



SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP)

Sydney Trains is the proponent and determining authority for this activity. This environmental impact assessment is being completed in accordance with Division 5.1 of the EP&A Act 1979 and Part 8 of the EP&A Reg 2021. This SEMP forms the assessment when paired with the associated Environmental Work Method Statements.

The activity covered by this SEMP is routine maintenance or ancillary works associated with the ongoing safe operation and management of the Sydney Trains rail network in accordance with NSW and Federal statutory objectives. As such, and in respect to this assessment, the cumulative impacts of the routine maintenance and ancillary works are negligible and alternatives to undertaking the works have not been assessed.

1) Project or Program Details

Project/Program Name		Moss Vale Station Power Supply Upgrade	
Project/Program No		P.0045573	
Scope of Works		<ul style="list-style-type: none"> • Installation of Substation in car park at Moss Vale station • Run the HV cabling (Underground) on Daleys Way • Run LV cabling from Substation to Lamp room on station platform 1 and to Moss vale station Governor house building • Installation of Main switch board next to existing switchboard • Installation of pits and cabling 	
What is the cost of the scope of works?		<input type="checkbox"/> Routine maintenance - any value <input checked="" type="checkbox"/> Capital investment - less than \$5 million <input type="checkbox"/> Capital investment - more than \$5 million	
Location (Line, KM, Suburb and/or Area)		Moss Vale Station	
Attach applicable Environmental Work Method Statement (EWMS)	EWMS Number	EWMS Title	
	EMS-03-EW-0280	Substation Maintenance	
	EMS-03-EW-0292	Services installation	
Is any of the proposed work outside of the EWMS' scope?	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes:  Contact your environmental officer to determine how environmental impact assessment for the works can proceed.		
Does this work have any steps or equipment that are not covered by the EWMS?	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes: <Describe>		
Is the work part of a larger job?	<input checked="" type="checkbox"/> No: Continue to Part 2 <input type="checkbox"/> Yes: <Provide details of larger job and relationship to these works>		


	 Contact your local environmental officer for assistance. The larger project may have environmental controls that need to be applied to this job. All relevant conditions and controls need to be added to PART 5 Summary Consultation and Mitigation Measures .
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2) Project Timing and Location(s)

2.1 Project Timing

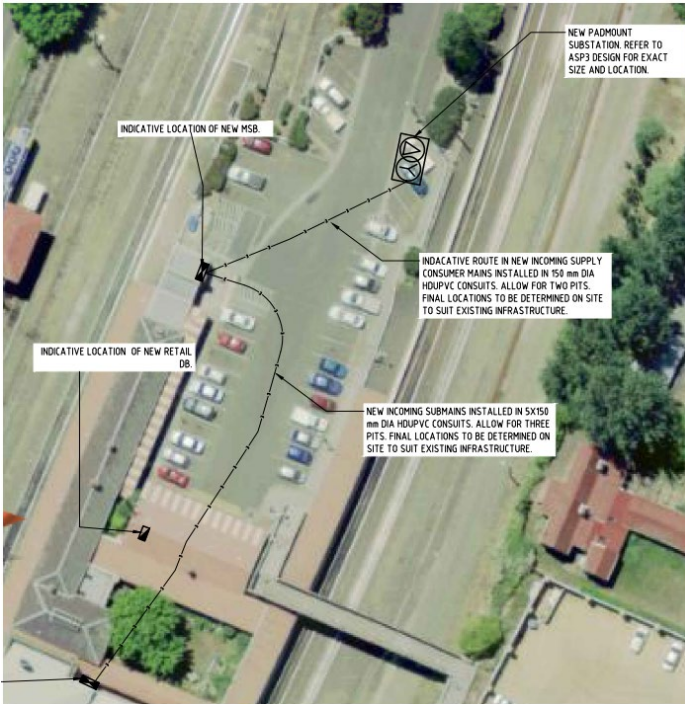
Activity	Detail dates and work hours, noting in particular any 'Out of hour' periods (that is, outside of 7am–6pm Monday to Friday or 8am–1pm Saturday)
Works/program commencement: <i>Including pre-works, site establishment, installation of erosion and sediment controls, etc.</i>	17/10/2022
Site construction and/or periodic maintenance activities <i>For programs/ recurring maintenance detail recurrence frequency and work hours of activities</i>	17/10/2022-21/10/2022 Day and night works 22/10/2022-2/12/2022 Monday to Friday 7 AM to 6 PM Saturday 8 AM to 1 PM
Works/program completion: <i>Including demobilisation and removal of all site offices, equipment and materials.</i>	02/12/2022

2.2 Existing Environment

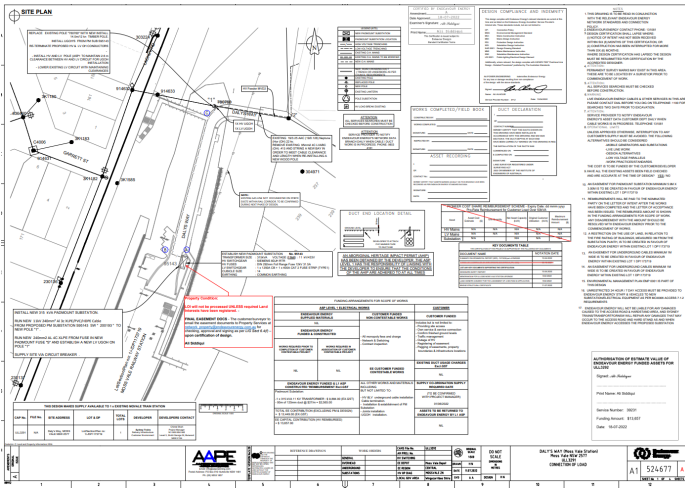
 <i>Note: Where multiple sites are to be covered by this form each location is to be identified separately in the following question set (e.g. Site 1, Site 2, etc)</i>
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Moss vale Railway Station	
 <p style="text-align: center;"><u>Location of Work</u></p>	Local environment includes: <ul style="list-style-type: none"> <input type="checkbox"/> In, or near, residential area <input type="checkbox"/> In, or near, customer areas <input type="checkbox"/> Tunnel/underground location <input type="checkbox"/> Easement/off corridor areas <input type="checkbox"/> Open spaces <input type="checkbox"/> Sparsely vegetated spaces <input type="checkbox"/> Thickly vegetated spaces <input type="checkbox"/> In, or near, waterways or drains <input type="checkbox"/> Other (specify):

Moss Vale Station Car Park



Site Drawings (Electrical)



3) Consultation requirements

3.1 Consultation with adjoining land managers


Do the works require consultation with other land managers?	Comments
Will the works result in substantial impacts on Council related infrastructure and services or locally listed heritage items? (i.e. local heritage items, stormwater, traffic, sewerage, water or impact on public place or footpaths, or works that impact flood prone areas or coastal areas)	<input type="checkbox"/> No: Continue to next question <input checked="" type="checkbox"/> Yes: Identify requirements and how they were addressed: S60 Heritage approval for installation of Padmount transformer and Transport exemption for IMSB installation in Lamp room obtained
Are the works adjacent to land reserved under the <i>National Parks & Wildlife Act 1974</i> ?	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes: Identify requirements and how they were addressed:
Consultation required with other stakeholders (e.g. RMS, Crown Land, Private landholder etc.)	<input type="checkbox"/> No: Continue to next question <input checked="" type="checkbox"/> Yes: Identify requirements and how they were addressed: Easement to Endeavour energy released and will be register with Land Registry
Note 1: Where consulted, land managers must be given a minimum of 21 days to provide comments. Any comments received must be considered and appropriate actions identified in Part 5.	

3.2 Community Consultation

Could there be community interest in the works?	<input type="checkbox"/> No: Community consultation assessment not required. <input checked="" type="checkbox"/> Yes: Complete EMS-03-FM-0104 EIA Public Engagement Assessment and identify the assessment outcome; <input type="checkbox"/> 'Outrage' risk management <input type="checkbox"/> Targeted public consultation <input checked="" type="checkbox"/> Public engagement not required Actions arising from the assessment must be identified in Part 5.
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4) Environmental Assessment

4.1 Working outside Active Operational Zone (AOZ)

Are any works to be completed outside the AOZ? <i>The definition of the AOZ is contained in EMS-03-PR-0008 Environmental Impact Assessment</i>	<input checked="" type="checkbox"/> No: Continue to next Question 4.2 <input type="checkbox"/> Yes  Contact your environmental officer for support. EMS-03-FM-0249 EWMS activities outside AOZ must be completed by an environmental officer and must be attached to this SEMP.
Note: Vehicle access across land that is not in the control of Sydney Trains via roads, access ways, easements, or with the consent of the relevant land owner is not considered to form part of the works outside the AOZ.	

4.2 Vegetation condition

<p>Is there any vegetation within the worksite that has not been maintained⁽¹⁾ within the last 10 years?</p> <p>(1) Pruned, weeded, mowed or other activity that significantly disturbed the vegetation.</p>	<p><input checked="" type="checkbox"/> No: Continue to Section 4.3</p> <p><input type="checkbox"/> Yes: Discuss with your local environmental officer whether the site should be considered as a sensitive site due to some biodiversity aspect. If so, add site to 4.3 Sensitive Sites as directed.</p>
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4.3 Sensitive Sites

For works undertaken outside of the AOZ the following section is to include all sites identified by the environmental officer in the activities' **EMS-03-FM-0249 EWMS activities outside AOZ.**

<p>Will the works be located in, or within 100m of an:</p> <ul style="list-style-type: none"> • Aboriginal heritage site or Environmentally Sensitive Site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Contaminated Site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No • Non-Aboriginal Heritage site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <p>A separate line is to be completed in the following table for each site/location identified</p>		
Location and distance (m) from the worksite	Nature of site <small>(Details from database or register)</small>	Potential for the works to impact ⁽²⁾
Moss Vale Railway Station and yard group	SHR Listed Site (No 01200)	Heritage fabric or unexpected archaeological finds.
<p>Notes:</p> <p>(1) Information about sensitive sites must be sufficient to be able to make an informed decision on potential impacts and appropriate project controls.</p> <p>(2) Additional assessments may be required for works in or adjacent to some sensitive sites. Please see the environmental officer and/or individual subject matter procedures for specific requirements.</p> <p>(3) Where works have the potential to impact sensitive sites the required additional controls, approvals, notifications, etc must be listed in Section 5.1 (additional approvals/permits) and/or Section 5.2 (additional controls)</p>		

4.4 Noise and Vibration Assessment of Works

<p>4.4a) Are there any noise sensitive receivers⁽¹⁾ within 350m of works?</p>	<p><input checked="" type="checkbox"/> Yes Describe receivers and continue to 4.4b)</p> <p style="text-align: right;">Receivers*1: _____ 85 m _____</p> <p style="text-align: right;">Distance: _____</p> <p><input type="checkbox"/> No Works do not need further noise assessment, go to Section 5.</p>
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<p>4.4b) Will work be limited to track work on a moving face, be undertaken for less than five (5) consecutive days and consist only of one or more of the following activities:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Ballasting or ballast clean <input type="checkbox"/> Resurfacing (tamping, stabilising, regulating) <input type="checkbox"/> Rail profiling <input type="checkbox"/> Continuous track welding / rail adjusting 	<p><input type="checkbox"/> Yes Works do not need noise and vibration assessment, go to Section 5.</p> <p><input checked="" type="checkbox"/> No Continue to 4.4c).</p>
<p>4.4c) Answer the following questions:</p> <p>a) Will there be any equipment producing noise levels of: (see 'References Tab' in EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment)</p> <ul style="list-style-type: none"> <input type="checkbox"/> more than 80 dBA⁽²⁾ during Standard Hours⁽³⁾, and/or <input type="checkbox"/> more than 60 dBA⁽²⁾ outside of Standard Hours⁽³⁾ or <p>b) <input checked="" type="checkbox"/> Will the works use pile drivers, hydraulic hammers or vibratory rollers (or similar vibration inducing plant)?, or</p> <p>c) <input type="checkbox"/> Will works at any one location last more than 3 weeks in duration?</p>	<p><input checked="" type="checkbox"/> Yes to any of the questions Complete EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment and include any resulting actions in Section 5.</p> <p><input type="checkbox"/> No Works do not need noise and vibration assessment, go to Section 5.</p>
<p>Notes</p> <p>1: Noise sensitive receivers include residences, hospitals, places of worship, schools, aged and child care facilities, etc.</p> <p>2: Noise levels are for the loudest equipment's 'Modified 10m Sound Pressure' as given in EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment ('Sound Pressure' Table, 'References' Tab).</p> <p>3: 'Standard Hours' = 7am-6pm Monday to Friday and 8am-1pm Saturday</p>	

5) Summary of approvals and control measures


Note: For works undertaken outside of the AOZ, the following section is also to include all actions and controls arising from the project's **EMS-03-FM-0249 EWMS Activities Outside of AOZ**.

5.1 Consultation, permits and approvals

Insert any relevant permits or requirements under other relevant legislation.

Environmental Hazard	Permits/Other Requirements	Timing	Responsibility
Noise	Letter Box drop and intermittent excavation	6 pm to 6 am	Head Contractor

5.2 Environmental Controls

Environmental Hazard	<u>All relevant work controls</u> including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities	Responsibility
Consultation	Letterbox notification provided Local <input checked="" type="checkbox"/> Possession <input type="checkbox"/>	Head Contractor New Era Group
 The works' SECM must illustrate the relevant work areas and site environmental controls described above		

5.3 Biodiversity Offset

Is a Biodiversity Offset required for the project in accordance with EMS-06-OR-1006 Biodiversity Note: All calculations are to be in accordance with EMS-06-WI-0177 Biodiversity Offsets Calculator	<input checked="" type="checkbox"/> No Continue <input type="checkbox"/> Yes Provide the following information: • Value: _____
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5.4 For environmental planning and assessment purposes the Site Environmental Management Plan for this job comprises of:

- This SEMP document
 - The Environmental Work Method Statement (EWMS) referred to in Section 1
 - The attached project's Site Environmental Control Map
- Plus (tick as required)
- EMS-03-FM-0248 EWMS Scope Exception
 - EMS-03-FM-0249 EWMS Activities outside AOZ (see Section 4.1)
 - EMS-10-FM-0166 Maintenance Quantified Noise Assessment (see Section 4.3)
 - Additional environmental studies, approvals (including Aboriginal and non-Aboriginal heritage)

5.5 Is review required by an environmental assessor?

Is this for a program of work?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Is any of the work to be completed outside of the Active Operational Zone (AOZ)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is any work being undertaken or will impact on land controlled by others?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is access required across land controlled by others that is not a road, easement or right of way?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were any sensitive sites identified in Section 4.2?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is any work being undertaken in embankments, cuttings or on the boundary fence?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is extensive Council or other Authority consultation required?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are environmental impacts “likely” and “significant”	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Was an EMS-10-FM-0166 <i>Maintenance Quantified Noise Assessment</i> required (Section 4.3) AND was a work phase identified as High Risk?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is work likely to cause community concern (other than noise)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Were additional environmental studies or approvals (e.g. heritage) required?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Were any biodiversity Offsets required for the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



If “Yes” to any of the above, this form must be submitted to the local environmental officer for assessment at least 4 weeks prior to the planned commencement date of the works.

Report all pollution and environment incidents immediately to SHEM or the Incident and Injury Hotline (1800 772 779) and your local environment officer.

Substation Maintenance			Sydney Trains Incident Hotline: 1800 772 779
Environmental Work Method Statement			
Scope			Plant and Equipment:
<p>Scope of EWMS: Works covered by this EWMS are limited to substation maintenance carried out to relevant electrical standard, including:</p> <ul style="list-style-type: none"> oil equipment gas equipment batteries general property / equipment maintenance 	<p>Not in Scope: Works not in scope include:</p> <ul style="list-style-type: none"> replacement of equipment itself major alteration / rebuild of substation (further assessment required) 	<p>Note: Works outside this scope may require an environmental assessment and Construction EMP. Contact local Environmental Professional for guidance.</p>	<ul style="list-style-type: none"> batteries brush cutters chainsaws chemical spray cleaning fluids crane gas filled equipment - transformers and switch gear gas generators lubricants (silicon) oil filled equipment - transformer, circuit breakers oils paints pumps slasher solvents trucks water blaster
Before works commence			
<p>Training/Qualifications required:</p> <ul style="list-style-type: none"> Project Manager to have completed Environmental Management for Projects online training and EWMS Planning Pathway Masterclass. Site Manager to have completed 1 day Erosion and Sediment Control course 	<p>External notifications:</p> <ul style="list-style-type: none"> Letter box drop to all affected residences 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> Site Environmental Management Plan Check for PCB oil as per electrical standards 	
During works			
<p>Inspections and Briefings:</p> <ul style="list-style-type: none"> Pre-work brief Daily plant inspections Daily site inspections 	<p>Permits / licences:</p>	<p>Records/Reporting:</p> <ul style="list-style-type: none"> Pollution Incident Notification Records of inspections 	
Post works			
<p>Inspections:</p> <ul style="list-style-type: none"> Post work ESC inspections 	<p>Site Rehabilitation</p> <ul style="list-style-type: none"> Revegetation 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> Post work defect reporting Check for PCB oil as per electrical standards Records of inspections 	

Applicable Job Steps	Environmental Hazard																
	<u>Staff awareness</u>	<u>Sensitive receivers</u>	<u>Erosion and sedimentation</u>	<u>Noise and vibration</u>	<u>Dust</u>	Property damage	<u>Traffic</u>	<u>Wastes</u>	<u>Soil contamination</u>	<u>Hydrocarbon spill</u>	Plants and animals	<u>Light spill</u>	<u>Fumes and smoke</u>	Aesthetics	Heritage	<u>Bush fires</u>	
Preliminary works	✓																
Remove vegetation / weed control around substation		✓	✓	✓	✓			✓		✓	✓						
Material / plant delivery and storage, site amenities, skip bins		✓	✓	✓	✓	✓	✓		✓	✓			✓				
Oil related activities (mtc of oil equipment, also oil water separators)			✓	✓	✓		✓	✓	✓	✓			✓				
Gas related activities (regassing equipment – nb: degassing only done in decommissioning)			✓	✓	✓		✓	✓	✓	✓			✓				
Batteries maintenance			✓	✓	✓		✓	✓	✓	✓			✓				
General maintenance (equipment, building, reballast yard, etc)				✓				✓	✓	✓					✓		

Environmental Hazard	Control	Responsibility for control	Controls reference
Staff on site unaware of environmental controls	<ul style="list-style-type: none"> Undertake site pre-work briefing and give local induction. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan SMS-06-FM-4163 Pre-work Briefing
Damage to environmentally sensitive site or receptor	<ul style="list-style-type: none"> The SEMP must identify any environmentally sensitive sites that may be impacted by the activity. 	Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan, <i>Environmentally Sensitive Site List</i> SMS-06-FM-4163 Pre-work Briefing

Environmental Hazard	Control	Responsibility for control	Controls reference
Erosion and sedimentation	<ul style="list-style-type: none"> • Develop erosion and sediment control plan for site and install erosion and sediment control structures prior to commencing site work • Maintain erosion and sediment control structures during works and until site has stabilised after completion of works • Provide sediment protection to stockpiles • Engage street sweeper to keep public roads used to access site clean of mud tracking and silt • Daily inspections 	Project Manager Site Manager Site Manager Project Manager Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • EMS-14-PR-0012 Erosion and Sediment Control
Offensive noise (chainsaws, plant, vehicles)	<ul style="list-style-type: none"> • The SEMP must identify potentially sensitive receivers and identify relevant controls through the noise assessment. 	Project Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • EMS-10-GD-0048 Guide to Managing Noise and Vibration from Rail-related Construction and Maintenance
Dust from maintenance works impacting non-Sydney Trains controlled property)	<ul style="list-style-type: none"> • Use water cart to dampen exposed surfaces including access roads, work areas and stockpiles • Cover long term stockpiles • Keep vehicles to existing access roads • Minimise removal of vegetation from worksite • Daily inspections 	Site Manager Site Manager Site Manager Project Manager Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • EMS-05-GD-0013 Air Quality Guide
Damage to adjacent properties	<ul style="list-style-type: none"> • The SEMP must identify potentially sensitive receivers and relevant controls based on vibration assessment, where relevant. • Liaise with adjacent land holder and undertake agreed actions. 	Project Manager Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan
Increased traffic flow in residential areas	<ul style="list-style-type: none"> • Implement Traffic Management Plan • Plan all vehicle movements to occur outside of local peak traffic periods • Ensure offsite staging areas in low impact areas • Utilise qualified traffic control staff 	Project Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan

Environmental Hazard	Control	Responsibility for control	Controls reference
<p>Generation of wastes: oil (possible PCB), gas (SF6, battery, other), oily pit sediment, oily rags, battery materials, cleaning fluids, solvents, paints, litter, oily ballast.</p>	<ul style="list-style-type: none"> • Do not overestimate quantities of materials required. • Separate wastes into recyclable categories • Ensure wastes are placed in appropriate containers • Minimise mixing of new ballast and spoil • Daily inspections • Remove stockpiles as soon as possible. • Ensure proper transport and disposal of hazardous materials • Use weak alkali to clean acids (batteries) • Maintain proper ventilation • Purchase and maintain equipment to minimise gas leakage • Take care in transport and handling of gases. • No spreading of weed infested material within corridor • Wash out containers prior to disposal. 	<p>Site Manager</p>	<ul style="list-style-type: none"> • Site Environmental Management Plan • EMS-13-OR-1013 Waste Management
<p>Soil contamination</p>	<ul style="list-style-type: none"> • Identify potential contaminants prior to commencing work on site (eg. PCB oil in oil filled equipment) • Develop stockpile and oil storage management plan to ensure segregation of potentially contaminated materials from clean materials • Implement stockpile plan • Daily inspections 	<p>Project Manager</p> <p>Project Manager</p> <p>Site Site Manager</p> <p>Site Manager</p>	<ul style="list-style-type: none"> • Site Environmental Management Plan • EMS-07-WI-0004 Contaminated Land Management

Environmental Hazard	Control	Responsibility for control	Controls reference
Hydrocarbon / chemical spill	<ul style="list-style-type: none"> • Ensure daily plant checklists completed and repairs made as required • Ensure all plant has suitable spill kits and operators trained in use and disposal of used materials • Notify Pollution Incidents to the Safety Incident and Injury Hotline 1800 772 779 • Ensure SDS is onsite for all stored chemicals • Ensure oil replacement within bunded areas (including portable bunds where necessary) 	Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • <i>SMS-16-SP-3076 Inspection, Testing, Calibration and Monitoring</i> • <i>SMS-06-GD-3112 Guide to Plant Risk Assessment</i> • <i>EMS-02-WI-0214 Notify Pollution Incidents</i>
Threats to biodiversity via native vegetation or habitat clearing, and the spread of noxious weeds.	<ul style="list-style-type: none"> • Maintain tape or other suitable fencing around “no go zones” • Clear minimal vegetation, only as approved. • Trim or remove trees under direction of an arborist. • Keep vehicles and equipment away from vegetation • Preserve wildlife / habitat where possible. Contact WIRES as required for injured animals. • Remove weeds from plant before leaving infested sites. • Use weed control process (spray qualifications, data sheets) • Revegetate disturbed areas using locally native, appropriate species, in an approved vegetation plan. 	Site Manager Site Manager Site Manager Site Manager Site Manager Site Manager Project Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • <i>EMS-06-OR-1006 Biodiversity</i> • <i>EMS-11-WI-0053 Noxious and Environmental Weed Herbicide Application</i> • <i>EMS-11-PR-0017 Pesticide System Procedure</i>
Fumes and smoke from diesel equipment and plant	<ul style="list-style-type: none"> • Maintain equipment in accordance with manufacturer's written specification • Ensure daily plant checklists completed and repairs made as required 	Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • <i>SMS-16-SP-3076 Inspection, Testing, Calibration and Monitoring</i>

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Environmental Hazard	Control	Responsibility for control	Controls reference
Heritage (substation internal fixtures)	<ul style="list-style-type: none"> • Check the S170 Register for any heritage structures that may be impacted. • Contact Sydney Trains Heritage Specialist (SEQR Directorate) for advice regarding Statements of Heritage Impact • Demarcate heritage site to prevent entry into heritage site • If a heritage item is uncovered, Stop further disturbance, demarcate the site and contact the Environmental Professional. 	Project Manager Project Manager Site Manager Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan • <i>Sydney Trains Heritage and Conservation Register</i>

Service Route Installation			Sydney Trains Incident Hotline: 1800 772 779
Environmental Work Method Statement			
Scope			Plant and Equipment:
<p>Scope of EWMS: Works covered by this EWMS are limited to services cable route installation:</p> <ul style="list-style-type: none"> Ducted Galvanised Steel Troughing (GST) Ground Line Troughing (GLT) Directional drilled / direct buried conduit Service installation (signals, electrical, communications, pest control) 	<p>Not in Scope: Works not in scope include:</p> <ul style="list-style-type: none"> Any work carried out within a substation (see substation maintenance) 	<p>Note: Works outside this scope may require an environmental assessment and Construction EMP. Contact local Environmental Professional for guidance.</p>	<ul style="list-style-type: none"> backhoe bobcat borers chainsaws compactors concrete truck and pump crane / crane truck dump truck excavators generators grader hand tamper hand tools lights mulcher radios skip bins street sweepers tippers trucks and vehicles water cart
Before works commence			
<p>Training/Qualifications required:</p> <ul style="list-style-type: none"> Project Manager to have completed Environmental Management for Projects online training and EWMS Planning Pathway Masterclass. Site Manager to have completed 1 day Erosion and Sediment Control course 	<p>External notifications:</p> <ul style="list-style-type: none"> Letter box drop to all affected residences 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> Site Environmental Management Plan Quantitative Noise Assessment as per EMS-09-GD-0048 Services Search 	
During works			
<p>Inspections and Briefings:</p> <ul style="list-style-type: none"> Pre-work brief Daily plant inspections Daily site inspections 	<p>Permits / licences:</p>	<p>Records/Reporting:</p> <ul style="list-style-type: none"> Pollution Incident Notification Records of inspections 	
Post works			
<p>Inspections:</p> <ul style="list-style-type: none"> Post work ESC inspections 	<p>Site Rehabilitation</p> <ul style="list-style-type: none"> Revegetation 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> Post work defect reporting Records of inspections 	

Applicable Job Steps	Environmental Hazard															
	<u>Staff awareness</u>	<u>Sensitive receivers</u>	<u>Erosion and sedimentation</u>	<u>Noise and vibration</u>	<u>Dust</u>	<u>Property damage</u>	<u>Traffic</u>	<u>Wastes</u>	<u>Soil contamination</u>	<u>Hydrocarbon spill</u>	<u>Plants and animals</u>	<u>Light spill</u>	<u>Fumes and smoke</u>	<u>Aesthetics</u>	<u>Heritage</u>	<u>Bush fires</u>
Preliminary works	✓															
Access upgrade to site (includes pre-build and stockpile locations)		✓	✓	✓	✓		✓		✓	✓		✓	✓			
Vegetation removal		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓			
Material / plant delivery and storage, skip bins				✓	✓	✓	✓		✓			✓	✓			
Install cable routes and airlines (includes cables, conduits, pits, ULXs, etc.)		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		
Temporary spoil stockpiling / removal by truck			✓	✓	✓		✓	✓	✓	✓		✓	✓			
Commissioning			✓	✓	✓		✓	✓	✓		✓	✓				
Remove redundant equipment (part of which is done during commission)			✓	✓	✓		✓	✓	✓		✓	✓		✓		
Demobilise, site tidy, waste / spoil disposal, etc			✓	✓	✓	✓	✓	✓	✓			✓	✓			

Environmental Hazard	Control	Responsibility for control	Controls reference
Staff on site unaware of environmental controls	<ul style="list-style-type: none"> Undertake site pre-work briefing and give local induction. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan SMS-06-FM-4163 <i>Pre-work Briefing</i>
Damage to environmentally sensitive site or receptor	<ul style="list-style-type: none"> The SEMP must identify any environmentally sensitive sites that may be impacted by the activity. 	Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan, <i>Environmentally Sensitive Site List</i> SMS-06-FM-4163 <i>Pre-work Briefing</i>

Environmental Hazard	Control	Responsibility for control	Controls reference
Erosion and sedimentation	<ul style="list-style-type: none"> Develop erosion and sediment control plan for site and install erosion and sediment control structures prior to commencing site work Maintain erosion and sediment control structures during works and until site has stabilised after completion of works Provide sediment protection to stockpiles Engage street sweeper to keep public roads used to access site clean of mud tracking and silt Daily inspections 	<p>Project Manager</p> <p>Site Manager</p> <p>Site Manager Project Manager</p> <p>Site Manager</p>	<ul style="list-style-type: none"> Site Environmental Management Plan EMS-14-PR-0012 <i>Erosion and Sediment Control</i>
Offensive noise <ul style="list-style-type: none"> during commissioning, permanent noise impacts of tuning units, relocated signals. 	<ul style="list-style-type: none"> The SEMP must identify potentially sensitive receivers and identify relevant controls through the noise assessment. 	<p>Project Manager</p>	<ul style="list-style-type: none"> Site Environmental Management Plan EMS-10-GD-0048 <i>Guide to Managing Noise and Vibration from Rail-related Construction and Maintenance</i>
Dust from maintenance works impacting non-Sydney Trains controlled property)	<ul style="list-style-type: none"> Use water cart to dampen exposed surfaces including access roads, work areas and stockpiles Cover long term stockpiles Keep vehicles to existing access roads Minimise removal of vegetation from worksite Daily inspections 	<p>Site Manager</p> <p>Site Manager Site Manager Project Manager Site Manager</p>	<ul style="list-style-type: none"> Site Environmental Management Plan EMS-05-GD-0013 <i>Air Quality Guide</i>
Damage to adjacent properties	<ul style="list-style-type: none"> The SEMP must identify potentially sensitive receivers and relevant controls based on vibration assessment, where relevant Liaise with adjacent land holder and undertake agreed actions. 	<p>Project Manager</p> <p>Site Manager</p>	<ul style="list-style-type: none"> Site Environmental Management Plan

Environmental Hazard	Control	Responsibility for control	Controls reference
Increased traffic flow in residential areas	<ul style="list-style-type: none"> Implement Traffic Management Plan Plan all vehicle movements to occur outside of local peak traffic periods Ensure offsite staging areas in low impact areas Utilise qualified traffic control staff 	Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan
Generation of wastes: Redundant equipment (including asbestos troughing), cabling, litter, oils, spoil, concrete wastes	<ul style="list-style-type: none"> Do not overestimate quantities of materials required. Separate wastes into recyclable categories Ensure wastes are placed in appropriate containers Daily inspections Remove stockpiles as soon as possible. Ensure proper transport and disposal of hazardous materials No spreading of weed infested material within corridor Wash out containers prior to disposal. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan EMS-13-OR-1013 <i>Waste Management</i>
Management of slurry wastes (concrete and super sucker)	<ul style="list-style-type: none"> Ensure proper, immediate disposal of slurry offsite. Alternatively, construct a correctly sized, impermeable slurry holding facility and properly dispose of all dewatered wastes. 	Project Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan EMS-13-WI-0183 <i>Hydro-Vac Slurry Management</i>
Soil contamination	<ul style="list-style-type: none"> Identify potential contaminants prior to commencing work on site (spoil, pesticides) Develop stockpile and oil storage management plan to ensure segregation of potentially contaminated materials from clean materials Implement stockpile plan Daily inspections 	Project Manager Project Manager Site Site Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan EMS-07-PR-0004 <i>Contaminated Land Management</i>

Environmental Hazard	Control	Responsibility for control	Controls reference
Hydrocarbon / chemical spill (herbicide)	<ul style="list-style-type: none"> Ensure daily plant checklists completed and repairs made as required Ensure all plant has suitable spill kits and operators trained in use and disposal of used materials Notify Pollution Incidents to the Safety Incident and Injury Hotline 1800 772 779 Ensure SDS is onsite for all stored chemicals 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan <i>SMS-16-SP-3076 Inspection, Testing, Calibration and Monitoring</i> <i>SMS-06-GD-3112 Guide to Plant Risk Assessment</i> <i>EMS-02-WI-0214 Notify Pollution Incidents</i>
Threats to biodiversity via native vegetation or habitat clearing, and the spread of noxious weeds.	<ul style="list-style-type: none"> Maintain tape or other suitable fencing around “no go zones” Clear minimal vegetation, only as approved. Trim or remove trees under direction of an arborist. Keep vehicles and equipment away from vegetation Preserve wildlife / habitat where possible. Contact WIRES as required for injured animals. Remove weeds from plant before leaving infested sites. Use weed control process (spray qualifications, data sheets) Revegetate disturbed areas using locally native, appropriate species, in an approved vegetation plan. For vegetation slashing program, check District vegetation maps 	Site Manager Site Manager Site Manager Site Manager Site Manager Site Manager Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan <i>EMS-06-OR-1006 Biodiversity</i> <i>EMS-11-WI-0053 Noxious and Environmental Weed Herbicide Application</i> <i>EMS-11-PR-0017 Pesticide System Procedure</i>
Light spill	<ul style="list-style-type: none"> Locate portable lighting towers so that they are not directed at residential properties Ensure parked vehicles headlights do not shine into residences Daily inspections 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan
Fumes and smoke from diesel equipment and plant	<ul style="list-style-type: none"> Maintain equipment in accordance with manufacturer’s written specification Ensure daily plant checklists completed and repairs made as required 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan <i>SMS-16-SP-3076 Inspection, Testing, Calibration and Monitoring</i>

Environmental Hazard	Control	Responsibility for control	Controls reference
Threats to visual aesthetics including placement of stockpiles, removal of vegetation screens, and creation of visually unattractive structures.	<ul style="list-style-type: none"> Place stockpiles and site amenities away from residents, and remove them as soon as possible. Create or maintain existing visual screens using vegetation, shade cloth on fences or natural site features. Consider visual amenity of new buildings and signal locations in design phase. 	Site Manager Site Manager Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan
Heritage (old signalling equipment, drainage structures)	<ul style="list-style-type: none"> Check the S170 Register for any heritage structures that may be impacted. Contact Sydney Trains Heritage Specialist (SEQR Directorate) for advice regarding Statements of Heritage Impact Demarcate heritage site to prevent entry into heritage site If a heritage item is uncovered, Stop further disturbance, demarcate the site and contact the Environmental Professional. 	Project Manager Project Manager Site Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan Sydney Trains Heritage and Conservation Register
Impacts on Aboriginal Heritage	<ul style="list-style-type: none"> If the land is undisturbed, the SEMP must identify if there are any known aboriginal objects, aboriginal places or culturally modified trees (carved or scar trees) that may be impacted by the activity. 	Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan

Mr Chintal Shah
Sydney Trains
36-46 GEORGE ST
BURWOOD NSW 2134

By email: chintal.shah@transport.nsw.gov.au

Dear Mr Shah

APPLICATION UNDER SECTION 60 OF THE HERITAGE ACT 1977

**Moss Vale Railway Station and yard group
STATE HERITAGE REGISTER N^o 01200**

Address: Main Southern railway, MOSS VALE NSW 2577

Proposal: Pad Mount Transformer installation and upgrade the power supply for Moss Vale Station

Section 60 application no: HMS ID 818, received 16/02/2022

As delegate of the Heritage Council of NSW (the Heritage Council), I have considered the above Section 60 application. Pursuant to section 63 of the *Heritage Act 1977*, approval is granted subject to the following conditions:

APPROVED DEVELOPMENT

1. All work shall comply with the information contained within:
 - a) Engineering drawings, prepared by Erbas as listed below:

Dwg No	Dwg Title	Date	Rev
Project Name: Moss Vale – Low Voltage Electrical Services			
SYD20392-E000[P1]	Site Plan and Schematic Diagram	20.12.21	A1

- b) Engineering drawings, prepared by AA Power Engineering as listed below:

Dwg No	Dwg Title	Date	Rev
Project Name: Daly's Way Moss Vale Station			
Sheet 1 of 4	Connection of Load	-	A1
Sheet 2 of 4	Connection of Load	-	A1
Sheet 3 of 4	Connection of Load	-	A1
Sheet 4 of 4	Connection of Load	-	A1

- c) *Statement of Heritage Impact* prepared by Sydney Trains, dated January 2022;
 - d) *Services Specification – Moss Vale Train Station Power Upgrade*, prepared by Erbas, dated 14/01/21;

- e) *Moss Vale Railway Station Precinct – Conservation Management Plan*, prepared by OCP Architects, dated May 2020; and
- f) *Memo – Moss Vale Station Power Supply Upgrade Historical Archaeological Assessment*, prepared by AMBS, dated 18 March 2022.

EXCEPT AS AMENDED by the conditions of this approval:

SITE PROTECTION

- 2. Significant built and landscape elements are to be protected during site preparation and the works from potential damage. Protection systems must ensure significant fabric, including landscape elements, is not damaged or removed.

Reason: To ensure significant fabric including vegetation is protected during construction.

APPROVED ARCHAEOLOGICAL WORKS

- 3. All works shall be in accordance with the approved research design and methodology outlined in *Moss Vale Station Power Supply Upgrade Historical Archaeological Assessment*, dated 18 March 2022, prepared by AMBS, except as amended by the following conditions:
- 4. This archaeological approval does not cover removal of any State significant relics. This approval covers excavation works for concrete plinth at location of substation, trenching for power supply line to the north and south of the proposed substation only.

FIELDWORK

- 5. The Applicant must ensure that if substantial intact archaeological deposits and/or State significant relics or buried engineering works not identified in *'Moss Vale Station Power Supply Upgrade Historical Archaeological Assessment*, dated 18 March 2022, prepared by AMBS, are discovered, work must cease in the affected area(s) and the Heritage Council of NSW must be notified. To address this discovery, you need to lodge a section 146 notification to the Heritage Council of NSW. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery. Advice would be provided in response to the lodged section 146 notification.
- 6. The Applicant must ensure that the nominated Excavation Director James Cole is present at the site supervising all excavation activity likely to expose relics.
- 7. **Archaeological site recording to include:** The Applicant must ensure that the Excavation Director James Cole takes adequate steps to record in detail relics, structures and features discovered on the site during the archaeological works in accordance with current best practice. This includes single context recording and preparation of a Harris Matrix; scaled photography and preparation of scaled plans/sections of excavation and archaeological features recorded. The Excavation Director shall establish and oversee the collection of all spatial data for the site according to a current NSW mapping datum (e.g GDA 94 or as specified). This shall include details of the excavation, archaeological features, topographic strata encountered and modern ground levels including the taking and recording of survey levels, reduced to Australian Height Datum (AHD). This work must be undertaken in accordance with relevant Heritage Council guidelines.

ANALYSIS AND REPORTING

- 8. The Applicant is responsible for the safe-keeping of any relics recovered from the site. The Applicant must ensure that the nominated Excavation Director James Cole or an

appropriate specialist, cleans, stabilises, labels, analyses, catalogues and stores any artefacts recovered from the site in a way that allows them to be retrieved according to both type and provenance.

- 9. Final Reporting:** Reporting is required in accordance with section 146(b) of the Heritage Act, 1977. The Applicant must ensure that a final excavation report is written to publication standard, within one (1) year of the completion of the field based archaeological activity. The Final location of artefacts recovered from the excavation (repository) must be included in this report. It must be prepared in accordance with any Heritage Council of NSW Guidance or advice on the Heritage NSW website as issued from time to time. Any application to extend the due date for the final excavation report must be made before it is due and lodged under section 65A of the Act.

Reason: All significant fabric within a State Heritage Register curtilage should be managed according to its significance. These are standard conditions to identify to the applicant how to proceed if historical archaeological relics, or other unexpected buried discoveries are identified during works.

ABORIGINAL OBJECTS

10. Should any Aboriginal objects be uncovered by the work which is not covered by a valid Aboriginal Heritage Impact Permit, excavation or disturbance of the area is to stop immediately and Heritage NSW is to be informed in accordance with the National Parks and Wildlife Act 1974. Works affecting Aboriginal objects on the site must not continue until Heritage NSW has been informed and the appropriate approvals are in place. Aboriginal objects must be managed in accordance with the National Parks and Wildlife Act 1974.

Reason: This is a standard condition to identify to the applicant how to proceed if Aboriginal objects are unexpectedly identified during works.

COMPLIANCE

11. If requested, the applicant and any nominated heritage consultant may be required to participate in audits of Heritage Council of NSW approvals to confirm compliance with conditions of consent.

Reason: To ensure that the proposed works are completed as approved.

DURATION OF APPROVAL

12. This approval will lapse five years from the date of the consent unless the building works associated with the approval have physically commenced.

Reason: To ensure the timely completion of works

Advice

Section 148 of the *Heritage Act 1977* (the Act) allows people authorized by the Minister to enter and inspect, for the purposes of the Act, with respect to buildings, works, relics, moveable objects, places or items that is or contains an item of environmental heritage. Reasonable notice must be given for the inspection.

Notification of Start and End of Archaeological

The Approved Excavation Director shall write to advise HNSW 5 days before start of the archaeological program and 5 days following the end of the archaeological program. Communication should be made to: HERITAGEMailbox@environment.nsw.gov.au with a

reference to the relevant Application No. (ie. HMS id). The Heritage Council and staff of Heritage NSW, Department of Premier & Cabinet authorized under section 148(1) of the Heritage Act 1977, reserve the right to inspect the site and records at all times and to access any relics recovered from the site.

Right of Appeal

If you are dissatisfied with this determination appeal may be made to the Minister for Heritage under section 70 of the Act.

Other Approvals

It should be noted that an approval under the Heritage Act is additional to that which may be required from other Local Government and State Government Authorities in order to undertake works.

Stamped documents

Any stamped documents (e.g. approved plans) for this application are available for the Applicant to download from the Heritage Management System at <https://hms.heritage.nsw.gov.au> under 'My Completed Applications.'

If you have any questions about this correspondence, please contact Mariyam Nizam, Senior Heritage Assessment Officer, at Heritage NSW on 8837 6375 or [Mariyam.Nizam@environment.nsw.gov.au](mailto:Mariam.Nizam@environment.nsw.gov.au).

Yours sincerely

Shikha Jhaldiyal

Shikha Jhaldiyal
Manager Assessments
Heritage NSW
Department of Premier and Cabinet
As Delegate of the Heritage Council of NSW
3/04/2022

cc: Wingecarribee Shire Council, mail@wsc.nsw.gov.au

Long Blackledge

Architects

**MOSS VALE STATION
IMSB INSTALLATION**

STATEMENT OF HERITAGE IMPACT

Prepared for

Sydney Trains

Issue A 2022_09_26 DRAFT

Nominated Architect:
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NSW Reg 9057

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1. Preamble

1.1 Background

As part of the LV upgrade Sydney Trains proposes to replace to the installation main switchboard (IMSB) presently located in the passageway adjacent to the former Buffet Room. Amongst other deficiencies the present board does not meet the required fire compartmentalization of 2 hours. To provide this compartmentalization the IMSB either requires a fire resistant room or a fire resistant containment. Four options have been assessed for their practicality, their effect on significant fabric and their visual impact.

Approval has been received for the installation of a new Pad Mount Substation in the north east corner of the car park (HMS ID 818 dated 3rd April 2022). The effect of these works (as well as the extension of the LV service to the station buildings) is set out in Memo – Moss Vale Station Power Supply Upgrade Historical Archaeological Assessment, prepared by AMBS, dated 18 March 2022 which is based on schematic drawing SYD 20392 E 000(P1). AMBS's recommendations for investigation and further fieldwork forms the major part of the s60 approval.

1.2 The Purpose of this report

This report supports an application under s57 of the Heritage Act for approval to the positioning of a new IMSB and associated low voltage cabling.

1.3 Referenced documents

- OCP Architects: Moss Vale Railway Station Precinct CMP May 2020
- Sydney Trains Technical Note: Installation of New Electrical and Data Services at Heritage Sites.
- Sydney Trains: Moss Vale IMSB installations options study (Powerpoint)
- Sydney Trains SoHI instation of Pad Mount electricity substation
- AMBS: Moss Vale Station Power Supply Upgrade Historical Archaeological Assessment dated 18 March 2022.
- Long Blackledge Architects drawing SK 2022_09_27

1.4 Location



Figure 1 Location Source: Six Maps 2021

1.5 Statutory Listed status

The station group is State Heritage Listed. SHI 4806253

The group is part of the Railcorp Section 170 register

The station is listed as an item of State heritage significance in the Wingecarribee WLEP 2010 item number 244.

2 Statement of Significance

Moss Vale Railway Precinct is of state significance as one of NSW's largest regional railway stations. For a short time Moss Vale served as the terminus of the Great Southern Line and at the time was one of only a few substantial railway buildings in NSW. The main wing of the 1867 station building is significant as one of the earliest railway buildings in NSW and is also one of the oldest buildings in Moss Vale. The elaborate Railway Refreshment Room dating from 1890 is significant as one of the largest in NSW remaining. The precinct presents a mostly intact group of Victorian station buildings and other structures that remain an important landmark in the town of Moss Vale. Moss Vale Railway Precinct is also significant for its use by a succession of NSW Governors from the 1880s until 1946. The station is rare as the only railway station in Australia that has been substantially designed and modified to accommodate regular Vice-regal use including the 1890 additions to the station building for a Governor's Waiting Room and the unique platform and entry arrangement. Other significant features of the precinct (all dating from duplication of the line in 1915) include the decorative cantilevered awning to the platforms which was one of the first of its type in NSW, the booking Office, the two-storey signal box, the brick overbridge, and, the two steel Warren Truss footbridges. Originally the station featured an extensive yard, and while some elements of the southern goods yard are no longer extant, a jib crane, weighbridge and hut remain extant and are good representative examples of typical structures provided at many railway goods yards (Sheedy, 1988).

(OE&H Listing)

3 Option Study

3.1 Option 1. Adjacent to existing switch board



Figure 2 Location . Source: OCP Architects. The position of the proposed IMSB is adjacent to the existing switchboard within the passageway connecting Platforms 1 and 2 and immediately north of the Former Buffet Room.



Figure 3 Location . Source: OCP Architects.

The placing of a 2 hour fire resisting enclosure in this sensitive location would be visually highly intrusive.

3.2 Option 2. Within the luggage room (former Buffet)



Figure 4 Location Source: OCP Architects.

This option has the switchboard in the luggage room which uses the potential very fine space of the former Buffet room- this option has issues with loading on suspended floors, access difficulties and the compromising possible better uses of this significant space.

3.3 Option 3. Within the enclosed space between the 1889 Lamp Room and the original 1867 station building (infilled 1890)



Figure 5 Location Source: OCP Architects



Figure 6 Option 3 images

This roofed former passage way is presently used to store barriers and the like and is conveniently located close to the service access gate through to the car park where these barriers are used. This space ordinarily would be an appropriate location for the enclosed switchboard but for its operational requirements.

3.4 Option 4. Within former Lamp Room



Figure 7 Location Source: OCP Architects

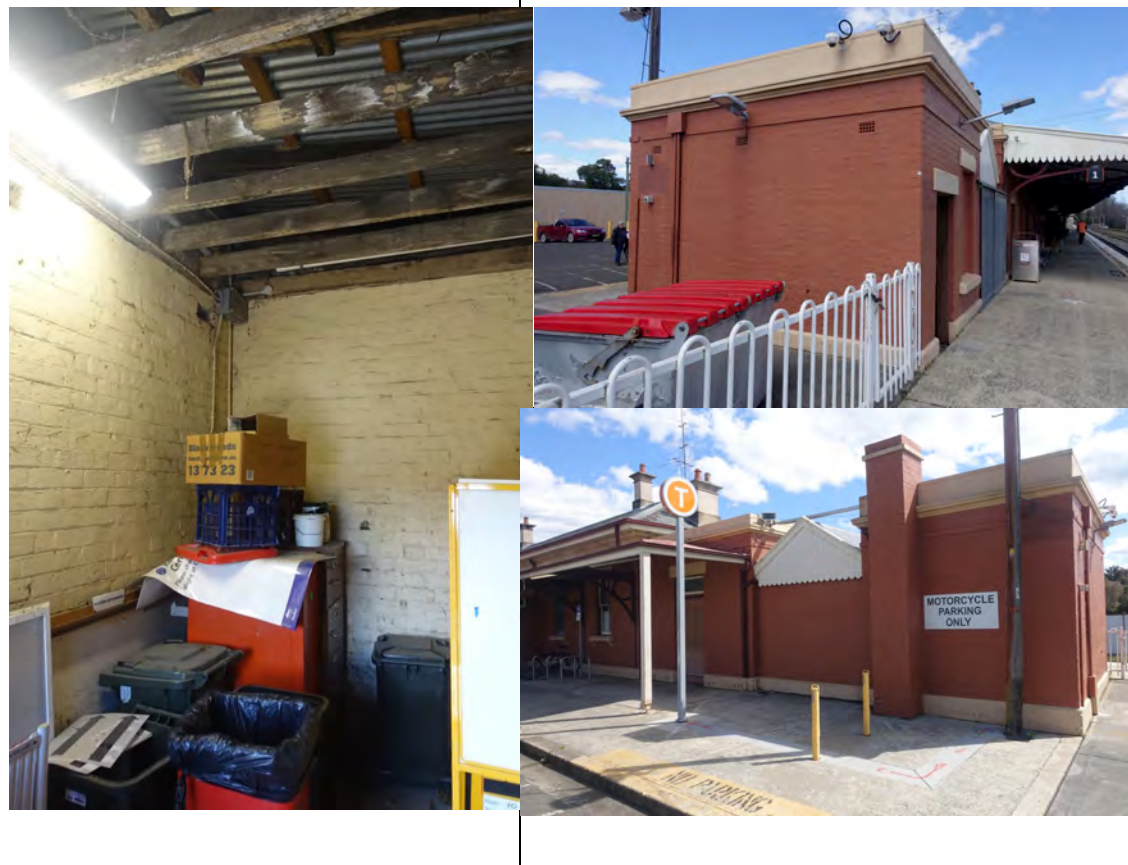


Figure 8 Images

Option 4 uses the former Lamp Room. This room has no public access, it is conveniently located close to the proposed LV cable run. The space has been identified as “highly significant”, whilst the proposed works have an

effect on the appearance and appreciation of the space the box within a box approach means that change is fabric is minimised and the installation is reversible without adverse effect.

3.5 Preferred Option

The use of the former Lamp Room is the preferred options for the following reasons:

- The Lamp Room is presently disused/underused.
- It can accommodate a 2 hour fire resisting enclosure without a direct effect on fabric.
- It has no public access.
- The underground cable run to and from the room is uncomplicated.
- The installation can be reversed with limited to no effect on significant fabric.
- All other feasible options have worse conservation outcomes.

Regulation requires the essential services to have 2 hour fire protection. This can be achieved by fire proofing the room in which the IMSB is located or placing the switchboard in a 2 hour rated box.

The former approach would require replacement of the panelled door set with a 2 hour rated fire door and the boxing out of the sash window adjacent with 200mm lightweight fire resistant construction. The weight of the required 180 FRL level is such that an additional structure would be required to support it. This work would be highly intrusive.

The latter approach of a box within a box is more easily managed and more reversible. It is proposed to construct a concrete plinth through which all services lead into a core filled concrete block enclosure capped with a Hebel fire-resisting panel. The face of the box would be a double 120 FRL door set. Whilst not capable of being made in any way attractive the box does have the essential virtue of reversibility.

4 Discussion

4.1 Compliance of the proposal with the CMP and design guides

CMP Policy 14.1 states:

TfNSW/Sydney Trains current standards and technical notes should be adhered to for installation of New facilities, Signage, Services & Amenities, and/or maintenance of existing, including:

- *‘Installation of New Electrical and Data Services at Heritage Sites’* (Sydney Trains, Aug 2019)

Section 4 of this standard set out requirement for conduits and ducts

	Conduits and Ducts	Discussion
1.	New cables must be concealed within existing conduits and ducts where possible.	Because the 4 building blocks of the station are linked only by canopies cabling between the blocks is presently intrusive and any additional wiring associated with this proposal is likely to make this worse. We recommend the approved in ground LV route is adapted to allow cables for the lifts, the GG/Buffer block and the remote ticket office is serviced by an in-ground duct.
2.	New conduits and ducts must not penetrate original or significant heritage surfaces.	In ground ducting will minimise the need for new penetrations and impacts on significant surfaces.
3.	Ceiling spaces, subfloor areas and dis-used chimney spaces can be used to conceal new conduits and ducts without causing damage to heritage fabric.	The ceiling space of Building A is likely to be used to restructure services within that building.
4.	Where new conduits and ducts cannot be concealed, they must be tucked up against existing conduits and ducts, beams, rafters, platform awning purlins etc. to reduce visual clutter. Example: When installing a conduit under an awning, install the conduit to the rear side of highest purlin to reduce visibility and facilitate future maintenance.	If reticulation is carefully thought through and obsolete services are removed accumulative clutter of services should be reduced.
5.	Conduits and duct must follow vertical	Yes

	and horizontal alignments and avoid ad hoc, curving/diagonal conduit routes.	
6.	Duct sizes and profiles should be selected to reflect the size and profile of existing beams/purlins/columns to minimise visual impacts.	N/A
7.	New conduits and ducts must not bridge from one structure to another through the air.	See 1
8.	Paint all new conduits and ducts (including their fixings and brackets) to match the colour of the adjacent fabric/background to minimise visual impacts.	See 1

4.2 Effect on significant fabric

The special and fabric heritage significance of the space is deemed “high”. Policies for High Significance encourage protection, display and if possible enhancement in accordance with Policy 8 of the CMP. The proposal partially follows this policy by its placement within an under-used part of the station and its complete reversibility.

5 Assessment of Impact.

5.1 The following aspects of the proposal respect or enhance the heritage significance of Moss Vale Station for the following reasons:

IMSB is essential for the safe running of the railway precinct. Upgrading this service will maintain the appropriate use of the buildings

5.2 The following aspects of the proposal could detrimentally impact on heritage significance and measures to be taken to minimise impacts:

The installation of in ground LV cabling to service the buildings remote to the main platform building has the potential to reduce the extent of intrusive cabling festooned around the buildings particularly where they link across canopies.

The proposed placement of the compartment within a room will be visually intrusive however this is appropriately mitigated by reversibility of the installation and under used nature of the space.

5.3 The following sympathetic solutions have been considered and discounted for the following reasons:

The options for different locations are discussed above.

The option for the box within a box is considered the least intrusive and most reversible option for the installation.

6 Recommendations

6.1 In ground cable route

The nominal approved route for the LV in ground duct should be modified to link the former Lamp Room to the Pad Mount Transformer. The approved archaeological methodology will apply.

6.2 Location

We recommend the adoption of Option 4 (former Lamp Room) for the location of the IMSB.

6.3 Enclosure method

We recommend the box within a box approach as documented, as the least intrusive means of achieving the required fire resistance.

7 Conclusion

The proposed IMSB is essential to the running of the station precinct, on balance the best location for the item is in the former Lamp Room. The method that least affects significant fabric is for the IMSB to be enclosed in a fire resisting enclosure.

APPENDIX A Enclosure Drawings

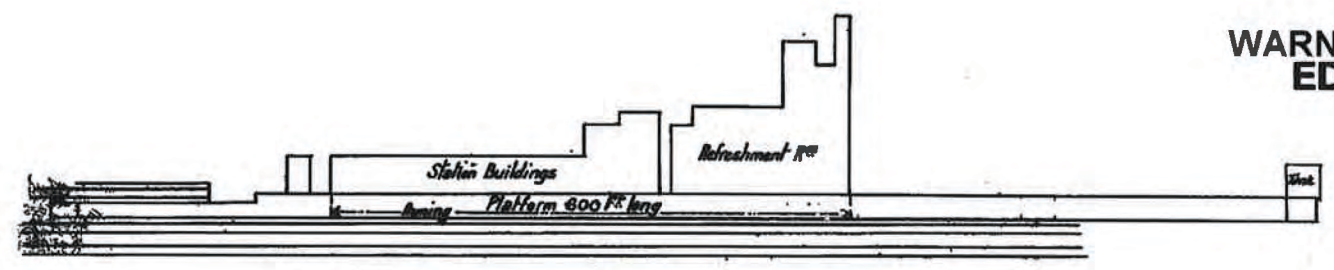
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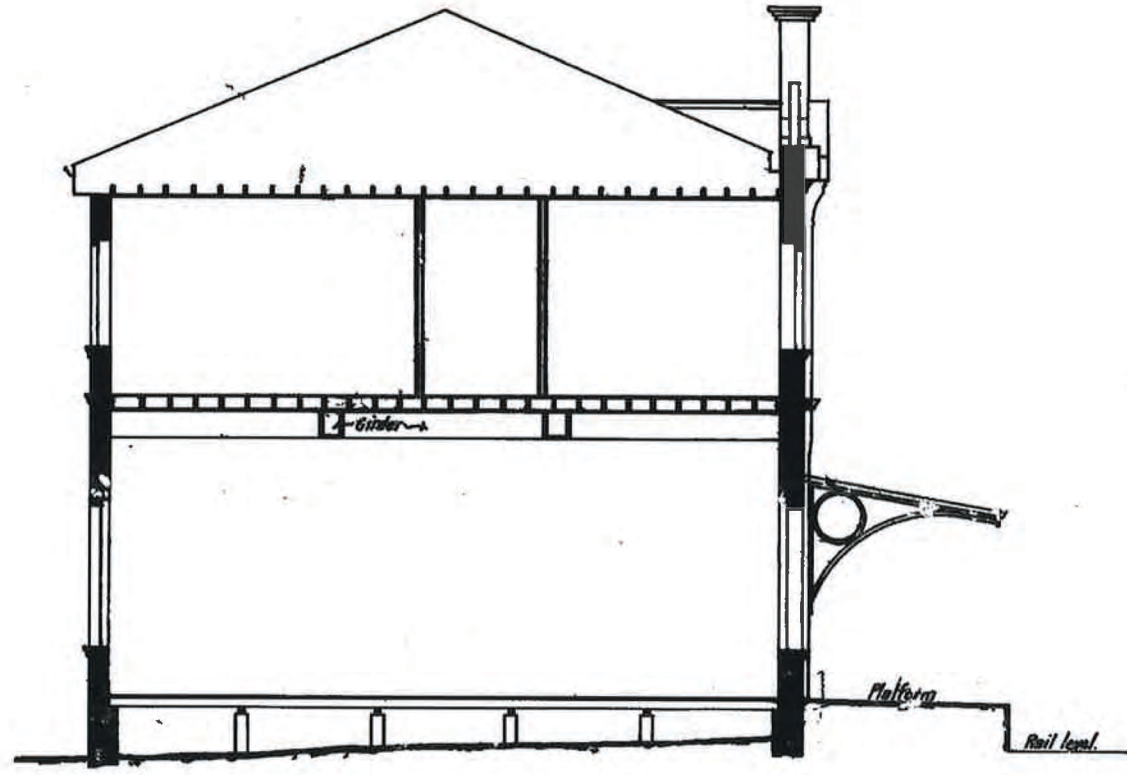
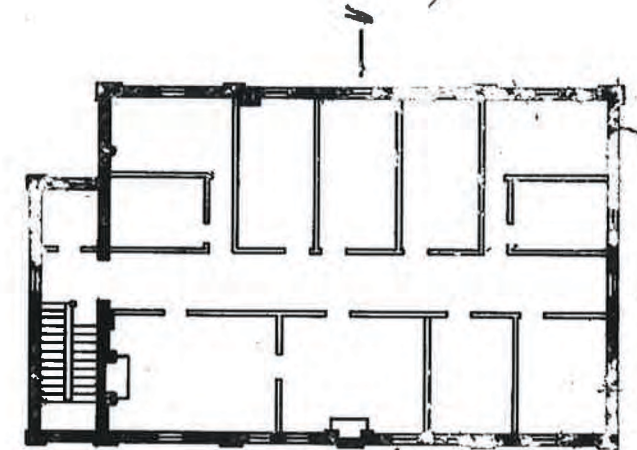
Mass Vale

Station Buildings

Scale 1/6" = 1' to 1/4" = 1'

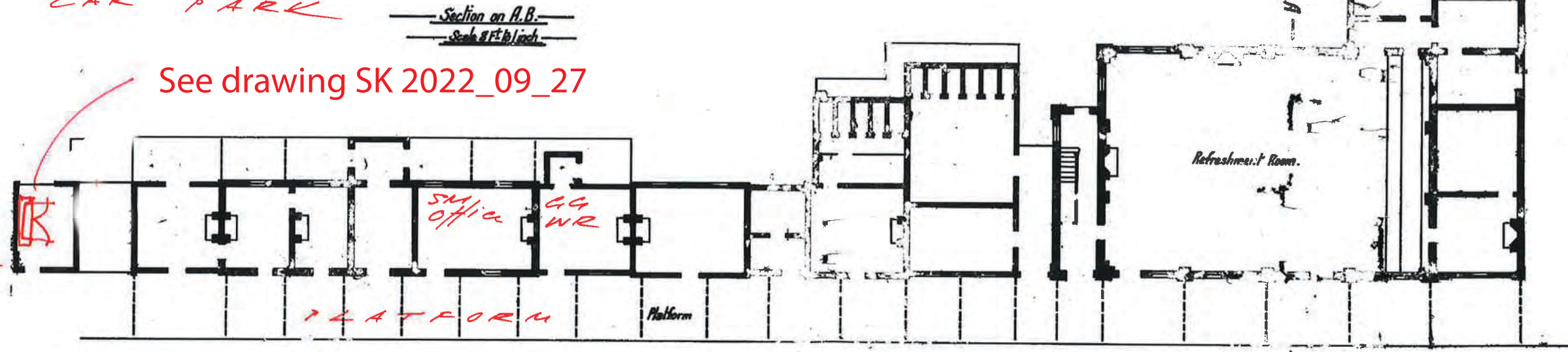


Block Plan
Scale 1/4" = 1' to 1/4" = 1'



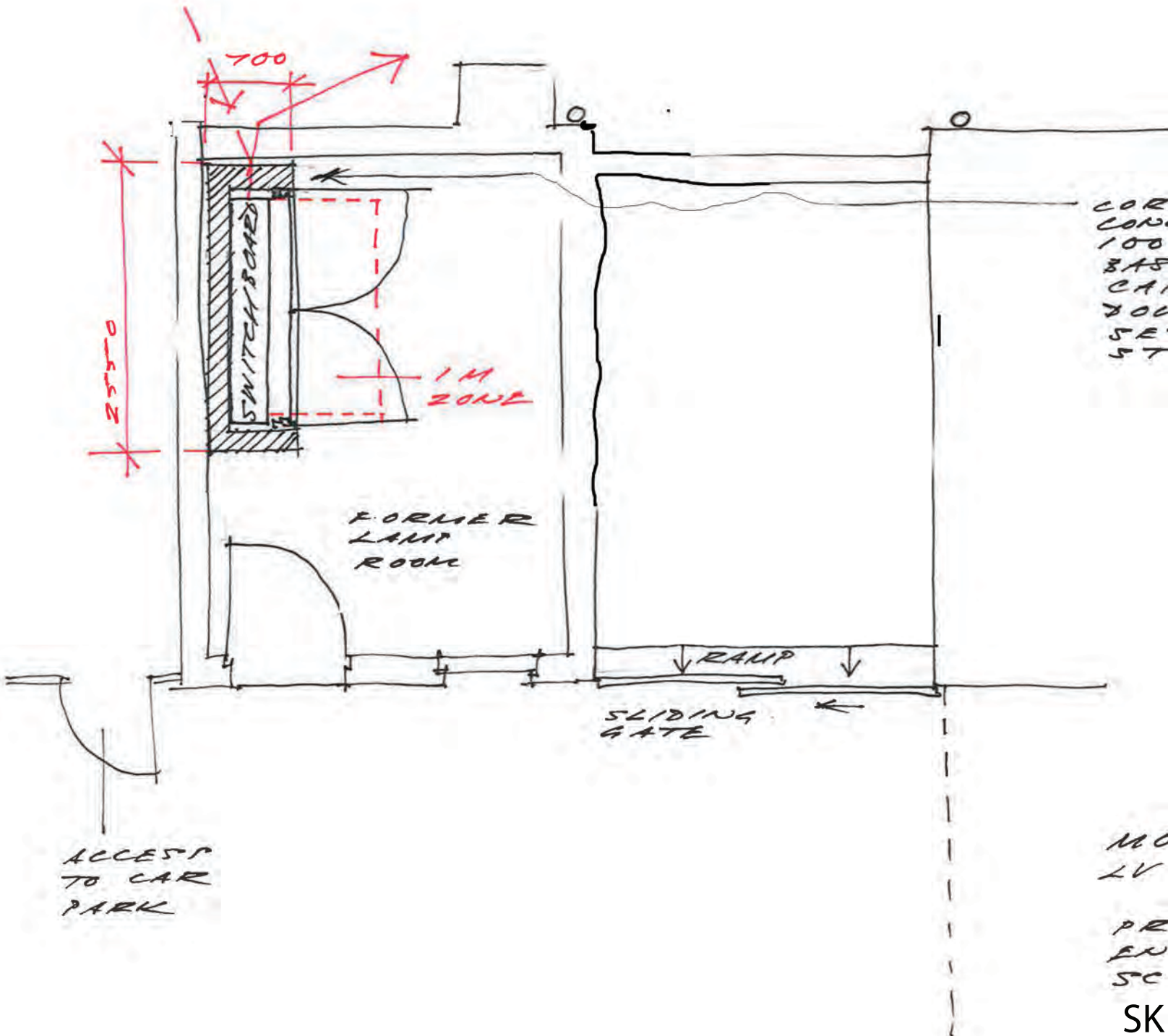
CAR PARK

See drawing SK 2022_09_27



MOSS VALE STATION
LOCATION OF IMSB

Group 1/4" = 1'



CORE FILLED 200 MM
 CONCRETE BLOCK ON
 100 MM CONCRETE
 BASE. 200 MM 'HEBEL'
 CAPPING. 120/120
 DOUBLE FIRE DOOR
 SET IN GROUTED
 STEEL DOOR FRAME

ACCESS
 TO CAR
 PARK

FORMER
 LAMP
 ROOM

RAMP
 SLIDING
 GATE

MOSS VALE STATION
 LV BOARD RELOCATION

PROPOSED
 ENCLOSURE
 SCALE 1:50 @ A4

SK 2022_09_27

APPENDIX B Sydney Trains Options Report

Moss Vale Station IMSB Installation options

Scope of works for IMSB

- The scope is to install IMSB next to existing DB with similar colour
- AMB standard requires to install IMSB in close area and with fireproof cabinet.
- As Moss Vale station is part of State heritage listed station, if fire proof cabinet installation require, then it will require heritage approval
- To comply with the requirements, 4 options were considered after consultation with supplier, Heritage and station operations.

Option 1



- Installation of DB as per the original approval next to existing in Orange colour on standard concrete plinth
- Install fire rated cabinet around the structure with tinned roof subject to Heritage approval (This is requirement from AMB standards)

Option 2: Installation of IMSB inside Luggage Room area

- Move rack and install DB with fireproof cabinet within room

Issues

- Existing floor is timber floor and require structural assessment for IMSB to install on the top with Fire resistance cabinet
- Require access key to Energy supplier company for meter reading



Option 3: Station Storage Room on platform 1

- Later extension of Moss Vale Platform 1 building with Concrete plinth and isolated building on city end of platform 1
- Install IMSB with cabinet and ceiling within this room
- Existing penetration of conduits available
- Issue related to storage of signs and garbage bins has to be consulted with Customer area manager and staff

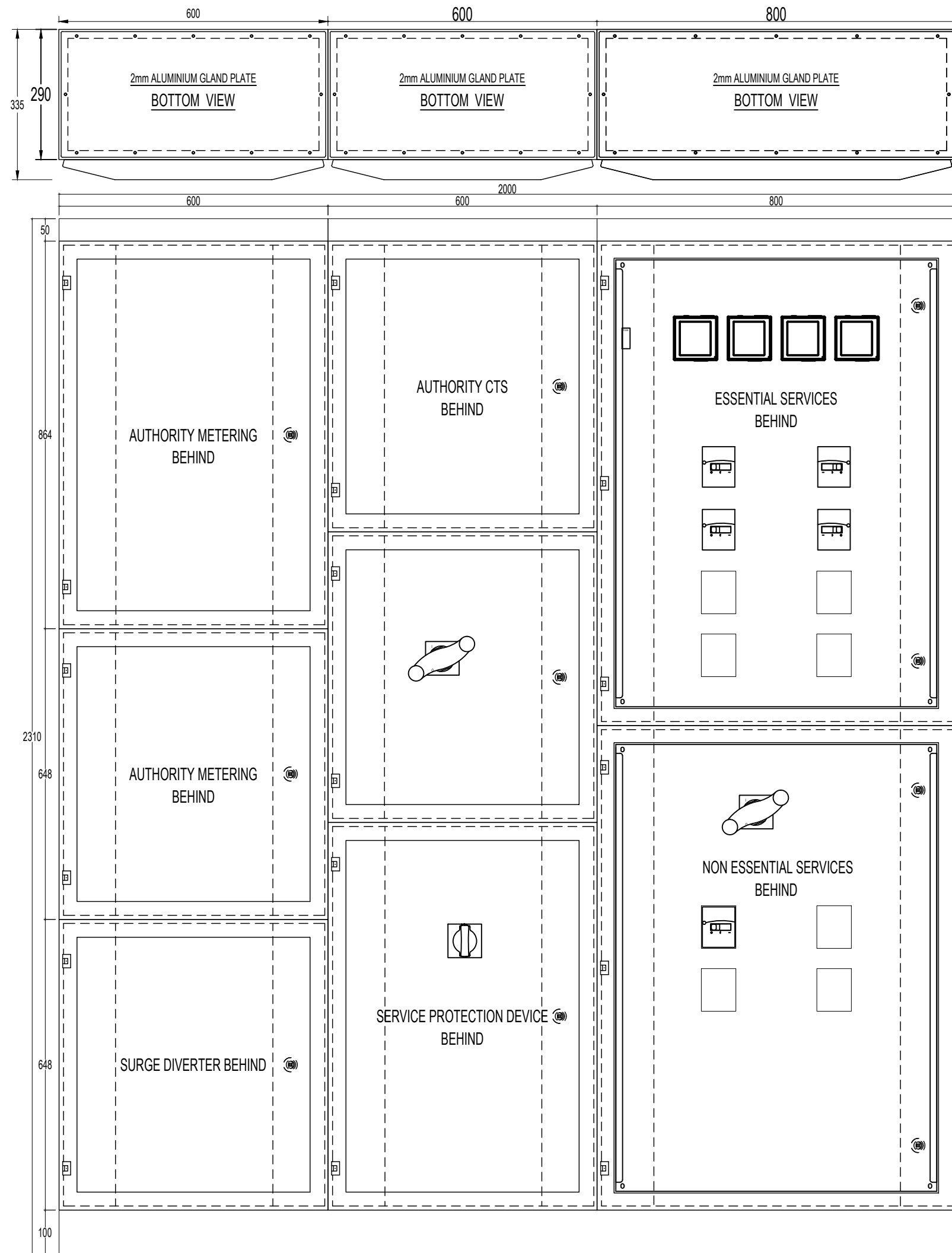


Option 4 Area with Steel Fence on platform 1

- Open area next to station storage room
- Concrete plinth for new IMSB
- Construction of fire cabinet require with ceiling
- Storage of fencing and other items within the area



APPENDIX C IMBS Drawings



CONSTRUCTION	
CABINET	1.6mm ZINC SEAL MILD STEEL. CORNERS WELDED AND DRESSED
DOORS & COVERS	1.6mm ZINC SEAL X15 ORANGE RIPPLE
COLOUR	PEARL WHITE
ESCUTCHEON & BRACKETS	CHROME PLATED
LOCKS	1/4 TURN BLACK CAST PINTLE HINGE, REMOVABLE NYLON PIN INCOMERS BOTTOM
HINGES	OUTGOING BOTTOM
CABLE ENTRY	2mm ALUMINIUM FORM 4aih
GLAND PLATES	IP54W
FORM OF SEGREGATION	MCCB CHASSIS
DEGREE OF PROTECTION	630A
CHASSIS	50kA
RATING	NEUTRAL & EARTH COPPER BAR
FAULT LEVEL	SCHNEIDER
NEUTRAL & EARTH	36kA
EQUIPMENT	
FAULT RATING	

A	25-08-22	A.L	ORIGINAL SUBMISSION	X.X
REV	DATE	BY	DESCRIPTION	CHK

ELECTRICAL CONTRACTOR:



NEW ERA
group

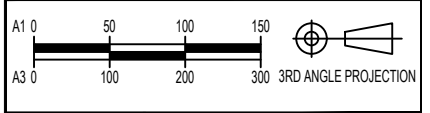


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PROJECT: NEW ERA GROUP
MOSS VALE STATION LV

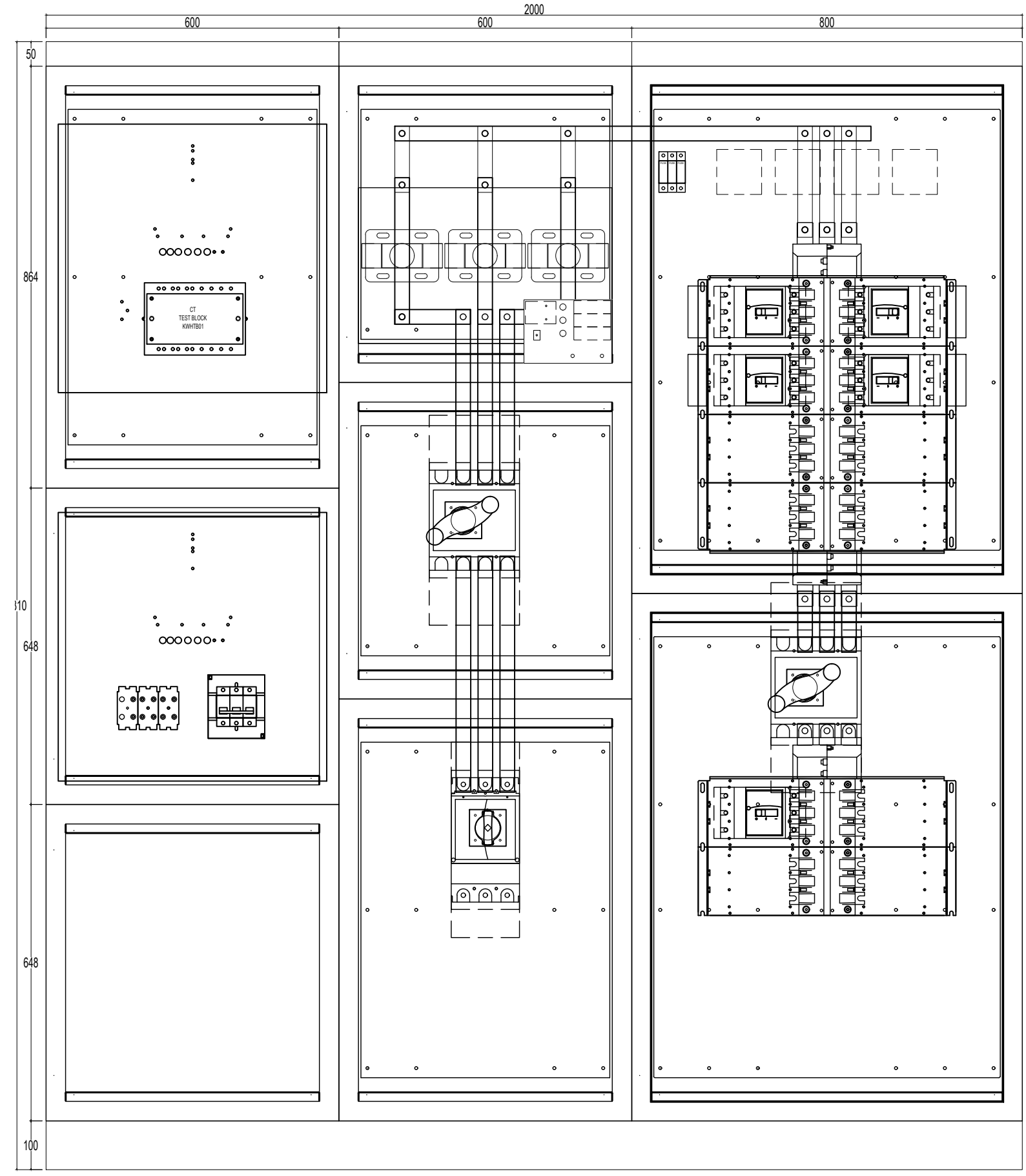
TITLE: MAIN SWITCHBOARD
DOOR & ESCUTCHEON FITTED



SCALE: 1:10(A3)	CHECKED: X.X	APPROVED: -
PROJECT: 2385	DRAWN: A.L	DATE: 25-08-22

DRAWING No: 2385 -11

CONSTRUCTION	
CABINET	1.6mm ZINC SEAL MILD STEEL. CORNERS WELDED AND DRESSED
DOORS & COVERS	
COLOUR	1.6mm ZINC SEAL X15 ORANGE RIPPLE
ESCUTCHEON & BRACKETS	PEARL WHITE
LOCKS	CHROME PLATED 1/4 TURN
HINGES	
	BLACK CAST PINTLE HINGE, REMOVABLE NYLON PIN
CABLE ENTRY	
	INCOMERS BOTTOM
	OUTGOING BOTTOM
GLAND PLATES	
FORM OF SEGREGATION	2mm ALUMINIUM
DEGREE OF PROTECTION	FORM 4ah
	IP54W
CHASSIS	
RATING	MCCB CHASSIS
FAULT LEVEL	630A
NEUTRAL & EARTH	50kA
	COPPER BAR
EQUIPMENT	
FAULT RATING	SCHNEIDER
	36kA



EQUIPMENT SCHEDULE				
ID	PART NUMBER	DESCRIPTION	SUPPLIER	QTY
1	12P-SH	12 POLE DUEL SIDE SINGLE FEED CHASSIS	CP	1
2	24P-SH-DF	24 POLE DUEL SIDE DUEL FEED CHASSIS	CP	1
3	MFH1038132T	DIN FUSE HOLDER 1P	MERCS	3
4	1038CFL01	1A FUSE LINK	MERCS	3
5	INT-1222-M-010	Single Phase or Three Phase, 3 or 4 Wire Aux powered	CROMPTON	4
6	M3N1-35-100/5	Dual Load 3 in 1 CT 100A rating.	CROMPTON	4
7	KWHTB01	METERING TEST BLOCK	IPD	1
8	RHF100	100A SERVICE FUSE	IPD	3
9	S71002BBWAU	SERVICE FUSE FITTING B WIRE 100A	IPD	3
10	240T85CL05S/ST	TYPE T CURRENT TRANS	WF ENERGY	3
11	31114	NON-AUTOMATIC MOLDED CASE SWITCH 690V	SCHNEIDER	2
12	31052	FRONT ROTARY HANDLE INS 320 TO 630 BLACK	SCHNEIDER	1
13	C63F3	BASIC FRAME NSX630F 36kA AC 3P 630A	SCHNEIDER	1
14	C6335E630	TRIP UNIT NSX630 AC 3P3D 630A 5.3E	SCHNEIDER	1
15	LV432593	1 3P LONG TERMINAL SHIELD	SCHNEIDER	2
16	LV432598	EXTENDED STANDARD ROTARY HANDLE	SCHNEIDER	1
17	C10F3TM063	NSX100F 36kA AC 3P3D 63A TMD	SCHNEIDER	4
18	C25F3TM250	NSX250F 36kA AC 3P3D 250A TMD	SCHNEIDER	1
19	NH-160	FUSE LINK NH1 160A 29.5mm	MERCS	3
20	DS00-3-160	DISCONNECT SWITCH 30 FUSE HOLDER NH00	MERCS	1
21	xx	xx	PHONIEX	1

A	25-08-22	A.L	ORIGINAL SUBMISSION	X.X
REV	DATE	BY	DESCRIPTION	CHK

ELECTRICAL CONTRACTOR:



NEW ERA
group

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PROJECT: NEW ERA GROUP
MOSS VALE STATION LV

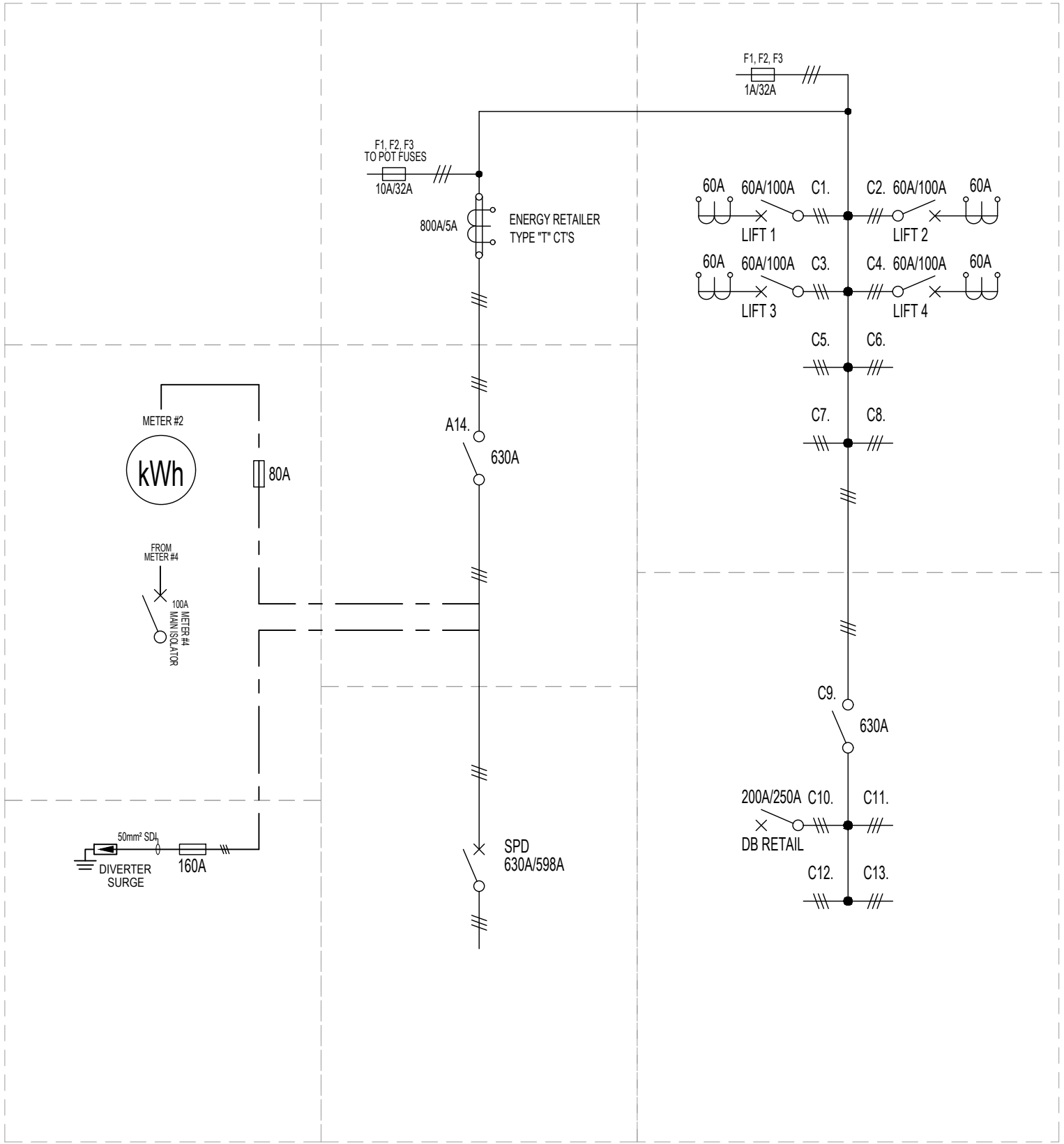
TITLE: MAIN SWITCHBOARD
DOOR & ESCUTCHEON REMOVED & EQUIPMENT LIST



SCALE: 1:10(A3)	CHECKED: X.X	APPROVED: -
PROJECT: 2385	DRAWN: A.L	DATE: 25-08-22

DRAWING No: 2385 -12

FRONT ELEVATION
DOOR & ESCUTCHEON REMOVED



SINGLE LINE DIAGRAM

CONSTRUCTION	
CABINET	1.6mm ZINC SEAL MILD STEEL. CORNERS WELDED AND DRESSED
DOORS & COVERS COLOUR	1.6mm ZINC SEAL X15 ORANGE RIPPLE
ESCUTCHEON & BRACKETS	PEARL WHITE
LOCKS	CHROME PLATED
HINGES	1/4 TURN BLACK CAST PINTLE HINGE, REMOVABLE NYLON PIN
CABLE ENTRY	INCOMERS BOTTOM OUTGOING BOTTOM
GLAND PLATES	2mm ALUMINIUM
FORM OF SEGREGATION	FORM 4aih
DEGREE OF PROTECTION	IP54W
CHASSIS	MCCB CHASSIS
RATING	630A
FAULT LEVEL	50kA
NEUTRAL & EARTH	COPPER BAR
EQUIPMENT	SCHNEIDER
FAULT RATING	36kA

A	XX-XX-XX	X.X	ORIGINAL SUBMISSION	X.X
REV	DATE	BY	DESCRIPTION	CHK

ELECTRICAL CONTRACTOR:

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PROJECT: NEW ERA GROUP
MOSS VALE STATION LV

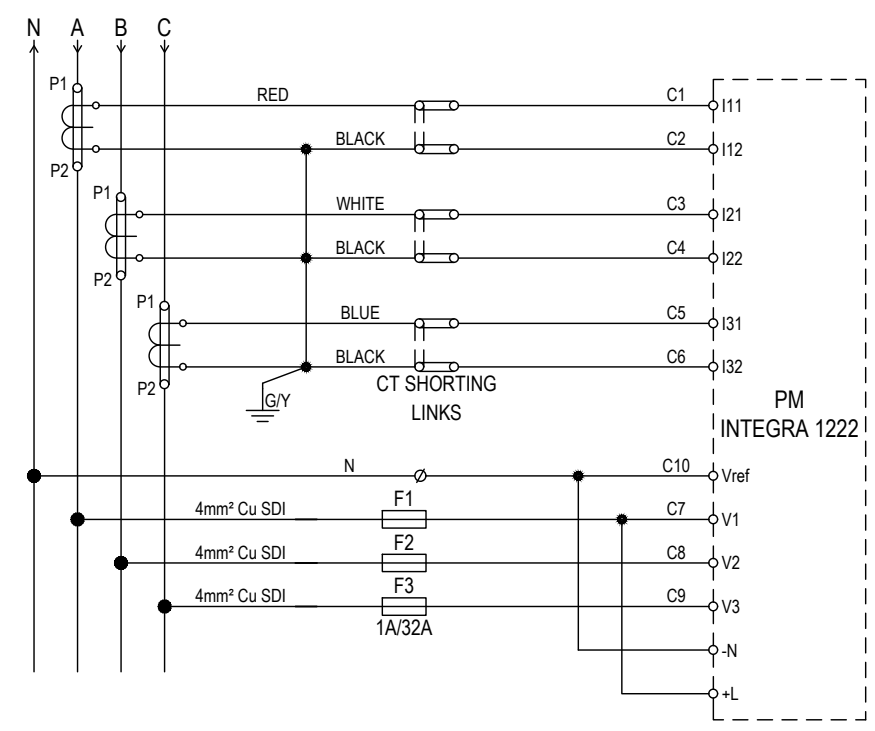
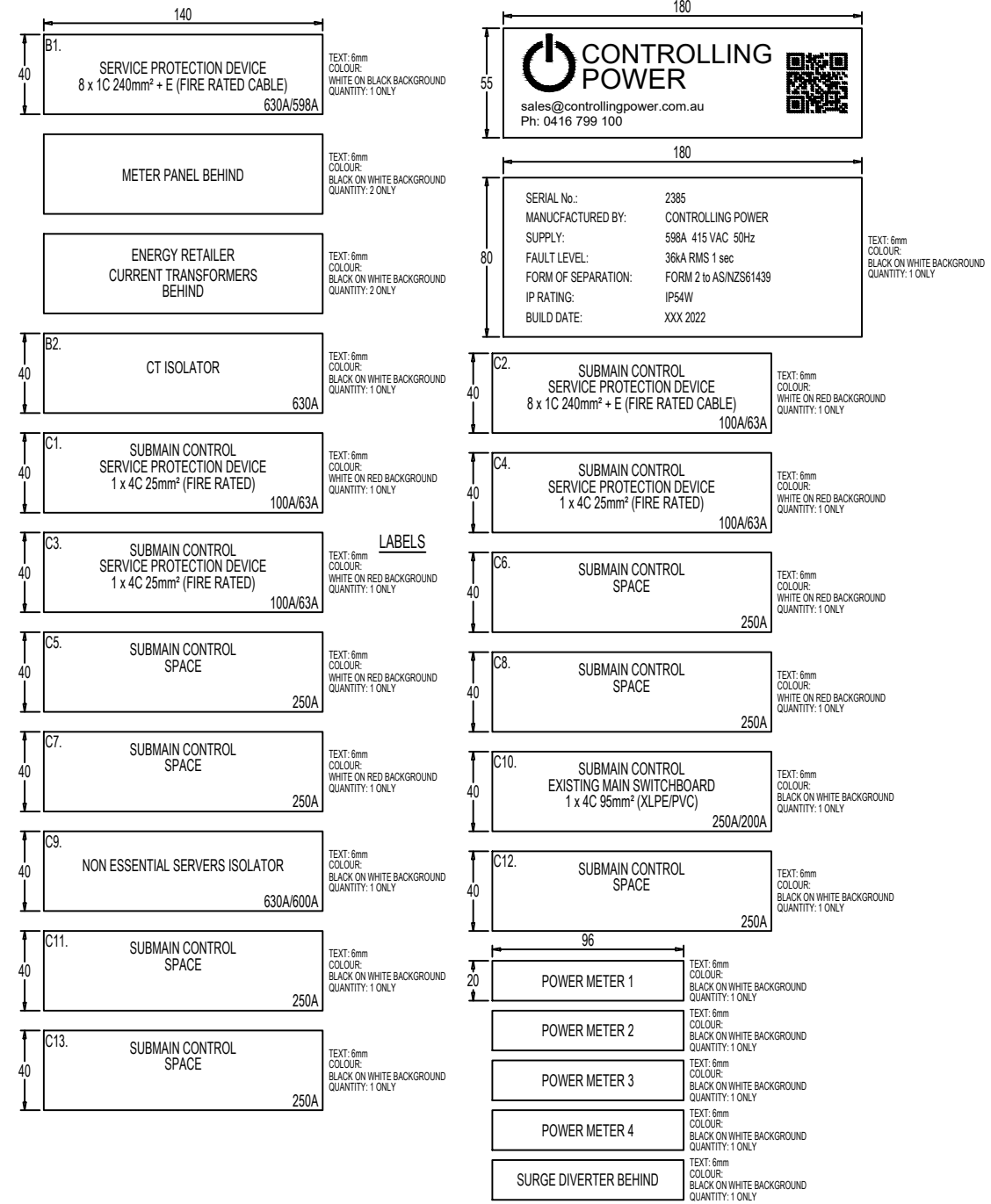
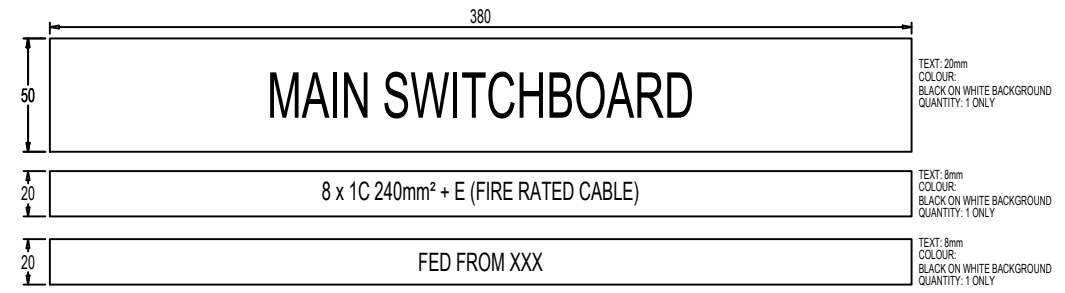
TITLE: MAIN SWITCHBOARD
SINGLE LINE DIAGRAM



SCALE: 1:10(A3)	CHECKED: X.X	APPROVED: -
PROJECT: 2385	DRAWN: A.L	DATE: 25-08-22
DRAWING No: 2385 -13		

CABLING
 CONTROL CABLING V90HT 1.5mm²
 IDENTIFICATION CARROL MARKFAST
 TERMINATIONS PREINSULATED FERRULES
 TERMINALS PUSH IN TERMINALS

LABELS
 LABELS MACHINE ENGRAVED
 CONSTRUCTION LAMINATE
 POLE DESIGNATION ADHESIVE VINYL



A	XX-XX-XX	X.X	ORIGINAL SUBMISSION	X.X
REV	DATE	BY	DESCRIPTION	CHK

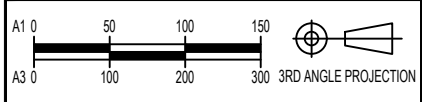
ELECTRICAL CONTRACTOR:

NEW ERA group

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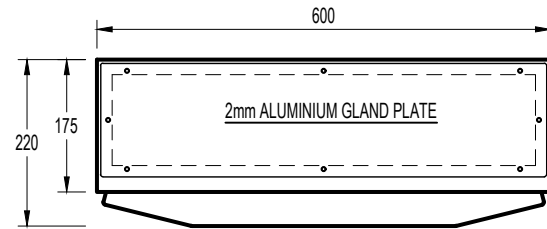
PROJECT: NEW ERA GROUP
 MOSS VALE STATION LV

TITLE: MAIN SWITCHBOARD
 SCHEMATICS & LABELS



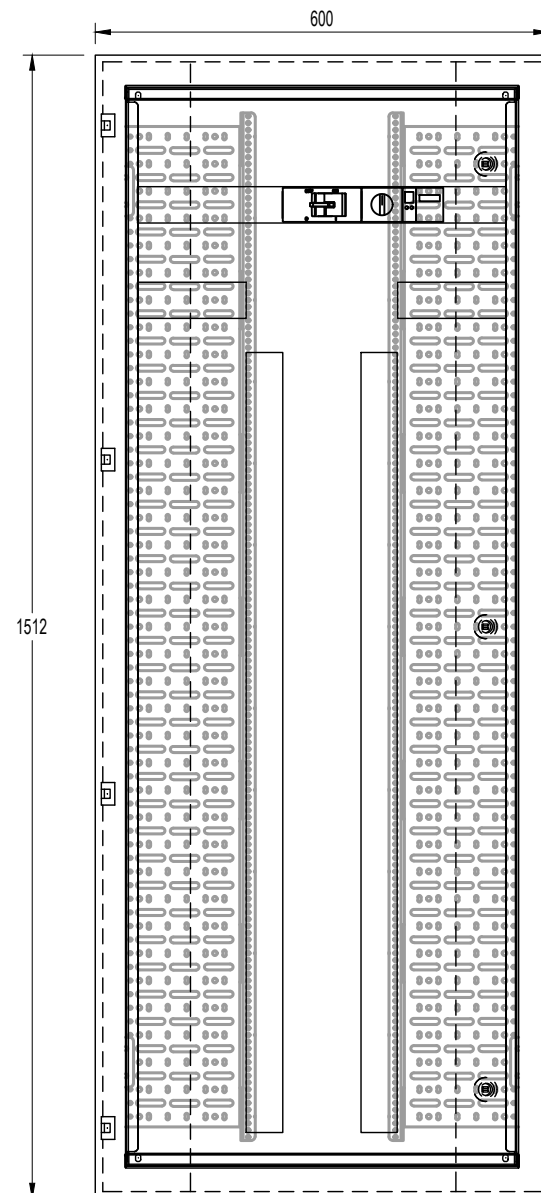
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PROJECT: 2385	DRAWN: A.L	DATE: 25-08-22

DRAWING No: 2385 -14

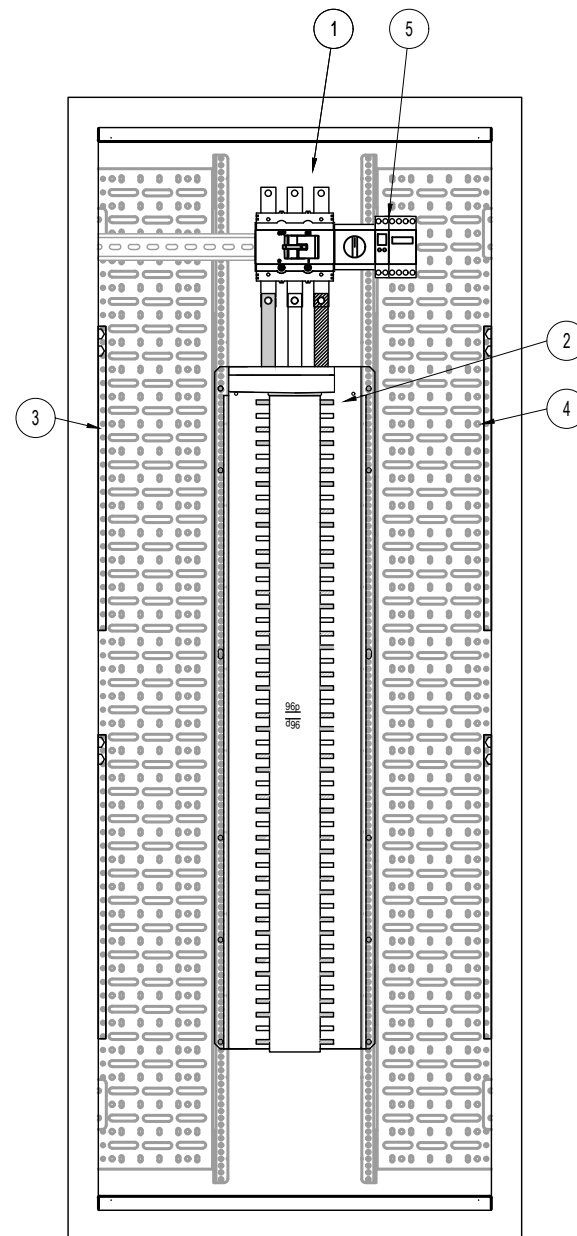


TOP & BOTTOM VIEW

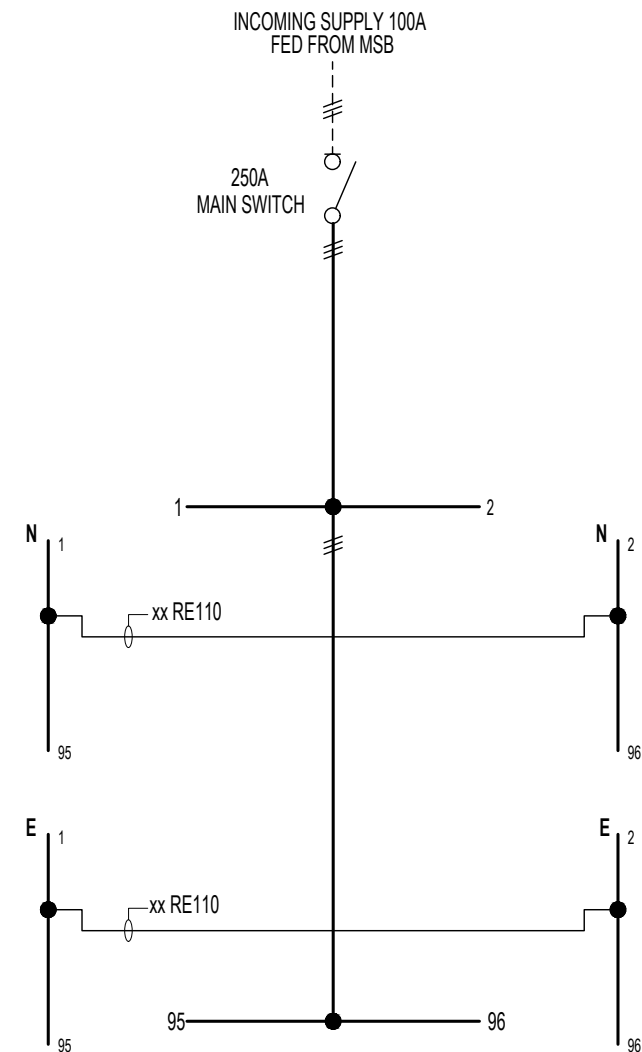
EQUIPMENT SCHEDULE				
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2	CP96-250	96 POLE CHASSIS	CP	1
3	BL-48-O	BRASS LINK 96 POLE (ODD 1-95)	CP	2
4	BL-48-E	BRASS LINK 96 POLE (EVEN 2-96)	CP	2
5	ELTS4	EMERGENCY LIGHTING TEST KIT	IPD	1
6	xx	xx	xx	xx
7	xx	xx	xx	xx
8	xx	xx	xx	xx
9	xx	xx	xx	xx
10	xx	xx	xx	xx



FRONT ELEVATION
DOOR & ESCUTCHEON FITTED (SHOWN DASHED)



FRONT ELEVATION
DOOR & ESCUTCHEON REMOVED



SINGLE LINE DIAGRAM

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CONSTRUCTION	1.6mm ZINC SEAL MILD STEEL CORNERS WELDED AND DRESSED
CABINET	1.6mm ZINC SEAL
DOORS & COVERS	X15 ORANGE RIPPLE
COLOUR	PEARL WHITE
ESCUTCHEON & BRACKETS	CHROME PLATED
LOCKS	1/4 TURN BLACK CAST PINTLE HINGE, REMOVABLE NYLON PIN
HINGES	INCOMERS TOP
CABLE ENTRY	OUTGOING TOP
GLAND PLATES	2mm ALUMINIUM
FORM OF SEGREGATION	FORM 2
DEGREE OF PROTECTION	IP43
CHASSIS RATING	ENCAPSULATED DIN CHASSIS 250A
FAULT LEVEL	20kA (0.1s)
NEUTRAL & EARTH	BRASS LINKS, 2 SCREW
EQUIPMENT	SCHNEIDER
FAULT RATING	6kA

REV	DATE	BY	DESCRIPTION	CHK
A	26-08-22	A.L	ORIGINAL SUBMISSION	X.X

ELECTRICAL CONTRACTOR:

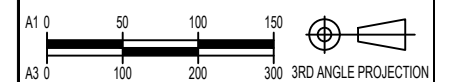


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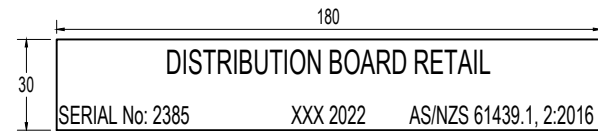
PROJECT: NEW ERA GROUP
MOSS VALE STATION LV

TITLE: DISTRIBUTION BOARD RETAIL
GENERAL ARRANGEMENT & SINGLE LINE DIAGRAM



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PROJECT: 2385	DRAWN: A.L	DATE: 25-08-22

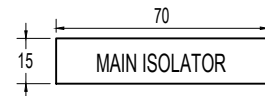
DRAWING No: 2385 -31



TEXT: 8mm + 6mm
COLOUR: BLACK ON WHITE BACKGROUND
QUANTITY: 1 ONLY

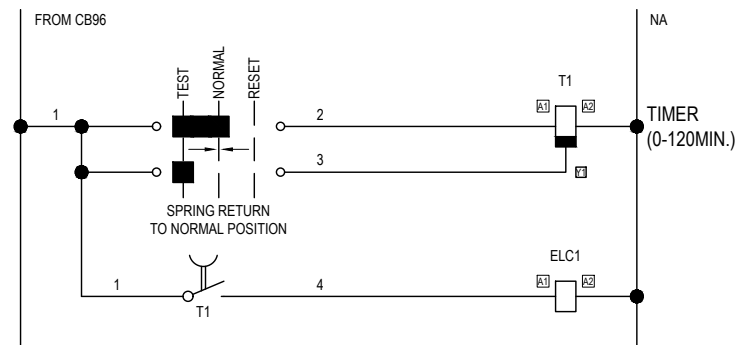


TEXT: 6mm
COLOUR: BLACK ON WHITE BACKGROUND
QUANTITY: 1 ONLY



TEXT: 6mm
COLOUR: BLACK ON WHITE BACKGROUND
QUANTITY: 1 ONLY

LABELS



TYPICAL EMERGENCY LIGHTING TEST EQUIPMENT

CIRCUIT DETAIL	POWER CHASSIS		CIRCUIT DETAIL
	CIRCUIT NO.		
	1	2	
	3	4	
	5	6	
	7	8	
	9	10	
	11	12	
	13	14	
	15	16	
	17	18	
	19	20	
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
	33	34	
	35	36	
	37	38	
	39	40	
	41	42	
	43	44	
	45	46	
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	51	52	
	53	54	
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	59	60	
	61	62	
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	65	66	
	67	68	
	69	70	
	71	72	
	73	74	
	75	76	
	77	78	
	79	80	
	81	82	
	83	84	
	85	86	
	87	88	
	89	90	
	91	92	
	93	94	
	95	96	

CABLING
CONTROL CABLING V90HT 1.5mm²
IDENTIFICATION CARROL MARKFAST
TERMINATIONS PREINSULATED FERRULES
TERMINALS PUSH IN TERMINALS

LABELS
LABELS MACHINE ENGRAVED
CONSTRUCTION LAMINATE
POLE DESIGNATION ADHESIVE VINYL

REV	DATE	BY	DESCRIPTION	CHK
A	26-08-22	A.L	ORIGINAL SUBMISSION	X.X

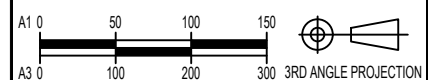
ELECTRICAL CONTRACTOR:



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P: 0416 799 100

PROJECT: NEW ERA GROUP
MOSS VALE STATION LV

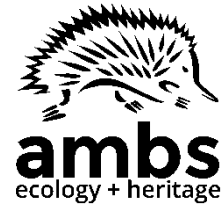
TITLE: DISTRIBUTION BOARD RETAIL
SCHEMATICS & LABELS



SCALE: 1:10(A3) CHECKED: X.X APPROVED: -
PROJECT: 2385 DRAWN: A.L DATE: 25-08-22

DRAWING No: 2385 -32

MEMO



DATE: 18 March 2022

AMBS Ref: 22033 M1

TO: Chintal Shah, Project Manager, Delivery Infrastructure, Customer Environment

FROM: James Cole, Historic Heritage Consultant, AMBS Ecology & Heritage

SUBJECT: Moss Vale Station Power Supply Upgrade Historical Archaeological Assessment

Sydney Trains is proposing to complete a Power Supply Upgrade project at Moss Vale Railway Station. The proposed works include the installation of a new Pad Mount sub-station and trenching to install high voltage conduits to the existing network (Figure 1). It is understood that a brief Historical Archaeological Assessment (HAA) is required to support an existing Fast Track application to Heritage NSW under Section 60 of the *Heritage Act 1977* to allow the proposed works to proceed. This memo has been authored by James Cole (Historic Heritage Consultant) and reviewed by Jennie Lindbergh (AMBS Director Historic Heritage).

The study area is located within the Moss Vale Railway Station Group, listed as the *Moss Vale Railway Station and yard group* on State Heritage Register (SHR 01200) (Figure 2). Additionally, the study area is listed as the *Moss Vale Railway Precinct* on the Transport Asset Holding Entity (TAHE) Section 170 Heritage and Conservation (S170) Register (4806253) and the Australian Rail Track Corporation (ARTC) S170 Register (4280253), and as the *Moss Vale Railway Station* on the Wingecarribee Local Environmental Plan 2010 (LEP I244). The Study area is also located within the *Argyle Street North Conservation Area* on the Wingecarribee LEP 2010 (C1836).

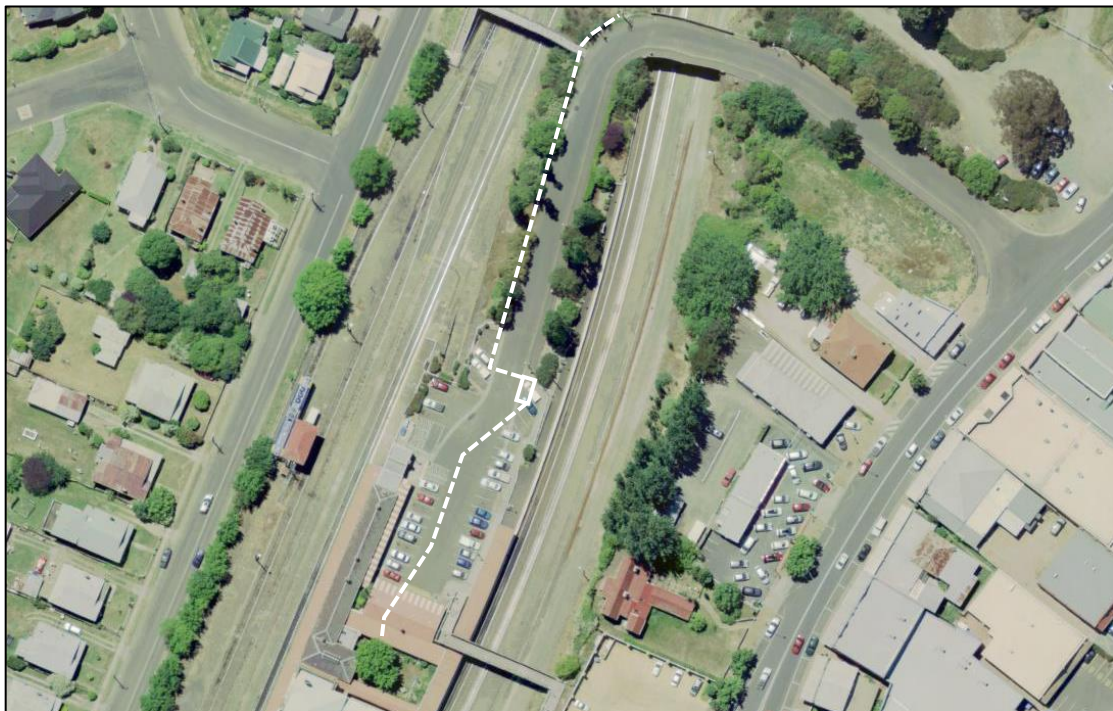
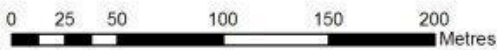


Figure 1 Approximate location of the study area. Location of pad mount substation marked by white box, approximate trenching alignments by white dashed lines (NSW Six Maps).



State Heritage Register

Gazetted Date: 2 April 1999



Scale: 1:2,500

Produced by: Michelle Galea

Legend

- SHR Curtilage
- Land Parcel
- LGA
- Suburbs

Figure 2 State Heritage Register for the Moss Vale Railway Station and yard group. Approximate location of the study area marked in white.

Moss Vale Railway Station is one of NSW’s oldest and largest regional railway stations, serving for a short time following its construction as the terminus of the Great Southern Line. The station opened in 1867 as Sutton Forest, at the time being the only public building in the settlement, renamed Moss Vale by 1877. The Station Building was constructed in 1867 and

extended in 1890 along the Up platform. At the same time as the extension, a Railway Refreshment Room was constructed, being extended in 1919 and 1927, with minor alterations continuing into the 1960s. Other key structures on site were primarily constructed in the early twentieth century, including the Booking Office, Footbridge, Overbridge, and Signal Box, all constructed in 1915. The station is considered significant under all NSW heritage assessment criteria.

Archaeological Potential

The archaeological potential of the study area has previously been assessed by AMBS (2019) to support an update of the Conservation Management Plan (CMP) for the railway station group completed by OCP Architects Pty Ltd. AMBS concluded that:

The archaeological resources within the original footprint of the southern goods yard to the east of the station, if with good integrity, would have High research potential. Those areas adjacent to the southern goods yard that were modified prior to and in response to the 1915 line duplication, would also have High research potential (AMBS 2019:38).

AMBS' assessment of archaeological significance is shown in Figure 3. Owing to the existing records, it is difficult to make firm statements about the potential archaeological deposits in the study area. Although the station has been operational since 1867, there are gaps in recording, where the development and layout of Moss Vale Railway Station is not well understood:

There is however, an important gap in the historical documents pertaining to the development of the station precinct and the goods yards in particular. The hiatus between the 1888 and 1915 plans appears to have been a period of great activity, when new infrastructure was installed - the c.1896 turntable, ash pits, water tanks, septic tanks and other structures. In addition, the station platform has relocated further north. Unfortunately, the 1888 and 1915 plans are aligned differently and the 1888 map appears to be a simple rendition that does not conform to the local topography ... Later modifications to the precinct are likely to have disturbed the archaeological remains; however, physical remains that could inform an understanding of the changes from the late nineteenth into the early decades of the twentieth centuries, would have research potential and be of value (AMBS 2019:36).

The proposed works will primarily be taking place to the east of the North Dock, constructed in 1915. At this time, the study area was converted into a station entrance, with the same layout retained to the present day (Figure 4). Based on this, it is considered unlikely that the location of the pad mount substation or service trenches have been subject to significant levels of disturbance throughout the twentieth century, and any archaeological resource underlying them would have a high likelihood of remaining intact.

Any intact archaeological remains relating to the late nineteenth or early twentieth century would have the potential to inform us about the development of the railway station and of local industries. While the nature of any archaeological remains is difficult to discern, it is likely based on work undertaken at other railway stations, that such deposits would consist of:

- Structural remains associated with sheds, and fencelines.
- Deposits associated with the use of the station as a distribution centre, particularly given its proximity to the goods shed and crane as shown in the 1888 layout of the railway station group (Figure 5).

- Works and infrastructure such as timber sleepers and railway track, and evidence of landscape modification.



Figure 3 The archaeological significance of the area within the SHR curtilage of the *Moss Vale Railway Station and yard group* (approximate location of the study area overlaid in white) (Google Earth Pro 2006 accessed 20.08.19).

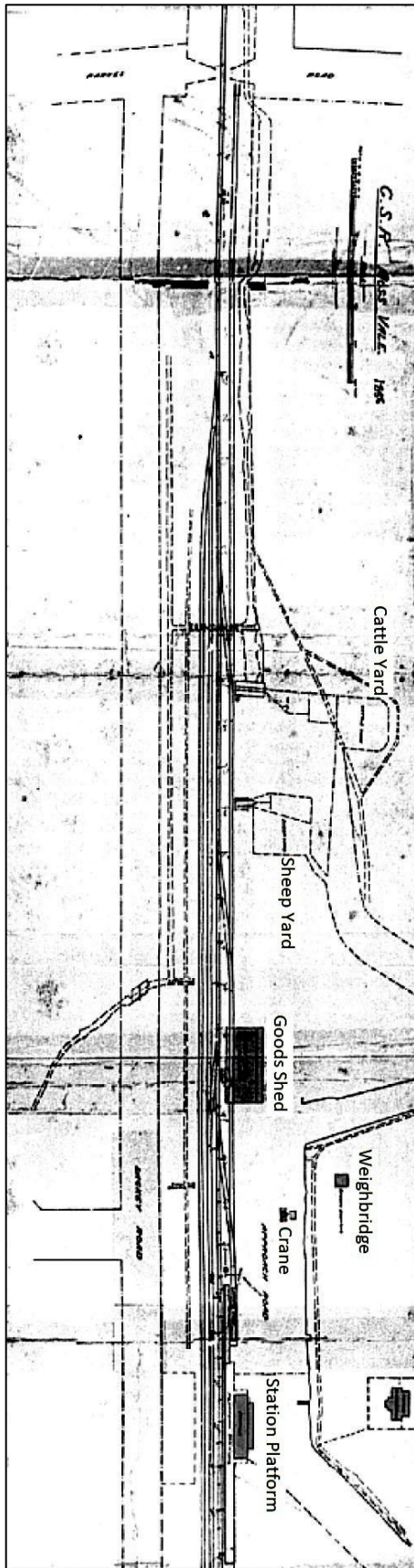


Figure 5 Annotated excerpt from 1888 plan of Moss Vale Railway Station (Freeman Part 3 1998:Fig.9).

Conclusion

Sydney Trains is proposing to install a pad mount substation at Moss Vale Railway Station to meet both current electricity requirements and to support the installation of two lifts for the purpose of disabled access. In order to complete this project, the following ground disturbing works are required:

- Excavation for a concrete plinth at the location of the substation - length 2800mm, width 1235mm, depth 1250mm.
- Excavation of trenching to the north of the substation to connect high voltage (HV) cable to a power pole (power pole also to be replaced as a part of works).
- Excavation of trenching to the south of the substation to supply power to Moss Vale Railway Station.

The route of the trenching is considered indicative only and may be altered during works based on the locations of existing services and infrastructure. The estimated width of trenching will be approximately 1000mm to a depth of approximately 1050mm.

The Moss Vale Railway Station Group has identified historical, associative, aesthetic, social, rarity and representativeness significance to the people of NSW, as well as having research potential both as a station designed in part for the use of the Governor of NSW, and through potential archaeological remains which may be present within its curtilage.

The archaeological potential of the study area is associated with the potential it has to provide new information regarding the development of the station between 1888 and 1915, a period in which the railway station underwent significant change but is considered to be poorly recorded. The study area, and in particular, the location of the pad mount substation has been assessed as having good potential to retain pre-1915 archaeological profiles in situ.

In AMBS' previous assessment supporting the CMP update for the item, the following recommendation was made:

As the below-ground archaeological resources associated with the early development of the station and goods yard have been assessed as having research potential these should also be managed in accordance with the Heritage Act, which requires that excavation or disturbance of land that is likely to contain, or is believed may contain, archaeological relics is undertaken in accordance with an excavation permit issued by the Heritage Council of NSW (Heritage Council). For excavations within the curtilage of a place listed on the State Heritage Register the application should be made for a permit under Section 60, or a gazetted Exemption under Section 57(2) of the Act (AMBS 2019:43).

It is understood that Sydney Trains has already submitted a Section 60 Fast Track application under the *Heritage Act 1977*. The information sheet *Historical Archaeology and Fast Track* provides the following guidance regarding works impacting archaeology which are acceptable:

Disturbance, excavation or minor impact to archaeological relics may be possible through the fast track pathway if:

- *the affected archaeology is not directly related to the heritage significance of the item or the reasons why a place is listed in the SHR Statement of Significance*

- *the archaeology is not of State heritage significance*
- *works would have no more than a minor impact on the heritage significance of the item*
- *works would not compromise the structural integrity of any heritage structure or significant landscape elements.*

This approval pathway is consistent with the significance of any potential archaeological remains and with the scale of the proposed works, which are minor in the context of areas of archaeological significance as shown in Figure 3. The proposed works have the potential to have a minor impact on archaeological remains in the study area. Based on this, the following mitigation measures are recommended to ensure that any archaeological remains present are identified during works, and to ensure that an adverse impact to these remains are mitigated:

- An Excavation Director is nominated for the project in accordance with the *Criteria for assessing Excavation Directors* (Heritage NSW 2019).
- The Excavation Director will provide a heritage induction to all contractors on the first day of excavation works on site. The induction will cover the archaeological potential of the proposed works and the processes which are to be followed if archaeological deposits or relics are identified during excavation.
- The Excavation Director will monitor the first day of excavation on the project in accordance with the Archaeological Method Statement below. Based on the results of this monitoring, the Excavation Director may recommend further archaeological monitoring or the use of an unexpected finds protocol for the proposed works.
- When it is considered by the Excavation Director that further monitoring is not required, works should proceed in accordance with the Sydney Trains Environmental Management System Procedure *Unexpected Archaeological Finds*. Should any unexpected archaeological items be identified during works, excavation should cease in the vicinity, and the Excavation Director should be called to record and assess the find.

Archaeological Method Statement

On the first day of excavation works, demolition requiring subsurface disturbance, that is the mechanical removal of the concrete slab and overburden, will be archaeologically monitored by AMBS' nominated Excavation Director, James Cole. Based on the results of this monitoring, the Excavation Director will make an assessment on the requirement for further archaeological monitoring during excavation. This assessment will be based on:

- The presence or absence of archaeological deposits or relics in the monitored area.
- The assessed level of disturbance to the soil profile underlying the study area.

Where archaeological remains are exposed within the footprint of the proposed works, archaeological excavation and recording will proceed in accordance with the following methodology:

- An excavator with a flat-edged mud bucket will remove the soil layers under the direction of the Excavation Director in uniform layers.
- Should the Excavation Director need to investigate features or relics further, machine excavation will stop, and hand excavation can occur until the feature is clearly understood and recorded.
- All significant archaeological deposits, features and relics identified will be recorded using archaeological best practice:
 - All information regarding the location, dimensions and characteristics of all recorded archaeological features and deposits will be recorded on pro-forma context sheets.
 - Digital photographs including JPEG and RAW of cleaned features.
 - Scale plans where appropriate.
 - Photogrammetry, if relevant.
 - Sequential numbering of features and deposits to facilitate preparation of a Harris Matrix and artefact labelling.
 - Samples of bricks and mortar from demolition fills will be collected if relevant
- Artefacts (relics) will be cleaned, bagged, labelled in accordance with the archaeological context, and appropriately stored for analysis so that any information that can contribute to the understanding of the site and its historical development is not lost. Artefact processing and cataloguing will be undertaken in line with AMBS standard procedures and best practice.
- Location data for the excavation areas will be taken by the Excavation Director with a handheld GPS, unless a surveyor is readily available.

At completion of the archaeological monitoring, a brief archaeological monitoring report will be prepared detailing the results of the monitoring programme. The report will be prepared in accordance with current heritage best practice and submitted to Heritage NSW and the client.