

# LOXTON EXTENTION OF WATER SUPPLY

LYS VAN TEKENINGE LIST OF DRAWINGS

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TEKENKONVENSIË	DRAWING CONVENTION
Kolom bo	Column above
Kolom onder alleenlik	Column below only
Opening in blad	Opening in slab, etc.
Voorafgegote 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
Lasdraende steenwerk onder	Loadbearing brickwork below
Balk nr.	Beam no.
Trigonometriese baken	Trigonometrical beacon
Opmetingstasie	Survey station
Hoogte mark	Bench mark
Rioollyn	Sewer line
Waterpyplyn	Water main
Stormwaterlyn	Storm water line
Eskom kragroete - oorhoofs	Eskom power lines - overhead
Kragkabel - ondergronds	Power lines - Overhead
Kraglyne - Oorhoofs	Power cables - underground
Telefoonroetes	Telephone lines
Telefoonkabels - ondergronds	Telephone cables - underground
Heining met hek	Fence with gates
Veiligheidsheining met hek	Security fence with gate
Dorpsgebiedgrens	Township boundary
Spoorlynne	Railway lines

ONTWERPDATA	DESIGN DATA
<b>STRUKTURE</b>	<b>STRUCTURES</b>
FONDAMENT DRADRUK	FOUNDATION BEARING PRESSURE
hoogstens	not exceeding
250 kPa	
BOLAS VIR KEERMURE	SURCHARGE PRESSURE TO RETAINING WALLS
normaalweg	generally
langs paale	adjacent roadways
GRONDIGTHEID	SOIL DENSITY
vir aktiewe druk	for active pressure
18 kN/m <sup>3</sup>	for passive pressure
vir passiewe druk	for passive pressure
16 kN/m <sup>3</sup>	
WINDLASTE	WIND LOADS
stabiliteit	stability
0,7 kN/m <sup>2</sup>	fixings
hegstukke	CONCRETE GRADES
0,9 kN/m <sup>2</sup>	
BETONSTERKTES	
SEE SPECIFICATIONS	
<b>STRUKTUURSTAAL</b>	<b>STRUCTURAL STEEL</b>
graad	grade
S355JR	
KONSTRUKSIEHOUT	CONSTRUCTION TIMBER
bruikbare graad S.A. Dennehout	merchantable S.A. pine
LAMELKONSTRUKSIEHOUT	LAMINATED TIMBER
volgens S.A.B.S 876	according to S.A.B.S. 876
houttipe	type of timber
graad	grade
digtheid	density
blootstellingskategorie	exposure category
verwagte gemiddelde ewewigswogehalte	expected average equilibrium moisture content
%	appearance class
voorkoms klas	
<b>LASDRAENDE STEENWERK</b>	<b>LOADBEARING BRICKWORK</b>
stena	bricks
mortel klas	mortar class
binne en buitemure van spoumure moet verbind	inner and outer leaves of cavity walls are to be
word tot Ingenieur se bevrediging	tied together to Engineers satisfaction
<b>LEWENDE BELASTING</b>	<b>LIVE LOADS</b>
ROOF SLAB: 1,5 kN/m <sup>2</sup>	

STRUKTURELE BETON	STRUCTURAL CONCRETE
Enige onderbreking in betonplasing moet gemaak word volgens die Ingenieur se voorskrifte.	Any breaks in concrete are to be made in accordance with the Engineers instruction.
Beginneuse vir kolomme, keermure, ens. moet nie 100 mm oorskry nie.	Kickers (starter ribs) to columns, retaining walls, etc. are not to exceed 100 mm.
Betonbedekking	Concrete cover
voetstukke	75 mm
kolonne	40 mm
balk	25 mm
blaale	15 mm
keermure	25 mm
of dorsnee van hoofbepawering, watter ookal die grootste.	or diameter of main reinforcing, whichever is the greater.
Giet 'n 50 mm dik werksvlak (blinding layer) van 10 MPa beton onder alle fundamente tensy anders gespesifiseer deur die Ingenieur.	Cast a 50 mm thick blinding layer of 10 MPa concrete under the full extent of all footings unless otherwise specified by the engineer.
Geen beton mag gegiet word voordat die bewapening deur die Ingenieur goedgekeur is nie.	No concrete shall be poured until the reinforcement has been approved by the Engineer.
Die kontrakteur moet sorg dat die staal na plasing en gedurende giet van beton in posisie bly.	The Contractor is to maintain the steel in position after placing and during concreting.

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

ALGEMENE NOTAS	GENERAL NOTES
<b>ALGEMEEN</b>	<b>GENERAL</b>
Lees hierdie stel tekeninge saam met argitek, siviele, strukturele, meganiese en elektriese tekeninge (waar van toepassing) en met die algemene spesifikasies soos uitgereik deur die Ingenieur.	Read this set of drawings in conjunction with architectural, civil, structural, mechanical and electrical drawings (where applicable) and with the general specifications issued by the Engineer.
Afvoerpype in kolomme word getoon maar moet vergelyk word met Argitekstekeninge voordat beton geplaas word.	Downpipes in columns are shown, but these must be checked against Architects drawings before commencing to cast concrete.
Alleenlik geskrewe afmetings moet gebruik word.	Figured dimensions are to be used exclusively.
Alle afmetings, hoogtes en uitspitpenne moet op die terrein nagegaan word en enige verskille, afwykings of onduidelikhede moet aan die Ingenieur gerapporteer word voordat met die werk begin word, of die betrokke materiaal bestel word.	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.
Geen veranderings mag aangebring word aan enige tekening of spesifikasie sonder die skriftlike toestemming van die Ingenieur nie.	No alterations may be made to drawings or specifications without written approval of Engineer.
Alle materiaal moet voldoen aan die spesifikasies en/of vereistes in die dokument en op die tekeninge.	All materials to comply with specifications and/or requirement as shown in document or on drawings.
Interne kontroletoets soos vereis in die spesifikasies moet uitgevoer word soos voorgeskryf en aan die Ingenieur voorgelê word.	Internal control tests as required by specifications are to be performed as laid down and submitted to the Engineer.
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.	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.

STRUKTUURSTAAL	STRUCTURAL STEEL
<b>STEELWORK</b>	<b>PLATEWORK</b>
1. All steelwork to be in accordance with SANS 1431 - grade S355JR.	1. Platework to be 6 thk. M.S. (u.o.s.) to SANS 1431 - grade S355JR.
2. Fabrication, workmanship, etc. to be in accordance with SABS 1200 H.	2. All welds to be 6 cont. f.w. watertight (to comply with SABS code of practice 044)
3. Where HSFG bolts are used they must be tightened as specified on page 6.23 of the South African Steel Construction handbook, using the "Turn of Nut Method".	3. Fabricator to supply all nuts, bolts washers, etc. (suitably bagged and labeled) including those in bolt list. (Shop bolting of flanges prior to delivery is preferred.)
4. Once tightened an HSFG bolt cannot be re-used and must be discarded. All holes to be 22 dia. for M20 bolts U.O.S.	4. All packs to be laminated and wired to platework for delivery.
5. Hardened washers are to be used with high tensile and HSFG bolts.	5. Flanges to be flat 65x8. All "wet" flanges to be sealed with clear silicone sealant.
6. Tapered washers are to be used where required.	6. Hole spacing in FLGS: pitch max. for wet chutes: 200 max. for dry chutes. u.o.s.
7. Fabricator is to supply all nuts, bolts and washers suitably bagged and labelled.	7. All dims given on drg. are inside chute plts. where applicable.
8. Welding to be carried out in accordance with SABS code of practice 044 (All welds 6 mm cont. fillet, unless otherwise noted)	8. Stiffeners to be flat 65x8 welded on int.f.w. 50 hit 100 miss alternate. u.o.s.
9. Shop Detailer to allow sufficient clearances for erection purposes.	9. All items to be hard stamped with item number (min. size: 15 mm high). unless otherwise indicate,
10. Standard back marks and cross centres to be used where possible.	10. All steel liner plates to be VRN 500, thickness as specified on, drg. bolted on with min. 4 M16 CSK nib head bolts U.O.S.
11. No deviation from member sizes, dimensions or setting out points unless permission has been obtained from the designer in writing.	11. All liners to be of standard size and shape where possible, and limited to 25 kg.
12. All loose items, packs and brackets, etc. to be wired on for delivery.	12. Gaps between steel liner plates to be 5 mm maximum - gaps to be offset in the material flow direction.
13. All items to be clearly marked with their respective item and drawing number (prior to sand blasting), by means of welding or hard stamping.	13. All burrs etc. to be ground smooth prior to painting and lining.
14. All steelwork must be colour coded, after primer, if specified on arrangement drawing and the No. must be indicated in white paint.	14. Paint as per specification.
15. Handrailing note: Tee pieces to be welded into beam web for handrailing stanchion fixing. No fixing to kick flat.	15. Fabricator to provide suitable lifting lugs where required, for lifting purposes.
16. Handrailing to be standard tubular, MENTIS or similar, max. spacing of stanchions to be 1,5 m.	16. All ceramic liners to be fitted to a suitable backing plate and bolted onto chute u.o.s.
17. Fabricator to supply temporary bracing as required for safe erection.	17. Fabricators must provide "SHOP DETAILS" drawings of the liners.
18. After painting all crawl beams to be clearly marked with SWL.	
	<b>ANCHORS</b>
	1. All chemical bolts to be HILTI HVA adhesive anchors or similar and approved by the engineer. Size as specified on drawings.
	<b>FLOORING</b>
	1. Flooring to be open grid type with 30x4,5 bearer bars and 38x38 nominal openings, unless otherwise specified.
	2. Direction of span of bearer bars are indicated thus $\leftarrow$
	3. Provide 130x8 kick flat along outer edges and openings in flooring. Flooring edges without kick flats to be banded.
	4. Flooring to be bitumen dipped, unless otherwise stated.
	5. Sharp corners of kick flats to be ground round and smooth.
	6. All flooring to be hard stamped with panel mark number and drawing number.

**AS BUILT  
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DIENS / SERVICE  
**LOXTON:  
EXTENTION OF WATER  
SUPPLY**

TITEL / TITLE  
LIST OF DRAWINGS, DRAWING CONVENTIONS, DESIGN DATA AND GENERAL NOTE

TEKENINGENR. / DRAWING NO.  
**SK2918/1**

SKAAL / SCALE	AS SHOWN	GETEKEN DRAWN	SK JULYSE
LEER NR. / FILE NO. SOOS GETOON		ONTWERP DESIGNED	
DATUM DATE FEBRUARY 2015		NAGESIEN CHECKED	



NOTAS / NOTES

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**SOOS GEBOU**

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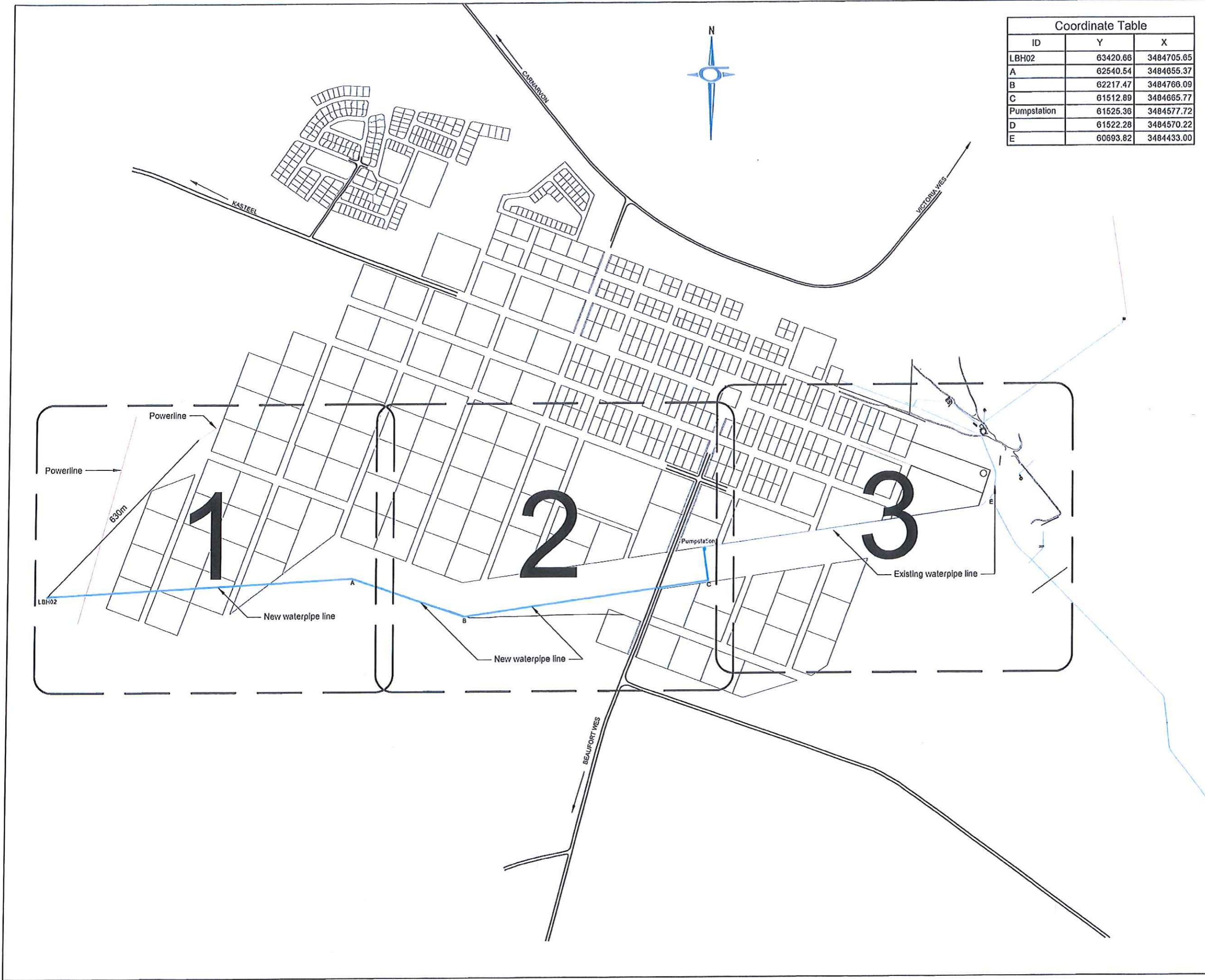
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**LOXTON**  
**EXTENSION OF EXTERNAL WATER**  
**SUPPLY**

TITEL / TITLE  
**LOCALITY PLAN**

TEKENING NR. / DRAWING NO.  
**SK2918/2**

SKAAL / SCALE	1:500	GETEKEN DRAWN	E T HESS
LEER NR. / FILE NO.	SK2231	ONTWERP DESIGNED	E T HESS
DATUM DATE	FEB 2015	NAGES EN CHECKED	<i>[Signature]</i>



Coordinate Table		
ID	Y	X
LBH02	63420.66	3484705.65
A	62540.54	3484655.37
B	62217.47	3484766.09
C	61512.89	3484665.77
Pumpstation	61525.36	3484577.72
D	61522.28	3484570.22
E	60693.82	3484433.00

NOTAS / NOTES

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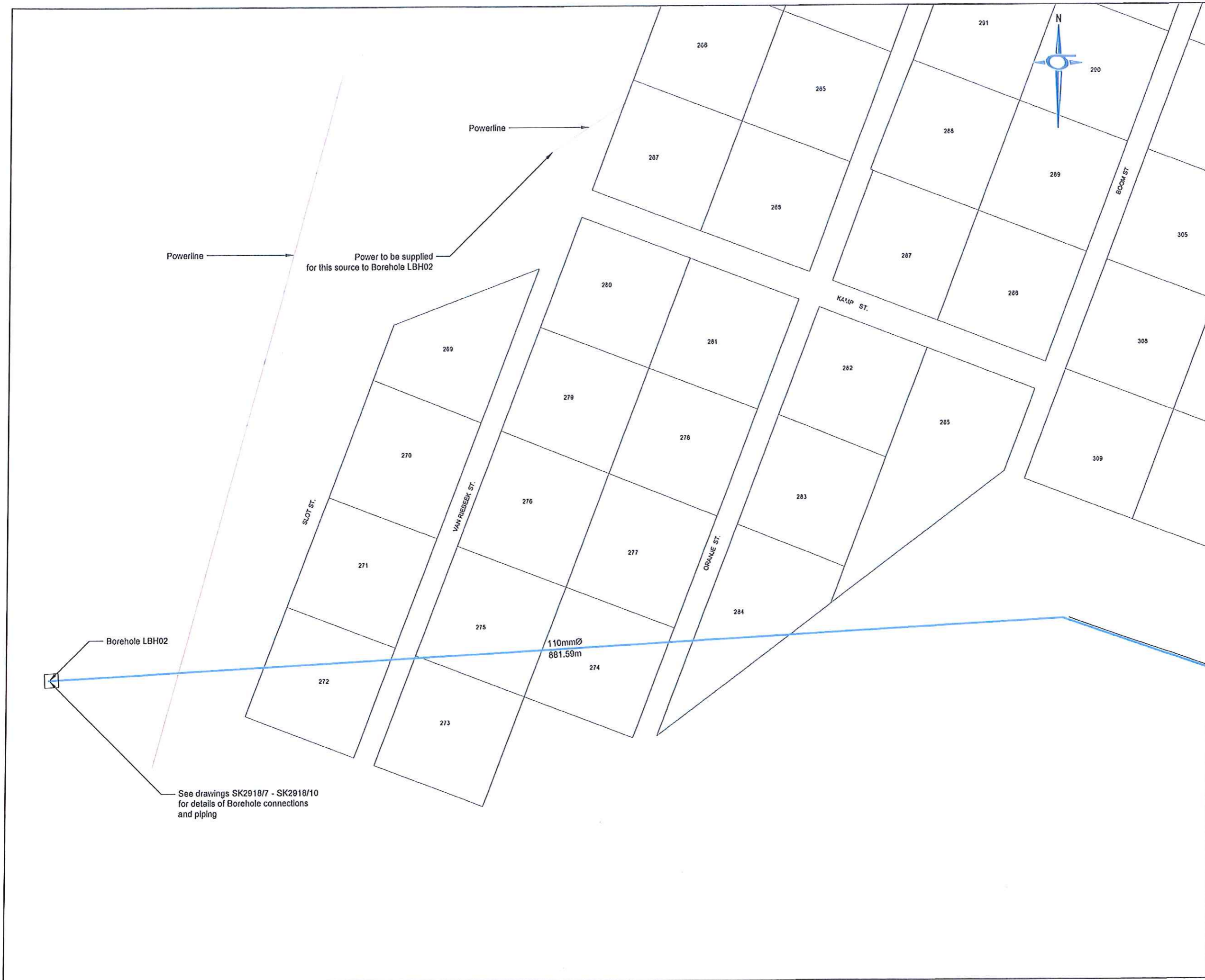
DENS / SERVICE  
**LOXTON**  
**EXTENSION OF EXTERNAL WATER SUPPLY**

TITEL / TITLE  
**PIPE LAYOUT AND SETTING OUT DATA**

TEKENING NR. / DRAWING NO.  
**SK2918/3**

SKAAL / SCALE	1:5000	GETEKEN / DRAWN	E T HESS
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*E.T. Hess*



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DENS / SERVICE  
**LOXTON**  
**EXTENSION OF EXTERNAL WATER SUPPLY**

TITEL / TITLE  
**PIPE LAYOUT - SHEET 1**

TEKENING NR. / DRAWING NO.  
**SK2918/4**

SKAAL / SCALE	1:1500	GETEKEN / DRAWN	ET HESS
LEERNR. / FILE NO	SK2918	ONTWERP / DESIGNED	ET HESS
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See drawings SK2918/11 - SK2918/15  
for details of Pumpstation and piping

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<b>LOXTON</b> EXTENSION OF EXTERNAL WATER SUPPLY			
TITEL / TITLE			
PIPE LAYOUT - SHEET 2			
TEKENING NR. / DRAWING NO.			
<b>SK2918/5</b>			
SKAAL / SCALE	1 : 1 500	GETEKEN / DRAWN	ET HESS
LEERNR. / FILE NO	SK2918	ONTWERP / DESIGNED	ET HESS
DATUM / DATE	FEB 2015	NAGES EN / CHECKED	<i>[Signature]</i>



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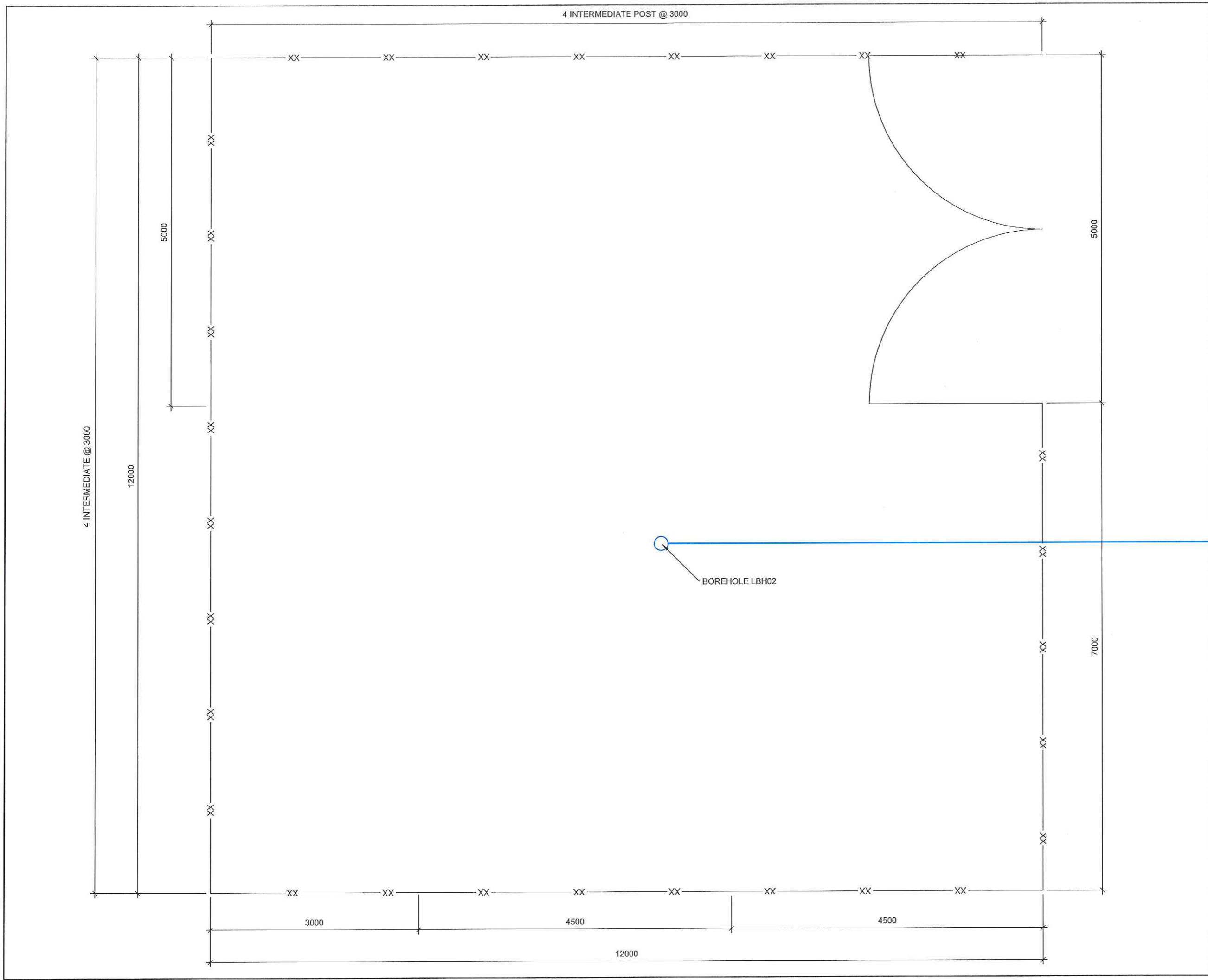
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**LOXTON  
EXTENSION OF EXTERNAL WATER  
SUPPLY**

TITEL / TITLE  
PIPE LAYOUT - SHEET 3

TEKENING NR. / DRAWING NO.  
**SK2918/6**

SKAAL / SCALE	1:1 500	GETEKEN / DRAWN	ET HESS
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**LOXTON**  
EXTENTION OF EXTERNAL WATER  
SUPPLY

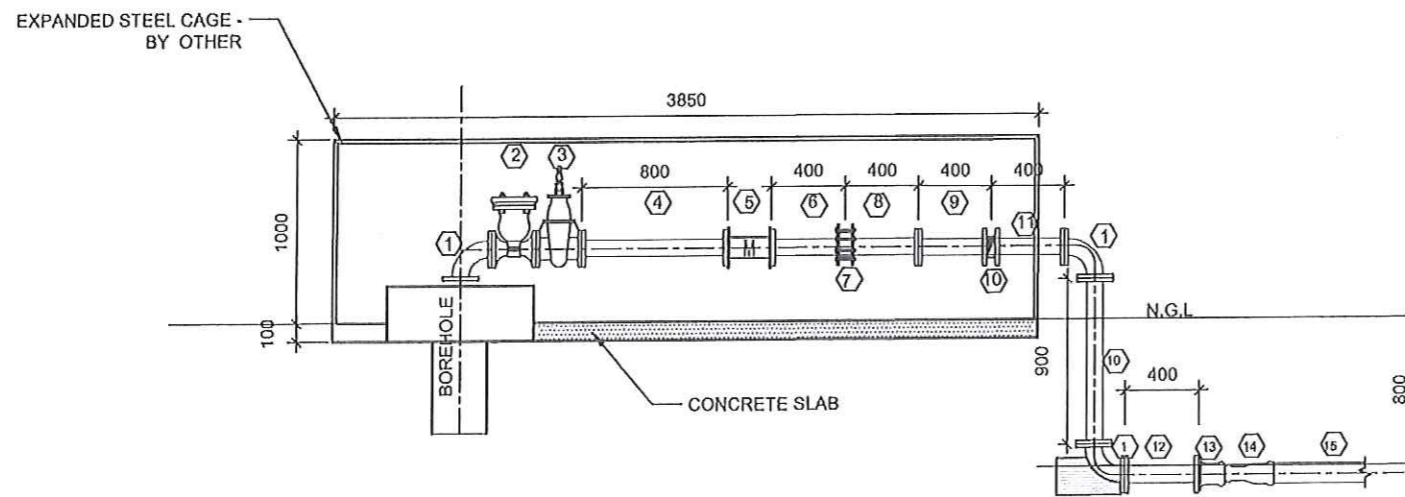
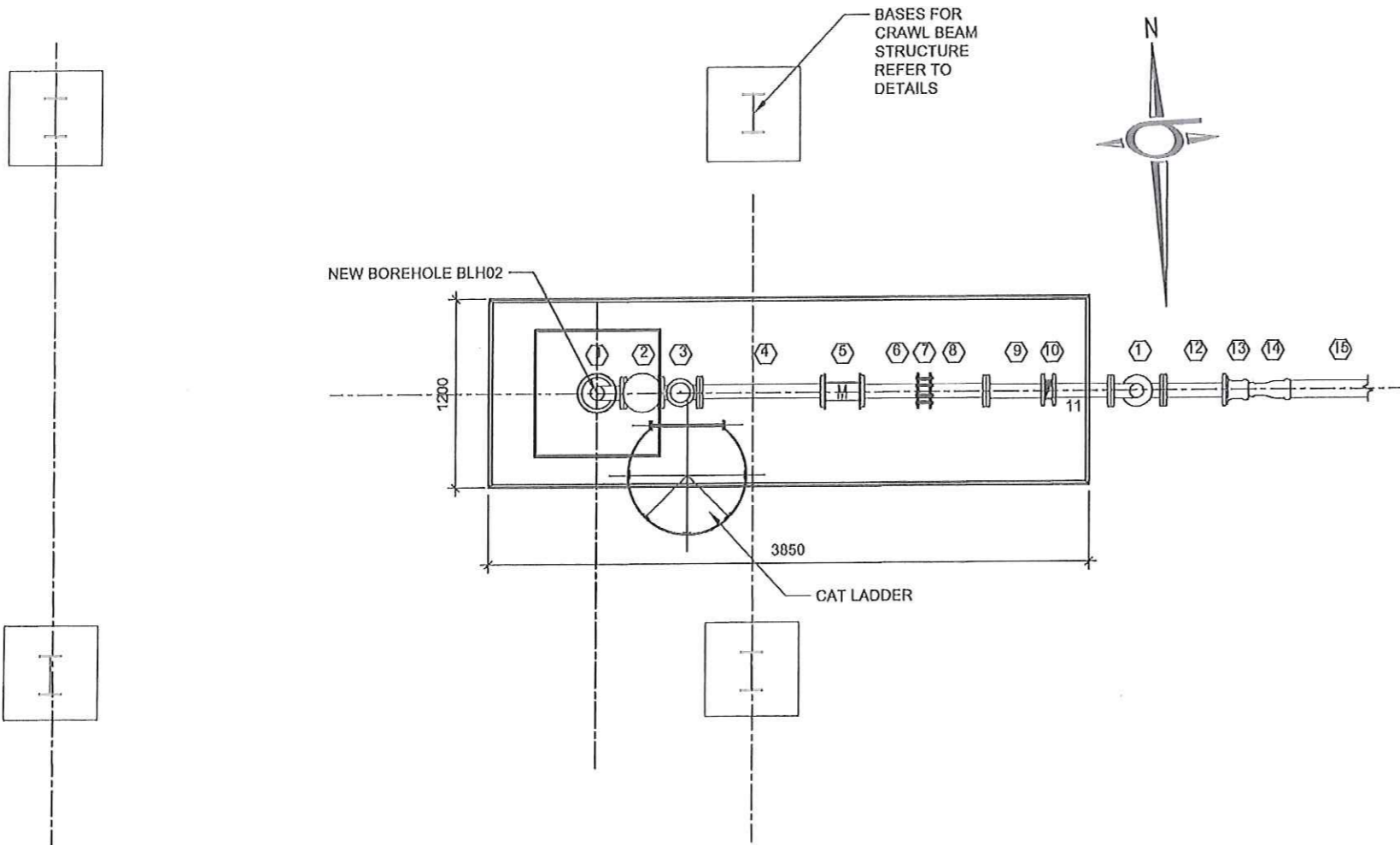
TITEL / TITLE  
**BOREHOLE LBH02**  
SETTING OUT

TEKENING NR. / DRAWING NO.  
**SK2918/7**

SKAAL / SCALE	1:25	GETEKEN DRAWN	E.T.HESS
LEER NR. / FILE NO.	SK2918	ONTWERP DESIGNED	E.T.HESS
DATUM DATE	FEB 2015	NAGESIEH CHECKED	

ITEM No.	SIZE NB	No. OFF	DESCRIPTION (DETAIL AS PER DRAWING) (ALL FLANGED U.O.N., ALL STEEL PIPING & FITTINGS MEDIUM WALL & TO BE HOT DIPPED GALVANISED)
1	80	3	90° BEND
2	80	1	A/R VALVE, FLANGE
3	80	1	VALVE, FLANGE
4	80	2	GI PIPE, 800mm LONG
5	80	1	WATER METER, FLANGE
6	80	1	GI PIPE, 400mm FLANGED ON ONE SIDE
7	80	1	VJ COUPLING
8	80	1	GI PIPE, 400 mm FLANGED ON ONE SIDE
9	80	1	GI PIPE, 400 mm long
10	80	1	NON RETURN VALVE WAFER TYPE
11	80	1	GI PIPE, 400 mm long
12	80	1	GI PIPE 400 mm long
13	80	1	FLANGE ADAPTER
14	80-110	1	REDUCER
15	110	1	PVC PIPE

- NOTES:
1. ALL PIPES FITTINGS TO BE FLANGED U.O.S
  2. ALL FLANGES TO BE
  3. ALL FLANGED FITTED 2- HOLES TOP
  4. STEEL PIPING TO: U.O.S SANS 62 MEDIUM WALL
  5. STEEL PIPE FITTINGS TO : ANSI B16.9 SCHED 80 AND BENDS BENDS TO BE LONG RADIUS U.O.S
  6. WELD TO STEEL PIPING TO BE 6 mm C.F.
  7. SUPPLY ALL CLOSERS 150 mm LONGER THAN INDICATED ON DRAWING AND SUPPLY 1 FLANGE LOOSE FOR SITE WELDING IN PLACE AFTER PIPE IS TRIMMED TO REQUIRED LENGTH
  8. 4 THICK KLINGRITE RING GASKETS TO BE FITTED BETWEEN JOINTING FACES. (THESE ARE NOT SHOWN ON DRAWING)
  9. NB = NOMINAL BORE
  10. ALL STEEL PIPING TO BE HOT D/P GALVANISED



NEW BOREHOLE BHL02 : PIPING LAYOUT

**AS BUILT**  
**SOOS GEBOU**

DATUM DATE	NR NO.	WYKING AMENDMENT	HAND. SIGN.

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DEVS / SERVICE  
**LOXTON:  
EXTENSION OF WATER  
SUPPLY**

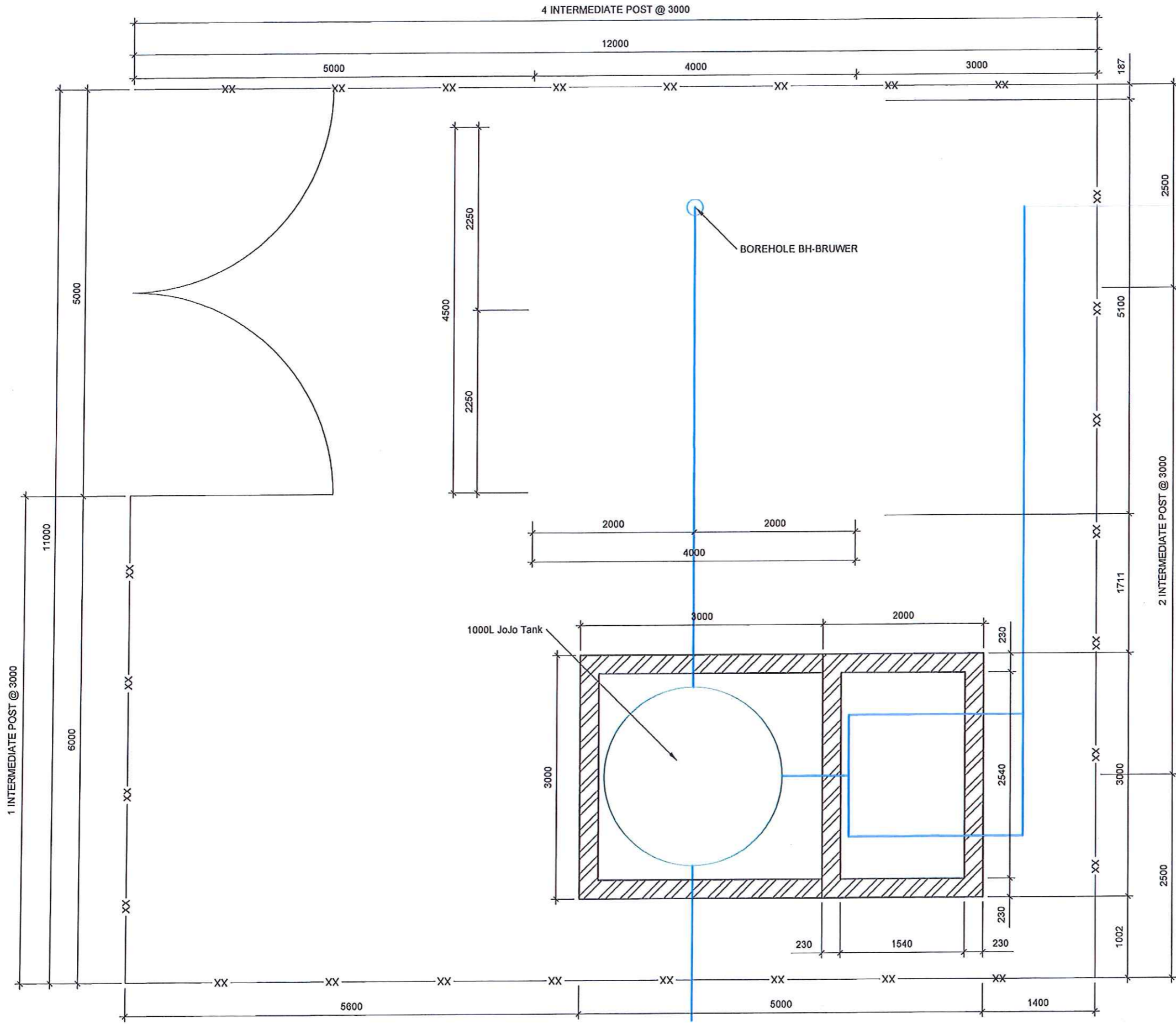
TITEL / TITLE  
**PIPING LAYOUT BOREHOLE LBH02**

TEKENING NR. / DRAWING NO.  
**SK2918/8**

SKAAL / SCALE	1:20 A1 1:20 A3	GETEKEN DRAWN	SK JULYSE
LEER N° / FILE NO	SOOS GEBOU	ONTWERP DESIGNED	
DATUM DATE	FEBRUARY 2014	NAGES BY CHECKED	



4 INTERMEDIATE POST @ 3000



NOTAS / NOTES

**AS BUILT  
SOOS GEBOU**

DATUM / DATE	NR / NO	WYSIGING / AMENDEMENT	HANDT / SGN

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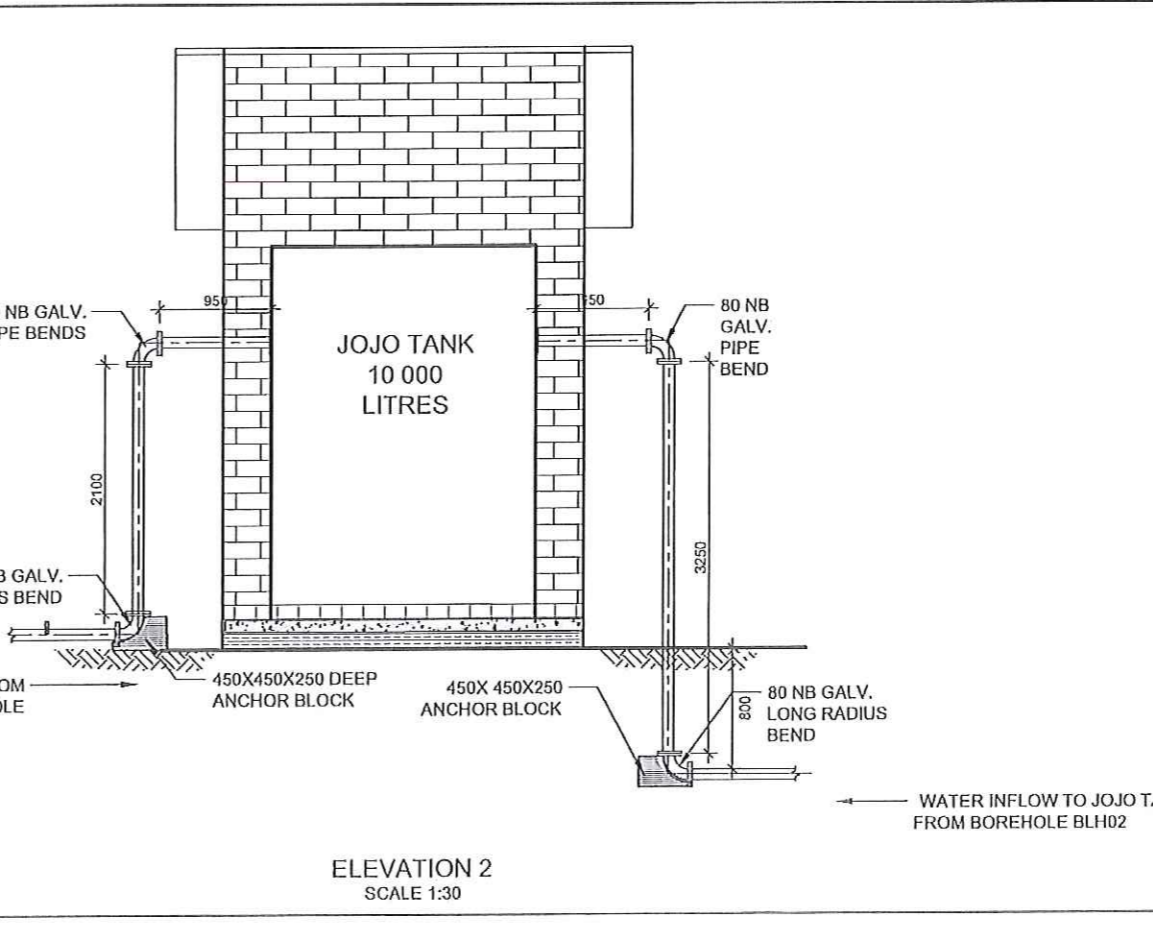
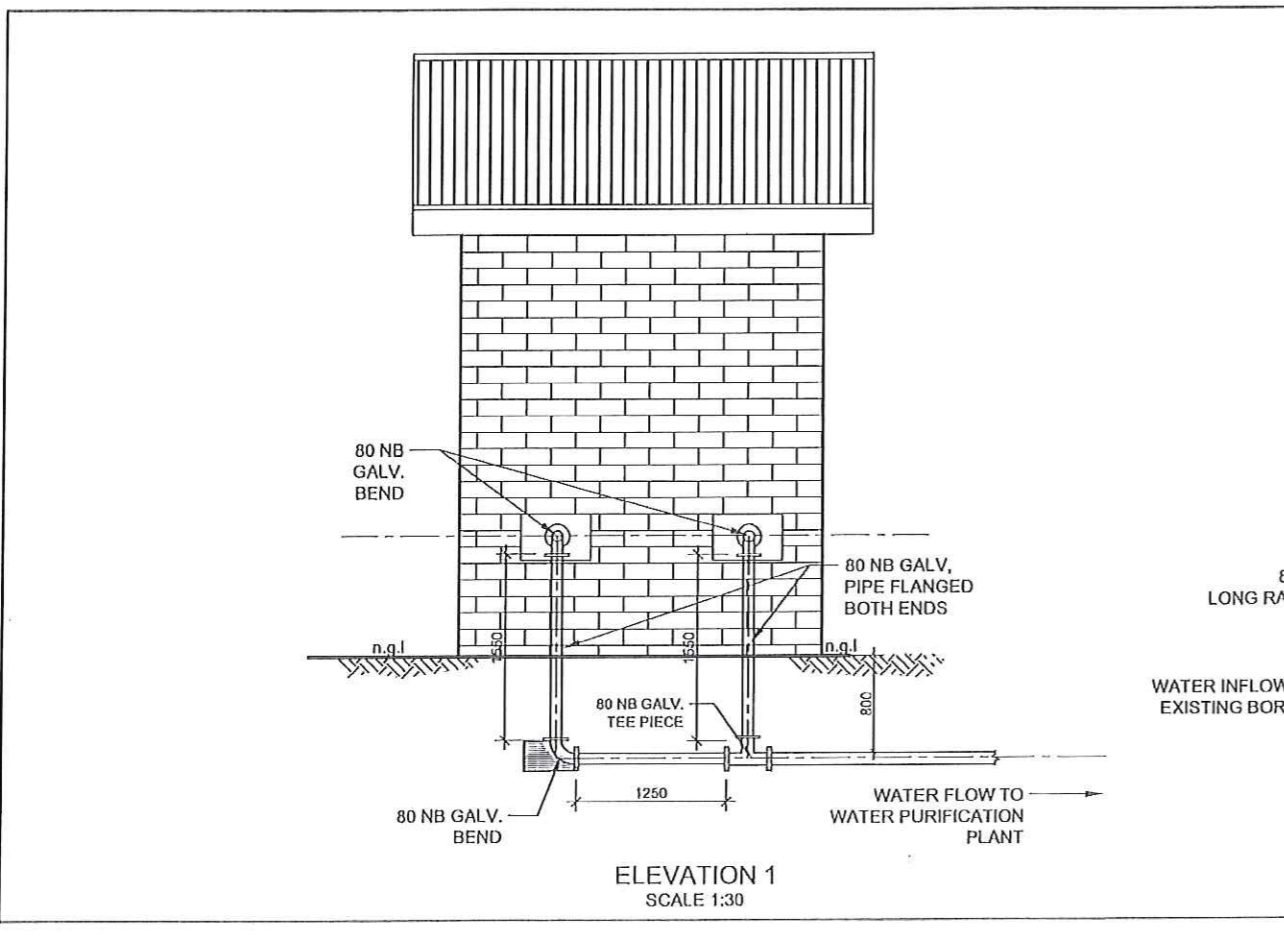
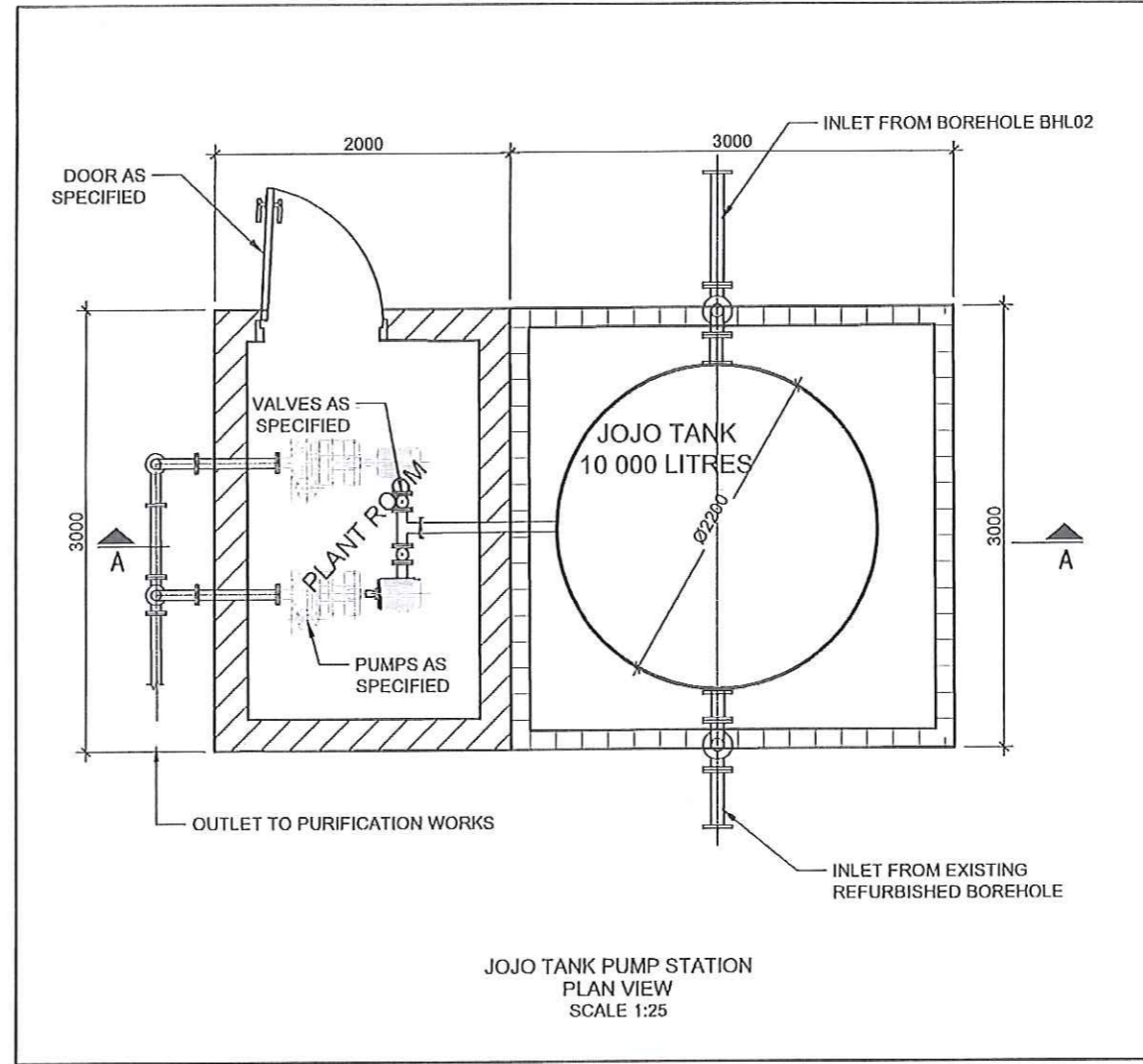
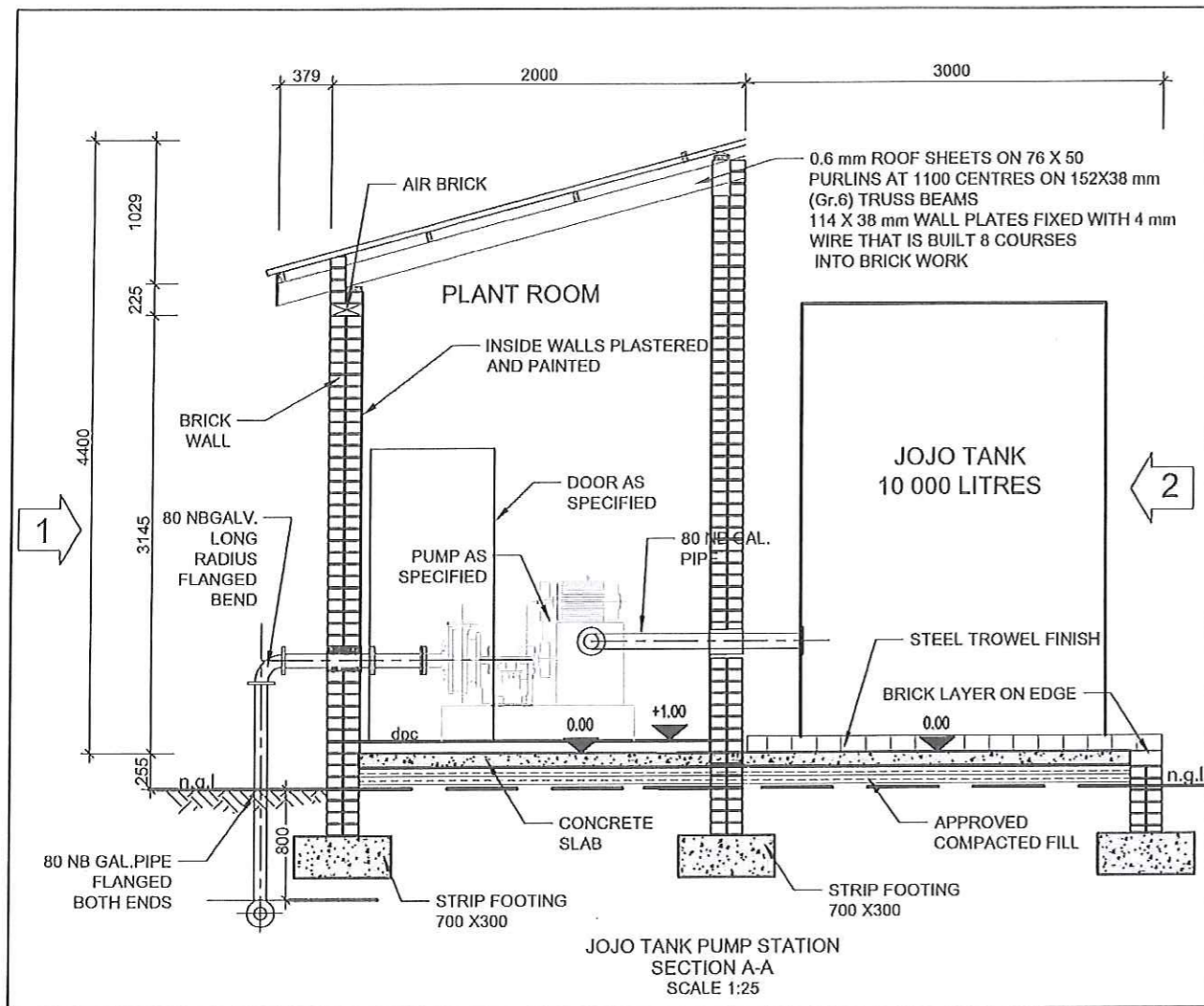
Post-af S. No 124  
Printshop / Printe Rm 2007  
UP-204  
8300  
Tel: / Fax: (041) 331278  
E-mail: info@stabilis.co.za

DENS / SERVICE: **LOXTON  
EXTENSION OF EXTERNAL WATER  
SUPPLY**

TITEL / TITLE: **BOREHOLE BH-BSG01  
SETTING OUT**

TEKENING NR. / DRAWING NO.: **SK2918/11**

SKAAL / SCALE: 1:25	GETEKEN / DRAWN: E T HESS
LEERAR / FILE NO: SK2918	ONTWERP / DESIGNED: E T HESS
DATUM / DATE: FEB 2015	NAGESIEN / CHECKED: <i>[Signature]</i>



NOTAS / NOTES

**AS BUILT**  
**SOOS GEBOU**

DATUM DATE	NR NO	WYS/G:G AVENEMENT	MANOT SIGN

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UBUNTU MUNICIPALITY

**STABILIS**  
Development (Pty) Ltd

Private / P.O. Box 661  
2300  
Tel: (053) 853 253  
Fax: (053) 831 328  
E-mail: info@stabilis.co.za

Private / P.O. Box 134  
Phongosha / P.O. Box 35479  
1601  
Tel: (053) 853 253  
Fax: (053) 831 328  
E-mail: info@stabilis.co.za

DENS / SERVICE  
LOXTON:  
EXTENSION OF WATER  
SUPPLY

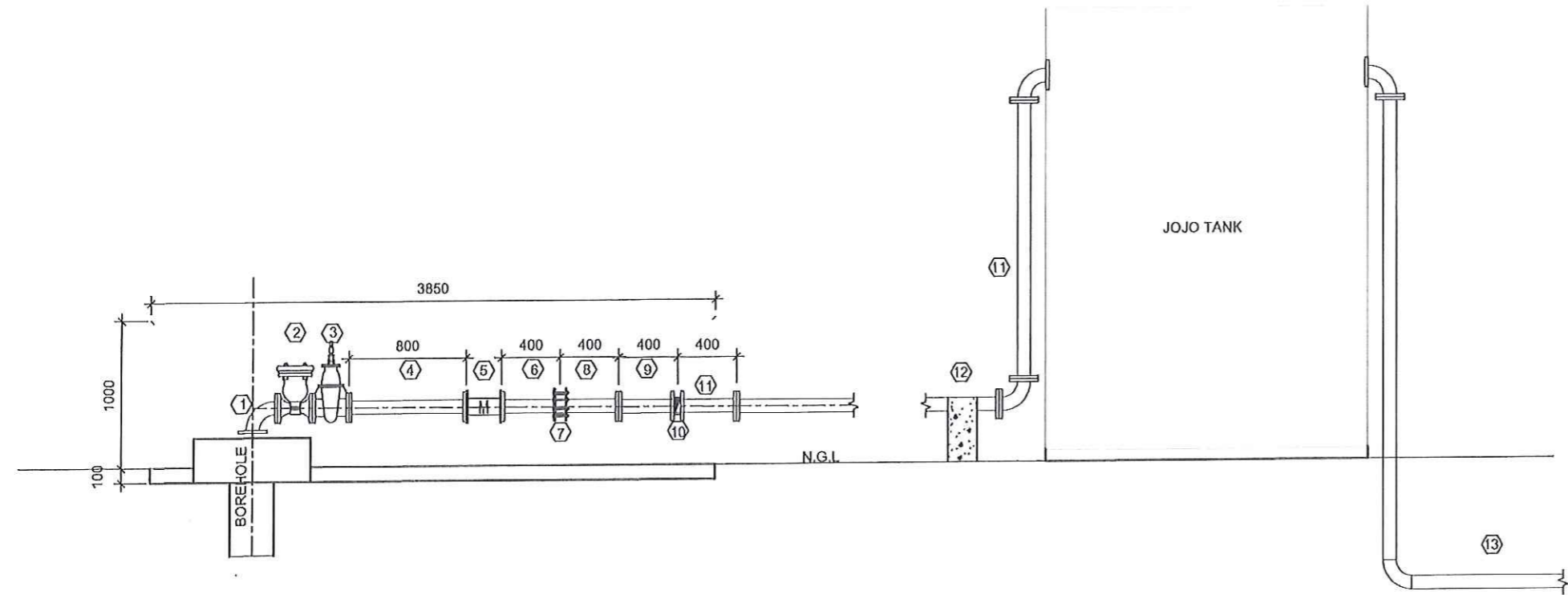
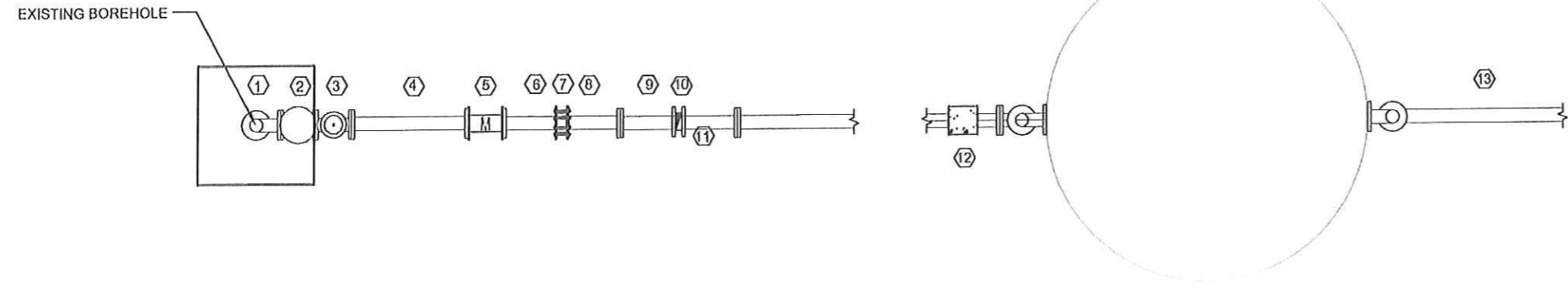
TITEL / TITLE  
PUMP STATION AND JOJO  
TANK LAYOUT

TEKENING NR. / DRAWING NO.  
**SK2918/12**

SKAL / SCALE	AS SHOWN	GETEKEN DRAWN	SK JULYSE
LEER / FILE NO	SOOS GETOON	ONTWERP DESIGNED	
DATUM DATE	FEBRUARY 2015	INGESIEK CHECKED	

ITEM No.	SIZE NB	No. OFF	DESCRIPTION (DETAILS PER DRAWING) (ALL FLANGED U.O.N., ALL STEEL PIPING & FITTINGS MEDIUM WALL & TO BE HOT DIPPED GALVANISED)
1	80	3	90° BEND
2	80	1	AIR VALVE, FLANGE
3	80	1	VALVE, FLANGE
4	80	2	GI PIPE, 800mm LONG
5	80	1	WATER METER, FLANGE
6	80	1	GI PIPE, 400mm FLANGED ON ONE SIDE
7	80	1	VJ COUPLING
8	80	1	GI PIPE, 400 mm FLANGED ON ONE SIDE
9	80	1	GI PIPE, 400 mm long
10	80	1	NON RETURN VALVE WAFER TYPE
11	80	1	GI PIPE
12		1	THRUSTBLOCK
13	110	1	PVC PIPE

- NOTES:
1. ALL PIPES FITTINGS TO BE FLANGED U.O.S
  2. ALL FLANGES TO BE
  3. ALL FLANGED FITTED 2- HOLES TOP
  4. STEEL PIPING TO: U.O.S SANS 62 MEDIUM WALL
  5. STEEL PIPE FITTINGS TO: ANSI B16.9 SCHED 80 AND BENDS BENDS TO BE LONG RADIUS U.O.S
  6. WELD TO STEEL PIPING TO BE 6 mm C.F.
  7. SUPPLY ALL CLOSERS 150 mm LONGER THAN INDICATED ON DRAWING AND SUPPLY 1 FLANGE LOOSE FOR SITE WELDING IN PLACE AFTER PIPE IS TRIMMED TO REQUIRED LENGTH
  8. 4 THICK KUNGRITE RING GASKETS TO BE FITTED BETWEEN JOINTING FACES. ( THESE ARE NOT SHOWN ON DRAWING)
  9. NB = NOMINAL BORE
  10. ALL STEEL PIPING TO BE HOT DIP GALVANISED



BOREHOLE BH-BSG01: PIPING LAYOUT

**AS BUILT**  
SOOS GETOON

DATUM DATE	N.R. NO.	WYSIG'NG AVENEMENT	MAVDT. S'GN
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Fax: (053) 831718  
E-mail: info@stabilis.co.za

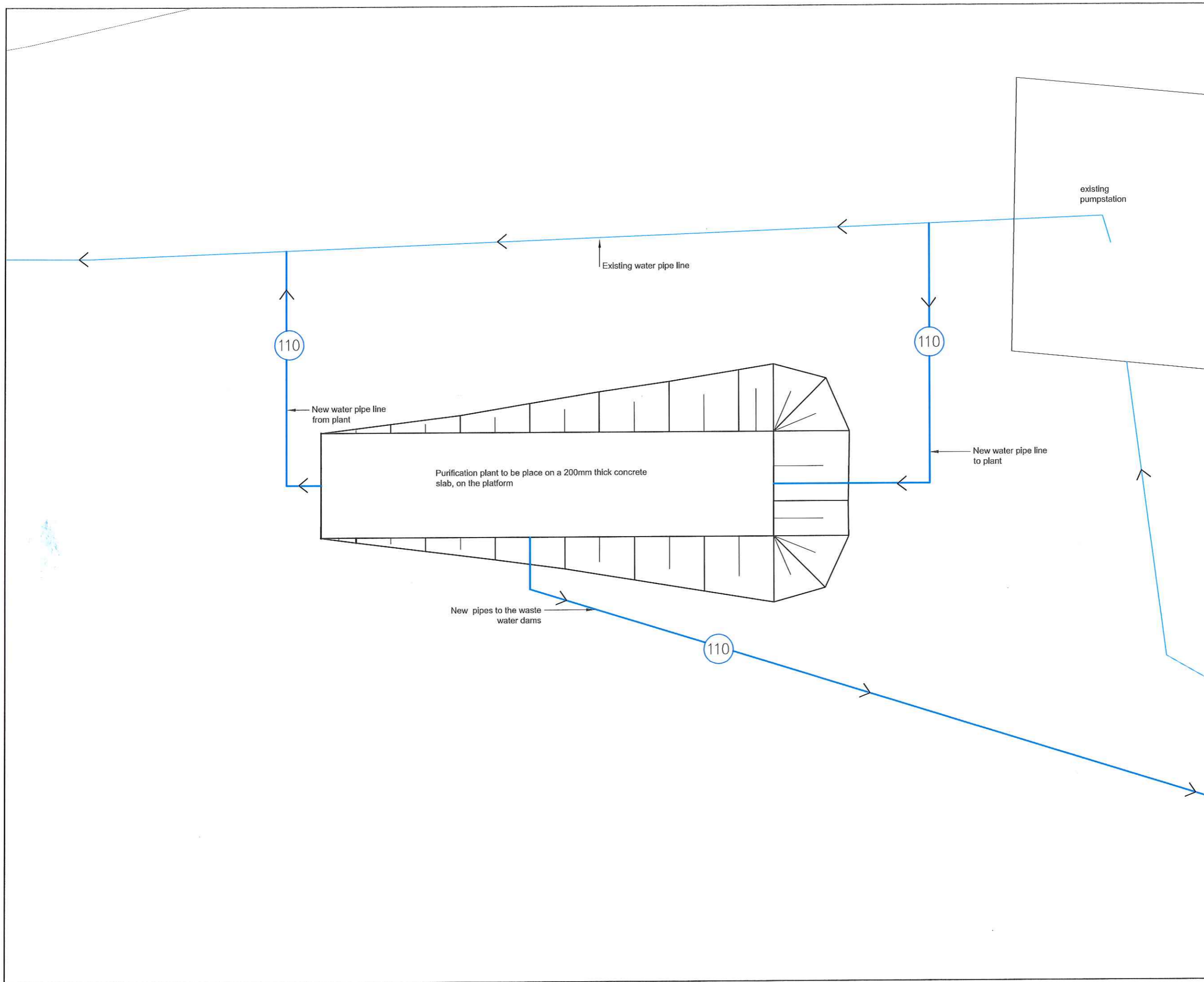
Polyval Site 158  
Phokeng / Phokeng Bop 35079  
LONDON  
Tel: / Fax: (051) 3311779  
E-mail: info@stabilis.co.za

DENS / SERVICE  
**LOXTON:  
EXTENSION OF WATER  
SUPPLY**

TITEL / TITLE  
**PIPING LAYOUT BOREHOLE BH-BSG01**

TEKENING NR. / DRAWING NO.  
**SK2918/13**

SKAAL / SCALE	1:20A1 1:42A3	GETEKEN DRAWN	SK JULYSE
LEERNR / FILE NO	SOOS GETOON	ONTWERP DESIGNED	
DATUM DATE	FEBRUARY 2014	NAGES EN CHECKED	



NOTAS / NOTES

**AS BUILT**  
**SOOS GEBOU**

DATUM DATE	NR. NO.	WYSIGING AMENDMENT	HANDT. SIGNL.
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8300  
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Fax: (053) 8312765  
E-mail: info@stabilis.co.za

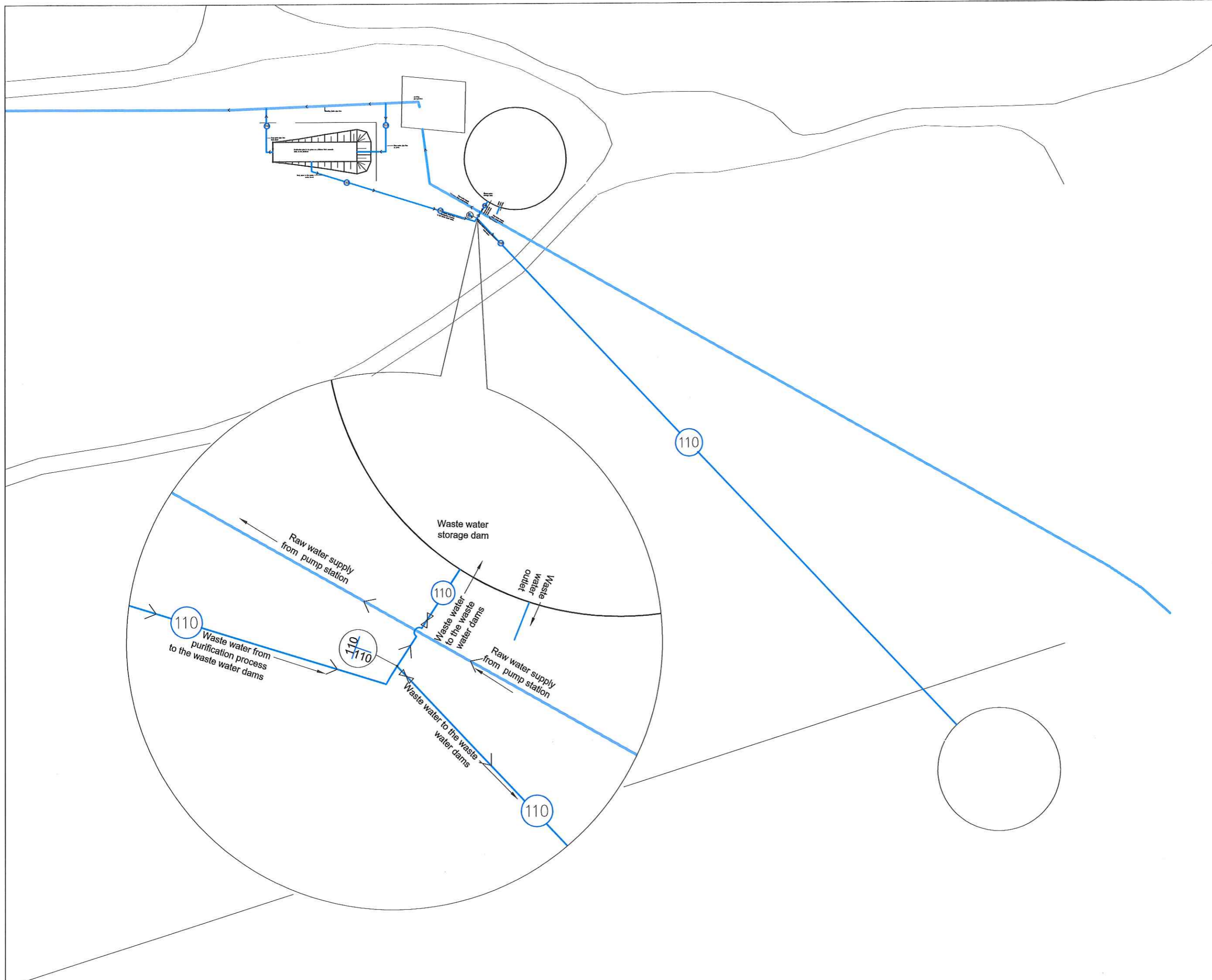
Postnet Suite 136  
Private Bag / Private Bag X5875  
UPINGTON  
0600  
Tel. / Fax: (054) 3317719  
E-mail: admin@stabilis.com

DIENS / SERVICE  
**LOXTON**  
EXTENTION OF EXTERNAL WATER SUPPLY

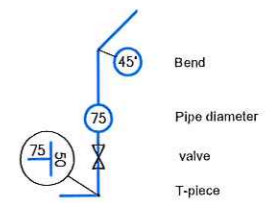
TITEL / TITLE  
PURIFICATION PLANT SETTING OUT

TEKENING NR. / DRAWING NO.  
**SK2918/14**

SKAAL / SCALE	1:50	GETEKEN DRAWN	E.T.HESS
LEER NR. / FILE NO.	SK2918	ONTWERP DESIGNED	E.T.HESS
DATUM DATE	FEB 2015	NAGESIEK CHECKED	<i>[Signature]</i>



NOTAS / NOTES



**AS BUILT**  
**SOOS GEB.**

DATUM DATE	NR NO	WYSIGING AMENDMENT	HANDT SIGN.
AFDRUK UITGEREIK PRINT ISSUED			

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8300  
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Fax: (053) 8312785  
E-mail: info@stabilis.co.za

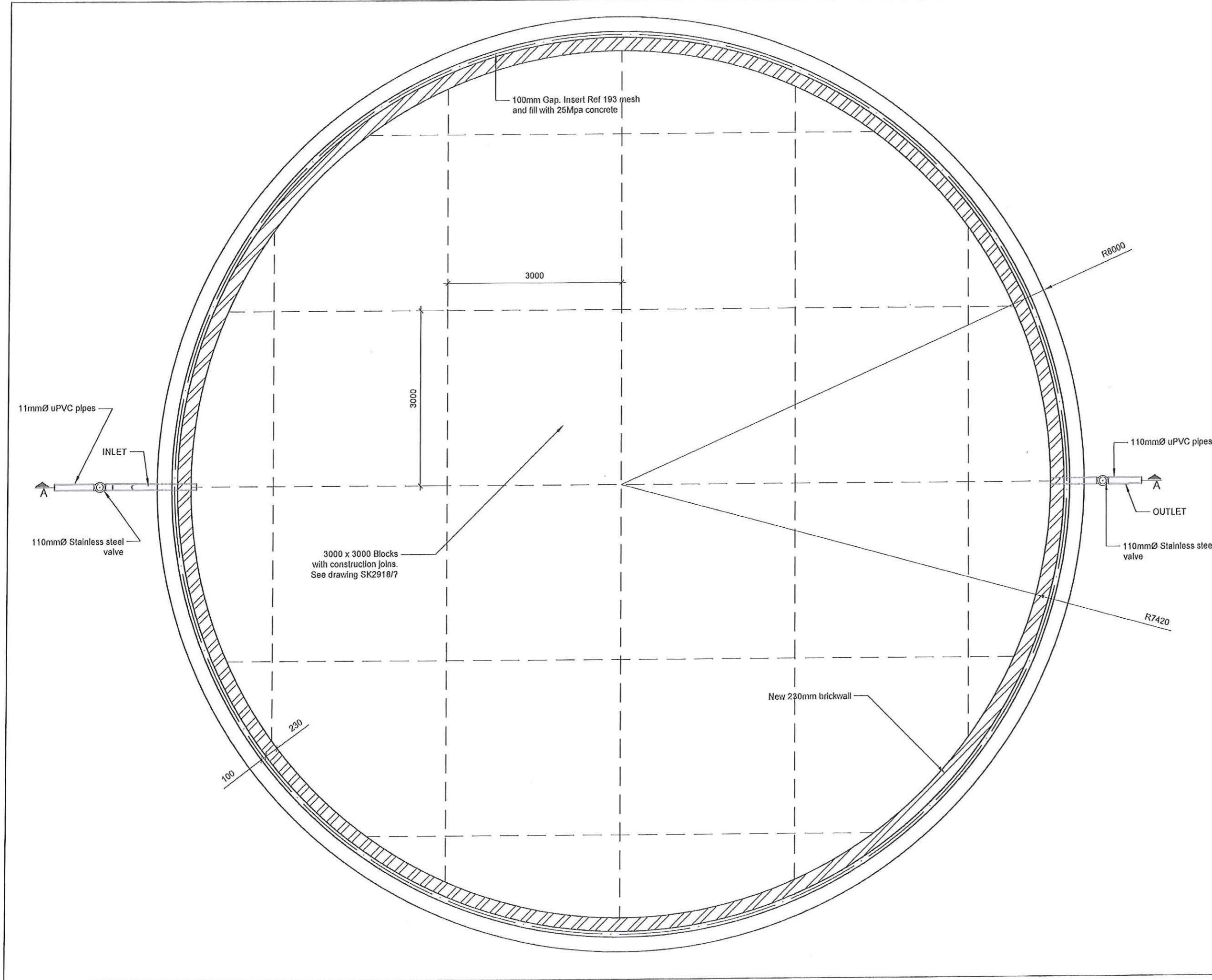
Postnet Suite 136  
Pretorius / Private Bag 35870  
UPINGTON  
8600  
Tel / Fax: (054) 3319778  
E-mail: edwin@stabilis.net

DIENS / SERVICE  
**LOXTON  
EXTENSION OF EXTERNAL WATER  
SUPPLY**

TITEL / TITLE  
**WATER NETWORK -  
WASTEWATER DAMS**

TEKENING NR. / DRAWING NO.  
**SK2918/15**

SKAAL / SCALE	1 : 50	GETEKEN DRAWN	E.T.HESS
LEERNR. / FILE NO. SK2918		ONTWERP DESIGNED	E.T.HESS
DATUM DATE	FEB 2015	NAGESIEN CHECKED	<i>[Signature]</i>



NOTAS / NOTES

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**SOOS GEBOU**

DATUM / DATE	NR / NO	WYSIG'NG / AMENDMENT	HANDT / S'GN
AFDRIUK UITGERE-K PRINT ISSUED			

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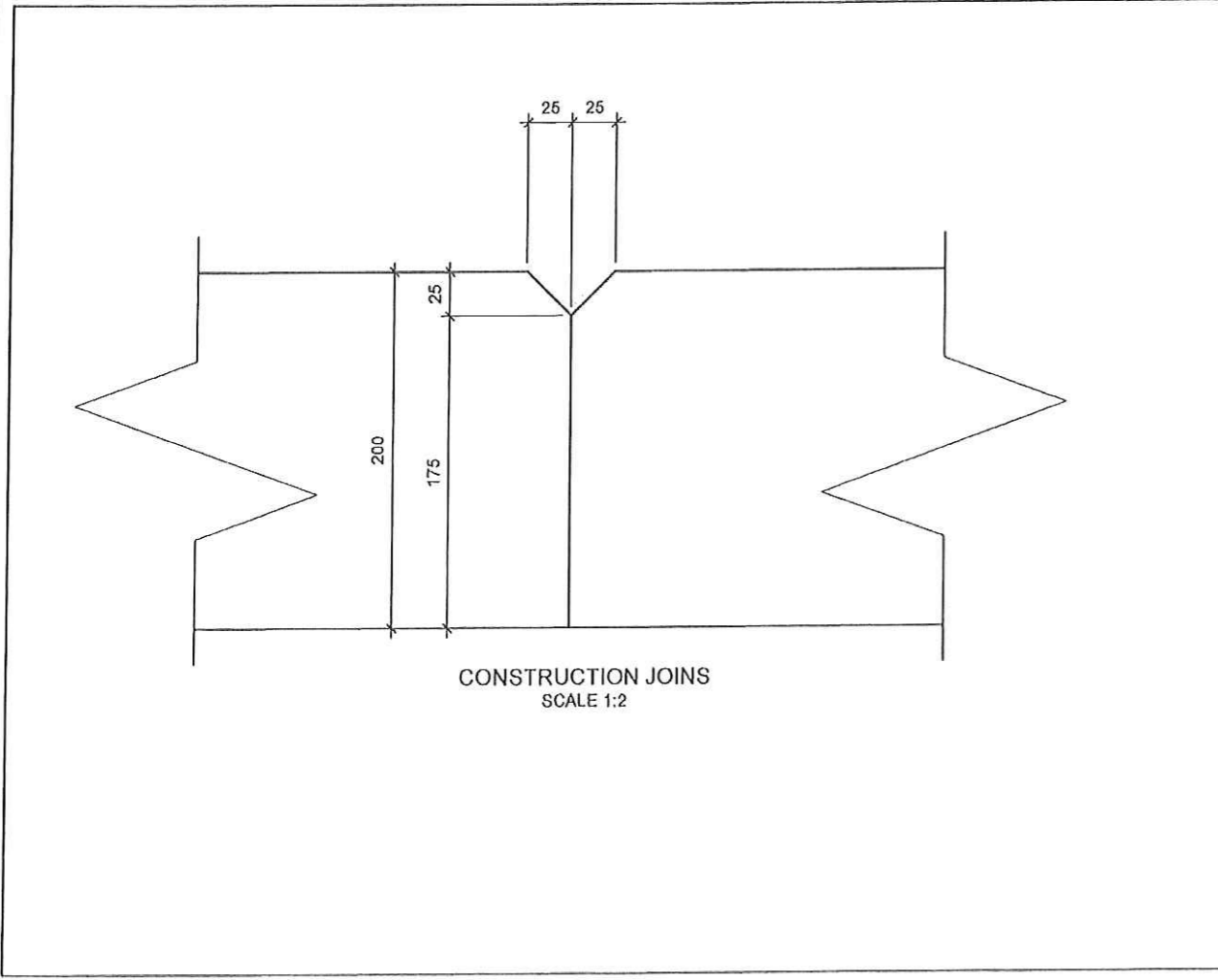
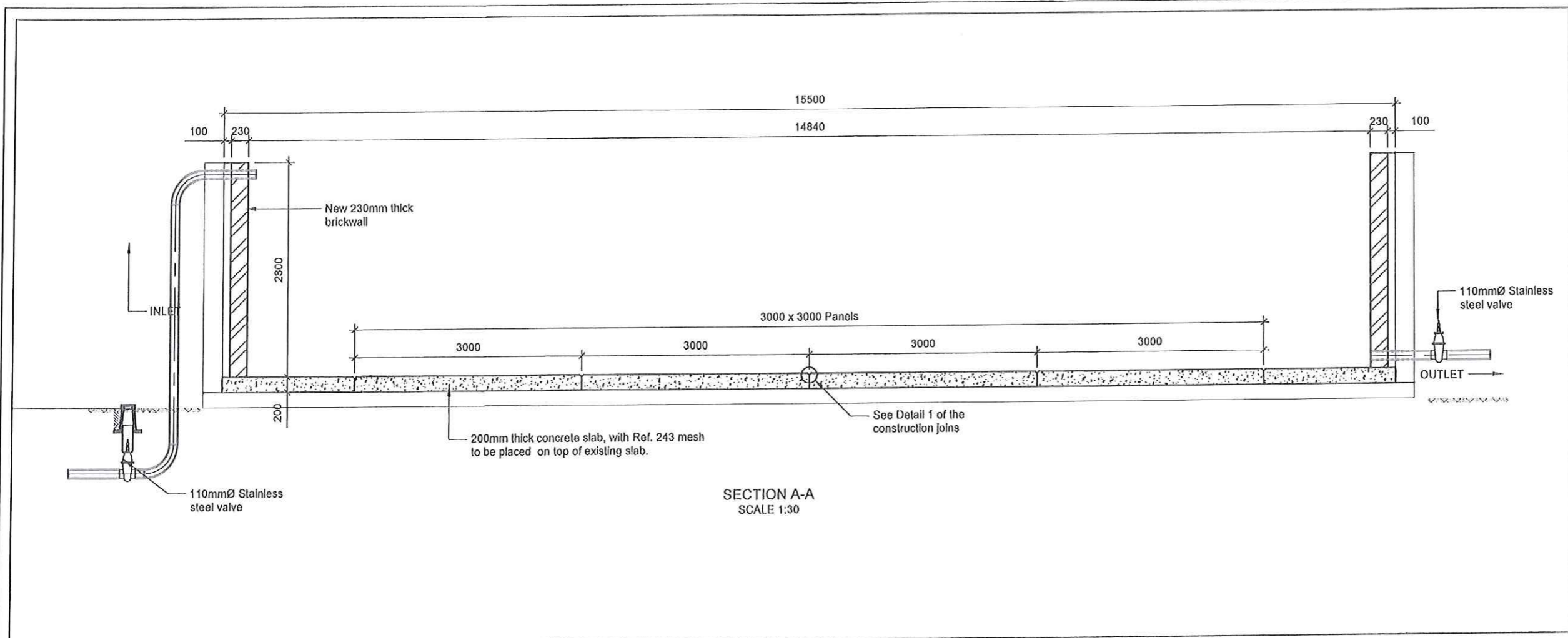
**STABILIS**  
Development (Pty) Ltd  
Pretoria / P.O. Box 651  
1000  
Tel: (011) 833 1133  
Fax: (011) 833 1136  
E-mail: info@stabilis.co.za

DENS / SERVICE  
**LOXTON**  
EXTENSION OF EXTERNAL WATER  
SUPPLY

TITEL / TITLE  
OLD RESERVOIR - WASTE WATER DAM  
LAYOUT PLAN - PLAN VIEW

TEKENING NR. / DRAWING NO.  
**SK2918/16**

SKAAL / SCALE	1:30	GETEKEN / DRAWN	E THISS
LEENW / FILE NO	SK2918	ONTWERP / DESIGNED	E THISS
DATUM / DATE	FEB 2015	NAAGSEK / CHECKED	<i>[Signature]</i>



NOTAS / NOTES

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**SOOS GEBOU**

DATUM DATE	N.R. NO	WYSIGING AMENDMENT	HANDT SIGN

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8000

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Fax: (053) 831144  
E-mail: info@stabilis.co.za

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KROONBURG / P.O. Box 13571  
UPINGTON  
8000

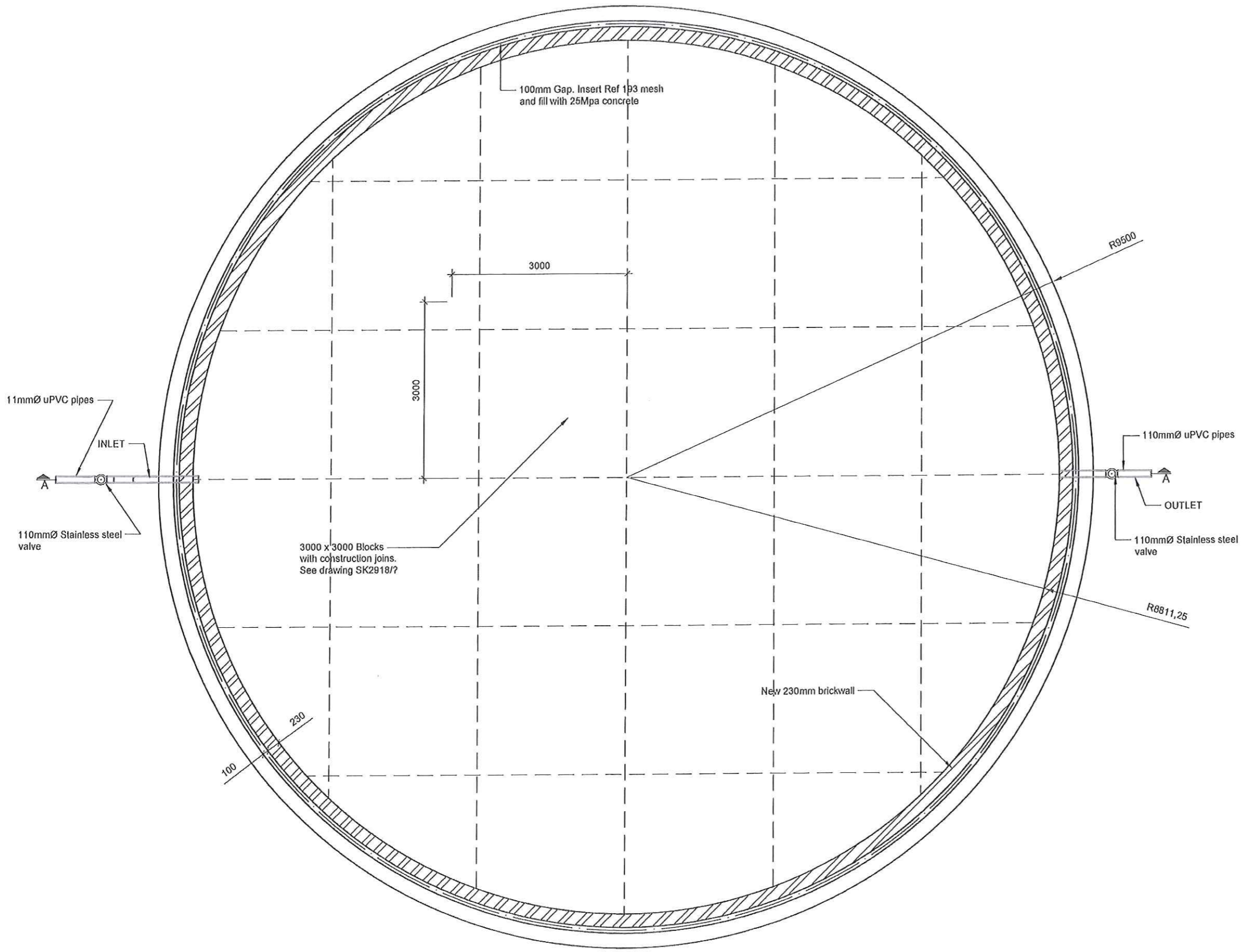
Tel: / Fax: (054) 231177  
E-mail: info@stabilis.co.za

DIENS / SERVICE  
**LOXTON**  
EXTENSION OF EXTERNAL WATER SUPPLY

TITEL / TITLE  
OLD RESERVOIR - WASTE WATER DAM  
SECTION AND DETAILS

TEKENING NR. / DRAWING NO.  
**SK2918/17**

SKAAL / SCALE	AS SHOWN	GETEKEN DRAWN	E.T. HESS
LEER NR. / FILE NO	SK2918	ONTWERP DESIGNED	E.T. HESS
DATUM DATE	FEB 2015	NAGES EN CHECKED	<i>[Signature]</i>



NOTAS / NOTES

**AS BUILT**  
**SOOS GEROL**

DATUM DATE	NR NO	WYS G'YS AMENDMENT	HANDT S'GN

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6200  
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Fax: (051) 833124  
E-mail: info@stabilis.co.za

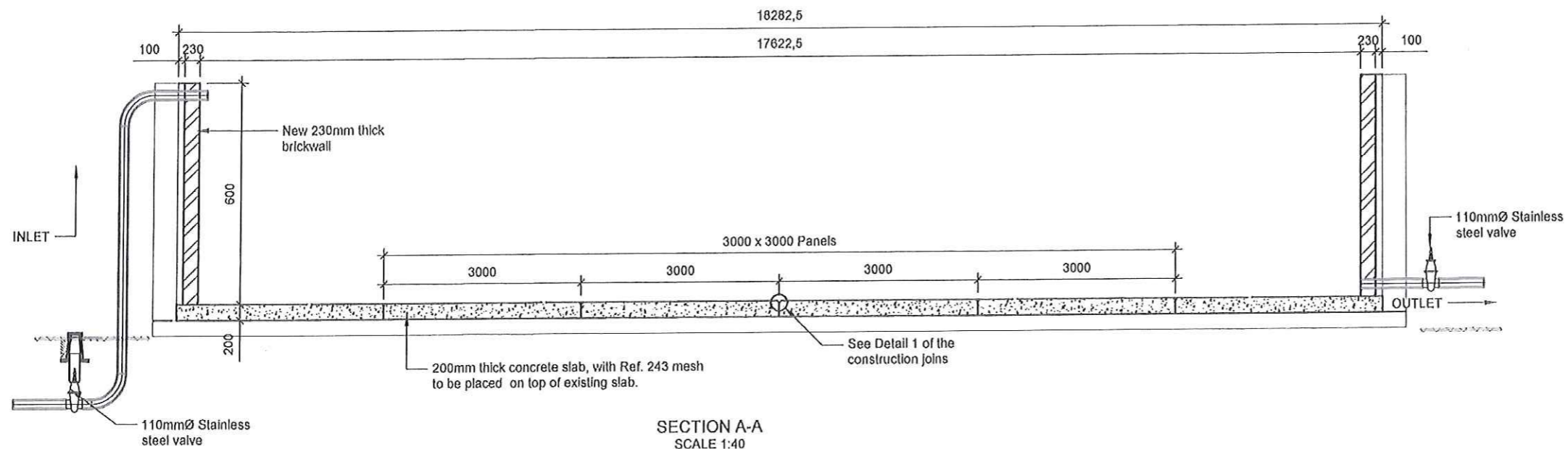
DEINS / SERVICE  
**LOXTON**  
EXTENSION OF EXTERNAL WATER SUPPLY

TITEL / TITLE  
OLD DAM - WASTE WATER DAM  
LAYOUT PLAN - PLAN VIEW

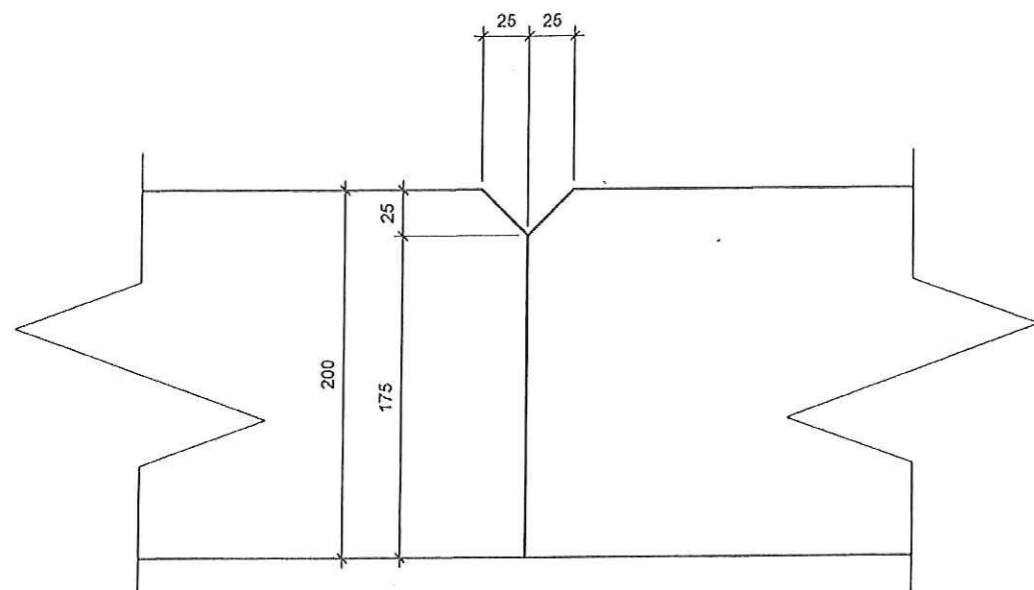
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LEERNR. / FILE NO	SK2918	ONTWERP DESIGNED	ET HESS
DATUM DATE	FEB 2015	NAGESYK CHECKED	<i>[Signature]</i>





SECTION A-A  
SCALE 1:40



CONSTRUCTION JOINS  
SCALE 1:2

**AS BUILT**  
**SOOS GEBOU**

DATUM / DATE	NR / NO	WYS O'NG / AMENDMENT	HAND / S'GN

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 KENILDE  
 7800  
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 Fax: (053) 8331188  
 E-mail: info@stabilis.co.za

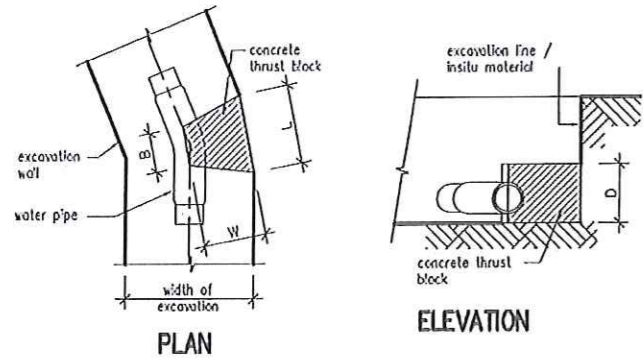
Postal Suite 119  
 Protea Park / Protea Way 35571  
 WINDYBROOK  
 2000  
 Tel: / Fax: (021) 2311772  
 E-mail: info@stabilis.co.za

DENS / SERVICE  
**LOXTON**  
EXTENSION OF EXTERNAL WATER SUPPLY

TITEL / TITLE  
**OLD DAM - WASTE WATER DAM SECTION AND DETAILS**

TEKENING NR. / DRAWING NO.  
**SK2918/19**

SKAAL / SCALE	AS SHOWN	GETEKEN / DRAWN	E.T.HESS
LEER NR. / FILE NO	SK2918	ONTWERP / DESIGNED	E.T.HESS
DATUM / DATE	FEB 2015	KLAGES EN / CHECKED	<i>[Signature]</i>

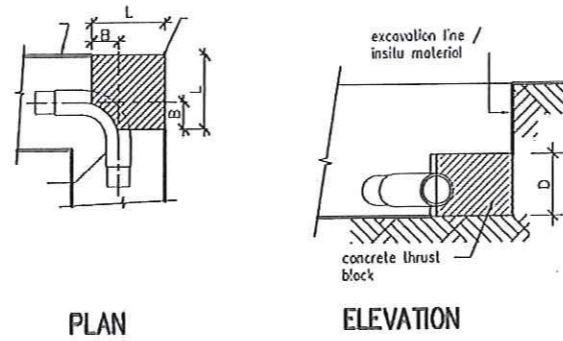


- NOTES:
1. Thrust area "A" in square meters.
  2. Concrete volume "V" allowed in cubic meters.
  3. Thrust block of class 15 concrete and to be cast against insitu material.

Thrust block for 45° bends and less and line pressure < 0,9 MPa

Pipe Ø	A m <sup>2</sup>	B mm	D mm	L mm	V m <sup>3</sup>	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	650	0,05	300
250	0,38	300	400	850	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.

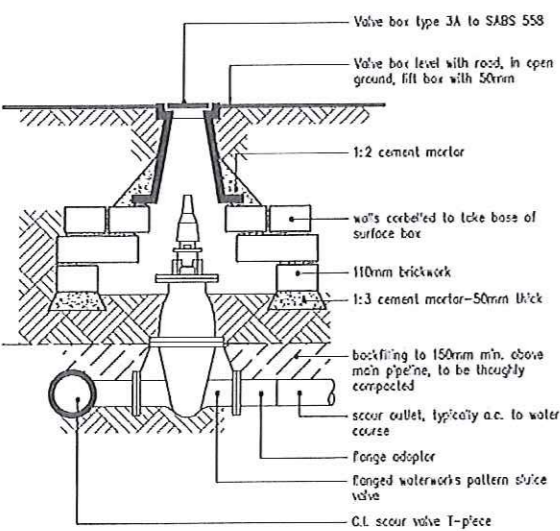
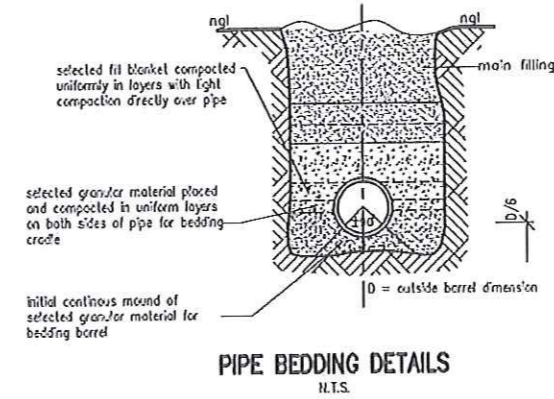


- NOTES:
1. Concrete strength 15 MPa at 28 days.
  2. Thrust block to be cast against insitu material.
  3. Thrust area "A" in square meters.
  4. Concrete volume "V" allowed in cubic meters.

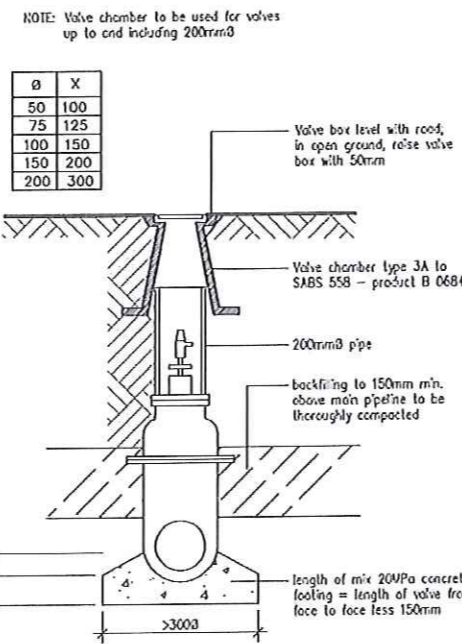
Dimensions of thrust blocks for different Ø pipes, end caps, T-pieces, cross and 90° bends.

Pipe Ø	A m <sup>2</sup>	B mm	D mm	L mm	V m <sup>3</sup>
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	300	400	600	0,14
250	0,69	350	500	700	0,21
300	1,00	450	600	800	0,32
350	1,36	500	700	1000	0,52

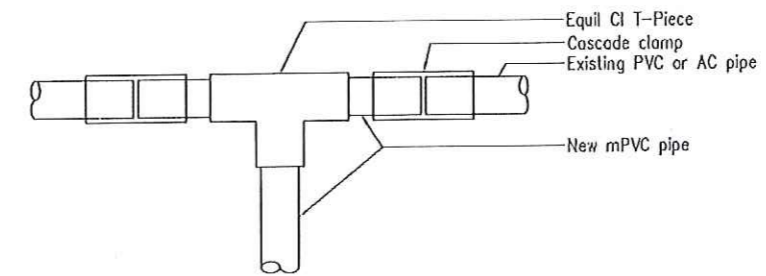
THRUST BLOCK FOR 90° BENDS  
N.T.S.



SCOUR VALVE BOX  
N.T.S.



VALVE CHAMBER TYPE 3  
N.T.S.



TYPICAL CONNECTION TO EXISTING PIPES

AS BUILT  
SOOS GEBOU

DATUM DATE	IR NO	WYSIGING AFBANDT	HANDT SIGN

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UBUNTU MUNICIPALITY

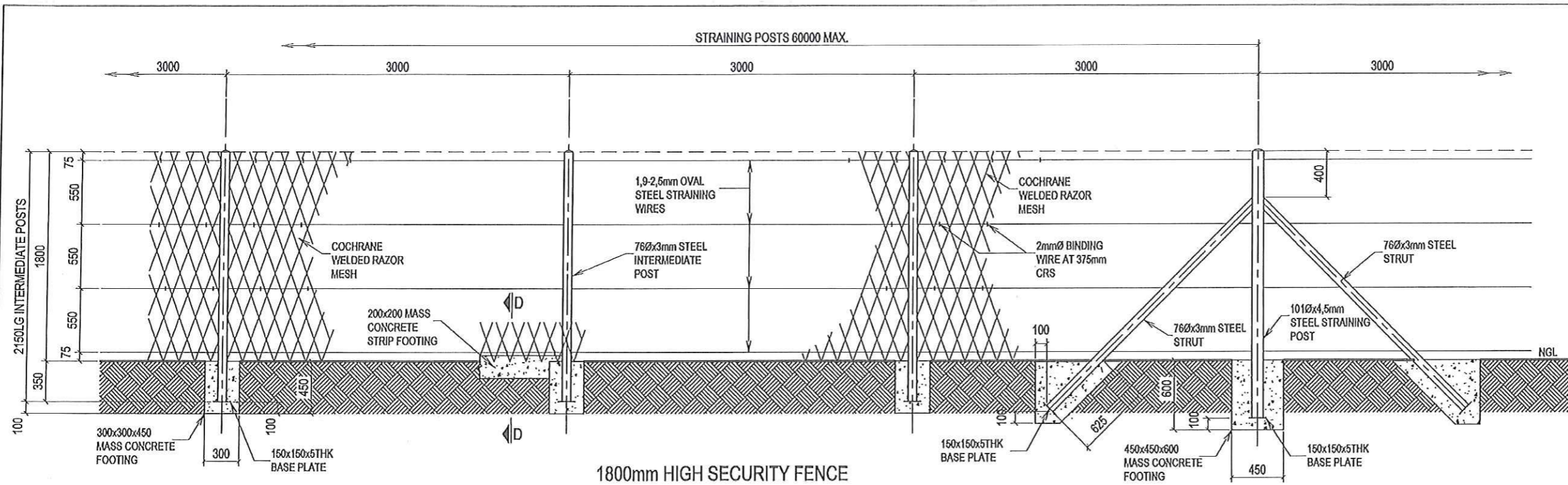
STABILIS  
Development (Pty) Ltd  
Pretoria / P.O. Box 681  
1000  
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Fax: (051) 831758  
E-mail: info@stabilis.co.za

DIENS / DIENST  
LOXTON:  
EXTENSION OF WATER  
SUPPLY

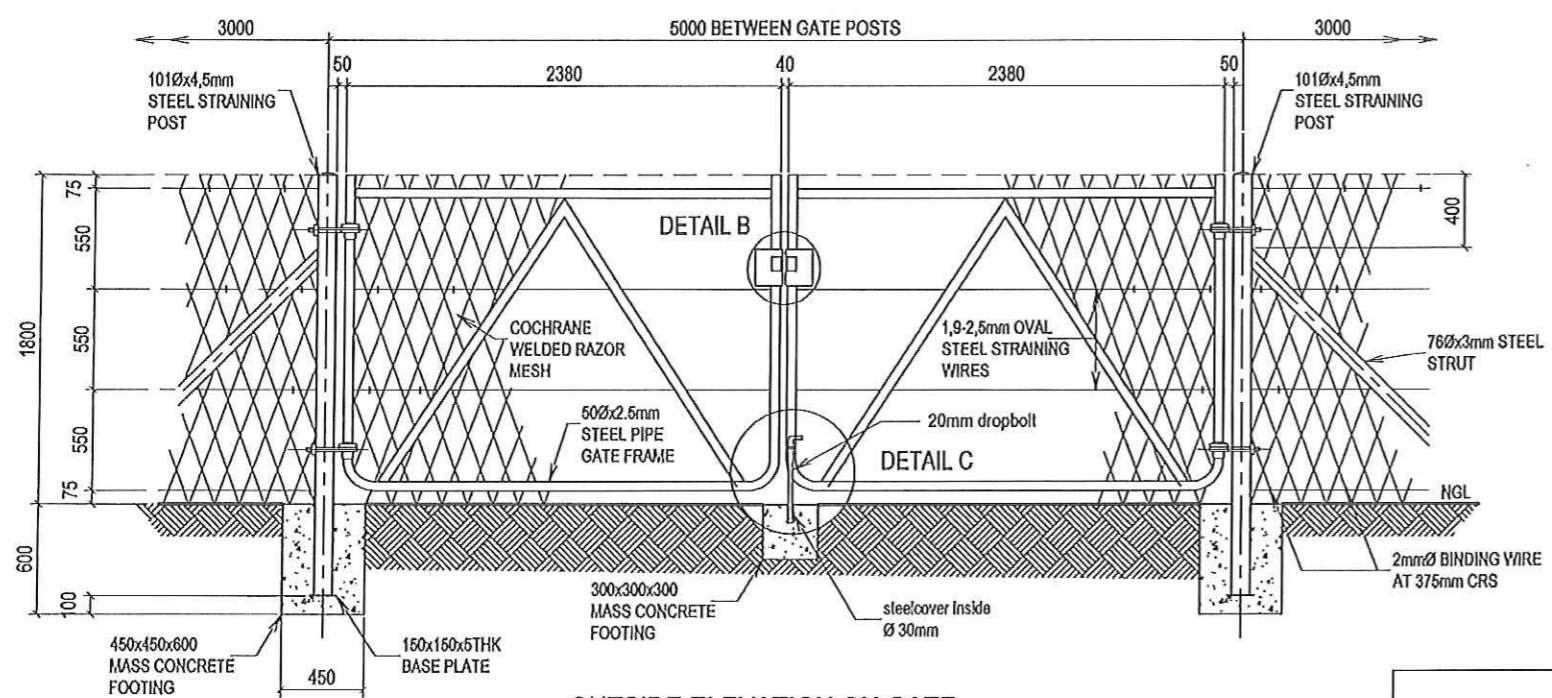
TITEL / TITEL  
THRUST  
BLOCKS, BEDDING  
DETAILS AND VALVES

TEKENING: IR. / DRAWING: NDO.  
SK2918/20

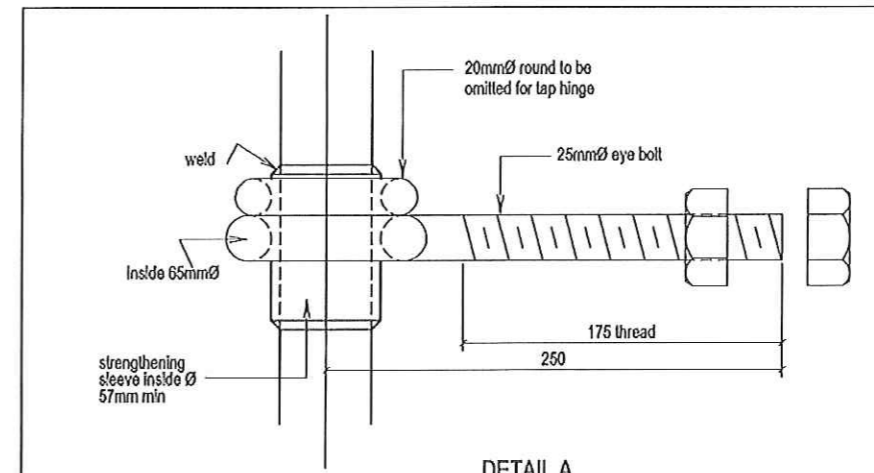
SKAAL / SCALE	AS SHOWN	GETEKEN DRAWN	SK. JAAR
LEERAR / FILE NO SOOS GETOON	ONTWERP DESIGNER		
DATUM DATE	FEBRUARY 2015	NAGES EN CHECKED	



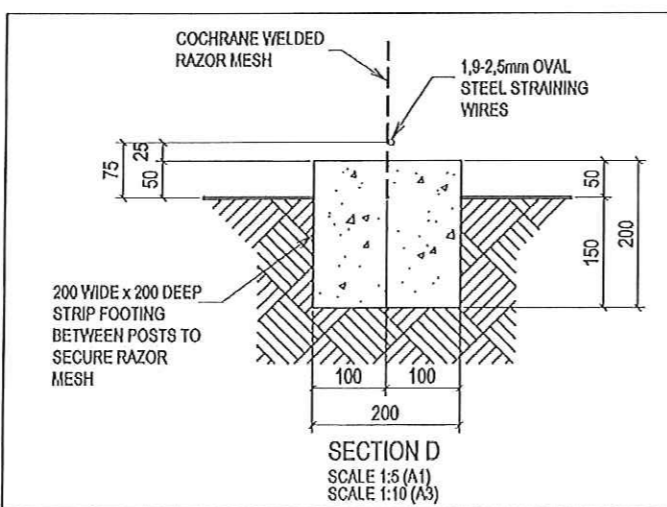
1800mm HIGH SECURITY FENCE



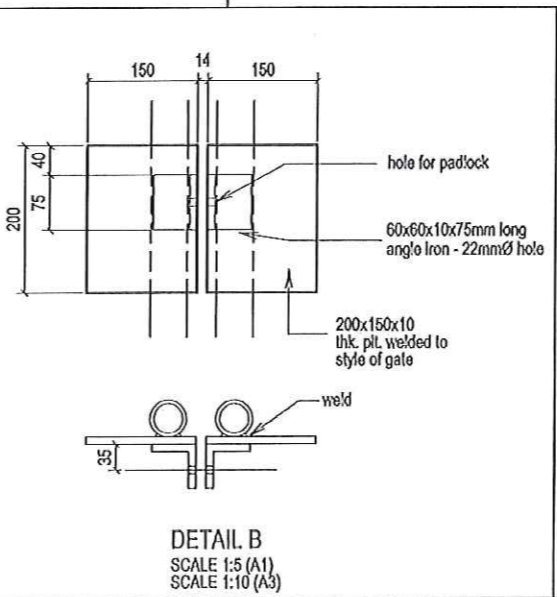
OUTSIDE ELEVATION ON GATE



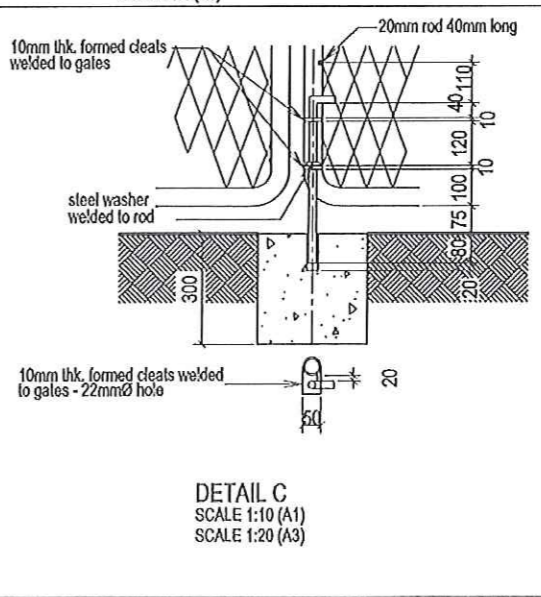
DETAIL A  
SCALE 1:2 (A1)  
SCALE 1:4 (A3)



SECTION D  
SCALE 1:5 (A1)  
SCALE 1:10 (A3)



DETAIL B  
SCALE 1:5 (A1)  
SCALE 1:10 (A3)



DETAIL C  
SCALE 1:10 (A1)  
SCALE 1:20 (A3)

NOTAS / NOTES

**AS BUILT**  
**SOOS GERANT**

DATUM	NR	WYSIUNG	HOOFD
DATE	NO	AMENDMENT	SGN
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Development (Pty) Ltd

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Private Site 13M  
Phosfoor / Phosfoor Bag 35273  
UPINGTON  
8500  
Tel. / Fax. (054) 3311773  
E-mail: info@stabilis.com

DENS / YEN SERVICE  
**LOXTON:**  
**EXTENSION OF WATER**  
**SUPPLY**

TITEL / TITELLE  
FENCE AND GATE  
DETAILS

TREKKNING/NR. / DRAWINGS NO.  
**SK2918/21**

SKAAL / SCALE	AS SHOWN	DETEKEN DRAWN	EK JULYEE
LEEREN / FREE NO	SOOS GERANT	ONTWERP DESIGNED	<i>[Signature]</i>
DATUM DATE	FEBRUARY 2015	INGESKEN CHECKED	<i>[Signature]</i>