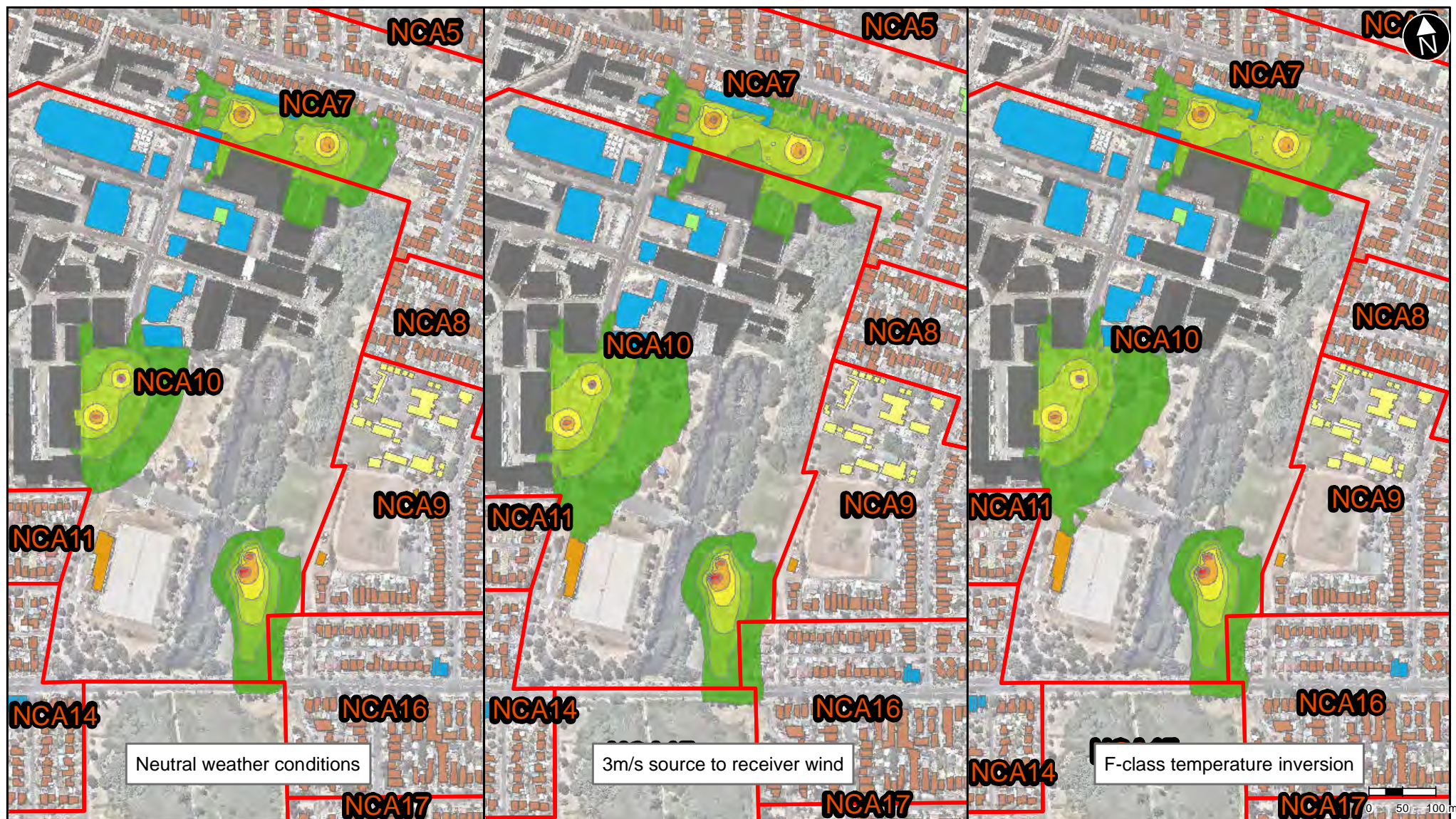


Figure K-5 Rockdale Low Flow Operating Condition

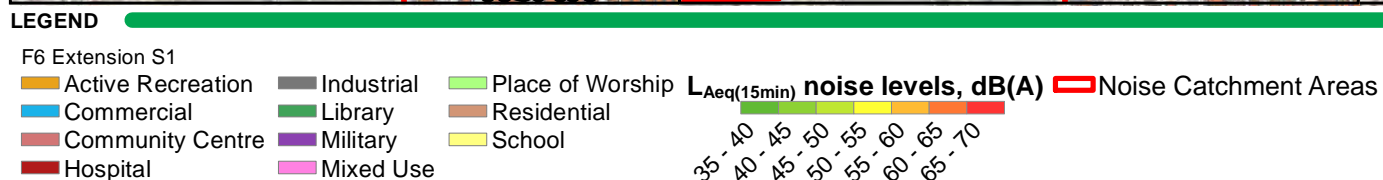
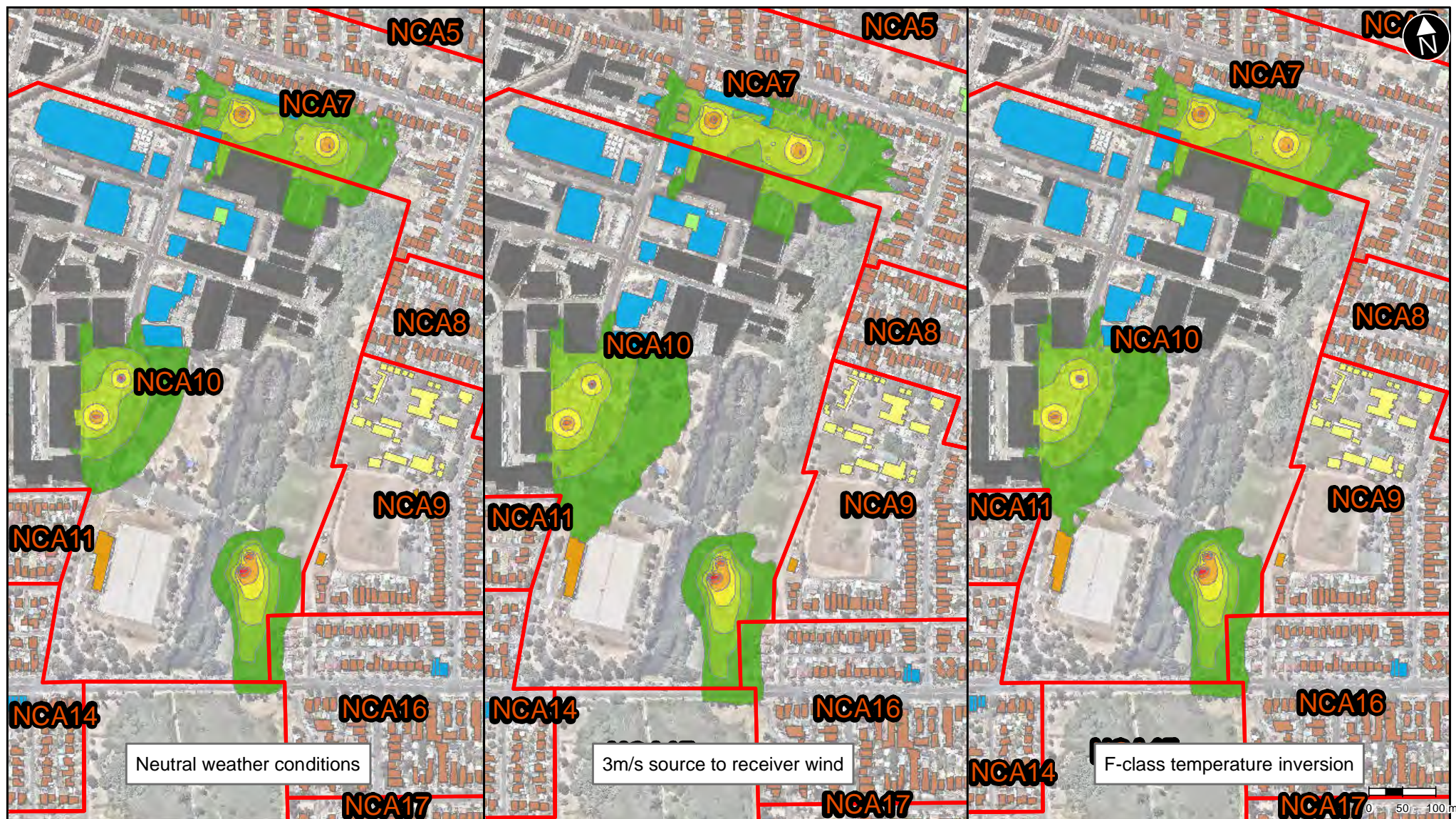
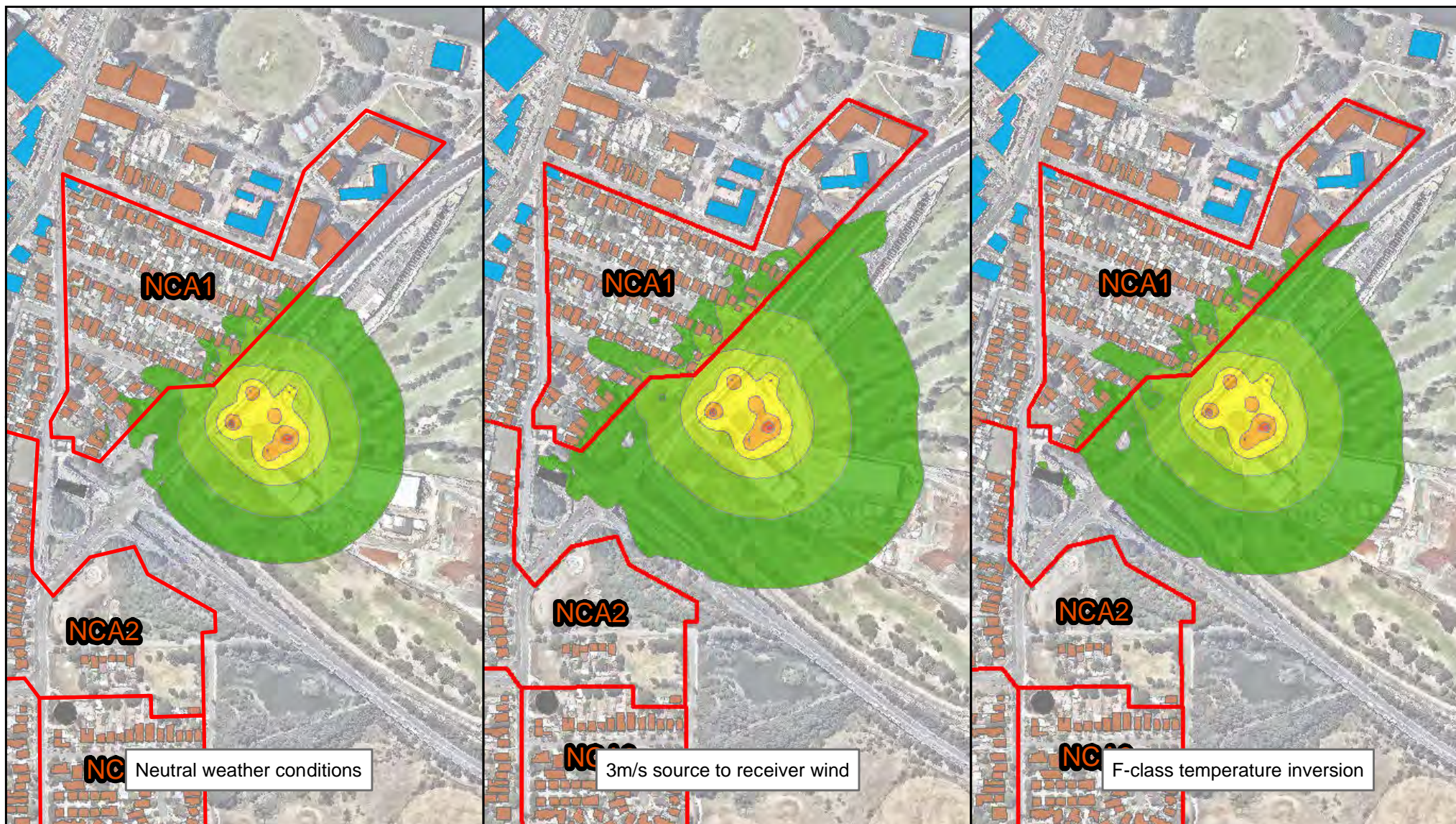


Figure K-6 Rockdale Emergency Operating Condition



LEGEND

F6 Extension S1

Active Recreation
Commercial
Community Centre
Hospital

Industrial
Library
Military
Mixed Use

Place of Worship
Residential
School

$L_{Aeq(15min)}$

noise levels, dB(A)

Noise Catchment Areas

35-40 40-45 45-50 50-55 55-60 60-65 65-70

Figure K-7 Arncliffe Cumulative Noise Impacts - Normal Operating Condition

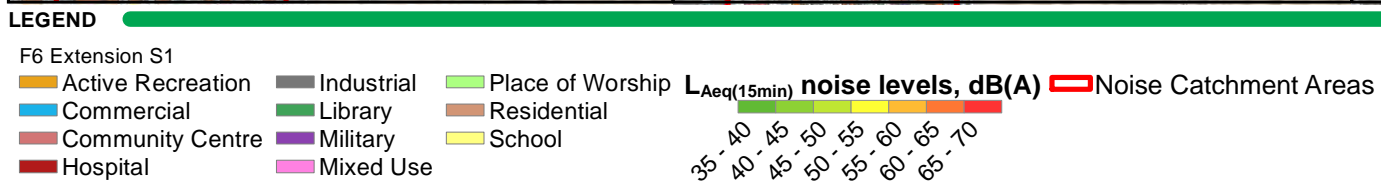
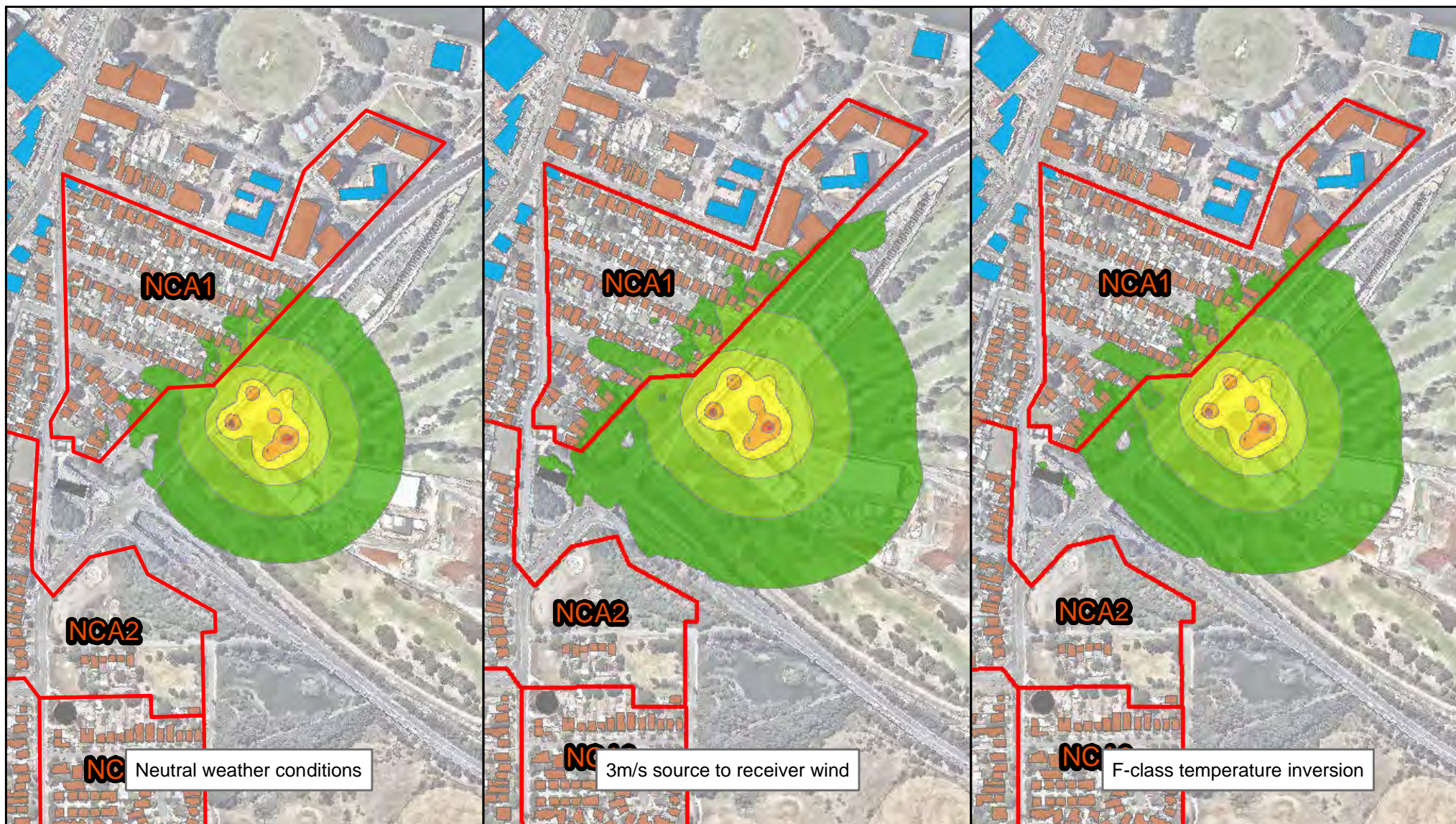


Figure K-8 Arnccliffe Cumulative Noise Impacts - Low Flow Operating Condition

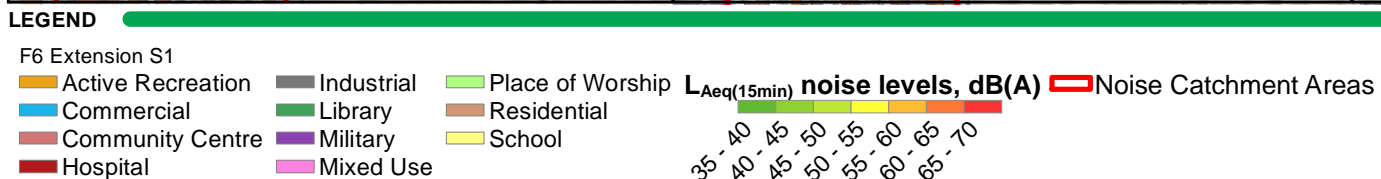
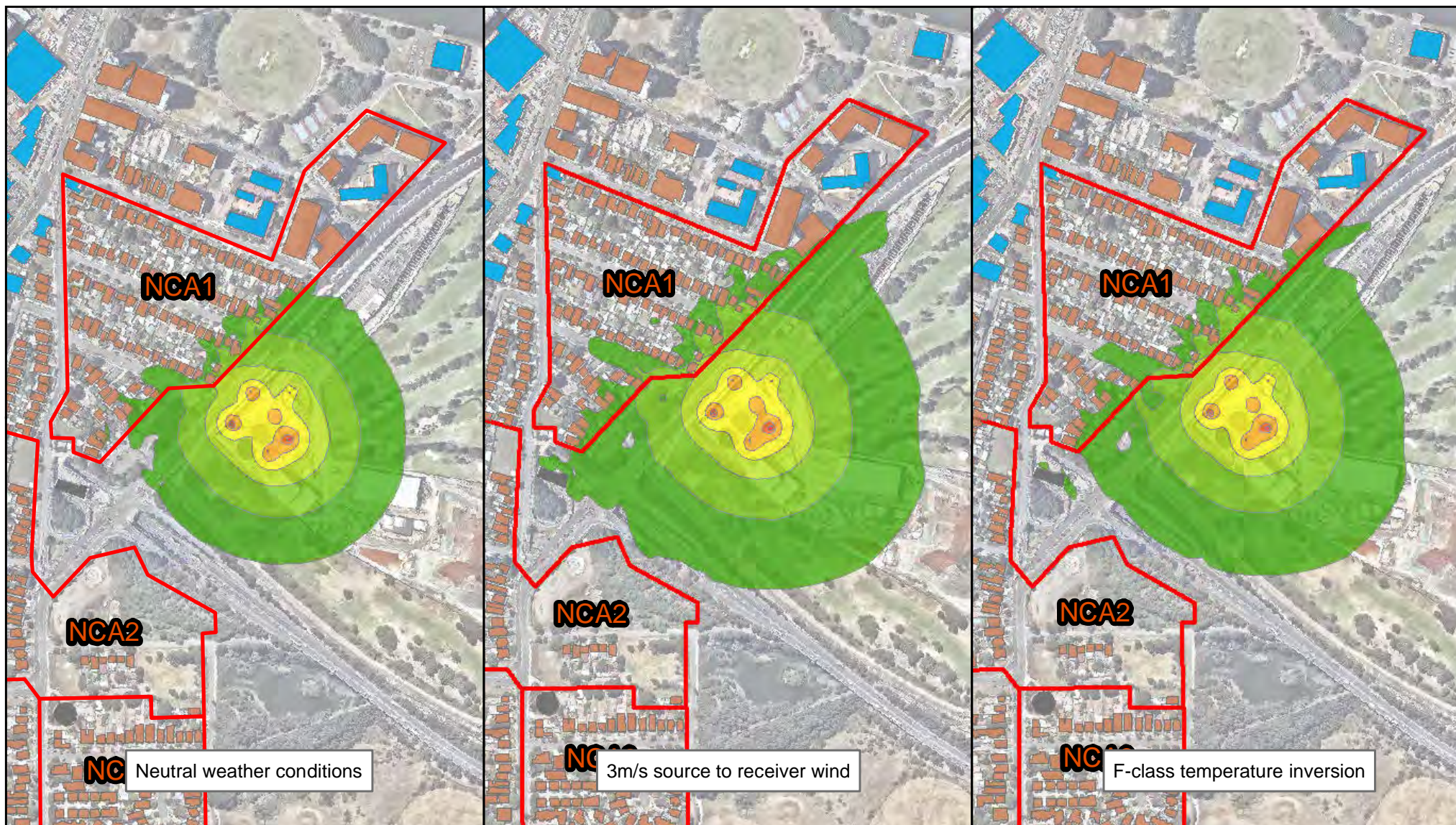


Figure K-9 Arncliffe Cumulative Noise Impacts - Emergency Operating Condition

(blank page)

