

Technical Test - Practical

Appointed Person - A61

Lifting Operations



Resources required

| Area | <ul style="list-style-type: none"> • Quiet room having desks and seating arrangements for each candidate |
|-------------------------------|--|
| <p>Other equipment</p> | <ul style="list-style-type: none"> • CPCS supplied Risk Assessment/Method Statement • CPCS supplied Lifting Scenarios 1–8 • Copies of LOLER 1998 • Copies of PUWER 1998 • Copies of BS 7121 parts 1, 2 and 3 • SFPSG Guidance on Ground Conditions • Range of mobile crane specifications • Copies of Lifting accessory catalogues • Copies of mobile crane outrigger point loading charts (preferable) • Drawing and writing and measuring (rulers etc.) equipment • A2 or A3 white paper for drawings |
| <p>Notes</p> | <ul style="list-style-type: none"> • There must be a minimum of five mobile crane specifications for each scenario. One crane must be the ideal, two within 25% of the ideal, and one specification being out of capacity for the scenario • For CPCS test purposes, an ideal crane is one that is deemed as working to 80% of its capacity for the radius, height and ground conditions for each scenario, relative to the load chart that has been selected and used by the candidate. This is important as Candidates must take commercial considerations into account and not select too large a crane <p><i>PLEASE NOTE THE 80% REQUIREMENT DOES NOT CONSTITUTE A FACTOR OF SAFETY BUT PURELY FOR CRANE SELECTION PURPOSES</i></p> <ul style="list-style-type: none"> • Candidates must be supplied with information regarding outrigger point loadings. Crane manufacturer’s outrigger point-loading charts must, as far as is reasonably practical, be used • The Strategic Forum Plant Safety Group (SFPSG) have produced guidance on Ground Conditions for Construction Plant (Inc. lifting equipment), which provides guidance (in Annex E) on ground loading and outrigger pads • Up to 8 candidates may be assessed providing sufficient resources are available |
| <p>Sequence</p> | <ul style="list-style-type: none"> • The Technical Test theory question paper or lift scenario may be attempted in any order by the candidate. However, the theory question paper, once started, must be completed by the Candidate before a comfort/refreshment break can be taken <p>The test must be completed within a given time. The specifications’ section gives further information</p> |

Technical Test - Practical

Appointed Person - A61

Lifting Operations



Activity instructions

| | |
|--|--|
| | <ul style="list-style-type: none"> • The tester will issue a lift scenario each Candidate. Each Candidate will have a different scenario and each Candidate must have access to the equipment identified within the resources section • A suitable factor of safety must be determined and applied to the accessories and crane for each scenario by the candidate. The factor of safety determined must be justified and relevant to the operation • The standards of the practical test grading sheet must be explained to the Candidates prior to starting the test. It is recommended to allow Candidates sight of the marking sheet • Rigged weight must include information on any additional counterweights used • To be successful on the test, candidates must pay particular attention to detail. Information stated on the drawing MUST be replicated correspondingly in the risk assessment/method statement and vice-versa • For CPCS testing purposes only, the following formula* (or an agreed formula with the tester) must be used if manufacturers' exact criteria is not available. Candidates must indicate which method has been used in the risk assessment/method statement <p>(0.75 x gross weight of crane) + gross weight of load = Total weight</p> <p><u>Total weight</u> = answer 1</p> <p>25000 (kg- ground support in each scenario)</p> <p>Square root of answer 1 = Area of mat size required (m²)</p> <p>Note:</p> <ol style="list-style-type: none"> 1. Gross weight of the load includes accessories and the hook block 2. This calculation can used to calculate worst case scenario outrigger loadings on cranes up to approximately 80 tonnes. Above 80 tonnes, manufacturer's data must be used <p>PLEASE NOTE THAT THIS FORMULA CANNOT BE USED OR RELIED ON FOR ACTIVITIES OUTSIDE OF THE CPCS TEST FOR A61</p> |
|--|--|

Activity measurements

| | |
|---------------------|--|
| Standards | <ul style="list-style-type: none"> • Identified on the grading form |
| Test timings | <ul style="list-style-type: none"> • The overall time of the test must be completed within 6 hours and 45 minutes |

Technical Test - Practical

Appointed Person - A61

Lifting Operations



Risk assessment

Note: This form can only be used for the purposes of CPCS appointed person and crane supervisor training, assessments and testing, and is used with kind permission of the Construction Plant-Hire Association.

A drawing showing the lift details must accompany this form. All boxes **MUST** be completed with either the required information or marked N/A.

Drawings must show plan and elevation and be in an identifiable scale

Important – All submitted data must be in metric units.

| | |
|-------------------------|------------------------|
| Assessment scenario No: | Date of assessment: |
| Candidate Name: | Location of assessment |

1. General details

| | |
|----------------------|------------|
| Customer: | |
| Site contact: | Telephone: |
| Site location: | |
| Description of lift: | |

2. Details of load

| | |
|---------------------|-------|
| Weight: | Net |
| | Gross |
| Dimensions | |
| Position of C of G: | |
| Height of lift | |
| Max radius | |

3. Details of crane

| |
|-----------------|
| Make and model: |
| Capacity: |

Technical Test - Practical

Appointed Person - A61

Lifting Operations



Details of crane (*Continued*)

| |
|---|
| Boom length required: |
| Fly jib length and angle (if required) or N/A: |
| Outrigger spread: (<i>show dimensions on drawing</i>) |
| Mat/Pad size: (<i>show all calculations</i>) |
| Rigged weight of crane (Indicate ballast used): |

4. Ground conditions

| |
|--|
| Access/egress for crane and transport: |
| Lifting position: |

5. Lifting accessories

| | |
|--------------------|-------------------|
| Sling (wire rope): | Slings (webbing): |
| Slings (chains): | Shackles: |
| Other accessories: | |

6. A: Identifications of hazards (proximity)

| Proximity hazards | Present? | Proximity hazards | Present? |
|-------------------------------|----------|----------------------------|----------|
| Overhead power lines | Yes/No | Confined working area | Yes/No |
| Other overhead obstacles | Yes/No | Restricted access – width | Yes/No |
| Underground services | Yes/No | Restricted access – height | Yes/No |
| Excavations | Yes/No | Other vehicles | Yes/No |
| Unstable/Soft ground | Yes/No | Other Hazards identified | Yes/No |
| Hazardous chemicals/materials | Yes/No | | |

6. B: Identifications of hazards (load)

| Load hazard | Present? | Load hazard | Present? |
|-----------------------|----------|--------------------------|----------|
| Slinging difficulties | Yes/No | Sharp edges | Yes/No |
| Top heavy | Yes/No | Other hazards identified | Yes/No |
| | | | |

Technical Test - Practical Appointed Person - A61 Lifting Operations



7. Assessment of risk

| Hazard present | Risk | Action to avoid or reduce risk |
|----------------|------|--------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Continue on separate sheet if needed.

Technical Test - Practical Appointed Person - A61 Lifting Operations



8. Operational requirements

What crane should come equipped with:

9. Customer provisions

Method statement

10. Personnel

The following personnel (please state) will be provided, complete with relevant personal protective equipment. The duties of these people will be as defined in British Standard 7121:

| Title | Responsibility | Required PPE |
|-------|----------------|--------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Continue on separate sheet if needed.

Technical Test - Practical

Appointed Person - A61

Lifting Operations



11. Lifting accessories

The lifting accessories will be provided by: *(please name)*.....

12. Weather conditions

The lifting operation can only take place if the weather conditions are within the limits recommended by:

(please state).....

13. Ground conditions

The ground bearings are *(please state)*.....and I have obtained assurances that the ground can withstand the load.

14. Sequence of operations

Please start at 1 and number each action consecutively.

| No | Description |
|----|-------------|
| | |

**Technical Test - Practical
Appointed Person - A61
Lifting Operations**



AN **nocr** JOB CARD

| No | Description |
|----|-------------|
| | |

**Technical Test - Practical
Appointed Person - A61
Lifting Operations**



| No | Description |
|----|-------------|
| | |

Continue on separate sheet if needed.

**Technical Test - Practical
Appointed Person - A61
Lifting Operations**



15. Contingency statement

16. Candidate's confirmation*

I confirm that I have prepared the Risk assessment and Method statement, and the lift has been planned in accordance with current legislation and British Standard 7121

Signed:
.....
.....

Dated:
.....
.....

Note:* For the purposes of Crane Supervisor Training and Testing, the Instructor shall sign this section.

Technical Test - Practical

Appointed Person - A61

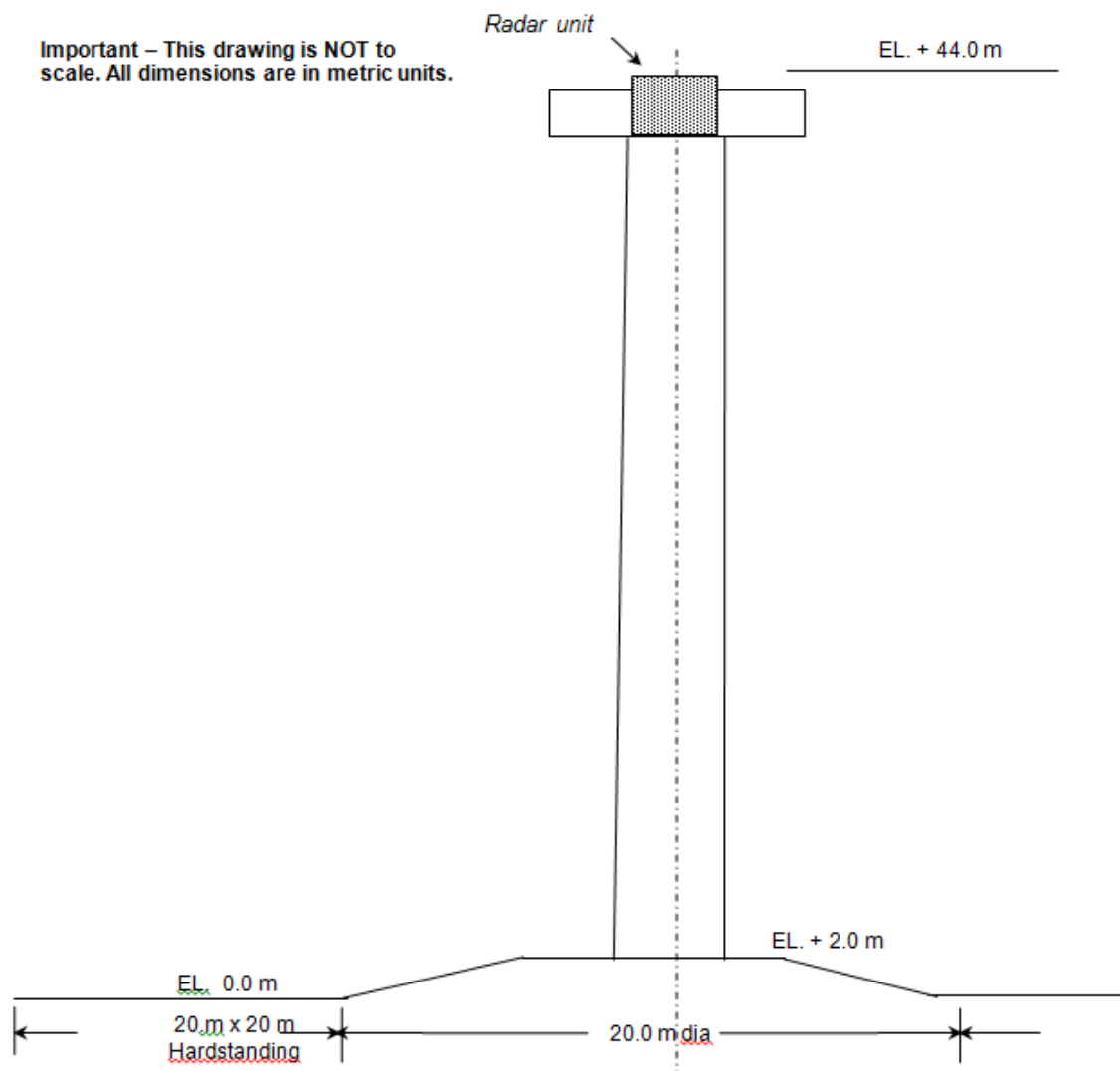
Lifting Operations

Scenario 1: Lift an airport radar unit

Candidate's notes:

1. Lift and lower a radar unit onto a transporter. The airfield is active and the worksite is located at the eastern corner of the airport.
2. There are 4 lifting points at the top of the radar unit, fitted with eye bolts – with link.
3. A dedicated lifting frame (supplied by the clients) must be used – being 0.4 t with wire rope slings, with a single lift point (to the crane) and 3.5 m from lifting ring to attaching points.
4. Weight of unit – 646 Kg.
5. Height of unit – 1.8 m.
6. Diameter of unit – 4.8 m
7. Diameter of tower – 3.0 m
8. Platform is 6.7 m dia and has rail height of 1.4 m.
9. Radar unit has been prepared for lifting by client and is ready to lift.
10. There is an internal stairway to the platform for maintenance purposes.
11. Customer – Dundrodd Airport Authority. Site – Zone 1, Dundrodd Airport. Site Contact – L Wade, 01744 98 65 87
12. Good access and egress roads to work site.
13. Trailer for transporting load to be positioned as close to tower as feasibly possible.
14. Ground bearing pressure not to exceed 25t/ m²

Important – This drawing is NOT to scale. All dimensions are in metric units.



Technical Test - Practical

Appointed Person - A61

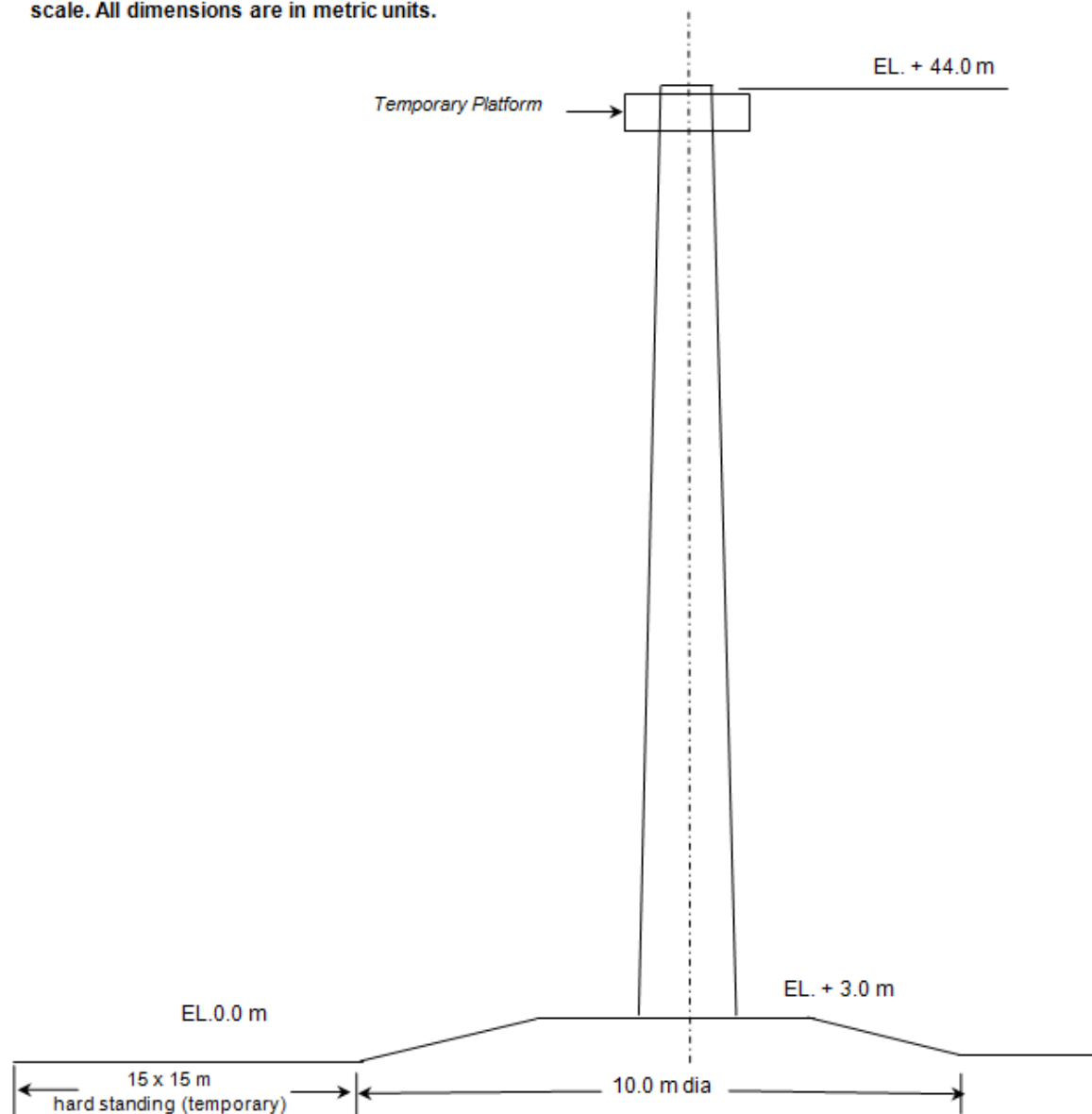
Lifting Operations

Scenario 2: Lift a Wind turbine generator/housing

Candidate's notes:

1. From a transporter, lift and place into position a wind turbine generator/housing unit.
2. There are 2 integral lifting points at the top of the generator housing
3. Diameter of column – base = 5.0 m, top = 3.0 m
4. Weight of generator and housing – 3.8 t
5. Diameter of housing – 2.6 m (*note: housing locates horizontally on tower*)
6. Length of housing - 4.5 m
7. Housing to be bolted to tower by turntable with 8 x bolts.
8. There is an internal stairway to turbine housing for maintenance purposes.
9. Platform (temporary) diameter - 5.0 m, height 1.2 m (platform to be rigged/derigged by client)
10. Customer – Wind Energy Inc. Site – Glenshire Wind Farm. Site Contact – N Hubbard, 01334 765 775
11. Good access and egress roads to site.
12. Trailer with load to be positioned close to tower as feasibly possible.
13. Ground bearing pressure not to exceed 25t/m²

Important – This drawing is NOT to scale. All dimensions are in metric units.



Technical test - Practical

Appointed person - A61

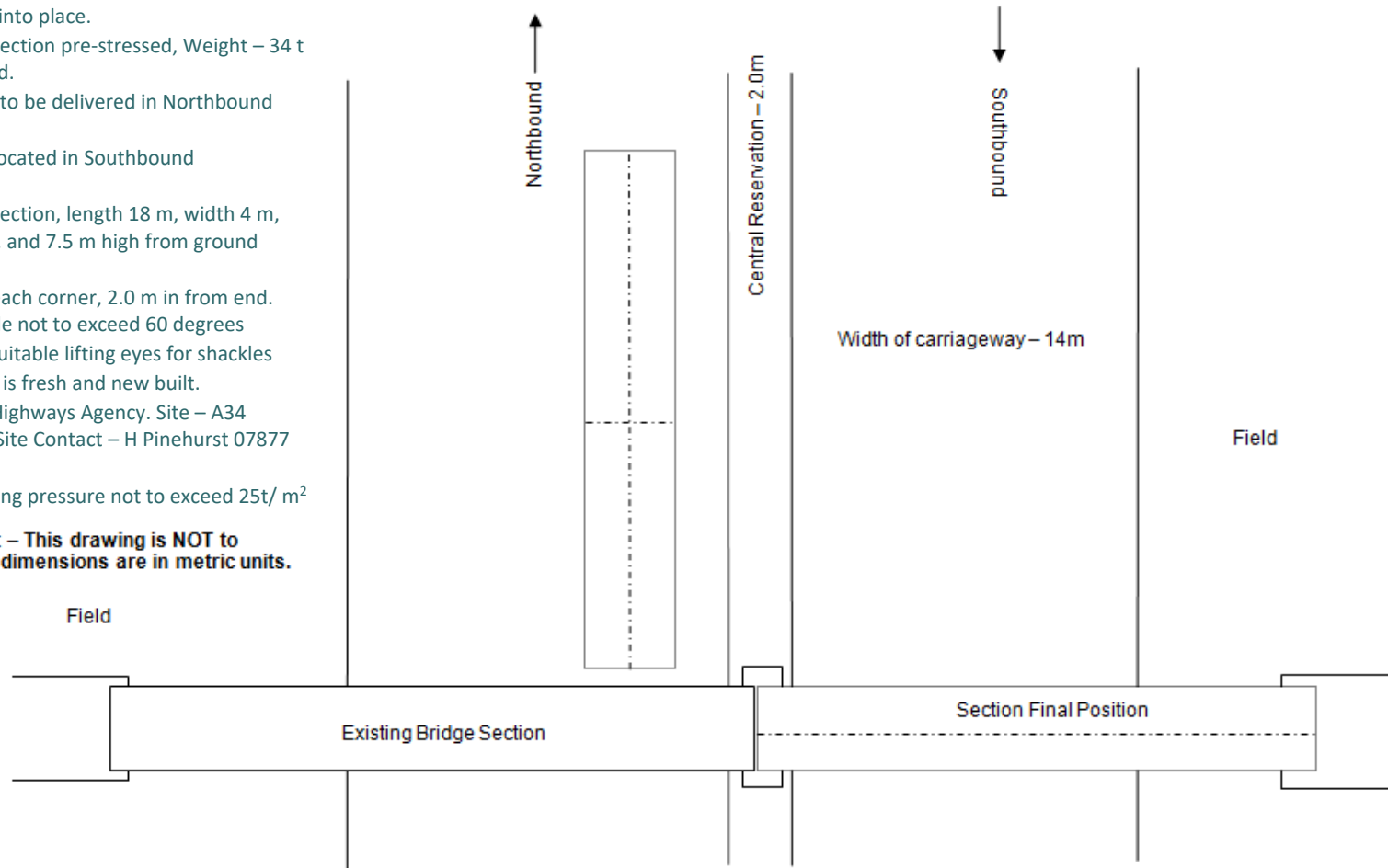
Lifting operations

Scenario 3: Lift and place a section of footpath bridge

Candidate's notes:

1. From its delivered location, lift a bridge section and position into place.
2. Bridge deck section pre-stressed, Weight – 34 t to be installed.
3. Deck section to be delivered in Northbound carriageway.
4. Crane to be located in Southbound carriageway.
5. Bridge deck section, length 18 m, width 4 m, Height 2.0 m, and 7.5 m high from ground level.
6. Lift point at each corner, 2.0 m in from end. Included angle not to exceed 60 degrees
7. Section has suitable lifting eyes for shackles
8. Road surface is fresh and new built.
9. Customer – Highways Agency. Site – A34 Junction 14. Site Contact – H Pinehurst 07877 344 547
10. Ground bearing pressure not to exceed 25t/ m²

Important – This drawing is NOT to scale. All dimensions are in metric units.



Technical test - Practical

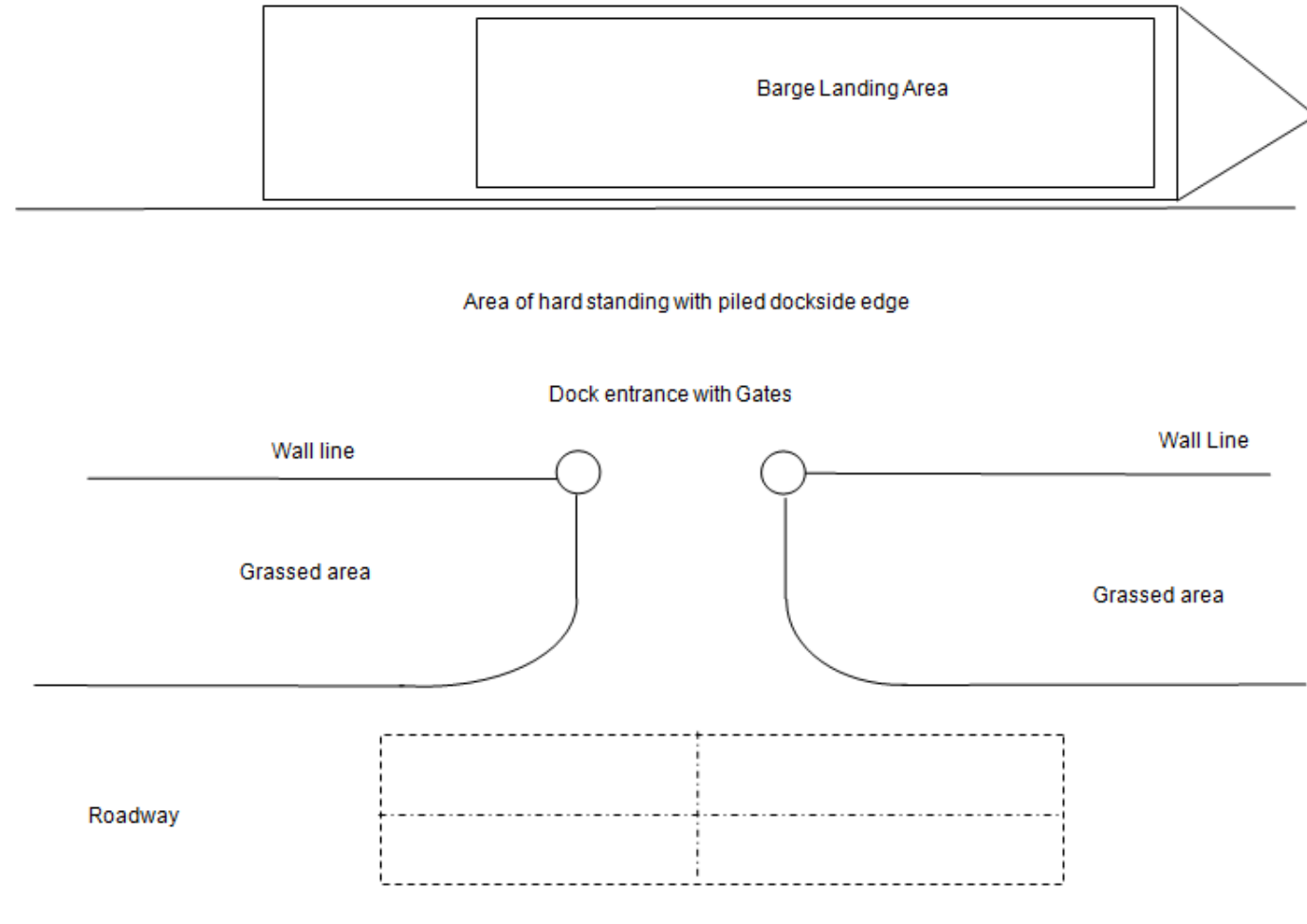
Appointed person - A61

Lifting operations

Scenario 4: Lift and place a tank onto a barge

Candidate's notes:

1. From its delivered position, lift an aluminium tank from the trailer and place onto the waiting barge.
2. Weight of tank – 9.35 t.
3. Tank dimensions – Length 12 m, Diameter 5 m.
4. Lifting beam, supplied by client, weighs a total of 650 kgs (inclusive of beam suspension wires) and is 6 m in length.
5. Roadway width – 7 m.
6. Gateway width – 5 m.
7. Wall and Gate heights 2.43 m.
8. Grassed area width – 5 m
9. Dockside 12 m wide
10. Tank has no fixed lifting points, and is hollow.
11. Barge landing area = 15 m x 6.6 m.
12. Barge is floating in a closed lock and moored alongside with a 1.0 m gap.
13. Flatdeck barge has full surrounding safety rail with a 0.7 m walkway all around the landing area.
14. Customer – TTP Chemicals Ltd. Site – Leaside Docks. Site Contact – J Stone 0207 345 4522
15. Ground bearing pressure not to exceed 25 t/m²



Important – This drawing is NOT to scale. All dimensions are in metric units.

Technical test - Practical

Appointed person - A61

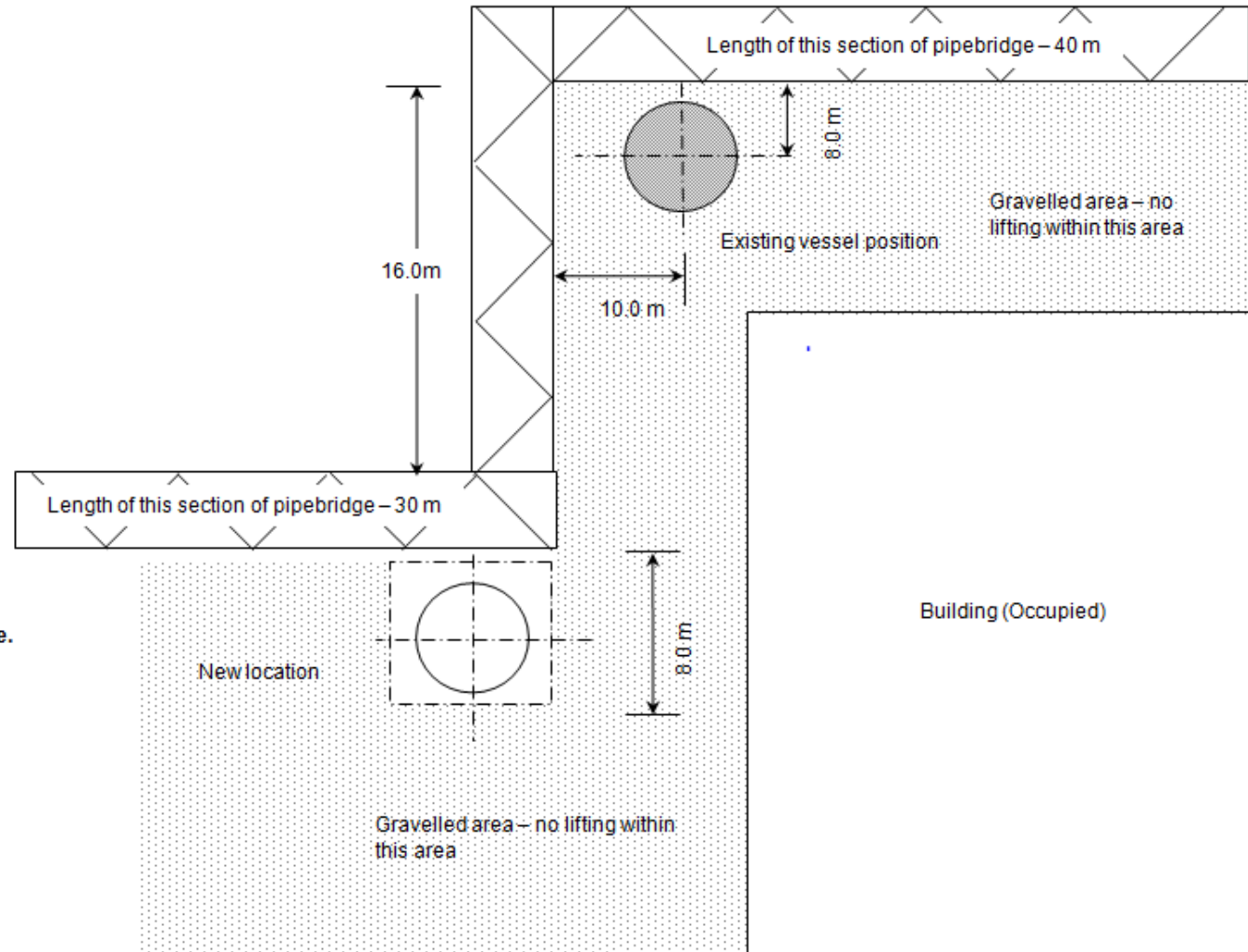
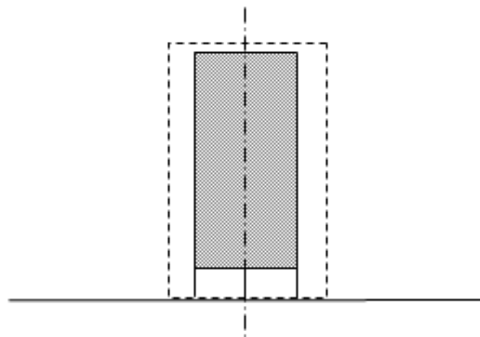
Lifting operations

Scenario 5: Lift and place a vessel into position

Candidate's notes:

1. Lift a vessel from an existing position and place into an open steel support structure. The plant is under construction.
2. Vessel weight: 22 t.
3. Support steelwork: 11.5 m high x 7 m x 7 m.
4. Vessel dimensions – Height (Inc. legs) 11 m, Diameter 6.8 m.
5. Vessel exists on site in vertical orientation.
6. Pipebridge height (to underside) – 8.8 m.
7. Pipebridge dimensions 2.7 m x 2.7 m.
8. Height of building – 7 m with flat roof. Dimensions 20 x 20 m.
9. Tank has 2 x fixed lifting points, has 4 x legs spaced radially, and 1 x central leg. The tank is to be bolted to the supporting steelwork by the client.
10. Customer – East-South Water Ltd. Site – Northern Grange Treatment Works. Site Contact – S Loggan 07735 345 554
11. Gravelled area to south of pipebridge. Concreted area to north of pipebridge.
12. Ground bearing pressure not to exceed 25 t/m²
13. Good access and egress road to work site.

**Important – This drawing is NOT to scale.
All dimensions are in metric units.**



Technical test - Practical

Appointed person - A61

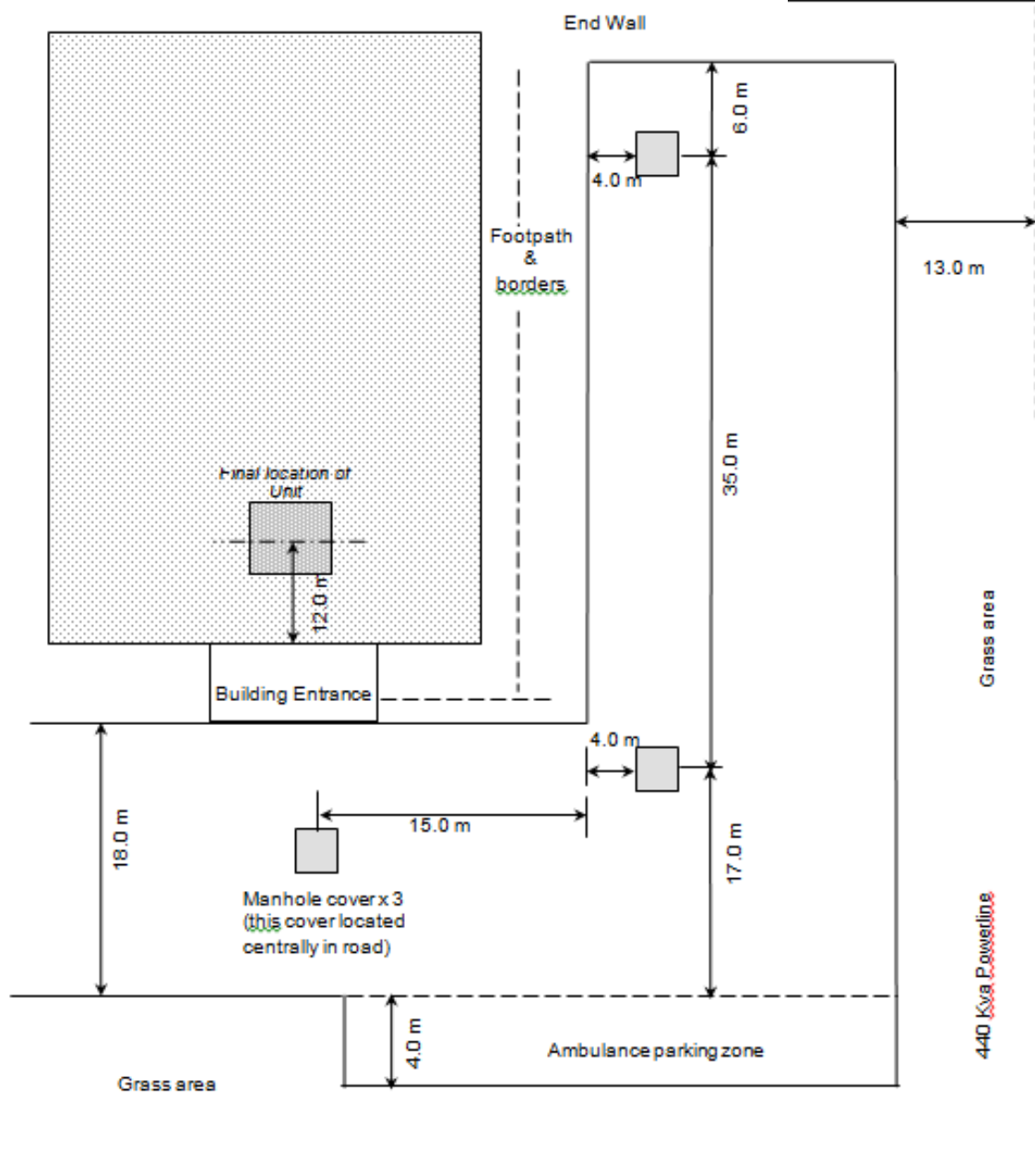
Lifting operations

Scenario 6: Lift and place an air conditioning unit

Candidate's notes:

1. Air Conditioning to be lifted from transporter and placed on top of the building, 12 m from the front of the building. The site is a new build and not occupied by the client.
2. Weight of the unit– 6.4 t and has a lifting point in each corner.
3. The Unit is 3.25 m high x 2.4 m x 2.4 m.
4. The building is 33 m high, 20 m wide and 30 m in length.
5. The road is 18 m wide with the end wall 2.4 m high.
6. The footpath and borders surrounding the building are 6 m wide and contain various underground services.
7. The manhole covers are 1 m x 1 m in size.
8. Customer – NHS. Site – Priestley Hospital. Site Contact – J Oremand, 01207 885 586
9. Trailer for transporting load to be positioned close to building as feasibly possible.
10. Ground bearing pressure not to exceed 25 t/m²

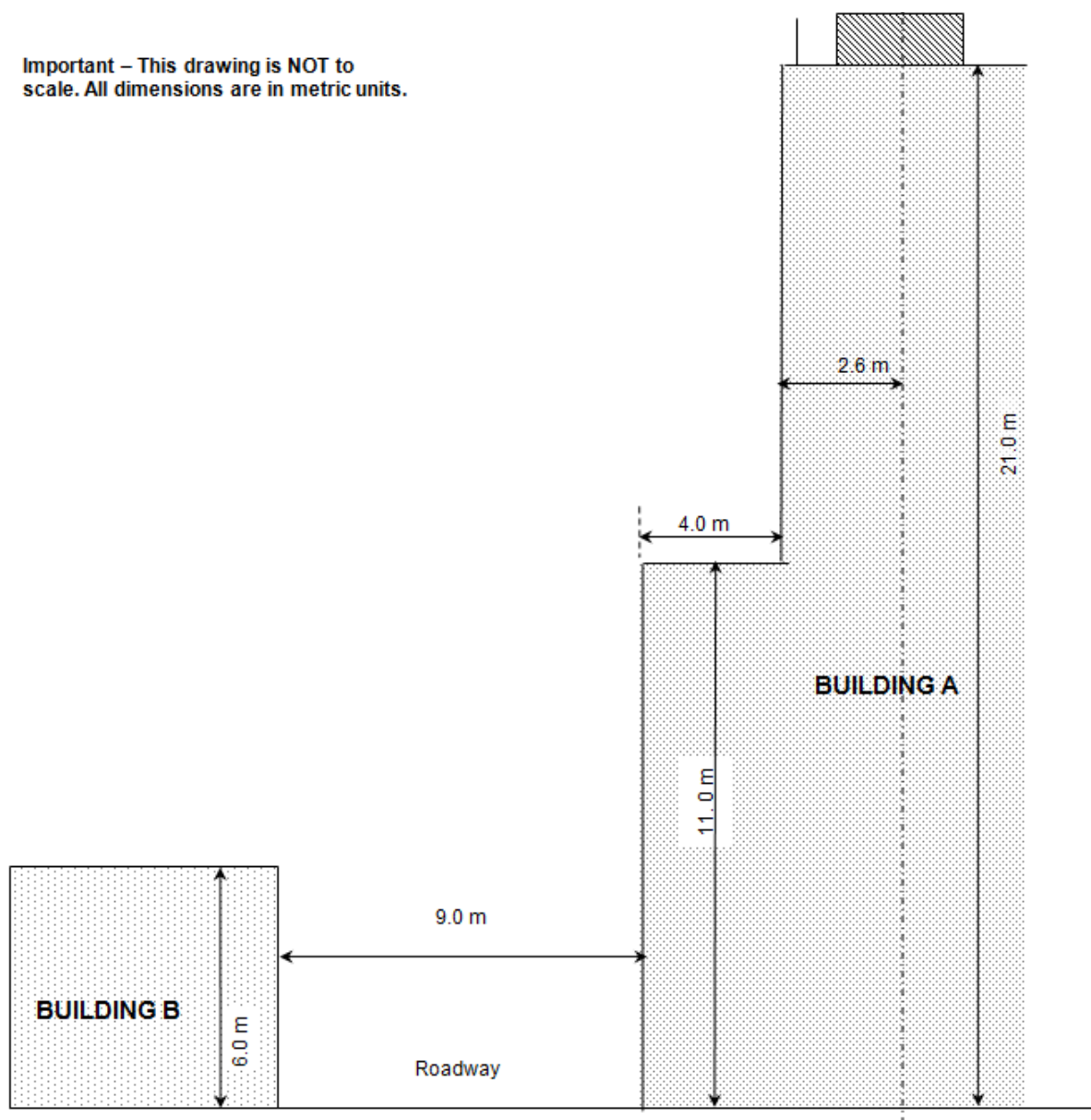
Important – This drawing is NOT to scale. All dimensions are in metric



Candidate's notes:

1. Unit located in top of a disused factory. Unit to be placed onto truck for transportation.
2. There are 4 x integral eye bolts in each corner on top of the motor.
3. Weight of motor – 4.8 t
4. Length of the motor – 5.0 m
5. Height of motor – 1.5 m
6. Width of the motor – 3.0 m
7. Roadway constructed of concrete and has no underground services.
8. Length of roadway – 40 m, with clear access at both ends.
9. Length of Building A and B – 20 m x 20 m
10. Access to roof is via internal stairs.
11. Safety rail along building 1.5 m high.
12. Customer – D Hunt Demolition. Site – Kimmins Sweets. Site Contact – R Wakeman, 07855 845 6655
13. Ground bearing pressure not to exceed 25 t/m²
14. Trailer for transporting load to be positioned close as feasibly possible.

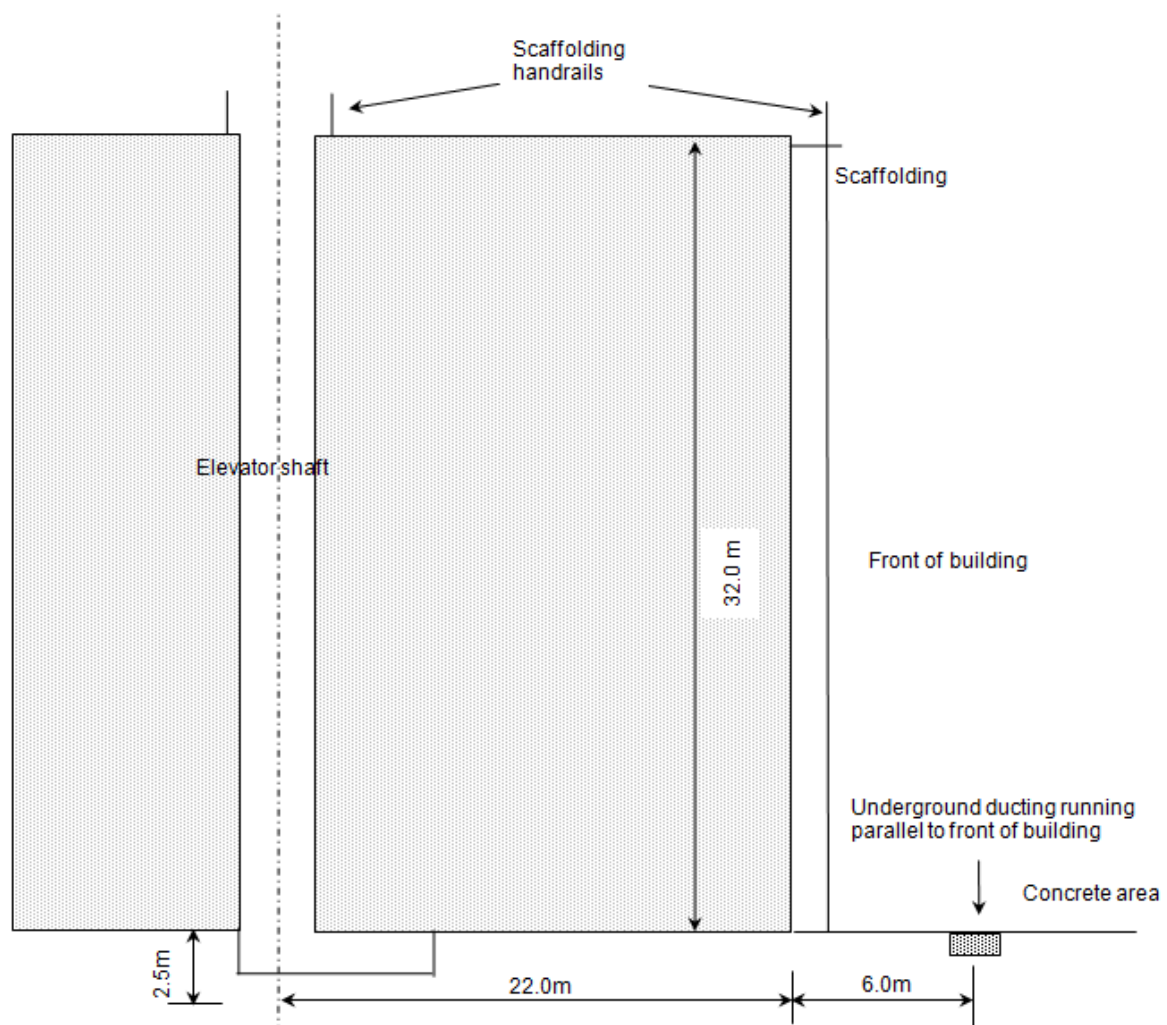
Important – This drawing is NOT to scale. All dimensions are in metric units.



Candidate's notes:

1. From a transporter, lift and lower the base-support unit down the lift shaft of this building being constructed. The unit is to be located at the bottom of the shaft.
2. The elevator shaft is 2 m x 2 m.
3. Weight of base-support unit – 0.7 t and is mounted on a pallet. Support unit must remain on pallet until located in basement.
4. Dimensions of base-support unit – Length 1m, Width 1m, Height 0.9m.
5. The building is 30 m long (front to rear) x 50 m wide. The shaft is located as per the diagram and midway between the two sides of the building. There is no hard standing at the sides of the building – only at the front.
6. Underground basement has separate maintenance access.
7. Scaffolding extends 1.5 m from the building.
8. Scaffolding handrails are 1.5 m high with one set encircling the shaft.
9. Underground ducting runs parallel to the front of the building and is 1 m wide and 1/2 metre deep.
10. Concrete area extends 15 m from the front of the building. Ground conditions on each side and the rear of the building are unsuitable for lifting purposes.
11. Customer – Meteor Construction. Site – RSB Headquarters. Site Contact – A Holbetts, 01788 674 7483
12. Ground bearing pressure not to exceed 25 t/m²

All dimensions are in metric units.



Technical test - Practical

Appointed person - A61

Lifting operations



AN NOCN JOB CARD

Basic details

| | |
|-----------------|---------------------|
| Test ref: | Candidate name: |
| Tester ref: | Candidate ref: |
| Tester ref: | Date of test: |
| Make and model: | Start time of test: |
| | Duration: |

The Candidate must achieve all asterisked items and a minimum of eight of the remaining items to be successful on the test.

| | Criteria | Standard | Y/N |
|--------------------------------------|---|---|-----|
| Section A (1) General details | 1 Customer | <i>as stated in given scenario</i> | |
| | 2 Name of site contact | <i>as stated in given scenario</i> | |
| | 3 Phone number of contact | <i>as stated in given scenario</i> | |
| | 4 Site location | <i>full description as stated in given scenario</i> | |
| | 5 The description of lift | <i>as stated in given scenario</i> | |
| Section B (2) Loads | 6 The net weight of the load/loads* | <i>as stated in given scenario</i> | |
| | 7 The gross weight of the load/loads* | <i>calculated as weight offload/ hook block and lifting accessories with a minimum FOS identified</i> | |
| | 8 Dimensions of the load/loads* | <i>as stated in given scenario</i> | |
| | 9 Position of the C of G | <i>as calculated (load is uniform or central)</i> | |
| | 10 Height of the lift* | <i>from ground level to bottom of load</i> | |
| | 11 Maximum radius* | <i>of load at any given point during the lift</i> | |
| Section C (3) Crane | 12 Make and model* | <i>as identified</i> | |
| | 13 The required capacity* | <i>must be the predetermined ideal size & type</i> | |
| | 14 Main boom length required | <i>as per selected crane specifications</i> | |
| | 15 Fly jib length and angle (if required) | <i>as per selected crane specifications</i> | |
| | 16 Outrigger spread* | <i>as per selected crane specifications</i> | |
| | 17 Mat/pad size* | <i>as calculated</i> | |
| | 18 Rigged weight of crane* | <i>as per manufacturers' specifications</i> | |
| Section D (4) Ground conditions | 19 Additional counterweights (if required) | <i>as per manufacturers' specification</i> | |
| | 20 Access and egress points for the crane* | <i>as stated in given scenario</i> | |
| | 21 Access and egress points for other transport | <i>as stated in given scenario</i> | |
| Section E (5) Lifting accessories | 22 The required lifting position* | <i>as stated in given scenario</i> | |
| | 23 The type and length required* | <i>suitable type(s) identified</i> | |
| | 24 Correct WLL identified* | <i>accurate</i> | |
| | 25 The number of lifting accessories required* | <i>number identified</i> | |

Technical test - Practical

Appointed person - A61

Lifting operations



| | Criteria | Standard | Y/N |
|--|---|--|-----|
| Section F (6a) Proximity hazards (as applicable) | 26 Overhead power lines* | <i>identified as yes or no</i> | |
| | 27 Other types of overhead obstacles* | <i>identified as yes or no</i> | |
| | 28 Underground services* | <i>identified as yes or no</i> | |
| | 29 Excavations* | <i>identified as yes or no</i> | |
| | 30 Unstable/soft ground* | <i>identified as yes or no</i> | |
| | 31 Hazardous chemicals/materials | <i>identified as yes or no</i> | |
| | 32 Confined working areas* | <i>identified as yes or no</i> | |
| | 33 Restricted access – width* | <i>identified as yes or no</i> | |
| | 34 Restricted access – height* | <i>identified as yes or no</i> | |
| | 35 Other vehicles | <i>identified as yes or no</i> | |
| | 36 Other hazards* | <i>identified as yes or no</i> | |
| Section G (6b) Load hazards | 37 Slinging difficulties* | <i>identified as yes or no</i> | |
| | 38 Top heavy loads* | <i>identified as yes or no</i> | |
| | 39 Sharp edged loads* | <i>identified as yes or no</i> | |
| | 40 Other hazards* | <i>identified as yes or no</i> | |
| Section H (7) Assessment of risk | 41 Hazards (not included in items 26-40)* | <i>identified</i> | |
| | 42 Risk s against the hazards in item 41* | <i>identified</i> | |
| | 43 Action to be taken to avoid/reduce risk as in item 41* | <i>identified</i> | |
| | 44 Risk s against the hazards in items 26-40* | <i>identified</i> | |
| | 45 Action to be taken to avoid/reduce risk as in items 26-36* | <i>identified</i> | |
| Section I (8) | 46 The equipment the crane must come equipped with | <i>identified (must state if information is contained in method statement)</i> | |
| Section J (9) | 47 Customer provisions | <i>identified (must state if information is contained in method statement)</i> | |
| Section K (10) Personnel | 48 The number of additional personnel required* | <i>must be minimum of 2 noted – lifting at height or depth requires minimum of 3</i> | |
| | 49 The type and responsibilities of personnel required* | <i>identified</i> | |
| | 50 Any PPE that personnel must be equipped with* | <i>identified</i> | |
| Section L (11) Lifting accessories | 51 Supplier of lifting accessories | <i>identified</i> | |

Technical test - Practical

Appointed person - A61

Lifting operations



AN NOCN JOB CARD

| | Criteria | Standard | Y/N |
|---|--|---|-----|
| Section M (12) Weather / Environmental and ground conditions | 52 Conditions when the lifting operation must be shut down | <i>as per crane manufacturers' recommendations</i> | |
| | 53 Maximum wind speed for load, and instruction to check wind speed at point of lift* | <i>identified</i> | |
| Section N (13) Ground conditions | 54 Ground conditions, and stated all precautions to be taken* | <i>identified</i> | |
| Section O (14) Sequence of operations | 55 The sequence of operations* | <i>logical order, does not cause incident or greater, is without confusion</i> | |
| Section P (15) Contingency statement | 56 Include a contingency statement* | <i>In case of interruption of lift etc.</i> | |
| Section Q Drawing | 57 Did the drawings (plan and elevation) show the positioning of the crane?* | <i>clear and identifiable</i> | |
| | 58 Did the drawings correctly show the positioning of the crane, load (before and after lift), slinging arrangements and ancillaries?* | <i>clear and identifiable</i> | |
| | 59 Clearly marked to scale* | <i>scale clearly identified, matched to drawing and suitable to show detail</i> | |
| Section R Additional | 60 Were the contents of the method statement understandable to others who may be involved in the lift?* | <i>clear, decipherable and coherent</i> | |

The Candidate must achieve all asterisked items and a minimum of 8 of the remaining items to be successful on the test

Achieved / Not Achieved