GANELLEN
BUILT ON EXPERIENCE

DISCOVERY POINT STAGE 6 - ARC

EXCAVATION METHODOLOGY & SCOPE OF WORKS ASSOCIATED WITH WORKS WITHIN PROXIMITY TO RAILCORPS HIGH-VOLTAGE ASSETS

Client:	AUSTRALAND PROPERTY GROUP	**Principal Contractor:**	GANELLEN PTY LTD
Address:	30 Montague Street, Balmain 2041 NSW	**Phone:** (02) 9555 2444	**Fax:** (02) 9555 5600

Plan Approval by:		
Joel BARNETT	Construction Director	
George TSIMOURTOS	Project Manager	

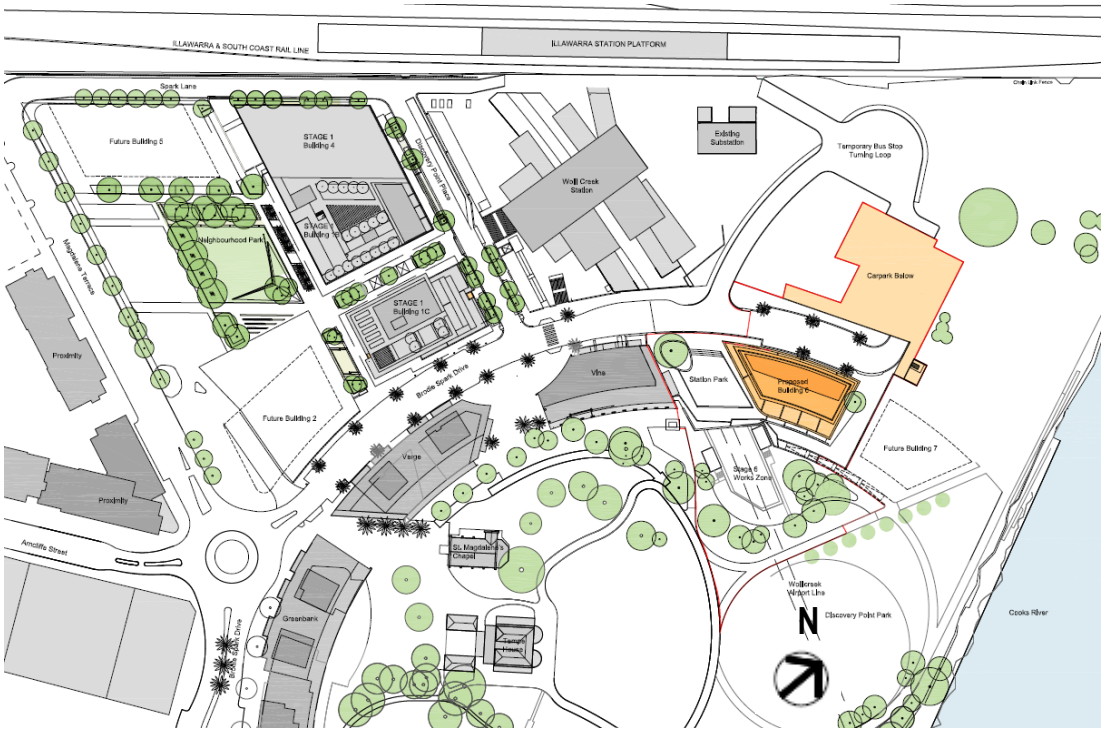
Details of Revisions

Level	Details	Date	Name / Initial
Rev.0	Excavation Methodology & Scope of Works Within Proximity to Railcorp Assets	10.01.13	George Tsimourtos
Rev.1	Excavation Methodology & Scope of Works Within Proximity to Railcorp Assets	11.01.13	George Tsimourtos
Rev.2	Excavation Methodology & Scope of Works Within Proximity to Railcorp Assets	14.01.13	George Tsimourtos
Rev.3	Excavation Methodology & Scope of Works Within Proximity to Railcorp Assets	16.01.13	George Tsimourtos

CONTENTS

1. BACKGROUND

The following Construction Methodology forms part of the overall proposal put forward to Railcorp in relation to working within the vicinity of existing high-voltage cables located to the north of the Wolli Creek Station tunnel. This methodology focuses on a specific work zone over the cabls between Brodie Spark Drive and the tunnel portal which is to be completed during a track shutdown.



2. PROJECT INFORMATION

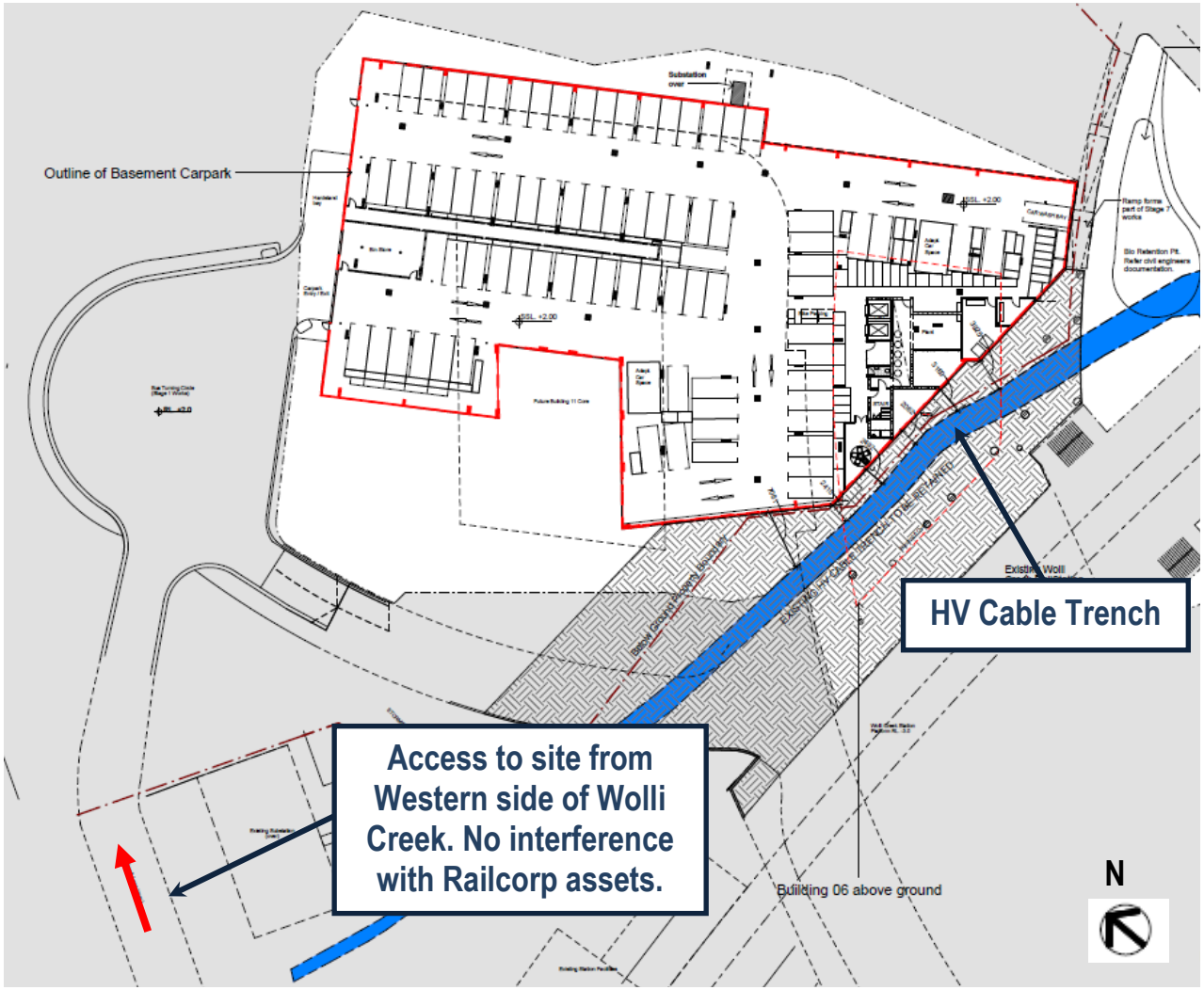
Project Name:	Discovery Point Stage 6 – Arc
Address:	Brodie Sparks Drive, Wolli Creek
Client:	**Australand Property Group** Grant Flannigan - Development Director Nicholle Sparkes – Construction Director
Superintendent:	TBC
Builder:	**Ganellen Pty Ltd** Joel Barnett – Construction Director George Tsimourtos – Project Manager
Architect:	**Bates Smart Pty Ltd** David Tordoff – Associate Joanna Kuo – Architect
Structural Engineer:	**Bonacci Pty Ltd** Tim Hoare – Director Patrick Mohan - Engineer
Rail Infrastructure Consultant:	**ARUP** David Stuart-Smith – Senior Associate (Electrical Systems) Dr Lorna Small – Rail Safety & Assurance Manager
Geotechnical Consultant:	**Douglas Partners** Peter Oitma – Senior Associate
Railcorp Panel Member	**Chandler Macleod** Jim Joveski

3. PROJECT DESCRIPTION

As part of Australand's development, Discovery Point, Ganellen Pty Ltd have been contracted to deliver Stage 6 of the development - the Arc residential tower. This involves the construction of 88 apartments and associated basement, landscaping and civil works. The proposed building is located within the vicinity of existing Railcorp HV Cables which are approximately 2-3 metres below existing ground level.

In order to allow construction works to Stage 6 to begin prior to Railcorp's HV cables being moved to the new location Railcorp require any construction works within a 2 metre vicinity of the high-voltage cable trench to be completed during a track possession. The construction team is proposing a construction methodology to protect Railcorp's assets while construction works are occurring within 2 metres of the cable trench.

Further to the project description please refer below plan outlining Building 6 and the location of the HV Trench as well as access to site.



Railcorp's asset currently running through the site involves a High Voltage cable which is encased in stabilised sand and located as shown on previous page. It is situated at approximately RL 1.48(top RL) at its lowest point and RL 2.18(top RL) at its highest point.

We have considered the following risk items to ensure our proposal does not affect the integrity of the cables:

Elimination of:

1. Direct loads imposed on the cables from construction works above
2. Direct damage to the cables due to impact or shear loads
3. Strike by excavation plant
4. Thermal concerns associated with risk of additional fill placed on top of the HV cable trench

Whilst providing:

5. Adequate access to cables in the event of a failure
6. Availability of a route for a replacement cable in the event of a failure

BREAKDOWN OF ACTIVITIES TO OCCUR PRIOR TO AND DURING TRACK POSSESSION

Works required **to occur prior** to track possession:

1. Site Establishment (6 day duration to complete works)
2. Vacuum Truck works to locate edges of trench zone (2 day duration to complete works)
3. Cable Trench Peg & Set-out (2 day duration to complete works)
4. Site Clearing / Establishment of excavation ramps and access batters (3 day duration to complete works)
5. Excavation of Northern Zone of Trench in preparation for track possession date (3-4 day duration to complete works)

Works required **to occur during** track possession on the 9th & 10th February:

1. Reduction of levels directly above trench towards North Eastern side of cable trench zone (approximately 1 metre of fill to be removed)
2. Finalise levels directly above entire length of trench zone
3. Create batter from cable trench to the required basement RL of 1.70 (approx. 36m metres).

4. CONSTRUCTION METHODOLOGY / SCOPE OF WORKS ASSOCIATED WITH STAGE 6 EXCAVATION

The following methodology details the excavation works required for Stage 6 within a 2 metre proximity of the HV trench zone. They are broken down into 2 sections:

Section 1: Description of Works to occur prior to the schedule track possession date

Section 2: Description of Works to occur during the track possession date

Prior to any works occurring the following site safety / risk mitigation procedures will be in place:

- All Dial before you dig reports identified and marked
- All Structural and geotechnical reports / sign offs in place
- Quality / Safety and Environmental procedures in place. These will include:
    - Daily Hazard Identification report for each activity mentioned below
    - Continual Improvement Monitoring Procedures
    - Safety and Inspection hold points after each nominated activity taking place (Refer Appendix A of this report for Detail Witness / Hold Point Matrix)
    - Environmental Hazard Inspections
    - Geo-technical inspections
    - Structural Engineer inspections
    - Electrical Permit Holder Inspections

SECTION 1: DESCRIPTION OF WORKS TO OCCUR PRIOR TO THE SCHEDULED TRACK POSSESSION DATE

The following sequence of works are required to take place prior to the track possession date:

1. **Site Establishment:** Shedding, amenities, power, water, safety documentation and environmental procedures must be adequately set up on site prior to any works occurring. This can only occur once Railcorp formal approval is provided and an early works CC is granted by the certifying authority.

2. **Set out of Cable Trench(inc Vacuum Truck Works) and Excavation parameters:** The survey and set-out of the cable trench will be as per the following:
    - A dial-before-you dig will be carried out prior to any work commencing
    - The HV cable trench will be surveyed and pegged out by a registered surveyor prior to any work commencing;
    - X-ray cable locator will also be employed during the survey & set-out process to ensure that there are no outlier cables impeding past the trench zone. It is worthy to note that the HV cables have been identified by Railcorp on 13th January 2013 using yellow and orange paint.
    - Exposure of the edge of cable trench and associated bends through use of a vacuum truck to ensure that all edges of the trench are identified (refer attached SWMS).
    - Identification markers will be placed at the exposed areas at all increments in order to demarcate the trench zone and the depth of fill removed.

3. **Site clearing / Establishment of excavation ramps and access batters:** Ganellen's civil contractor must prepare and clear the site in order to establish clear working areas for movement of excavated fill. Moreover adequate access ramps and batters need to be created for the excavation machinery to track back and forth safety and efficiently.

4. **Excavation of Northern Zone of Trench in preparation for track possession date:** In order to reduce the levels above the cable trench and also create the batter required from the cable trench to the Stage 6 basement level, a small portion of the basement area north of the trench must be excavated to the BEL of 1.70. This is required to minimise the time required to create the designed batter.

NB: Ganellen will be engaging an accredited Electrical permit holder to supervise all works occurring within 2m of the trench zone.

SECTION 2: DESCRIPTION OF WORKS TO OCCUR DURING THE TRACK POSSESSION DATE OF 9TH & 10TH FEBRUARY

The following sequence of works are required to take place during the 9th & 10th February:

Excavation Works directly surrounding the HV Trench

1. Reduce approximately 1m of fill to the NE portion of the site directly above the HV trench zone (approx. RL 3.0). This will be performed through use of 2 x excavation machines not more than 20t each in order to ensure that no loads are directly imposed on the trench (refer Figures No.1 & 2). The excavator will not sit above the trench zone directly and will perform most of the excavating activities from either side of the trench. An additional 30t machine will sit on the northern side of the trench (below the zone of influence of the cable) in order to stockpile the material away from the trench.

Figure No.1 - Section 2 Diagrammatic Explanation – Works to Occur During 9th and 10th February Track Closure (Step 1 Plan)

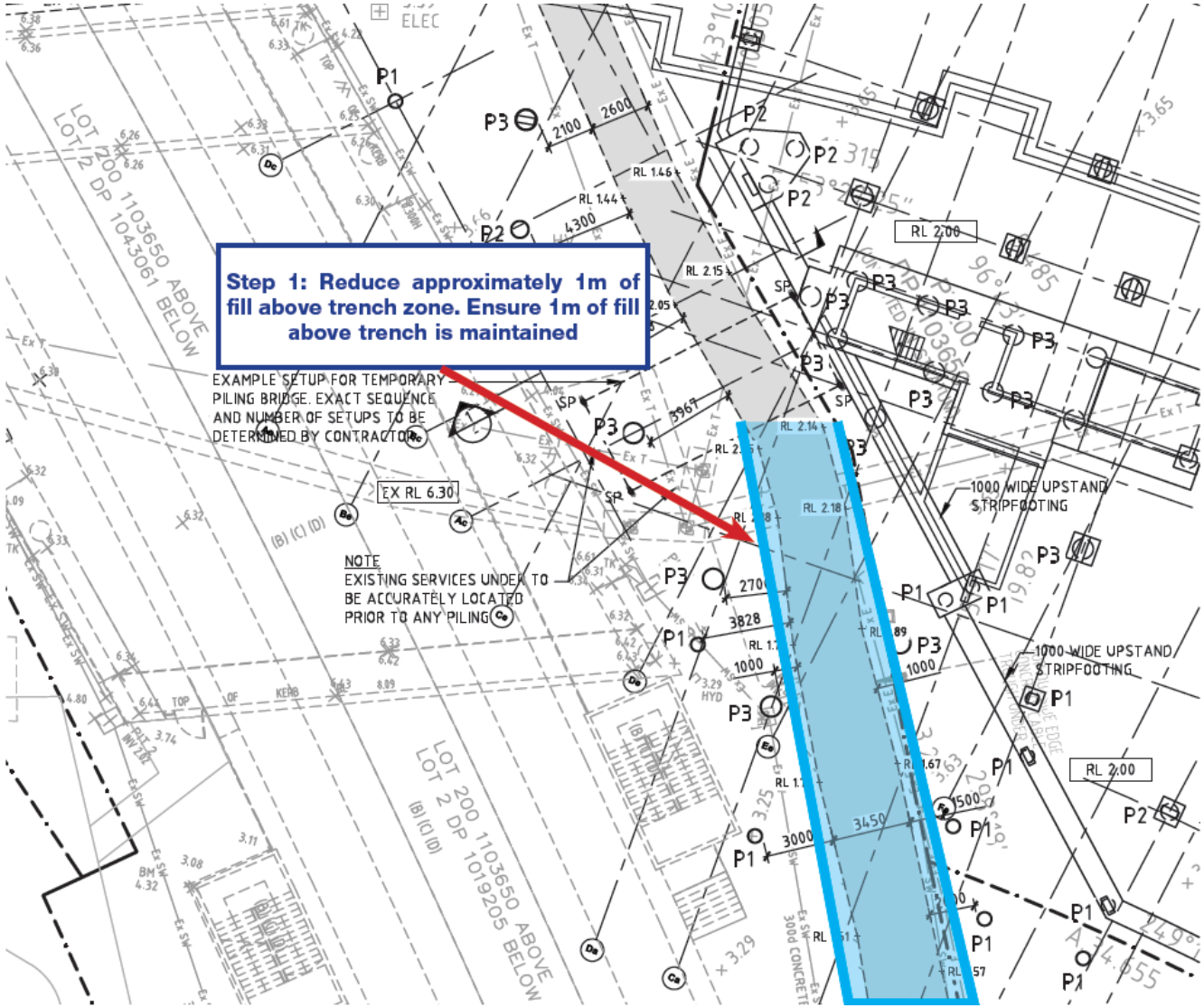
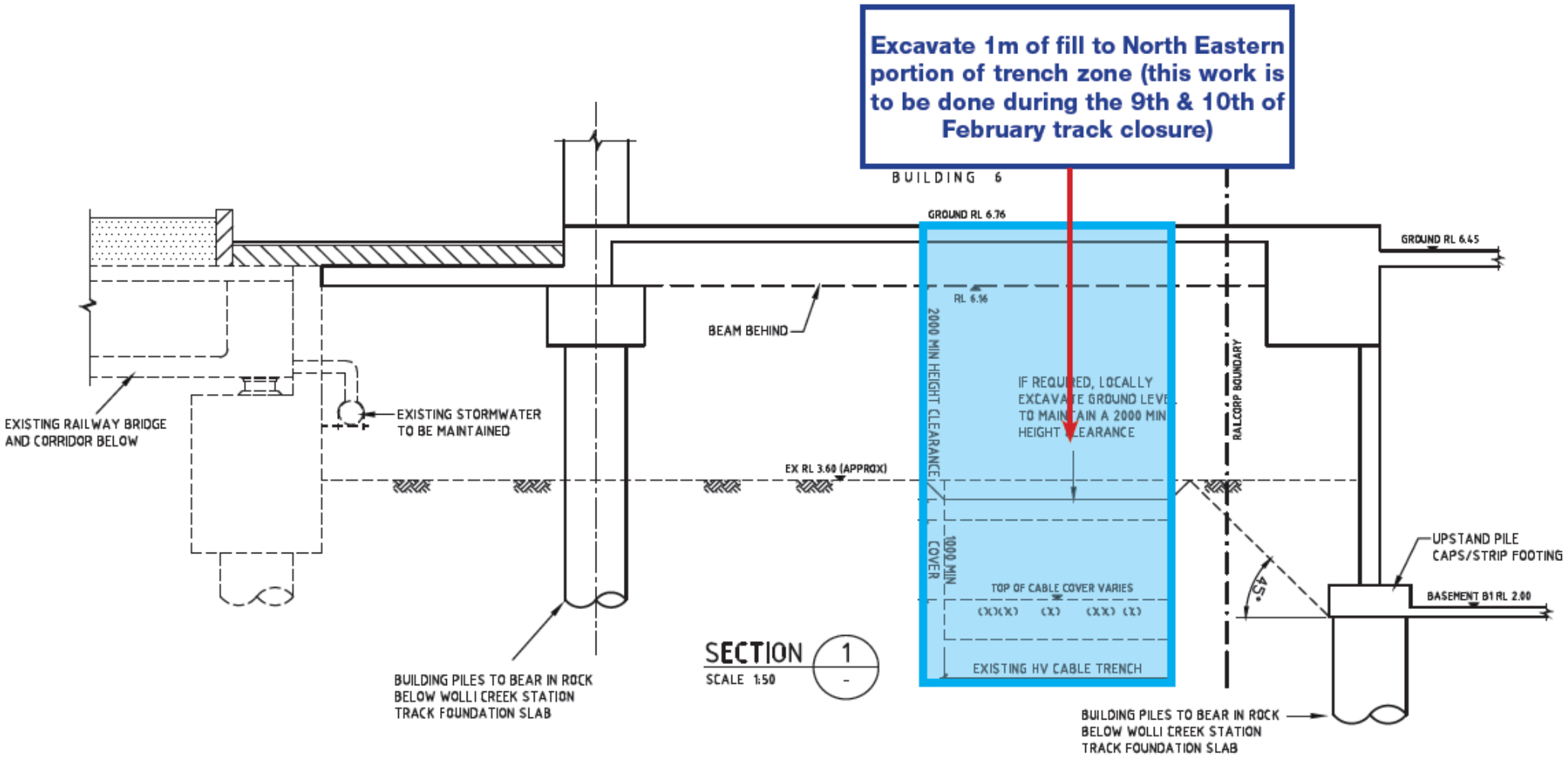


Figure No.2 - Section 2 Diagrammatic Explanation – Excavation Works (Detailed Section)



2. Once the levels to the NE zone of the trench have been reduced the levels along the remainder of the HV trench will be adjusted to their required design RL. These works again will be performed by a 20t excavator and possibly a 5tonne smaller excavator. It is expected that only minor fill will need to be moved and stockpiles away from the trench on the western side of the trench moving minor fill to its stockpile away from the trench (refer Figures No.3 & 4).

Figure No.3 - Section 2 Diagrammatic Explanation – Works to Occur During 9th and 10th February Track Closure (Step 2 Plan)

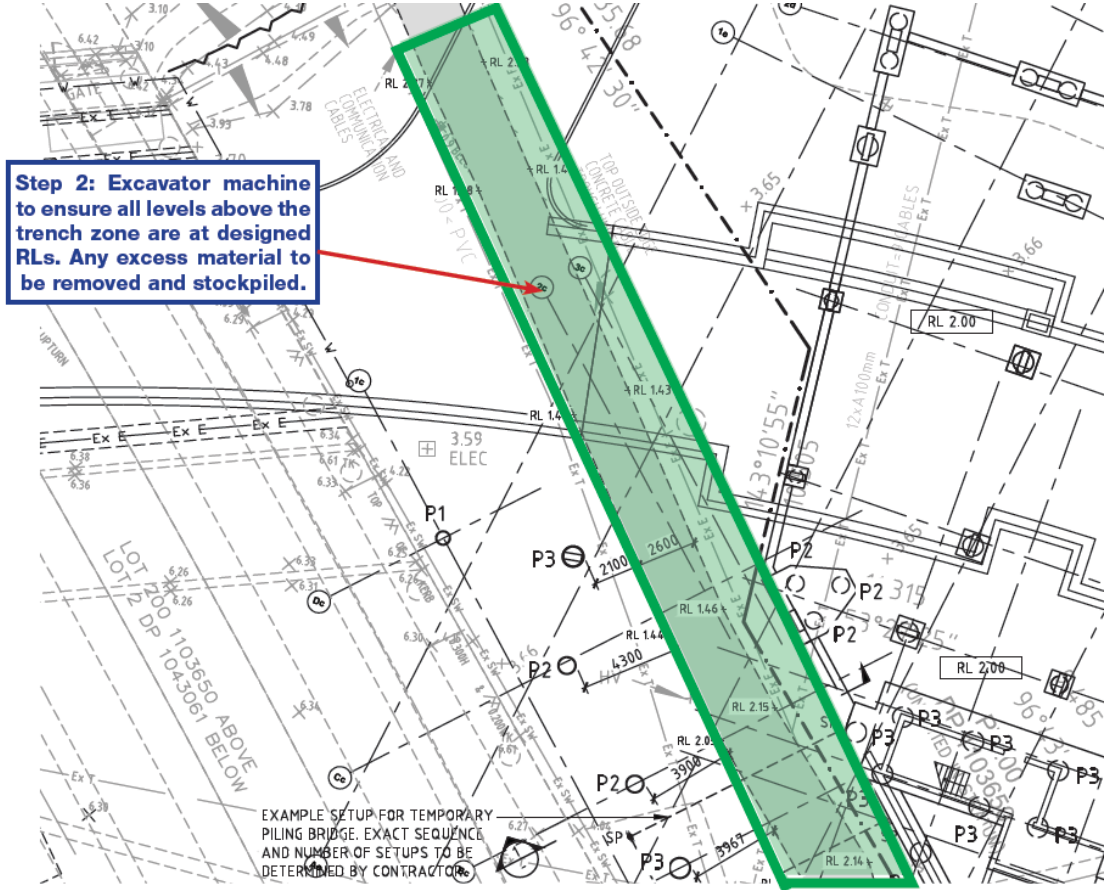
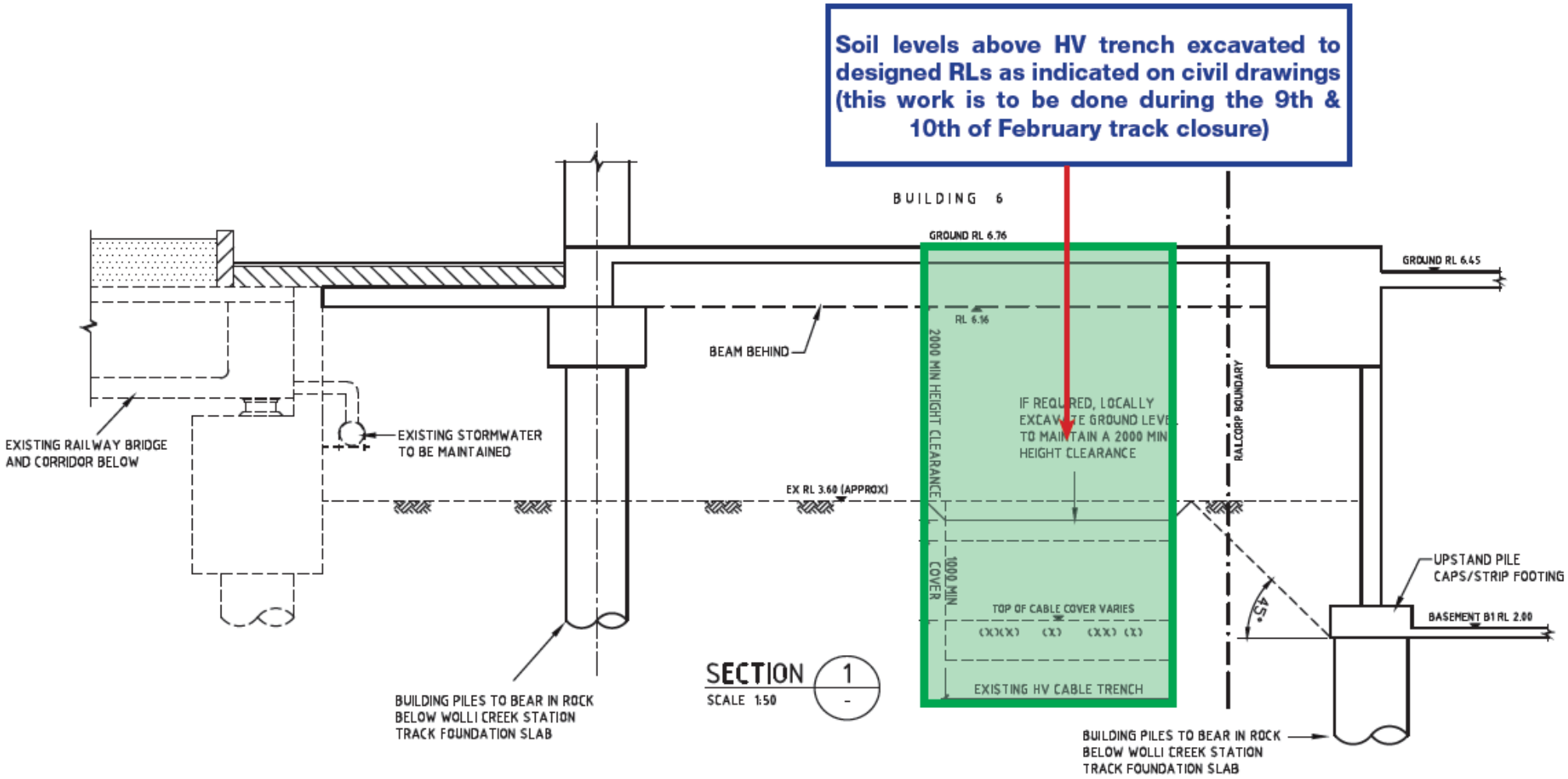


Figure No.4 - Section 2 Diagrammatic Explanation – Excavation Works (Detailed Section)



Once the correct levels have been established over the HV cable the 20t excavator will batter away from the trench zone to the designed final basement excavated level (RL 1.70) required to build Stage 6 basement. (refer Figures No.5 & 6).

Figure No.5 - Section 2 Diagrammatic Explanation – Works to Occur During 9th and 10th February Track Closure (Step 3 Plan)

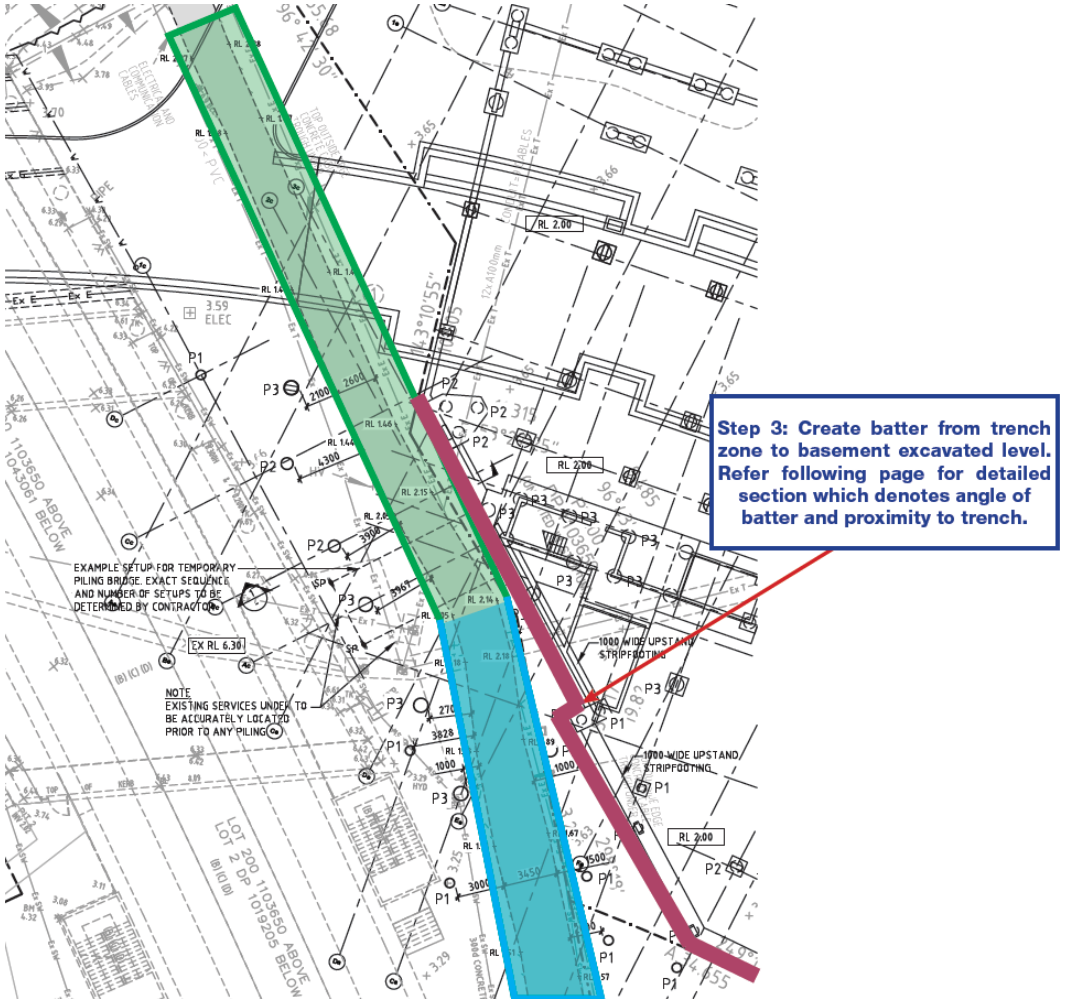
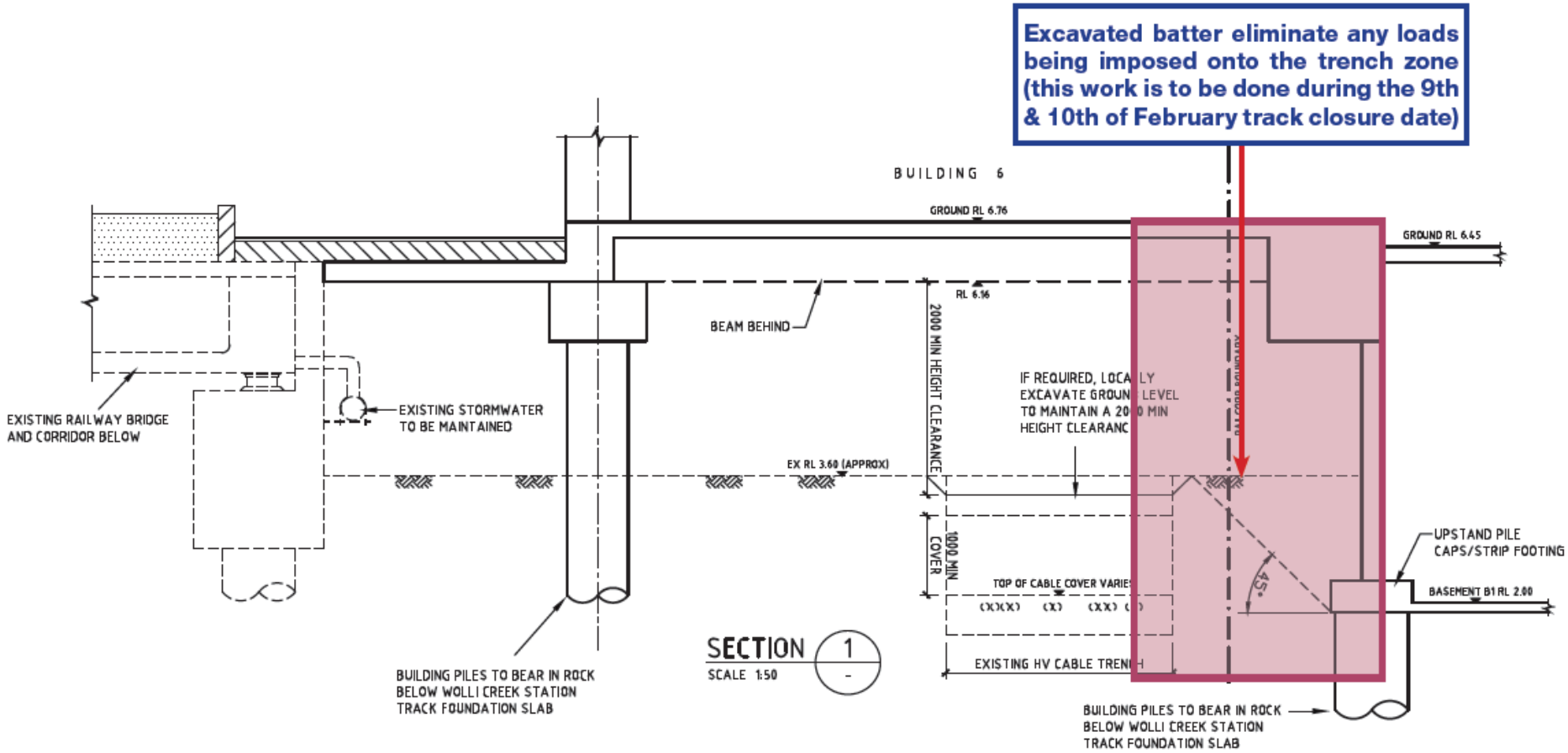


Figure No.6 - Section 2 Diagrammatic Explanation – Excavation Works (Detailed Section)



During the entire excavation works subject to this methodology various Witness Hold Points and SWMS have been generated (attached to this report) indicating the measures in place to ensure Railcorp's assets are not affected by the works.

The following supporting documentation has been provided in the Appendix:

Appendix A: Witness Inspection / Hold Point Matrix

Appendix B: ESWMS

Appendix C: Project Safety Agreement

Appendix D: Project Scope of Works Form

Appendix E: Electrical Permit

Figure No.7 – Section 2 Diagrammatic Explanation – Works to Occur During 9th and 10th February Track Closure (Overall Plan)

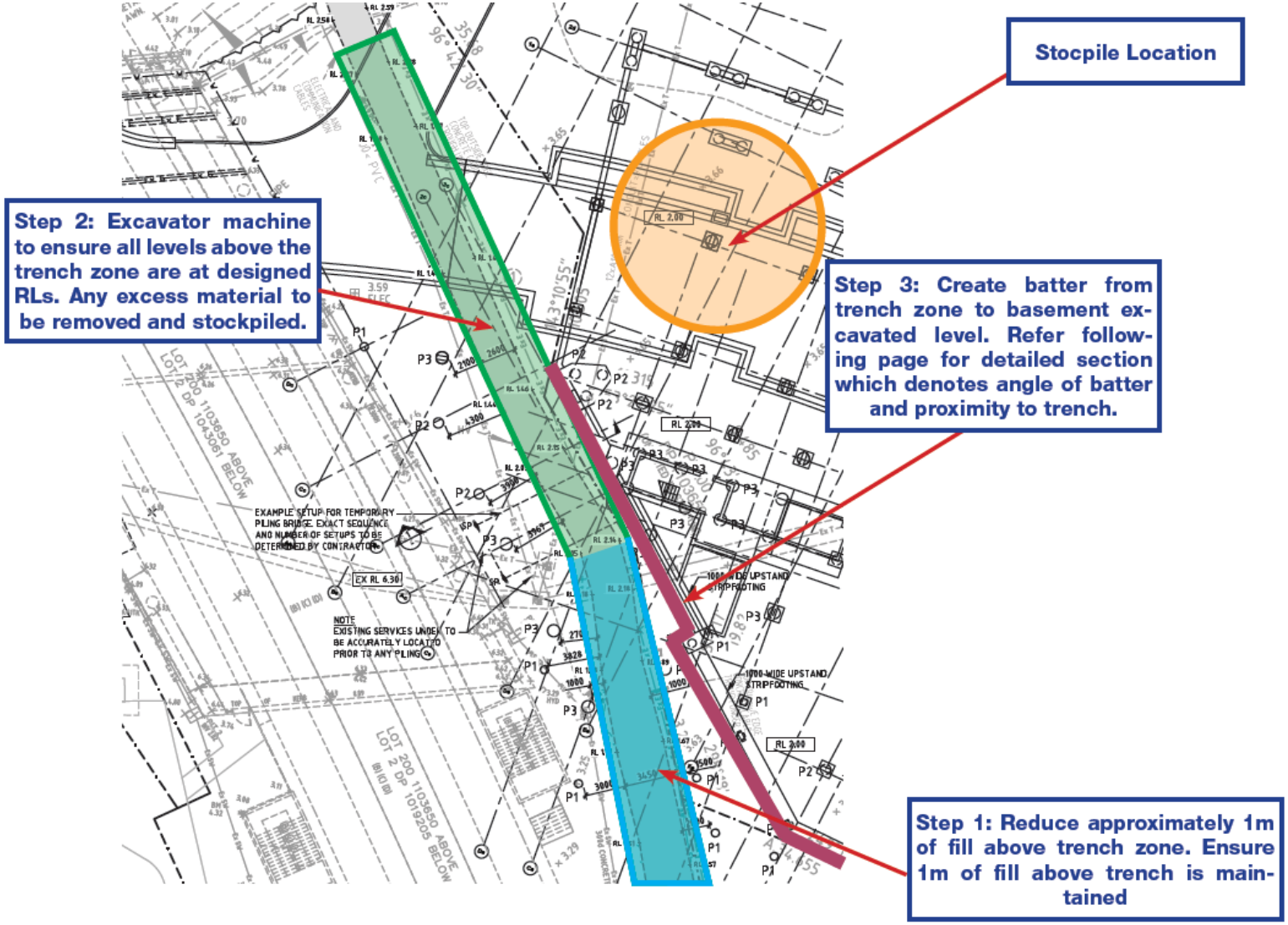
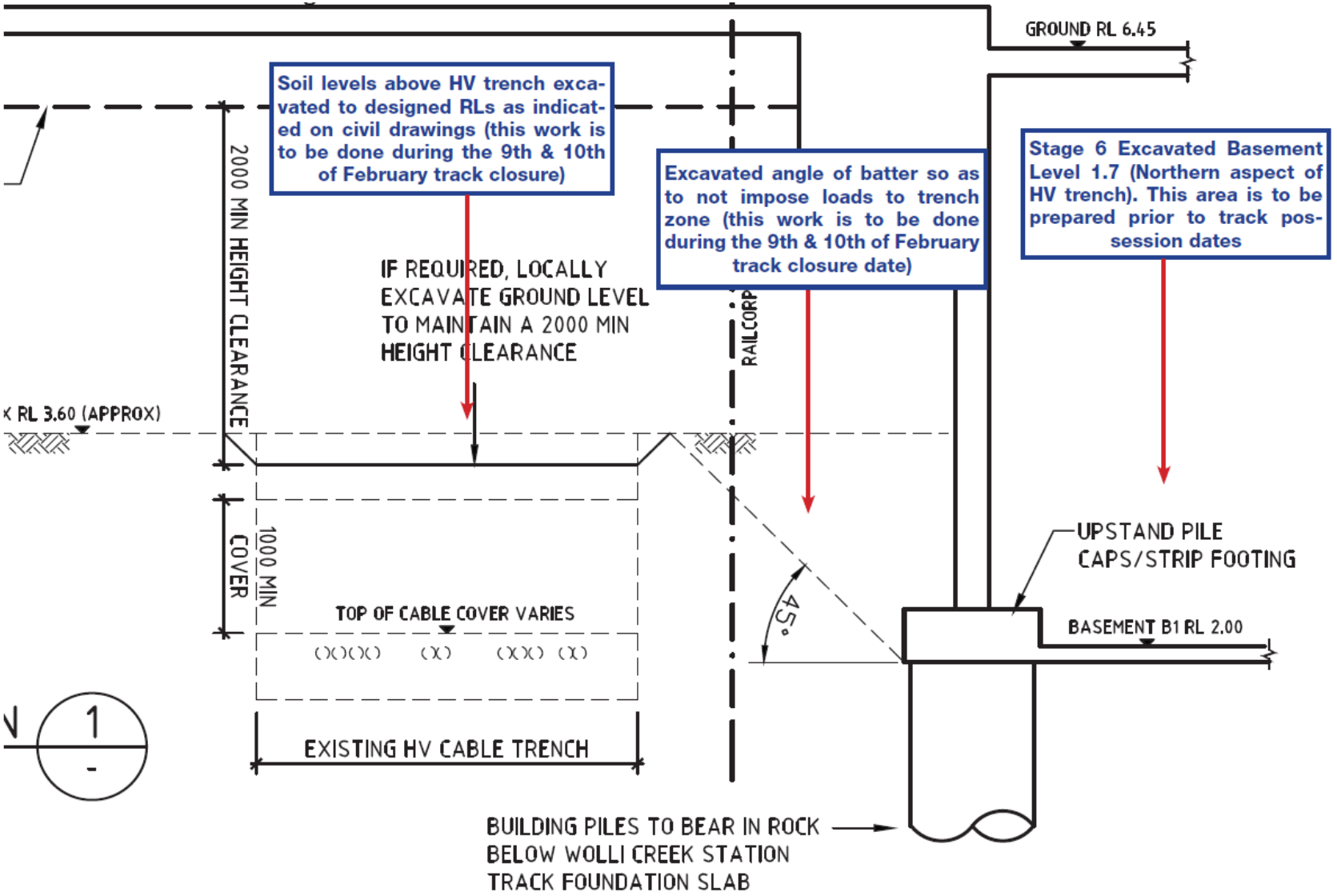


Figure No.8 - Section 2 Diagrammatic Explanation – Sectional View of Works (Overall Plan)



5. APPENDIX A – WITNESS INSPECTION / HOLD POINT MATRIX

WITNESS INSPECTION / HOLD POINT MATRIX		RAILCORP / TRANSFIELD	AUSTRALAND PROPERTY GROUP	BONACCI	DOUGLAS PARTNER	ARUP	GANELLEN	SCREW PILING CONTRACTOR	PILING CONTRACTOR
	Witness Point (WP) or Hold Point (HP)								
Works Surrounding HV Trench - Prior to Track Possession									
Step 1 Erection of Demarcation fence	WP	✓	✓			✓	✓		
Step 2 - Vacuum Truck / Set out	HP	✓	✓				✓		
Step 3 Basement Excavation	WP	✓	✓				✓		
Excavation Works Surrounding HV Trench - To Occur During Track Possession Date 9th & 10th of February 2013									
Step 4 Excavate approximately 1m of fill above North Eastern end of trench	WP	✓	✓				✓		
NB: immediate stop in place if any of the above HP / WP are not maintained									

NB: Electrical Permit holder to be present at all times

6. APPENDIX B – ESWMS

GANELLEN BUILT ON EXPERIENCE ACN: 084 147 222 30 Montague Street, BALMAIN NSW 2041	**ENVIRONMENTAL/ SAFE WORK METHOD STATEMENT (ESWMS)** Working Near or Around Live High Voltage Underground RailCorp Assets (Excavation Works)	**PROJECT NUMBER:** 0094 **PROJECT NAME:** *Discovery Point Stage 6*

1. ACTIVITY OR TASK:

Working near or around live high voltage underground RailCorp assets (Excavation Works)	Reviewed for issue by: Fuad Ahmed (Compliance and Systems Manager)

Competency required to complete work safely **(Competence = Relevant Training/Qualifications + Experience)**	WorkCover's Construction Induction (White Card) Manual Handling Techniques		
ESWMS reviewed by person responsible i.e. Team Leader / Tradesman	Name: George Tsimourtos	Position / Competence/ License: Project Manager	Date: 18/12/12

EQUIPMENT to be used on site	
EQUIPMENT	20tons Excavators, Vacuum Trucks, Mobile Cranes, Tipper Trucks
SPECIALIST EQUIPMENT	

2. ESWMS ENDORSEMENT RECORDS:

This Document is to be further developed for Site Specific Issues in consultation with the Client.

The conditions of this document will be implemented through further Hazard Identification and Risk Assessment and documented on the daily Hazards Sheet.

Project Manager	George Tsimourtos	**Ganellen ESWMS No.**	ESWMS 31	**Project Specific ESWMS No.**	02

Document Control

Project Specific Rev No.	Description	Prepared By	Signature	Date	Approved By	Signature	Date	Authorised By	Signature	Date
A	Issued for Client's Review & acceptance	Fuad Ahmed		18.12.12	George Tsimourtos		18.12.12	Joel Barnett		18.12.12

Total ESWMS Issued to the Project

No.	Description	Issued Date

GANELLEN BUILT ON EXPERIENCE ACN: 084 147 222 30 Montague Street, BALMAIN NSW 2041	**ENVIRONMENTAL/ SAFE WORK METHOD STATEMENT (ESWMS)** Working Near or Around Live High Voltage Underground RailCorp Assets (Excavation Works)	**PROJECT NUMBER:** 0094 **PROJECT NAME:** *Discovery Point Stage 6*

3. HAZARD IDENTIFICATION
Identify hazards that may be present by ticking items on the list below.

WORK LOCATION		HAZARDOUS AREA		HIGH RISK		HIGH RISK	
Difficult Entry/Exit	■	Hazardous Substances - attach MSDS to SWMS	■	Falling Objects	■	Suspended loads	
Oxygen Deficiency				Poor Lighting		Poor Visibility	
Oxygen Excess		Working at Heights		Slippery Surfaces		Inhalable Dusts/Fibres	
Engulfment (trench collapse)		Remote Area		Multiple Electrical Feeds		High Noise Levels	■
Poisonous Gas Present		Motor Room Hazards		Trip Hazards	■	Use of Chemicals	
Temperature Extremes	■	Toxic Substances		Electrical Hazards - LV		Elevated Work Platform	
Defined Confined Space		Potential for Difficult Rescue		Electrical Hazards - HV	■	Difficulty to Communicate amongst workers	
Explosive Gas Present				Manual Handling	■		
				Sharp Materials		Moving Machinery	■
				Ladders used in the task	■	Tools & Equipment	
HAZARDOUS SUBSTANCES (in work area / to be used -attach MSDS				Working at Heights	■	Heat/ Sunlight/ Radiation	■
				Working near Crane & Crane Runways	■	Working near Operation Processing Lines	
Diesel (Please refer to the onsite MSDS Register)				Rail Movement		Live Rails	
				Pressurised Fluids		Pneumatics	
				Flammable Materials Present			

KEY			
	Not applicable	■	Applicable (change if required)

4. PRECAUTIONS
hard hat, safety glasses, safety boots compulsory

ADDITIONAL PRECAUTIONS		PERMITS	
Gloves: type ……		Hot Work	
Safety Glasses / Goggles	■	Excavation	■
Full Face Shield		Confined Space	
High Visibility Vest	■	Hazardous Work Clearance	
Harness		Access to Area	
Fire Extinguishers	■	High Voltage Access	
Barricades	■	Scaffolding	
Mobile Phone		Authority to work	
Ventilation		Other?	
Lighting		SPECIAL ISSUES:	
Erect Scaffolding to access		Access to and from work area through construction site	
Respirator or Dust mask			
Erect Warning signs	■		
Flashing Light			
Fluro Flag			
Welding screen			
Fall Arrest systems			
Welding Face Shield			
Hard Hat	■		
Safety Shoes	■		

5. ENVIRONMENTAL HAZARDS
(IMPACTS - tick those identified)

Air Pollution (dust, fumes)	■	Spills to ground		Other:
Noise (plant & equipment)	■	Soil Erosion		
Spills to drains/waterways		Hazard to Flora /Fauna		

6. RISK MATRIX

P = Probability	C = Consequence	Risk Score P = Probability	C = Consequence 5	4	3	2	1
5. Almost certain : Expected to occur • A Major hazard that could happen at any time • More than 10 people are exposed regardless of time • A strong probability of multiple occurrences within a 12 month period	**5. Catastrophic: Fatality / Major incident of long duration** • Death or toxic chemical release with detrimental effects • Huge financial costs (over 1 million) • Large scale, irreversible, uncontained harm to the environment	5	VERY HIGH (25)	HIGH (20)	HIGH (15)	MEDIUM (10)	LOW (5)
4. Likely: An event that could happen • 5-10 people are exposed, regardless of time • Will probably occur at some time within a 12 month period	**4. Major: Critical event / Major impact on Project** • Extensive injuries and loss of production capability • Toxic chemical release with no detrimental effects • Loss of limb or bodily function (includes noise induced hearing loss & chronic dermatitis) • Major financial cost ($100,000 – 1 million) • Large scale long term (>2 yrs), uncontained harm to the environment	4	HIGH (20)	HIGH (16)	MEDIUM (12)	MEDIUM (8)	LOW (4)
3. Possible: could occur at some time • 2-5 people are being exposed, regardless of time • Might occur within a 12 month period	**3. Moderate: Significant event / Considerable inconvenience** • Medical treatment that results in no hospitalization or loss of function • Toxic chemical release contained with offsite assistance • 1 day or less off work • High Financial loss ($10,000 - $100,000) • Small scale, medium term (1-2 years) uncontained harm to the environment	3	HIGH (15)	MEDIUM (12)	MEDIUM (9)	MEDIUM (6)	LOW (3)
2. Unlikely: may occur but very rarely • < 2 people are being exposed, regardless of time • Unlikely to occur within a 12 month period	**2. Minor: Minimal effect / Some inconvenience** • First Aid Treatment only • Chemical release immediately contained onsite • Person can return to normal duties if injured • Medium financial cost ($1,000 - $10,000) • Short term (<1year), reversible, contained harm to the environment	2	MEDIUM (10)	MEDIUM (8)	MEDIUM (6)	LOW (4)	LOW (2)
1. Rare: under exceptional circumstances	**1. Insignificant: No apparent inconvenience** • First Aid treatment minimal if injury occurs – i.e. Report only • Low financial cost • Temporary, reversible environment degradation	1	LOW (5)	LOW (4)	LOW (3)	LOW (2)	LOW (1)

RISK MANAGEMENT ACTIONS

Risk Score		Action Level	Report to	Management Action Plan	Timeframe: Corporate (Strategic, Divisional, Non-Project Operational)	Timeframe: Project
25	VERY HIGH	Intolerable	Division Head / Appropriate Level Manager	Immediate action to eliminate risk or reduce to acceptable level.	Implementation: Immediate Review: Weekly	
15-20	HIGH	Conditional Tolerable	Division Head / Appropriate Level Manager	Conditional tolerable if all cost effective measures to treat the level of risk are implemented. Where cost effective measures can be applied, additional action required to reduce level of residual risk.	Implementation: 6 months Review: Quarterly	Implementation: 3 months Review: Monthly
6-12	MEDIUM	Conditional Tolerable	Senior Manager /Appropriate Level Manager	Conditional tolerable if all cost effective measures to treat the level of risk are implemented. Maintain watching brief, quarterly review by management. Where cost effective measures can be applied, longer term additional action required to reduce level of residual risk.	Implementation: 12 months Review: 6 monthly	Implementation: 6 months Review: Quarterly
1-5	LOW	Tolerable	Immediate Supervisor	Broadly acceptable, cost effective measures to reduce level of risk unlikely.	N/A	N/A

Who has health and safety duties in relation to the works outlined in the ESWMS?

A person conducting a business or undertaking (PCBU) has the primary duty under the Work Health Safety (WHS) Act 2011 to ensure, as far as reasonably practicable, that workers and other persons at the workplace are not exposed to health and safety risks arising from the business or undertaking. The Work Health Safety (WHS) Regulations 2011 may also list other specific obligations that need to be complied with.

Designers of plant and structures must ensure, so far as is reasonably practicable, that the plant or structure is without risks to health and safety when used for a purpose for which it was designed.

Manufacturers, importers and suppliers must ensure, so far as is reasonably practicable, that plant or structures they manufacture, import or supply are without risks to health and safety.

Installers must ensure, so far as is reasonably practicable, that the way the plant or structure is installed is without risks to the health and safety of persons who install, use, decommission or dismantle the plant or structure and others who are at or in the vicinity of the workplace.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the PCBU complies with the WHS Act and Regulations. This includes taking reasonable steps to ensure that the PCBU has and uses appropriate resources and processes to eliminate or minimise risks that arise from the construction work.

Workers have a duty to take reasonable care for their own health and safety and that they do not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.

Reference:

- Work Health and Safety Act 2011
- Work Health and Safety Regulations 2011

7. ENVIRONMENTAL SAFE WORK METHOD STATEMENT

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
Planning Phase					
1. *Work Breakdown Structure development.*	Inappropriate hazards and risks assessments carried out on site as a result of misinterpretation of the scope of works.	High (15)	Work breakdown structure to be developed by qualified and competent engineers. Detailed Project risk analysis to be carried out and all aspects with regards to environmental protection and health & safety of the employees to be addressed at the planning stage. The risk assessment to be communicated to the project team prior to the commencement of the project. Any residual risk in design stage to be covered in construction phases using the risk assessment tools.	Low (5)	Project Manager. Construction Director. Compliance and Systems Manager.
2. *Working Methodology development and its approval.*	Workers exposed to health and safety hazards as a result of inadequate working methodology.	High (15)	Competent and qualified person to develop the working methodology ensuring that all required tasks have been detailed and associated potential risks mitigated appropriately at the design stage. Approval of the working methodology to be obtained by the Construction Director. The methodology to be submitted to the Client (Australand) and RailCorp for their review & acceptance.	Low (5)	Project Manager. Construction Director. RailCorp Rep. Australand PM. Structural Engineers. Geotechnical Engineers/ Surveyors.
3. *Project/ Works Risk Assessment.*	Risks mitigation not carried out at the project planning stage exposing entire project team to serious health safety risks. Potential harm to the existing environment.	High (15)	Competent persons to carry out the project risks assessments ensuring all potential risks are highlighted and addressed. Risks to the health and safety of the workers must be communicated to the project team prior to the commencement of the project. The records all project risks assessments to be kept on site with the Site Supervisor. The existing environment must be assessed in order to highlight and address all the potential environmental risks associated with the work tasks in the planning stages of works. Based upon the initial risks assessment, appropriate Sedimentation and erosion controls to be implemented on site.	Low (5)	Project Manager. Construction Director. Systems & Compliance Manager

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
4. *Organising of all the required structural/ geotechnical reports/ approvals prior to the commencement of works.*	Workers exposed to potential safety threats (fatality, serious injuries) due to the lack of risk mitigation carried out on sites. Traffic management.	High (15)	Project Manager to organise all the required permits, approvals, specifications, and design drawings prior to the commencement of the works and incorporate the documentation into the working methodology. Project risks mitigation to be carried out covering all the potential hazards into consideration and communicated to the workers companywide prior to commencement of the works. A detailed traffic management plan to be developed and implemented on site prior to the commencement of the works.	Low (5)	Project Manager. Site Manager. Traffic Coordinator.
5. *Workers competency/ training requirements for working near or around RailCorp electrical assets.*	Unauthorised personnel working on construction site exposing everyone to serious safety risks.	High (20)	Training requirements for the job to be identified at the project planning stage and all workers to be trained accordingly. The minimum training requirements to work on this project are White Card (WorkCover Construction Induction Card), and safe manual handling techniques. All workers training to be checked prior to allowing the person commencing on the site. The records to be kept with the PM and the Site Supervisor on site. Company's Competency & Training Matrix to be used whilst resources deployment, if required.	Low (5)	Project Manager. Systems & Compliance Manager. Site Supervisor
6. *Job briefing (including the site inductions) carried out with the Project team prior to the commencement of the works on site.*	Workers lack of understanding with regards to their roles and responsibilities with regards to the safety and environmental protection whilst carrying out the tasks.	High (20)	All workers on site to be project inducted. The project inductions to cover the safety and environmental protection requirements. Following documentation to form part of the inductions as a minimum: Project Risk Assessment Sheets (PRAS), Continual Improvement Monitoring Procedures, Environmental hazard inspections, ESWMS. All inducted persons to be issued with the project induction stickers for their hard hats. The stickers must be displayed whilst on sites at all times. All visitors to be site inducted and escorted during their visit.	Low (5)	Site Manager. Project Manager. Site Supervisor.

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
7. *Implementation of the ESWMS.*	Site works not carried out in accordance with the accepted and implemented ESWMS exposing everyone on site to potential safety risks and hazards.	High (15)	Site Manager to ensure that all workers on site are ESWMS inducted prior to allowing them to carrying out their works. Site Manager to be responsible for the correct implementation of the ESWMS on sites and carrying out any necessary changes, in accordance with the changing site conditions.	Low (5)	Site Manager

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
Execution Phase					
8. *On site arrival and carrying out the fresh risks assessment with the team.*	Workers exposed to unsafe working conditions.	High (20)	Project Manager/ Site Manager to carry out the fresh risk assessment on the day of project commencement in daily hazard identification report. The risks to be communicated to all workers via tool box talks etc.	Low (5)	Site Supervisor. Site Manager. Geotechnical Engineers/ Surveyors
	Overhead structures.		The risk assessment to cover any existing overheads structures. If applicable then appropriate measures like vehicles travel plans to be developed and implemented.		
	Slip and trip hazards.		Site manager to assess the existing site conditions and implement appropriate controls in order to mitigate any trip and slip hazards on site. All workers to comply with the minimum PPE requirements on construction sites i.e. safety shoes, high-vis shirts, and hard hats.		
	Direct damage to the existing buried HV Cable trench due to impact or shear loads.		A Qualified Surveyor to mark out the location of the HV cable trench. All personnel/ plant to maintain the safe approach distances at all times in accordance with the SAD table mentioned in item nos. 18 & 19.		
	Electrocution to the workers.		A Qualified Surveyor to mark out the location of the HV cable trench. Dial before you dig plans to be kept on site at all times. Minimum safe approach distances to be implemented strictly on site at all times. The SADs to be communicated with all workers/ operators on site and displayed on various project locations. All workers to comply with the minimum PPE requirements on construction sites i.e. safety shoes, high-vis shirts, & safety hard hats.		
	Emergency response protocol implementation.		Site Manager to implement the emergency response procedures on site. All workers to be made aware of such controls. RailCorp emergency hotline number 1800 772 779 to be communicated to all workers and displayed on site at various locations.		

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
9. *Site Setup in accordance with the accepted Project Working Methodology.*	Failure to comply with the specifications may result in serious property and/ or personnel damages.	High (20)	PM to ensure that all workers are well aware of the potential risks and hazards by carrying out the toolbox talks.	Low (5)	Project Manager. Site Manager. Site Supervisor
	Workers getting electrocuted as a result of coming into contact with the buried live cables.		Project Manager to acquire all dial before you dig plans prior to the commencement of the works. The current plans to be kept onsite at all times with the Site Supervisor (the plans expire in 28 days).		
	Direct damage to the existing buried HV Cable trench due to impact or shear loads.		A Qualified Surveyor to mark out the location of the HV cable trench. All personnel/ plant to maintain the safe approach distances at all times in accordance with the SAD table mentioned in item nos. 18 & 19.		
	Unauthorised access to the site.		Access to the site to be restricted to only authorised personnel and the site to be isolated using the temporary fencing. All visitors to the site to be site inducted and escorted during their visit on site.		
	Manual handling.		All workers to be trained in manual handling techniques. Mechanical means to be used where possible. No single person to lift any loads heavier than 20kgs. Site Supervisor to assess the load and the worker's lifting capabilities prior to engaging him/ her in any loads lifting tasks.		
	Infringement of the minimum safe approach distances resulting in serious safety hazards.		The safe approach distances (SADs) to be maintained at all times by all workers and the plant on site. The SADs to be communicated to all workers/ operators during their project induction stage. The SADs to be displayed on site as well.		
	Workers unaware of the incidents/ emergency reporting procedures.		All workers to be made aware of Ganellen's emergency response protocol prior to commencement of the works. RailCorp's Safety Incidents Hotline is 1800 772 779 and must be displayed in the project site office.		
	Vehicular & pedestrian traffic onsite.		Approved traffic management plan to be developed and implemented on site prior to the commencement of the works.		

10. *Marking out of the HV cable trench by a registered surveyor.*	Damage to the RailCorp HV cables as a result of incorrect marking out of the trench.	High (15)	A Qualified Surveyor to mark out the location of the HV cable trench. All personnel/ plant to maintain the safe approach distances at all times in accordance with the SAD table mentioned in item nos. 18& 19. Dial before you dig plans to be kept on site at all times with the Site Supervisor. The plans expiry date is 28 days. Exposure to the edge of cable trench at piling locations & associated bends will be carried out using vacuum trucks ensuring that all edges of the trench are identified. Vacuum truck log book to be filled and dated prior to use. Vacuum truck operator to ensure that no water is used during the entire trench location process. Vacuum truck operator to ensure that trench bends are accurately marked and located by certified surveyor prior to works commencing. Pegs to be placed at edges of trench and soil removed to be backfilled in same location. Vacuum truck operator to ensure that a risk assessment is conducted after every trench bend identified. Use of an X-ray cable locator will also be carried out ensuring that there are no outlier cables impeding past the HV cable trench.	Low (5)	Site Manager. Project Manager. Site Supervisor Registered Surveyor Plant Operators Site Engineers Structural Engineers Geotechnical Engineers/ Surveyors
	Unauthorised access to the site.		The entire site to be fenced off in order to restrict any unauthorised access to the site. All visitors to be site inducted and escorted during their stay on site. The trench itself will also be fenced off to prevent unauthorised access.		
	Manual handling.		All workers to be trained in manual handling techniques. Mechanical means to be used where possible. No single person to lift any loads heavier than 20kgs. Site Supervisor to assess the load and the worker's lifting capabilities prior to engaging him/ her in any loads lifting tasks.		
	Infringement of the minimum safe approach distances resulting in serious safety hazards		The safe approach distances (SADs) to be maintained at all times by all workers and the plant on site. The SADs to be communicated to all workers/ operators during their project induction stage. The SADs to be displayed on site as well.		
	Screw piles design calculations.		All design calculations and the screw piles loading & locations will be designed, certified & verified by the design team prior to installation (i.e. Bonacci, Douglas Partners, and Australand Proper Group).		
	Completed work tasks not complying with the required specifications/ scope.		The completion and quality of the tasks will be checked using Witness Inspection/ Hold Point Matrix (Please refer to the Working Methodology, Appendix A). Any deficiencies in the		

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
14. *Excavation to the Basement adjacent to Trench Zone.* *(Please refer to Working Methodology, Figure 10)*	Workers getting crushed by moving plant.	High (20)	Plant/ equipment set up points and travel paths will be identified prior to the commencement on site. Exclusion zones to be defined where applicable. Vehicular traffic management plan to be developed and implemented on site at all times. All workers on site to comply with the PPE requirements.	Low (5)	Site Manager. Project Manager. Site Supervisor Registered Surveyor Plant Operators Site Engineers Structural Engineers
	Completed work tasks not complying with the required specifications/ scope.		The completion and quality of the tasks will be checked using Witness Inspection/ Hold Point Matrix (Please refer to the Working Methodology, Appendix A). Any deficiencies in the work performance will be rectified prior to commencing to the next stage of works.		
	Damage to the RailCorp's Assets.		Excavation works do not impede past the trench zone and a number of temporary and permanent batters will be in place to protect and avoid any disturbances to the RailCorp's assets. All temporary and permanent batters will be sloped to avoid the zone of influence to the trench zone. Spotters to be organised for plant operations. Spotters to ensure that batters are more than 1m away from the zone of influence.		
	Incompetent Operators operating plant.		Site Manager to check the competency certificates for all plant operators prior to allowing them to operate.		
	Hydraulic spills/ oil leakages.		Emergency spill response kits to be kept on site and with the operating plant at all times. Workers to be made aware of the notification procedure in case of any incident on site.		
	Infringement of the minimum safe approach distances resulting in serious safety hazards.		The safe approach distances (SADs) to be maintained at all times by all workers and the plant on site. The SADs to be communicated to all workers/ operators during their project induction stage. The SADs to be displayed on site as well.		
	Lack of awareness about the emergency response protocol.		All workers to be made aware of Ganellen's emergency response protocol prior to commencement of the works. RailCorp's Safety Incidents Hotline is 1800 772 779 and must be displayed in the project site office.		

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person

Procedure (In Steps)	Possible Hazards	Initial Risk	Control (Safety & Environmental)	Residual Risk	Responsible Person
16. *Vehicular movements*.	Unauthorised access to the site. Workers getting crushed by the working crane.	High (15)	The site will be fenced off and restricted for any unauthorised access. All vehicle/ plant operators will be project inducted and made aware of the implemented site safety rules. Prestart checks will be carried out prior to operating any plant/ equipment on site. Certificates Traffic management plan to be implemented on site. Exclusion zones to be defined where applicable. Vehicular traffic management plan to be developed and implemented on site at all times. All workers on site to comply with the PPE requirements at all times.	Low (5)	Site Manager. Project Manager. Site Supervisor Plant Operators Structural Engineers Traffic Coordinators
17. *Site pack up at the end of each day (shift).*	Site left unsafe at the end of the shift.	High (15)	Site Manager ensuring that the site is left in safe and secured manner. All tools and equipment to be placed in safe locations. All plant to be secured at their designated spots. After hours contact numbers and other required signage to be displayed on site at all times. The site to be properly fenced off ensuring that no unauthorised access is allowed.	Low (5)	Site Supervisor Site Manager

18. *Minimum safe approach distances (SADs) to electrical equipment for persons and tools.*

(In accordance with the RailCorp document SMS-08-GD-0268).

Table 1 – Minimum SADs to electrical equipment for persons and tools

AC Nominal Voltage	Minimum SADs		
	Non Accredited Persons	Accredited Persons	Authorised Persons
Insulated low voltage aerial lines up to 1000V, including low voltage aerial bundled cables.	Refer to Table 2		0.5m
Low voltage – above 50V AC but not exceeding 1000V.	3.0m	1.0m	0.5m
Above 1000V up to and including 11,000V	3.0m	1.2m	0.7m
Above 11,000V up to and including 33,000V	3.0m	1.2m	1.0m
Above 33,000V up to and including 66,000V	3.0m	1.4m	1.0m
Above 66,000V up to and including 132,000V	3.0m	1.8m	1.5m
Above 132,000V up to and including 220,000V	6.0m	2.4m	These voltages are not found on the RailCorp Electrical Network. If these voltages are encountered around another network, the Network Operator concerned must be consulted as to the SAD.
330,000V	6.0m	3.7m	
500,000V	8.0m	4.6m	
DC Nominal Voltage	**Non Accredited Persons**	**Accredited Persons**	**Authorised Persons**
Above 120V but not exceeding 600V.	3.0m	1.0m	0.5m
Above 600V Including 1500V	3.0m	1.0m	0.5m

19. *Minimum safe approach distances (SADs) to electrical equipment for persons and tools.*

(In accordance with the RailCorp document SMS-08-GD-0268).

Table 2 – Minimum SADs for non-electrical work around insulated low voltage cables up to 1000V (including low voltage aerial bundled cables) and low voltage aerial lines

Work Activity	Minimum SADs	
	Non Accredited Persons	Accredited Persons
Mobile Plant Operation	Refer to SMS-06-GD-0268, Appendix A	
Handling non-conductive materials (timber, plywood, PVC, pipes and guttering etc.)	1.5m	0.5m
Handling metal materials (roofing, guttering, pipes etc.)	4.0m	0.5m
Driving or operating vehicle	0.6m	
Hand held tools	0.5m	
Scaffolding	Refer to SMS-06GD-0282, Scaffolding	

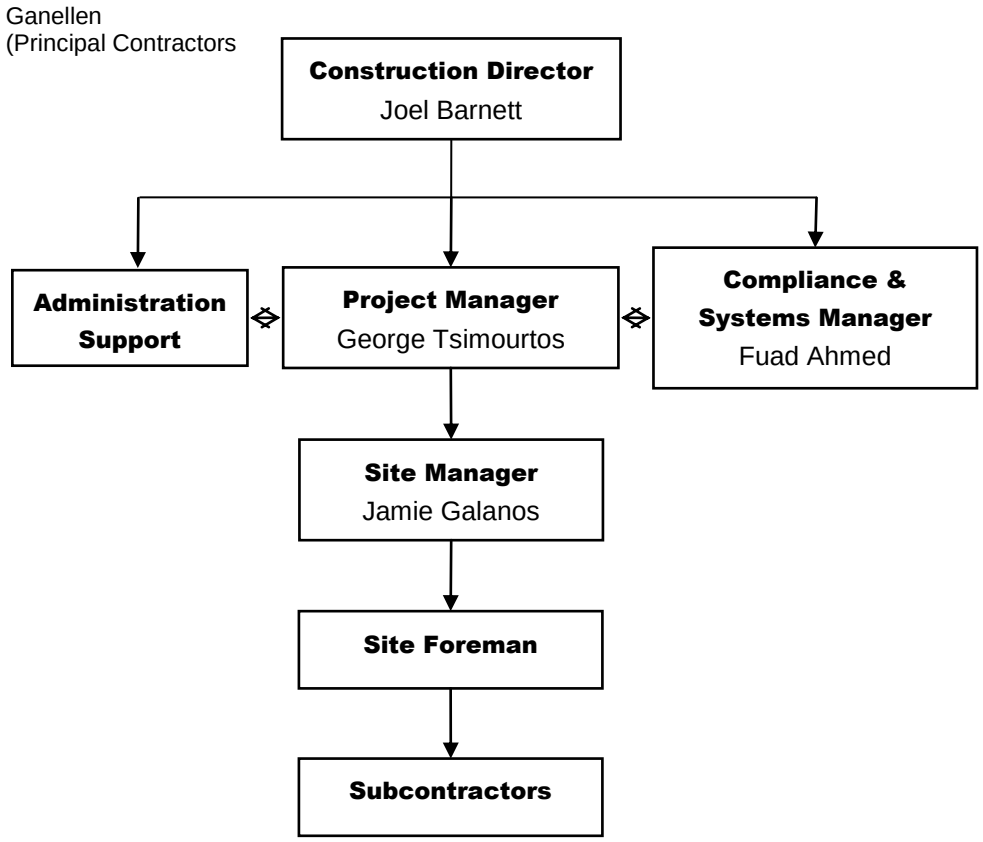
8. EMERGENCY CONTACT DETAILS

CLIENT NAME	Australand Property Group
CLIENT CONTACT (Mob)	Robert Tasevski (0407 938 811)

9. TRAINING & COMPETENCY REGISTER

CONTRACTOR					
NAME(S)	**WHS GENERAL INDUCTION (White Card)**	**FIRST AID**	**LOCAL SITE INDUCTION**	**TRAINING / QUALIFICATIONS / TICKETS (Class)**	**YEARS EXPERIENCE**

10. PROJECT MANAGEMENT & RESPONSIBILITY PROCESS



Description	Contact Number
Australand Site Manager Scott Bradley	**0438 709 630**
Australand HSE Co-ordinator Mark McBride	**0458 120 133**
Ganellen Construction Director Joel Barnett	**0410 410 113**
Ganellen Compliance & Systems Manager Fuad Ahmed	**0421 649 552**
Ganellen Project Manager George Tsimourtos	**0405 336 763**
Ganellen Site Manager Jamie Galanos	**0405 145 302**
Ganellen Return to Work Coordinator Rebecca Bacon	**0414 788 114**
Ganellen Head Office	**02 9555 2444**

11. ESWMS INDUCTION SIGN OFF SHEET

By signing this document you are acknowledging that you have read and understood the instructions contained within the Environmental Safe Work Method Statement (ESWMS). You are committing to work by the instructions contained within the ESWMS. At no times are you to work in a manner that contravenes the ESWMS. Should such a condition arise, you must stop work immediately and inform your supervisor.

NAME		SIGNATURE	DATE
FIRST NAME	LAST NAME		

12. Legal and Other Requirements

The ESWMS have been prepared in accordance with the requirements of the following legal and other documentation. Please refer to Compliance and Systems Manager for the availability of all mentioned standards.

WHS Act 2011
WHS Regulation 2011

RailCorp System Guide – Working Around Electrical Equipment – SMS-06-GD-0268

Work Cover – Guidelines for the safe use of ladders
Work Cover – Moving plant on Construction Sites.
Work Cover – Use of personal protective equipment at work – a guidance note.
Work Cover – A guide to Sun Safety for outdoor workers.
Work Cover – A guide to dust hazards.
Work Cover – HazPak

Work Cover NSW Code of Practice: Electrical practices for construction work.
Work Cover NSW Code of Practice: Noise management and protection of hearing at work.
Work Cover NSW Code of Practice: Amenities for construction work.
Work Cover NSW Code of Practice: WHS Induction training for construction work.
Work Cover NSW Code of Practice: Control of workplace hazardous substances.
Work Cover NSW Code of Practice: Excavation
Work Cover NSW Code of Practice: 'Electrical Practices for Construction Work'.

AS 2919 Industrial Clothing AS 2210 Part 2 Occupational Safety Footwear
AS 2865:2001 Safe working in a confined space
AS 1657:1992 Fixed platforms, walkways, stairways and ladders – Design, construction and installation
AS 1269.3:1998 Occupational noise management – Hearing protector program
AS 1270:1988 Acoustics – Hearing protectors
AS 1891:1983 Industrial safety belts and harness
AS 3795:1990 Clothing for protection against chemicals
AS 1742 Traffic Control Standards: (Set) Manual of uniform traffic control devices
AS 4142.1-1993: Fibre Ropes – Care and Safe Usage

AS/NZS 1715:1994 Selection, use and maintenance of respiratory protective devices
AS/NZS 1716:1994 Respiratory protective devices
AS/NZS 2161.2:1998 Occupational protective gloves – General requirements
AS/NZS 2161.3:1998 Occupational protective gloves – Protection against mechanical risks
AS/NZS 2604:1998 Sunscreen products - Evaluation and classification
AS/NZS 1336:1997 Recommended practices for occupational eye protection
AS/NZS 1800:1998 Occupational protective helmets – Selection, care and use
AS/NZS 1337:1992 Eye protectors for industrial applications

7. APPENDIX C – PROJECT SAFETY AGREEMENT

Project Safety Agreement (PSA)

__Part 1__ to be completed by Project Owner and submitted to Asset Maintainer(s) prior to any Project work proceeding in the rail corridor, or on/near operating RailCorp Infrastructure. __Part 2__ is actioned by Asset Maintainer. __Part 3__ to be completed and submitted by Project at Practical Completion stage. __Part 4__ to be jointly completed following Practical Completion

PSA Registration No.	Completed by Asset Maintainer

PART 1 Project Description & Management

Section A Project Details *Project Manager to complete*			
Project name	Discovery Point – Stage 6 - Arc	**Program**	
Company/Division	Australand / Ganellen	**Contact**	George Tsimourtos 0405 336 763
Reference no (if available)	NA	**Project no** (if applicable)	NA

Location Tracks, nearest station, structure	Brodie Sparks Drive – Near Wolli Creek Station		
From:	km/structure number	**To:**	km/structure number

RailCorp District/Location where work will take place

☐ North ☐ Central ☐ West ☐ Illawarra ☐ Facilities ☐ C&CS ☐ Other_**Airport Line**

Stage / Type of Work	Discrete project ☒	Cyclic/Generic works ☐	Multiple stages ☐ Seq #

☐ Worksite / Principal Contractor establishment ☐ Enabling / Preparation ☒ Construction ☐ Defect/Restoration ☐ Commissioning

Assets affected by this work

☐ Track ☐ Electrical ☐ Tunnel ☐ Fire Systems ☐ Yards ☒ Underground Services ☐ Infrastructure outside corridor
☐ Signal ☐ Structure ☐ Stations ☐ Fencing/security ☐ Control/Monitoring systems ☐ Corridor/Access ☐ Other

Scope of works	☒ Approved Project Scope of Works is attached as Appendix 2
Site Plan (where applicable)	☒ Site plan/sketch/ fro worksite or Principal Contractor establishment attached as Appendix 3

Configuration Change Request (CCR) required?	☐ Yes ☒ No	**CCR no:**

CCR status

Presented to CCB? ☒ Yes ☐ No

Approved? ☐ Yes Verified by (Name & Signature)

Not approved ☐ No – (Provide Comments/outstanding issues)

Design accepted by RailCorp Engineering ? ☐ Yes ☐ No ☐ N/A	Comments re design approval:

Planned Dates	**Start date** Including Pre-work 04/02/2013	**Finish date** 01/09/2014
Planned possession use	WE / Weekday (WK) Possession numbers:	

☐ Mid-week possession, and/or ☒ No possession needed and/or ☐ Weekend (Closedown Possession

Proposed Planned w/s protection ☐ **LPA** ☐ **TOA** ☐ **TWA** ☐ **ASB** ☐ **Lookout Working** ☐ **N/A**

Principal Contractor (PC) (tick as applicable)		**Principal Contractor Appointment Req'd** ☐**No** ☒**Yes** **(if yes complete below)** If EPC is to be appointed attach plans showing extent of EPC zone and EPC Appt checklist (SMS-06-FM-1405)						
RailCorp	☒	Division:	IRD:☐	IMD:☐	C&CS:☐	E&P:☐	TPD☐	Novo:☐
			Other:					
External PC	☐	Company:						
Construction Manager (PC Rep) Name:				**Phone no.**				

Section B Interfaces/Hazards *Project Manager to complete for ALL projects* *(tick as applicable)*			
1	Work will affect **maintenance activities or access to or inspections of** assets, emergency or road access, access to facilities etc (include stockpiles/ site sheds)	☐ Yes ☒ No	If Yes, provide summary of impacts and controls in Appendix 1 B1
2	Changed **maintenance responsibility** resulting or new asset becoming operational (include non-commissioned assets requiring routine inspection)	☐ Yes ☒ No	If Yes, describe changes or additional responsibility in Appendix 1 B2
3	There are potential **reliability issues** associated with the works (works near/around or access to site, near points or other services, off-track plant used on track)	☐ Yes ☒ No	If Yes, describe issues and their management in Appendix 1 B3
4	**Excavation or earthworks** will be in close proximity to operations or services, and/or impact on other assets If in **vicinity of Ferraz** units (ie East Hills line) ***Senior RailCorp Electrolysis Engineer*** *required.*	☒ Yes ☐ No	If Yes, provide summary of work methodology and damage risk mitigation in Appendix 1 B4. If near **Ferraz** units **Senior RailCorp Electrolysis Eng to complete Part 2.**
5	Work involves **hazardous materials** (i.e. asbestos/hazardous materials stored or used on site)	☐ Yes ☒ No	If Yes, give details and how it will be managed in Appendix 2 B5
6	E**nvironmental hazards** associated with this work (i.e. noise, light spill, endangered flora, fauna, or heritage, soil/waterway contamination)	☐ Yes ☒ No	If Yes, give hazard details and how they will be managed in Appendix 1 B6
7	**Electrical hazards** - Working near (under/over) electrical infrastructure. Permit or lookout/spotter	☒ Yes ☐ No	If Yes, give details and how they will be managed in Appendix 1 B7
8	Will the work involve **any disturbance to track in the period 1 November to 31 March?**	☐ Yes ☒ No	District Civil Maint. Engineer approves or advises conditions in Part 2.

Section C Site Safety, Standards and Accreditation (Project Manager to complete)		
Work will be in accordance with RailCorp Standards/Procedures	☒ Yes ☐ No	Details of approved exceptions/waivers must be identified in Appendix 1. (C1) During course of works any urgent conditions requiring attention to be identified to applicable Infrastructure Maintenance Personnel.
Work will be performed by accredited and competent staff	☒ Yes ☐ No	Includes persons working, supervising, certifying or commissioning activities. If No - details of exceptions etc to be advised in Appendix 1 (C2)

List persons/activities with specific commissioning/certification responsibility/requirements.

Activity	Nominated person	Position	Phone	Division/Company
Superintendent of Project works around within close proximity to Railcorp's assets.	Robert Tasevski	Development Manager	0407 938 811	Australand Property Group
Builder - Construction involving Stage 6 – Arc building at Discovery Point – Brodie Sparks Drive Wolli Creek	George Tsimourtos	Project Manager	0405 336 763	Ganellen Pty Ltd
Structural Design	Tim Hoare	Director	0418 803 220	Bonacci Group
Geotechnical Design	Peter Oitmaa	Senior Associate	0412 574 518	Douglas Partners
Rail Infrastructure Consultant	ARUP	David Stuart-Smith – Senior Associate (Electrical Systems)	0458 711 892	ARUP
Rail Infrastructure Consultant	ARUP	Dr Lorna Small – Rail Safety & Assurance Manager	-	ARUP

Piling Contractor	TBC	TBC	TBC	Vibropile

Worksite Safety System and Responsibilities in place for this work/worksite? (tick applicable below)

☒ RailCorp SMS ☐ Safety Interface Agreement ☒ External Principal Contractor SMS ☐ Alliance PrgSMP
☐ EPW Risk & Indemnity Agreement ☐ Other (provide details)

Safety management documentation? (tick one or more as applicable)	**Req'd**	**In Place**	**Comment or details of equivalent approved documentation**
Asbestos removal permit	☐	☐	
Demolition Plan	☐	☐	
Excavation Work Plan	☒	☒	
Confined Spaces Entry permit	☐	☐	

Underground Services Location (tick one)

Underground Services Documentation	☐ N/A	☐ **DSS**	☐ **ISS**	☐ **Other (provide details)**

PART 2 PSA Signoff

Registration Number			
Project Name			
Project Location		*Company/Division*	
Submitted by (Project Owner/Representative)		*Name*	*Signature*

Asset Maintainer to complete & return to Project Owner (tick as applicable) – Registration number to be recorded above.

Asset Owner/Stakeholder Endorsement	**Applies Y/N**	**Conditions Y/N**	**Signed**	**Name (Print)**	**Comments**
Civil & Track Maintenance	☐	☐			
Electrical Maintenance	☐	☐			
Signal Maintenance	☐	☐			
Facilities (stations/buildings/yards)	☐	☐			
Comms and Controls Systems	☐	☐			
Environmental	☐	☐			
Electrolysis Engineer (eg Ferraz Units/ other issues)	☐	☐			
Other	☐	☐			

Issued by: (person representing asset maintainer/owner)

Name	Position	Signed	Date

Conditions and/or documentation for work to proceed *(list any requirements not referenced elsewhere in this document).*

PART 3 Notice of Practical Completion *Project Manager to complete*

Full Scope of Work Completed ☐
Part/Staged Completion ☐

Date that Practical Completion was achieved:			
The scope of works as defined by referenced PSA has reached Practical Completion and is suitable for operational purposes. Site Inspection/formal signoff with applicable district maintenance staff will be arranged.			
Details of Incomplete work/omissions (urgent outstanding works to be identified to district staff)			
All work has been carried as per the details & conditions set out in parts 1 & 2 of referenced PSA & scope including compliance to applicable standards & procedures.		☐ Yes ☐ No	**Document details of any exceptions/non compliance to standards, procedures and/or approval conditions together with applicable control/mitigation in table 1**
Project Representative Name	**Position**	**Signature**	**Date**

Part 4 Acceptance of Practical Completion by Asset Maintainer

Project Name			
Project Location		*Company/Division*	
PSA Registration Number		**Sequence # (for multiple reports**	**/**

Table 1A exceptions to PSA Conditions, standards & procedures, approved waivers

Description of Non Compliance (if applicable)	**Mitigation/Exemptions**

Defects and/or omissions to be listed below. *Note: any defects must be entered to Teams 3 (ref APP-AI-RN-002)*

Table 1B Outstanding Works at Practical Completion *Tick applicable box to identify category of outstanding works (tick under D if Defect, O if Omission, S if Site Cleanup against each item as applicable)*

Outstanding Works	**Action, Due Date & Responsibility**	**D**	**O**	**S**

Acceptance of Practical Completion by Asset Maintainer and/or Asset Manager Representative.

All works have reached the stage of Practical Completion. Where applicable, any non compliance or exception to approved conditions/standards, outstanding works, omissions, and/or defects is listed above.

Position	Name	Signature	Date
Project Representative			
Maintenance Representative(s)			
Asset Eng Representative(s)			
Other			

Appendix 1 *Details of Interface/Hazards identified at Part B*
B1 – Maintenance/Access Restrictions NA
B2 – Changed Maintenance Responsibility **NA**
B3 – Reliability Issues **NA**
B4 – Excavation/Earthworks in Rail Corridor Refer attached Ganellen Construction methodology detailing excavation works to occur within proximity to HV cable trench.
B5 – Hazardous Materials **NA**
B6 – Environmental Hazards **NA**
B7 – Electrical Hazards Refer attached Ganellen Construction methodology detailing procedures in place to ensure compliance and safe working around Railcorp's electrical assets.
C1 Engineering Standards/RailCorp Procedure Waivers **NA**
C2 Worker Accreditation Exemptions/Conditions **NA**

Appendix 2 *Project Representative to attach Project Scope of Works or Site Plan as applicable*

8. APPENDIX D – PROJECT SCOPE OF WORKS FORM

Project No.: NA **Project Manager/Engineer: PM: George Tsimourtos / Engineer: Bonacci (Tim Hoare)** **Delivering Division/Company:** Ganellen / Bonacci

AMP II id: **Preliminary/Detailed/Variation** (circle relevant) **Version:** Rev.0 **Version Date:10/12/12**

Project Name: Discovery Point Stage 6 – Arc

Location (including kms): Brodie Sparks Drive Wolli Creek NSW 2205

District/Discipline Affected: Wolli Creek HV Cable trench located at stage 6 Brodie Sparks Drive Wolli Creek 2205 **Date Prepared: 10.12.12**

Basis of Estimate: Unit Rate / Detailed Cost Estimate (circle relevant)

Scope (e.g. Extent, Quantity, Standards, Comments & References) (***Number each item sequentially eg 1,2,…... and scope items as subsets ie 1.1, 1.2,….***)
Scope of Works is defined in Ganellen's construction methodology attached and dated 10.01.13.

Possession & Access Requirements (WE/WK/ATP)
☐ Weekend Track Possession -include Config and WE number(s)
☐ Mid week Possession - include date(s)
☐ Non possession - include dates(s)
☐ Other – give details

Resource Assumptions (RailCorp Work Group, contractor, worktrains, track machine, Key Resources etc) ***To be arranged by Project.***

Other Requirements	**(Y/N)**	**Responsibility**	**Comments**
Configuration Change Request required			

Environmental Impact (EAS/REF/EMP required)			
Design Requirements:- * Track Design			
* Civil Design			
* Electrical Design			
* Signal Design			
Other Specific Hold Points (List if required)			
Will more information/inspection/design be required to update this scope later.			

Other Assumptions, Inclusions & Exclusions

Disposal of obsolete/surplus or redundant assets under this Project Scope is approved by Infrastructure Maintenance.
Any revenue resulting from such disposals will to be credited to the appropriate asset owner in accordance with AMG Financial procedures.

<other>

Sign Off – *Note. Scope is authorised subject to configuration and design approval, and compliance to RailCorp standards and procedures (except where noted), and any conditions as listed.*

Name	*Signature*	*Date*	
_____	_____	_____	*Project Manager/Engineer (Representative)*
_____	_____	_____	*Asset Engineer (Track)*
_____	_____	_____	*Asset Engineer (Structures & Land)*
_____	_____	_____	*Asset Engineer (Electrical)*
_____	_____	_____	*Asset Engineer (Signal)*
_____	_____	_____	*Other Asset Owner Representative*

9. APPENDIX E – ELECTRICAL PERMIT

AMENDED PERMIT REQUEST 8/1/13

Request for Electrical Permit to Work

Issue date:05/07/10
Review date: 02/07/13

This form is to be completed and forwarded to the nominated electrical representative only.
If you don't know details of the electrical equipment (eg feeder number), ASK.

Date submitted: 3/1/13	Requestor (name): MARC HORWITZ ON BEHALF OF AUSTRALAND & GANELLAN	Fax:
		Phone: 28012

1 Tick appropriate box below:

- ☐ **More** than 6 weeks notice prior to work: – Approval **NOT** required (go to section 2)
- ☑ **Less** than 6 weeks notice prior to work: – **Approval required by Elect. Maint. Engineer** (complete 1, then go to 2)

Electrical Maintenance Engineer **Signature:** _____ Date: _____

2 Forward to: ELECTRICAL ISOLATIONS – CENTRAL (Name of nominated Electrical Representative)

3 Planned times: From:	0700	hrs	9/2/13	To:	1700	hrs	10/2/13
No. of shifts			(Date)				(Date)

Work location (suburb / landmark): WOLLI CREEK STATION

Description of work: EXCAVATION WORKS AROUND 11KV AND 1500KV CABLES

Plant to be used: EXCAVATOR / ASSOCIATED EXCAVATION MACHINERY

Company / Work Team name: (performing the work) GANELLAN/AUSTRALAND Contact phone: JOEL BARNETT GANELLAN 0410410113/ROBERT TASEVSKI AUSTRALAND 0407938811

Other Network Operators' services from which supply is to be removed:

4 1500V isolation

AMENDED 8/1/13

On-site instruction is ***mandatory*** for all Permit Holders unless:

1. the electrically safe work area is more than than 300m from any live 1500V equipment, and
2. there is no other live equipment to be listed in the Special Instructions and Warnings (item 5) of the Permit, and
3. off-site instruction is approved by the nominated Electrical Representative.

FEEDERS 121, 122, 131 AND 132		Track UP & DN AIRPORT LINE
OHW structure	OHW structure	Track
OHW structure	OHW structure	Track

5 High / Low Voltage isolation — On site instruction is mandatory for all prospective Permit Holders.

Extent of work: From pole number: _____ To pole number: _____

Overhead line or cable feeder numbers for which supply is to be removed: 11KV FEEDER 662/2 (ALSO 662/3, 662/4 AND 662/5)

6 **NOTE: For possessions, arrangement for necessary on-site instruction of Permit Holders is to be made 7 days prior to the pre-possession meeting date.**

Permit Holder name	Phone	Permit Holder name	Phone
Jim Jovelski	0422 758 013		

7 ******ELECTRICAL USE ONLY******

Is off-site instruction approved by an AOM with appropriate authority?
Yes / No (strike out as appropriate).

Pre-numbered Permit(s) to be issued: _____

Arranged by (name): Signature: Return to requestor (date):