GAUTENG DEPARTMENT OF EDUCATION
SENIOR CERTIFICATE EXAMINATION

POSSIBLE ANSWERS FOR : BRICKLAYING AND PLASTERING SG

QUESTION 1

1.1 Limestone and shale mixed together.
Mixture fired at high temperature where clinkers are formed.
The clinkers are then ground to a fine powder. **[6]**

1.2
- Ordinary Portland Cement
- Rapid Hardening Cement
- Portland Blastfurnace Cement
- Portland Cement 15 SL
- Sulphate Resistant Cement
- High Alumina Cement
- White Cement (Five of the above.) 5x1=**[5]**

1.3
- Prepare a mixing platform. (1)
- Measure and spread the sand on the platform. (1)
- Spread the cement evenly over the sand and mix the two until the mixture is uniform in colour. (3)
- Spread out the mixture and add water gradually while mixing until a consistency of thin porridge is achieved. (3)
- Spread out the mixture, distribute the stone over this and mix thoroughly until the colour and consistency of the concrete is uniform throughout. (3)

1.4
- Retaining forms in position – leaving the formwork in place. (2)
- Ponding – covering surface with water. (2)
- Covers – sand, earth, sand which are kept wet. (2)
- Water – sprinkling or spraying with water. (2)
- Liquid curing compounds – forms moisture-retaining membrane on the concrete surface. (2)

1.5 Equipment:
- A metal mould of a conical shape with both ends open. (1)
- Metal rod 60 cm long and 16 mm in diameter. (1)
- A base plate of mild steel. (1)
- A trowel. (1)

Slump test:

- Check that the inside of the mould is smooth, clean and free from set concrete. (2)
- Place the base plate on a level surface. (1)
- Place the mould on the base plate with the narrow end at the top. (2)
- Fill the cone with a sample of the concrete in four layers of 75 mm, stamping each layer 25 times with the rod. (2)
- The last layer should overfill the mould and use a trowel to level off the top. (2)
- Remove the mould vertically and carefully, allowing the concrete to subside. (2)
- Place the mould upside down next to the concrete. (1)
- Place a rule across the mould and measure the distance between the rule and the concrete. (2)

[18]

QUESTION 2

2.1 One-and-a-half brick corner in English bond.

2.2
- Flush struck
- Hollow key
- Weather struck
- Square recessed
- Tuck pointing
- Raked out

(Five of the above) 2x5=(10)

2.3 Cavity wall construction (20)

[30]

QUESTION 3

3.1 Check

(a) All connections and adjust where required. (2)
(b) All tie-ins to the building. (2)
(c) Base plates on firm ground. (2)
(d) Scaffold boards for traps. (2)
(e) Access points and ladders. (2)
(f) Toe boards and guard rails. (Five of the above.) **(10)**

3.2
3.2.1 Uprights are at least 1,04 m apart. (2)
3.2.2 Putlogs appear at 1 m centres. (2)
3.2.3 Double putlogs at joints in boards and boards do not overlap more than 150 mm. (2)
3.2.4 All splices are improved by short tubes. (2)
3.2.5 Diagonal bracings are secure and in correct positions. (2)
3.2.6 Putlogs are bent and are secure at the flat which are inserted in the brickwork. (2)
3.2.7 Uprights or standards are firm on sound timber on the ground. (2)
3.2.8 Base spate is used or present. (2)

3.2.9 Diagonal bracings are secure at points where they cross ledgers and/or uprights. (2)
3.2.10 At all windows the ledgers should pass through and be clipped inside the wall. (2)
3.2.11 Ledgers are placed in position for workmen to mount scaffold and are secure on the ground and at the top and centre. (2)
3.2.12 Boards are in sound condition and position. (2)
3.2.13 Toeboards are in position and secure. (2)
3.2.14 Guard rails are in a good position and secure. (2)
3.2.15 Clear passageway on working area; on the scaffold not less than 400 mm. (2)
3.2.16 All parts are well maintained and couplings are oiled and in good condition. (Ten of the above) 10x2=**(20)**

3.3 3.3.1 Sole plate
3.3.2 Longitudinal bracing
3.3.3 Ledger bracing
3.3.4 Standard
3.3.5 Ledgers
3.3.6 Guardrail
3.3.7 Toe board
3.3.8 Transoms
3.3.9 Through tie
3.3.10 Scaffold boards 2x10=**(20)**

QUESTION 4

4.1 To remove smoke and gases from the fireplace. **(4)**

4.2
- The direction of the wind in relation to the fire outlet (3)
- The shape of the building (3)
- The closeness of trees or other buildings (3)
- The position of door and window openings (3)
- The slope of the roof (3)

(15)

4.3 TOP VIEW OF THE HEARTH
- Correctness (8)
- Detail (16)
- Neatness (4)
- Scale (3)

(31)
[50]

QUESTION 5

5.1 (a) Overall impression (3)
Detail (12)
Neatness (2)
(b) Connection of pipes (3)
(20)

5.2 Essentials of a good trap.

(a) An efficient "seal" carrying from 38,1 mm to 76 mm in depth according to the purpose to be served. (2)
(b) Must be as close as possible to self-cleaning. (2)
(c) Must not retard the flow of water unduly. (2)
(d) Should retain a minimum amount of water consistent with its purpose. (2)
(e) Should be provided with means of access where possible. (2)
(10)

5.3 A septic tank digests by bacterial action and passes the effluence out to be absorbed by the soil. (4)

A vacuum tank is only a storage tank and has to be emptied regularly by tanker. (4)

5.4 4,5 meters from boundary (6)
3 meters from dwelling (6)
Under no circumstances to be placed under driveway (6)
(26)
[56]

QUESTION 6

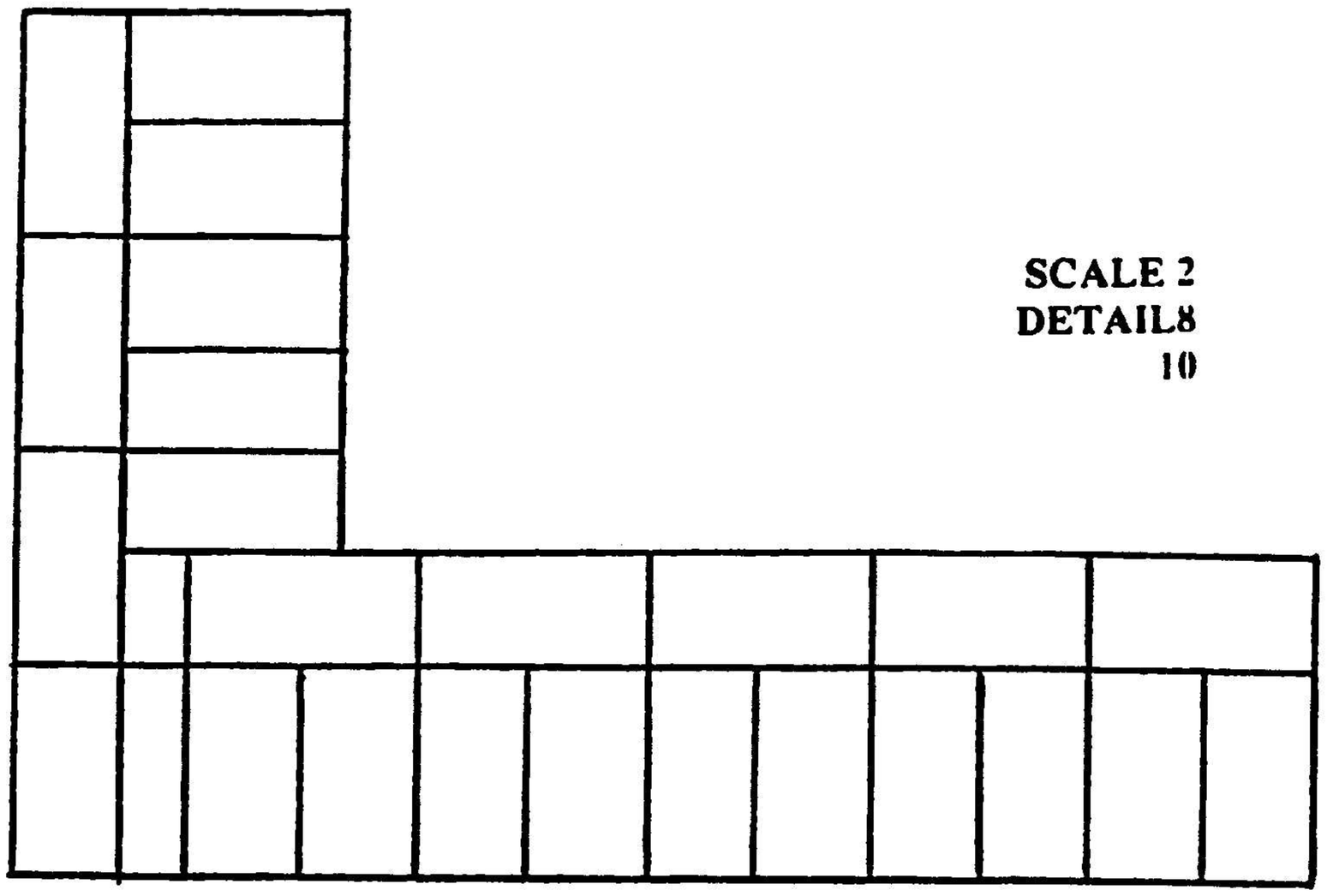
Finding centre line – a brick wall

3000 – 2/240	=	2520	(4)
4000 – 2/240	=	3520	(4)
2/2520	=	5040	(3)
2/3520	=	7040	(3)
	=	12 080	(3)
less 4/220	=	11 200	(3)

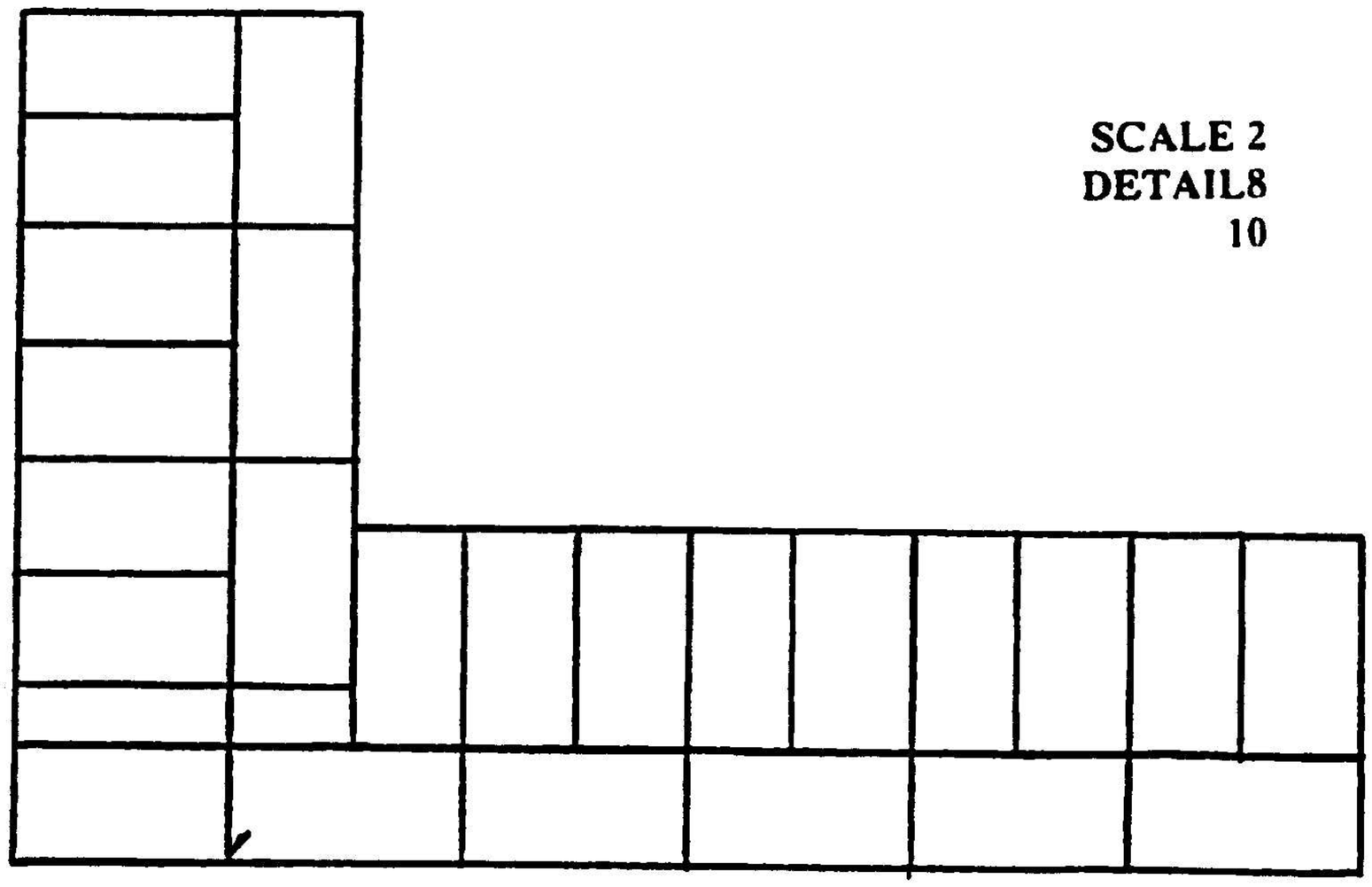
Area of wall	=	11,20 x 2,40	(3)
	=	26,88 m^2	(3)
Area of opening	=	1 m x 2 m	(2)
	=	2 m^2	(2)
Total area of wall	=	26,88 m^2 - 2 m^2	(3)
	=	24,88 m^3	(2)
Number of bricks	=	24,88 x 110	(4)
	=	2736,8	(2)
	=	2737 bricks	(3)
			[44]

TOTAL: 300

ANSWER QUESTION 2.1



SCALE 2
DETAIL8
10



SCALE 2
DETAIL8
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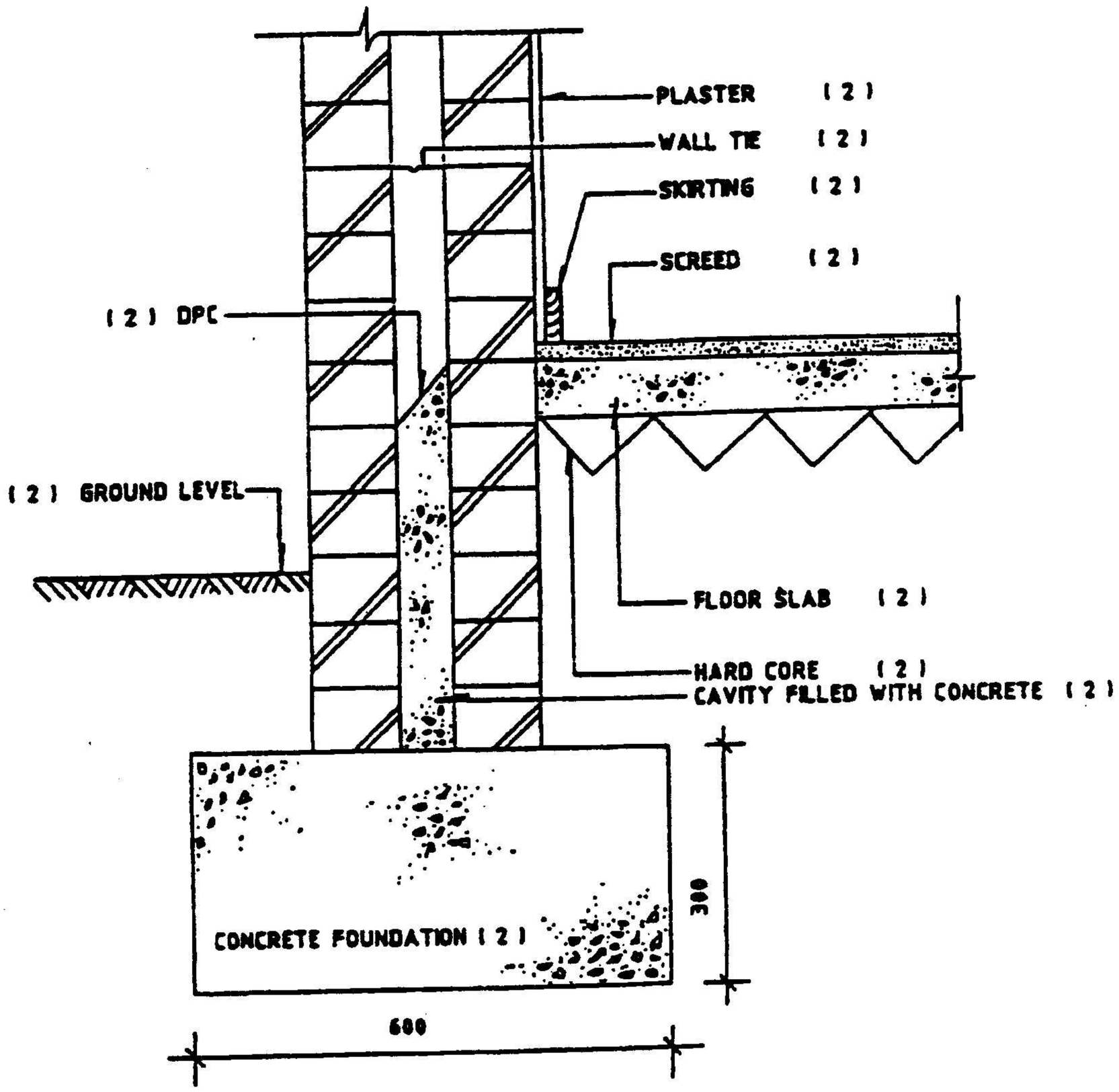
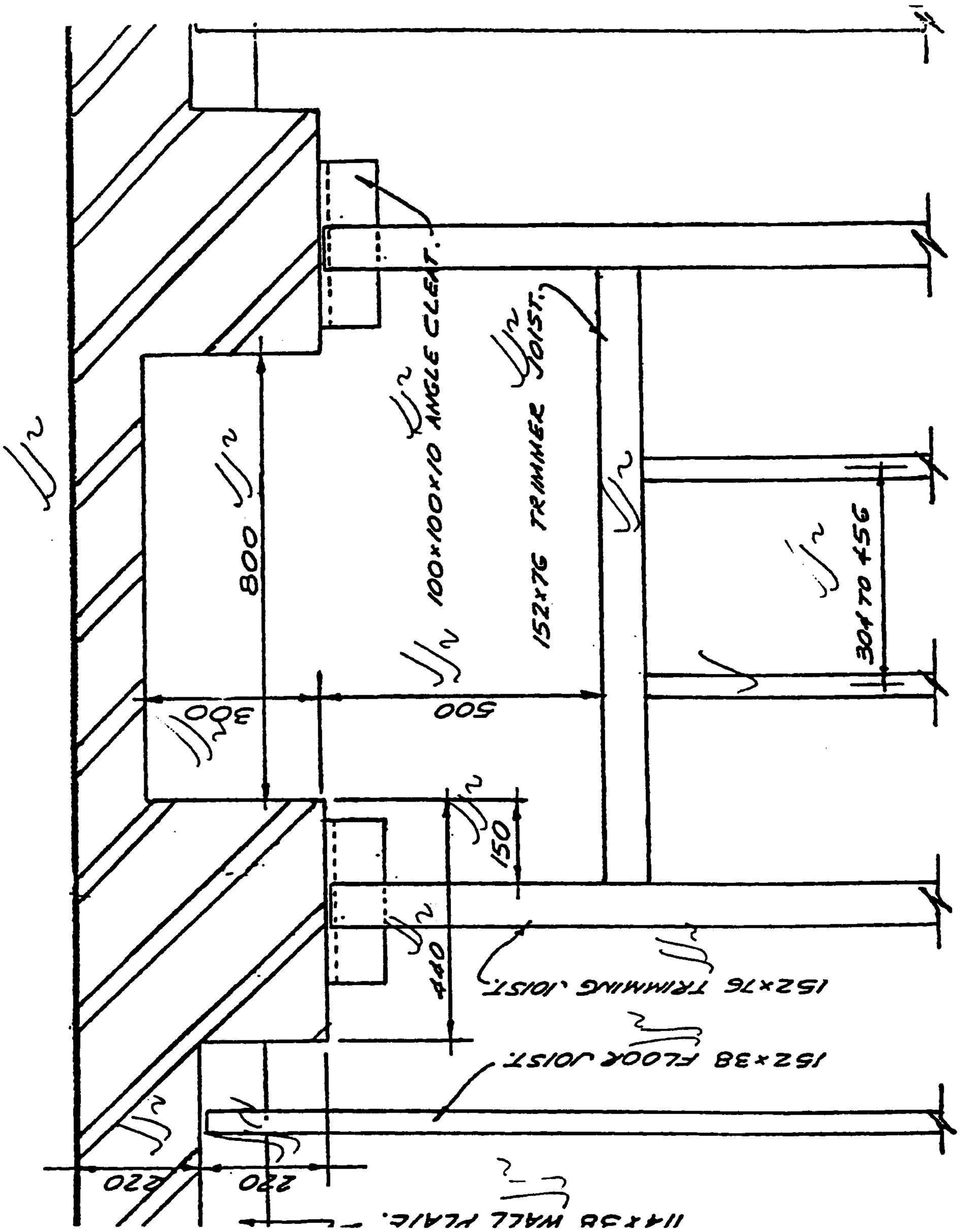
ANSWER QUESTION 2.3



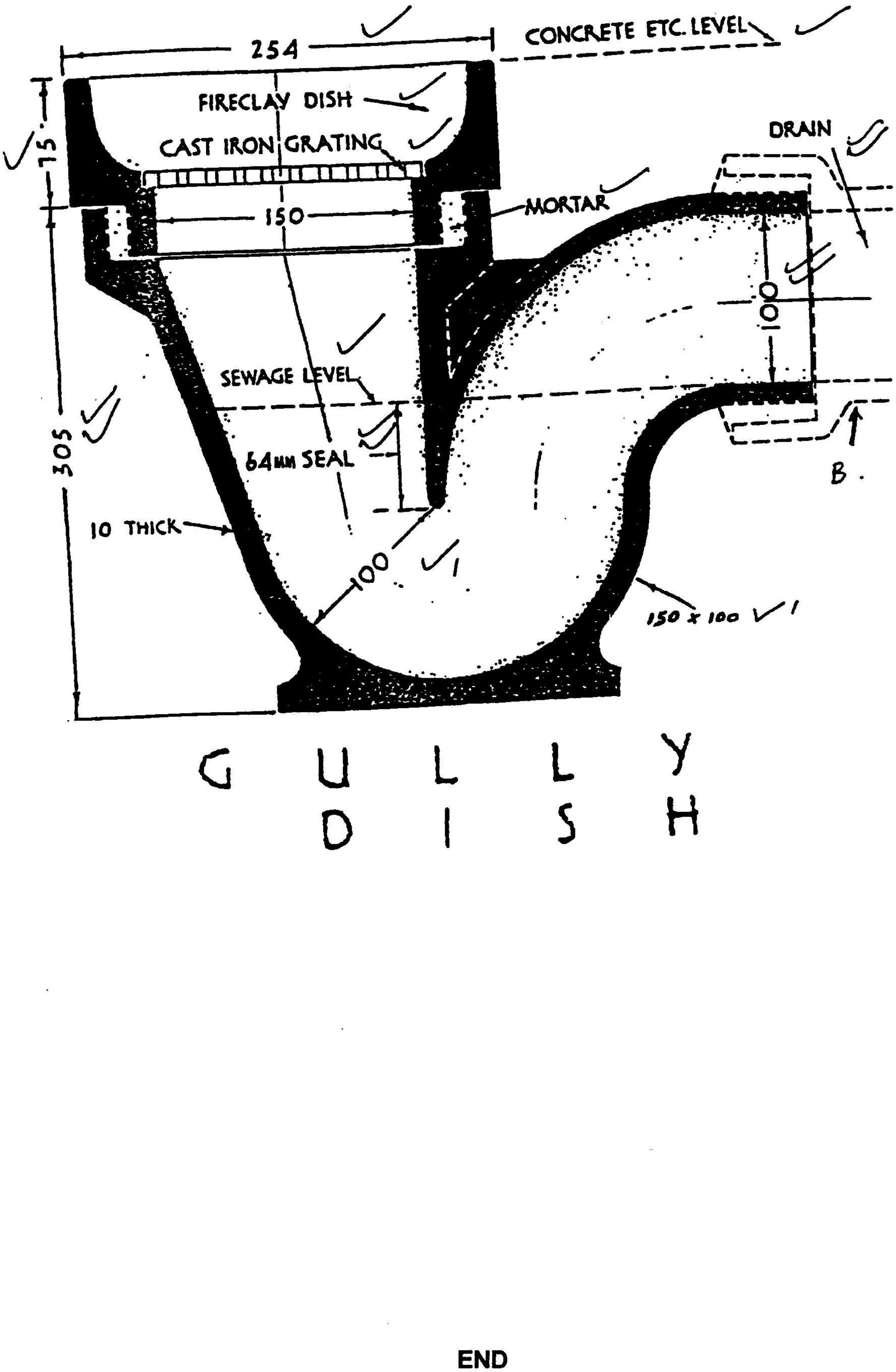
CAVITY WALL CONSTRUCTION

(20)

ANSWER QUESTION 4.3



ANSWER QUESTION 5.1



END

GAUTENGSE DEPARTEMENT VAN ONDERWYS
SENIORSERTIFIKAAT-EKSAMEN

MOONTLIKE ANTWOORDE VIR : STEENMESSEL EN PLEISTERWERK SG

VRAAG 1

1.1 Kalksteen en skalie word saam gemeng. (2)
Mengsel word teen 'n hoë temperatuur gebrand tot klinkers. (2)
Die klinkers word nou tot 'n fyn poeier gemaal. (2)
[6]

1.2
- Gewone Portland sement
- Snelhard sement
- Portland hoogoondsement
- Portland sement 15 SL
- Sulfaatbestande sement
- Hoog alluinaardryke sement (alumina)
- Wit sement

(Vyf van bg) 5x1=**[5]**

1.3
- Berei 'n mengplatvorm voor. (1)
- Meet en versprei die sand oor die platvorm. (1)
- Sprei die sement egalig oor die sand en meng die twee tot die mengsel egalig van kleur is. (3)
- Sprei die mengsel uit en voeg water geleidelik terwyl mengsel gemeng word tot 'n samestelling van 'n dun pap verkry word. (3)
- Sprei die mengsel uit, voeg die klip by en meng deeglik tot die kleur en vastigheid dwarsdeur die betonoppervlak egalig is. (3)

1.4
- Behou vorms in posisie – laat die vormwerk in sy plek. (2)
- Damming – bedek oppervlak met water. (2)
- Bedekking – sand, grond, sand wat nat gehou word. (2)
- Water – sprinkel of sproei met water. (2)
- Vloeistof nabehandelingsmiddel – vorm 'n vogdigte membraan op die betonoppervlakte. (2)

1.5 Apparaat:

- 'n Metaalvorm met 'n keëlvormige fatsoen oop aan albei kante. (1)
- 'n Metaalstaaf 60 cm lank en 16 mm in deursneë is. (1)
- 'n Voetplaat van sagte staal. (1)
- 'n Troffel. (1)

Saktoets:

- Maak seker dat die binnekant van die vorm glad, skoon en vry is van gestette beton. (2)
- Plaas die voetplaat op 'n waterpas oppervlakte. (1)
- Plaas die vorm op die voetplaat met die nou kant na bo. (2)
- Vul die vorm met 'n monster van die beton in vier lae van 75 mm. Stamp elke laag 25 keer met die staaf. (2)
- Die laaste laag in die vorm moet oorvol wees en gebruik nou die troffel om die bokant gelyk te maak. (2)
- Verwyder die vorm vertikaal versigtig en laat toe dat die beton sak. (2)
- Plaas die vorm onderstebo langs die beton. (1)
- Plaas die liniaal dwarsoor die vorm en beton en meet die distansie tussen die liniaal en beton. (2)

[18]

VRAAG 2

2.1 'n Anderhalfsteen hoek in Engelse verband.

2.2
- Afstrykvoeg (Vlakvoeg)
- Hol uitgestrykte voeg
- Drupvoeg
- Vierkantige uitstrykvoeg
- Rifvoeg
- Uitgekrapte diepvoeg

(Vyf van bg) 2x5=(10)

2.3 Spoumuurkonstruksie (20)

[30]

VRAAG 3

3.1 Sien na

(a) Alle verbindings en verstel waar nodig. (2)
(b) Alle verbindings na die gebou. (2)
(c) Voetplate op vaste grond. (2)
(d) Steierplanke vir valstrikke. (2)
(e) Toegangspunte en lere. (2)
(f) Stootstukke en skutrelings (Vyf van bg) (10)

3.2
3.2.1 Regopstanders moet minstens 1,04 m van mekaar wees. (2)
3.2.2 Kortelings 1 m senters van mekaar. (2)
3.2.3 Dubbelkortelings waar die planke bymekaar kom en planke mag nie meer as 150 mm oorvleuel nie. (2)
3.2.4 Splitlasse word verbeter met kort pype. (2)
3.2.5 Diagonale spanstukke is vasgemaak en in die korrekte posisie. (2)
3.2.6 Kortelings is gebuig en veilig aan die plakkant wat in die muur vas is. (2)
3.2.7 Regop standers is stewig op gawehout op die grond. (2)
3.2.8 Voetplate word gebruik of aangebied. (2)

3.2.9 Diagonale spanstukke is bevestig by punte waar hulle kruis met steierbalke of standers. (2)
3.2.10 By alle vensters moet die steierbalke deurgaan en aan die binnekant van die muur verbind word. (2)
3.2.11 Steierbalke word in posisie geplaas vir die werksmense om die steier te bestyg en word verbind met die onderkant, middel en aan die bokant van die steier. (2)
3.2.12 Steierplanke is gaaf en in posisie. (2)
3.2.13 Stootstukke is in posisie en verbind. (2)
3.2.14 Skutrelings is in 'n goeie posisie en verbind. (2)
3.2.15 'n Oop toegangsweg op die werksarea op die steier nie minder as 400 mm nie. (2)
3.2.16 Alle dele is goed in stand gehou en alle koppelstukke is geolie en in 'n goeie toestand. (10 van bg) 2x10=**(20)**

3.3 3.3.1 Voetplaat
3.3.2 Landsverspanning
3.3.3 Steierbalkverspanning
3.3.4 Regopstander
3.3.5 Steierbalke
3.3.6 Skutrelings
3.3.7 Stootstuk
3.3.8 Kalfsteun
3.3.9 Deurloopverbinding
3.3.10 Steierplanke 2x10=**(20)**

VRAAG 4

4.1 Om alle rook en gasse te verwyder van die kaggel. **(4)**

4.2
- Die rigting van die wind met betrekking tot die vuuruitlaat (3)
- Die vorm van die gebou (3)
- Die nabyheid van bome of ander geboue (3)
- Die posisie van die deur en vensteropeninge (3)
- Die skuinste van die dak (3)

(15)

4.3 BO-AANSIG VAN DIE HERD.
- Korrekheid (8)
- Detail (16)
- Netheid (4)
- Skaal (3)

(31)
[50]

VRAAG 5

5.1	(a)	Algehele indruk	(3)
		Detail	(12)
		Netheid	(2)
	(b)	Aansluiting van pype	(3)
			(20)

5.2 Kenmerke van 'n goeie sperder.

(a)	'n Doeltreffende "seël" van 38,1 mm tot 76 mm variasies in diepte volgens die doel van die gebruik.	(2)
(b)	Moet so naby as moontlik aan selfreiningend wees.	(2)
(c)	Moet nie die water onnodig vertraag nie.	(2)
(d)	Moet 'n minimum water behou in ooreenstemming met sy doel.	(2)
(e)	Moet voorsien word van 'n toeganspunt waar moontlik.	(2)
		(10)

5.3 'n Septiese tenk se inhoud word verteer deur bakterië en die uitvloeisel word deur die grond geabsorbeer. (4)

'n Vakuumtenk is slegs 'n stoorplek en moet gereeld leeg gemaak word deur 'n tenkwa. (4)

5.4	4,5 m vanaf die grenslyn	(6)
	3 meter vanaf die woning	(6)
	Onder geen omstandighede geplaas onder 'n inrypad.	(6)
		(26)
		[56]

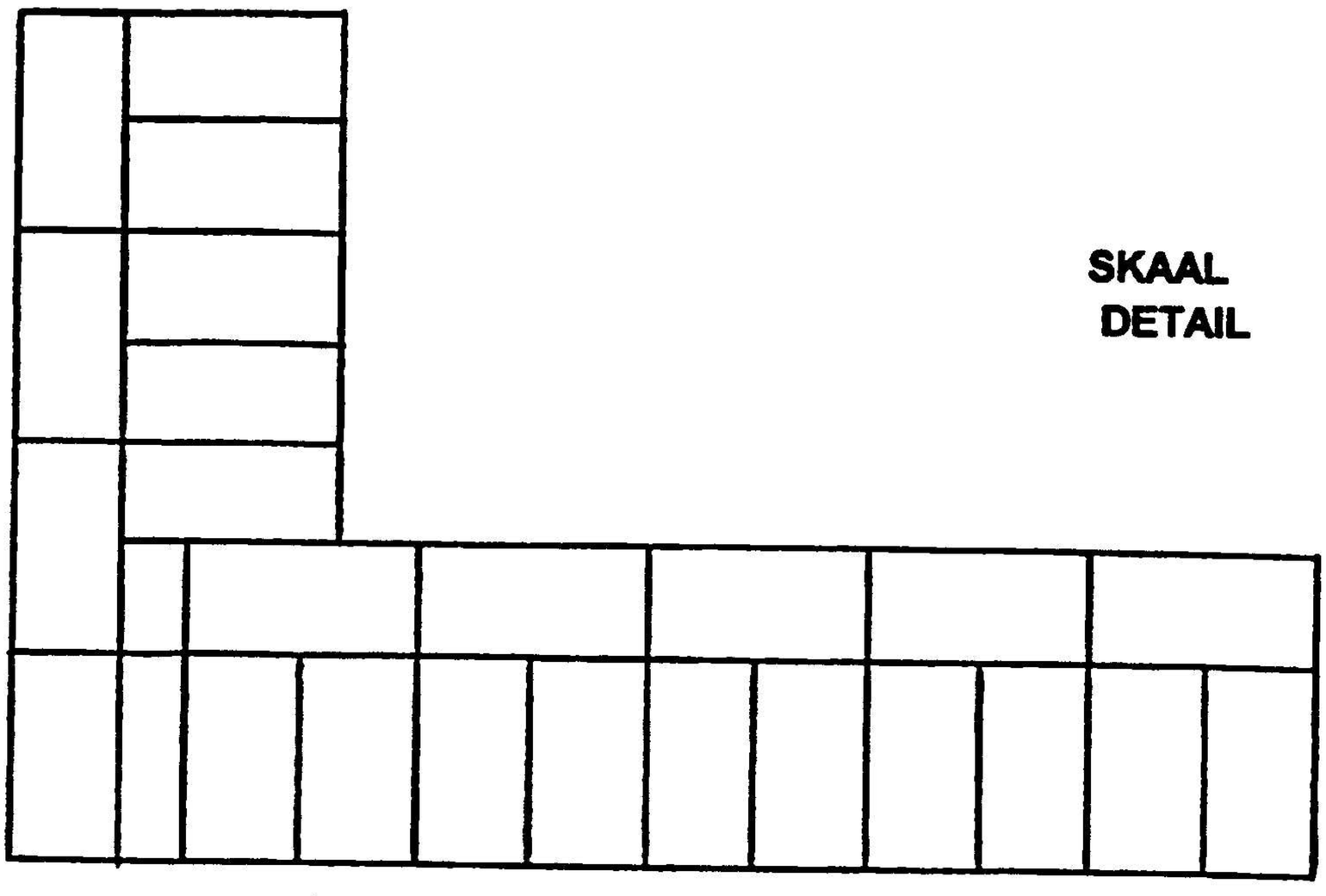
VRAAG 6

Vind die hartlyn – 'n steenmuur

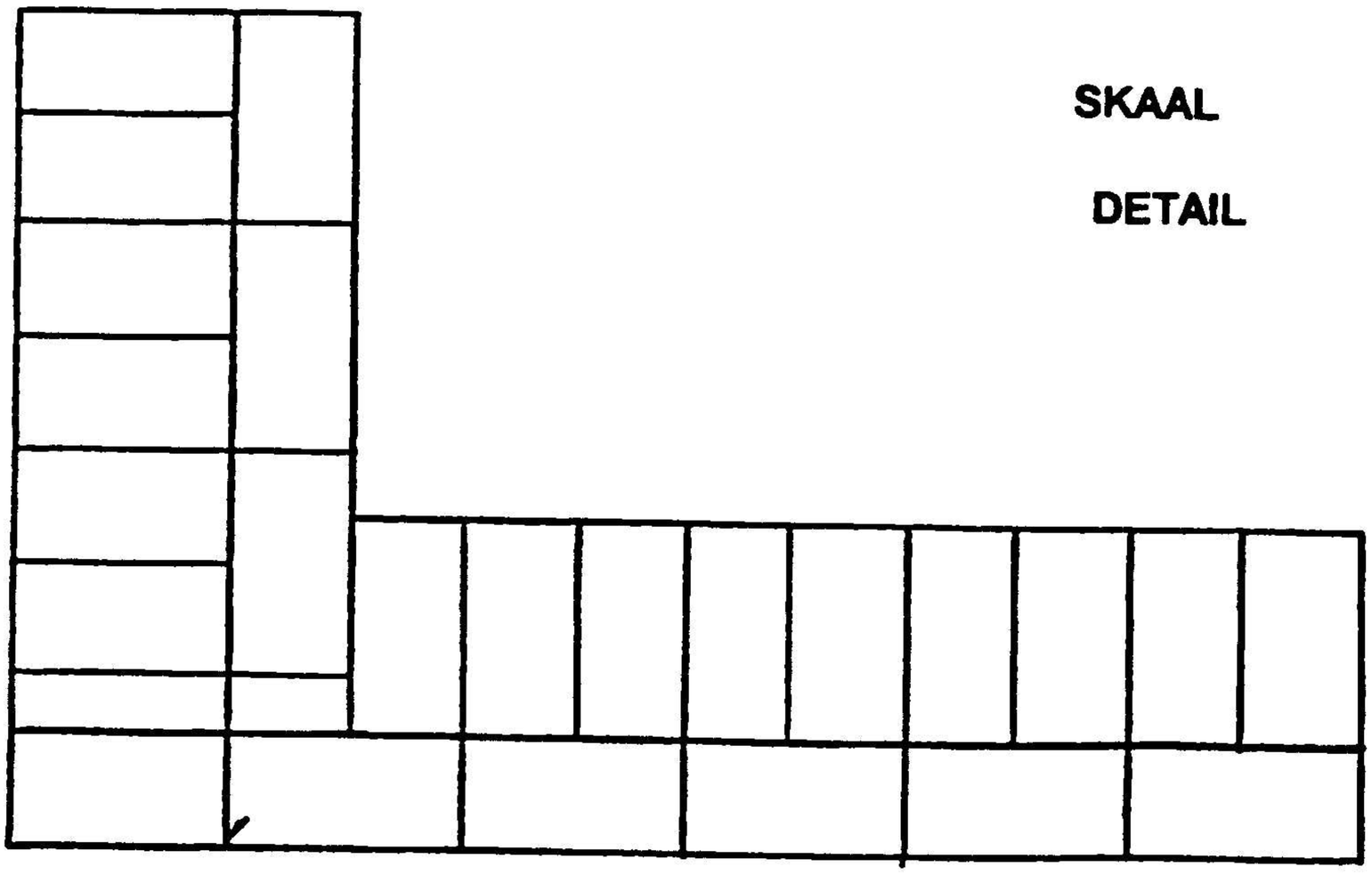
3000 – 2/240	=	2520		(4)
4000 – 2/240	=	3520		(4)
2/2520	=	5040		(3)
2/3520	=	7040		(3)
	=	12 080		(3)
min 4/220	=	11 200		(3)
Oppervlakte van muur	=	11,20 x 2,40		(3)
	=	26,88 m^2		(3)
Oppervlakte van opening	=	1 m x 2 m		(2)
	=	2 m^2		(2)
Totale oppervlakte van muur	=	26,88 m^2 - 2 m^2		(3)
	=	24,88 m^3		(2)
Aantal stene	=	24,88 x 110		(4)
	=	2736,8		(2)
	=	2737 bricks		(3)
				[44]

TOTAAL: 300

ANTWOORD VRAAG 2.1



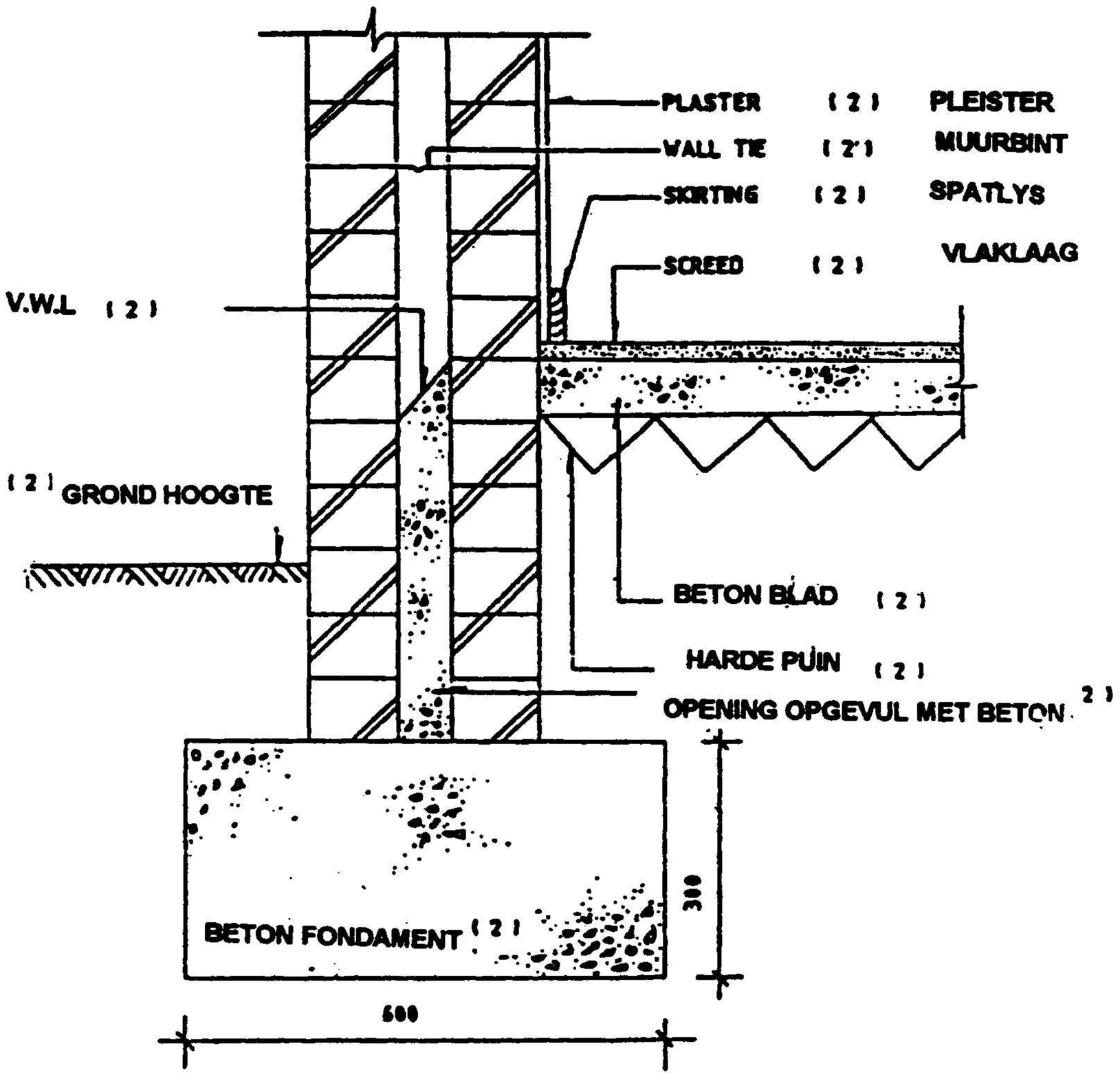
SKAAL
DETAIL



SKAAL

DETAIL

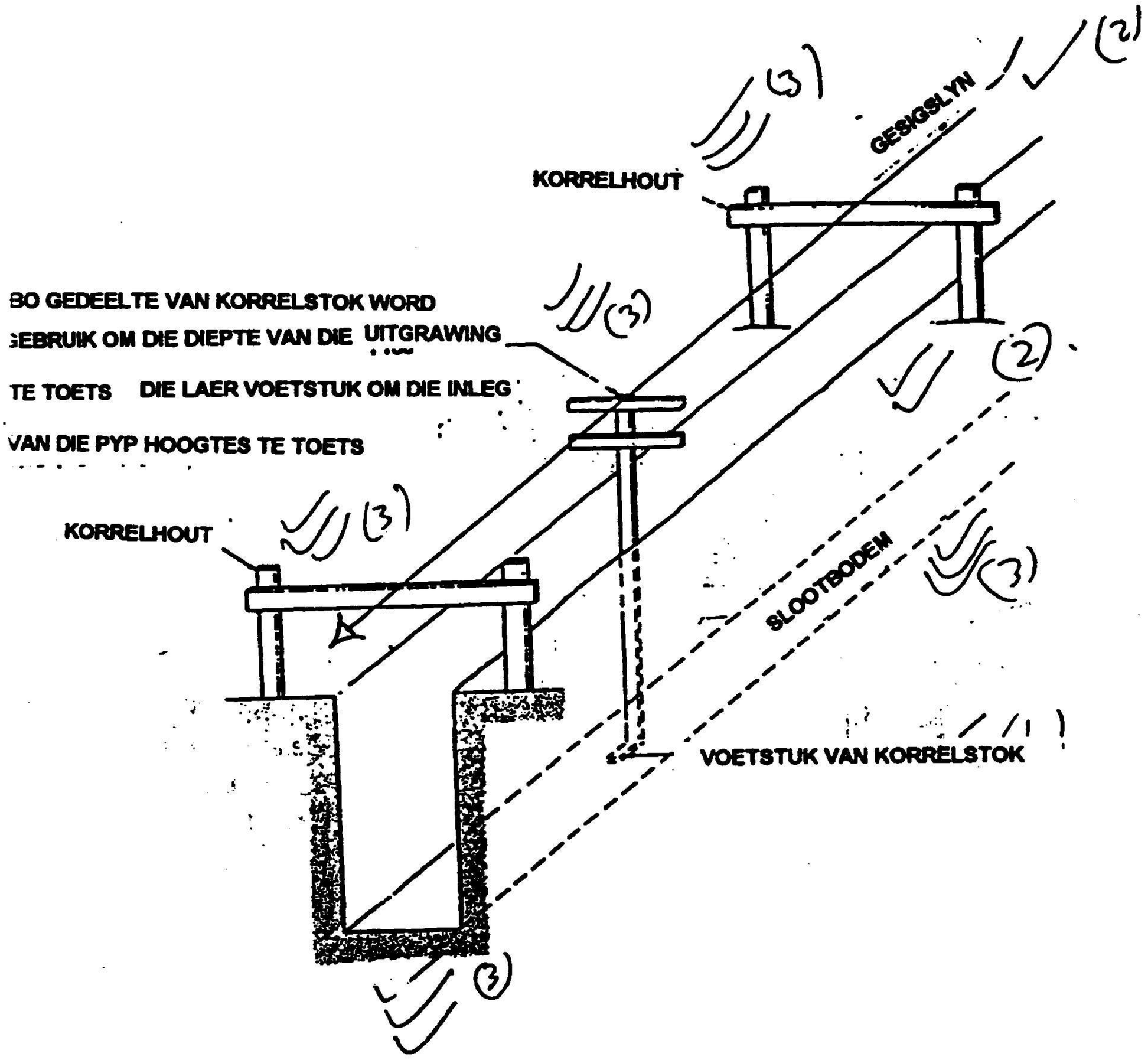
ANTWOORD VRAAG 2.3



SPOUMUUR KONSTRUKSIE

(20)

ANTWOORD VRAAG 3.3



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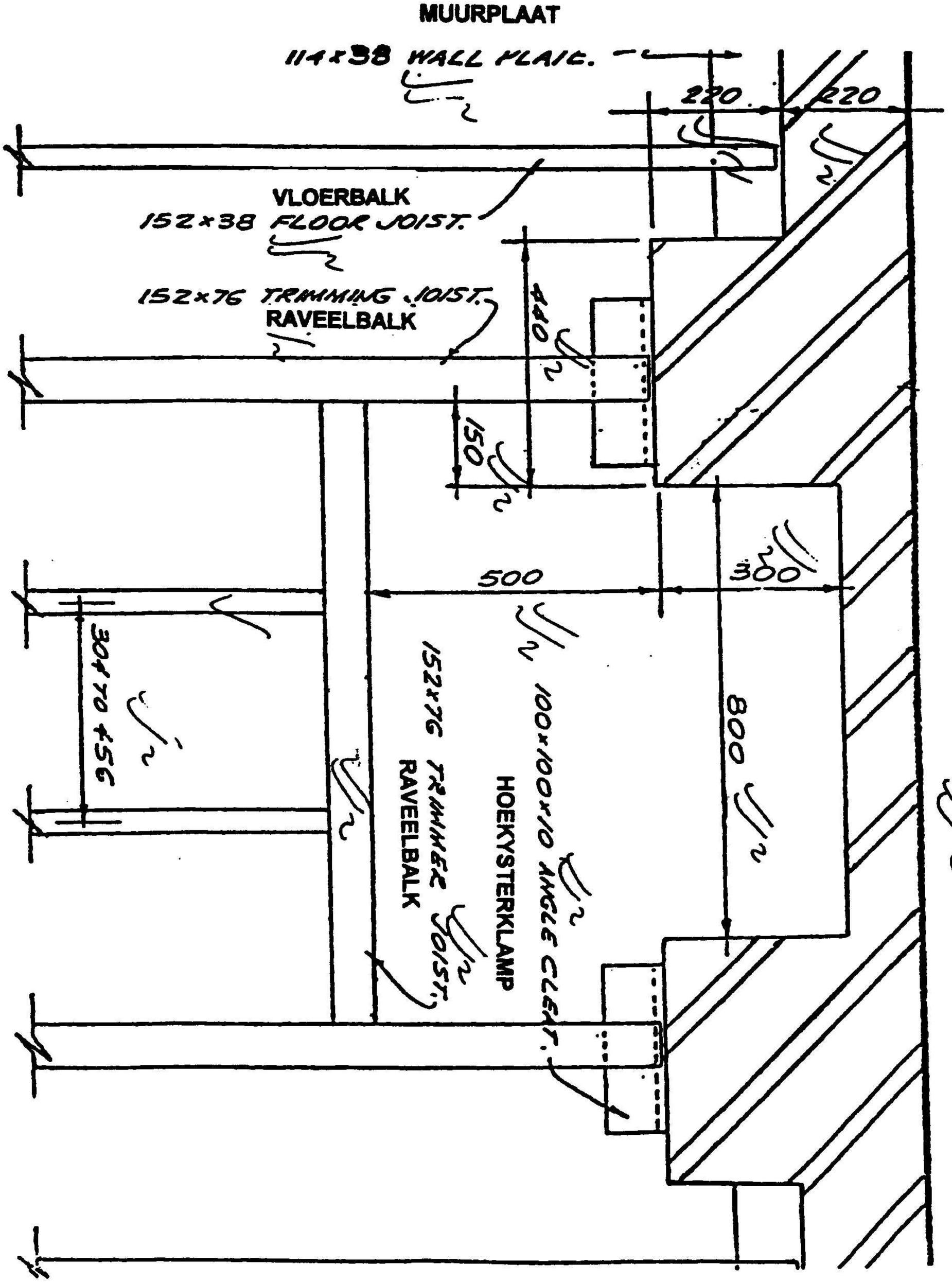

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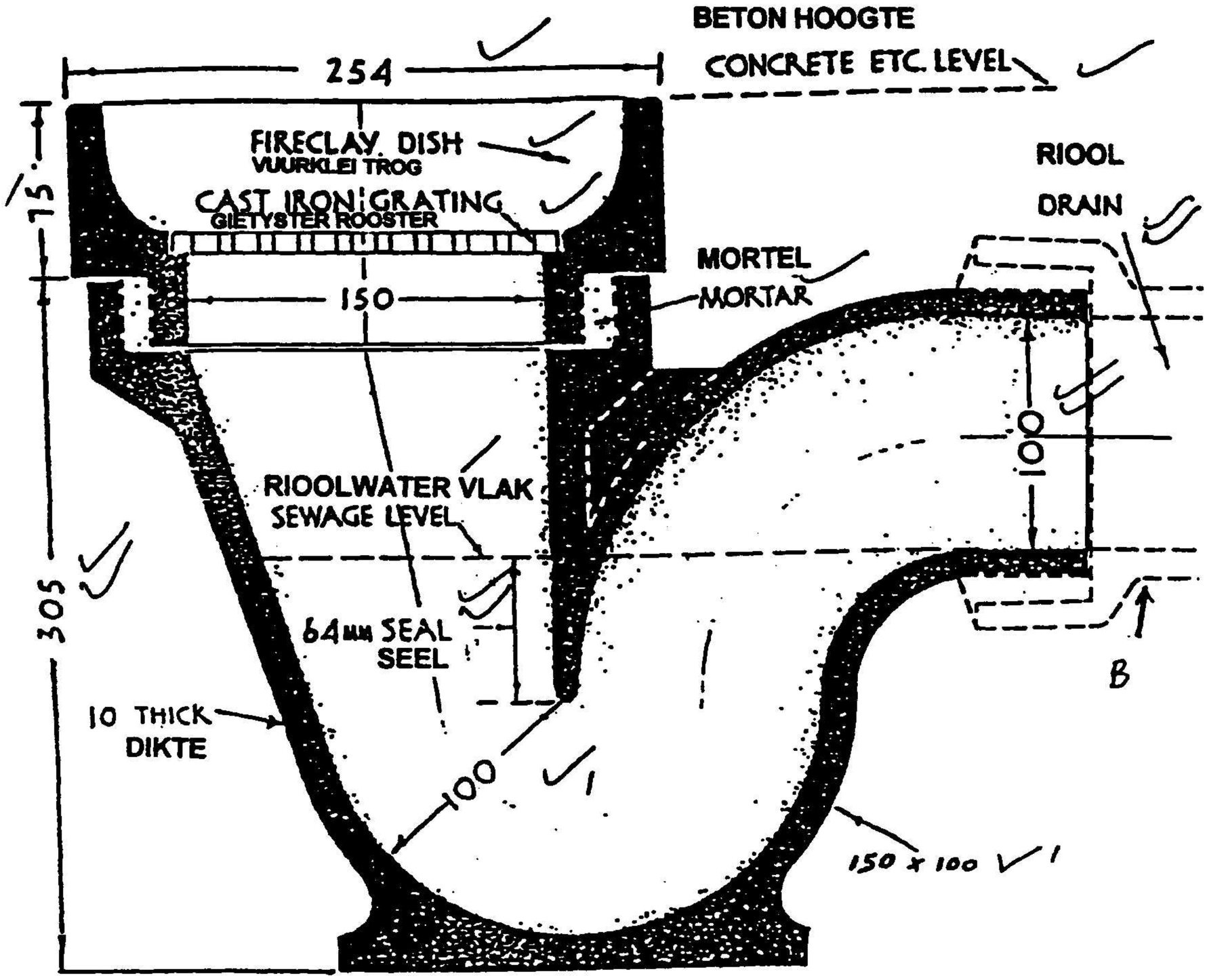

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