

COMPANY LOGO	COMPANY NAME		DOCUMENT REFERENCE	CON/SHEQ/SWP01
	SAFE WORK PROCEDURE: TITLE			
	PROJECT		REVISION	00
	APPROCED BY	16.1 – CEO E.G	DATE	06/02/2016












SAFE WORK PROCEDURE AND JOB OBSERVATION

ACTIVITY

<u>Compiled by:</u> Attach the attendance register	<u>Reviewed by:</u>	<u>Approved by:</u>
<u>Title</u> Relevant Supervisors	<u>Title:</u> CR8.1 Construction Manager	<u>Title:</u> Programme Manager
<u>Signature</u>	<u>Signature</u>	<u>Signature</u>
<u>Date</u>	<u>Date</u>	<u>Date</u>

<u>Reviewed by:</u>	<u>Reviewed by:</u>	<u>Acknowledged by:</u>
<u>Title</u> LES	<u>Title</u> OHS Senior Advisor	<u>Title</u> Project Manager
<u>Signature</u>	<u>Signature</u>	<u>Signature</u>
<u>Date</u>	<u>Date</u>	<u>Date</u>

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SAFE WORK PROCEDURE – CLAMPING IN OF CONDUCTORS													
DATE	06 January 2016			TOWER NUMBER	ALL			PROJECT / SITE	Medupi-Borutho				
Training & Certification ✓				Critical Inspections ✓				Hazards ✓				Risks ✓	
Trained as Climber? X				Tools and Equipment Work is inspected & drop zone / Clear Area demarcated? X Tools inspected & register kept. X Lifting machine & Tackle Register available? X Vehicle & Operators completed checks? X Climbers checked Harness? X Defective Equipment removed? X Equipment safe for use? X				Process Work at Height X Environment Snakes, Ticks, Bees, Insects X Lifting Equipment's X Ergonomics/Improper position X Mechanical X Mobile Plant/Equipment X Human Behaviour / Emotional Fitness. X				Nip Point /Pinching X	
Trained in perform rescue & first aid? X												Work on unstable Structures	
Job observation done? Have you Discussed the SWP with team? X												Inclement Weather (Wind. Weather, Rain, Terrain, X	
Medicals valid? Fit for duty? X												Emotional state of personnel X	
Are you on Medication? X												Improper position for the task X	
Team Breathalyzed? X												Inadequate training X	
Checked all Certificates? X												Competency of all involved. X	
Crane Operator License valid? *** X													
INDICATE PPE REQUIRED TO BE WORN BY EMPLOYEE /OPERATOR.													
PPE												<i>Insert photo of safety harness</i>	
	Respirator	Dust Mask	Hearing Protection	Apron	Climber or Gen Hardhat	Safety Shoes	Leather / Climbers Gloves	Safety Goggles	Face Shield	2-Piece Suit Pants	2-Piece Suit Top	Safety Harness	Reflective Vest
HOUSEKEEPING							ASSEMBLY POINT, SIGNAGES, PARKING & SMOKING AREA						
Work Area	1. Make sure that your work area is neat and tidy.						1. Identify and Assembly Point (Ensure that a fully stocked First Aid Box is available & Register).						
	2. Remove anything that might cause employees to trip and fall.						2. Put up all Signage's required on site.						
	3. Ensure that suitable waste bins are on site to dispose waste.						3. Identify a Parking Area. Ensure that you have all Emergency Numbers.						
	4. Ensure that your Tools are at a required place.						4. Identify Smoking Area and ensure that Bin with river sand is made available.						
	5. Ensure that Toilet is available & anchored.						5. Position clearly identified Water (Drinking & washing of hands) in Green Area.						
	6. Before leaving site, DO HOUSEKEEPING AGAIN.						6. Ensure that Fire Extinguishers and Fire Beaters are available on site. Rescue Kit as well.						

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1. Pre- Task Activities

- Identify parking Area and display a sign
- Identify smoking area and ensure smoking bins are available
- Ensure drinking water is available
- Ensure fire beaters and extinguishers are available
- Ensure first aid boxes are available and sign displayed
- Establish emergency evacuation plan and erect signs
- Ensure emergency numbers are available
- Ensure rescue plan is communicated and rescue kit is available onsite
- Investigate and plan each phase of the job and choose the most suitable plant.
- Provide for emergency access and egress at all times.
- Provide for protection of the public, employees and livestock.
- Look out for changes in ground, weather and water condition

2. High risks activities

- Working at Height
- Stringing
- Over tensioning
- Working on close proximity to overhead lines
- Crossing the road
- Joining the conductor
- Lacking communication

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3. Tools and Equipment Required for this Activity (An example)

DESCRIPTION	QTY	CAPACITY
1. Puller and Tensioner	1	16ton
2. 2-Way Radio	8	
3. Temporary Stays	12	4ton
4. Working Shackles	18	210-450kn
5. Run-out Block	32	450-600mm
6. Come-along Clamp	14	27-32mm,10-15mm (47Kn)
7. Hammer	2	4pount
8. Swivel	6	221-350kN
9. Head Board	1	221kN
10. Pilot Connector Joint	4	9kN
11. Temporary Running Earths	6	
12. Pulling Sock	14	9kN
13. Snatch Block	10	4ton
14. Rope Pulley	4	1 – 3wheels (3 – 6 ton)
15. Talia System	12	3 – 6 ton
16. Coffin Hoist	6	3 – 6 ton
17. Wire Rope Sling	6	13-16mm
18. Fall Rescue Kit	2	
20. Wrist Tool Lanyard	24	

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SAFE WORK PROCEDURE/JOB OBSERVATION

Task : **Stringing**

STEPS		SAFETY STEP BY STEP PROCESS	CRITICAL STEPS	JOB OBSERVATION		COMMENTS
				Yes	No	
1.	Conduct a daily continuous risk assessment (DSTI) and Stringing on site.	Communicate and ensure all employees are trained on the SWP they understand the contents of the DSTI and Safe Work Procedure	Ensure that stringing and regulation activities are task risk specific and that it covers all aspects of the activity Have employees sign an acknowledgement that they understood and was present when this SWP was communicated.			
2.	Risk Assessment	Conduct RA , by Safety Rep and Supervisor, including task risk assessment for stringing.	Ensure that all hazards and risks are identified and Communicated to employees. They have to sign an acknowledgement register to show that they understood ,			
3.	Team briefing about the activity	Define individual roles and	Ensure that all appointments,			

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	by Supervisor	responsibilities assigned for the day. Clearly communicate with employees who is responsible for what, Ensure that employees are all feeling well, stress levels are low.	competency certificate and medicals (in writing) are in place. Lines of communication to be established and confirmed Ensure that communication at the work site is available in case of an emergency.			
4.	Equipment and PPE inspections.	Checklists to be completed and sign by supervisor and she rep before work starts. Records of this inspection to kept onsite	Ensure all Equipment have valid certificates, including calibration certificates are valid. Do buddy checks on harnesses			
5.	Emergency Evacuation plan (Refer to Site Emergency Plan)	Ensure that an emergency evacuation plan has been identified and explained to all	Test employee to see if they know and understand the emergency plan,			
6.	Job rotation for all climbers	Supervisor monitors all climbers for signs of fatigue. And ensure climbing working rota should in place and adhere to) to avoid fatigue.	Rotate climbers from structure to structure-supervisor to ensure rotation takes place as necessary; observers for climber fatigue			
7.	Supervisor to ensure that climbers are trained and	Ensure Medical certificate proving if employee can	Whenever people change teams – supervisor to ensure			

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	medically fit	work at heights without any restriction are available and Work on Height certificate are available & valid	that there is a balance within the team of newly qualified and experienced climbers.			
8.	Personal Protective Equipment	Ensure all employees including visitors are provided with PPE	Ensure all employees or every person onsite is wearing PPE (see PPE chart 1 on page 2).			
9.	Supervisor to confirm Rescue plan kit	Supervisor to ensure rescue kit is available and that employees are trained on how to perform rescue	Train employees on rescue plan and test if they understand how to perform rescue			
10.	Supervisor must be appointed and to be in possession of the latest fall protection plan	All employees working on Height must be trained on the contents of the FPP by EPP developer and proof must be kept onsite	Supervisor to continuously train employees on FPP and must always be available onsite or work area			
11.	Supervisor to inspect work area	Supervisor to inspect if towers are safe for climbing by means of binoculars	Climber to also inspect the tower when climbing and observe and notify the supervisor			
12.	Activity					
13.	Loading and Offloading of cable drum onto the truck and offloading onto the ground 8	-Training documents for the crane operator and rigger must be valid.	Ensure out riggers are fully extended, pin in place also stable and foot plate are used			

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	ton Crane truck by means of two x 5 ton slings and a shaft or chain.	<ul style="list-style-type: none"> -Load test certificates for crane and 3monthly inspection for lifting tackle. -Clear communication must be maintained at all the time. -Refer to Loading and offloading SWP. 	<p>during operation</p> <p>Ensure no crane operates under live</p> <p>Ensure all no one is in a close vicinity during the operation</p> <p>Ensure crane and slings have been inspected before work start.</p>			
14.	Transportation of 4300kg conductor drums on site	<ul style="list-style-type: none"> -Conductor drums must be secured during transportation to site. -Refer to Loading and offloading SWP. 	<p>All conductor cable drums must be secured, safe packed and chocked before transportation proceeds.</p> <p>Truck driver's license must be available</p>			
15.	Loading / offloading of material and equipment with a crane truck	<ul style="list-style-type: none"> -Ensure that all workers that are not involved with the lifting are out of harm's way -Ensure employees climbing on the truck are trained on Working at Height -Ensure out riggers are fully extended and pin in place and stable -Refer to Loading and offloading SWP. 	<p>Competent rigger to rig the equipment and material, ensuring the material is secured, the crane truck is earthed and the out riggers are stable.</p> <p>Ensure crane operator is trained</p> <p>Ensure load test certificates of crane and lifting tackles are in place and 3 month</p>			

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			inspections have been conducted			
16.	Positioning of the Puller.	<p>Ensure that the winch and tensioners have been positioned in the correct position without any obstruction or being a risk to any employees / public members. Ensure recommended distance is maintained</p> <p>-Puller will be positioned at about 50m to 100m and at level ground.</p> <p>-It will be earth on ground using spike via 10mm copper cable</p>	<p>Ensure winch and tensioner are positioned in accord with the stringing Method statement (MS-OHL 041)</p> <p>Ensure winch and Tensioner are back stayed as indicated on the method statement sub regulation 11.2 (refer to method statement)</p> <p>Only competent operator to operate.</p> <p>No one with loose clothing or jewellery is to operate the drum jack; appropriate PPE to be utilized. Supervisor to check and inspect the terrain and if recommended distance can be maintained</p> <p>Both machines to be earthed</p>			
17.	Positioning of the Tensioner	<p>Ensure recommended distance is maintained</p> <p>Ensure there is no obstructions in the close vicinity.</p>	<p>Supervisor to inspect the work area and ensure recommended distance is maintained.</p> <p>Supervisor to ensure earths</p>			

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		<ul style="list-style-type: none"> -Ensure earths are applied. - -Ensure machines are back stayed properly by using anchor blocks. -Tensioner will be positioned at about 50m to 100m and at level ground. -It will be earth on ground using. -It will be earth on ground using spike via 10mm copper cable. -Drum stands and drums will behind the tensioner. 	<p>are inspected and good working conditions.</p> <p>Ensure all points of connections are secured.</p> <p>Supervisor to stay vigilant and supervise the activity</p>			
18.	Preparing for the full conductors.	<ul style="list-style-type: none"> -No employee underneath suspended loads -Employee to keep clear and safely guide the load. -Truck mounted crane to be used to position the conductor on the hydraulic jack. -Ensure the drums are secured on the jack. -Hydraulic jack will be back stayed by using concrete 	<p>Supervisor to ensure earths are inspected and good working conditions.</p> <p>Ensure all points of connections are secured.</p> <p>Supervisor to stay vigilant and supervise the activity</p> <p>Operators to ensure that means of communication are clear to the employees.</p> <p>Ensure conductor are properly placed into hydraulic</p>			

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		blocks where necessary. -Alternatively use stay plate to back stay the drum jack. Both puller and tensioner are back stayed using the method.	jacks			
19.	Fitting the conductor onto tensioner.	-Loosen the free end of the conductor, from its drum, and fit pulling socks to the end of the conductor. -Ensure all points of connection are correctly done. -Feed conductor through bull wheels. With the rope that you connected to conductor via single socks. -Keep the conductor tight around bull wheels so that it does not jump on the grooves of the bull wheels (refer to figure)	Supervisor to verify and inspect if all is in order in accord with the method statement. Conductor to be inspected and checked for any damages while being feed Supervision at all times must be visible. Inspect all connection before commencing activity.			

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		<p>-3 persons will pull the rope in front of machine while the operator is feeding the conductor.(This is to keep the conductor tight around bull wheels)</p> <p>-Ensure if the conductor is fed properly on the bull wheel.</p>				
20.	Connecting the Pilot to the conductor	<p>-Connecting of pilot wire to the conductor by means of head board (crocodile) with single joining sock and 6 ton swivels (221kN (22ton) and swivels 221kN (22ton).</p> <p>-Open the joining sock and insert the end of the conductor and secure it by using solo tape.</p>	<p>Supervisor to ensure work area is safe for employees.</p> <p>Ensure hands protection are worn Pig skin gloves.</p> <p>Ensure Single socks 11/16-11/8 3800lbs and 2.2 ton swivels or head board is firm and secure before operation commences.</p>			
21.	Preparation for pulling the Pilot wire.	<p>-Person operating roll over jack must ensure it is positioned correctly before loading the pilot wire drum</p> <p>-Insert pilot rope into puller,</p>	<p>Only trained personnel to work with stringing equipment.</p> <p>Machine to be switched off and key to be with the operator.</p>			

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		<p>-Insert pilot rope drum onto the roll over jack.</p> <p>-Ensure that pilot is correctly inserted of the puller.</p> <p>-Now the machine is ready to pull</p>				
22.	Pulling of pilot wire.	<p>-Ensure hand radios are in placed on critical places where any dangers may be: especially when crossing existing powerlines, road, railway lines and bushy areas.</p> <p>-Supervisor to train employees on how to communicate prior commencement of work</p> <p>-The Tensioner and Puller operator to maintain communication when tensioning the pilot wire.</p>	<p>Communication must be clear at all times by means of two way radio.</p> <p>Supervisor to ensure clear communication is maintained at all times</p> <p>Continuous communication to be maintained at all times when tensioning the pilot wire</p> <p>Ensure if all employees know how to use two way radio during operation.</p> <p>Once the pilot cable has been</p>			

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		<p>-Tensioner will maintain tension to keep the conductors above ground level.</p> <p>-Rolling the full steel drum out and put an empty steel drum reel back.</p> <p>And then follow step 20 and 21.</p>	<p>checked, adjusted and cleared, stringing may commence.</p> <p>Supervisor to ensure that there is no employee under the conductors being strung and is running on the running block.</p>			
23.	Changing Pilot wire Steel drum and the conductor	<p>-Pull Sock reaches the run out block on the last structure of the pull.</p> <p>-Stringing machine operator to start releasing the tension from the conductor</p> <p>-Manual realising to slack the conductor</p> <p>-And then follow step 20 and 21.</p>	<p>Supervisor to give clear instruction to operators when stop</p> <p>Supervisor to verify and ensure if operators understood the instruction</p>			
24.	When the conductor reaches	-Ensure communication is				

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	<p>the puller.</p> <p>maintained between two operators to stop the machine</p> <p>-The Climber will climb tower to connect conductor on to the tower by means of yoke plate, slings and 47kN come along clamp.</p> <p>-Now the stringing is completed.</p> <p>-The supervisor will give instruction to release stringing machines.</p>	<p>supervisor to ensure operators are understands the instructions clearly</p>				
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COMMENTS (Describe any practice that deserve compliment or correction)

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NAME OF PERSON BEING OBSERVED:	SIGNATURE:
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FOLLOW UP ACTION:

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Participation Attendance Register

NO	Name	Surname	Designation	ID Number	Contacts	Company Name	Signature	Date
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								