

## Hazard/Risk Assessment Pro-forma

<b>Work Package No.</b>	COMMS World	<b>Risk Assessment No:</b>	RA015
<b>Operation/Task:</b>	Duct Laying and Excavation	<b>Method Statement Title:</b>	Duct Laying and Excavation
<b>Location/Area:</b>	Union Canal, NCR 754	<b>Method Statement No:</b>	MS015
<b>Persons at risk:</b>	Members of public, visitors, operatives, supervision		

No.	Hazardous Activity	Associated Risk	Initial Risk Score			Control Measures	Residual Risk Score		
			S	L	RR		S	L	RR
1	Working near to underground services	<ul style="list-style-type: none"> <li>- Contact with electricity cables leading to Fire, explosion, electric shock, burns</li> <li>- Damage of gas supplies leading to gas leak/fire, explosion, burns, asphyxiation</li> <li>- Damage to water suppliers leading to injury from effected stones/materials, flooding and drowning</li> <li>- Contact with sewage</li> <li>- Interface with fibre optic mains</li> <li>- Contact with electricity cables leading to Fire, explosion, electric shock, burns</li> <li>- Damage of gas supplies leading to gas leak/fire, explosion, burns, asphyxiation</li> <li>- Damage to water suppliers leading to injury from effected stones/materials, flooding and drowning</li> <li>- Contact with sewage</li> <li>- Interface with fibre optic mains</li> <li>- Flash burns</li> <li>- Electrical burns</li> <li>- Direct Electric shock</li> <li>- Service damage</li> </ul>	5	3	15	<ul style="list-style-type: none"> <li>- The area must be assessed and supervised by a trained, competent and authorised Supervisor/ Foreman to identify the location of the known services in and around the area to be excavated.</li> <li>- All operatives involved in the task must be trained and competency card must be kept on site with a copy in Diona Construction Office</li> <li>- Permission to Work along with updated service drawings must be provided prior the job commences</li> <li>- The work are must be clearly marked with barriers and signage</li> <li>- Prior to any excavation the Supervisor/ Foreman in charge should be satisfied that:                             <ul style="list-style-type: none"> <li>All known services have been located</li> <li>Sufficient trial holes have been dug to identify the route taken by each service</li> <li>There is a sufficient clearance between the proposed excavation and the existing services (remembering the cables do not run in straight lines) to ensure safety</li> <li>All operatives involved are competent, aware of the risk associated with excavations (incl. Underground services) and the need to comply with any conditions set out on the permit.</li> </ul> </li> </ul>	5	1	5

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							<ul style="list-style-type: none"> <li>Where appropriate sufficient arrangements have been made to provide support and/ or TM</li> <li>Always treat all services live unless documentary evidence proves otherwise</li> <li>If any additional services are discovered during the job, stop the work and inform the Client and Diona Construction Supervision immediately.</li> <li>The Cable Avoidance Tool (CAT) must be used by a competent and authorised personnel prior and during the works, a valid calibration certificate must be on site.</li> <li>All known services must be clearly marked</li> <li>A site specific Permit To Dig must be obtained</li> <li>Do not excavate over the top of the marked position of the service. Dig alongside the location and then dig horizontally to</li> <li>locate the services</li> <li>No hand held power tools must be used within 3m of the line of any IP Gas Service</li> <li>No Works without a SGN Plant protection officer present whilst working within 3 m of IP and HP Gas.</li> <li>A competent banksman must be present when undertaking mechanical excavation Mechanical excavators (including breaker attachments) MUST NOT be used within the agreed distances from the confirmed location of gas mains and services</li> <li>Ground movement around gas MUST be prevented (contact the gas provider if differently)</li> <li>The placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over the Has Supplier plant is prohibited unless specially agreed protective measures (i.e. the construction of reinforced crossing points) have been carried out.</li> <li>If damage occurs or observed, to the cable, cease the work, fence the area off and immediately inform the supervisor, Diona Construction and</li> </ul>			
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						<p>the Client.</p> <ul style="list-style-type: none"> <li>Information of any additional services must be passed onto the client for further use</li> <li>Use temporary supports for exposed services within a trench, the details of these should have previously been agreed with the Client</li> <li>Services must not be used as hand or foot holds by anyone climbing in or out of an excavation</li> <li>If the new service been exposed and cannot be identified, Client should be immediately called so a positive identification can be made</li> <li>Where it is necessary to break away or disturb concrete in which services are embedded the services should be isolated or an alternative safe method of excavating agreed with the Client before work starts.</li> <li>Trial holes MUST be dug by hand to determine the exact location of mains and service pipes in advance of mechanical excavation or thrust boring. Be aware of the potential for the presence of protruding objects from gas plant in the form of standpipes, test points and valve bodies.</li> <li>Access to sites and Gas Provider plant MUST be provided at all times</li> </ul>			
2	Working in close proximity to uneven surfaces / open excavations etc	- Slips, trips and falls	3	3	9	<ul style="list-style-type: none"> <li>Do not run; do not walk backwards; look where you are going</li> <li>Ensure adequate footwear is worn</li> <li>Walk in areas which are free from obstructions; chose safest route</li> <li>Where necessary provide adequate walkway/footpath i.e. road plates / walk boards</li> <li>Where necessary erect adequate signage</li> <li>Protect excavation edges</li> <li>Ensure work area is adequately lit</li> </ul>	3	2	6
3	Working in and with excavations	<ul style="list-style-type: none"> <li>Striking underground services</li> <li>Collapse of sides</li> <li>Falls of persons</li> </ul>	5	2	10	<ul style="list-style-type: none"> <li>All work activities are to be controlled by adequate supervision.</li> <li>Where there is a risk of collapse, sides of excavations</li> </ul>	5	1	5

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		<ul style="list-style-type: none"> <li>- Falls of materials</li> <li>- Undermining of adjacent properties</li> <li>- Contaminated soil</li> <li>- Asphyxiation</li> <li>- Flooding of excavation</li> </ul>				<ul style="list-style-type: none"> <li>must be adequately shored and supported and ensure they are regularly inspected (Refer to HSG85 for further guidance)</li> <li>- Locate all existing services</li> <li>- Where flooding risk occurs, install pumps of suitable capacity</li> <li>- Physical barriers to be erected around excavations.</li> <li>- If the excavation is on the public highway NRSWA Chapter 8 must be followed.</li> <li>- Vehicle edge protection i.e. stop blocks are to be utilised where necessary</li> <li>- Implement designated walking routes and ensure pedestrians adhere to them</li> <li>- A competent person must carry out an inspection of the excavation at the start of every shift or after any event likely to affects its stability.</li> <li>- Erect suitable signs</li> <li>- Switch off vehicle engines. Do not leave them idling and locate generating plant away from excavation location.</li> <li>- Where poor ventilation is identified the atmosphere must be continually monitored, coupled with appropriate evacuation procedures.</li> <li>- Provide safe means of access and egress</li> <li>- All vehicle movements must be adequately controlled by a banksman.</li> </ul>			
4	Manual Handling	<ul style="list-style-type: none"> <li>- Cuts and abrasions to the skin from rough surfaces, sharp or jagged edges, projections</li> <li>- Falling materials causing bruised/broken/crushed toes, feet, hands or fingers</li> <li>- Strains and sprains to muscles and joints, torn ligaments and tendons, disc trouble from lifting operations</li> <li>- Slips, trips and falls</li> </ul>	3	4	12	<ul style="list-style-type: none"> <li>- Avoid manual handling if possible; wherever possible use mechanical means.</li> <li>- Assess the load – can it be moved by mechanical means</li> <li>- Adopt safe lifting and handling techniques at all times.</li> <li>- Ensure to bend your knees and not your back.</li> <li>- Do not lift beyond your capability.</li> <li>- Ensure the route is clear of obstruction prior to lifting</li> <li>- If team lifting communications / directions must be decided before lifting commences.</li> <li>- Supervisor to be present at all times</li> <li>- PPE such as safety hats, safety shoes and gloves must</li> </ul>	3	3	9

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						be worn.			
5	Working in close proximity to moving vehicles/plant	<ul style="list-style-type: none"> <li>- Collision with pedestrians</li> <li>- Collision with property/structures</li> <li>- Collision with other vehicles</li> <li>- Causing collapse of or vehicles/plant into excavation</li> </ul>	4	4	16	<ul style="list-style-type: none"> <li>- Adequate edge protection to be erected around excavation</li> <li>- Vehicle edge protection i.e. stop blocks are to be utilised where necessary</li> <li>- Excavations must be adequately shored and supported.</li> <li>- Traffic routes and pedestrian walkways should be clearly signed/fenced off and adequately lit. Ensure pedestrians adhere to them.</li> <li>- Speed restrictions will be displayed and enforced as necessary</li> <li>- Limit reversing where possible</li> <li>- All reversing vehicles to be accompanied by a trained banks man.</li> <li>- All plant and equipment must be inspected and maintained as per the manufacturer's instructions.</li> <li>- All mobile plant must be subject to a daily inspection by the operator prior to use.</li> <li>- Only use vehicles and plant if you have been properly trained, authorised and received adequate instructions in its safe use.</li> <li>- Do not overload equipment or use it for a purpose other than that for which it was provided.</li> <li>- Excavator loads must never be lifted over the heads of personnel.</li> <li>- Ensure the machine, and the capacity in which it is operating, is not at risk of becoming unstable i.e. deep excavations, loose ground conditions, over reaching etc.</li> <li>- Report any defects immediately to your employer, and warn others not to use plant / equipment until it is repaired.</li> <li>- Ensure key is removed from vehicles/plant when not in use.</li> <li>- Ensure all safety devices i.e. beacons are on at all times.</li> <li>- Vehicles movements to be strictly controlled next to</li> </ul>	4	2	8

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						<ul style="list-style-type: none"> <li>excavations. Banksman to be in attendance.</li> <li>- Exclusion zone around operation of machine to be in place.</li> <li>- Ensure personnel approaching the excavator driver do so from the front of the cab within his sight. Do not approach without first gaining drivers attention.</li> <li>- Wear hi-visibility clothing</li> </ul>			
6	Working with noisy plant, tools and equipment	<ul style="list-style-type: none"> <li>- Noise induced hearing loss (temporary and permanent)</li> <li>- Tinnitus (ringing/buzzing in ears)</li> <li>- Distractions (drowns out sound of moving plant/warning signals)</li> </ul>	3	3	9	<ul style="list-style-type: none"> <li>- Avoid working with noise plant, tools and equipment where possible</li> <li>- Use correct tool for the job.</li> <li>- Keep tools/plant etc in good condition. Report defects to your supervisor and warn others not to use the equipment until it is repaired.</li> <li>- Avoid long periods of use, rotate the work.</li> <li>- Where applicable, ensure all noise control measure i.e. silencers, mufflers etc</li> <li>- Shut down plant and machinery when not in use</li> <li>- Ear protection MUST be worn when your daily personal noise exposure level reaches 85dB(A)</li> <li>- Contact Supervisor if equipment produces excessive noise levels.</li> <li>- Local planning permission for noise and hours of work are not to be exceeded.</li> </ul>	3	2	6
7	Working with vibrating equipment	<ul style="list-style-type: none"> <li>- Damage to blood vessels and nerves of the hand resulting in skin blanching (vibration white finger/hand arm vibration syndrome) pains, pins and needle, numbness and loss of natural dexterity (possibly permanent)</li> <li>- Loss of limbs</li> </ul>	3	3	9	<ul style="list-style-type: none"> <li>- Avoid working with vibrating equipment where possible</li> <li>- Keep tools/plant in good condition. Report defects to your supervisor and warn others not to use the equipment until it is repaired.</li> <li>- Where applicable, keep tools sharp</li> <li>- Avoid long periods of use ; rotate the work</li> <li>- Ensure adequate clothing and gloves are worn to keep hands and body warm and dry</li> <li>- Regularly exercise your hands and fingers and keep them warm to improve blood flow</li> <li>- Report incidences of white or blue finger to your supervisor</li> </ul>	3	2	6
8	Working with disc cutters and abrasive wheels	<ul style="list-style-type: none"> <li>- Bursting of abrasive wheel or disc</li> <li>- contact with wheel or disc</li> </ul>	4	3	12	<ul style="list-style-type: none"> <li>- Use the correct tools/wheel for task and ensure that a competent and trained person correctly mounts it.</li> </ul>	4	2	8

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		<ul style="list-style-type: none"> <li>- clothing entanglement with moving parts</li> <li>- eye injury from flying fragments</li> <li>- inhalation of dust</li> <li>- exposure to excessive noise levels</li> <li>- exposure to vibration</li> <li>- electric shock</li> </ul>				<ul style="list-style-type: none"> <li>- Prior to changing the abrasive when the power supply must be disconnected/unplugged and correct tools used for removal.</li> <li>- Ensure equipment is in good condition.</li> <li>- Ensure that the RPM marked on the wheel and the machine are the same. Never exceed the RPM indicated on the abrasive wheel.</li> <li>- Inspection wheel prior to use. Report any defects to your supervisor. Damaged equipment or discs must be quarantined immediately to prevent further use.</li> <li>- Ensure that all guards are securely in position and properly adjusted prior to use</li> <li>- Avoid prolonged continuous use. Rotate work activities and regularly exercise hands and fingers to keep them warm and improve blood flow.</li> <li>- Ensure goggles are worn.</li> <li>- Suitable hearing protection is mandatory for personnel working in the vicinity of this equipment</li> <li>- For certain operations suitable respiratory equipment and hearing protection will be required</li> </ul>			
9	Use of hand tools	<ul style="list-style-type: none"> <li>- Eye injuries</li> <li>- Injuries to hands, feet and body</li> <li>- Cuts and abrasions</li> <li>- Slips and trips</li> </ul>	3	3	9	<ul style="list-style-type: none"> <li>- Inspect tool prior to their use. Report any defects to your supervisor.</li> <li>- Select the proper tool for the task. Do not improvise.</li> <li>- Eye protection to be used where there is a risk of flying particles</li> <li>- Sharp tools to be carried and used safely</li> <li>- Tools should not be left lying around – they constitute a tripping hazard and are liable to be damaged</li> <li>- Ensure correct PPE is worn</li> <li>- Tools/ Equipment not to be modified or adjusted. Follow maintenance procedures and manufacturers recommendations.</li> </ul>	3	2	6
10	Use of excavators	<ul style="list-style-type: none"> <li>- Overturning of machine</li> <li>- Impact with operatives</li> <li>- Contact with buried services</li> <li>- Shovel of load dropping inadvertently</li> <li>- Contact with overhead services</li> <li>- Contact with other road users</li> </ul>	3	2	6	<ul style="list-style-type: none"> <li>- Inspect machine prior to use. Report defects.</li> <li>- Do not exceed manufacturers bucket size</li> <li>- Travelling with attachment close to the machine with bucket clear of ground</li> <li>- Do not stand or work within operating distance without operators permission</li> </ul>	3	1	6

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		<ul style="list-style-type: none"> <li>- Materials dropping from shovel or bucket</li> </ul>					<ul style="list-style-type: none"> <li>- Bucket/arms must not be slewed over personnel, vehicle cabins or huts</li> <li>- Whilst vehicle movements are being undertaken vehicles and pedestrians are to be separated.</li> <li>- Exclusion zone around operation of machine to be in place.</li> <li>- Use a banksman where drivers vision is impaired or operating in congested conditions</li> <li>- Site Management to ensure speed restrictions are enforced and monitor use on sloping ground</li> <li>- Ensure seat belt is worn</li> <li>- Great care should be taken by machines working on a gradient to ensure machine stability</li> <li>- 3 points of contact entering or leaving machine using the designed steps which are to be kept clear of debris</li> <li>- Regular servicing to be maintained</li> <li>- All other maintenance including tyre repair only by specialist mechanics</li> <li>- Only trained competent personnel to use</li> <li>- Remove keys when not in use and lock up</li> <li>- Site speed limit to be adhered</li> <li>- Works inside an exclusion zone – barriers, cones etc</li> <li>- No plant working above</li> <li>- High visibility clothing worn</li> <li>- Reversing movements kept to a minimum and under the control of a banksman. Machines to be guided by banksmen when reversing or manoeuvring</li> <li>- Use horn to warn pedestrians</li> <li>- Ensure that all workers have an agreed system for attracting the driver's attention before entering the danger zone</li> <li>- Arrangements for communication between operator and other operators if working with them.</li> <li>- Operate within the confines of manufacturers recommendations</li> <li>- SWL adhered to at all times</li> <li>- Tyre pressure checked and maintained</li> <li>- PPE work by an excavator operator to be kept in a</li> </ul>			
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						<ul style="list-style-type: none"> <li>good condition</li> <li>- Segregated pedestrian walkways keeping pedestrians and vehicles apart</li> <li>- No one is to approach the machines working radius without warning the driver first and ensure eye contact</li> <li>- No use of mobile phones, eating or drinking whilst operating.</li> <li>- Only trained competent personnel to change attachments on the quick hitch</li> <li>- QH is identified on LOLER certificate</li> <li>- Ensure a copy of the manufactures guide is available and the operator has been familiarised</li> <li>-</li> </ul>			
11	Setting out traffic management system	<ul style="list-style-type: none"> <li>- Vehicles striking operatives / pedestrians</li> <li>- Vehicles striking traffic management system</li> <li>- Vehicles striking other vehicles</li> </ul>	5	3	15	<ul style="list-style-type: none"> <li>- Design layout of traffic management, all as per chapter 8</li> <li>- Use necessary signage and barriers.</li> <li>- Park vehicles in a safe place</li> <li>- Set out signs before moving onto the work site</li> <li>- Always stay on verge or footway if possible</li> <li>- Cone off works area, always face the traffic</li> <li>- Ensure high visibility clothing is worn</li> <li>- Continual monitoring of work in progress and traffic control as required</li> <li>- <b>Closures of the Toe Path on NCR 754</b></li> </ul>	5	1	5
12	Environmental Protection	<ul style="list-style-type: none"> <li>- Pollution of Water Courses,</li> <li>- Noise Pollution</li> <li>- Air Pollution</li> </ul>	5	3	15	<ul style="list-style-type: none"> <li>- No refuelling to be carried out within 20 meters of Water Course.</li> <li>- Emergency Spill Response and Spill Kits to be available.</li> <li>- All tools and equipment to be visually inspected prior to use, defective equipment to be rejected for use.</li> <li>- All equipment to be maintained in good condition and fit for purpose</li> <li>- All potential contaminants to be removed from site on completion of works.</li> </ul>	5	1	5
13	Working near Water	<ul style="list-style-type: none"> <li>- Potential Drowning</li> </ul>	4	3	12	<ul style="list-style-type: none"> <li>- All Operatives to wear Life Jackets</li> <li>- Life Buoy to be erected.</li> <li>- No Wellingtons to be worn</li> <li>- Barrier to be set up between works area and Canal</li> </ul>	4	1	4

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14	Hot Lay Materials	<ul style="list-style-type: none"> <li>- Potential Burns</li> <li>- Potential contaminants</li> </ul>	2	3	6	<ul style="list-style-type: none"> <li>- Operatives to wear Long sleeve FR rated clothing</li> <li>- Suitable Gloves to be worn at all times.</li> <li>- All spare or loose materials to be cleaned up and removed from site</li> </ul>	1	2	2
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**Any previously unidentified risk – STOP Work immediately and contact your supervision**

**Key**

**S = Severity Rating**

1. Negligible
2. Minor Injury
3. Major Injury (RIDDOR)
4. Fatality
5. Multiple Fatality

**L = Likelihood of Occurrence**

1. Improbable
2. Remote 1 – 10%
3. Possible 10 – 50%
4. Probable 50 – 90%
5. Almost certain 90%+

**RR = Risk Rating**

		5	4	3	2	1
Severity	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Likelihood				

- |          |   |
|----------|---|
| <b>R</b> | Unacceptable risk, plan out or add further controls                             |
| <b>O</b> | Acceptable only if no other method viable and with high level controls in place |
| <b>Y</b> | Acceptable with suitable controls   |
| <b>G</b> | Acceptable, no further action required  |

Risk Assessment Prepared by (Name): Stuart Millar Signature: \_\_\_\_\_ Date: 17/12/20

Risk Assessment Briefing Record			
Name	Job Title	Signature	Date

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