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WARNING
NO DRAINAGE WORKS SHALL COMMENCE UNTIL THE CONTRACTOR CONFIRMS THE I.L. OF ALL EXISTING DRAINS, AND CONFIRMS IN WRITING WITH THE ENGINEERING SUPERVISOR.

ALL EXISTING PROPERTY SERVICES' LOCATIONS AND DEPTHS ARE APPROXIMATE AND MUST BE VERIFIED ON SITE. THE CONTRACTOR SHOULD SUPPLY PRECISE LOCATIONS AND DEPTHS TO THE ENGINEER FOR REVIEW PRIOR TO ANY WORKS THAT MAY AFFECT THESE SERVICES.

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE.

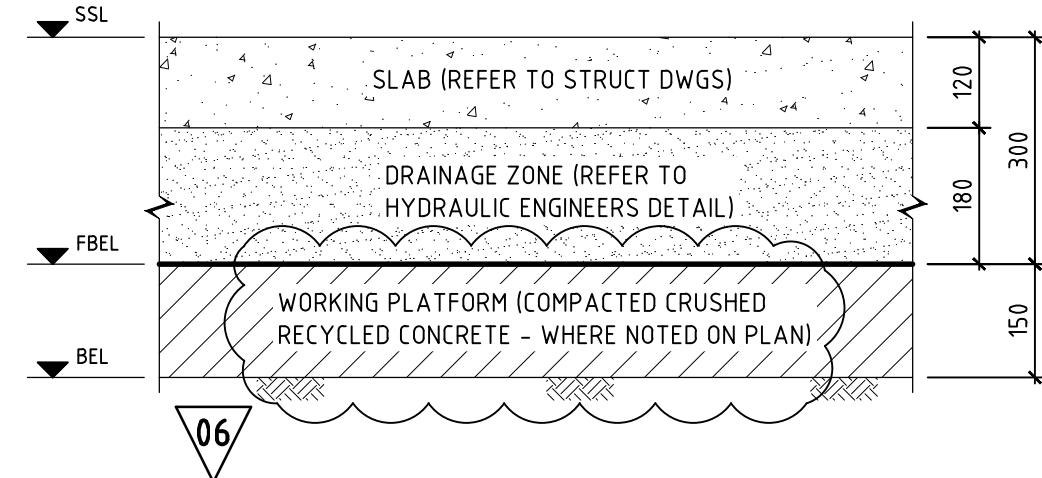
LEGEND

- BOUNDARY
- + EX RL 5.00 EXISTING SURFACE LEVEL
- CUT TO BULK EARTHWORKS LEVEL
- FILL TO BULK EARTHWORKS LEVEL
- TOP OF BATTER
- 15 EXISTING ROCK CONTOUR
- FBEL RL 150 FINISHED BULK EXCAVATION LEVELS

BULK EARTHWORKS PLAN

SCALE 1:500

0m 5m 10m 20m 30m



TYPICAL BULK EXCAVATION DETAIL

SCALE 1:10

EXCAVATION NOTES

- THE EXCAVATED MATERIAL IS TO BE TEMPORARILY STOCKPILED WITHIN THE NEIGHBOURHOOD PARK AS SHOWN ON SHEET C008 (EROSION & SEDIMENT CONTROL PLAN) AND RE-USED AS LANDSCAPING SOIL BUILD-UP TO PARK AREAS IN ACCORDANCE WITH LANDSCAPE ARCHITECTS SPECIFICATIONS (ALSO REFER TO STAGE 1 PAVEMENT DETAIL PLANS SHEETS C121 - C124)
- GEOTECH TO CONFIRM BATTER ACCEPTABILITY.

FILL NOTES

RE-USE OF SITE SOIL

THE EXISTING FILL AND SANDSTONE SPOIL, IF TO BE RE-USED ON SITE, WILL NEED TO BE MOISTURE CONDITIONED AND CONTAIN NO OVERSIZED MATERIAL. THE MOISTURE CONTENT SHOULD BE WITHIN +2% AND -4% OF STANDARD OPTIMUM MOISTURE CONTENT (SOMC). HYDRATED LIME OR CEMENT CAN BE APPLIED IN A CONTROLLED MANNER TO CONDITION WET SPOIL SHOULD GROUNDWATER FLOWS INTO THE EXCAVATION PRODUCE WET SPOIL.

ASSUMING THE FILL/SANDSTONE SPOIL IS TO BE COMPACTED WITH A 10 TONNE VIBRATORY ROLLER OR EQUIVALENT, AND THEN THE FILL CAN BE PLACED IN 200mm TO 250mm THICK LAYERS (LOOSE THICKNESS) AND BE COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 98% STANDARD COMPACTION. WHERE THE FILL IS TO BE USED AS A PERMANENT ROAD EMBANKMENT THEN THE UPPER 1m OF FILL SHOULD BE COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 100% STANDARD COMPACTION.

AREAS LESS THAN 1m OF FILL

SUBGRADE PREPARATION EARTHWORKS FOR AREAS WITH LESS THAN ABOUT 1m FILL SHOULD INCLUDE THE FOLLOWING:

- STRIP SURFACE VEGETATION, TREE ROOTS, ORGANIC TOPSOIL, FILL, AND OTHER MATERIALS UNSUITABLE FOR RE-USE AS CONTROLLED FILL AND REMOVE FROM SITE, OR WHERE APPROPRIATE, STOCKPILE FOR RE-USE IN LANDSCAPING MOUNDS ETC.
- STRIP AND STOCKPILE FILL MATERIALS SUITED FOR RE-USE AS CONTROLLED FILL (E.G. EXISTING PAVEMENT BASE COURSE LAYERS, GRANULAR FILL), WHERE APPROPRIATE.
- REMOVE ALL FILLING TO EXPOSE NATURAL SOILS. DUE TO THE EXPECTED VERY POOR TRAFFICABILITY OF THE SOFT ESTUARINE AND ALLUVIAL SOILS, COMPLETE REMOVAL AND REPLACEMENT OF THE EXISTING FILL MAY NOT BE PRACTICAL. THEREFORE IT MAY BE APPROPRIATE TO LEAVE SOME FILL IN PLACE TO ACT AS A WORKING PLATFORM.
- INSPECT THE EXPOSED SUBGRADE SOIL TO ENSURE THAT ALL FILL HAS BEEN REMOVED, AND THAT THE EXPOSED MATERIAL CONFORMS TO THE DESIGN ASSUMPTIONS. THIS SHOULD BE PERFORMED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.
- PROOF ROLL THE EXPOSED SURFACE OF NATURAL MATERIAL, ACCOMPANIED BY GEOTECHNICAL INSPECTION. EXCAVATE LOCALISED SOFT SPOTS TO A DEPTH OF 0.3m, AND REPLACE WITH CLEAN GRANULAR FILL, COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 100% STANDARD.
- MOISTURE CONDITION THE NATURAL SOILS. DRYING OUT OR WETTING UP THESE SOILS MAY BE REQUIRED TO ACHIEVE A MOISTURE CONTENT SUITABLE FOR ACHIEVING THE REQUIRED LEVEL OF COMPACTION.
- COMPACT THE EXPOSED SUBGRADE SOILS TO A MINIMUM DRY DENSITY RATIO OF 100% STANDARD. FILL MATERIALS TO BE PLACED TO RAISE THE SUBGRADE LEVEL TO THE DESIGN LEVEL SHOULD BE PLACED IN LAYERS AND COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 100% STANDARD COMPACTION.

AREAS GREATER THAN 1m OF FILL

FOR AREAS COVERED BY MORE THAN ABOUT 1m OF FILL, THE FILL SHOULD BE EXCAVATED TO AT LEAST 0.5m BELOW THE PROPOSED BOTTOM LEVEL OF THE PAVEMENT BASE LAYER (OR SUB-BASE LAYER, IF USED). THE EXPOSED SURFACE SHOULD BE PROOF ROLLED USING A VERY HEAVY VIBRATING ROLLER (SAY 18 TONNES), OR AN IMPACT ROLLER. THIS WILL REDUCE THE RISK OF EXCESSIVE SETTLEMENT OCCURRING IN THE REMAINING UNCONTROLLED FILL.

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04	NOTES DELETED, BULK EX AMENDED, FOR TENDER	25.07.11	JF	SN
03	NOTES ADDED, FOR TENDER	22.07.11	JF	SN
02	CONTIG PILES DELETED, SEC TAGS AMENDED, FOR TENDER	15.07.11	JF	PM
01	FOR TENDER	27.05.11	JF	PM
P1	ISSUED FOR PRELIMINARY	15.04.11	JF	SN

Rev Description Date By App

06	EXHAUST DUCT BEL AMENDED, FOR TENDER	23.08.11	JF	SN
05	BULK EX RL AMENDED, BULK EX DETAIL ADDED	05.08.11	JF	SN

Rev Description Date By App



AUSTRALAND
LEVEL 3 HOMEBUSH BAY DRIVE
RHODES, 2108
LOCKED BAG 2106 NORTH RYDE NSW 2106

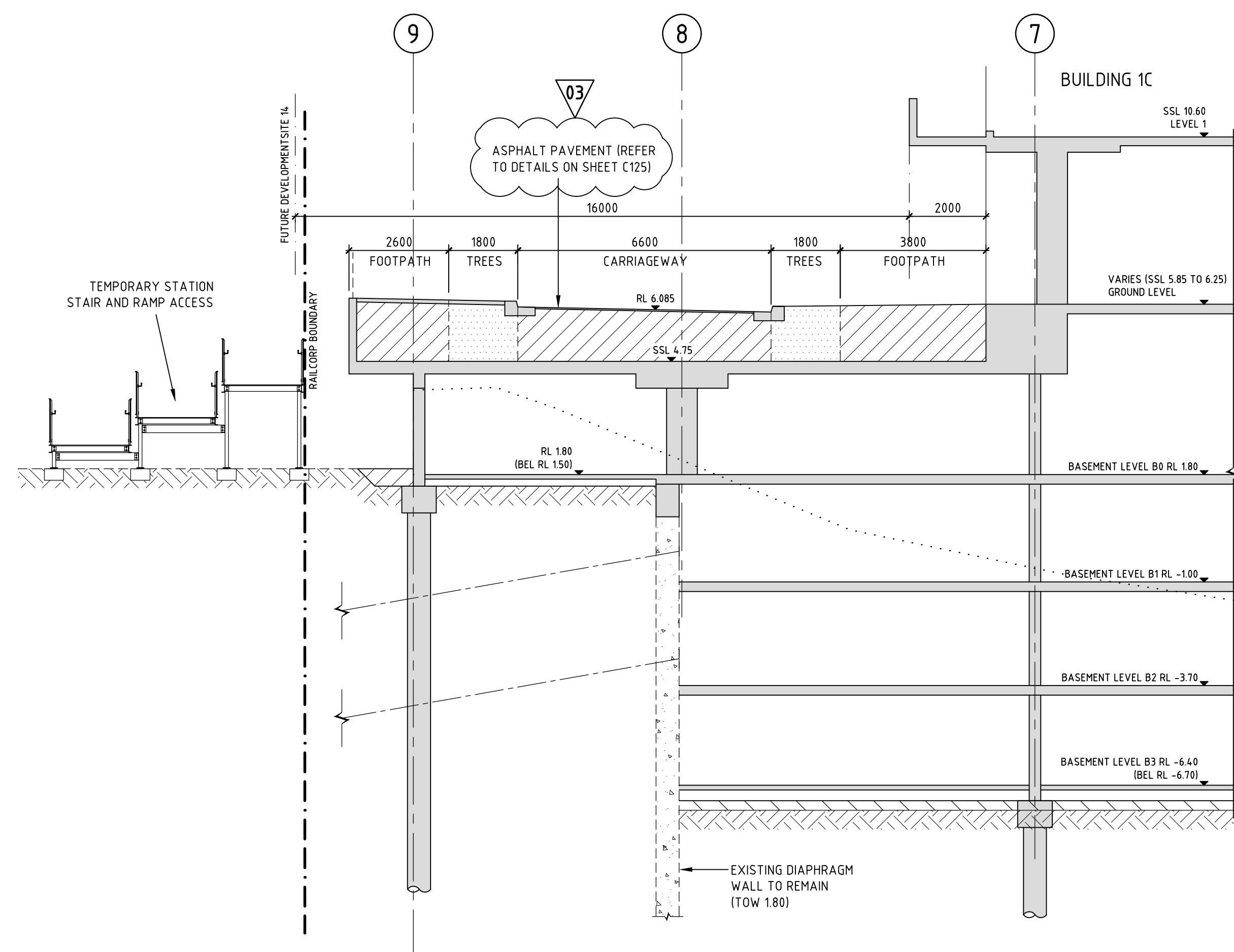
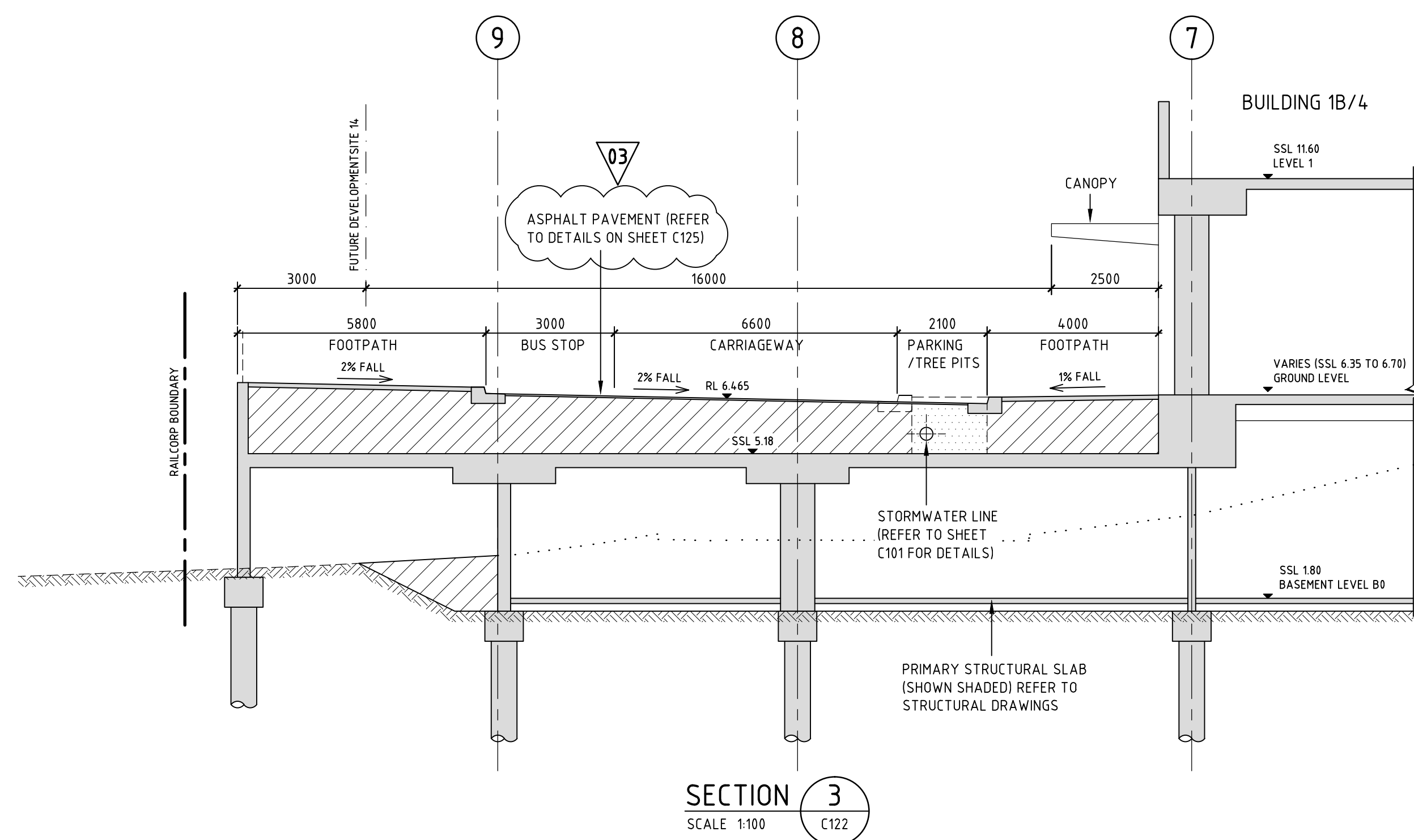
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Project Name
**DISCOVERY POINT
WOLLI CREEK
STAGE 1**

Drawing Title
**EARLY WORKS
BULK EARTHWORKS PLAN**

FOR TENDER

Designed	PM	Project Director Approved	Date	North
Drawn	JF			
Scale	1:500	Project Ref	Drawing No	Rev
Date	APRIL 2011	20 01193 01	C005	06
Sheet				

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		FOR TENDER		
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Drawn	JF			
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Date	MAY 2011			
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		20 01193 01	C126	03

