

SWMS No 036	<div style="color: red; font-weight: bold;">SJD Electrical</div> Job Safety Analysis / Safe Work Method Statement					Page 1 of 9
SJD ELECTRICAL PTY LTD - ABN 53 127 802 608 - ACN 127 802 608 - ELECTRICAL LICENCE 68608 - QBCC LICENCE 1270514 - ARC LICENCE AU19801 - MOLEX LICENCE CIAU3372						
Safe Work Method Statement Title: SWMS: 036 TRENCHING						Date Created: 00/00/16
Project Name:			Person responsible for ensuring compliance with this SWMS:			Review Date: 00/00/17
Project/Client:			Job No:	Authorised By:		Revision No. 0
Licences, Permits, Competencies Required: (tick items relevant to this task and site)						
<input type="checkbox"/> Confined Space		<input type="checkbox"/> Work at Heights		<input type="checkbox"/> Excavation		<input type="checkbox"/> Hot Work
<input type="checkbox"/> White Card		<input type="checkbox"/> EWP		<input type="checkbox"/> Electrical License		<input type="checkbox"/> Rescue and Resuscitation
<input type="checkbox"/> Radiation		<input type="checkbox"/> Network Access				
Common Hazards to Manage: (tick items relevant to this task and site)						
<input type="checkbox"/> Manual handling		<input type="checkbox"/> Working at Heights		<input type="checkbox"/> Risk of Electric Shock		<input type="checkbox"/> Slips, Trips and Falls
<input type="checkbox"/> Housekeeping						

HAZARD CLASSIFICATION MATRIX POSSIBLE RESULTS Risk = Consequence x Likelihood			Probability				
			RARE A	UNLIKELY B	POSSIBLE C	LIKELY D	ALMOST CERTAIN E
Consequences	Catastrophic	5	Medium (M)	High (H)	High (H)	Extreme (E)	Extreme (E)
	Major	4	Medium (M)	Medium (M)	High (H)	High (H)	Extreme (E)
	Moderate	3	Low (L)	Medium (M)	High (H)	High (H)	High (H)
	Minor	2	Low (L)	Low (L)	Medium (M)	Medium (M)	High (H)
	Insignificant	1	Low (L)	Low (L)	Low (L)	Medium (M)	Medium (M)

RISK RATING	ACTION REQUIRED (ALARP – As Low As Reasonably Practicable)
E = Extreme, UNACCEPTABLE	Intolerable risk. Activity must not be undertaken prior to Management / CEO review of potential risk mitigation measures and a decision that risk is ALARP
H = High risk, Only acceptable if ALARP	Implement strict control measures to reduce risk to an acceptable level. Activity must not continue until the level of risk is reduced to As Low As Reasonably Practicable (ALARP) and preferably Medium rating. Operations Manager and/or Project Supervisor approval of the risk controls is required.
M = Medium risk Undesirable	Specify, document and implement existing risk controls and additional management actions to reduce the risk to ALARP and <u>preferably Low rating</u> . Activity must not continue without Operations Manager and/or Project Supervisor approval.
L = Low risk, Tolerable	Tolerable risk. Carry out activity

Basic PPE to be used

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Other PPE:												

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Job Task #	Job Step	Potential Health, Safety and Environmental Hazards	PROBABILITY	CONSEQUENCE	RATING	Control Measures	PROBABILITY	CONSEQUENCE	RATING	PERSON(S) RESPONSIBLE
1	Planning and preparation	Non-compliance with current legislative requirements and company processes.	D	4	H	<p>All personnel to complete site specific induction.</p> <p>All personnel to have completed company specific induction.</p> <p>Personnel are to hold the required licenses and certificates for the work, and be assessed as competent to use or operate equipment and plant.</p> <p>All personnel must read, understand and sign off on this SWMS. All personnel are given the opportunity to provide input into the content of this SWMS.</p> <p>Daily pre-starts will be held at the beginning of each shift.</p> <p>Any changes throughout the shift will be communicated prior to the commencement of the next task.</p> <p>A JSA is to be completed for any changes to the task.</p> <p>Ensure permit requirements are understood.</p>	B	4	M	<p>Work crew</p> <p>Supervisor</p> <p>Permit Holder</p>
		<p>Working outdoors with exposure to;</p> <ul style="list-style-type: none"> - UV / high temperatures causing heat stress / dehydration / sunburn - Fauna and insects causing bites and stings 	D	3	H	<p>'Check ins' during extreme weather conditions.</p> <p>Comply with the Queensland Worksafe heat stress procedure.</p> <p>Ensure there is an area in the shade for rest (preferably Crib Facilities).</p> <p>Work Breaks are compulsory at nominated times (preferably during the hotter parts of the day)</p> <p>Drink adequate water amount of water.</p> <p>Use sun block for protection from sun.</p> <p>Use insect repellent (if applicable).</p>	B	3	M	Work crew
		<p>Interactions with other trades working in the vicinity;</p> <ul style="list-style-type: none"> - Inadvertently cause hazardous situation including trips, slips, falls 	D	3	H	<p>Ensure other workers are informed and aware of all other trades working in the area</p> <p>Communicate potential interactions during prestart</p>	B	3	L	<p>Supervisor</p> <p>Work Crew</p>

Job Task #	Job Step	Potential Health, Safety and Environmental Hazards	PROBABILITY	CONSEQUENCE	RATING	Control Measures	PROBABILITY	CONSEQUENCE	RATING	PERSON(S) RESPONSIBLE
		Unauthorized access to work area by other authorized personnel without correct PPE.	D	3	H	<p>Follow all site rules and procedures.</p> <p>Wear all mandatory PPE and task specific PPE.</p> <p>If a hazard is identified in the work area – fix it immediately or if unable to do so, isolate the hazard and inform your supervisor immediately.</p> <p>Site wide barricading to be installed to restrict access to unauthorized personnel.</p> <p>Signage to be visible around all site and at all access points.</p> <p>All visitors must report to site office before entering site.</p> <p>All visitors to be escorted by a site inducted personnel member.</p>	B	3	M	Supervisor Work crew
		<p>Poor ground conditions</p> <p>Uneven, loose, wet or soft ground at the work site.</p>	C	2	H	<p>Inspect path of travel for any obstructions and remove them.</p> <p>Daily site inspections prior to commencement of work activities and at the conclusion of each work day.</p> <p>Regular housekeeping inspections including regular walk rounds to be conducted to ensure a clean and tidy work area.</p>	B	2	M	Work crew
2	Work area preparation	<p>Personal injury -</p> <ul style="list-style-type: none"> - Cuts, strains, abrasions, burns - Possible eye injury - Dust inhalation (depends on surrounds – these tasks should not cause dust or fumes) 	C	3	H	<p>Authority and empowerment to Stop the Job.</p> <p>Follow all site rules and procedures.</p> <p>Ensure correct manual handling techniques are followed.</p> <p>Wear all mandatory PPE and task specific PPE.</p> <p>Communicate task clearly with all work crew members. Ensure a thorough understanding of expectations.</p> <p>If a hazard is identified in the work area – fix it immediately or if unable to do so, isolate the hazard and inform you supervisor.</p> <p>Work on flat surface where practicable</p> <p>Secure all tools and/or equipment by lanyard or store in a toolbox/basket when on the work platform.</p>	B	3	M	Work crew Supervisor

Job Task #	Job Step	Potential Health, Safety and Environmental Hazards	PROBABILITY	CONSEQUENCE	RATING	Control Measures	PROBABILITY	CONSEQUENCE	RATING	PERSON(S) RESPONSIBLE
		Striking existing underground service	D	4	H	<p>Supervisor to ensure all drawings for the area in which the trenching will take place have been checked for pipelines, CP Cabling etc.</p> <p>Locating shall be done by using a Locating Device. Wherever possible, impressed current should be used.</p> <p>Any hard spots located during water spearing MUST be hand dug and exposed to ensure clear identification.</p> <p>Those services shown on the drawings which have been located are to be marked with an identifiable combination of at least two of the following; posts / pegs / HiVis marking tape / signage.</p> <p>Warning signs shall be located in the following locations: -</p> <ul style="list-style-type: none"> - At least 5 metres away from the identified service and on the approach side of the trench so as to prevent excavation machinery coming too close to the service. - Directly over the service. <p><i>The location of these markings and services are to be made known to the workgroup during the reading and in particular to the Spotter and the Plant Operator before any work commences.</i></p> <p>Hand excavation must take place around identified services to ensure that they are clearly exposed for at least 500mm around the service before any mechanical excavations commence.</p> <p>Note: If an in ground service has been located in a number of locations, the Supervisor must satisfy himself that the location spacings are of sufficient number to ensure that the service does not extend outside the line between the location points.</p> <p>The only person who has the authority to remove the location warning markings of the foreign crossing is the operator of the excavating machine.</p>	B	4	M	Supervisor Work crew
		Permit failures <i>(remove line item if not required)</i>	C	4	H	<p>The Supervisor in charge of any trenching operations is to ensure that, when deemed necessary, a Permit to Excavate is in place and that permit procedures have been followed before any ground breaking activity begins.</p>	B	4	M	Supervisor Work crew

Job Task #	Job Step	Potential Health, Safety and Environmental Hazards	PROBABILITY	CONSEQUENCE	RATING	Control Measures	PROBABILITY	CONSEQUENCE	RATING	PERSON(S) RESPONSIBLE
3	Set up for trenching	Striking above ground services	C	4	H	<p>The Supervisor is responsible for ensuring there are no above ground services which will present any danger to personnel operating machinery or persons working in the vicinity of the above ground service.</p> <p>The Supervisor is responsible for ensuring that flagged catenaries are erected at least 50 metres either side of any power line crossing the ROW.</p> <p>Operator to complete daily recorded pre-start safety check.</p> <p>Notify supervisor of identified deficiencies immediately – TAG OUT / DO NOT USE.</p> <p>Only experienced / competent personnel to operate trenching machine / excavator when within 5 metres of an above ground foreign crossing.</p> <p>Training of trenching/excavator operators shall occur only with a certified operator in vicinity of the machine and not when within 5 metres of a live service.</p>	B	4	M	Supervisor Work Crew
4	Trenching	<p>Open Trench - person, vehicle or plant falls/drives into trench / bell hole</p> <p>Public vehicle drives into trench/ bell hole near road crossing</p>	D	4	H	<p>Spoil to act as barrier down one side of trench.</p> <p>Ensure signage is erected warning of excavations.</p> <p>Ensure bell holes have barrier mesh erected at least 1 metre from edge of bell hole.</p> <p>Ensure bell holes / trenches near road crossings have barrier mesh erected as delineator, flashing amber light to warn drivers at night, excavation signs, no entry signage.</p> <p>Ensure Roadwork Ahead signage is placed on road and signage placed either side of road crossing to slow traffic.</p>	B	4	M	Work Crew

Job Task #	Job Step	Potential Health, Safety and Environmental Hazards	PROBABILITY	CONSEQUENCE	RATING	Control Measures	PROBABILITY	CONSEQUENCE	RATING	PERSON(S) RESPONSIBLE
5	Trenching (continued)	Person / vehicle or plant struck by machine	D	4	H	<p>Reversing / Travel alarm fitted and operational on all plant.</p> <p>Operator to ensure all personnel, vehicles and plant are clear of machinery prior to starting.</p> <p>Other than the operator, no personnel are to be riding on / in a machine while it is in operation (Machinery maintenance personnel may ride in or on the machine for diagnostic purposes only).</p> <p>Personnel wishing to speak to the operator are to wait at a safe distance from the machine until they have gained the operators attention, (by radio or hand signals) then only approach when the trenching bucket wheel has stopped or excavator bucket has been placed on the ground before proceeding alongside the machine.</p> <p>All personnel to wear HI Vis shirts.</p>	B	4	M	Work crew
		Vehicle incident	D	4	H	<p>Ensure only authorised vehicles operate in the area.</p> <p>Ensure appropriate barricading is in place.</p> <p>Reduce speed around trenching area.</p> <p>Do not park in area of trenching.</p> <p>Ensure 10kph signs are erected in the vicinity of workers or working machinery on the ROW.</p>	B	4	M	Work crew
		<p>Failure to maintain a safe distance from edge of trench causing –</p> <ul style="list-style-type: none"> - Plant not involved in the trenching falling into the trench - Plant straddling trench falling in - Trench collapse. 	D	4	H	<p>The distance plant must stay away from the trench should exceed the depth of trench in good ground and 1.5 times the depth in poor ground conditions.</p> <p>When it is necessary to traverse an open trench in questionable ground conditions, i.e. to remove spoil that has fallen in from subsidence, that part of the trench should be backfilled prior to the movement and the excavator will then be able to track back out safely and continue to remove spoil.</p>	B	4	M	Work crew

Job Task #	Job Step	Potential Health, Safety and Environmental Hazards	PROBABILITY	CONSEQUENCE	RATING	Control Measures	PROBABILITY	CONSEQUENCE	RATING	PERSON(S) RESPONSIBLE
6	Trench entry	Cave in of trench / bell hole	D	4	H	<p>Trenches over 1.5m deep must be benched at 45 deg, battered at 1:1 or shored using approved proprietary shoring.</p> <p>No person to enter trench deeper than 1.5 metres unless it is benched, battered or shored.</p> <p>Ensure safe means of access / egress is in place every 9m along trench</p> <p>Ensure bell holes are opened up wide enough to prevent materials / sides falling onto any person working on pipe / tie in.</p> <p>Where personnel are required to work in a trench ensure a safe means of access/egress exists - ramp sides, cut in steps or place ladders every 9m along trench</p>	B	4	M	Work crew
7	Laying conduit in trench	Personal injury - <ul style="list-style-type: none"> - Cuts, strains, abrasions, burns - Possible eye injury - Dust inhalation (depends on surrounds – these tasks should not cause dust or fumes) - Uneven, loose, wet or soft ground at the work site. 	D	4	H	<p>Ensure correct manual handling techniques are followed.</p> <p>Wear all mandatory PPE and task specific PPE.</p> <p>Communicate task clearly with all work crew members. Ensure a thorough understanding of expectations.</p> <p>If a hazard is identified in the work area – fix it immediately or if unable to do so, isolate the hazard and inform you supervisor.</p> <p>Work on flat surface where practicable</p> <p>Secure all tools and/or equipment by lanyard or store in a toolbox/basket when on the work platform.</p>	B	4	M	Work crew
8	Backfilling Trench	Personal injury - <ul style="list-style-type: none"> - Cuts, strains, abrasions, burns - Possible eye injury - Dust inhalation (depends on surrounds – these tasks should not cause dust or fumes) - Uneven, loose, wet or soft ground at the work site. 	C	4	H	<p>Ensure correct manual handling techniques are followed.</p> <p>Wear all mandatory PPE and task specific PPE.</p> <p>Communicate task clearly with all work crew members. Ensure a thorough understanding of expectations.</p> <p>If a hazard is identified in the work area – fix it immediately or if unable to do so, isolate the hazard and inform you supervisor.</p> <p>Work on flat surface where practicable</p> <p>Secure all tools and/or equipment by lanyard or store in a toolbox/basket when on the work platform.</p>	B	4	M	Work crew
9	Completion of task	Slips, trips, and falls	C	4	H	<p>Leave work area tidy.</p> <p>Store equipment in authorised access area (e.g. locked storage facility).</p> <p>Report any damage/defect to supervision and tag out any faulty equipment.</p>	B	4	M	Work crew

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Personnel Qualifications and Experience Required	Personnel Duties and Responsibilities		Training Required to Complete Work
	Supervisor	All Personnel	
Personnel will need to be trained and competent .	Empower all personnel to STOP the JOB if required to do so.	All personnel to maintain tidy work area on site at all times. Personal Protective Equipment (PPE) to be worn at all times on site.	Supervisor to be trained in risk identification, assessment and control e.g. Job Safety Analysis (JSA).
Appropriate industry and site specific induction.	Supervisor to carry out daily inspections of work site for hazards.	Ensure housekeeping is maintained throughout the task to avoid the risk of injury.	Training in the use of specific plant. Inspection and maintenance of equipment to be conducted (where applicable) for the type of equipment / plant to be used.
Appropriate Certificates of Competency will be required by personnel for particular operations e.g. excavator, trencher.	Ensure appropriate permits are in place for the task (if applicable).	Barricading to be used as appropriate to protect others from working below elevated work.	

Engineering Details / Certificates / Australian Standards	Referenced – Codes of Practice / Regulations / Legislation
<ul style="list-style-type: none"> AS/NZS 3000 Wiring Rules (Electrical Installations) AS/NZS 3012:2010 Electrical Installations – Construction and Demolition Sites. AS/NZS 3017 - Electrical installations - verification guidelines AS/NZS 4836 – Safe working on or near low voltage electrical installations and equipment 	<ul style="list-style-type: none"> Work Health and Safety Act and Regulations 2011 Electrical Safety Act 2002 and Electrical Safety Regulations 2013 Electrical Safety Code of Practice 2013 - Managing Electrical Risks in the Workplace Excavation Work Code of Practice – Safe Work Australia Managing risks of Plant in the workplace Code of Practice 2013. <p>(remove any of the above that are not applicable for the task being undertaken)</p>
Plant / Equipment Required (Mobile or Static)	Maintenance Checks / Calibration Intervals
<ul style="list-style-type: none"> Portable hand tools, electrical power tools / drills (insulated tools) Excavator / trencher Appropriate testing equipment 	<ul style="list-style-type: none"> Hand tools and ladders to be checked daily. All electrical equipment to be tested and tagged. Excavator / Trencher in accordance with manufacturer's recommendations <p>(remove if not applicable)</p>

