

LOXTON

CIVIL SERVICES

36 SITES

LYS VAN TEKENINGE LIST OF DRAWINGS

NR.	NO.	TITEL
SK2374/1		LIST OF DRAWINGS, DRAWING CONVENTION, DESIGN DATA AND GENERAL NOTES
-/2		LOCALITY PLAN
-/3		WATER LAYOUT PLAN
-/4		SEWER LAYOUT PLAN SHEET 1
-/5		SEWER LAYOUT PLAN SHEET 2
-/6		SEWER LAYOUT PLAN SHEET 3
-/7		WATER DETAILS SHEET 1
-/8		WATER DETAILS SHEET 2

TEKENKONVENSIEN DRAWING CONVENTION

Kolom bo		Column above
Kolom onder alleenlik		Column below only
Opening in blad		Opening in slab, etc.
Voorafgegotte betonkolom		Precast concrete column
Onafgewerkte hoogte (bv. onafgewerkte vloerhoogte, ens.)		Unfinished level (eg. unfinished floor level, etc.)
Afgewerkte hoogte (bv. afgewerkte vloerhoogte, ens.)		Finished level (eg. finished floor level, etc.)
Steenwerk bo		Brickwork above
Laasdraende steenwerk onder		Loadbearing brickwork below
Balk nr.	1	Beam no.
Trigonometriese baken		Trigonometrical beacon
Opmetingstasie	100000	Survey station
Hoogtemerk	100000	Bench mark
Rioollyn		Sewer line
Waterpyplyn		Water main
Stormwaterlyn		Storm water line
Eskom kragroete - oorhoofs		Eskom power lines - overhead
Kragkobel - ondergronds		Power lines - Overhead
Kraglyne - Oorhoofs		Power cables - underground
Telefoonroetes		Telephone lines
Telefoonkabels - ondergronds		Telephone cables - underground
Heining met hek		Fence with gate
Veiligheidsheining met hek		Security fence with gate
Dorpsgebiedgrens		Township boundary
Spoorlyne		Railway lines

ONTWERPDATA DESIGN DATA

STRUKTURE		STRUCTURES	
FOUNDERINGSDRUK HOOGSTENS	250 kPa	FOUNDATION BEARING PRESSURE NOT EXCEEDING	
DRUK VAN KEERMURE NORMAALWEG LANGE POOL		SURCHARGE PRESSURE TO RETAINING WALLS generally adjacent roadways	
GRONDSTABILITEIT vir omliggende druk vir passiewe druk		SOIL STABILITY for active pressure for passive pressure	
WINDLASTE stabiliteit hegtukke	0,7 kN/m ² 0,9 kN/m ²	WIND LOADS stability fixings	
BETONKONVENSIEN		CONCRETE GRADES	
KLAS	NOMINALE MENGSEL	MAX. AGGREGAAT GROOTTE	STERKTE
WERKSTUK	C 1:3:6	19	15 MPa
KOLOMME	F 1:2:4	19	25 MPa
TENY ANDERS GETOON OP FONDEMENT TEKENINGE	F 1:1,5:3	19	30 MPa
STRUKTUURSTAAL			
groot			
KEERSTRAKKE	SABS 563	CONSTRUCTION TIMBER	merchantable S.A. pine
LAMINAARSTRAKKE		LAMINATED TIMBER	according to S.A.B.S. 076
volgens S.A.B.S. 076		houttipe	type of timber
groot		groot	grade
digtheid		digtheid	density
blootstellingkategorie	%	verwagte gemiddelde ewewigavogehalte voorkoms klas	expected average equilibrium moisture content appearance class
LAASDRAENDE STEENWERK		LOADBEARING BRICKWORK	bricks
atene		mortel klas	mortar class
binne en buitemure van spoumure moet verbind word tot Ingenieur se bevrediging		inner and outer leaves of cavity walls are to be tied together to Engineers satisfaction	
LEWENDE BELASTING		LIVE LOADS	
			2

SIVIELE WERK CIVIL WORK

PAAL EN STRATE ROADS AND STREETS

Laagdikte Layer thickness (mm)	Digtheid Density %	Material (beskryf - describe)	
geselekteerde lae			selected layers
in-situ laag			in situ layer
stutlaag			subbase
kroonlaag			base course
stytlaag			wearing course

ALGEMENE NOTAS GENERAL NOTES

ALGEMEEN
 Lees hierdie stel tekeninge saam met argiteks, meganiese en elektriese tekeninge (waar v.t.) en met die algemene spesifikasie soos uitgereik deur die Ingenieur.
 Afvoerpepe in kolomme word getoon maar moet vergelyk word met Argitek-tekeninge voordat beton geplaas word.
 Alleenlik geskrewe afmetings moet gebruik word.
 Alle afmetings, hoogtes en uitspanne moet op die terrein nagegaan word en enige verskille, afwykings of onduidelikhede word, of die betrokke materiaal bestel word, moet aan die Ingenieur gerapporteer word voordat die werk begin.
 Geen veranderinge mag aangebring word op enige tekening of spesifikasie sonder die skriftelike toestemming van die Ingenieur nie.
 Alle materiaal moet voldoen aan die spesifikasies en/of vereistes in die dokument en op die tekeninge.
 Interne kontroletoetses soos vereis in die spesifikasies moet uitgevoer word soos voorgeskryf en aan die Ingenieur voorgele word.
 Standaardspesifikasies van toepassing op elke werk sal die jongste uitgawe wees van die SABS - 1200 reeks tensy anders gespesifiseer in die dokument of op die tekeninge.

GENERAL
 Read this set of drawings in conjunction with architectural, mechanical and electrical drawings (where applicable) and with the general specification issued by the Engineer.
 Downpipes in columns are shown, but these must be checked against Architects drawings before commencing to cast concrete.
 Figured dimensions are to be used exclusively.
 All dimensions, levels and setting out pegs must be checked on site and any discrepancy, variation or ambiguity reported to the Engineer before commencing work or ordering relevant materials.
 No alterations may be made to drawings or specifications without written approval of Engineer.
 All materials to comply with specifications and/or requirement as shown in documents or on drawings.
 Internal control tests as required by specifications are to be performed as laid down and submitted to the Engineer.
 Standard specifications as applicable for each activity will be latest edition of S.A.B.S. - 1200 series unless otherwise specified in documents or on drawings.

STRUKTURELE BETON STRUCTURAL CONCRETE

Enige onderbreking in betonplasing moet gemaak word volgens die Ingenieur se voorskrifte.
 Beginneuse vir kolomme, keermure, ens. moet nie 100 mm oorskry Kickers (starter ribs) to columns, retaining walls, etc. are not to exceed 100 mm.

BETONDEKKING	CONCRETE COVER	
voetstukke	75 mm	footings
kolomme	40 mm	columns
balke	25 mm	beams
blaale	15 mm	slabs
keermure	25 mm	retaining walls

of deursnee van hoofbepawening, watter ookal die grootste.
 Giet 'n 50 mm dik werksvlak (blinding layer) van 10 Mpa beton onder alle fondamente en in-situ beton.
 Geen beton mag gegiet word voordat die bepawening deur die Ingenieur goedgekeur is nie.
 Die kontrakteur moet sorg dat die staal na plasing en gedurende giet van beton in posisie bly.

Any breaks in the concrete are to be made in accordance with the Engineers instruction.
 Kickers (starter ribs) to columns, retaining walls, etc. are not to exceed 100 mm.
 or diameter of the main reinforcing, whichever is the greater.
 Cast a 50 mm thick blinding layer of 10 MPa concrete under the full extent of all footings and insitu concrete.
 No concrete shall be poured until the reinforcement has been inspected by the Engineer.
 The Contractor is to maintain the steel in position after placing and during concreting.

FONDEMENTE FOUNDATIONS

Funderingsvlakke en toestande moet deur Ingenieur inspekteer en goedgekeur word alvorens werksvlakke gegiet word.
 Founding levels and conditions must be inspected and approved by Engineer before blinding is cast.

STRUKTUURSTAAL STRUCTURAL STEEL

Alle struktuurstaal en staalwerk moet voldoen aan die vereistes van die jongste uitgawe van S.A.B.S. 1200 H.
 Alhoewel geen knooppate op dakkappe gewys is nie, moet alle sweislasse die volle krag wat deur die ter sproken deel gedra word, kan ontwikkel en waar nodig moet knooppate bygevoeg word.
 Tensy anders getoon, moet knooppate van 6 p.l. wees.
 Alle hol profile (d.i. pype en reghoekige hol profile) moet toegesweis word met 3 p.l.
 Alle gedeeltes moet vry van skifering, stof, slaak, ens. wees voordat dit in werkwinkel geveer word met een laag sinkchromaat grondverf.
 Alle ankerboute moet gegiet word deur die siviele kontrakteur onder die toesig van die staaloprigter wie verantwoordelik sal wees vir die akkuraatheid van plasing daarvan.
 Alle tekeninge moet noukeuring onderseok word deur die staalvoordiger en oprigter van staal, en verwagte probleme moet tydig aan Ingenieur uitgegely word.
 Alle bonte moet voorsien word van die toepaslike wassers, selfs al is dit nie op die tekeninge gewys nie.
 Die vervaardiger sal aan die Roodgewende Ingenieur 'n volledige stel werkwinkel detail plannings verskaf voordat hy materiaal bestel of begin vervaardig en sal alleenlik verantwoordelik vir die dimensionele akkuraatheid hiervan wees. Die Roodgewende Ingenieur sal alleenlik verantwoordelik vir die ontwerp aspek van die werk wees.
 Alle ankerboute, voetplate en gedeeltes van kolomme wat onder vloeroppervlak is, moet geveer word met 'n goedgekeurde verende verf nadat die staalwerk opgerig is, en moet deur die Ingenieur goedgekeur word.
 Alle sweislasse 6mm deurlopende hoeksweislasse tensy anders gespesifiseer.
 Die kontrakteur moet tydelike vertikale verspanning voorsien en installeer tot die bevrediging van die Ingenieur.
 Alle staalwerk geveer volgens spesifikasie.

All structural steel and steelwork shall comply with the requirements of the latest edition of S.A.B.S. 1200 H.
 No gussets are shown on trusses, however, all welded joints are to develop the full force that can be resisted by the member under consideration, and gussets are to be added where necessary to do so.
 Unless otherwise stated, gussets to be 6 p.l.
 All hollow members (ie. tubes and rectangular hollow sections) are to be closed off the 3 p.l.
 All members to be free from scale, rust, slag, etc. before being shop pointed with one coat of zincchromate primer.
 All holding down bolts are to be cast in by the civil contractor under the supervision of the steel erector, who shall be responsible for their accuracy of placing.
 All drawings must be scrutinised by the steel manufacturer and erector, and anticipated erection problems must linearly be pointed out to the Engineer.
 All bolts to be supplied with the appropriate washers even though they are not shown on the drawings.
 The manufacturer is to submit a full set of shop detail drawings to the Engineer prior to ordering materials or commencing manufacture and shall be solely responsible for the dimensional accuracy of these. The Engineer shall only be responsible for checking the design intent.
 All H.D. bolts, base plates and parts of columns below floor level to be painted to the satisfaction of the Engineer with an approved rust resistant paint after erection of steelwork.
 All welds 6 mm continuous fillet welds unless otherwise specified.
 The contractor is to supply and install temporary vertical bracing to the satisfaction of the Engineer.
 All steelworks to be painted as per specification.

SIVIELE WERK CIVIL WORK

Bedekking op alle waterpepe, rioolpepe, stormwaterpepe, hulse en elektriese kabele moet wees soos vereis op die toepaslike tekeninge of spesifikasies.
 Geen werk ondergronds, byvoorbeeld pyplyne, mag bedek word voordat dit deur die Ingenieur goedgekeur is nie.
 Openvolgende lae op paale en strate mag ook nie geplaas word voordat die vorige laag nie skriftelik deur die Ingenieur goedgekeur is nie.
 Alle leengroewe en stortingssterreine moet skriftelik deur die Ingenieur goedgekeur word voor gebruik.
 Die presiese posisie van kasduikers en pype moet, waar hulle streke en/of paale kruis, op terrein nagegaan word en die posisie moet skriftelik deur die Ingenieur goedgekeur word.

Cover on all water pipes, sewer pipes, storm water pipes, sleeves and electrical cables to comply with the drawings or specifications.
 No underground work, for example pipe lines, may be covered without prior approval of Engineer.
 Successive layers on roads and streets may not be placed before the previous layer has been approved by the Engineer in writing.
 Prior written approval must be obtained from the Engineer before utilization of any quarry or spoil area.
 Exact position of culverts and pipes crossing roads and streets to be checked on site, and the final position to be approved by the Engineer in writing.

NOTAS / NOTES

DATUM DATE	NR. NO.	WYSIGING AMENDMENT	HANDT. SIGN.

CITY ENGINEER DATE

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DIENS / SERVICE

LOXTON
 CIVIL SERVICES: 36 SITESRVN

TITEL / TITLE
 LIST OF DRAWINGS, DRAWING CONVENTION, DESIGN DATA AND GENERAL NOTES.
 LYS VAN TEKENINGE, TEKENKONVENSIEN, ONTWERPDATA EN ALGEMENE NOTAS.

TEKENING NR. / DRAWING NO.
 SK2374/1

SKAAL / SCALE	GETEKEN DRAWN	J Nel
LEER NR. / FILE NO. SK2374	ONTWERP DESIGNED	
DATUM DATE MRT 2011	NAGESIEN CHECKED	



NOTAS / NOTES

22/02/11	1	AS BUILT	JN
DATUM DATE	NR. NO.	WYSIGING AMENDMENT	HANDT. SIGN.
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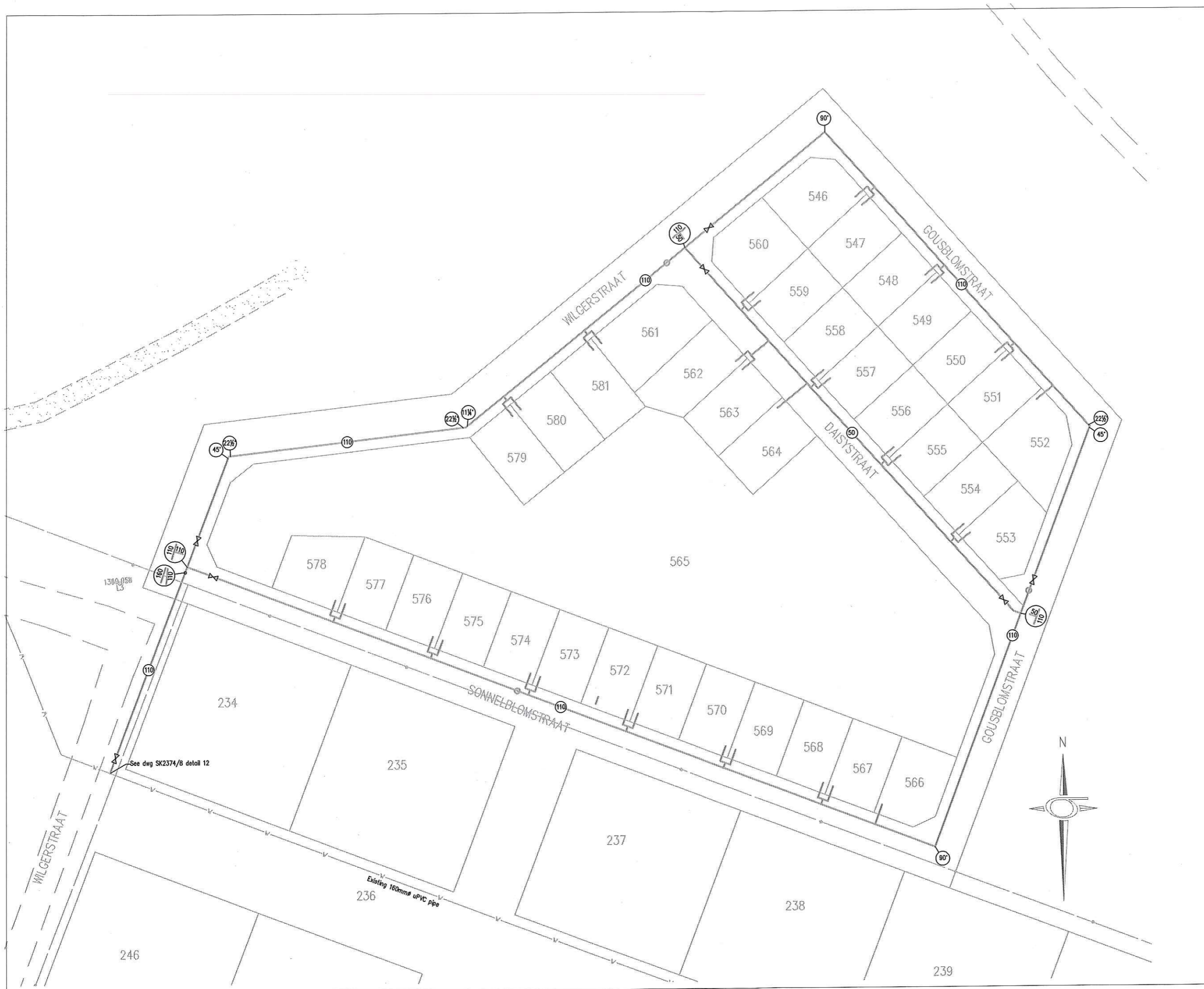
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LOXTON
 CIVIL SERVICES: 36 SITES

TITEL / TITLE
LOCALITY PLAN

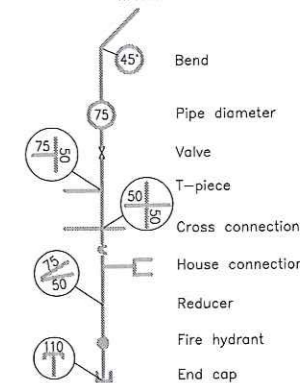
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SK2374/2

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DATUM DATE	MRT 2011	NAGESIEN CHECKED	<i>[Signature]</i>



NOTAS / NOTES

WATER LEGEND



NOTE:
 50mm pipes – HDPE CLASS 10
 75mm & 110mm pipes – uPVC class 9

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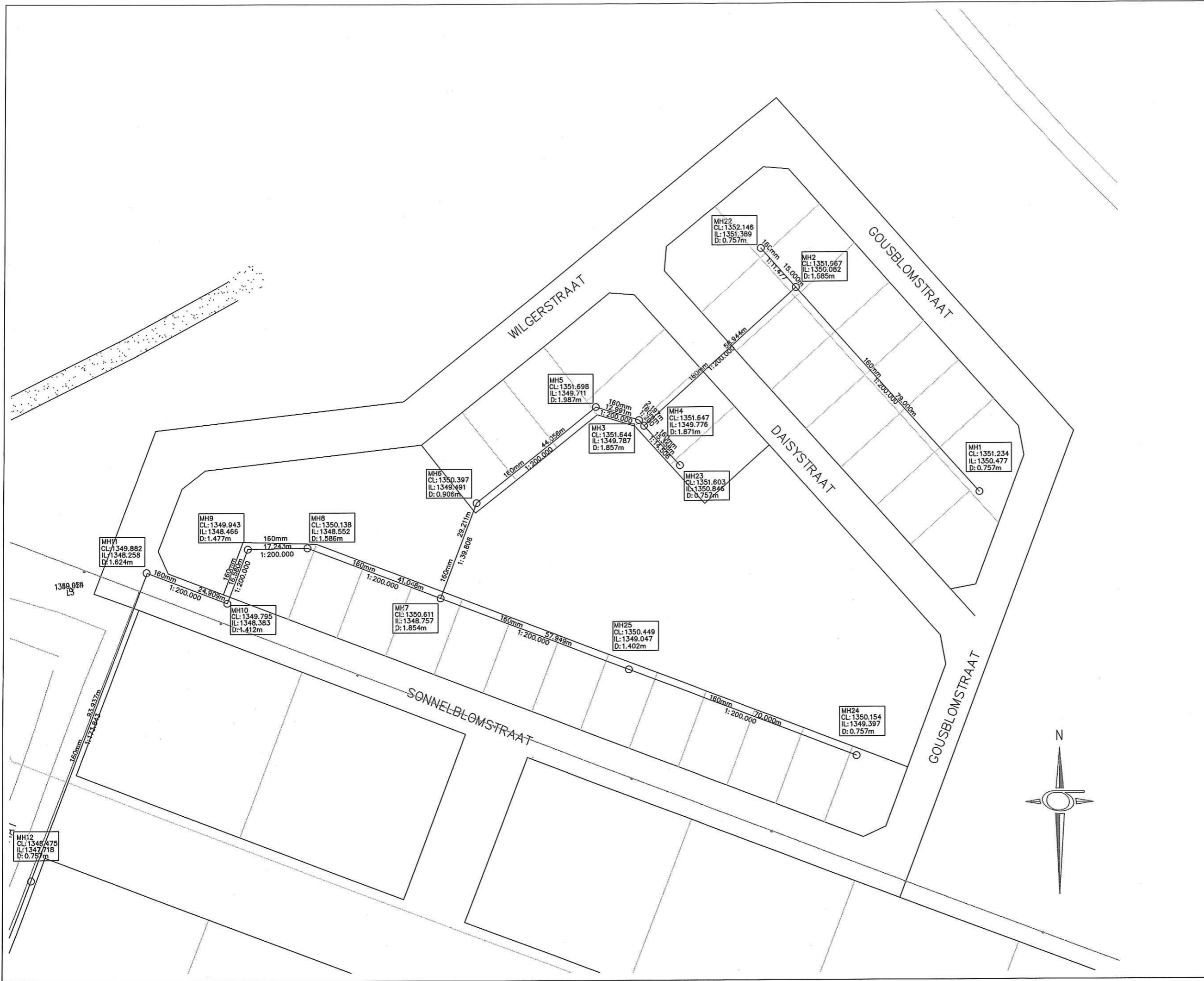
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 CIVIL SERVICES: 36 SITES

TITEL / TITLE
 WATER LAYOUT PLAN

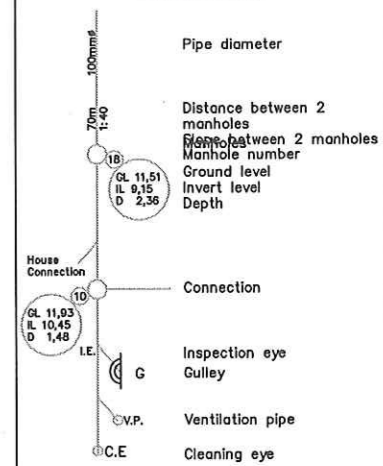
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SK2374/3

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DATUM DATE	MRT 2011	NAGESIEN CHECKED	<i>[Signature]</i>



NOTAS / NOTES

SEWER LEGEND



All pipes to be 160 mm φ

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DATE	NO.	AMENDMENT	SIGN.
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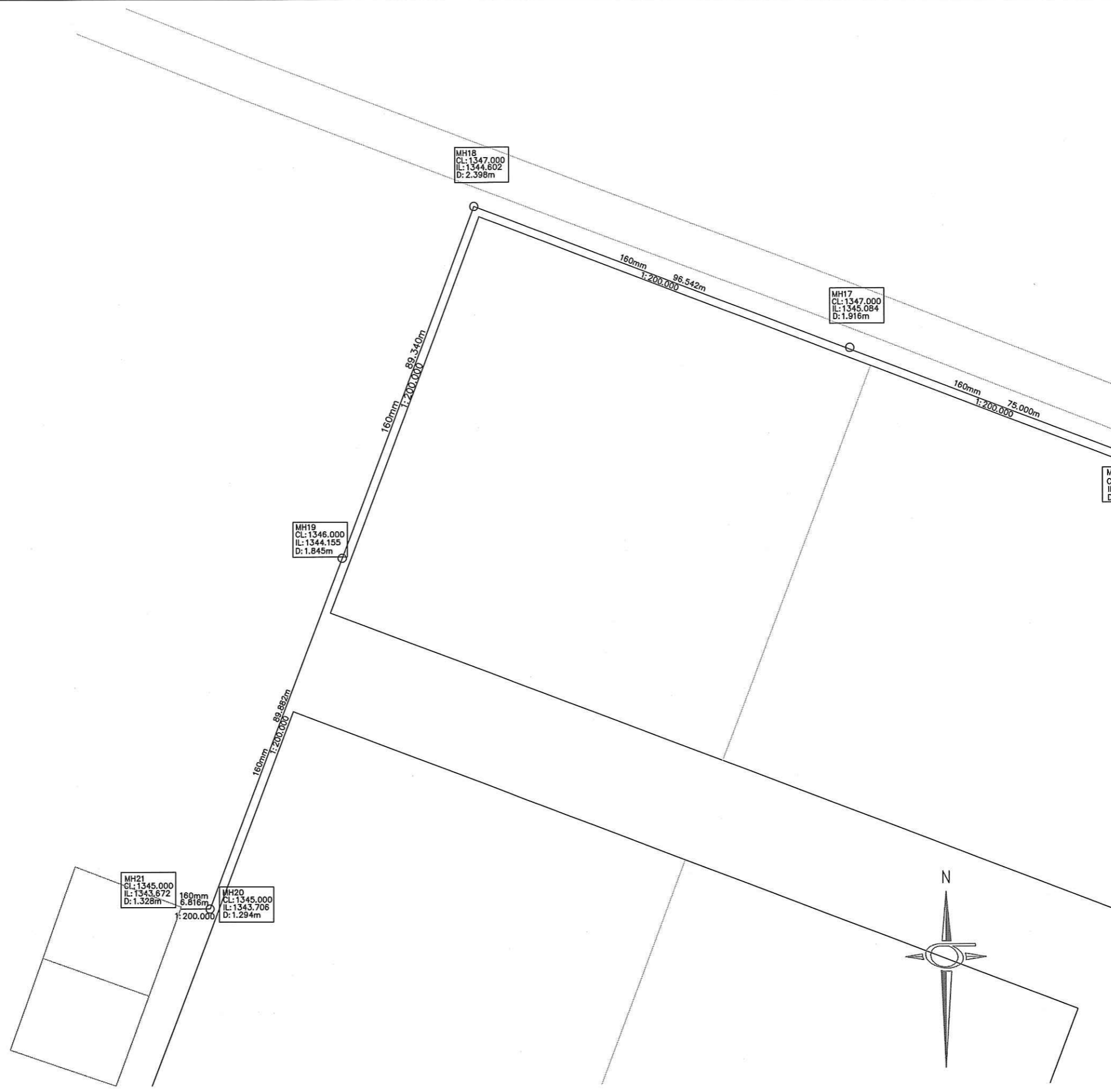
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 CIVIL SERVICES: 36 SITES

TITEL / TITLE
SEWER LAYOUT SHEET 1

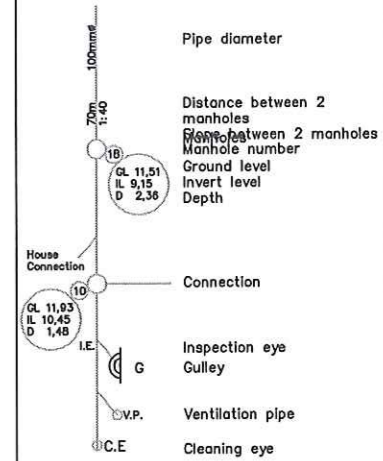
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SK2374/4

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DATUM / DATE	MRT 2011	MAKEDIN / CHECKED	[Signature]



NOTAS / NOTES

SEWER LEGEND



All pipes to be 160 mm ø

DATUM DATE	NR. NO.	WYSIGING AMENDMENT	HANDT. SIGN.
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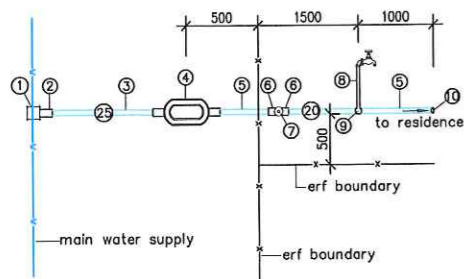
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TITEL / TITLE
SEWER LAYOUT SHEET 3

TEKENING NR. / DRAWING NO.
SK2374/6

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LEER NR. / FILE NO.	SK2374	ONTWERPER / DESIGNED	[Signature]
DATUM / DATE	MRT 2011	MAKESKEM / CHECKED	[Signature]



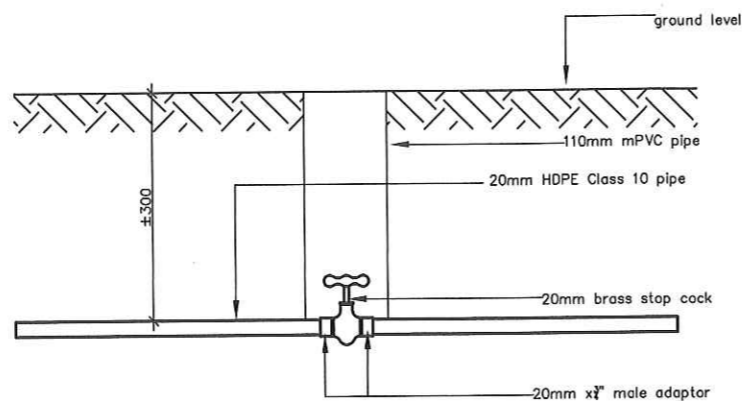
LIST OF COMPONENTS

1. Saddle with 25mmØ outlet
2. 25mm x 1" Male adaptor
3. 25mmØ HDPE water pipe Type 4 Class 10
4. 15mmØ water meter complete with lockable above ground meter box, meter, stop cock and compression fittings for 25mmØ incoming and 20mmØ outgoing HDPE pipes
5. 20mmØ HDPE water pipe Type 4 Class 10
6. 20mm x 3/4" Male adaptor
7. 20mm brass stop cock
8. 20mm bib tap with post to DETAIL W17, see dwg. SK 2374/7
9. 20mm x 3/4" Female T-piece
10. 20mm end cap

NOTE: ALL FITTINGS TO BE PLASSON COMPRESSION FITTINGS OR SIMILAR APPROVED.

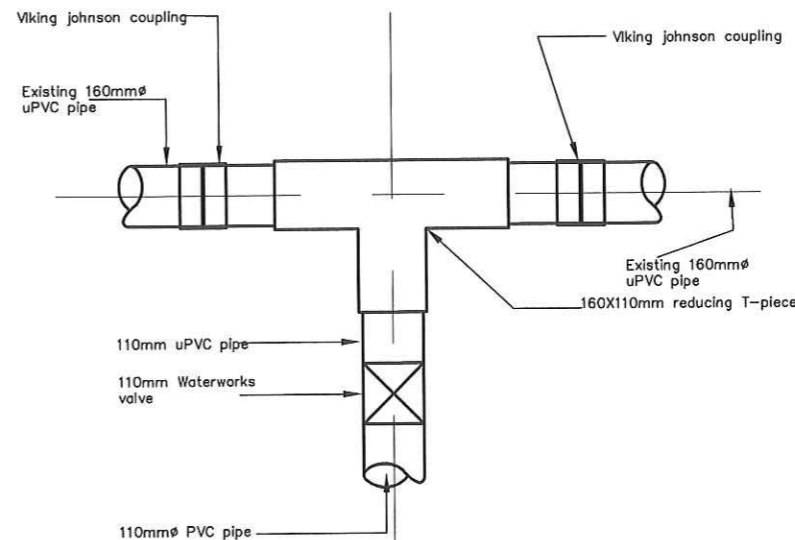
**SINGLE WATER CONNECTION
WITH BIB TAP AND POST**
N.T.S.

DETAIL Nr. 8

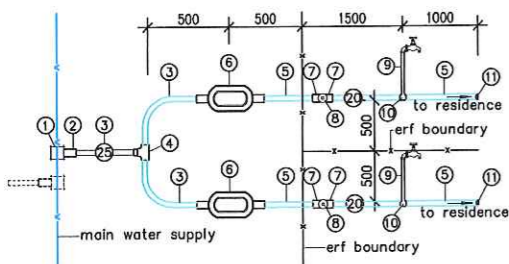


DETAIL BRASS STOP COCK
N.T.S.

DETAIL Nr. 10



DETAIL 12



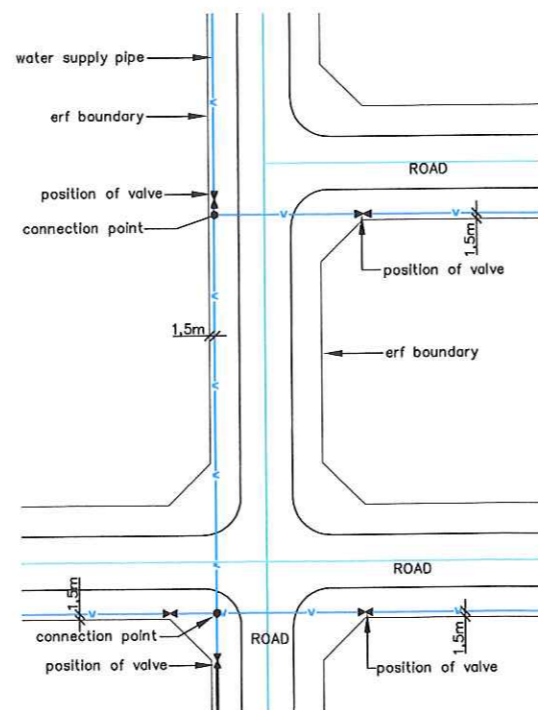
LIST OF COMPONENTS

1. Saddle with 25mmØ outlet
2. 25mm x 1" Male adaptor
3. 25mmØ HDPE water pipe Type 4 Class 10
4. 25x25mm T-piece
5. 20mmØ HDPE water pipe Type 4 Class 10
6. 15mmØ water meter complete with lockable above ground meter box, meter, stop cock and compression fittings for 25mmØ incoming and 20mmØ outgoing HDPE pipes
7. 20mm x 3/4" Male adaptor
8. 20mm brass stop cock
9. 20mm bib tap and post to DETAIL, see dwg SK 2374/7
10. 20mm x 3/4" Female T-piece
11. 20mm end cap

NOTE: ALL FITTINGS TO BE PLASSON COMPRESSION FITTINGS OR SIMILAR APPROVED.

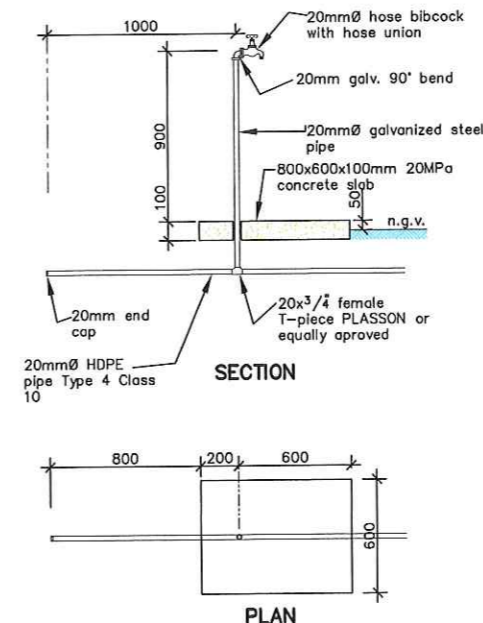
**DOUBLE WATER CONNECTION
WITH BIB TAP AND POST**
N.T.S.

DETAIL Nr. 7



PIPE LAYOUT AT STREET JUNCTION
N.T.S.

DETAIL Nr. 9



DETAIL OF HOSE TAP
N.T.S.

DETAIL Nr. 11

DATUM	NR.	WYSIGING	HANDT.
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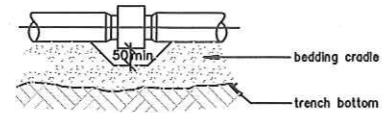
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CIVIL SERVICES: 31 ERVEN**

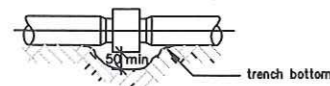
TITEL / TITLE
DETAIL

TEKENING NR. / DRAWING NO.
SK2374/7

SKAAL / SCALE	AS SHOWN	GETEKEN DRAWN	J. NEL
LEER NR. / FILE NO.	SK 2374	ONTWERP DESIGNED	
DATUM DATE	MART 2011	NAGESIEH CHECKED	



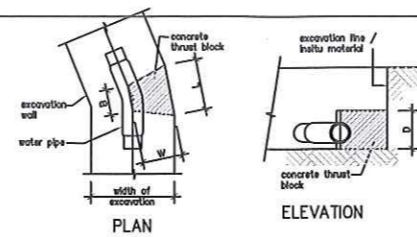
CLASS A, B AND C BEDDING



CLASS D BEDDING

PIPE BEDDING DETAILS: TYPICAL JOINT POCKETS
N.T.S.

DETAIL Nr. 1



NOTES:

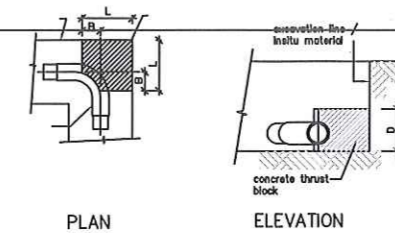
1. Thrust area "A" in square meters.
2. Concrete volume "V" allowed in cubic meters.
3. Thrust block of class 15 concrete and to be cast against insitu material.

Thrust block for 45° bends and less and line pressure < 0,8 MPa

Pipe Ø	A m ²	B mm	D mm	L mm	V m ³	W mm
50	0,02	100	150	200	0,01	300
75	0,03	100	150	200	0,01	300
100	0,06	150	200	300	0,01	300
150	0,14	200	300	400	0,03	300
200	0,24	250	350	550	0,05	300
250	0,36	300	400	650	0,09	400
300	0,54	350	500	1000	0,15	450
350	0,74	400	600	1150	0,23	500

THRUST BLOCK FOR 45° AND LESS
N.T.S.

DETAIL Nr. 2



NOTES:

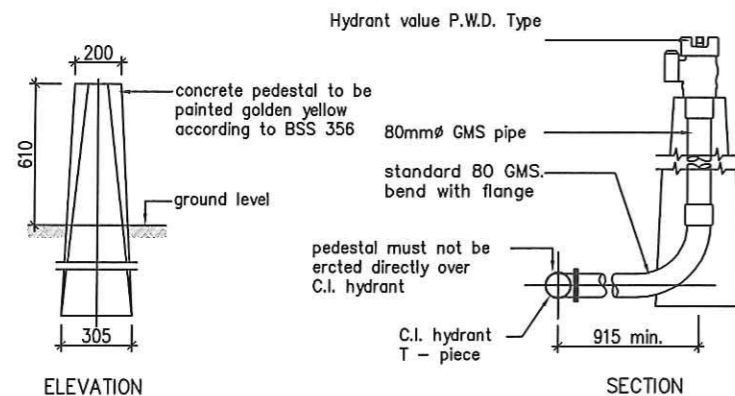
1. Concrete strength 15 MPa at 28 days.
2. Thrust block to be cast against insitu material.
3. Thrust area "A" in square meters.
4. Concrete volume "V" allowed in cubic meters.

Dimensions of thrust blocks for different Ø pipes, and caps, T-pieces, cross and 90° bends.

Pipe Ø	A m ²	B mm	D mm	L mm	V m ³
50	0,03	75	150	300	0,01
70	0,06	100	150	350	0,02
100	0,11	100	200	400	0,03
150	0,25	150	300	450	0,06
200	0,44	200	400	600	0,14
250	0,69	250	500	700	0,21
300	1,00	300	600	800	0,32
350	1,36	350	700	1000	0,52

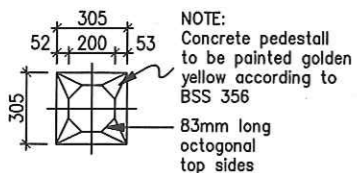
THRUST BLOCK FOR 90° BENDS
N.T.S.

DETAIL Nr. 3



ELEVATION

SECTION



BOTTOM ELEVATION

SIDE ELEVATION

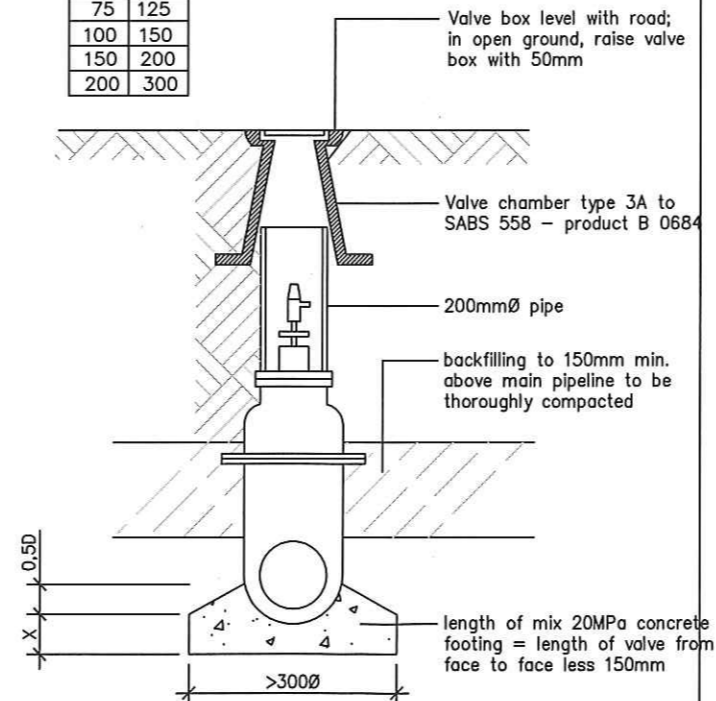
HYDRANT KEY

TYPE A VALVE HYDRANT STANDPOST
SCALE 1:20

DETAIL Nr. 4

NOTE: Valve chamber to be used for valves up to and including 200mmØ

Ø	X
50	100
75	125
100	150
150	200
200	300



VALVE CHAMBER TYPE 3
N.T.S.

DETAIL Nr. 5

DATUM DATE	NR. NO.	WYSIGING AMENDMENT	HANDT. SIGN.

AFDRUK UITGEREIK PRINT ISSUED

CITY ENGINEER DATE

KUENT / CUENT
UBUNTU MUNICIPALITY

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DIENS / SERVICE
LOXTON
CIVIL SERVICES: 36 SITES

TITEL / TITLE
WATER DETAILS: SHEET 2

TEKENING NR. / DRAWING NO.
SK2374/8

SKAAL / SCALE	AS SHOWN	GETEKEN DRAWN	J. Nel
LEER NR. / FILE NO. SK2374		ONTWERP DESIGNED	
DATUM DATE MRT 2011		NAGESIEN CHECKED	