TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	RA-2026-YjuaHz3Z	03.09.2026	A

PROJECT 132 kv cable works

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	Green	El Sewdy	Heliopolis

ACTIVITY Route marker installation

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

SN	Activity	Hazard / Aspect	Consequence	Groups Exposed	Existing Controls	Initial Risk P × S = R	Additional Controls	Residual Risk P × S = R
1	**Complete HDPE Duct Infill**	1. Vehicle movement and traffic hazards 2. Manual handling during loading/unloading 3. Uneven ground conditions	Personal injury, property damage	Site Personnel, Subcontractors, Public	1. Implement traffic management plan 2. Designated walkways 3. Mandatory PPE 4. Speed limit enforcement	**P 3 × S 3** **9**	1. Comply with ADOSH SF CoP 27.0 2. Daily vehicle inspection 3. Toolbox talk	**P 2 × S 2** **4**
2	**Site mobilization and setup of temporary**	Passing high-speed public traffic and moving site vehicles	Personal injury, property damage	Site Personnel, Subcontractors, Public	Approved TTM plan, high-visibility clothing (Class 3), physical water-filled/concrete barriers, advanced warning signs, and trained flagmen.	**P 3 × S 3** **9**	Deployment of Truck Mounted Attenuators (TMA) and enforcement of reduced speed limit zone in coordination with local traffic authorities.	**P 2 × S 2** **4**
3	**Trench excavation and sub-surface ground preparation**	Accidental strike on existing buried live electrical cables or gas utilities	Personal injury, property damage	Site Personnel, Subcontractors, Public	Utility mapping review, CAT & Genny cable avoidance scanning, and manual trial pits (pot-holing) prior to mechanical excavation.	**P 3 × S 3** **9**	Mandatory Permit to Dig system, use of insulated hand tools near identified utilities, and continuous competent supervision.	**P 2 × S 2** **4**
4	**Uncoiling, handling, and positioning HDPE pipe**	Sudden release of stored mechanical spring energy in coiled HDPE pipe	Personal injury, property damage	Site Personnel, Subcontractors, Public	Use of specialized pipe reeler/uncoiler frame, controlled strap cutting procedures, and establishing exclusion zones.	**P 3 × S 3** **9**	Mandatory deployment of safety restraints/bands before unstrapping and wearing high-impact resistant safety glasses and gloves.	**P 2 × S 2** **4**
5	**HDPE pipe jointing via electrofusion and**	High-temperature heating elements, hot molten plastic, and portable electrical generators	Personal injury, property damage	Site Personnel, Subcontractors, Public	Certified welding equipment, RCD-protected generators, heat-resistant safety gloves, and portable fire extinguishers nearby.	**P 3 × S 3** **9**	Hot Work Permit implementation, provision of localized exhaust ventilation or respiratory protection (FFP3) in confined areas.	**P 2 × S 2** **4**
6	**Entry into underground chambers and manholes**	Hazardous atmosphere (oxygen deficiency, toxic gases like H2S/methane), engulfment, or fall from height	Personal injury, property damage	Site Personnel, Subcontractors, Public	Confined Space Entry Permit, pre-entry 4-gas atmospheric testing, forced air ventilation, and tripod rescue system with harness.	**P 3 × S 3** **9**	Continuous multi-gas monitoring during entry, dedicated trained top-person/standby monitor, and verified emergency rescue plan.	**P 2 × S 2** **4**

TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	RA-2026-YjuaHz3Z	03.09.2026	A

PROJECT 132 kv cable works

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	Green	El Sewdy	Heliopolis

ACTIVITY Route marker installation

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

SN	Activity	Hazard / Aspect	Consequence	Groups Exposed	Existing Controls	Initial Risk P × S = R	Additional Controls	Residual Risk P × S = R
7	**Mechanical winch pulling of HDPE sub-ducts**	High-tension winch wire snap, rotating capstans, and pinch/nip points	Personal injury, property damage	Site Personnel, Subcontractors, Public	Properly rated winching wire with calibrated weak-link swivel, emergency stop switches, and safety guards over rotating parts.	P 3 × S 3 = 9	Integrated load monitoring with automatic shut-off at peak tension limits and strict exclusion zones along the tension line.	P 2 × S 2 = 4
8	**Duct proving (mandrel testing) and air**	Uncontrolled high-pressure compressed air release and projectile ejection of foam pig or mandrel	Personal injury, property damage	Site Personnel, Subcontractors, Public	Calibrated pressure relief valves, secure containment/catcher cage at receiving duct end, clear exclusion zone enforcement.	P 3 × S 3 = 9	Mandatory Pressure Testing Permit, full-face protection shields for operators, and calibrated double-gauge manifolds.	P 2 × S 2 = 4
9	**Pre-installation underground utility locating and mark-out**	Unidentified live buried electrical cables or third-party utilities	Electrocution, electrical flashover, explosion, fatal burns, disrupted power distribution	Surveyors, Cable Jointer Assistants, Site Engineers	Obtain and review statutory utility asset drawings (as-builts); conduct Cable Avoidance Tool (CAT & Genny) scans across the alignment; calibrate detection equipment before use; mark identified utilities on ground with spray paint or pin flags.	P 4 × S 5 = 20	Ground Penetrating Radar (GPR) scan for complex crossings; implement Permit to Dig / Ground Disturbance Permit; verify depth using vacuum excavation if verification is critical.	P 1 × S 4 = 4
10	**Loading, transport, and offloading of concrete and composite marker posts**	Heavy, awkward pre-cast concrete markers (manual handling, load shifting)	Musculoskeletal disorders (MSDs), spinal injury, crushing of extremities from dropped loads	Drivers, Riggers, Ground Workers	Use mechanical lifting aids (HIAB, mini-crane, hydraulic tail lifts); secure loads with certified ratchet straps and edge protectors; ensure multi-person lifts for items >20kg; mandatory safety boots with metatarsal protection and grip gloves.	P 4 × S 3 = 12	Establish dedicated drop zones with exclusion perimeters; conduct pre-shift manual handling dynamic risk assessments; utilize powered all-terrain wheelbarrows.	P 2 × S 2 = 4
11	**Manual excavation for marker post foundation pits**	Direct strike on energized low/medium/high voltage cables with hand tools	Electric shock, severe arc flash injury, fatal electrocution	Excavation Crew, Laborers	Strict adherence to HSG47 / safe digging practices; enforce hand digging with non-conductive (insulated 1000V BS 8020) spades and shovels; no picks, forks, or mechanical breakers within 500mm of indicated cable lines; continuous scanning with CAT throughout digging.	P 4 × S 5 = 20	Station a dedicated spotter/banksman during all excavation; implement daily inspection of insulated hand tools; use air-pick or vacuum excavation in dense cable corridors.	P 1 × S 4 = 4
12	**Mechanical post-hole augering in non-cable designated corridors**	Rotating auger entanglement and striking unexpected buried services	Traumatic amputation, limb entrapment, arc blast, mechanical puncture of service line	Auger Operators, Banksmen, Ground Workers	Set minimum exclusion zone around operating auger (minimum 2m); ensure PTO/driveshaft guards are fitted and operational; verify area cleared by scanning and trial pits before boring; emergency stop testing prior to start-up.	P 3 × S 5 = 15	Fit auger rig with proximity sensors; maintain positive communication via two-way radios or standard hand signals; prohibit loose clothing and wear snag-resistant PPE.	P 1 × S 3 = 3

TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	RA-2026-YjuaHz3Z	03.09.2026	A

PROJECT 132 kv cable works

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	Green	El Sewdy	Heliopolis

ACTIVITY Route marker installation

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

SN	Activity	Hazard / Aspect	Consequence	Groups Exposed	Existing Controls	Initial Risk P × S = R	Additional Controls	Residual Risk P × S = R
13	**Working in proximity to overhead electrical power lines (OHL) along right-of-way**	High-reach delivery vehicles, cranes, or vertical markers encroaching safe clearance distances	Electrical arc flash, vehicle electrification, fatal electrocution	HIAB Drivers, Riggers, Ground Workers	Survey overhead cable heights and establish GS6 goalposts/warning bunting; enforce strict clearance envelopes (e.g., minimum 15m from steel pylons, 9m from wooden poles); lower vehicle booms completely before transit.	P 3 × S 5 = 15	Install height-limiting restrictors on hydraulic cranes; assign a dedicated signaler/spotter equipped with an air horn to halt operations if clearance limits are breached.	P 1 × S 4 = 4
14	**Handling, mixing, and pouring concrete/grout for marker foundation stabilization**	Contact with wet cementitious mixtures and silica dust generation during dry mix handling	Chemical burns (cement dermatitis), eye injury/corneal abrasion, silicosis	Concrete Handlers, Laborers	Supply pre-mixed wet concrete where feasible; provide chemical-resistant nitrile/PVC gauntlets, safety goggles, and impermeable overalls; maintain clean eyewash stations within 10m of pouring point; wash stations provided on site.	P 3 × S 3 = 9	Mandatory FFP3 respirators during dry bag handling; barrier creams supplied and applied pre-shift; COSHH assessments briefed to all team members.	P 1 × S 1 = 1
15	**Placement, plumb-alignment, and fixing of route marker posts and warning plates**	Pinch points, sharp metallic edges on labels, and unstable marker posts before backfill	Lacerations, crushed fingers, impact injury from falling/collapsing marker post	Installers, Technicians	Use temporary wooden bracing or alignment stakes to secure marker prior to concrete set; wear EN388 cut-level D handling gloves; use deburred signage plates; employ mechanical clamps for leveling.	P 3 × S 2 = 6	Inspect edge finishes of stainless steel/composite labels prior to field deployment; verify post-plumb using magnetic levels without hand exposure under suspended structures.	P 1 × S 1 = 1
16	**Route marker installation on road verges, pedestrian footpaths, and traffic corridors**	Live vehicular traffic and interaction with pedestrians	Vehicle-pedestrian collision, crushing, multiple fatalities	Installation Crew, Public, Vehicle Operators	Deploy compliant Temporary Traffic Management (Chapter 8 / MUTCD); set up advance warning signs, lane closures, and Class 2/3 high-visibility safety cones; wear Class 3 Hi-Vis clothing; maintain clear safety buffer zones.	P 4 × S 5 = 20	Deploy an Impact Protection Vehicle (IPV) / crash cushion truck for high-speed carriageway verges; schedule roadside works during off-peak traffic or night shifts with localized mobile lighting towers.	P 1 × S 3 = 3
17	**Transit and installation across rough, remote cross-country terrain**	Slips, trips, falls on uneven slopes, hidden holes, boggy ground, and biological hazards (ticks, snakes)	Fractures, ligament sprains, vector-borne infections (e.g., Lyme disease), delayed medical evacuation	Field Installers, Drivers	Mandatory lace-up safety boots with high ankle support and deep tread; pre-planned access routes; satellite tracking / check-in check-out protocol for lone or remote working; carriage of off-road first aid kit and tick-removal tools.	P 4 × S 3 = 12	Use certified All-Terrain Vehicles (UTVs) with ROPS and trained operators; establish an Emergency Evacuation Plan with GPS coordinate logging for helicopter landing zones (HLZ).	P 2 × S 2 = 4

TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	RA-2026-YjuaHz3Z	03.09.2026	A

PROJECT 132 kv cable works

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	Green	El Sewdy	Heliopolis

ACTIVITY Route marker installation

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

SN	Activity	Hazard / Aspect	Consequence	Groups Exposed	Existing Controls	Initial Risk P × S = R	Additional Controls	Residual Risk P × S = R
18	**Backfilling, mechanical compaction, and site reinstatement around marker base**	Hand-arm vibration (HAVS) and flying debris from plate compactors or tampers	Vibration White Finger, nerve damage, eye trauma, hearing degradation	Plant Operators, Ground Workers	Use low-vibration compactors/tamping rammers; implement job rotation to strictly limit vibration exposure below daily Exposure Action Values (EAV); wear anti-vibration gloves, safety glasses, and hearing protection (SNR 30+).	**P 3 × S 3** **9**	HAVS electronic monitoring tags on equipment; maintain equipment service logs to avoid excessive vibration from worn dampeners; designate 3m flying debris zone around running tampers.	**P 1 × S 2** **2**

LIKELIHOOD / FREQUENCY

Descriptor	Likely Frequency	Probability
Frequent	Occurs frequently	5
Often	Occurs several times per year	4
Likely	Has occurred more than once	3
Possible	Has occurred	2
Rare	Never occurred	1

RISK MATRIX — PROBABILITY × CONSEQUENCE

Probability	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Rare (1)	1	2	3	4	5
Possible (2)	2	4	6	8	10
Likely (3)	3	6	9	12	15
Often (4)	4	8	12	16	20
Frequent / Almost Certain (5)	5	10	15	20	25

TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	**RA-2026-YjuaHz3Z**	**03.09.2026**	**A**

PROJECT **132 kv cable works**

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	**Green**	**El Sewdy**	**Heliopolis**

ACTIVITY **Route marker installation**

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

15 - 25	**Extreme Risk**	Activity or industry should not proceed in current form.
8 - 12	**High Risk**	Activity or industry should be modified to include remedial planning and action and be subject to detailed EHS assessment.
4 - 6	**Moderate Risk**	Activity or industry can operate subject to management and/or modification.
1 - 3	**Low Risk**	No action required, unless escalation of risk is possible.