Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM1 - Shun Man House, Oi Man Estate

Scenario: Unmitigated

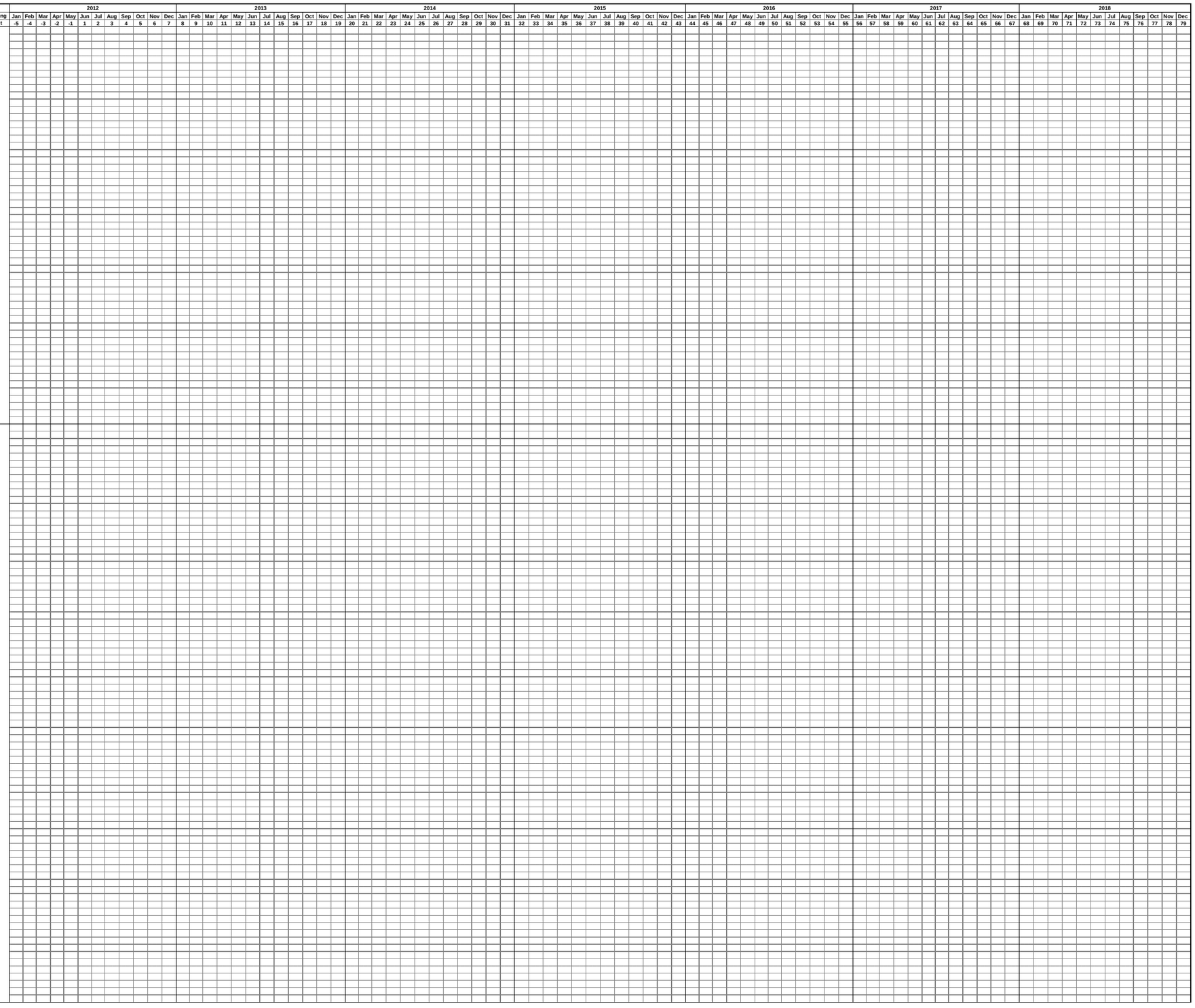
Package	Construction Activity	Work Site No. [1]	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
Hung Hom Station, SAT & Related Work	***Hung Hom Station Sub-Location Area***					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Project Office Construction	PSO	115	1348	48	0
	Hoarding Erection	HUH1	112	818	48	0
	Pre-drilling	HUH1	90	818	27	0
	Dwall Plants Setting up	HUH1	114	818	51	0
	A&A/ Modification Works					
	Concourse Level HUH					
	Stage 1 - Re-construct M/F, ABWF & BS	HUH2	123	866	59	0
	Stage 2 - Re-construct M/F, ABWF & BS	HUH2	123	866	59	0
	Area H1					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to NOV					
	Cooling mains diversion	H1	115	1151	49	0
	Dia 1650 Sewer diversion (SCL (MKK - HUH) part)	H1	118	1151	51	0
	Tentative CLP cable tunnels strengthening	H1	111	1151	45	0
	IMC Building & Carpark areas					
	IMC Hoarding & Catch Fan Erection	IMC	114	1162	47	0
	IMC Demolition and site clearance	IMC	123	1162	57	0
	Dia 1650 Sewer diversion	IMC	115	1162	49	0
	Modification to Existing EVA structures	HWPR	119	1123	53	0
	Temporary Cofferdam					
	Podium to NOV					
	Dwall construction (SCL (MKK - HUH)) for sewer diversion	H1	120	1151	54	0
	Dwall construction (SCL (MKK - HUH)) remaining	H1	120	1151	54	0
	IMC Building & Carpark areas					
	Temporary Cofferdam after demolition	IMC	118	1162	51	0
	Excavation					
	Podium to NOV					
	Excavation & Strutting to SCL (MKK - HUH) roof	H1	124	1151	58	0
	Excavation & Strutting to SCL (MKK - HUH) base	H1	124	1151	58	0
	IMC Building & Carpark areas					
	Pump test, Excavation & Strutting	IMC	82	1162	16	0
	Structure Works					
	Podium to NOV					
	Concrete Structure SCL (MKK - HUH) roof	H1	120	1151	53	0
	Concrete Support to CLP Tunnel	H1	118	1151	52	0
	Concrete Structure SCL (MKK - HUH) roof	H1	124	1151	58	0
	Waterfront EVA structure (SCL (MKK - HUH))	H1	118	1151	51	0
	IMC Building & Carpark areas					
	Cooling Tower Raft	CT	115	1160	49	0
	Cooling Tower Ground Slab	CT	115	1160	49	0
	Cooling Tower wall & roof	CT	115	1160	49	0
	Waterfront EVA structure (SCL (TAW - HUH))	IMC	118	1162	51	0
	Area H2					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to Coliseum					
	Modification of Traversa	H2	116	1106	50	0
	Utilities Diversion/ Services relocate (GL 0 - GL 7)	H2	124	1106	58	0
	Temporary Cofferdam					
	Podium to Coliseum					
	Ground Treatment to GL 1 to GL 7	H2	94	1106	28	0
	Dwall & Barrette GL 0 to GL 7	H2	119	1106	53	0
	Pump test GL 0 to GL 7	H2	82	1106	16	0
	Underpinning beam & columns	H2	114	1106	48	0
	Demolish existing columns	H2	122	1106	57	0
	Excavation					
	Podium to Coliseum					
	Excavation & Strutting GL 0 to GL 7	H2	121	1106	56	0
	Final Excavation & Strutting to NSL base Gl 0 to GL 7	H2	121	1106	55	0
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Base GL 0 to GL 7	H2	116	1106	50	0
	SCL (MKK - HUH) Slab & props to existing foundation GL 0 to GL 7	H2	116	1106	50	0
	SCL (MKK - HUH) Base & Wall GL 0 to GL 7	H2	122	1106	56	0
	SCL (TAW - HUH) & other Structures GL 0 to GL 7	H2	116	1106	50	0
	Vent Shaft Structures GL 0	H2	117	1106	51	0
	Area H3					
	Modification/ Enabling Works/ Utilities Diversions					
	Coliseum Area					
	Utilities Diversion/ Services relocate (GL 7 - GL 15)	H3	119	1051	54	0
	Temporary Cofferdam					
	Coliseum Area					
	Dwall GL 7 to GL 15	H3	119	1051	54	0
	Excavation					
	Coliseum Area					
	Pump test GL 7 to GL 15	H3	82	1051	17	0
	Excavation to SCL (TAW - HUH) slab Gl 7 to GL 15	H3	124	1051	59	0
	Excavation & Strutting to intermediate slab GL 7 to GL 15	H3	124	1051	59	0
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H3	124	1051	59	0
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Track Slab & Structures GL 7 to GL 15	H3	116	1051	51	0
	SCL (MKK - HUH) Structures Intermediate Slab & props GL 7 to GL 15	H3	116	1051	51	0
	SCL (MKK - HUH) Structure Base & Wall GL 7 to GL 15	H3	116	1051	51	0
	SCL (TAW - HUH) Structures Wall & Roof GL 7 to GL 15	H3	116	1051	51	0
	SCL (TAW - HUH) & other Structures GL 7 to GL 15	H3	116	1051	51	0
	Area H4					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 15 - GL 28)	H4	119	975	54	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K	H4	119	975	55	0
	Dwall GL 15 to GL 31 / GL N	H4	118	975	54	0
	Dwall GL 15 to GL 31 / GL K1	H4	118	975	54	0
	Excavation					
	Hung Hom Station					
	Pump test GL 15 to GL 28	H4	85	975	20	0
	Excavation & Strutting 1st Layer GL 15 to GL 28	H4	124	975	59	0
	Excavation & Strutting GL 15 to GL 28	H4	123	975	59	0
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H4	124	975	60	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 15 to GL 28	H4	116	975	52	0
	Install Temporary Steel Tower Column GL 15 to GL 22	H4	114	975	49	0
	Demolish existing Column & Pier Cap GL 15 to GL 22	H4	117	975	53	0
	SCL (MKK - HUH) Base Structure GL 15 to GL 28	H4	116	975	52	0
	SCL (TAW - HUH) & other Structures GL 15 to GL 28	H4	121	975	56	0
	SCL (MKK - HUH) Internal Structures GL 15 to GL 28	H4	119	975	54	0

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM1 - Shun Man House, Oi Man Estate

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
	Area H5					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 28 - GL 38)	H5	119	889	55	0
	Temporary Storm Drain@ 1875 Diversion (GL 31)	H5	114	889	50	0
	Redivert Storm Drain@ 1875 Diversion (GL 32)	H5	125	889	61	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H5	119	889	55	0
	Dwall GL 31 to GL 38 / GL K1	H5	118	889	54	0
	Dwall GL 31 to GL 38 / GL N	H5	118	889	54	0
	Excavation					
	Hung Hom Station					
	Pump test GL 28 to GL 38	H5	85	889	21	0
	Excavation & Strutting 1st Layer GL 28 to GL 38	H5	124	889	60	0
	Excavation & Strutting GL 28 to GL 38	H5	124	889	60	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 28 to GL 38	H5	116	889	52	0
	SCL (MKK - HUH) Base Structure GL 28 to GL 38	H5	116	889	52	0
	SCL (MKK - HUH) Internal Structures GL 28 to GL 38	H5	116	889	52	0
	Underpinning Columns to Podium Soffit GL 28 to GL 38	H5	114	889	50	0
	SCL (TAW - HUH) & other Structures GL 28 to GL 38	H5	121	889	57	0
	Area H6					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 38 - GL 48)	H6	119	818	56	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H6	119	818	55	0
	Underpinning Mid-level walkway	H6	114	818	51	0
	Dwall GL 38 to GL 48 / Interface / GL N	H6	118	818	55	0
	Dwall GL 38 to GL 48 / Interface / GL K1	H6	118	818	55	0
	Excavation					
	Hung Hom Station					
	Pump test GL 38 to GL 48 / Interface	H6	85	818	22	0
	Excavation & Strutting 1st Layer GL 38 to GL 48	H6	121	818	58	0
	Excavation & Strutting GL 38 to GL 48 / Interface	H6	121	818	58	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 38 to GL 48 / Interface	H6	123	818	60	0
	SCL (MKK - HUH) Base Structure GL 38 to GL 48	H6	116	818	53	0
	SCL (MKK - HUH) Internal Structures GL 38 to GL 48	H6	116	818	53	0
	Underpinning Columns to Podium Soffit GL 38 to GL 48	H6	114	818	51	0
	SCL (TAW - HUH) & other Structures GL 38 to GL 48	H6	121	818	58	0
NAT & Related Work	***North Approach Tunnel Sub-Location Area***					
	Reprovisioning Facilities					
	Reprovisioned at Hung Hom Station Area					
	Building Works for Intercity Train Crew Facilities	ITCF	112	875	48	0
	Building Works for Signal Equipment Room	SER	110	748	48	0
	Building Works for Telecom Equipment Room	TER	110	1088	44	0
	Building Works for S&C Depot	S&C	110	1031	45	0
	Area C1					
	Demolish Existing Facilities					
	Demolish Existing Loco Running Shed	LRS	121	781	58	0
	Demolish Existing Ways & Works Workshop	W&W	121	720	59	0
	Modification/ Enabling Works/ Utilities Diversions					
	Cheung Wan Road Viaduct					
	Site Clearance and Hoarding and Utility diversion	NCWR	112	718	50	0
	Foundations	NCWR	120	718	58	0
	Construction of Substructure and Superstructure for New Diversion Bridge					
	Stage 1	NCWR	114	718	52	0
	Stage 2	NCWR	114	718	52	0
	Demolish of Existing Viaduct	ECWR	122	739	59	0
	DSD Culvert Diversion					
	Construct New Box Culvert - Loco Shed area	BC1	121	775	58	0
	Construct New Box Culvert - Ways & Works Workshop area	BC3	121	712	59	0
	Construct New Box Culvert - above SCL (MKK - HUH) Tunnels	BC2	121	757	59	0
	Temporary Cofferdam					
	Podium to Existing Culverts					
	Cofferdam Construction	C1a	119	747	57	0
	At Existing Culverts					
	Cofferdam Construction (existing culvert)	C1b	119	703	57	0
	Excavation					
	Podium to Existing Culverts					
	Excavation & Shoring	C1a	114	747	52	0
	At Existing Culverts					
	Excavation & Shoring (existing culvert)	C1b	114	703	52	0
	Structure Works					
	Podium to Existing Culverts					
	Concrete Structures SCL (MKK - HUH)	C1a	118	747	56	0
	Concrete Structures SCL (TAW - HUH)	C1a	117	747	55	0
	At Existing Culverts					
	Concrete Structures SCL (MKK - HUH) (existing culvert)	C1b	118	703	56	0
	Concrete Structures SCL (TAW - HUH) (existing culvert)	C1b	117	703	55	0
	Backfilling					
	Backfill	C1	117	703	55	0
	Area C2					
	Demolish Existing Facilities					
	Demolish Existing STA Building	STA	121	622	60	0
	Temporary Cofferdam					
	Hung Hom Bypass Pier C2/5					
	Install Diaphragm Wall	PierC2/5	119	583	59	0
	Underpinning foundation	PierC2/5	115	583	55	0
	Existing Culverts to STA Building					
	Cofferdam Construction	C2	119	521	60	0
	Excavation					
	Existing Culverts to STA Building					
	Excavation & Shoring	C2	114	521	55	0
	Structure Works					
	Existing Culverts to STA Building					
	Concrete Structures SCL (MKK - HUH)	C2	118	521	59	0
	Concrete Structures SCL (TAW - HUH)	C2	119	521	60	0



Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM1 - Shun Man House, Oi Man Estate

Scenario: Unmitigated

| Package | Construction Activity | Work [1] Site No. | SWL | Dist [2] (m) | SPL [3] | Shielding Effect | 2012 Jan -5 | Feb -4 | Mar -3 | Apr -2 | May -1 | Jun 1 | Jul 2 | Aug 3 | Sep 4 | Oct 5 | Nov 6 | Dec 7 | 2013 Jan 8 | Feb 9 | Mar 10 | Apr 11 | May 12 | Jun 13 | Jul 14 | Aug 15 | Sep 16 | Oct 17 | Nov 18 | Dec 19 | 2014 Jan 20 | Feb 21 | Mar 22 | Apr 23 | May 24 | Jun 25 | Jul 26 | Aug 27 | Sep 28 | Oct 29 | Nov 30 | Dec 31 | 2015 Jan 32 | Feb 33 | Mar 34 | Apr 35 | May 36 | Jun 37 | Jul 38 | Aug 39 | Sep 40 | Oct 41 | Nov 42 | Dec 43 | 2016 Jan 44 | Feb 45 | Mar 46 | Apr 47 | May 48 | Jun 49 | Jul 50 | Aug 51 | Sep 52 | Oct 53 | Nov 54 | Dec 55 | 2017 Jan 56 | Feb 57 | Mar 58 | Apr 59 | May 60 | Jun 61 | Jul 62 | Aug 63 | Sep 64 | Oct 65 | Nov 66 | Dec 67 | 2018 Jan 68 | Feb 69 | Mar 70 | Apr 71 | May 72 | Jun 73 | Jul 74 | Aug 75 | Sep 76 | Oct 77 | Nov 78 | Dec 79 |
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Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM1 - Shun Man House, O1 Man Estate

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
New EVA	***New EVA***					
	1112 EVA Construction (subarea 1)	EVA16	119	1155	53	0
	1112 EVA Construction (subarea 2)	EVA17	119	1090	53	-10
	1112 EVA Construction (subarea 3)	EVA18	119	781	56	0
	1111 EVA at NAT Construction (subarea 1)	EVA19	119	758	56	0
	1111 EVA at NAT Construction (subarea 2)	EVA20	119	731	56	0
	1111 EVA at NAT Construction (subarea 3)	EVA21	119	706	57	0
	1111 EVA at NAT Construction (subarea 4)	EVA22	119	679	57	0
	1111 EVA at NAT Construction (subarea 5)	EVA23	119	652	57	0
	1111 EVA at NAT Construction (subarea 6)	EVA24	119	628	58	0
	1111 EVA at NAT Construction (subarea 7)	EVA25	119	608	58	0
	1111 EVA at NAT Construction (subarea 8)	EVA26	119	590	58	0
	1111 EVA at NAT Construction (subarea 9)	EVA27	119	575	58	0
	1111 EVA at NAT Construction (subarea 10)	EVA28	119	541	59	0
	1111 EVA at NAT Construction (subarea 11)	EVA29	119	515	59	0
	1111 EVA at NAT Construction (subarea 12)	EVA30	119	502	60	0
Hung Hom Freight Pier	***Hung Hom Freight Pier***					
	Barging Activities					
	At the Freight Pier					
	Loading Activities	FP1	119	1383	52	0
	At Tip of the Freight Pier					
	Loading Activities	FP2	119	1466	51	0
	Trucks Travelling					
	Travelling to Barging Points by Haul Roads					
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]	HR1-1	79	-		0
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]	HR1-2	80	-		0
	Trucks Travelling away from the Freight Pier by haul road [4]	HR2	84	-		0
	Trucks at Buffer Zone During Peak Periods					
	Trucks Travelling at Buffer Zone [4]	BZL1	78	-		0
	[4] Calculation of total SWL for Haul Road is based on BS 5228: Part 1: 2009 (Equation F.6)					
Concurrent Work from SCL (HUH - ADM)						
15 Hung Hom SAT	**Demolish Existing Facilities**					
	Demolition of Freight Buidling	803	121	1202	55	0
12 Hung Hom Landfall	**Hung Hom Landfall**					
	Cofferdam Wall Construction and Shear Pining	801	117	1239	50	0
	Soft Ground Excavation	801	117	1239	51	0
	Excaivation Work	801	127	1239	60	0
	Tunnel Box Construction	801	115	1239	48	0
	E&M Installation	801	114	1239	47	0
	Cofferdam Wall Removal	801	119	1239	52	0
	Backfilling and Reinstatement	801	116	1239	49	0
	Hung Hom Freight Pier					
	Demolition of Existing Tip of Freight Pier	804	116	1465	48	0
	Piling Construction	804	118	1465	50	0
	Concrete Deck Construction and Marine Furniture	804	115	1465	47	0
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**					
	Site Clearance, Fencing & Hoarding	802	118	1187	52	0
	Excavate Soft Material (+4.0mPD to -17.5mPD)	802	120	1187	54	0
	Construct North Flood Gate Building	802	114	1187	47	0

Package	Construction Activity	2012 Jan -5	Feb -4	Mar -3	Apr -2	May -1	Jun 1	Jul 2	Aug 3	Sep 4	Oct 5	Nov 6	Dec 7
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	-	-	-	-	-	-	-	-	75	75	-	-

Package	Construction Activity	2013 Jan 8	Feb 9	Mar 10	Apr 11	May 12	Jun 13	Jul 14	Aug 15	Sep 16	Oct 17	Nov 18	Dec 19
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	-	-	69	69	64	-	-	-	-	-	-	-

Package	Construction Activity	2014 Jan 20	Feb 21	Mar 22	Apr 23	May 24	Jun 25	Jul 26	Aug 27	Sep 28	Oct 29	Nov 30	Dec 31
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	52	60	54	62	68	70	74	74	73	82	82	82

Package	Construction Activity	2015 Jan 32	Feb 33	Mar 34	Apr 35	May 36	Jun 37	Jul 38	Aug 39	Sep 40	Oct 41	Nov 42	Dec 43
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	82	82	82	82	82	82	83	83	83	83	83	68

Package	Construction Activity	2016 Jan 44	Feb 45	Mar 46	Apr 47	May 48	Jun 49	Jul 50	Aug 51	Sep 52	Oct 53	Nov 54	Dec 55
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	83	83	83	83	83	83	83	83	83	-	-	-

Package	Construction Activity	2017 Jan 56	Feb 57	Mar 58	Apr 59	May 60	Jun 61	Jul 62	Aug 63	Sep 64	Oct 65	Nov 66	Dec 67
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	-	-	-	-	-	-	-	80	80	80	80	80

Package	Construction Activity	2018 Jan 68	Feb 69	Mar 70	Apr 71	May 72	Jun 73	Jul 74	Aug 75	Sep 76	Oct 77	Nov 78	Dec 79
New EVA	***New EVA***												
	1112 EVA Construction (subarea 1)												
	1112 EVA Construction (subarea 2)												
	1112 EVA Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 1)												
	1111 EVA at NAT Construction (subarea 2)												
	1111 EVA at NAT Construction (subarea 3)												
	1111 EVA at NAT Construction (subarea 4)												
	1111 EVA at NAT Construction (subarea 5)												
	1111 EVA at NAT Construction (subarea 6)												
	1111 EVA at NAT Construction (subarea 7)												
	1111 EVA at NAT Construction (subarea 8)												
	1111 EVA at NAT Construction (subarea 9)												
	1111 EVA at NAT Construction (subarea 10)												
	1111 EVA at NAT Construction (subarea 11)												
	1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier	***Hung Hom Freight Pier***												
	Barging Activities												
	At the Freight Pier												
	Loading Activities												
	At Tip of the Freight Pier												
	Loading Activities												
	Trucks Travelling												
	Travelling to Barging Points by Haul Roads												
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
	Trucks Travelling away from the Freight Pier by haul road [4]												
	Trucks at Buffer Zone During Peak Periods												
	Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)													
15 Hung Hom SAT	**Demolish Existing Facilities**												
	Demolition of Freight Buidling												
12 Hung Hom Landfall	**Hung Hom Landfall**												
	Cofferdam Wall Construction and Shear Pining												
	Soft Ground Excavation												
	Excaivation Work												
	Tunnel Box Construction												
	E&M Installation												
	Cofferdam Wall Removal												
	Backfilling and Reinstatement												
	Hung Hom Freight Pier												
	Demolition of Existing Tip of Freight Pier												
	Piling Construction												
	Concrete Deck Construction and Marine Furniture												
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**												
	Site Clearance, Fencing & Hoarding												
	Excavate Soft Material (+4.0mPD to -17.5mPD)												
	Construct North Flood Gate Building												
	Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	64	64	64	65	65	-	-	-	-	-	-	-

Remarks:
[1] The Works Area with length to width ratio exceeding 5 : 1 is divided into Subareas.
[2] Noise source at more than 300m from the sensitive receiver are not considered in the noise assessment due to large distance attenuation effect.
[3] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM4a - Carmel Secondary School (South Blk)

Scenario: Unmitigated

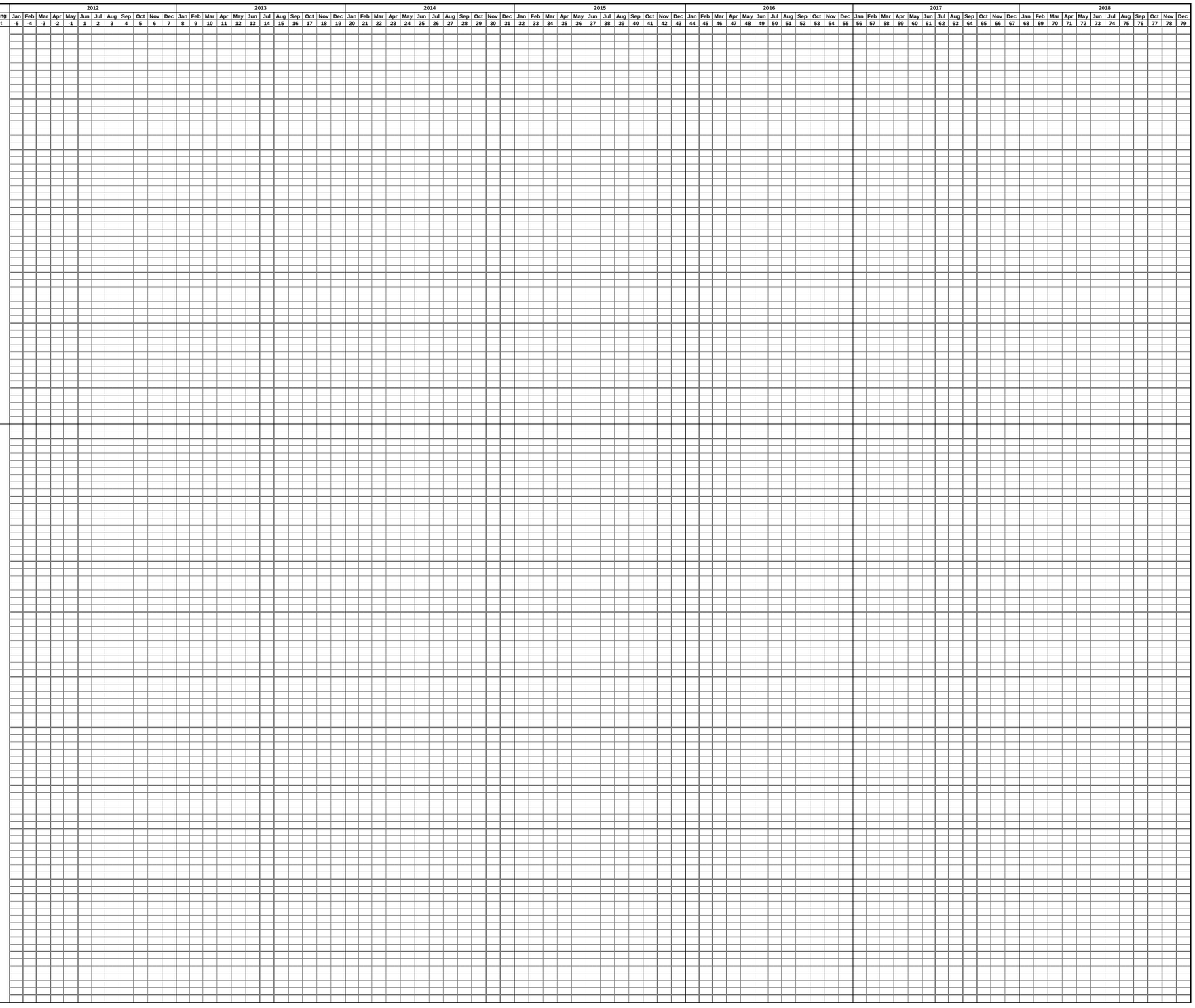
Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
Hung Hom Station, SAT & Related Work	***Hung Hom Station Sub-Location Area***					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Project Office Construction	PSO	115	1183	49	0
	Hoarding Erection	HUH1	112	650	50	0
	Pre-drilling	HUH1	90	650	29	0
	Dwall Plants Setting up	HUH1	114	650	53	0
	A&A/ Modification Works					
	Concourse Level HUH					
	Stage 1 - Re-construct M/F, ABWF & BS	HUH2	123	713	61	0
	Stage 2 - Re-construct M/F, ABWF & BS	HUH2	123	713	61	0
	Area H1					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to NOV					
	Cooling mains diversion	H1	115	1002	50	0
	Dia 1650 Sewer diversion (SCL (MKK - HUH) part)	H1	118	1002	53	0
	Tentative CLP cable tunnels strengthening	H1	111	1002	46	0
	IMC Building & Carpark areas					
	IMC Hoarding & Catch Fan Erection	IMC	114	1018	49	0
	IMC Demolition and site clearance	IMC	123	1018	58	0
	Dia 1650 Sewer diversion	IMC	115	1018	50	0
	Modification to Existing EVA structures	HWPR	119	981	54	0
	Temporary Cofferdam					
	Podium to NOV					
	Dwall construction (SCL (MKK - HUH)) for sewer diversion	H1	120	1002	55	0
	Dwall construction (SCL (MKK - HUH)) remaining	H1	120	1002	55	0
	IMC Building & Carpark areas					
	Temporary Cofferdam after demolition	IMC	118	1018	52	0
	Excavation					
	Podium to NOV					
	Excavation & Strutting to SCL (MKK - HUH) roof	H1	124	1002	59	0
	Excavation & Strutting to SCL (MKK - HUH) base	H1	124	1002	59	0
	IMC Building & Carpark areas					
	Pump test, Excavation & Strutting	IMC	82	1018	17	0
	Structure Works					
	Podium to NOV					
	Concrete Structure SCL (MKK - HUH) roof	H1	120	1002	55	0
	Concrete Support to CLP Tunnel	H1	118	1002	53	0
	Concrete Structure SCL (MKK - HUH) roof	H1	124	1002	59	0
	Waterfront EVA structure (SCL (MKK - HUH))	H1	118	1002	53	0
	IMC Building & Carpark areas					
	Cooling Tower Raft	CT	115	1018	50	0
	Cooling Tower Ground Slab	CT	115	1018	50	0
	Cooling Tower wall & roof	CT	115	1018	50	0
	Waterfront EVA structure (SCL (TAW - HUH))	IMC	118	1018	52	0
	Area H2					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to Coliseum					
	Modification of Traversa	H2	116	956	52	0
	Utilities Diversion/ Services relocate (GL 0 - GL 7)	H2	124	956	59	0
	Temporary Cofferdam					
	Podium to Coliseum					
	Ground Treatment to GL 1 to GL 7	H2	94	956	29	0
	Dwall & Barrette GL 0 to GL 7	H2	119	956	54	0
	Pump test GL 0 to GL 7	H2	82	956	17	0
	Underpinning beam & columns	H2	114	956	49	0
	Demolish existing columns	H2	122	956	58	0
	Excavation					
	Podium to Coliseum					
	Excavation & Strutting GL 0 to GL 7	H2	121	956	57	0
	Final Excavation & Strutting to NSL base Gl 0 to GL 7	H2	121	956	56	0
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Base GL 0 to GL 7	H2	116	956	51	0
	SCL (MKK - HUH) Slab & props to existing foundation GL 0 to GL 7	H2	116	956	51	0
	SCL (MKK - HUH) Base & Wall GL 0 to GL 7	H2	122	956	58	0
	SCL (TAW - HUH) & other Structures GL 0 to GL 7	H2	116	956	51	0
	Vent Shaft Structures GL 0	H2	117	956	52	0
	Area H3					
	Modification/ Enabling Works/ Utilities Diversions					
	Coliseum Area					
	Utilities Diversion/ Services relocate (GL 7 - GL 15)	H3	119	896	55	0
	Temporary Cofferdam					
	Coliseum Area					
	Dwall GL 7 to GL 15	H3	119	896	55	0
	Excavation					
	Coliseum Area					
	Pump test GL 7 to GL 15	H3	82	896	18	0
	Excavation to SCL (TAW - HUH) slab Gl 7 to GL 15	H3	124	896	60	0
	Excavation & Strutting to intermediate slab GL 7 to GL 15	H3	124	896	60	0
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H3	124	896	60	0
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Track Slab & Structures GL 7 to GL 15	H3	116	896	52	0
	SCL (MKK - HUH) Structures Intermediate Slab & props GL 7 to GL 15	H3	116	896	52	0
	SCL (MKK - HUH) Structure Base & Wall GL 7 to GL 15	H3	116	896	52	0
	SCL (TAW - HUH) Structures Wall & Roof GL 7 to GL 15	H3	116	896	52	0
	SCL (TAW - HUH) & other Structures GL 7 to GL 15	H3	116	896	52	0
	Area H4					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 15 - GL 28)	H4	119	814	55	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K	H4	119	814	56	0
	Dwall GL 15 to GL 31 / GL N	H4	118	814	55	0
	Dwall GL 15 to GL 31 / GL K1	H4	118	814	55	0
	Excavation					
	Hung Hom Station					
	Pump test GL 15 to GL 28	H4	85	814	22	0
	Excavation & Strutting 1st Layer GL 15 to GL 28	H4	124	814	60	0
	Excavation & Strutting GL 15 to GL 28	H4	123	814	60	0
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H4	124	814	61	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 15 to GL 28	H4	116	814	53	0
	Install Temporary Steel Tower Column GL 15 to GL 22	H4	114	814	51	0
	Demolish existing Column & Pier Cap GL 15 to GL 22	H4	117	814	54	0
	SCL (MKK - HUH) Base Structure GL 15 to GL 28	H4	116	814	53	0
	SCL (TAW - HUH) & other Structures GL 15 to GL 28	H4	121	814	58	0
	SCL (MKK - HUH) Internal Structures GL 15 to GL 28	H4	119	814	56	0

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM4a - Carmel Secondary School (South Blk)

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
	Area H5					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 28 - GL 38)	H5	119	724	57	0
	Temporary Storm Drain@ 1875 Diversion (GL 31)	H5	114	724	52	0
	Redivert Storm Drain@ 1875 Diversion (GL 32)	H5	125	724	63	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H5	119	724	56	0
	Dwall GL 31 to GL 38 / GL K1	H5	118	724	56	0
	Dwall GL 31 to GL 38 / GL N	H5	118	724	56	0
	Excavation					
	Hung Hom Station					
	Pump test GL 28 to GL 38	H5	85	724	23	0
	Excavation & Strutting 1st Layer GL 28 to GL 38	H5	124	724	61	0
	Excavation & Strutting GL 28 to GL 38	H5	124	724	62	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 28 to GL 38	H5	116	724	54	0
	SCL (MKK - HUH) Base Structure GL 28 to GL 38	H5	116	724	54	0
	SCL (MKK - HUH) Internal Structures GL 28 to GL 38	H5	116	724	54	0
	Underpinning Columns to Podium Soffit GL 28 to GL 38	H5	114	724	52	0
	SCL (TAW - HUH) & other Structures GL 28 to GL 38	H5	121	724	59	0
	Area H6					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 38 - GL 48)	H6	119	650	58	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H6	119	650	57	0
	Underpinning Mid-level walkway	H6	114	650	53	0
	Dwall GL 38 to GL 48 / Interface / GL N	H6	118	650	57	0
	Dwall GL 38 to GL 48 / Interface / GL K1	H6	118	650	57	0
	Excavation					
	Hung Hom Station					
	Pump test GL 38 to GL 48 / Interface	H6	85	650	24	0
	Excavation & Strutting 1st Layer GL 38 to GL 48	H6	121	650	60	0
	Excavation & Strutting GL 38 to GL 48 / Interface	H6	121	650	60	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 38 to GL 48 / Interface	H6	123	650	62	0
	SCL (MKK - HUH) Base Structure GL 38 to GL 48	H6	116	650	55	0
	SCL (MKK - HUH) Internal Structures GL 38 to GL 48	H6	116	650	55	0
	Underpinning Columns to Podium Soffit GL 38 to GL 48	H6	114	650	53	0
	SCL (TAW - HUH) & other Structures GL 38 to GL 48	H6	121	650	60	0
NAT & Related Work	***North Approach Tunnel Sub-Location Area***					
	Reprovisioning Facilities					
	Reprovisioned at Hung Hom Station Area					
	Building Works for Intercity Train Crew Facilities	ITCF	112	728	50	0
	Building Works for Signal Equipment Room	SER	110	595	50	0
	Building Works for Telecom Equipment Room	TER	110	946	46	0
	Building Works for S&C Depot	S&C	110	891	46	0
	Area C1					
	Demolish Existing Facilities					
	Demolish Existing Loco Running Shed	LRS	121	609	60	0
	Demolish Existing Ways & Works Workshop	W&W	121	553	61	0
	Modification/ Enabling Works/ Utilities Diversions					
	Cheung Wan Road Viaduct					
	Site Clearance and Hoarding and Utility diversion	NCWR	112	547	52	0
	Foundations	NCWR	120	547	60	0
	Construction of Substructure and Superstructure for New Diversion Bridge					
	Stage 1	NCWR	114	547	54	0
	Stage 2	NCWR	114	547	54	0
	Demolish of Existing Viaduct	ECWR	122	567	62	0
	DSD Culvert Diversion					
	Construct New Box Culvert - Loco Shed area	BC1	121	603	61	0
	Construct New Box Culvert - Ways & Works Workshop area	BC3	121	539	62	0
	Construct New Box Culvert - above SCL (MKK - HUH) Tunnels	BC2	121	589	61	0
	Temporary Cofferdam					
	Podium to Existing Culverts					
	Cofferdam Construction	C1a	119	574	59	0
	At Existing Culverts					
	Cofferdam Construction (existing culvert)	C1b	119	532	60	0
	Excavation					
	Podium to Existing Culverts					
	Excavation & Shoring	C1a	114	574	54	0
	At Existing Culverts					
	Excavation & Shoring (existing culvert)	C1b	114	532	55	0
	Structure Works					
	Podium to Existing Culverts					
	Concrete Structures SCL (MKK - HUH)	C1a	118	574	58	0
	Concrete Structures SCL (TAW - HUH)	C1a	117	574	57	0
	At Existing Culverts					
	Concrete Structures SCL (MKK - HUH) (existing culvert)	C1b	118	532	59	0
	Concrete Structures SCL (TAW - HUH) (existing culvert)	C1b	117	532	58	0
	Backfilling					
	Backfill	C1	117	532	57	0
	Area C2					
	Demolish Existing Facilities					
	Demolish Existing STA Building	STA	121	446	63	0
	Temporary Cofferdam					
	Hung Hom Bypass Pier C2/5					
	Install Diaphragm Wall	PierC2/5	119	409	62	0
	Underpinning foundation	PierC2/5	115	409	58	0
	Existing Culverts to STA Building					
	Cofferdam Construction	C2	119	340	64	0
	Excavation					
	Existing Culverts to STA Building					
	Excavation & Shoring	C2	114	340	59	0
	Structure Works					
	Existing Culverts to STA Building					
	Concrete Structures SCL (MKK - HUH)	C2	118	340	63	0
	Concrete Structures SCL (TAW - HUH)	C2	119	340	63	0



Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM4a - Carmel Secondary School (South Blk)

Scenario: Unmitigated

| Package | Construction Activity | Work [1] Site No. | SWL | Dist [2] (m) | SPL [3] | Shielding Effect | 2012 Jan -5 | Feb -4 | Mar -3 | Apr -2 | May -1 | Jun 1 | Jul 2 | Aug 3 | Sep 4 | Oct 5 | Nov 6 | Dec 7 | 2013 Jan 8 | Feb 9 | Mar 10 | Apr 11 | May 12 | Jun 13 | Jul 14 | Aug 15 | Sep 16 | Oct 17 | Nov 18 | Dec 19 | 2014 Jan 20 | Feb 21 | Mar 22 | Apr 23 | May 24 | Jun 25 | Jul 26 | Aug 27 | Sep 28 | Oct 29 | Nov 30 | Dec 31 | 2015 Jan 32 | Feb 33 | Mar 34 | Apr 35 | May 36 | Jun 37 | Jul 38 | Aug 39 | Sep 40 | Oct 41 | Nov 42 | Dec 43 | 2016 Jan 44 | Feb 45 | Mar 46 | Apr 47 | May 48 | Jun 49 | Jul 50 | Aug 51 | Sep 52 | Oct 53 | Nov 54 | Dec 55 | 2017 Jan 56 | Feb 57 | Mar 58 | Apr 59 | May 60 | Jun 61 | Jul 62 | Aug 63 | Sep 64 | Oct 65 | Nov 66 | Dec 67 | 2018 Jan 68 | Feb 69 | Mar 70 | Apr 71 | May 72 | Jun 73 | Jul 74 | Aug 75 | Sep 76 | Oct 77 | Nov 78 | Dec 79 |
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Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: OM4a - Carmel Secondary School (South Blk)

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
New EVA	***New EVA***					
	1112 EVA Construction (subarea 1)	EVA16	119	1010	54	0
	1112 EVA Construction (subarea 2)	EVA17	119	941	55	-10
	1112 EVA Construction (subarea 3)	EVA18	119	618	58	0
	1111 EVA at NAT Construction (subarea 1)	EVA19	119	593	58	0
	1111 EVA at NAT Construction (subarea 2)	EVA20	119	565	59	0
	1111 EVA at NAT Construction (subarea 3)	EVA21	119	538	59	0
	1111 EVA at NAT Construction (subarea 4)	EVA22	119	509	59	0
	1111 EVA at NAT Construction (subarea 5)	EVA23	119	481	60	0
	1111 EVA at NAT Construction (subarea 6)	EVA24	119	455	60	0
	1111 EVA at NAT Construction (subarea 7)	EVA25	119	435	61	0
	1111 EVA at NAT Construction (subarea 8)	EVA26	119	416	61	0
	1111 EVA at NAT Construction (subarea 9)	EVA27	119	400	62	0
	1111 EVA at NAT Construction (subarea 10)	EVA28	119	364	62	0
	1111 EVA at NAT Construction (subarea 11)	EVA29	119	336	63	0
	1111 EVA at NAT Construction (subarea 12)	EVA30	119	322	63	0
Hung Hom Freight Pier	***Hung Hom Freight Pier***					
	Barging Activities					
	At the Freight Pier					
	Loading Activities	FP1	119	1231	53	0
	At Tip of the Freight Pier					
	Loading Activities	FP2	119	1318	52	0
	Trucks Travelling					
	Travelling to Barging Points by Haul Roads					
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]	HR1-1	79	-		0
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]	HR1-2	80	-		0
	Trucks Travelling away from the Freight Pier by haul road [4]	HR2	84	-		0
	Trucks at Buffer Zone During Peak Periods					
	Trucks Travelling at Buffer Zone [4]	BZL1	78	-		0
	[4] Calculation of total SWL for Haul Road is based on BS 5228: Part 1: 2009 (Equation F.6)					
Concurrent Work from SCL (HUH - ADM)						
15 Hung Hom SAT	**Demolish Existing Facilities**					
	Demolition of Freight Buidling	803	121	1054	56	0
12 Hung Hom Landfall	**Hung Hom Landfall**					
	Cofferdam Wall Construction and Shear Pining	801	117	1093	51	0
	Soft Ground Excavation	801	117	1093	52	0
	Excavation Work	801	127	1093	61	0
	Tunnel Box Construction	801	115	1093	50	0
	E&M Installation	801	114	1093	48	0
	Cofferdam Wall Removal	801	119	1093	53	0
	Backfilling and Reinstatement	801	116	1093	51	0
	Hung Hom Freight Pier					
	Demolition of Existing Tip of Freight Pier	804	116	1314	49	0
	Piling Construction	804	118	1314	51	0
	Concrete Deck Construction and Marine Furniture	804	115	1314	47	0
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**					
	Site Clearance, Fencing & Hoarding	802	118	1039	53	0
	Excavate Soft Material (+4.0mPD to -17.5mPD)	802	120	1039	55	0
	Construct North Flood Gate Building	802	114	1039	48	0

Construction Activity	2012 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2013 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
New EVA																								
1112 EVA Construction (subarea 1)																								
1112 EVA Construction (subarea 2)																								
1112 EVA Construction (subarea 3)																								
1111 EVA at NAT Construction (subarea 1)																								
1111 EVA at NAT Construction (subarea 2)																								
1111 EVA at NAT Construction (subarea 3)																								
1111 EVA at NAT Construction (subarea 4)																								
1111 EVA at NAT Construction (subarea 5)																								
1111 EVA at NAT Construction (subarea 6)																								
1111 EVA at NAT Construction (subarea 7)																								
1111 EVA at NAT Construction (subarea 8)																								
1111 EVA at NAT Construction (subarea 9)																								
1111 EVA at NAT Construction (subarea 10)																								
1111 EVA at NAT Construction (subarea 11)																								
1111 EVA at NAT Construction (subarea 12)																								
Hung Hom Freight Pier																								
Barging Activities																								
At the Freight Pier																								
Loading Activities																								
At Tip of the Freight Pier																								
Loading Activities																								
Trucks Travelling																								
Travelling to Barging Points by Haul Roads																								
Trucks Travelling to the Freight Pier by haul road (segment 1) [4]																								
Trucks Travelling to the Freight Pier by haul road (segment 2) [4]																								
Trucks Travelling away from the Freight Pier by haul road [4]																								
Trucks at Buffer Zone During Peak Periods																								
Trucks Travelling at Buffer Zone [4]																								
Concurrent Work from SCL (HUH - ADM)																								
Demolish Existing Facilities																								
Demolition of Freight Buidling																								
Hung Hom Landfall																								
Cofferdam Wall Construction and Shear Pining																								
Soft Ground Excavation																								
Excavation Work																								
Tunnel Box Construction																								
E&M Installation																								
Cofferdam Wall Removal																								
Backfilling and Reinstatement																								
Hung Hom Freight Pier																								
Demolition of Existing Tip of Freight Pier																								
Piling Construction																								
Concrete Deck Construction and Marine Furniture																								
North Ventilation Building, Plant Rooms and Emergency Access (NOV)																								
Site Clearance, Fencing & Hoarding																								
Excavate Soft Material (+4.0mPD to -17.5mPD)																								
Construct North Flood Gate Building																								
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	-	-	-	-	-	-	-	73	73	60	60	-	-	74	74	69	-	-	-	-	-	-	-	-

Construction Activity	2014 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2015 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
New EVA																								
1112 EVA Construction (subarea 1)																								
1112 EVA Construction (subarea 2)																								
1112 EVA Construction (subarea 3)																								
1111 EVA at NAT Construction (subarea 1)																								
1111 EVA at NAT Construction (subarea 2)																								
1111 EVA at NAT Construction (subarea 3)																								
1111 EVA at NAT Construction (subarea 4)																								
1111 EVA at NAT Construction (subarea 5)																								
1111 EVA at NAT Construction (subarea 6)																								
1111 EVA at NAT Construction (subarea 7)																								
1111 EVA at NAT Construction (subarea 8)																								
1111 EVA at NAT Construction (subarea 9)																								
1111 EVA at NAT Construction (subarea 10)																								
1111 EVA at NAT Construction (subarea 11)																								
1111 EVA at NAT Construction (subarea 12)																								
Hung Hom Freight Pier																								
Barging Activities																								
At the Freight Pier																								
Loading Activities																								
At Tip of the Freight Pier																								
Loading Activities																								
Trucks Travelling																								
Travelling to Barging Points by Haul Roads																								
Trucks Travelling to the Freight Pier by haul road (segment 1) [4]																								
Trucks Travelling to the Freight Pier by haul road (segment 2) [4]																								
Trucks Travelling away from the Freight Pier by haul road [4]																								
Trucks at Buffer Zone During Peak Periods																								
Trucks Travelling at Buffer Zone [4]																								
Concurrent Work from SCL (HUH - ADM)																								
Demolish Existing Facilities																								
Demolition of Freight Buidling																								
Hung Hom Landfall																								
Cofferdam Wall Construction and Shear Pining																								
Soft Ground Excavation																								
Excavation Work																								
Tunnel Box Construction																								
E&M Installation																								
Cofferdam Wall Removal																								
Backfilling and Reinstatement																								
Hung Hom Freight Pier																								
Demolition of Existing Tip of Freight Pier																								
Piling Construction																								
Concrete Deck Construction and Marine Furniture																								
North Ventilation Building, Plant Rooms and Emergency Access (NOV)																								
Site Clearance, Fencing & Hoarding																								
Excavate Soft Material (+4.0mPD to -17.5mPD)																								
Construct North Flood Gate Building																								
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	52	71	72	72	75	76	76	76	75	76	74	74	70	71	71	70	70	71	71	74	75	71	71	64

Construction Activity	2016 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2017 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
New EVA																								
1112 EVA Construction (subarea 1)																								
1112 EVA Construction (subarea 2)																								
1112 EVA Construction (subarea 3)																								
1111 EVA at NAT Construction (subarea 1)																								
1111 EVA at NAT Construction (subarea 2)																								
1111 EVA at NAT Construction (subarea 3)																								
1111 EVA at NAT Construction (subarea 4)																								
1111 EVA at NAT Construction (subarea 5)																								
1111 EVA at NAT Construction (subarea 6)																								
1111 EVA at NAT Construction (subarea 7)																								
1111 EVA at NAT Construction (subarea 8)																								
1111 EVA at NAT Construction (subarea 9)																								
1111 EVA at NAT Construction (subarea 10)																								
1111 EVA at NAT Construction (subarea 11)																								
1111 EVA at NAT Construction (subarea 12)																								
Hung Hom Freight Pier																								
Barging Activities																								
At the Freight Pier																								
Loading Activities																								
At Tip of the Freight Pier																								
Loading Activities																								
Trucks Travelling																								
Travelling to Barging Points by Haul Roads																								
Trucks Travelling to the Freight Pier by haul road (segment 1) [4]																								
Trucks Travelling to the Freight Pier by haul road (segment 2) [4]																								
Trucks Travelling away from the Freight Pier by haul road [4]																								
Trucks at Buffer Zone During Peak Periods																								
Trucks Travelling at Buffer Zone [4]																								
Concurrent Work from SCL (HUH - ADM)																								
Demolish Existing Facilities																								
Demolition of Freight Buidling																								
Hung Hom Landfall																								
Cofferdam Wall Construction and Shear Pining																								
Soft Ground Excavation																								
Excavation Work																								
Tunnel Box Construction																								
E&M Installation																								
Cofferdam Wall Removal																								
Backfilling and Reinstatement																								
Hung Hom Freight Pier																								
Demolition of Existing Tip of Freight Pier																								
Piling Construction																								
Concrete Deck Construction and Marine Furniture																								
North Ventilation Building, Plant Rooms and Emergency Access (NOV)																								
Site Clearance, Fencing & Hoarding																								
Excavate Soft Material (+4.0mPD to -17.5mPD)																								
Construct North Flood Gate Building																								
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	69	69	70	68	68	68	72	72	75	75	75	75	75	71	72	72	71	71	67	69	69	69	66	66

Construction Activity	2018 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	68	69	70	71	72	73	74	75	76	77	78	79
New EVA												
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Hung Hom Freight Pier												
Barging Activities												
At the Freight Pier												
Loading Activities												
At Tip of the Freight Pier												
Loading Activities												
Trucks Travelling												
Travelling to Barging Points by Haul Roads												
Trucks Travelling to the Freight Pier by haul road (segment 1) [4]												
Trucks Travelling to the Freight Pier by haul road (segment 2) [4]												
Trucks Travelling away from the Freight Pier by haul road [4]												
Trucks at Buffer Zone During Peak Periods												
Trucks Travelling at Buffer Zone [4]												
Concurrent Work from SCL (HUH - ADM)												
Demolish Existing Facilities												
Demolition of Freight Buidling												
Hung Hom Landfall												
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excavation Work												
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Hung Hom Freight Pier												
Demolition of Existing Tip of Freight Pier												
Piling Construction												
Concrete Deck Construction and Marine Furniture												
North Ventilation Building, Plant Rooms and Emergency Access (NOV)												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	63	63	63	64	64	-	-	-	-	-	-	-

Remarks:
[1] The Works Area with length to width ratio exceeding 5 : 1 is divided into Subareas.
[2] Noise source at more than 300m from the sensitive receiver are not considered in the noise assessment due to large distance attenuation effect.
[3] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH2 - Wing Fung Building

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
Hung Hom Station, SAT & Related Work	***Hung Hom Station Sub-Location Area***					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Project Office Construction	PSO	115	907	51	0
	Hoarding Erection	HUH1	112	381	55	0
	Pre-drilling	HUH1	90	381	33	0
	Dwall Plants Setting up	HUH1	114	381	57	0
	A&A/ Modification Works					
	Concourse Level HUH					
	Stage 1 - Re-construct M/F, ABWF & BS	HUH2	123	468	64	0
	Stage 2 - Re-construct M/F, ABWF & BS	HUH2	123	468	64	0
	Area H1					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to NOV					
	Cooling mains diversion	H1	115	757	53	0
	Dia 1650 Sewer diversion (SCL (MKK - HUH) part)	H1	118	757	55	0
	Tentative CLP cable tunnels strengthening	H1	111	757	48	0
	IMC Building & Carpark areas					
	IMC Hoarding & Catch Fan Erection	IMC	114	780	51	0
	IMC Demolition and site clearance	IMC	123	780	60	0
	Dia 1650 Sewer diversion	IMC	115	780	53	0
	Modification to Existing EVA structures	HWPR	119	748	56	0
	Temporary Cofferdam					
	Podium to NOV					
	Dwall construction (SCL (MKK - HUH)) for sewer diversion	H1	120	757	58	0
	Dwall construction (SCL (MKK - HUH)) remaining	H1	120	757	57	0
	IMC Building & Carpark areas					
	Temporary Cofferdam after demolition	IMC	118	780	55	0
	Excavation					
	Podium to NOV					
	Excavation & Strutting to SCL (MKK - HUH) roof	H1	124	757	62	0
	Excavation & Strutting to SCL (MKK - HUH) base	H1	124	757	62	0
	IMC Building & Carpark areas					
	Pump test, Excavation & Strutting	IMC	82	780	19	0
	Structure Works					
	Podium to NOV					
	Concrete Structure SCL (MKK - HUH) roof	H1	120	757	57	0
	Concrete Support to CLP Tunnel	H1	118	757	55	0
	Concrete Structure SCL (MKK - HUH) roof	H1	124	757	62	0
	Waterfront EVA structure (SCL (MKK - HUH))	H1	118	757	55	0
	IMC Building & Carpark areas					
	Cooling Tower Raft	CT	115	785	52	0
	Cooling Tower Ground Slab	CT	115	785	52	0
	Cooling Tower wall & roof	CT	115	785	52	0
	Waterfront EVA structure (SCL (TAW - HUH))	IMC	118	780	55	0
	Area H2					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to Coliseum					
	Modification of Traversa	H2	116	709	54	0
	Utilities Diversion/ Services relocate (GL 0 - GL 7)	H2	124	709	62	0
	Temporary Cofferdam					
	Podium to Coliseum					
	Ground Treatment to GL 1 to GL 7	H2	94	709	32	0
	Dwall & Barrette GL 0 to GL 7	H2	119	709	57	0
	Pump test GL 0 to GL 7	H2	82	709	20	0
	Underpinning beam & columns	H2	114	709	52	0
	Demolish existing columns	H2	122	709	60	0
	Excavation					
	Podium to Coliseum					
	Excavation & Strutting GL 0 to GL 7	H2	121	709	59	0
	Final Excavation & Strutting to NSL base Gl 0 to GL 7	H2	121	709	59	0
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Base GL 0 to GL 7	H2	116	709	54	0
	SCL (MKK - HUH) Slab & props to existing foundation GL 0 to GL 7	H2	116	709	54	0
	SCL (MKK - HUH) Base & Wall GL 0 to GL 7	H2	122	709	60	0
	SCL (TAW - HUH) & other Structures GL 0 to GL 7	H2	116	709	54	0
	Vent Shaft Structures GL 0	H2	117	709	55	0
	Area H3					
	Modification/ Enabling Works/ Utilities Diversions					
	Coliseum Area					
	Utilities Diversion/ Services relocate (GL 7 - GL 15)	H3	119	647	58	0
	Temporary Cofferdam					
	Coliseum Area					
	Dwall GL 7 to GL 15	H3	119	647	58	0
	Excavation					
	Coliseum Area					
	Pump test GL 7 to GL 15	H3	82	647	21	0
	Excavation to SCL (TAW - HUH) slab Gl 7 to GL 15	H3	124	647	63	0
	Excavation & Strutting to intermediate slab GL 7 to GL 15	H3	124	647	63	0
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H3	124	647	63	0
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Track Slab & Structures GL 7 to GL 15	H3	116	647	55	0
	SCL (MKK - HUH) Structures Intermediate Slab & props GL 7 to GL 15	H3	116	647	55	0
	SCL (MKK - HUH) Structure Base & Wall GL 7 to GL 15	H3	116	647	55	0
	SCL (TAW - HUH) Structures Wall & Roof GL 7 to GL 15	H3	116	647	55	0
	SCL (TAW - HUH) & other Structures GL 7 to GL 15	H3	116	647	55	0
	Area H4					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 15 - GL 28)	H4	119	552	59	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K	H4	119	552	60	0
	Dwall GL 15 to GL 31 / GL N	H4	118	552	59	0
	Dwall GL 15 to GL 31 / GL K1	H4	118	552	59	0
	Excavation					
	Hung Hom Station					
	Pump test GL 15 to GL 28	H4	85	552	25	0
	Excavation & Strutting 1st Layer GL 15 to GL 28	H4	124	552	64	0
	Excavation & Strutting GL 15 to GL 28	H4	123	552	64	0
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H4	124	552	65	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 15 to GL 28	H4	116	552	56	0
	Install Temporary Steel Tower Column GL 15 to GL 22	H4	114	552	54	0
	Demolish existing Column & Pier Cap GL 15 to GL 22	H4	117	552	57	0
	SCL (MKK - HUH) Base Structure GL 15 to GL 28	H4	116	552	56	0
	SCL (TAW - HUH) & other Structures GL 15 to GL 28	H4	121	552	61	0
	SCL (MKK - HUH) Internal Structures GL 15 to GL 28	H4	119	552	59	0

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH2 - Wing Fung Building

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
	Area H5					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 28 - GL 38)	H5	119	463	61	0
	Temporary Storm Drain@ 1875 Diversion (GL 31)	H5	114	463	55	0
	Redivert Storm Drain@ 1875 Diversion (GL 32)	H5	125	463	67	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H5	119	463	60	0
	Dwall GL 31 to GL 38 / GL K1	H5	118	463	60	0
	Dwall GL 31 to GL 38 / GL N	H5	118	463	60	0
	Excavation					
	Hung Hom Station					
	Pump test GL 28 to GL 38	H5	85	463	27	0
	Excavation & Strutting 1st Layer GL 28 to GL 38	H5	124	463	65	0
	Excavation & Strutting GL 28 to GL 38	H5	124	463	66	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 28 to GL 38	H5	116	463	58	0
	SCL (MKK - HUH) Base Structure GL 28 to GL 38	H5	116	463	58	0
	SCL (MKK - HUH) Internal Structures GL 28 to GL 38	H5	116	463	58	0
	Underpinning Columns to Podium Soffit GL 28 to GL 38	H5	114	463	56	0
	SCL (TAW - HUH) & other Structures GL 28 to GL 38	H5	121	463	62	0
	Area H6					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 38 - GL 48)	H6	119	381	63	0
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H6	119	381	62	0
	Underpinning Mid-level walkway	H6	114	381	58	0
	Dwall GL 38 to GL 48 / Interface / GL N	H6	118	381	62	0
	Dwall GL 38 to GL 48 / Interface / GL K1	H6	118	381	62	0
	Excavation					
	Hung Hom Station					
	Pump test GL 38 to GL 48 / Interface	H6	85	381	28	0
	Excavation & Strutting 1st Layer GL 38 to GL 48	H6	121	381	64	0
	Excavation & Strutting GL 38 to GL 48 / Interface	H6	121	381	64	0
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 38 to GL 48 / Interface	H6	123	381	66	0
	SCL (MKK - HUH) Base Structure GL 38 to GL 48	H6	116	381	60	0
	SCL (MKK - HUH) Internal Structures GL 38 to GL 48	H6	116	381	59	0
	Underpinning Columns to Podium Soffit GL 38 to GL 48	H6	114	381	57	0
	SCL (TAW - HUH) & other Structures GL 38 to GL 48	H6	121	381	64	0
NAT & Related Work	***North Approach Tunnel Sub-Location Area***					
	Reprovisioning Facilities					
	Reprovisioned at Hung Hom Station Area					
	Building Works for Intercity Train Crew Facilities	ITCF	112	500	53	0
	Building Works for Signal Equipment Room	SER	110	362	54	0
	Building Works for Telecom Equipment Room	TER	110	714	48	0
	Building Works for S&C Depot	S&C	110	665	49	0
	Area C1					
	Demolish Existing Facilities					
	Demolish Existing Loco Running Shed	LRS	121	333	66	0
	Demolish Existing Ways & Works Workshop	W&W	121	291	67	0
	Modification/ Enabling Works/ Utilities Diversions					
	Cheung Wan Road Viaduct					
	Site Clearance and Hoarding and Utility diversion	NCWR	112	272	59	0
	Foundations	NCWR	120	272	66	0
	Construction of Substructure and Superstructure for New Diversion Bridge					
	Stage 1	NCWR	114	272	60	0
	Stage 2	NCWR	114	272	60	0
	Demolish of Existing Viaduct	ECWR	122	290	68	0
	DSD Culvert Diversion					
	Construct New Box Culvert - Loco Shed area	BC1	121	325	66	0
	Construct New Box Culvert - Ways & Works Workshop area	BC3	121	277	67	0
	Construct New Box Culvert - above SCL (MKK - HUH) Tunnels	BC2	121	320	66	0
	Temporary Cofferdam					
	Podium to Existing Culverts					
	Cofferdam Construction	C1a	119	303	65	0
	At Existing Culverts					
	Cofferdam Construction (existing culvert)	C1b	119	260	66	0
	Excavation					
	Podium to Existing Culverts					
	Excavation & Shoring	C1a	114	303	60	0
	At Existing Culverts					
	Excavation & Shoring (existing culvert)	C1b	114	260	61	0
	Structure Works					
	Podium to Existing Culverts					
	Concrete Structures SCL (MKK - HUH)	C1a	118	303	64	0
	Concrete Structures SCL (TAW - HUH)	C1a	117	303	63	0
	At Existing Culverts					
	Concrete Structures SCL (MKK - HUH) (existing culvert)	C1b	118	260	65	0
	Concrete Structures SCL (TAW - HUH) (existing culvert)	C1b	117	260	64	0
	Backfilling					
	Backfill	C1	117	260	64	0
	Area C2					
	Demolish Existing Facilities					
	Demolish Existing STA Building	STA	121	170	71	0
	Temporary Cofferdam					
	Hung Hom Bypass Pier C2/5					
	Install Diaphragm Wall	PierC2/5	119	140	71	0
	Underpinning foundation	PierC2/5	115	140	67	0
	Existing Culverts to STA Building					
	Cofferdam Construction	C2	119	79	76	0
	Excavation					
	Existing Culverts to STA Building					
	Excavation & Shoring	C2	114	79	71	0
	Structure Works					
	Existing Culverts to STA Building					
	Concrete Structures SCL (MKK - HUH)	C2	118	79	75	0
	Concrete Structures SCL (TAW - HUH)	C2	119	79	76	0

Construction Activity	2012 Jan -5	Feb -4	Mar -3	Apr -2	May -1	Jun 1	Jul 2	Aug 3	Sep 4	Oct 5	Nov 6	Dec 7	2013 Jan 8	Feb 9	Mar 10	Apr 11	May 12	Jun 13	Jul 14	Aug 15	Sep 16	Oct 17	Nov 18	Dec 19	2014 Jan 20	Feb 21	Mar 22	Apr 23	May 24	Jun 25	Jul 26	Aug 27	Sep 28	Oct 29	Nov 30	Dec 31
Utilities Diversion/ Services relocate (GL 28 - GL 38)																																				
Temporary Storm Drain@ 1875 Diversion (GL 31)																																				
Redivert Storm Drain@ 1875 Diversion (GL 32)																																				
Underpinning GL K & L																																				
Dwall GL 31 to GL 38 / GL K1																																				
Dwall GL 31 to GL 38 / GL N																																				
Pump test GL 28 to GL 38																																				
Excavation & Strutting 1st Layer GL 28 to GL 38																																				
Excavation & Strutting GL 28 to GL 38																																				
SCL (TAW - HUH) Track Slab GL 28 to GL 38																																				
SCL (MKK - HUH) Base Structure GL 28 to GL 38																																				
SCL (MKK - HUH) Internal Structures GL 28 to GL 38																																				
Underpinning Columns to Podium Soffit GL 28 to GL 38																																				
SCL (TAW - HUH) & other Structures GL 28 to GL 38																																				
Utilities Diversion/ Services relocate (GL 38 - GL 48)																																				
Underpinning GL K & L																																				
Underpinning Mid-level walkway																																				
Dwall GL 38 to GL 48 / Interface / GL N																																				
Dwall GL 38 to GL 48 / Interface / GL K1																																				
Pump test GL 38 to GL 48 / Interface																																				
Excavation & Strutting 1st Layer GL 38 to GL 48																																				
Excavation & Strutting GL 38 to GL 48 / Interface																																				
SCL (TAW - HUH) Track Slab GL 38 to GL 48 / Interface																																				
SCL (MKK - HUH) Base Structure GL 38 to GL 48																																				
SCL (MKK - HUH) Internal Structures GL 38 to GL 48																																				
Underpinning Columns to Podium Soffit GL 38 to GL 48																																				
SCL (TAW - HUH) & other Structures GL 38 to GL 48																																				
Building Works for Intercity Train Crew Facilities																																				
Building Works for Signal Equipment Room																																				
Building Works for Telecom Equipment Room																																				
Building Works for S&C Depot																																				
Demolish Existing Loco Running Shed																																				
Demolish Existing Ways & Works Workshop																									67	67										
Site Clearance and Hoarding and Utility diversion									59	59																										
Foundations												66	66	66	66	66	66	66	66	66																
Stage 1																	60	60	60	60																
Stage 2																										60	60	60	60	60						
Demolish of Existing Viaduct																															68	68				
Construct New Box Culvert - Loco Shed area																																				
Construct New Box Culvert - Ways & Works Workshop area																										67	67	67	67	67	67	67	67	67		
Construct New Box Culvert - above SCL (MKK - HUH) Tunnels																																				
Cofferdam Construction																																				
Cofferdam Construction (existing culvert)																																				
Excavation & Shoring																																				
Excavation & Shoring (existing culvert)																																				
Concrete Structures SCL (MKK - HUH)																																				
Concrete Structures SCL (TAW - HUH)																																				
Concrete Structures SCL (MKK - HUH) (existing culvert)																																				
Concrete Structures SCL (TAW - HUH) (existing culvert)																																				
Backfill																																				
Demolish Existing STA Building																									71	71										
Install Diaphragm Wall																									71	71	71	71	71							
Underpinning foundation																											67	67	67	67	67					
Cofferdam Construction																									76	76	76	76	76							
Excavation & Shoring																															71	71	71	71	71	
Concrete Structures SCL (MKK - HUH)																																				
Concrete Structures SCL (TAW - HUH)																																				

Construction Activity	2015 Jan 32	Feb 33	Mar 34	Apr 35	May 36	Jun 37	Jul 38	Aug 39	Sep 40	Oct 41	Nov 42	Dec 43	2016 Jan 44	Feb 45	Mar 46	Apr 47	May 48	Jun 49	Jul 50	Aug 51	Sep 52	Oct 53	Nov 54	Dec 55	2017 Jan 56	Feb 57	Mar 58	Apr 59	May 60	Jun 61	Jul 62	Aug 63	Sep 64	Oct 65	Nov 66	Dec 67	2018 Jan 68	Feb 69	Mar 70	Apr 71	May 72	Jun 73	Jul 74	Aug 75	Sep 76	Oct 77	Nov 78	Dec 79
Utilities Diversion/ Services relocate (GL 28 - GL 38)																																																
Temporary Storm Drain@ 1875 Diversion (GL 31)																																																
Redivert Storm Drain@ 1875 Diversion (GL 32)																																																
Underpinning GL K & L																																																
Dwall GL 31 to GL 38 / GL K1																																																
Dwall GL 31 to GL 38 / GL N																																																
Pump test GL 28 to GL 38																																																
Excavation & Strutting 1st Layer GL 28 to GL 38																																																
Excavation & Strutting GL 28 to GL 38																																																
SCL (TAW - HUH) Track Slab GL 28 to GL 38																																																
SCL (MKK - HUH) Base Structure GL 28 to GL 38																																																
SCL (MKK - HUH) Internal Structures GL 28 to GL 38																																																
Underpinning Columns to Podium Soffit GL 28 to GL 38																																																
SCL (TAW - HUH) & other Structures GL 28 to GL 38																																																
Utilities Diversion/ Services relocate (GL 38 - GL 48)																																																
Underpinning GL K & L																																																
Underpinning Mid-level walkway																																																
Dwall GL 38 to GL 48 / Interface / GL N																																																
Dwall GL 38 to GL 48 / Interface / GL K1																																																
Pump test GL 38 to GL 48 / Interface																																																
Excavation & Strutting 1st Layer GL 38 to GL 48																																																
Excavation & Strutting GL 38 to GL 48 / Interface																																																
SCL (TAW - HUH) Track Slab GL 38 to GL 48 / Interface																																																
SCL (MKK - HUH) Base Structure GL 38 to GL 48																																																
SCL (MKK - HUH) Internal Structures GL 38 to GL 48																																																
Underpinning Columns to Podium Soffit GL 38 to GL 48																																																
SCL (TAW - HUH) & other Structures GL 38 to GL 48																																																
Building Works for Intercity Train Crew Facilities																																																
Building Works for Signal Equipment Room																																																
Building Works for Telecom Equipment Room																																																
Building Works for S&C Depot																																																
Demolish Existing Loco Running Shed																																																
Demolish Existing Ways & Works Workshop																																																
Site Clearance and Hoarding and Utility diversion																																																
Foundations																																																
Stage 1																																																
Stage 2																																																
Demolish of Existing Viaduct																																																
Construct New Box Culvert - Loco Shed area																																																
Construct New Box Culvert - Ways & Works Workshop area																																																
Construct New Box Culvert - above SCL (MKK - HUH) Tunnels																																																
Cofferdam Construction																																																
Cofferdam Construction (existing culvert)						66	66	66																																								
Excavation & Shoring																																																
Excavation & Shoring (existing culvert)										61	61																																					
Concrete Structures SCL (MKK - HUH)																																																
Concrete Structures SCL (TAW - HUH)																																																
Concrete Structures SCL (MKK - HUH) (existing culvert)											65	65																																				
Concrete Structures SCL (TAW - HUH) (existing culvert)																																																
Backfill																64	64																															
Demolish Existing STA Building																																																
Install Diaphragm Wall																																																
Underpinning foundation																																																
Cofferdam Construction																																																
Excavation & Shoring																																																
Concrete Structures SCL (MKK - HUH)	75	75	75	75	75																																											
Concrete Structures SCL (TAW - HUH)																																																

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH2 - Wing Fung Building

Scenario: Unmitigated

| Package | Construction Activity | Work [1] Site No. | SWL | Dist [2] (m) | SPL [3] | Shielding Effect | 2012 Jan -5 | Feb -4 | Mar -3 | Apr -2 | May -1 | Jun 1 | Jul 2 | Aug 3 | Sep 4 | Oct 5 | Nov 6 | Dec 7 | 2013 Jan 8 | Feb 9 | Mar 10 | Apr 11 | May 12 | Jun 13 | Jul 14 | Aug 15 | Sep 16 | Oct 17 | Nov 18 | Dec 19 | 2014 Jan 20 | Feb 21 | Mar 22 | Apr 23 | May 24 | Jun 25 | Jul 26 | Aug 27 | Sep 28 | Oct 29 | Nov 30 | Dec 31 | 2015 Jan 32 | Feb 33 | Mar 34 | Apr 35 | May 36 | Jun 37 | Jul 38 | Aug 39 | Sep 40 | Oct 41 | Nov 42 | Dec 43 | 2016 Jan 44 | Feb 45 | Mar 46 | Apr 47 | May 48 | Jun 49 | Jul 50 | Aug 51 | Sep 52 | Oct 53 | Nov 54 | Dec 55 | 2017 Jan 56 | Feb 57 | Mar 58 | Apr 59 | May 60 | Jun 61 | Jul 62 | Aug 63 | Sep 64 | Oct 65 | Nov 66 | Dec 67 | 2018 Jan 68 | Feb 69 | Mar 70 | Apr 71 | May 72 | Jun 73 | Jul 74 | Aug 75 | Sep 76 | Oct 77 | Nov 78 | Dec 79 |
|---|---|---

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH2 - Wing Fung Building

Scenario: Unmitigated

Package	Construction Activity	Work Site No. [1]	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
New EVA	***New EVA***					
	1112 EVA Construction (subarea 1)	EVA16	119	767	56	0
	1112 EVA Construction (subarea 2)	EVA17	119	695	57	-10
	1112 EVA Construction (subarea 3)	EVA18	119	360	63	0
	1111 EVA at NAT Construction (subarea 1)	EVA19	119	332	63	0
	1111 EVA at NAT Construction (subarea 2)	EVA20	119	302	64	0
	1111 EVA at NAT Construction (subarea 3)	EVA21	119	274	65	0
	1111 EVA at NAT Construction (subarea 4)	EVA22	119	243	66	0
	1111 EVA at NAT Construction (subarea 5)	EVA23	119	216	67	0
	1111 EVA at NAT Construction (subarea 6)	EVA24	119	190	68	0
	1111 EVA at NAT Construction (subarea 7)	EVA25	119	169	69	0
	1111 EVA at NAT Construction (subarea 8)	EVA26	119	150	70	0
	1111 EVA at NAT Construction (subarea 9)	EVA27	119	130	71	0
	1111 EVA at NAT Construction (subarea 10)	EVA28	119	96	74	0
	1111 EVA at NAT Construction (subarea 11)	EVA29	119	73	76	0
	1111 EVA at NAT Construction (subarea 12)	EVA30	119	43	81	0
Hung Hom Freight Pier	***Hung Hom Freight Pier***					
	Barging Activities					
	At the Freight Pier					
	Loading Activities	FP1	119	975	55	0
	At Tip of the Freight Pier					
	Loading Activities	FP2	119	1068	54	0
	Trucks Travelling					
	Travelling to Barging Points by Haul Roads					
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]	HR1-1	79	-		0
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]	HR1-2	80	-		0
	Trucks Travelling away from the Freight Pier by haul road [4]	HR2	84	-		0
	Trucks at Buffer Zone During Peak Periods					
	Trucks Travelling at Buffer Zone [4]	BZL1	78	-		0
	[4] Calculation of total SWL for Haul Road is based on BS 5228: Part 1: 2009 (Equation F.6)					
Concurrent Work from SCL (HUH - ADM)						
15 Hung Hom SAT	**Demolish Existing Facilities**					
	Demolition of Freight Buidling	803	121	808	58	0
12 Hung Hom Landfall	**Hung Hom Landfall**					
	Cofferdam Wall Construction and Shear Pining	801	117	851	54	0
	Soft Ground Excavation	801	117	851	54	0
	Excavation Work	801	127	851	63	0
	Tunnel Box Construction	801	115	851	52	0
	E&M Installation	801	114	851	50	0
	Cofferdam Wall Removal	801	119	851	55	0
	Backfilling and Reinstatement	801	116	851	53	0
	Hung Hom Freight Pier					
	Demolition of Existing Tip of Freight Pier	804	116	1060	51	0
	Piling Construction	804	118	1060	53	0
	Concrete Deck Construction and Marine Furniture	804	115	1060	49	0
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**					
	Site Clearance, Fencing & Hoarding	802	118	795	55	0
	Excavate Soft Material (+4.0mPD to -17.5mPD)	802	120	795	57	0
	Construct North Flood Gate Building	802	114	795	51	0
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)						

| Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A) | | | | | |

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH9 - Harbourfront Horizon

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
Hung Hom Station, SAT & Related Work	***Hung Hom Station Sub-Location Area***					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Project Office Construction	PSO	115	28	81	0
	Hoarding Erection	HUH1	112	268	58	0
	Pre-drilling	HUH1	90	268	36	0
	Dwall Plants Setting up	HUH1	114	268	60	0
	A&A/ Modification Works					
	Concourse Level HUH					
	Stage 1 - Re-construct M/F, ABWF & BS	HUH2	123	409	66	-10
	Stage 2 - Re-construct M/F, ABWF & BS	HUH2	123	409	66	-10
	Area H1					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to NOV					
	Cooling mains diversion	H1	115	268	62	0
	Dia 1650 Sewer diversion (SCL (MKK - HUH) part)	H1	118	268	64	0
	Tentative CLP cable tunnels strengthening	H1	111	268	57	0
	IMC Building & Carpark areas					
	IMC Hoarding & Catch Fan Erection	IMC	114	276	60	0
	IMC Demolition and site clearance	IMC	123	276	69	0
	Dia 1650 Sewer diversion	IMC	115	276	62	0
	Modification to Existing EVA structures	HWPR	119	333	63	0
	Temporary Cofferdam					
	Podium to NOV					
	Dwall construction (SCL (MKK - HUH)) for sewer diversion	H1	120	268	67	0
	Dwall construction (SCL (MKK - HUH)) remaining	H1	120	268	66	0
	IMC Building & Carpark areas					
	Temporary Cofferdam after demolition	IMC	118	276	64	0
	Excavation					
	Podium to NOV					
	Excavation & Strutting to SCL (MKK - HUH) roof	H1	124	268	71	0
	Excavation & Strutting to SCL (MKK - HUH) base	H1	124	268	71	0
	IMC Building & Carpark areas					
	Pump test, Excavation & Strutting	IMC	82	276	28	0
	Structure Works					
	Podium to NOV					
	Concrete Structure SCL (MKK - HUH) roof	H1	120	268	66	0
	Concrete Support to CLP Tunnel	H1	118	268	64	0
	Concrete Structure SCL (MKK - HUH) roof	H1	124	268	71	0
	Waterfront EVA structure (SCL (MKK - HUH))	H1	118	268	64	0
	IMC Building & Carpark areas					
	Cooling Tower Raft	CT	115	339	59	0
	Cooling Tower Ground Slab	CT	115	339	59	0
	Cooling Tower wall & roof	CT	115	339	59	0
	Waterfront EVA structure (SCL (TAW - HUH))	IMC	118	276	64	0
	Area H2					
	Modification/ Enabling Works/ Utilities Diversions					
	Podium to Coliseum					
	Modification of Traversa	H2	116	284	62	-5
	Utilities Diversion/ Services relocate (GL 0 - GL 7)	H2	124	284	70	-5
	Temporary Cofferdam					
	Podium to Coliseum					
	Ground Treatment to GL 1 to GL 7	H2	94	284	40	-5
	Dwall & Barrette GL 0 to GL 7	H2	119	284	65	-5
	Pump test GL 0 to GL 7	H2	82	284	28	-5
	Underpinning beam & columns	H2	114	284	60	-5
	Demolish existing columns	H2	122	284	68	-5
	Excavation					
	Podium to Coliseum					
	Excavation & Strutting GL 0 to GL 7	H2	121	284	67	-5
	Final Excavation & Strutting to NSL base Gl 0 to GL 7	H2	121	284	67	-5
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Base GL 0 to GL 7	H2	116	284	62	-5
	SCL (MKK - HUH) Slab & props to existing foundation GL 0 to GL 7	H2	116	284	62	-5
	SCL (MKK - HUH) Base & Wall GL 0 to GL 7	H2	122	284	68	-5
	SCL (TAW - HUH) & other Structures GL 0 to GL 7	H2	116	284	62	-5
	Vent Shaft Structures GL 0	H2	117	284	63	-5
	Area H3					
	Modification/ Enabling Works/ Utilities Diversions					
	Coliseum Area					
	Utilities Diversion/ Services relocate (GL 7 - GL 15)	H3	119	311	64	-10
	Temporary Cofferdam					
	Coliseum Area					
	Dwall GL 7 to GL 15	H3	119	311	64	-10
	Excavation					
	Coliseum Area					
	Pump test GL 7 to GL 15	H3	82	311	27	-10
	Excavation to SCL (TAW - HUH) slab Gl 7 to GL 15	H3	124	311	69	-10
	Excavation & Strutting to intermediate slab GL 7 to GL 15	H3	124	311	69	-10
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H3	124	311	70	-10
	Structure Works					
	Podium to Coliseum					
	SCL (TAW - HUH) Track Slab & Structures GL 7 to GL 15	H3	116	311	61	-10
	SCL (MKK - HUH) Structures Intermediate Slab & props GL 7 to GL 15	H3	116	311	61	-10
	SCL (MKK - HUH) Structure Base & Wall GL 7 to GL 15	H3	116	311	61	-10
	SCL (TAW - HUH) Structures Wall & Roof GL 7 to GL 15	H3	116	311	61	-10
	SCL (TAW - HUH) & other Structures GL 7 to GL 15	H3	116	311	61	-10
	Area H4					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 15 - GL 28)	H4	119	363	62	-10
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K	H4	119	363	63	-10
	Dwall GL 15 to GL 31 / GL N	H4	118	363	62	-10
	Dwall GL 15 to GL 31 / GL K1	H4	118	363	62	-10
	Excavation					
	Hung Hom Station					
	Pump test GL 15 to GL 28	H4	85	363	29	-10
	Excavation & Strutting 1st Layer GL 15 to GL 28	H4	124	363	67	-10
	Excavation & Strutting GL 15 to GL 28	H4	123	363	67	-10
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15	H4	124	363	68	-10
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 15 to GL 28	H4	116	363	60	-10
	Install Temporary Steel Tower Column GL 15 to GL 22	H4	114	363	58	-10
	Demolish existing Column & Pier Cap GL 15 to GL 22	H4	117	363	61	-10
	SCL (MKK - HUH) Base Structure GL 15 to GL 28	H4	116	363	60	-10
	SCL (TAW - HUH) & other Structures GL 15 to GL 28	H4	121	363	65	-10
	SCL (MKK - HUH) Internal Structures GL 15 to GL 28	H4	119	363	63	-10

Package	Construction Activity	2012												2013												2014											
		Jan -5	Feb -4	Mar -3	Apr -2	May -1	Jun 1	Jul 2	Aug 3	Sep 4	Oct 5	Nov 6	Dec 7	Jan 8	Feb 9	Mar 10	Apr 11	May 12	Jun 13	Jul 14	Aug 15	Sep 16	Oct 17	Nov 18	Dec 19	Jan 20	Feb 21	Mar 22	Apr 23	May 24	Jun 25	Jul 26	Aug 27	Sep 28	Oct 29	Nov 30	Dec 31
Hung Hom Station, SAT & Related Work	***Hung Hom Station Sub-Location Area***																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Hung Hom Station																																				
	Project Office Construction										81	81	81																								
	Hoarding Erection											58	58																								
	Pre-drilling													36	36	36																					
	Dwall Plants Setting up											60	60	60																							
	A&A/ Modification Works																																				
	Concourse Level HUH																																				
	Stage 1 - Re-construct M/F, ABWF & BS																																				
	Stage 2 - Re-construct M/F, ABWF & BS																																				
	Area H1																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Podium to NOV																																				
	Cooling mains diversion													62	62	62	62																				
	Dia 1650 Sewer diversion (SCL (MKK - HUH) part)																																				
	Tentative CLP cable tunnels strengthening																															57	57	57	57	57	57
	IMC Building & Carpark areas																																				
	IMC Hoarding & Catch Fan Erection																																				
	IMC Demolition and site clearance																																				
	Dia 1650 Sewer diversion																																				
	Modification to Existing EVA structures																																				
	Temporary Cofferdam																																				
	Podium to NOV																																				
	Dwall construction (SCL (MKK - HUH)) for sewer diversion																																				
	Dwall construction (SCL (MKK - HUH)) remaining																																				
	IMC Building & Carpark areas																																				
	Temporary Cofferdam after demolition																																				
	Excavation																																				
	Podium to NOV																																				
	Excavation & Strutting to SCL (MKK - HUH) roof																																				
	Excavation & Strutting to SCL (MKK - HUH) base																																				
	IMC Building & Carpark areas																																				
	Pump test, Excavation & Strutting																																				
	Structure Works																																				
	Podium to NOV																																				
	Concrete Structure SCL (MKK - HUH) roof																																				
	Concrete Support to CLP Tunnel																																				
	Concrete Structure SCL (MKK - HUH) roof																																				
	Waterfront EVA structure (SCL (MKK - HUH))																																				
	IMC Building & Carpark areas																																				
	Cooling Tower Raft																																				
	Cooling Tower Ground Slab																																				
	Cooling Tower wall & roof																																				
	Waterfront EVA structure (SCL (TAW - HUH))																																				
	Area H2																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Podium to Coliseum																																				
	Modification of Traversa													57	57	57																					
	Utilities Diversion/ Services relocate (GL 0 - GL 7)																65	65	65																		
	Temporary Cofferdam																																				
	Podium to Coliseum																																				
	Ground Treatment to GL 1 to GL 7																			35	35	35	35														
	Dwall & Barrette GL 0 to GL 7																							60	60	60	60	60	60								
	Pump test GL 0 to GL 7																														23	23					
	Underpinning beam & columns																														55	55	55	55	55		
	Demolish existing columns																																			63	
	Excavation																																				
	Podium to Coliseum																																				
	Excavation & Strutting GL 0 to GL 7																																				
	Final Excavation & Strutting to NSL base Gl 0 to GL 7																																				
	Structure Works																																				
	Podium to Coliseum																																				
	SCL (TAW - HUH) Base GL 0 to GL 7																																				
	SCL (MKK - HUH) Slab & props to existing foundation GL 0 to GL 7																																				
	SCL (MKK - HUH) Base & Wall GL 0 to GL 7																																				
	SCL (TAW - HUH) & other Structures GL 0 to GL 7																																				
	Vent Shaft Structures GL 0																																				
	Area H3																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Coliseum Area																																				
	Utilities Diversion/ Services relocate (GL 7 - GL 15)																																				
	Temporary Cofferdam																																				
	Coliseum Area																																				
	Dwall GL 7 to GL 15																																				
	Excavation																																				
	Coliseum Area																																				
	Pump test GL 7 to GL 15																																				
	Excavation to SCL (TAW - HUH) slab Gl 7 to GL 15																																				
	Excavation & Strutting to intermediate slab GL 7 to GL 15																																				
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15																																				
	Structure Works																																				
	Podium to Coliseum																																				
	SCL (TAW - HUH) Track Slab & Structures GL 7 to GL 15																																				
	SCL (MKK - HUH) Structures Intermediate Slab & props GL 7 to GL 15																																				
	SCL (MKK - HUH) Structure Base & Wall GL 7 to GL 15																																				
	SCL (TAW - HUH) Structures Wall & Roof GL 7 to GL 15																																				
	SCL (TAW - HUH) & other Structures GL 7 to GL 15																																				
	Area H4																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Hung Hom Station																																				
	Utilities Diversion/ Services relocate (GL 15 - GL 28)																																				
	Temporary Cofferdam																																				
	Hung Hom Station																																				
	Underpinning GL K																																				
	Dwall GL 15 to GL 31 / GL N																																				
	Dwall GL 15 to GL 31 / GL K1																																				
	Excavation																																				
	Hung Hom Station																																				
	Pump test GL 15 to GL 28																																				
	Excavation & Strutting 1st Layer GL 15 to GL 28																																				
	Excavation & Strutting GL 15 to GL 28																																				
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15																																				
	Structure Works																																				
	Hung Hom Station																																				
	SCL (TAW - HUH) Track Slab GL 15 to GL 28																																				
	Install Temporary Steel Tower Column GL 15 to GL 22																																				
	Demolish existing Column & Pier Cap GL 15 to GL 22																																				
	SCL (MKK - HUH) Base Structure GL 15 to GL 28																																				
	SCL (TAW - HUH) & other Structures GL 15 to GL 28																																				
	SCL (MKK - HUH) Internal Structures GL 15 to GL 28																																				

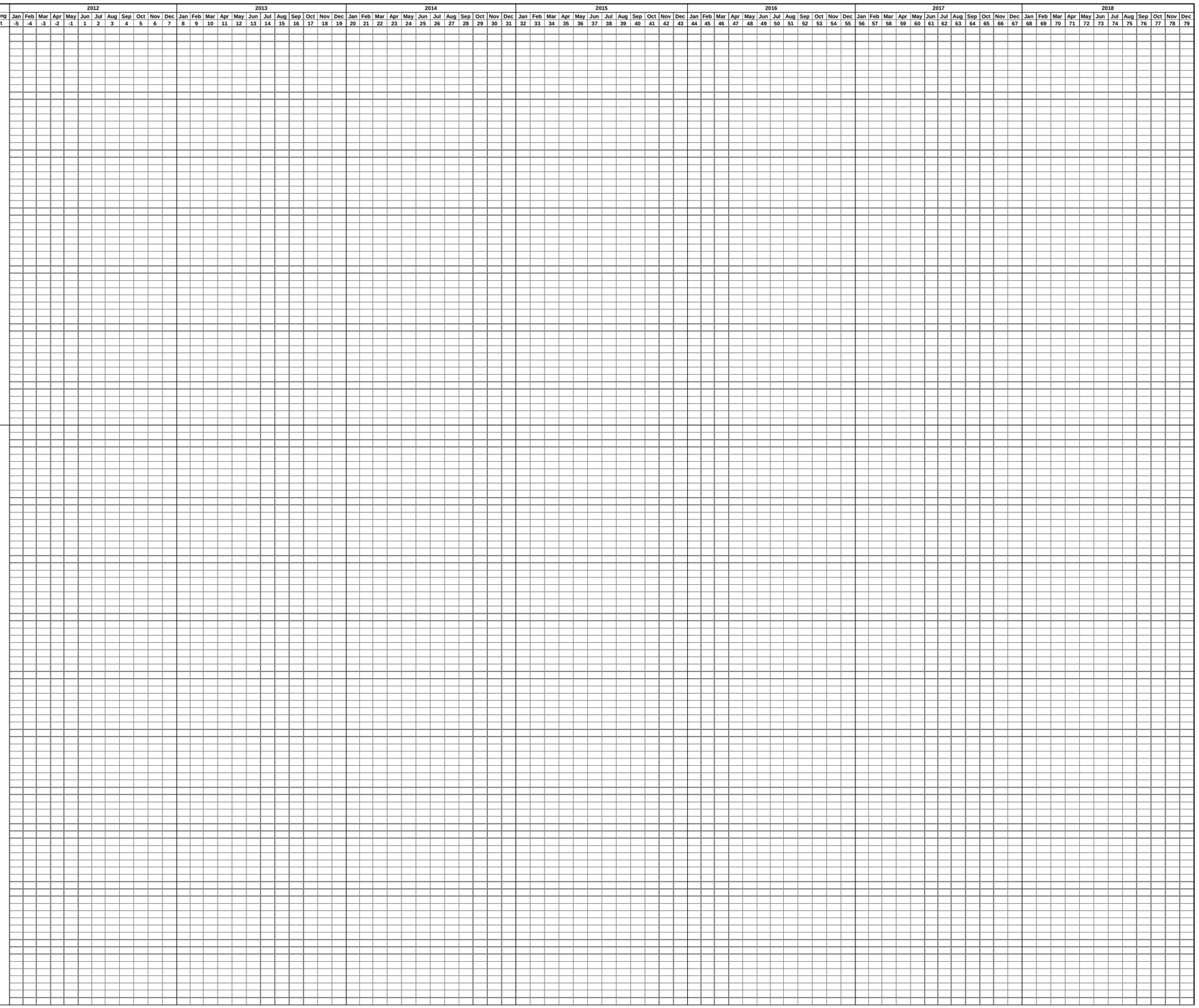
Package	Construction Activity	2015												2016												2017											
		Jan 32	Feb 33	Mar 34	Apr 35	May 36	Jun 37	Jul 38	Aug 39	Sep 40	Oct 41	Nov 42	Dec 43	Jan 44	Feb 45	Mar 46	Apr 47	May 48	Jun 49	Jul 50	Aug 51	Sep 52	Oct 53	Nov 54	Dec 55	Jan 56	Feb 57	Mar 58	Apr 59	May 60	Jun 61	Jul 62	Aug 63	Sep 64	Oct 65	Nov 66	Dec 67
Hung Hom Station, SAT & Related Work	***Hung Hom Station Sub-Location Area***																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Hung Hom Station																																				
	Project Office Construction																																				
	Hoarding Erection																																				
	Pre-drilling																																				
	Dwall Plants Setting up																																				
	A&A/ Modification Works																																				
	Concourse Level HUH																																				
	Stage 1 - Re-construct M/F, ABWF & BS																																				
	Stage 2 - Re-construct M/F, ABWF & BS																																				
	Area H1																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Podium to NOV																																				
	Cooling mains diversion																																				
	Dia 1650 Sewer diversion (SCL (MKK - HUH) part)						64	64	64																												
	Tentative CLP cable tunnels strengthening																																				
	IMC Building & Carpark areas																																				
	IMC Hoarding & Catch Fan Erection						60	60																													
	IMC Demolition and site clearance									69	69	69																									
	Dia 1650 Sewer diversion						62	62	62	62	62	62	62																								
	Modification to Existing EVA structures																																				
	Temporary Cofferdam																																				
	Podium to NOV																																				
	Dwall construction (SCL (MKK - HUH)) for sewer diversion	67	67	67	67	67																															
	Dwall construction (SCL (MKK - HUH)) remaining						66	66	66	66	66																										
	IMC Building & Carpark areas																																				
	Temporary Cofferdam after demolition												64	64	64																						
	Excavation																																				
	Podium to NOV																																				
	Excavation & Strutting to SCL (MKK - HUH) roof											71	71																								
	Excavation & Strutting to SCL (MKK - HUH) base																		71	71	71																
	IMC Building & Carpark areas																																				
	Pump test, Excavation & Strutting															28	28	28																			
	Structure Works																																				
	Podium to NOV																																				
	Concrete Structure SCL (MKK - HUH) roof													66																							
	Concrete Support to CLP Tunnel														64	64	64	64																			
	Concrete Structure SCL (MKK - HUH) roof																					71	71	71													
	Waterfront EVA structure (SCL (MKK - HUH))																							64	64	64	64	64									
	IMC Building & Carpark areas																																				
	Cooling Tower Raft																																				
	Cooling Tower Ground Slab																																				
	Cooling Tower wall & roof																																				
	Waterfront EVA structure (SCL (TAW - HUH))																				64	64	64														
	Area H2																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Podium to Coliseum																																				
	Modification of Traversa																																				
	Utilities Diversion/ Services relocate (GL 0 - GL 7)																																				
	Temporary Cofferdam																																				
	Podium to Coliseum																																				
	Ground Treatment to GL 1 to GL 7																																				
	Dwall & Barrette GL 0 to GL 7																																				
	Pump test GL 0 to GL 7																																				
	Underpinning beam & columns																																				
	Demolish existing columns																																				
	Excavation																																				
	Podium to Coliseum																																				
	Excavation & Strutting GL 0 to GL 7		62	62	62																																
	Final Excavation & Strutting to NSL base Gl 0 to GL 7																				62	62															
	Structure Works																																				
	Podium to Coliseum																																				
	SCL (TAW - HUH) Base GL 0 to GL 7																																				
	SCL (MKK - HUH) Slab & props to existing foundation GL 0 to GL 7					57	57	57																													
	SCL (MKK - HUH) Base & Wall GL 0 to GL 7									63	63	63	63																								
	SCL (TAW - HUH) & other Structures GL 0 to GL 7														57	57	57	57																			
	Vent Shaft Structures GL 0																					58	58	58													
	Area H3																																				
	Modification/ Enabling Works/ Utilities Diversions																																				
	Coliseum Area																																				
	Utilities Diversion/ Services relocate (GL 7 - GL 15)																																				
	Temporary Cofferdam																																				
	Coliseum Area																																				
	Dwall GL 7 to GL 15																																				
	Excavation																																				
	Coliseum Area																																				
	Pump test GL 7 to GL 15																																				
	Excavation to SCL (TAW - HUH) slab Gl 7 to GL 15																																				
	Excavation & Strutting to intermediate slab GL 7 to GL 15																																				
	Excavation & Strutting to SCL (MKK - HUH) base Gl 7 to GL 15																																				
	Structure Works								

Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH9 - Harbourfront Horizon

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
	Area H5					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 28 - GL 38)	H5	119	435	61	-10
	Temporary Storm Drain@ 1875 Diversion (GL 31)	H5	114	435	56	-10
	Redivert Storm Drain@ 1875 Diversion (GL 32)	H5	125	435	68	-10
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H5	119	435	61	-10
	Dwall GL 31 to GL 38 / GL K1	H5	118	435	61	-10
	Dwall GL 31 to GL 38 / GL N	H5	118	435	61	-10
	Excavation					
	Hung Hom Station					
	Pump test GL 28 to GL 38	H5	85	435	27	-10
	Excavation & Strutting 1st Layer GL 28 to GL 38	H5	124	435	66	-10
	Excavation & Strutting GL 28 to GL 38	H5	124	435	66	-10
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 28 to GL 38	H5	116	435	59	-10
	SCL (MKK - HUH) Base Structure GL 28 to GL 38	H5	116	435	59	-10
	SCL (MKK - HUH) Internal Structures GL 28 to GL 38	H5	116	435	58	-10
	Underpinning Columns to Podium Soffit GL 28 to GL 38	H5	114	435	56	-10
	SCL (TAW - HUH) & other Structures GL 28 to GL 38	H5	121	435	63	-10
	Area H6					
	Modification/ Enabling Works/ Utilities Diversions					
	Hung Hom Station					
	Utilities Diversion/ Services relocate (GL 38 - GL 48)	H6	119	503	60	-10
	Temporary Cofferdam					
	Hung Hom Station					
	Underpinning GL K & L	H6	119	503	60	-10
	Underpinning Mid-level walkway	H6	114	503	55	-10
	Dwall GL 38 to GL 48 / Interface / GL N	H6	118	503	59	-10
	Dwall GL 38 to GL 48 / Interface / GL K1	H6	118	503	59	-10
	Excavation					
	Hung Hom Station					
	Pump test GL 38 to GL 48 / Interface	H6	85	503	26	-10
	Excavation & Strutting 1st Layer GL 38 to GL 48	H6	121	503	62	-10
	Excavation & Strutting GL 38 to GL 48 / Interface	H6	121	503	62	-10
	Structure Works					
	Hung Hom Station					
	SCL (TAW - HUH) Track Slab GL 38 to GL 48 / Interface	H6	123	503	64	-10
	SCL (MKK - HUH) Base Structure GL 38 to GL 48	H6	116	503	57	-10
	SCL (MKK - HUH) Internal Structures GL 38 to GL 48	H6	116	503	57	-10
	Underpinning Columns to Podium Soffit GL 38 to GL 48	H6	114	503	55	-10
	SCL (TAW - HUH) & other Structures GL 38 to GL 48	H6	121	503	62	-10
NAT & Related Work	***North Approach Tunnel Sub-Location Area***					
	Reprovisioning Facilities					
	Reprovisioned at Hung Hom Station Area					
	Building Works for Intercity Train Crew Facilities	ITCF	112	479	54	-10
	Building Works for Signal Equipment Room	SER	110	602	50	-10
	Building Works for Telecom Equipment Room	TER	110	358	54	0
	Building Works for S&C Depot	S&C	110	406	53	-10
	Area C1					
	Demolish Existing Facilities					
	Demolish Existing Loco Running Shed	LRS	121	536	61	0
	Demolish Existing Ways & Works Workshop	W&W	121	610	60	0
	Modification/ Enabling Works/ Utilities Diversions					
	Cheung Wan Road Viaduct					
	Site Clearance and Hoarding and Utility diversion	NCWR	112	593	52	0
	Foundations	NCWR	120	593	59	0
	Construction of Substructure and Superstructure for New Diversion Bridge					
	Stage 1	NCWR	114	593	53	0
	Stage 2	NCWR	114	593	53	0
	Demolish of Existing Viaduct	ECWR	122	577	62	0
	DSD Culvert Diversion					
	Construct New Box Culvert - Loco Shed area	BC1	121	561	61	0
	Construct New Box Culvert - Ways & Works Workshop area	BC3	121	612	60	0
	Construct New Box Culvert - above SCL (MKK - HUH) Tunnels	BC2	121	590	61	0
	Temporary Cofferdam					
	Podium to Existing Culverts					
	Cofferdam Construction	C1a	119	573	59	0
	At Existing Culverts					
	Cofferdam Construction (existing culvert)	C1b	119	633	58	0
	Excavation					
	Podium to Existing Culverts					
	Excavation & Shoring	C1a	114	573	54	0
	At Existing Culverts					
	Excavation & Shoring (existing culvert)	C1b	114	633	53	0
	Structure Works					
	Podium to Existing Culverts					
	Concrete Structures SCL (MKK - HUH)	C1a	118	573	58	0
	Concrete Structures SCL (TAW - HUH)	C1a	117	573	57	0
	At Existing Culverts					
	Concrete Structures SCL (MKK - HUH) (existing culvert)	C1b	118	633	57	0
	Concrete Structures SCL (TAW - HUH) (existing culvert)	C1b	117	633	56	0
	Backfilling					
	Backfill	C1	117	573	57	0
	Area C2					
	Demolish Existing Facilities					
	Demolish Existing STA Building	STA	121	717	59	0
	Temporary Cofferdam					
	Hung Hom Bypass Pier C2/5					
	Install Diaphragm Wall	PierC2/5	119	767	57	0
	Underpinning foundation	PierC2/5	115	767	52	0
	Existing Culverts to STA Building					
	Cofferdam Construction	C2	119	676	58	0
	Excavation					
	Existing Culverts to STA Building					
	Excavation & Shoring	C2	114	676	53	0
	Structure Works					
	Existing Culverts to STA Building					
	Concrete Structures SCL (MKK - HUH)	C2	118	676	57	0
	Concrete Structures SCL (TAW - HUH)	C2	119	676	57	0

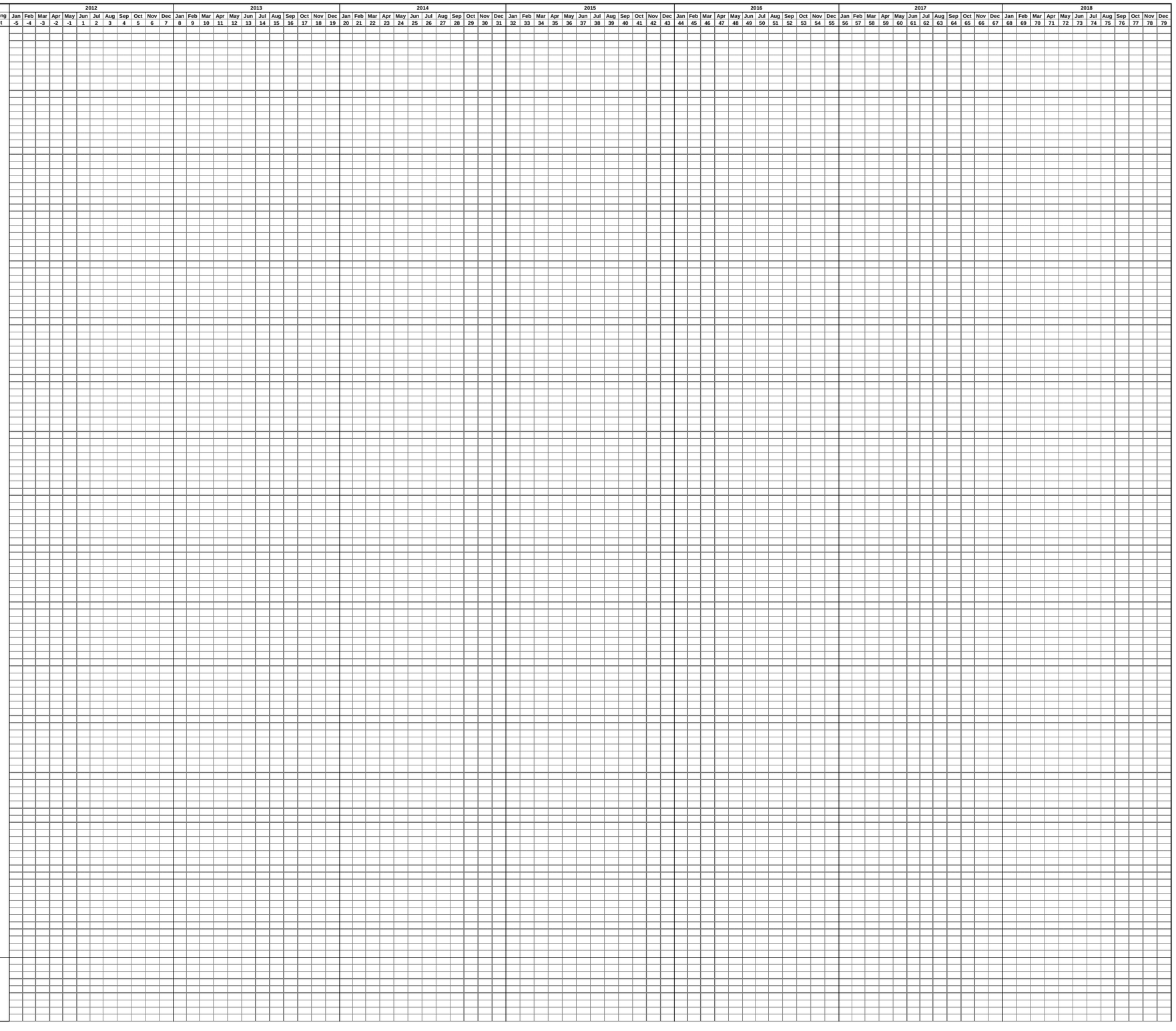


Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH9 - Harbourfront Horizon

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
	Area C3A					
	Temporary Cofferdam					
	STA Building to Chatham Road North (OB2)					
	Cofferdam Construction	C3A	119	880	55	0
	Excavation					
	STA Building to Chatham Road North (OB2)					
	Excavation & Shoring	C3A	114	880	50	0
	Structure Works					
	STA Building to Chatham Road North (OB2)					
	Concrete Structures SCL (MKK - HUH)	C3A	117	880	53	0
	Backfilling					
	STA Building to Chatham Road North (OB2)					
	Backfill	C3A	117	880	53	0
	Area C4A					
	Temporary Cofferdam					
	Chatham Road North (OB2) to Slip Road (OB2A)					
	Cofferdam Construction	C4A	119	943	54	0
	Excavation					
	Chatham Road North (OB2) to Slip Road (OB2A)					
	Excavation & Shoring	C4A	114	943	50	0
	Structure Works					
	Chatham Road North (OB2) to Slip Road (OB2A)					
	Concrete Structures SCL (MKK - HUH)	C4A	116	943	51	0
	Backfilling					
	Chatham Road North (OB2) to Slip Road (OB2A)					
	Backfill	C4A	117	943	52	0
	Area C6					
	Modification/ Enabling Works/ Utilities Diversions					
	Existing CLP Substation					
	Modify Existing CLP Substation	CLP	119	1086	53	0
	Oi Sen Path Temporary Footbridge					
	Construct Temporary Working Platform (GL G-J)	TFB4	100	1212	33	0
	Cut Back Slope and Existing Soil Nails and Install New Soil Nails (GL G-J)	TFB4	107	1212	41	0
	Construct Temporary Working Platform (GL E-G)	TFB3	100	1247	33	0
	Cut Back Slope and Existing Soil Nails and Install New Soil Nails (GL E-G)	TFB3	107	1247	40	0
	Construct Temporary Working Platform (GL C-E)	TFB2	100	1287	33	0
	Cut Back Slope and Existing Soil Nails and Install New Soil Nails (GL C-E)	TFB2	107	1287	40	0
	Construct Temporary Working Platform (GL A-C)	TFB1	100	1327	32	0
	Cut Back Slope and Existing Soil Nails and Install New Soil Nails (GL A-C)	TFB1	107	1327	40	0
	Construct Temporary Footbridge Structure and Finishes (GL A-J)	GL A-J	113	1212	46	0
	Install Mini Piles (Pier K)	Pier K	111	1186	45	0
	Construct Pile Cap (Pier K)	Pier K	112	1186	45	0
	Construct Truss Structure (Pier K)	Pier K	107	1186	41	0
	Install Mini Piles (Pier L)	Pier L	111	1161	45	0
	Construct Pile Cap (Pier L)	Pier L	112	1161	46	0
	Construct Truss Structure (Pier L)	Pier L	107	1161	41	0
	Install Mini Piles (Pier M)	Pier M	111	1138	45	0
	Construct Pile Cap (Pier M)	Pier M	112	1138	46	0
	Construct Truss Structure (Pier M)	Pier M	107	1138	41	0
	Install Mini Piles (Pier N)	Pier N	111	1116	45	0
	Construct Pile Cap (Pier N)	Pier N	112	1116	46	0
	Construct Truss Structure (Pier N)	Pier N	107	1116	41	0
	Install Mini Piles (Pier P)	Pier P	111	1070	46	0
	Construct Pile Cap (Pier P)	Pier P	112	1070	46	0
	Construct Truss Structure (Pier P)	Pier P	107	1070	42	0
	Construct Temporary Footbridge Structure and Finishes (GL J-O)	GL J-O	114	1064	48	0
	Construct Pile Cap (GL O-R)	TFB12	112	1061	46	0
	Construct Truss Structure (GL O-R)	TFB12	113	1061	48	0
	Construct Temporary Footbridge Structure and Finishes (GL O-R)	TFB12	112	1061	46	0
	Complete Footpath and Finishes (GL R-T)	TFB13	111	1059	46	0
	Chatham Road North Slip Road Overbridge (OB2A)					
	Site Clearance and Hoarding and Utility diversion	TOB2A	112	1015	47	0
	Foundations for Temporary OB2A (Piling & Pier)	TOB2A	116	1015	51	0
	Deck Construction for Temporary OB2A	TOB2A	114	1015	49	0
	Demolish Deck of Existing OB2A	OOB2A	114	1014	49	0
	Construction of New OB2A Pile & Pile Cap	OOB2A	119	1014	54	0
	Construction of New OB2A Abutment & Bridge Deck	OOB2A	118	1014	53	0
	OB2A Reinstatement	OOB2A	117	1014	52	0
	Temporary OB2A Removal	TOB2A	117	1015	52	0
	OB2A Pedestrian Subway					
	Site Clearance and Hoarding and Utility diversion	OB2APS	112	1002	47	0
	Demolish Existing Box Structure of OB2A Pedestrian Subway	OB2APS	122	1002	57	0
	OB2A Pedestrian Subway Reinstatement	OB2APS	117	1002	52	0
	Oi Sen Path Works					
	Pedestrian Diversion Works	OSPPS	120	1025	54	0
	Relocate CLP cable	OSPPS	120	1025	55	0
	Soil Nailing	OSPPS	105	1025	40	0
	Retaining wall	OSPPS	120	1025	55	0
	Slope Cut	OSPPS	120	1025	55	0
	Reinstate Oi Sen Path	OSPPS	117	1025	52	0
	Temporary Cofferdam					
	Between OB2 and OB2A					
	Temporary Retaining Wall	C6a	118	997	53	0
	North of OB2A					
	Sheet Piled Wall	C6b	120	1030	55	0
	At Temporary OB2A					
	Sheet Piled Wall	C6c	120	1071	54	0
	Excavation					
	Between OB2 and OB2A					
	Excavation & Shoring	C6a	114	997	49	0
	North of OB2A					
	Excavation & Shoring (existing culvert)	C6b	114	1030	49	0
	At Temporary OB2A					
	Excavation & Shoring (existing culvert)	C6c	114	1071	49	0
	Structure Works					
	Between OB2 and OB2A					
	Concrete Structures	C6a	116	997	51	0
	North of OB2A					
	Concrete Structures	C6b	116	1030	50	0
	At Temporary OB2A					
	Concrete Structures	C6c	116	1071	50	0
	Backfilling					
	OB2 to Temporary OB2A					
	Backfill	C6	117	997	52	0
Homantin Siding	***Homantin Siding***					
	Loco Siding @HKPolyU Building					
	Removal of Existing Tracks	ETR	118	984	53	0
	Decking Across Culvert	CUV	112	1018	47	0
	Office / Store construction	OFF	114	897	50	0
	EVA construction	EVA	114	950	49	0
	Track Laying to HKPolyU	NTL	118	984	53	0



Appendix 6.5A Sample Calculation of Construction Noise Levels during Non-Restricted Hours - Unmitigated Scenario

NSR: HH9 - Harbourfront Horizon

Scenario: Unmitigated

Package	Construction Activity	Work [1] Site No.	SWL	Dist [2] (m)	SPL [3]	Shielding Effect
New EVA	***New EVA***					
	1112 EVA Construction (subarea 1)	EVA16	119	324	64	0
	1112 EVA Construction (subarea 2)	EVA17	119	317	64	0
	1112 EVA Construction (subarea 3)	EVA18	119	559	59	-10
	1111 EVA at NAT Construction (subarea 1)	EVA19	119	584	58	0
	1111 EVA at NAT Construction (subarea 2)	EVA20	119	611	58	0
	1111 EVA at NAT Construction (subarea 3)	EVA21	119	637	57	0
	1111 EVA at NAT Construction (subarea 4)	EVA22	119	663	57	0
	1111 EVA at NAT Construction (subarea 5)	EVA23	119	691	57	0
	1111 EVA at NAT Construction (subarea 6)	EVA24	119	716	56	0
	1111 EVA at NAT Construction (subarea 7)	EVA25	119	739	56	0
	1111 EVA at NAT Construction (subarea 8)	EVA26	119	758	56	0
	1111 EVA at NAT Construction (subarea 9)	EVA27	119	776	56	0
	1111 EVA at NAT Construction (subarea 10)	EVA28	119	803	55	0
	1111 EVA at NAT Construction (subarea 11)	EVA29	119	838	55	0
	1111 EVA at NAT Construction (subarea 12)	EVA30	119	863	55	0
Hung Hom Freight Pier	***Hung Hom Freight Pier***					
	Barging Activities					
	At the Freight Pier					
	Loading Activities	FP1	119	183	69	0
	At Tip of the Freight Pier					
	Loading Activities	FP2	119	280	65	0
	Trucks Travelling					
	Travelling to Barging Points by Haul Roads					
	Trucks Travelling to the Freight Pier by haul road (segment 1) [4]	HR1-1	79	80	63	0
	Trucks Travelling to the Freight Pier by haul road (segment 2) [4]	HR1-2	80	150	61	0
	Trucks Travelling away from the Freight Pier by haul road [4]	HR2	84	170	65	0
	Trucks at Buffer Zone During Peak Periods					
	Trucks Travelling at Buffer Zone [4]	BZL1	78	31	66	0
	[4] Calculation of total SWL for Haul Road is based on BS 5228: Part 1: 2009 (Equation F.6)					
Concurrent Work from SCL (HUH - ADM)						
15 Hung Hom SAT	**Demolish Existing Facilities**					
	Demolition of Freight Buidling	803	121	248	68	0
12 Hung Hom Landfall	**Hung Hom Landfall**					
	Cofferdam Wall Construction and Shear Pining	801	117	253	64	0
	Soft Ground Excavation	801	117	253	64	0
	Excaivation Work	801	127	253	74	0
	Tunnel Box Construction	801	115	253	62	0
	E&M Installation	801	114	253	61	0
	Cofferdam Wall Removal	801	119	253	66	0
	Backfilling and Reinstatement	801	116	253	63	0
	Hung Hom Freight Pier					
	Demolition of Existing Tip of Freight Pier	804	116	243	64	0
	Piling Construction	804	118	243	66	0
	Concrete Deck Construction and Marine Furniture	804	115	243	62	0
13 NOV	**North Ventilation Building, Plant Rooms and Emergency Access (NOV)**					
	Site Clearance, Fencing & Hoarding	802	118	258	65	0
	Excavate Soft Material (+4.0mPD to -17.5mPD)	802	120	258	67	0
	Construct North Flood Gate Building	802	114	258	61	0
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)						

Construction Activity	2012 Jan -5	Feb -4	Mar -3	Apr -2	May -1	Jun 1	Jul 2	Aug 3	Sep 4	Oct 5	Nov 6	Dec 7
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities						69	69	69	69	69	69	69
Loading Activities						65	65	65	65	65	65	65
Trucks Travelling to the Freight Pier by haul road (segment 1)						63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)						61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road						65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone						66	66	66	66	66	66	66
Demolition of Freight Buidling												
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excaivation Work												
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Demolition of Existing Tip of Freight Pier												
Piling Construction												
Concrete Deck Construction and Marine Furniture												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	-	-	-	-	-	73	73	73	82	82	82	82

Construction Activity	2013 Jan 8	Feb 9	Mar 10	Apr 11	May 12	Jun 13	Jul 14	Aug 15	Sep 16	Oct 17	Nov 18	Dec 19
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities	69	69	69	69	69	69	69	69	69	69	69	69
Loading Activities	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling to the Freight Pier by haul road (segment 1)	63	63	63	63	63	63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)	61	61	61	61	61	61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone	66	66	66	66	66	66	66	66	66	66	66	66
Demolition of Freight Buidling												
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excaivation Work												
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Demolition of Existing Tip of Freight Pier												
Piling Construction												
Concrete Deck Construction and Marine Furniture												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	74	74	74	74	74	73	73	73	73	74	74	74

Construction Activity	2014 Jan 20	Feb 21	Mar 22	Apr 23	May 24	Jun 25	Jul 26	Aug 27	Sep 28	Oct 29	Nov 30	Dec 31
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities	69	69	69	69	69	69	69	69	69	69	69	69
Loading Activities	65	65	65	65	65	65	65	65				
Trucks Travelling to the Freight Pier by haul road (segment 1)	63	63	63	63	63	63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)	61	61	61	61	61	61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone	66	66	66	66	66	66	66	66	66	66	66	66
Demolition of Freight Buidling											68	68
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excaivation Work												
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Demolition of Existing Tip of Freight Pier									64	64	64	64
Piling Construction												
Concrete Deck Construction and Marine Furniture												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	74	74	74	74	73	73	73	73	73	73	73	73

Construction Activity	2015 Jan 32	Feb 33	Mar 34	Apr 35	May 36	Jun 37	Jul 38	Aug 39	Sep 40	Oct 41	Nov 42	Dec 43
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities	69	69	69	69	69	69	69	69	69	69	69	69
Loading Activities												
Trucks Travelling to the Freight Pier by haul road (segment 1)	63	63	63	63	63	63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)	61	61	61	61	61	61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone	66	66	66	66	66	66	66	66	66	66	66	66
Demolition of Freight Buidling	68											
Cofferdam Wall Construction and Shear Pining	64	64	64	64	64	64	64	64				
Soft Ground Excavation									64	64	64	
Excaivation Work									74	74	74	74
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Demolition of Existing Tip of Freight Pier	64	64										
Piling Construction												
Concrete Deck Construction and Marine Furniture												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	74	74	74	74	74	74	74	74	75	75	76	76

Construction Activity	2016 Jan 44	Feb 45	Mar 46	Apr 47	May 48	Jun 49	Jul 50	Aug 51	Sep 52	Oct 53	Nov 54	Dec 55
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities	69	69	69	69	69	69	69	69	69	69	69	69
Loading Activities												
Trucks Travelling to the Freight Pier by haul road (segment 1)	63	63	63	63	63	63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)	61	61	61	61	61	61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone	66	66	66	66	66	66	66	66	66	66	66	66
Demolition of Freight Buidling												
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excaivation Work	74	74	74	74								
Tunnel Box Construction			62	62	62							
E&M Installation						61						
Cofferdam Wall Removal						66						
Backfilling and Reinstatement							63	63	63	63	63	
Demolition of Existing Tip of Freight Pier												
Piling Construction												
Concrete Deck Construction and Marine Furniture												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)	67	67										
Construct North Flood Gate Building		61	61	61	61							
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	74	74	73	73	73	75	75	75	75	75	75	73

Construction Activity	2017 Jan 56	Feb 57	Mar 58	Apr 59	May 60	Jun 61	Jul 62	Aug 63	Sep 64	Oct 65	Nov 66	Dec 67
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities	69	69	69	69	69	69	69	69	69	69	69	69
Loading Activities												
Trucks Travelling to the Freight Pier by haul road (segment 1)	63	63	63	63	63	63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)	61	61	61	61	61	61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone	66	66	66	66	66	66	66	66	66	66	66	66
Demolition of Freight Buidling												
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excaivation Work												
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Demolition of Existing Tip of Freight Pier												
Piling Construction												
Concrete Deck Construction and Marine Furniture												
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	73	73	73	73	73	73	73	73	73	73	73	73

Construction Activity	2018 Jan 68	Feb 69	Mar 70	Apr 71	May 72	Jun 73	Jul 74	Aug 75	Sep 76	Oct 77	Nov 78	Dec 79
1112 EVA Construction (subarea 1)												
1112 EVA Construction (subarea 2)												
1112 EVA Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 1)												
1111 EVA at NAT Construction (subarea 2)												
1111 EVA at NAT Construction (subarea 3)												
1111 EVA at NAT Construction (subarea 4)												
1111 EVA at NAT Construction (subarea 5)												
1111 EVA at NAT Construction (subarea 6)												
1111 EVA at NAT Construction (subarea 7)												
1111 EVA at NAT Construction (subarea 8)												
1111 EVA at NAT Construction (subarea 9)												
1111 EVA at NAT Construction (subarea 10)												
1111 EVA at NAT Construction (subarea 11)												
1111 EVA at NAT Construction (subarea 12)												
Loading Activities	69	69	69	69	69	69	69	69	69	69	69	69
Loading Activities												
Trucks Travelling to the Freight Pier by haul road (segment 1)	63	63	63	63	63	63	63	63	63	63	63	63
Trucks Travelling to the Freight Pier by haul road (segment 2)	61	61	61	61	61	61	61	61	61	61	61	61
Trucks Travelling away from the Freight Pier by haul road	65	65	65	65	65	65	65	65	65	65	65	65
Trucks Travelling at Buffer Zone	66	66	66	66	66	66	66	66	66	66	66	66
Demolition of Freight Buidling												
Cofferdam Wall Construction and Shear Pining												
Soft Ground Excavation												
Excaivation Work												
Tunnel Box Construction												
E&M Installation												
Cofferdam Wall Removal												
Backfilling and Reinstatement												
Demolition of Existing Tip of Freight Pier												
Piling Construction	66	66	66									
Concrete Deck Construction and Marine Furniture				62	62	62	62	62	62			
Site Clearance, Fencing & Hoarding												
Excavate Soft Material (+4.0mPD to -17.5mPD)												
Construct North Flood Gate Building												
Overall Noise Level (SCL - Mong Kok East to Hung Hom Section), Leq (30min), dB(A)	73	73	73	73	73	73	73	73	73	73	73	73

Remarks:
[1] The Works Area with length to width ratio exceeding 5 : 1 is divided into Subareas.
[2] Noise source at more than 300m from the sensitive receiver are not considered in the noise assessment due to large distance attenuation effect.
[3] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.