

Checklist for Excavation & Lateral Support Plan Submissions
(This checklist is **not** required to be submitted to the BD.)

Part A – Administration

Typical Items		Requirements	Reference
1.	Statutory Forms	<input type="radio"/> Form BA 4 (for appointment of AP/RSE/RGE)	ADM-8 B(A)R 18A and 29(1)
		<input type="radio"/> Form BA 5 (for application for approval)	
		<input type="radio"/> Form BA6 (Stability Certificate as necessary)	
		<input type="radio"/> Form BA16 (Application for exemption/ modification as necessary)	
2.	Fee for plan processing	<input type="radio"/> Payment required when fees are charged according to total number of submitted plans	APP-55
3.	Plans and Documents	<input type="radio"/> 3 signed sets of plans and 2 signed sets of all documents	ADM-8 APP-141
4.	Additional sets of plans and/or documents for referrals to relevant organizations required when the proposed excavation & lateral support works involve or affect the areas	<input type="radio"/> Scheduled Area Nos. 1, 2 & 4 (1 set of plans)	ADM-8 APP-24 APP-30 APP-32 APP-61 APP-62 APP-134
		<input type="radio"/> Railway Protection Areas (2 sets of plans)	
		<input type="radio"/> Scheduled Area No. 5 (2 sets of plans and 1 set of documents)	
		<input type="radio"/> Designated Area of Northshore Lantau (1 set of plans)	
		<input type="radio"/> Slopes/Retaining Structures/ deep excavation/disused tunnel (1 set of plans)	
		<input type="radio"/> Culvert, nullah, stream course (3 sets of plans)	
		<input type="radio"/> Chek Lap Kok Airport (1 set of plans)	
		<input type="radio"/> Structures to be erected in, over, under or upon street (2 sets of plans)	
		<input type="radio"/> Highway structures (1 set of plans and 1 set of documents)	
		<input type="radio"/> Sea walls, adjacent to sea front (1 set of plans and 1 set of documents)	
		<input type="radio"/> Reclamation, piers (2 sets of plans and 2 sets of documents)	
<input type="radio"/> Public drainage or water mains (1 set of plans)			

Part B - Documents

Typical Items	Requirements	Reference
1.	<p>Design Document : Part I - Synopsis and Essential information</p> <p>A description of the E&LS system includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Types of the E&LS works <input type="checkbox"/> Design codes/standards with edition <input type="checkbox"/> Grade of materials to recognized standards <input type="checkbox"/> Geotechnical parameters <input type="checkbox"/> Groundwater conditions <input type="checkbox"/> A summary abstracted from the appraisal and assessment report on the effects on adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls affected by the proposed works, including vibration, tilting, settlement and groundwater drawdown together with the proposed precautionary measures and monitoring system <input type="checkbox"/> Loadings considered, including: <ul style="list-style-type: none"> • Design soil pressures • Design surcharge loads • Design groundwater levels • Additional surcharge loads due to adjoining buildings, structures, slopes and retaining walls, etc. <input type="checkbox"/> Information on computerized calculations <ul style="list-style-type: none"> • Structural/geotechnical computer program statement signed by RSE and/or RGE • Assumptions made and justifications on parameters used in the computer model, e.g. material properties, boundary conditions, etc. • Input data with computer-generated graphics or hand sketch showing the framing & layout of the system, nodes & elements, connection fixity, etc. 	<p>ADM-8 ADM-19 APP-57</p> <p>ADM-6 ADM-8</p>
2.	<p>Design Document : Part II - Detailed analysis and design</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analysis and design on the structural elements, e.g. struts, waling, pile wall, etc., of the E&LS system to design codes adopted <input type="checkbox"/> Design check on the structural adequacy of structural elements at each stage of construction sequence 	<p>ADM-8 ADM-19 APP-57 B(C)R 15</p>

Typical Items		Requirements	Reference
		<input type="checkbox"/> Design check on the margins of safety: <ul style="list-style-type: none"> • FOS against overturning • FOS against sliding • FOS against hydraulic failure including base heave <input type="checkbox"/> Sensitivity analysis in Ultimate Limit State Checks and risk assessment on progressive failure (for Limit State Partial Factor method only)	
3.	Geotechnical Assessment Report together with Ground/Site Investigation Report	<input type="checkbox"/> Justification on geotechnical parameters & assumptions adopted with G.I. information and tests from Ground/Site Investigation Reports <input type="checkbox"/> RGE to sign geotechnical assessment reports and supporting documents (for ELS submission with excavation depth greater than 4.5 m only)	ADM-8 ADM-19 APP-22 APP-49 APP-57 APP-141
4.	Appraisal report together with assessment on the effects on adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls affecting and/or be affected by the proposed works	<input type="checkbox"/> Construction method and works sequence adopted, including construction of basement structure, backfilling, subsoil drainage, etc. <input type="checkbox"/> Estimates on vibration on adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls, etc. due to pile wall installation process <input type="checkbox"/> Estimates on the envisaged amount of settlement, tilting & ground water drawdown induced on adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls, etc. <input type="checkbox"/> Estimates on the additional stress on MTR structures/sewage tunnels <input type="checkbox"/> Precautionary measures together with construction sequence required to safeguard the adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls, etc. , e.g. for potential damming up of groundwater in sloping ground <input type="checkbox"/> Instrumentation and monitoring required to safeguard the adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls, etc.	ADM-8 ADM-19 APP-22 APP-24 APP-30 APP-62 APP-137

Part C - Plans

Typical Items		Requirements	Reference
1.	Plans properly indexed and space reserved at the lower right corner for official stamps of approval	<input type="checkbox"/> Plans to be properly indexed and each drawing to bear a title and number <input type="checkbox"/> Vertical space (90mm wide x 200 mm high) or horizontal space (245mm wide x 80mm high) for accommodating official stamps of approval, curtailed check and true copy certification by the BA on every plan at the lower right corner	ADM-8 ADM-10
2.	A block plan showing the location of the site and relevant details	<input type="checkbox"/> Block plan to be in scale not less than 1:500 <input type="checkbox"/> Location of the site with adjoining buildings, structures, lands, streets, utility services, slopes, retaining walls, access road over which right of way, if any, granted, etc. <input type="checkbox"/> Remarks provided below the block plan, if site within boundaries of Scheduled Area(s), Designated Area(s), etc.	APP-22 B(A)R Section 13
3.	Plans and sections shown in appropriate scales for readability.	<input type="checkbox"/> Plans and sections/elevation to be in a scale not less than 1:100; except that a scale of not less than 1:200 may be accepted for cases of very extensive works <input type="checkbox"/> Details to be in scale not less than 1:75	B(A)R Section 13
4.	Details showing the characteristic features of the site and environments	<input type="checkbox"/> Locations of all boreholes contained in G.I. <input type="checkbox"/> Design ground water levels <input type="checkbox"/> Existing adjoining buildings with types, layouts and depths/levels of foundations <input type="checkbox"/> Ground profile with levels of all adjoining slopes <input type="checkbox"/> Existing retaining walls with layouts, sizes and depths/levels of foundations <input type="checkbox"/> Layouts and depths/levels of all adjoining existing nullahs, underground structures, tunnels, basement, underground services and utility services	APP-22 APP-30
5.	General Notes on Design Codes and Standards	<input type="checkbox"/> Building (Construction) Regulations <input type="checkbox"/> Updated editions of relevant Design Code of Practices and Standards <input type="checkbox"/> Design method (Global Safety Factor method/Limit State Partial Factor method) <input type="checkbox"/> Requirement on the submission of a performance review (for Limit State Partial Factor method only)	ADM-8 ADM-19 APP-22 APP-57 APP-115

Typical Items		Requirements	Reference
6.	General Notes on Material specifications with limiting stresses	<input type="checkbox"/> Grade of materials complying with updated editions of relevant Code of Practices and standards adopted	ADM-8 ADM-19 APP-15 APP-22
7.	General Notes on quality control standards and testing on workmanship	<input type="checkbox"/> Details of sampling method, frequency of tests, testing methods and acceptance criteria of tested materials complying with relevant standards, e.g. <ul style="list-style-type: none"> ● Grouted soil strata when ground strengthening is proposed under particular ground conditions ● soil tests, such as dry densities, moisture contents and relative compaction, etc., for soil backfill works complying with Geospec 3 	APP-15
8.	Notes on details of construction method/sequence	<input type="checkbox"/> Construction method and plant used <input type="checkbox"/> Sequence of construction, including installation of pile wall, grout curtain works, installation of tiebacks with precautionary measures and testing requirements (e.g. pull-out tests for tiebacks), installation and removal of struts, waling & pile wall, backfilling and formation of haul roads/working platforms by slope cutting and/or filling in a sloping ground (with the maximum gradient more than 15° across the site from boundary to boundary) as part of the preparation works before bulk excavation, if any <input type="checkbox"/> Measures for the control of vibrations induced due to construction of the proposed E&LS (such as, pile wall installation), including pre-boring, phasing of works, etc. <input type="checkbox"/> Measures for the control of settlement induced by the proposed works due to ground loss during pile wall installation, groundwater drawdown, soil excavation <input type="checkbox"/> Method of overcoming underground obstruction with typical details <input type="checkbox"/> Method statement, including preloading of struts, ground treatment (e.g. grouting and recharging) and acceptance criteria for pumping tests for dewatering <input type="checkbox"/> Location, extent and installation depth of grouting works, grouting materials used, grouting pressure, holding time and number of strokes during injection, criteria for grouting to stop, and any relevant testing requirements	ADM-19 APP-22 APP-137

Typical Items		Requirements	Reference
9.	Notes on Precautionary Measures	<input type="checkbox"/> Precautionary measures with details, such as shoring, underpinning, grouting, etc., to safeguard adjoining buildings, structures, lands, streets, utility services, slopes and retaining walls, etc. affected, if any <input type="checkbox"/> Precautionary measures, such as temporary drainage, sheet cover, etc., to protect earthworks against heavy rainfall	ADM-19
10.	Locations and details of instrumentation and monitoring requirements	<input type="checkbox"/> Ground settlement, building settlement, building tilting, building vibration, utilities settlement, groundwater level and allowable groundwater drawdown to be monitored <input type="checkbox"/> Frequency of monitoring <input type="checkbox"/> Monitoring criteria in three triggering levels, namely the alert, alarm and action levels respectively and the corresponding contingency measures <input type="checkbox"/> Locations of monitoring points on adjoining buildings, structures, lands, streets, utility services, slopes, retaining walls, sea walls, etc.	ADM-19 APP-22 APP-24 APP-61 APP-62 APP-137
11.	Plans showing the layout arrangement of the E&LS systems	<u>1st Stage E&LS plan submission (showing details of vertical elements, e.g. sheet piles or diaphragm wall etc.) :</u> <input type="checkbox"/> Layout with identification, setting-out dimensions and design penetration depth of each pile wall type relative to the existing ground and to the proposed excavation levels <input type="checkbox"/> Schedules with identification, size, grade and design penetration depth, etc. for each pile wall type <input type="checkbox"/> Schedules with design level, stiffness, loads and/or preloading forces, if any, of each layer of struts to be adopted in the 2 nd Stage E&LS plan submission <input type="checkbox"/> Schedules with design level, stiffness, loads, etc. of each layer of tiebacks to be adopted in the 2 nd Stage E&LS plan submission <input type="checkbox"/> Extent and depth of ground treatment, such as grout curtain with levels, etc. <input type="checkbox"/> Locations of all boreholes in the G.I. Report <input type="checkbox"/> Locations of pumping wells, observation wells and recharge wells for pump tests, if any <input type="checkbox"/> Extent of works and/or pile wall elements installation outside site lot boundaries <input type="checkbox"/> Contour lines of the founding bedrock strata based on boreholes in ground investigation (for pile wall socketted into category 1(c) or better rock only)	ADM-19 APP-22 APP-30 APP-57 B(C)R21

Typical Items		Requirements	Reference
		<p><u>2nd Stage E&LS plan submission (showing details of lateral support elements, e.g. struts/waling for each excavation stage):</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Layout and level of excavation/filling works for each stage of construction sequence to be shown separately <input type="checkbox"/> Determined bulk excavation limit contours (for Scheduled Area No. 1 only) <input type="checkbox"/> Layout, identification and levels of each layer of tiebacks/struts and waling with pile wall elements and king posts for each stage of construction sequence to be shown separately <input type="checkbox"/> Schedules with identification, grade, levels, stiffness, strut loads and/or preloading forces, if any, of each layer of struts to be in agreement with the 1st Stage E&LS plan submission <input type="checkbox"/> Locations of strut with preloading, if any <input type="checkbox"/> Schedules with identification, levels, stiffness, loads, etc. of each layer of tiebacks to be in agreement with the 1st Stage E&LS plan submission 	
12.	Information on sections and elevations	<p><u>1st Stage E&LS plan submission (showing details of vertical elements, e.g. sheet piles or diaphragm wall etc.):</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Ground investigation boreholes nearest to the sections with profile of the existing ground and soil/rock strata with SPT values for cohesionless soil and undrained shear strength (s_u) values for cohesive soil <input type="checkbox"/> Design groundwater levels <input type="checkbox"/> Adjoining existing buildings, structures, nullahs, underground structures, tunnels and basement, etc. with types, layouts and depths/levels of foundations <input type="checkbox"/> Ground profile with levels of all adjoining slopes <input type="checkbox"/> Existing retaining walls with layouts, sizes and depths/levels of foundations <input type="checkbox"/> Design depth of ground treatment, such as grout curtain <input type="checkbox"/> Design penetration depth of pile wall elements <input type="checkbox"/> Pile wall, levels of the associated layers of struts/tiebacks and the excavation level at each stage of construction sequence to be shown <input type="checkbox"/> Sequence of construction includes removal of struts, waling, pile wall and backfilling, if any 	ADM-19 APP-22 APP-30 APP-57 B(C)R21

Typical Items		Requirements	Reference
		<p><u>2nd Stage E&LS plan submission (showing details of lateral support elements, e.g. struts/waling for each excavation stage):</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Excavation/filling works for each stage of construction sequence to be shown separately <input type="checkbox"/> Determined bulk excavation limit profile (for Scheduled Area No. 1 only) <input type="checkbox"/> Each layer of struts/tiebacks and waling at each level with pile wall, king posts and grout curtain, if any, at each stage of construction sequence to be shown separately and to be in agreement with the 1st Stage E&LS plan submission <input type="checkbox"/> Sequence of construction includes removal of struts, waling, pile wall and backfilling, if any, to be in agreement with the 1st Stage E&LS plan submission <input type="checkbox"/> Struts with preloading, if any <input type="checkbox"/> King posts supporting struts and their embedment 	
13.	Structural details	<p><u>1st Stage E&LS plan submission (showing details of vertical elements, e.g. sheet piles or diaphragm wall etc.):</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Typical details of pile wall elements and/or grout curtain with design penetration depth <input type="checkbox"/> Typical details showing the interlocking pile wall elements and welded joints at splices <p><u>2nd Stage E&LS plan submission (showing details of lateral support elements, e.g. struts/waling for each excavation stage):</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Typical details showing the welded joints at strut splices and connections with pile wall elements/waling and secondary struts/ties <input type="checkbox"/> Typical support details at pile wall elements and king posts for waling and struts <input type="checkbox"/> Typical pressure jet set-up details for strut preloading <input type="checkbox"/> Typical details of lagging wall 	ADM-8 ADM-19 APP-57

(2/2016)