

POSSIBLE ANSWERS FOR:**MARKS: 300****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 ground to a fine powder. (6)
- 1.2 Ordinary Portland Cement**
Rapid Hardening Cement
Portland Blast furnace Cement
Portland Cement 15SL
Sulphate Resistant Cement
High Alumina Cement
White Cement (Five of the above) 1x5=(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) (11)
- 1.4 Retaining forms in position – leaving the formwork in place**
Ponding – covering surface with water
Covers – sand, earth, sand which is kept wet
Water – sprinkling or spraying with water
Liquid curing compounds – form moisture retaining membrane on the concrete surface 2x5=(10)

- 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, tamping each layer 25 times with a rod.** (2)
 - The last layer should overfill the mould and use a trowel should be used 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 Check**
- (a) all connections and adjust where required,
 - (b) all tie-ins to the building.
 - (c) base plates on firm ground,
 - (d) scaffold boards for traps,
 - (e) access points and ladders.
 - (f) toe boards and guard rails.
- (Five of the above) 2x5=(10)
- 2.2**
- 2.2.1 Uprights are at least 1,04 m apart.**
 - 2.2.2 Putlogs appear at 1 m centres.**
 - 2.2.3 Double putlogs at joints in boards and boards do not overlap more than 150 mm.**
 - 2.2.4 All splices are improved by short tubes.**
 - 2.2.5 Diagonal bracings are secure and in correct positions.**
 - 2.2.6 Putlogs are bent and are secure at the flat which is inserted in the brickwork**

- 2.2.7 Uprights or standards are firm on sound timber on the ground.
 - 2.2.8 Base slate is used or present.
 - 2.2.9 Diagonal bracings are secure at points where they cross ledgers and/or uprights.
 - 2.2.10 At all windows the ledgers should pass through and be clipped inside the wall.
 - 2.2.11 Ledgers are placed in position for workmen to mount scaffold and are secure on the ground and at the top and centre.
 - 2.2.12 Boards are in sound condition and position.
 - 2.2.13 Toeboards are in position and secure.
 - 2.2.14 Guard rails are in a good position and secure.
 - 2.2.15 Clear passageway on working area; on the scaffold not less than 400 mm.
 - 2.2.16 All parts are well maintained and couplings are oiled and in good condition.
- (Ten of the above) $2 \times 10 = (20)$

2.3

- 2.3.1 Sole plate
- 2.3.2 Longitudinal bracing
- 2.3.3 Ledger bracing
- 2.3.4 Standard
- 2.3.5 Ledgers
- 2.3.6 Guardrail
- 2.3.7 Toe board
- 2.3.8 Transoms
- 2.3.9 Through tie
- 2.3.10 Scaffold boards

$2 \times 10 = (20)$

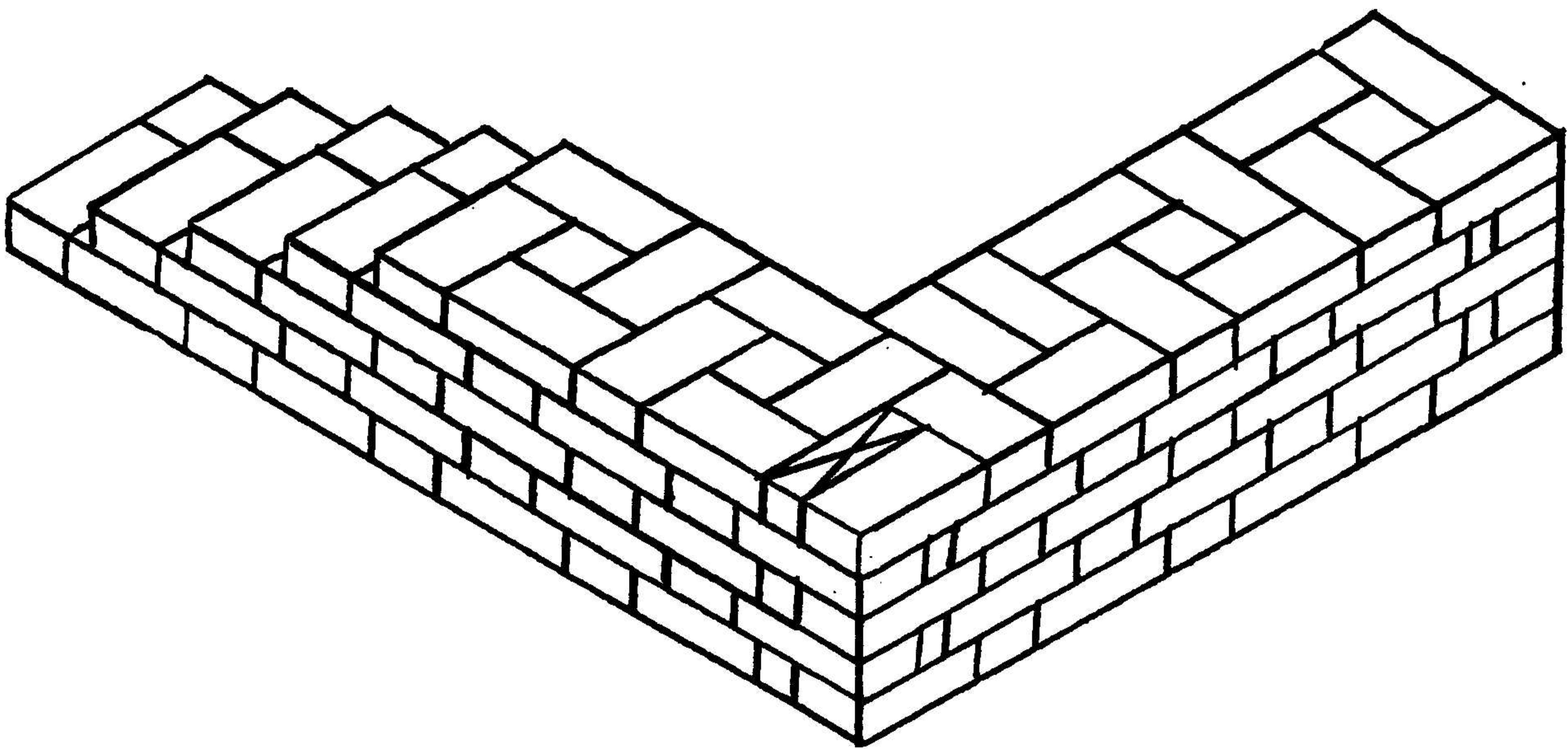
QUESTION 3

3.1

- 3.1.1 Arch face
- 3.1.2 Skewback
- 3.1.3 Arch bricks
- 3.1.4 Key brick
- 3.1.5 Extrados
- 3.1.6 Intrados
- 3.1.7 Span

$2 \times 7 = (14)$

ANSWER - QUESTION 3.2

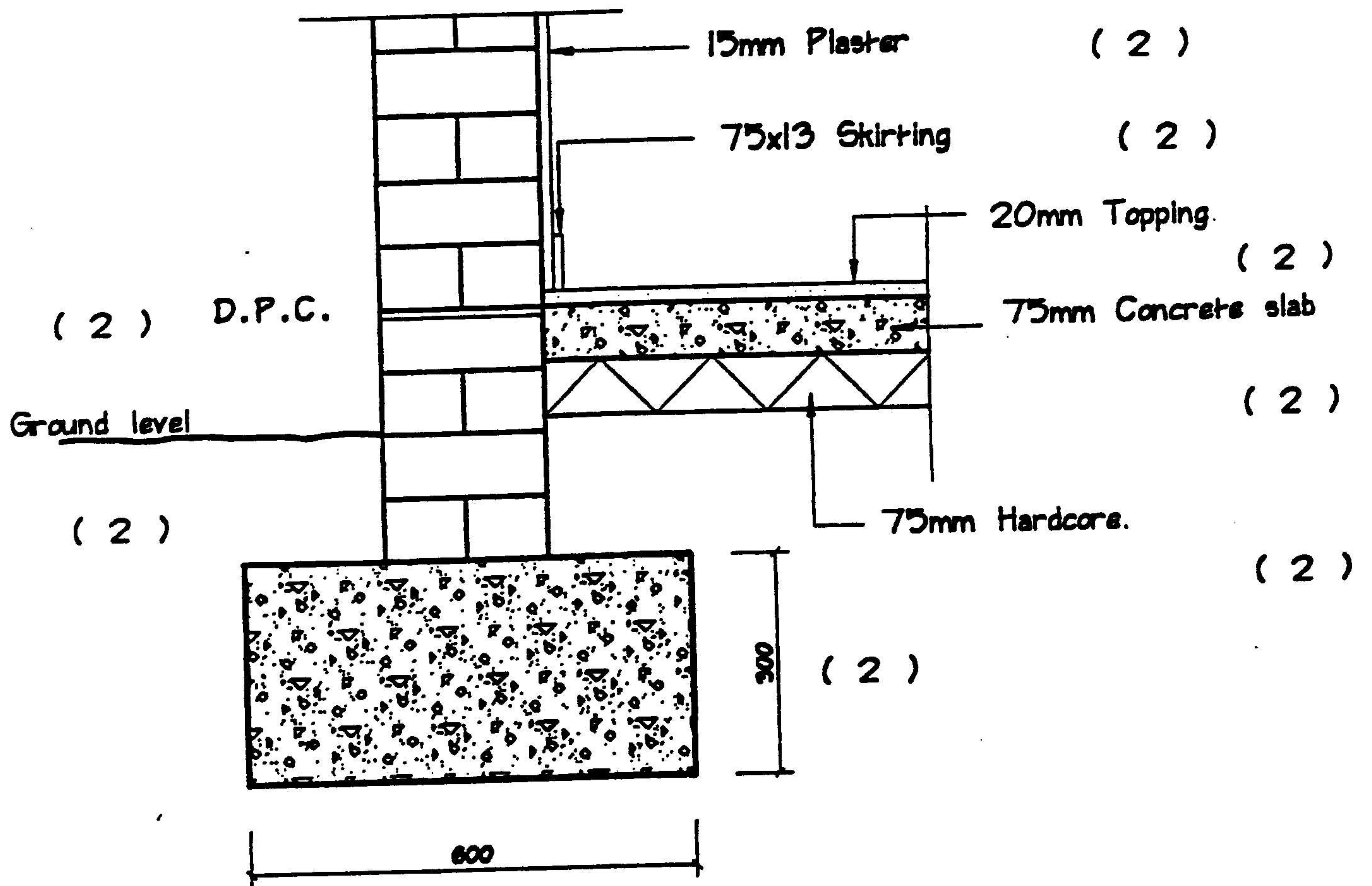


ISOMETRIC VIEW OF A CORNER BUILT IN FLEMISH BOND

SCALE 1:10

(24)

ANSWER QUESTION 3.3



SCALE 4
DETAIL 16

20

3.2 Corner in Flemish bond

Overall impression	(5)
Correct interpretation	(5)
Bonding	(4)
Neatness	(4)
Stopped end	(4)
Scale	(2) (24)

3.3 Section through a wall**QUESTION 4**

- 4.1 Work from previously obtained invert levels positioned by use of a 'dumpy-level'. (3)**
Set up sight rails straddling where the trench is to be excavated. (3)
These rails are at the upper and lower ends of the proposed trench. (3)
These rails are to be level and at a predetermined height above invert levels. (3)
Excavate trench to required working width and approximate depth. (3)
Use boning rods between sight rails, sighting over and between the rails with boning rods being used to obtain the correct depth. (4)
Work up and down trench with boning rods until the bottom of trench is even to the required fall. (3) (22)

- 4.2 VP**
DP
SWP
WWP
G **5 x 2 = (10)**

- 4. A septic tank digests the solids by bacterial action, and passes the effluent out to be absorbed by the soil. (3)**
A vacuum tank is only a storage tank and has to be emptied regularly by tanker (3)
- 4.4 Where soil is not suitable for soak pits, (3)**
Where pollution of water supply can take place, (3)

4.5

- 4.5.1 A window projecting beyond the normal face of the surrounding wall**
4.5.2 A retaining wall that lays back at a slight angle to the vertical.
4.5.3 A manhole required when land is too steep to accept normal fall of sewer
4.5.4 Accepted in place of manhole for inspection of sewer

4x4=(16)
[60]

QUESTION 5**5.1 To remove smoke and gasses from the fireplace.****(4)****5.2**

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

5 x 2 = (10)**5.3 TOP VIEW OF THE HEARTH**

* Correctness

(8)

* Detail

(16)

* Neatness

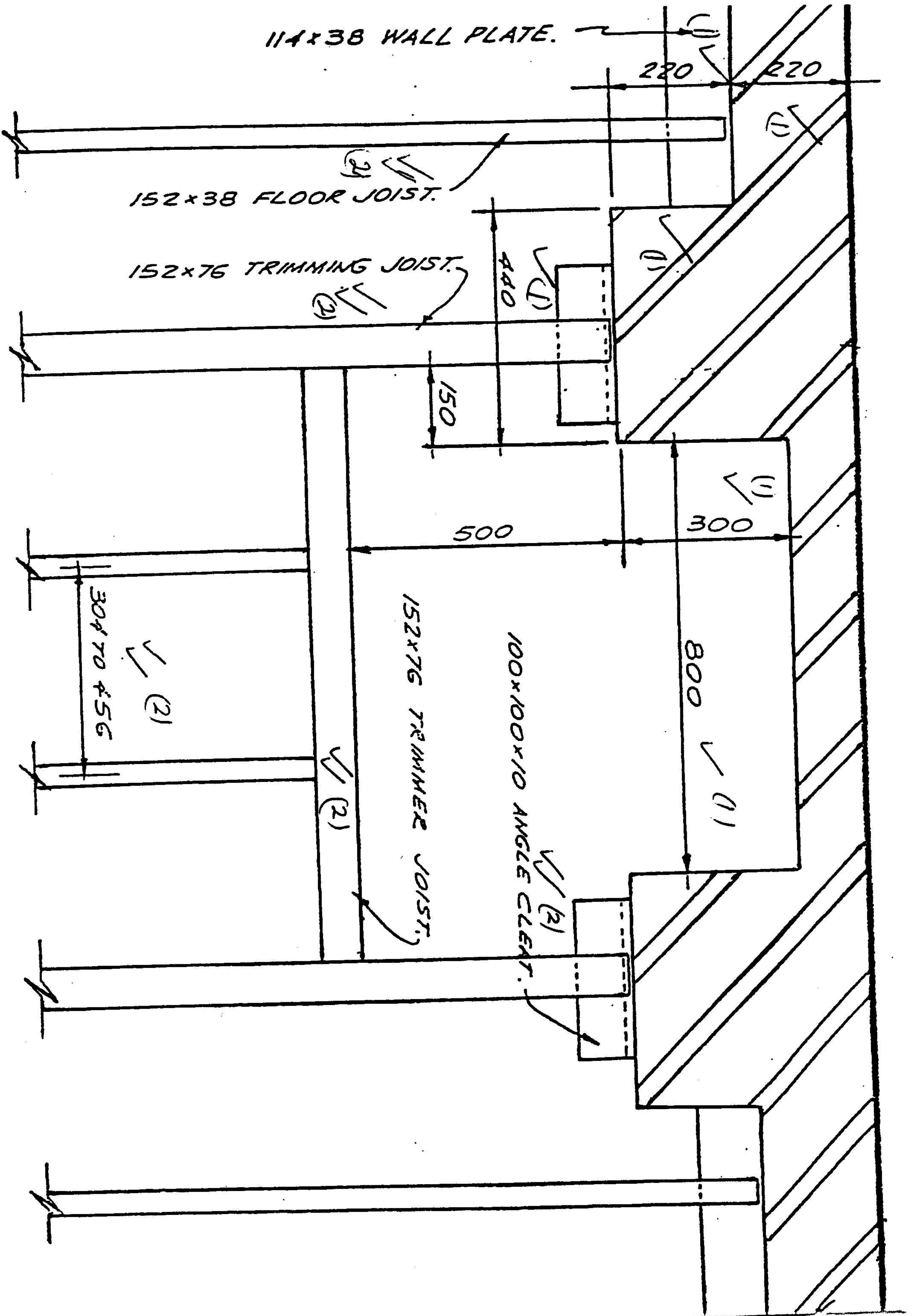
(4)

* Scale

(2) (30)**QUESTION 6**

Area of long walls	= L x H	(2)
	= 2 (13 x 2,7)	(2)
	= 70,2 m²	(2)
Area of short walls	= L x H	(2)
	= 2 (7-0,440) X 2,7	(2)
	= 35,424m²	(2)
Total Area	= 70,2 + 35,424	(2)
	= 105,624 m²	(2)
Area of openings	= Window A + Window B + Door	(2)
	= (3x2) + (2x1) + (1x2)	(2)
	= 10 m²	(2)
Area of brickwork	= Area of walls – Area of openings	(2)
	= 105,624 – 10	(2)
	= 95,624 m²	(2)
Number of bricks	= Area of brickwork x 110 bricks	(2)
	= 95,624 x 110	(2)
	= 10518,64	(2)
say	10519 bricks	(2) (38)

ANSWER - QUESTION 5.2



MOONTLIKE ANTWOORDE VIR:

701-2/0

PUNTE: 300

STEENMESSEL EN PLEISTERWERK SG

VRAAG 1

- 1.1 Kalkklip en skalies saam gemeng
Mengsel gebrand teen 'n hoë temperatuur waar die klinkers gevorm word. (6)
Die klinkers word gemaal tot 'n fyn poeier.
- 1.2
- Gewone Portland-sement
 - Snelhard-sement
 - Portland hoogoondsement
 - Portland sement 155L
 - Silfaatbestande sement
 - Hoog alluïenryke sement (alumina)
 - Wit sement
- 1x5=(5)
- 1.3
- Berei 'n mengplaatvorm voor (1)
 - Meet en versprei die sand op die plaatvorm. (1)
 - Versprei die sement egalig oor die sand en werk dit deur totdat die mengsel 'n eenvormige kleur het. (3)
 - Versprei die mengsel, voeg die water geleidelik by terwyl gemeng word tot 'n digtheid van slap pap. (3)
 - Versprei die mengsel weer, gooi die klip daaroor en meng dit deeglik totdat die kleur en digtheid van die beton dwarsdeur eenvormig is. (3)
- [11]
- 1.4 Hou die vorms in posisie – laat die vormwerk op hulle plekke
Opdamming: - bedek die oppervlakte met water
Dekkings: - Sand, grond, sand wat nat gehou word.
Water: - Sprinkel of sprei met water.
Vloeibare nabehandelingsamestellings – vorm vogtige behoubare membraan op die betonoppervlakte. 5 x 2 = (10)
- 1.5 Uitrusting:
- 'n Keëlvormige metaalvorm met albei kante oop. (1)
 - 'n Metaalstaaf 60 cm lank en 16 mm in deursnee. (1)
 - 'n Voetplaat van sagte staal / weekstaal (1)
 - 'n Troffel (1)
- Saktoets:
- Sien toe dat die binnekant van die vorm glad is en vry van droë beton. (2)
 - Plaas die voetplaat op 'n waterpasoppervlakte (1)
 - Plaas die vorm op die voetplaat met die smal kant na bo. (2)
 - Vul die vorm met 'n monster beton in vier lae van 75 mm elk en stamp elke laag 25 keer met die staaf. (2)
 - Die laaste laag moet oorvol gevul word en gebruik die troffel om dit 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 meetstok (liniaal) oor die vorm en beton en meet die afstand tussen die meetstok en beton. (2)
- [18]

VRAAG 2

2.1 Kontroleer:

- (a) alle verbindings en verstel waar nodig.
- (b) alle verbindings na die gebou toe.
- (c) voetplate op stewige grond.
- (d) steierplanke vir valstrikke.
- (e) toegangspunte en lere.
- (f) stootstukke en skutrelings (VYF van die SES) 5 x 2 = (10)

2.2

- 2.2.1 Regopstaanders moet ten minste 1,04 , uit mekaar wees.
- 2.2.2 Kortelings moet 1 m uitmekaar wees
- 2.2.3 Dubbele kortelings moet aangebring word waar planke gelas word en moet nie meer as 150 mm oorvleuel nie.
- 2.2.4 Alle splitlasse word verbeter deur kort pype.
- 2.2.5 Diagonale verspannings moet vas en in die korrekte posisies wees.
- 2.2.6 Kortelings is haaks gebuig en vas op die plat kante wat in die steenwerk insteek.
- 2.2.7 Regopstaanders moet stewig op gawe hout op die grond staan
- 2.2.8 Voetplate word gebruik of voorsien
- 2.2.9 Diagonale verspannings moet vas wees by punte waar hulle kruis met steierbalke of regopstaanders
- 2.2.10 By alle vensters moet die steierbalke deurgaen en aan die binnekant vasgeklem word.
- 2.2.11 Steierbalke word in posisie geplaas sodat die werksman die steier kan bestyg en word vasgemaak op die grond, middel en die bokant van die steier.
- 2.2.12 Steierplanke moet van gawe hout en in posisie wees.
- 2.2.13 Stootstukke moet in posisie en vas wees
- 2.2.14 Skutrelings moet in 'n goeie posisie en vas wees.
- 2.2.15 'n Onbelemmerde deurgang op die werksoppervlakte, nie minder as 400 mm op die steier nie.
- 2.2.16 Alle dele moet goed onderhou word en die koppelings moet geolie en in 'n goeie toestand wees. (TIEN van bg.) 10 x 2 = (20)

2.3

- 2.3.1 Voetbalk
- 2.3.2 Lang verspanning
- 2.3.3 Steierbalk verspanning
- 2.3.4 Staanders
- 2.3.5 Steierbalke
- 2.3.6 Skutreling
- 2.3.7 Stootstuk
- 2.3.8 Kalf
- 2.3.9 Deurloopverbinding
- 2.3.10 Steierplanke 10 x 2 = (20)

VRAAG 3

3.1

- 3.1.1 Boogaansig
- 3.1.2 Boogstuiters
- 3.1.3 Boogstene
- 3.1.4 Sluitstene
- 3.1.5 Buitewelwing
- 3.1.6 Binnewelwing
- 3.1.7 Spanwydte

7 x 2 = (14)

3.2

- Hoek in Vlaamse verband
- Totale indruk
- Korrekte uitleg
- Verband
- Netheid
- Doodloopt
- Skaal

(5)

(5)

(4)

(4)

(4)

(2)

[24]

3.3 Deursnee deur 'n muur

(20)

VRAAG 4

- 4.1
- Werk vanaf voorafbepaalde bodemvlakke verkry met die bukswaterpas (3)
 - Stel die korrelhout op wydsbeen oor die sloot wat uitgegrawe moet word. (3)
 - Hierdie hout is aan die bokant sowel as by die laer kant van die voorgestelde sloot. (3)
 - Die houte moet waterpas wees op 'n voorafbepaalde hoogte bo die bodemvlak (3)
 - Grawe sloot uit na die verlangde werkswydte en tot die benaderde diepte, (3)
 - Gebruik korrestokke tussen die korrelhout, neem peiling oor en tussen die houte (4)
 - Werk nou op en af met die sloot met die korrelstokke totdat die bodem van die sloot gelyk is volgens die verlangde val. (3)

[22]

4.2

- LP
- DP
- RVP
- VWP
- RP

5 x 2 = (10)

4.3

- 'n Septiese tenk verteer die vaste stowwe deur bakteriële en die uitvloei word deur die grond geabsorbeer. (3)
- 'n Vakuumtenk is slegs 'n stoortenk wat gereeld leeg gemaak moet word deur 'n 'tenkwa. (3)

4.4

- Waar die grond nie geskik is vir 'n syferput nie.
- Waar besoedeling van die watertoevoer plaas kan vind.

(3)

4.5

- 4.5.1 'n Venster wat verby die normale muurvlak uitstaan. (3)
- 4.5.2 'n Keermuur wat vertikaal effens na agter terughel
- 4.5.3 'n Mangat wat benodig word wanneer die grond te steil is om 'n normale val vir die riool te verkry.
- 4.5.4 Word gebruik in die plek van 'n mangat vir die inspeksie van 'n riool. $4 \times 4 =$ (16)
- [60]**

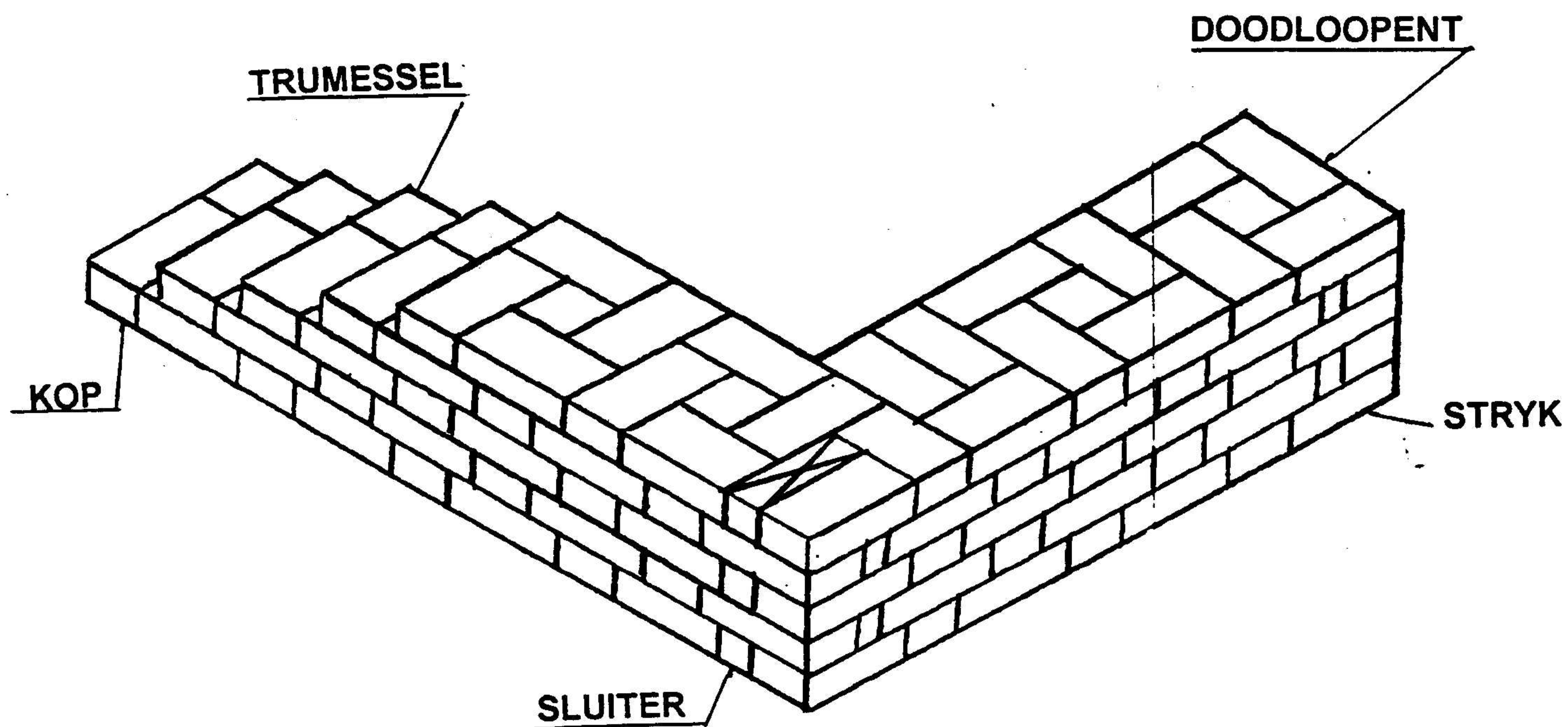
VRAAG 5

- 5.1 Om alle rook en gasse wat deur die kaggel ontstaan, te verwyder.
- 5.2
- Die rigting van die wind in verhouding tot die vuuruitlaat
 - Die fatsoen van die gebou
 - Die nabyheid van bome of ander geboue
 - Die posisie van deur- en vensteropeninge
 - Die helling van die dak $2 \times 5 = 10$ (10)
- 5.3 Bo-aansig van die herd
- Korrektheid (8)
 - Detail (16)
 - Netheid (4)
 - Skaal (2)
- [30]**

VRAAG 6

- Oppervlakte van lang mure
- = LX H (2)
- = $2(13 \times 2,7)$ (2)
- = $70,2 \text{ m}^2$ (3)
- Oppervlakte van kort mure
- = L X H (2)
- = $2(7-0,440) \times 2,7$ (2)
- = $35,424 \text{ m}^2$ (2)
- Totale oppervlakte
- = $70,2 + 35,424$ (2)
- = $105,624 \text{ m}^2$ (2)
- Oppervlak van openinge
- = Venster A + Venster B + Deur (2)
- = $(3 \times 2) + (2 \times 1) + (1 \times 2)$ (2)
- = 10 m^2 (2)
- Oppervlak van steenwerk
- = Oppv. van mure - Oppv. van opening (2)
- = $105,624 \text{ m}^2 - 10 \text{ m}^2$ (2)
- = $95,624 \text{ m}^2$ (2)
- Aantal stene
- = Oppv. van steenwerk x 110 stene (2)
- = $95,624 \times 110$ (2)
- = $10518,64$ stene (2)
- = sê 10519 stene (3)
- [38]**

Antwoord vraag 3.2

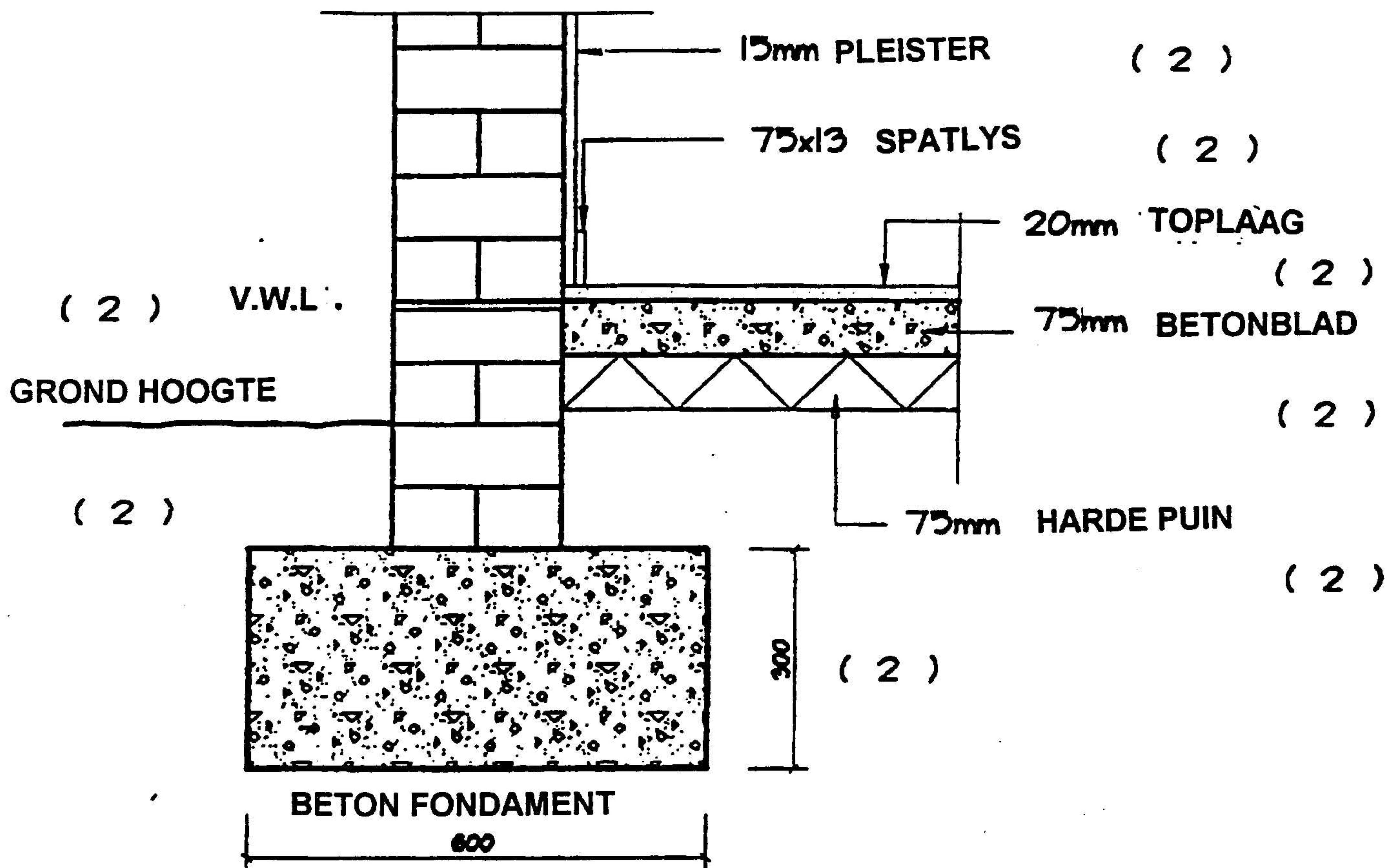


ISOMETRIESE AANSIG VAN 'N HOEK GEBOU IN VLAAMSEVERBAND

SKAAL: 1:10

Vraag 3.3

ANTWOORD VRAAG 3.3



SKAAL 4
DETAIL 16
—
20

