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:

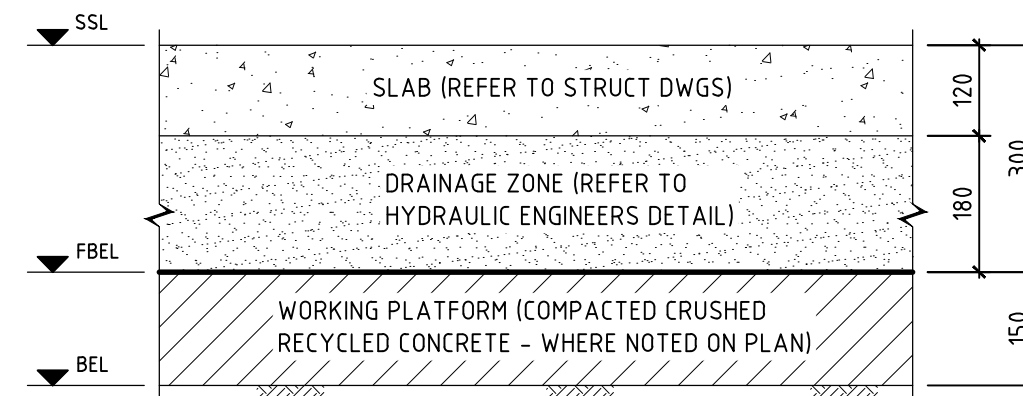
- STRIP SURFACE VEGETATION, TREE ROOTS, ORGANIC TOPSOIL, FILL, AND OTHER MATERIALS UNSUITABLE FOR RE-USE AS CONTROLLED FILL AND REMOVE FROM SITE, OR WHERE APPROPRIATE, STOCKPILE FOR RE-USE IN LANDSCAPING MOUNDS ETC.
- STRIP AND STOCKPILE FILL MATERIALS SUITED FOR RE-USE AS CONTROLLED FILL (E.G. EXISTING PAVEMENT BASE COURSE LAYERS, GRANULAR FILL), WHERE APPROPRIATE.
- REMOVE ALL FILLING TO EXPOSE NATURAL SOILS. DUE TO THE EXPECTED VERY POOR TRANSMITTABILITY 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.

EXCAVATION NOTES

1. THE EXCAVATED MATERIAL IS TO BE TEMPORARILY STOCKPILED WITHIN THE NEIGHBOURHOOD PARK AS SHOWN ON SHEET C08 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)
2. GEOTECH TO CONFIRM BATTER ACCEPTABILITY.

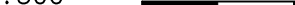


TYPICAL BULK EXCAVATION DETAIL

SCALE 1:10

## BULK EARTHWORKS PLAN





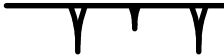
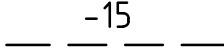


SCALE 1:500



0m 5m 10m 20m 30m

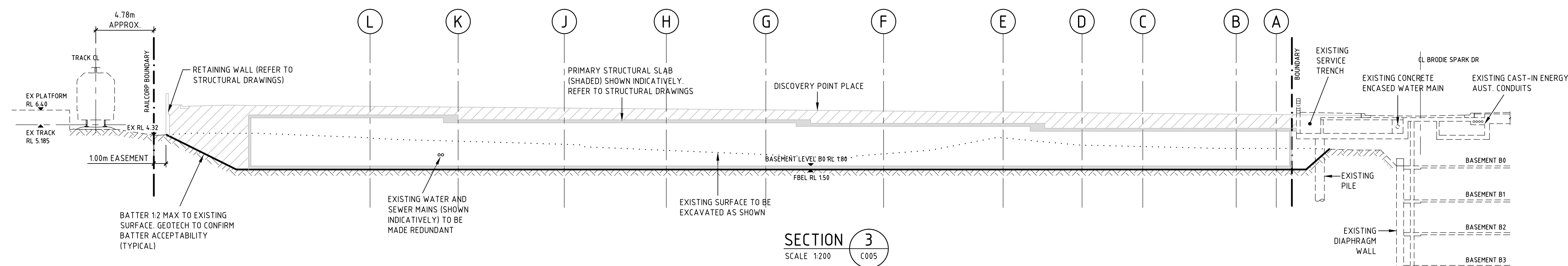
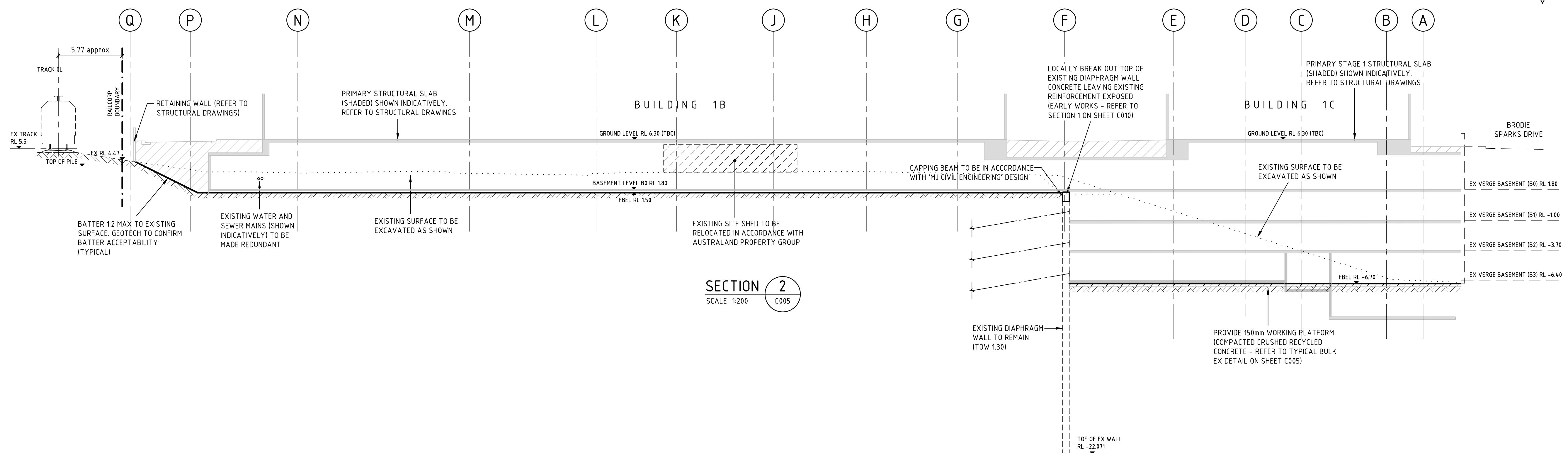
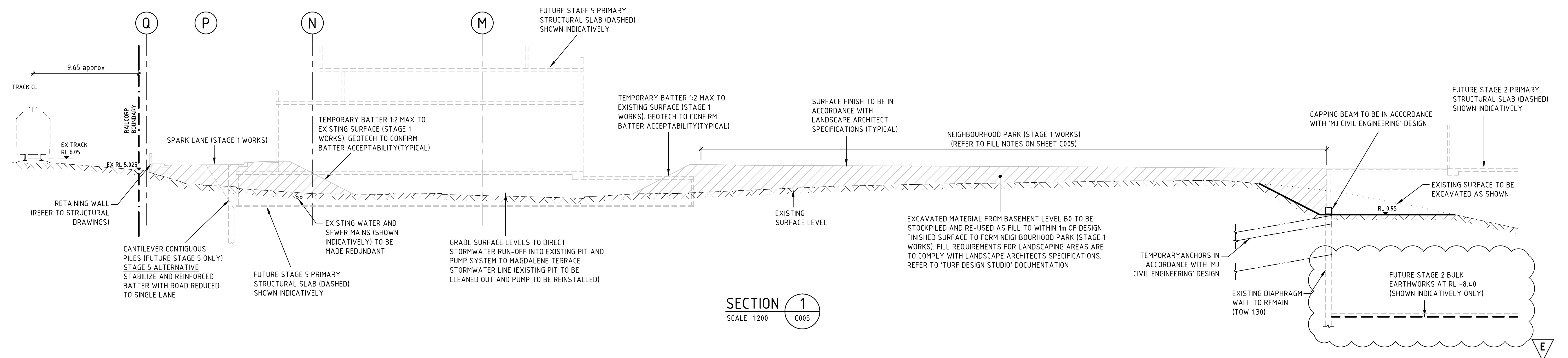
DIAPHRAGM WALL NOTE

PLEASE REFER TO 'MJ CIVIL ENGINEERING' FOR ALL DIAPHRAGM WALL CONSTRUCTION, WHICH CONSISTS OF STAGING, DEMOLITION, EXTENSION AND TEMPORARY SUPPORT ANCHORS.

	BOUNDARY
	EXISTING SURFACE LEVEL
	CUT TO BULK EARTHWORKS LEVEL
	FILL TO BULK EARTHWORKS LEVEL
	TOP OF BATTER
	EXISTING ROCK CONTOUR
	FINISHED BULK EXCAVATION LEVELS
	

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E	STAGE 2 EARTHWORKS NOTE ADDED	9.11.12	JF SN
D	EXTENT OF EARTHWORKS AMENDED	26.09.12	JF SN
C	EXTENT OF EARTHWORKS AMENDED	20.09.12	JF SN
B	EXTENT OF EARTHWORKS AMENDED	16.08.12	JF SN
A	ISSUED FOR CONSTRUCTION	21.05.12	JF SN
Rev	Description	Date	By App

Rev	Description	Date	By App
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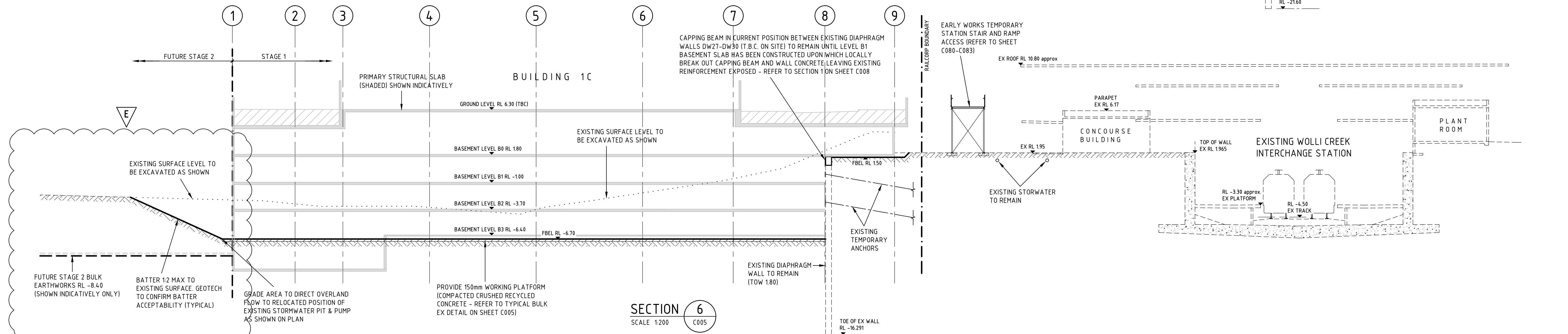
<i>E</i>	<i>SECTION 1 AMENDED</i>	<i>06.11.12</i>	<i>JF</i>	<i>SN</i>
<i>D</i>	<i>SECTION 1 AMENDED</i>	<i>26.09.12</i>	<i>JF</i>	<i>SN</i>
<i>C</i>	<i>SECTION 1 AMENDED</i>	<i>20.09.12</i>	<i>JF</i>	<i>SN</i>
<i>B</i>	<i>SECTION 1 AMENDED TO SUIT NEW EXTENT OF EARTHWORKS</i>	<i>17.08.12</i>	<i>JF</i>	<i>SN</i>
<i>A</i>	<i>ISSUED FOR CONSTRUCTION</i>	<i>21.05.12</i>	<i>JF</i>	<i>SN</i>

Rev	Description	Date	By	App
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Project Name		DISCOVERY POINT WOLLI CREEK STAGE 1					
Drawing Title	EARLY WORKS BULK EARTHWORKS SECTIONS - SHEET 1	Designed	PM	Project Director Approved		Date	North
		Drawn	JF				
		Scale	1:200, 20				
		Date	APRIL 2011				
		Sheet					
		Project Ref		Drawing No		Rev	
		20 01193 01		C006		E	



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