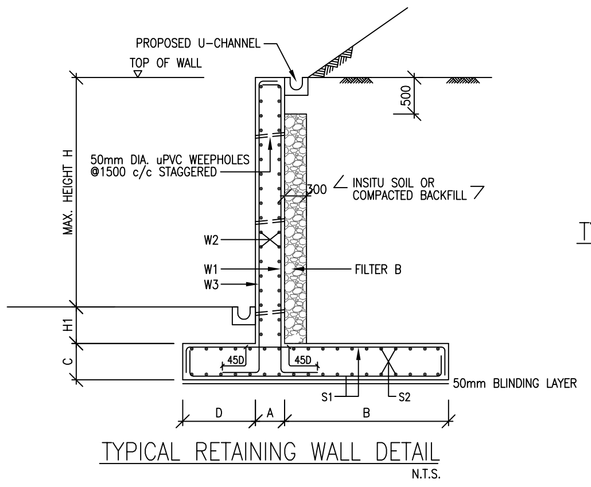
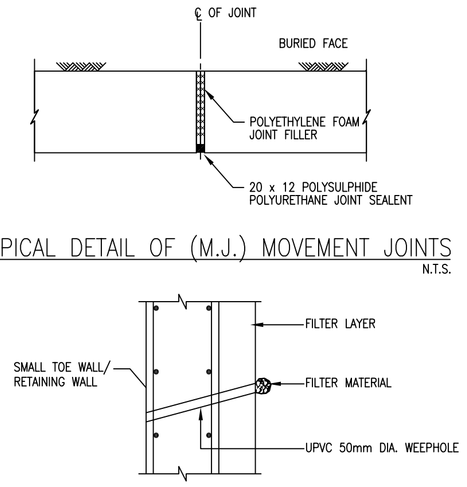


TYPICAL RETAINING WALL DETAIL

N.T.S.

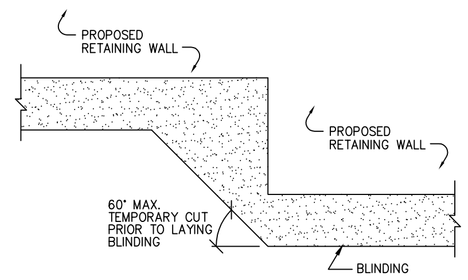


TYPICAL DETAIL OF (M.J.) MOVEMENT JOINTS

N.T.S.

TYPICAL WEEPHOLE DETAIL

N.T.S.

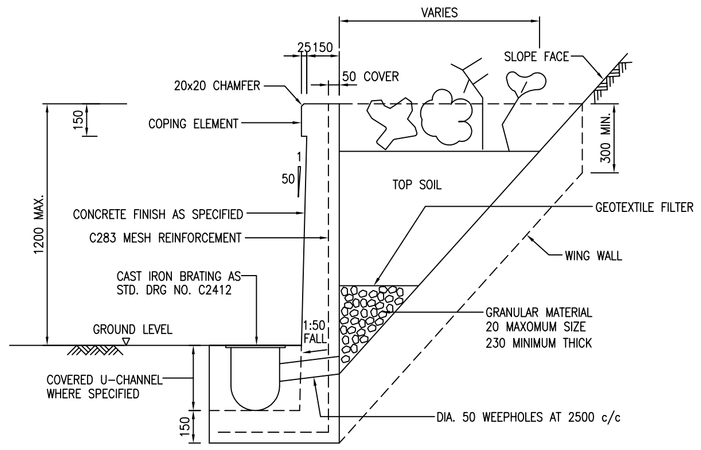


BLINDING FILL DETAIL AT RETAINING WALL BASE

R.C. RETAINING WALL SCHEDULE

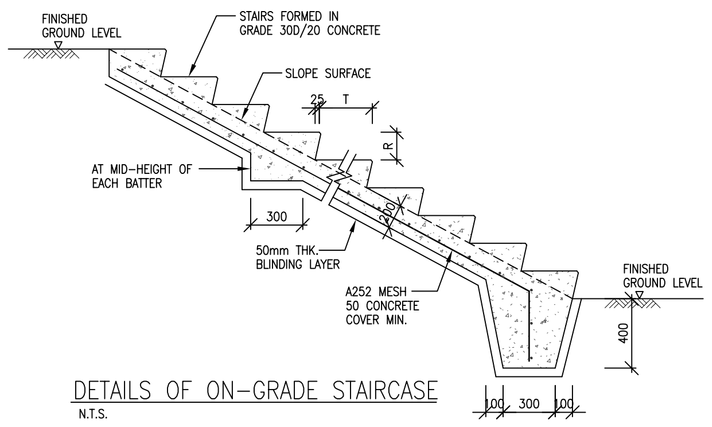
WALL TYPE	MAX. HEIGHT H (mm)	SOIL HEIGHT H1 (mm)	BASE THICKNESS C (mm)	TOE WIDTH D (mm)	WALL THICKNESS A (mm)	HEEL WIDTH B (mm)	REINFORCEMENT					ALLOWABLE BEARING CAPACITY (KPa)	FOUNDING MATERIAL.
							WALL			BASE			
							W1	W2	W3	S1	S2		
B	2260	0	200	0	200	1800	Y20-150	Y16-200	Y20-150	Y20-200	Y16-200	135	CDG
C	4750	0	400	0	400	5000	Y25-150	Y16-200	Y25-150	Y32-150	Y16-200	150	CDG
D	4800	0	400	0	400	1600	Y25-150	Y16-200	Y25-150	Y32-150	Y16-200	150	CDG

NOTES: 1. DESIGN REVIEWS SHOULD BE CARRIED OUT IF FOUNDING MATERIALS ARE DEVIATED FROM THE DESIGN ASSUMPTIONS.
2. 200mm EMBEDMENT SHOULD BE PROVIDED FOR ALL WALLS.



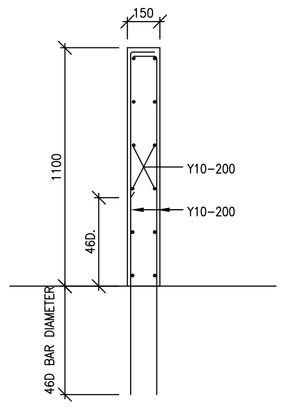
CONCRETE TOE WALL

N.T.S.



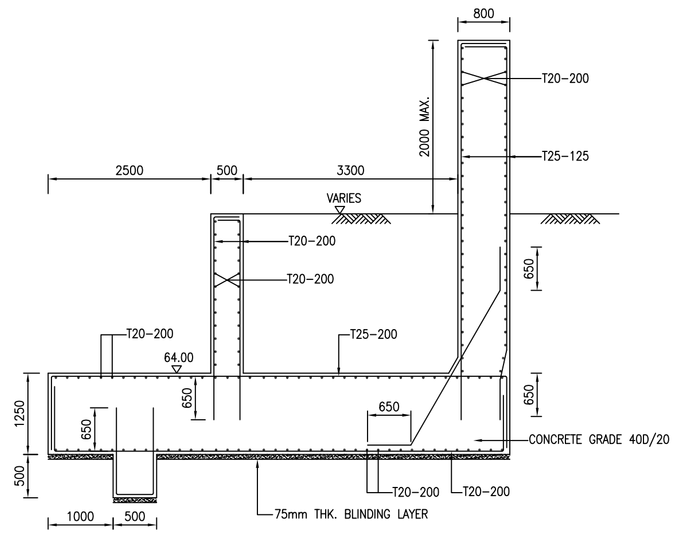
DETAILS OF ON-GRADE STAIRCASE

N.T.S.



TYPICAL DETAIL FOR 1100 HIGH PARAPET WALL

N.T.S.



TYPICAL DETAIL FOR RETAINING WALL TYPE E

SCALE 1 : 50

37. A SURVEY OF ALL SLOPES AND RETAINING WALLS FORMEDM MODIFIED OR PARTIALLY MODIFIED UNDER THE CONTRACT SHALL BE CONDUCTED AND COMPLETED UPON THEIR COMPLETION OR AT ANY OTHER TIME AS APPROPRIATE DURING THE CONSTRUCTION PERIOD. SUCH SURVEY SHALL BE COMPLETED UPON THE SUBSTANTIAL COMPLETION OF THE WORKS AS

38. (1) THE FOLLOWING PARTICULARS THE SLOPE AND RETAINING WALL RECORD SURVEY SHALL BE SUBMITTED TO THE SO: CERTIFIED BY THE SO.
(A) ALL NECESSARY DETAILS OF THE SUBJECT SLOPES AND INCLUDING DETAILS OF THE EXTENT OF NEW FILL BODY OF A FILL SLOPE AS APPROPRIATE, RECORDED ON A PLAN 1:1000 SCALE SHOWING THE LOCATIONS WITH GRAPHICAL BOUNDARIES APPROPRIATELY HIGHLIGHTED AND REFERENCED TO THE HK1980 GRID, AND

(B) A SOFT COPY OF THE PLAN AS STATED PREPARED IN A FORMAT AS SPECIFIED IN THE CONTRACT.

(2) THE PARTICULARS SHALL BE SUBMITTED TO THE SO NOT MORE THAN 28 DAYS, OR SUCH OTHER TIME STATED IN THE CONTRACT, AFTER COMPLETION OF THE SLOPE AND RETAINING WALL RECORD SURVEY AS AGREED BY THE SO.

GENERAL NOTES FOR SITE FORMATION WORKS:

1. ALL SITE FORMATION WORKS SHALL COMPLY WITH GENERAL SPECIFICATION FOR BUILDING 2007 AND PARTICULAR SPECIFICATION. ALL RC WORKS SHALL BE TO SECTION 6 OF THE SPECIFICATION.

2. THE CONTRACTOR SHALL SUBMIT WITH THE TENDER A METHOD STATEMENT OF SITE FORMATION WORKS. THE METHOD STATEMENT SHALL INCLUDE:

   A) OVERALL WORKS PROGRAMME AND DETAIL BREAKDOWN ON SEQUENCE OF WORKS FOR EACH PARTICULAR AREA.

   B) ALL TEMPORARY WORKS AND PRECAUTIONARY MEASURES INCLUDING LAYOUT PLANS, SECTIONS, LOCATIONS, SIZES, LENGTHS, METHODS, ETC. WITH SUPPORTING CALCULATIONS REQUIRED FOR COMPLETION OF THE PERMANENT SITE FORMATION WORKS.

   C) THE METHOD STATEMENT AND CALCULATION SHALL BE CERTIFIED BY A REGISTERED STRUCTURAL AND REGISTERED GEOTECHNICAL ENGINEERS EMPLOYED BY THE CONTRACTOR.

3. BEFORE THE COMMENCEMENT OF SITE WORKS, THE CONTRACTOR SHALL SUBMIT FULL DETAILS OF ALL ITEMS 2 AND MAKE NECESSARY CORRECTION, AMENDMENT AND RE-SUBMISSION TO THE SATISFACTION OF SO.

4. ALLOW A PROVISIONAL QUANTITY OF 2NOS. PIEZOMETERS, 2 NOS. INCLINOMETERS, 6 NOS. VIBRATIONS AND 10 NOS. TELL-TALE CHECK POINTS INCLUDING PROVISION, CONSTRUCTION, MONITORING AND SUBMISSION OF THE RESULTS. ALL MONITORING SHALL BE TAKEN DAILY BY INDEPENDENT SURVEYOR EMPLOYED BY THE CONTRACTOR AND KEPT ON SITE DURING CONSTRUCTION OF THE SITE FORMATION WORKS UNTIL PROJECT COMPLETION AT THE CONTRACTOR? S EXPENSE. TWO COPIES OF THE MONITORING RESULTS SHALL BE SUBMITTED TO SCU/SO BIWEEKLY.

5. ALLOW A PROVISIONAL QUANTITY OF 2 NOS. DRILL HOLES INCLUDING DESIGN, INSTALLATION AND REMOVAL OF ALL TEMPORARY PLATFORMS IF REQUIRED ON SLOPE TO BE SUNKEN TO A DEPTH OF CONTINUOUS 5M GRADE III BEDROCK WITH TCR NOT LESS THAN 90% RETRIEVED BY A REGISTERED SPECIALIST CONTRACTOR FOR GROUND INVESTIGATION WORKS. SPT WITH SPLIT-SPOON SAMPLING AND MAZIER SAMPLES ARE TO BE CARRIED OUT AND TAKEN AT 2M INTERVALS FROM 2M BELOW GROUND AND AT EVERY CHANGE OF STRATA AT THE CONTRACTOR? S EXPENSE AT LOCATIONS TO BE DIRECTED BY SO ON SITE. 2 COPIES OF THE BOREHOLE LOGS SHALL BE SUBMITTED TO SO.

6. ALLOW A PROVISIONAL QUANTITY OF 2 NOS. TRIAL PITS INCLUDING DESIGN, INSTALLATION AND REMOVAL OF ALL TEMPORARY PLATFORMS AND SHORING IF REQUIRED ON SLOPE TO A MAXIMUM DEPTH 3M BY A REGISTERED SPECIALIST CONTRACTOR FOR GROUND INVESTIGATION WORKS. 6 NOS. OF IN-SITU DENSITY TESTS SHALL BE CARRIED OUT AND 6 NOS. OF BULK SAMPLES SHALL BE TAKEN FOR CARRYING OUT PROCTOR TESTS FOR THE FILL MATERIALS.. THE ACTUAL LOCATIONS OF THE TESTINGS AND TAKING SAMPLES SHALL BE CONFIRMED ON SITE BY THE ENGINEER. 2 COPIES OF THE LOGGING SHALL BE SUBMITTED TO SO.

7. ALLOW A PROVISIONAL QUANTITY OF 12 NOS. OF PARTICLE SIZE DISTRIBUTION, 20 NOS. OF SINGLE-STAGE TRIAXIAL TEST (CUT WITH PWP), 5NOS. OF MULTI-STAGE TRIAXIAL TEST (CUT WITH PWP), 12 NOS. OF BULK DENSITY TEST AND 6 NOS. OF PROCTOR TEST BY PUBLIC WORK LABORATORIES IN ACCORDANCE WITH THE TESTING SCHEDULES PROVIDED BY SO. 2 COPIES OF THE TESTING REPORTS SHALL BE SUBMITTED TO SO.

8. ALL MONITORING CHECK POINTS SHALL BE MAINTAINED AND PROTECTED FROM DAMAGE AND THE CONTRACTORS SHALL BE RESPONSIBLE FOR REINSTATEMENT IF NECESSARY AS INSTRUCTED BY SO WHEN DAMAGE HAVE OCCURRED.

9. GEOTEXTILE FILTER SHALL BE PROVIDED AT ONE END OF THE PROPOSED WEEPHOLES DIRECTLY CONTACTED WITH GROUND.

10. LOOSE/SOFT SURFACE IF FOUND ON SLOPES SHALL BE REMOVED, RE -COMPACTED AND / OR REPLACED BY MASS CONCRETE IN ACCORDANCE WITH THE DIRECTION OF SO ON SITE.

11. UNWANTED OR OVER-GROWN / ROTTEN VEGETABLE IF FOUND ON SLOPES AND UNEXCAVATED AREA SHALL BE REMOVED TO THE SATISFACTION OF SO.

12. TREE RINGS SHALL BE PROVIDED WHEREVER FOUND NECESSARY

13. THE CONTRACTOR SHALL CONDUCT AND SUBMIT A CONDITION SURVEY INCLUDING PHOTOS AND LOCATION PLANS TO IDENTIFY THE CONDITION OF THE EXISTING SLOPES, STAIRCASE, HAND-RAILING, DRAINAGE, PAVEMENT, GROUND, SOIL NAILS, PLANTING, ETC. WITHIN AND AROUND THE SITE TO THE SATISFACTION OF SO. THE CONTRACTOR SHALL REPAIR AND REINSTATE ALL THE EXISTING REMAINING PROPERTIES WITHIN THE SITE WHEREVER FOUND NECESSARY TO THE SATISFACTION OF SO ON SITE.

14. MAXIMUM ALLOWABLE HORIZONTAL MOVEMENT, TILTS, VIBRATION, SETTLEMENT, ANGULAR DISTORTION AND DRAWDOWN INDUCED ON EXISTING GROUND, SLOPES, DRAINS, STAIRCASE, SOIL NAILS, ETC. DURING SITE FORMATION WORKS ARE 25MM, 1/300, 15MM/S, 25MM, 1" AND 1M RESPECTIVELY.

15. PREPARE A CLEAR INDEXED STATEMENT TO SHOW ALL METHOD STAGES OF CONSTRUCTION. SUBMIT A COPY OF STRUCTURAL AND GEOTECHNICAL CALCULATION TO JUSTIFY THE STRUCTURAL ADEQUACY OF ALL FALSEWORK AND FORMWORK AND STABILITY OF ALL TEMPORARY SLOPES TO SO FOR COMMENT.

16. PERCUSSION METHOD IS NOT ALLOWED ON SITE FOR CARRYING OUT ALL WORKS INCLUDING BOTH TEMPORARY AND PERMANENT CASES UNLESS OBTAINING APPROVAL FROM SCU/SO.

17. THE CONTRACTOR SHALL SEEK APPROVAL FROM RELEVANT GOVERNMENT DEPARTMENTS AND PARTIES FOR HIS ANY PERMANENT AND TEMPORARY WORK EXTENDED BEYOND THE SITE BOUNDARY DURING THE SITE FORMATION WORK.

18. THE CONTRACTOR SHOULD BE CAREFULLY CONSIDERED, SELECTED, DESIGNED AND CONSTRUCTED HIS PROPOSED WORKS SO THAT NO ADVERSE IMPACT WILL BE INDUCED ON THE ADJACENT GROUND, PROPERTIES, SLOPES, RETAINED TREES, SOIL NAILS, PLANTS, DRAINAGE, ETC. AND AS DIRECTED BY SO, THE CONTRACTOR SHALL PROTECT AND MAINTAIN THEM.

19. ALL THE PROPOSED WORKS SHALL BE DESIGNED AND CONSTRUCTED WITHIN THE SITE BOUNDARY UNLESS OBTAINING THE APPROVAL FROM THE ARCHITECT, RELEVANT GOVERNMENT DEPARTMENTS / PARTIES.

20. THE CONTRACTOR SHALL EXERCISE UTMOST CARE WHILE WORKING IN THE VICINITY OF THE ADJACENT LANDS IN PARTICULAR DISCHARGE OF EXCAVATED MATERIALS, SILTING WATER INTO GOVERNMENT DRAINAGE SYSTEM AND / OR EXISTING STREAM COURSE ARE PROHIBITED AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE SUFFICIENTLY AND MAINTAIN TEMPORARY DRAINS, COLLECTION AND DESILTING FACILITIES TO ENSURE THAT DISCHARGE OF STORM WATER FROM THE SITE INTO THE EXISTING STREAM COURSE AND / OR GOVERNMENT DRAINAGE SYSTEM ARE ACCEPTABLE TO ALL RELEVANT GOVERNMENT AUTHORITIES BY PROVISION OF ALL REQUIRED REPORT, SUBMISSION ETC. AS REQUESTED.

21. VERIFY AND SETTING OUT THE LOT BOUNDARIES BASED ON THE RELEVANT GOVERNMENT DEPARTMENTS PRIOR TO THE COMMENCEMENT OF THE WORKS. IF ANY DISCREPANCY IS FOUND, CONTRACTOR SHOULD IMMEDIATELY INFORM SCU/SO AND MAKE APPROPRIATE CORRECTION FOLLOWED BY THE INSTRUCTION OF SCU/SO.

22. PREPARE AND SUBMIT SITE SAFETY AND QUALITY SUPERVISION PLANS FOR THE REQUIRED WORKS AND CARRY OUT SITE SUPERVISION IN ORDER TO COMPLY WITH ANY ORDINANCES OR STATUTORY UNDERTAKING FOR THE SAID WORKS AS NECESSARY.

23. CARRYING OUT ALL TESTS, INVESTIGATIONS, GROUND INVESTIGATIONS, AS REQUIRED AND INSTALLATION OF ALL MONITORING CHECKPOINTS AND INSTRUMENTATION, ETC IN ORDER TO FULFILL ALL THE CONDITIONS IMPOSED IN APPROVAL AND CONSENT FOR THE SAID WORKS.

24. THE CONTRACTOR IS ALSO REQUIRED TO REINSTATE ANY DAMAGES CAUSED DURING THE CONSTRUCTION AT HIS OWN EXPENSES TO THE SATISFACTORY OF ALL RELEVANT GOVERNMENT AUTHORITIES AND PARTIES. INCLUDING DESIGN AND CONSTRUCTION.

25. THE CONTRACTOR SHALL BE DEEMED TO BE AWARE OF AND TO ACCEPT ALL RISKS ARISING OUT OF ANY UNFAVORABLE OR DIFFICULT SUB-SOIL CONDITIONS, PRESENCE OF ANY OBSTRUCTIONS, FOUNDATIONS, AND WHATSOEVER WHETHER FORESEEABLE OR UNFORESEEABLE AND THE CONTRACTOR SHALL NOT BE ENTITLED TO ANY EXTENSION OF TIME OR EXTRA PAYMENT IN COMPENSATION IN RESPECT THEREOF.

26. CARRYING OUT BACKFILLING WORKS WITH APPROPRIATE METHOD AND SUFFICIENT TESTING UP TO THE SITE FORMATION PROFILE IN ACCORDANCE WITH THE CURRENT STANDARDS TO THE SATISFACTION OF THE ARCHITECT AND RELEVANT GOVERNMENT DEPARTMENTS.

27. ALL THE WORKS INCLUDING MOVEMENT OF PLANTS ARE TO BE CARRIED OUT IN SUCH A MANNER SO AS TO CAUSE AS LITTLE INCONVENIENCE AND NUISANCE AS POSSIBLE TO NEARBY RESIDENTS, OPERATION OF EXISTING DRIVING CENTRE AND THE PUBLIC.

28. THE CONTRACTOR SHALL THEREUPON TAKE UP FULL RESPONSIBILITY AND BE LIABLE FOR ANY DEFECT OR INSUFFICIENCY IN THE DESIGN AND ANY INADEQUACY IN THE PERFORMANCE OF THE RESULTANT WORKS.

29. THE CONTRACTOR SHALL NOTE THAT SOME EXISTING DRAINAGE SYSTEM WILL BE REMAINED AND HE IS RESPONSIBLE TO REPAIR AND RE-ROUT IF NECESSARY IN ACCORDANCE WITH THE CURRENT STANDARD TO THE SATISFACTION OF THE ARCHITECT AND GOVERNMENT AUTHORITY.

30. ANY GROUND INVESTIGATION REPORTS, TOPOGRAPHIC SURVEY, REPORTS, ETC. WHICH MAY BE MADE AVAILABLE TO THE TENDERERS ARE FOR GUIDANCE / REFERENCE ONLY. NO RESPONSIBILITY WILL BE TAKEN BY THE CLIENT AND THE ARCHITECT FOR THEIR ACCURACY OR APPLICABILITY OVER THE WHOLE SITE. NO ADDITIONAL COST AND TIME WILL BE ENTERTAINED IN SUCH CONNECTION.

31. THE CONTRACTOR SHALL BE A REGISTERED SPECIALIST CONTRACTOR FOR SITE FORMATION WORKS.

32. THE CONTRACTOR SHALL DESIGN AND PROVIDE SUFFICIENT TEMPORARY PRECAUTIONARY MEASURES, SAFETY MEASURES, SURFACE DRAINAGE SYSTEM, EXCAVATION AND LATERAL SUPPORT SYSTEM, ETC. TO FACILITATE AND ENABLE CONSTRUCTION OF THE PROPOSED WORKS IN ACCORDANCE WITH THE CURRENT STANDARDS TO THE SATISFACTION OF THE ARCHITECT AND RELEVANT GOVERNMENT DEPARTMENTS FOR THE WORKS AND IF NECESSARY FOR APPROVAL AND OBTAINING CONSENT BEFORE THE WORKS DETAILED METHOD STATEMENTS, PROGRAMME, CONSTRUCTION SEQUENCE, EQUIPMENTS AND IF NECESSARY WITH DRAWINGS SHALL BE SUBMITTED AND OBTAIN APPROVAL FROM SO AND IF NECESSARY RELEVANT GOVERNMENT DEPARTMENTS SUCH AS GEO BEFORE START OF THE WORKS.

33. THE CONTRACTOR SHALL NOTE THAT PART OF EXISTING UPGRADING WORK SUCH AS SOIL NAILS, PLANTING, EROSION CONTROL MAT, DRAINAGE, ETC. IN THE SLOPE 11NW-D/C92 WILL BE REMAINED. NO WORK IS ALLOWED TO CAUSE ADVERSE IMPACT ON THEM. THE CONTRACTOR IS SOLELY RESPONSIBLE TO REINSTATE ANY DAMAGE WORKS INDUCED BY HIS WORKS AT HIS OWN COST AND TIME TO THE SATISFACTION OF THE ARCHITECT. INCLUDING DESIGN AND CONSTRUCTION.

34. THE CONTRACTOR SHOULD NOTE THAT AS INSTRUCTED, HE IS ALSO RESPONSIBLE TO CONSTRUCT THE FOLLOWING WORKS INCLUDING DESIGN AND CONSTRUCTION OF ALL TEMPORARY WORKS AS REQUIRED COMPLETING THE SAID WORKS TO THE SATISFACTION OF THE ARCHITECT.

   (A) PROVIDE, ERECT AND DISMANTLE A PROPER AND SAFE TEMPORARY ACCESS PLATFORM FOR CONSULTANTS TO CARRY OUT ROCK JOINT MAPPING ON THE ROCK SLOPE SURFACE WHERE IS LOCATED AT THE SOUTHWESTERN CORNER OUTSIDE THE SITE FACING TO THE WEST.

   (B) CONSTRUCT ROCK SLOPE TREATMENT WORKS SUCH AS SCALING, TRIMMING, SHOTCRETING, ROCK DOWELS, ETC. AS REQUIRED IN ACCORDANCE WITH THE DRAWINGS PROVIDED BY SO FOR ROCK SLOPE AT THE SOUTHWESTERN CORNER OUTSIDE THE SITE FACING TO THE WEST.

   (C) EMPLOY A REGISTERED SPECIALIST CONTRACTOR FOR GROUND INVESTIGATION WORK AND CARRY OUT GROUND INVESTIGATION WORKS IN THE SLOPE 11NW- D/C494. AS INSTRUCTED, CONDUCT SOIL TESTING USING PUBLIC WORKS LABORATORIES IN ACCORDANCE WITH THE SCHEDULES PROVIDED BY SO.

   (D) CONSTRUCT ALL THE REMEDIAL WORKS SUCH AS SOIL NAILING, DRAINAGE, HYDROSEEDING, RAKING DRAIN, EROSION CONTROL MAT, ETC. IN THE SLOPE 11NW-D/C494 IN ACCORDANCE WITH THE DRAWINGS PROVIDED BY SO.

35. SUBMIT ALL DOCUMENTS, DRAWINGS, RECORDS, REPORTS, REVIEW, MANUALS AND WHATSOEVER REQUIRED FOR THE WORKS FOR SCU/GEO/SO? S ACCEPTANCE/APPROVAL AND/ OR OBTAINING ANY NECESSARY APPROVAL AND CONSENT.

36. NO WORK IS ALLOWED TO INDUCE ADVERSE EFFECT ON THE STABILITY OF EXISTING GEOTECHNICAL WORKS SUCH AS SOIL NAILS, EROSION CONTROL MAT,DRAINAGE, SLOPE, RETAINING WALL, ETC. IF NECESSARY, THE CONTRACTOR SHOULD PROVIDE SUFFICIENT CALCULATION/ ASSESSMENT TO JUSTIFY NO ADVERSE IMPACT INDUCED ON THE ADJACENT PROPERTIES TO THE SATISFACTION OF SO/GEO BEFORE THE WORK.

Notes :

No.	Date	Description	Initial
	05/01/12	TENDER DRAWING	

Revision

Consultant Project No.
8165

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CONSULTING ENGINEERS, BUILDING SERVICES

	Name	Signed	Date
Designed			
Drawn			
Checked			
Approved			

Contract No.

File No.

Project No.
420 RO

Consultant Agreement No.
9AS022

Contract
LOCAL OPEN SPACE AT CHUNG YEE STREET, KOWLOON CITY DISTRICT

Drawing Title
TYPICAL DETAILS AND NOTES

Drawing No.	Scale
SE/2263/NTSF007	AS SHOWN

(Date)

ARCHITECTURAL SERVICES DEPARTMENT