GAUTENG DEPARTMENT OF EDUCATION
SENIOR CERTIFICATE EXAMINATION

BRICKLAYING AND PLASTERING SG

QUESTION 1

1.1 Unsafe acts

- Working at unsafe speed (2)
- Working without authority (2)
- Failure to secure machinery and materials (2)
- Arranging or placing objects unsafely (2)
- Adjusting or working on moving equipment (2)
- Taking chances (2)
- Taking up unsafe positions (2)
- Failure to use safety equipment (2)
- Failure to wear protective apparel (2)

Any five of these 5x2=(10)

1.2 Unsafe conditions

- Unsafe construction (2)
- Disorderly and haphazard planning (2)
- Defective working conditions such as slippery floors (2)
- Overcrowding in workshops (2)
- No personal protective equipment (2)
- Unsafe ventilation (2)
- Unsafe lighting (2)

Any five of these 5x2=(10)

1.3

- The sewer must be laid in a straight line as far as possible. (2)
- There must be no sharp bends. (2)
- An inspection eye must be installed at each connection. (2)
- At any branching a cleaning eye must be installed. (2)
- A ventilation pipe must be installed at the highest point. (2)
- Sewerage must be self-cleaning. (2)
- Sewerage must be laid on a steady base. (2)
- Sewerage must be air- and water-tight. (2)
- Gullies must be placed so that the water lock does not evaporate. (2)
- Sewerage must, as far as possible, not be installed underneath a building. (2)

10x2=(20)

1.4

- Cast-iron pipes (1)
- Plastic pipes (1)
- Earthenware pipes (1)

3x1=(3)

1.5

- Manholes are long-lasting constructions. (1)
- It is possible to clean a drain in both directions. (1)
- It is easy to find a manhole. (1)

3x1=(3)

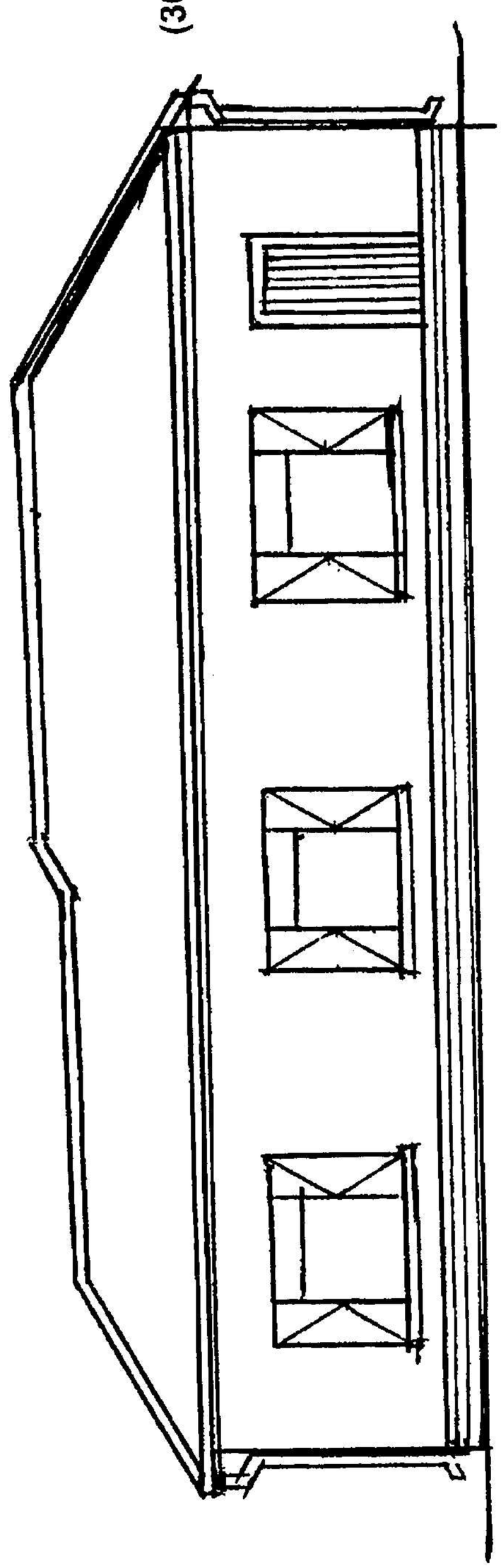
1.6

- Water test (2)
- Compressed-air test (2)

2x2=(4)
[50]

QUESTION 2

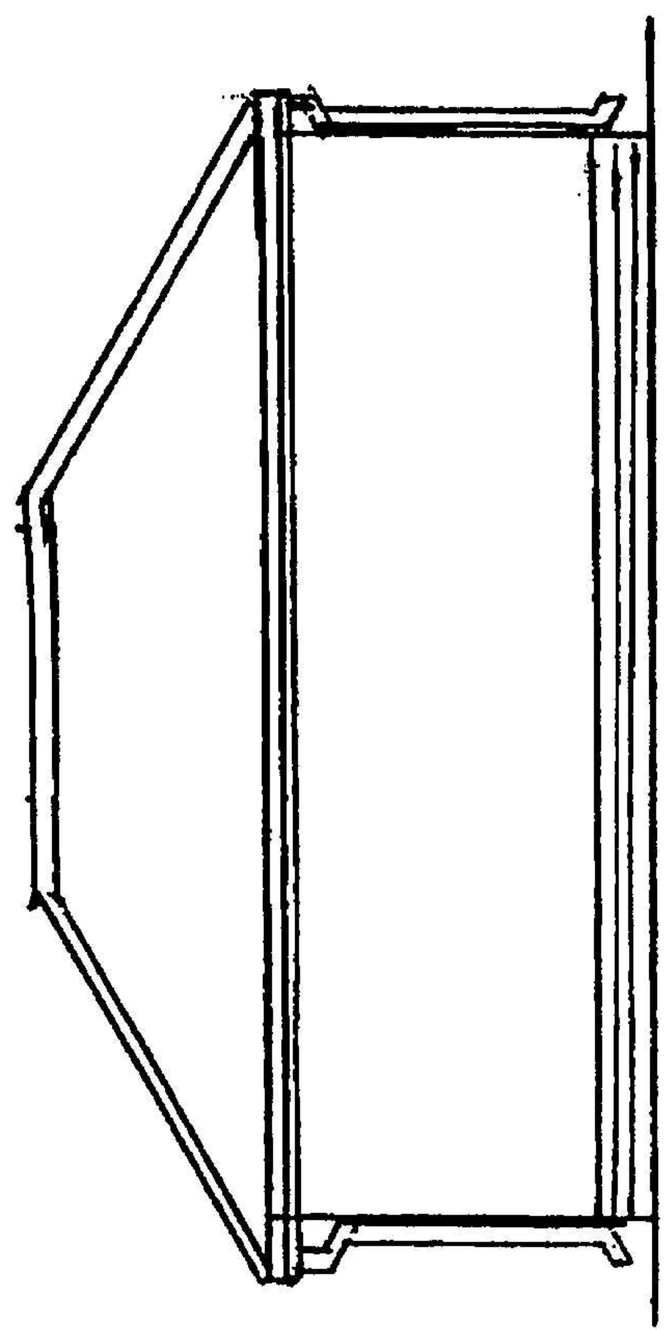
(30)



NORTH ELEVATION SCALE 1:100

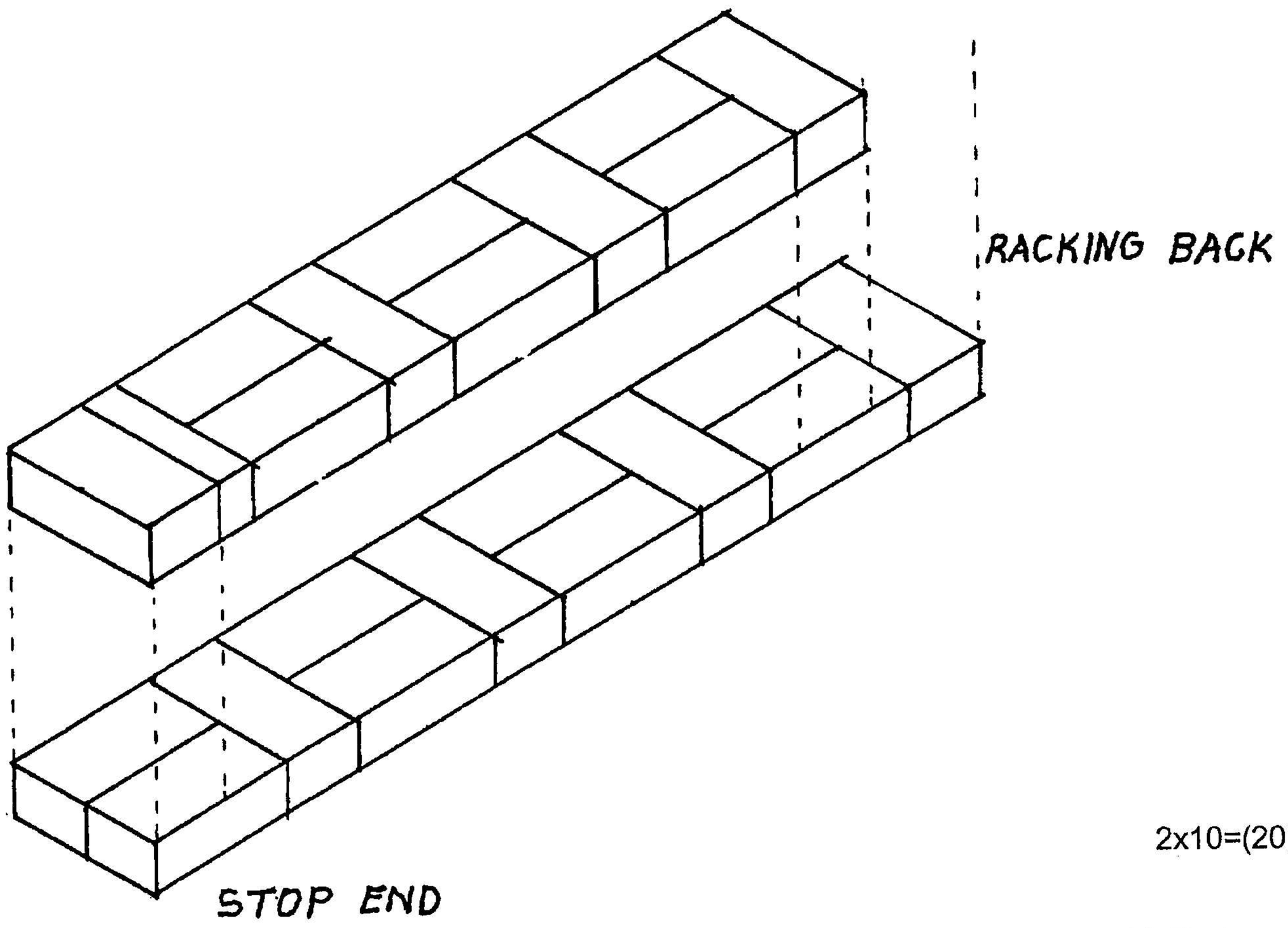
(20)

[50]



WEST ELEVATION SCALE 1:100

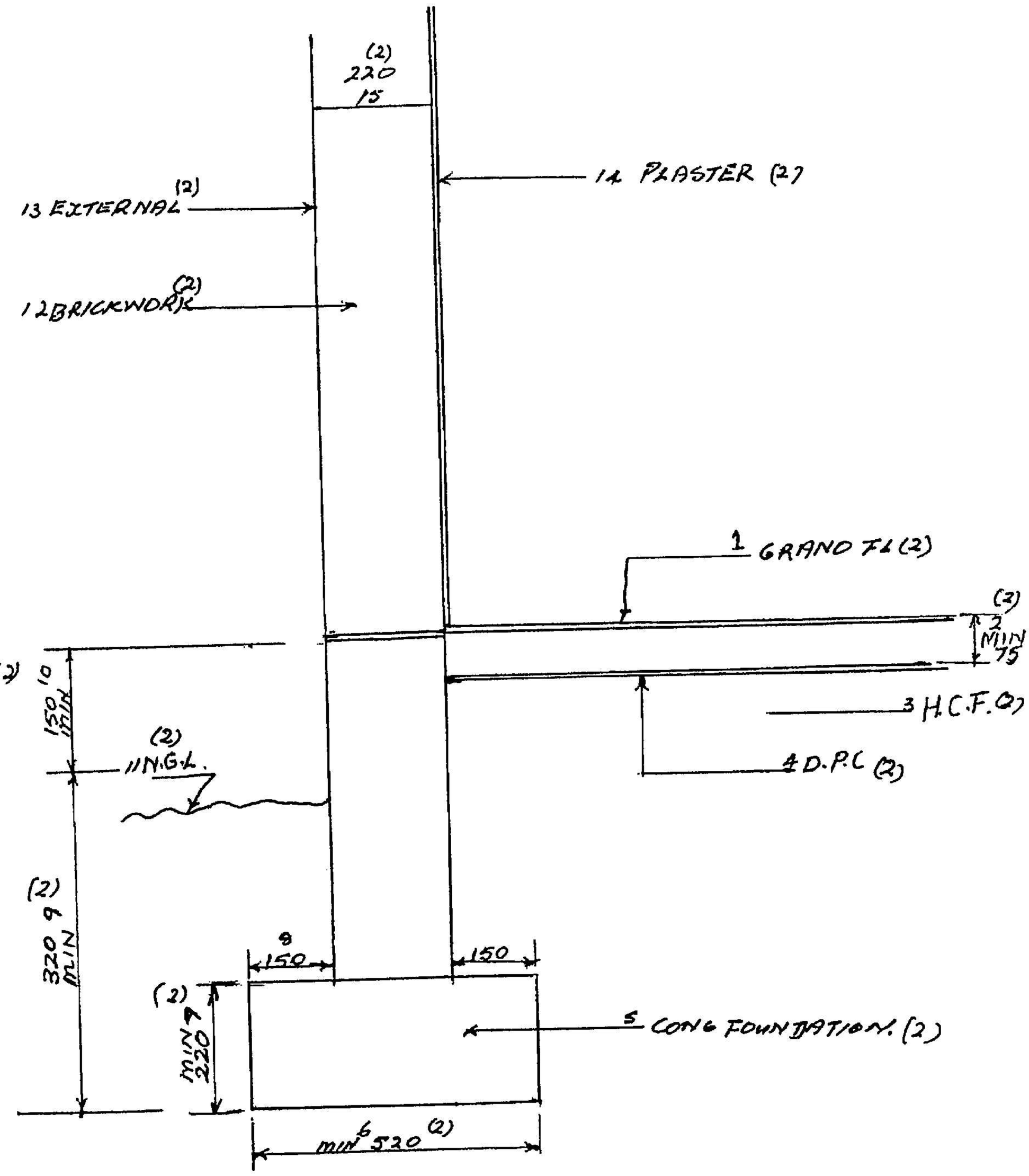
QUESTION 3.1



2x10=(20)

ALTERNATING PLAN COURSES IN FLEMISH BOND SCALE 1:10

QUESTION 3.2



2x15=(30)
[50]

QUESTION 4

ANSWER SHEET/*ANTWOORDBLAD*

4.1

1	3812 ,375 14 298 50	14,298 1429,5	**SUBSTRUCTURE / *ONDERBOU*** **CENTRE LINE FOR SUBSTRUCTURE / *MIDDELLYN VAN ONDERBOUSTRUKTUUR*** 2 x 12,5 = 25 000 2 x 7 = 14 000 Subtotal/*Subtotaal* = 39 000 Minus 4 x 220 = 880 Total / *Totaal* = 38,12 m Centre line of substructure is 25,0 m long *Middellyn van onderboustruktuur is 25,0 m lank.* Area if substructure is 375 mm high/ *Oppervlak as onderboustruktuur 375 mm hoog is 14,298*
2	38,12 2, 106,736 50	106,	Number of bricks for substructure if there are 50 bricks per square metre for a half-brick wall/ *Aantal stene vir onderboustruktuur indien daar 50 stene per vierkante meter vir 'n halfsteenmuur is.* = 1429,5 bricks/*stene*

4.2

1	38,12 m 2,8 106,736		**SUPERSTRUCTURE / *BOBOU*** Centre line for superstructure / *Middellyn van boboustruktuur* 2 x 12,5 = 25 000 2 x 7 = 14 000 Subtotal/*Subtotaal* = 39 000 Minus 4 x 220 = 880 Total/*Totaal* = 38,12 m^2 Centre line of superstructure is 25,0 m long. *Middellyn van boboustruktuur is 25,0 m lank* Height of superstructure is 2 800 mm *Hoogte van boboustruktuur is 2 800 mm*
2	106,736 50	10,673,6	Number of bricks for superstructure if there are 50 bricks per square metre for a half-brick wall/ *Aantal bakstene vir boboustruktuur indien daar 50 stene per vierkante meter vir 'n halfsteenmuur is* = 10,673

4.3				**DEDUCTIONS / *AFTREKKINGS*** **OPENINGS / *OPENINGE*** **WINDOWS / *VENSTERS***
	3			3 @ 2,5 x 65 = 3,75
	2			Doors/*deure* 2 x 1 = 2 x 2 x 1 = 4 m^2
	2			
	2	7,75 50 3 875		Total area of openings / *Totale oppervlak van openinge* Windows / *Vensters* = 11,50 Doors / *Deure* = 400 Total / *Totaal* = 15,25 Total number of bricks to fall away at openings/ *Totale aantal stene wat wegval by die openinge* = 3 875
				TOTAL NUMBER OF BRICKS FOR THE BUILDING ***TOTALE AANTAL BAKSTENE VIR DIE GEBOU*** Substructure / *Onderbou* = 1429,5 Superstructure / *Bobou* = 10673,6 Minus openings / *openinge* = 3 875 Total / *Totaal* = 8 122,1 Total number of bricks + 5% for wastage / *Totale aantal stene + 5% vir vermorsing* = 8 747

QUESTION 5

5.1
5.1.1 Conc. (2)
5.1.2 I.C. (2)
5.1.3 I.L. (2)
5.1.4 V.P. (2)
5.1.5 C.E. (2)

5x2=(10)

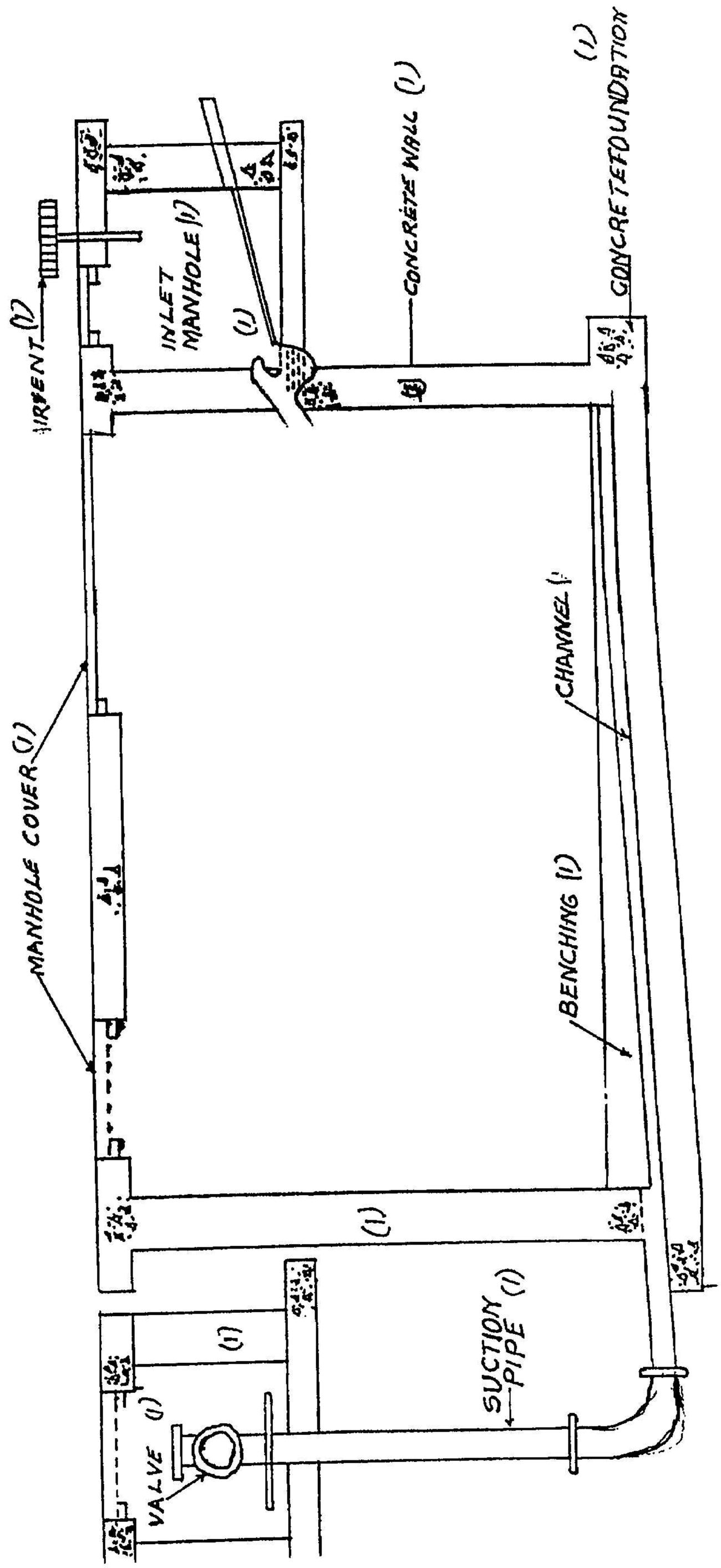
5.2
- Rubber stoppers should be placed in all openings. (2)
- All gullies must be filled with water. (2)
- A manometer must be installed with air pressure apparatus. (2)
- Air must be pumped into drain until the manometer registers a pressure of 50 mm. (2)
- If the drain is airtight the manometer will register the constant pressure. (2)

5x2=(10)

5.3
- A flexible pipe from the tanker is connected to the valve of the vacuum tank. (3)
- The air in the tank is pumped out. (3)
- The contents of the vacuum tank are sucked out into the tanker by means of atmospheric pressure. (4)

(10)

QUESTION 5.4



A LONGITUDINAL SECTION THROUGH A VACUUM TANK (1)

(20)
[50]

QUESTION 6

6.1.1 (1) Enclosing a site or part of it to prevent the escape of loose sub-soil such as sand (2)

(2) Retaining the sides of trenches and general excavations. (2)

(3) Forming collar dams, that is, water-tight enclosures necessary for construction of foundations in or under water. (2)

(4) Constructing retaining walls in docks and similar manner works. (2)

(5) For coastal defence works as protection against erosion. (2)

(6) For the protection of a river bank against erosion. (2)

Any three answers 3x2=(6)

6.1.2 (1) Wooden piles (3)

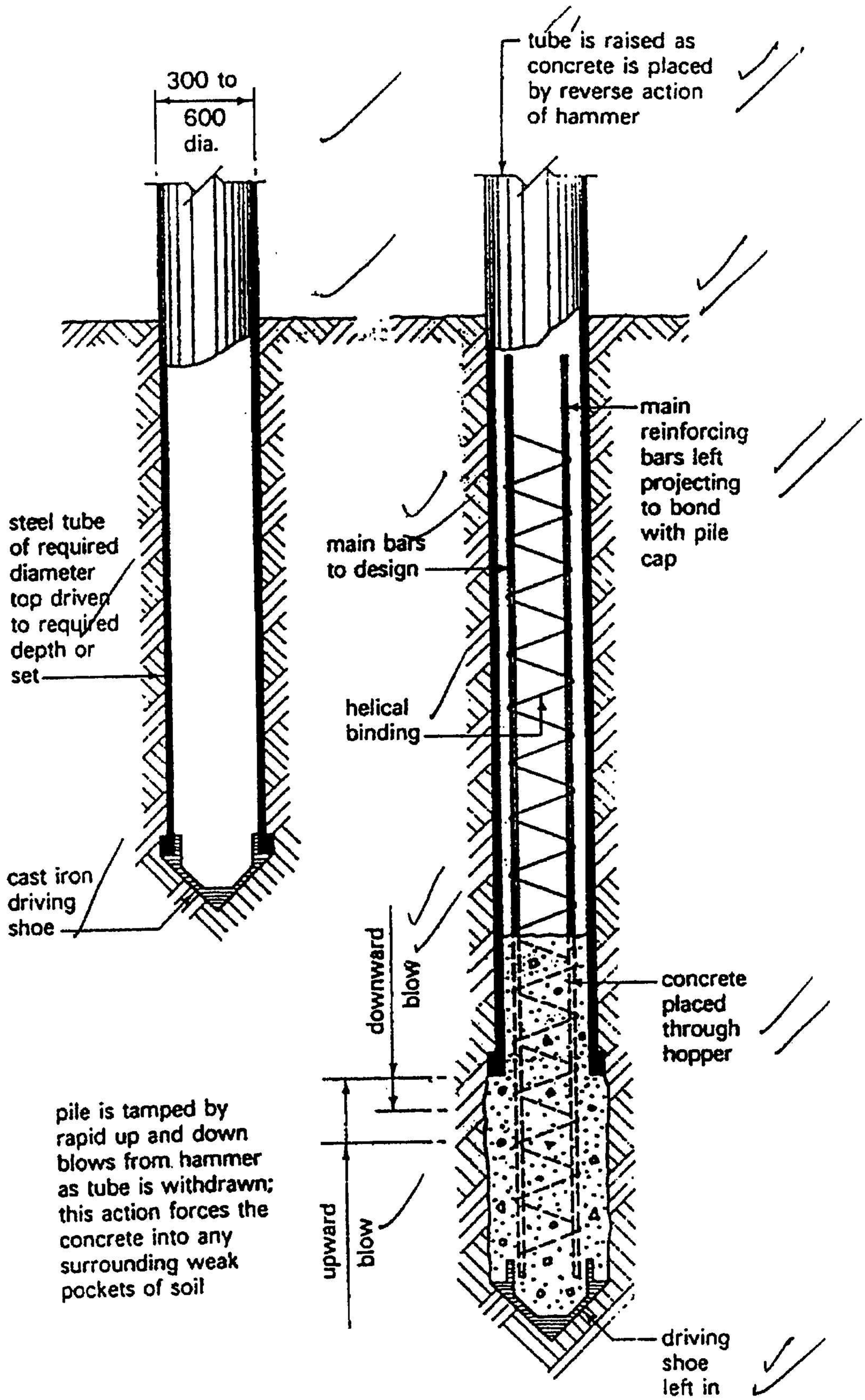
(2) Concrete piles (3)

(3) Steel piles (3)

(4) Asbestos piles (3)

3x4=(12)

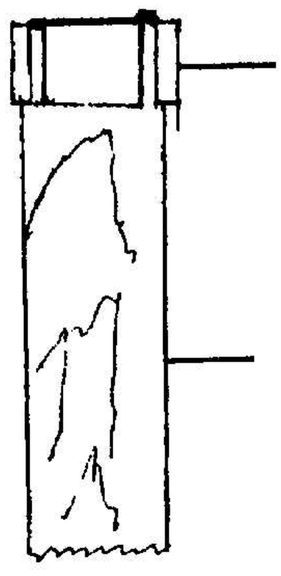
QUESTION 6.2



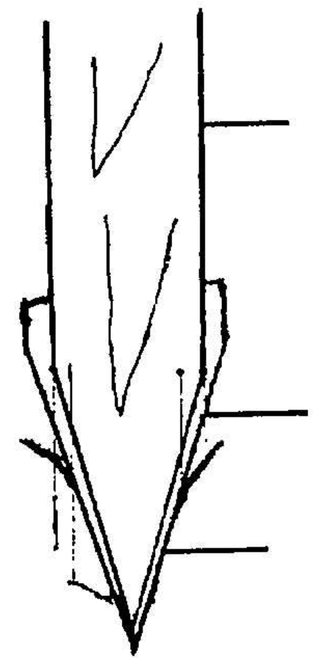
Vibro cast *in situ* pile

(24)

QUESTION 6.3



Top of Wooden Pile/
Top van Hout-heipaal



Bottom of wooden pile/
Onderkant van hout-heipaal

(8)
[50]

GAUTENGSE DEPARTEMENT VAN ONDERWYS
SENIORSERTIFIKAAT-EKSAMEN

STEENMESSEL EN PLEISTERWERK SG

VRAAG 1

1.1 Onveilige handelinge

- Werk teen 'n onveilige spoed (2)
- Werk sonder toestemming (2)
- Nalaat om masjinerie en materiaal te beveilig (2)
- Voorwerpe onveilig rangskik of plaas (2)
- Verstel of werk aan bewegende toerusting (2)
- Kanse vat (2)
- In onveilige posisies staan (2)
- Versuim om veiligheidstoerusting te gebruik (2)
- Versuim om beskermklere te dra (2)

Enige vyf van hierdie 5x2=(10)

1.2 Onveilige toestande

- Onveilige konstruksie (2)
- Deurmekaar en lukrake beplanning (2)
- Defekte werkstoestande soos glibberige vloere (2)
- Oorvol werkswinkels (2)
- Geen persoonlike veiligheidstoerusting nie (2)
- Onveilige ventilasie (2)
- Onveilige verligting (2)

Enige vyf van hierdie 5x2=(10)

1.3

- Die riool moet sover moontlik in 'n reguit lyn gelê word. (2)
- Daar moet geen skerp draaie wees nie. (2)
- 'n Steekoog moet by elke verbinding geïnstalleer word. (2)
- By enige vertakking moet daar 'n steekoog geïnstalleer word. (2)
- 'n Ventilasiepyp moet op die hoogste punt geïnstalleer word. (2)
- Riool moet selfreinigend wees. (2)
- Riool moet op 'n stewige fondasie gelê word. (2)
- Riool moet lug- en waterdig wees. (2)
- Afvoerpype moet so geplaas word dat die waterblok nie verdamp nie. (2)
- Riole moet, sover moontlik, nie onder 'n gebou geïnstalleer word nie. (2)

10x2=(20)

1.4

- Gietysterpype (1)
- Plastiekpype (1)
- Erdewerkpype (1)

3x1=(3)

1.5

- Mangate is lankhoudende konstruksies. (1)
- Dit is moontlik om 'n drein in albei rigtings oop te maak. (1)
- Dit is maklik om 'n mangat op te spoor. (1)

3x1=(3)

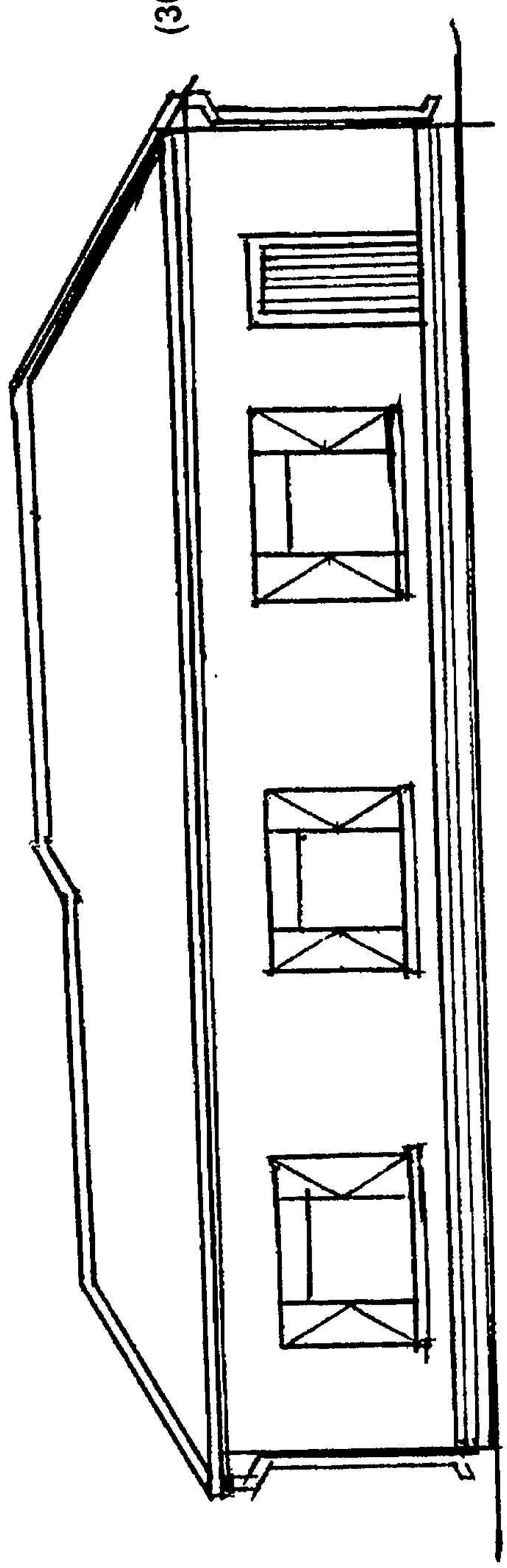
1.6

- Watertoets (2)
- Druklug-toets (2)

2x2=(4)
[50]

VRAAG 2

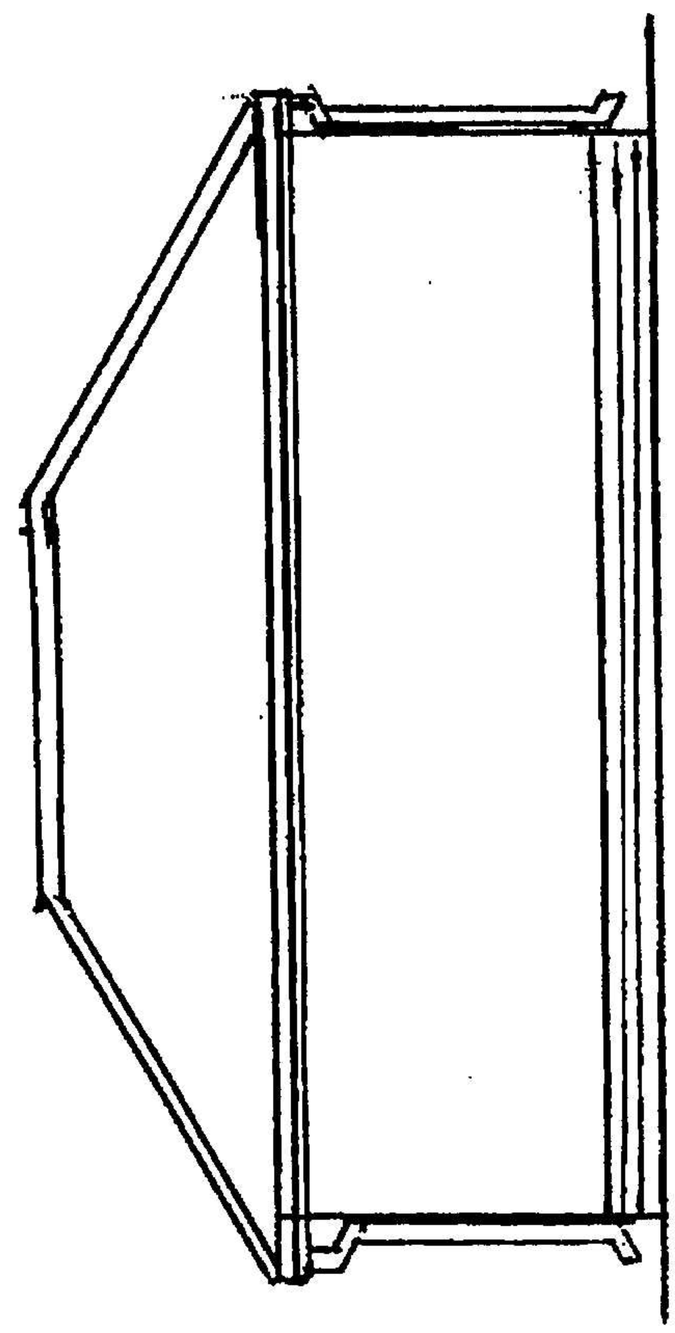
(30)



SKAAL 1:100

NOORD-AANSIG

(20)

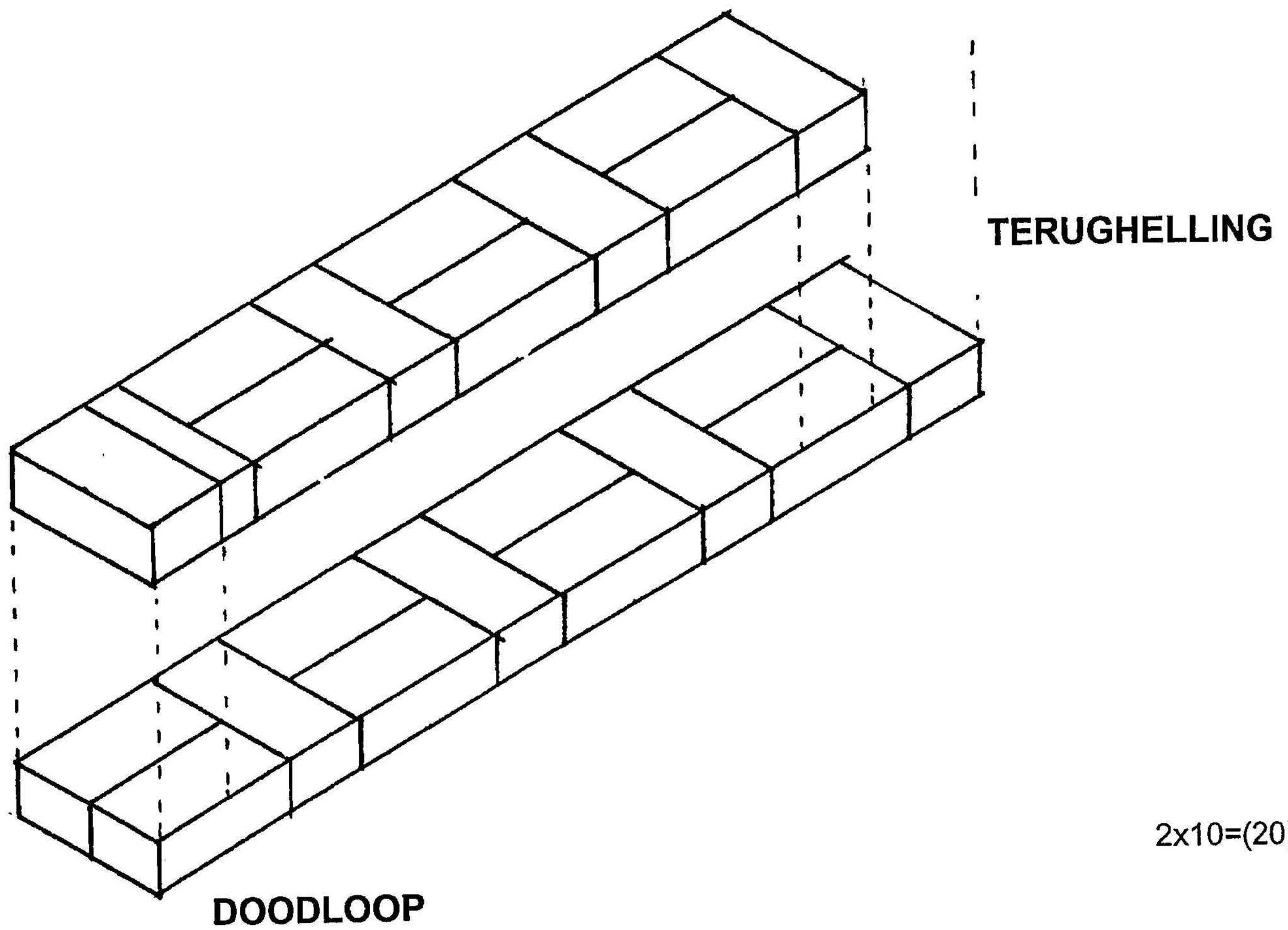


[50]

SKAAL 1:100

WES-AANSIG

VRAAG 3.1

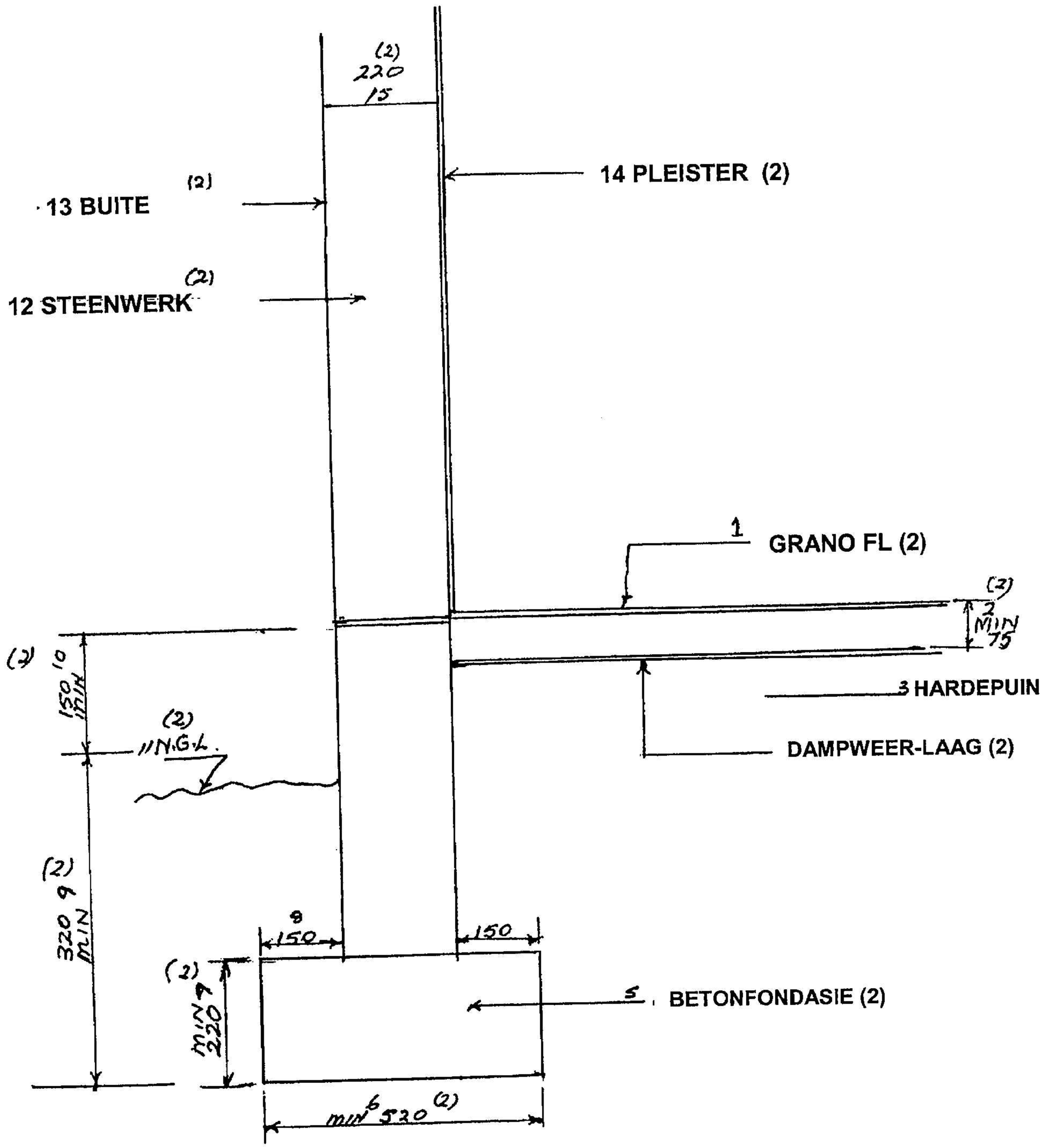


2x10=(20)

PLANLAE IN VLAAMSE VERBAND

SKAAL 1:10

VRAAG 3.2



2x15=(30)
[50]

VRAAG 4

ANSWER SHEET / *ANTWOORDBLAD*

4.1

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2/	38,12 2, 106,736 50	106,	Number of bricks for substructure if there are 50 bricks per square metre for a half-brick wall/ *Aantal stene vir onderboustruktuur indien daar 50 stene per vierkante meter vir 'n halfsteenmuur is.* = 1429,56 bricks/*stene*

4.2

1	38,12 m 2,8 106,736		**SUPERSTRUCTURE / *BOBOU*** Centre line for superstructure / *Middellyn van boboustruktuur* 2 x 12,5 = 25 000 2 x 7 = 14 000 Subtotal/*Subtotaal* = 39 000 Minus 4 x 220 = 880 Total/*Totaal* = 38,12 m^2 Centre line of superstructure is 25,0 m *Middellyn van boboustruktuur is 25,0 m* Height of superstructure is 2 800 mm *Hoogte van boboustruktuur is 2 800 mm*
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4.3				**DEDUCTIONS / *AFTREKKINGS*** **OPENINGS / *OPENINGE*** **WINDOWS / *VENSTERS***
	3			3 @ 2,5 x 65 = 3,75
	2			Doors/*deure* 2 x 1 = 2 x 2 x 1 = 4 m^2
	2			
				Total area of openings / *Totale oppervlak van openinge* Windows / *Vensters* = 11,50 Doors / *Deure* = 400 Total / *Totaal* = 15,25
	2	7,75 50 3 875		Total number of bricks to fall away at openings/ *Totale aantal stene wat wegval by die openinge* = 3 875
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VRAAG 5

5.1
5.1.1 Kons. (2)
5.1.2 I.C. (2)
5.1.3 I.L. (2)
5.1.4 V.P. (2)
5.1.5 C.E. (2)

5x2=(10)

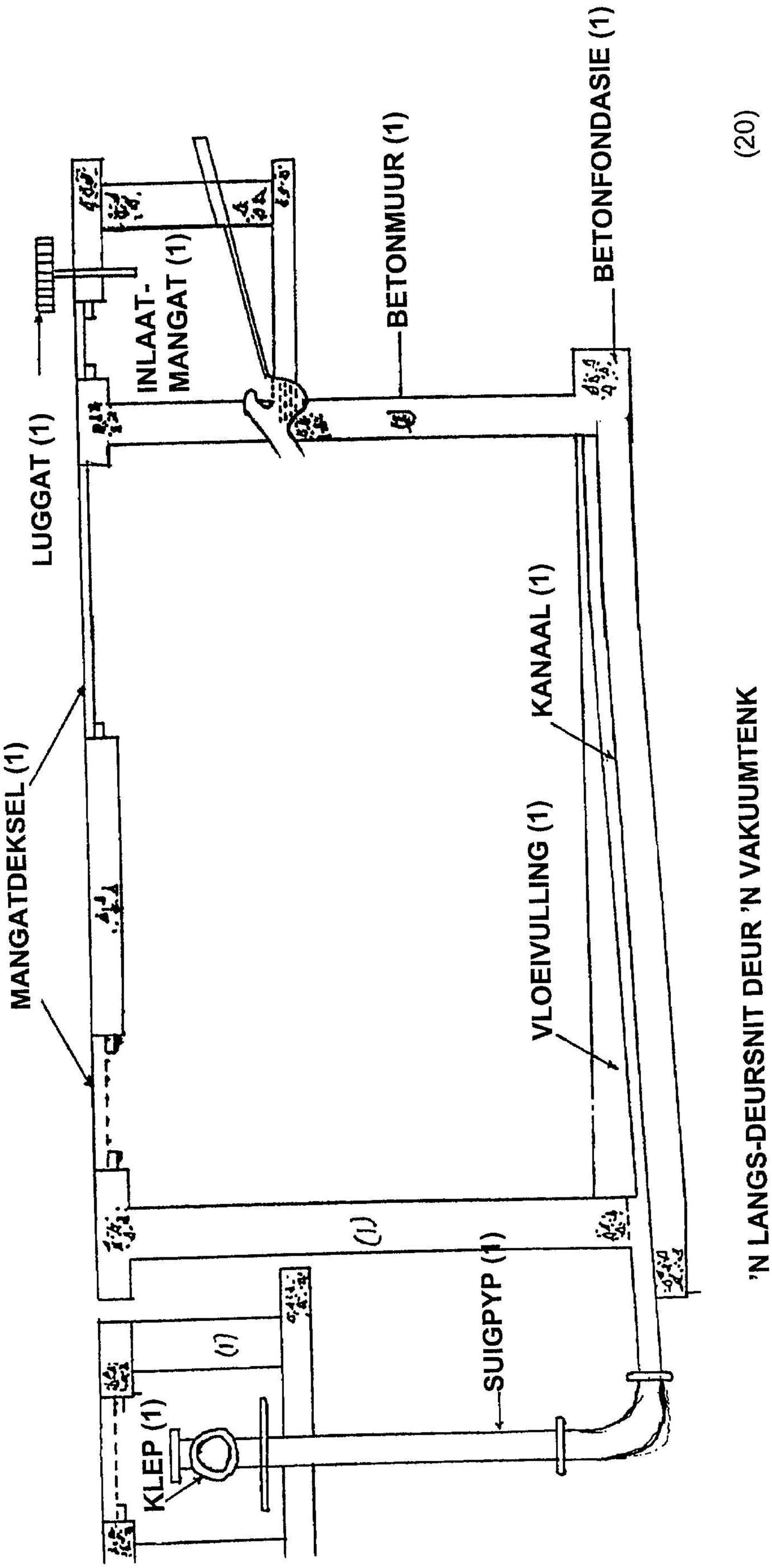
5.2
- Rubberproppe moet in alle openinge geplaas word. (2)
- Alle afvoerpype moet vol water gemaak word. (2)
- 'n Manometer met druklug-toebehore moet geïnstalleer word. (2)
- Lug moet in die riool ingepomp word totdat die manometer 'n druk van 50 mm registreer. (2)
- Indien die riool lugdig is, sal die manometer 'n konstante druk registreer. (2)

5x2=(10)

5.3
- 'n Buigbare pyp word met die klep van die vakuumtenk verbind. (3)
- Die lug in die tenk word uitgepomp. (3)
- Die inhoud van die vakuumtenk word d.m.v. atmosferiese druk uitgesuig. (4)

(10)

VRAAG 5.4



'N LANGS-DEURSNIT DEUR 'N VAKUUMTENK

(20)
[50]

VRAAG 6

6.1.1 (1) Afkamp van 'n perseel of gedeelte daarvan om te keer dat los grond (sand) ontsnap. (2)

(2) Afkeer van walle van vore en algemene uitgrawings. (2)

(3) Vorming van opgaardamme, dit is waterdigte ruimtes wat nodig is vir die oprigting van fondasies in of onder water. (2)

(4) Bou van keerwalle in dokke en soortgelyke werke. (2)

(5) Vir kus-keerwalle om erosie te voorkom. (2)

(6) Vir die beskerming van 'n rivieroewer teen erosie. (2)

Enige drie antwoorde 3x2=(6)

6.1.2 (1) Houtpale (3)

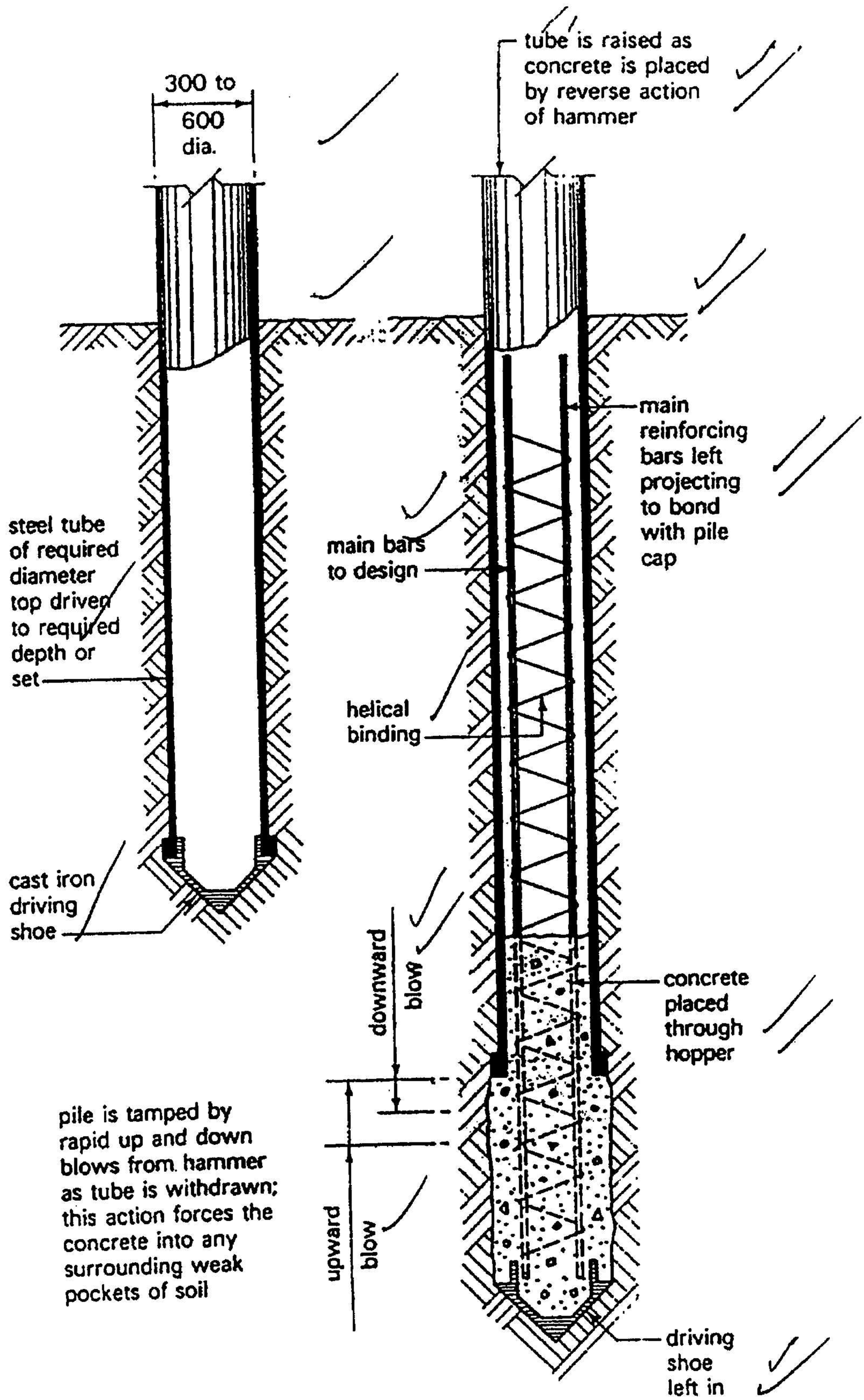
(2) Betonpale (3)

(3) Staalpale (3)

(4). Asbespale (3)

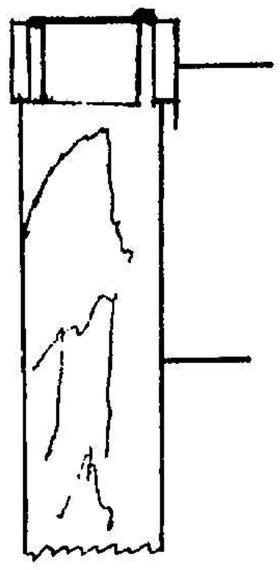
3x4=(12)

QUESTION / *VRAAG* 6.2



Vibro cast *in situ* pile (24)

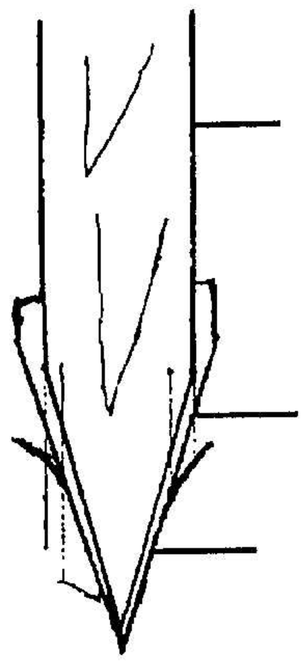
QUESTION / *VRAAG* 6.3



Steel Pile Cap/ ✓✓
Staal-slagmus

Wooden Pile/✓
Houtstapel✓

Top of Wooden Pile/
Top van Hout-heipaal



Wooden Pile/✓
Hout-heipaal

Steel Pile Shoe/✓
Staalheipaal-skoen

Steel Pile Anchors/✓✓
Staalheipaalankers

Bottom of wooden pile/
Onderkant van hout-heipaal

(8)
[50]