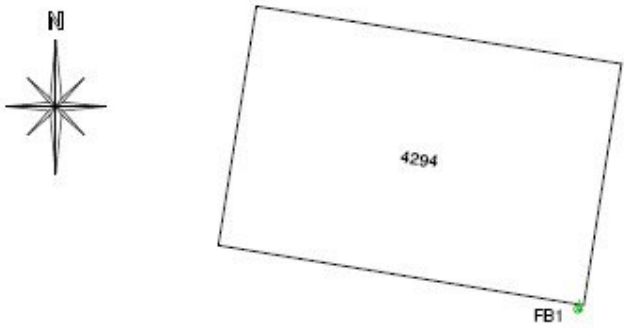
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

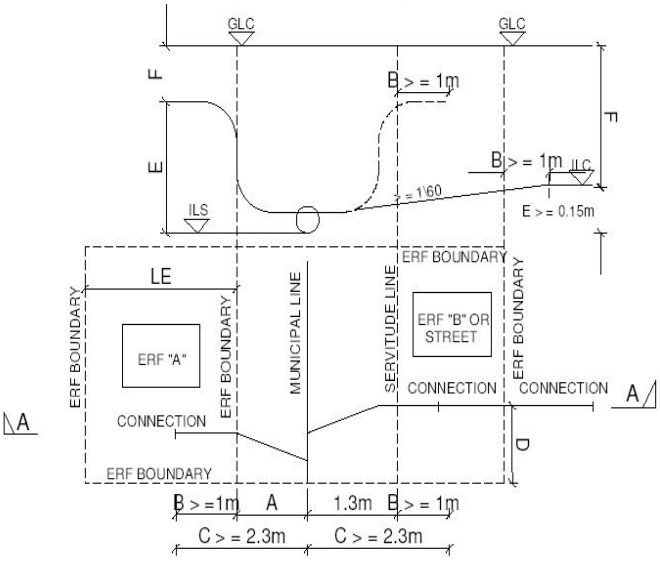
Township: ERF 2661 PARSONS VLEI Erf No. 4293

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	198.061 m
GLC	=	198 m
ILC	=	196.002 m
ILS	=	195.843 m
E(ILC-ILS)	=	0.159 m
F(GLC-ILC	=	1.998 m
MFL	=	198.061 m
LE	=	97 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

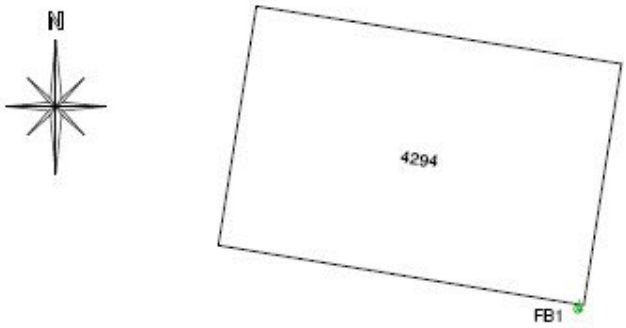
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

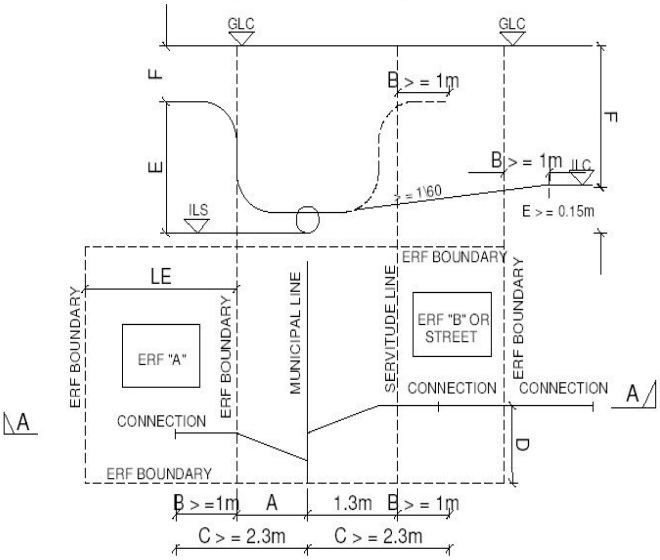
Township: ERF 2661 PARSONS VLEI Erf No. 4294

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.829 m
GLC	=	197.8 m
ILC	=	195.751 m
ILS	=	195.61 m
E(ILC-ILS)	=	0.141 m
F(GLC-ILC	=	2.049 m
MFL	=	197.829 m
LE	=	97 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

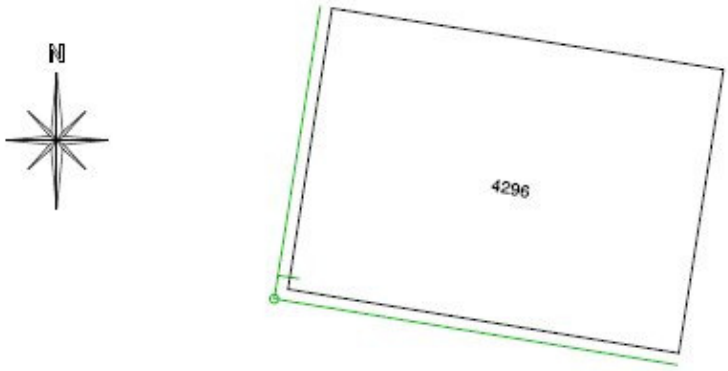
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

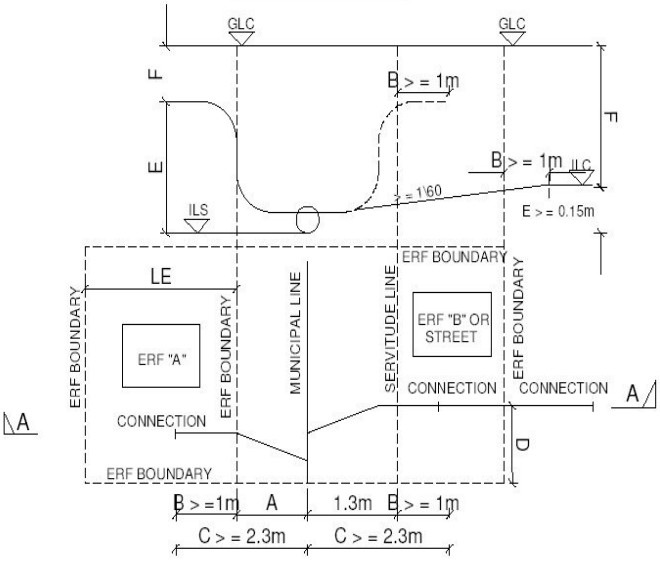
Township: ERF 2661 PARSONS VLEI Erf No. 4296

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.44 m
GLC	=	197.6 m
ILC	=	195.78 m
ILS	=	194.163 m
E(ILC-ILS)	=	1.617 m
F(GLC-ILC	=	1.820 m
MFL	=	197.44 m
LE	=	73 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

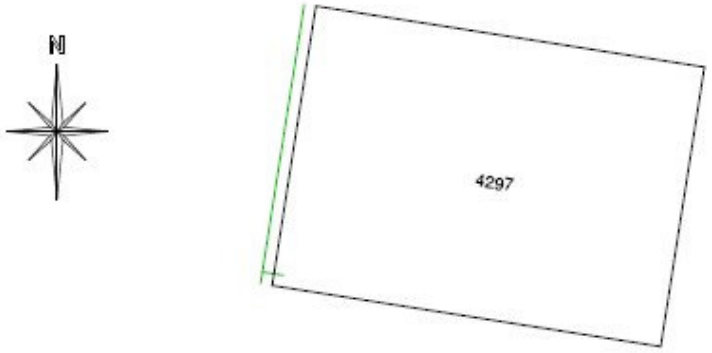
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

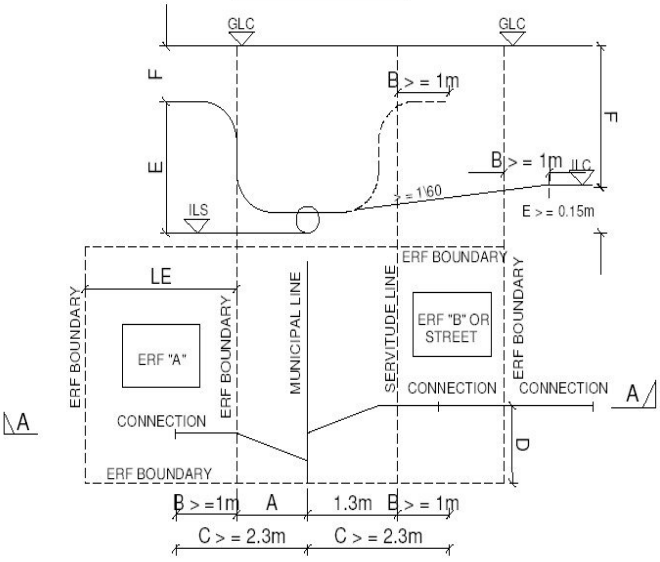
Township: ERF 2661 PARSONS VLEI Erf No. 4297

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.865 m
GLC	=	197.872 m
ILC	=	196.202 m
ILS	=	194.441 m
E(ILC-ILS)	=	1.761 m
F(GLC-ILC	=	1.670 m
MFL	=	197.865 m
LE	=	73 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

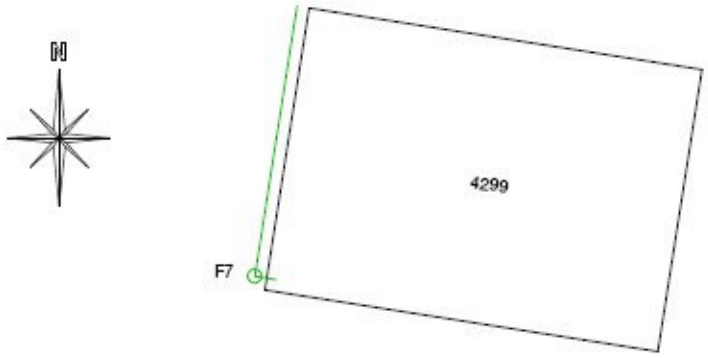
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

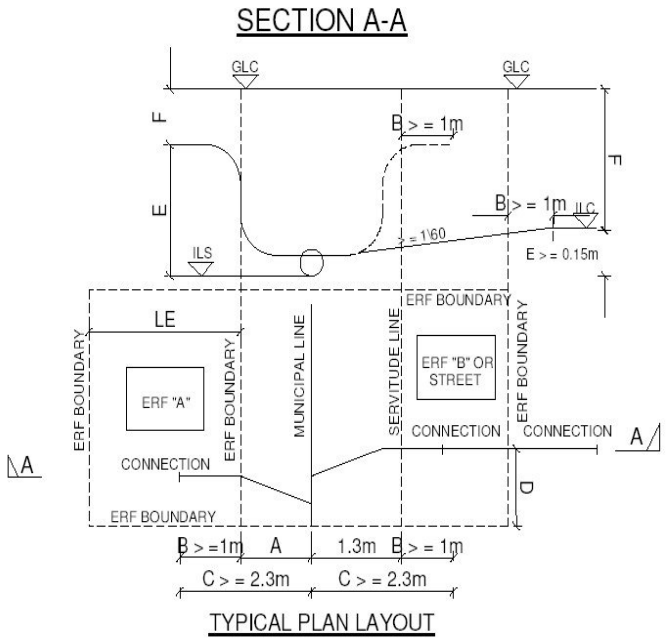
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4299

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION



A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.759 m
GLC	=	197.993 m
ILC	=	196.002 m
ILS	=	194.843 m
E(ILC-ILS)	=	1.159 m
F(GLC-ILC	=	1.991 m
MFL	=	197.759 m
LE	=	73 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

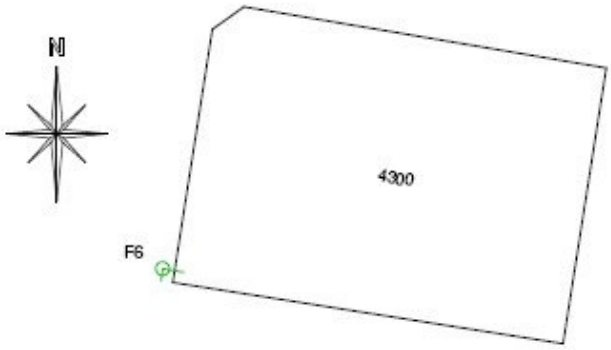
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

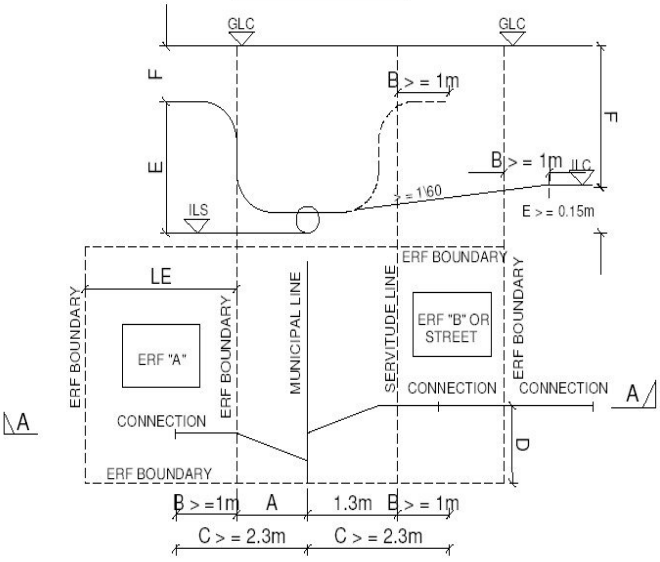
Township: ERF 2661 PARSONS VLEI Erf No. 4300

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.857 m
GLC	=	197.87 m
ILC	=	196.111 m
ILS	=	195.173 m
E(ILC-ILS)	=	0.938 m
F(GLC-ILC	=	1.759 m
MFL	=	197.857 m
LE	=	73 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

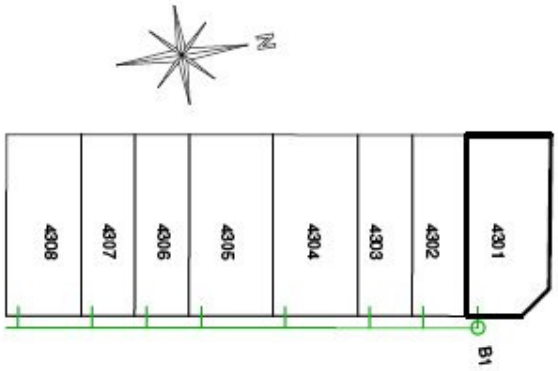
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

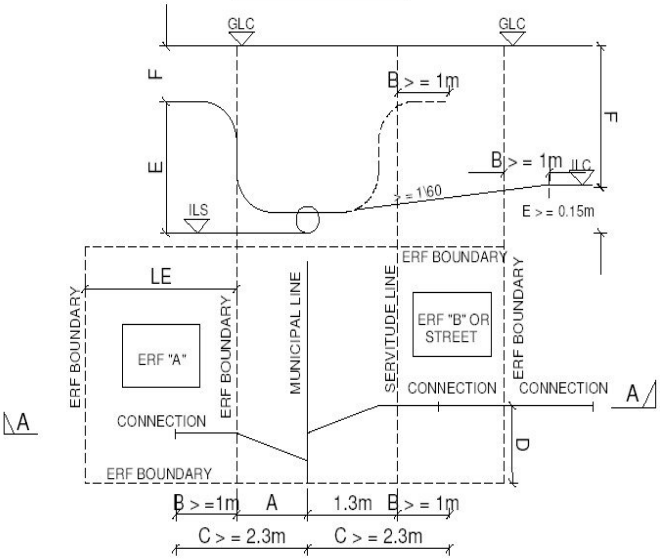
Township: ERF 2661 PARSONS VLEI Erf No. 4301

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.978 m
GLC	=	197.058 m
ILC	=	196.29 m
ILS	=	196.14 m
E(ILC-ILS)	=	0.150 m
F(GLC-ILC	=	0.768 m
MFL	=	197.06 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

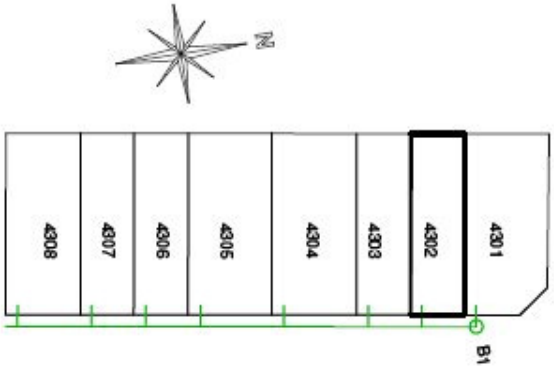
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

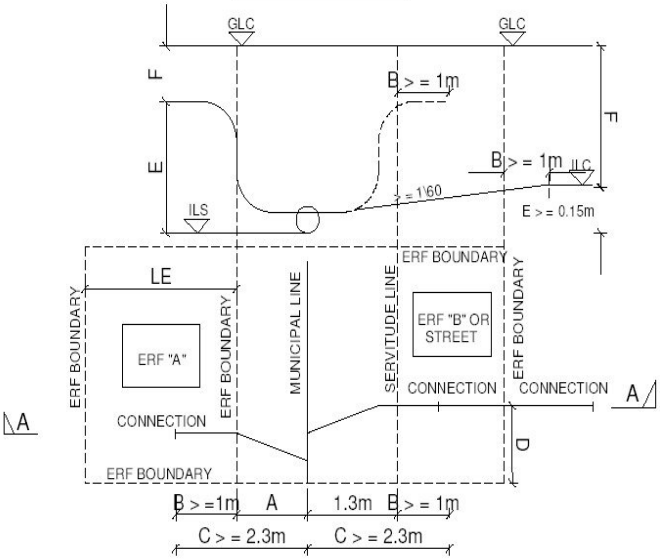
Township: ERF 2661 PARSONS VLEI Erf No. 4302

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.028 m
GLC	=	197.128 m
ILC	=	196.323 m
ILS	=	196.075 m
E(ILC-ILS)	=	0.248 m
F(GLC-ILC	=	0.805 m
MFL	=	197.028 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

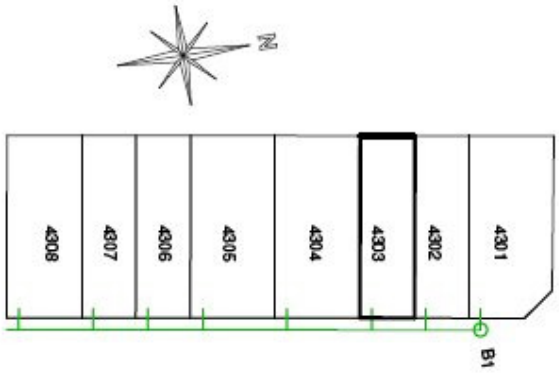
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

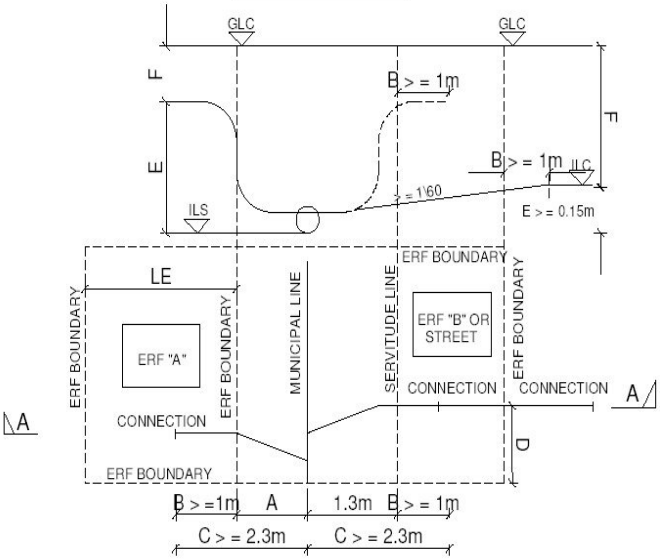
Township: ERF 2661 PARSONS VLEI Erf No. 4303

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.949 m
GLC	=	197.012 m
ILC	=	196.143 m
ILS	=	196.009 m
E(ILC-ILS)	=	0.134 m
F(GLC-ILC	=	0.869 m
MFL	=	196.949 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

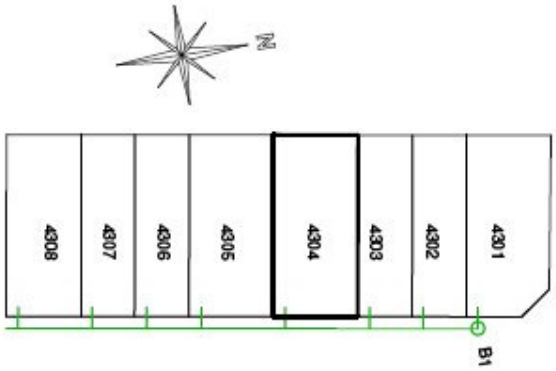
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

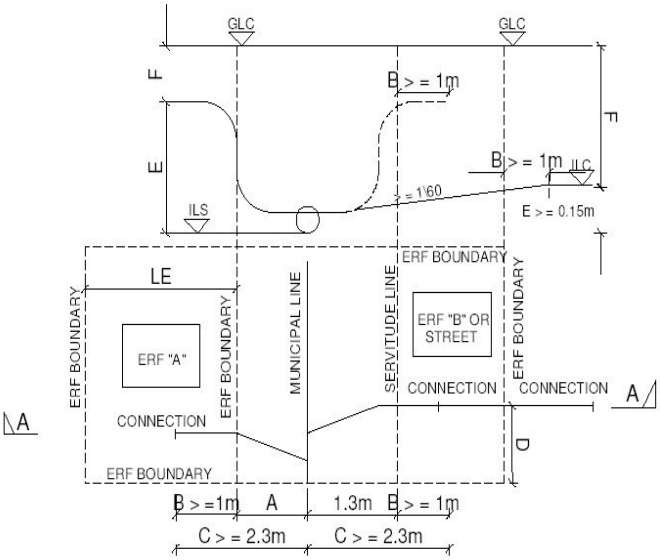
Township: ERF 2661 PARSONS VLEI Erf No. 4304

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.876 m
GLC	=	196.891 m
ILC	=	196.156 m
ILS	=	195.92 m
E(ILC-ILS)	=	0.236 m
F(GLC-ILC	=	0.735 m
MFL	=	196.876 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

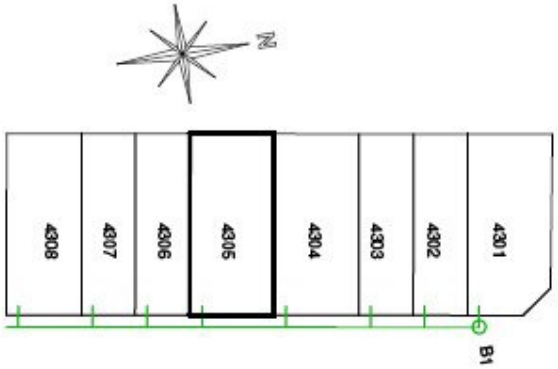
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

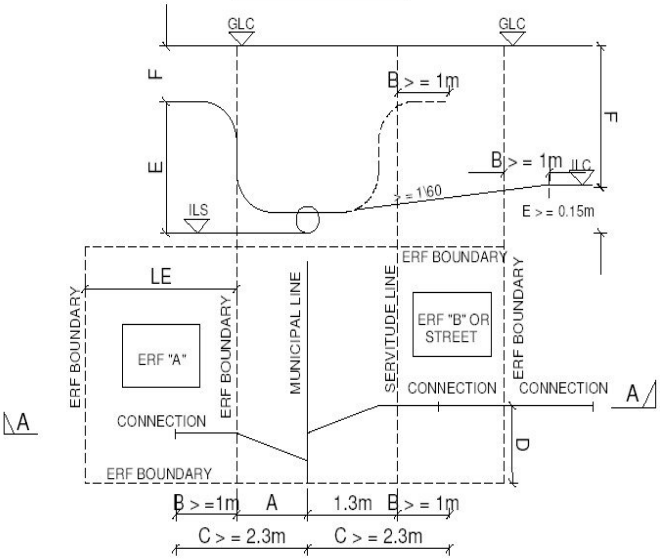
Township: ERF 2661 PARSONS VLEI Erf No. 4305

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.821 m
GLC	=	197.802 m
ILC	=	196.09 m
ILS	=	195.831 m
E(ILC-ILS)	=	0.259 m
F(GLC-ILC	=	1.712 m
MFL	=	196.821 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

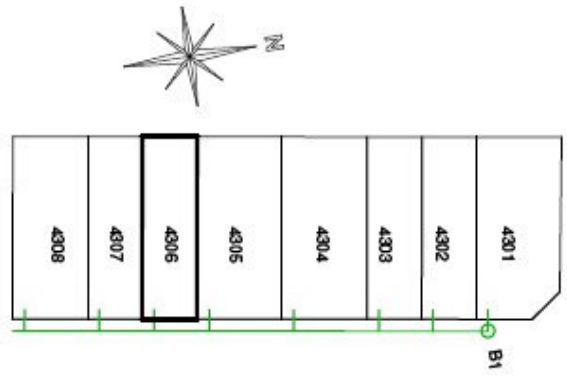
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

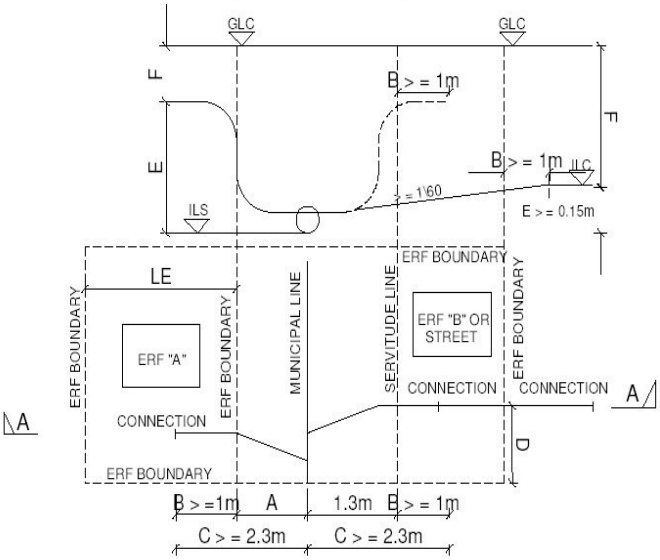
Township: ERF 2661 PARSONS VLEI Erf No. 4306

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.795 m
GLC	=	196.8 m
ILC	=	196.05 m
ILS	=	195.765 m
E(ILC-ILS)	=	0.285 m
F(GLC-ILC	=	0.750 m
MFL	=	196.795 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

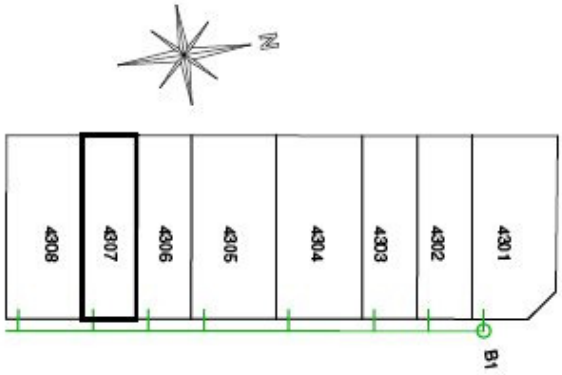
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

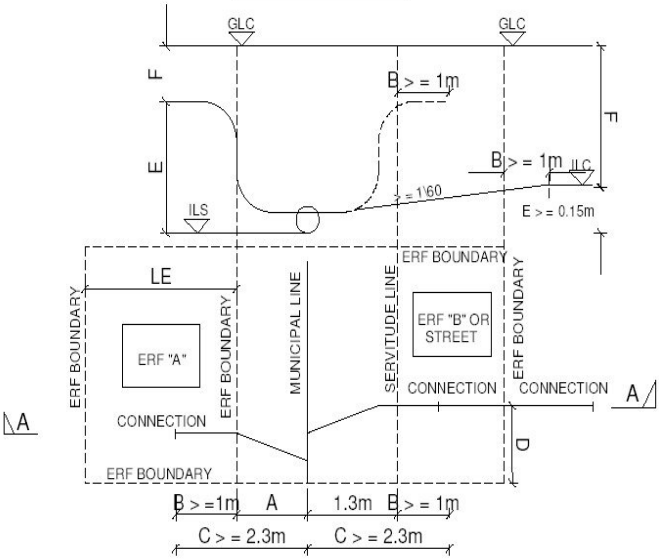
Township: ERF 2661 PARSONS VLEI Erf No. 4307

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.777 m
GLC	=	196.852 m
ILC	=	196.043 m
ILS	=	195.712 m
E(ILC-ILS)	=	0.331 m
F(GLC-ILC	=	0.809 m
MFL	=	196.777 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

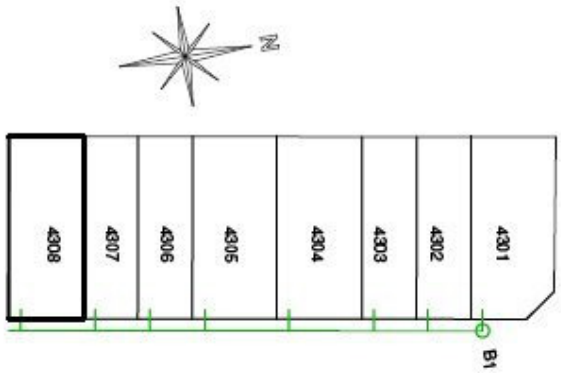
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

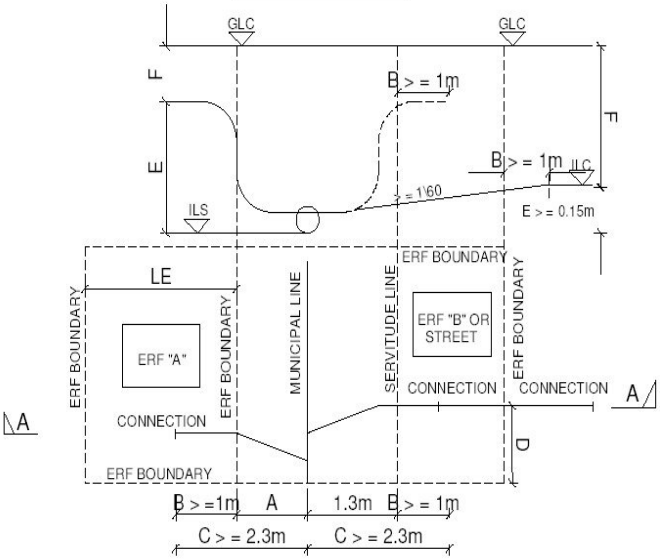
Township: ERF 2661 PARSONS VLEI Erf No. 4308

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.784 m
GLC	=	196.788 m
ILC	=	196.006 m
ILS	=	195.63 m
E(ILC-ILS)	=	0.376 m
F(GLC-ILC	=	0.782 m
MFL	=	196.784 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

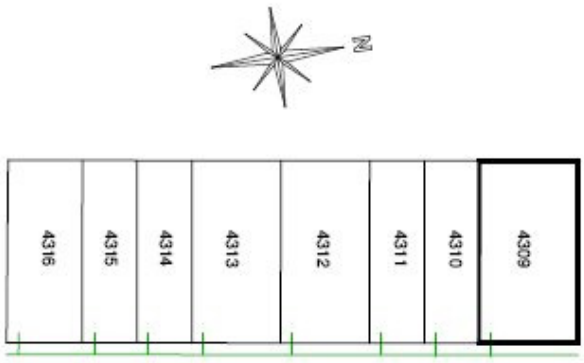
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

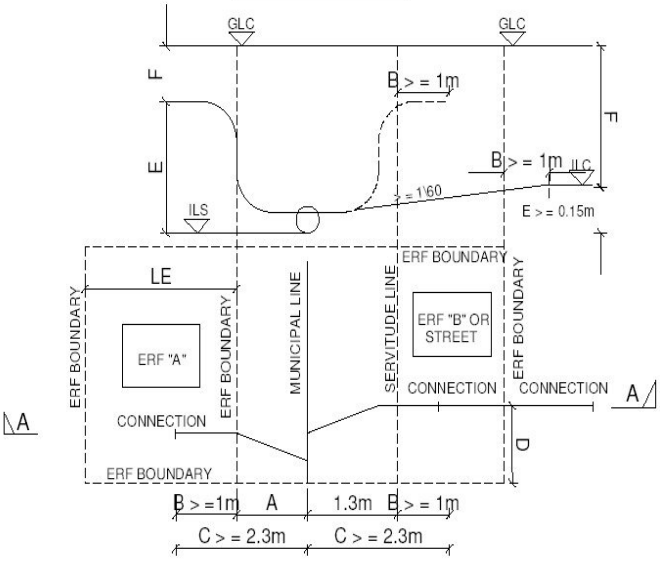
Township: ERF 2661 PARSONS VLEI Erf No. 4309

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.744 m
GLC	=	196.851 m
ILC	=	195.968 m
ILS	=	195.472 m
E(ILC-ILS)	=	0.496 m
F(GLC-ILC	=	0.883 m
MFL	=	196.744 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

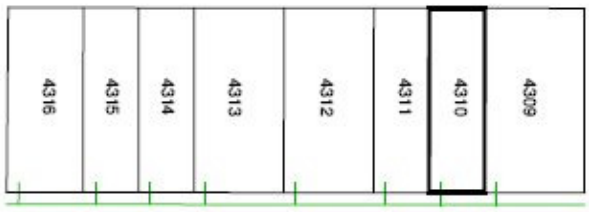
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

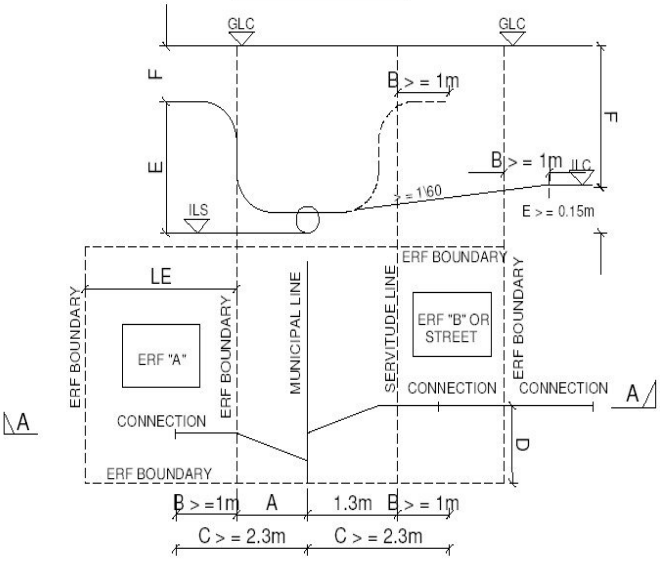
Township: ERF 2661 PARSONS VLEI Erf No. 4310

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.676 m
GLC	=	196.752 m
ILC	=	195.873 m
ILS	=	195.408 m
E(ILC-ILS)	=	0.465 m
F(GLC-ILC	=	0.879 m
MFL	=	196.676 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

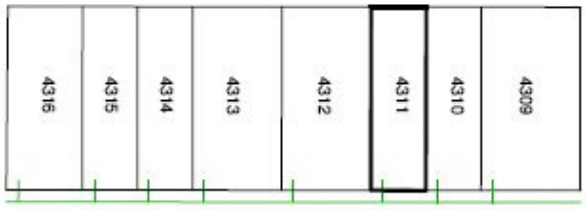
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

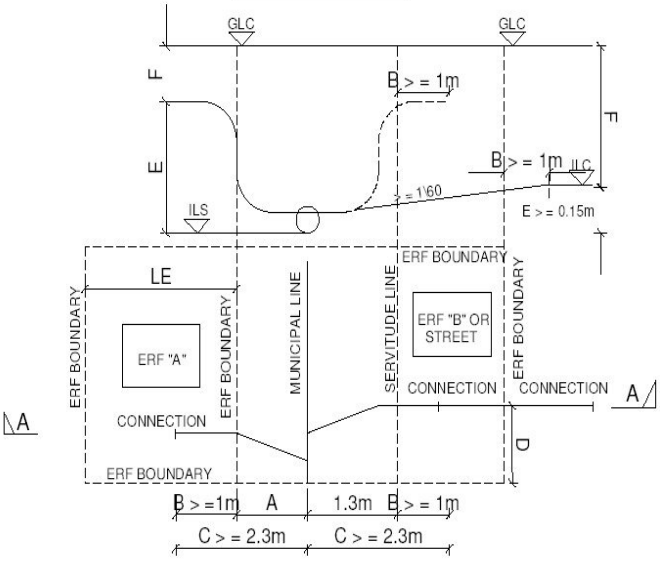
Township: ERF 2661 PARSONS VLEI Erf No. 4311

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.654 m
GLC	=	196.709 m
ILC	=	195.883 m
ILS	=	195.356 m
E(ILC-ILS)	=	0.527 m
F(GLC-ILC	=	0.826 m
MFL	=	196.654 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

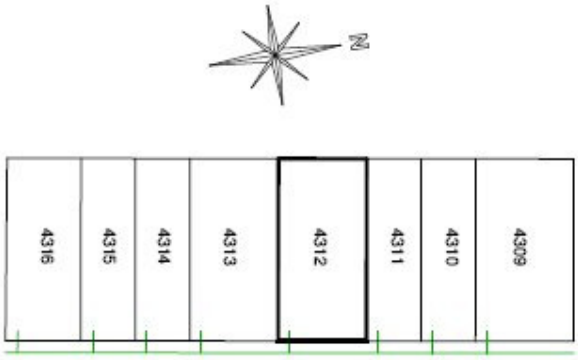
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

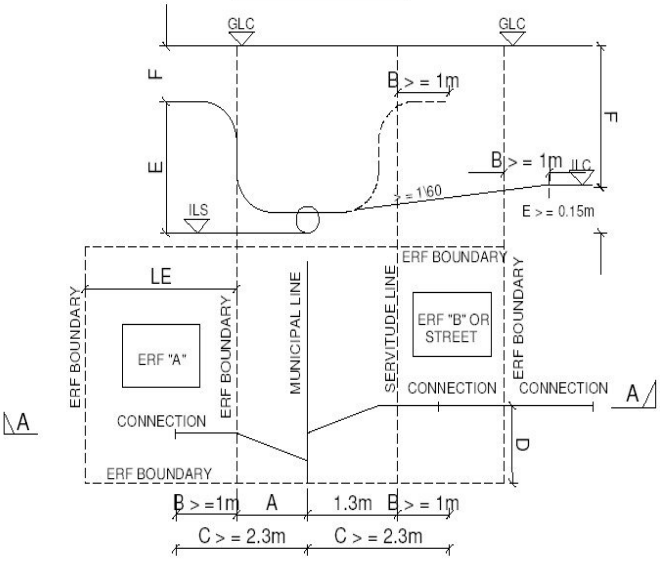
Township: ERF 2661 PARSONS VLEI Erf No. 4312

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.649 m
GLC	=	196.701 m
ILC	=	195.818 m
ILS	=	195.253 m
E(ILC-ILS)	=	0.565 m
F(GLC-ILC	=	0.883 m
MFL	=	196.649 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

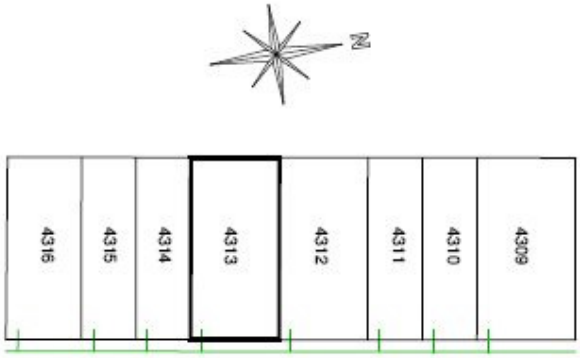
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

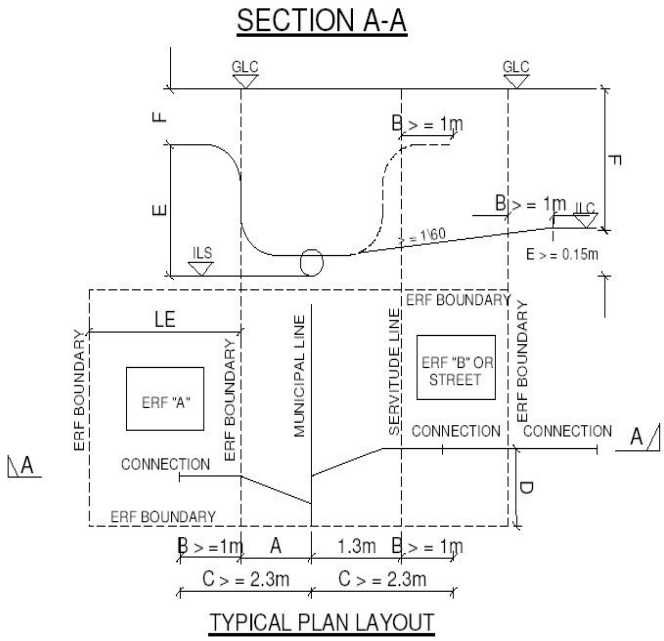
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4313

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION



A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.632 m
GLC	=	196.609 m
ILC	=	195.825 m
ILS	=	195.15 m
E(ILC-ILS)	=	0.675 m
F(GLC-ILC	=	0.784 m
MFL	=	196.632 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

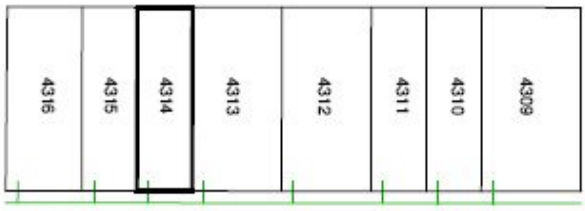
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

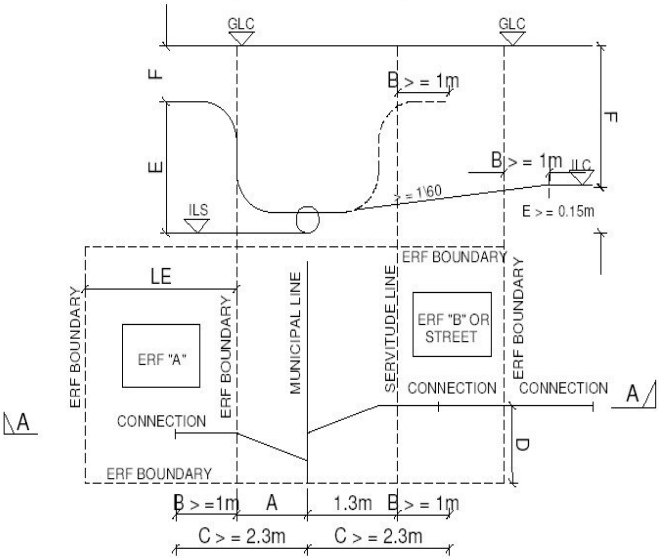
Township: ERF 2661 PARSONS VLEI Erf No. 4314

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.53 m
GLC	=	196.726 m
ILC	=	195.743 m
ILS	=	195.095 m
E(ILC-ILS)	=	0.648 m
F(GLC-ILC	=	0.983 m
MFL	=	196.53 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

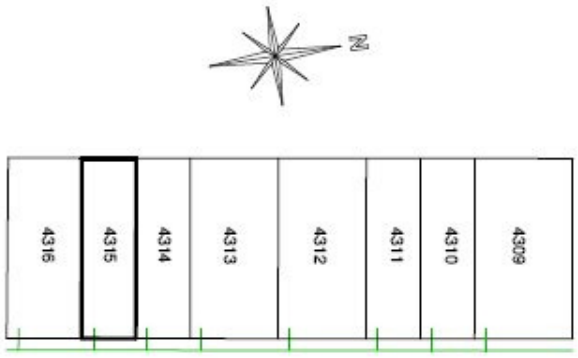
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

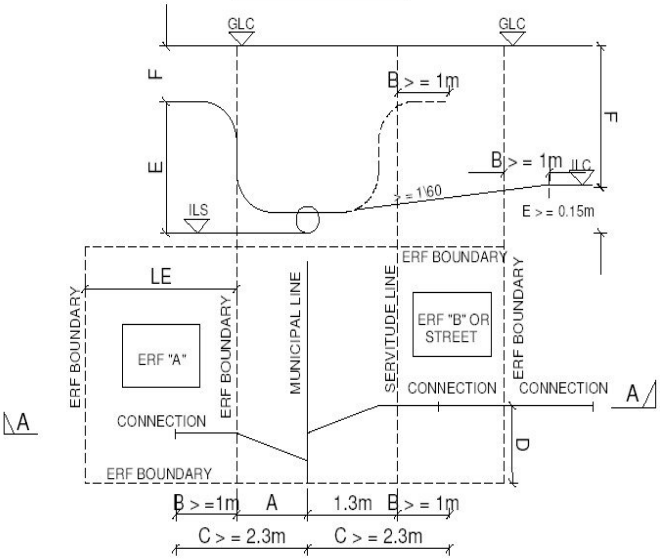
Township: ERF 2661 PARSONS VLEI Erf No. 4315

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.532 m
GLC	=	196.598 m
ILC	=	195.763 m
ILS	=	195.037 m
E(ILC-ILS)	=	0.726 m
F(GLC-ILC	=	0.835 m
MFL	=	196.532 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

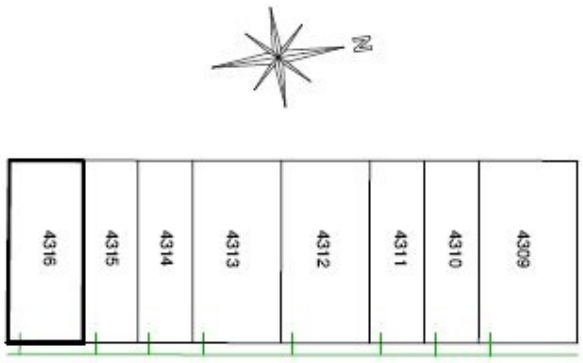
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

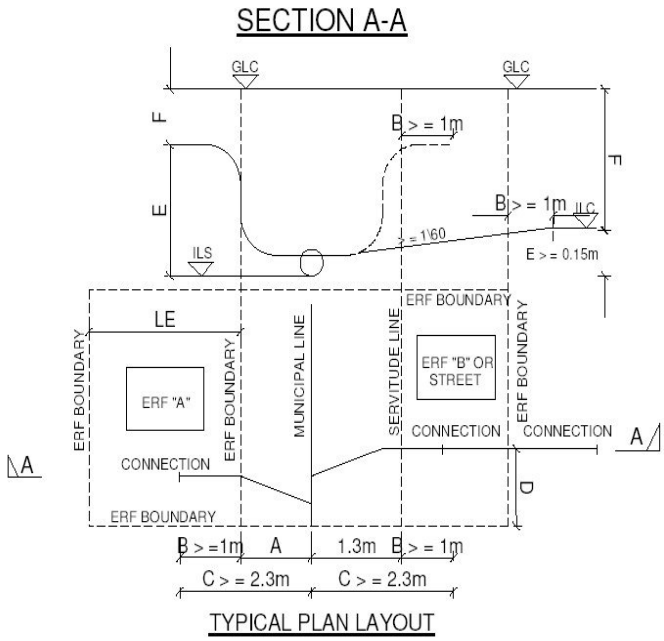
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4316

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION



A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.538 m
GLC	=	196.558 m
ILC	=	195.769 m
ILS	=	194.956 m
E(ILC-ILS)	=	0.813 m
F(GLC-ILC	=	0.789 m
MFL	=	196.538 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

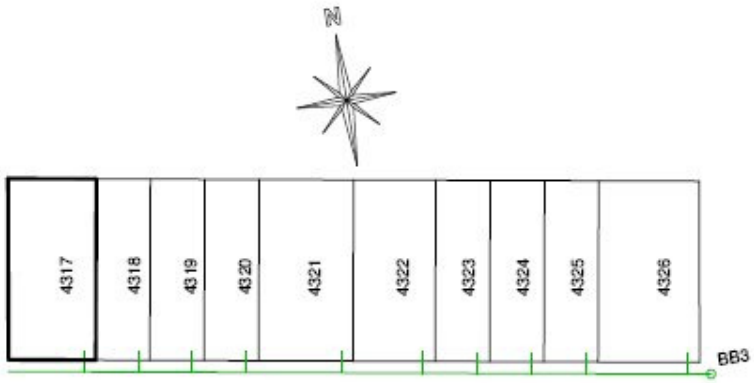
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

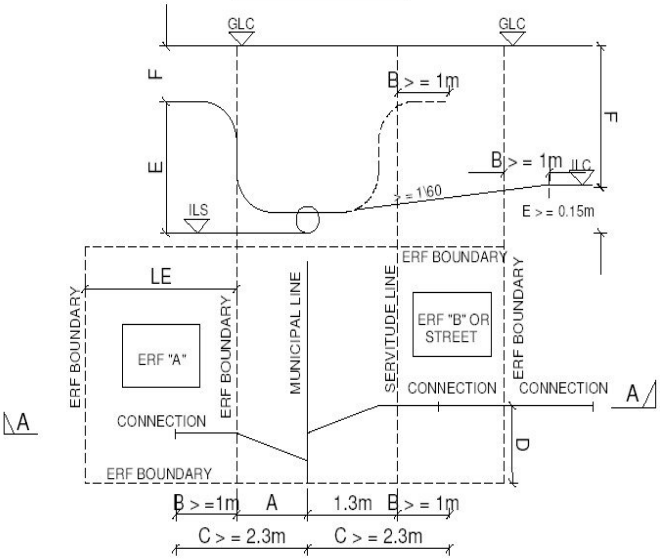
Township: ERF 2661 PARSONS VLEI Erf No. 4317

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.41 m
ILC	=	195.498 m
ILS	=	193.121 m
E(ILC-ILS)	=	2.377 m
F(GLC-ILC	=	0.912 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

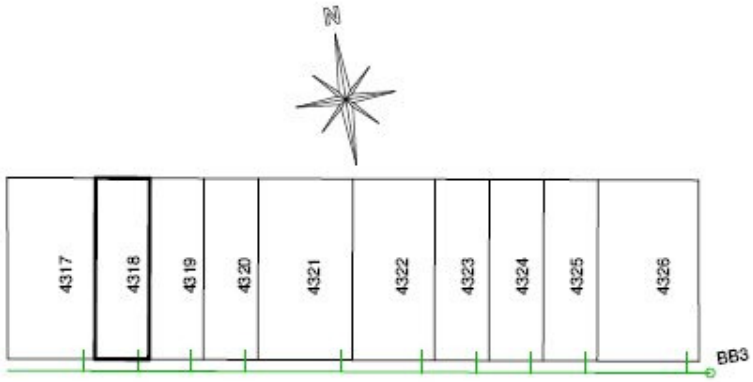
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

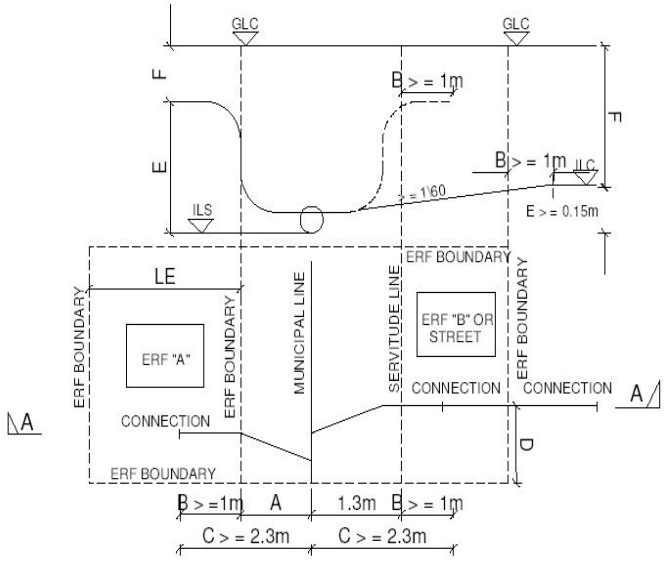
Township: ERF 2661 PARSONS VLEI Erf No. 4318

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.442 m
ILC	=	195.509 m
ILS	=	193.091 m
E(ILC-ILS)	=	2.418 m
F(GLC-ILC	=	0.933 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

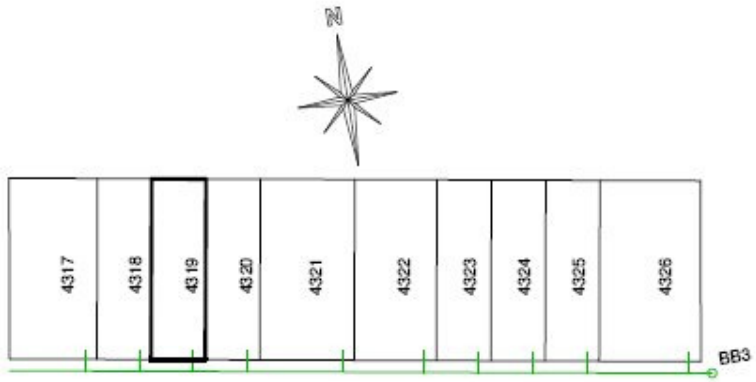
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

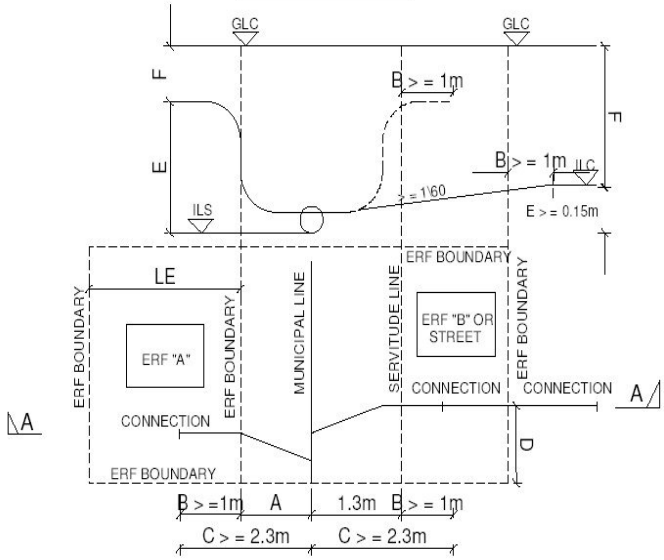
Township: ERF 2661 PARSONS VLEI Erf No. 4319

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.482 m
ILC	=	195.507 m
ILS	=	193.061 m
E(ILC-ILS)	=	2.446 m
F(GLC-ILC	=	0.975 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

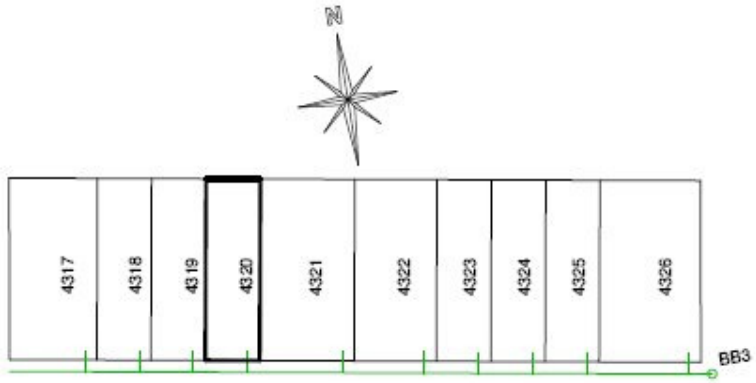
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

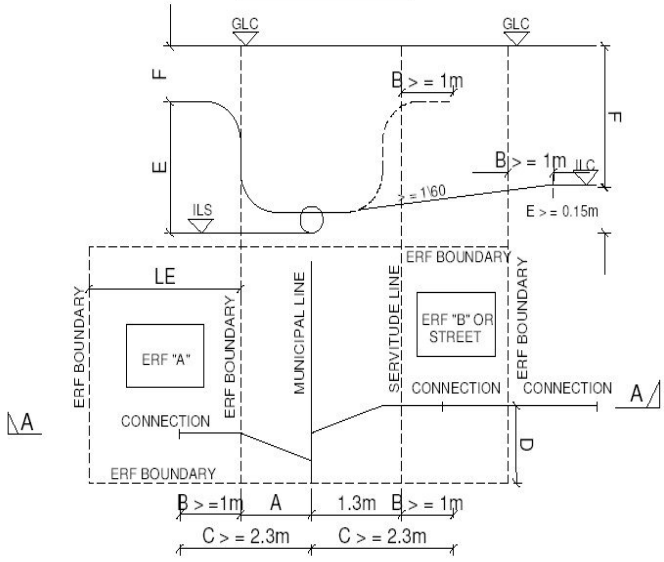
Township: ERF 2661 PARSONS VLEI Erf No. 4320

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.372 m
ILC	=	195.446 m
ILS	=	193.03 m
E(ILC-ILS)	=	2.416 m
F(GLC-ILC	=	0.926 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

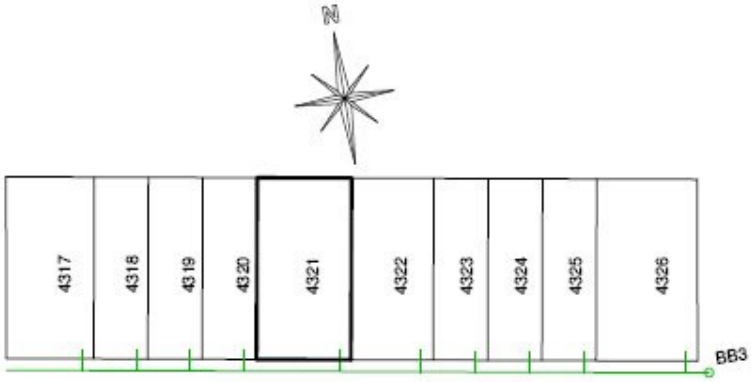
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

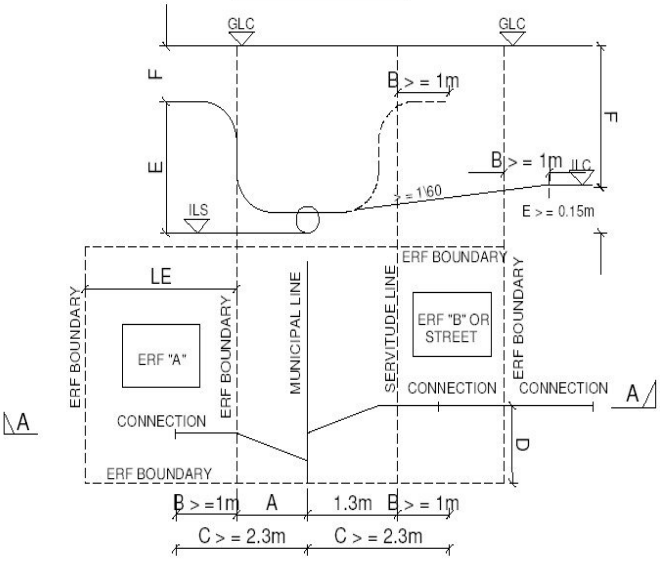
Township: ERF 2661 PARSONS VLEI Erf No. 4321

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.44 m
ILC	=	195.438 m
ILS	=	192.982 m
E(ILC-ILS)	=	2.456 m
F(GLC-ILC	=	1.002 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

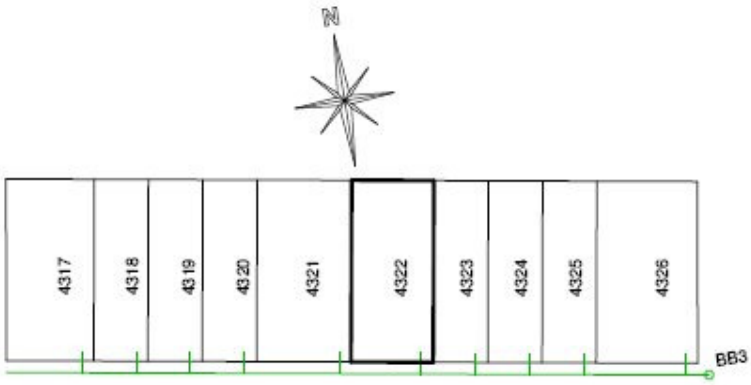
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

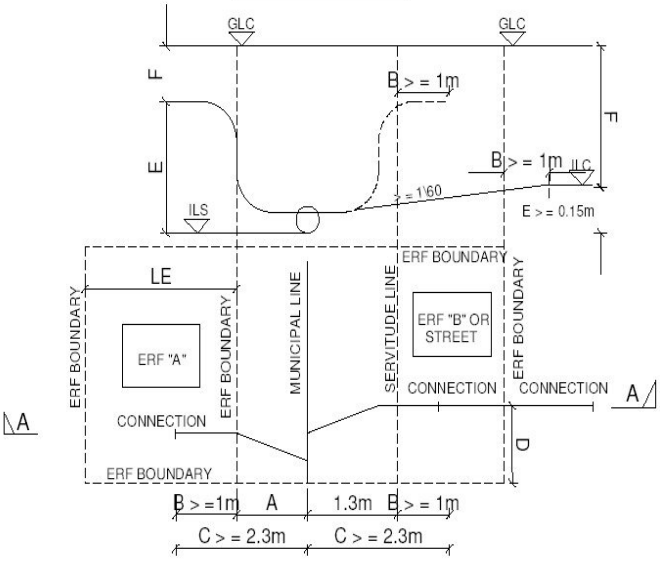
Township: ERF 2661 PARSONS VLEI Erf No. 4322

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.482 m
ILC	=	195.497 m
ILS	=	192.931 m
E(ILC-ILS)	=	2.566 m
F(GLC-ILC	=	0.985 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

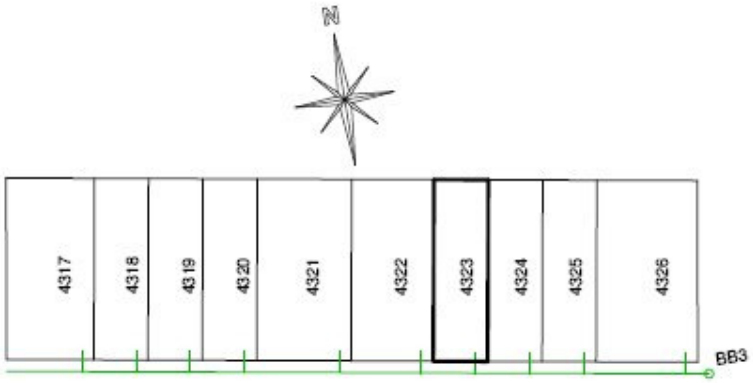
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

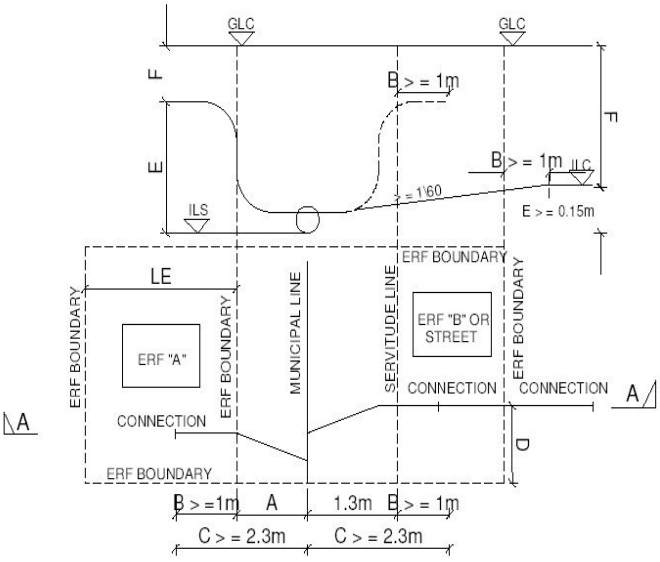
Township: ERF 2661 PARSONS VLEI Erf No. 4323

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.451 m
ILC	=	195.482 m
ILS	=	192.915 m
E(ILC-ILS)	=	2.567 m
F(GLC-ILC	=	0.969 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

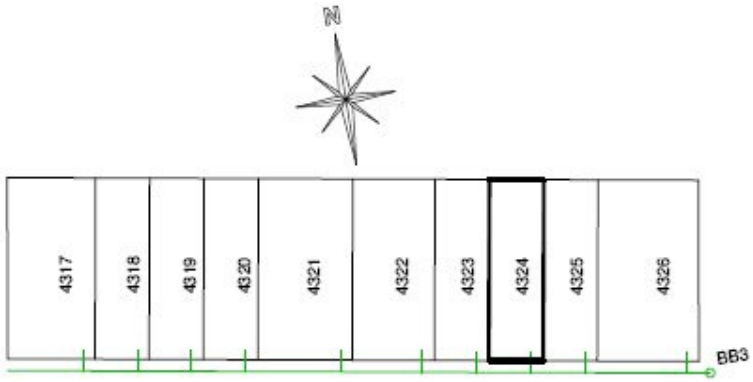
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

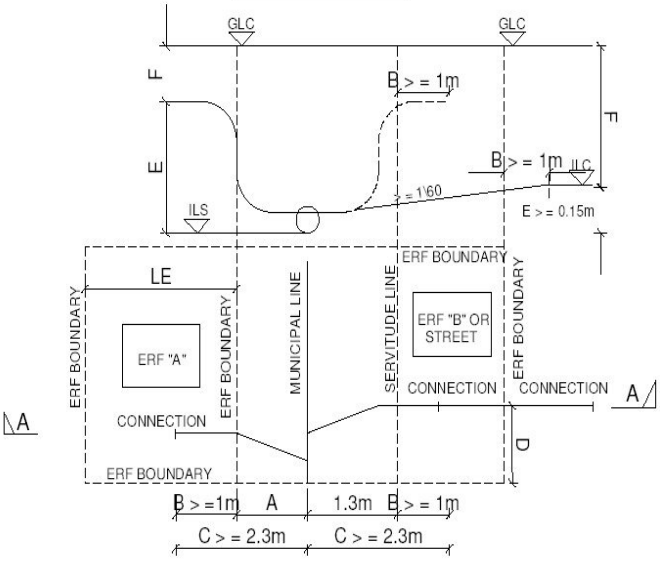
Township: ERF 2661 PARSONS VLEI Erf No. 4324

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.33 m
ILC	=	195.395 m
ILS	=	192.889 m
E(ILC-ILS)	=	2.506 m
F(GLC-ILC	=	0.935 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

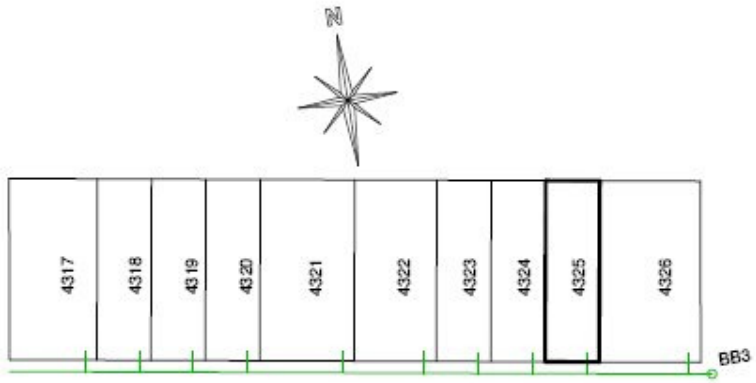
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

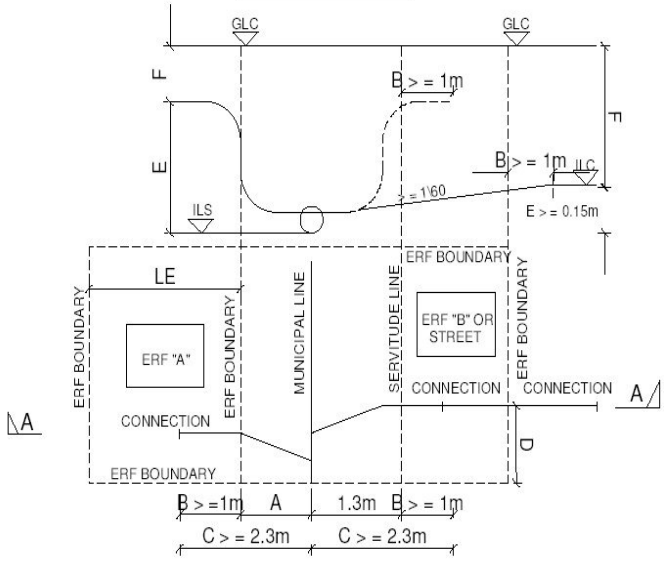
Township: ERF 2661 PARSONS VLEI Erf No. 4325

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.401 m
ILC	=	195.486 m
ILS	=	192.854 m
E(ILC-ILS)	=	2.632 m
F(GLC-ILC	=	0.915 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

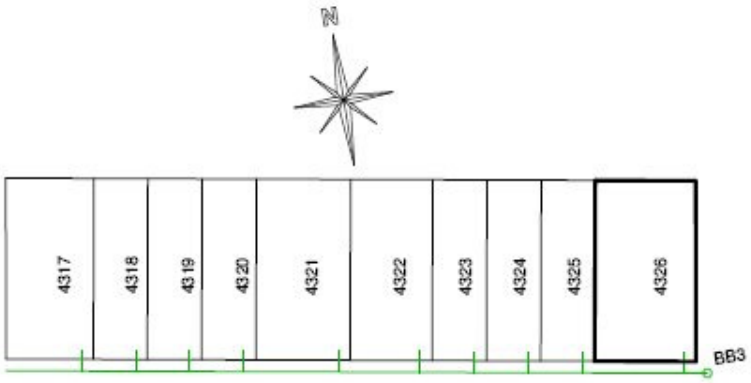
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

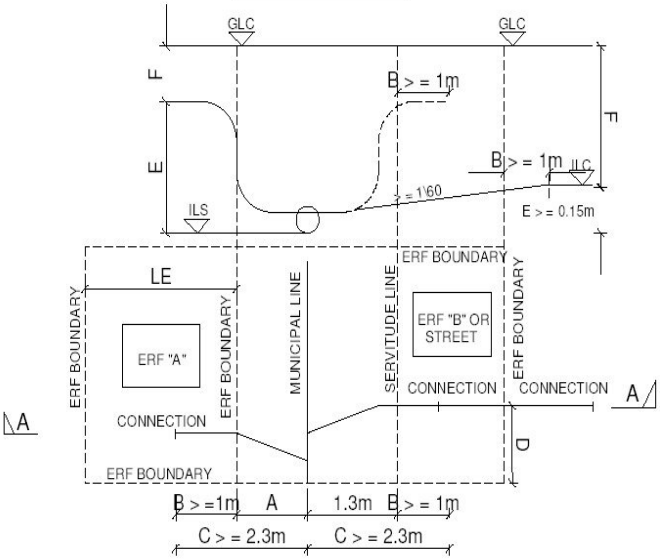
Township: ERF 2661 PARSONS VLEI Erf No. 4326

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.409 m
ILC	=	195.491 m
ILS	=	192.799 m
E(ILC-ILS)	=	2.692 m
F(GLC-ILC	=	0.918 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

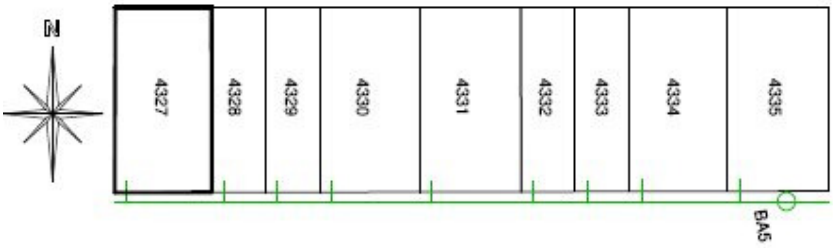
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

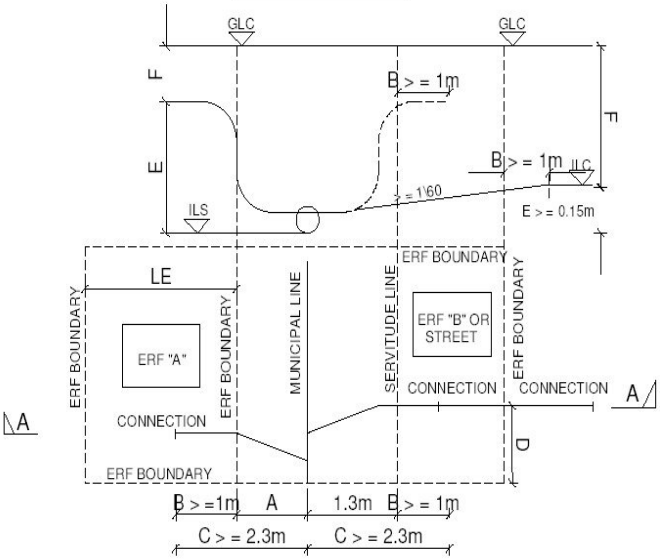
Township: ERF 2661 PARSONS VLEI Erf No. 4327

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.236 m
GLC	=	196.2 m
ILC	=	195.461 m
ILS	=	193.805 m
E(ILC-ILS)	=	1.656 m
F(GLC-ILC	=	0.739 m
MFL	=	196.236 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

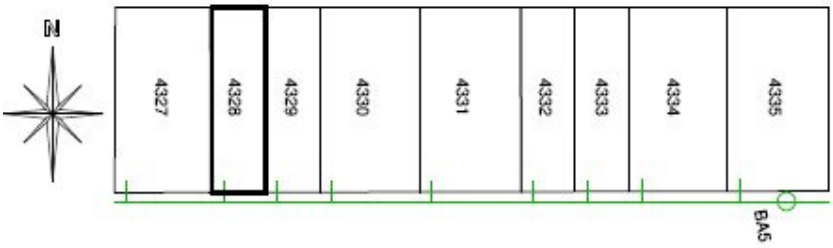
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

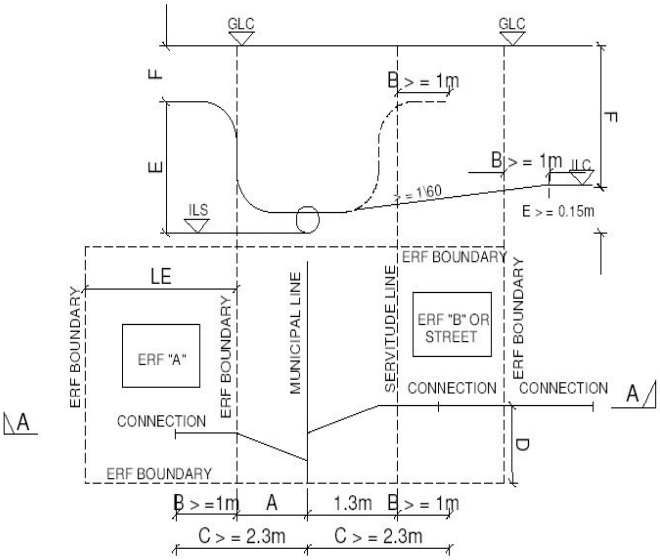
Township: ERF 2661 PARSONS VLEI Erf No. 4328

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.001 m
GLC	=	195.998 m
ILC	=	195.225 m
ILS	=	192.727 m
E(ILC-ILS)	=	2.498 m
F(GLC-ILC	=	0.773 m
MFL	=	196.001 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

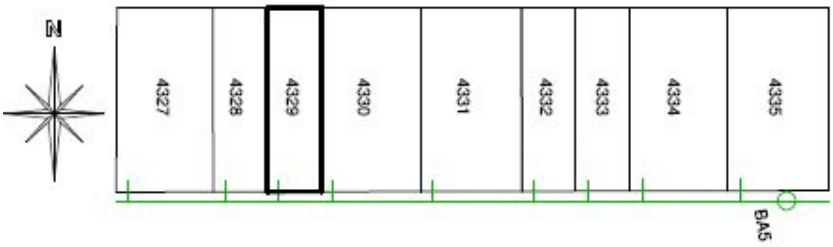
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

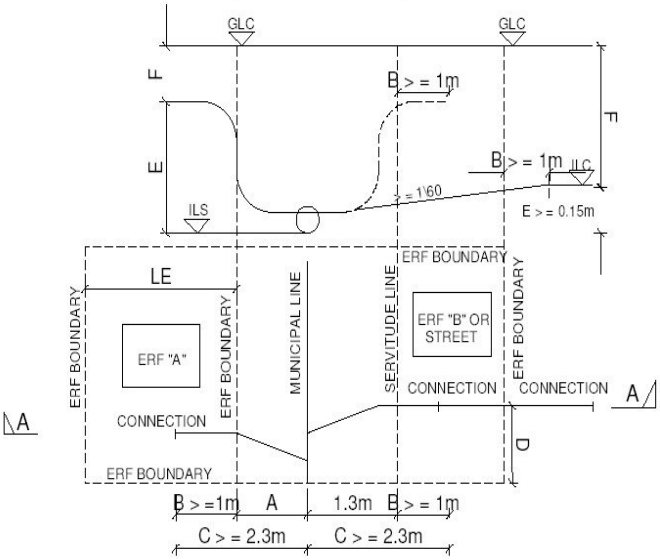
Township ERF 2661 PARSONS VLEI Erf No. 4329

Date constructed 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	195.956 m
GLC	=	195.99 m
ILC	=	195.18 m
ILS	=	192.788 m
E(ILC-ILS)	=	2.392 m
F(GLC-ILC	=	0.810 m
MFL	=	195.956 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer M. Stemmett Date 23 May 2008

Signature of Prof. Eng. Prof. registration no 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

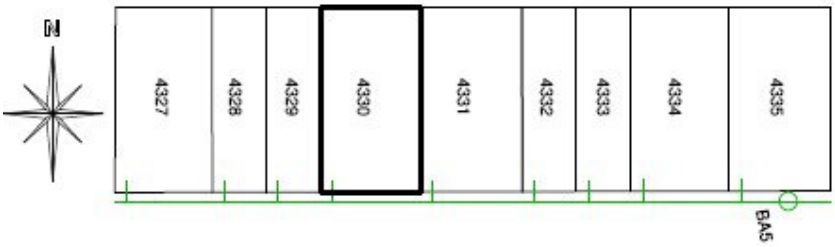
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

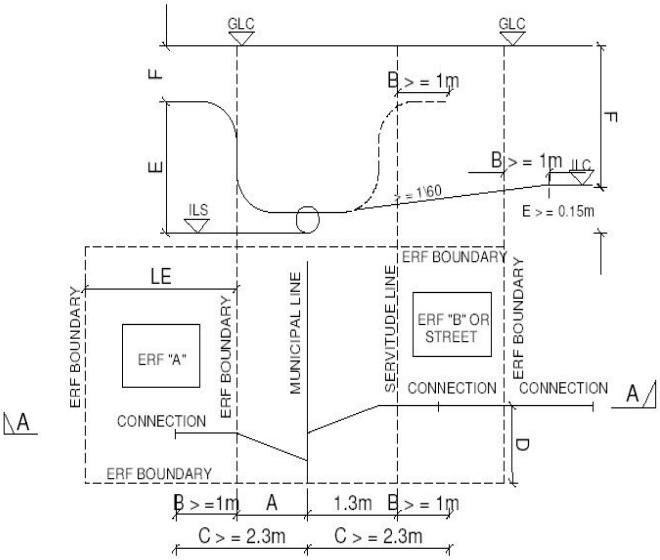
Township: ERF 2661 PARSONS VLEI Erf No. 4330

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.082 m
GLC	=	196.105 m
ILC	=	195.31 m
ILS	=	192.85 m
E(ILC-ILS)	=	2.460 m
F(GLC-ILC	=	0.795 m
MFL	=	196.082 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

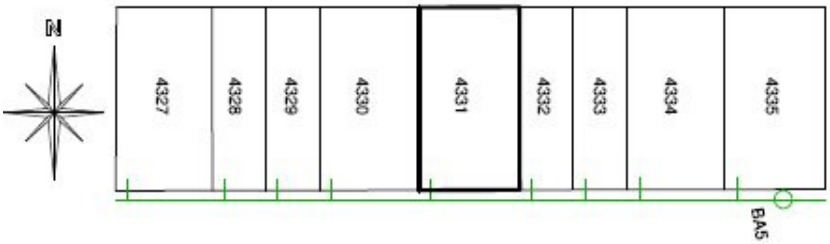
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

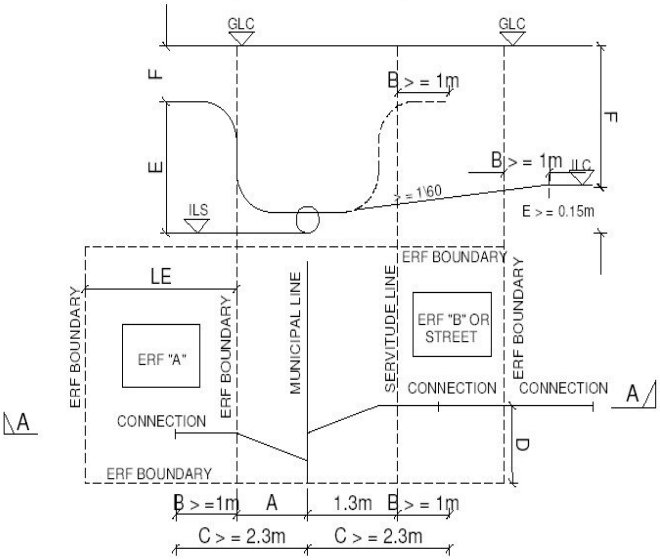
Township: ERF 2661 PARSONS VLEI Erf No. 4331

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.124 m
GLC	=	196.108 m
ILC	=	195.35 m
ILS	=	192.956 m
E(ILC-ILS)	=	2.394 m
F(GLC-ILC	=	0.758 m
MFL	=	196.124 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

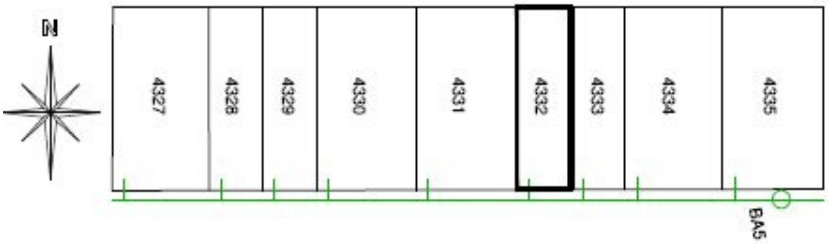
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

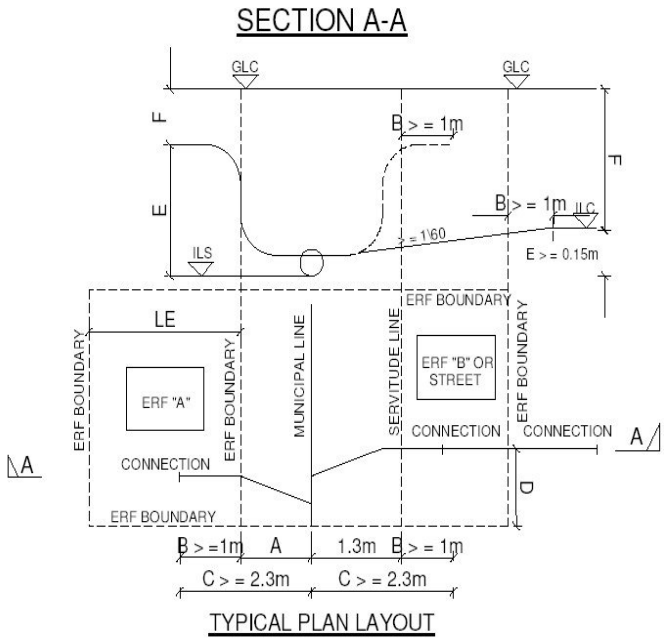
WASTEWATER CONVEYANCE SUB SILO

Township ERF 2661 PARSONS VLEI Erf No. 4332

Date constructed 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION



A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.157 m
GLC	=	197.165 m
ILC	=	195.38 m
ILS	=	193.069 m
E(ILC-ILS)	=	2.311 m
F(GLC-ILC	=	1.785 m
MFL	=	196.157 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer M. Stemmett Date 23 May 2008

Signature of Prof. Eng. Prof. registration no 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

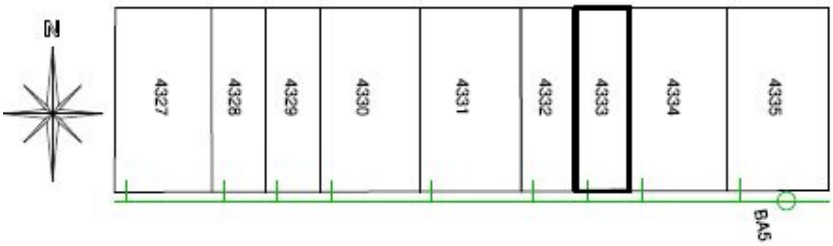
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

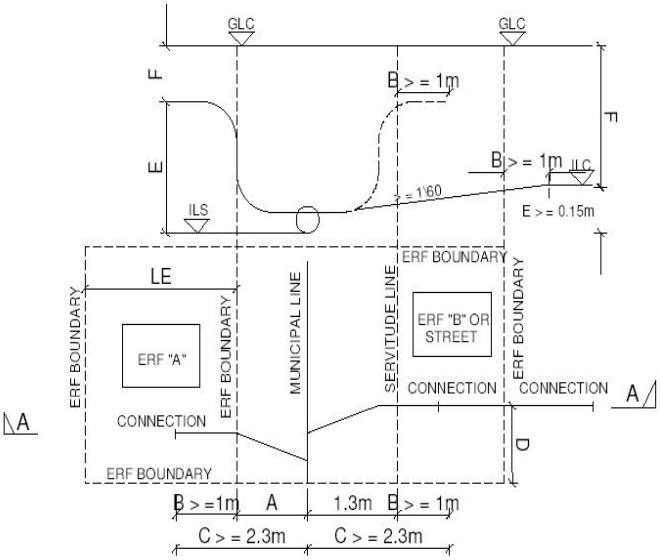
Township: ERF 2661 PARSONS VLEI Erf No. 4333

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.23 m
GLC	=	196.186 m
ILC	=	195.455 m
ILS	=	193.126 m
E(ILC-ILS)	=	2.329 m
F(GLC-ILC	=	0.731 m
MFL	=	196.23 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

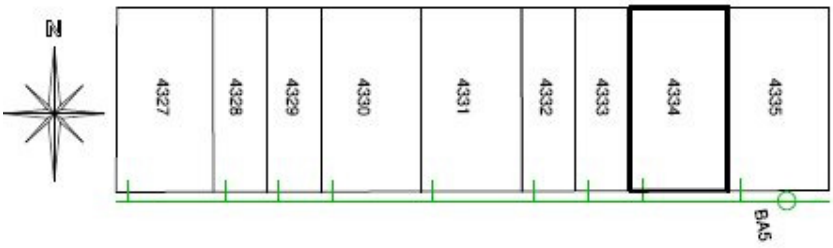
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

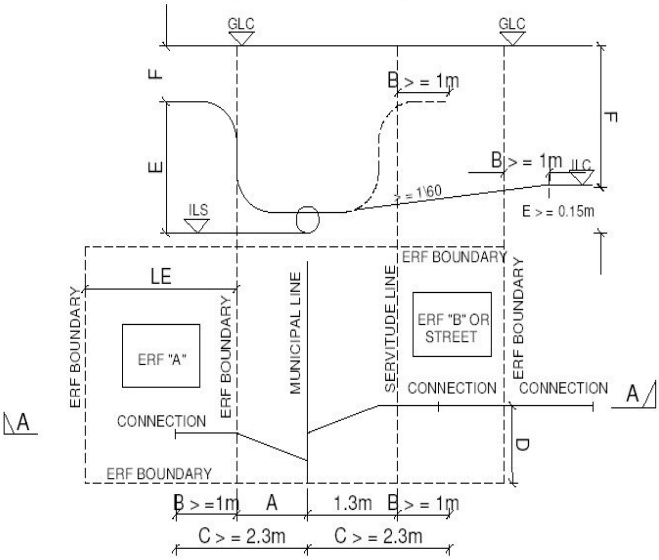
Township: ERF 2661 PARSONS VLEI Erf No. 4334

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.255 m
GLC	=	196.241 m
ILC	=	195.482 m
ILS	=	193.189 m
E(ILC-ILS)	=	2.293 m
F(GLC-ILC	=	0.759 m
MFL	=	196.255 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

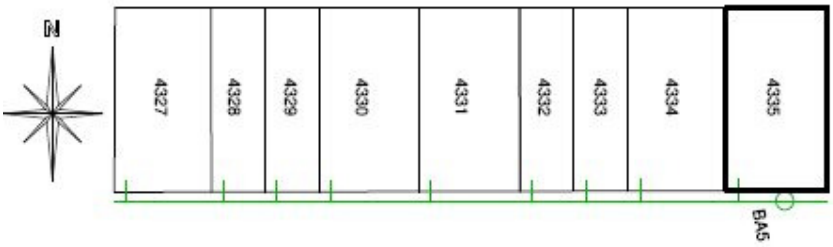
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

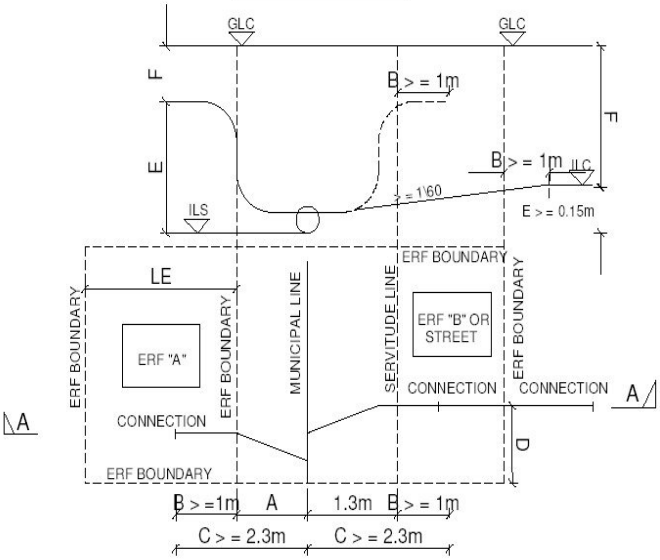
Township: ERF 2661 PARSONS VLEI Erf No. 4335

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.24 m
GLC	=	196.251 m
ILC	=	195.461 m
ILS	=	193.294 m
E(ILC-ILS)	=	2.167 m
F(GLC-ILC	=	0.790 m
MFL	=	196.24 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

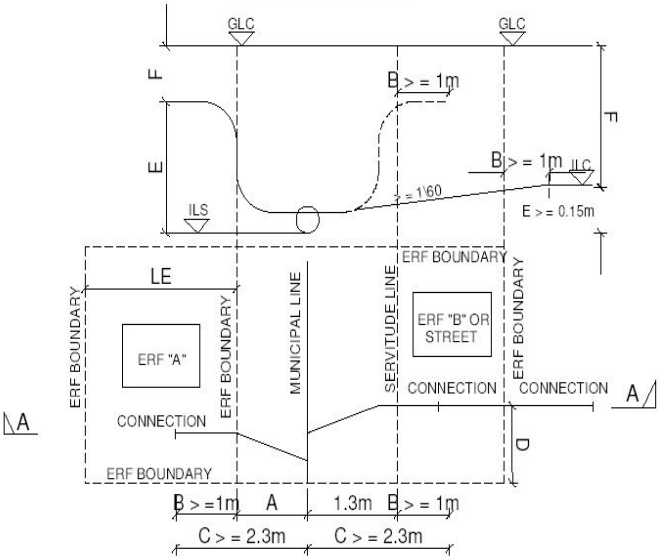
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4336

Date constructed: 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.333 m
GLC	=	196.325 m
ILC	=	195.561 m
ILS	=	193.401 m
E(ILC-ILS)	=	2.160 m
F(GLC-ILC	=	0.764 m
MFL	=	196.333 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

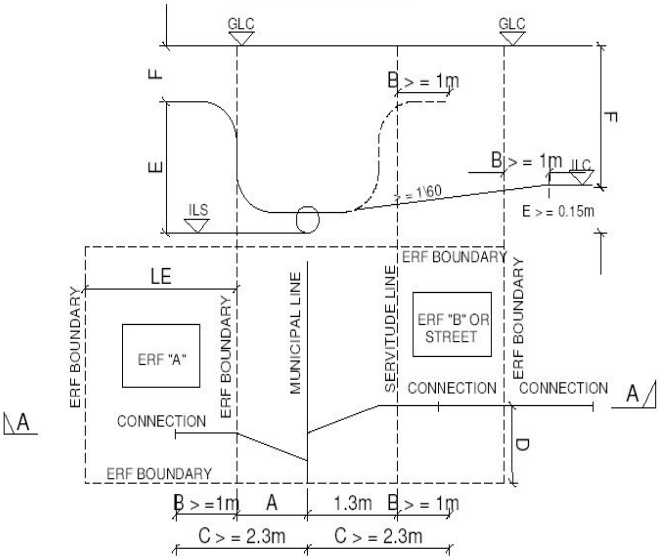
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4337

Date constructed: 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.349 m
GLC	=	196.341 m
ILC	=	195.578 m
ILS	=	193.465 m
E(ILC-ILS)	=	2.113 m
F(GLC-ILC	=	0.763 m
MFL	=	196.349 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

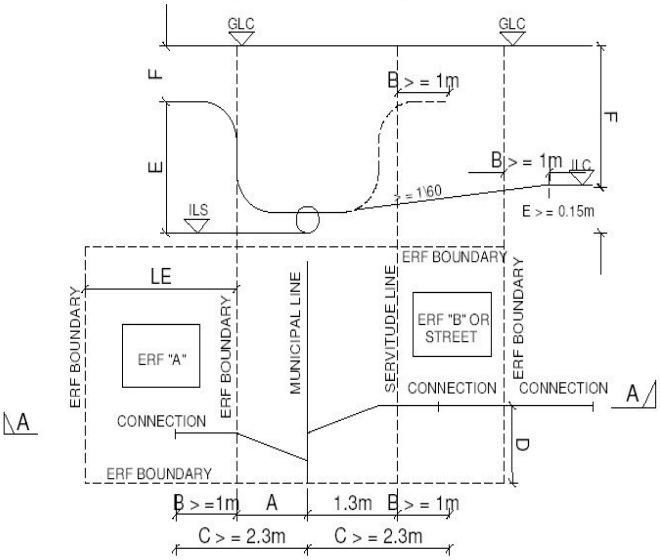
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4338

Date constructed: 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.365 m
GLC	=	196.34 m
ILC	=	195.59 m
ILS	=	193.526 m
E(ILC-ILS)	=	2.064 m
F(GLC-ILC	=	0.750 m
MFL	=	196.365 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng.: Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

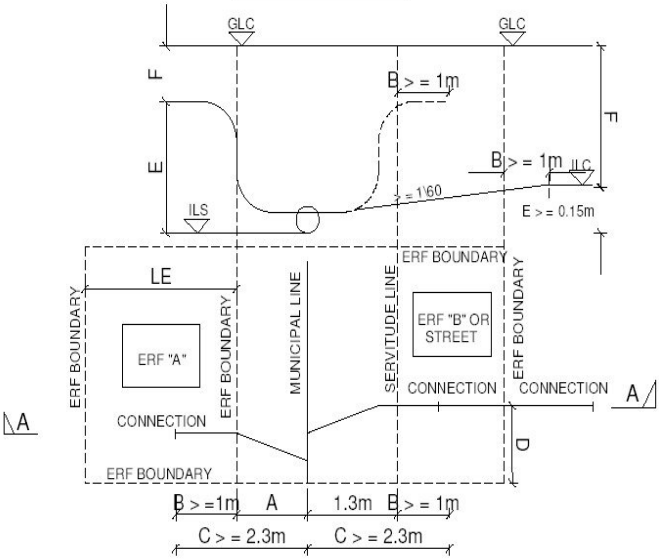
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4339

Date constructed: 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.478 m
GLC	=	196.441 m
ILC	=	195.655 m
ILS	=	193.63 m
E(ILC-ILS)	=	2.025 m
F(GLC-ILC	=	0.786 m
MFL	=	196.478 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

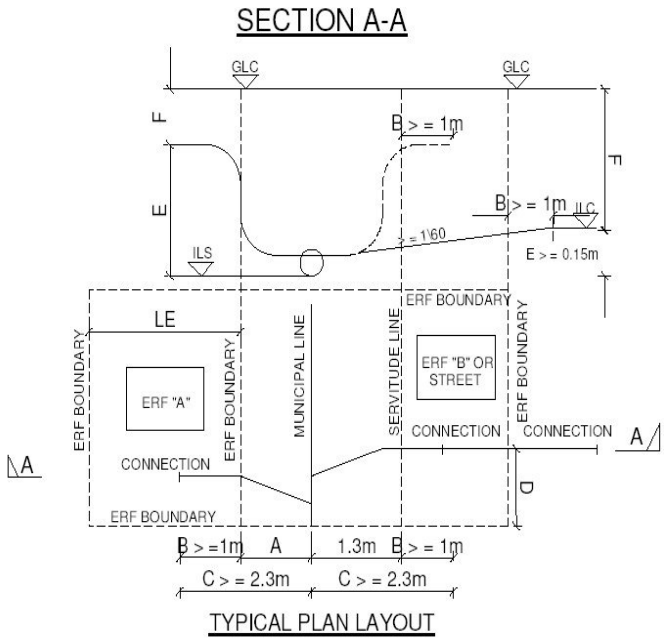
INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4340

Date constructed: 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION



A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.62 m
GLC	=	196.611 m
ILC	=	195.83 m
ILS	=	193.747 m
E(ILC-ILS)	=	2.083 m
F(GLC-ILC	=	0.781 m
MFL	=	196.62 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

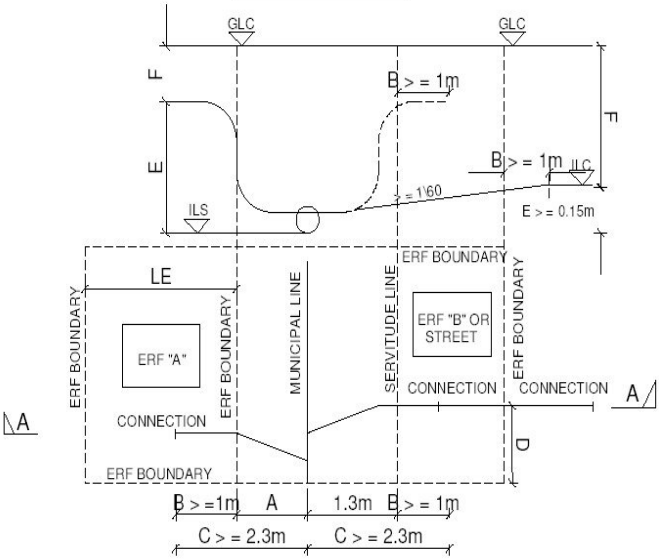
WASTEWATER CONVEYANCE SUB SILO

Township ERF 2661 PARSONS VLEI Erf No. 4341

Date constructed 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.543 m
GLC	=	196.55 m
ILC	=	195.76 m
ILS	=	193.8 m
E(ILC-ILS)	=	1.960 m
F(GLC-ILC	=	0.790 m
MFL	=	196.543 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer M. Stemmett Date 23 May 2008

Signature of Prof. Eng. Prof. registration no 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

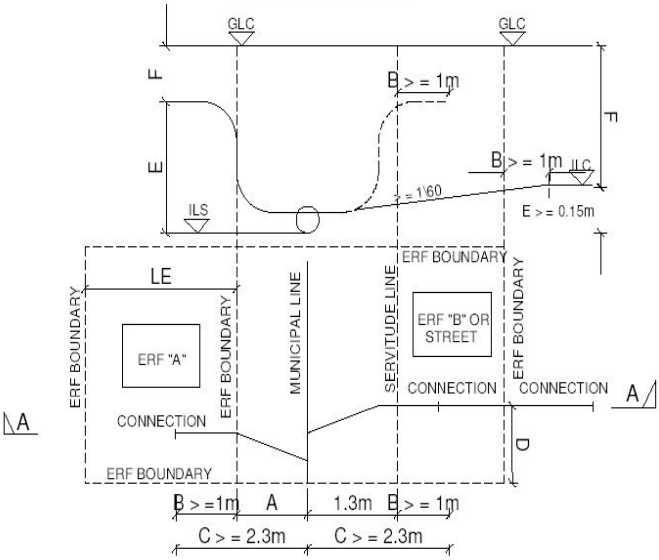
WASTEWATER CONVEYANCE SUB SILO

Township: ERF 2661 PARSONS VLEI Erf No. 4342

Date constructed: 23 May 2008

LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	197.007 m
GLC	=	196.95 m
ILC	=	196.103 m
ILS	=	193.862 m
E(ILC-ILS)	=	2.241 m
F(GLC-ILC	=	0.847 m
MFL	=	197.007 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

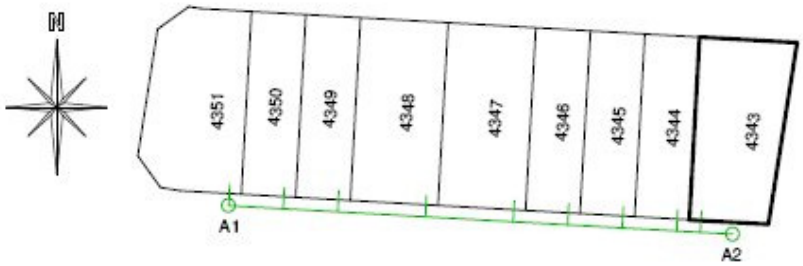
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

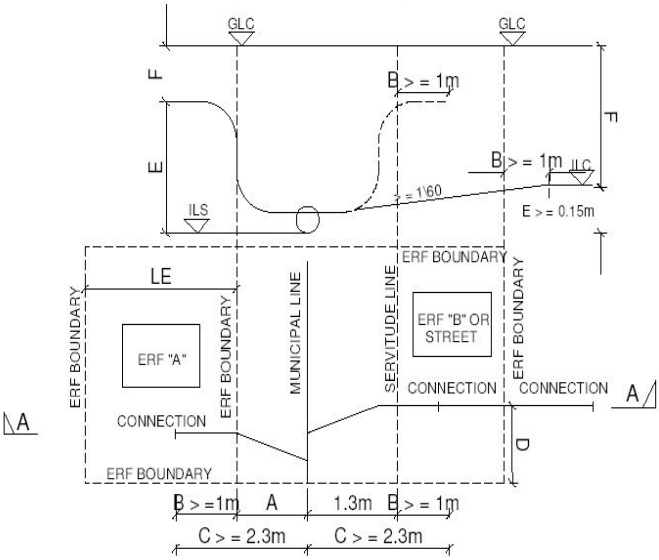
Township: ERF 2661 PARSONS VLEI Erf No. 4343

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.638 m
GLC	=	196.792 m
ILC	=	195.832 m
ILS	=	195.295 m
E(ILC-ILS)	=	0.537 m
F(GLC-ILC	=	0.960 m
MFL	=	196.638 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

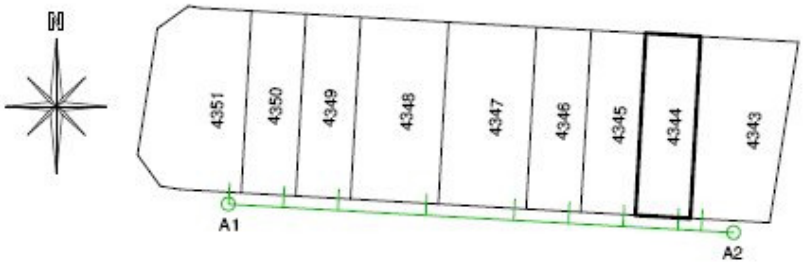
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

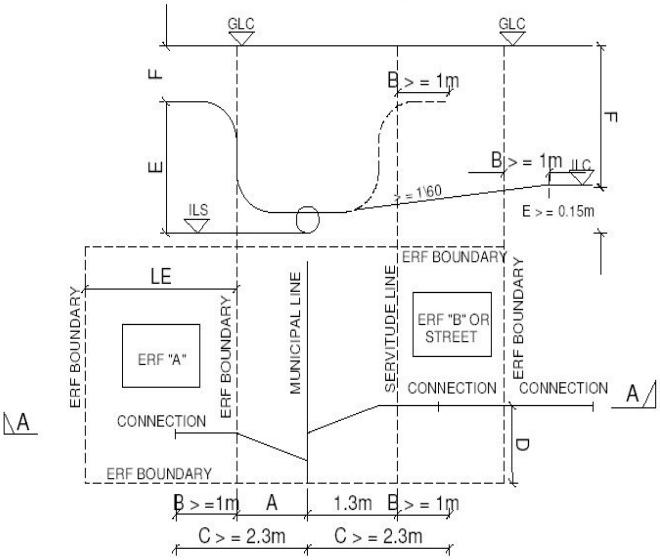
Township: ERF 2661 PARSONS VLEI Erf No. 4344

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.722 m
GLC	=	196.856 m
ILC	=	195.92 m
ILS	=	195.322 m
E(ILC-ILS)	=	0.598 m
F(GLC-ILC	=	0.936 m
MFL	=	196.722 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

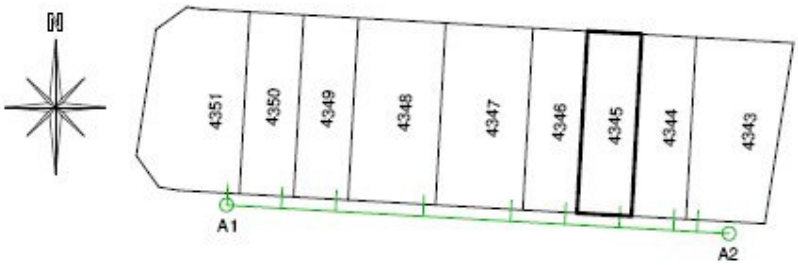
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

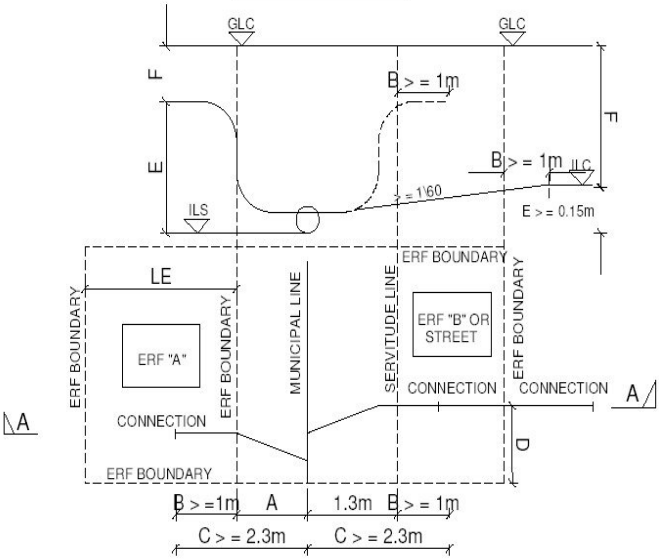
Township: ERF 2661 PARSONS VLEI Erf No. 4345

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.771 m
GLC	=	196.871 m
ILC	=	196.01 m
ILS	=	195.38 m
E(ILC-ILS)	=	0.630 m
F(GLC-ILC	=	0.861 m
MFL	=	196.771 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

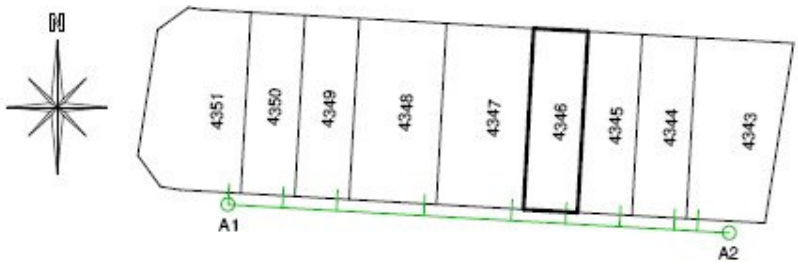
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

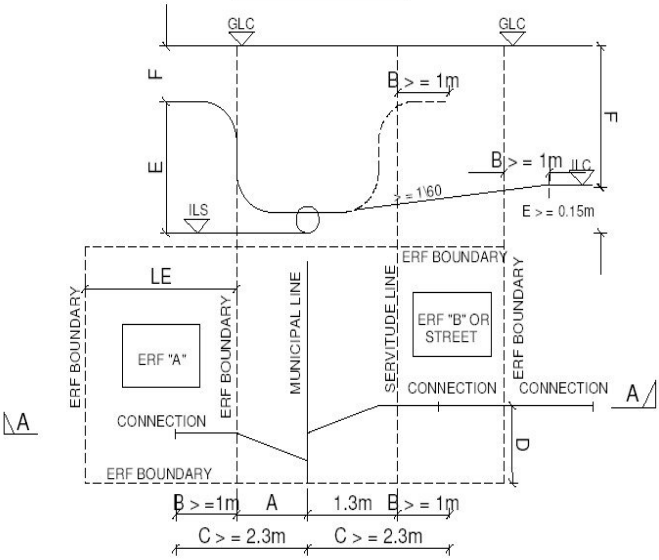
Township: ERF 2661 PARSONS VLEI Erf No. 4346

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.806 m
GLC	=	196.951 m
ILC	=	196.015 m
ILS	=	195.439 m
E(ILC-ILS)	=	0.576 m
F(GLC-ILC	=	0.936 m
MFL	=	196.806 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

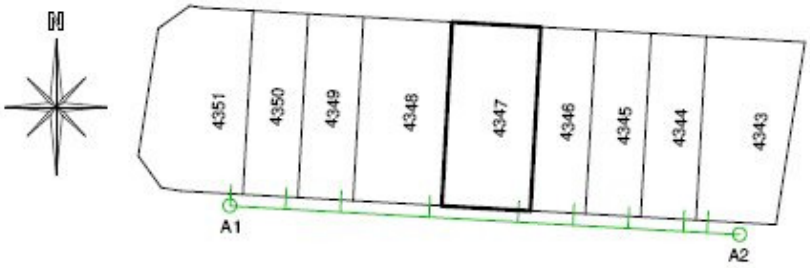
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

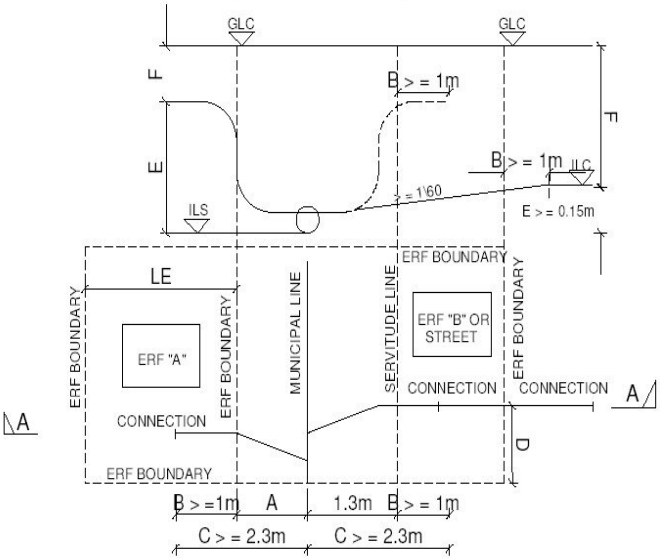
Township: ERF 2661 PARSONS VLEI Erf No. 4347

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.831 m
GLC	=	196.823 m
ILC	=	196.021 m
ILS	=	195.49 m
E(ILC-ILS)	=	0.531 m
F(GLC-ILC	=	0.802 m
MFL	=	196.831 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

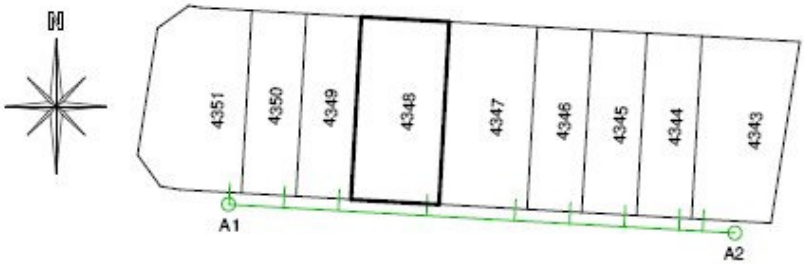
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

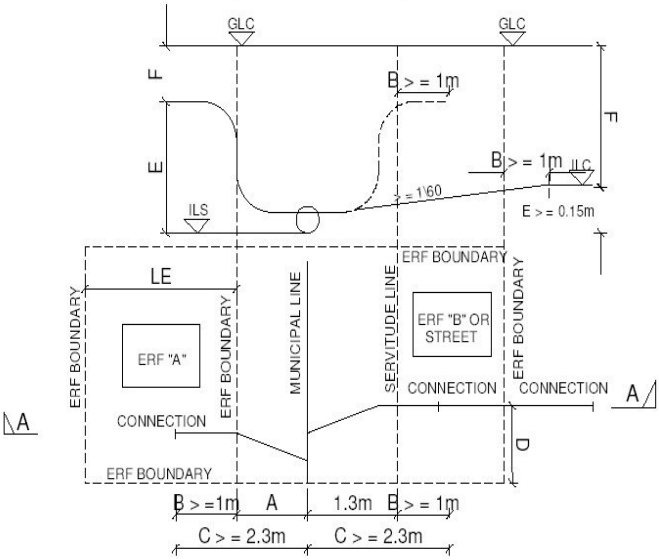
Township: ERF 2661 PARSONS VLEI Erf No. 4348

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.839 m
GLC	=	196.909 m
ILC	=	196.069 m
ILS	=	195.589 m
E(ILC-ILS)	=	0.480 m
F(GLC-ILC	=	0.840 m
MFL	=	196.839 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

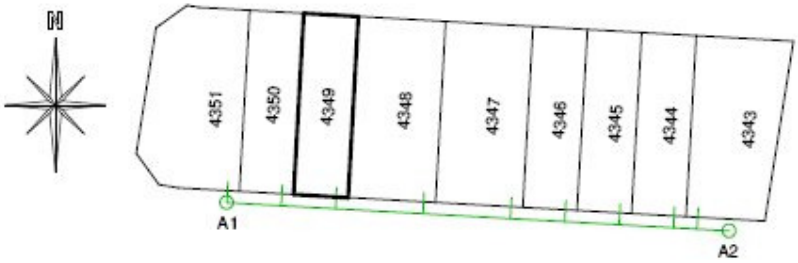
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

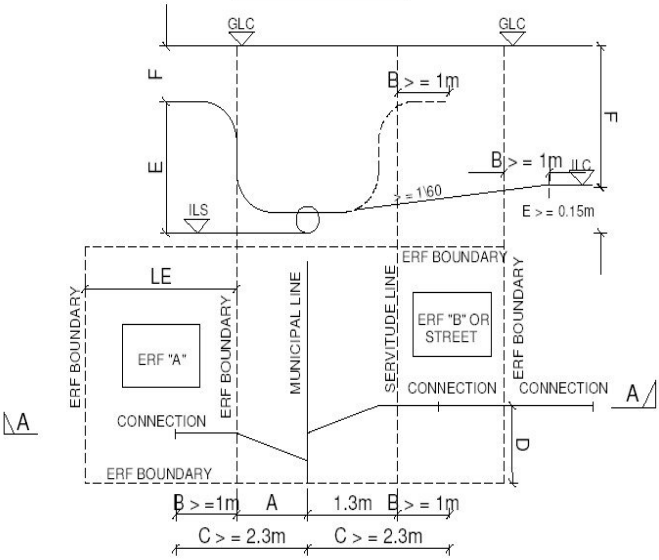
Township: ERF 2661 PARSONS VLEI Erf No. 4349

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.861 m
GLC	=	196.906 m
ILC	=	196.101 m
ILS	=	195.68 m
E(ILC-ILS)	=	0.421 m
F(GLC-ILC	=	0.805 m
MFL	=	196.861 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

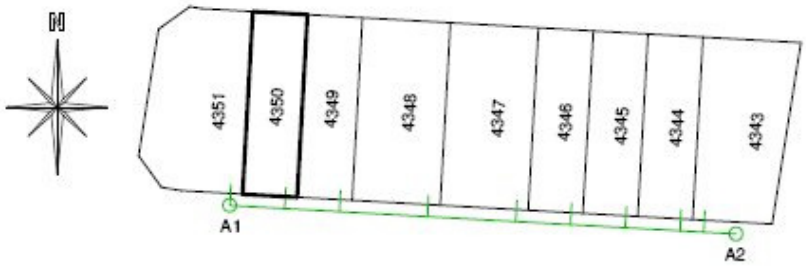
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

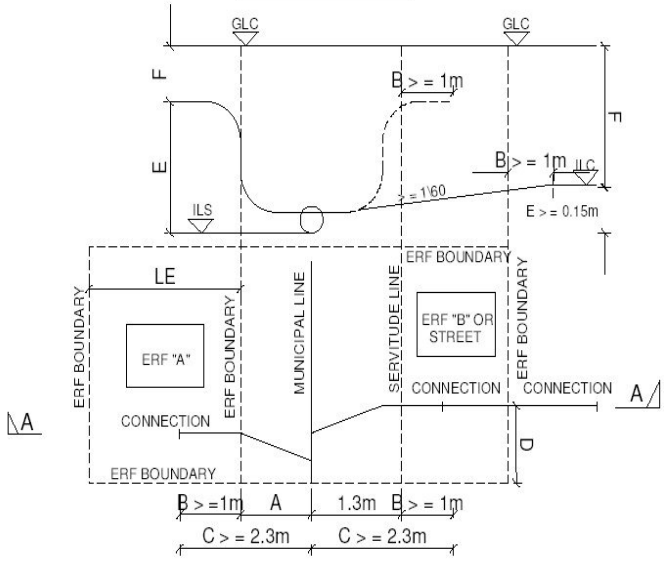
Township: ERF 2661 PARSONS VLEI Erf No. 4350

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.872 m
GLC	=	196.924 m
ILC	=	196.095 m
ILS	=	195.744 m
E(ILC-ILS)	=	0.351 m
F(GLC-ILC	=	0.829 m
MFL	=	196.872 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421

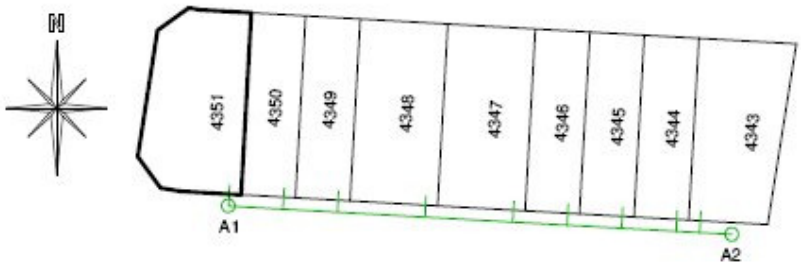
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

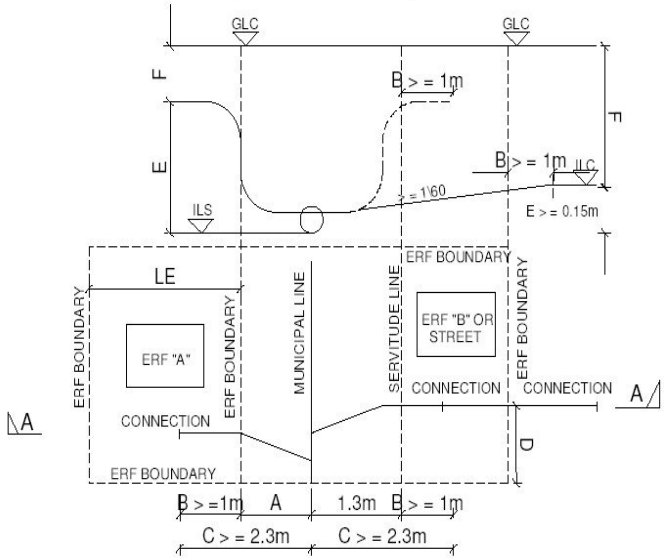
Township: ERF 2661 PARSONS VLEI Erf No. 4351

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3	m
B	=	1	m
C	=	2.3	m
D	=	1.3	m
MGL	=	196.898	m
GLC	=	196.906	m
ILC	=	196.1	m
ILS	=	195.801	m
E(ILC-ILS)	=	0.299	m
F(GLC-ILC	=	0.806	m
MFL	=	196.898	m
LE	=	20	m
ø Mun.Sewer	=	160	m
ø Connect	=	110	m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

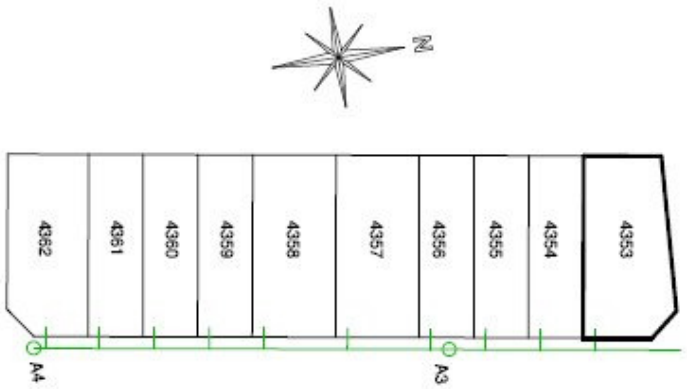
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

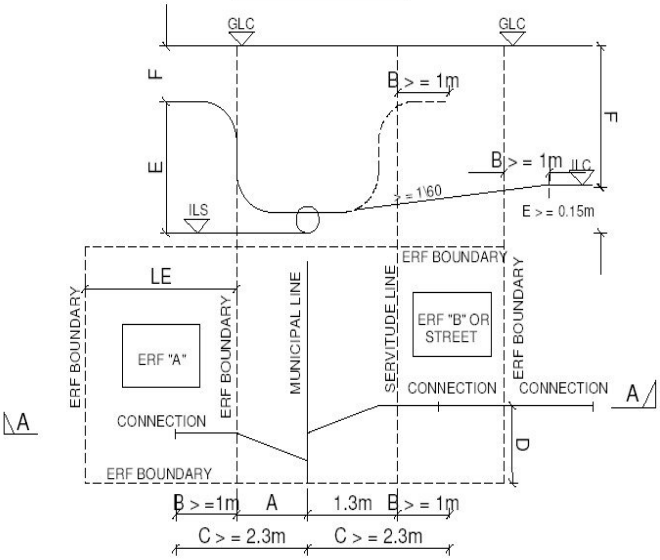
Township: ERF 2661 PARSONS VLEI Erf No. 4353

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.607 m
GLC	=	196.635 m
ILC	=	195.822 m
ILS	=	195.075 m
E(ILC-ILS)	=	0.747 m
F(GLC-ILC	=	0.813 m
MFL	=	196.607 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

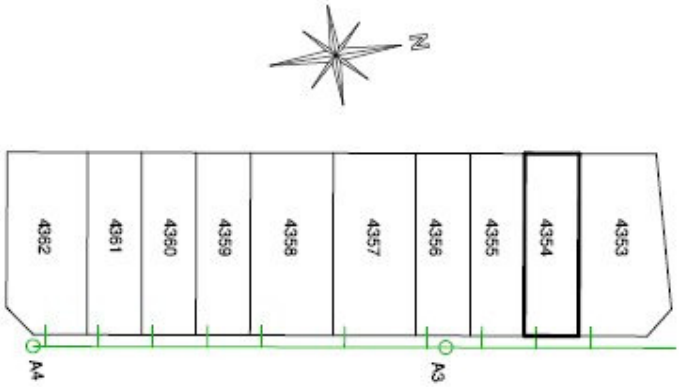
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

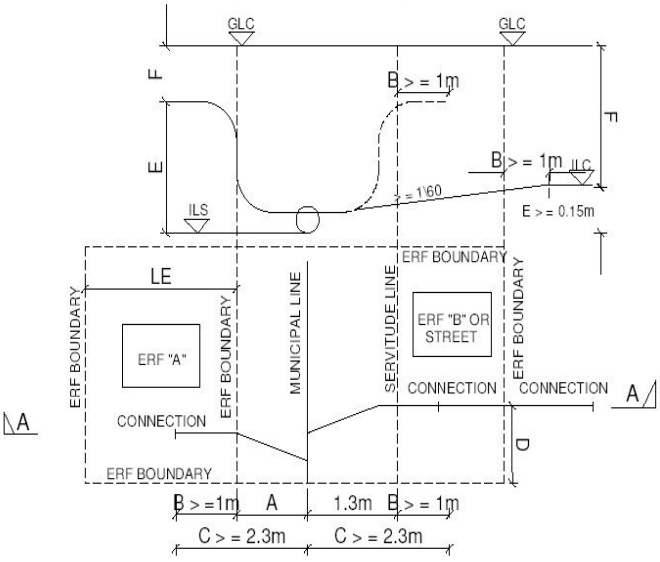
Township: ERF 2661 PARSONS VLEI Erf No. 4354

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.615 m
GLC	=	196.587 m
ILC	=	195.843 m
ILS	=	195.02 m
E(ILC-ILS)	=	0.823 m
F(GLC-ILC	=	0.744 m
MFL	=	196.615 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

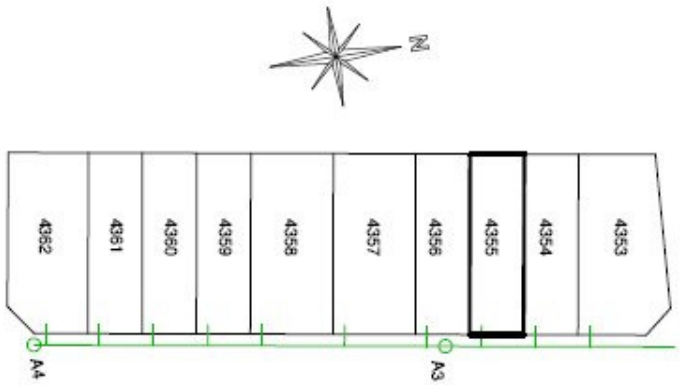
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

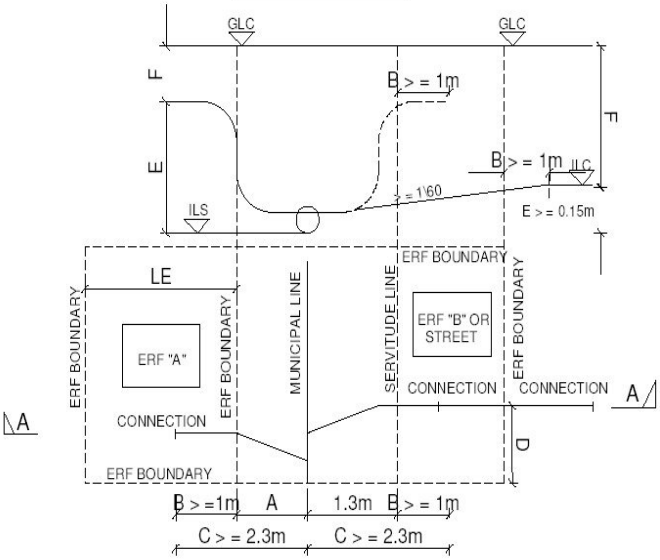
Township: ERF 2661 PARSONS VLEI Erf No. 4355

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.582 m
GLC	=	196.566 m
ILC	=	195.812 m
ILS	=	194.962 m
E(ILC-ILS)	=	0.850 m
F(GLC-ILC	=	0.754 m
MFL	=	196.582 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

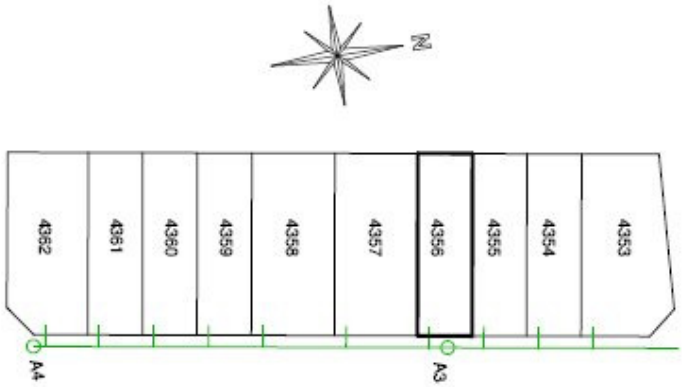
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

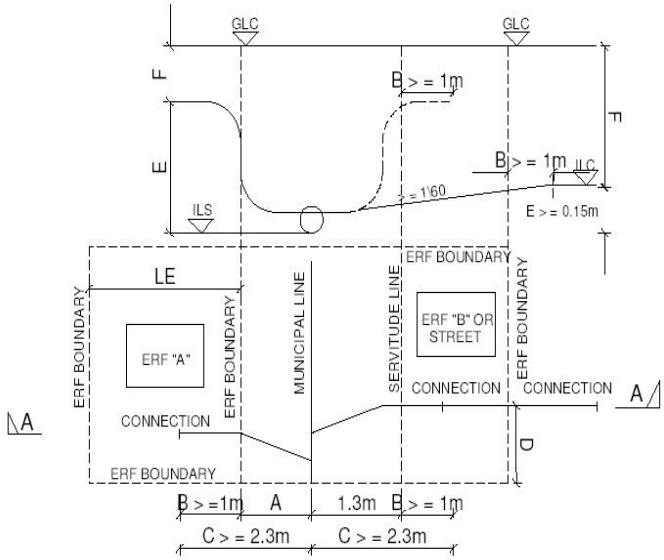
Township: ERF 2661 PARSONS VLEI Erf No. 4356

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.574 m
GLC	=	196.552 m
ILC	=	195.791 m
ILS	=	194.898 m
E(ILC-ILS)	=	0.893 m
F(GLC-ILC	=	0.761 m
MFL	=	196.574 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

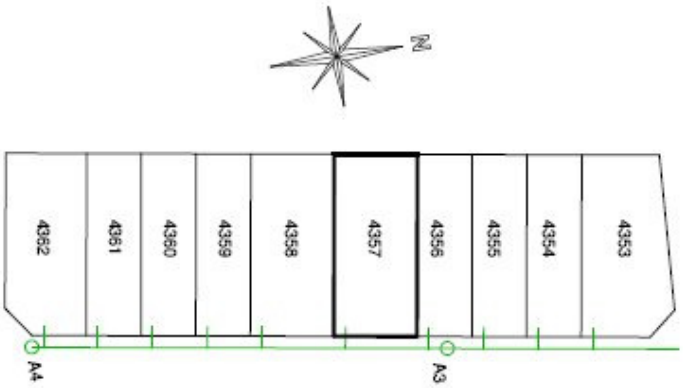
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

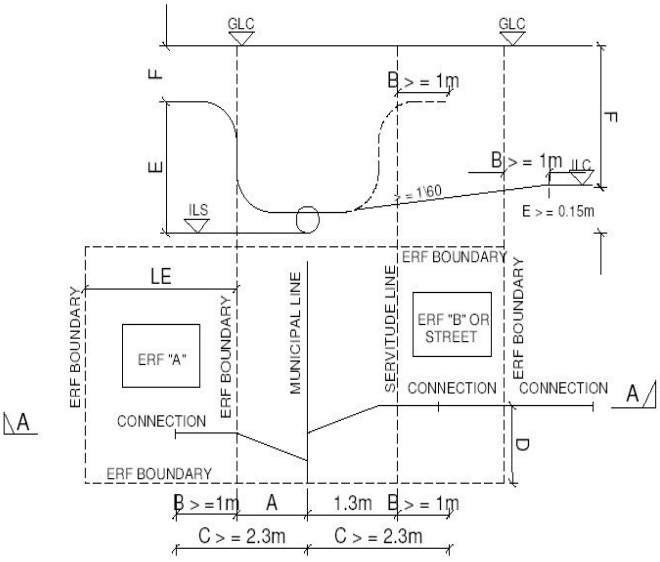
Township: ERF 2661 PARSONS VLEI Erf No. 4357

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.479 m
GLC	=	196.449 m
ILC	=	195.701 m
ILS	=	194.801 m
E(ILC-ILS)	=	0.900 m
F(GLC-ILC	=	0.748 m
MFL	=	196.479 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

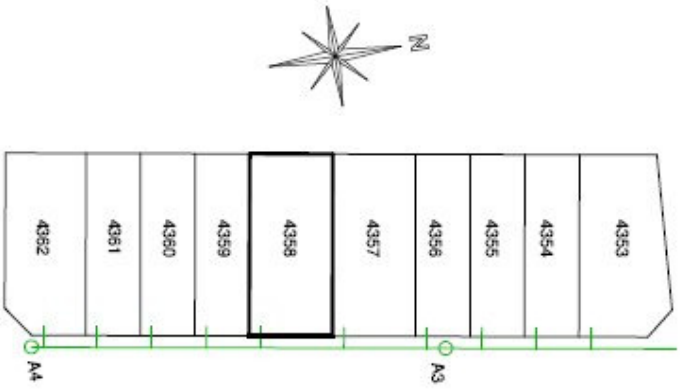
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

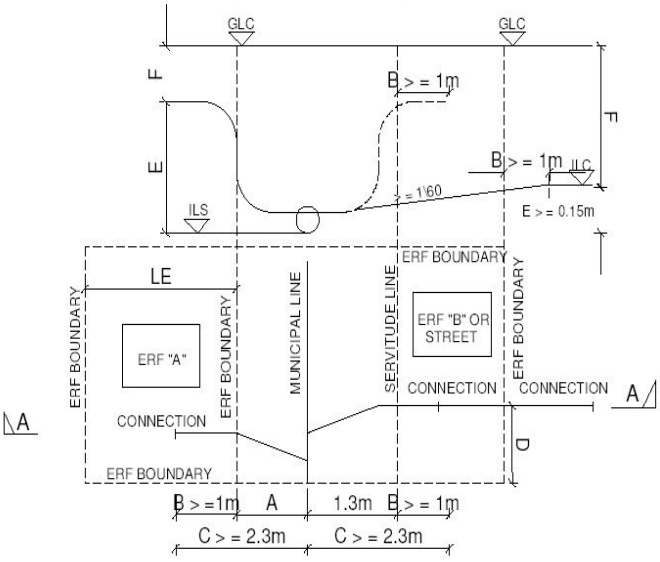
Township: ERF 2661 PARSONS VLEI Erf No. 4358

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.407 m
GLC	=	196.399 m
ILC	=	195.605 m
ILS	=	194.729 m
E(ILC-ILS)	=	0.876 m
F(GLC-ILC	=	0.794 m
MFL	=	196.407 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

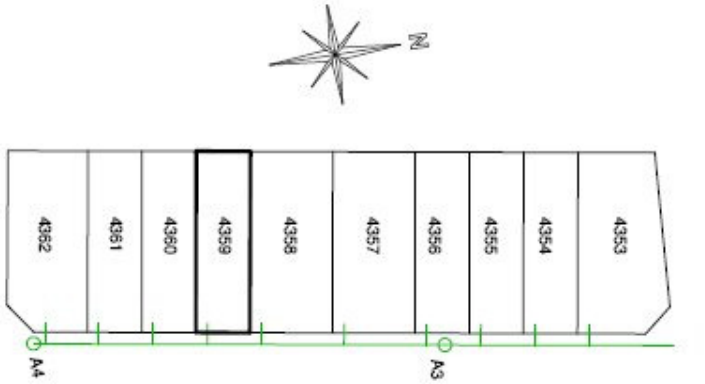
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

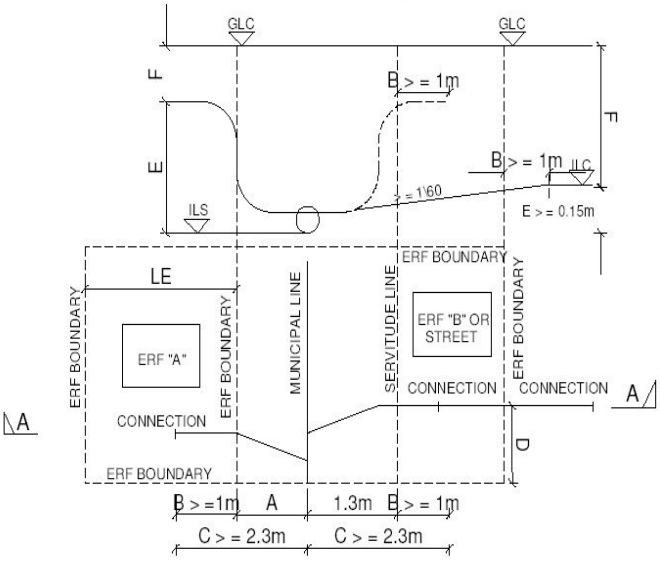
Township: ERF 2661 PARSONS VLEI Erf No. 4359

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.363 m
GLC	=	196.352 m
ILC	=	195.611 m
ILS	=	194.657 m
E(ILC-ILS)	=	0.954 m
F(GLC-ILC	=	0.741 m
MFL	=	196.363 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

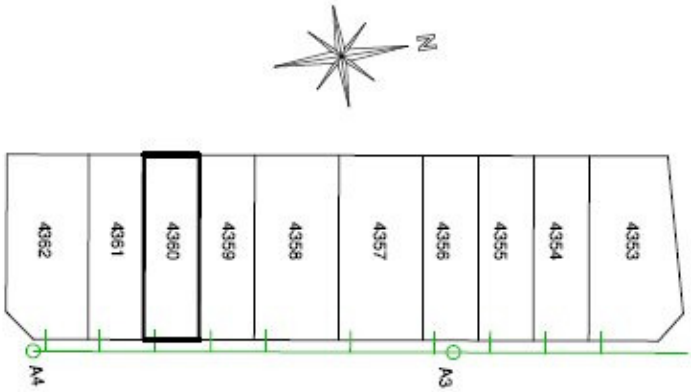
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

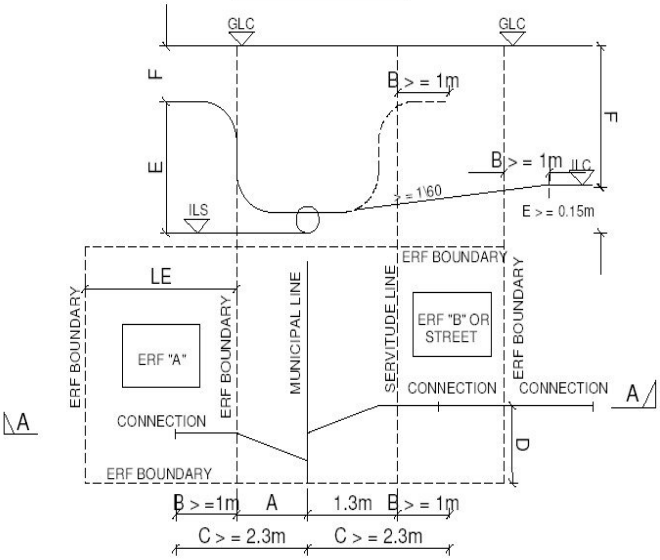
Township: ERF 2661 PARSONS VLEI Erf No. 4360

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.359 m
GLC	=	196.397 m
ILC	=	195.59 m
ILS	=	194.595 m
E(ILC-ILS)	=	0.995 m
F(GLC-ILC	=	0.807 m
MFL	=	196.359 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

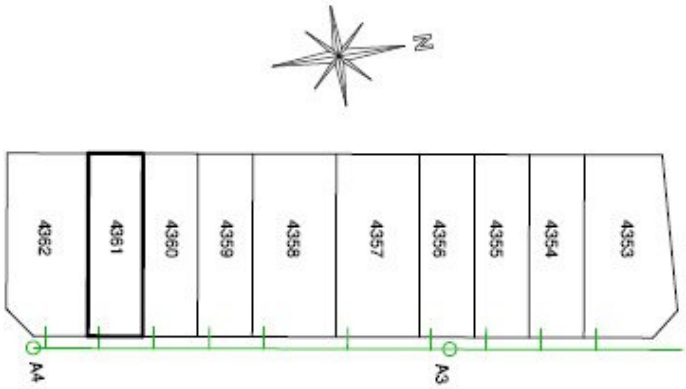
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

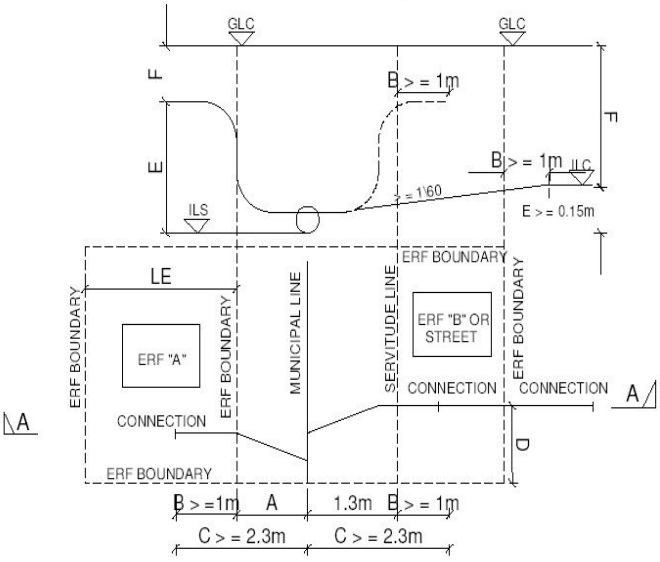
Township: ERF 2661 PARSONS VLEI Erf No. 4361

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.378 m
GLC	=	196.398 m
ILC	=	195.602 m
ILS	=	194.535 m
E(ILC-ILS)	=	1.067 m
F(GLC-ILC	=	0.796 m
MFL	=	196.378 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection
ILS = Invert level - municipal sewer
MGL =Minimum ground level on erf
GLC = Ground level of erf connection
MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES
73 Heugh Road
PO Box 13867
Humewood
Port Elizabeth, 6013
Tel/Fax: (041) 5812421

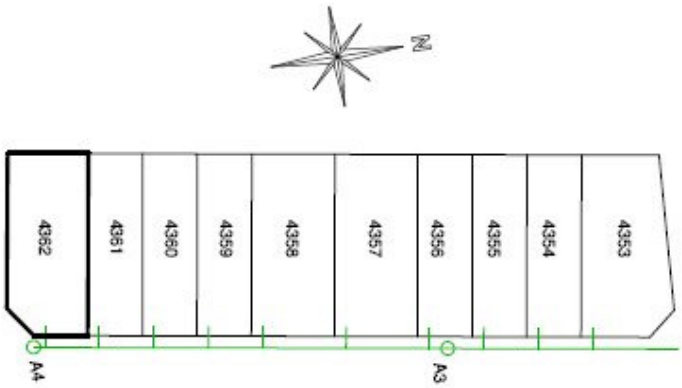
NELSON MANDELA METROPOLITAN MUNICIPALITY

INFRASTRUCTURE ENGINEERING BUSINESS UNIT

WASTEWATER CONVEYANCE SUB SILO

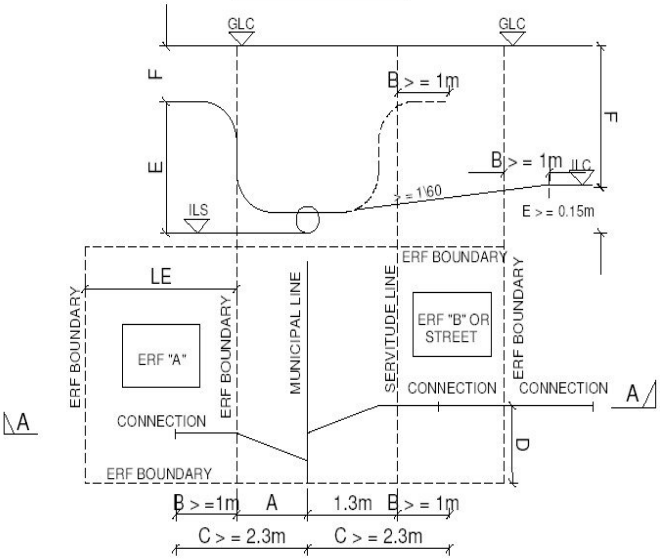
Township: ERF 2661 PARSONS VLEI Erf No. 4362

Date constructed: 23 May 2008



LAYOUT PLAN OF ERF, SEWER AND CONNECTION

SECTION A-A



TYPICAL PLAN LAYOUT

A	=	1.3 m
B	=	1 m
C	=	2.3 m
D	=	1.3 m
MGL	=	196.4 m
GLC	=	196.381 m
ILC	=	195.63 m
ILS	=	194.478 m
E(ILC-ILS)	=	1.152 m
F(GLC-ILC	=	0.751 m
MFL	=	196.4 m
LE	=	20 m
ø Mun.Sewer	=	160 m
ø Connect	=	110 m

ILC = Invert level of connection

ILS = Invert level - municipal sewer

MGL =Minimum ground level on erf

GLC = Ground level of erf connection

MFL = Minimum floor level of buildings on erf

Consulting Engineer: M. Stemmett Date: 23 May 2008

Signature of Prof. Eng. Prof. registration no: 950143

ENGINEERING ADVICE AND SERVICES

73 Heugh Road
PO Box 13867
Humewood

Port Elizabeth, 6013
Tel/Fax: (041) 5812421