



Risk assessment and method statement

Groundworks RAMS

Excavation, drainage and foundations. Pre-filled with typical hazards, controls and sequence: edit it for this site.

PROJECT

SITE ADDRESS			
ACTIVITY		RAMS REFERENCE	
Excavation, drainage and foundations			
CONTRACTOR CARRYING OUT THE WORK		PRINCIPAL CONTRACTOR	
PREPARED BY	APPROVED BY	REVISION	DATE

Revision record

Reissue and rebrief when the sequence, the programme, the team or the conditions change. If you would have written it differently had you known, it needs a new revision.

REV	DATE	WHAT CHANGED	BY

THE WORK

The activity, the place and the people

Pre-filled for this kind of work. Make every line specific to this site: this sequence, this access, these people, this weather.

Scope of the activity

What is being done, and what is not included.

MHSWR REGULATION 3(1)

Excavation for [drainage / foundations / services ducts] to [depth] as shown on [drawing ref]. Includes the services search, trench support, pipe laying or concrete, backfill, compaction and reinstatement. Support to [temporary works design ref]. Not included: [list any exclusions].

Location and access

Where on site, how people and materials get there, and the restrictions.

Site access via [gate]. Plant and vehicle route [route], kept apart from the pedestrian route by barriers. Spoil stored at [area], at least [distance] back from the edge. Excavations fenced or covered at the end of each shift. Working hours [08:00 to 17:00].

Programme and interfaces

When the work runs, and who else is working nearby.

CDM REGULATION 15(2)

START DATE

DURATION

WORKING HOURS

INTERFACES WITH OTHER TRADES

Other trades near the excavation: [trades], kept outside the exclusion zone. Service owners: [names], for plans, supervision near their assets and any disconnection. Scaffold or structures beside the dig: [details].

Documents this RAMS relies on

Drawings [refs]. Ground investigation and contamination report [ref]. Service plans from each owner [refs]. Temporary works design [ref]. Permit to dig. Excavation inspection record. Lift plan. Construction phase plan.

The team, and their competence

CDM REGULATION 8

ROLE	NAME	CARD, TICKET OR TRAINING NEEDED	CONTACT
Plant operators		CPCS or NPORS card for the excavator, dumper or roller they drive.	
Supervisor		Experienced in excavation work, with site supervision training, on site throughout.	
Excavation inspector		A competent person who knows the dangers and the support system in use.	
Locator operator		Trained in the cable locator and signal generator and their limits.	
Slinger signaller		CPCS or NPORS card, for any lift by excavator.	
Confined space entry		Trained for the level of risk, with a trained rescue team on standby.	

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 2 of 9
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METHOD STATEMENT

The sequence of work

The order the team will work in on the day, with the controls built into each stage. If the sequence changes on site, revise the RAMS and brief it again.

STAGE	WHAT IS DONE, AND HOW	CONTROLS AT THIS STAGE	BY
Before the day	Review the drawings, ground investigation, service plans and temporary works design. Book plant and support equipment, and plan the traffic routes and spoil areas.	Temporary works design on site; service plans in date; RAMS approved by the principal contractor.	Contracts manager
Arrival and briefing	Sign in, attend the induction, then brief the team on this RAMS, the services found, the exclusion zones and the rescue plan. Check plant and cards.	Briefing signed against this revision; CPCS or NPORS cards checked; plant pre-use checks recorded.	Supervisor
Set out routes and barriers	Set out pedestrian and vehicle routes, the excavator exclusion zone, spoil and material areas, and barriers around the work.	People and plant kept apart; banksman for reversing; overhead lines marked with goal posts.	Supervisor
Locate and mark services	Scan the work area with the cable locator and signal generator, mark the services found, and dig trial holes by hand to confirm them.	Permit to dig issued; marks in paint or crayon, wooden pegs on soft ground, no steel pins.	Locator operator
Break the surface	Break out the hard surface away from the marked lines, then expose services under it by careful hand digging.	Hand-held power tools 500mm from the indicated line where practicable; services treated as live.	Operatives
Excavate and support	Dig by machine to the design depth, installing trench boxes or sheets and props as the dig goes down, or batter the sides.	Nobody in an unsupported trench; spoil and plant kept back from the edge; locator used again as the dig deepens.	Excavator operator
Protect and inspect	Fit edge protection and access ladders, then have the excavation inspected before anyone goes in, and at the start of each shift after.	Inspection under CDM regulation 22; report written if the inspector is not satisfied; no entry until it is put right.	Competent person
Work in the excavation	Lay pipes, build chambers or place concrete, lowering materials by excavator or by hand from the edge.	Lifts planned; nobody under the bucket or load; quick hitch pin checked on each attachment change.	Supervisor
Backfill and compact	Backfill in layers and compact with a roller or plate, removing the support in stages as the backfill rises.	Supports removed only from outside the trench; vibration exposure planned for compaction.	Operatives
Reinstate and clear	Reinstate the surface, record the services found, remove barriers and plant, and hand the area back.	Inaccurate service plans reported to the owner; area checked with the site manager before the team leaves.	Supervisor

CDM REGULATION 15(2): PLAN, MANAGE AND MONITOR THE WORK

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 3 of 9
---------	------------------------------	----------	------	----------------

RISK ASSESSMENT

Hazards, controls and the risk that remains

Each significant hazard rated before and after its controls, as likelihood times severity. The ratings are typical: check them for this site.

	LIKELIHOOD		SEVERITY		
	1	2	3	4	5
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

1 to 4 low
 5 to 12 medium
 15 to 25 high

HAZARD	WHO COULD BE HARMED, AND HOW	RISK BEFORE	CONTROLS	RISK AFTER	BY
Collapse of the excavation	Operatives in the trench or pit, buried or crushed by a fall of the sides.	4 x 5 = 20 High	- No ground relied on to stand unsupported: trench boxes, sheets and props, or battering to a safe angle, to the temporary works design. - Support equipment on site before digging starts, and installed without anyone entering an unsupported trench. - Excavation inspected at the start of each shift, after any event affecting stability, and after any fall of material.	1 x 5 = 5 Med	Supervisor
Striking buried services	Operatives and the excavator driver, from electric shock, burns, gas escape or flooding.	4 x 5 = 20 High	- Service plans from each owner checked, the area scanned with a cable locator and signal generator, and services marked before breaking ground. - Trial holes dug by hand or vacuum excavation to confirm position and depth; locator used again as the dig goes down. - Every service treated as live until disconnected and proven safe; permit to dig issued for the area.	1 x 5 = 5 Med	Supervisor
Falls into the excavation	Operatives, other trades and the public near open excavations.	4 x 4 = 16 High	- Guard-rails and toe boards at the edge, or trench box extensions or sheets standing above ground level. - Covered or fenced at the end of each shift, with lighting where people pass at night. - Safe access in and out: a tied ladder extending at least 1 metre above the landing, or a stair unit.	1 x 4 = 4 Low	
Spoil, materials and plant at the edge	People in the excavation, from material falling in or the edge giving way.	3 x 5 = 15 High	- Spoil heaps and materials kept back from the edge, at the distance in the temporary works design. - Plant and vehicles parked away from the edge, with wheel stops where dumpers tip into the excavation. - Toe boards or projecting sheets to stop loose material falling in; helmets worn in the trench.	1 x 5 = 5 Med	
Undermining walls, buildings and scaffold	Operatives in the trench and people near a wall, building or scaffold beside it.	3 x 5 = 15 High	- Foundations of nearby walls, buildings and scaffold checked before digging, with a structural engineer where needed. - Extra support or propping to the design before the dig goes below the foundation level.	1 x 5 = 5 Med	
Water in the excavation	Operatives in the excavation, from flooding, softened sides and loss of support.	3 x 4 = 12 Med	- Groundwater and nearby watercourses identified in the ground investigation; support designed for the water load. - Water channelled to a sump and pumped out, with the effect of pumping on stability considered. - Work stopped and the excavation re-inspected after heavy rain or a burst main.	1 x 4 = 4 Low	
People struck by plant	Operatives, banksmen and other trades near excavators, dumpers and lorries.	4 x 5 = 20 High	- Traffic routes and pedestrian routes planned and kept apart by barriers. - Exclusion zone around the slewing excavator; nobody approaches until the operator has seen them and stopped. - Trained banksmen for reversing and for work near people in the trench.	1 x 5 = 5 Med	Supervisor
Dumper overturning	Dumper drivers, crushed when a dumper overturns on a slope, spoil heap or edge.	3 x 5 = 15 High	- Dumpers with roll-over protection, and seat belts worn every time. - Kept to gradients within the manufacturer's limits and off stockpiles; skips not loaded above the top edge. - Wheel stops at a safe distance from the edge when tipping.	1 x 5 = 5 Med	

MHSWR REGULATION 3(6): WITH FIVE OR MORE EMPLOYEES, RECORD THE SIGNIFICANT FINDINGS

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 4 of 9
---------	------------------------------	----------	------	----------------

RISK ASSESSMENT, CONTINUED

More hazards, and those specific to this site

HAZARD	WHO COULD BE HARMED, AND HOW	RISK BEFORE	CONTROLS	RISK AFTER	BY
Quick hitch attachment falling	Operatives in the trench or near the bucket when an attachment drops off.	3 x 5 = 15 High	- Quick hitch with its safety pin or locking device in place, checked every time an attachment is changed. - Operator trained on the specific hitch; nobody works under the bucket. - Hitch thoroughly examined under LOLER at the interval set by the competent person.	1 x 5 = 5 Med	
Lifting with an excavator	Operatives guiding pipes, chambers or trench boxes into the excavation.	3 x 4 = 12 Med	- Excavator set up by its manufacturer for lifting, with a marked lifting point, a rated capacity and a LOLER thorough examination in date. - Lift planned, a trained slinger signaller in charge, and nobody under the load.	1 x 4 = 4 Low	
Overhead power lines	Excavator drivers and tipper drivers, and anyone near plant that touches a line.	2 x 5 = 10 Med	- Lines identified before work and the network operator asked to divert or switch them off where plant comes close. - Where lines stay live, goal posts and barriers keep plant out of reach, with height limits briefed.	1 x 5 = 5 Med	
Fumes and bad air in deep excavations	Operatives in deep trenches, chambers and pits where gas or exhaust can collect.	2 x 5 = 10 Med	- No petrol or diesel engines in or beside the excavation unless the exhaust is ducted away. - Atmosphere tested before entry where gas, fume or low oxygen is foreseeable; work then treated as a confined space. - Confined space entry only under a permit, with trained people and a rescue plan.	1 x 5 = 5 Med	
Contaminated ground	Operatives digging on brownfield land, near fuel tanks or old drains.	3 x 3 = 9 Med	- Ground investigation and contamination report reviewed before work starts. - Anything unexpected, such as odours, oily or discoloured soil, drums or asbestos, means stop and report. - Welfare with hot water for washing before eating; cuts covered.	1 x 3 = 3 Low	
Wet cement and concrete	Operatives placing, levelling and finishing concrete in foundations and bases.	4 x 3 = 12 Med	- Waterproof gloves suitable for alkalis, and wellingtons high enough that concrete cannot get in. - Waterproof trousers over the boots and knee pads when kneeling; cement washed off the skin straight away. - Eyewash at the pour; skin checks for early signs of dermatitis.	2 x 3 = 6 Med	
Manual handling of kerbs, pipes and blocks	Operatives laying kerbs, edgings, pipes, chamber rings and blocks.	4 x 3 = 12 Med	- Kerbs, chamber rings and heavy pipes placed by vacuum lifter, kerb lifter or excavator rather than lifted by hand. - Materials delivered and stacked close to where they are laid, so carrying distances stay short. - What must be moved by hand is a two-person lift or a lighter unit, with knee pads for kneeling work.	2 x 3 = 6 Med	
Breaking out: dust, vibration and noise	Operatives using breakers, cut-off saws and compactors on concrete and kerbs.	4 x 3 = 12 Med	- Machine-mounted breakers used in place of hand-held ones wherever practicable. - Water suppression or on-tool extraction for cutting, and FFP3 RPE, face fit tested. - Vibration exposure planned per tool and per person, with hearing protection in the noise zone.	2 x 3 = 6 Med	
Rescue from an excavation	An injured operative, or one trapped by a fall of ground.	2 x 5 = 10 Med	- Rescue plan agreed before work starts, with the means to lift someone out and the emergency services route kept clear. - Nobody works alone in an excavation; nobody enters a collapsed trench without support in place.	1 x 5 = 5 Med	

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 5 of 9
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EQUIPMENT

Plant, equipment and PPE

Plant and equipment

Each item, the checks and certificates it needs, and who may operate it.

PUWER 1998, LOLER 1998

ITEM	CHECKS AND CERTIFICATES	OPERATOR COMPETENCE
Excavator	Daily check; quick hitch pin checked on each change; LOLER exam if lifting.	CPCS or NPORS card
Site dumper	Daily check; roll-over protection fitted; seat belt worn.	CPCS or NPORS card
Roller and plate compactor	Daily check; vibration data known for exposure planning.	Trained operator
Trench boxes, sheets and props	Checked on delivery and at each shift inspection.	Trained in the system
Cable locator and signal generator	Calibration or self-test in date; checked before use.	Trained operator
Gas detector	Calibrated and bump tested before entry to deep excavations.	Trained user

Personal protective equipment

PPE is the last line of defence, after the controls above. Specify the type, not just the item.

PPE AT WORK REGULATIONS 1992

ITEM	NEEDED	TYPE AND SPECIFICATION
Safety helmet	☒	Worn at all times near plant
Safety footwear	☒	Midsole protection; wellingtons for concrete
High-visibility clothing	☒	To site standard
Gloves	☒	Alkali-resistant for concrete; grip gloves
Eye protection	☒	Breaking out, cutting, concrete
Hearing protection	☒	Breakers, saws and compaction
Respiratory protection Type, and face-fit tested	☒	FFP3, face fit tested, for cutting
Harness or restraint Anchor points identified	☐	

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 6 of 9
---------	------------------------------	----------	------	----------------

CONTROLS

Substances, permits, emergencies and the environment

Hazardous substances

Each substance and its COSHH assessment.

COSHH 2002, REGULATION 6

SUBSTANCE	COSHH ASSESSMENT REFERENCE	CONTROLS
Wet cement and concrete	[ref]	Alkali-resistant gloves, wellingtons, eyewash; wash skin straight away.
Silica dust from cutting and breaking	[ref]	Water suppression or on-tool extraction; FFP3 RPE, face fit tested.
Contaminated ground	[ref]	Ground report reviewed; stop and report anything unexpected; wash before eating.
Diesel exhaust fume	[ref]	No engines in or beside the excavation unless exhaust is ducted away.

Permits and plans

PERMIT OR PLAN	NEEDED	REFERENCE
Hot work permit	☐	
Permit to work	☐	
Permit to dig or break ground	☒	
Confined space entry	☒	
Lift plan	☒	
Temporary works design	☒	

Emergency and rescue

First aid, fire, and how someone is rescued.
The rescue plan belongs in the RAMS, not after it.

Rescue plan for an injured or trapped operative, with the means to lift them out and the access route for the emergency services kept clear. For a service strike: stop, move everyone clear, call the service owner and the emergency services, and do not touch damaged cables or pipes.

Environment and neighbours

Dust, noise, vibration, waste, spills and hours of work.

Spoil kept on site in the agreed area, covered in dry weather. Water pumped from excavations through a settlement tank, not straight to drains or watercourses. Spill kit with the plant. Contaminated soil kept separate for testing and disposal.

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 7 of 9
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BEFORE BREAKING GROUND

Buried services check

Complete before any ground is broken in the area. Assume services are present until this check shows otherwise.

CHECK	WHAT IS NEEDED	RESULT OR REFERENCE	CHECKED BY AND TIME
Service plans	Electricity, gas, water, telecoms and drainage plans from each owner, in date		
Plans on the drawing	Services copied onto the working drawing for the team		
Site walk	Covers, meter boxes, street lights, marker posts and old reinstatements noted		
Locator	Calibration or self-test in date; operator trained		
Area scanned	Whole work area swept with the locator, in more than one direction		
Signal generator	Used to trace each service found		
Services marked	Paint or crayon on hard ground, wooden pegs on soft; no steel pins		
Trial holes	Dug by hand or vacuum to confirm position and depth		
Breaking out	Hand-held power tools 500mm from the indicated line where practicable		
Gas pipes	Exposed by hand; no mechanical excavation within 500mm		
Permit to dig	Issued for the area, with its reference and expiry		

HSE HSG47 AVOIDING DANGER FROM UNDERGROUND SERVICES (THIRD EDITION, 2014).

PROJECT	DOCUMENT Groundworks RAMS	REVISION	DATE	PAGE 8 of 9
---------	------------------------------	----------	------	----------------

Briefed before the work starts

DATE AND TIME

A SIGNATURE AGAINST A REVISION, ON A DATE, BEFORE THE WORK STARTED, IS HOW A BRIEFING IS EVIDENCED

A pre-filled starting point, not legal advice. Edit it for the site and have it approved.