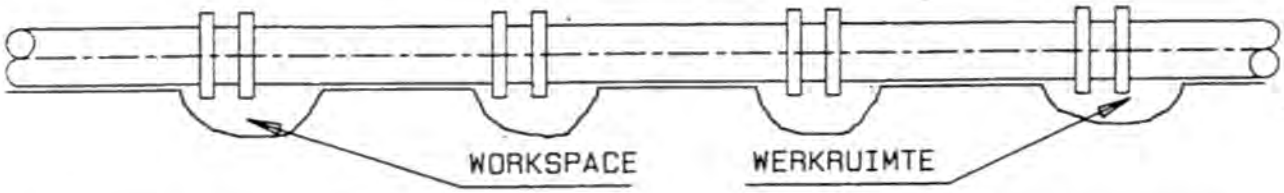
DEPARTMENT OF PUBLIC WORKS

DRAINAGE DETAILS

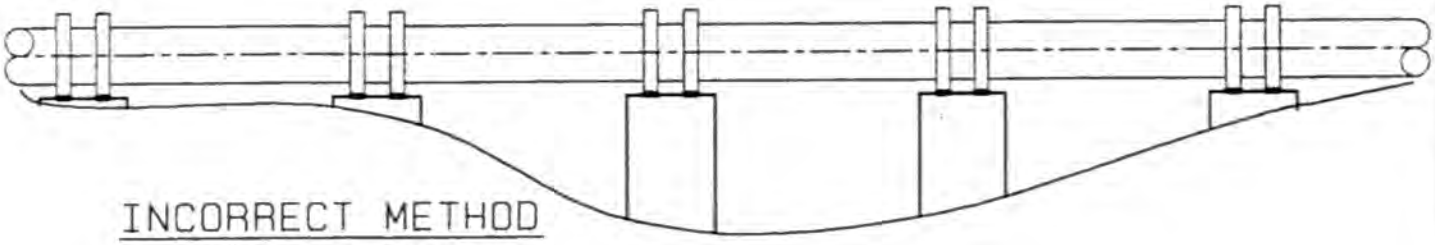
REVISED EDITION
DECEMBER 1998

A. UNDER NORMAL SOIL CONDISIONS
ONDER NORMALE GROND OMSTANDIGHEDE



CORRECT METHOD
KORREKTE METODE

BARREL OF PIPE MUST REST-ON RIGID GROUND
BODEM VAN PYP MOET OP VASTE GROND RUS

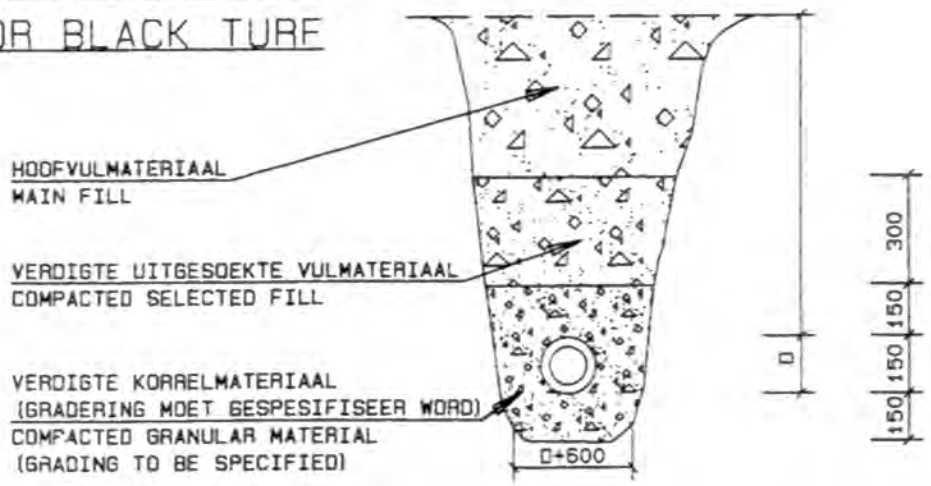


INCORRECT METHOD
VERKEERDE METODE

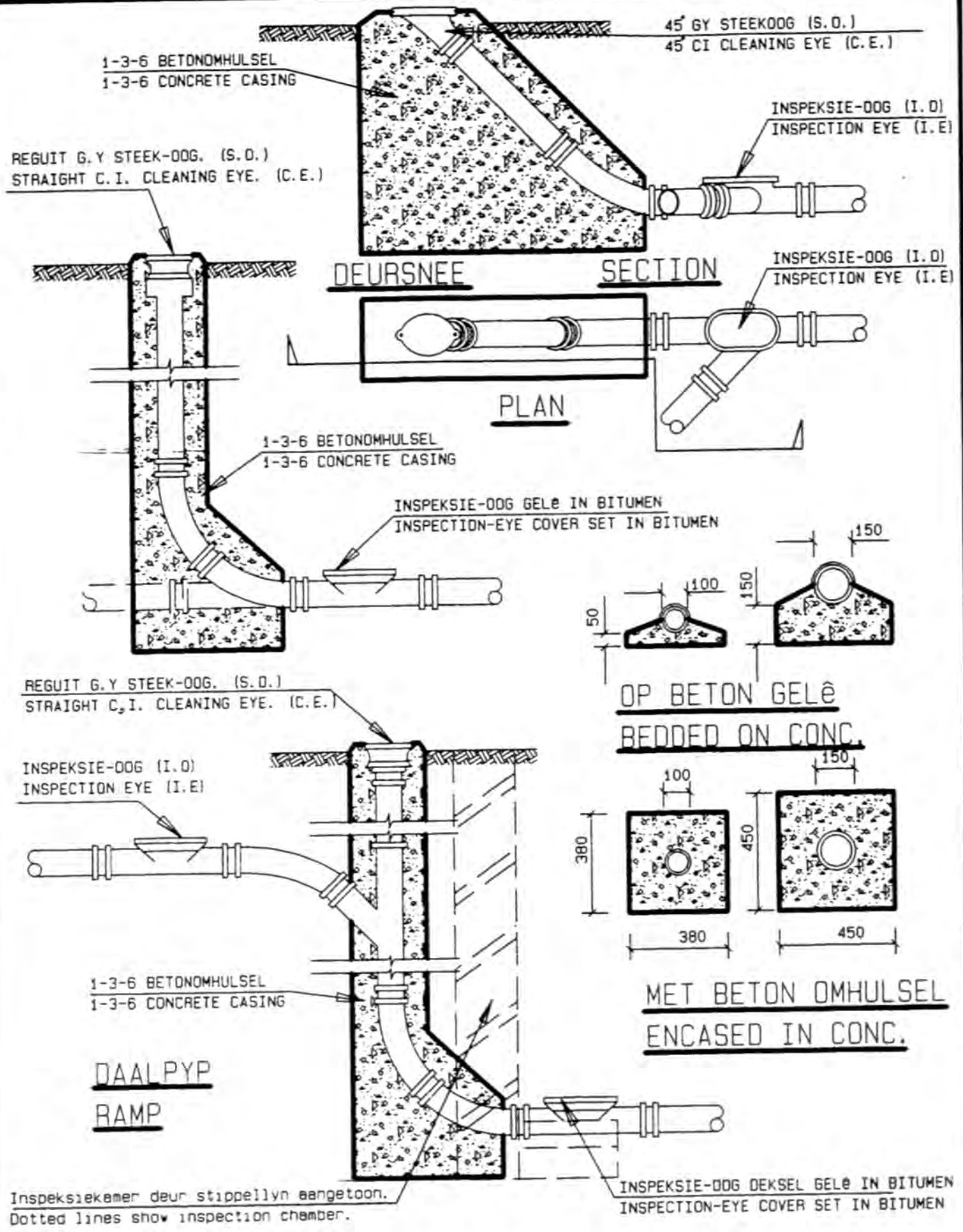
NOTE
EXCAVATIONS TAKEN OUT TOO DEEP MUST BE MADE UP WITH APPROVED FILLING AT CONTRACTORS EXPENSE.
EXCAVATIONS IN ROCK MUST BE LEVELLED UP WITH GRANULAR MATERIAL TO ENSURE PIPES HAVING AN EVEN BEARING.

NOTA
UITGRAWINGS WAT TE DIEP UITGEGRAWE IS MOET MET GOEDGEKEURDE VULMATERIAAL OPGEVUL WORD OP ONKOSTE VAN DIE KONTRAKTEUR.
UITGRAWINGS IN ROTS MOET MET KORRELAGTIGE MATERIAAL OPGEVUL WORD, SODAT PYPE GELYKMATIG GESTEUN WORD.

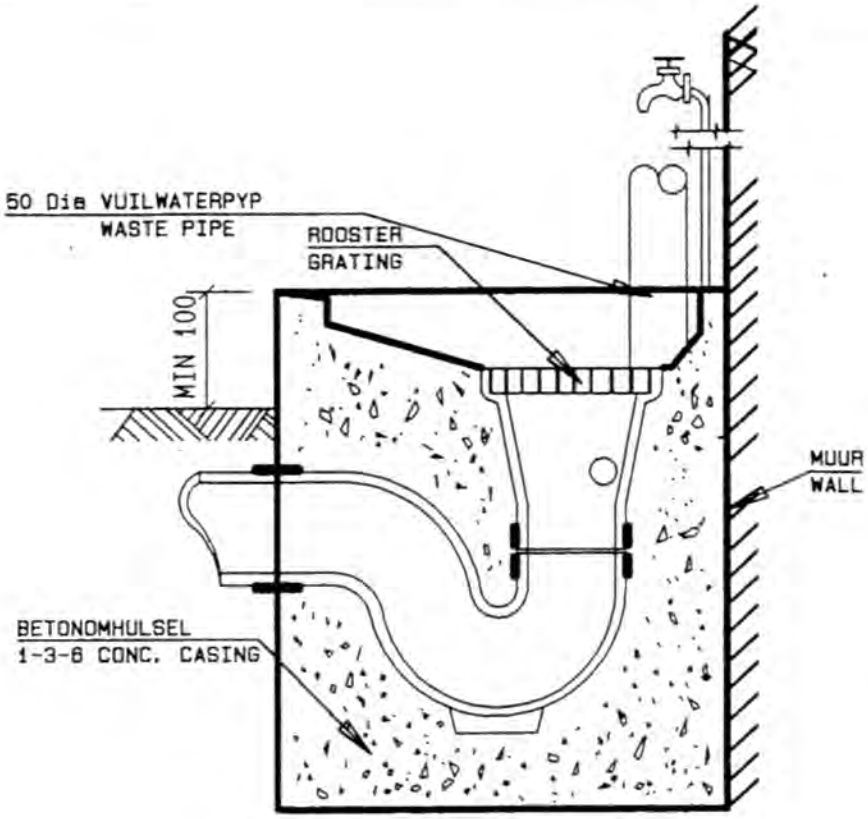
B. IN KLEI OF SWART TURF
IN CLAY OR BLACK TURF



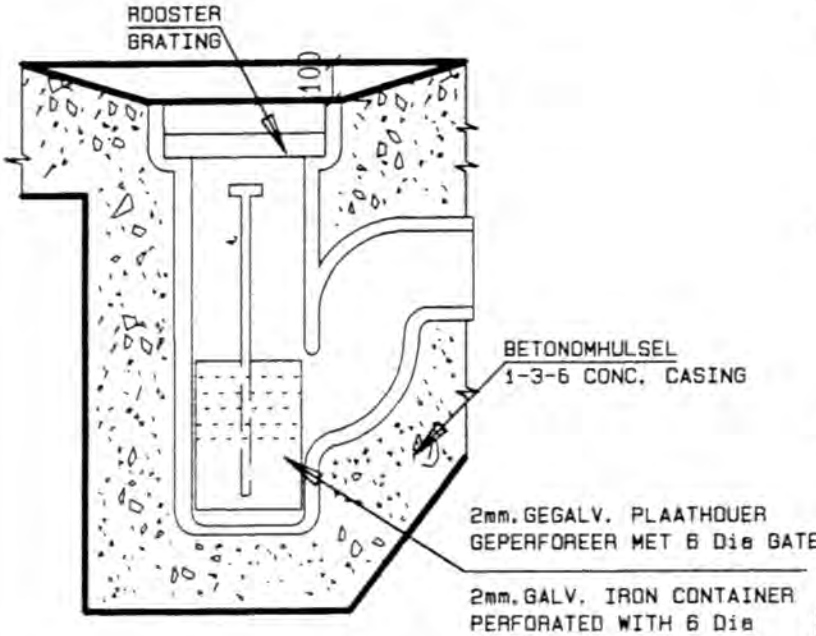
GETEKEN. J.A.C RABE DRAWN.		
NAGESIEN. CHECKED.	METODE VIR DIE LE VAN RIOLE. METHOD OF LAYING DRAINS.	D1D
SKAAL. 1 : 20 SCALE.		



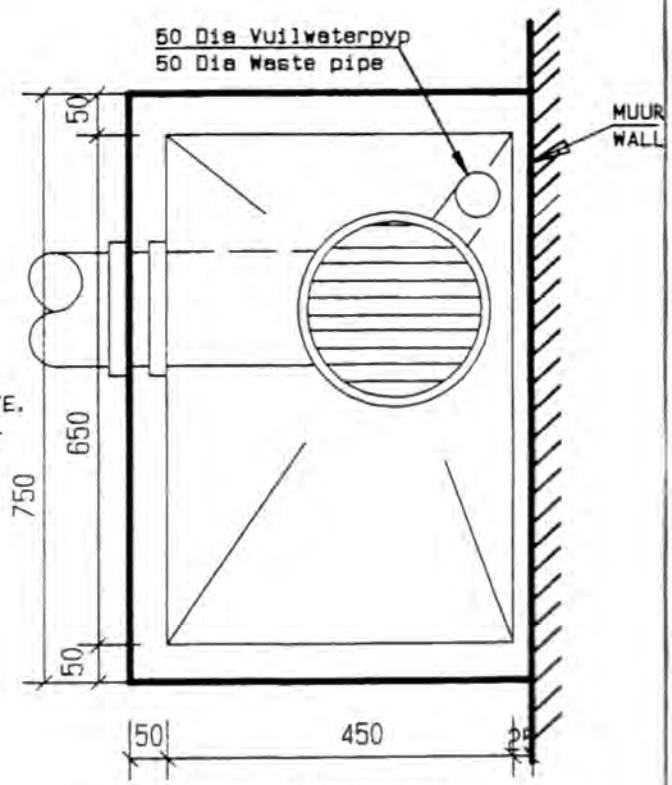
GETEKEN. J.A.C. RABE DRAWN.	STEEKOë, INSPEKSIEOë, DAALPYP. CLEANING EYE, INSPECTION EYE, RAMP.	D2D
NAGESIEN. CHECKED.		
SKAAL. 1 : 20 SCALE.		



DEURSNEE
SECTION



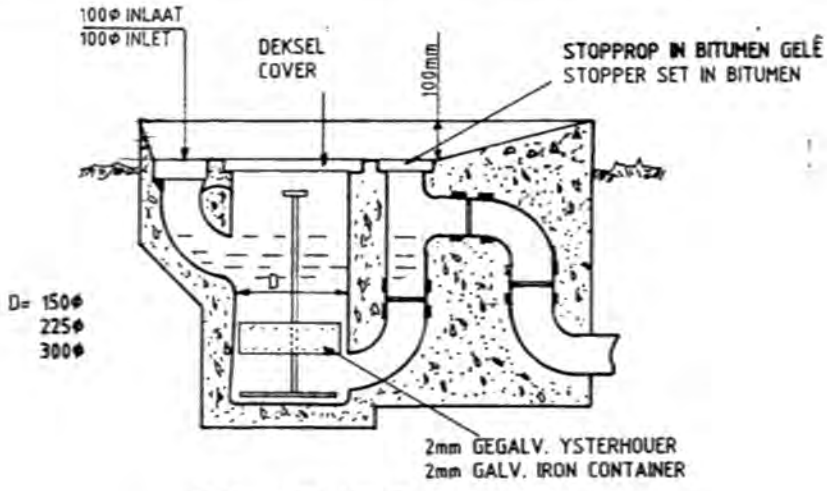
STALRIOOLPUT
STABLE GULLY



PLAN

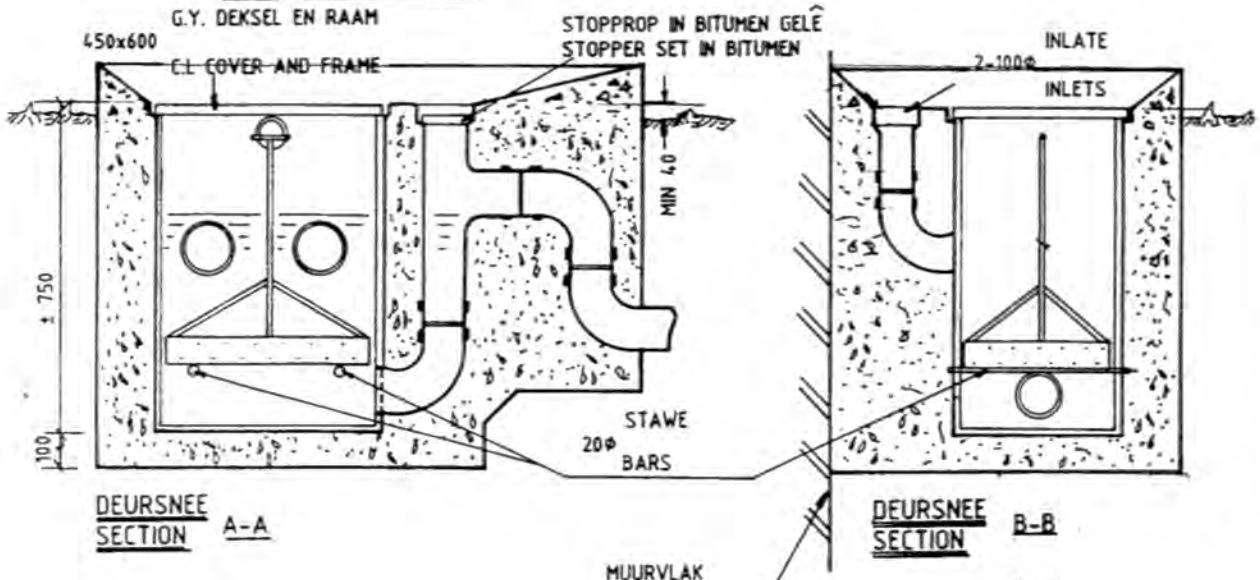
GEKOMDE RIOOLPUT
DISHED GULLY

GETEKEN. J.A.C. BABE DRAWN.		
NEGESIEN. CHECKED.	STAL- EN GEKOMDERIOOLPUT. STABLE- EN DISHED GULLY.	D4D
SKAAL. 1 : 20 SCALE.		



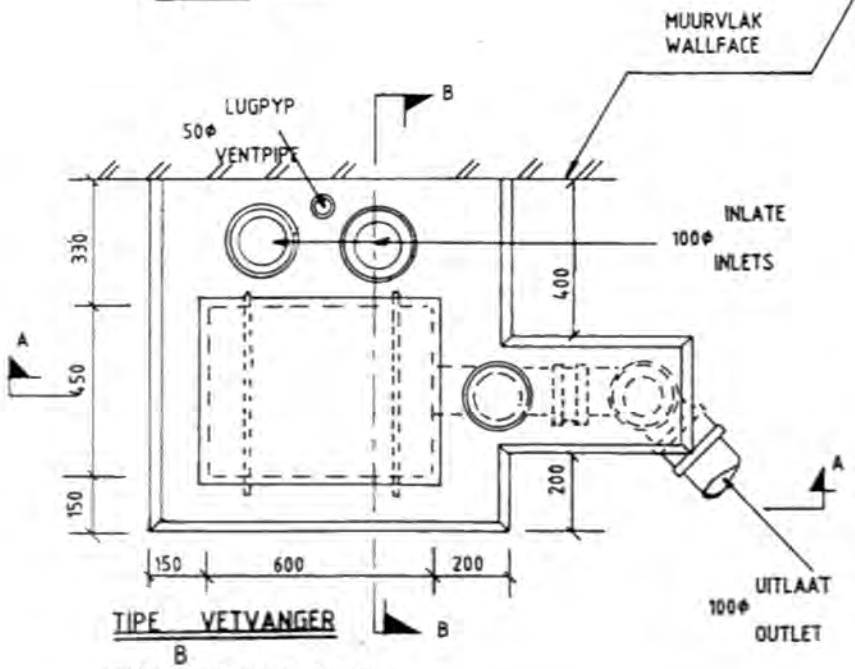
TIPE VETVANGER
A
TYPE GREASE TRAP

SABS 559 FIG 27

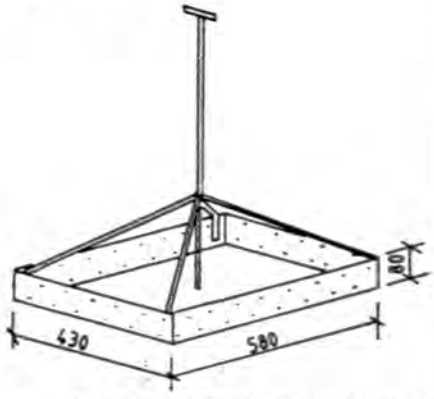


DEURSNEE A-A
SECTION

DEURSNEE B-B
SECTION



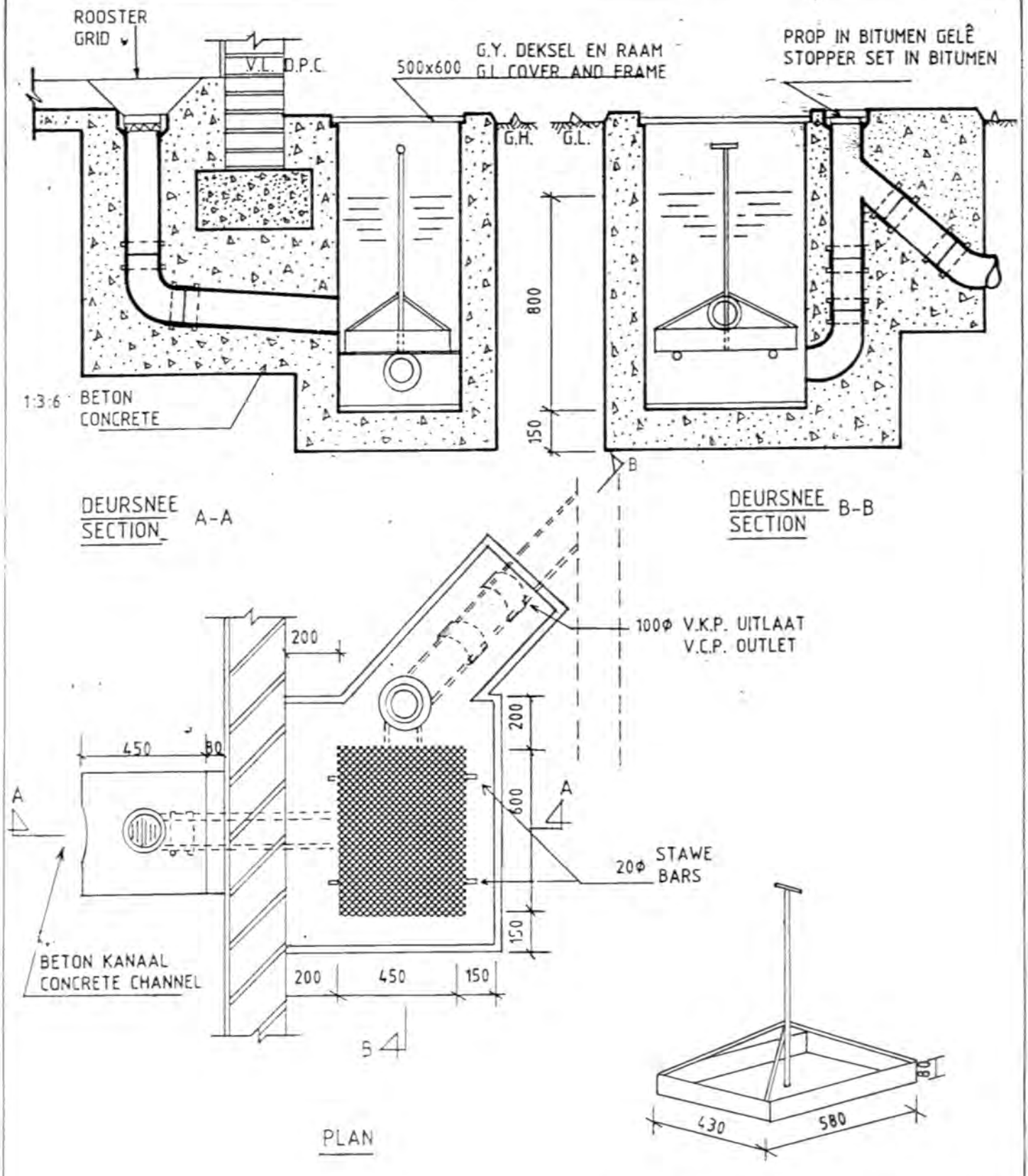
TIPE VETVANGER
B
TYPE GREASE TRAP



2mm GEGALV. PLAATHOUER GEPERFOREER MET 6Φ GATE.

2mm GALV. IRON CONTAINER, PERFORATED WITH 6Φ HOLES.

GETEKEN DRAWN S.P. CILLIERS		
NAGESIEN CHECKED	VETVANGER TIPE A EN B GREASE TRAP TYPE A AND B	D50
SKAAL SCALE 1:20		

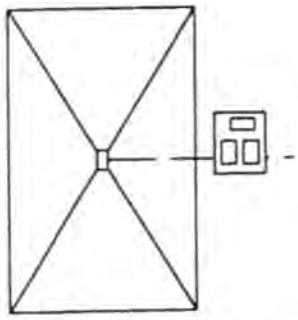


GEGALV. PLAATHOUER, GEPERFOREER MET 6Φ GATE.

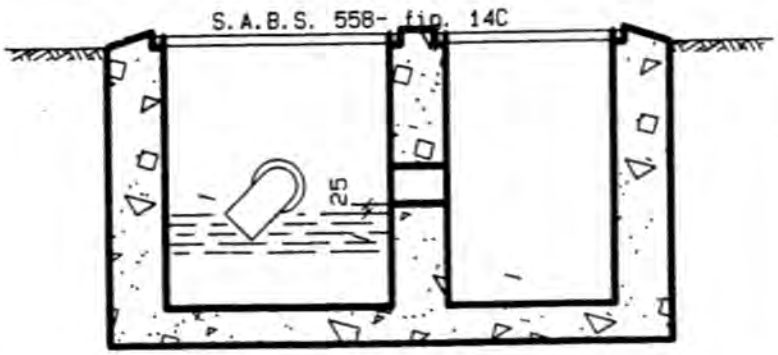
2 mm GALV. SHEETIRON CONTAINER PERFORATED WITH 6Φ HOLES.

GETEKEN DRAWN R.W.BRAND.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	D6D
NAGESIEN CHECKED	DETRITUSVANGER VIR STALLE DETRITUS INTERCEPTING TRAP FOR STABLES.	
SKAAL SCALE 1:20		

450x600-38 Kg GY MANGATDEKSEL ENKELDIGTHEID EN RAAM.
450x600-38 Kg CI SINGLE SEAL MANHOLE COVER AND FRAME.

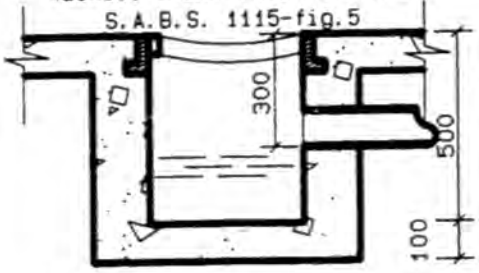


PLAN VAN WASBLAD
PLAN OF WASH BAY
1:200

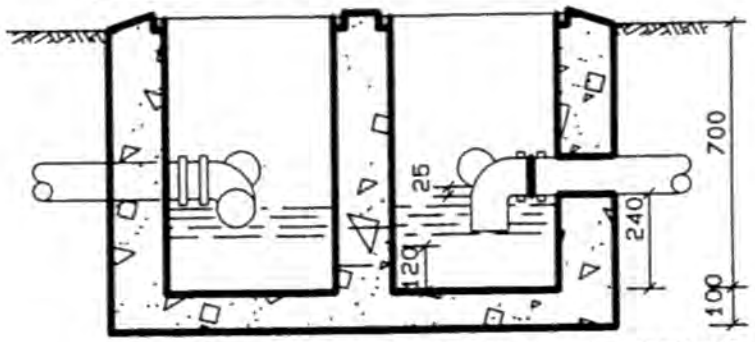


SNIT B-B
SECTION B-B

450x600 STORMWATER ROOSTER.
450x600 STORM-WATER GRATING.
S.A.B.S. 1115-fig.5



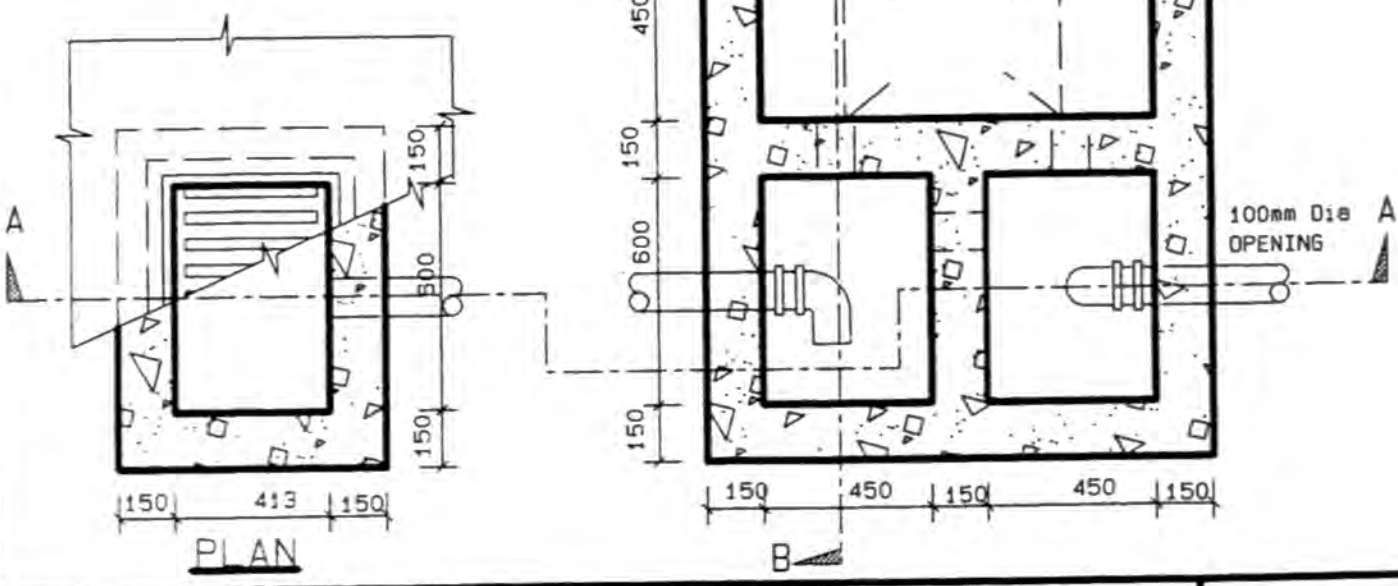
SNIT A-A
SECTION A-A



NB. GEEN VERKEER MAG OP DIE DEKSEL TOEGELAAT WORD NIE.
NO TRAFFIC WILL BE ALLOWED ON THE COVERS.

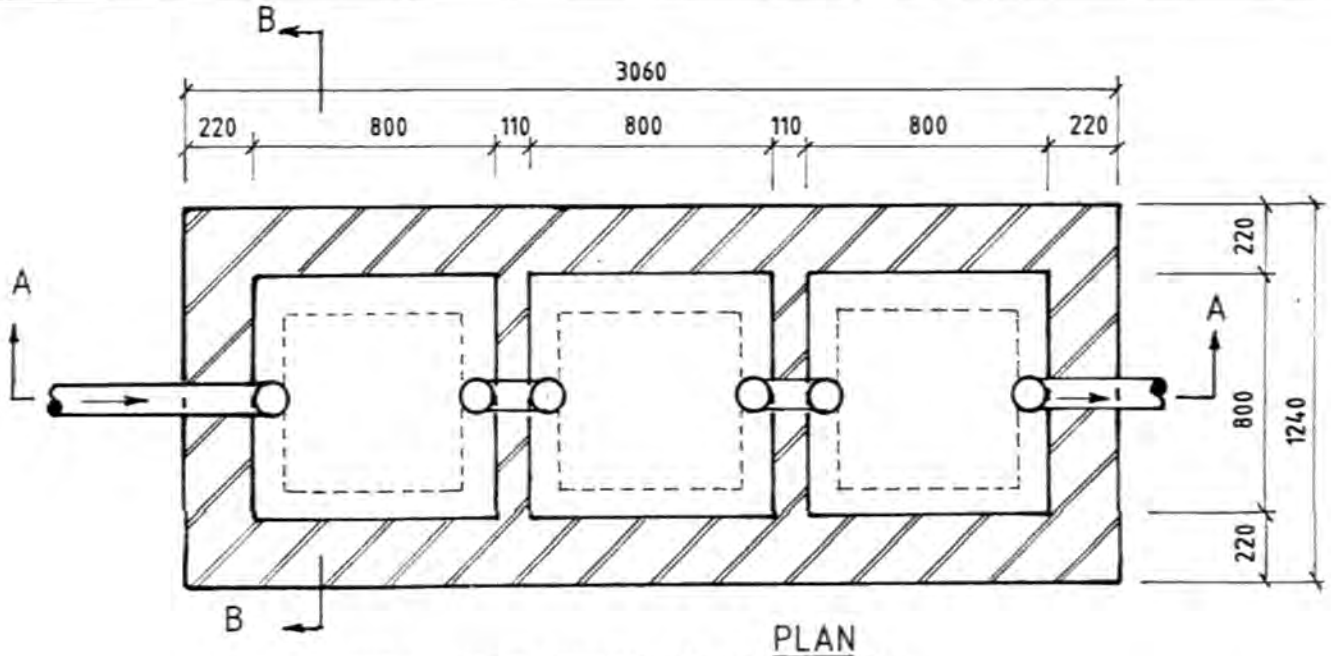
ALLE PYPE GETOON IS 100mm Dia PYPE.
ALL PIPES SHOWN ARE 100mm Dia PIPES.

NOTA: BINNEMATE VAN KAMERS MOET OOREENSTEM MET DAGMATE VAN RAME.
NOTE: INNER DIMENSIONS OF CHAMBERS MUST BE ACCORDING TO THE DAYLIGHT OPENING OF FRAMES.



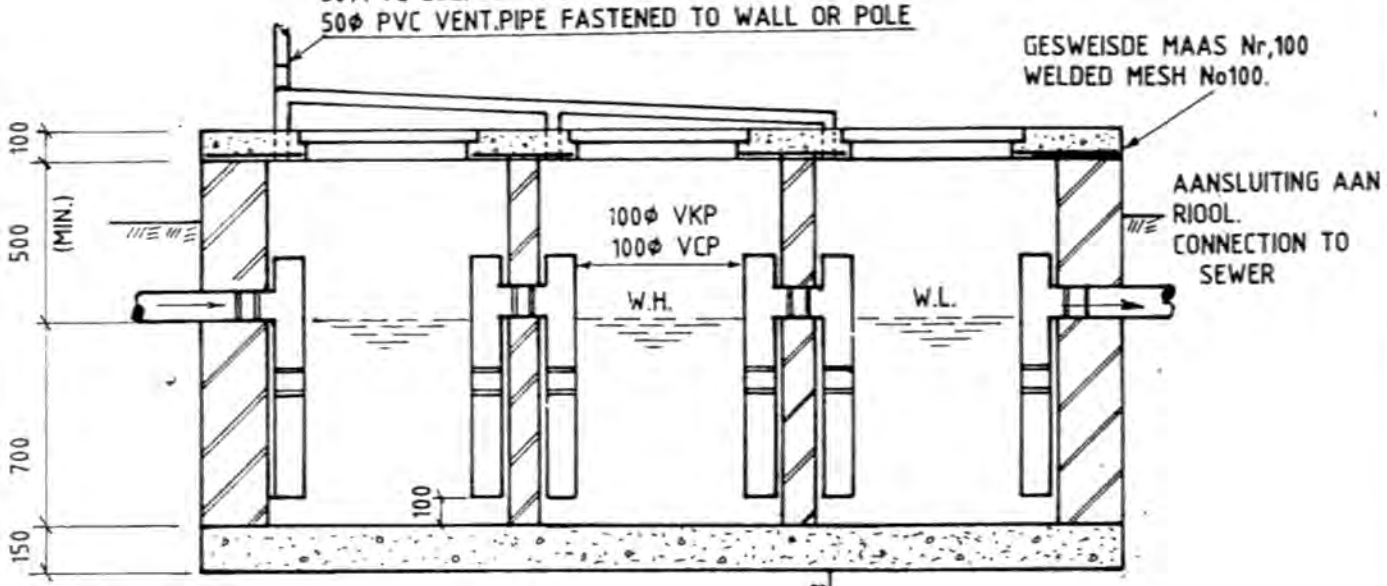
PLAN

GETEKEN. J.A.C. RABE DRAWN.	OLIE EN VETVANGER VIR VOERTUIG WASBLAD OIL AND GREASE TRAP FOR VEHICLE WASH BAY	D7D
NAGESIEN. CHECKED.		
SKAAL. 1 : 20 SCALE.		

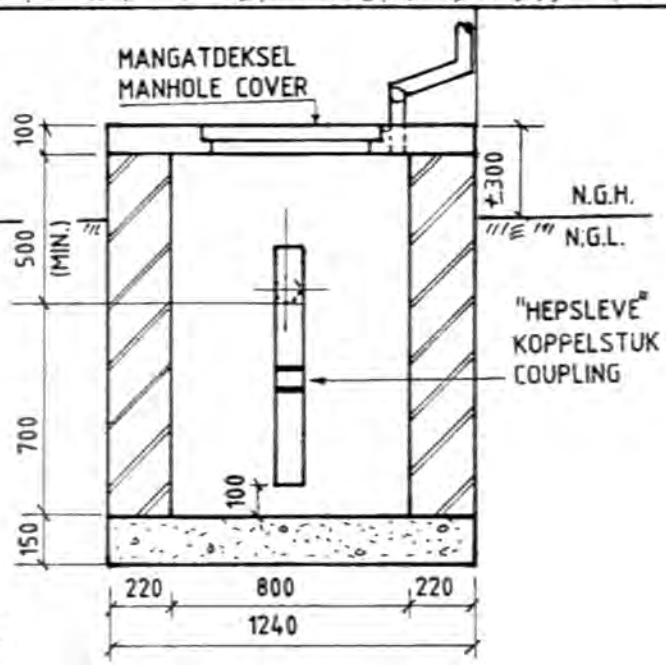


PLAN

50ΦPVC LUGPYP VASGEMAAK AAN MUUR OF PAAL.
50Φ PVC VENT.PIPE FASTENED TO WALL OR POLE



SNIT A-A
SECTION A-A



600 x 600 VIERKANTIGE DUBBELAFDIGTING MANGATDEKSEL VOLGENS SABS 558-1973 TIPE 8B.

600 x 600 SQUARE DOUBLE SEAL MANHOLE COVER ACCORDING TO SABS 558-1973 TYPE 8B.

SNIT B-B
SECTION B-B

GETEKEN DRAWN: WAB.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	PETROLVANGER PETROL INTERCEPTER	D 7(A)D
SKAAL SCALE: 1 : 25		

GETEKEN M.J PAPENHUYZEN.
DRAWN.

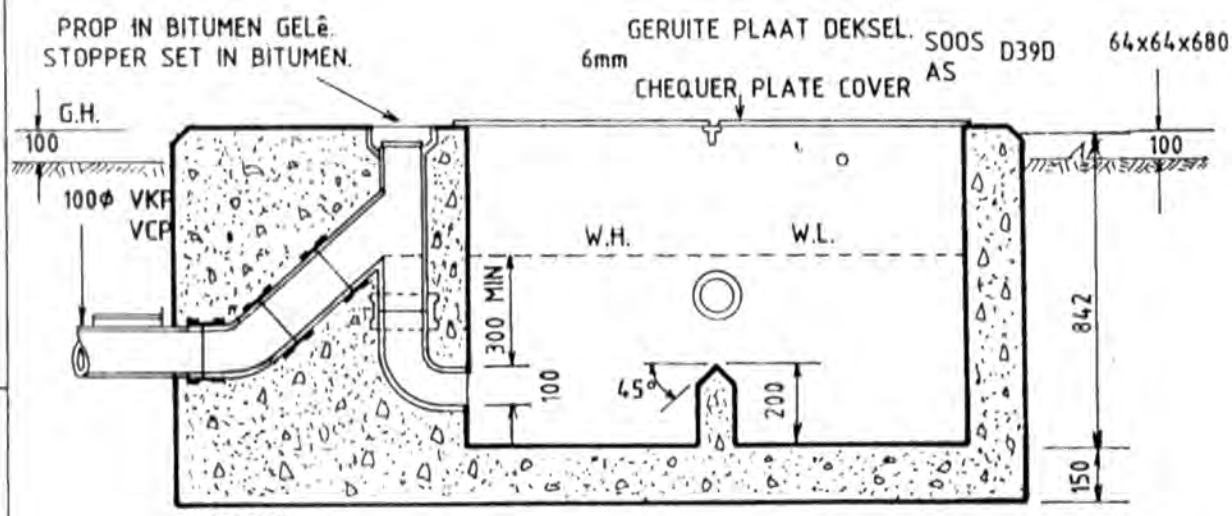
NAGESIEN
CHECKED

SKAAL 1 : 20
SCALE

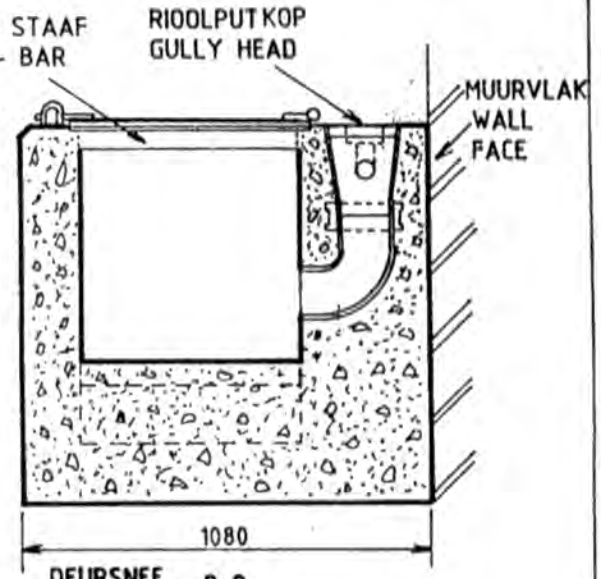
VETVANGER
GREASE TRAP

TIPE C
TYPE C

D90

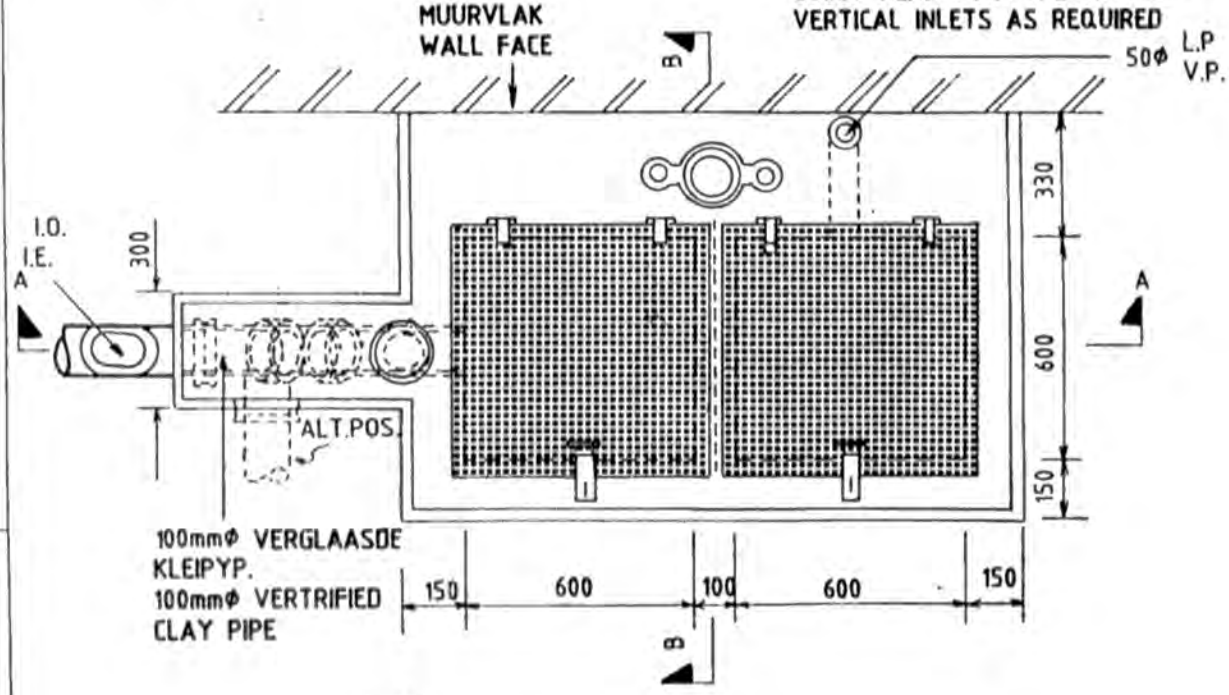


DEURSNEE A-A
SECTION

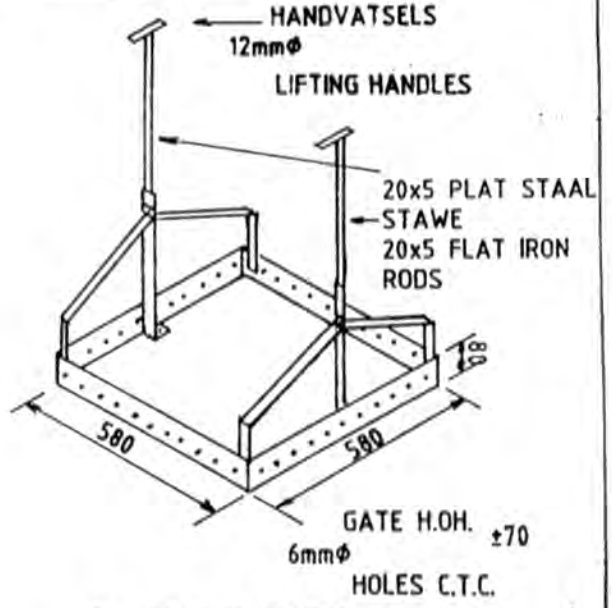


DEURSNEE B-B
SECTION

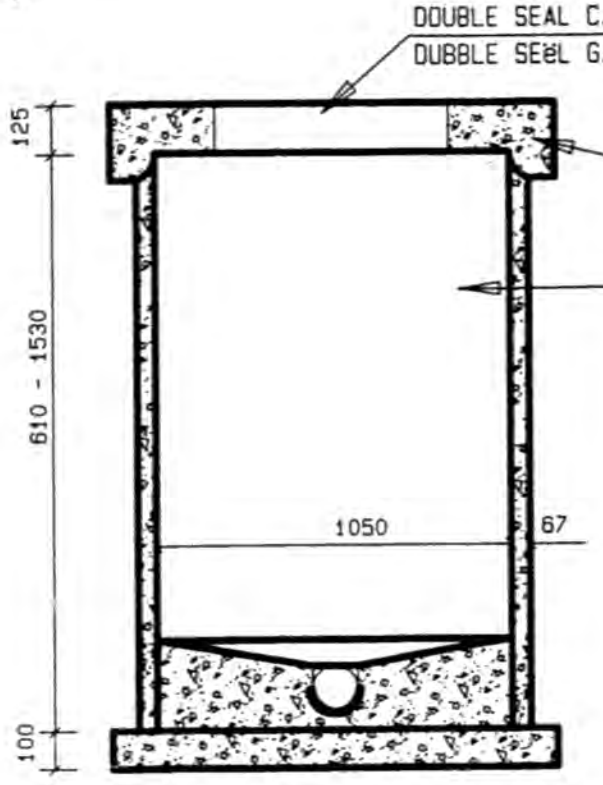
RIOOLPUTKOP MET EEN OF TWEE VERTIKALE INLASTE SOOS VERLANG
GULLY HEAD WITH ONE OR TWO VERTICAL INLETS AS REQUIRED



PLAN



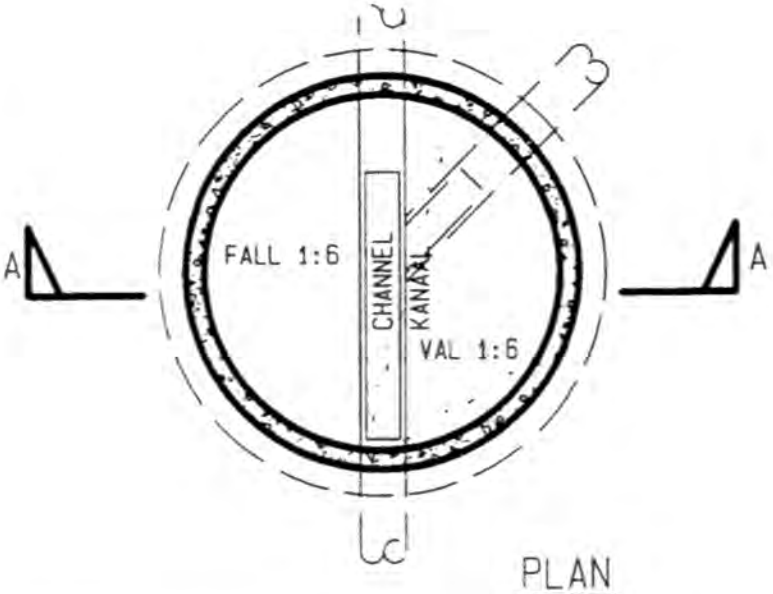
2mm GEGALV. PLAATHOUER
2mm GALV. IRON CONTAINER



BENCHING TO BE BROUGHT UP VERTICALLY TO TOP OF MAIN DRAIN PIPE AND THEN SLOPED UPWARDS AT 1:6 TOWARDS CHAMBER WALLS.

VULLING MOET VERTIKAAL TOT KRUIN VAN PYP OPGEBOU WORD EN DAN MET HELLING VAN 1:6 SKUINS AFGEWERK WORD TOT BY I.K. MUUR.

SNIT A-A
SECTION A-A

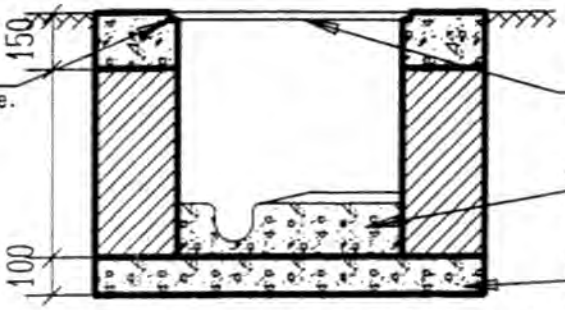


PLAN

NOTE
CHAMBER CAN BE SUPPLIED WITH SLOTTED CUTOUTS AT THE BASE TO SUIT SEWERS AS REQUIRED.

NOTA
KAMER KAN MET UITSNYDINGS OP BASIS VOORSIEN WORD VIR VERSKILLENDE DEURSNEE PYPE SOOS BENODIG.

GETEKEN. J.A.C. RABE DRAWN.	INSPECTION CHAMBER (UNDER 1 530 DEEP) INSPEKSIEKAMER (MINDER AS 1 530 DIEP)	D10D
NAGESIEN. CHECKED.		
SKAAL. 1 : 20 SCALE.		



G.Y. Raam in beton gele.
C.I. Frame set in concrete.

450x600 G.Y. Deksel en raam.
450x600 C.I. Cover and frame.

Vloeivulling.
Benching.

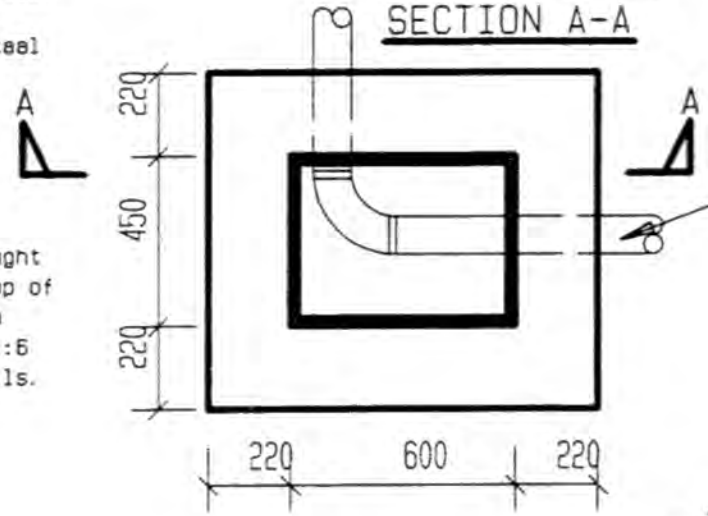
1-3-6 Beton.
1-3-6 Concrete.

TIPE A
TYPE A

Kamer minder as 600 diep.
Chamber under 600 deep.

DEURSNEE A-A
SECTION A-A

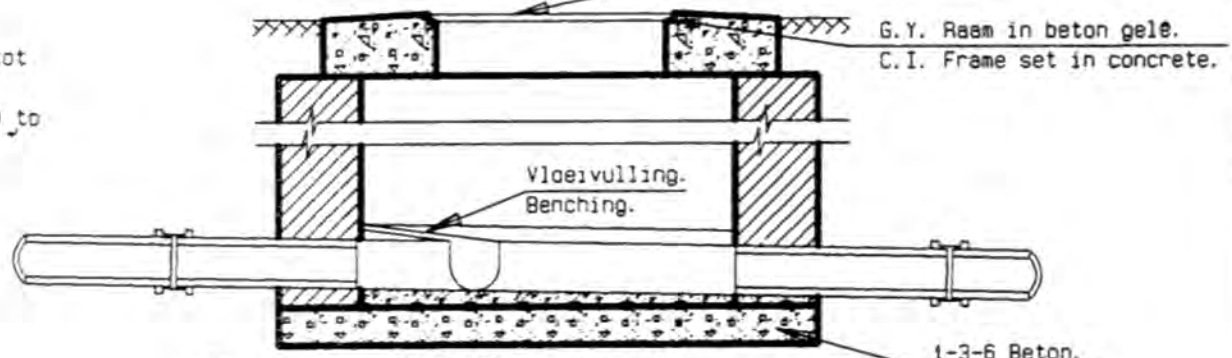
Vulling moet vertikaal tot bokant van pyp opgebou word en dan met helling 1:6 skuins afgewerk word tot by I.K. muur.
Benching to be brought up vertically to top of main drain and then sloped upwards at 1:6 towards chamber walls.



V.K.P. Kanaal.
V.C.P. Chanel.

TIPE B
TYPE B

Kamers 600 tot 1530 diep.
Chambers 600 to 1530 deep.



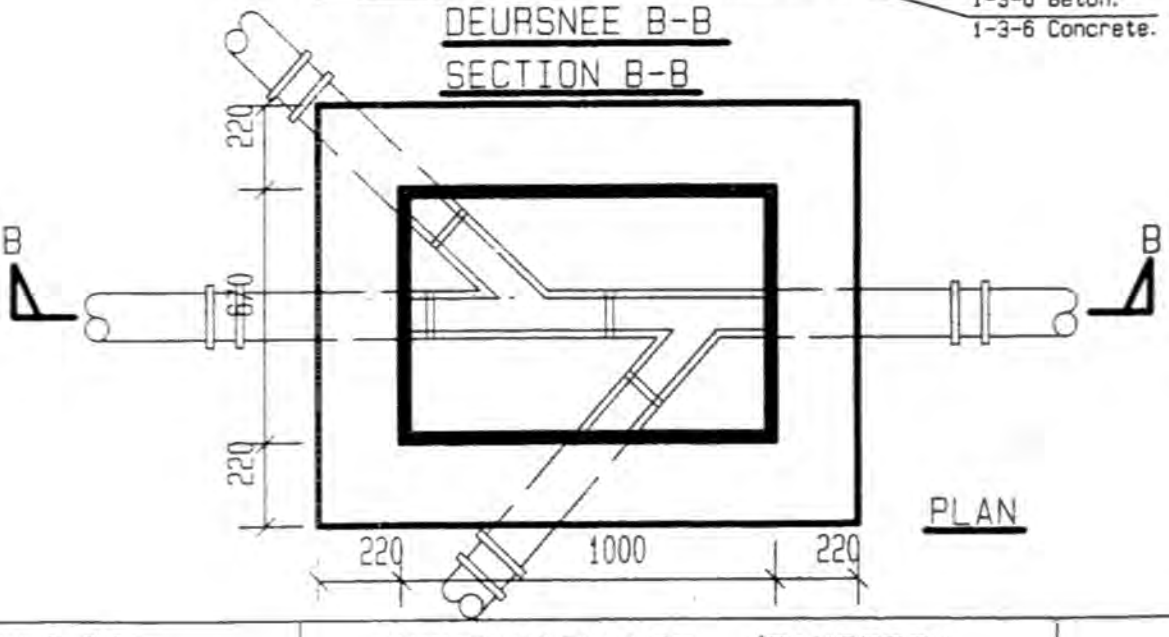
450x600 G.Y. Deksel en raam.
450x600 C.I. Cover and frame.

G.Y. Raam in beton gelê.
C.I. Frame set in concrete.

Vloeivulling.
Benching.

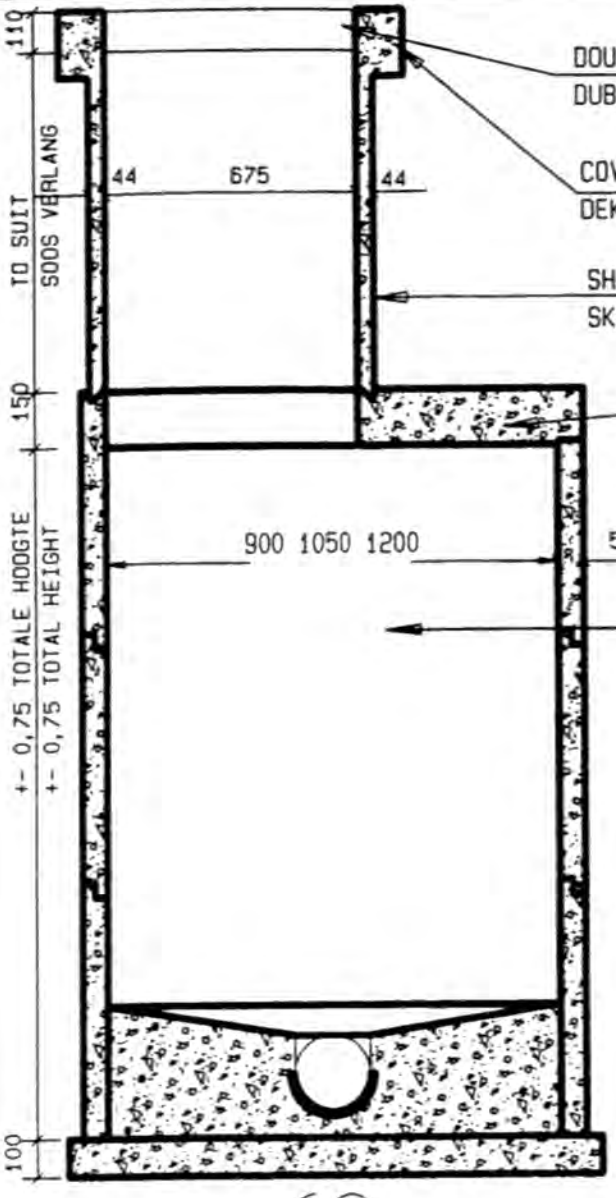
1-3-6 Beton.
1-3-6 Concrete.

DEURSNEE B-B
SECTION B-B



PLAN

GETEKEN. J.A.C. RABE DRAWN.	INSPEKSIEKAMER. (BAKSTEEN MET DIEPTE MINDER AS 1530) INSPECTION CHAMBER. (BRICK WORK LESS THAN 1530)	D10/AD
NAGESIEN. CHECKED.		
SKAAL. 1 : 20 SCALE.		



DOUBLE SEAL C.I. COVER AND FRAME TO BE SUPPLIED.
DUBBEL SEëL G.Y. DEKSEL EN RAAM MOET VOORSIEN WORD.

COVER SLAB.
DEK BLAD.

SHAFT
SKAG

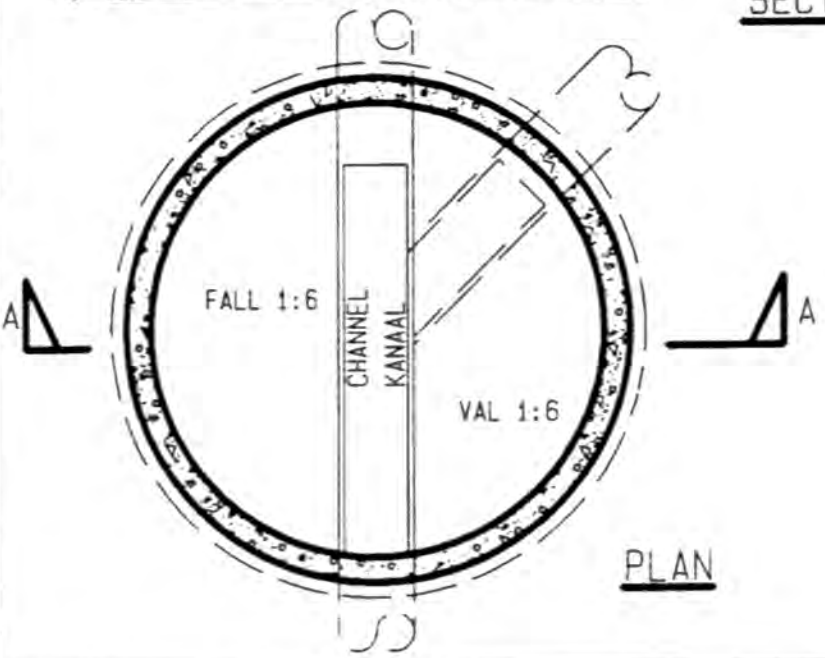
REDUCER SLAB.
VERLOOP BLAD.

CHAMBER.
KAMER.

BENCHING TO BE BROUGHT UP VERTICALLY TO TOP OF MAIN DRAIN PIPE AND THEN SLOPED UPWARDS AT 1:6 TOWARDS CHAMBER WALLS.

VULLING MOET VERTIKAAL TOT KRUIN VAN PYP OPGEBOU WORD EN DAN MET HELLING VAN 1:6 SKUINS AFGEWERK WORD TOT BY I.K. MUUR.

SNIT A-A
SECTION A-A



PLAN

NOTE
CHAMBER CAN BE SUPPLIED WITH SLOTTED CUTOUTS AT THE BASE TO SUIT SEWERS AS REQUIRED.

NOTA
KAMER KAN MET UITSNYDINGS OP BASIS VOORSIEN WORD VIR VERSKILLENDE DEURSNEE PYPE SOOS BENODIG.

GETEKEN. J.A.C. RABE DRAWN.	MANGATE (DIEPER AS 1 530) MANHOLES (OVER 1 530)	D11D
NAGESIEN. CHECKED.		
SKAAL. 1 : 20 SCALE.		

450x600 G.Y. Deksel en raam.
450x600 C.I. Cover and frame.

Granolitiese afwerking.
Grano. finish.

Beton gevorm om G.Y. raam te neem.
Concrete rebated to take C.I. frame.

760x600 Opening.
760x600 Opening.

Y= (3/4) * (X)
Vloeivulling moet vertikaal tot top van pyp opgebou word en dan met helling van 1:6 skuins afgewerk word tot by I.K. muur.

Benching to be brought up vertically to top of main drain pipe and then sloped upwards at 1:6 towards chamber walls.

X

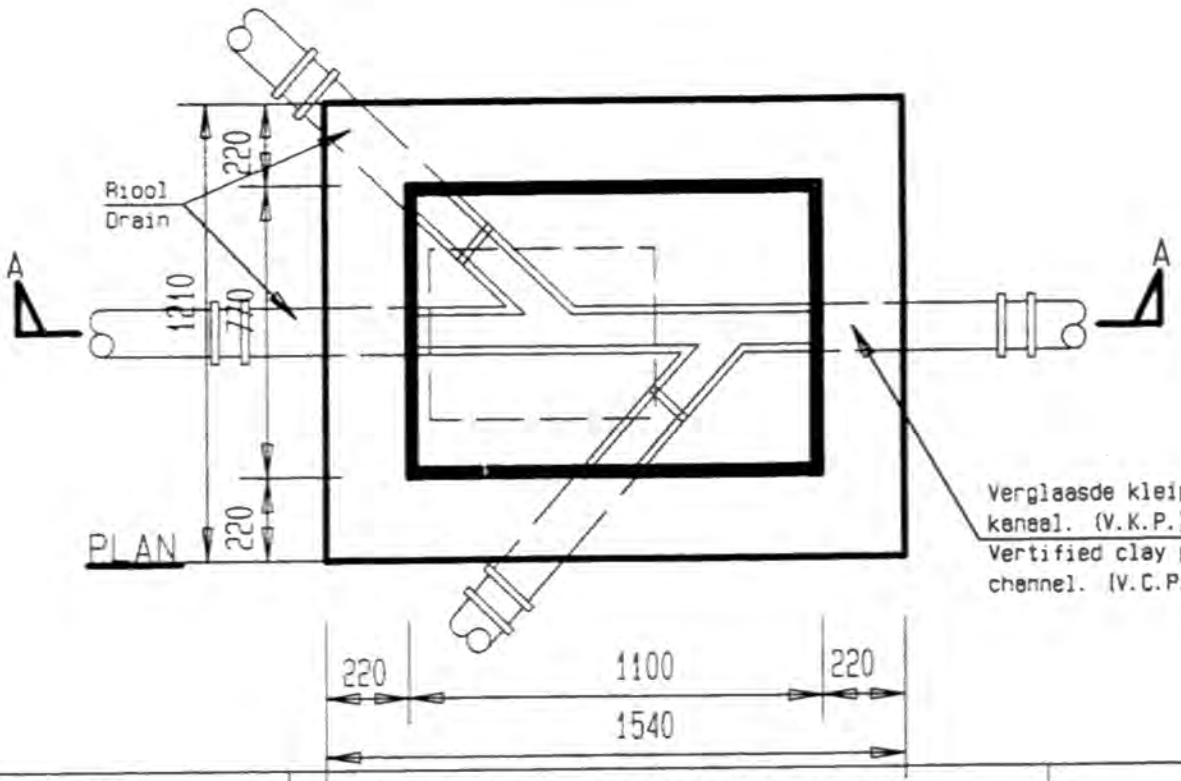
Y

Hardgebakte stene met smal voë.
Hard brick with narow joints.

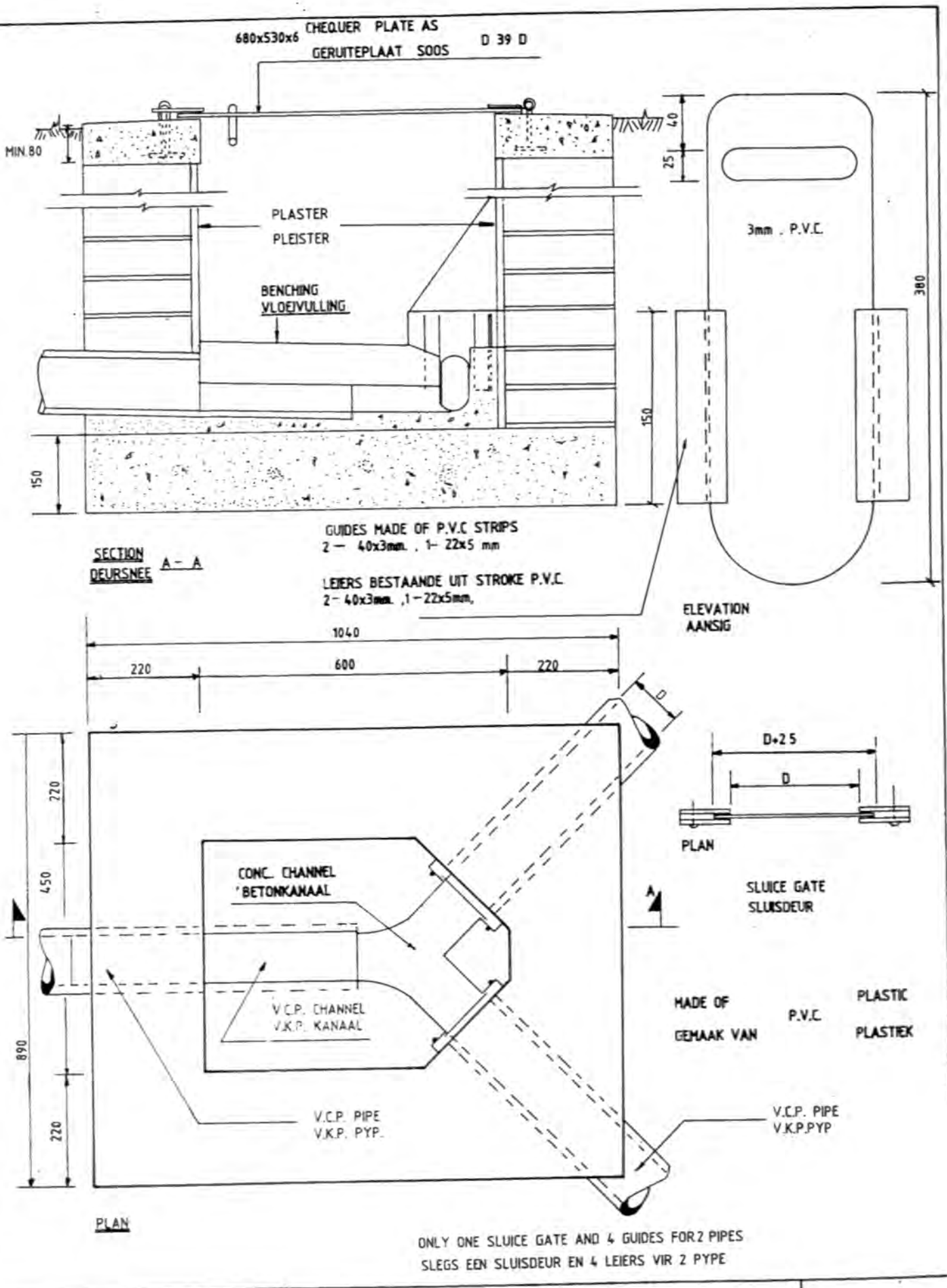
Riool
Drain

150 Beton.
150 Concrete.

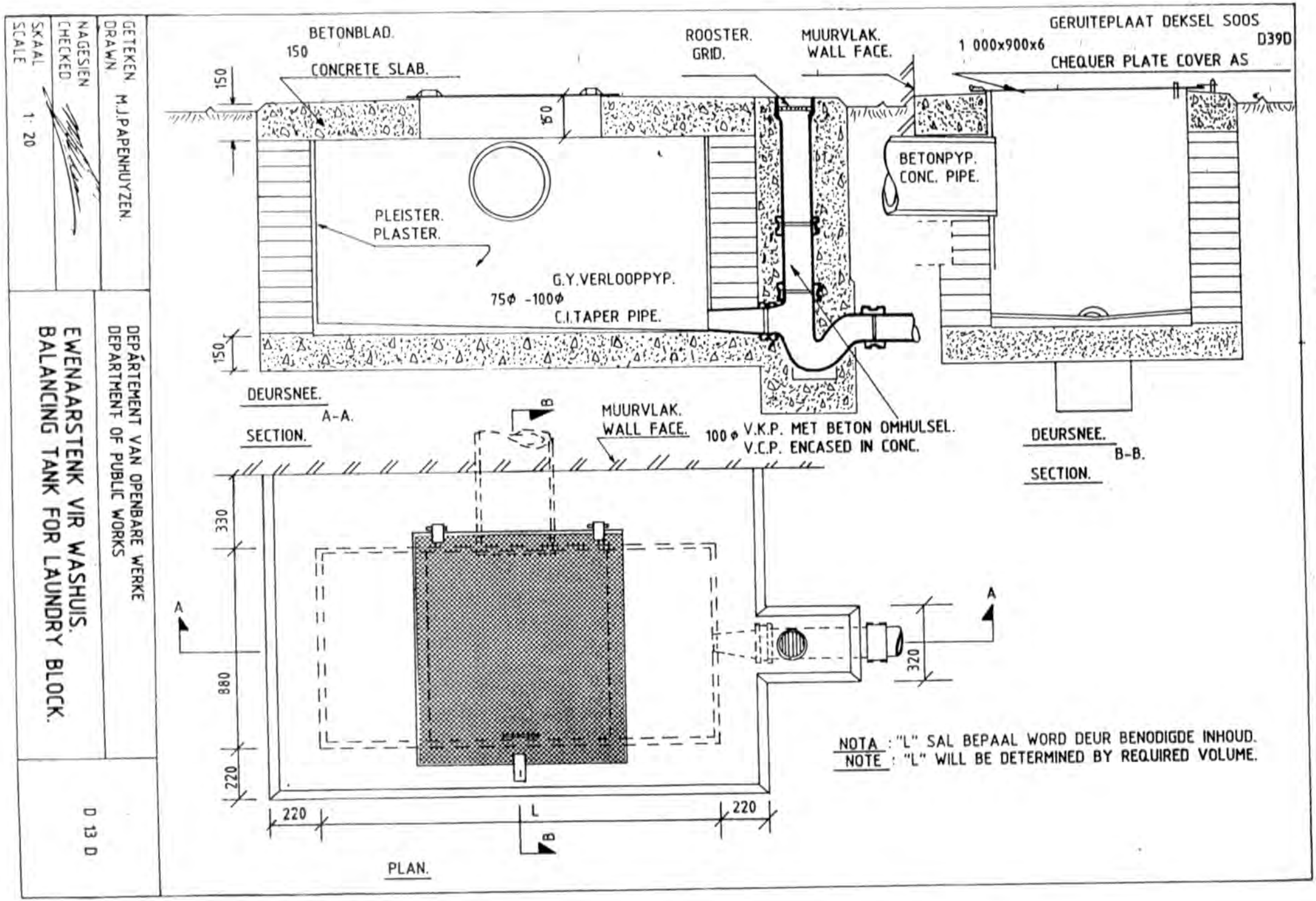
DEURSNEE A-A
SECTION A-A

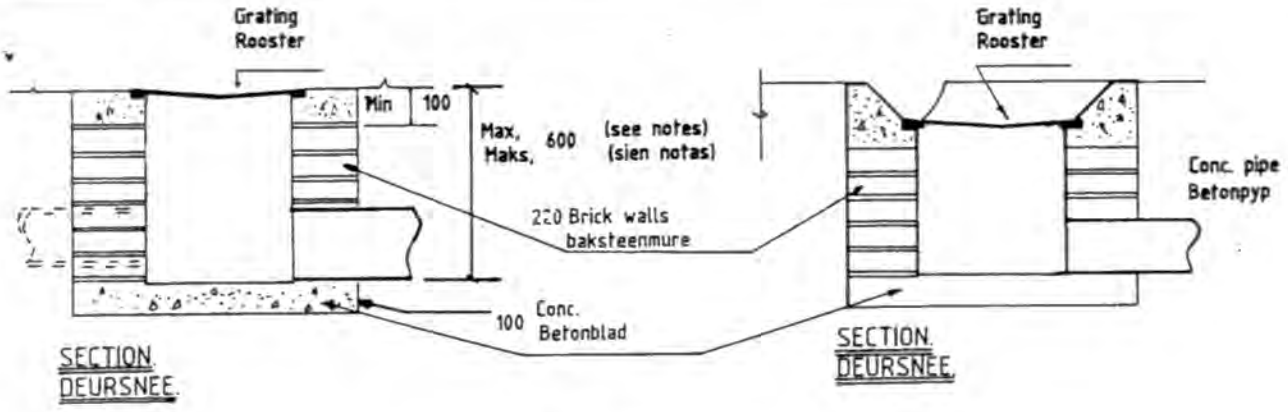


GETEKEN. J.A.C. RABE DRAWN.	MANGATE. (BAKSTEEN DIEPER AS 1530) MANHOLES. (BRICK WORK OVER 1530)	D11/AD
NAGESIEN. CHECKED.		
SKAAL. 1 : 20 SCALE.		



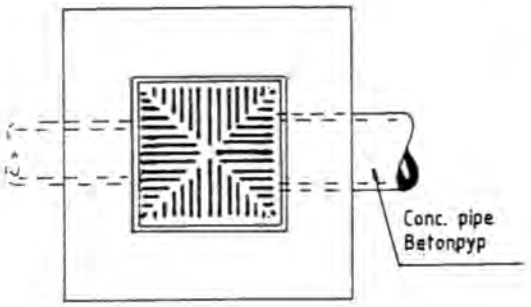
GETEKEN. DRAWN. S. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED.	CONTROL CHAMBER KONTROLEKAMER	D 12 D
SKAAL. SCALE. 1:10		


BETONBLAD.
150
CONCRETE SLAB.
150
150
ROOSTER.
GRID.
MUURVLAK.
WALL FACE.
GERUITEPLAAT DEKSEL SOOS
D39D
1 000x900x6
CHEQUER PLATE COVER AS
BETONPYP.
CONC. PIPE.
PLEISTER.
PLASTER.
G.Y.VERLOOPPYP.
75ϕ -100ϕ
C.I.TAPER PIPE.
150
DEURSNEE.
A-A.
SECTION.
MUURVLAK.
WALL FACE.
100ϕ V.K.P. MET BETON OMHULSEL.
V.C.P. ENCASED IN CONC.
DEURSNEE.
B-B.
SECTION.
330
880
220
220
L
220
320
A
B
NOTA : "L" SAL BEPAAL WORD DEUR BENODIGDE INHOUD.
NOTE : "L" WILL BE DETERMINED BY REQUIRED VOLUME.
PLAN.
GETEKEN M.J.PAPENHUYZEN.
DRAWN
NAGESIEN
CHECKED
SKAAL 1:20
SCALE
DEPARTEMENT VAN OPENBARE WERKE
DEPARTMENT OF PUBLIC WORKS
EWENAARSTENK VIR WASHUIS.
BALANCING TANK FOR LAUNDRY BLOCK.
D 13 D



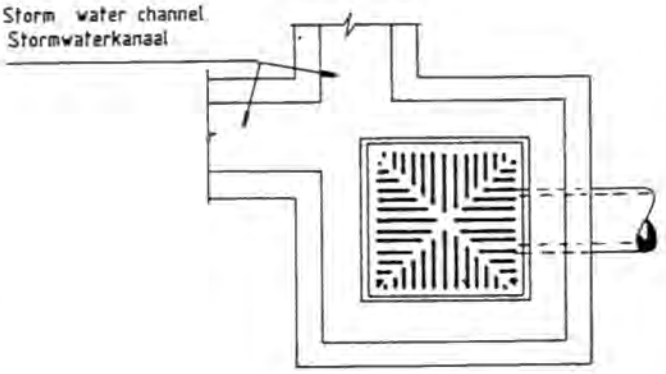
SECTION.
DEURSNEE.

SECTION.
DEURSNEE.



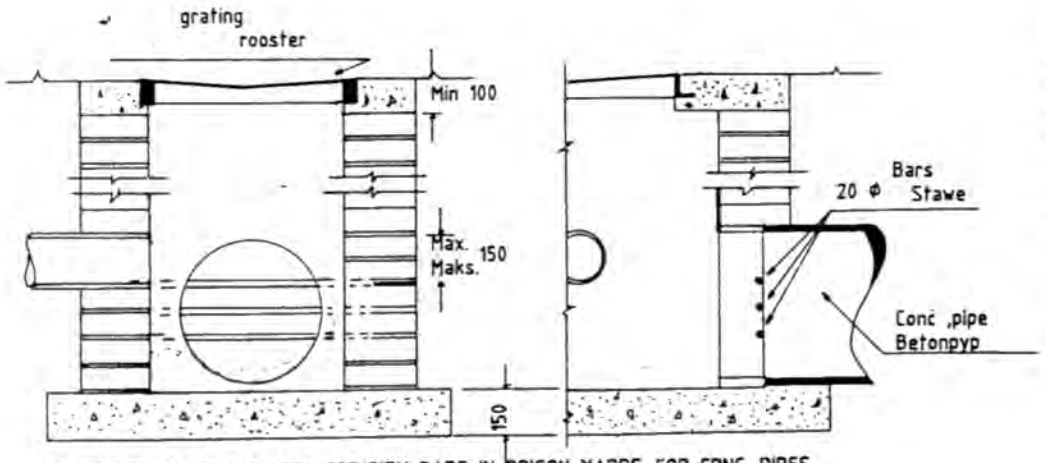
PLAN

TYPE A
TIPE



PLAN

TYPE B
TIPE



GRATING SIZES.
ROOSTERMATES.

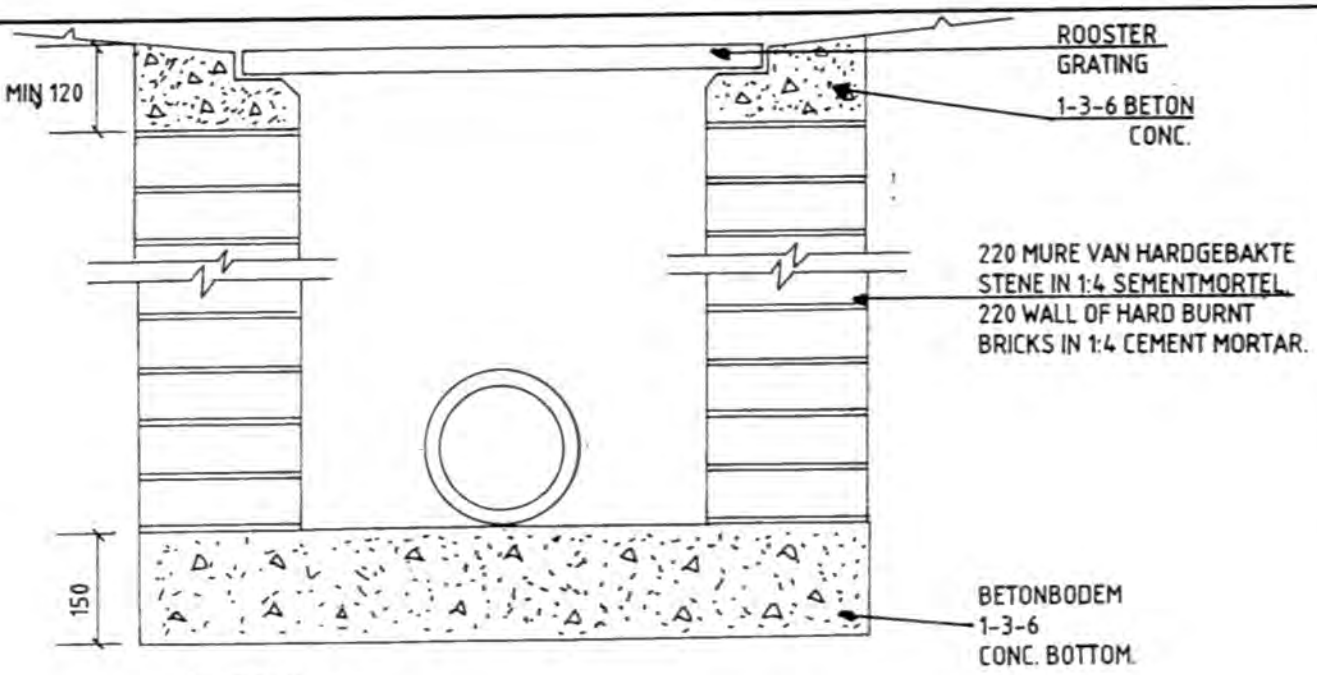
300x300
350x350
380x380
400x400
450x450
500x500
600x600

SECTION OF CATCHPITS WITH SECURITY BARS IN PRISON YARDS, FOR CONC. PIPES 380 ϕ AND LARGER.
DEURSNEE VAN VANGPUTTE MET VEILIGHEIDSSTAWE IN GEVANGENISBINNEPLASE, VIR BETONPYPE 380ϕ EN GROTER.

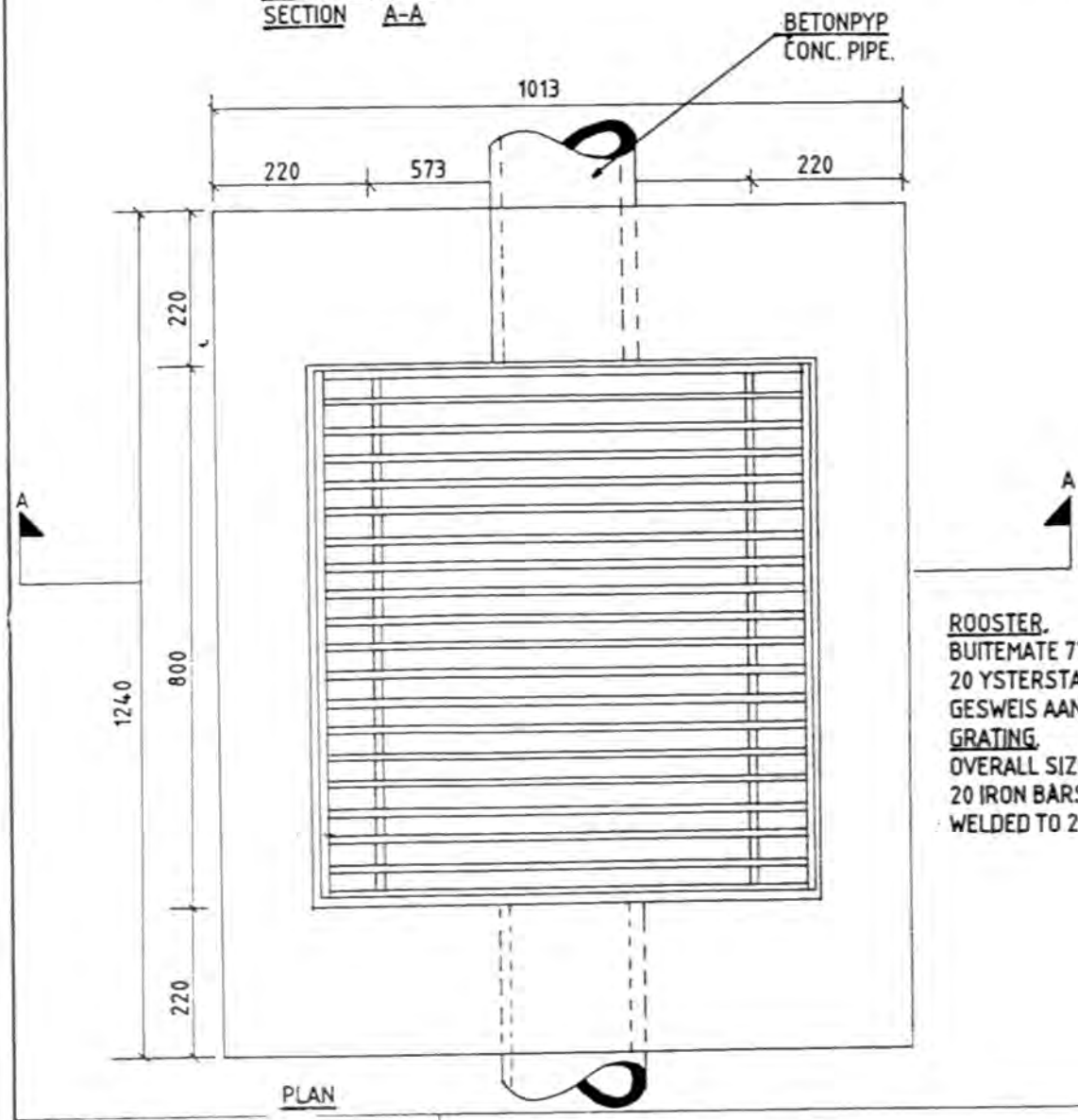
NOTES:
Catchpits under 600ϕ deep:
Inside dimensions of finished wall is equal to daylight sizes of C.I. frame.
Catchpits 610—1 530 deep : (asD 10 D)
Grating sizes to suit framework.
Catchpits over 1530 deep (as D11D)
Grating sizes to suit framework.

NOTAS.
Vangputte minder as 600 diep:
Binnemate van afgewerkte mure is gelyk aan dagmate van G.Y. raam.
Vangputte 610/1 530 diep (soos D 10 D)
Roosterwerk moet by raamwerk pas.
Vangputte dieper as 1 530: (soos D 11 D).
Roostermate moet by raamwerk pas.

GETEKEN. DRAWN. S. CILLIERS.		
NAGESIEN. CHECKED.	CATCHPITS. ——→ TYPE A AND B	D 14 D
SKAAL. SCALE. 1:25	VANGPUTTE ——→ TIPE A EN B.	



DEURSNEE A-A
SECTION A-A



PLAN

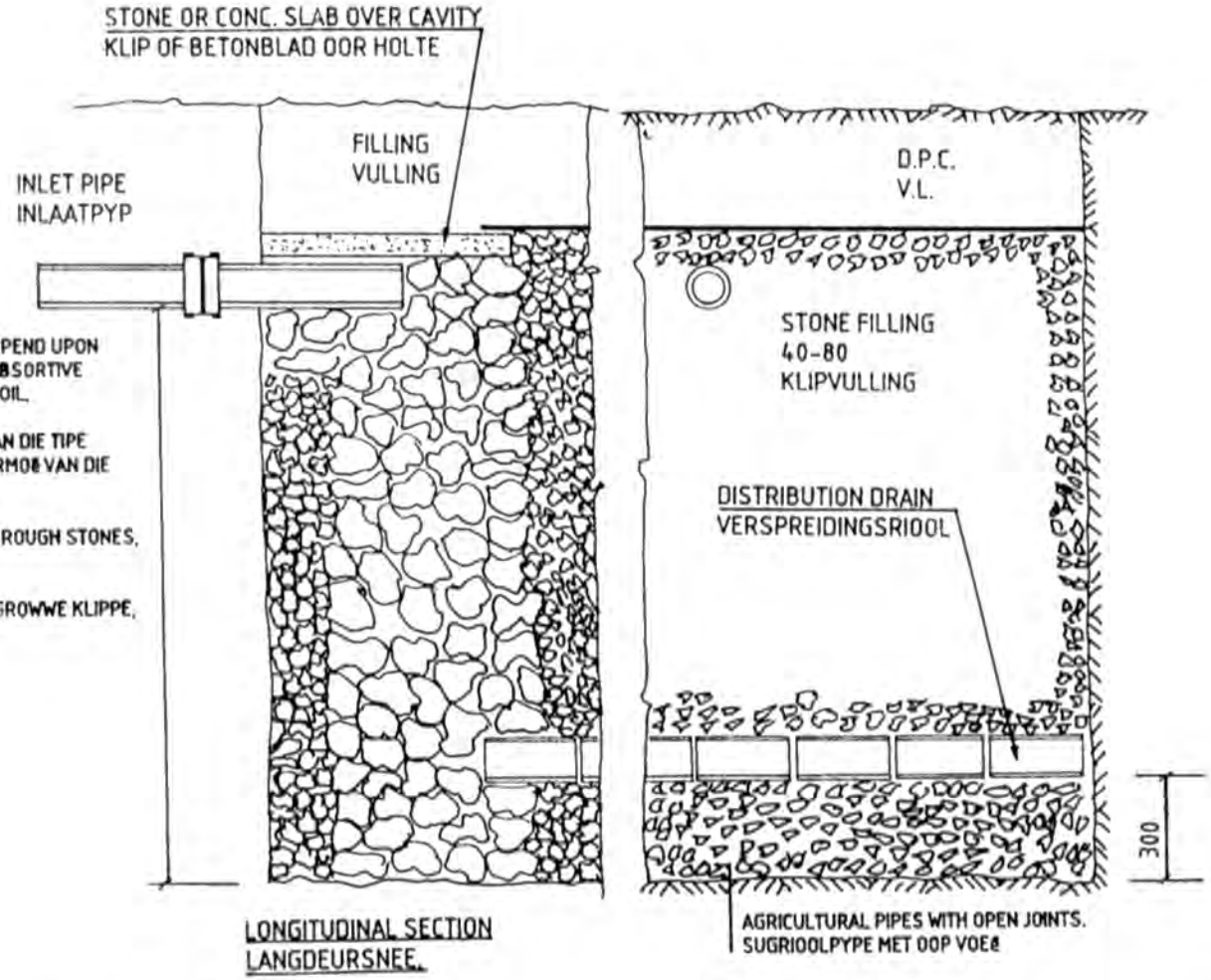
ROOSTER.
BUITEMATE 772x690
20 YSTERSTAWE 40x12 H.O.H. 40
GESWEIS AAN 2-40x12 STAWE.
GRATING.
OVERALL SIZE 772x690
20 IRON BARS 40x12 C.T.C 40
WELDED TO 2-40x12 BARS.

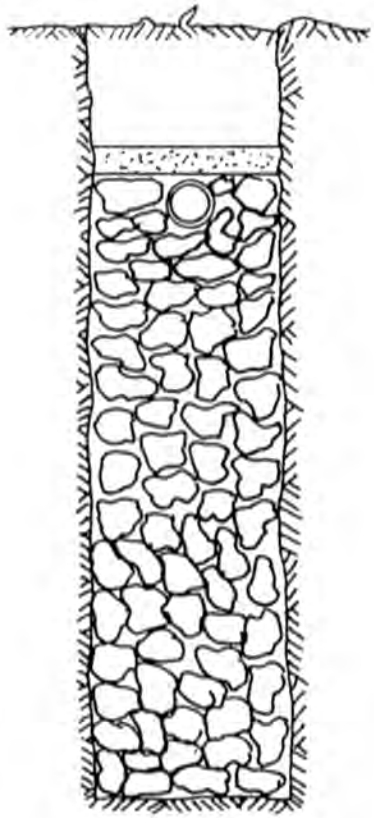
GETEKEN. DRAWN. J.A.C. RABE		
NAGESIEN. CHECKED.	VANGPUT TIPE C. CATCHPIT TYPE C.	D15D
SKAAL. SCALE. 1:10		

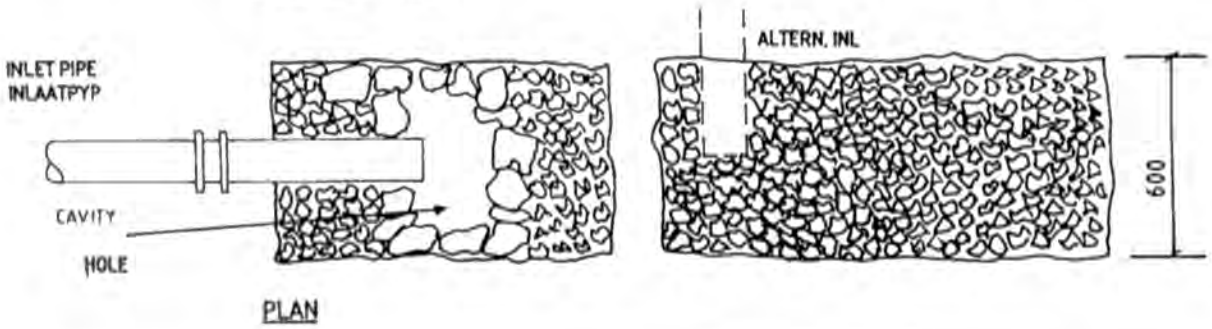
GETEKEN. DRAWN. JAC. RABE
NAGESIEN. CHECKED.
SKAAL. SCALE. 1:20

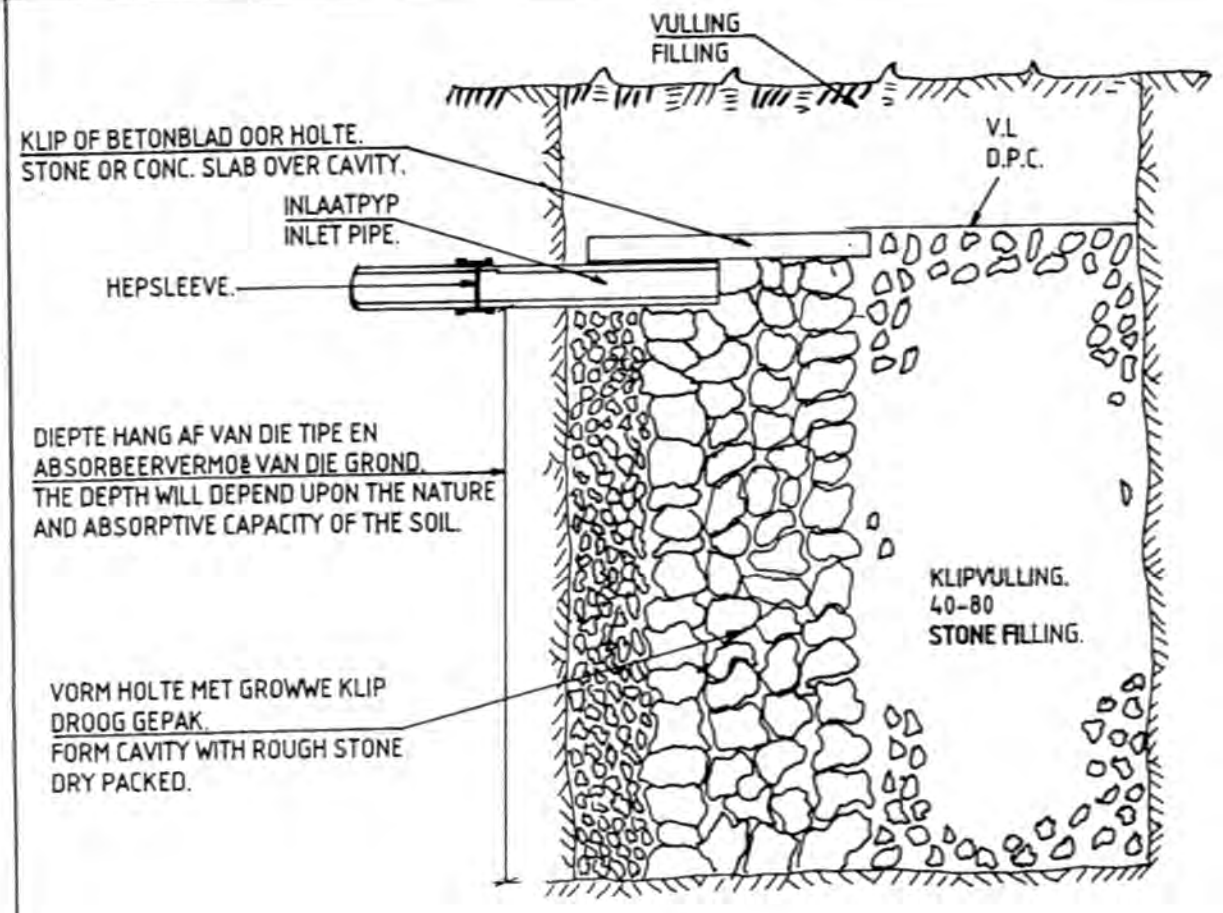
STAFEL RIOOL
FRENCH DRAIN

D 160

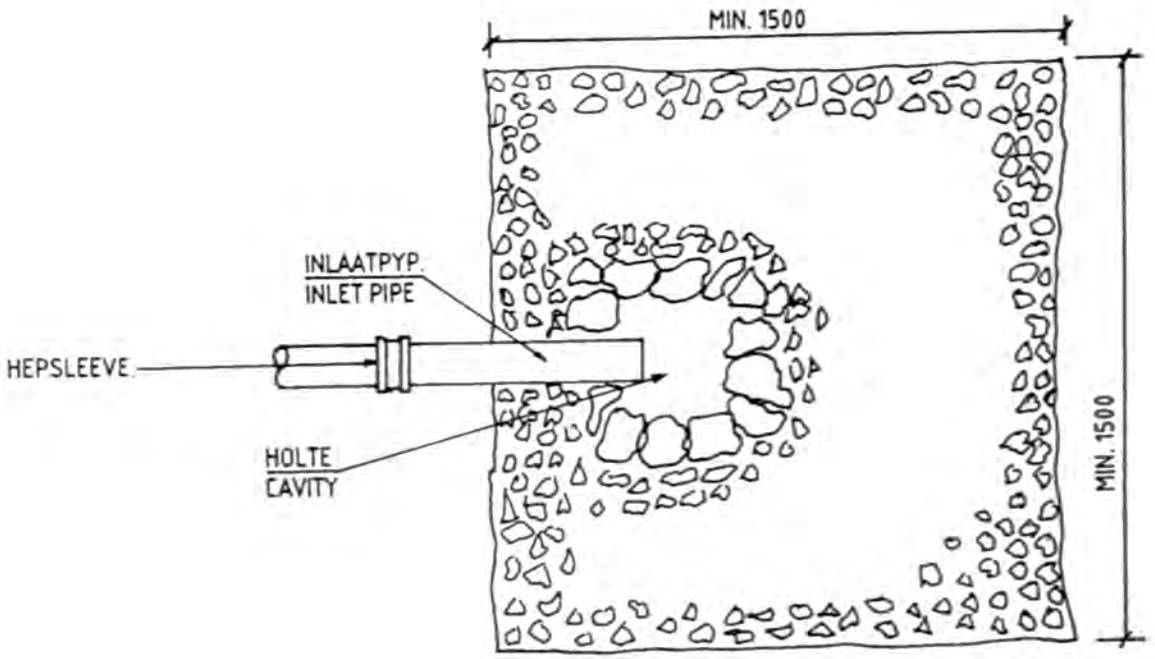






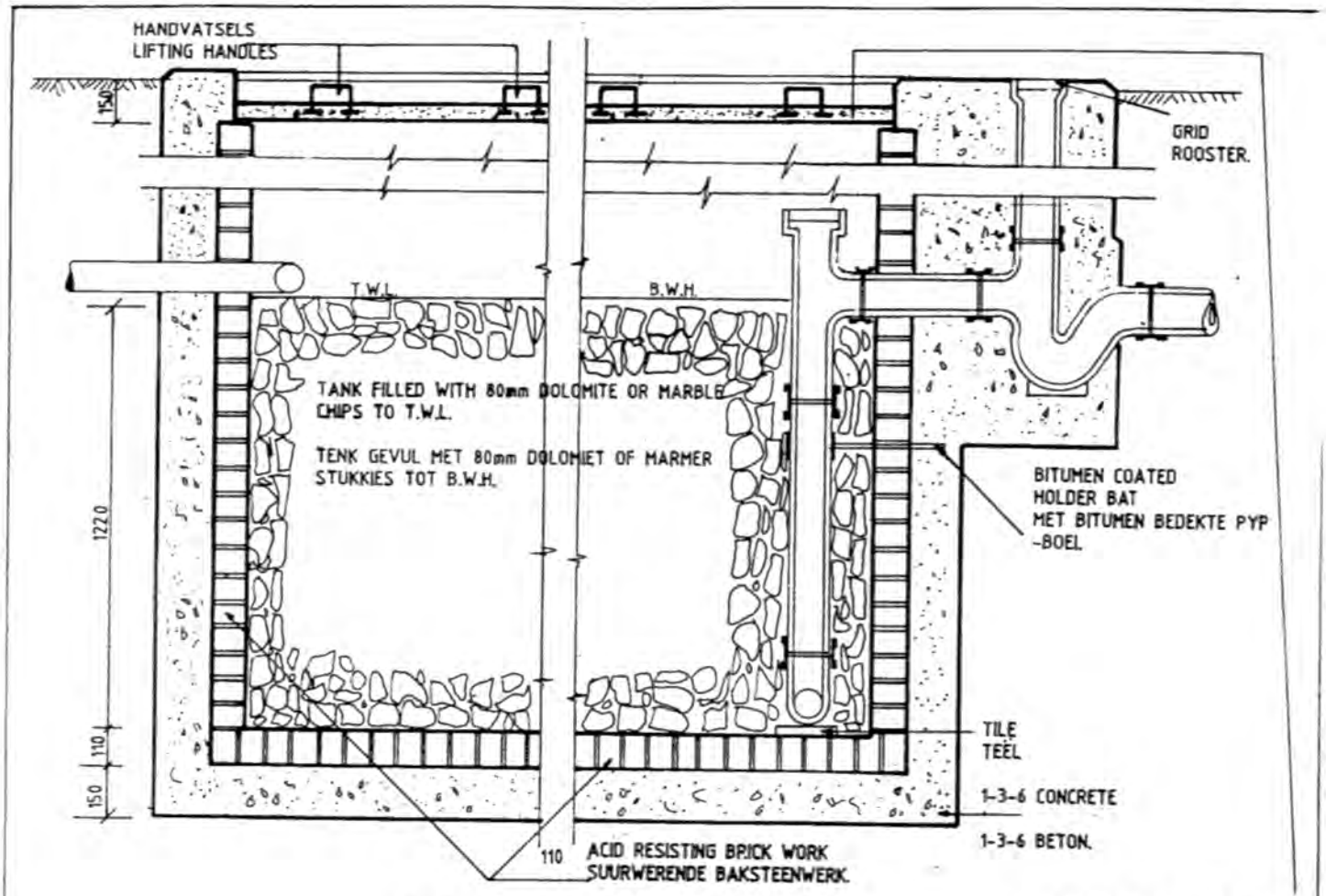


DEURSNEE
SECTION



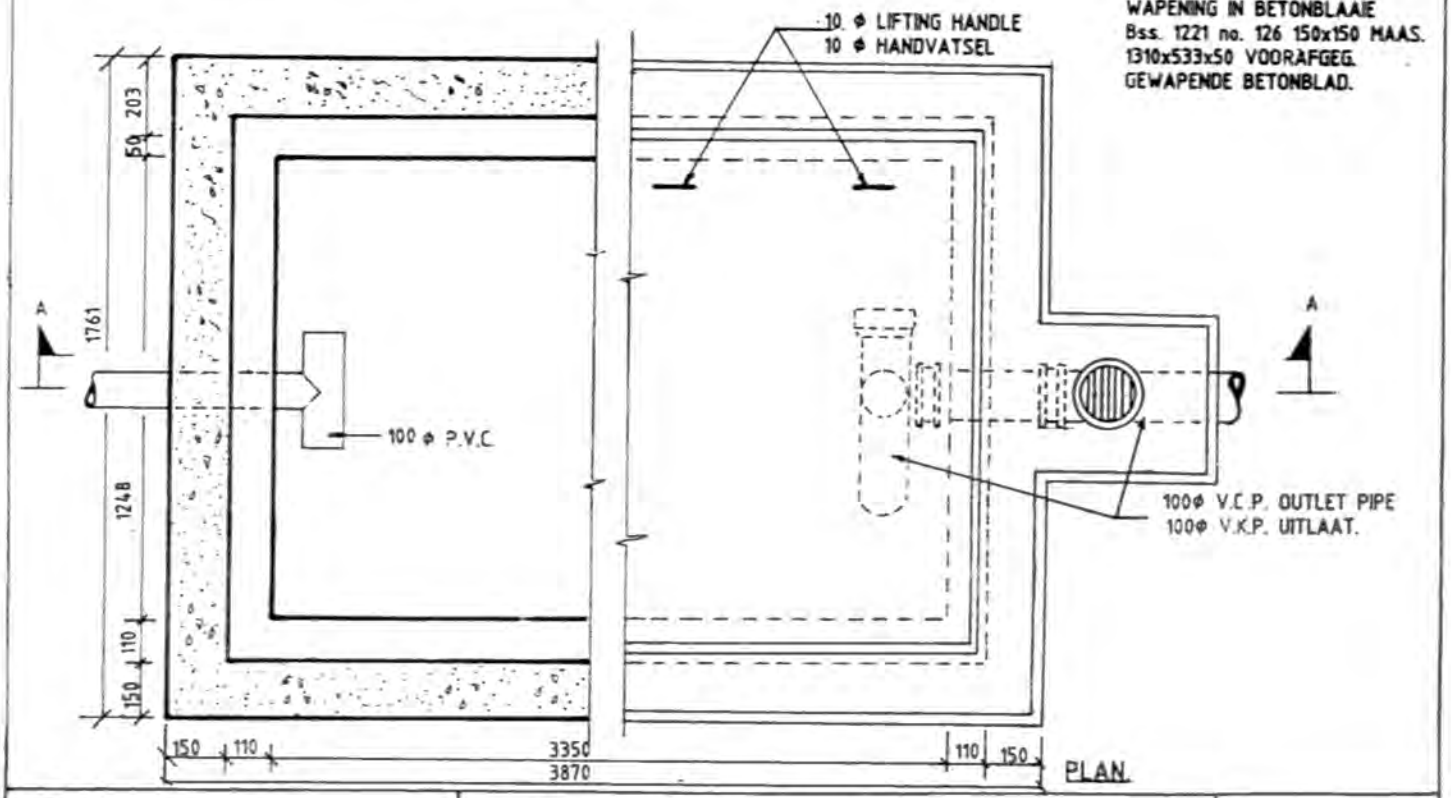
PLAN

GETEKEN. DRAWN. J.A.C. RABE		D17D
NAGESIEN. CHECKED.	SYFERPUT SOAKAGE PIT	
SKAAL. SCALE. 1:20		



SECTION A-A
DEURSNEE A-A

REINFORCEMENT IN CONC. SLABS
Bss. 1221 NO. 126 150x150 MESH.
1310x533x50 PRECAST REINFORCED CONC. SLAB
WAPENING IN BETONBLAAIE
Bss. 1221 no. 126 150x150 MAAS.
1310x533x50 VOORAFGEG. GEWAPENDE BETONBLAD.



PLAN.

GETEKEN. DRAWN. S.P. CILLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED.	ACID NEUTRALIZING TANK. SUUR NEUTRALISERINGSTENK.	D18D
SKAAL. SCALE. 1:20		

GETEKEN
DRAWN S.P. CILLIERS

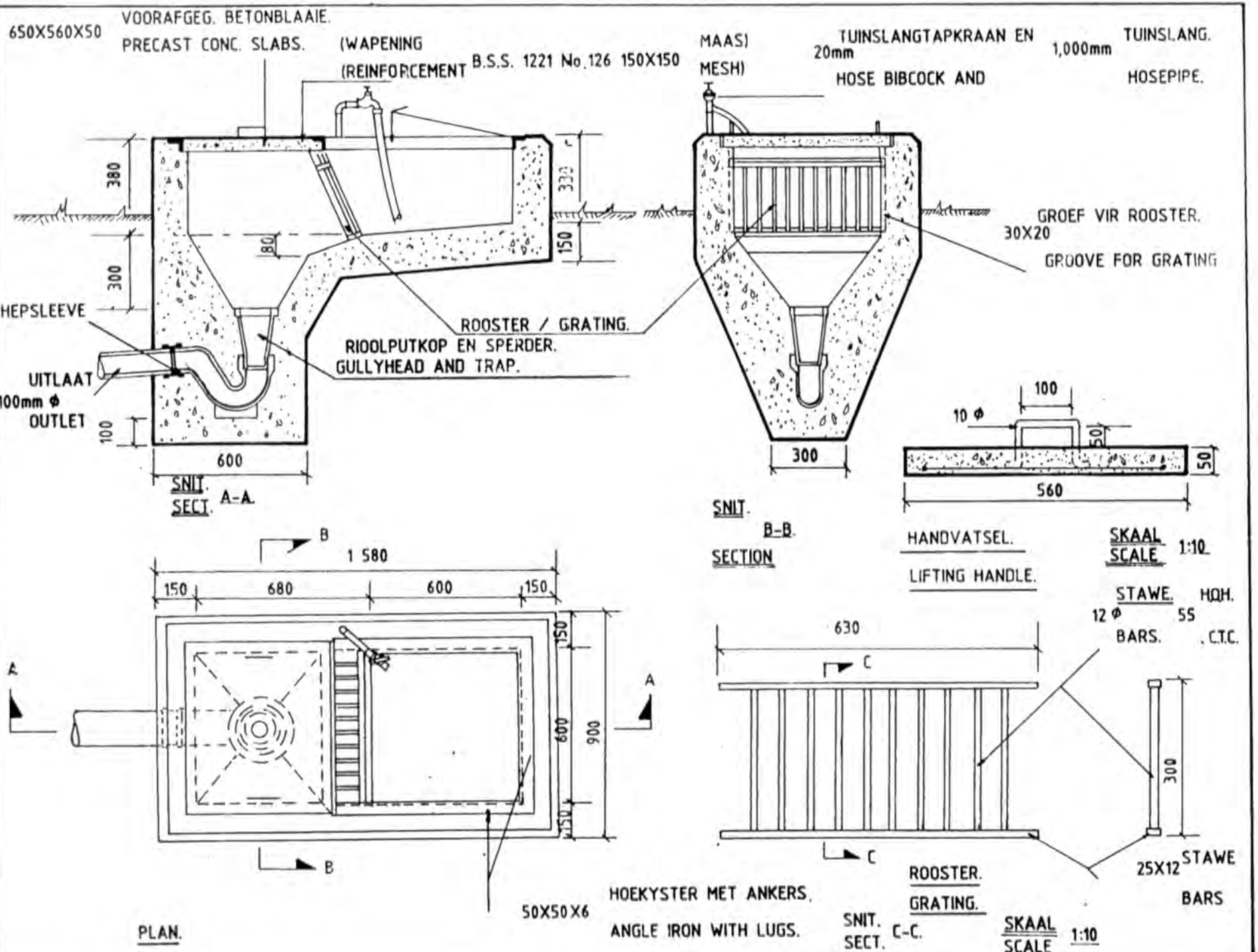
NAGESIEN
CHECKED

SKAAL
SCALE 1:20

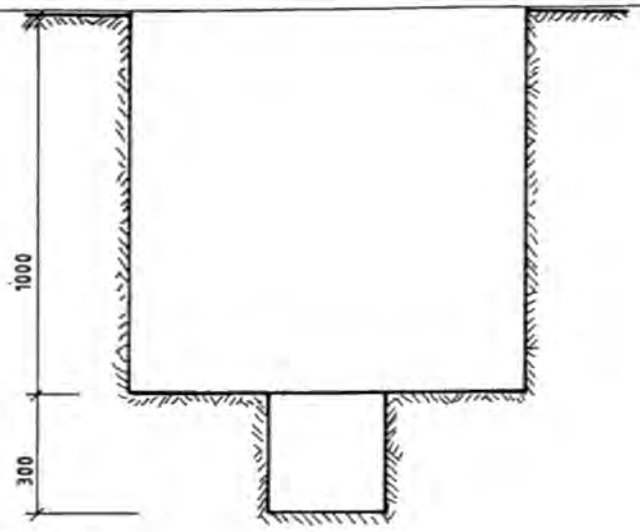
DEPARTEMENT VAN OPENBARE WERKE
DEPARTMENT OF PUBLIC WORKS

STORTINGSPUT.
DUMPING PIT.

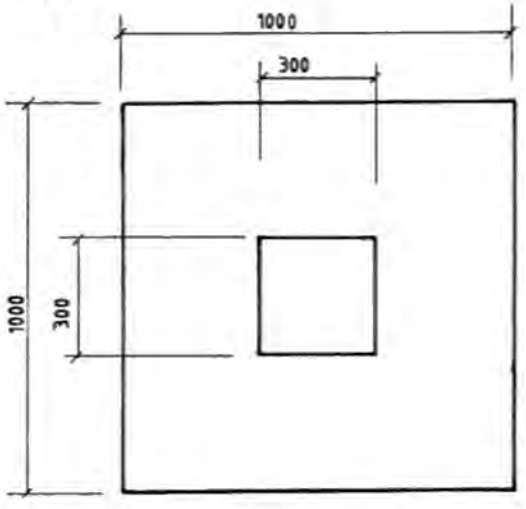
D 19 D



THE 300x300mm TEST HOLE IS TO BE THOROUGHLY SOAKED BY FILLING IT WITH WATER TO A DEPTH OF 300mm. THIS WATER LEVEL MUST BE MAINTAINED FOR AT LEAST 4 HOURS BY CONSTANTLY ADDING WATER. IMMEDIATELY AFTER THIS INITIAL SOAKING AND WITH THE WATER LEVEL ,STILL AT THE REQUIRED DEPTH, (NO FUTHER WATER IS TO BE ADDED AFTER THIS) THE DROP IN THE WATER SURFACE MUST BE OBSERVED FOR A PERIOD OF 30 MINUTES, THEN MEASURED. FROM THESE OBERVATIONS THE AVERAGE TIME FOR THE WATER TO DROP 25mm CAN BE CALCULATED AND THE LENGTH OF THE FRENCH DRAIN DETERMINED FROM THE TABLE BELOW.



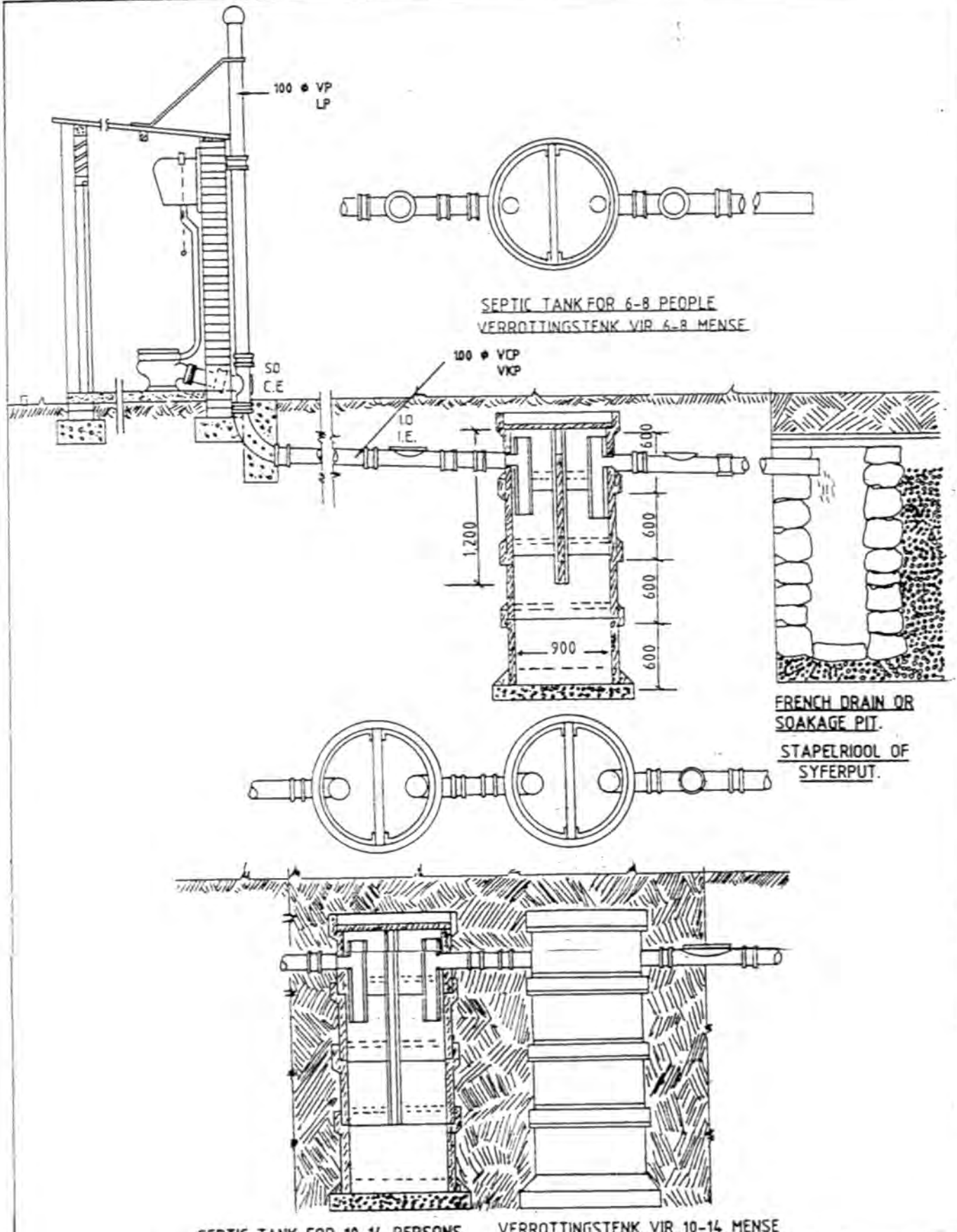
SECTION.



PLAN.

AVERAGE TIME TAKEN FOR WATER TO DROP 25mm IN 300x300x300 HOLE.	COMMENTS	LENGTH OF FRENCH DRAIN PER PERSON. DEPTH 1,5 m BELOW INVERT OF INLET PIPE. (DOMESTIC SEWAGE EFFLUENT INCLUDING WASTE WATER.)
15 SECONDS OR LESS.	EXCELLENT.	300 mm
30 SECONDS OR LESS.	VERY GOOD	450 mm
1 MINUTE	GOOD	600 mm
2 MINUTE	GOOD	750 mm
3 MINUTE	GOOD	1,1 m
4 MINUTE	GOOD	1,4 m
5 MINUTE	GOOD	1,55 m
10 MINUTE	FAIR	1,8 m
15 MINUTE	FAIR	2,3 m
30 MINUTE	TIGHT	3 m
60 MINUTE	BAD	4,5 m

GETEKEN. DRAWN S.P. CILLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	D20D
NAGESIEN CHECKED	ABSORPTION TEST HOLE. WEGSYFER TOETSGAT .	
SKAAL SCALE 1:25		

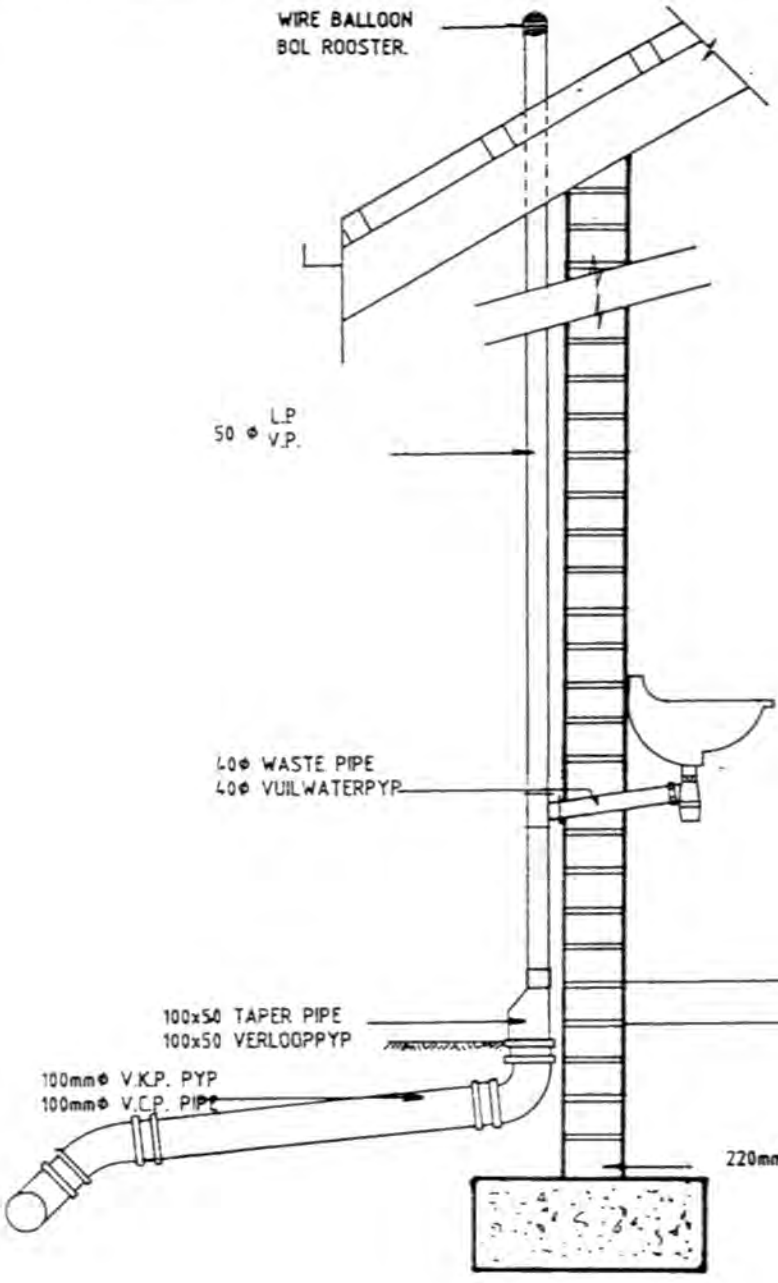


SEPTIC TANK FOR 6-8 PEOPLE
VERROTTINGSTENK VIR 6-8 MENSE

FRENCH DRAIN OR
SOAKAGE PIT.
STAPELRIOOL OF
SYFERPUT.

SEPTIC TANK FOR 10-14 PERSONS. VERROTTINGSTENK VIR 10-14 MENSE

GETEKEN. DRAWN. S.P. GILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	D21D
NAGESIEN. CHECKED.	PREFABRICATED CIRCULAR SEPTIC TANKS.	
SKAAL. SCALE 1:20	VOORAFVERVAARDIGE RONDE VERROTTINGSTENK.	

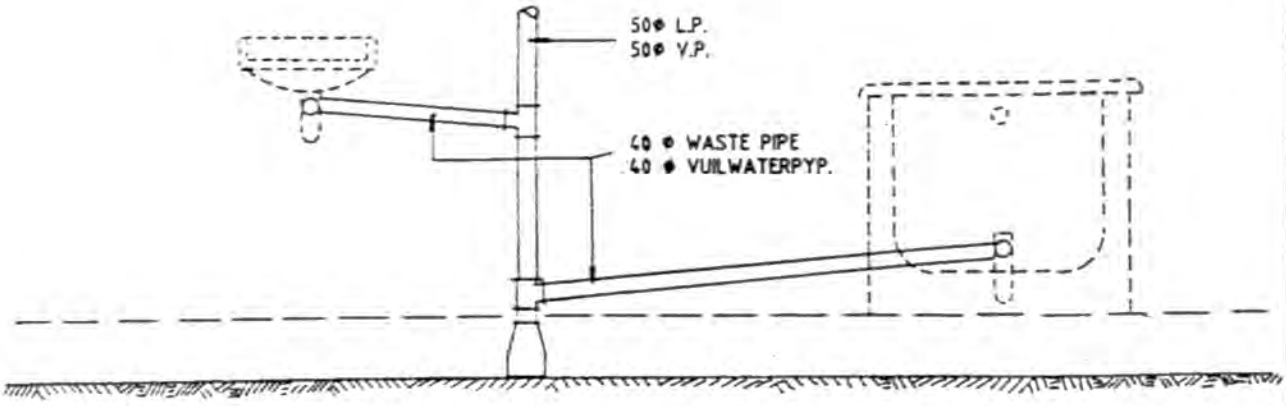


NOTA

ALLE VUIL WATER SPERDERS MOET N SEËL VAN 'N MINIMUM DIEPTE VAN 65mm HÊ.

NOTE

ALL WASTE WATER TRAPS TO HAVE A MINIMUM SEAL OF 65mm.



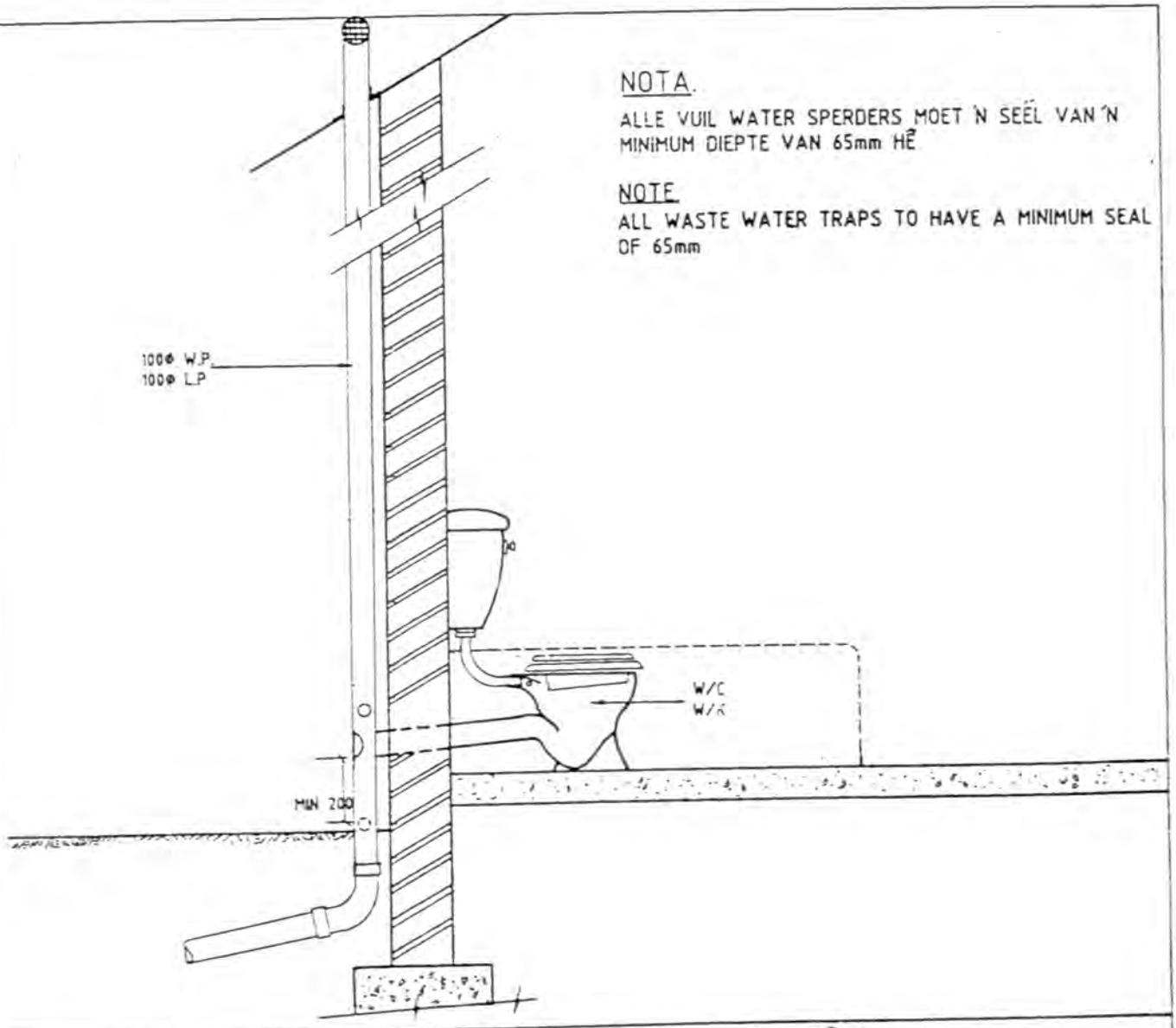
GETEKEN DRAWN. S.P. CILLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	TIPIESE VUILWATERPYP AANSLUITING MET RIOOL. TYPICAL WASTE PIPE CONNECTION TO DRAIN.	D22(A)0
SKAAL SCALE. N.V.S.		

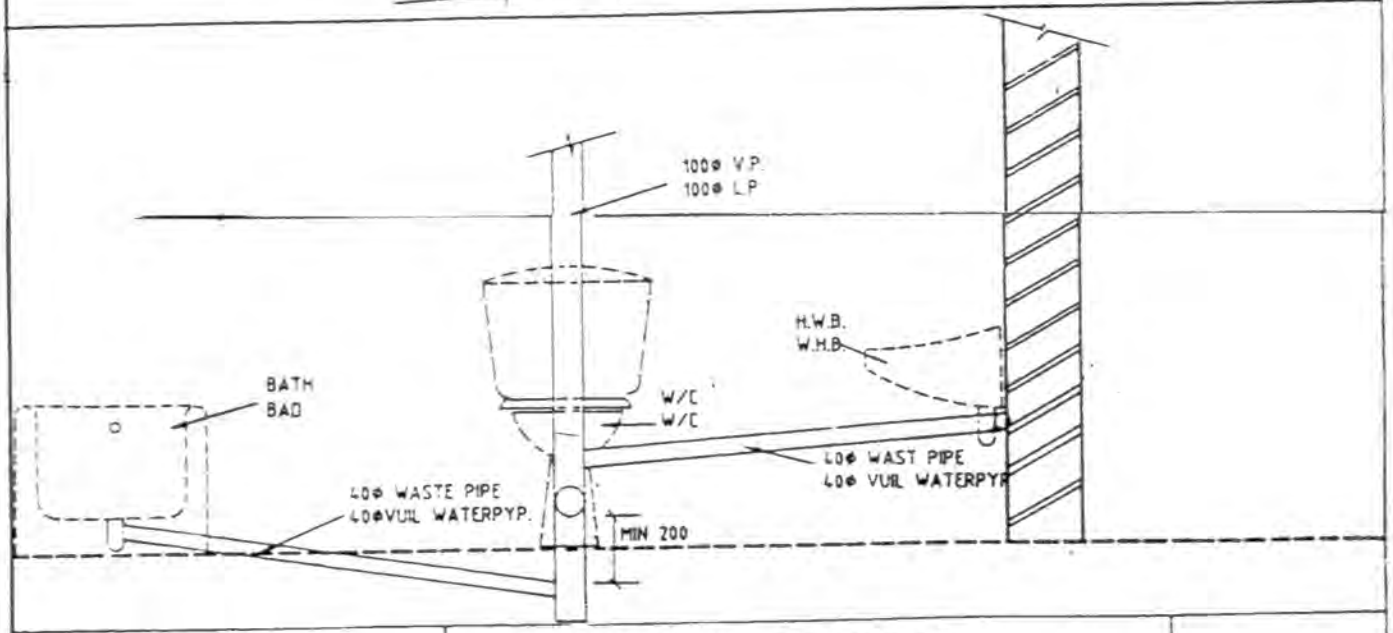
NOTA.

ALLE VUIL WATER SPERDERS MOET 'N SEËL VAN 'N MINIMUM DIEPTE VAN 65mm HÊ

NOTE

ALL WASTE WATER TRAPS TO HAVE A MINIMUM SEAL OF 65mm



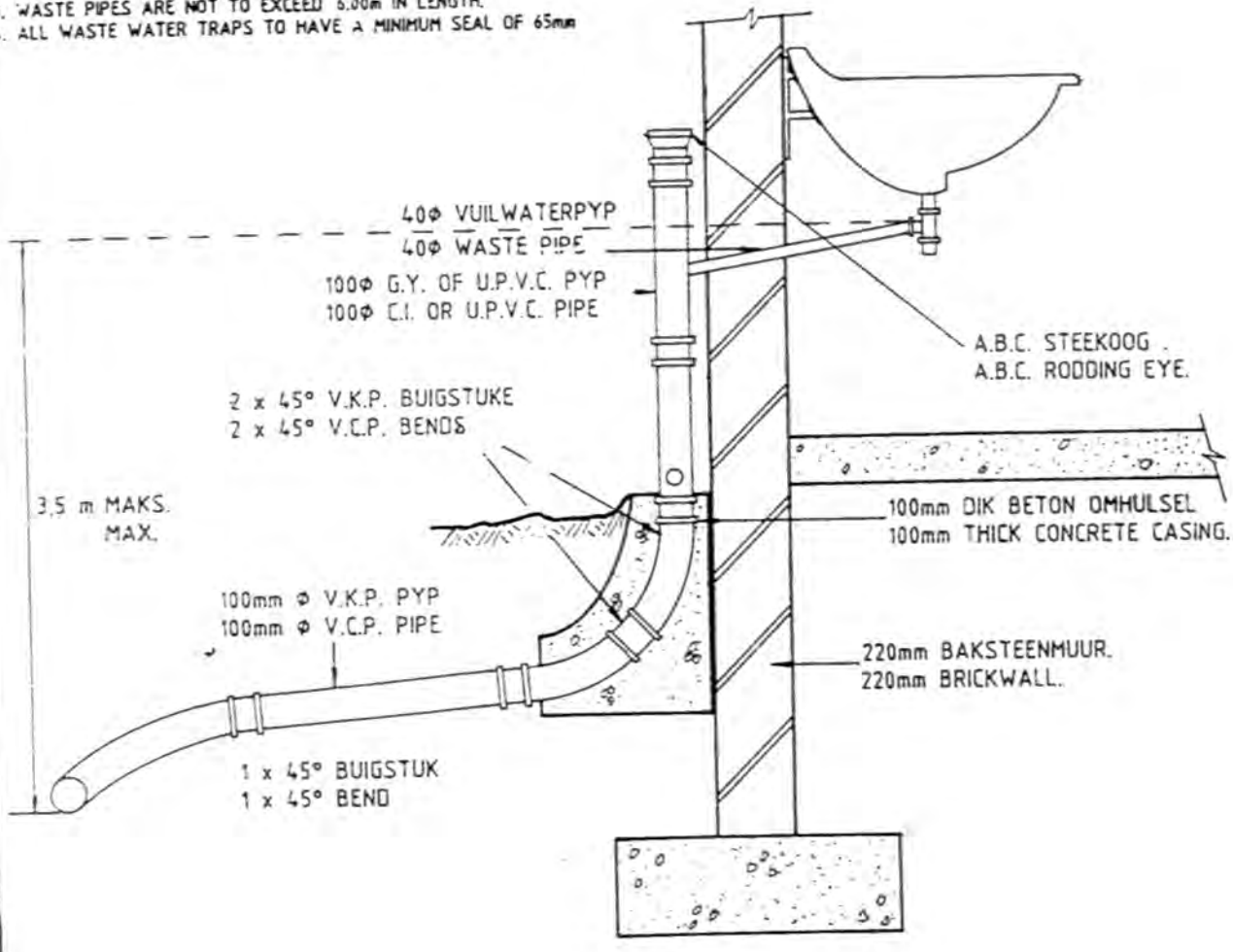


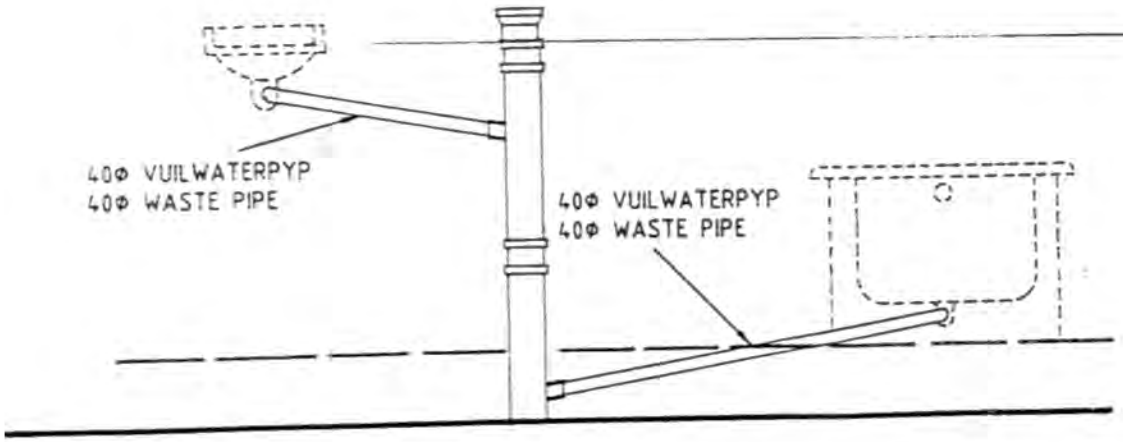
GETEKEN DRAWN S.P. GILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	TIPIESE AANSLUITING MET RIOOL. TYPICAL CONNECTION TO DRAIN.	D22(B)D
SKAAL SCALE 1:20		

NOTAS : NOTES.

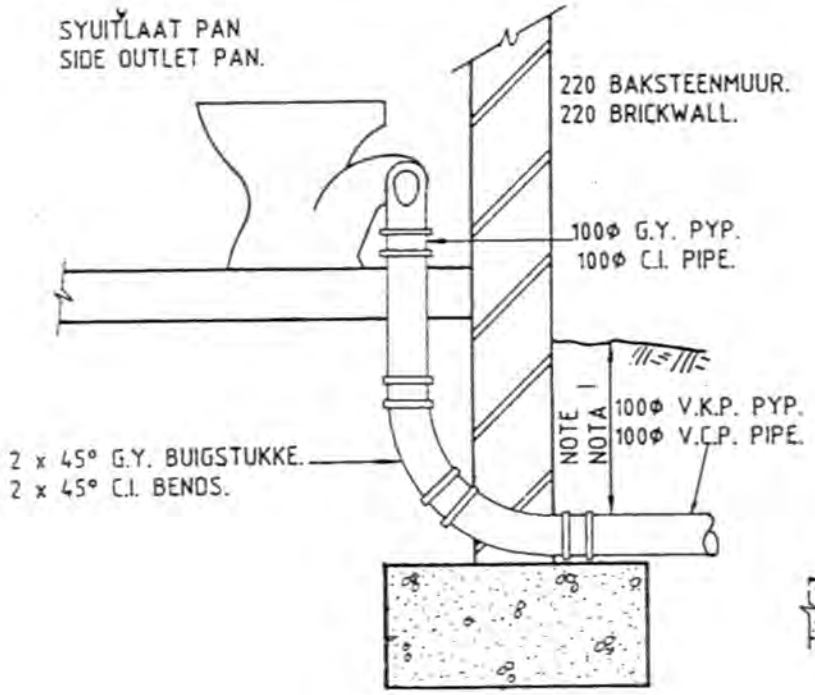
1. ALLE VUILWATERPYPE MOET 40Φ WEES EN TEEN N' HELLING VAN 1 : 25 GELÊ WORD.
2. INDIEN DIE AFSTAND TUSSEN DIE BOONSTE AANSLUITING EN DIE INLOOP VLAK VAN DIE TAK RIOOL 3.5m OORSKRY MOET DAAR TERUGGEKEER WORD NA TEKENING D22(A)D
3. VUILWATERPYPE MOET NIE 6.00m IN LENGTE OORSKRY NIE.
4. ALLE VUILWATER SPERDERS MOET N' SEEL VAN N' MINIMUM DIEPTE VAN 65mm HÊ.

1. ALL WASTE PIPES TO BE 40Φ LAID AT A GRADIENT OF 1 : 25.
2. IF THE DISTANCE OF THE UPPERMOST CONNECTION AND THE INVERT LEVEL OF THE BRANCH DRAIN EXCEEDS 3.5m THEN REVERT TO TYPE DRAWING D22(A)D.
3. WASTE PIPES ARE NOT TO EXCEED 6.00m IN LENGTH.
4. ALL WASTE WATER TRAPS TO HAVE A MINIMUM SEAL OF 65mm





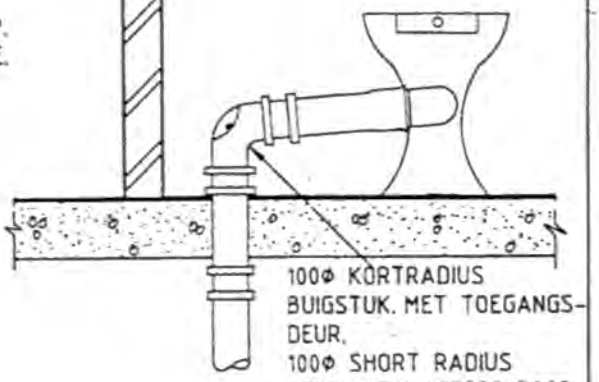
GETEKEN / DRAWN: M.C. BOTHA.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN / CHECKED:	TIPIESE VUILWATERPYP AANSLUITING MET RIOOL TYPICAL WASTE PIPE CONNECTION TO DRAIN.	D22(C)D
SKAAL / SCALE: 1 : 20		

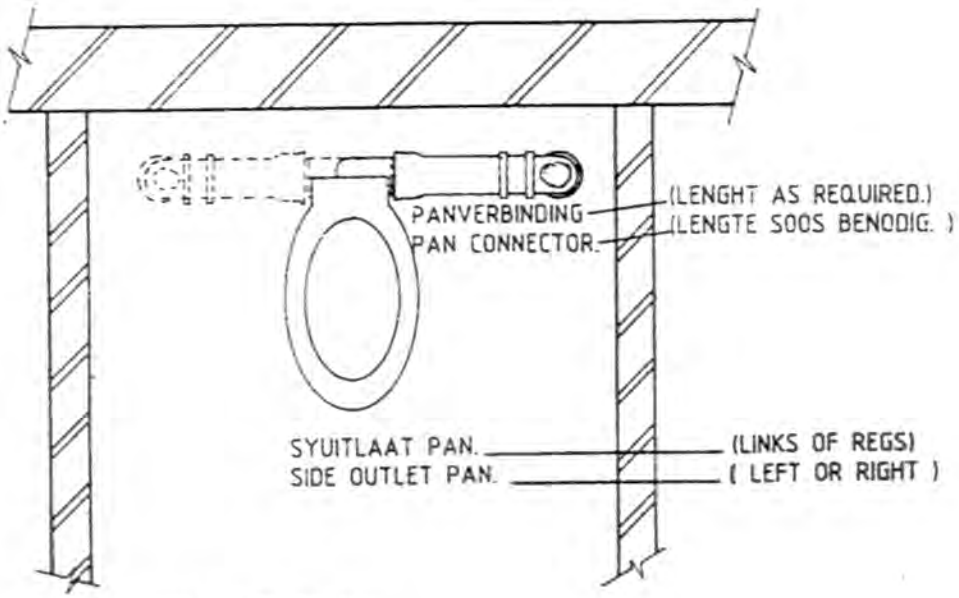


NOTAS - NOTES.

1. INDIEN MINDER AS 300mm GROND DEKKING MOET RIOOLPYP OMHUL WORD MET 100mm DIK BETON.

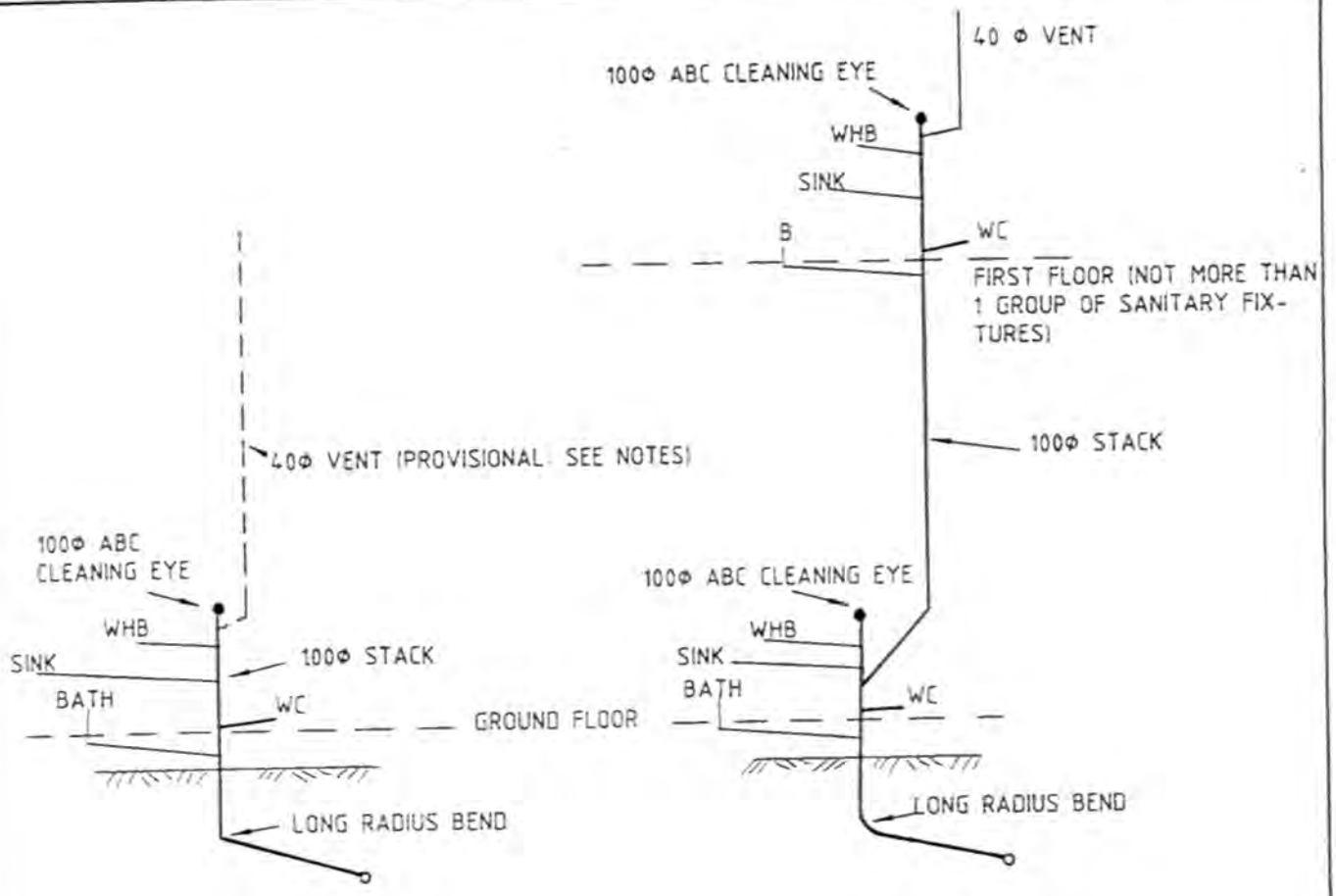
1. IF THERE IS LESS THAN 300mm GROUND COVER THE DRAIN IS TO BE INCASED WITH 100mm THICK CONCRETE.





THIS TYPE OF CONNECTION MUST BE USED IN LIEU OF AN "S" TRAP WHICH IS NOT PERMITTED.
HIERDIE TIPE AANSLUITING MOET GEBRUIK WORD IN PLEK VAN N' "S" SPERDER WAT NIE TOEGELAAT WORD NIE.

GETEKEN DRAWN M.C. BOTHA.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECHED	TIPIESE W.K. AANSLUITING. TYPICAL W.C. CONNECTION.	D22(D)D
SKAAL SCALE 1 : 20		



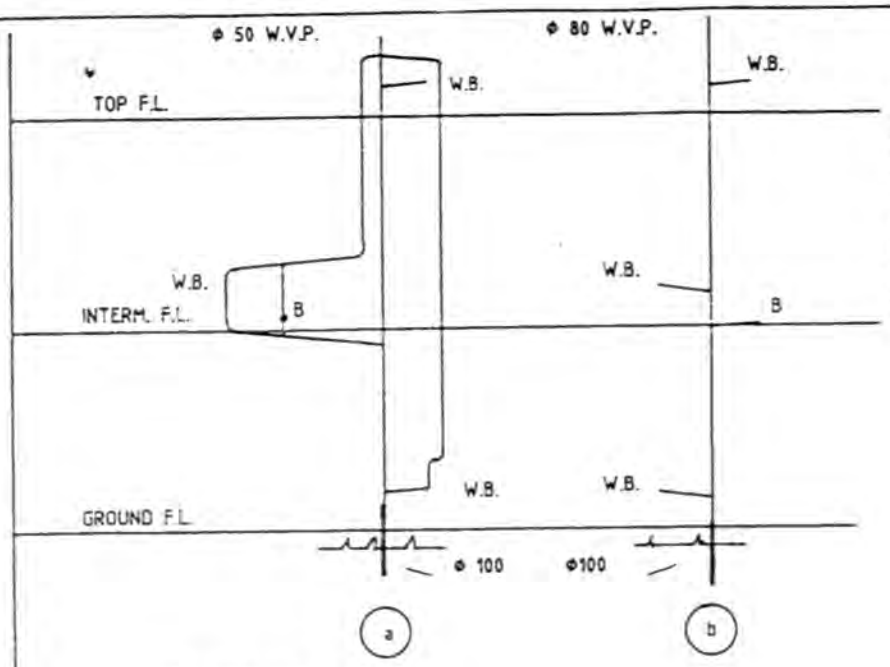
SINGLE STOREY

TWO STOREY

NOTES.

1. ALL WASTE PIPES TO BE 40Φ LAID AT A GRADIENT OF 1:25
2. THE CROWN OF THE W.C. TRAP MAY NOT BE MORE THAN 1,5 m ABOVE THE DRAIN INVERT.
3. THE HIGHEST WASTE PIPE CONNECTION TO THE STUB STACK MAY NOT BE MORE THAN 2m ABOVE THE DRAIN INVERT.
4. NOT MORE THAN ONE GROUP OF SANITARY FIXTURES ON GROUND FLOOR.
5. SHOULD ANY OF THE REQUIREMENTS IN 2 TO 4 BE EXCEEDED THEN A 40Φ VENTILATION PIPE MUST BE PROVIDED.
6. WASTE PIPES MAY NOT EXCEED 5m IN LENGTH.
7. NO CONNECTION TO THE STACK MAY BE MADE BETWEEN THE CENTRE LINE OF THE W.C. CONNECTION AND 200mm BELOW.
8. EACH FITTING MUST BE SEPARATELY CONNECTED TO THE STUBSTACK.
9. ALL WASTE FITTINGS ARE TO BE FITTED WITH DEEP SEAL TRAPS (75mm)
10. W.C. AND FLOOR OUTLETS MUST BE WITHIN 3m OF THE STUBSTACK. BATHS, BASINS, SINKS, SHOWERS, URINALS AND WASH TROUGHS MUST BE WITHIN 5m.

GETEKEN DRAWN J.C. MINNIE	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	D22(E)D
NAGESIEN CHECKED	STUB STACK SYSTEM	
SKAAL SCALE	(TWO STOREY MAXIMUM)	

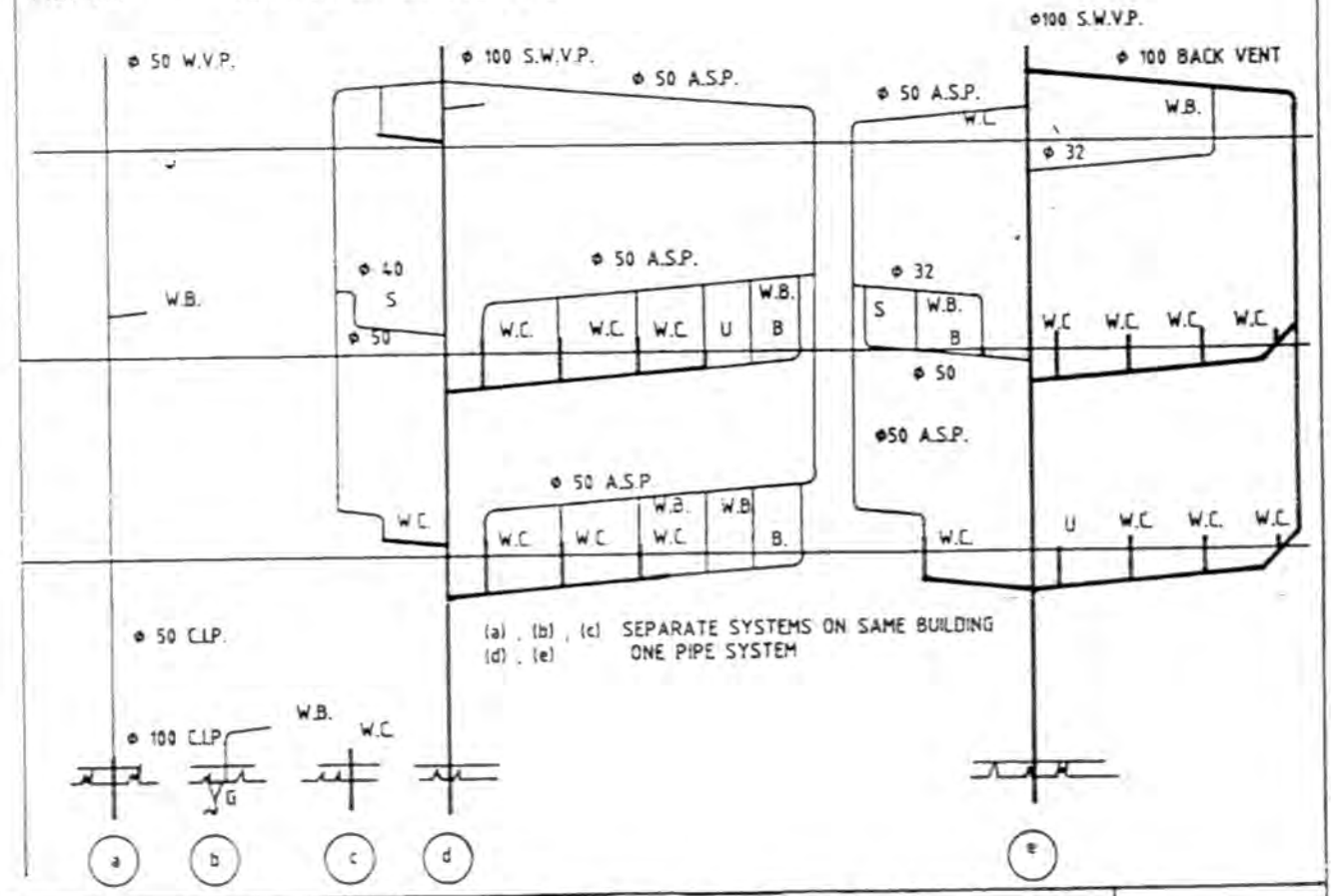


ABBREVATIONS

A.S.P.	ANTI SYPHON PIPE
B	BATH
G	GULLEY
S.V.P.	SOIL AND VENT PIPE
S.P.	SOIL PIPE
U	URINAL
W.B.	WASH BASIN
W.V.P.	WASTE AND VENT PIPE
W.P.	WASTE PIPE
W.C.	WATER CLOSET

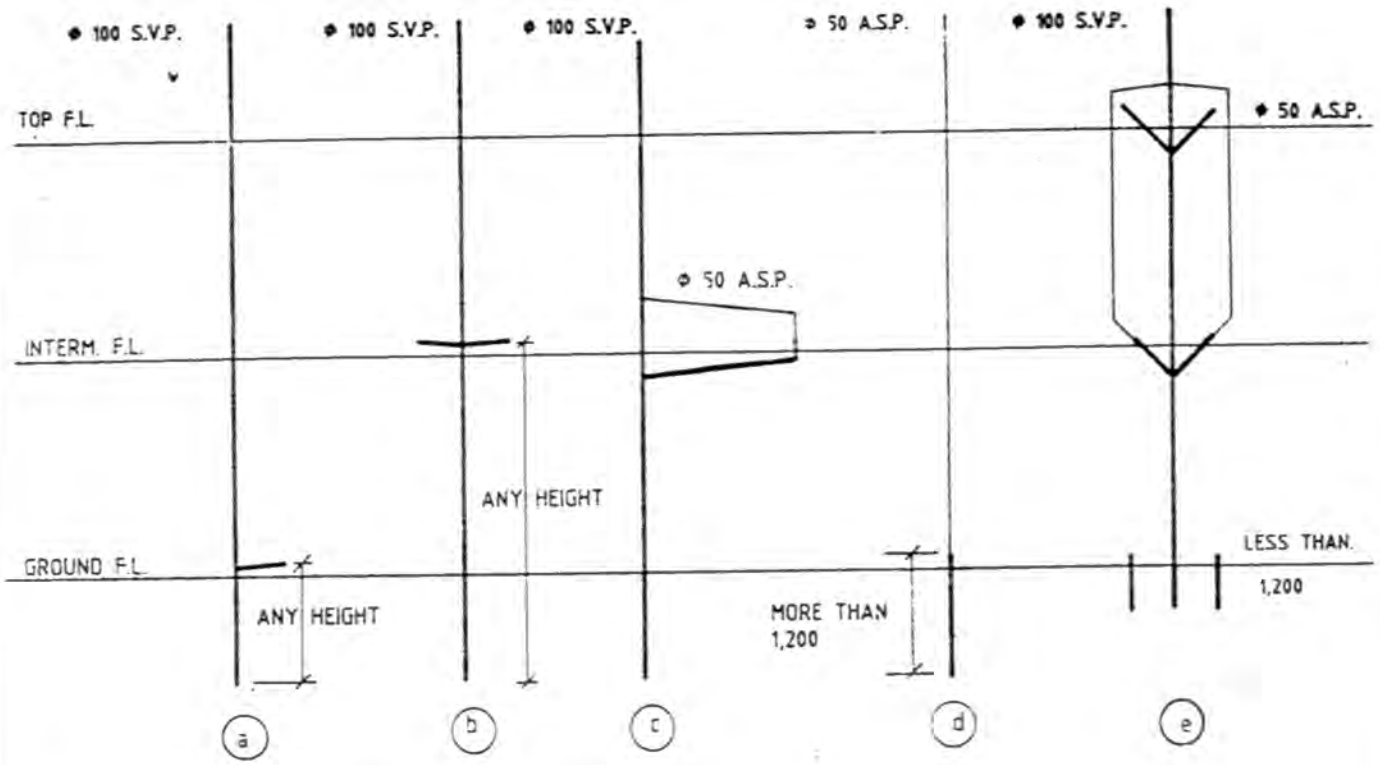
(a) WASTE PIPES WITH A.S.P.'S
(b) WASTE PIPES WITHOUT A.S.P.'S

FIG 5A VENTING OF WASTE PIPES



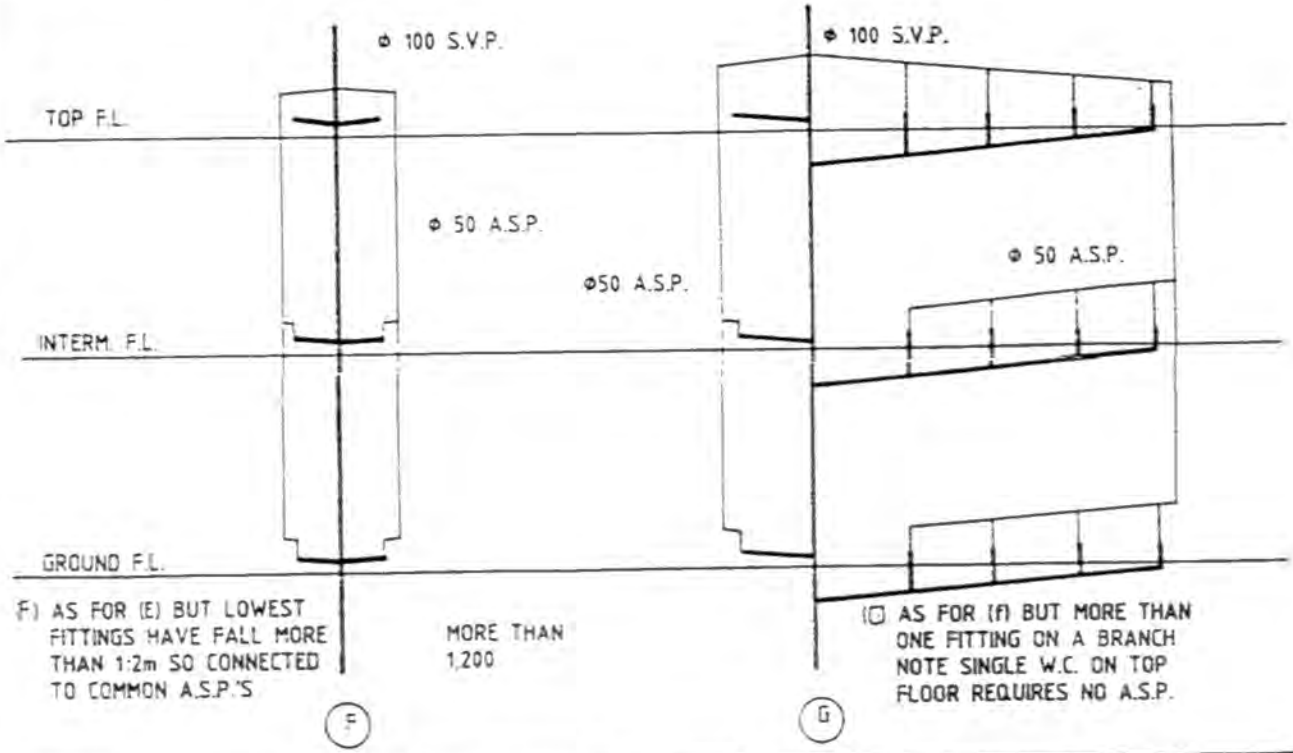
(a) , (b) , (c) SEPARATE SYSTEMS ON SAME BUILDING
(d) , (e) ONE PIPE SYSTEM

GETEKEN DRAWN S.P CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	THE ONE PIPE SYSTEM EENPYPSTELSEL.	D23(A)D
SKAAL SCALE NOT TO SCALE		



(a)+(b) SOIL FITTINGS LESS THAN 6m FROM V.P. — NO A.S.P. REQUIRED

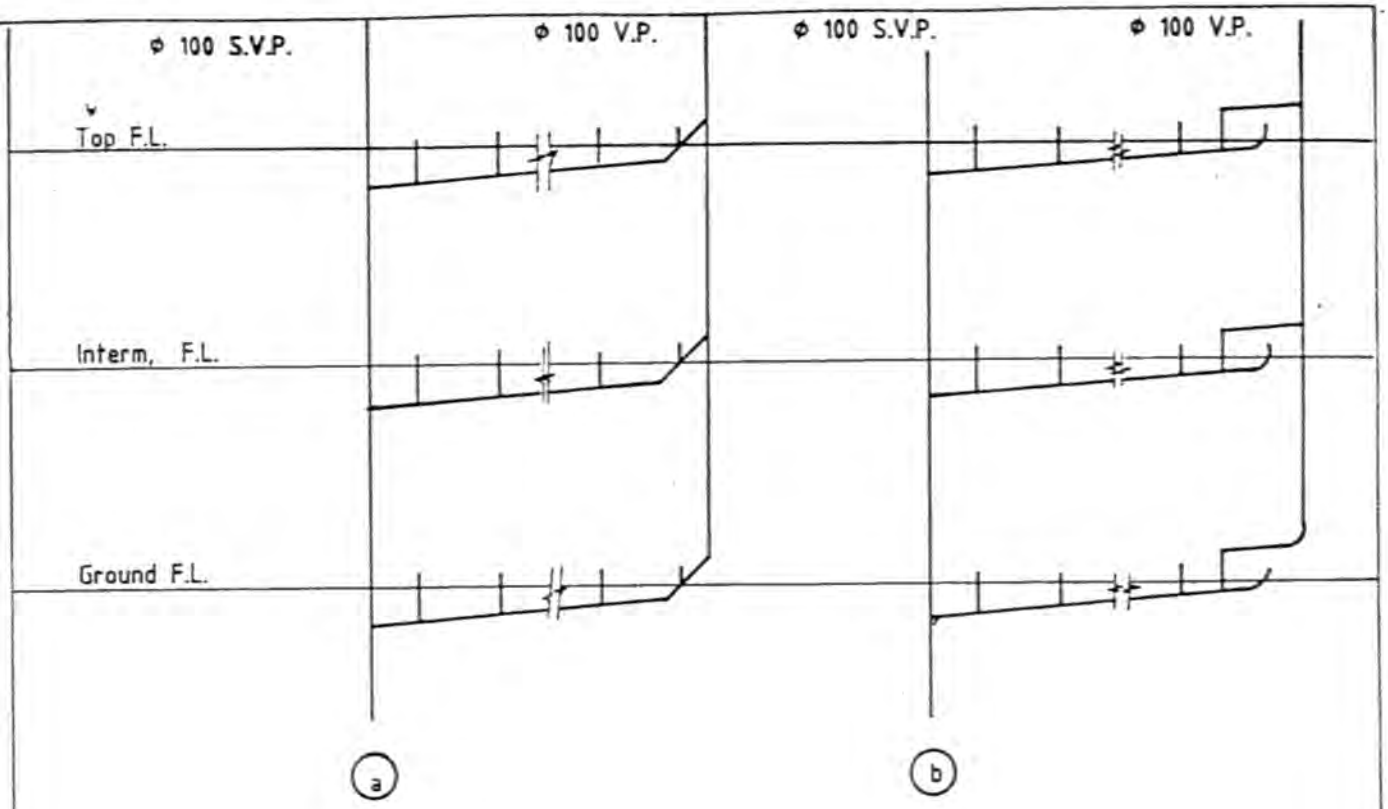
(c) SOIL FITTING TRAP IS MORE THAN 6m FROM V.P. — A.S.P. REQUIRED
(d) SOIL FITTING HAS DROP MORE THAN 1,2m — A.S.P. REQUIRED
(e) GROUND FLOOR SOIL FITTINGS HAVE FALL LESS THAN 1,2m ,SO CONNECT DIRECT TO SEWER — TOP FLOOR FITTINGS HAVE NO A.S.P. (AS FOR (b) INTERM. HAVE A.S.P. BECAUSE OF FITTINGS ABOVE.



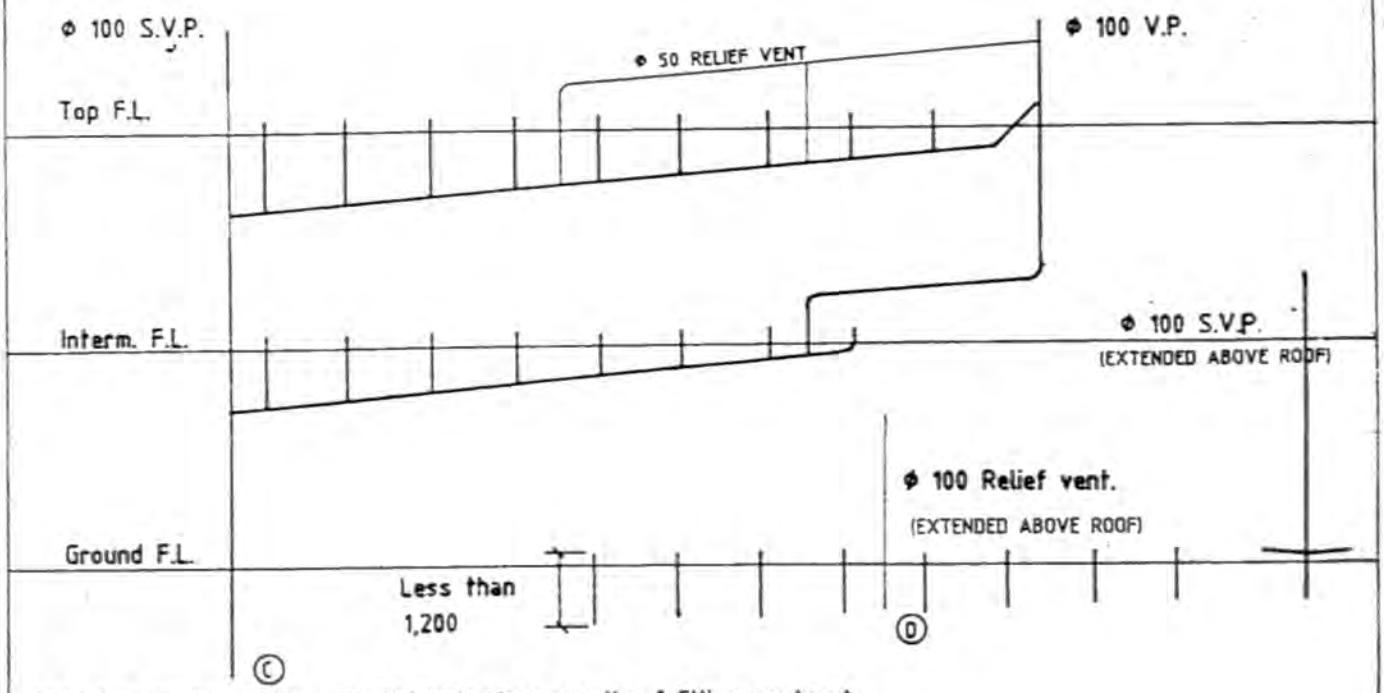
(F) AS FOR (E) BUT LOWEST FITTINGS HAVE FALL MORE THAN 1:2m SO CONNECTED TO COMMON A.S.P.'S

(G) AS FOR (f) BUT MORE THAN ONE FITTING ON A BRANCH NOTE SINGLE W.C. ON TOP FLOOR REQUIRES NO A.S.P.

GETEKEN / DRAWN C.J. PRITCHARD	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN / CHECKED	USE OF ANTI-SIPHON PIPES ON SOILFITTINGS IN THE TWO PIPE SYSTEM GEBRUIK VAN SLUKPYP OP DREKWATERTOEBEHORE IN TWEEPYPSTELSEL.	D23(B)D
SKAAL / SCALE NOT TO SCALE		

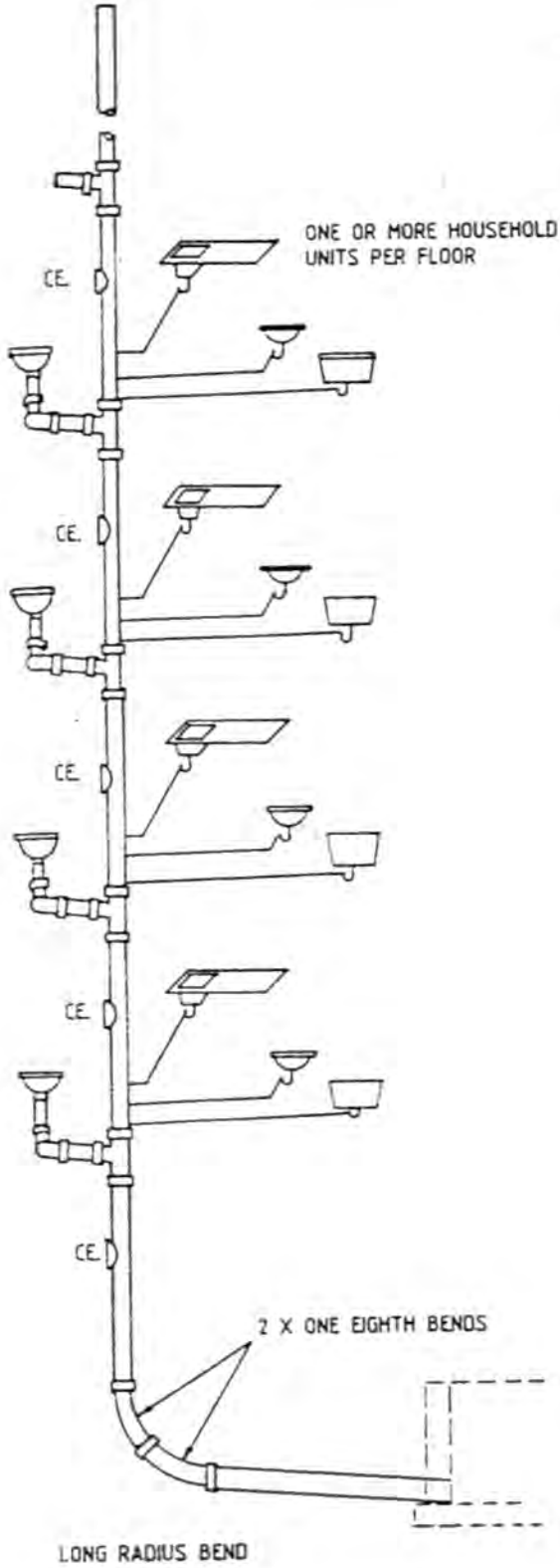


(a) Back venting - Up to 7 soil fittings per branch.
(b) Alternative means of back venting - Up to 8 soil fittings per branch.



(c) On top floor back venting with relief vents where more then 8 fittings per branch
On intermediate floor back venting for 8 soil fittings per branch.
(d) Recommended relief vents where more then 8 fittings, next to each other, run directly into the oram.

GETEKEN. DRAWN. S.P. Cilliers.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED.	USE OF RELIEF AND BACK VENTS IN THE TWO PIPE SYSTEM VENTILASIEPYPE IN DIE TWEEPYPSTELSEL.	D23(C)D
SKAAL. SCALE. NOT TO SCALE		



IMPORTANT

1) EACH FITTING MUST BE TAKEN SEPARATELY TO THE SINGLE STACK.

2) EACH PIPELINE MUST HAVE FACILITIES TO CLEAN THE PIPE.

3) A CLEANING EYE MUST BE PROVIDED FOR THE STACK ON EACH FLOOR.

4) THE GROUND FLOOR MUST BE DRAINED INDEPENDENTLY WHERE MORE THAN TWO FLOORS ARE INVOLVED.

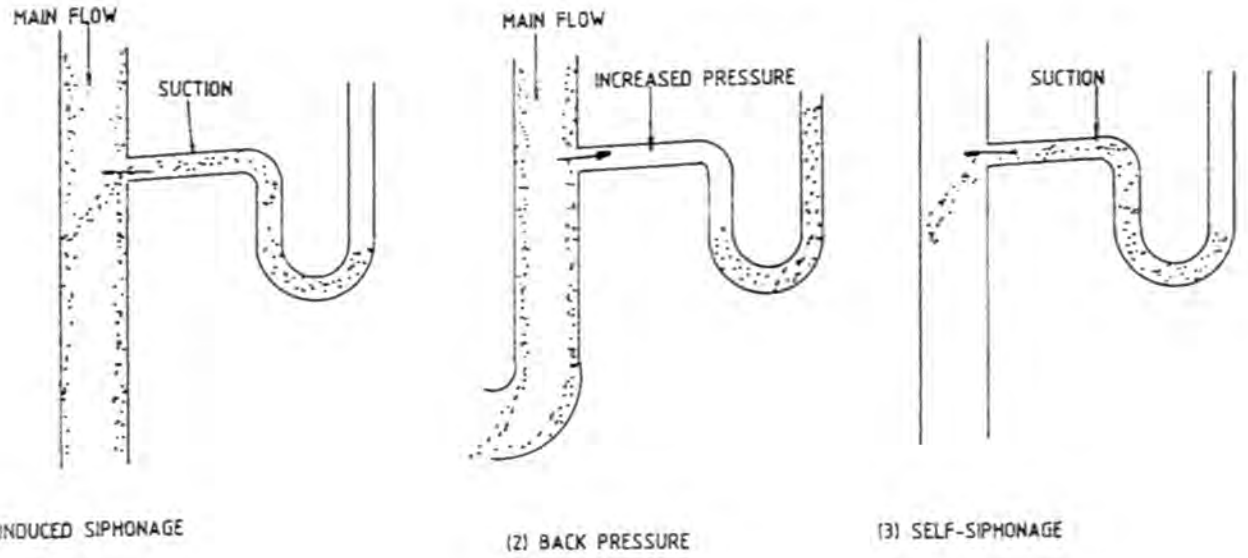
5) W.C.'S MUST BE WITHIN 3 METERS OF THE STACK. BATHS, BASINS, SINKS AND SHOWERS, WITHIN 5 METERS.

6) ALL WASTE PIPES MUST BE A MIN. OF 40mm DIA. AND FITTED WITH UNSYPHONABLE TRAPS WITH A SEAL OF AT LEAST 75mm.

7) THE STACK MUST BE PROVIDED WITH A LONG RADIUS BEND AT GROUND LEVEL LEADING TO A MANHOLE e.g. TWO ONE-EIGHTH BENDS.

FIGURE 7

GETEKEN DRAWN S.P. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	D23(D)0
NAGESIEN CHECKED	SINGLE STACK SYSTEM ENKELSTAMSTELSEL.	
SKAAL SCALE NOT TO SCALE		



(1) INDUCED SIPHONAGE

(2) BACK PRESSURE

(3) SELF-SIPHONAGE

FIGURE 6

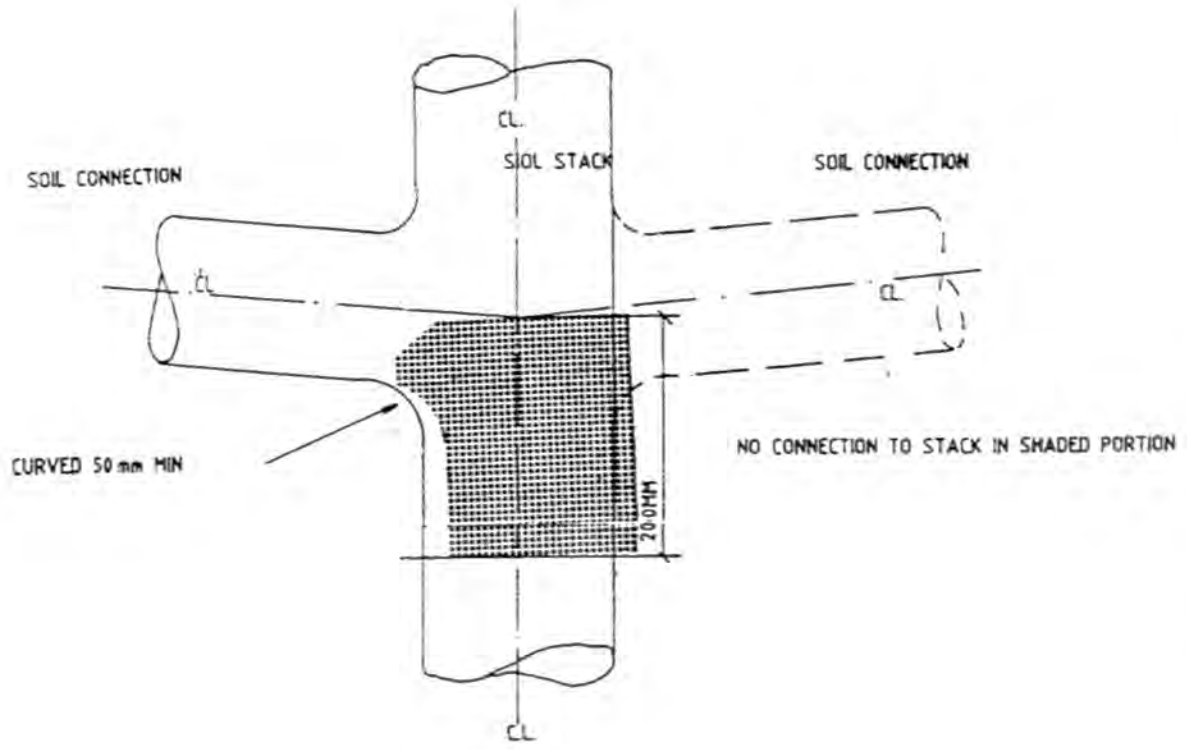
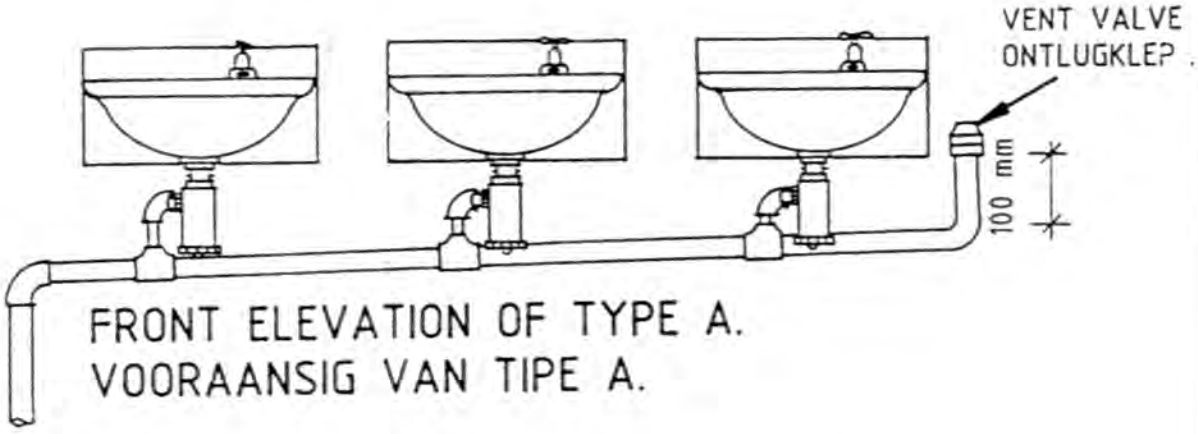


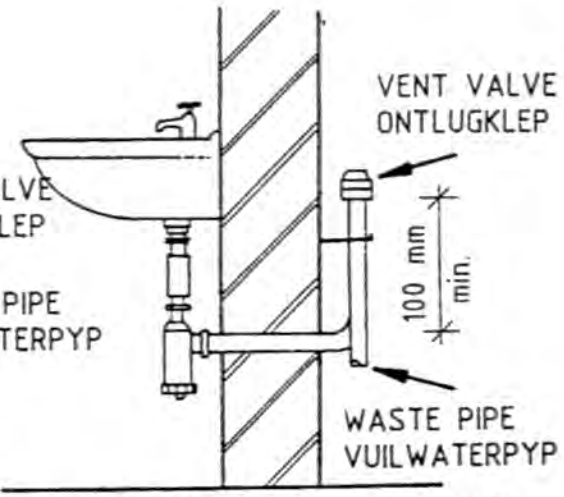
FIGURE 8.

GETEKEN. DRAWN S. CILLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	SINGLE STACK SYSTEM.	D23(E)D
SKAAL SCALE NIE VOLGENS SKAAL	ENKELSTAMSTELSEL	

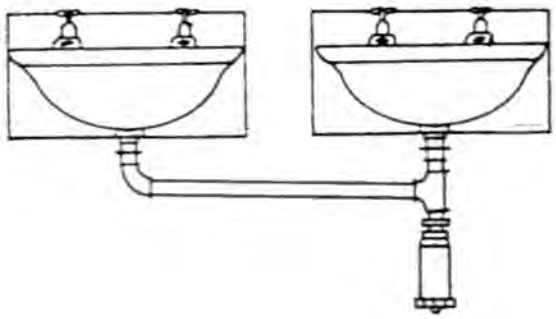


FRONT ELEVATION OF TYPE A.
VOORAANSIG VAN TIPE A.

SECTION THROUGH TYPE A.
SNIT DEUR TIPE A.

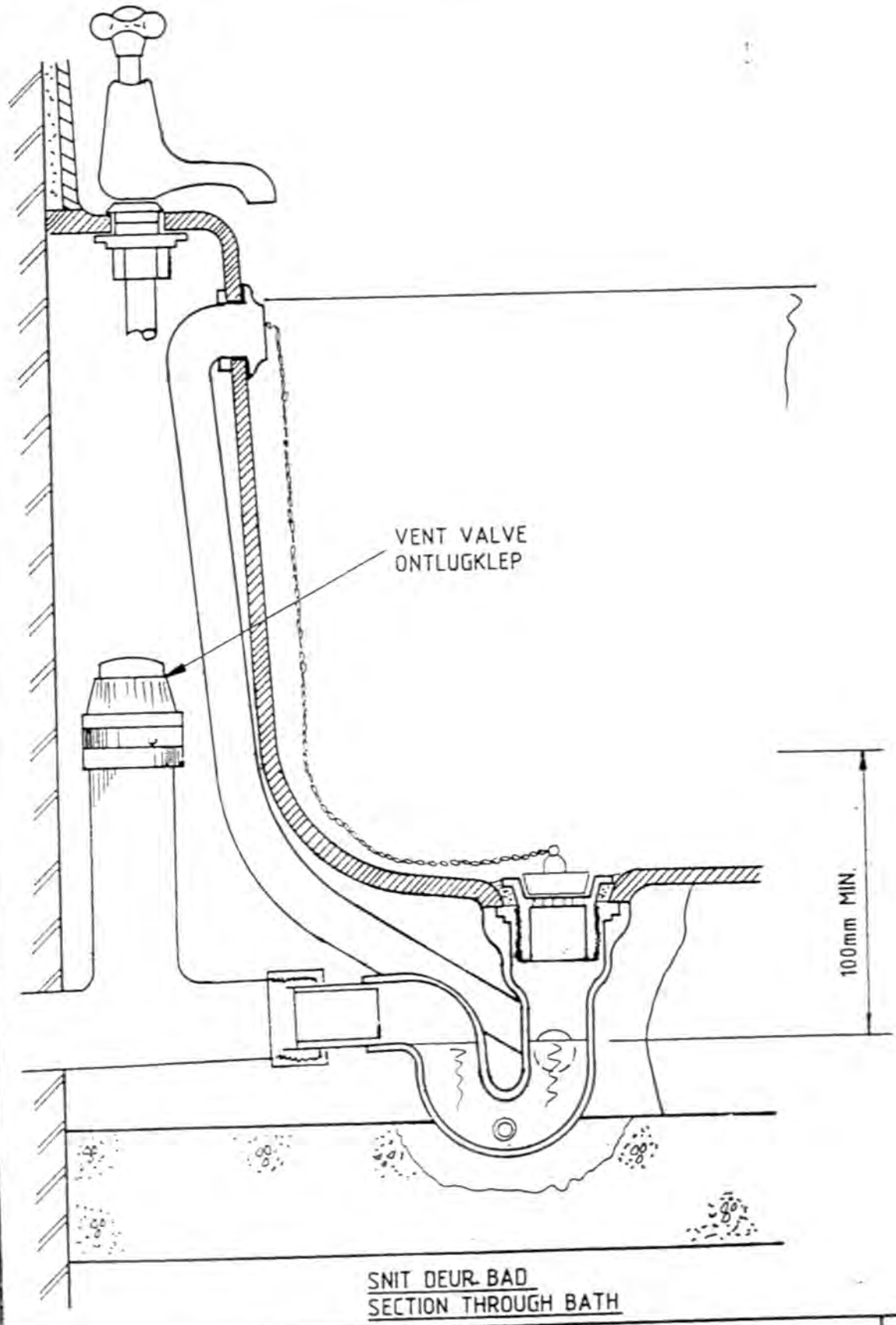


SECTION THROUGH TYPE B.
SNIT DEUR TIPE B.



FRONT ELEVATION OF TYPE A.
VOORAANSIG VAN TIPE A.

GETEKEN DRAWN T.C. MYNHARDT.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	TYPICAL DETAIL OF VENT VALVE (ANTI-SYPHON) FOR WASTE FITTINGS. TIPIESE DETAIL VAN ONTLUGKLEP (ONTLUGTER) VIR VUILWATER TOEBEHORE.	D 24 (B) D
SKAAL SCALE		



SNIT DEUR BAD
SECTION THROUGH BATH

GETEKEN DRAWN M.J.PAPENHUYZEN	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED	TYPICAL DETAIL OF VENT VALVE (ANTI-SYPHON) FOR BATHS. TIPIESE DETAIL VAN ONTLUGKLEP (ONTLUGTER) VIR BADDENS.	D 24 (C) D
SKAAL SCALE N.V.S./N.T.S.		

SERIE.
SERIES.

HIERDIE TIPE SISTEEM WORD AANBEVEEL.
THIS TYPE OF SYSTEM IS RECOMMENDED.

1.) DRUKMETER
2.) DRUK VERMINDERINGSKLEP.
3.) TERUGSLAGKLEP
4.) KLEPPE
5.) POMP
6.) WARMWATER SILINDER.
7.) WARMWATER NA ABLUSIE ENS.
8.) WARMWATERVLOEIPYP
9.) WARMWATERTERUGVLOEIPYP.
10.) IN SERIE KOPPELING
11.) KOUE WATER TOEVOER PYP
12.) KOMBINASIE VEILIGHEIDSKLEP/LUG ONTLASKLEP.

1.) PRESSURE GAUGE.
2.) PRESSURE REDUCING VALVE.
3.) NON RETURN VALVE.
4.) VALVES
5.) PUMP.
6.) HOT WATER CYLINDER
7.) HOT WATER TO ABLUTIONS ETC.
8.) HOT WATER FLOW PIPE.
9.) HOT WATER RETURN PIPE
10.) IN SERIES COUPLING.
11.) COLD WATER SUPPLY PIPE.
12.) COMBINATION SAFETY VALVE/ AIR RELEASE VALVE

GETEKEN. DRAWN. S.P. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED.	TIPIESE WARMWATER SISTEEM (IN SERIE) TYPICAL HOT WATER SISTEM (IN SERIES).	D25(A)D
SKAAL. NIE VOLGENS SKAAL SCALE.		

GETEKEN. DRAWN S.P. CILLIERS.

NAGESIEN CHECKED

SKAAL SCALE NIE VOLGENS SKAAL.

DEPARTEMENT VAN OPENBARE WERKE
DEPARTMENT OF PUBLIC WORKS

TIPIESE WARMWATER SISTEEM (IN PARALLEL).
TYPICAL HOT WATER SYSTEM (IN PARALLEL).

D25(B)D

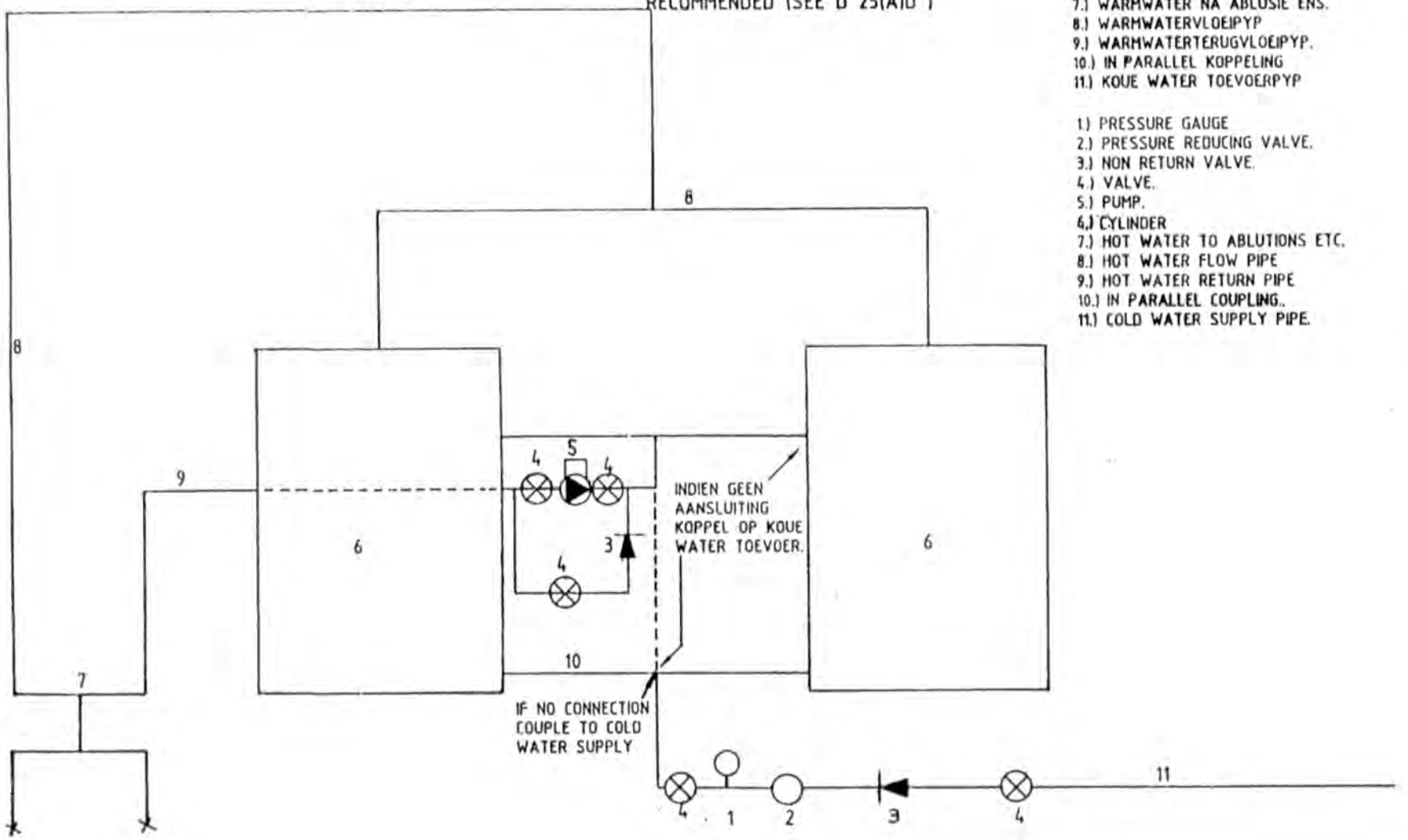
PARALLEL
PARALLEL.

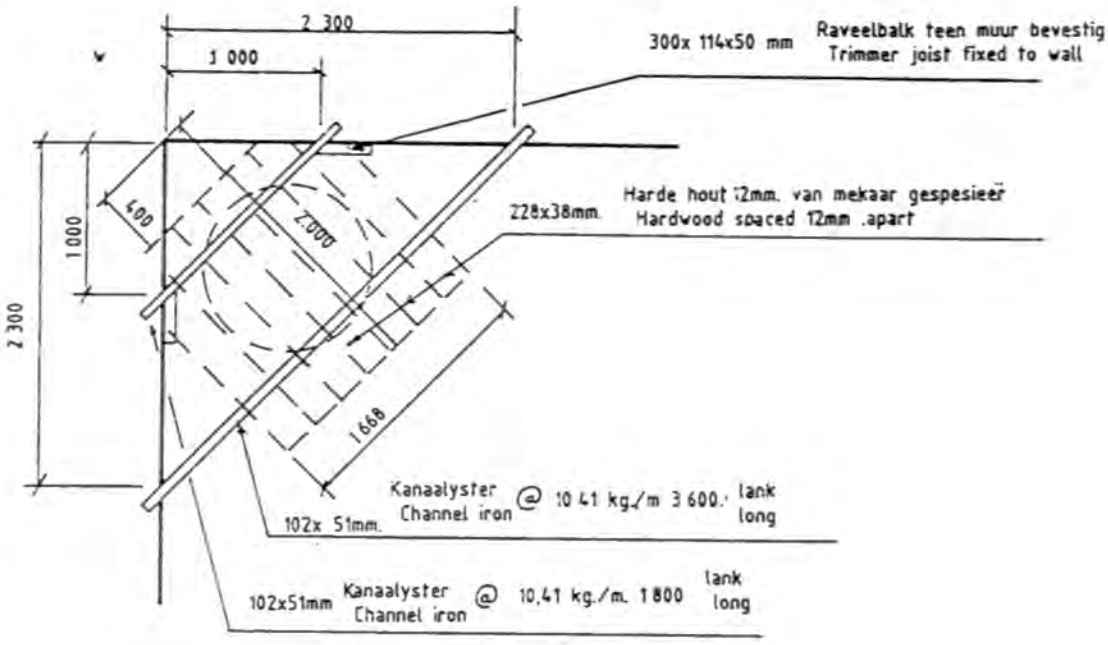
HIERDIE TIPE SISTEEM WORD NIE AANBEVEEL NIE (SIEN D 25(A)D).

THIS TYPE OF SYSTEM IS NOT RECOMMENDED (SEE D 25(A)D)

1.) DRUKMETER.
2.) DRUK VERMINDERINGS KLEP.
3.) TERUGSLAGKLEP.
4.) KLEPPE
5.) POMP
6.) WARMWATER SILINDER.
7.) WARMWATER NA ABLUSIE ENS.
8.) WARMWATERVLOEIPYP
9.) WARMWATERTERUGVLOEIPYP.
10.) IN PARALLEL KOPPELING
11.) KOUE WATER TOEVOERPYP

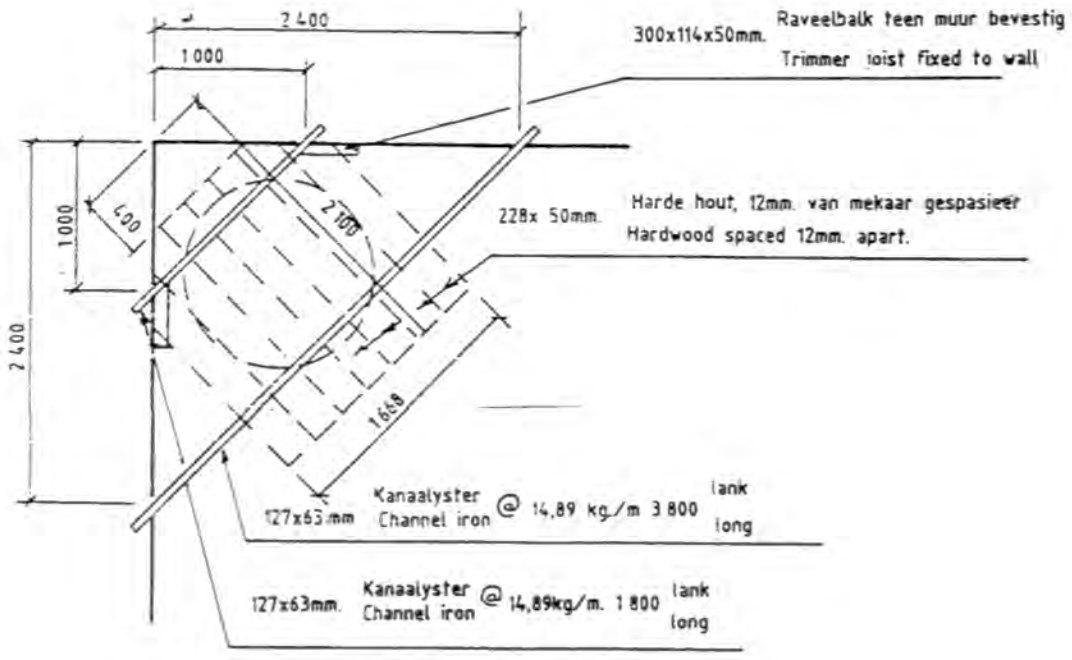
1.) PRESSURE GAUGE
2.) PRESSURE REDUCING VALVE.
3.) NON RETURN VALVE.
4.) VALVE.
5.) PUMP.
6.) CYLINDER
7.) HOT WATER TO ABLUTIONS ETC.
8.) HOT WATER FLOW PIPE
9.) HOT WATER RETURN PIPE
10.) IN PARALLEL COUPLING.
11.) COLD WATER SUPPLY PIPE.





VIR 1 400 LITER TENK

FOR 1 400 LITRE TANK



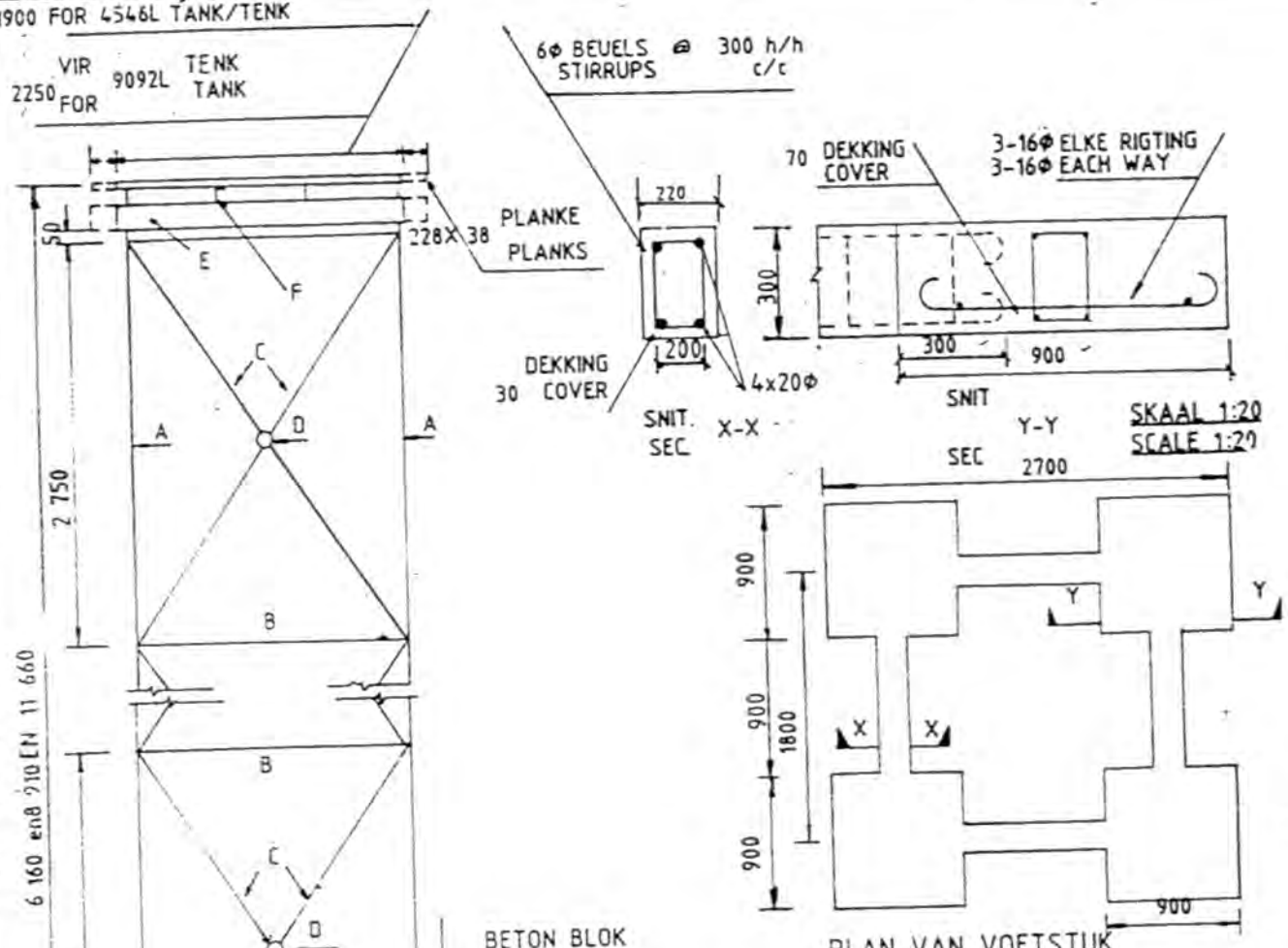
VIR 2 300 LITER TENK

FOR 2 300 LITRE TANK

GETEKEN. DRAWN. S.P. CILLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED.	HOEKSTEEN VIR WATERTENK. CORNER SUPPORT FOR WATER TANK.	D330
SKAAL. SCALE. 1:50		

1900 FOR 4546L TANK/TENK

VIR 9092L TENK
2250 FOR TANK



BETON BLOK
CONC. BLOCK
220 x 220 TO 300 x 300
220x220 NA 300x300

PLAN VAN VOETSTUK
PLAN OF FOOTING

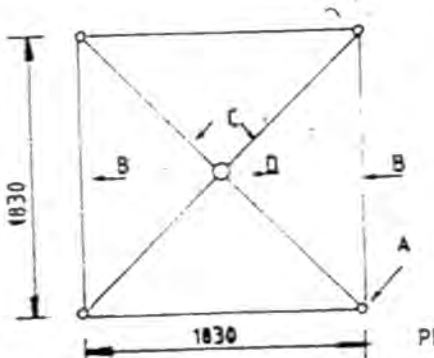
A:80X 4, 85mm N.D. PYP
B. 32 X 2,65 N.D. PYP
C. 16ΦS. S. STAAF
D. 110X 8 S. S. RING
E. 152x76x18 kg/m KANAAL
F. 127x64x15 kg/m KANAAL

A. 80 x 4,85mm N.B. PIPE
B. 32 x 2,65 N.B. PIPE
C. 16ΦM.S ROD
D. 110 x 8 M.S. RING
E. 152x76x18 kg/m CHANNEL
F. 127x 64x15 kg/m. CHANNEL

AANSIG
ELEVATION

VERBINDINGS
B en C tot A: 1-16 Φ bout
A tot E: 2-12Φ boute
E tot F: 2-12Φ boute

CONNECTIONS
B and C to A: 1-16 Φ bolts
A. to E: 2-12Φ bolts
E to F: 2-12Φ bolts

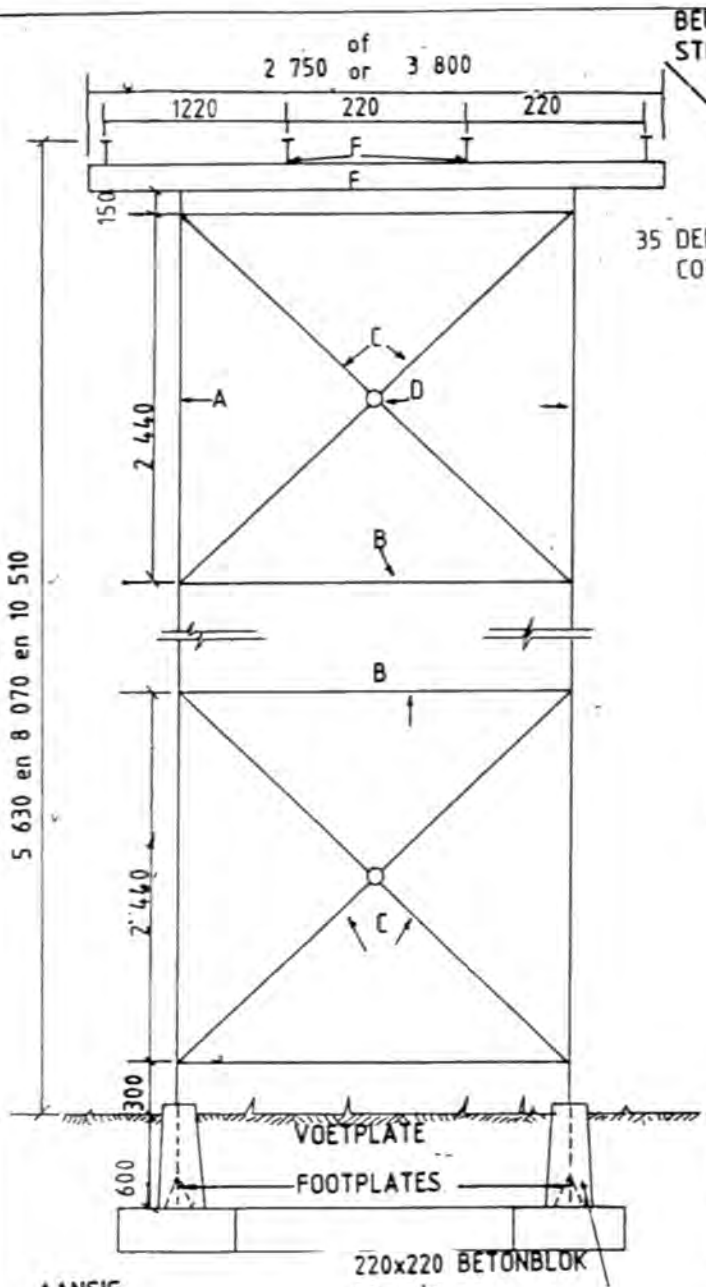


PLAN

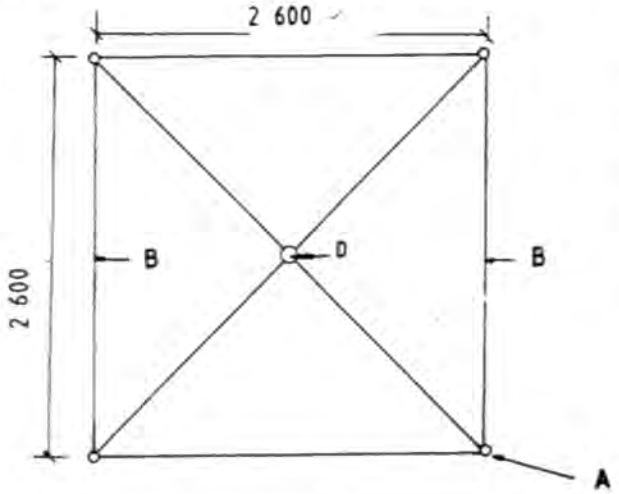
NOTA. VIR KATLEER SIEN D370
VIR DETAILS EN VERBINDINGS
SIEN TEK. D38 D
NOTE FOR CATLADDER SEE D 37 D
FOR DETAILS AND CONNECTIONS
SEE DRWG D 38 D

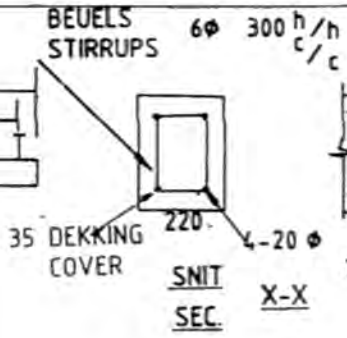
TOELAATBARE GRONDDRUK 100 kPa
ALLOWABLE GROUND PRESSURE

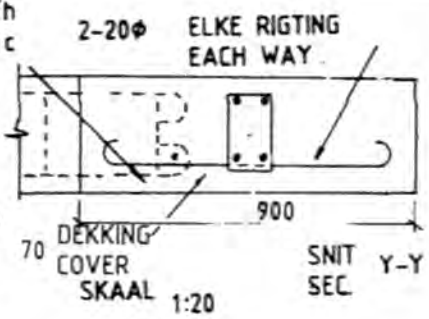
GETEKEN. DRAWN. S.P. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED. 84-05-04	STAANDER 4546 EN 9092 LITER TENK STAND FOR 4546 AND 9092 LITRE TANK	D 34 D
SKAAL 1:50		



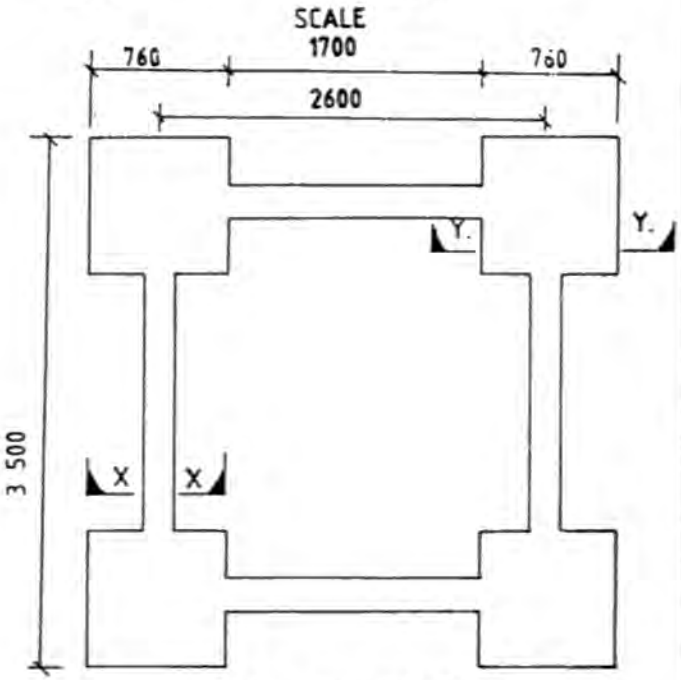
AANSIG
ELEVATION







SKAAL 1:20
SCALE 1:20



PLAN VAN VOETSTUK
PLAN OF FOOTING

A: 65 N.D. x 4,5mm. PYP	A: 65 N.B. x 4,5mm PIPE.
B: 32 " x 2,65mm. "	B: 32 " x 2,65mm "
C: 16 Φ S.S. STAAF	C: 16 Φ M.S. ROD.
D: 110 x 8Φ S.S. RING.	D: 110 x 8 Φ M.S. ROD.
E: 152x89x17 kg/m I-PROFIEL	E: 152x89x17 kg/m } PRO -
F: 152x89x17 kg/m I-PROFIEL	F: 152x89x17 kg/m } FILE.

VERBINDINGS:	CONNECTIONS:
B en C na A: 1-16 Φ BOUT.	B and C to A: 1-16 Φbolt,
A na E: 2-12 Φ BOUTE.	A to E: 2-12Φ BOLTS.
E na F: 2-12 Φ "	E to F: 2-12 Φ "

NOTAS
TENKINHOUDE: 5455 en 10910 en 16365 liter.
Sien D37D vir platvorm en katleer en D38D vir verbindings en voetplaat.

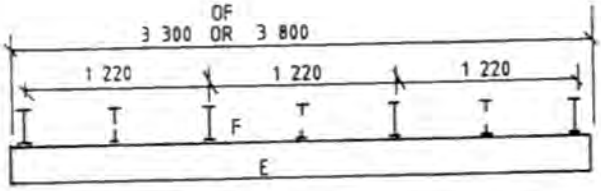
NOTES
TANK CAPACITIES: 5455 and 10910 and 16365 litre
See D37D for platform and cat-ladder and D38D for connection and foot plate.

TOELAATBARE GRONDDRUK
ALLOWABLE GROUND PRESSURE
100 kPa

GETEKEN DRAWN S.P. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED 84-05-04	STAANDER VIR 1 220 HOË PERSSTAALTENKE	D35D
SKAAL SCALE 1:50	STAND FOR HIGH PRESSED STEEL TANKS.	

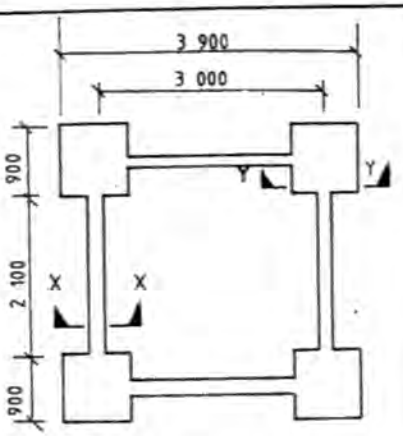
TOELAATBARE GRONDDRUK 125 kPa

ALLOWABLE GROUND PRESSURE

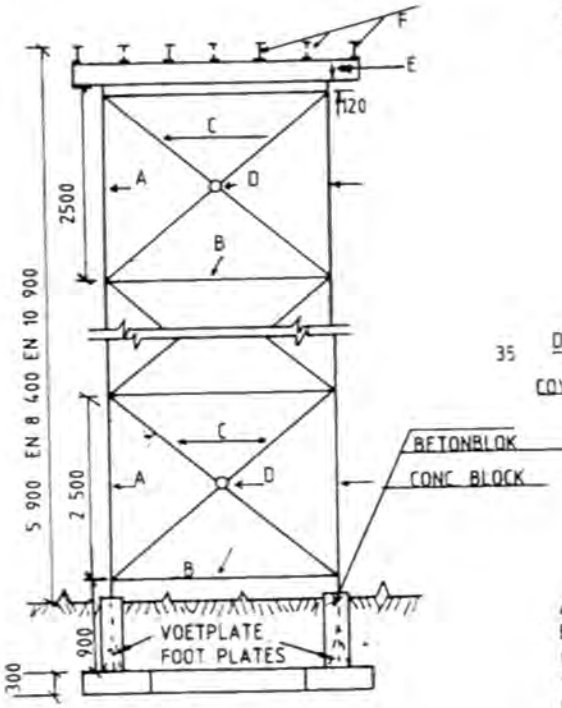


DETAIL VAN KOP OF HEAD

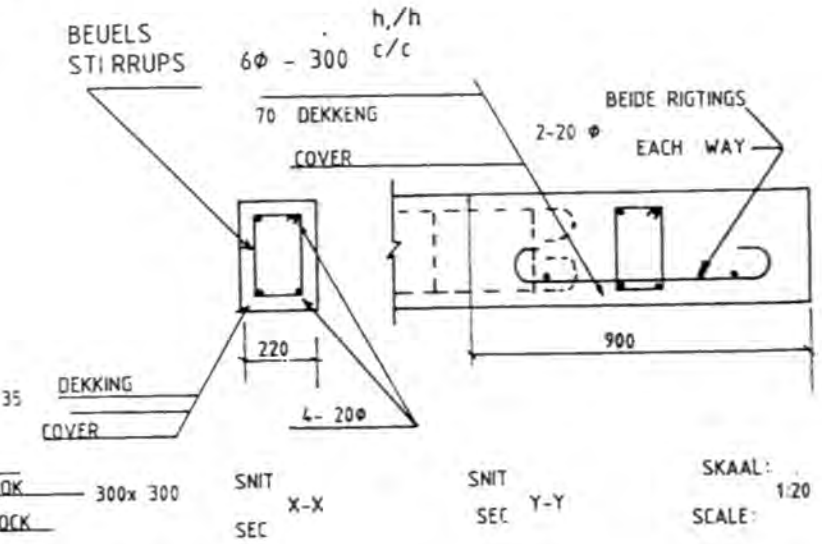
SKAAL SCALE 1:50



PLAN VAN VOETSTUK
PLAN OF FOOTING



AANSIG
ELEVATION



A:	90N.D.x4,85mm PYP.
B:	32 ND x2,65 mm PYP
C:	16 Φ S.S. STAAF
D:	110N.D.x 8 RING
E:	254x146x37 kg/m I-PROFIEL
F:	203x133x25 kg/m I-PROFIEL

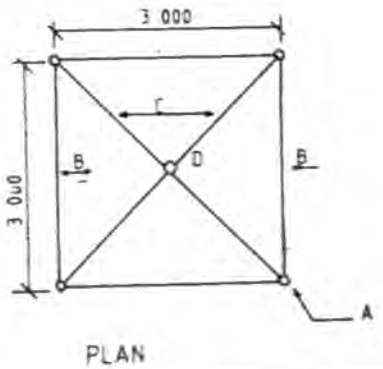
A:	90N.B. x4,85mm PIPE
B:	32 NB x2,65mm PIPE
C:	16Φ M.S. ROD
D:	110 N.B. x8 RING
E:	254x146x37 kg/m I-PROFILE
F:	203x133x25 kg/m I-PROFILE

VERBINDINGS

Ben C na A: 1-16Φ BOUT
A en E: 2-12Φ BOUTE
E na F: 2-12Φ BOUTE

CONNECTIONS

B and C to A: 1-16Φ bolt
A to E: 2-12Φ bolt
E toF: 2-12Φ bolts

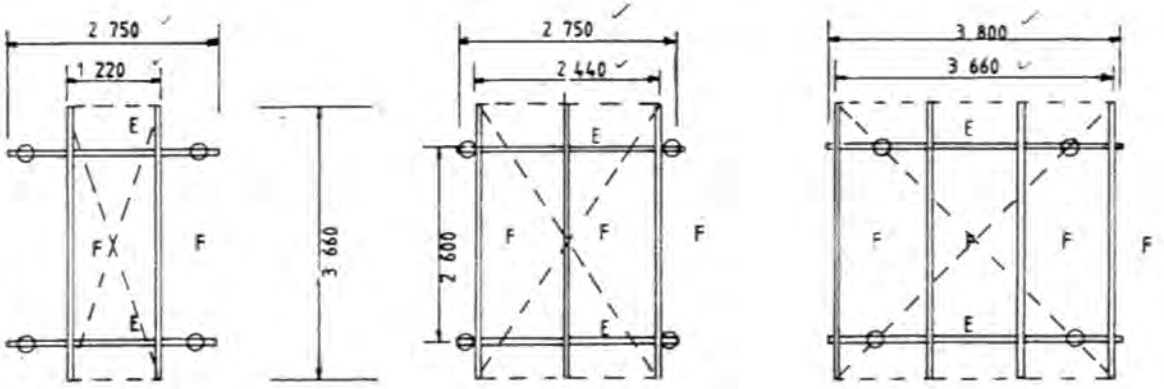


PLAN

NOTAS:
TENKINHOUDE: 21820 EN 32730 LITER
SIEN D 37 D VIR PLATFORMS EN KATLEER
EN D38D VIR VERBINDINGS EN VOETPLAAT

NOTES:
TANK CAPACITIES: 21820 AND 32730 LITRE
SEE D 37 D FOR PLATFORMS AND CAT LADDER
AND D 38 D FOR CONNECTIONS AND FOOT PLATE

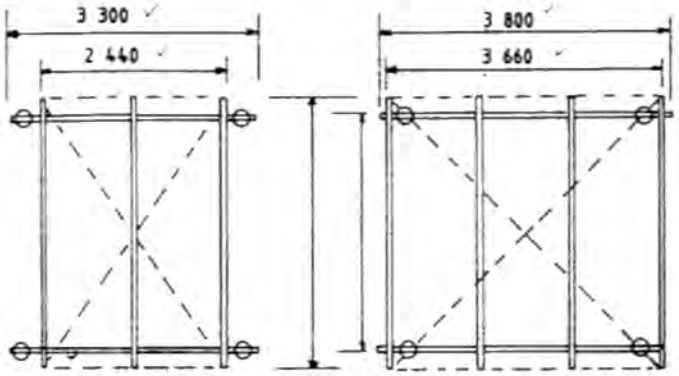
GETEKEN. DRAWN. S.P. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED. 11-05-04	STAANDER VIR 2440 HOË PERSSTAALTENKE STAND FOR HICH PRESSED STEEL TANK	D36D
SKAAL. SCALE. 1:100		



TENKE TANKS: 3 660x1 220-5455 L | 3 660x2 440 – 10910L | 3 660 x3 660- 16365L

PLATFORMS VIR TENKE FOR TANKS 1 220 HOOG HIGH

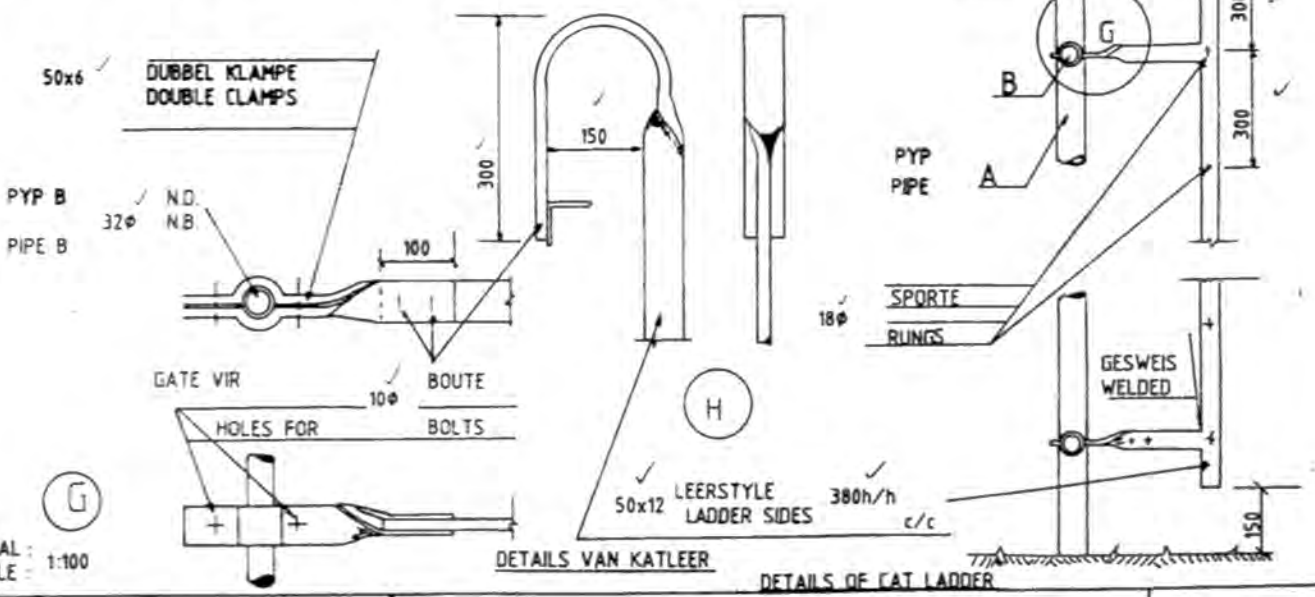
SKAAL: SCALE: 1: 100



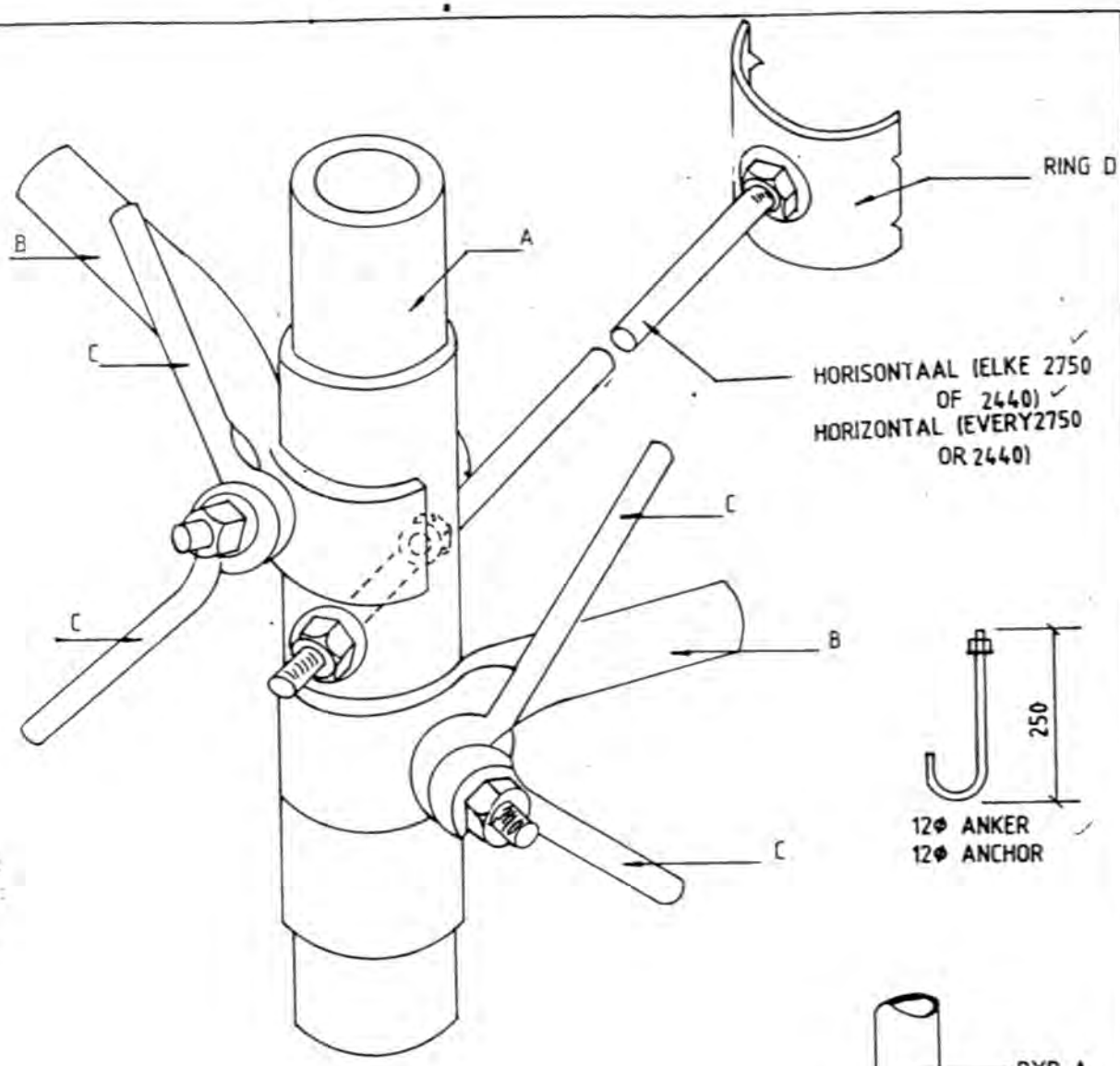
TENKE TANKS: 3 660x2 440– 21820 L | 3 660x3 660–32730 L

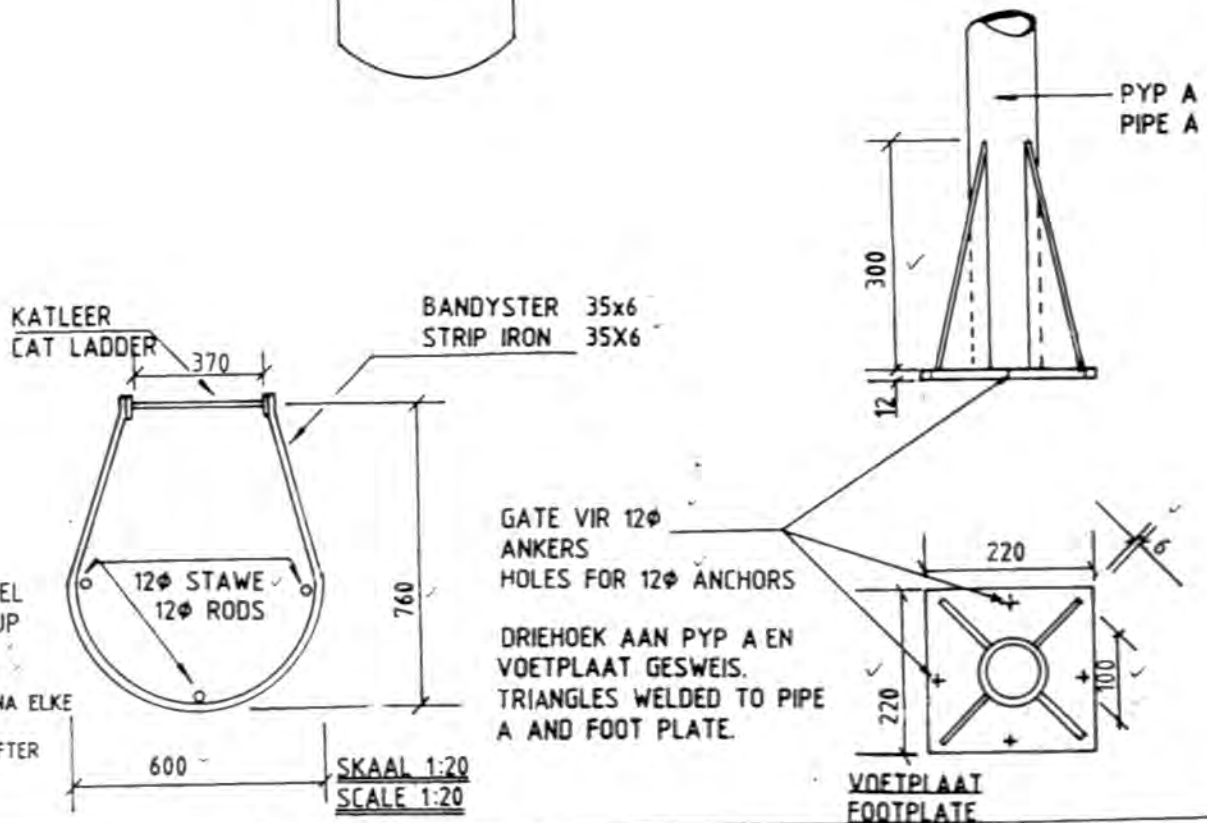
PLATFORMS VIR TENKE FOR TANKS 2 440 HOOG HIGH SKAAL: SCALE: 1:100

VEILIGHEIDSBEUELS SIEN SAFETY STIRRUPS SEE 0380

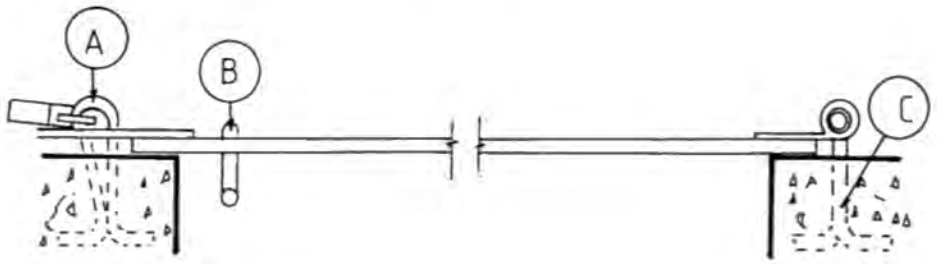


GETEKEN. DRAWN. S. EILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED. 84-05-04	PLATFORMS EN KATLEER AND CAT LADDER	D 37 D
SKAAL. 1:100 SCALE. 1:20		

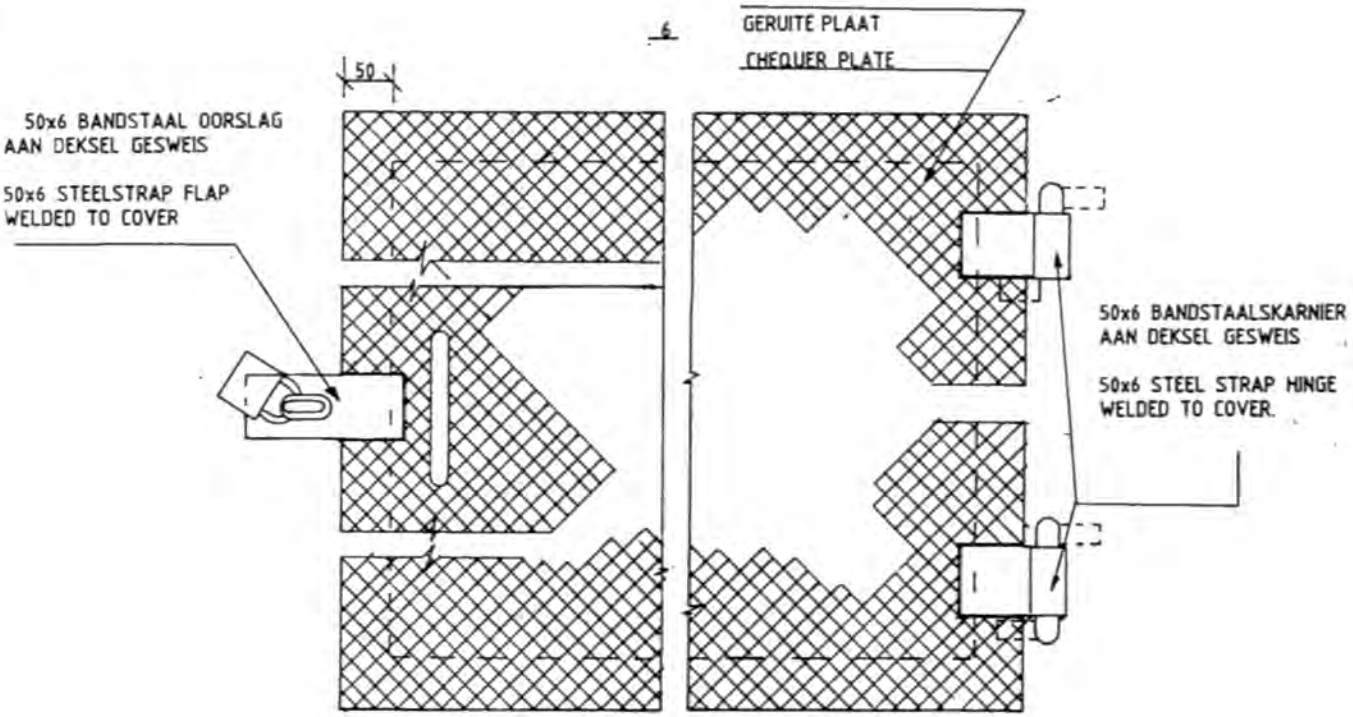




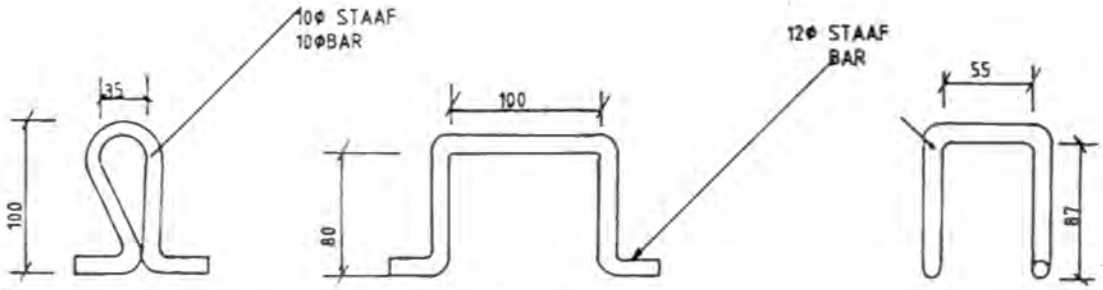
GETEKEN DRAWN S.P. CILLIERS	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN CHECKED 24-05-04	VERBINDINGS EN VOETPLAAT CONNECTIONS AND FOOTPLATE	D 38 D
SKAAL SCALE 1:10		



DEURSNEE
SECTION



PLAN. NIE OP SKAAL.
NOT TO SCALE

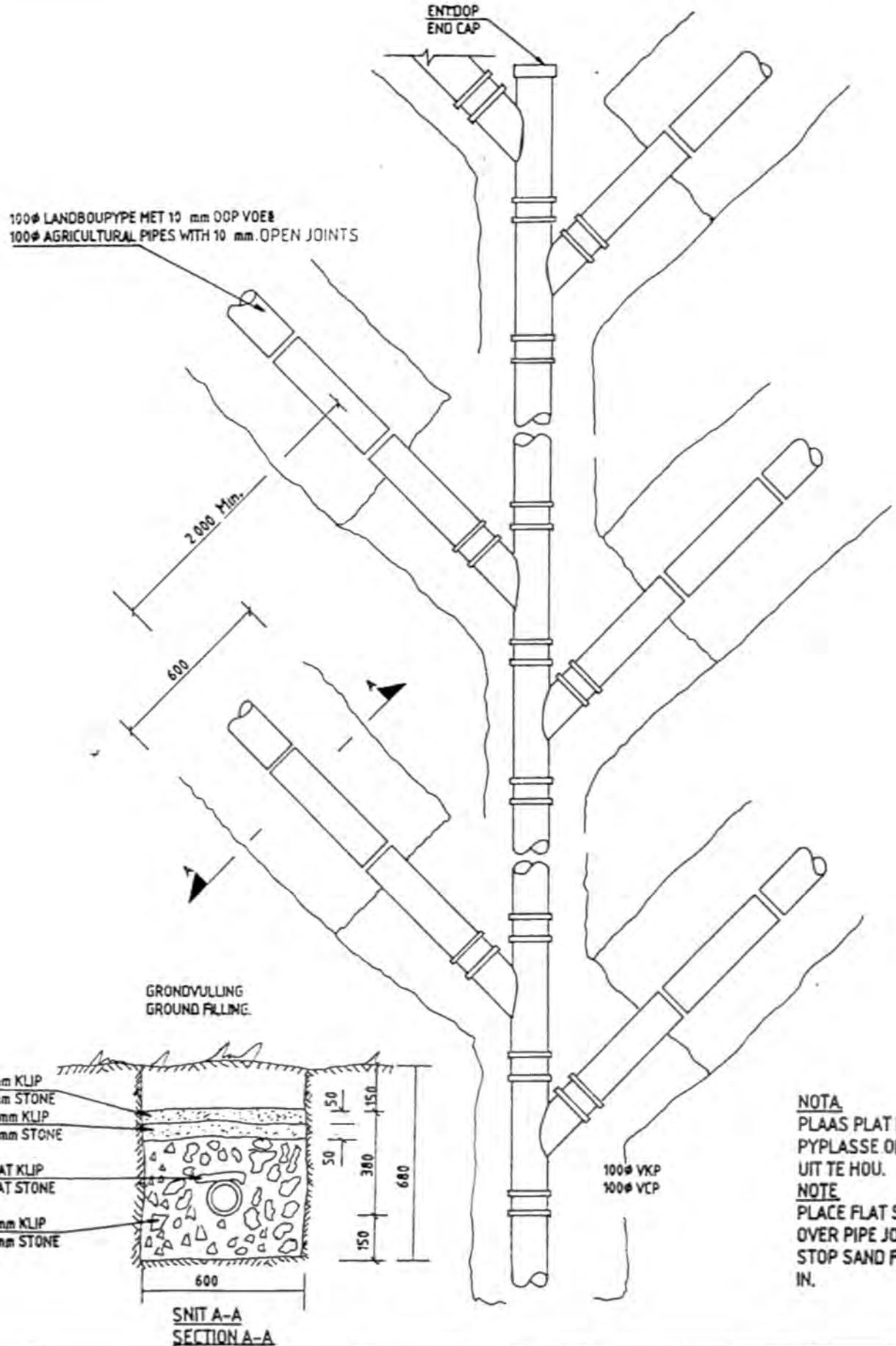


SLOTOOG
LOCK EYE A

HANDVADSEL
LIFTING HANDLE B

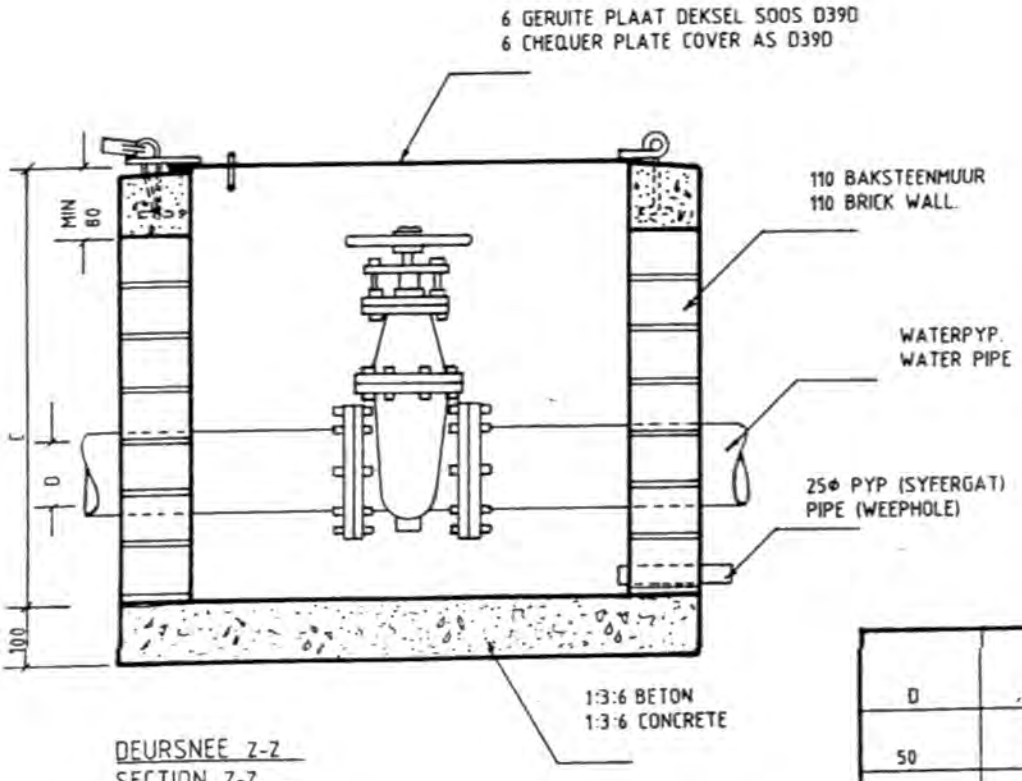
SKARNIERPEN
HINGE PIN. C

GETEKEN. DRAWN. S.CILLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	
NAGESIEN. CHECKED.	GERUITEPLAATDEKSEL. CHEQUER PLATE COVER	D 39 D
SKAAL. 1:5 SCALE.		



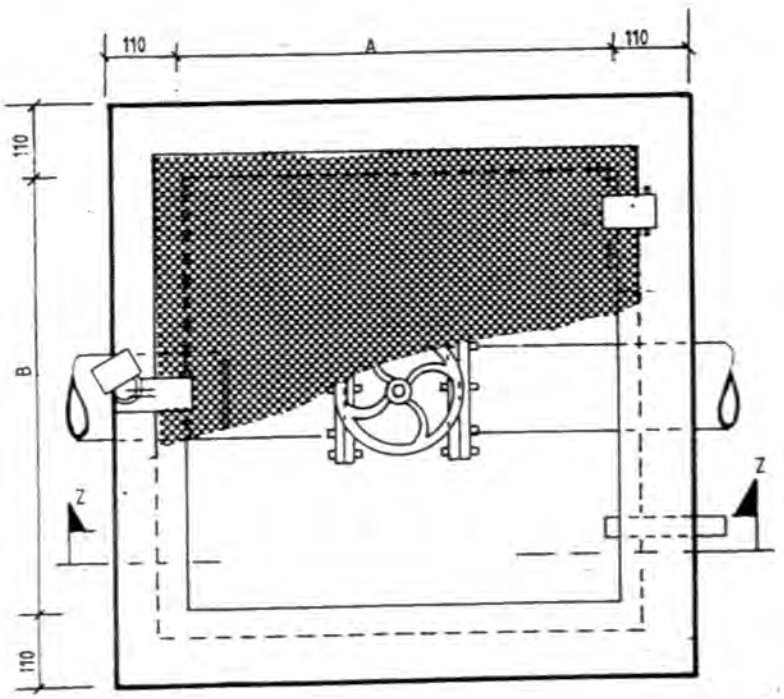
NOTA.
PLAAS PLAT KLIP OOR PYPLASSE OM SAND UIT TE HOU.
NOTE.
PLACE FLAT STONES OVER PIPE JOINTS TO STOP SAND FILTERING IN.

GETEKEN. DRAWN. J.A.C. RABE	SUGRIOOL AGRICULTURAL DRAIN	D 4-1 D
NAGESIEN. CHECKED.		
SKAAL. SCALE. 1:20		



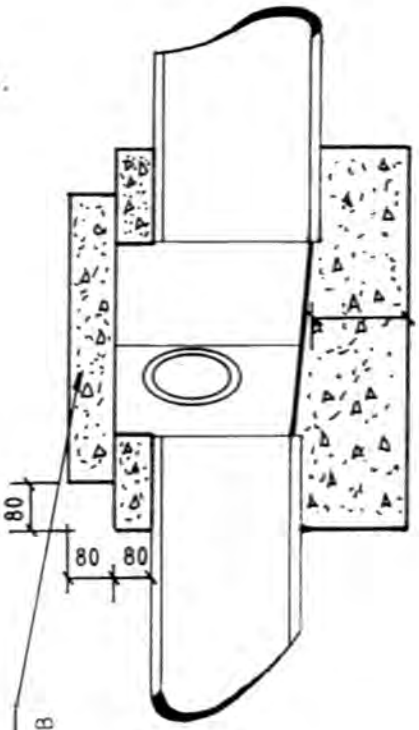
DEURSNEE Z-Z
SECTION Z-Z

D	A	B	C
50	570	570	600
80	680	680	675
100	680	680	675
125	680	800	750
150	680	800	830
180	680	800	900
200	800	900	980
225	800	900	1050
250	800	900	1120
300	800	1020	1280

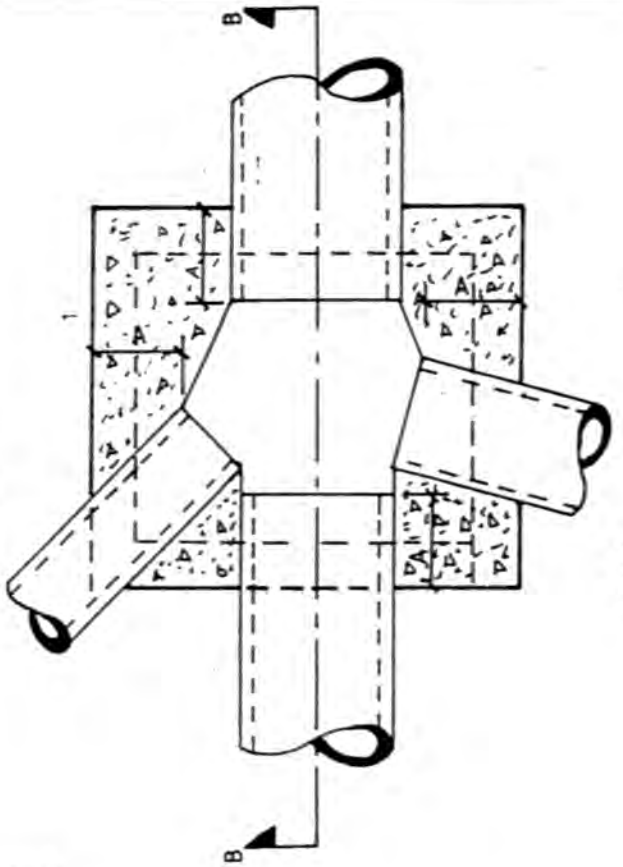


PLAN

GETEKEN. DRAWN. S.P. CLLLIERS.	DEPARTEMENT VAN OPENBARE WERKE DEPARTMENT OF PUBLIC WORKS	D420
NAGESIEN. CHECKED.	KLEPKAMER. VALVE CHAMBER.	
SKAAL. SCALE. NIE VOLGENS SKAAL		



DEURSNEE B-B
SECTION B-B

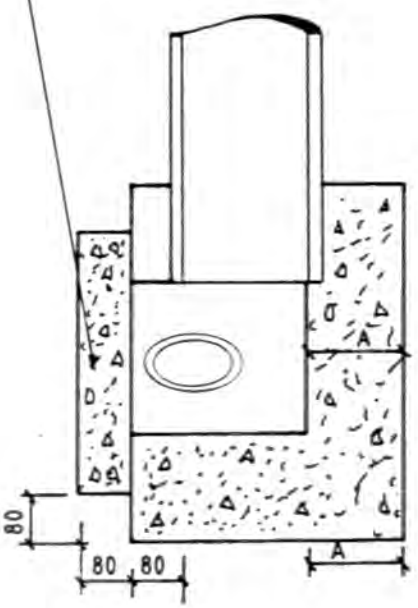


PLAN

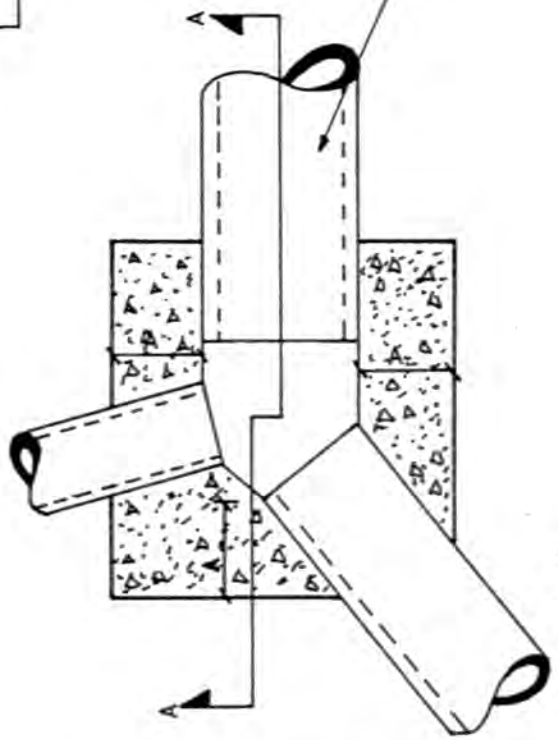
LOS BETONBLAD
LOOSE CONC. COVER SLAB

A= MIN 150

BETONPYP
CONC. PIPE



DEURSNEE A-A
SECTION A-A



PLAN

GETEKEN. DRAWN. J.A.C. RABE		
NAGESIEN. CHECKED.	AANSLUITING VIR STORMWATERPYPE JUNCTION BOX FOR STORMWATER PIPES	D44D
SKAAL. SCALE. 1:20		