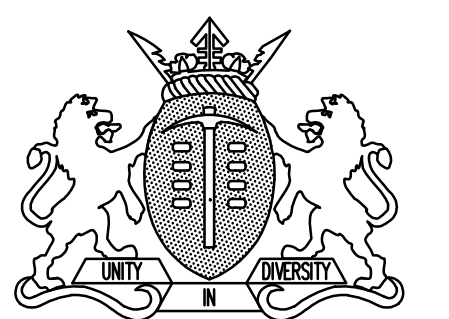
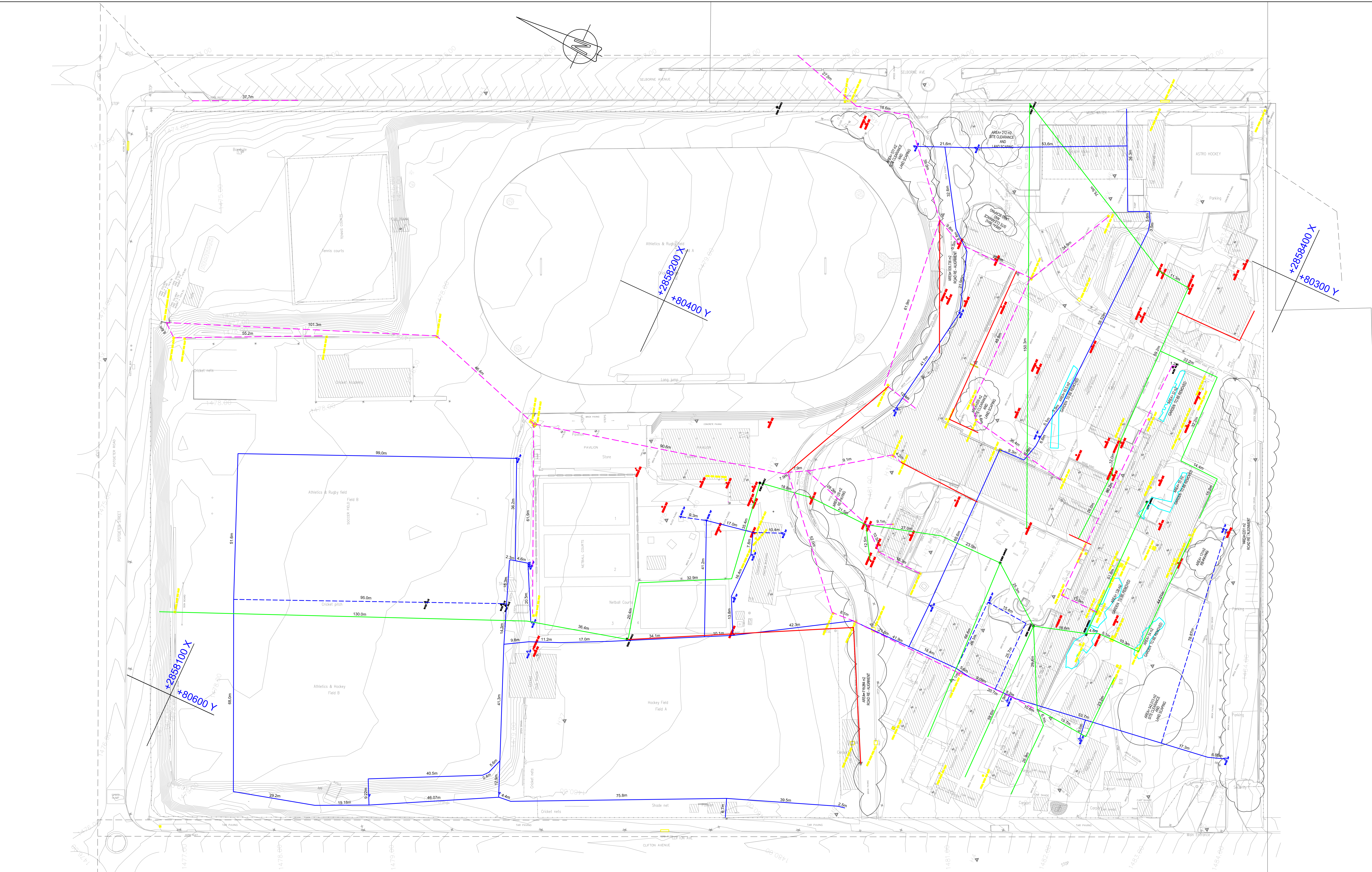




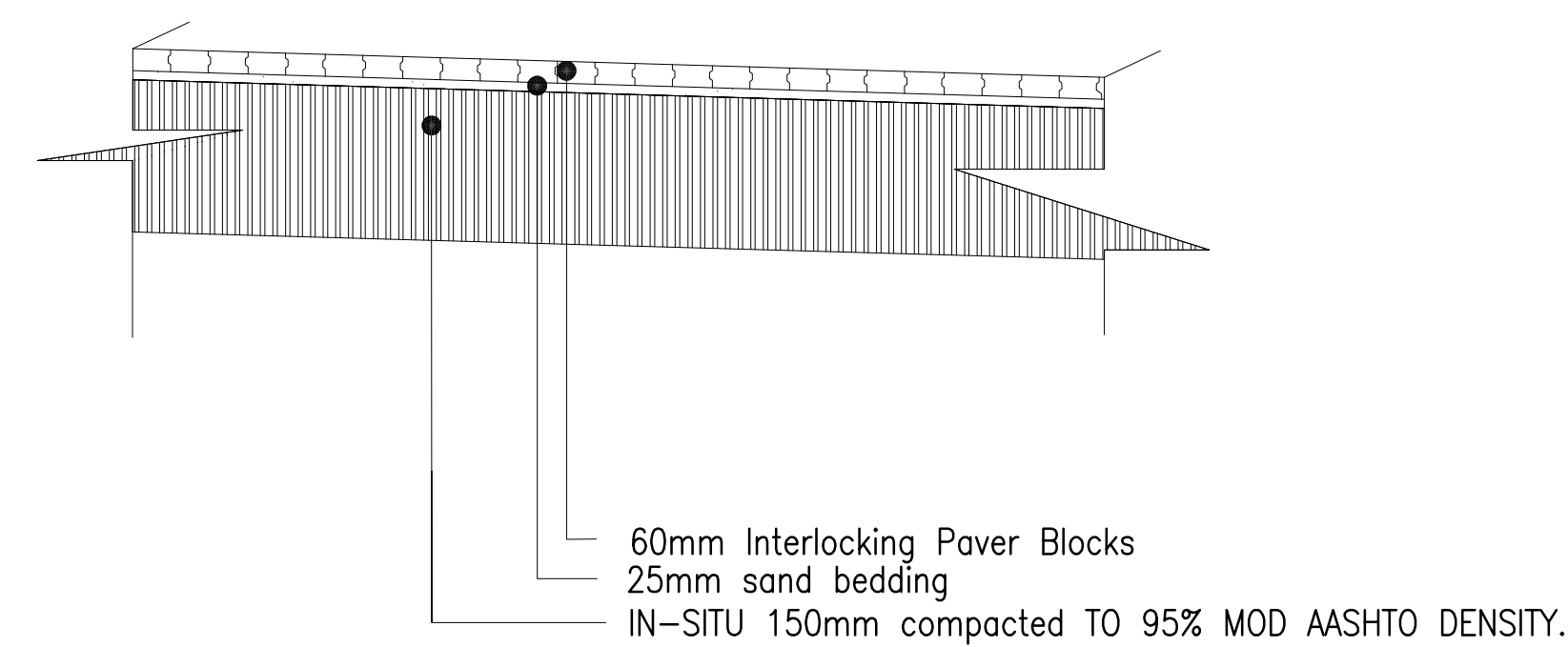
LEGEND

- PROPOSED STORMWATER NETWORK
- EXISTING STORMWATER NETWORK
- DOMESTIC WATER NETWORK
- EXISTING DOMESTIC WATER NETWORK
- IRRIGATION SYSTEM
- PROPOSED SEWER NETWORK
- EXISTING SEWER NETWORK
- PROPOSED APRON

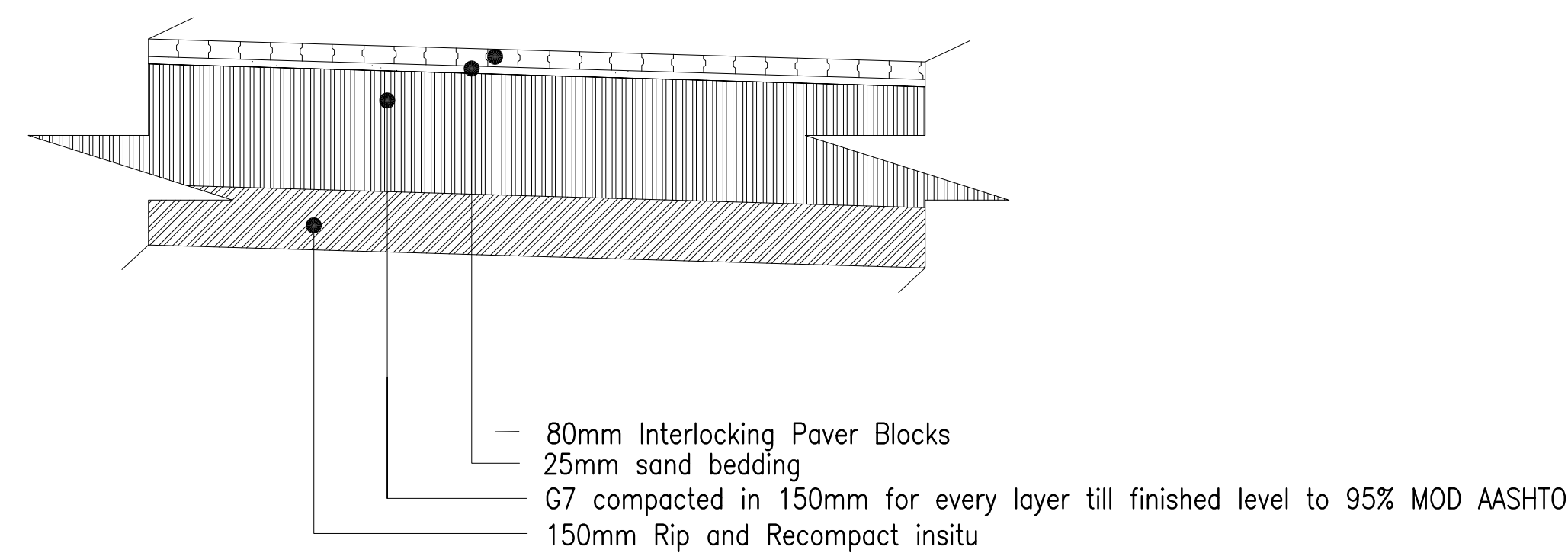
TO: 08/2021		ISSUED FOR TENDER	
REVISION No: 1		DATE: 08/2021	
DESCRIPTION: 1		DESCRIPTION: 1	
REVISIONS			
SIZE ON ORIGINAL DRAWING 100 mm			
			
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT			
PROJECT: HOERSKOOLOO CENTURION PHASE B			
SUBJECT: UPGRADES AND ADDITIONS			
CONTRACT: SECTION 1			
DISCIPLINE: PROJECT STAGE			
CIVIL 4			
WORK DESCRIPTION: SUB-DIVISION			
UNDERGROUND SERVICES			
DRAWING DESCRIPTION: GENERAL LAYOUT PLAN			
FILE No:	DESIGN	SCALE	DATE
589-S2-ST-C-200	1:500	08/2021	J. SIBANDA
DESIGNER	CHECKED	DATE	NAME
J. SIBANDA	J. SIBANDA	08/2021	J. SIBANDA
RESPONSIBLE PROFESSIONAL			
CONSULTANT: PMPLUS			
CONTRACTOR:			
SCALE	DATE	NAME	DATE
A1	08/2021	J. SIBANDA	08/2021



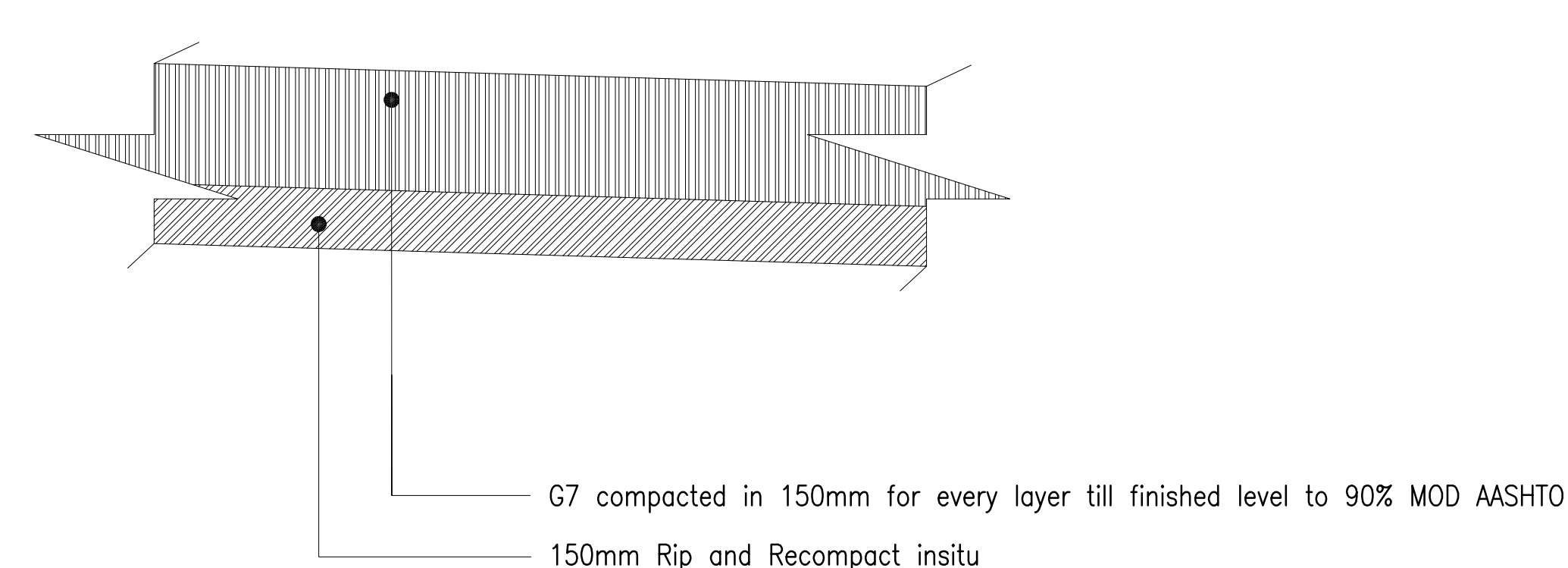
- NOTES**
THE THICKNESS OF ALL APRON TO BE DEMOLISHED IS 75mm
- LEGEND**
- SEWER LINE TO BE DEMOLISHED
 - WATER LINE TO BE DEMOLISHED
 - EXISTING HDPE WATER PIPES
 - STORMWATER LINE TO BE DEMOLISHED
 - APRON TO BE RECONSTRUCTED
 - GARDEN TO BE REMOVED
- EXISTING PIPES**
- EXISTING WATER PIPES = 1300m
 - EXISTING SEWER PIPES = 1452m
 - EXISTING STORMWATER PIPES = 1193m



TYPICAL X-SECTION OF ROAD RE-ALIGNMENT
N.T.S



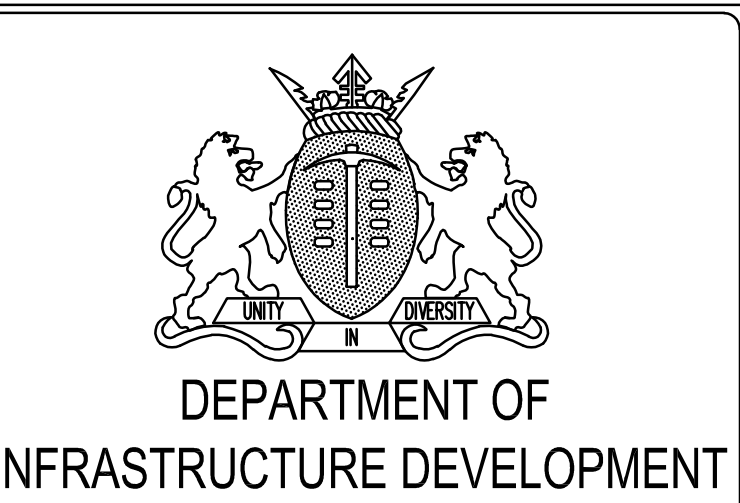
TYPICAL X-SECTION OF BACKFILLING AND LANDSCAPING AREAS
N.T.S



TYPICAL X-SECTION OF BACKFILLING AND LANDSCAPING AREAS
N.T.S

TD	08/2021	ISSUED FOR TENDER	DESCRIPTION:
REVISION NO:	DATE:		
REVISIONS			
SIZE ON ORIGINAL DRAWING 100 mm			
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT			
PROJECT: HERRISWOOD CENTURION PHASE B			
SERVICE: UPGRADES AND ADDITIONS			
CONTRACT: SECTION			
DISCIPLINE: CIVIL		PROJECT STAGE: 4	
WORK DESCRIPTION: SUB DIVISION			
UNDERGROUND SERVICES			
PROPOSED SERVICES TO BE SHOWN: ROAD RE-ALIGNMENT, BACKFILLING AND PAVING LAYOUT PLAN			
FILE NO:	J.5040	ITEM NO:	
DESIGN:	J.5040	DRAWN:	J.5040
SCALE:	1:100	CHECKED:	
DATE:	08/2021	RESPONSIBLE PROFESSIONAL:	DATE: 20/10/2021
DRAWING CO-ORDINATOR:			
CONSULTANT: PMPLUS			
CONTRACTOR:			
CAD: J.5040	APP/LOC:	FILE NAME:	
AGE:	DRAWING NUMBER:	REV:	
A0	589-S2-ST-C-201	TD	

TO	01/02/21	ISSUED FOR TENDER
REVISION No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		

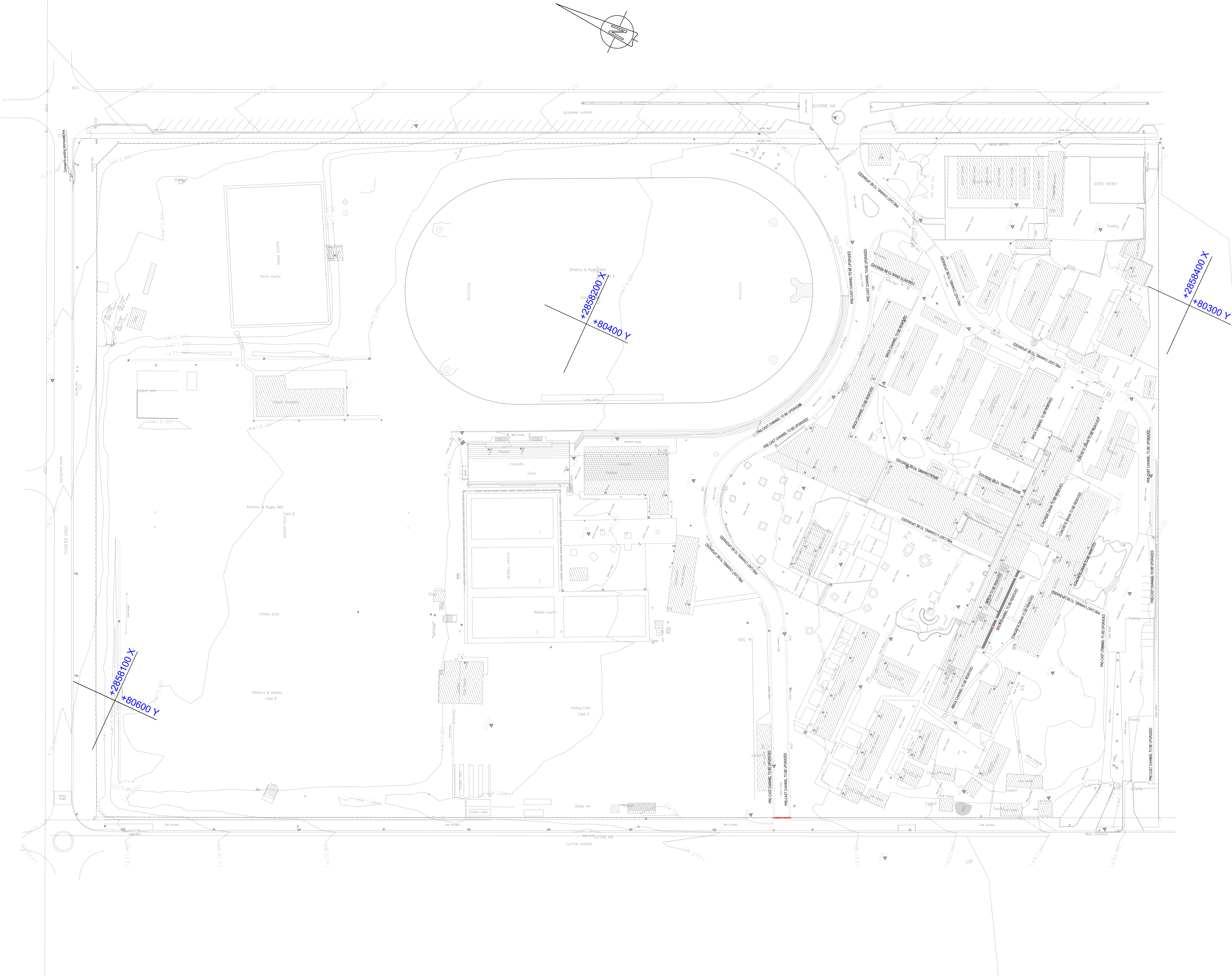


INSTITUTION	WIDERSKOL CENTURION PHASE B
SERVICE	UPGRADES AND ADDITIONS
CONTRACT SECTION	
DISCIPLINE	PROJECT STAGE
CIVIL	
WORK DESCRIPTION - SUB-DIVISION	
UNDERGROUND SERVICES	
DRAWING DESCRIPTION	PROPOSED STORM WATER CHANNEL TO BE UPGRADED

FILE No.	SCALE	DESIGN	SCALE	FILE NAME
06/2021	1:500	J.S.BANER	1:500	589-S2-ST-C-202
DATE	FILE	DESIGNER	CHECKED	DATE
06/2021	J.S.BANER	J.S.BANER	J.S.BANER	20/07/2021
DRAWING CO-ORDINATES				



CONSULTANT	CONTRACTOR
DATE	DATE
06/2021	06/2021
FILE	FILE
589-S2-ST-C-202	589-S2-ST-C-202
TD	TD





LEGEND



- ### LEGEND

PROPOSED SEWER LINE

PROPOSED MCP

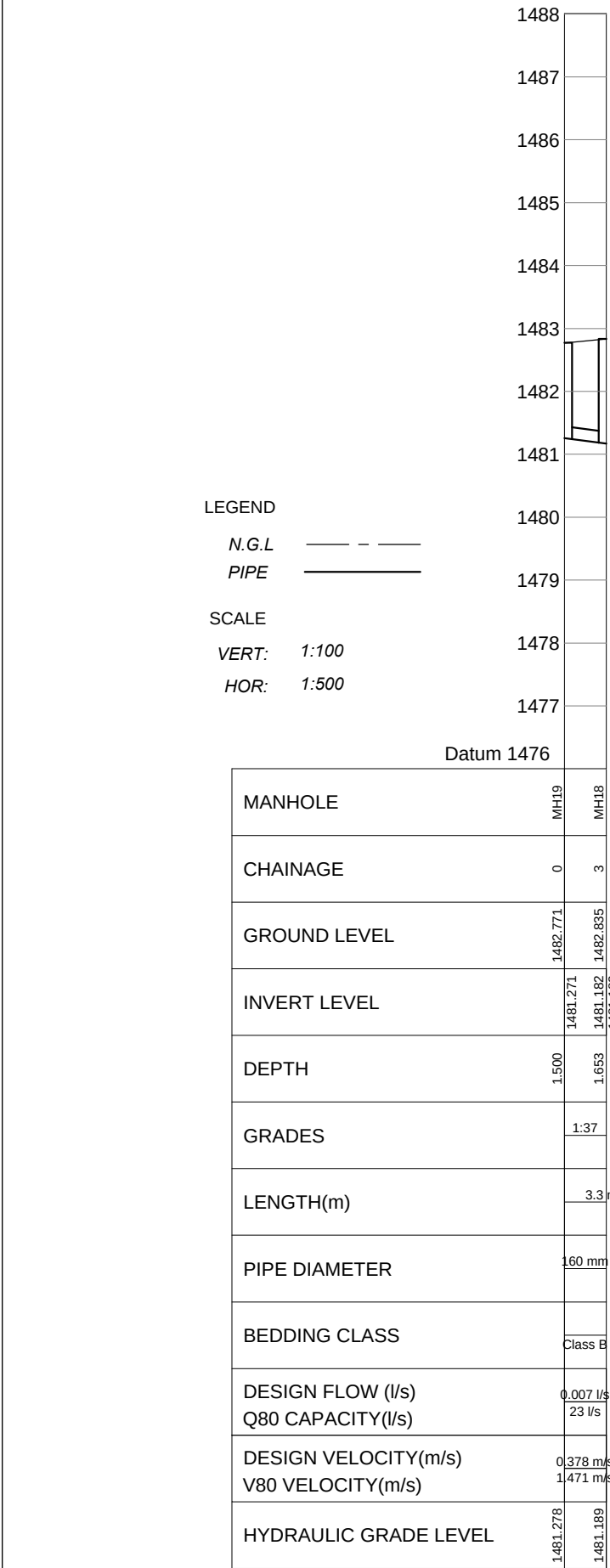
PROPOSED MANHOLE

EXISTING SEWER LINE

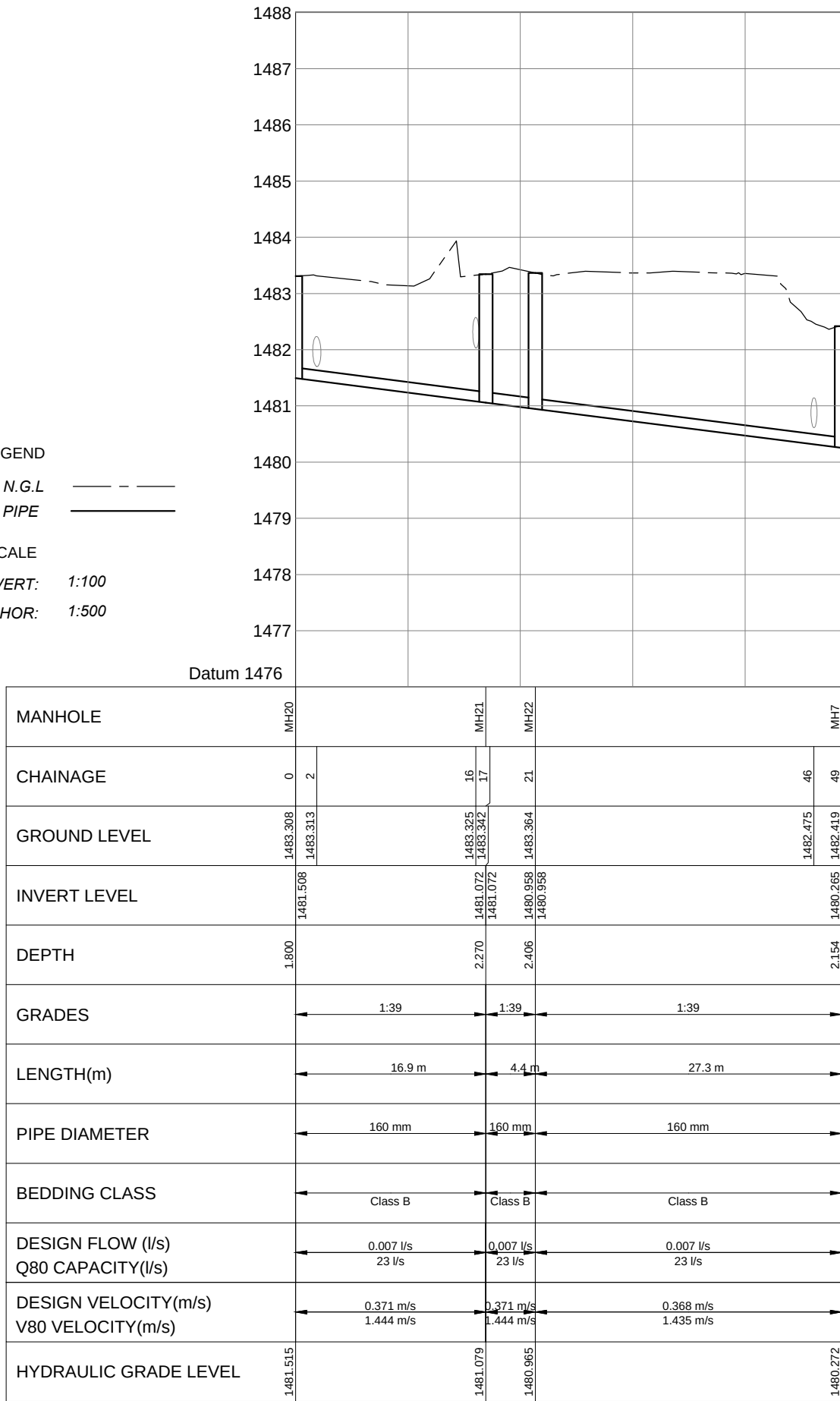
Sewer Schedule

Name	Y-Coord	X-Coord
MH1	80394955	28583640.20
MH2	80393010	2858390.30
MH3	80374626	2858390.47
MH4	80393010	2858390.47
MH5	80393010	2858390.47
MH6	80340463	28583732.35
MH7	80340341	28583732.35
MH8	80339389	2858376.41
MH9	80339389	2858376.41
MH10	80326705	2858312.20
MH11	80323259	2858308.14
MH12	80323261	2858478.79
MH13	80323261	2858478.79
MH14	80335575	2858408.21
MH15	80335575	2858408.21
MH16	80334726	2858390.47
MH17	80334726	2858390.47
MH18	80350520	2858372.35
MH19	80350520	2858372.35
MH20	80331505	2858390.47
MH21	80308653	2858437.30
MH22	80331057	2858390.47
MH23	80340341	2858376.41
MH24	80330878	2858372.58
MH25	80330878	2858372.58
MH26	80331106	2858348.24
MH27	80331106	2858348.24
MH28	80331106	2858348.24
MH29	80331106	2858348.24
MH30	80331106	2858348.24
MH31	80338630	2858341.24
MH32	80331106	2858348.24
MH33	80455022	2858383.873
MH34	80455022	2858383.873
MH35	80455022	2858383.873
MH36	80455022	2858383.873
MH37	80455022	2858383.873
MH38	80455022	2858383.873
MH39	80455022	2858383.873
MH40	80455022	2858383.873
MH41	80455022	2858383.873
MH42	80441793	2858275.36
MH43	80441793	2858275.36
MH44	80441793	2858275.36
MH45	80441793	2858275.36
MH46	80441793	2858275.36
MH47	80441793	2858275.36
MH48	80441793	2858275.36
MH49	80441793	2858275.36
MH50	80441793	2858275.36
MH51	80441793	2858275.36
MH52	80441793	2858275.36
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MH66	80441793	2858275.36
MH67	80441793	2858275.36
MH68	80441793	2858275.36
MH69	80441793	2858275.36
MH70	80441793	2858275.36
MH71	80441793	2858275.36
MH72	80441793	2858275.36
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MH95	80441793	2858275.36
MH96	80441793	2858275.36
MH97	80441793	2858275.36
MH98	80441793	2858275.36
MH99	80441793	2858275.

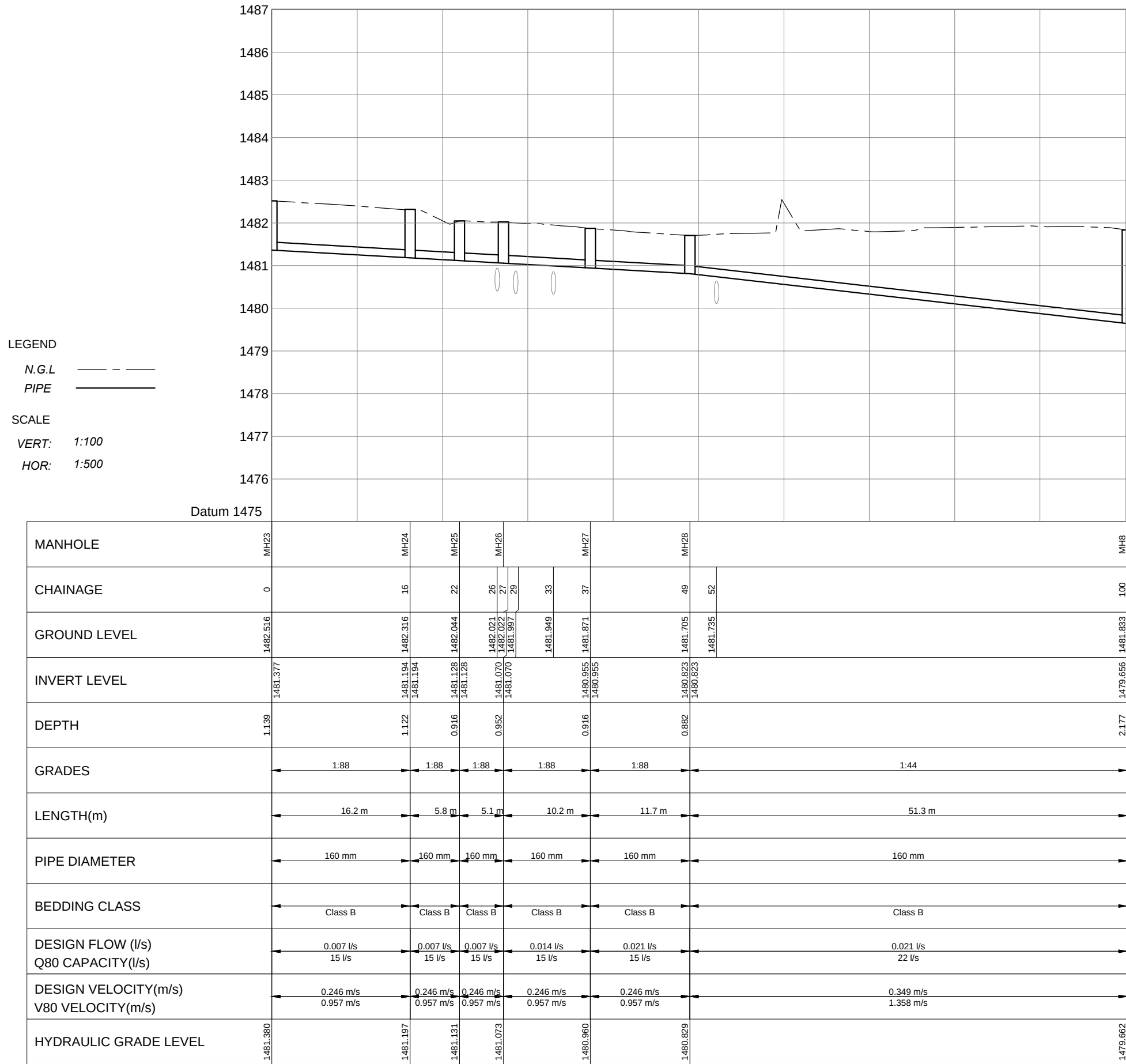
REVISION NO. TD 09/2021		ISSUED FOR TENDER	
DATE.		DESCRIPTION:	
REVISONS			
SIZE ON ORIGINAL DRAWING 100 mm			
			
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT			
INSTITUTION			
HOODSKOL. CENTURUM PHASE B			
REVISION			
(UPGRADES AND MODIFICATIONS)			
CONTRACT / SECTION			
DISCIPLINE			
			MODIFYING STAGE
OPIH			4
WORK DESCRIPTION / SUB-DESCRIPTION			
UNDERGROUND SERVICES			
DRAWING DESCRIPTION			
PROPOSED SEWER LAYOUT			
FILE NO.			ITEM NO.
DESIGN SCALE	J. ŠONĐ	F. AMIRKURBANVIĆ	DRAWING CHECKED
DATE	NAME	SIGNATURE	SR. INCHES
09/2021	J. ŠIBANIĆ		2013/0115
DRAWING CO-ORDINATED			
CONSULTANT:			
			
PMPLUS d.o.o. BEOGRAD, BEOGRADSKA CESTA 111 11000 BEOGRAD, SERBIA TEL: +381 11 266 60 60 FAX: +381 11 266 60 61 E-MAIL: info@pmplus.rs www.pmplus.rs			
CONTRACTOR:			
COORD. SYSTEM	AUTOCAD		FILE NAME
A0	DRAWING NUMBER		REV.
589-S2-ST-G-203			



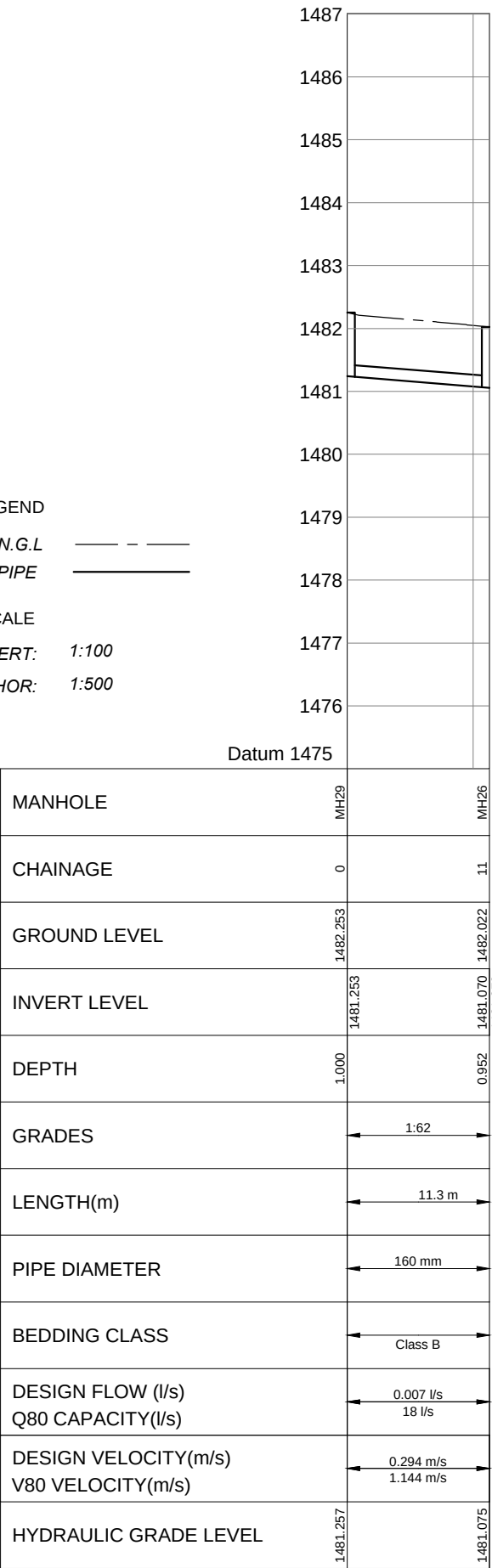
Manhole MH19 to MH18



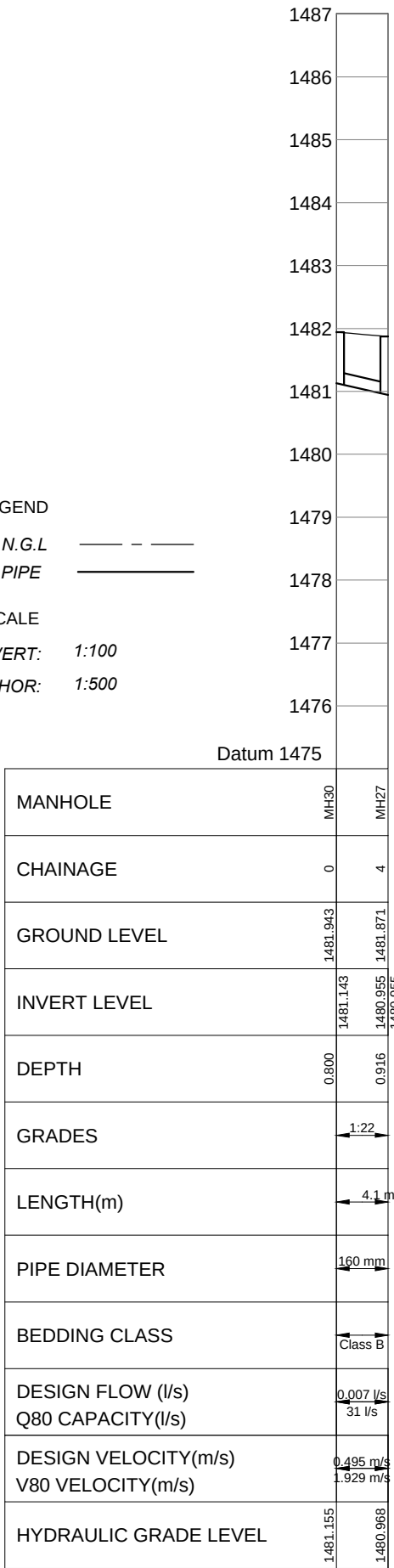
Manhole MH20 to MH7



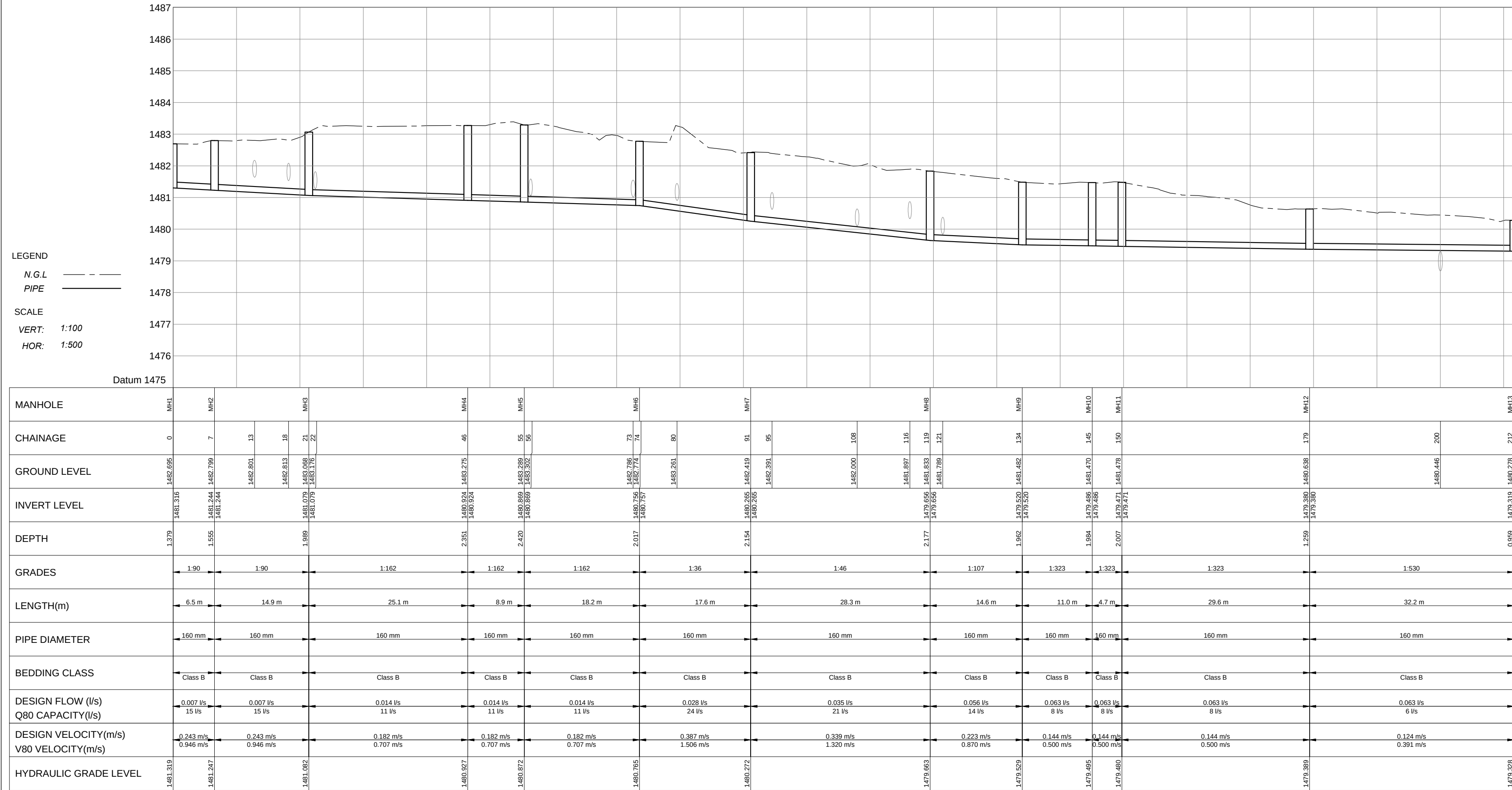
Manhole MH23 to MH8



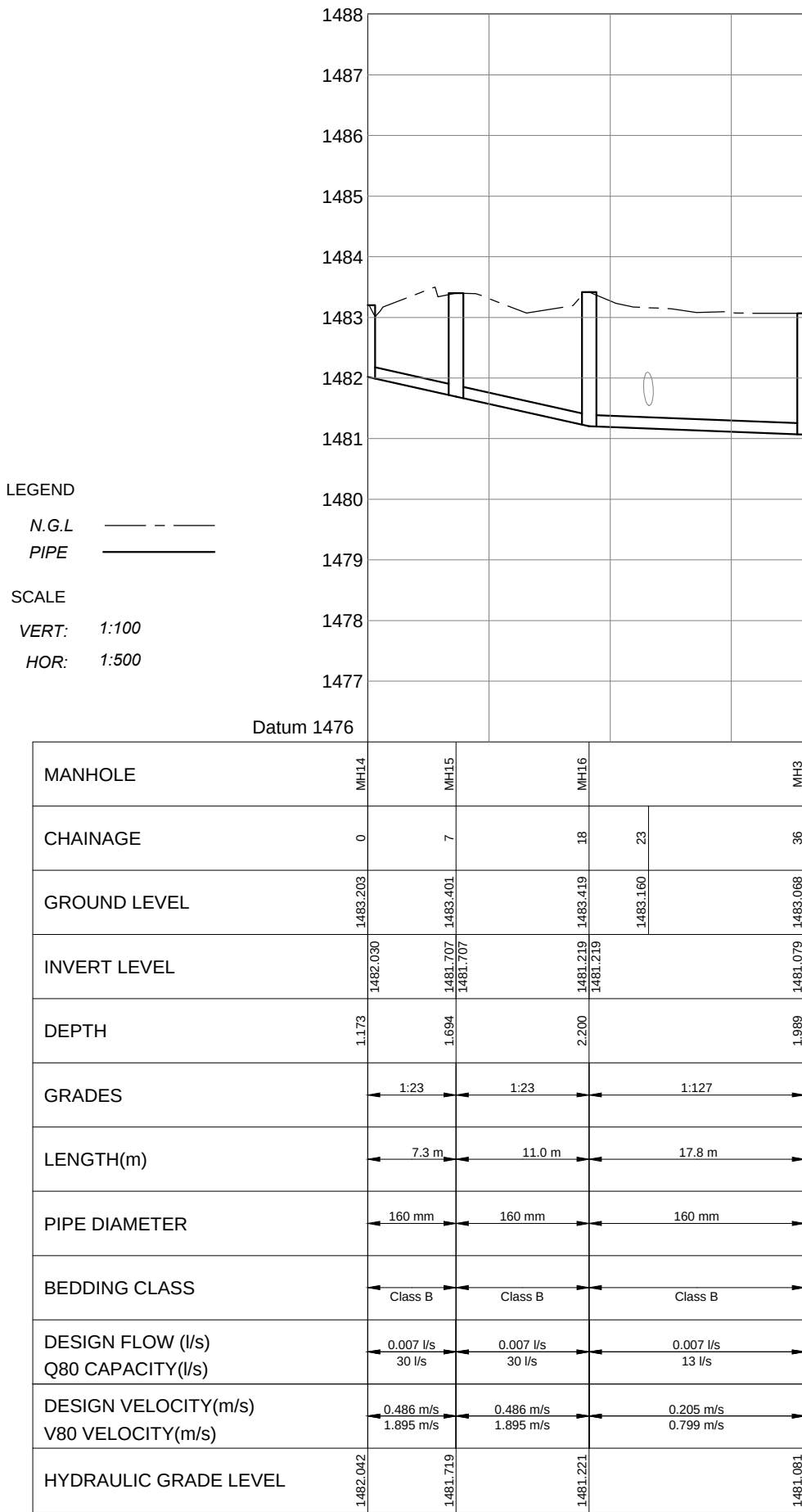
Manhole MH29 to MH26



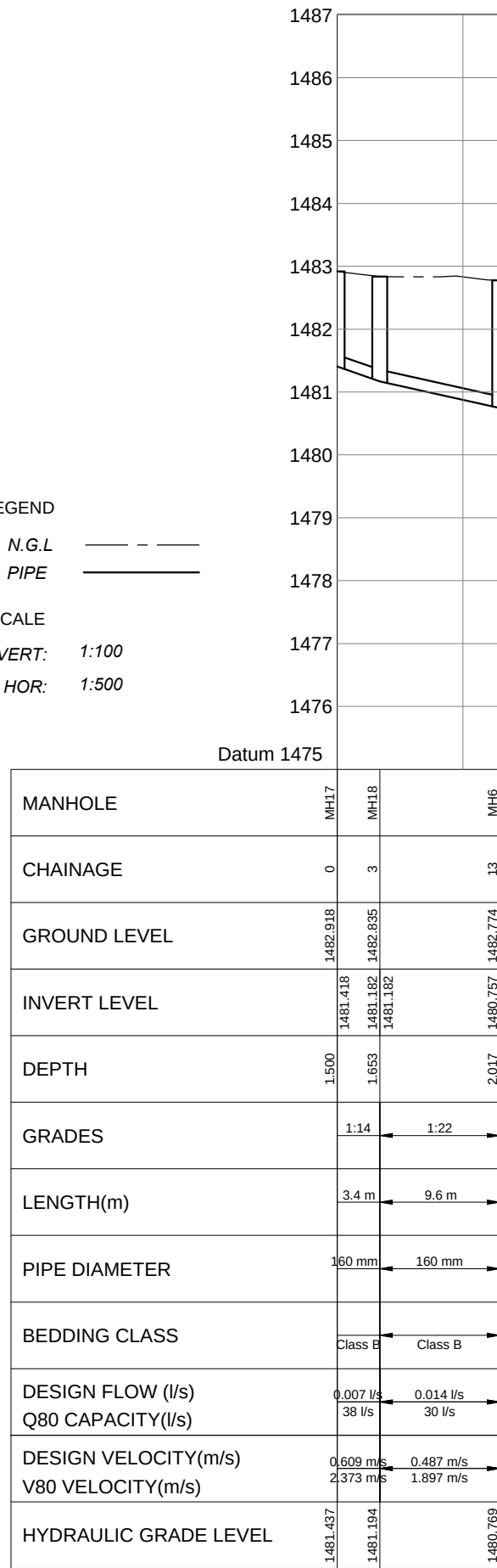
Manhole MH30 to MH27



Manhole MH1 to MH13

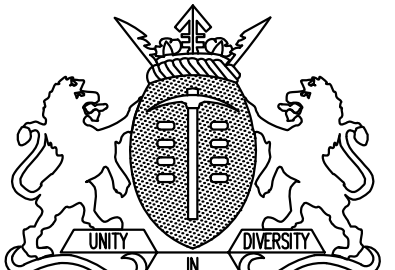


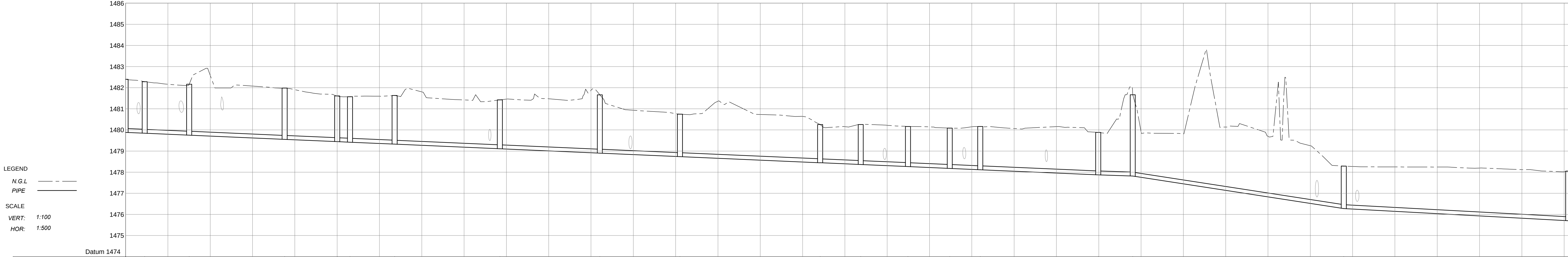
Manhole MH14 to MH3



Manhole MH17 to MH6

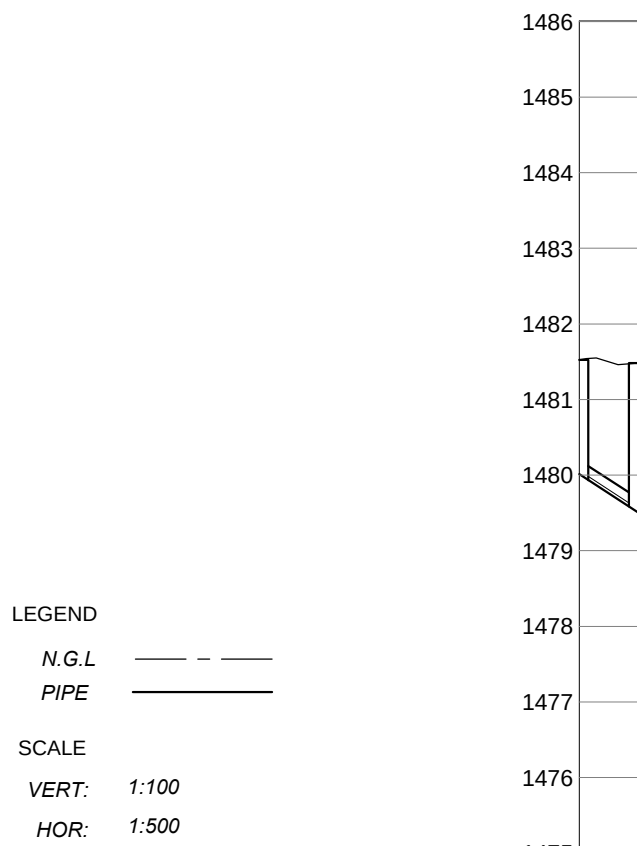
NOTES:
1. ALL HDPE PIPES SHALL BE TYPE PE 100, PN 10 PIPES

TD	09/2021	ISSUED FOR TENDER
REVISION NO	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOL CENTURION PHASE B		
SERVICE		
HOERSKOOL CENTURION PHASE B		
CONTRACT - SECTION		
CIVIL ENGINEERING SERVICES		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
SEWER LONG SECTION SHEET 1 OF 3		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	S. DUKE	DRAWN
SCALE	AS SHOWN	CHECKED
RESPONSIBLE PROFESSIONAL		
DATE	NAME	SIGNATURE
09/2021	J. SIBANDA	
PR NUMBER		
201370155		
DRAWING CO-ORDINATED		
CONSULTANT		
		
BULLENDI 1, 2 BALUBANA STREET CENTURION GDR		
P.O. BOX 8576 MIDRAND, 1685 TEL +27 12 666 1000 Fax +27 12 666 0908 E-Mail: admin@pmplus.co.za		
CONTRACTOR		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-205	TD



MANHOLE	MH32	MH33	MH34	MH35	MH36	MH37	MH38	MH39	MH40	MH41	MH42	MH43	MH44	MH45	MH46	MH47	MH48	MH49	MH50
CHAINAGE	0	3	5	13	15	23	38	88	88	112	112	174	174	185	185	230	230	291	341
GROUND LEVEL	1482.396	1482.339	1482.283	1482.115	1482.105	1481.986	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962	1481.962
INVERT LEVEL	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886
DEPTH	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
GRADES	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:114	1:149	1:149	1:149	1:149
LENGTH(m)	4.5	10.5	22.6	12.4	3.0	10.5	24.9	23.6	18.9	33.1	9.6	11.2	9.9	7.2	27.9	9.2	49.8	53.1	53.1
PIPE DIAMETER	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
BEDDING CLASS	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s	0.007 l/s 13 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s
HYDRAULIC GRADE LEVEL	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886	1479.886

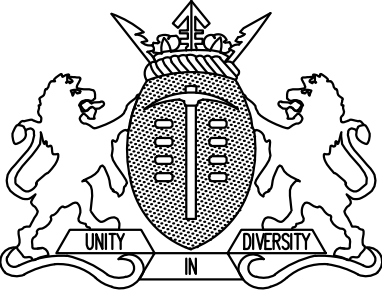
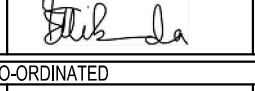
Manhole MH32 to MH50



MANHOLE	MH31	MH9
CHAINAGE	0	4
GROUND LEVEL	1480.024	1480.024
INVERT LEVEL	1478.024	1478.024
DEPTH	2.000	2.000
GRADES	1:8	1:8
LENGTH(m)	3.9	3.9
PIPE DIAMETER	160 mm	160 mm
BEDDING CLASS	Class B	Class B
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	0.007 l/s 51 l/s	0.007 l/s 51 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	0.216 m/s 0.842 m/s	0.216 m/s 0.842 m/s
HYDRAULIC GRADE LEVEL	1478.024	1478.024

Manhole MH31 to MH9

NOTES:
1. ALL HDPE PIPES SHALL BE TYPE PE 100, PN 10 PIPES

TO	09/2021	ISSUED FOR TENDER	
REVISION No	DATE :	DESCRIPTION:	
REVISIONS			
SIZE ON ORIGINAL DRAWING 100 mm			
			
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT			
INSTITUTION			
HOERSKOOL CENTURION PHASE B			
SERVICE			
HOERSKOOL CENTURION PHASE B			
CONTRACT - SECTION			
CIVIL ENGINEERING SERVICES			
DISCIPLINE		PROJECT STAGE	
CIVIL		4	
WORK DESCRIPTION - SUB DIVISION			
DRAWING DESCRIPTION			
SEWER LONG SECTION SHEET 2 OF 3			
FILE No.	J. SIBANDA	S. DUBE	ITEM No.
DESIGN	J. SIBANDA	S. DUBE	DRAWN
SCALE	AS SHOWN	J. SIBANDA	CHECKED
RESPONSIBLE PROFESSIONAL			
DATE	NAME	SIGNATURE	PR NUMBER
09/2021	J. SIBANDA		201370155
DRAWING CO-ORDINATED			
CONSULTANT :			
			
PROJECT'S STRATEGY CONSULTANTS			
BUILDING 1, 5 BALHARA STREET CENTURION OFFICE PARK CENTURION 0081			
P.O. BOX 8076 MEDUNGANI, 1685 Tel: +27 12 656 1000 Fax: +27 12 656 0900 E-Mail: info@pmplus.co.za			
CONTRACTOR :			
CADD SYSTEM	AUTOCAD	FILE NAME	REV
DRAWING NUMBER		REV	
A1		589-S2-ST-C-206	
		TD	

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500

MANHOLE	MH60	MH59
CHAINAGE	0	20
GROUND LEVEL	1480.090	1480.796
INVERT LEVEL	1479.927	1478.888
DEPTH	1.173	1.916
GRADES	1:20	
LENGTH(m)	20.2 m	
PIPE DIAMETER	160 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	0.007 l/s 32 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	0.520 m/s 2.024 m/s	
HYDRAULIC GRADE LEVEL	1479.921	1478.902

Manhole MH60 to MH59

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500

MANHOLE	MH61	MH62	MH63	MH49
CHAINAGE	0	10	22	74
GROUND LEVEL	1479.702	1479.316	1478.504	1478.287
INVERT LEVEL	1478.525	1478.143	1477.931	1476.287
DEPTH	1.173	1.173	1.173	2.000
GRADES	1:25	1:35		1:50
LENGTH(m)	9.7 m	12.3 m		51.8 m
PIPE DIAMETER	160 mm	160 mm		160 mm
BEDDING CLASS	Class B	Class B		Class B
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	0.007 l/s 28 l/s	0.007 l/s 37 l/s		0.007 l/s 20 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	0.461 m/s 1.784 m/s	0.595 m/s 2.317 m/s		0.328 m/s 1.277 m/s
HYDRAULIC GRADE LEVEL	1478.540	1478.161	1477.936	1476.292

Manhole MH61 to MH49

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500

MANHOLE	MH50	MH51	MH52	MH53	MH54	MH55	MH56
CHAINAGE	341	350	366	380	387	433	446
GROUND LEVEL	1475.048	1475.080	1475.033	1475.044	1475.040	1475.217	1475.130
INVERT LEVEL	1475.124	1475.045	1475.016	1475.016	1475.016	1475.217	1475.114
DEPTH	2.333	2.662	2.500	2.500	1.465	1.173	0.967
GRADES	1:93	1:93	1:24	1:96	1:96	1:203	
LENGTH(m)	46.2 m	46.2 m	69.8 m	20.6 m	20.8 m	37.5 m	
PIPE DIAMETER	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	
BEDDING CLASS	Class B	Class B	Class B	Class B	Class B	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	0.028 l/s 10 l/s	0.028 l/s 10 l/s	0.028 l/s 10 l/s	0.028 l/s 10 l/s	0.028 l/s 10 l/s	0.028 l/s 10 l/s	0.014 l/s 5 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	0.240 m/s 0.935 m/s	0.240 m/s 0.935 m/s	0.472 m/s 1.843 m/s	0.236 m/s 0.920 m/s	0.236 m/s 0.920 m/s	0.162 m/s 0.632 m/s	0.342 m/s 1.331 m/s
HYDRAULIC GRADE LEVEL	1475.719	1475.230	1475.726	1475.726	1475.980	1475.783	1475.178

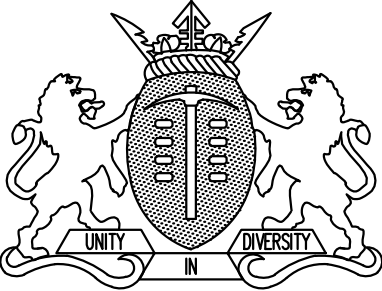
Manhole MH50 to MH56

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500

MANHOLE	MH57	MH58	MH59	MH42
CHAINAGE	0	25	28	48
GROUND LEVEL	1481.042	1480.227	1480.796	1480.295
INVERT LEVEL	1479.904	1478.907	1478.888	1478.909
DEPTH	1.500	1.765	1.878	1.796
GRADES	1:46	1:46	1:46	
LENGTH(m)	24.5 m	3.6 m	19.6 m	
PIPE DIAMETER	160 mm	160 mm	160 mm	
BEDDING CLASS	Class B	Class B	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	0.007 l/s 23 l/s	0.007 l/s 23 l/s	0.014 l/s 23 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	0.342 m/s 1.331 m/s	0.342 m/s 1.331 m/s	0.342 m/s 1.331 m/s	
HYDRAULIC GRADE LEVEL	1479.910	1478.973	1478.894	1478.465

Manhole MH57 to MH42

NOTES:
1. ALL HDPE PIPES SHALL BE TYPE PE 100, PN 10 PIPES

TO	09/2021	ISSUED FOR TENDER
REVISION No	DATE :	DESCRIPTION:
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
INSTITUTION		
HOERSKOOL CENTURION PHASE B		
SERVICE		
HOERSKOOL CENTURION PHASE B		
CONTRACT - SECTION		
CIVIL ENGINEERING SERVICES		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
SEWER LONG SECTION SHEET 3 OF 3		
FILE No.	DESIGN	ITEM No.
J. SIBANDA	S. DUBE	
SCALE	AS SHOWN	PR NUMBER
09/2021	J. SIBANDA	201370155
RESPONSIBLE PROFESSIONAL		
DATE	NAME	SIGNATURE
09/2021	J. SIBANDA	
DRAWING CO-ORDINATED		
CONSULTANT :		
		
BUILDING 1, 5 BALHARNA STREET CLAREMONT OFFICE PARK CENTURION 0041		
P.O. BOX 8076 MEDUNGANI, 1685 Tel: +27 12 666 1000 Fax: +27 12 666 0900 E-Mail: admin@pmplus.co.za		
CONTRACTOR :		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-207	TD

PAVING AND WALKWAYS

DRIVEWAYS

EXISTING TRENCH

COMPACTION 95% MOD AASHTO (LAST 150mm)

COMPACTED SELECTED BACKFILL: COMPACTION TO 93% MOD ASSHTO. MATERIAL TO SANS1200 DB / SANS 1200 DB 3.5. (MAXIMUM AGGREGATE SIZE TO BE(63mm))

REMOVE EXISTING FILL BLANKET AND REPLACE WITH 1:8 SOILCRETE IF SO REQUIRED BY ENGINEER

EXISTING COMPACTED SELECTED BEDDING

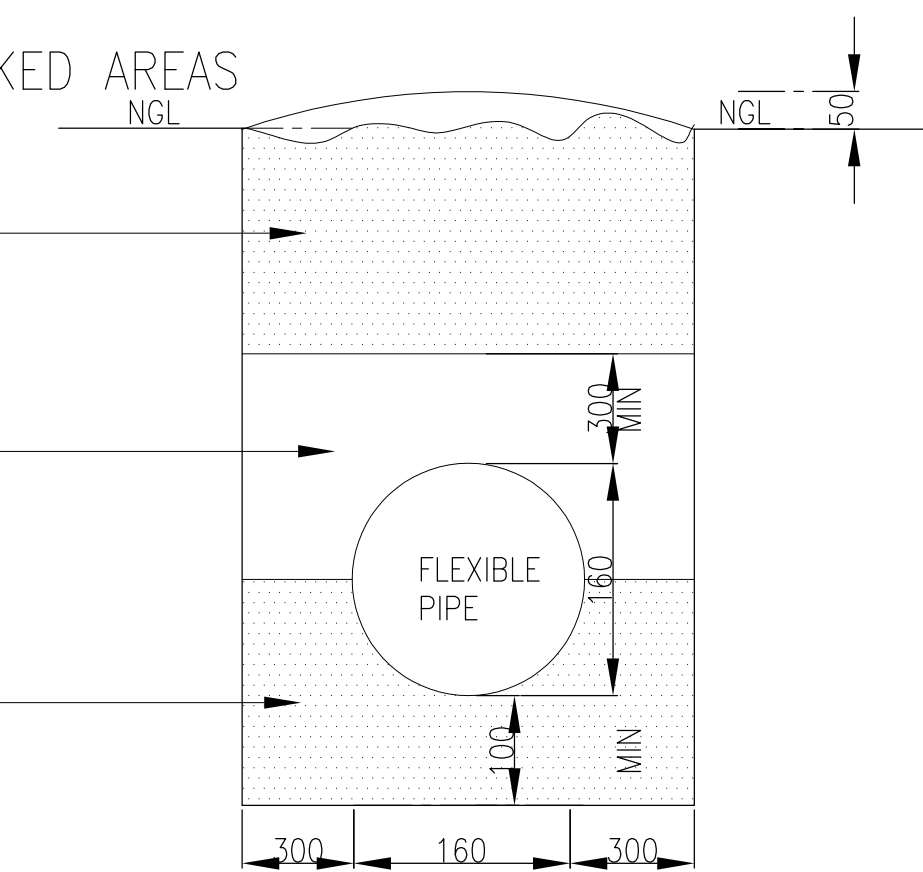
TO ENGINEER SPECIFICATION

EXISTING PIPE

300 D 300

COMPACTED SELECTED BACKFILL:
COMPACTION TO 93% MOD AASHTO.
MATERIAL TO SABS1200 DB/ _____
SANS 1200 DB 3.5
(MAXIMUM AGGREGATE SIZE TO BE 63mm)

COMPACTED SELECTED BEDDING:
COMPACTION TO 93% MOD AASHTO.
MATERIAL TO SABS1200 DB/ _____
SANS 1200 DB 2.3
(MAXIMUM AGGREGATE SIZE TO BE 6mm)



N.T.S

1200mm Ø PRECAST CONCRETE
ROOF SLAB (HEAVY DUTY) WITH:
1. TYPE 1A (SABS 558/ SANS 558) COVER AND
FRAME FOR ROADS OR/
2. HEAVY DUTY C.I. TYPE 4 (SABS 558/SANS 55)
MANHOLE COVER AND FRAME WITH ONE
ADAPTOR SLAB FOR PAVED OR OPEN AREAS

CUT 200mm ϕ HOLE IN SIDE AND
FILL AREA BELOW BENCHING WITH
10 MPa / 13mm CONCRETE

Technical drawing of a manhole detail, showing cross-section and plan views with dimensions and material specifications.

Dimensions:

- Overall width: 1372
- Overall height: 500
- Top flange width: 186 (each side)
- Internal width: 1000
- Internal height: 300
- Bottom flange width: 250 (each side)
- Internal diameter: 1000
- Bottom flange height: 250

Materials and Components:

- PAVING SURFACE
- COVER AND FRAME
- ADAPTOR SLAB
- COVERSLAB
- 15MPa/3mm CONCRETE
- POLYSULPHIDE SEAL OR BEDDED ON CEMENT SLURRY
- 300mm CONCRETE (25 MPa/19mm) RIM TO FORM MECHANICAL KEY WITH PIPE
- JUNCTION OF CONCRETE RING BEAM TO PIPE AS PER DETAIL TYPE DT 12/W
- MIN 8kN/m² MIN HDPE PIPE SHAFT
- PREMANUFACTURED HDPE BENCHING
- MAX SLOPE 1:4
- FACTORY FITTED HDPE BENCHING ALL SURFACE FINISHED SMOOTH

Notes:

- VARIABLE (referring to the height of the premanufactured HDPE benching)

N.T.S

[illegible]

CADASTRAL			
System = WGS 29°			
Name	Y	X	Description
D	80642.08	285811.86	12mm Iron Peg (Placed)
C	80422.56	2858010.62	Round Iron Fence Post (Found)
B	80412.14	2858014.46	Corner Palisade wall (Found)
F	80250.54	2858364.49	Square Iron Tube (Found)
E	80477.19	2858469.20	Corner Wall (Found)

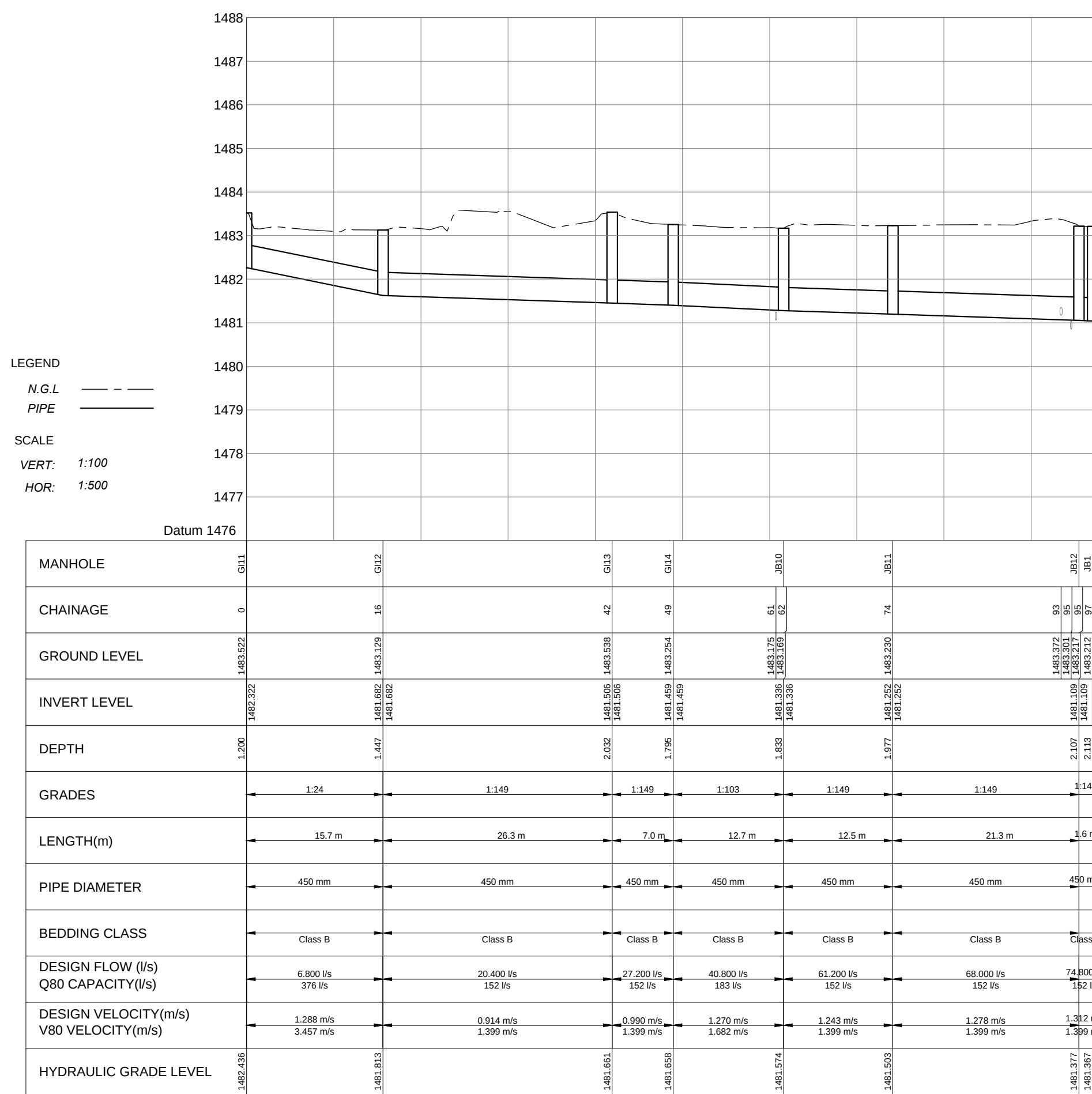
Stormwater Schedule			Stormwater Schedule		
Name	Y-Coord	X-Coord	Name	Y-Coord	X-Coord
GH1	80343.938	2858446.334	JB14	80392.364	2858346.786
GH2	80401.756	2858451.701	GH34	80377.321	2858343.582
GH3	80377.610	2858421.569	JB21	80383.624	2858346.770
GH4	80354.989	2858411.459	GH35	80387.168	2858342.378
SW1	80344.521	2858406.178	JB15	80392.364	2858342.356
GH5	80339.373	2858388.167	GH36	80387.747	2858326.638
SW2	80338.274	2858396.330	JB16	80392.325	2858325.379
JB1	80338.170	2858389.514	GH37	80388.007	2858330.697
JB2	80337.896	2858371.486	JB17	80388.007	2858325.379
JB3	80337.798	2858365.109	GH38	80386.030	2858317.680
JB4	80337.841	2858355.628	JB18	80381.043	2858325.400
JB5	80337.863	2858350.772	GH39	80374.832	2858321.583
GH6	80337.926	2858337.050	JB19	80373.187	2858325.415
JB6	80334.661	2858329.124	GH40	80351.497	2858321.931
JB7	80332.499	2858323.875	JB20	80349.440	2858325.499
JB8	80320.631	2858311.614	GH41	80337.884	2858312.111
JB9	80317.950	2858308.843	JB22	80333.262	2858306.691
GH8	80311.682	2858290.444	JB23	80303.644	2858302.365
GH9	80304.871	2858270.449	GH42	80303.884	2858346.270
GH10	80307.262	2858260.953	GH43	80301.811	2858340.277
C 1	80308.973	2858232.898	JB24	80308.420	2858332.375
GH11	80415.562	2858409.167	JB25	80308.387	2858325.351
GH12	80399.911	2858405.109	GH9	80317.950	2858308.843
GH13	80373.624	2858409.221	GH44	80281.285	2858382.655
GH14	80373.618	2858402.220	SW4	80282.005	2858376.105
JB10	80373.607	2858389.546	SW5	80282.871	2858363.045
JB11	80361.083	2858385.630	JB21	80337.884	2858302.351
JB12	80339.734	2858389.515	GH45	80337.355	2858373.886
JB1	80338.170	2858389.514	SW6	80324.244	2858370.788
GH15	80402.474	2858405.052	JB26	80317.720	2858370.819
GH16	80399.911	2858405.109	JB27	80305.700	2858370.877
GH16	80379.325	2858405.197	JB22	80303.262	2858366.691
GH14	80373.618	2858402.220	GH46	80319.980	2858367.682
GH17	80384.544	2858370.546	JB28	80317.720	2858370.819
SW3	80382.652	2858389.546	GH47	80308.437	2858373.983
JB13	80377.825	2858389.546	JB27	80305.700	2858370.877
JB10	80373.607	2858389.546	GH48	80310.887	2858367.692
GH18	80377.820	2858381.448	JB23	80303.644	2858302.365
JB13	80377.825	2858389.546	GH49	80310.611	2858355.014
GH19	80379.846	2858385.446	JB24	80308.420	2858332.375
JB13	80377.825	2858389.546	GH50	80310.583	2858326.240
GH20	80382.351	2858387.287	JB25	80308.387	2858325.351
JB11	80361.083	2858389.530	GH51	80321.455	2858310.675
GH21	80339.773	2858390.317	JB8	80320.631	2858311.614
JB12	80339.734	2858389.515	GH52	80347.838	2858309.113
GH22	80327.424	2858391.855	SW7	80340.178	2858308.204
JB1	80338.170	2858389.514	GH53	80340.238	2858288.580
GH23	80344.640	2858374.328	GH54	80337.284	2858279.845
JB2	80337.896	2858371.486	GH55	80337.248	2858273.014
GH24	80344.642	2858368.532	GH10	80337.652	2858260.953
JB3	80337.798	2858365.109	GH56	80362.200	2858288.798
GH25	80335.151	2858365.825	SW8	80347.701	2858264.921
JB4	80337.841	2858355.628	GH54	80337.234	2858278.843
GH26	80335.178	2858351.478	GH57	80326.548	2858284.228
JB5	80337.863	2858350.772	GH55	80327.588	2858273.014
GH27	80341.110	2858353.281	GH78	80433.311	2858404.387
JB5	80337.863	2858350.772	SW19	80446.485	2858401.600
GH28	80347.976	2858343.603	SW20	80446.481	2858391.163
GH29	80347.941	2858341.463	JB30	80446.459	2858389.281
GH	80337.926	2858337.050	JB31	80446.404	2858384.870
GH30	80334.240	2858340.456	JB32	80443.785	2858384.840
GH	80337.926	2858337.050	GH58	80488.136	2858384.624
GH31	80347.073	2858330.424	JB33	80478.682	2858384.795
JB6	80334.661	2858330.124	JB34	80478.400	2858384.798
GH32	80390.425	2858352.129	JB35	80478.162	2858370.055
JB14	80392.364	2858346.786	JB36	80477.558	2858368.608
GH15	80399.911	2858346.356	JB37	80477.558	2858355.728
JB16	80392.325	2858325.379	JB38	80477.558	2858351.787
JB17	80388.007	2858325.379	GH59	80478.467	2858348.620
JB18	80381.043	2858325.400	GH60	80484.434	2858348.847
JB19	80373.187	2858325.415	GH61	80485.646	2858348.963
JB20	80349.440	2858325.499	JB40	80453.387	2858349.176
JB7	80332.499	2858323.875	GH62	80445.935	2858320.223
GH33	80380.070	2858363.763	SW9	80446.688	2858314.436
JB21	80383.624	2858346.770	GH63	80402.077	2858308.943
			GH64	80453.786	2858277.286
			GH65	80450.969	2858272.025

Stormwater Schedule			Stormwater Schedule		
Name	Y-Coord	X-Coord	Name	Y-Coord	X-Coord
GH1	80454.265	2858263.114	GH115	80485.731	2858270.352
GH6	80459.001	2858256.386	SW28	80483.320	2858256.278
SW10	80462.361	2858249.237	JB55	80484.304	2858251.678
JB42	80455.100	2858245.629	GH66	80459.001	2858256.386
JB43	80461.029	2858231.175	GH116	80470.735	2858255.690
SW 19	80458.830	2858220.837	JB56	80468.324	2858251.578
SW11	80461.765	2858218.460	GH117	80465.589	2858250.163
SW12	80456.140	2858217.227	JB42	80455.100	2858245.629
GH7	80474.781	2858183.866	GH118	80466.753	2858232.771
SW13	80476.980	2858179.187	JB43	80451.039	2858232.771
JB44	80455.074	2858169.811	GH119	80462.702	2858220.028
GH45	80454.260	2858163.385	SW11	80461.765	2858218.460
SW14	80445.695	2858135.119	GH120	80456.732	2858215.278
JB46	80452.939	2858120.027	JB44	80453.374	2858199.811
JB47	80450.027	2858105.443	GH121	80527.989	2858159.348
JB48	80449.837	2858097.214	SW32	80526.693	2858154.585
SW15	80455.725	2858052.563	JB58	80511.910	2858200.128
SW16	80477.528	2858038.762	JB59	80511.910	2858194.444
SW17	80434.879	2858031.164	SW30	80482.200	2858171.935
C 2	80430.443	2858005.039	JB45	80454.203	2858163.885
GH78	80448.659	2858401.670	GH122	80535.365	2858008.069
SW19	80446.485	2858401.600	SW29	80522.880	2858004.546
SW20	80446.481	2858391.163	GH125	80538.699	2858198.034
GH79	80449.782	2858384.388	JB58	80511.907	2858134.844
JB31	80456.006	2858384.870	GH126	80538.699	2858198.034
GH80	80462.367	2858383.507	GH124	80534.071	2858202.763
JB32	80463.793	2858384.840	JB58	80511.910	2858200.128
GH81	80477.029	2858389.118	GH128	80477.752	2858128.689
JB49	80479.744	2858396.321	JB46	80452.939	2858120.027
JB50	80479.622	2858388.167	GH127	80462.508	2858107.996
JB34	80474.240	2858384.786	JB47	80460.602	2858105.443
GH100	80420.015	2858370.214	GH128	80484.282	2858102.179
JB53	80419.980	2858344.309	SW31	80483.092	2858098.142
GH91	80419.916	2858323.389	JB57	80469.767	2858091.771
JB54	80425.401	2858322.721	JB48	80468.837	2858087.214
GH62	80445.935	2858320.223	GH129	80468.767	2858084.755
GH101	80417.642	2858346.093	JB57	80469.767	2858091.771
JB53	80419.980	2858344.309	GH68	80471.754	2858392.089
GH109	80420.711	2858317.689	JB20	80454.203	2858389.344
JB54	80425.401	2858322.721	JB30	80446.459	2858389.281
GH103	80476.368	2858357.024	GH69	80475.588	2858388.102
GH63	80469.072	2858356.543	GH70	80434.533	2858355.572
GH104	80476.714	2858356.930	JB29	80436.623	2858369.305
JB37	80477.558	2858355.769	GH71	80435.285	2858404.843
GH105	80502.420	2858356.622	GH72	80430.527	2858408.169
GH90	80501.890	2858351.506	GH73	80446.475	2858408.146
JB38	80477.558	2858351.767	SW18	80446.472	2858404.897
GH106	80504.439	2858348.439	GH74	80476.363	2858410.902
GH99	80507.800	2858351.565	SW21	80470.057	2858404.599
GH107	80450.331	2858353.270	SW18	80446.472	2858404.897
GH92	80502.496	2858351.636	GH74	80476.363	2858410.902
GH93	80476.073	2858308.221	SW21	80470.057	2858404.599
GH94	80502.285	2858296.786	GH75	80475.588	2858388.102
GH95	80398.275	2858292.786	GH76	80475.588	2858388.102
GH96	80406.509	2858276.205	JB35	80478.162	2858370.055
GH97	80424.322	2858263.871	SW25	80474.014	2858370.088
GH98	80417.690	2858265.215	SW26	80464.717	2858370.098
JB41	80452.665	2858263.214	JB52	80462.542	2858366.632
GH110	80504.288	2858337.645	JB52	80462.542	2858366.632
GH99	80504.521	2858330.468	GH99	80462.542	2858366.632
GH92	80502.496	2858321.636	JB52	80462.542	2858366.632
GH111	80474.642	2858315.786	JB52	80462.542	2858366.632
GH93	80475.073	2858308.221			
GH112	80467.258	2858277.196			
SW27	80451.806	2858279.806			
GH84	80453.786	2858277.286			
GH113	80453.181	2858266.752			
GH94	80453.786	2858277.286			
GH114	80433.942	2858271.285			
GH98	80437.600	2858265.215			

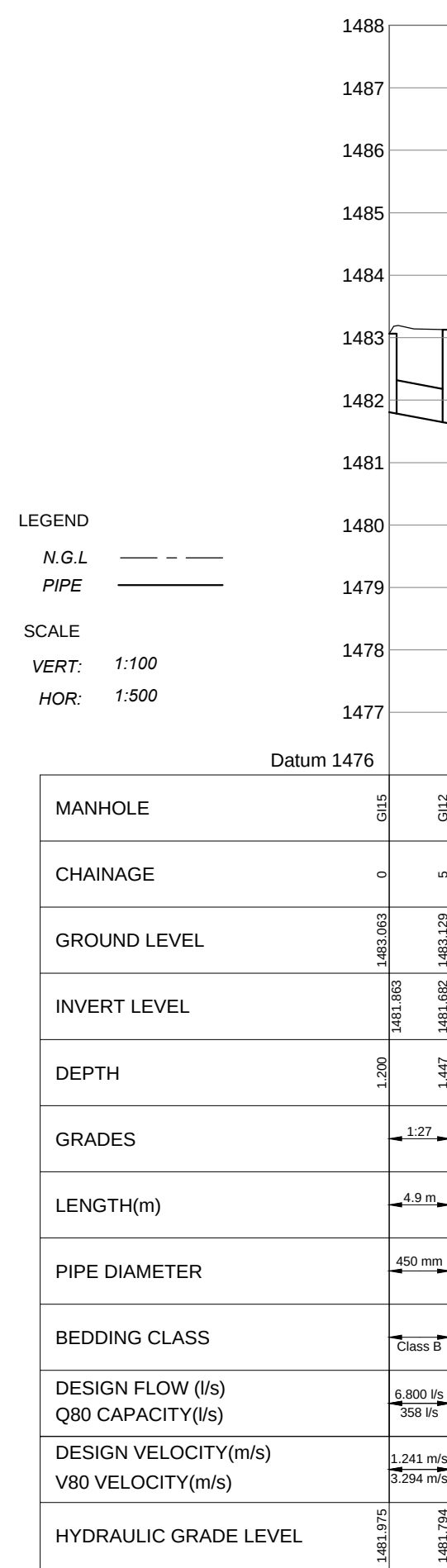
- NOTES**
1. All pipes shall be spigotted reinforced concrete
 2. Stormwater channel should have a 250 micron HDPE lining and continuous light steel mesh reinforcement over sealed key construction and expansion joints that preclude any movement.

LEGEND

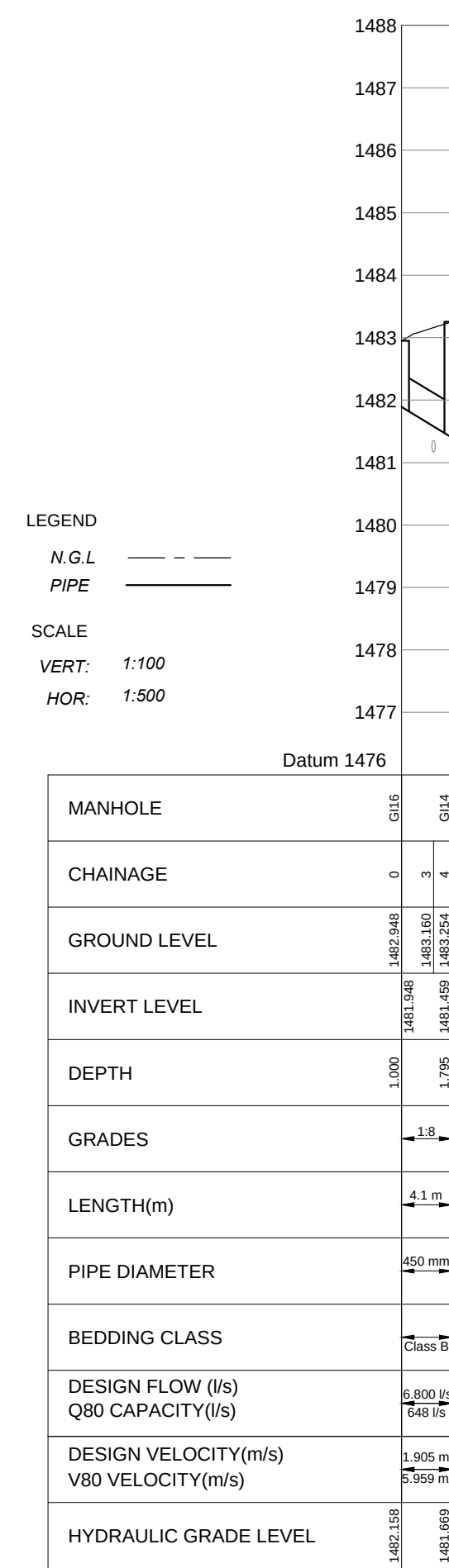
- STORMWATER LINE
- PROPOSED NEW CHANNEL
- PROPOSED JUNCTION BOX
- PROPOSED MANHOLE
- PROPOSED GRIDLINE</



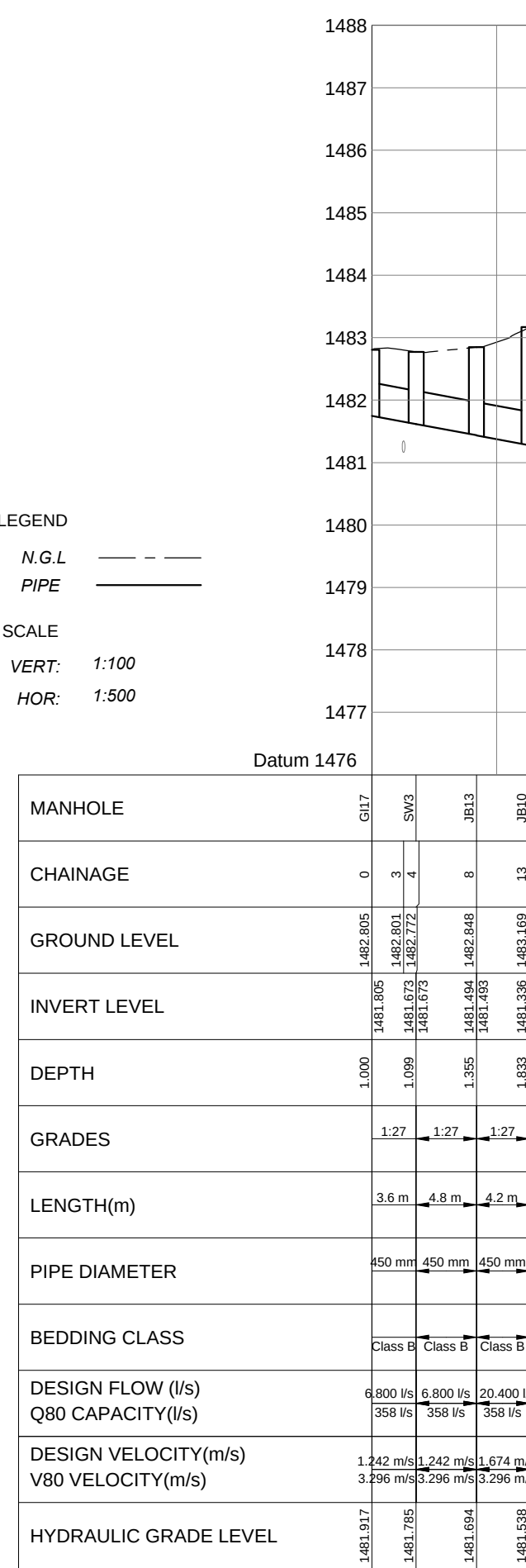
Manhole GI11 to JB1



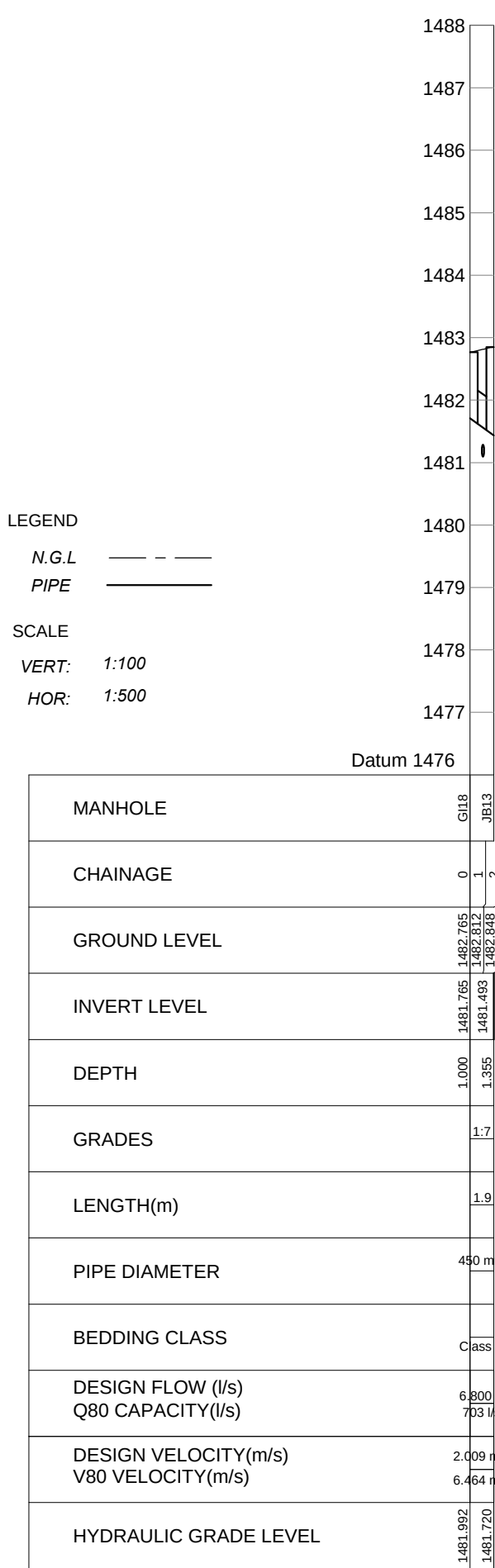
Manhole GI15 to GI12



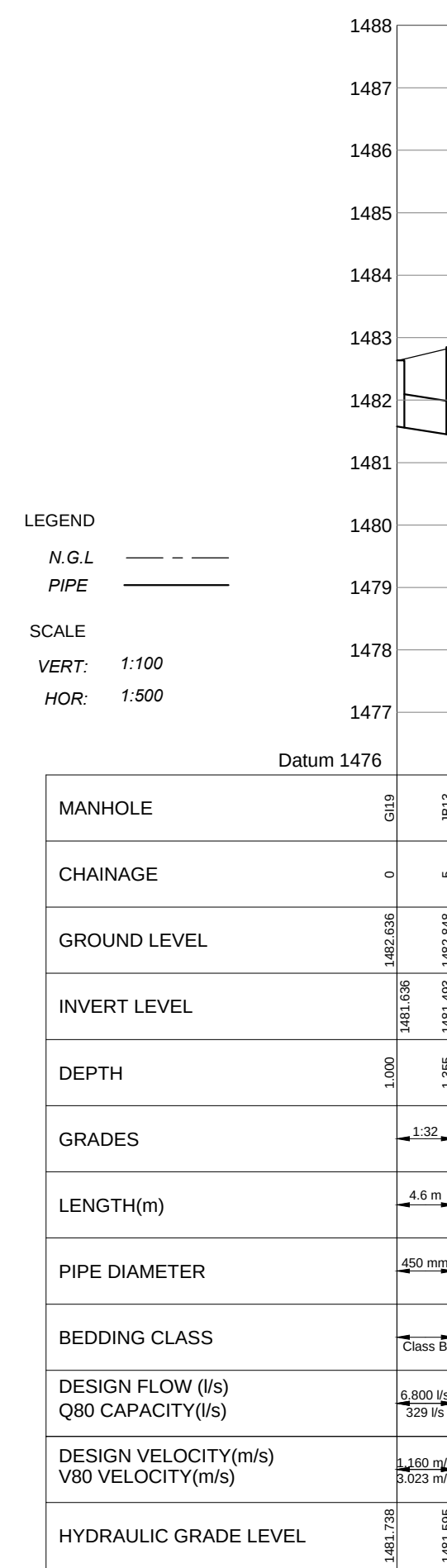
Manhole GI16 to GI14



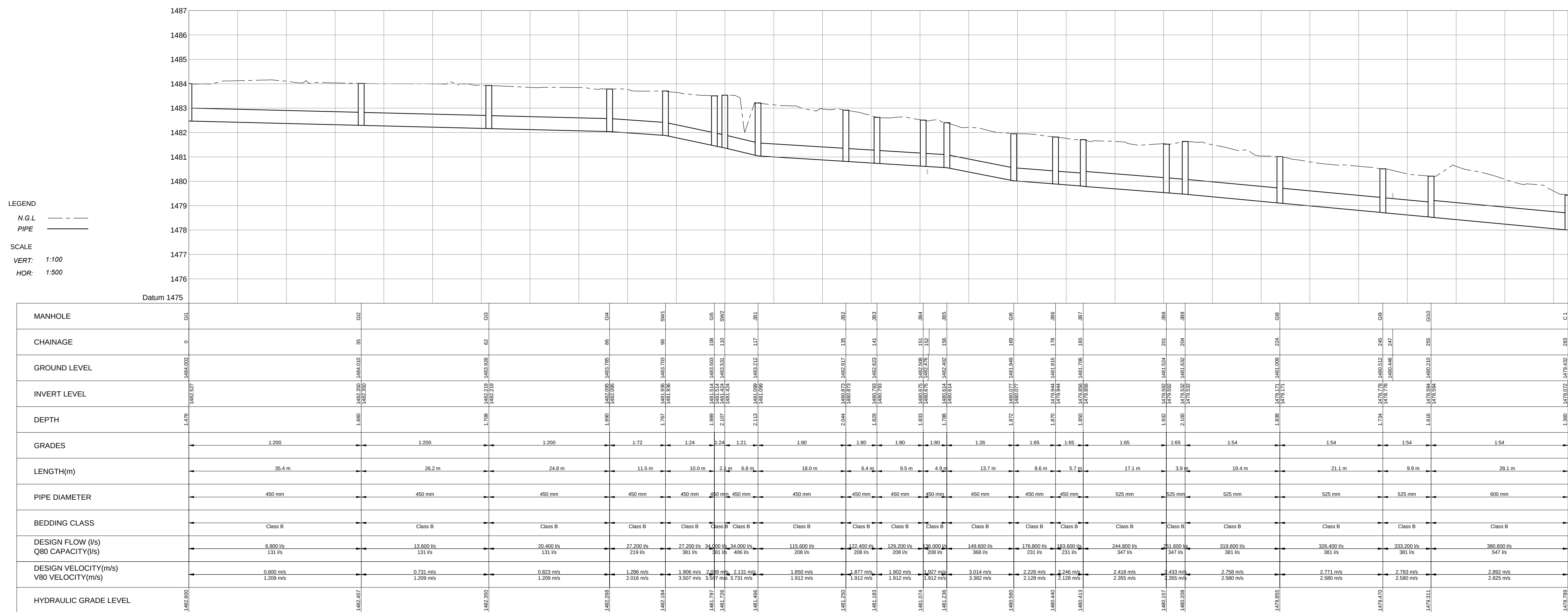
Manhole GI17 to JB10



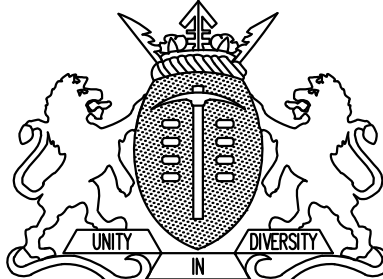
Manhole GI18 to JB13

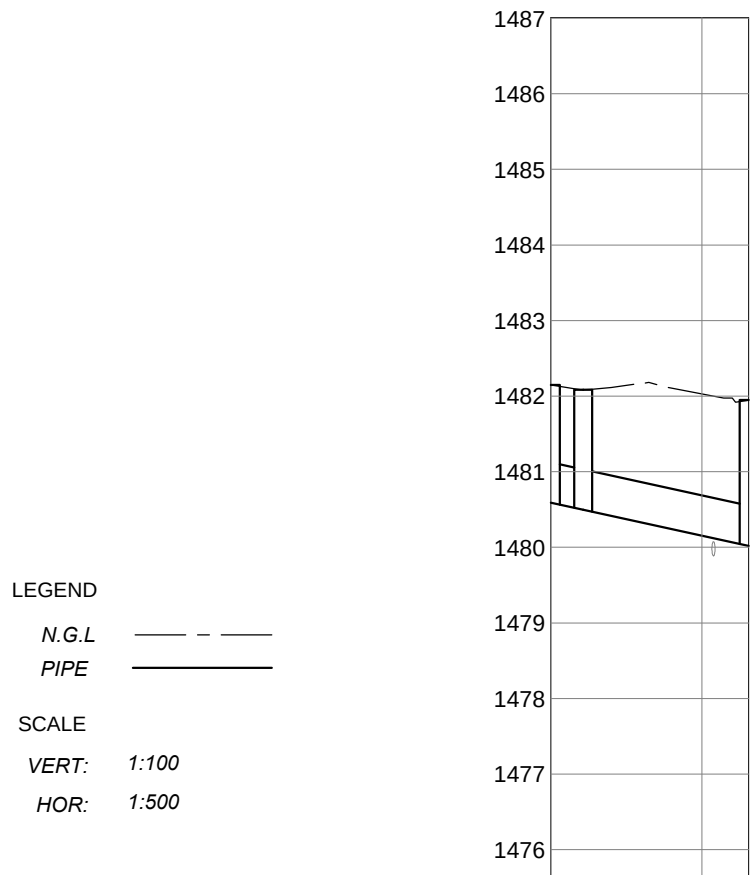


Manhole GI19 to JB13



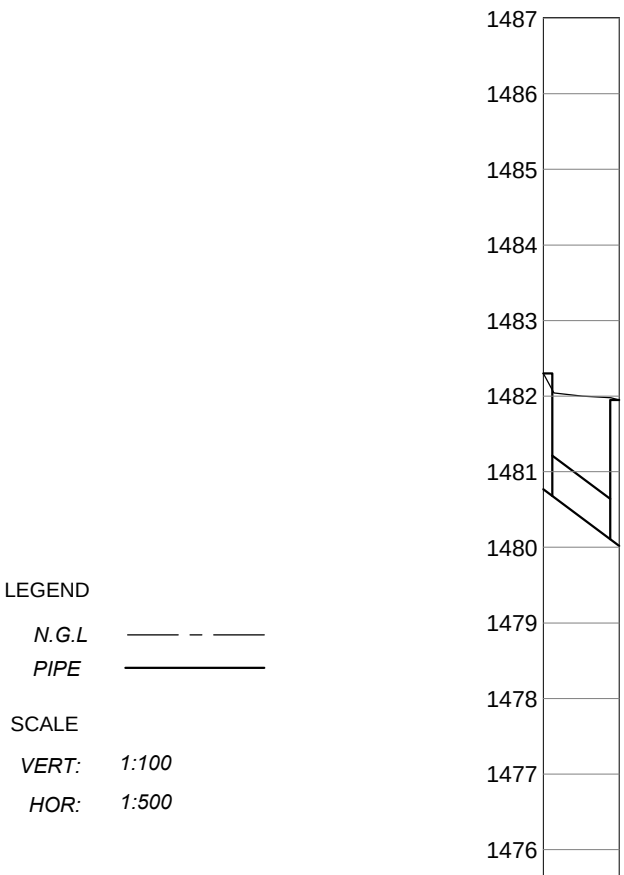
Manhole GI1 to C 1

TD	09/2021	ISSUED FOR TENDER	
REVISION No	DATE :	DESCRIPTION:	
REVISIONS			
SIZE ON ORIGINAL DRAWING 100 mm			
			
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT			
INSTITUTION			
HOERSKOOL CENTURION PHASE B			
SERVICE			
HOERSKOOL CENTURION PHASE B			
CONTRACT - SECTION			
CIVIL ENGINEERING SERVICES			
DISCIPLINE		PROJECT STAGE	
CIVIL		4	
WORK DESCRIPTION - SUB DIVISION			
DRAWING DESCRIPTION			
STORMWATER LONG SECTION SHEET 1 OF 9			
FILE No.			ITEM No.
DESIGN	J. SIBANDA	S. DUBE	DRAWN
SCALE	AS SHOWN	J. SIBANDA	CHECKED
RESPONSIBLE PROFESSIONAL			
DATE	NAME	SIGNATURE	PR NUMBER
09/2021	J. SIBANDA		201370155
DRAWING CO-ORDINATED			
CONSULTANT :			
 PMPLUS PROJECTS & STRATEGY CONSULTANTS BULLDOG 1, 18 BULLDOG STREET CAMBERIDGE OFFICE PARK 00480 P.O. BOX 8076 MIDRAND, 1685 Tel : +27 12 565 1000 Fax : +27 12 565 1068 E-Mail: admin@pmplus.co.za			
CONTRACTOR :			
CADD SYSTEM	AUTOCAD		FILE NAME
SIZE	DRAWING NUMBER		REV
A1	589-S2-ST-C-215		TD



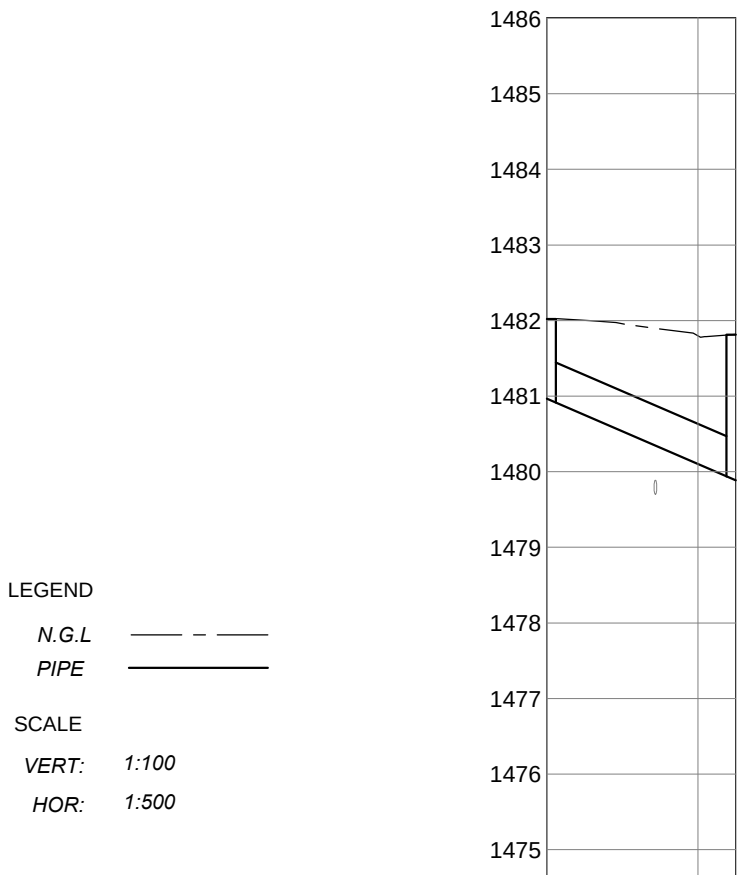
MANHOLE	G128	G16
CHAINAGE	0	13
GROUND LEVEL	1482.146	1481.949
INVERT LEVEL	1480.555	1480.077
DEPTH	1.500	1.872
GRADES	1:23	1:23
LENGTH(m)	2.10	11.0
PIPE DIAMETER	450 mm	450 mm
BEDDING CLASS	Class B	Class B
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 389 l/s	13,600 l/s 389 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.322 m/s 3.475 m/s	1.587 m/s 3.575 m/s
HYDRAULIC GRADE LEVEL	1480.752	1480.251

Manhole G128 to G16



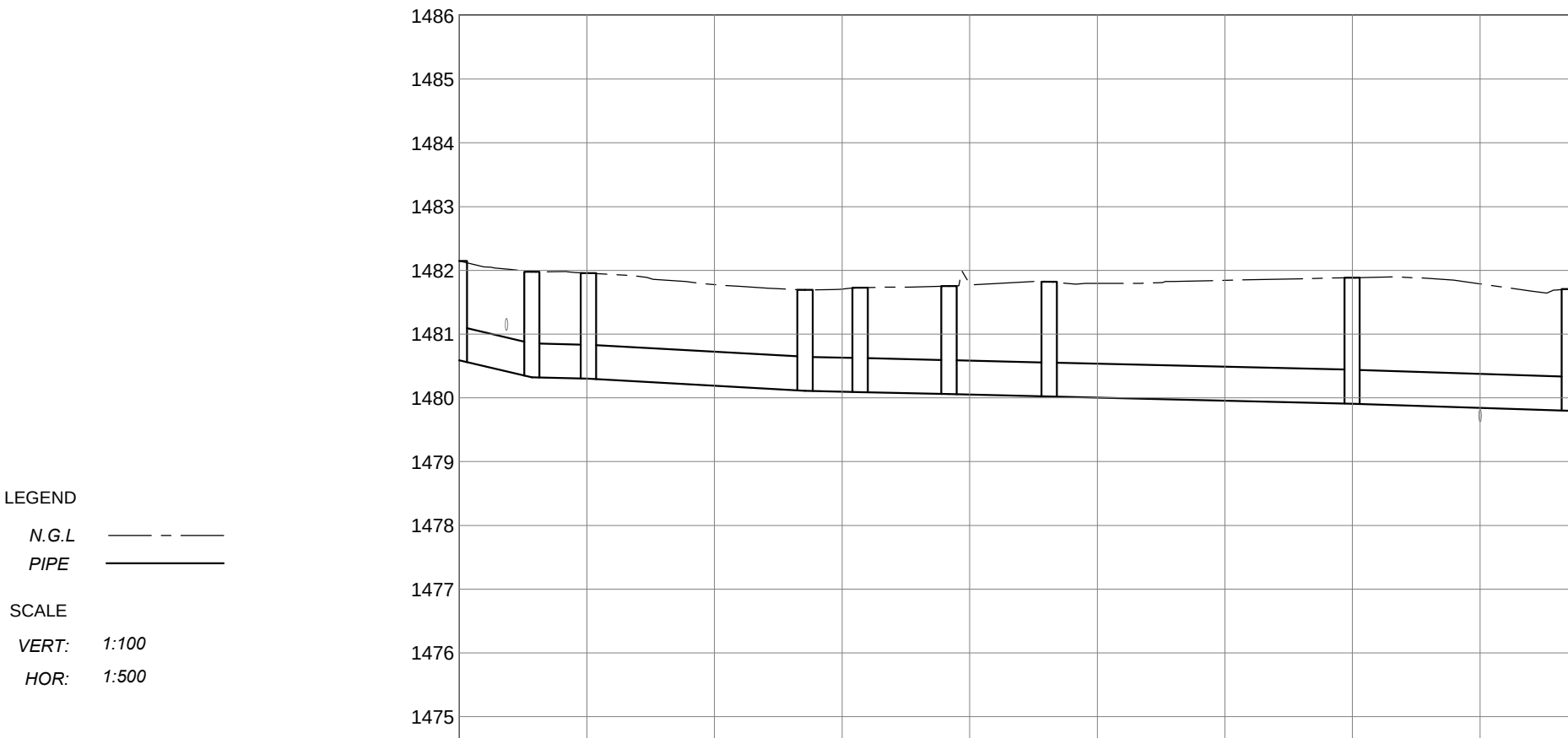
MANHOLE	G130	G16
CHAINAGE	0	5
GROUND LEVEL	1482.352	1481.949
INVERT LEVEL	1480.251	1480.077
DEPTH	1.476	1.872
GRADES	1:17	
LENGTH(m)	5.1	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 718 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.039 m/s 5.023 m/s	
HYDRAULIC GRADE LEVEL	1481.054	1480.320

Manhole G130 to G16



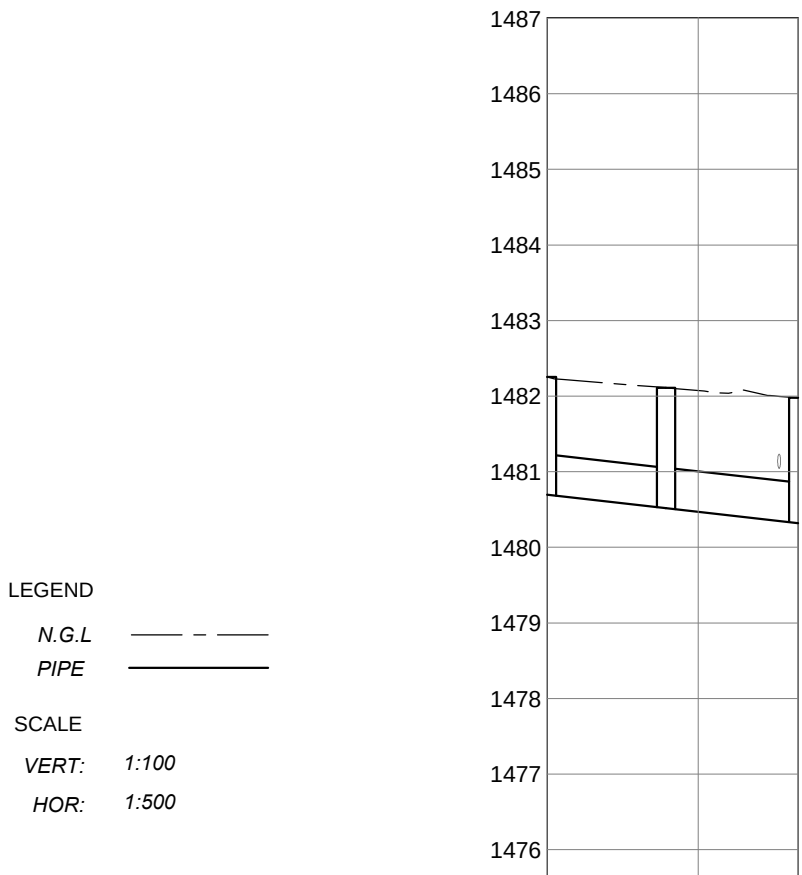
MANHOLE	G131	JB6
CHAINAGE	0	12
GROUND LEVEL	1482.022	1481.944
INVERT LEVEL	1480.022	1479.944
DEPTH	1.500	1.870
GRADES	1:12	
LENGTH(m)	12.5	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 546 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.695 m/s 5.023 m/s	
HYDRAULIC GRADE LEVEL	1481.194	1480.118

Manhole G131 to JB6



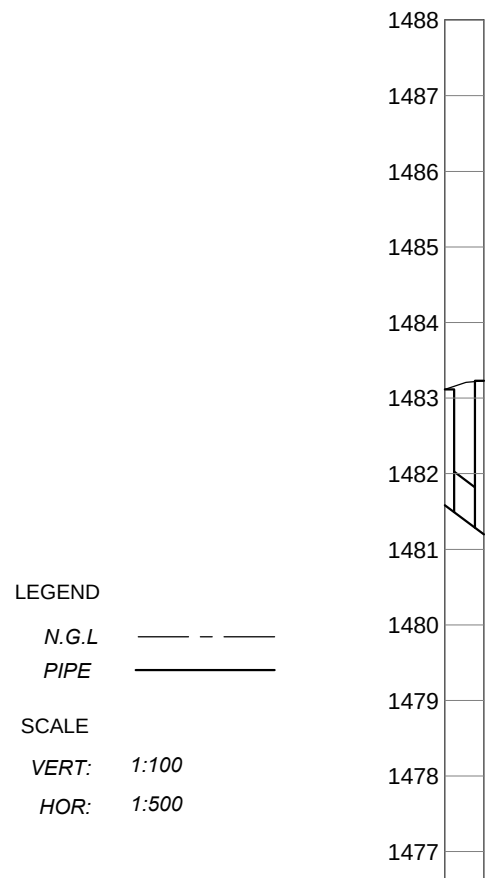
MANHOLE	G132	JB7
CHAINAGE	0	38.22
GROUND LEVEL	1482.147	1481.944
INVERT LEVEL	1480.555	1480.077
DEPTH	1.500	1.872
GRADES	1:21	1:212
LENGTH(m)	5.7	4.4
PIPE DIAMETER	450 mm	450 mm
BEDDING CLASS	Class B	Class B
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 404 l/s	13,600 l/s 128 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.362 m/s 5.713 m/s	0.979 m/s 1.173 m/s
HYDRAULIC GRADE LEVEL	1480.721	1480.094

Manhole G132 to JB7



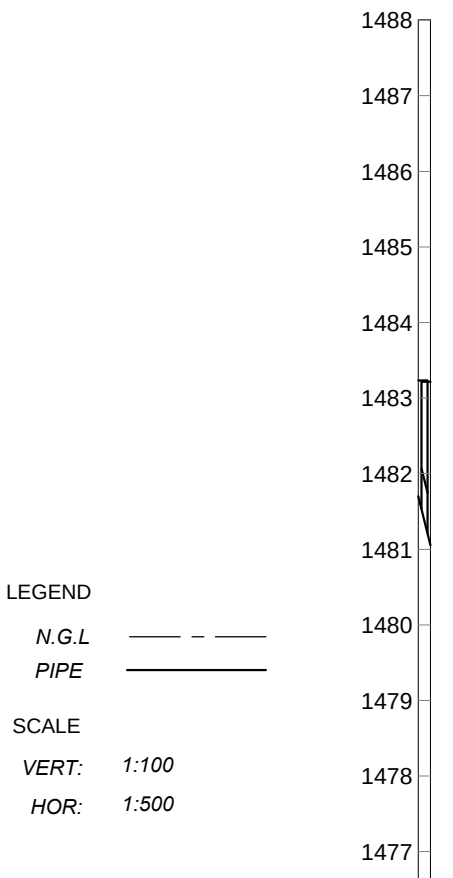
MANHOLE	G133	JB14
CHAINAGE	0	17
GROUND LEVEL	1482.754	1481.944
INVERT LEVEL	1480.754	1480.077
DEPTH	1.500	1.860
GRADES	1:44	1:44
LENGTH(m)	7.9	8.7
PIPE DIAMETER	450 mm	450 mm
BEDDING CLASS	Class B	Class B
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 280 l/s	13,600 l/s 280 l/s
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.012 m/s 2.574 m/s	1.258 m/s 3.574 m/s
HYDRAULIC GRADE LEVEL	1480.845	1480.513

Manhole G133 to JB14



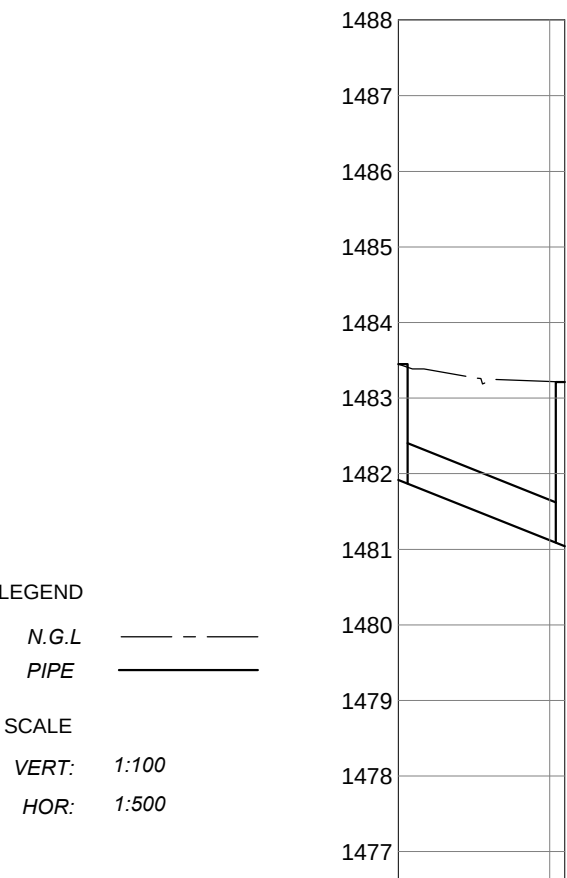
MANHOLE	G120	JB11
CHAINAGE	0	11
GROUND LEVEL	1483.117	1482.920
INVERT LEVEL	1481.424	1480.522
DEPTH	1.476	1.877
GRADES	1:17	
LENGTH(m)	2.6	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 723 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	2.345 m/s 6.847 m/s	
HYDRAULIC GRADE LEVEL	1481.486	1481.086

Manhole G120 to JB11



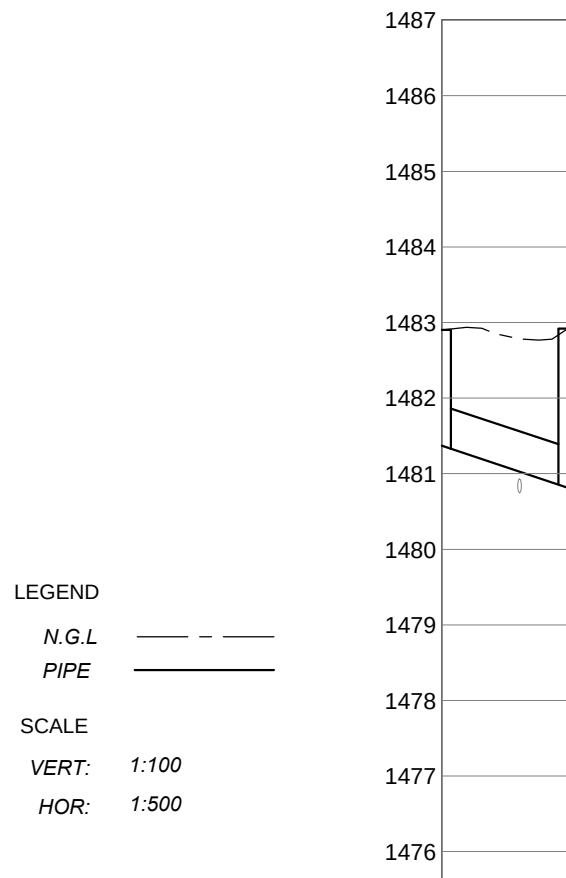
MANHOLE	G121	JB12
CHAINAGE	0	11
GROUND LEVEL	1483.117	1482.920
INVERT LEVEL	1481.424	1480.522
DEPTH	1.476	1.877
GRADES	1:11	
LENGTH(m)	1.0	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 1070 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	3.941 m/s 6.847 m/s	
HYDRAULIC GRADE LEVEL	1481.486	1481.086

Manhole G121 to JB12



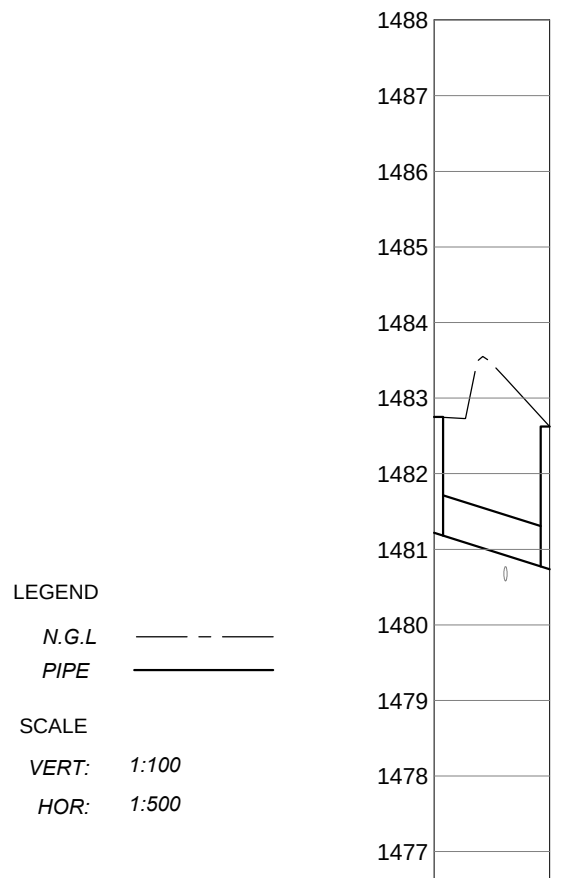
MANHOLE	G122	JB1
CHAINAGE	0	11
GROUND LEVEL	1483.117	1482.920
INVERT LEVEL	1481.424	1480.522
DEPTH	1.476	2.113
GRADES	1:13	
LENGTH(m)	11.0	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 524 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.648 m/s 4.822 m/s	
HYDRAULIC GRADE LEVEL	1481.194	1480.320

Manhole G122 to JB1



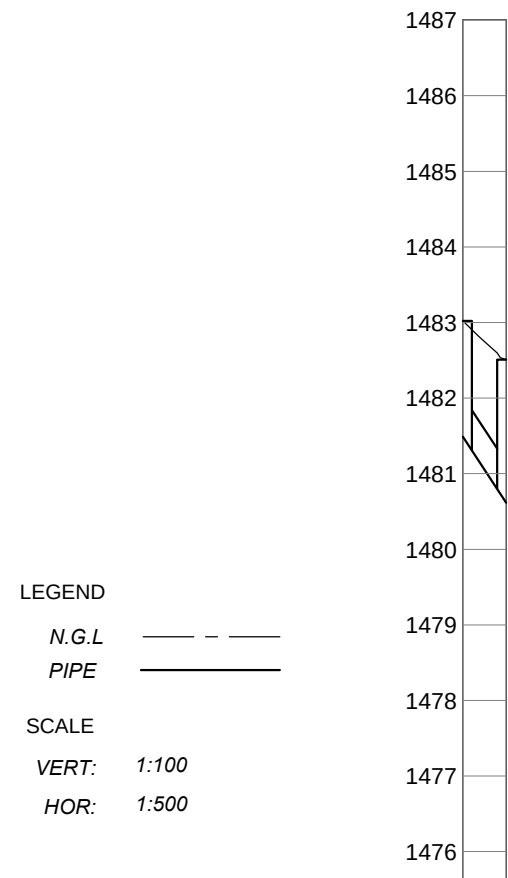
MANHOLE	G123	JB2
CHAINAGE	0	12
GROUND LEVEL	1482.901	1482.917
INVERT LEVEL	1480.405	1480.077
DEPTH	1.476	2.944
GRADES	1:15	
LENGTH(m)	8.3	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 479 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.545 m/s 4.406 m/s	
HYDRAULIC GRADE LEVEL	1481.172	1480.073

Manhole G123 to JB2



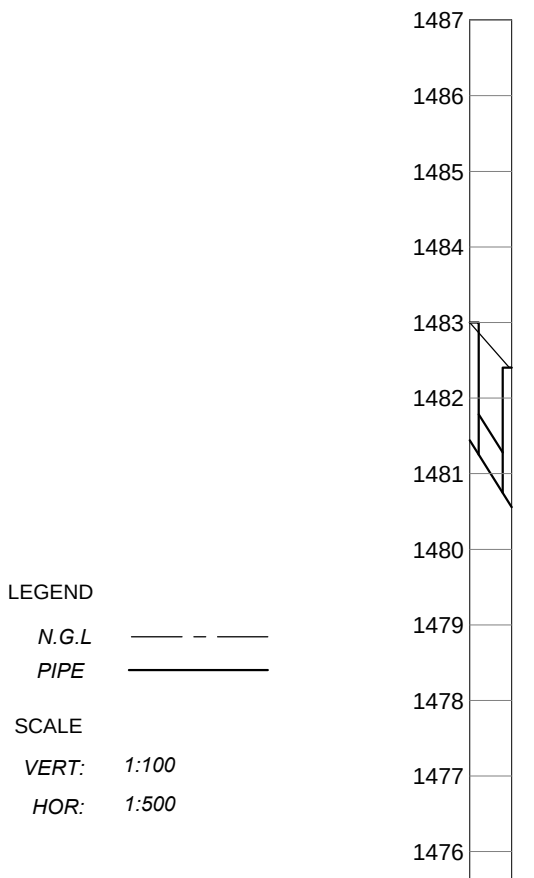
MANHOLE	G124	JB3
CHAINAGE	0	15
GROUND LEVEL	1482.751	1482.901
INVERT LEVEL	1480.795	1480.521
DEPTH	1.476	1.869
GRADES	1:16	
LENGTH(m)	7.7	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 468 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.515 m/s 4.288 m/s	
HYDRAULIC GRADE LEVEL	1481.421	1480.940

Manhole G124 to JB3



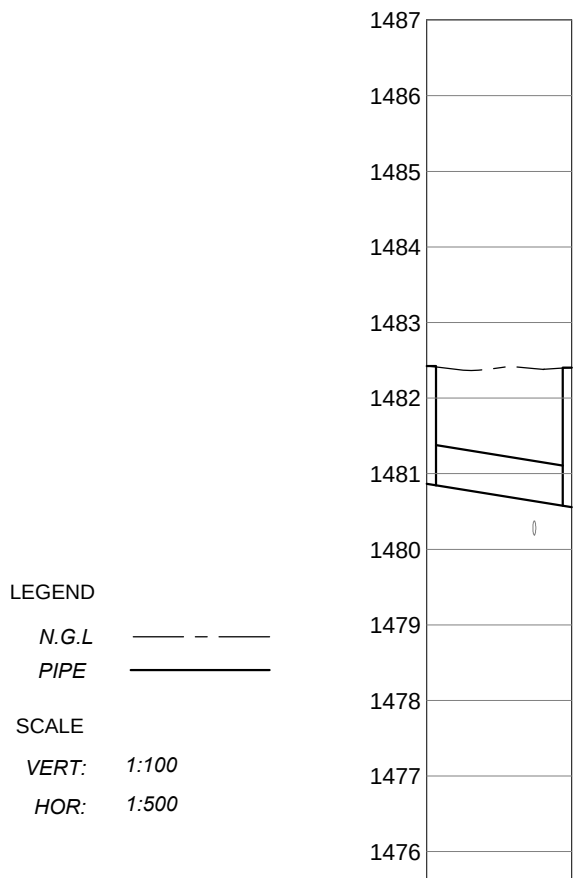
MANHOLE	G125	JB4
CHAINAGE	0	12
GROUND LEVEL	1482.023	1482.908
INVERT LEVEL	1480.523	1480.075
DEPTH	1.476	1.863
GRADES	1:13	
LENGTH(m)	3.0	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 609 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	2.518 m/s 6.834 m/s	
HYDRAULIC GRADE LEVEL	1481.191	1480.075

Manhole G125 to JB4



MANHOLE	G126	JB5
CHAINAGE	0	12
GROUND LEVEL	1482.000	1482.901
INVERT LEVEL	1480.500	1480.074
DEPTH	1.500	1.898
GRADES	1:13	
LENGTH(m)	2.8	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 590 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	2.550 m/s 6.852 m/s	
HYDRAULIC GRADE LEVEL	1481.052	1480.367

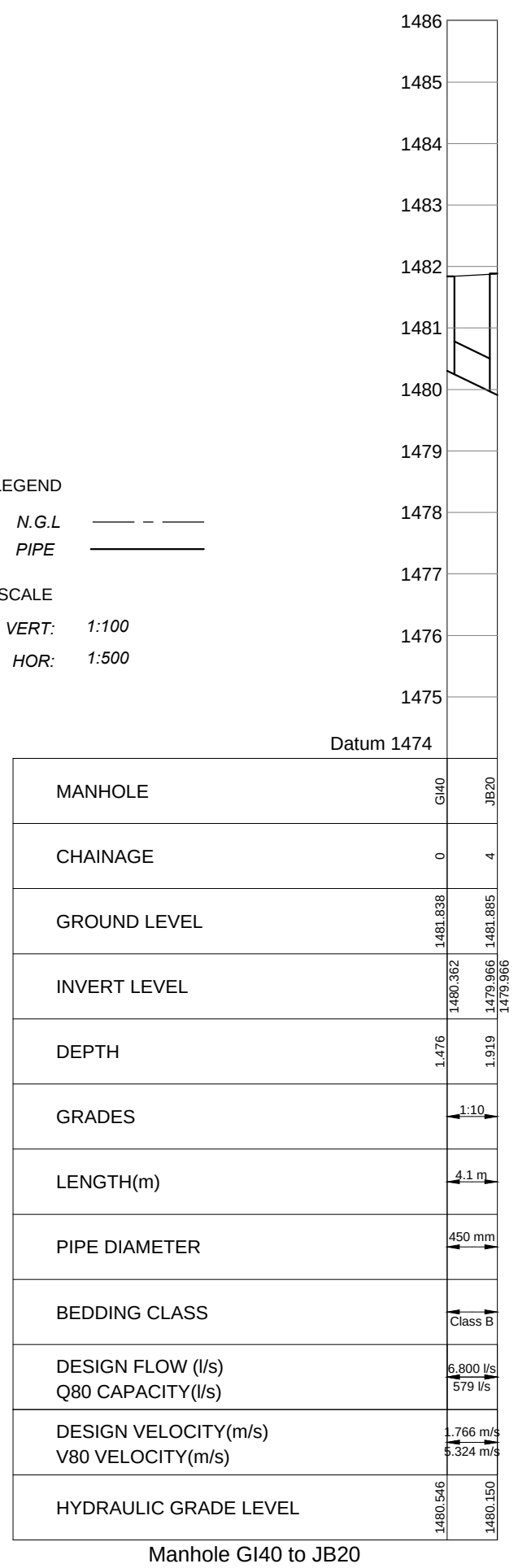
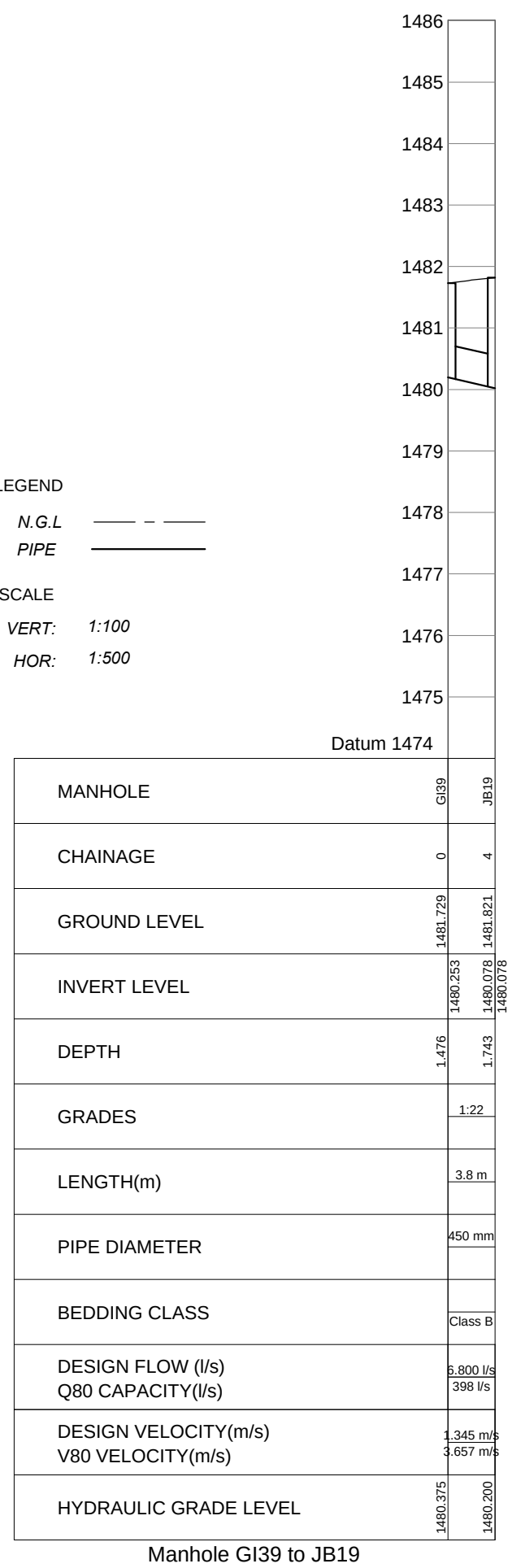
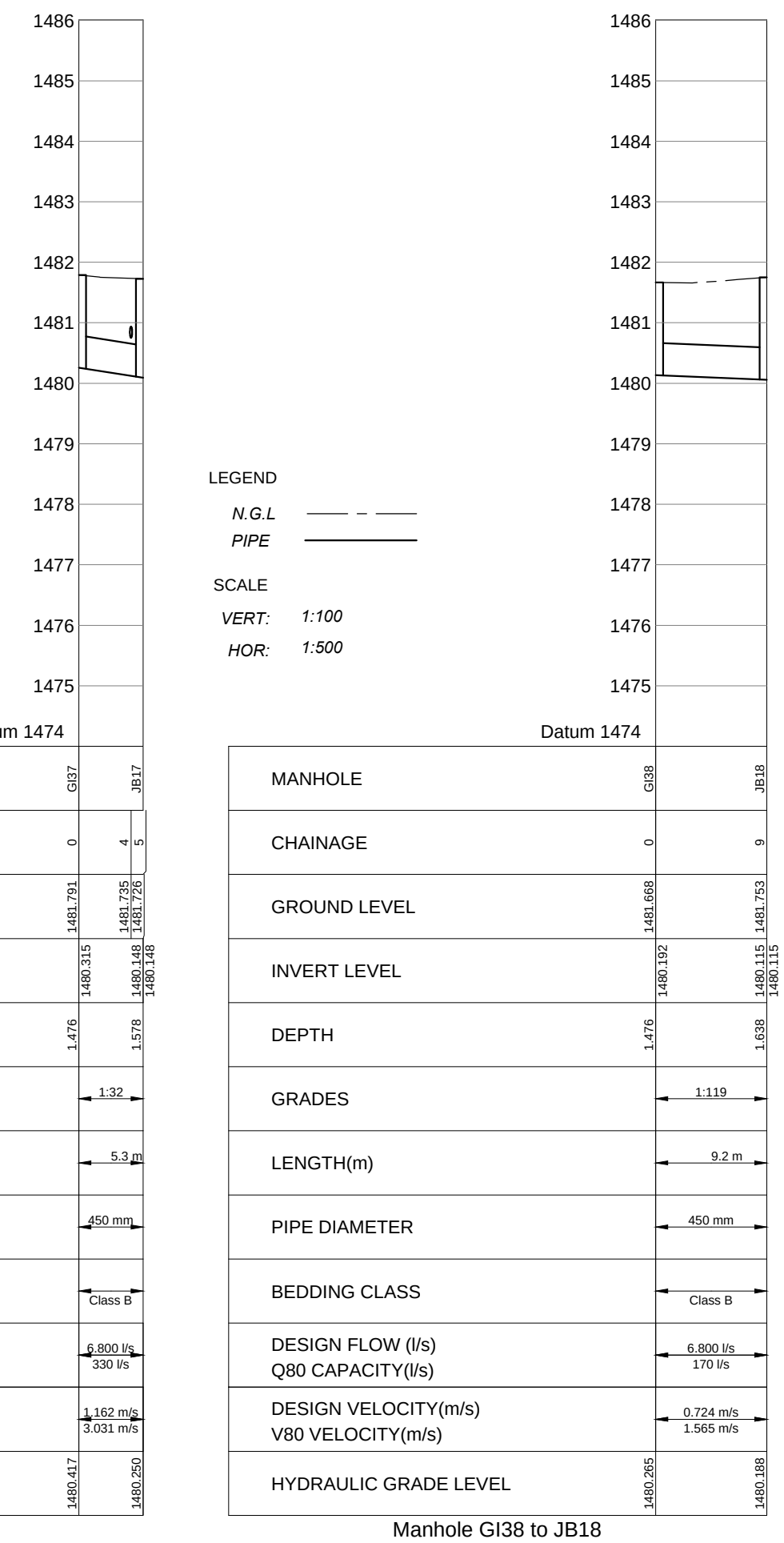
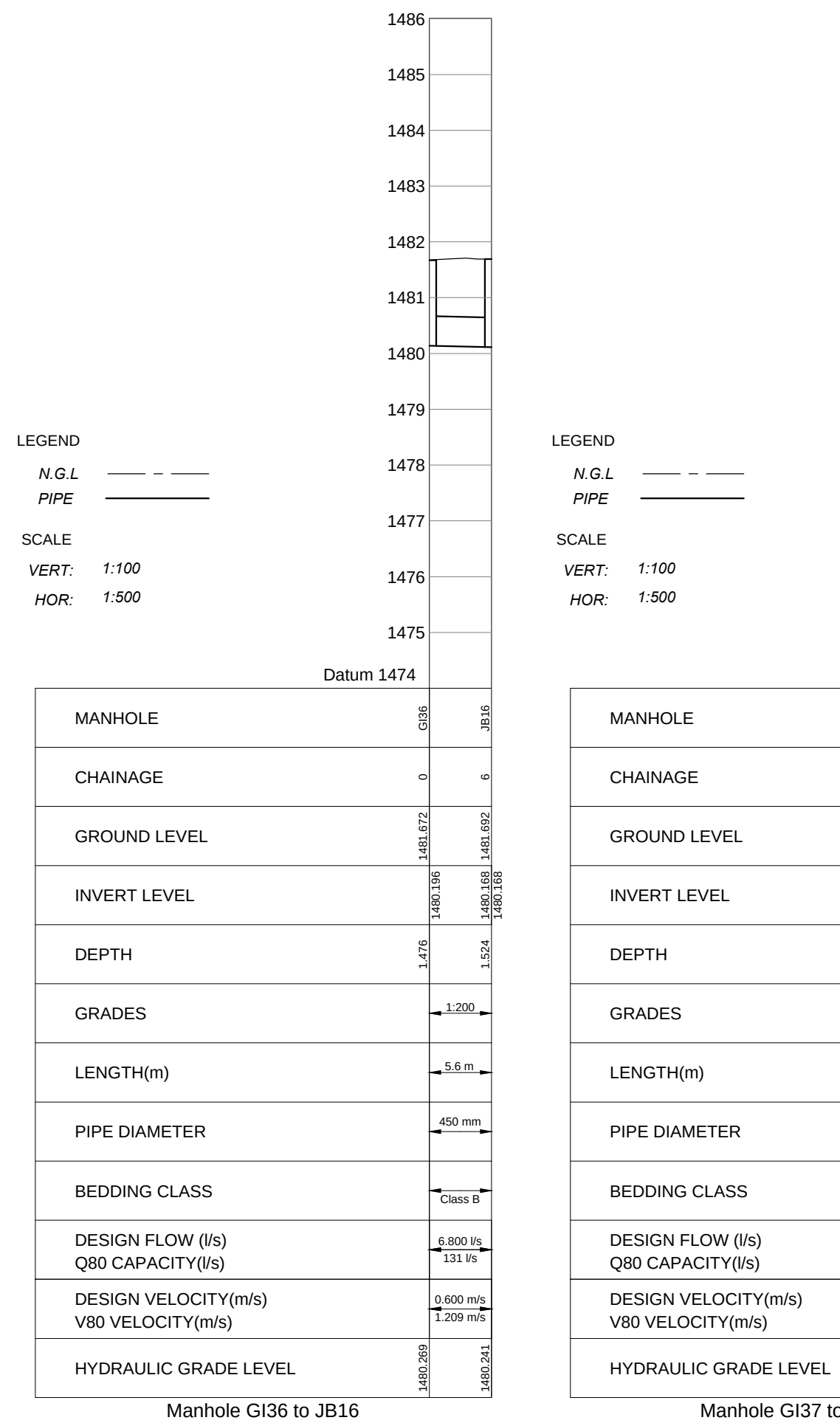
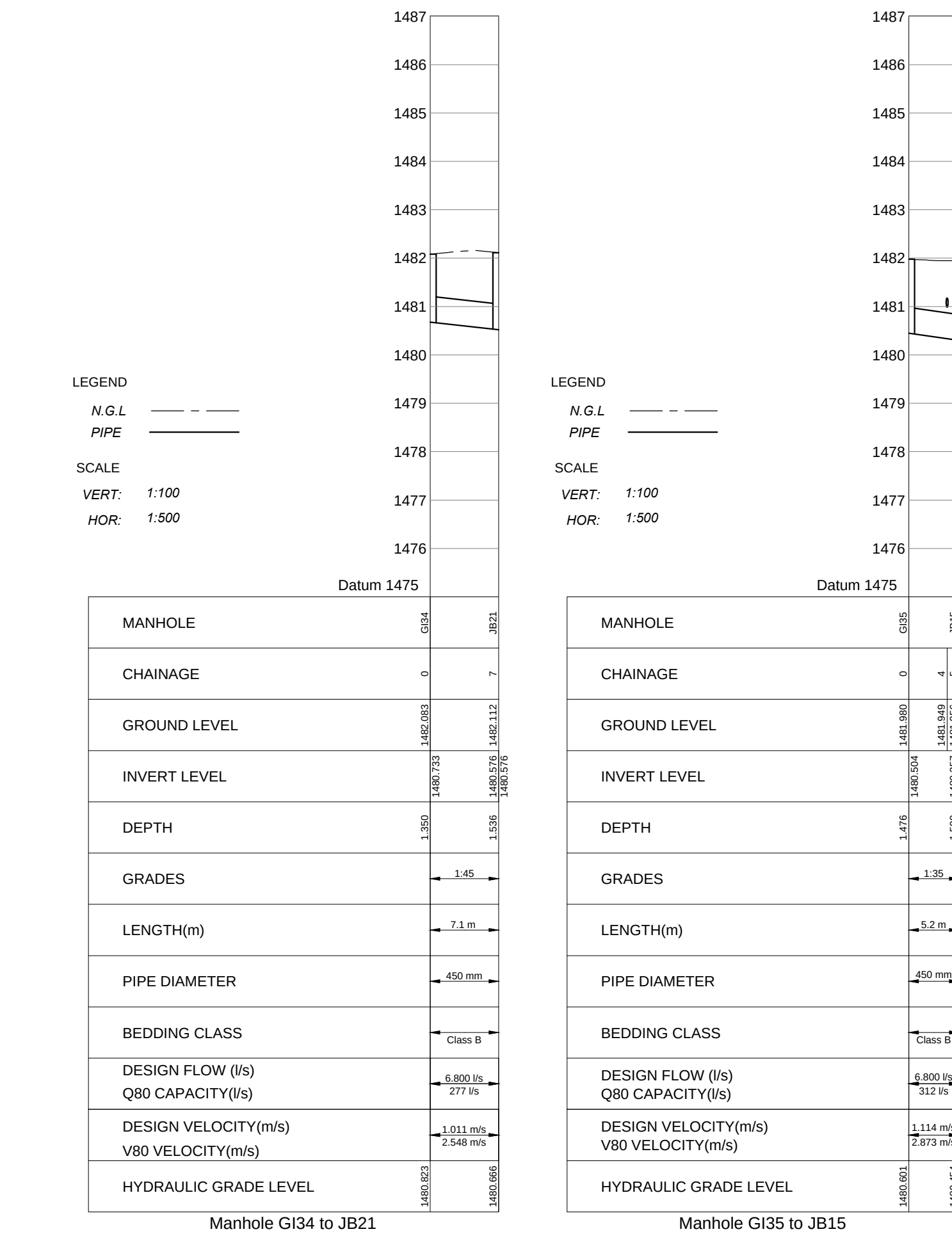
Manhole G126 to JB5



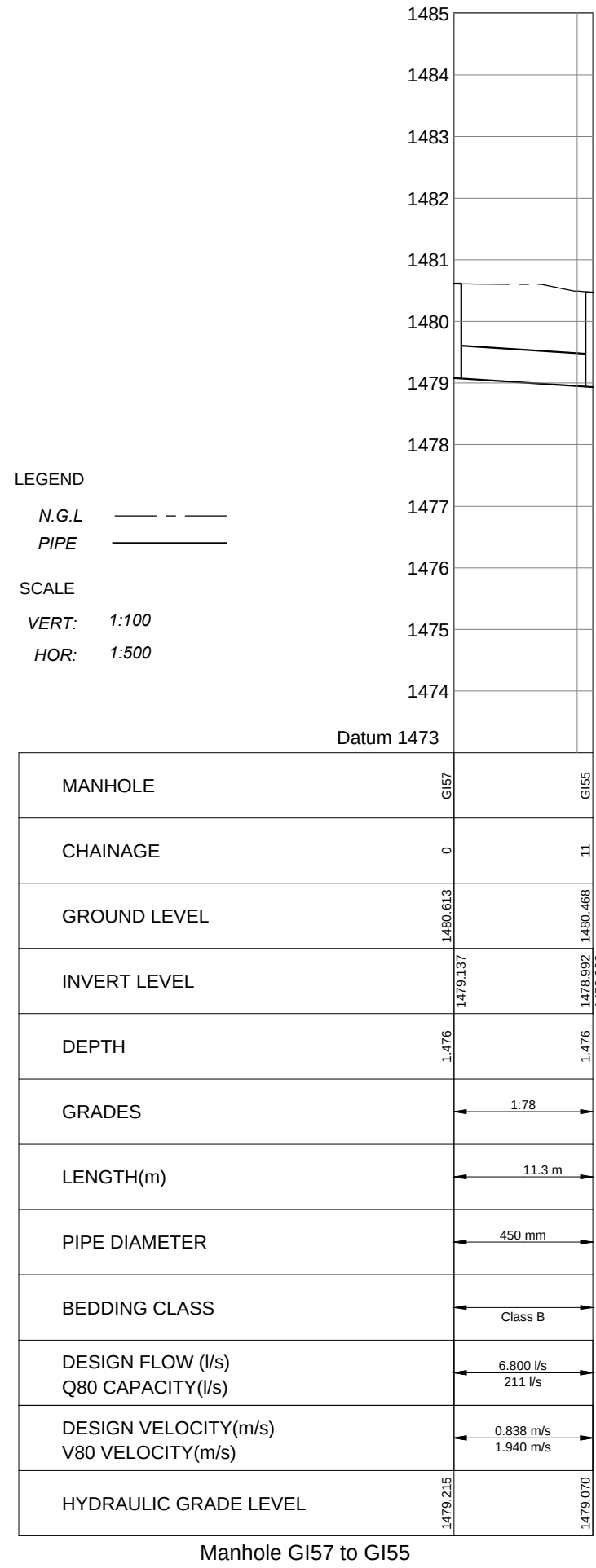
MANHOLE	G127	JB5
CHAINAGE	0	15
GROUND LEVEL	1482.423	1482.901
INVERT LEVEL	1480.923	1480.521
DEPTH	1.500	1.798
GRADES	1:31	
LENGTH(m)	9.6	
PIPE DIAMETER	450 mm	
BEDDING CLASS	Class B	
DESIGN FLOW (l/s) Q80 CAPACITY(l/s)	6,800 l/s 334 l/s	
DESIGN VELOCITY(m/s) V80 VELOCITY(m/s)	1.174 m/s 3.068 m/s	
HYDRAULIC GRADE LEVEL	1481.027	1480.128

Manhole G127 to JB5

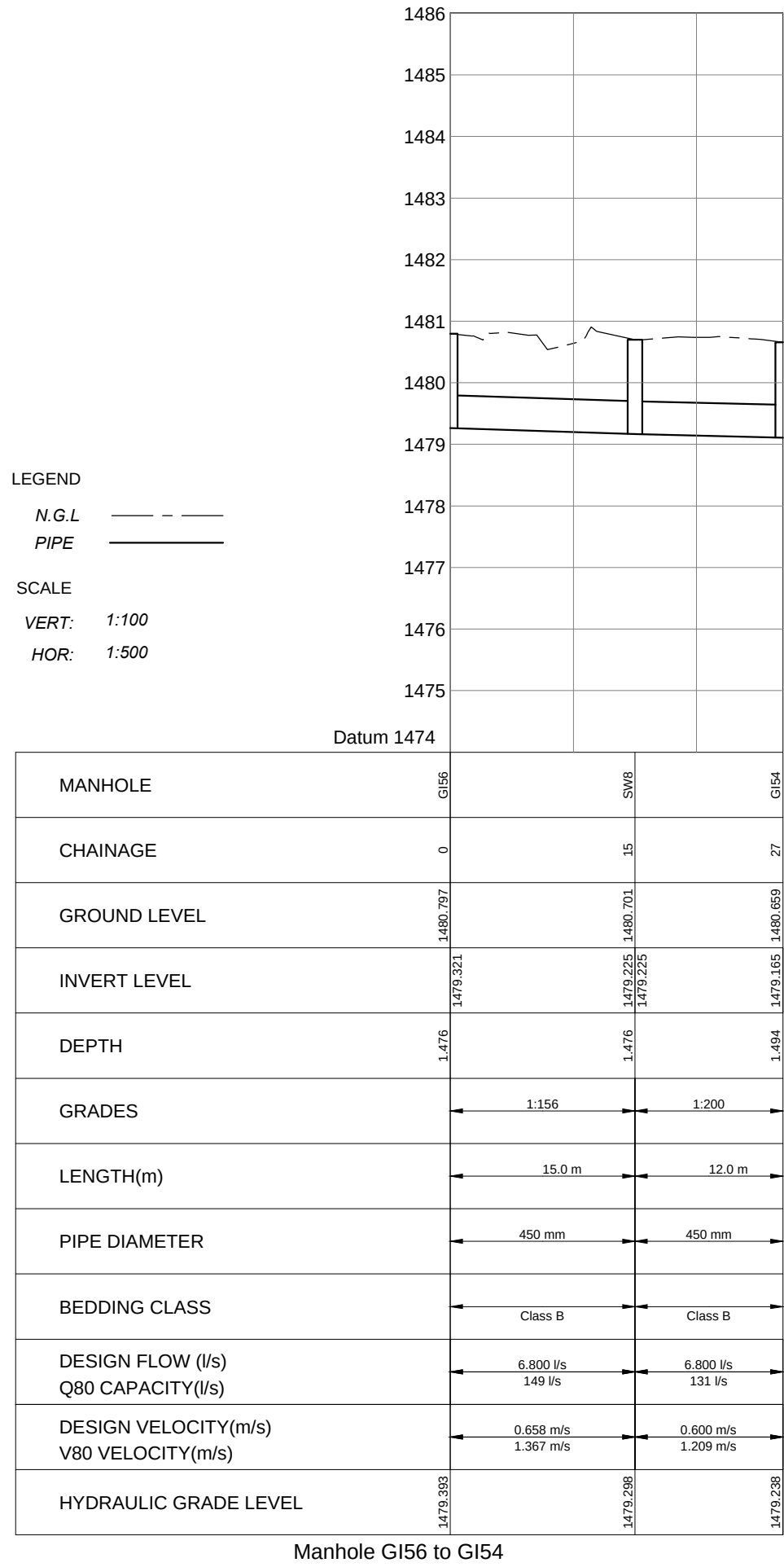
TO	09/2021	ISSUED FOR TENDER
REVISION No	DATE :	DESCRIPTION :
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
SERVICE		
HOERSKOOI CENTURION PHASE B		
CONTRACT - SECTION		
CIVIL ENGINEERING SERVICES		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
STORMWATER LONG SECTION SHEET 2 OF 9		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	S. DUBE
SCALE	AS SHOWN	J. SIBANDA
RESPONSIBLE PROFESSIONAL		
DATE	NAME	SIGNATURE
09/2021	J. SIBANDA	
PR NUMBER		
201370155		
DRAWING CO-ORDINATED		
CONSULTANT :		
		
PROJECT'S STRATEGY CONSULTANTS		
BUILDING 1, 5 BAHIRIA STREET		
CAMBERIDGE OFFICE PARK		
CENTURION		
P.O. BOX 8576 MEDUNGANI, 1655		
Tel: +27 12 665 1000		
Fax: +27 12 665 0909		
E-Mail: info@pmplus.co.za		
CONTRACTOR :		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-216	TD



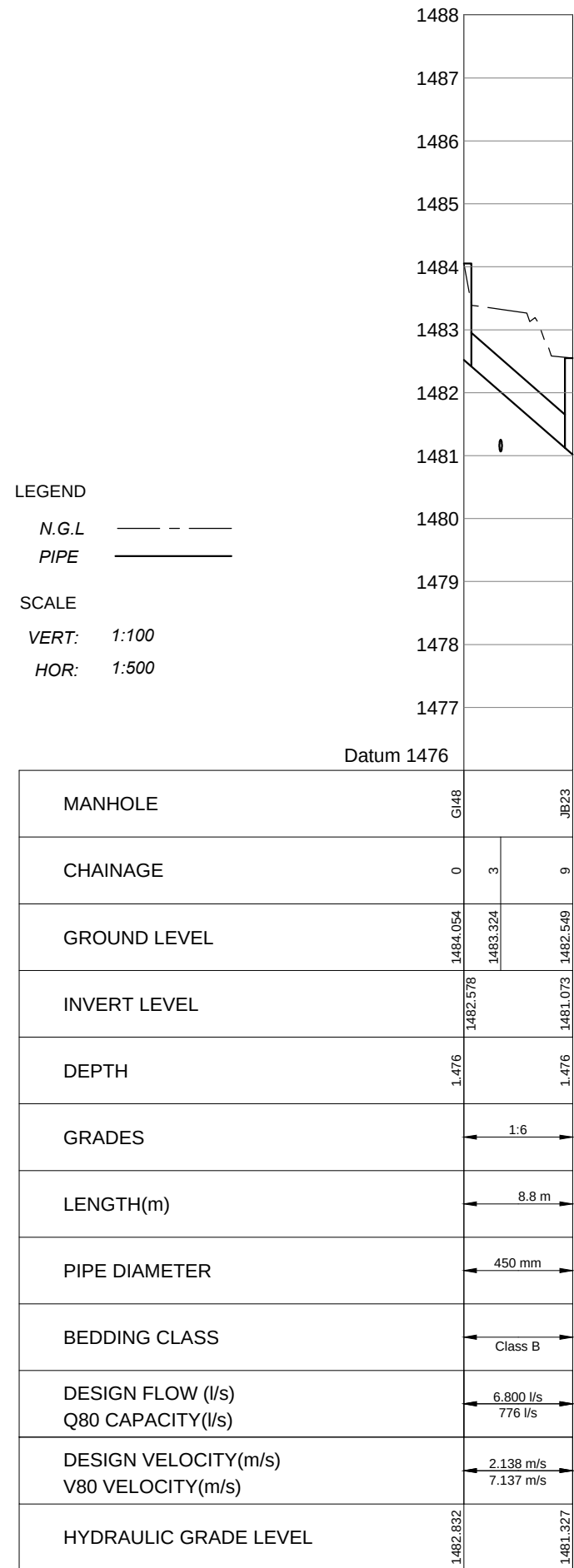
TD	09/2021	ISSUED FOR TENDER			
REVISION No.	DATE :	DESCRIPTION:			
REVISONS					
SIZE ON ORIGINAL DRAWING 100 mm					
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT					
INSTITUTION					
HOERSKOOI CENTURIUM PHASE B					
SERVICE					
HOERSKOOI CENTURIUM PHASE B					
CONTRACT - SECTION					
CIVIL ENGINEERING SERVICES					
DISCIPLINE				PROJECT STAGE	
CIVIL				4	
WORK DESCRIPTION - SUB DIVISION					
DRAWING DESCRIPTION					
STORMWATER LONG SECTION SHEET 3 OF 9					
FILE NO.				ITEM NO.	
DESIGN	J. SIBANDA	S. DUBE			DRAWN
SCALE	AS SHOWN	J. SIBANDA			CHECKED
RESPONSIBLE PROFESSIONAL					
DATE	NAME	SIGNATURE	PR NUMBER		
09/2021	J. SIBANDA		201370155		
DRAWING CO-ORDINATED					
CONSULTANT :					
MPLUS PROJECT & STRATEGIC CONSULTANTS PTY LTD BUILDING 1, 5 BALCHINKA STREET CAMBERIDGE OFFICE PARK CENTURIUM 0986 P O BOX 8576 MIDRAND, 1685 TEL : +27 12 665 1020 FAX : +27 12 665 0505 E Mail: admin@mplus.co.za					
CONTRACTOR :					
CADD SYSTEM	AUTOCAD				FILE NAME
SIZE	DRAWING NUMBER				REV
A1	589-S2-ST-C-217				TD



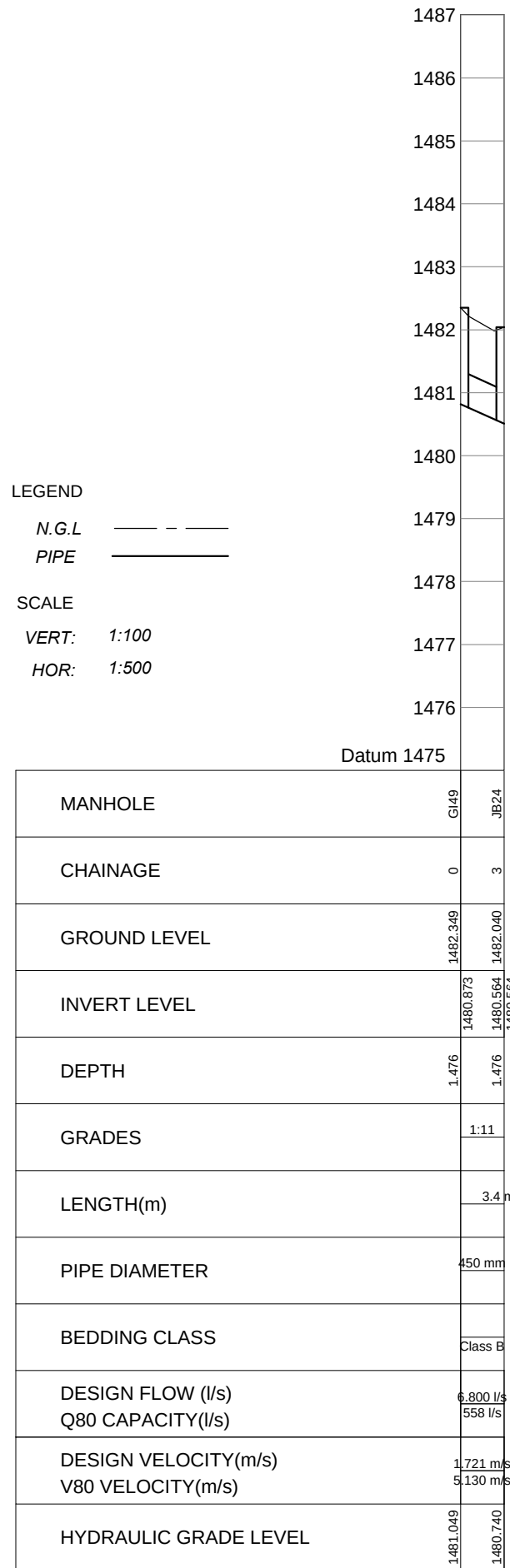
Manhole G157 to G155



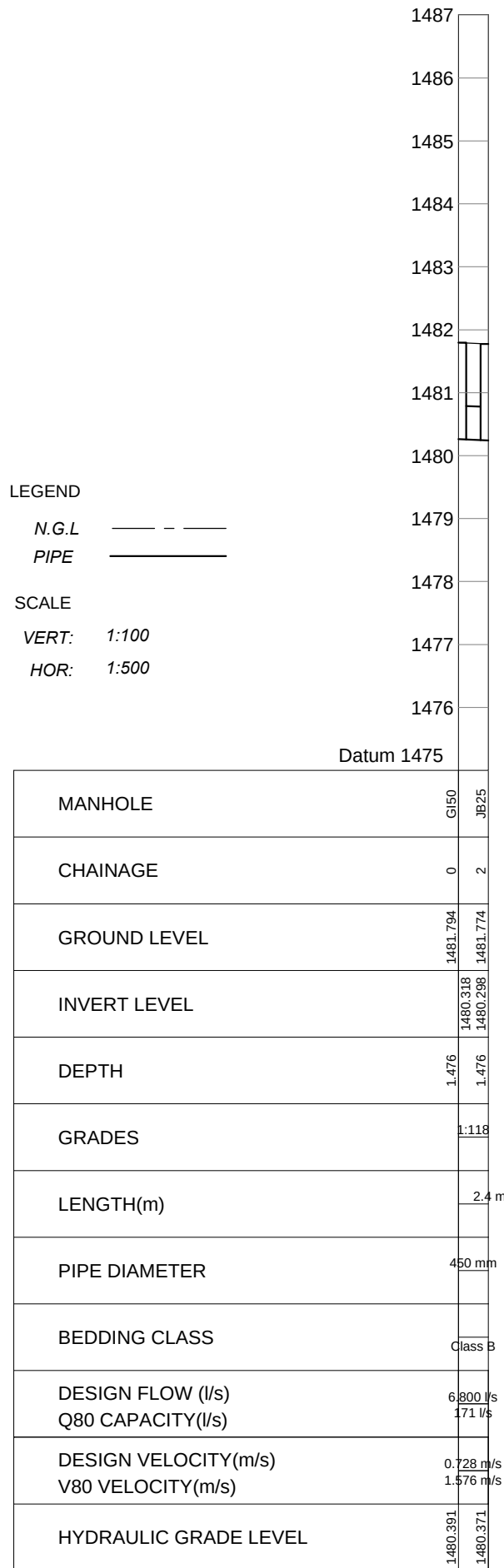
Manhole G156 to G154



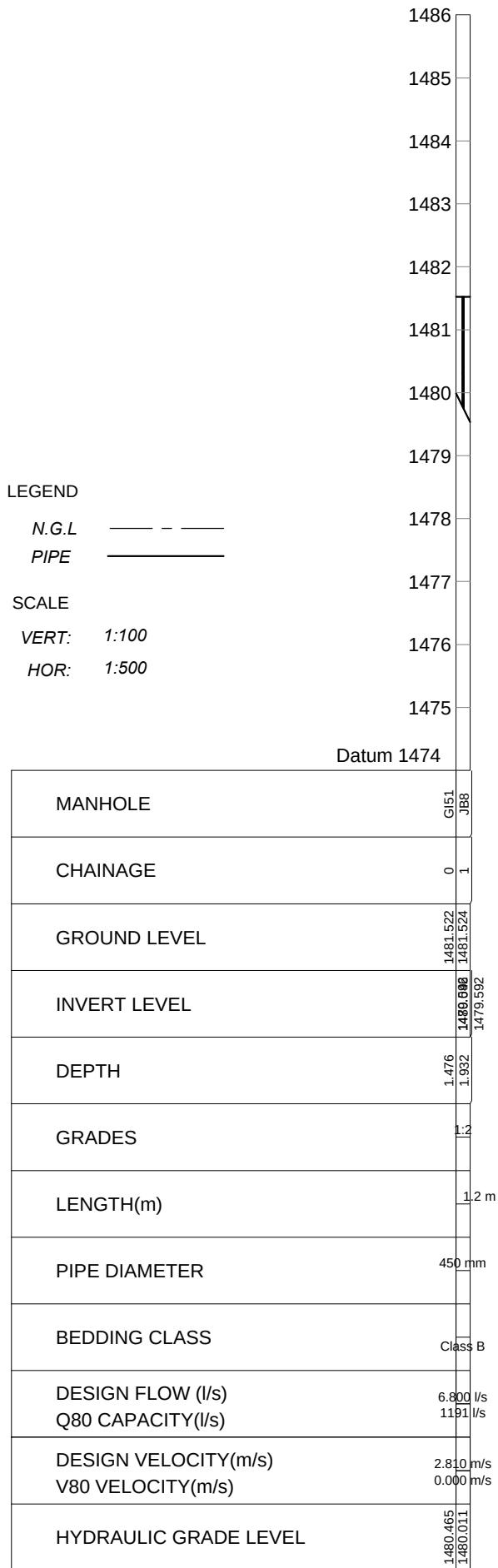
Manhole G148 to JB23



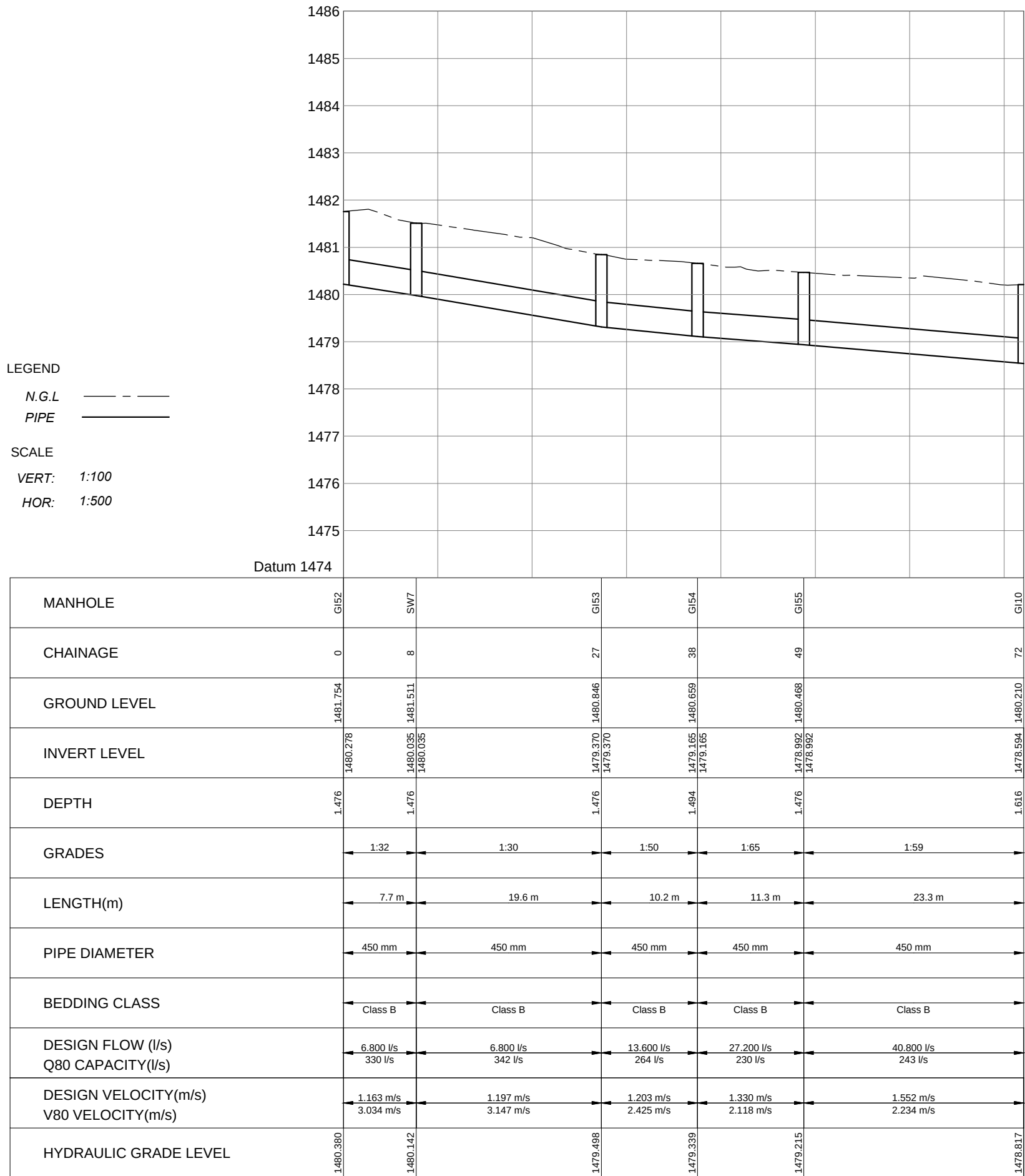
Manhole G149 to JB24



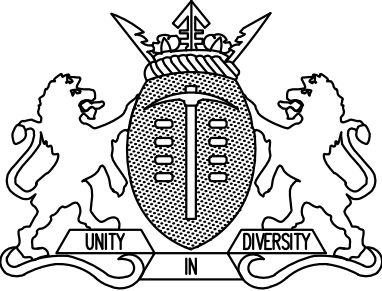
Manhole G150 to JB25



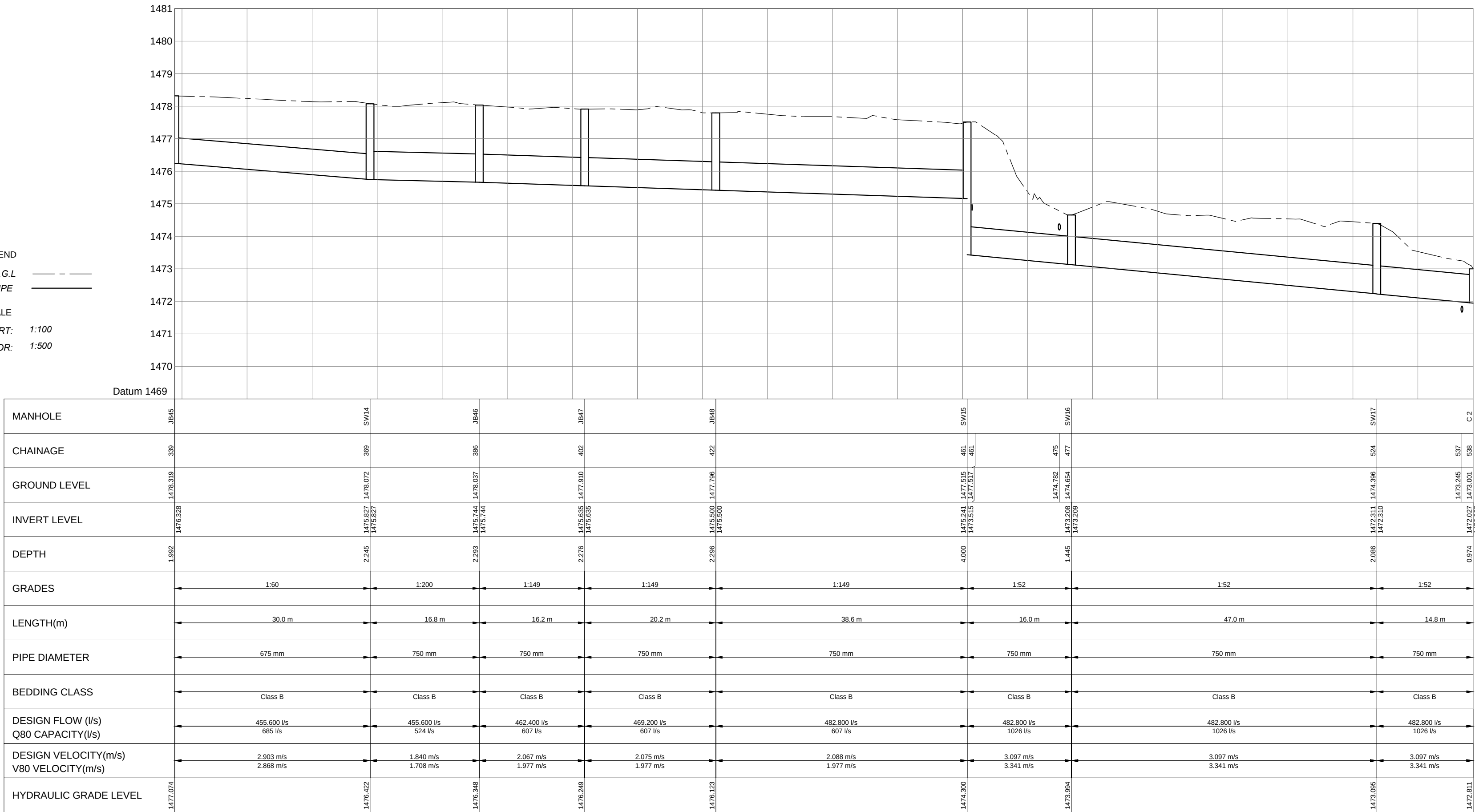
Manhole G151 to JB8



Manhole G152 to G110

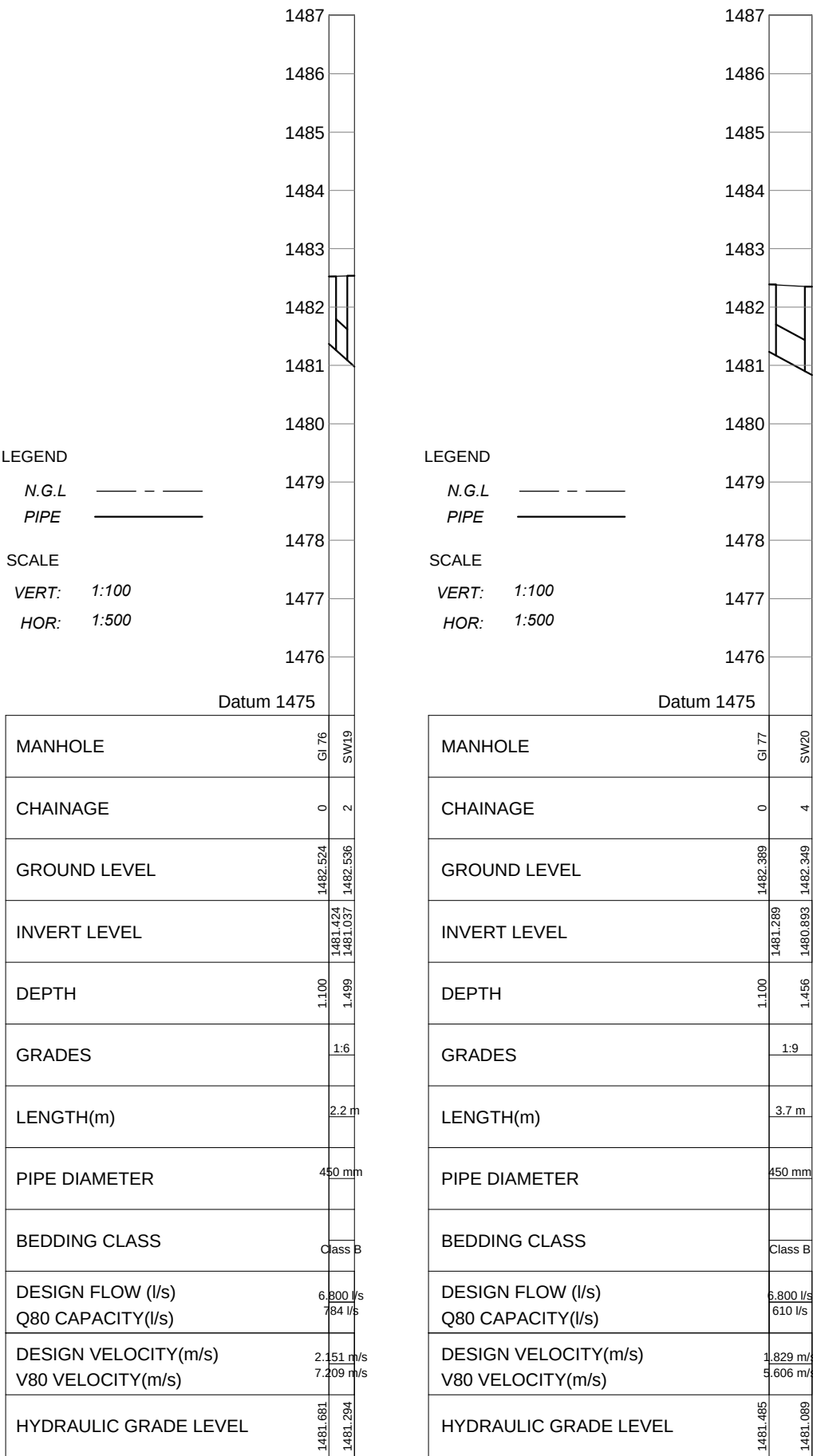
TO	09/2021	ISSUED FOR TENDER
REVISION No	DATE :	DESCRIPTION:
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
INSTITUTION		
HOERSKOOL CENTURION PHASE B		
SERVICE		
HOERSKOOL CENTURION PHASE B		
CONTRACT - SECTION		
CIVIL ENGINEERING SERVICES		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
STORMWATER LONG SECTION SHEET 4 OF 9		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	S. DUBE
SCALE	AS SHOWN	J. SIBANDA
RESPONSIBLE PROFESSIONAL		
DATE	NAME	SIGNATURE
09/2021	J. SIBANDA	
PR NUMBER		
201370155		
DRAWING CO-ORDINATED		
CONSULTANT :		
		
PROJECT'S STRATEGY CONSULTANTS		
BUILDING 1, 5 BALHINA STREET		
CLAREMONT OFFICE PARK		
CENTURION		
D04E		
P.O. BOX 8576 MEDUNGANI, 1685		
Tel: +27 12 665 1000		
Fax: +27 12 665 0908		
E-Mail: info@pmplus.co.za		
CONTRACTOR :		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-218	TD

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500



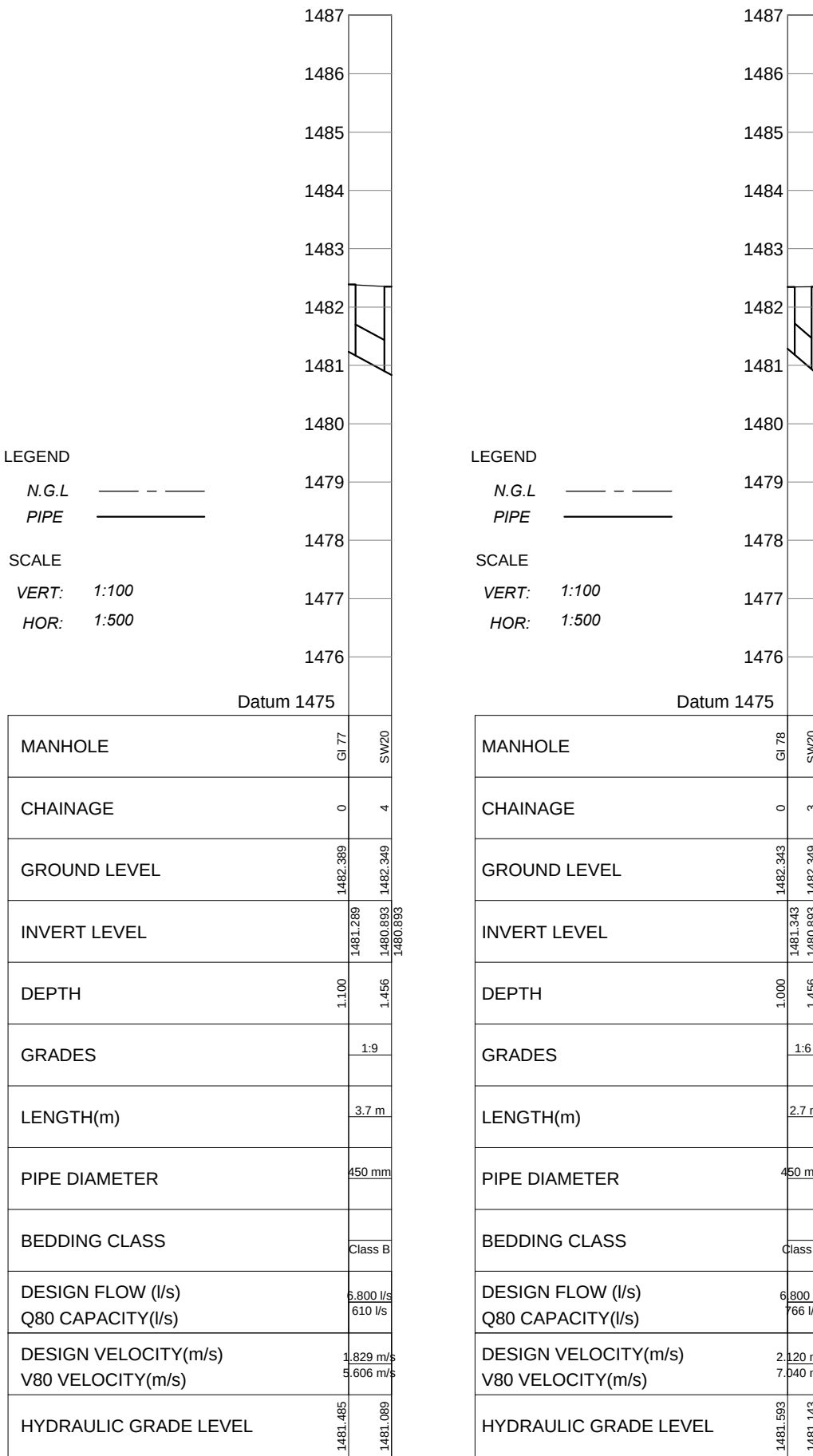
Manhole JB45 to C 2

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500



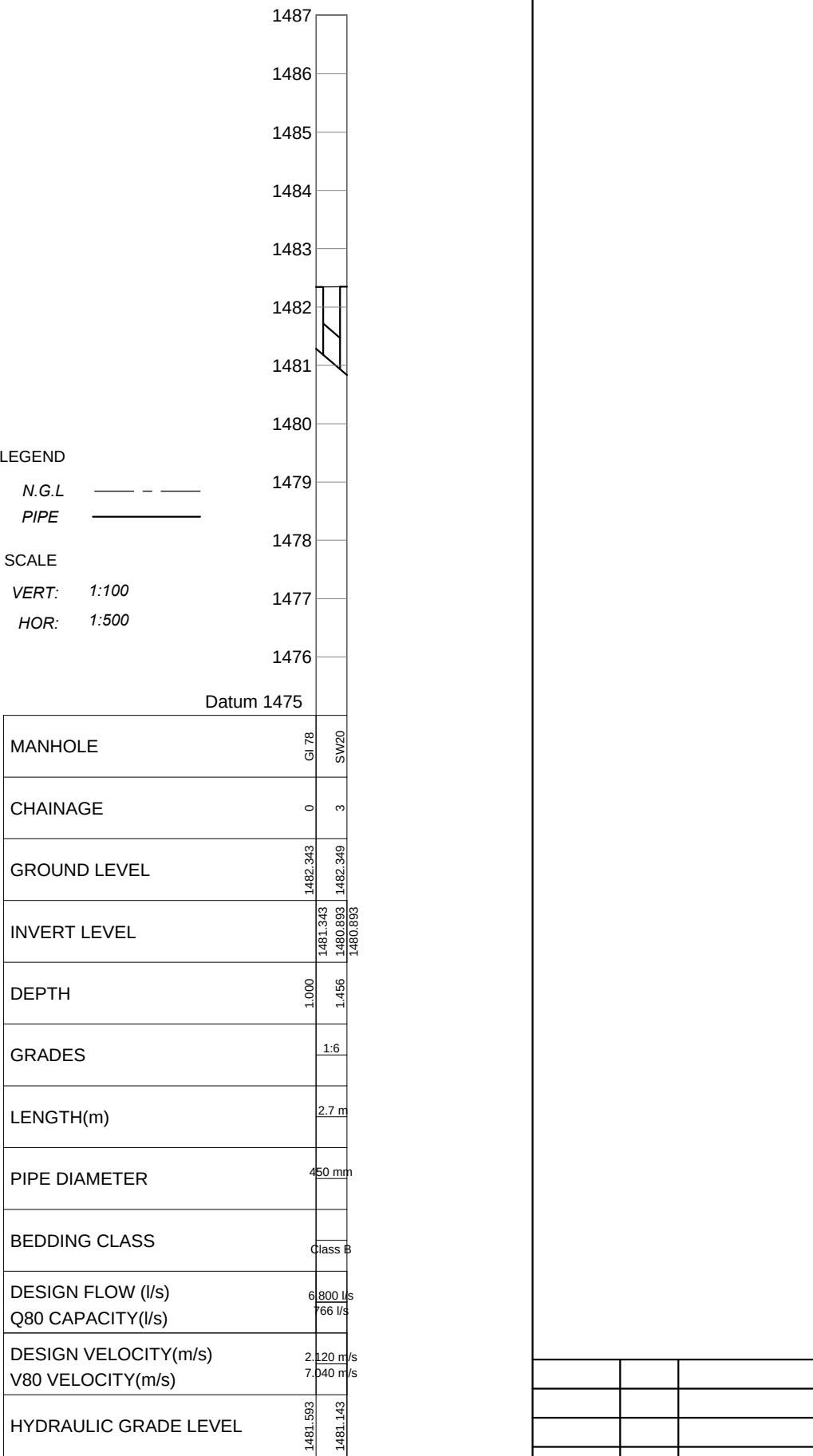
Manhole GI 76 to SW19

LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500



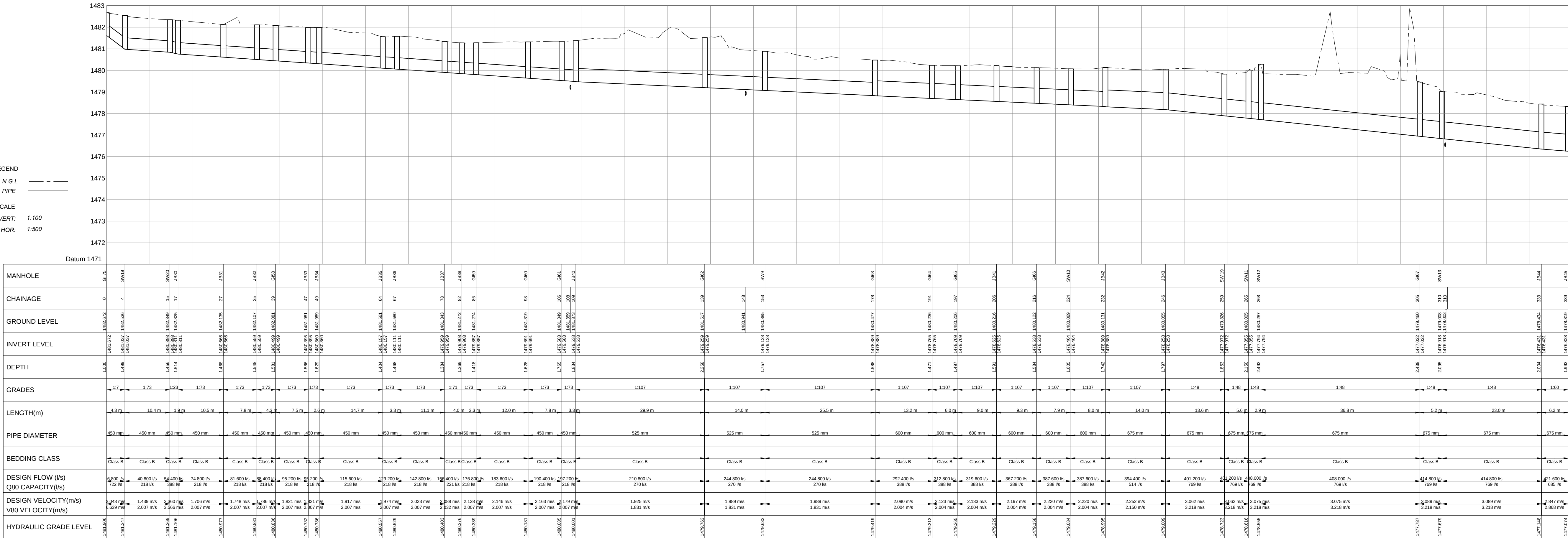
Manhole GI 77 to SW20

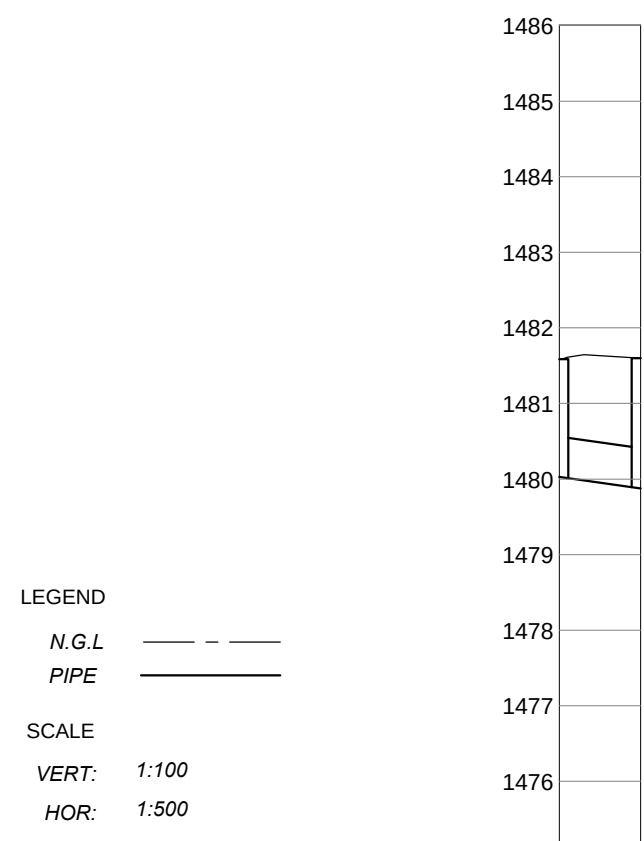
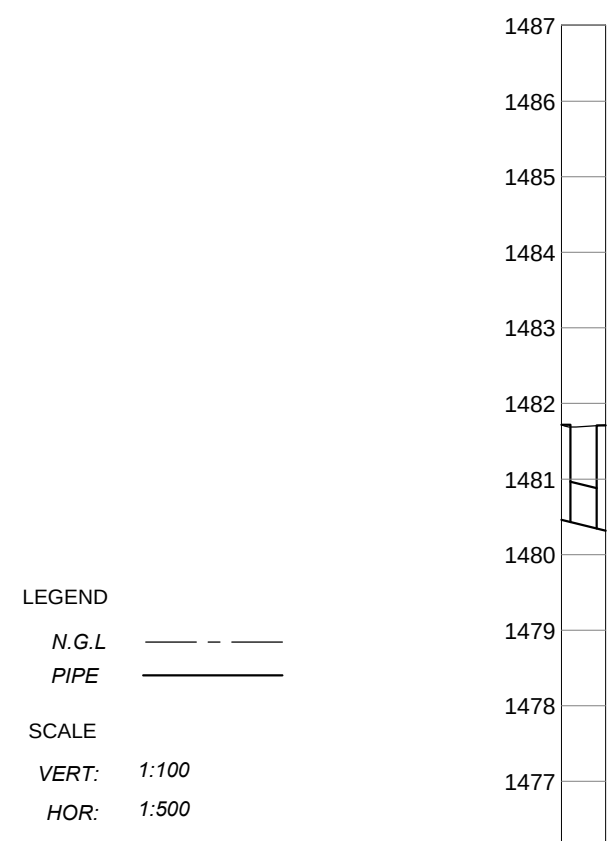
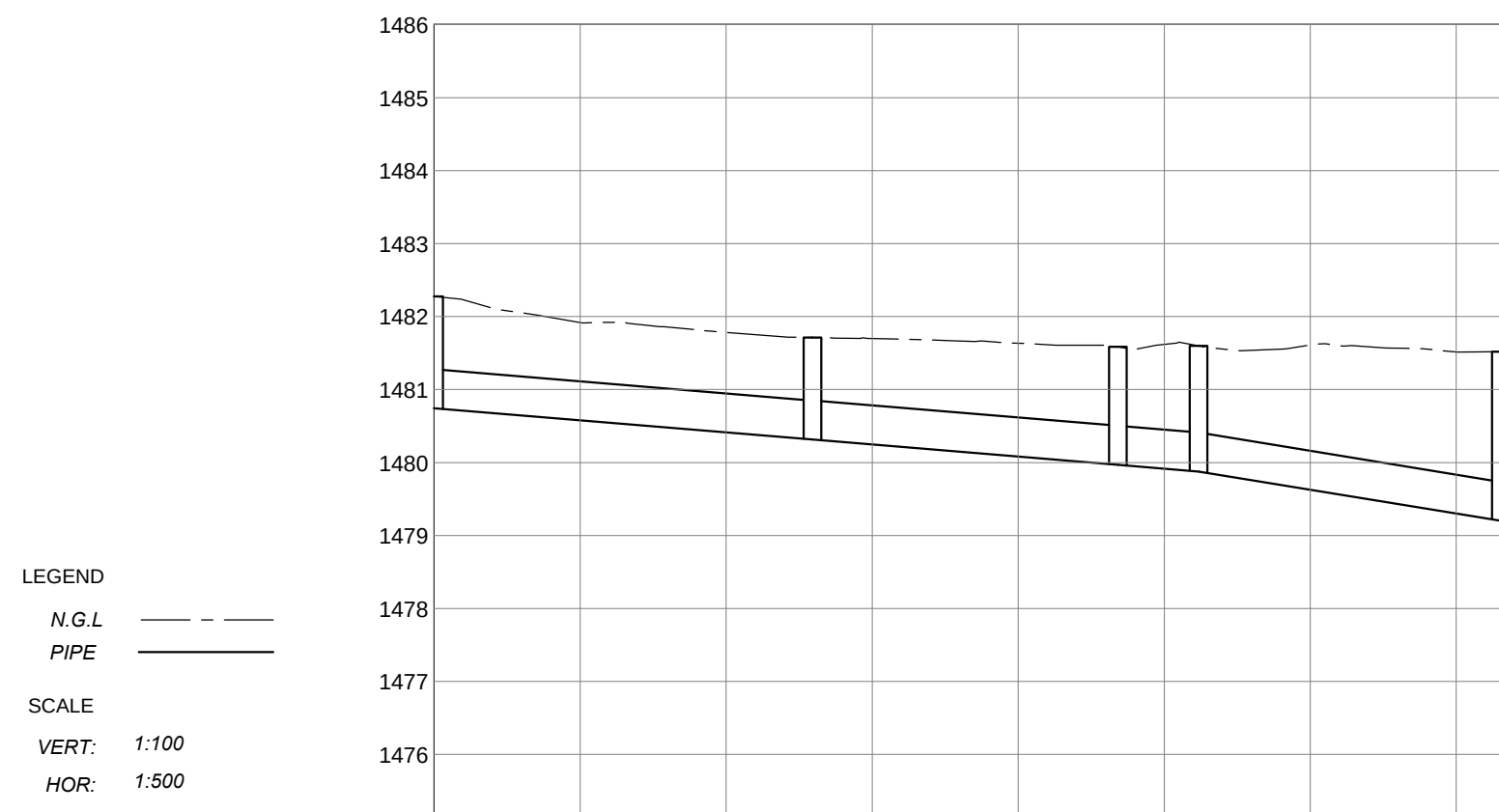
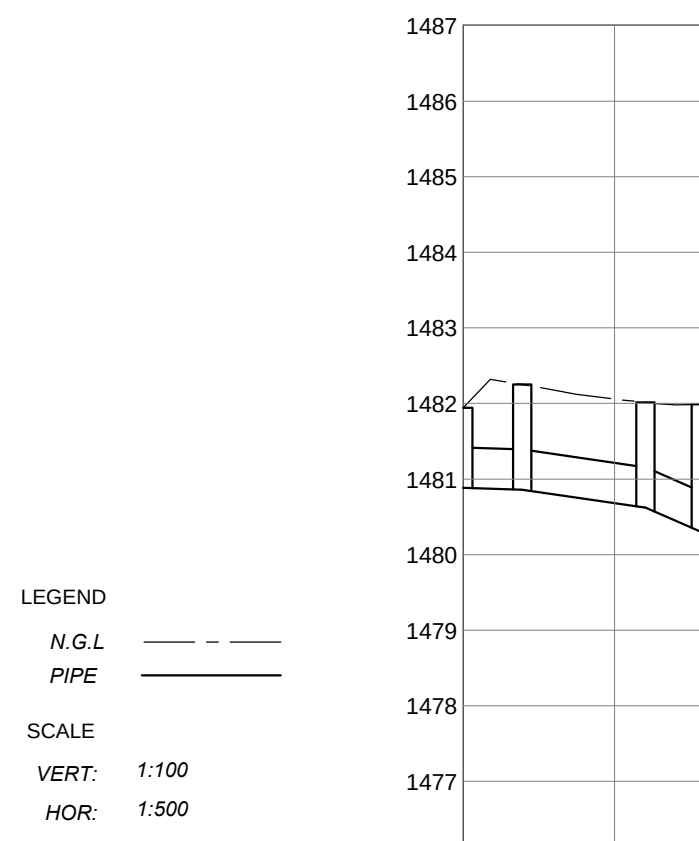
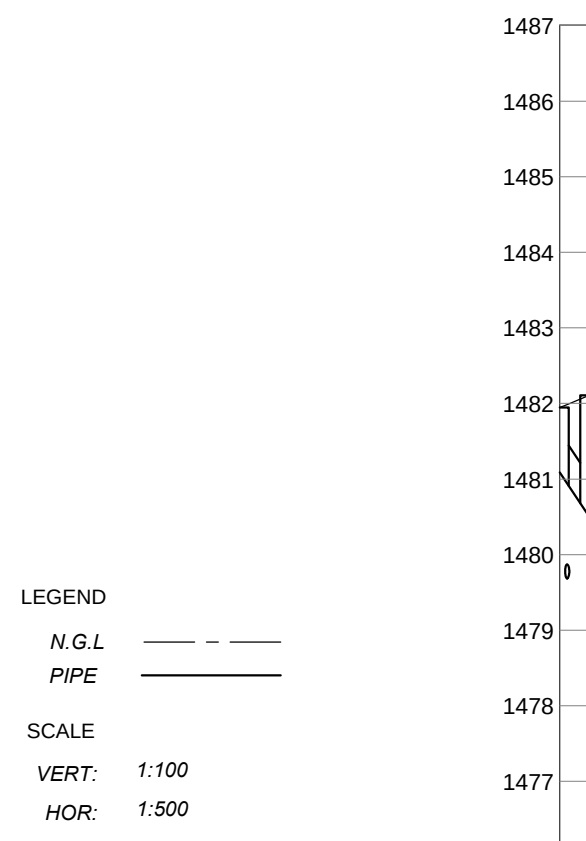
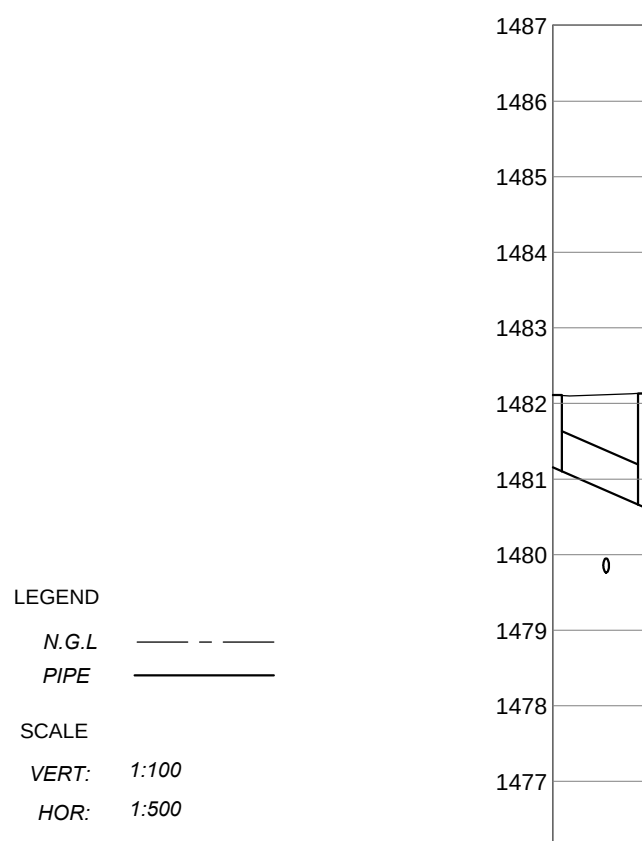
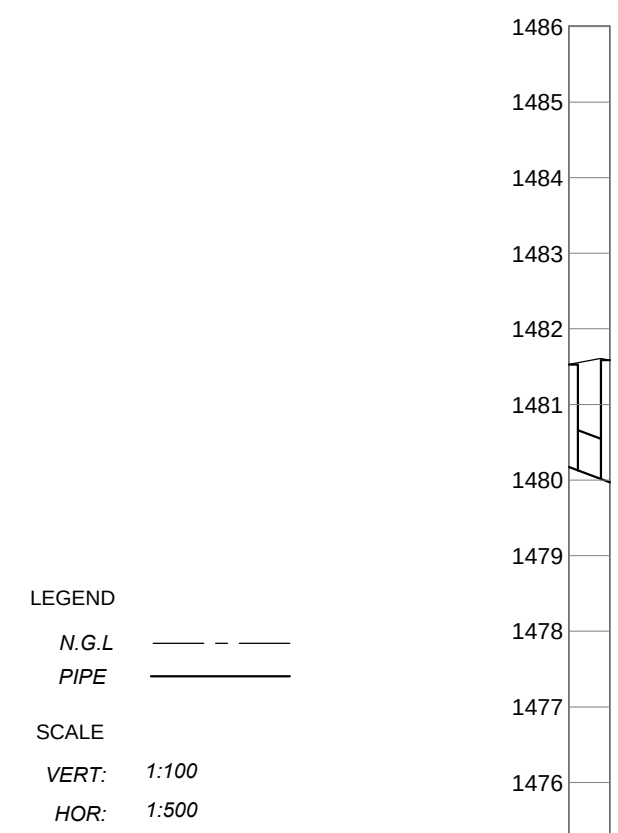
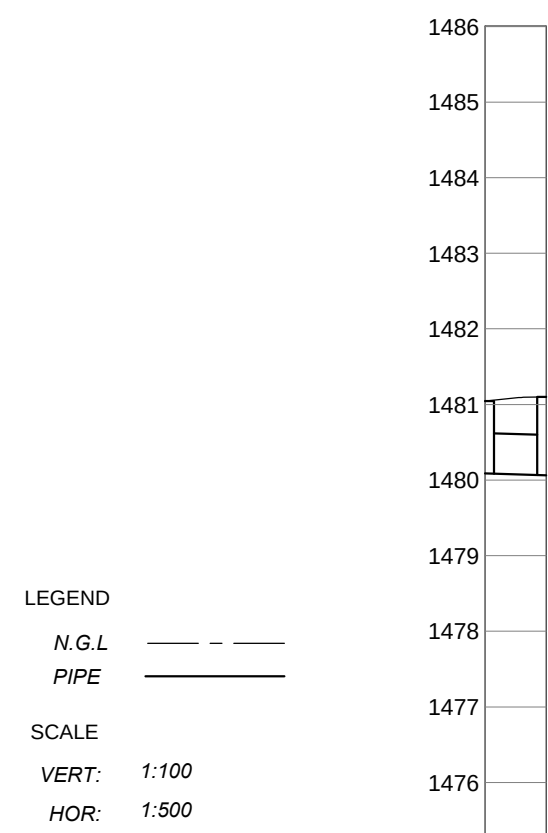
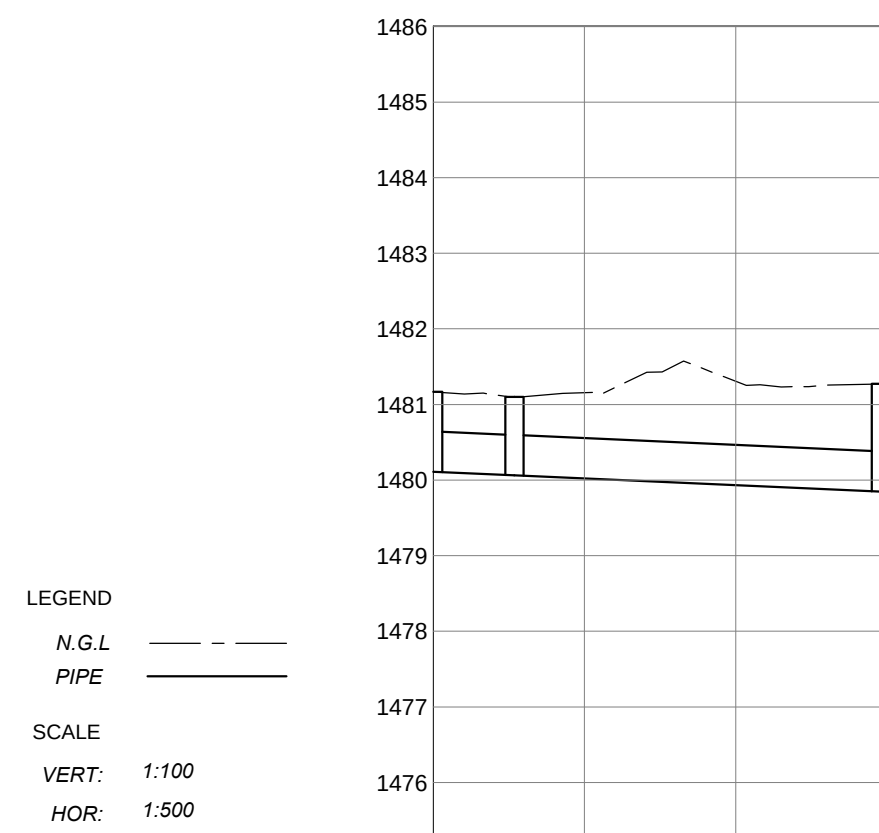
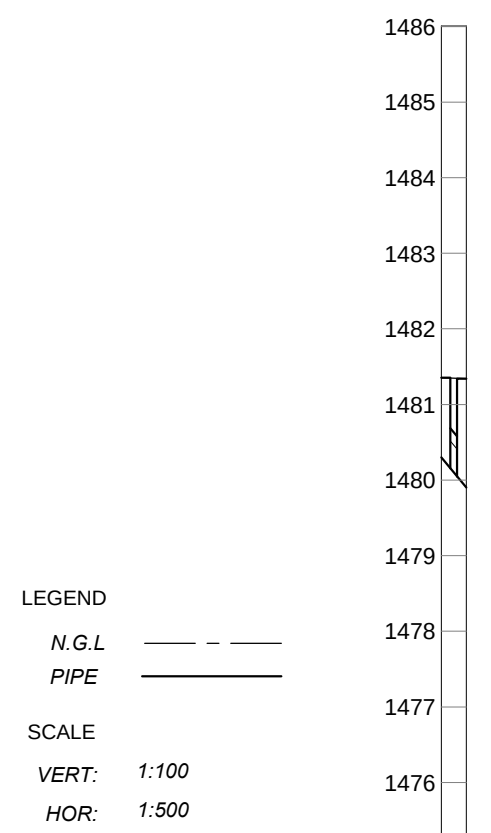
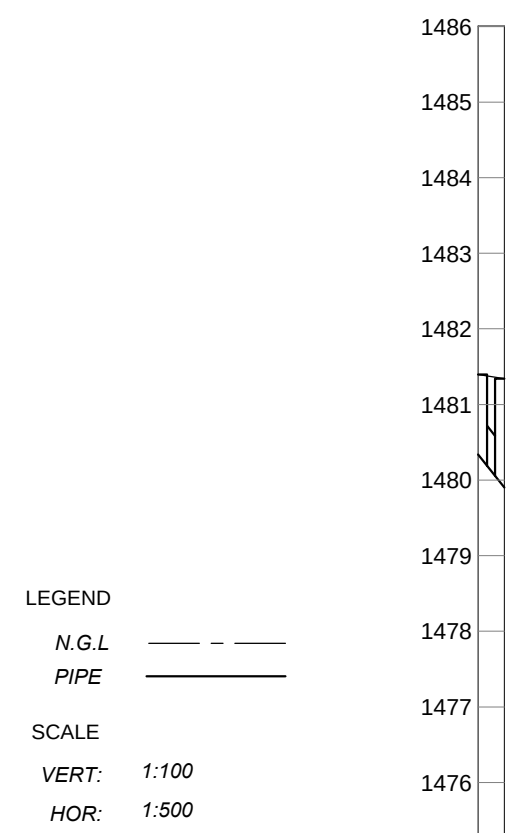
LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500



Manhole GI 78 to SW20

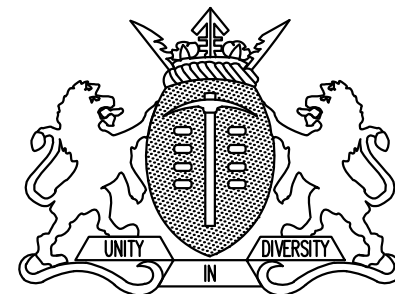
LEGEND
N.G.L. ---
PIPE ---
SCALE
VERT: 1:100
HOR: 1:500





TD	09/2021	ISSUED FOR TENDER

REVISION NO.	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		



DEPARTMENT OF
INFRASTRUCTURE DEVELOPMENT

INSTITUTION

HOERSKOOI CENTURION PHASE B

SERVICE	
HOERSKOOI CENTURION PHASE B	

CONTRACT - SECTION

CIVIL ENGINEERING SERVICES

DISCIPLINE	PROJECT STAGE
CIVIL	4

WORK DESCRIPTION - SUB DIVISION	
---------------------------------	--

	DRAWING DESCRIPTION
--	---------------------

STORMWATER LONG SECTION SHEET 6 OF 9

FILE No.			ITEM No.
DESIGN	J. SIBANDA	S. DUBE	DRAWN
SCALE	AS SHOWN	J. SIBANDA	CHECKED

RESPONSIBLE PROFESSIONAL			
DATE	NAME	SIGNATURE	PR NUMBER
09/2021	J. SIBANDA		201370155

DRAWING CO-ORDINATED			

COMPLETION			

CONSULTANT :



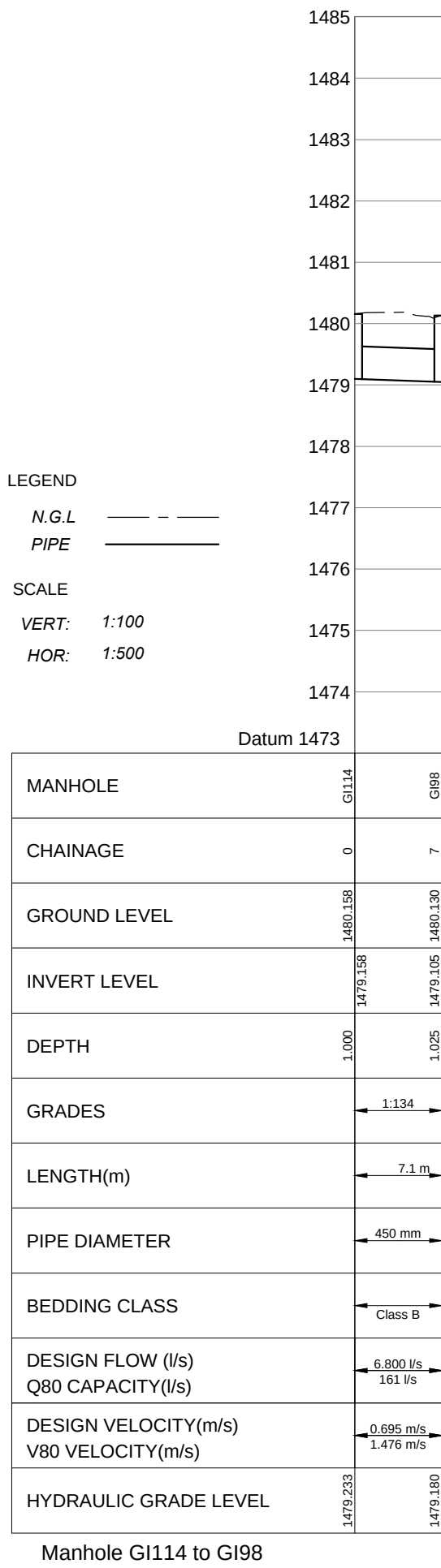
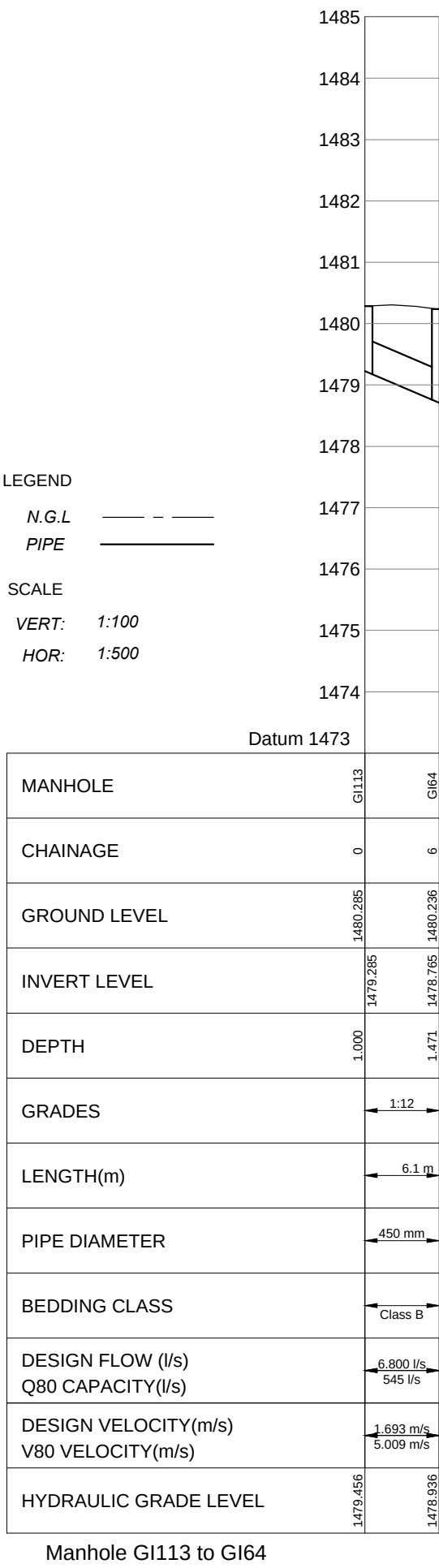
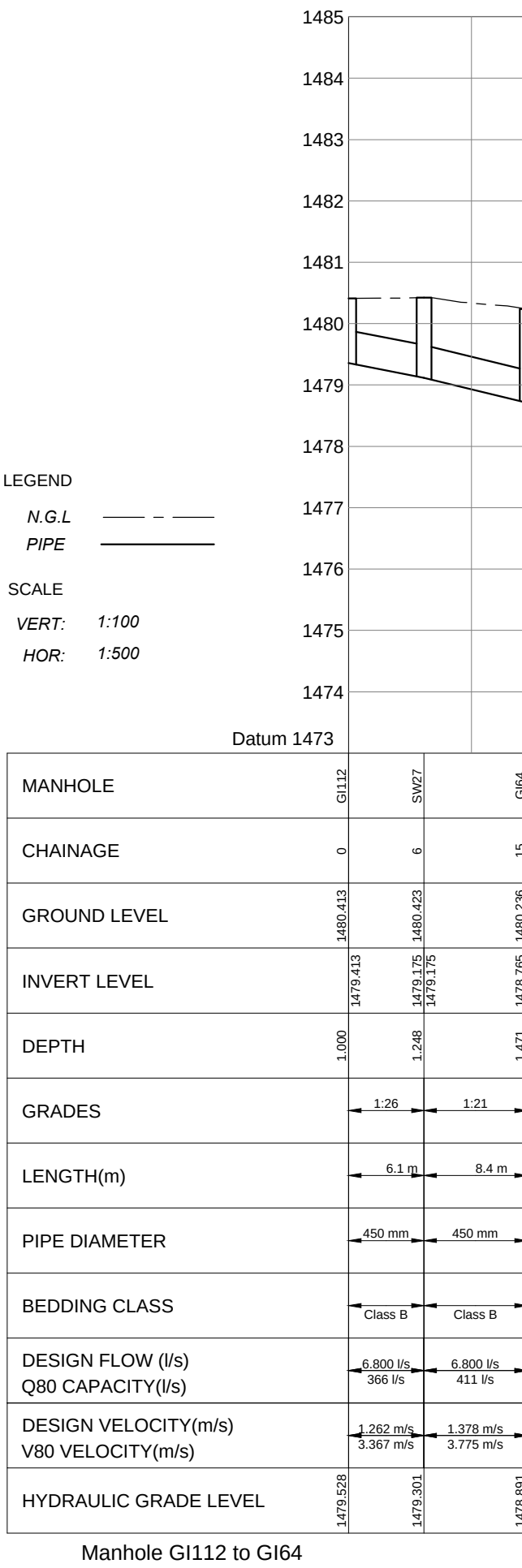
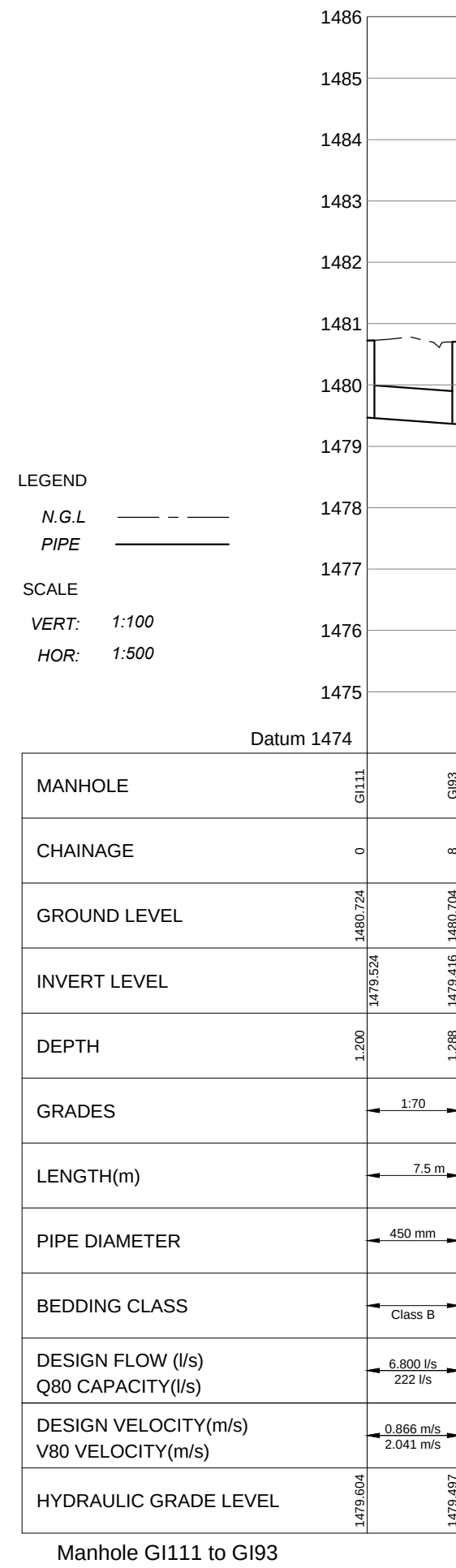
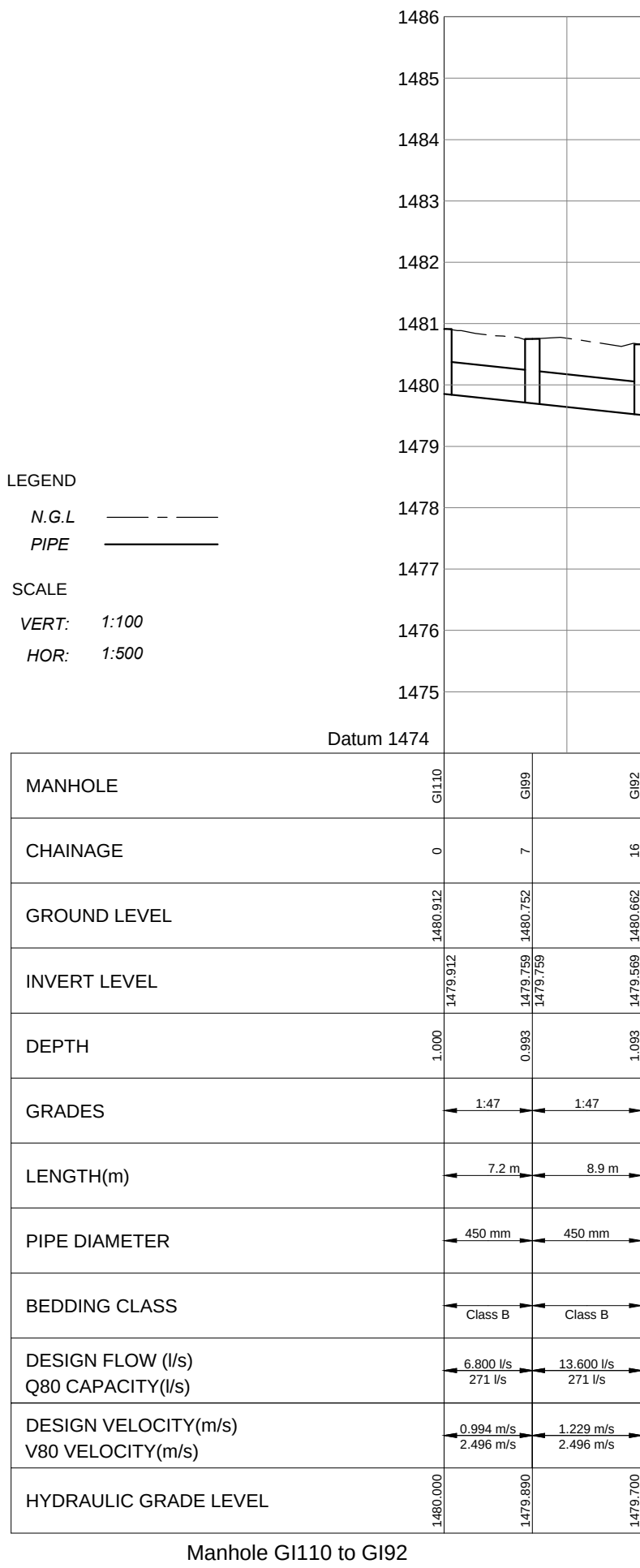
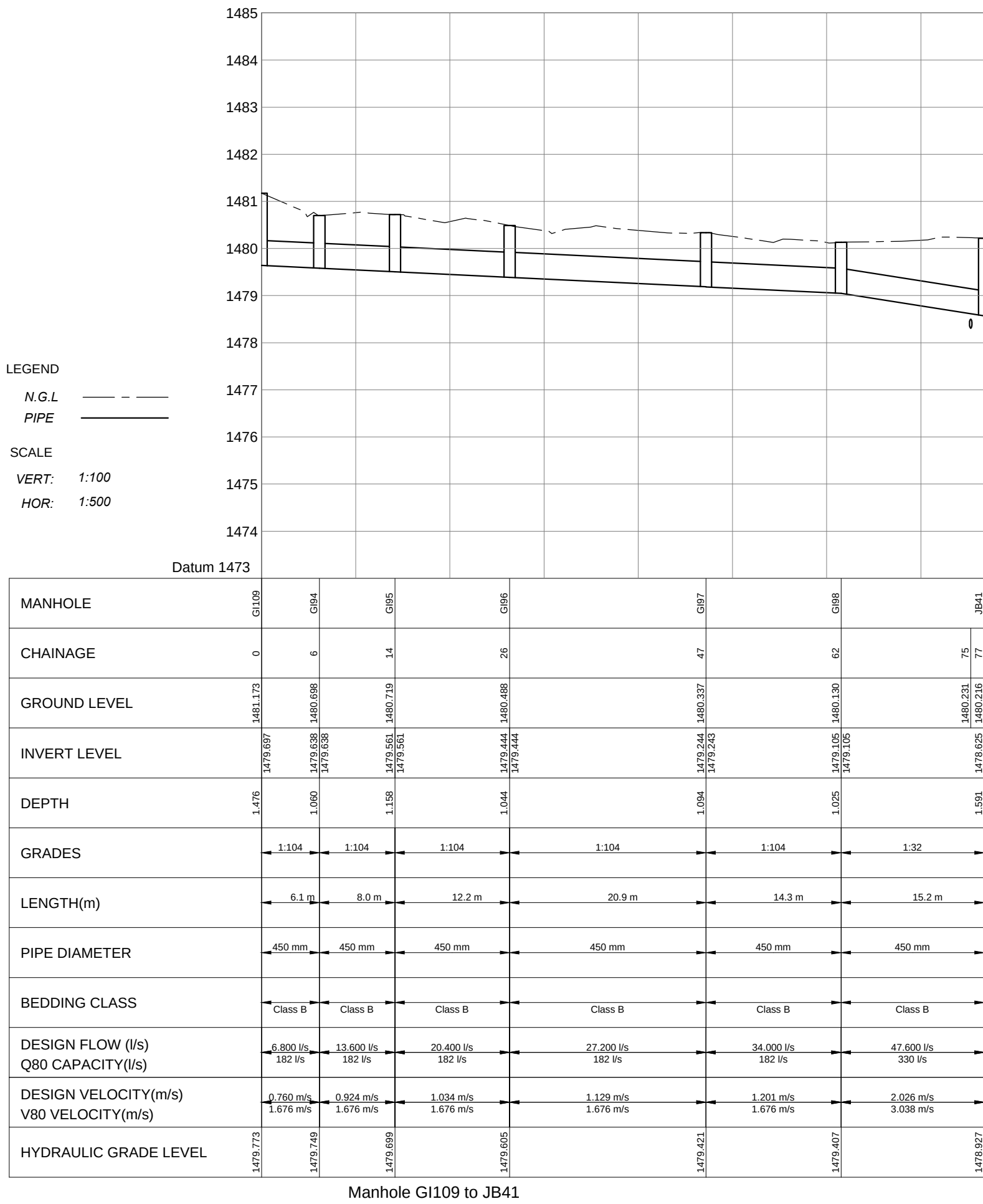
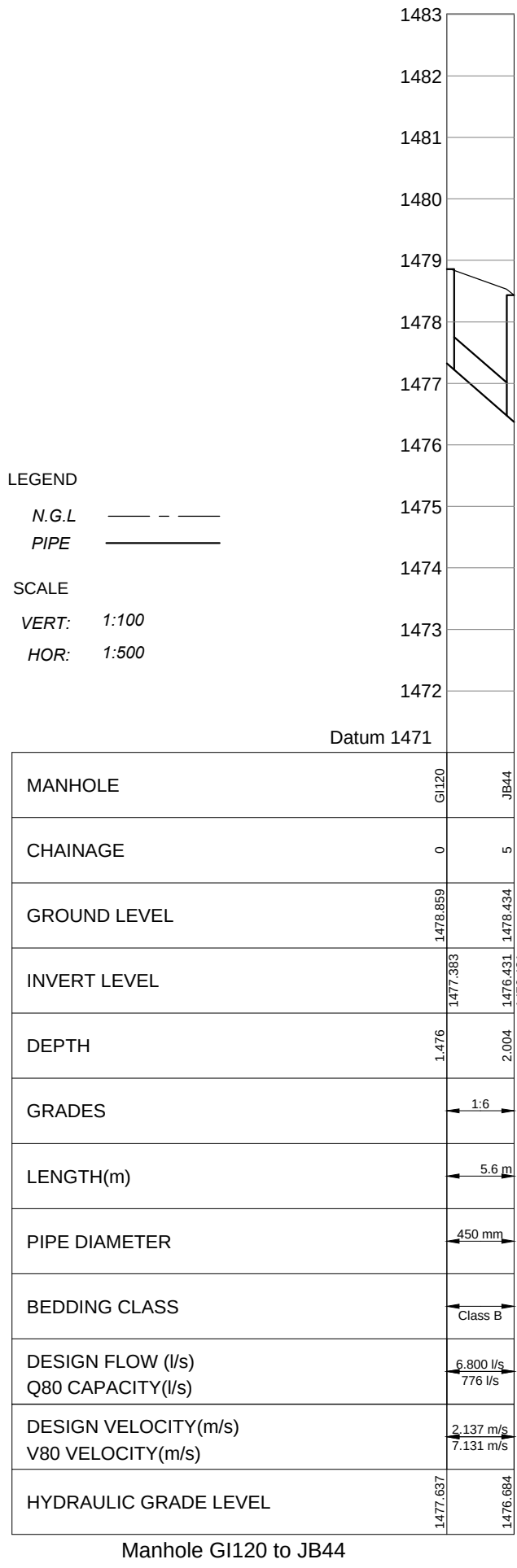
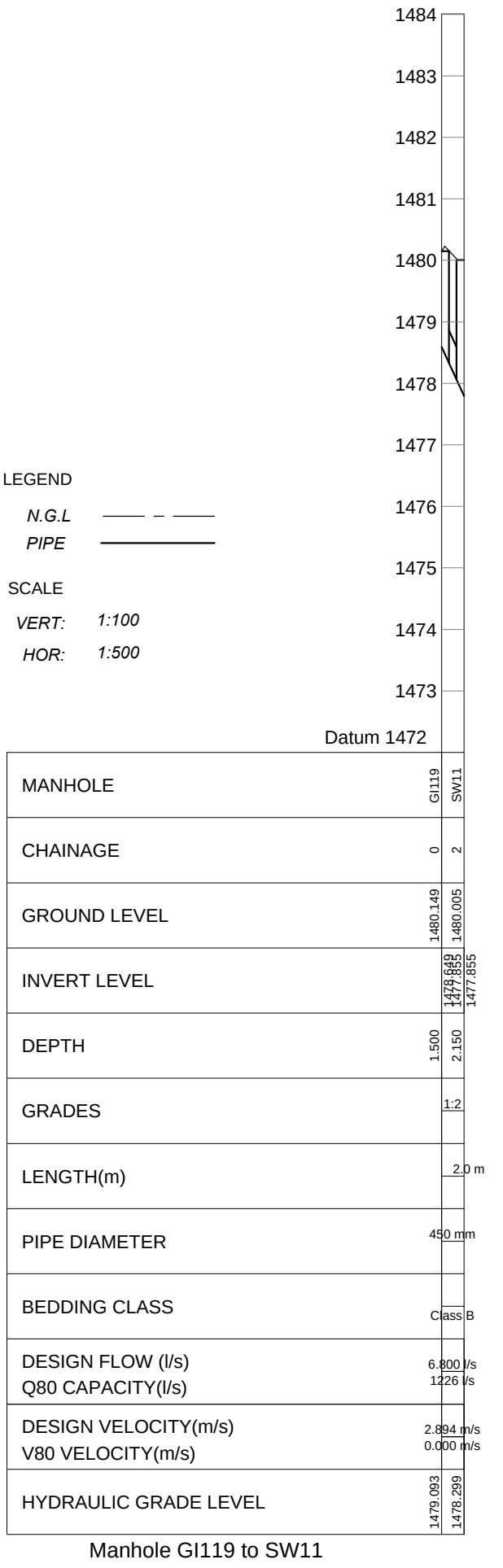
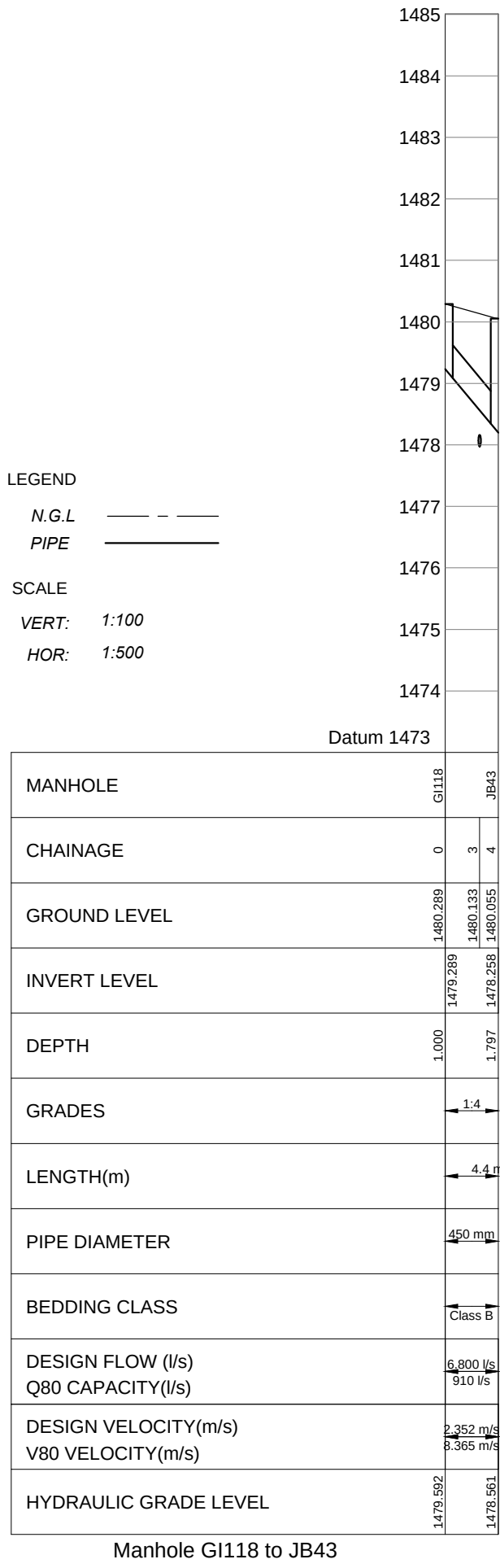
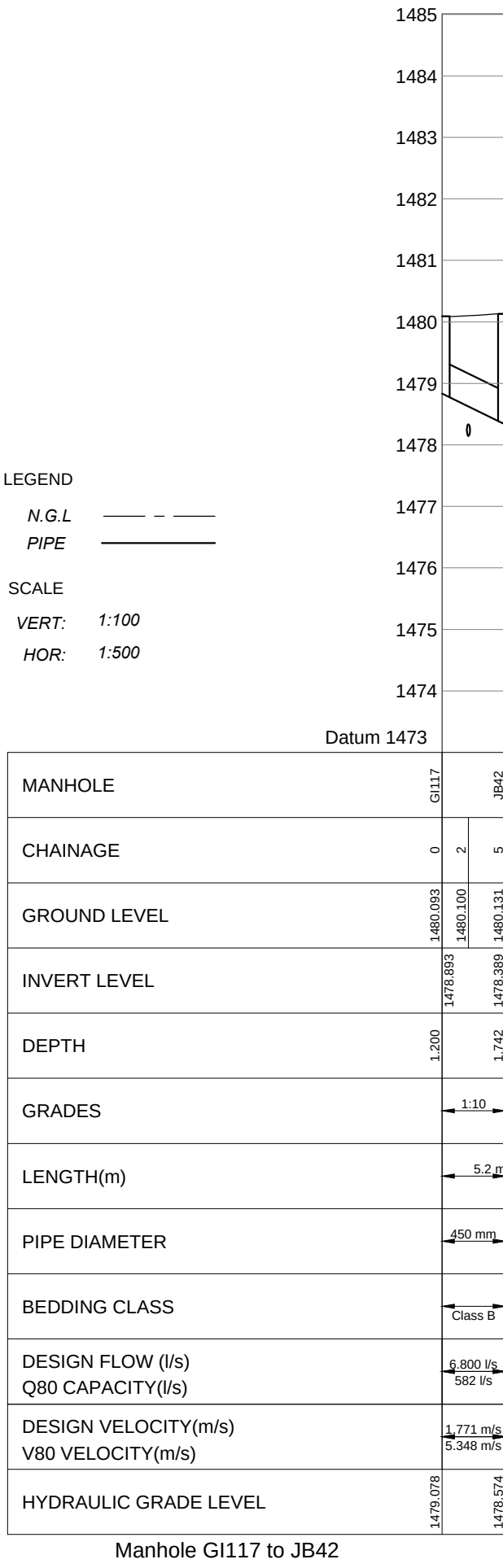
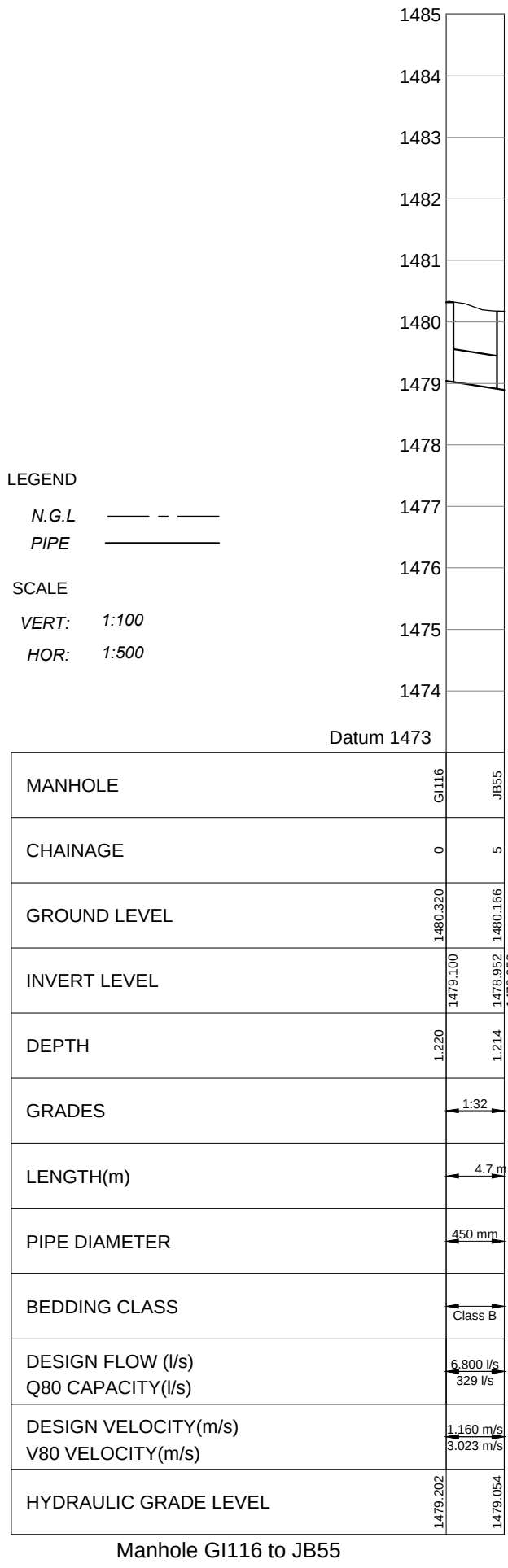
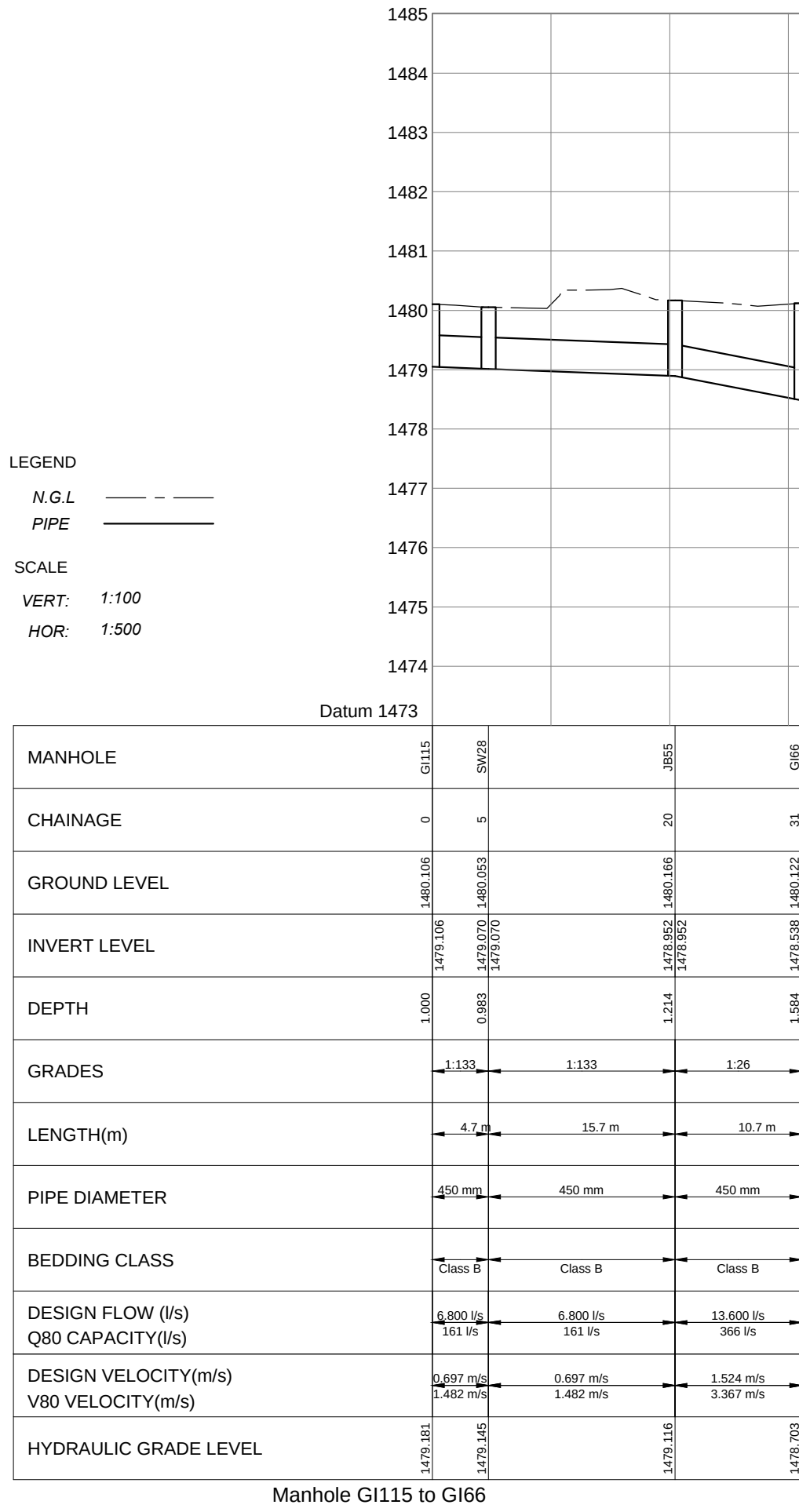
BUILDING 1, 5 BAUHINIA STREET P.O. BOX 8576
CAMBRIDGE OFFICE PARK Tel: +27 12 665
CENTURION Fax: +27 12 665
0066 E-Mail: admission@centurion.co.za

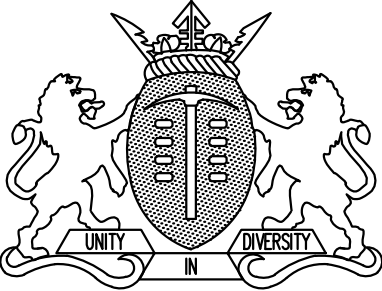
C. F. H. J. VAN DER WERF *et al.*

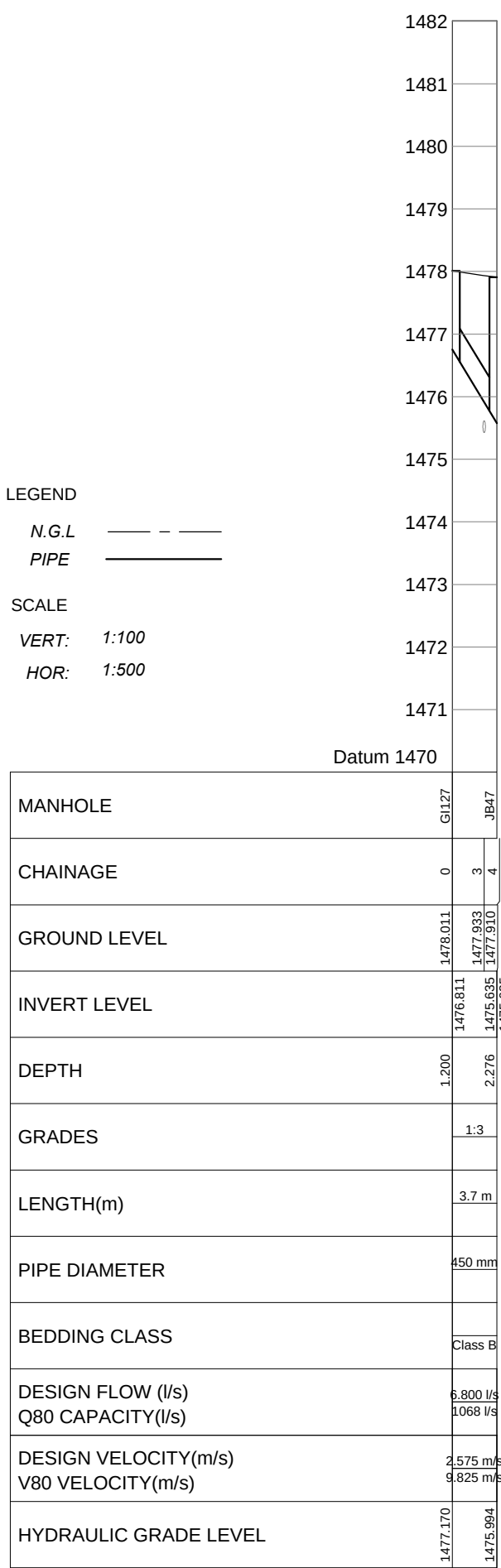
CONTRACTOR :	
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CADD	AUTOCAD		FILE
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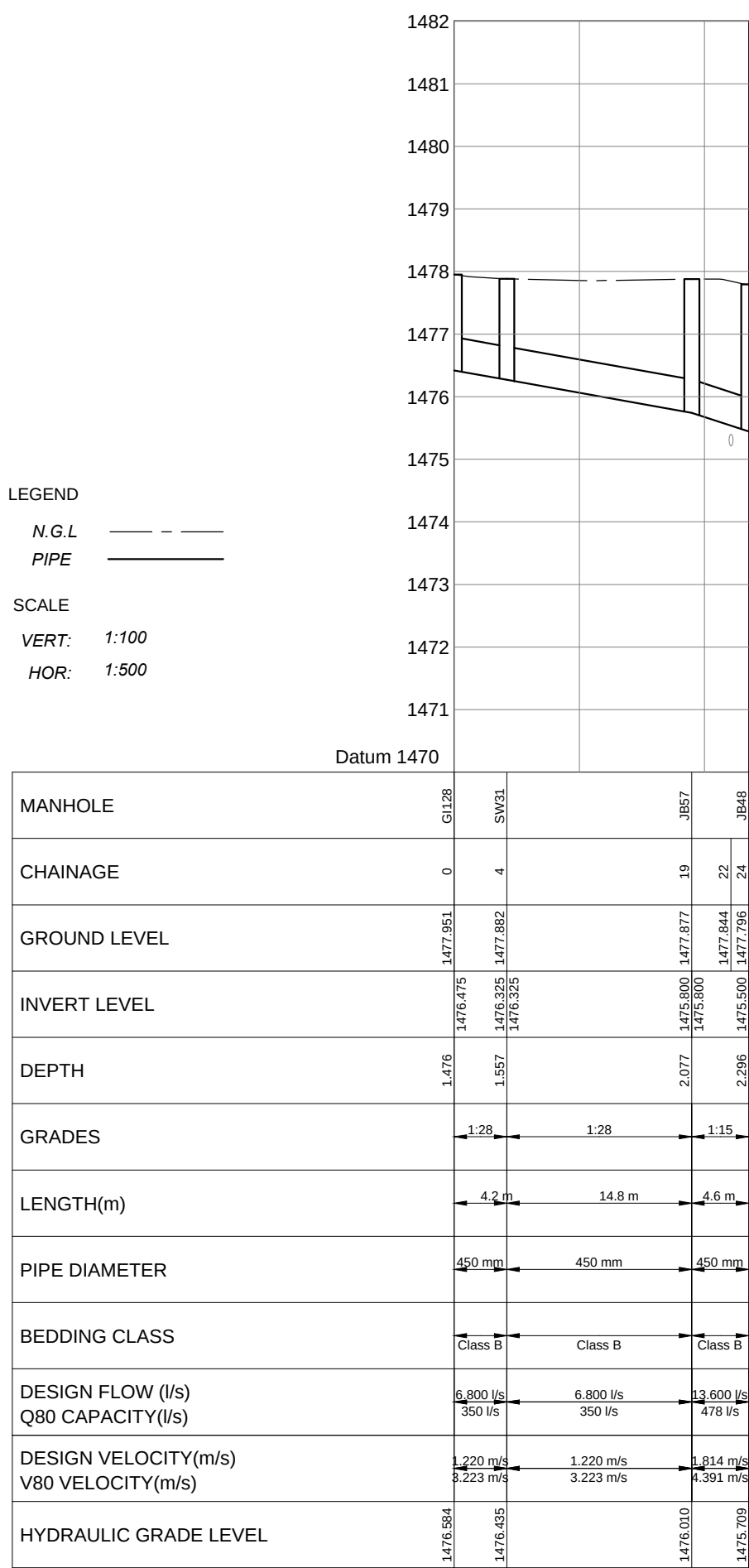
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SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-220	TD



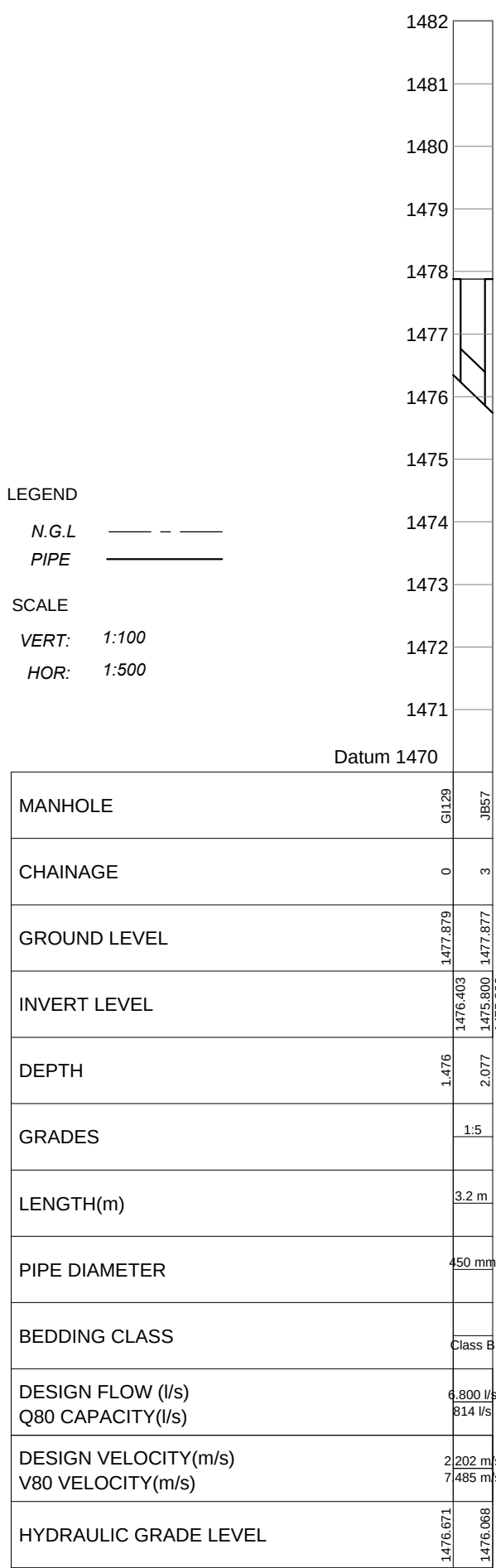
TO	09/2021	ISSUED FOR TENDER
REVISION No	DATE :	DESCRIPTION :
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
SERVICE		
HOERSKOOI CENTURION PHASE B		
CONTRACT - SECTION		
CIVIL ENGINEERING SERVICES		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
STORMWATER LONG SECTION SHEET 7 OF 9		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	S. DUBE
SCALE	AS SHOWN	J. SIBANDA
DATE	09/2021	PR NUMBER
NAME	J. SIBANDA	201370155
SIGNATURE		
DRAWING CO-ORDINATED		
CONSULTANT :		
		
PROJECT'S STRATEGY CONSULTANTS		
BUILDING 1, 5 BALHARA STREET		
CENTURION OFFICE PARK		
CENTURION		
P.O. BOX 8076 MEDUNGANI, 1655		



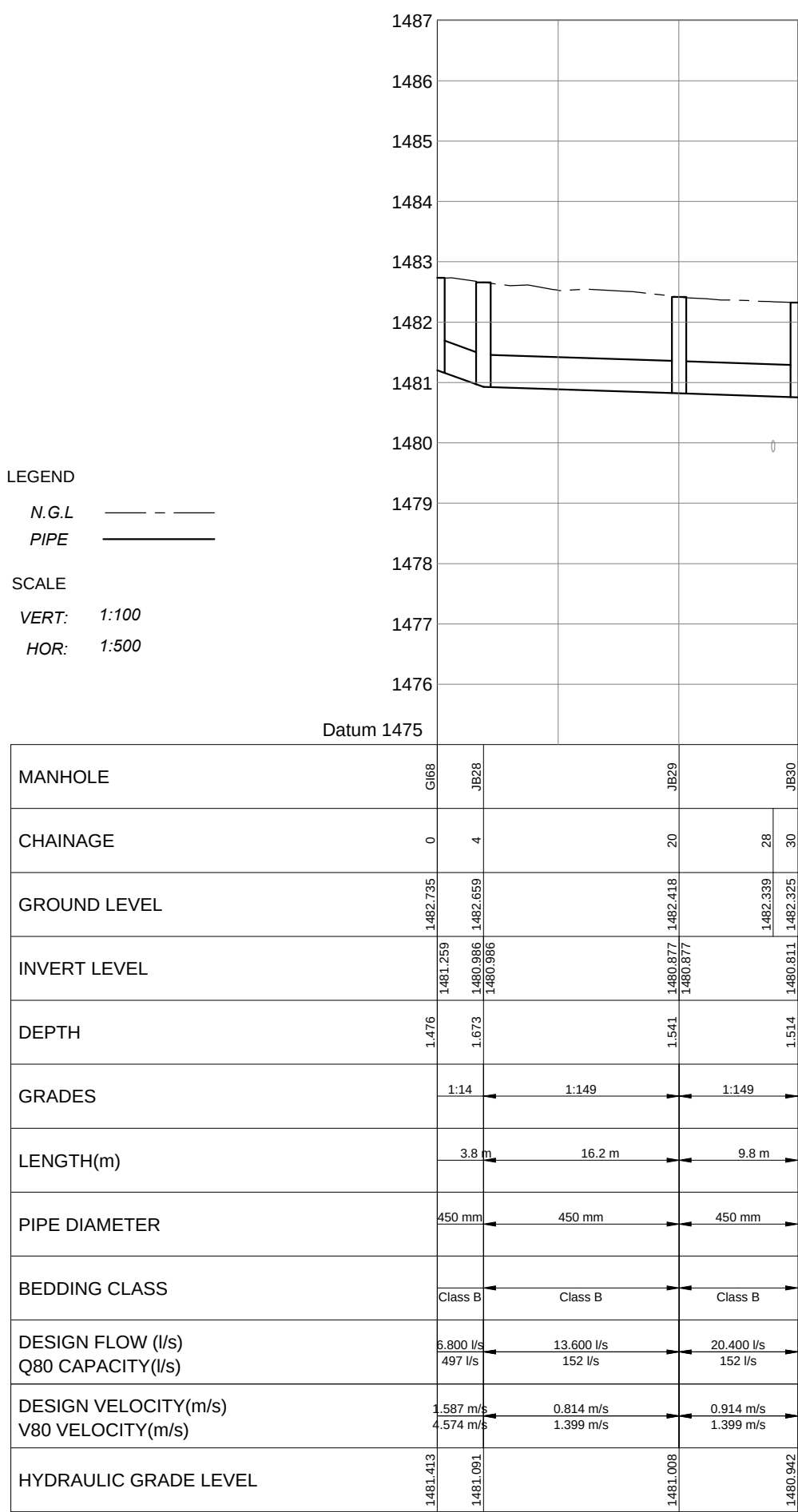
Manhole GI127 to JB47



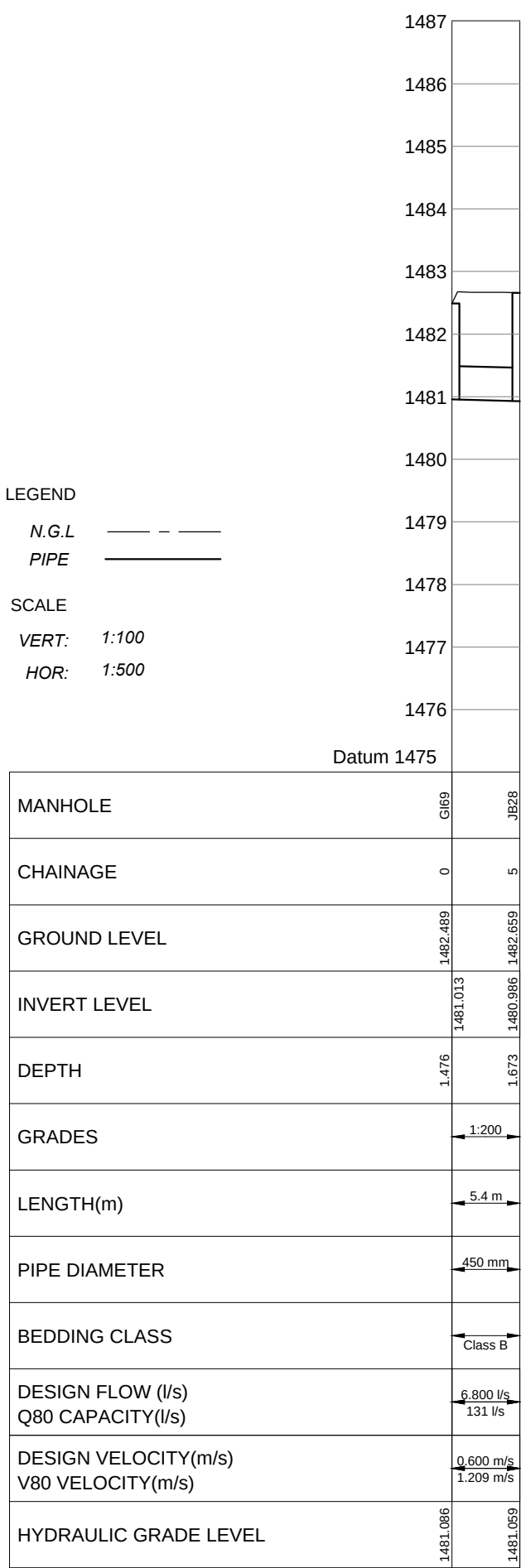
Manhole GI128 to JB48



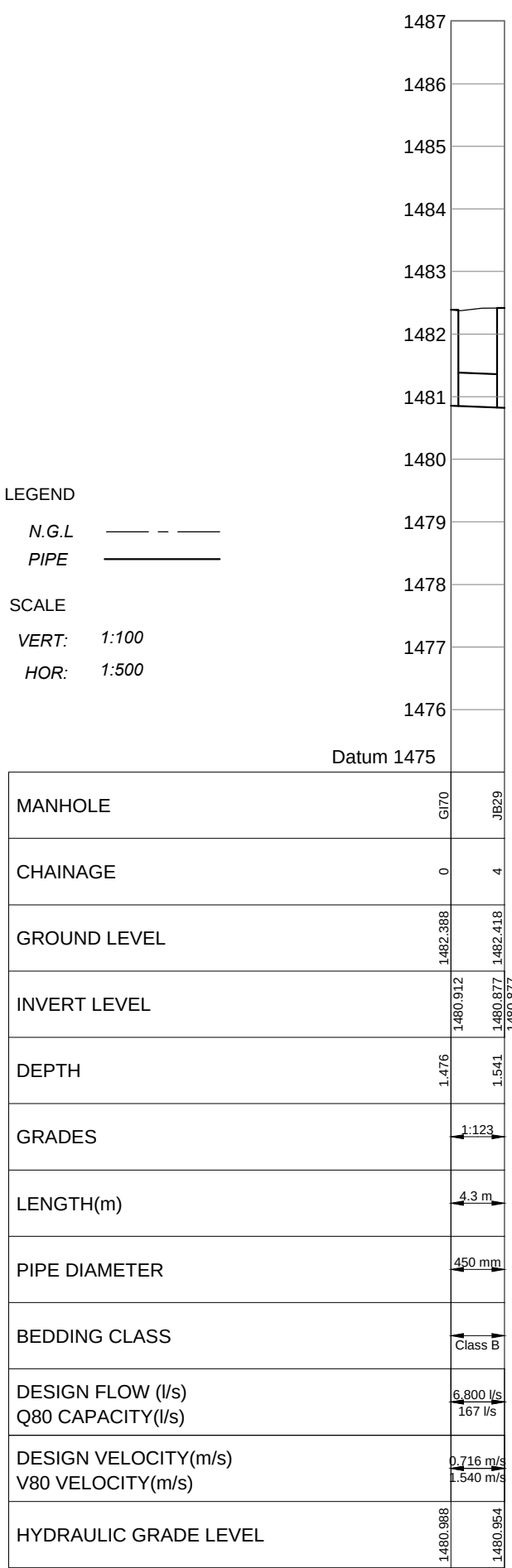
Manhole GI129 to JB57



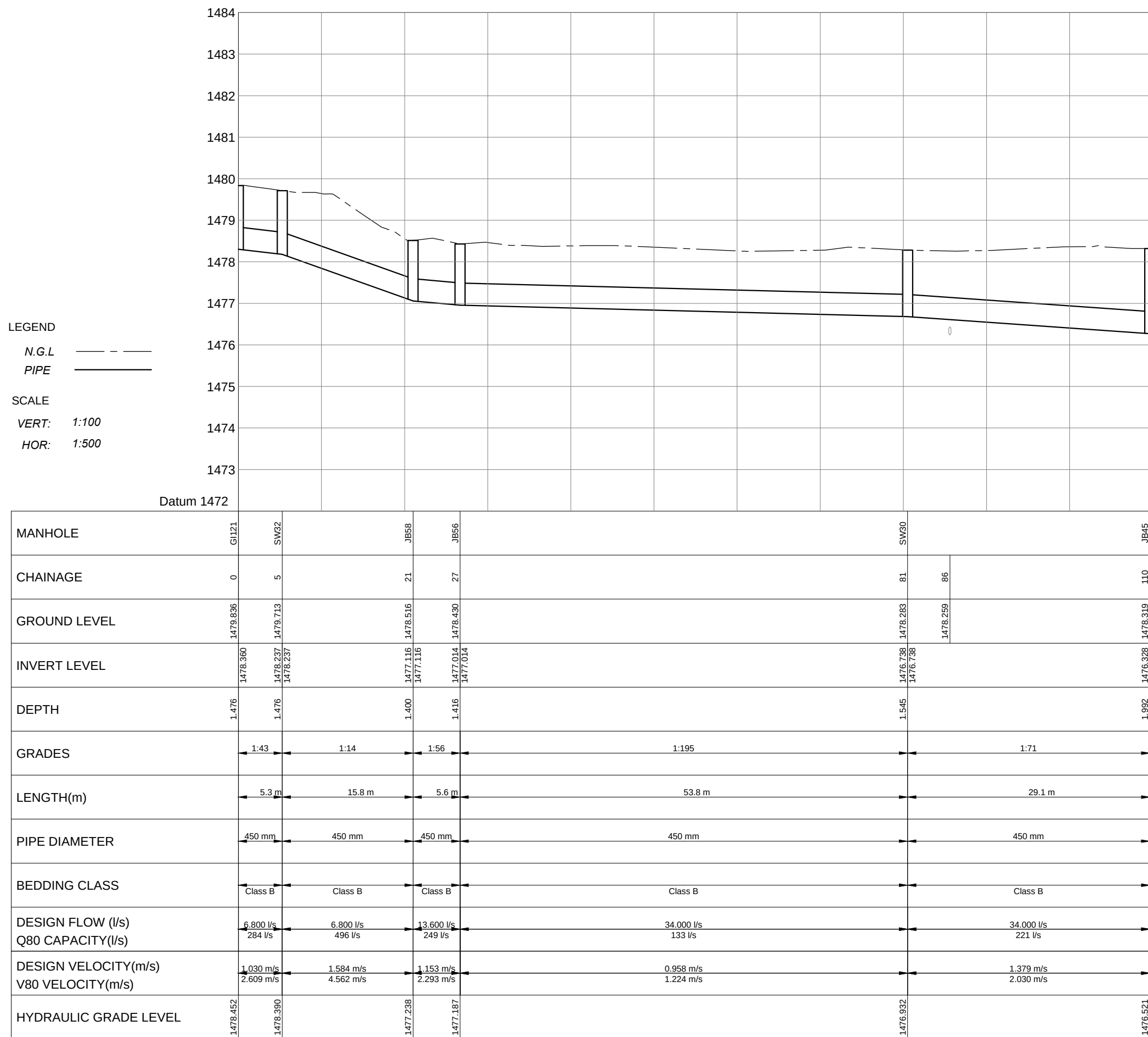
Manhole GI168 to JB30



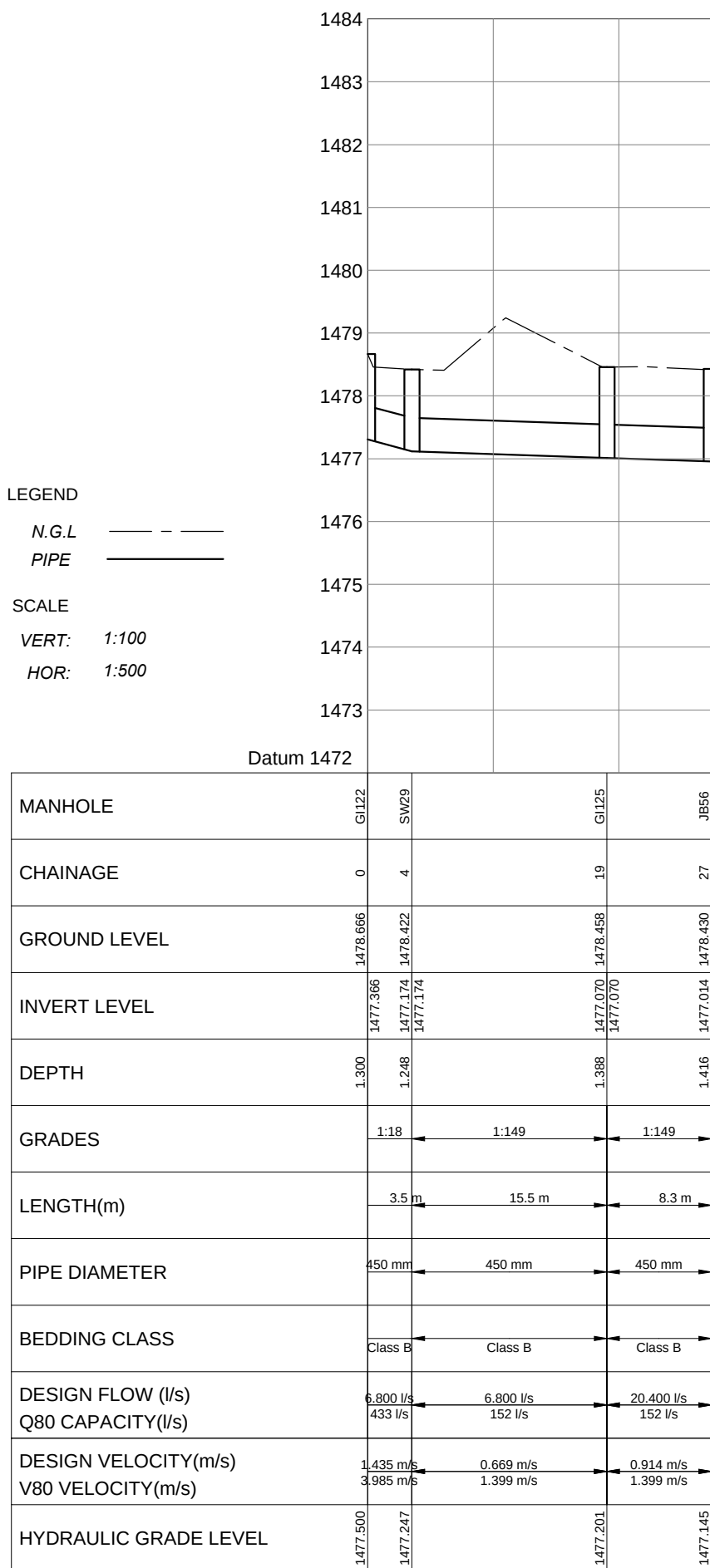
Manhole GI169 to JB28



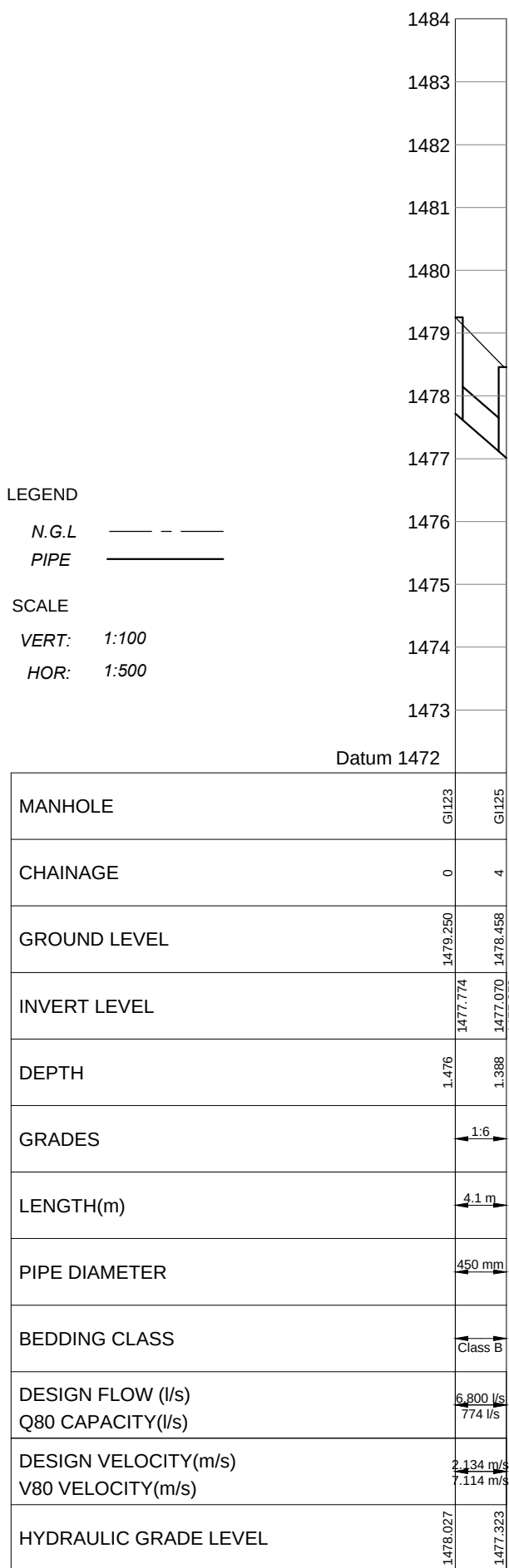
Manhole GI170 to JB29



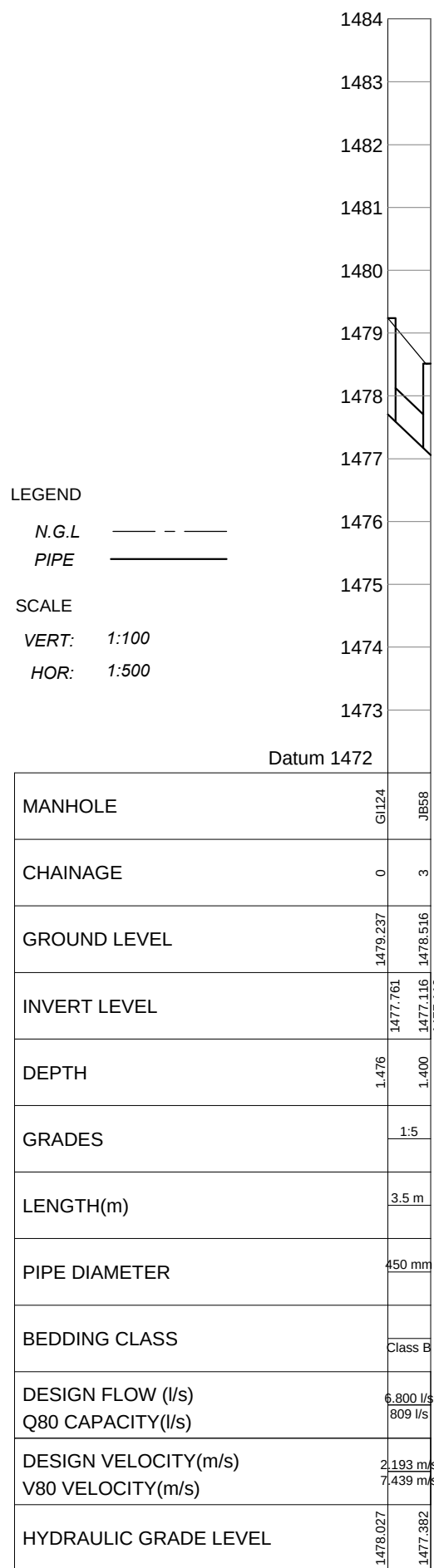
Manhole GI121 to JB45



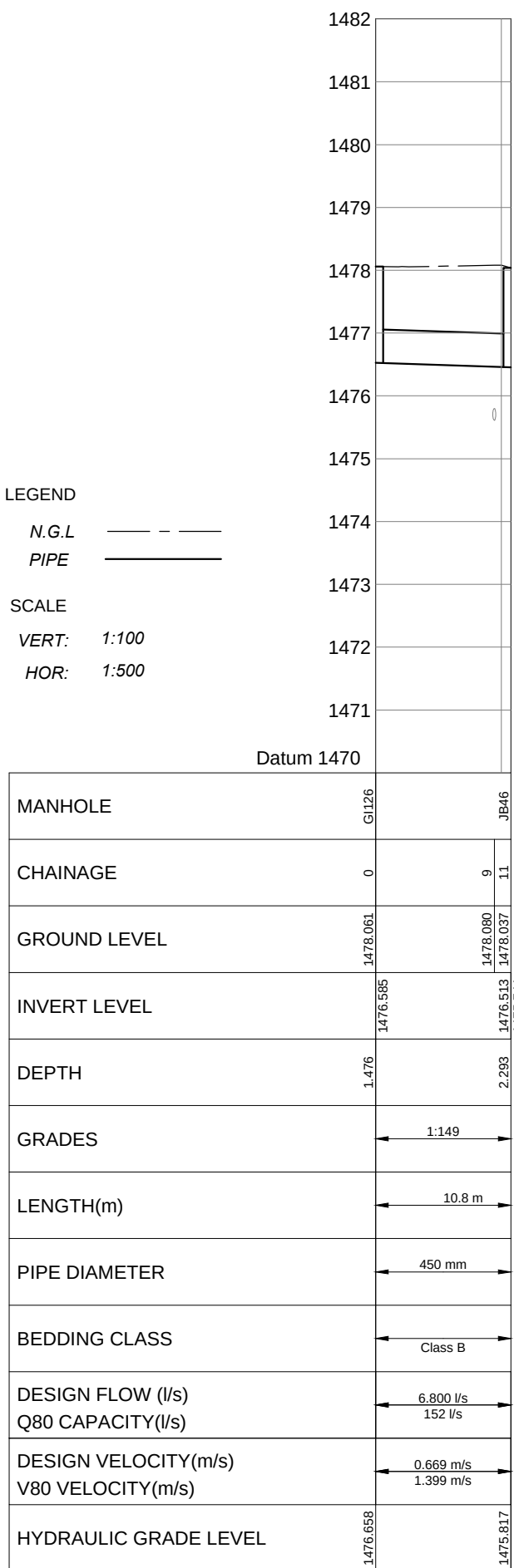
Manhole GI122 to JB56



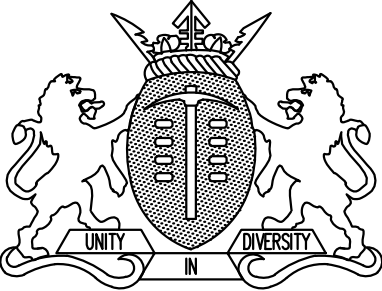
Manhole GI123 to GI125

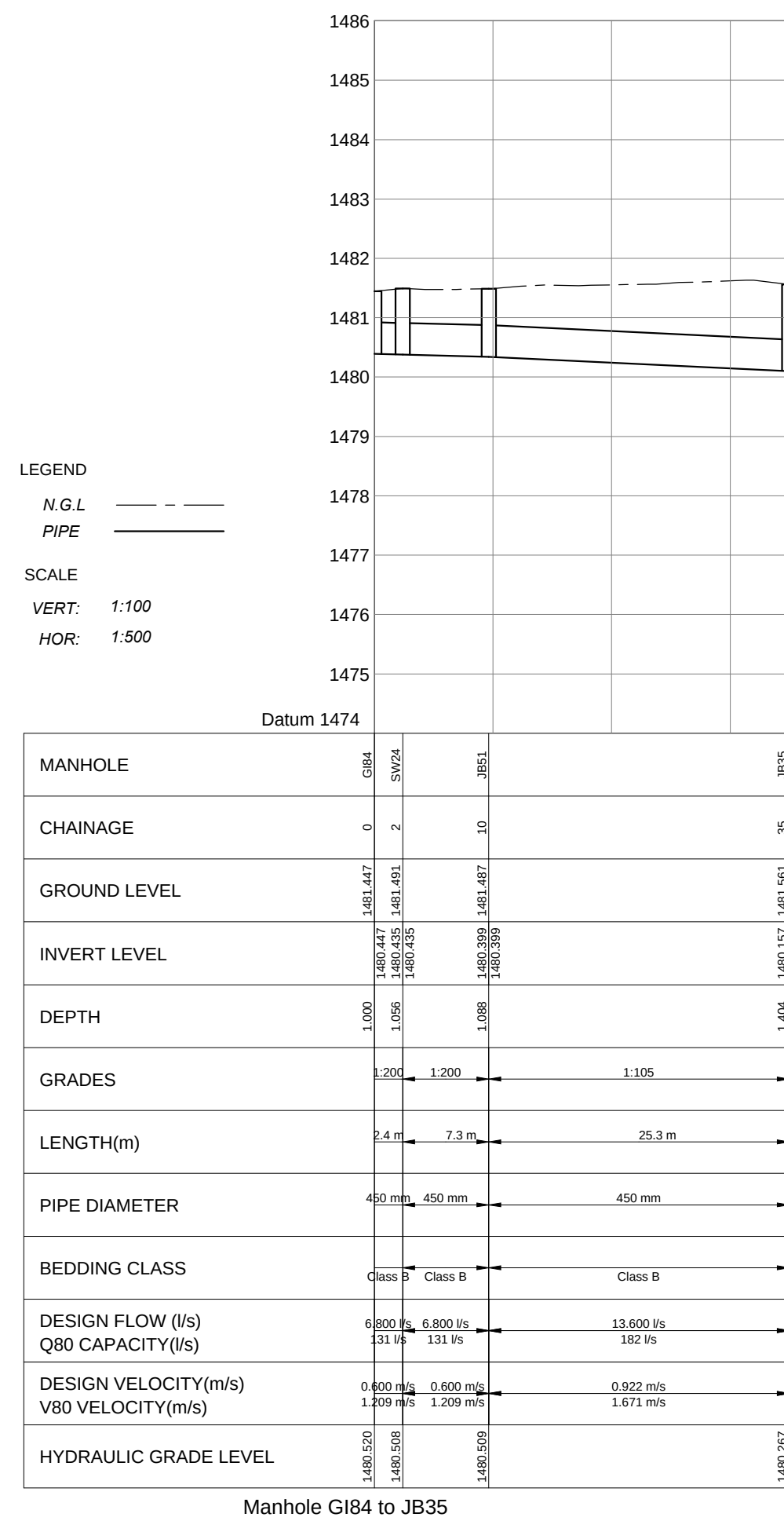
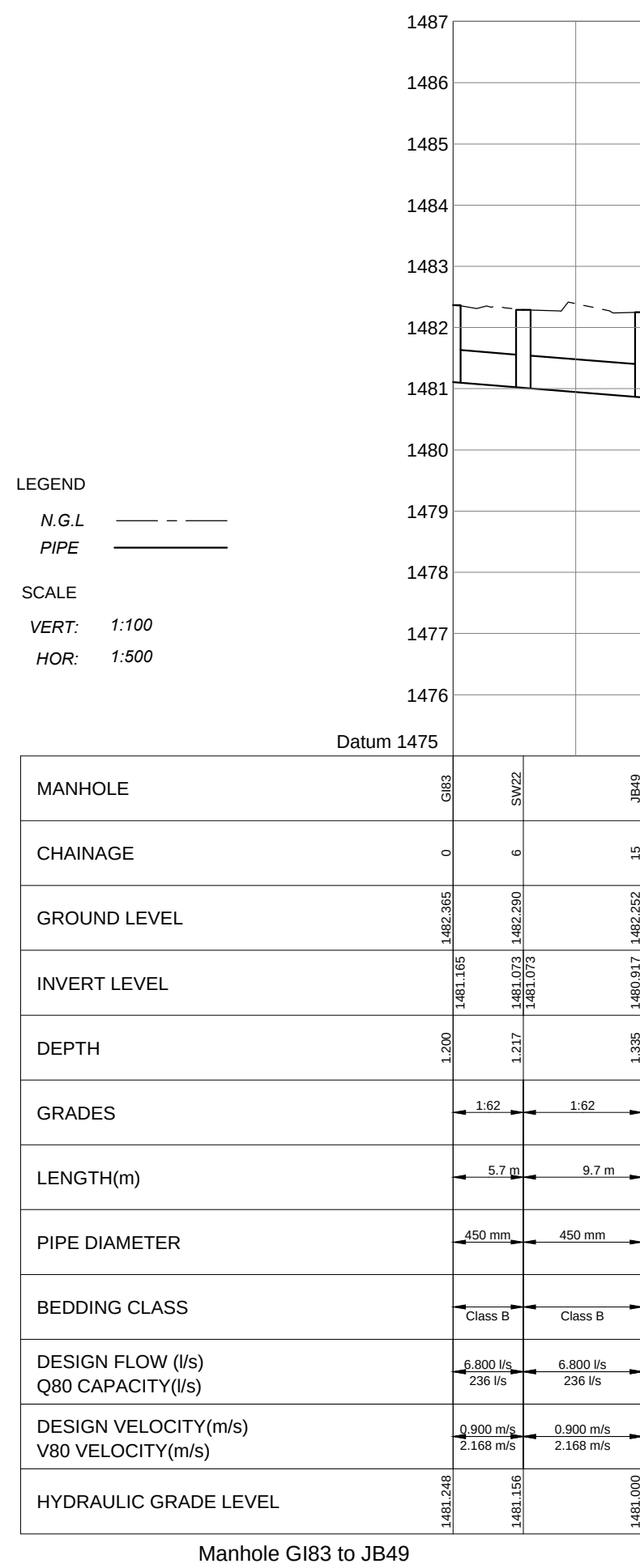
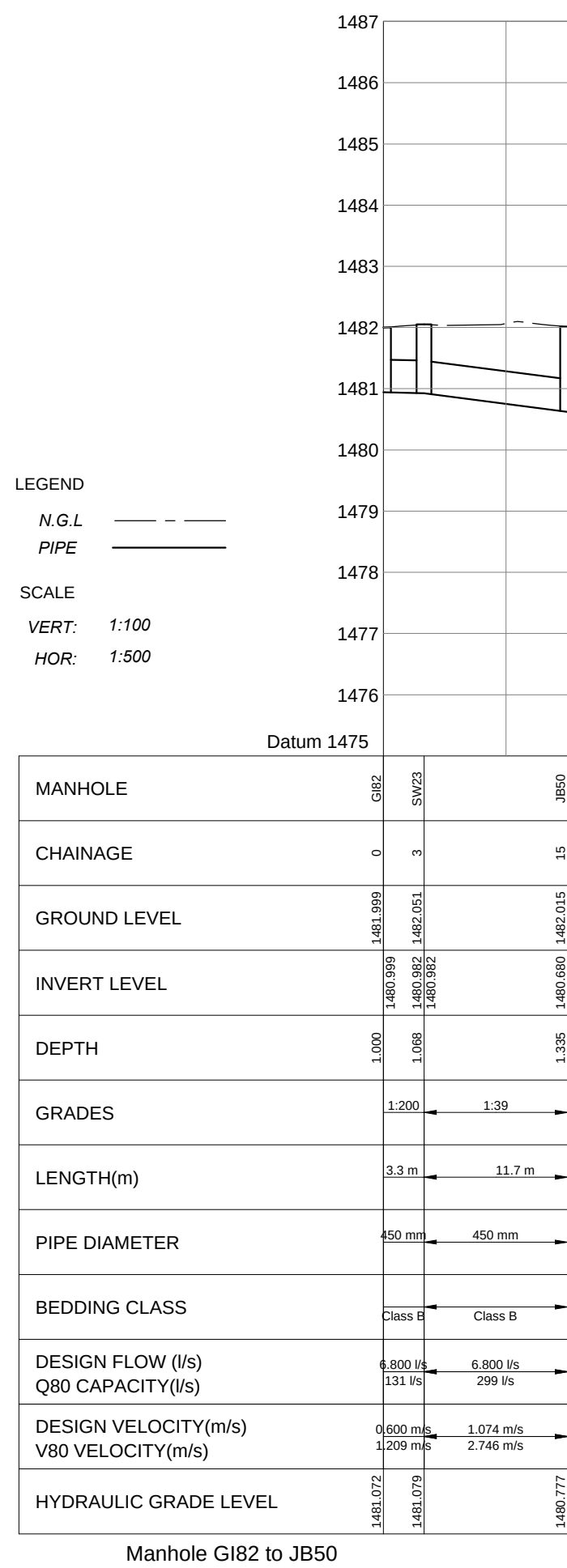
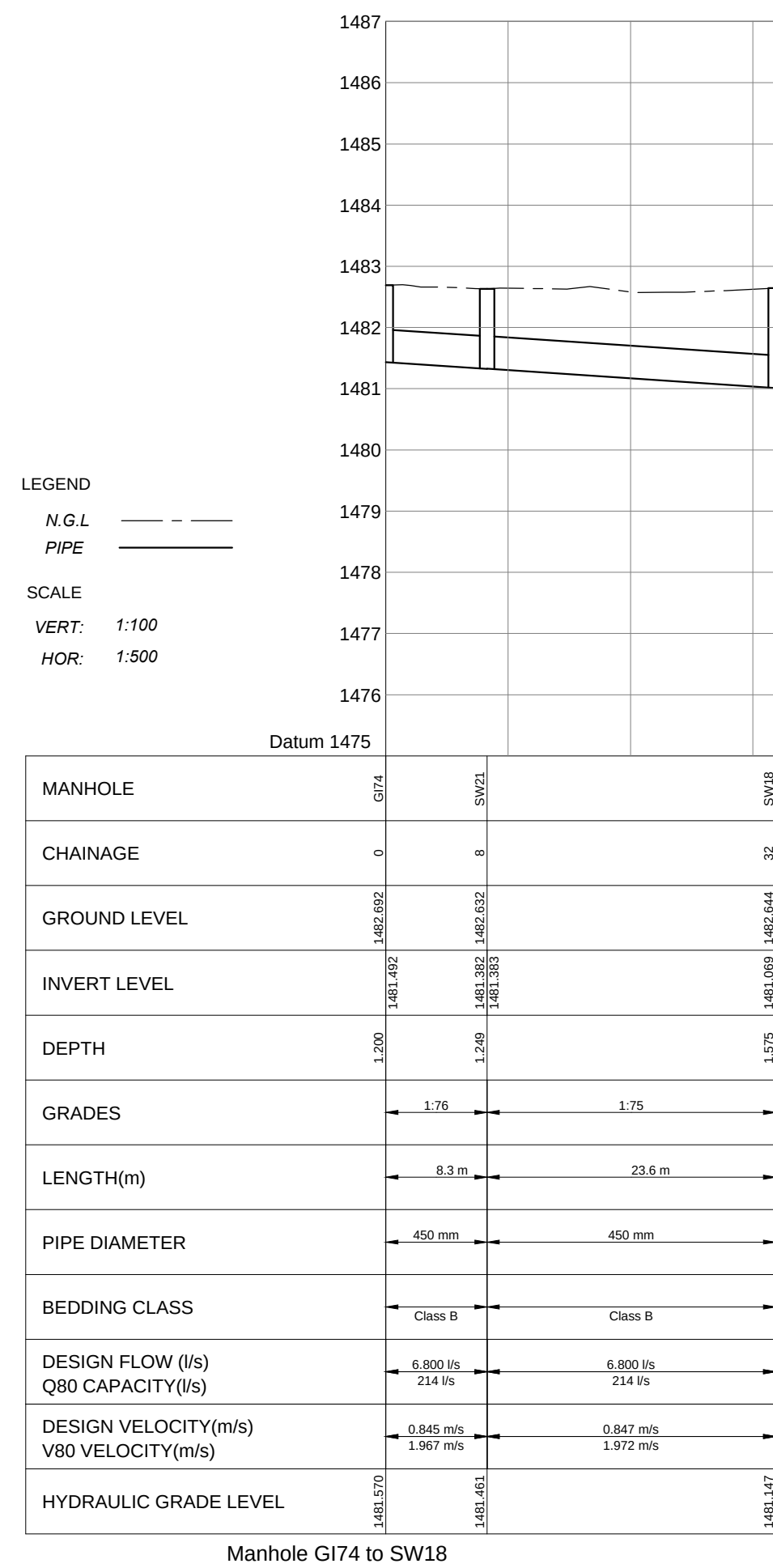
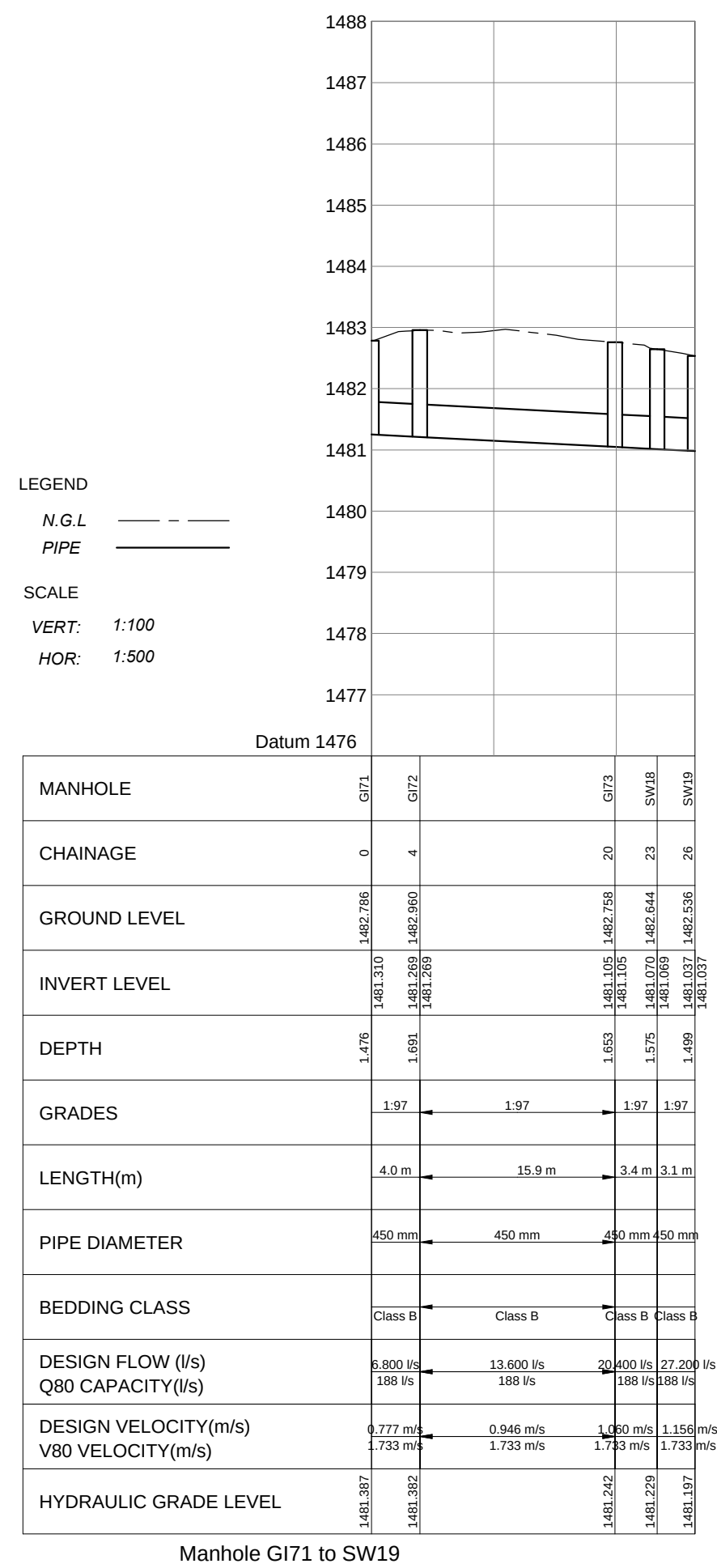
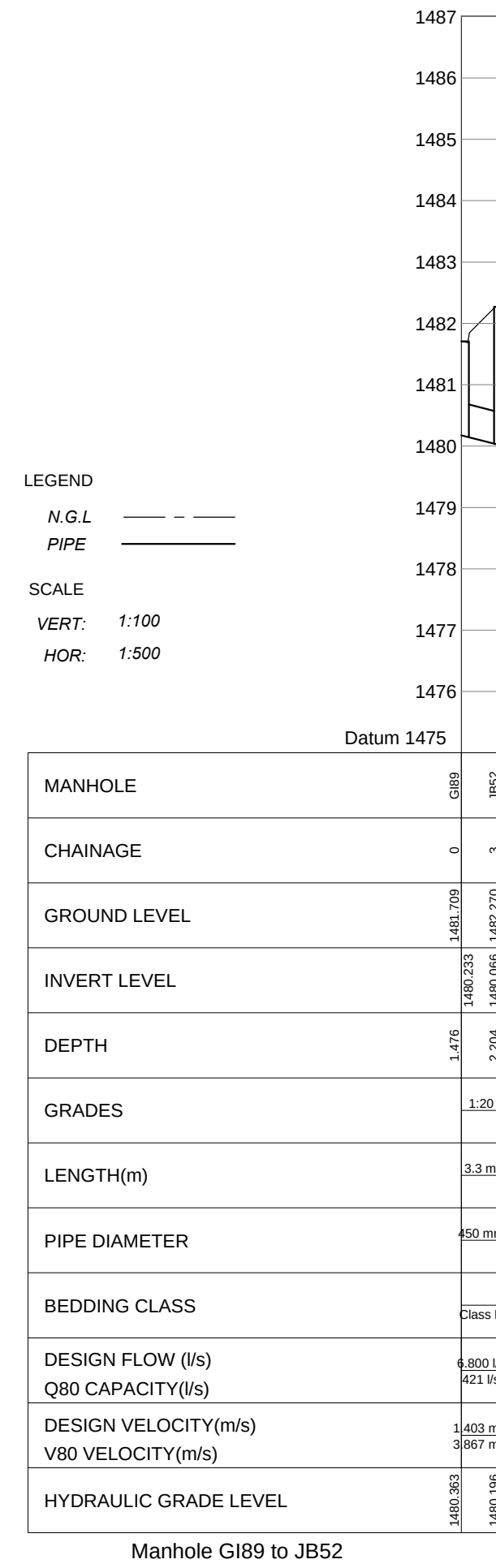
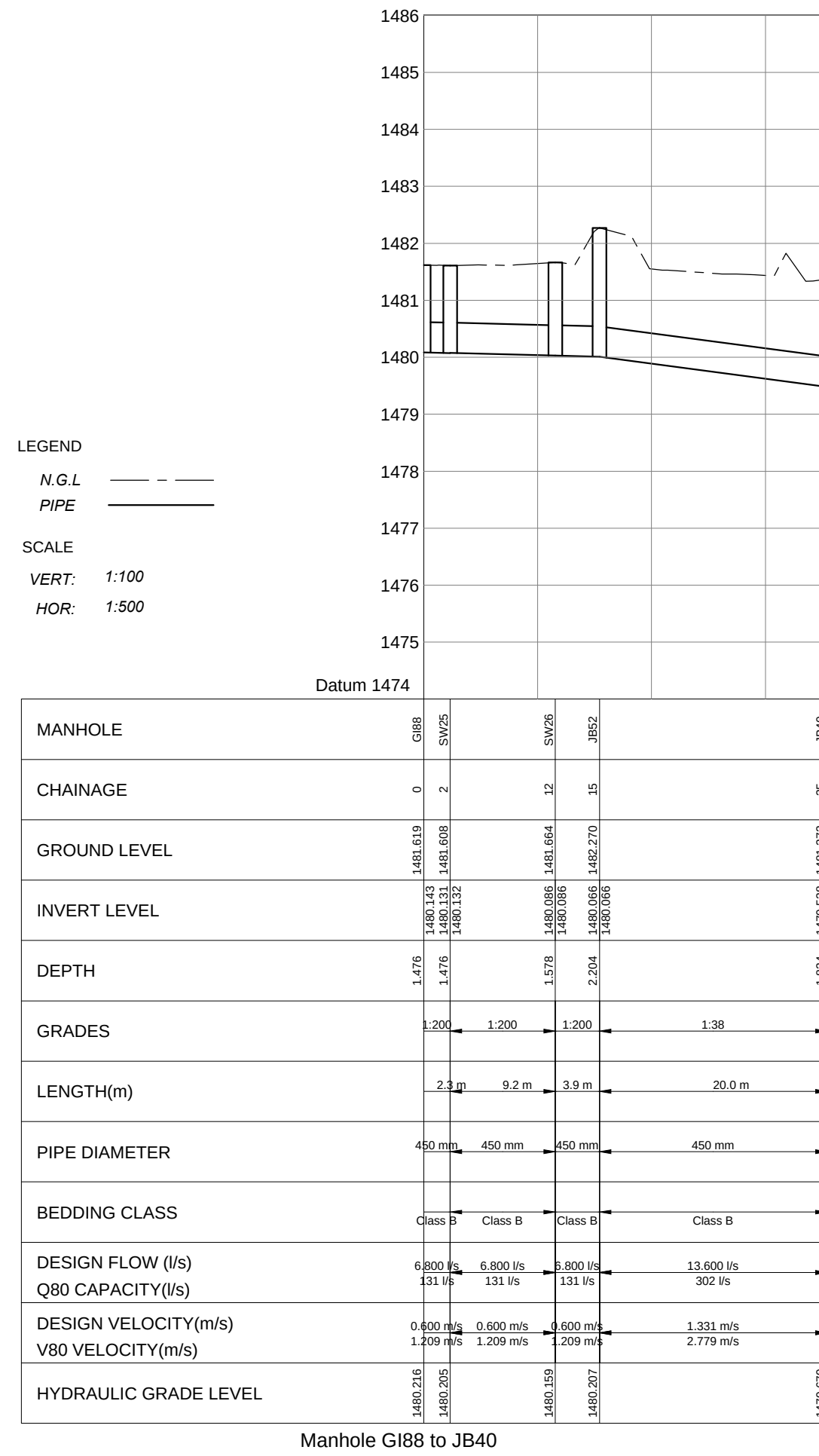
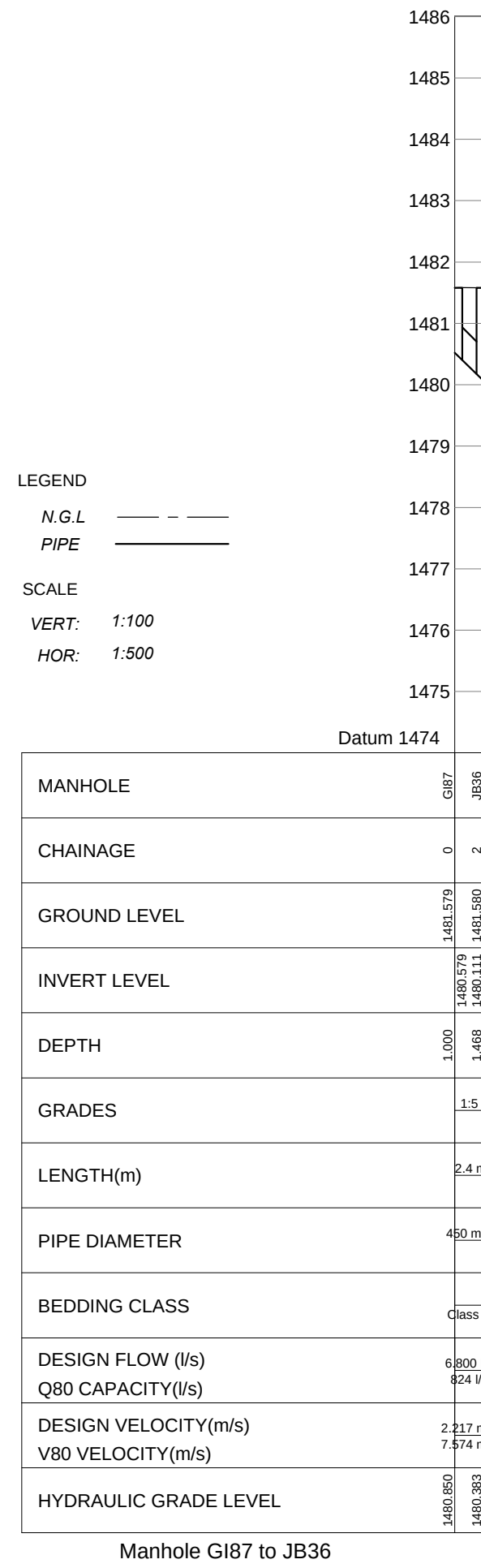
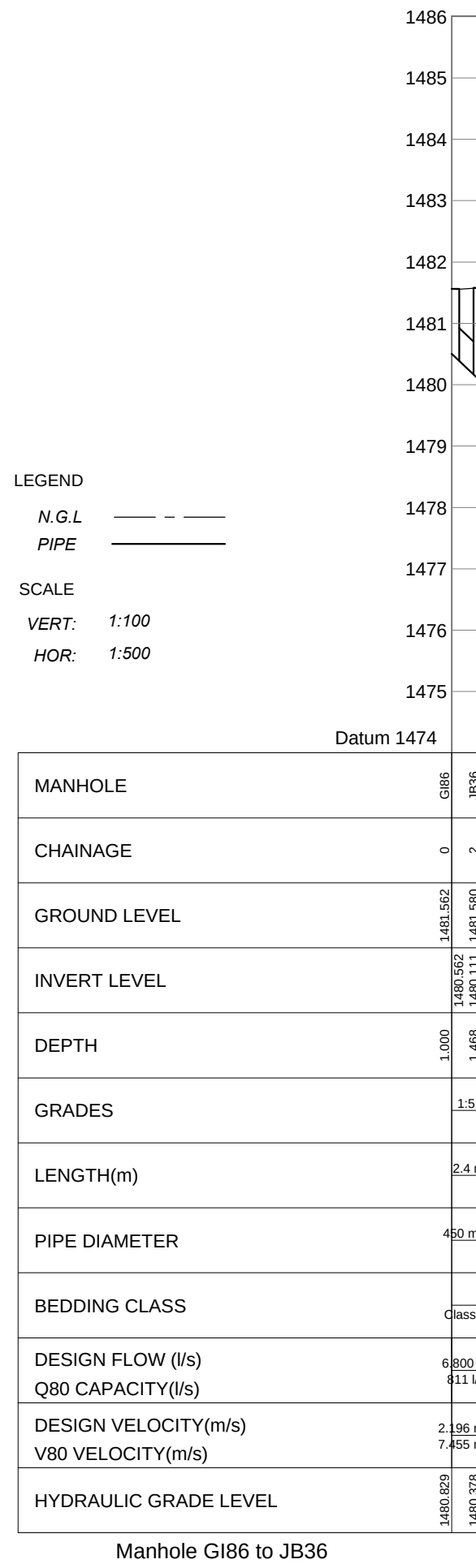
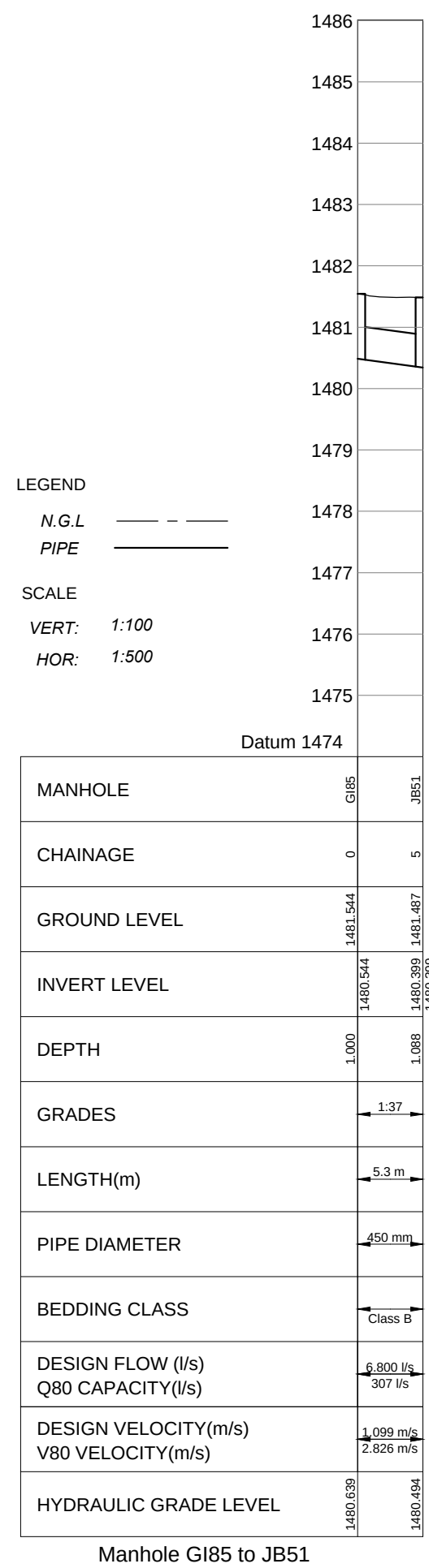


Manhole GI124 to JB58

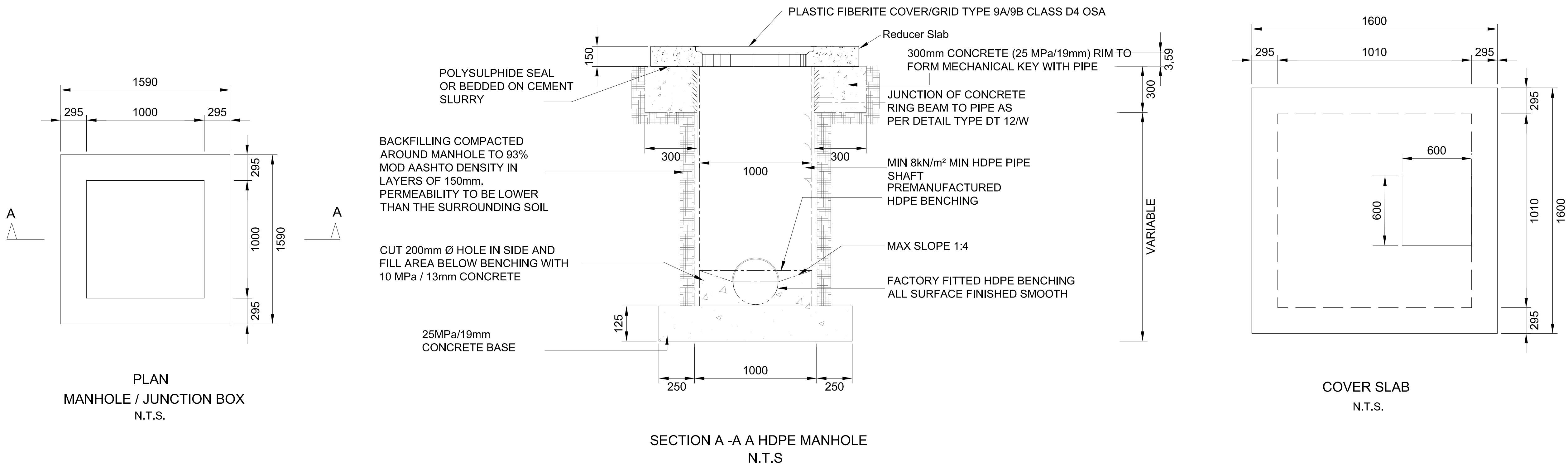


Manhole GI126 to JB46

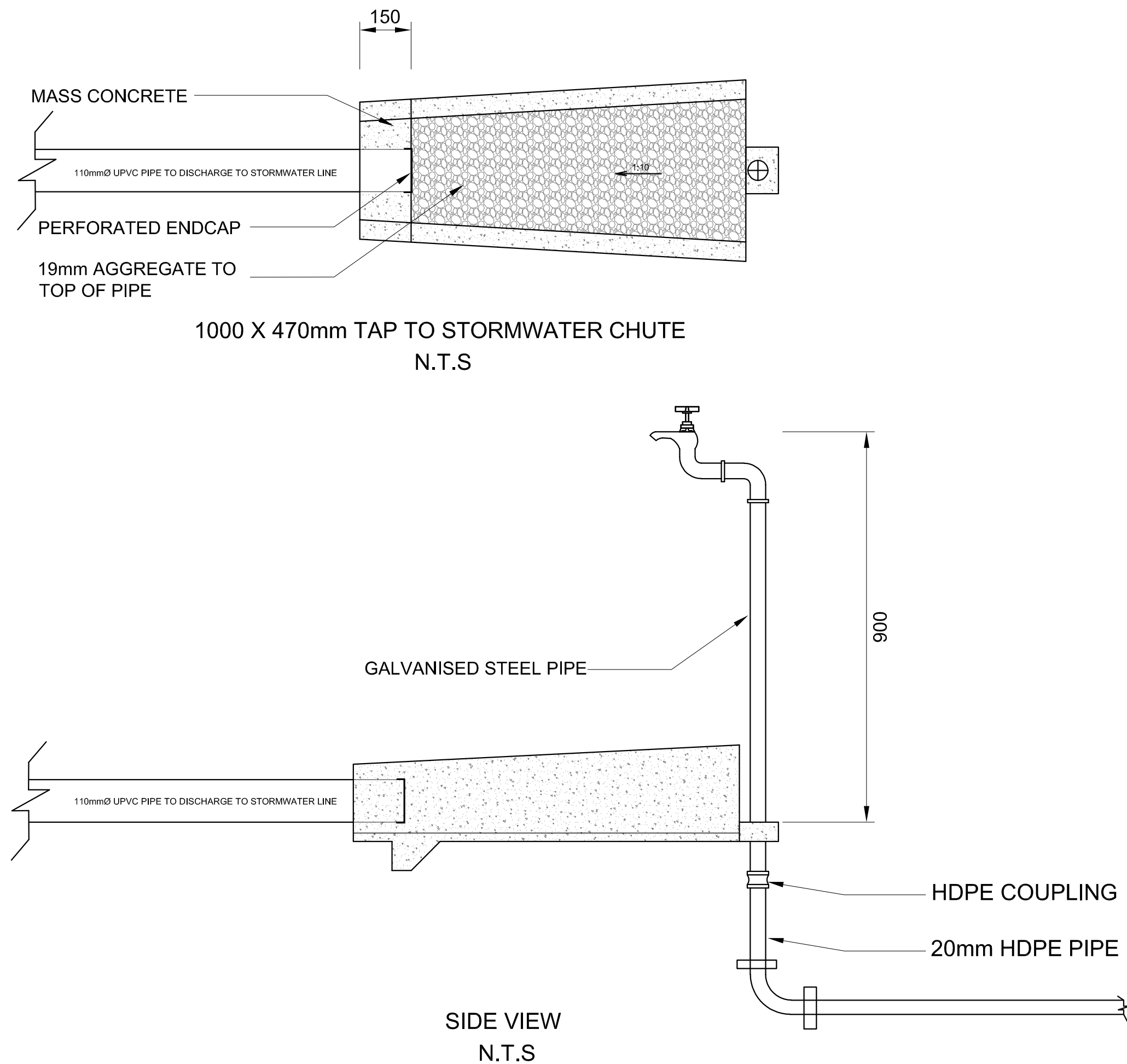
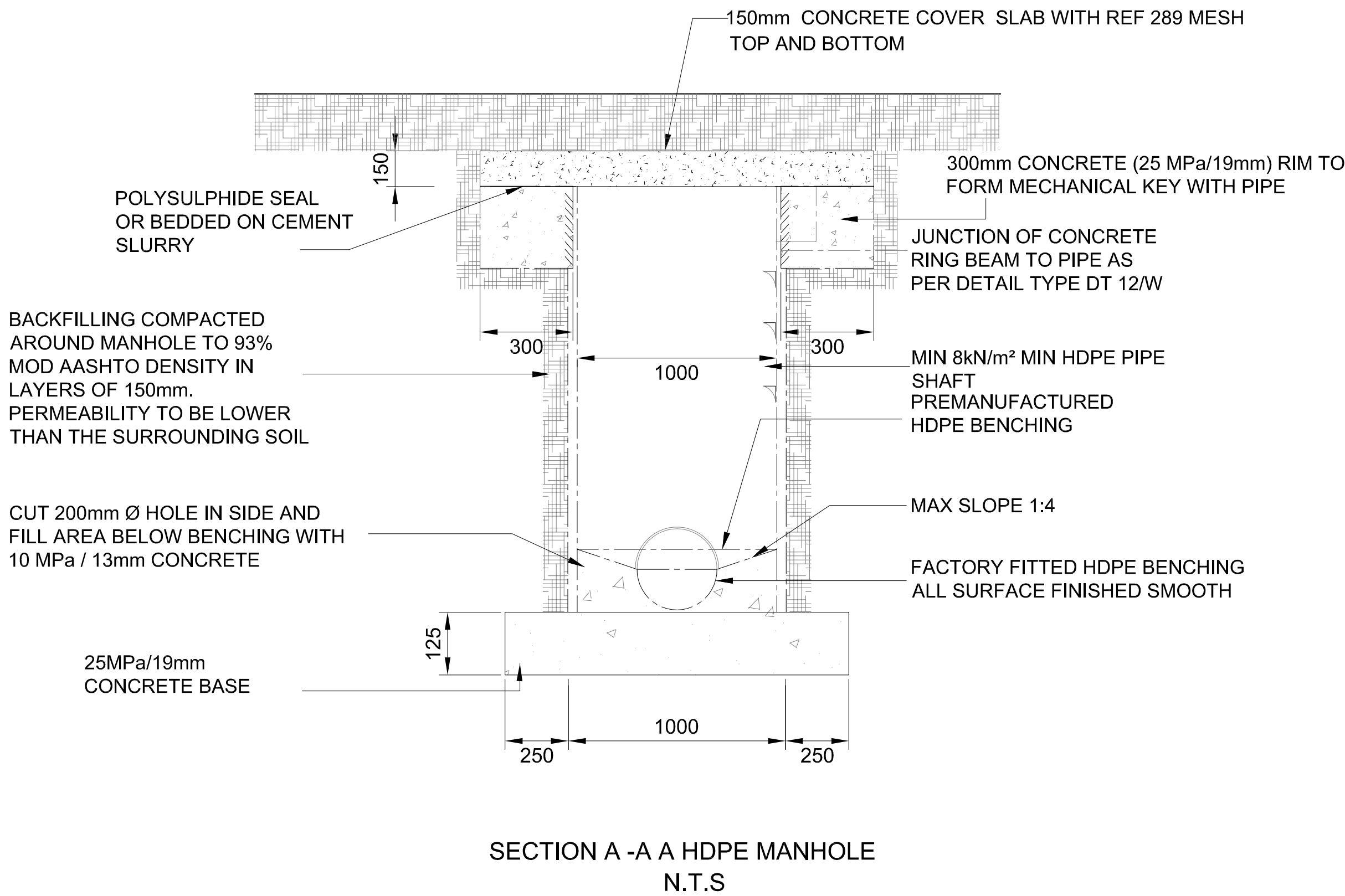
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REVISION No	DATE :	DESCRIPTION :
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
SERVICE		
HOERSKOOI CENTURION PHASE B		
CONTRACT - SECTION		
CIVIL ENGINEERING SERVICES		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
STORMWATER LONG SECTION SHEET 8 OF 9		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	S. DUBE
SCALE	AS SHOWN	J. SIBANDA
DATE	09/2021	PR NUMBER
NAME	J. SIBANDA	201370155
SIGNATURE		
DRAWING CO-ORDINATED		
CONSULTANT :		
		
PROJECT'S STRATEGY CONSULTANTS		
BUILDINGS 1, 5 BAHIRARA STREET		
CENTURION OFFICE PARK		
DUBE		
P.O. BOX 8076 MEDUNGANI, 1605		
Tel: +27 12 665 1000		
Fax: +27 12 665 0908		
E-Mail: info@pmplus.co.za		
CONTRACTOR :		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-222	TD

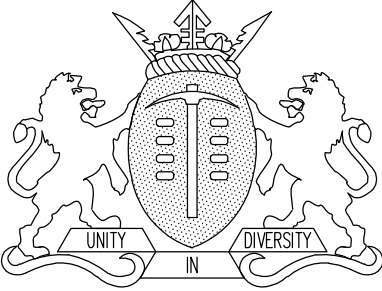
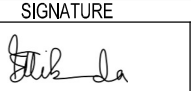
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MANHOLE DETAILS

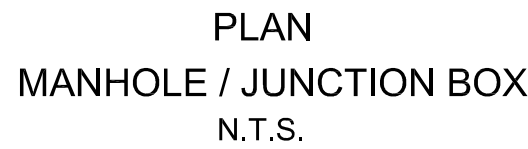


JUNCTION BOX

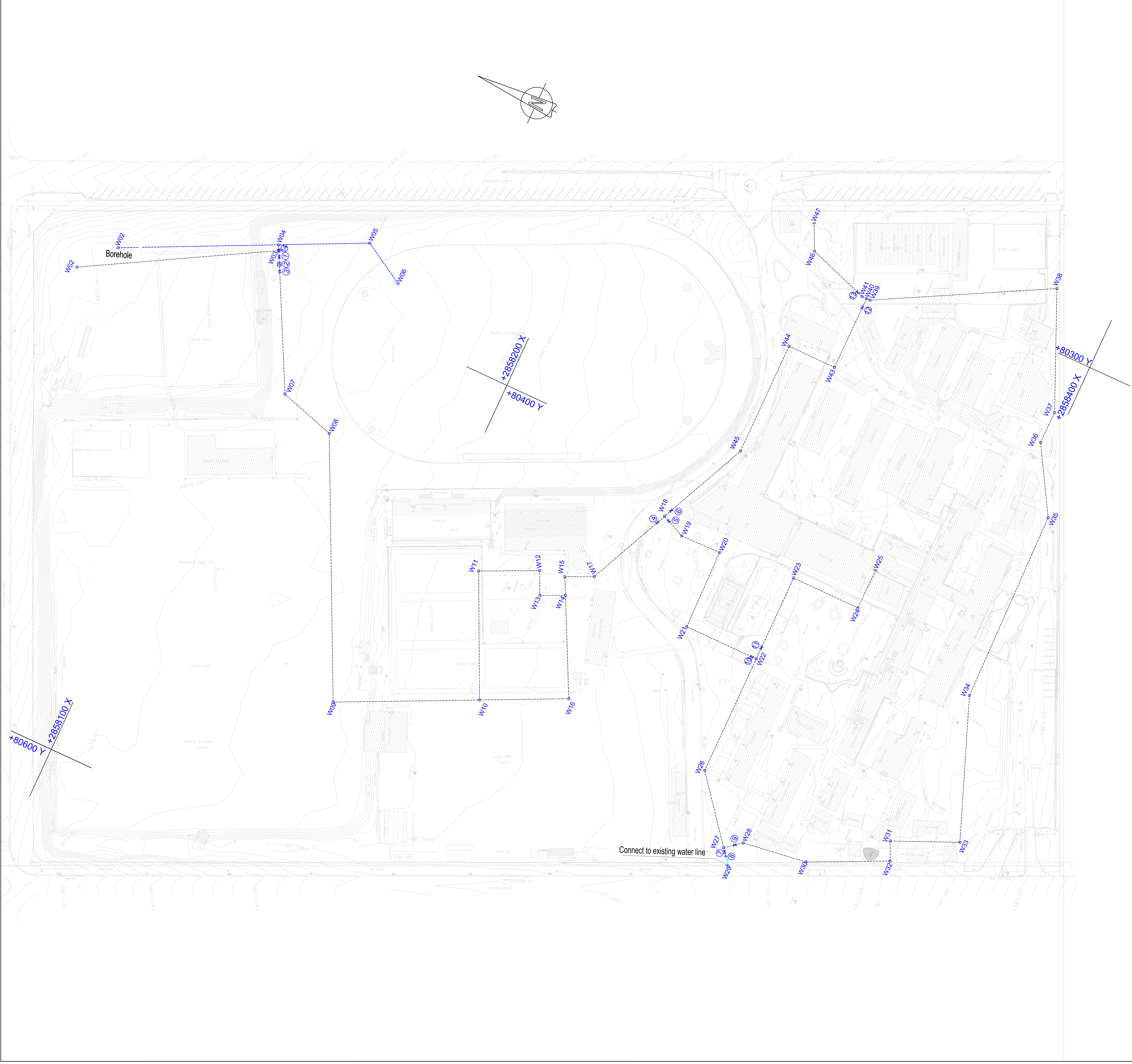


TO	09/2021	ISSUED FOR TENDER
REVISION No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOL CENTURION PHASE B		
SERVICE		
UPGRADES AND ADDITIONS		
CONTRACT - SECTION		
DISCIPLINE		
CIVIL		
PROJECT STAGE		
4		
WORK DESCRIPTION - SUB DIVISION		
DRAWING DESCRIPTION		
STORMWATER MANHOLE DETAILS - 1 OF 3		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	S. DUBE
SCALE	AS SHOWN	J. SIBANDA
RESPONSIBLE PROFESSIONAL		
DATE	NAME	SIGNATURE
09/2021	J. SIBANDA	
DRAWING CO-ORDINATED		
CONSULTANT :		
		
BUILDING 1, 5 BALHARRA STREET CARBONITE OFFICE PARK OWE		
P.O. BOX 6076 MIDRAND, 1685 Tel: +27 12 665 1020 Fax: +27 12 665 0906 E-Mail: info@pmplus.co.za		
CONTRACTOR :		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-224	TD

MANHOLE DETAILS



TO	09/2021	ISSUED FOR TENDER	
REVISION No	DATE	DESCRIPTION	
REVISONS SIZE ON ORIGINAL DRAWING 100 mm			
 UNITED IN DIVERSITY			
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT			
(INSTITUTION)			
HOERSKOOL CENTURION PHASE B			
(SERVICE)			
UPGRADES AND ADDITIONS			
(CONTRACT - SECTION)			
(DISCIPLINE)			
CIVIL			(PROJECT STAGE)
			4
(WORK DESCRIPTION - SUB DIVISION)			
UNDERGROUND SERVICES			
(DRAWING DESCRIPTION)			
STORMWATER GRID INLET TYPE 3 - 3 OF 3			
FILE NO.			ITEM NO.
DESIGN	J. SIBANDA	S. DUBE	
SCALE	AS SHOWN	J. SIBANDA	CHECKED
RESPONSIBLE PROFESSIONAL			
DATE	NAMES	SIGNATURE	PR NUMBER
09/2021	J. SIBANDA		201370155
DRAWING CO-ORDINATED			
CONSULTANT:			
 PROJECTS & STRUCTURE CONSULTANTS BUILDING 1, 8 RAUHPAN STREET CAMBERIDGE OFFICE PARK CENTURION 2004 P.O. BOX 5076 MIDRAND, 1695 Tel: +27 11 688 1080 Fax: +27 11 685 5000 E-Mail: enquiries@mplus.co.za			
(CONTRACTOR)			
CADD SYSTEM	AUTOCAD		FILE NAME
SIZE	DRAWING NUMBER		REV
A1	589-S2-ST-C-226		



W01		CONNECTING TO STORMWATER
W02		CONNECTING TO EXISTING BOREHOLE
W03		110mmØ EQUAL TEE
W04		110mmØ EQUAL TEE
W05		110mmØ 45° BEND 110mmØ 11.25° BEND
W06		CONNECTING TO EXISTING IRRIGATION SYSTEM
W07		110mmØ 45° BEND

W22		110mmØ EQUAL TEE
W23		110mmØ 90° BEND
W24		110mmØ 90° BEND
W25		110mmØ BEND CAP
W26		110mmØ 22.5° BEND 110mmØ 11.25° BEND
W27		110mmØ EQUAL TEE
W28		110mmØ 22.5° BEND 110mmØ 11.25° BEND

W08		110mmØ 45° BEND
W09		110mmØ 90° BEND
W10		110mmØ EQUAL TEE
W11		110mmØ 90° BEND
W12		110mmØ 90° BEND
W13		110mmØ 90° BEND
W14		110mmØ EQUAL TEE

W47		110mmØ BEND CAP
W29		CONNECTING TO EXISTING MUNICIPAL WATER
W30		110mmØ 22.5° BEND
W31		110mmØ 90° BEND
W32		110mmØ 90° BEND
W33		110mmØ 90° BEND
W34		110mmØ 22.5° BEND

W15		110mmØ 90° BEND
W16		110mmØ 90° BEND
W17		110mmØ 45° BEND
W18		110mmØ EQUAL TEE
W19		110mmØ 22.5° BEND
W20		110mmØ 90° BEND
W21		110mmØ 90° BEND

W35		110mmØ 22.5° BEND 110mmØ 11.25° BEND
W36		110mmØ 22.5° BEND 110mmØ 11.25° BEND
W37		110mmØ 22.5° BEND
W38		110mmØ 90° BEND
W39		110mmØ 22.5° BEND 110mmØ 11.25° BEND
W40		110mmØ EQUAL TEE
W41		110mmØ 22.5° BEND

1		ISOLATION VALVE
2		NON RETURN VALVE
3		ISOLATION VALVE
4		ISOLATION VALVE
5		ISOLATION VALVE
6		ISOLATION VALVE
7		ISOLATION VALVE
8		2000 X 110Ø REDUCER
9		ISOLATION VALVE
10		ISOLATION VALVE
11		ISOLATION VALVE
12		ISOLATION VALVE
13		ISOLATION VALVE
14		SCOUR VALVE

W43		110mmØ 90° BEND
W44		110mmØ 90° BEND
W45		110mmØ 22.5° BEND
W46		110mmØ 45° BEND

LEGEND

DOMESTIC 110Ø HDPE WATER LINE

ISOLATION VALVE

EXISTING DOMESTIC WATER LINE

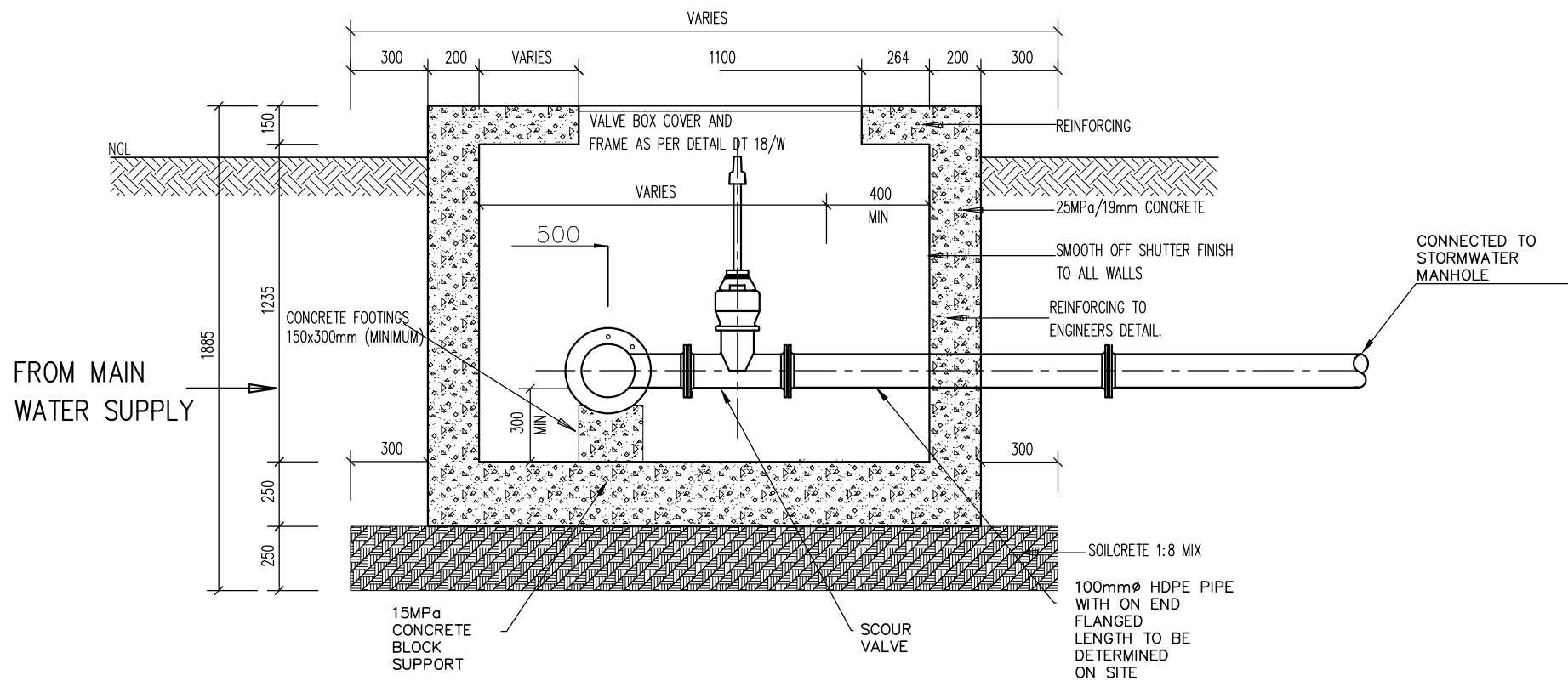
IRRIGATION SYSTEM

MAIN SUPPLY 200Ø HDPE

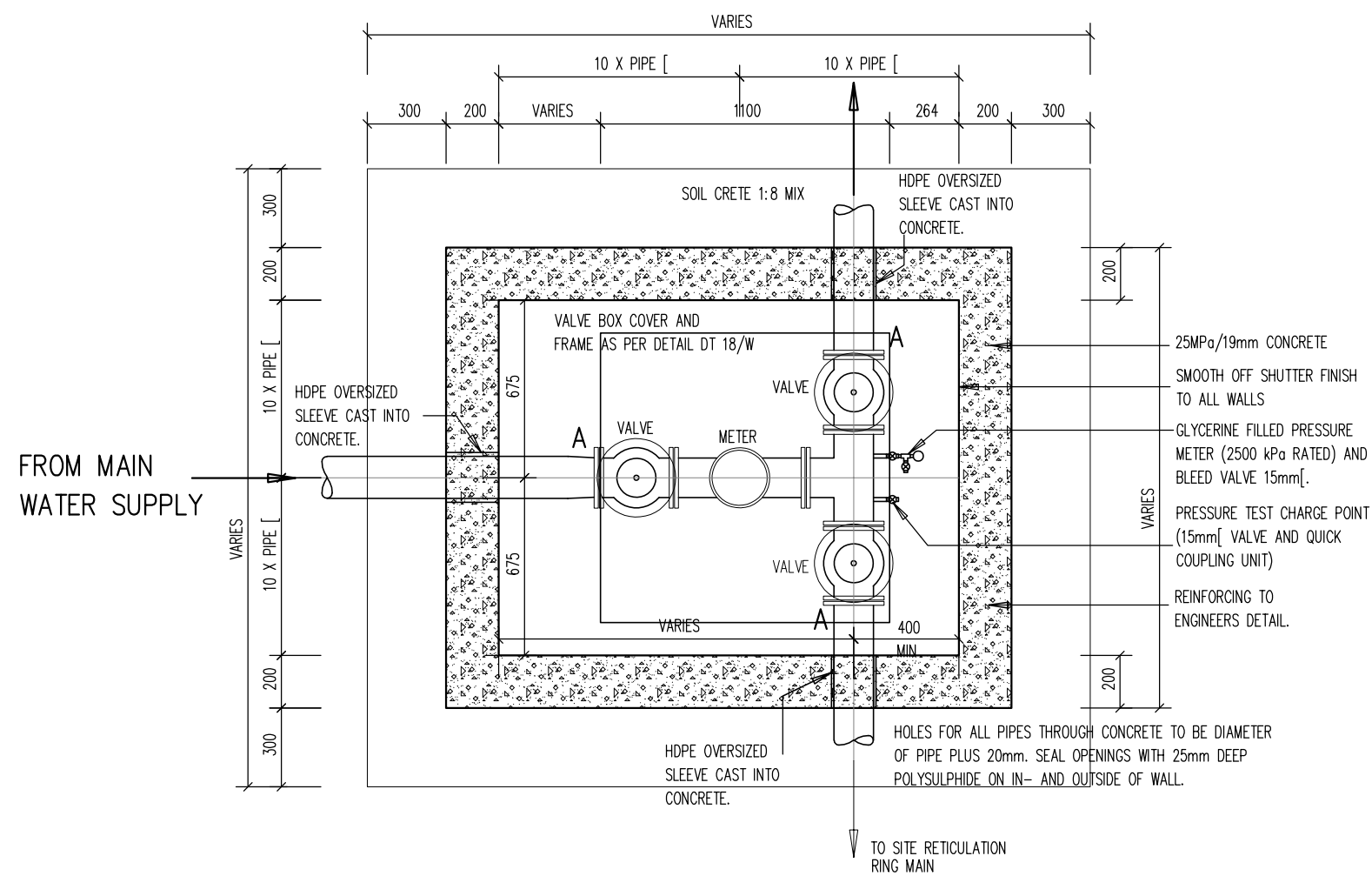
SCOUR VALVE

END CAP

TD	202021	ISSUED FOR TENDER
REVISION No.	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSCOOK CONCRETE/PHASE B		
SERVICE		
UPGRADES AND INSTALLATIONS		
CONTRACT SECTION		
DISCIPLINE		PROJECT STAGE
CIVIL		
WORK DESCRIPTION - SUB-BRANCH		
UNDERGROUND SERVICES		
DRAWING DESCRIPTION		
PROPOSED WATER PIPING LAYOUT PLAN		
FILE No.	SOURCE	ITEM No.
DESIGN	J. SIBANDA	DOWN
SCALE	1:500	CHECKED
RESPONSIBLE PROCESSOR		
DATE	NAME	SIGNATURE
08/02/21	J. SIBANDA	
DRAWING CO-ORDINATED		
CONSULTANT		
PMPLUS		
CONTRACTOR		
CAD	AUTOCAD	FILE
SIZE	DRAWING NUMBER	NAME
A0	589-S2-ST-C-210	TD

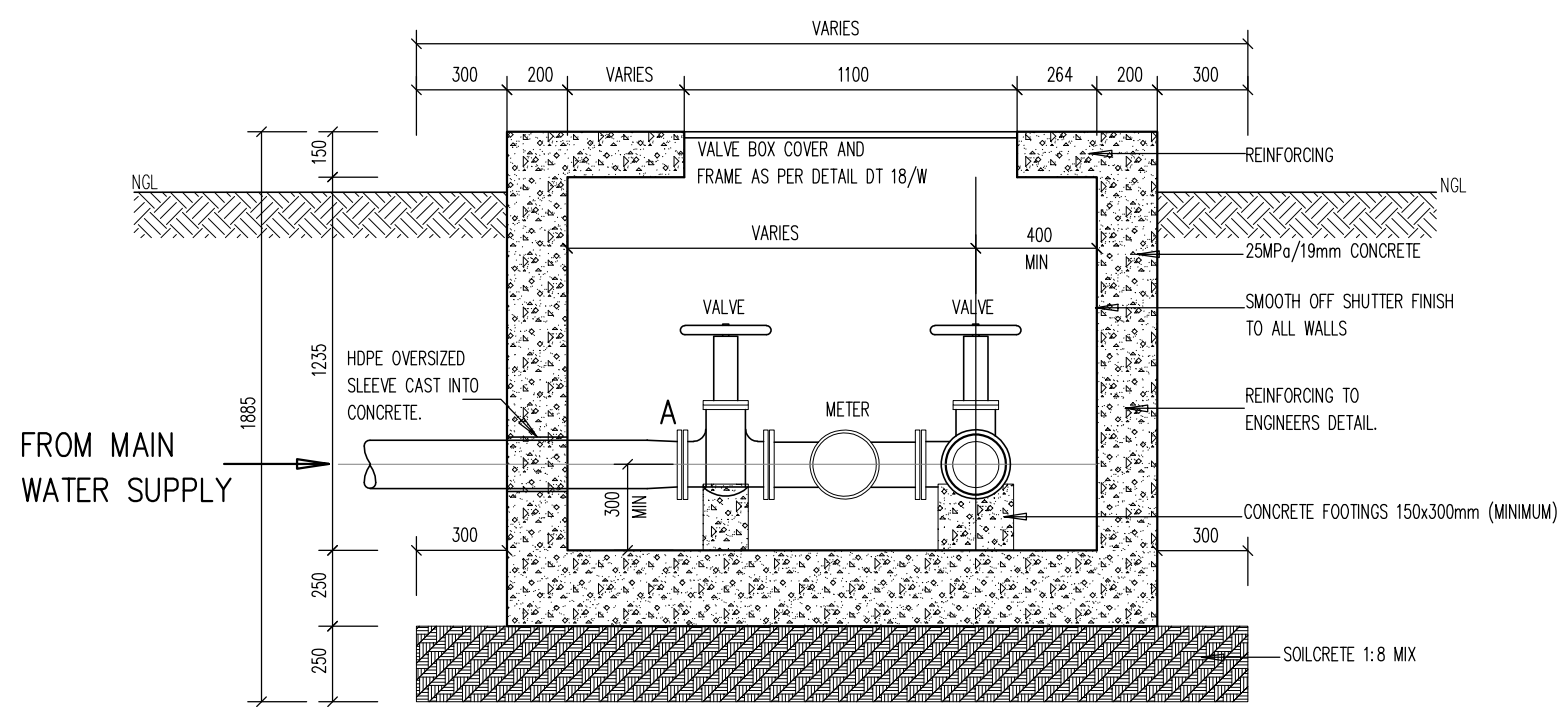


PLAN OF SCOUR VALVE
SCALE : N.T.S



PLAN: CONCRETE VALVE BOX
SCALE N.T.S

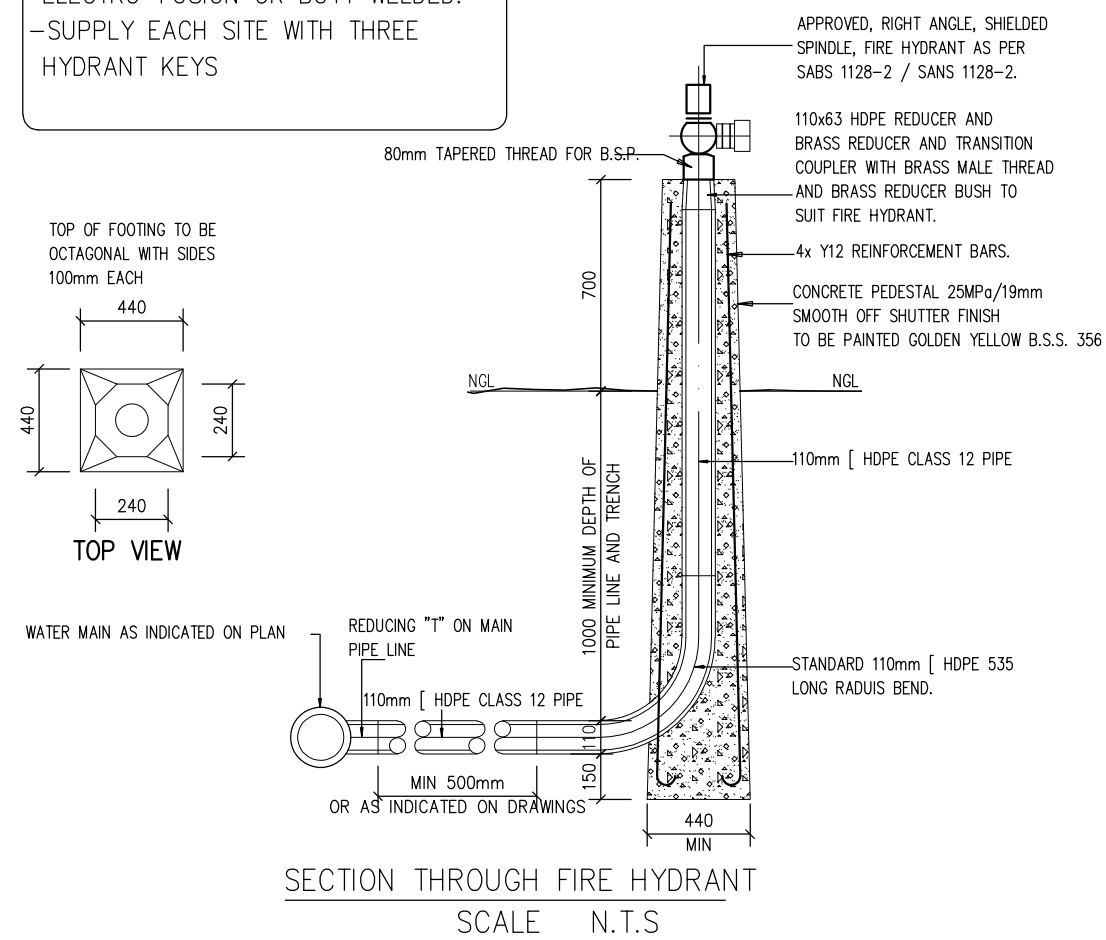
A = STUB AND FLANGE WELDED TO HDPE PIPE AND FLANGE ADAPTORS TO PIPE END AND VALVE AS WELL AS VJ (STEPED IF NEEDED) COUPLING IN BETWEEN TO LOOSEN FITTINGS IN VALVE BOX ALL FITTINGS TO BE NUMBERED P1,P2 ETC. AND INDICATED IN PIPE SCHEDULE.



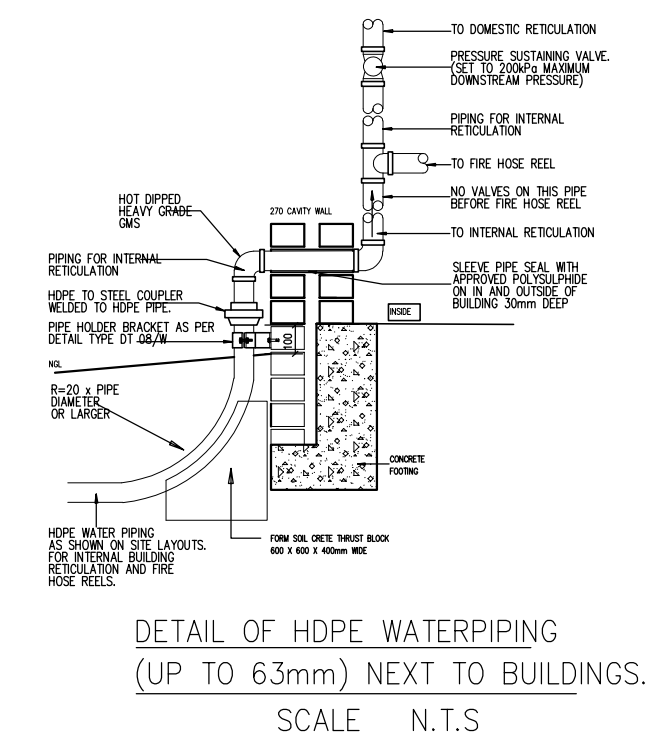
SECTION: CONCRETE VALVE BOX
SCALE N.T.S

VALVE CHAMBER FOR VALVES NOT EXCEEDING 300mm N.B

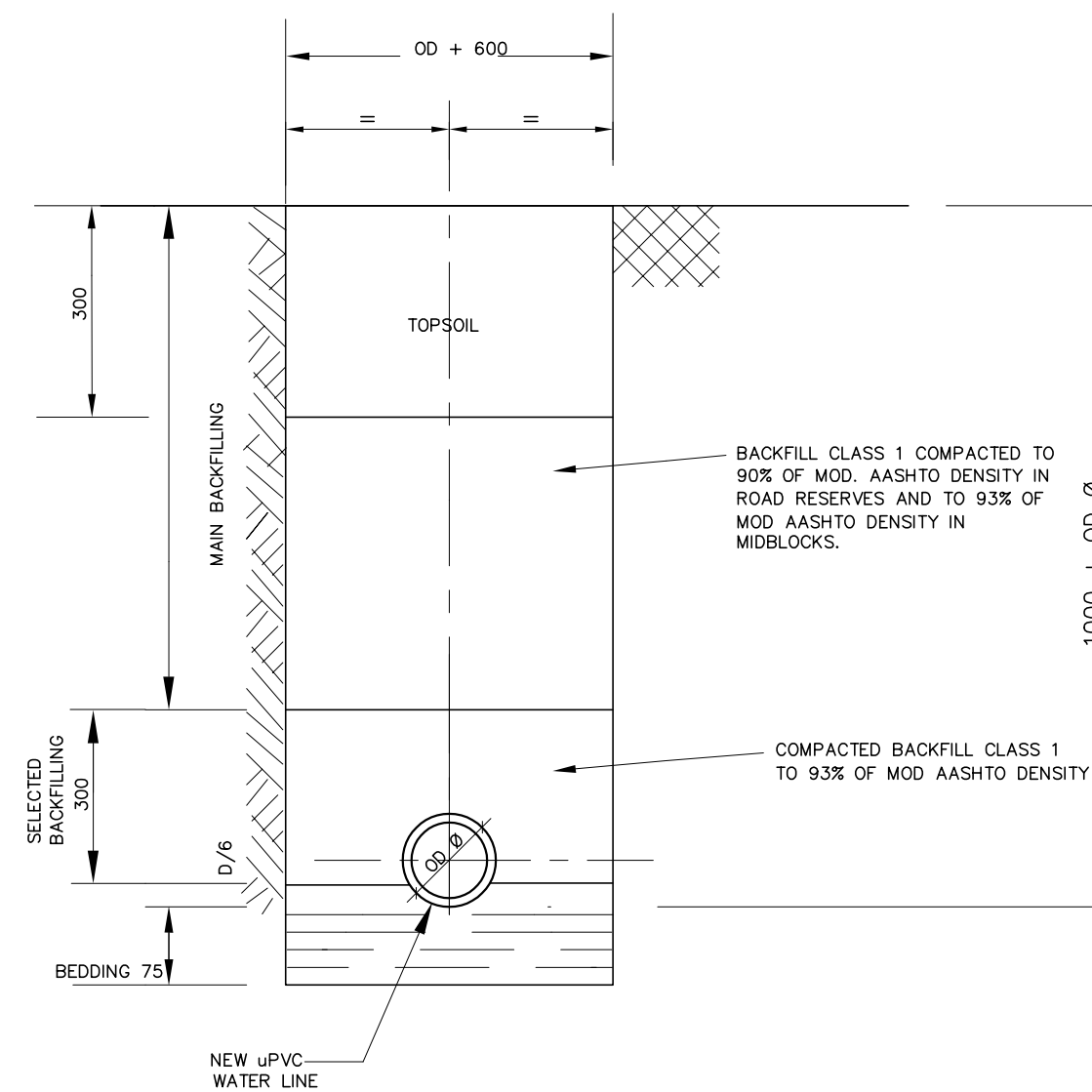
NOTE:
-ALL HDPE CONNECTIONS TO BE ELECTRO-FUSION OR BUTT WELDED.
-SUPPLY EACH SITE WITH THREE HYDRANT KEYS



SECTION THROUGH FIRE HYDRANT
SCALE N.T.S



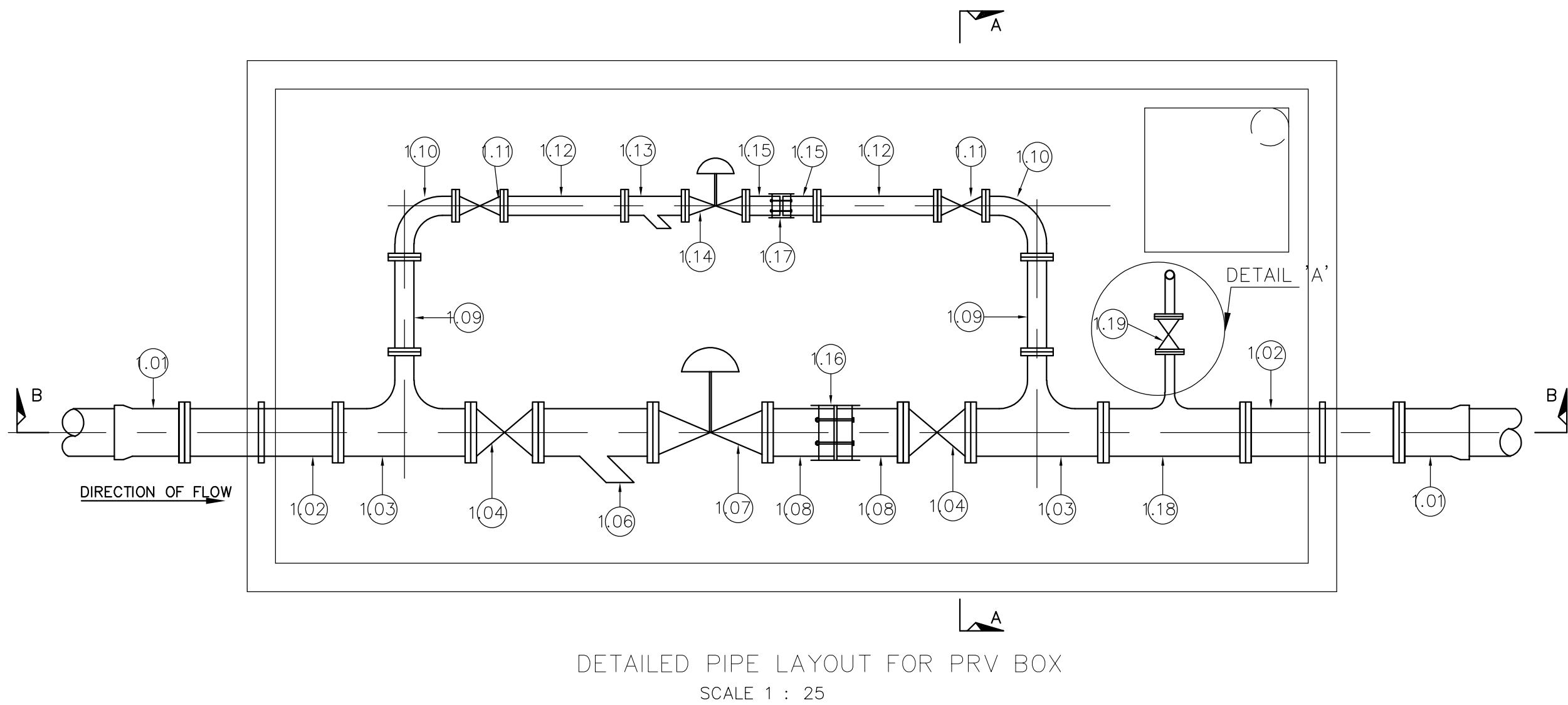
FIRE HYDRANT DETAILS
SCALE : N.T.S



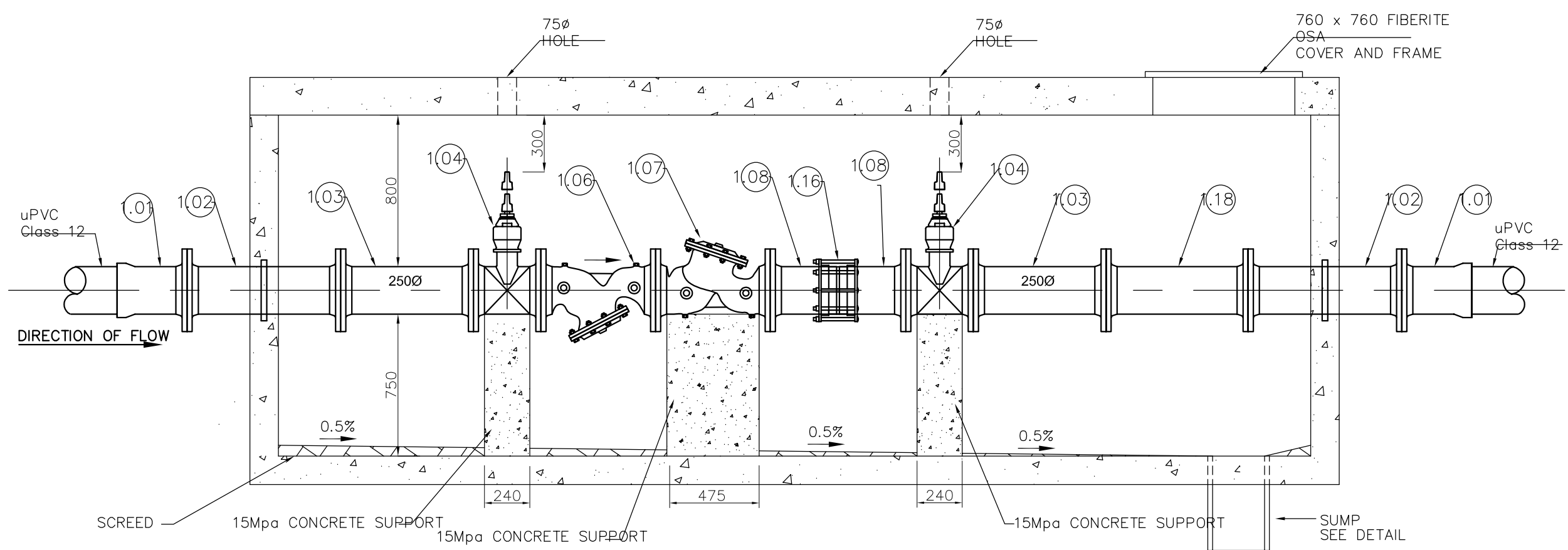
BACKFILL DETAILS
SCALE : N.T.S

- NOTES:
- BEDDING MATERIAL
THE BEDDING MATERIAL MUST BE SELECTED GRANULAR MATERIAL WITH $P_i < 6$ AND MUST BE WITHOUT STONE $> 20\text{mm}$, ORGANIC MATTER OR LUMPS OF CLAY.
THE BEDDING MATERIAL MUST BE COMPACTED UNDERNEATH AND ON BOTH SIDES OF THE WATER PIPE TO 93% OF MOD. AASHTO DENSITY.
 - BACKFILL CLASS 1
THE BACKFILL MATERIAL MUST BE HOMOGENEOUS, AND MUST BE COMPACTED TO 93% OF MOD. AASHTO DENSITY, IN LAYERS NOT EXCEEDING 100mm.
THE FOLLOWING MAY NOT BE PRESENT:
a) TREE ROOTS, BUILDING RUBBLE AND/OR ORGANIC MATTER.
b) LUMPS OF CLAY $> 75\text{mm}$
c) STONES $> 150\text{mm}$
 - BACKFILLING CLASS 2
SELECTED BACKFILLING MATERIAL WITH $\text{CBR} > 7$ AT 93% OF MOD. AASHTO DENSITY.
MAX. $P_i < 12$
MAX. LAYER THICKNESS = 100mm.
 - MINIMUM COVER — 900mm IN OPEN FIELD
—1200mm IN ROAD CROSSING

TD	09/2021	ISSUED FOR TENDER
REVISION No	DATE	DESCRIPTION
REVISIONS SIZE ON ORIGINAL DRAWING 100 mm		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION HOERSKOOL CENTURION PHASE B		
SERVICE UPGRADES AND ADDITIONS		
CONTRACT - SECTION		
DISCIPLINE PROJECT STAGE CIVIL		
WORK DESCRIPTION - SUB DIVISION UNDERGROUND SERVICES		
DRAWING DESCRIPTION WATER DETAILS		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	S. DUBE
SCALE	AS SHOWN	J. SIBANDA
DATE	09/2021	PR NUMBER
J. SIBANDA		201370155
DRAWING CO-ORDINATED		
CONSULTANT:		
PMPLUS PROJECTS STRATEGY CONSULTANTS BUILDING 1, 5 BALHARNA STREET CARBONVILLE OFFICE PARK DUBLIN P.O. BOX 6070 MIDRAND, 1605 TEL: +27 11 655 1100 FAX: +27 11 655 1006 E-MAIL: info@pmplus.co.za		
CONTRACTOR:		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-211	TD



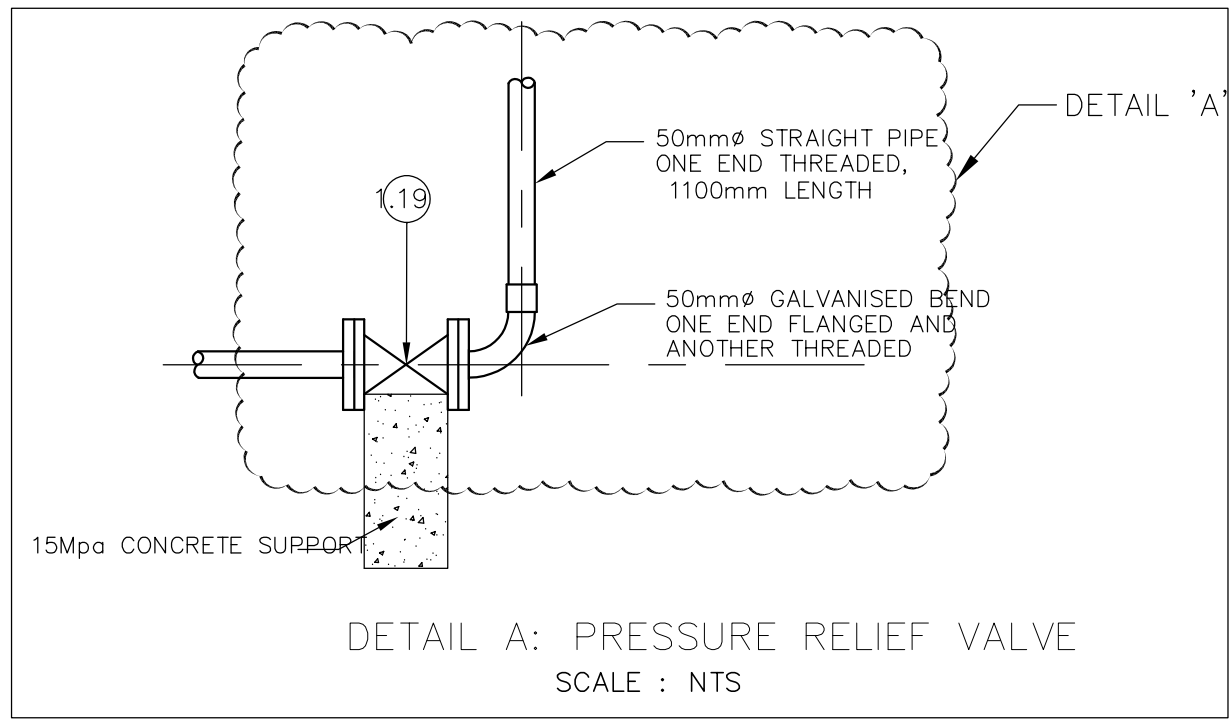
DETAILED PIPE LAYOUT FOR PRV BOX
SCALE 1 : 25



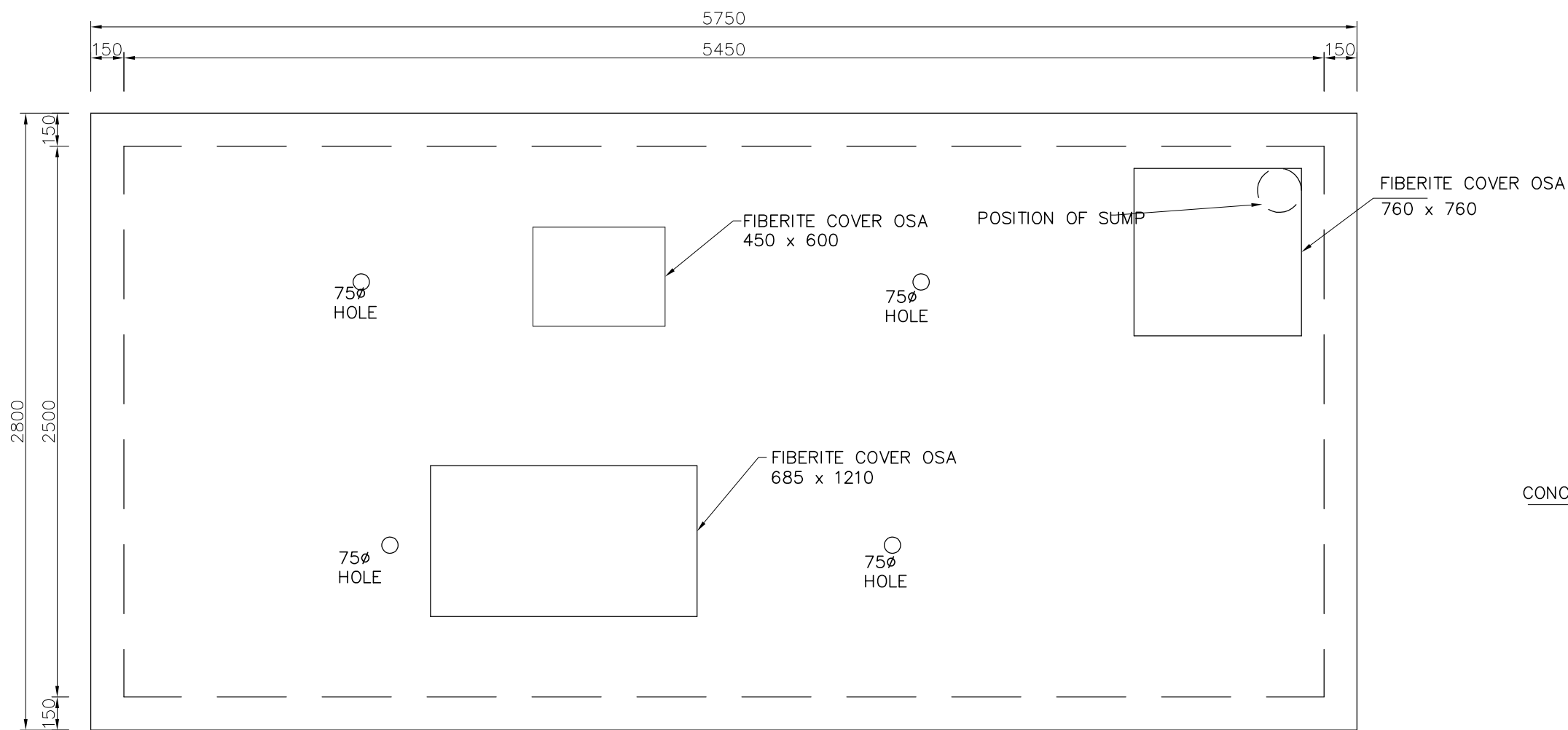
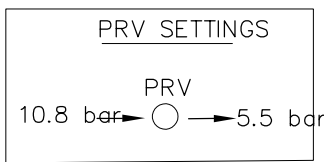
SECTION B-B
SCALE 1 : 25

PIPEWORK OF PRESSURE REDUCING VALVE BOX

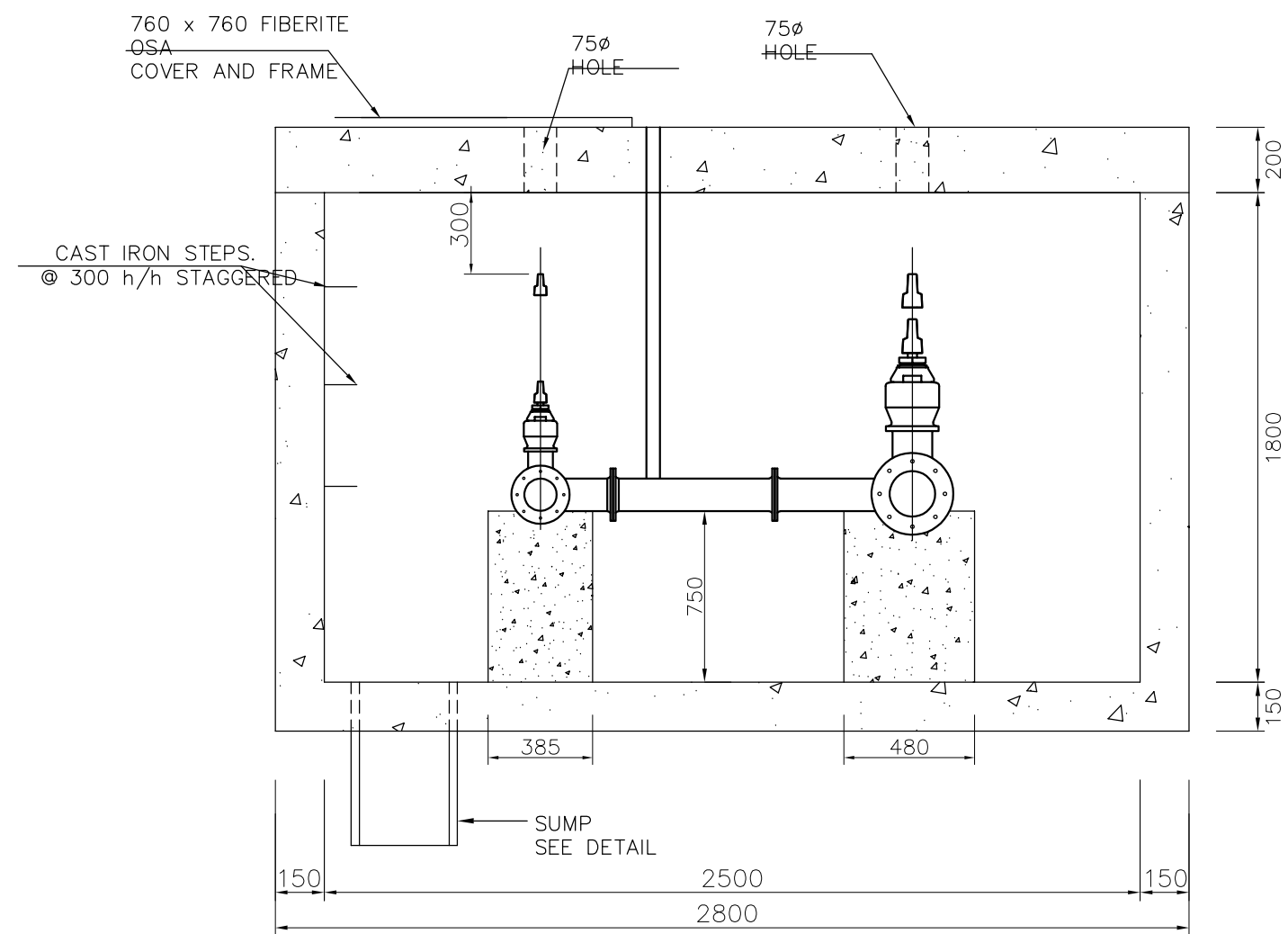
ITEM NO.	No. OFF	DESCRIPTION	MATERIAL	DIMENSIONS
1.01	2	250 Ø FLANGED ADAPTOR	MILD STEEL	FOR uPVC CLASS 12
1.02	2	SPECIAL PIPE, BOTH ENDS FLANGED, WITH PUDDLE FLANGE	MILD STEEL	250Ø 390 810 250Ø
1.03	2	TEE SPECIAL BOTH ENDS FLANGED	MILD STEEL	100Ø 350 425 250Ø 700
1.04	2	250Ø FLANGED RSV GATE VALVE WITH TOP CAP NON RISING SPINDLE LEFTHAND CLOSING	SANS 664 CLASS 16	
1.06	1	250Ø STRAINER, CI FLANGED WITH BOLTED TOP	70FS SERIES	
1.07	1	250Ø PRESSURE REDUCING VALVE BERMAD 720 -20 WITH V-PORT	ASTM A 126 CLASS B	
1.08	2	PIPE SPECIAL ONE END FLANGED	MILD STEEL	350 250Ø
1.09	2	SPECIAL PIPE, BOTH ENDS FLANGED,	MILD STEEL	100Ø 500 100Ø
1.10	2	SPECIAL BEND, BOTH ENDS FLANGED,	MILD STEEL	100Ø 270 270 100Ø
1.11	2	100Ø FLANGED RSV GATE VALVE WITH TOP CAP NON RISING SPINDLE LEFTHAND CLOSING	SANS 664 CLASS 16	
1.12	2	SPECIAL PIPE, BOTH ENDS FLANGED,	MILD STEEL	100Ø 638 100Ø
1.13	1	100Ø STRAINER, CI FLANGED WITH BOLTED TOP	70FS SERIES	
1.14	1	100Ø PRESSURE REDUCING VALVE BERMAD 720 -20 WITH V-PORT	ASTM A 126 CLASS B	
1.15	2	PIPE SPECIAL ONE END FLANGED	MILD STEEL	180 100Ø
1.16	1	250Ø VIKING JOHNSON COUPLING		
1.17	1	100Ø VIKING JOHNSON COUPLING		
1.18	1	TEE SPECIAL BOTH ENDS FLANGED	MILD STEEL	50Ø 350 425 250Ø 750
1.19	1	50mm BERMAD PRESSURE RELIEF VALVE MODEL 430		MODEL 430



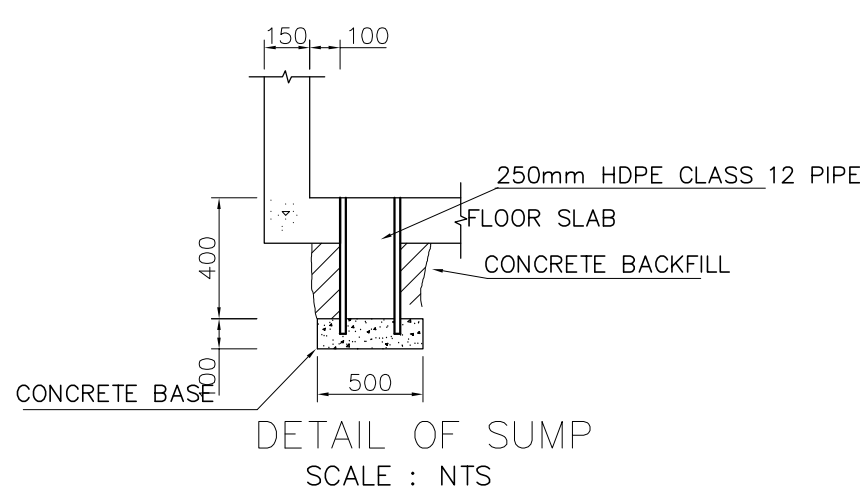
DETAIL A: PRESSURE RELIEF VALVE
SCALE : NTS



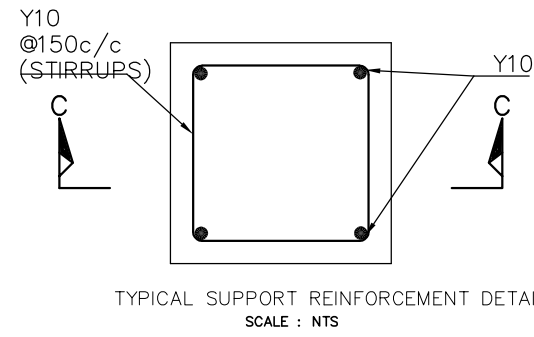
ROOFPLAN- PRV BOX
SCALE 1: 25



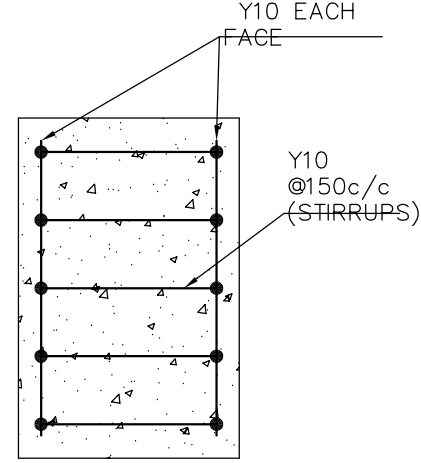
SECTION A-A
SCALE : NTS



DETAIL OF SUMP
SCALE : NTS

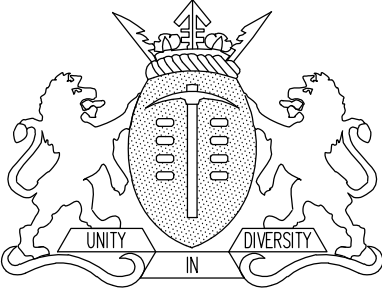
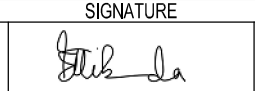


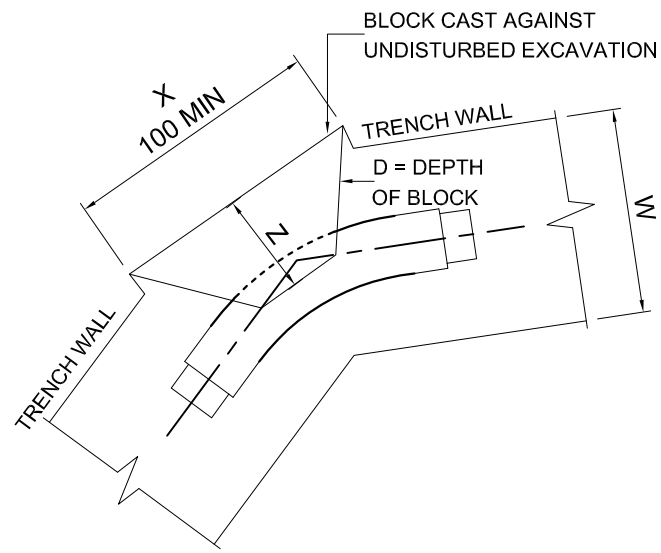
TYPICAL SUPPORT REINFORCEMENT DETAIL
SCALE : NTS



SECTION C - C
SCALE : NTS

NOTE:
COVER TO ALL REINFORCEMENT TO BE 50mm

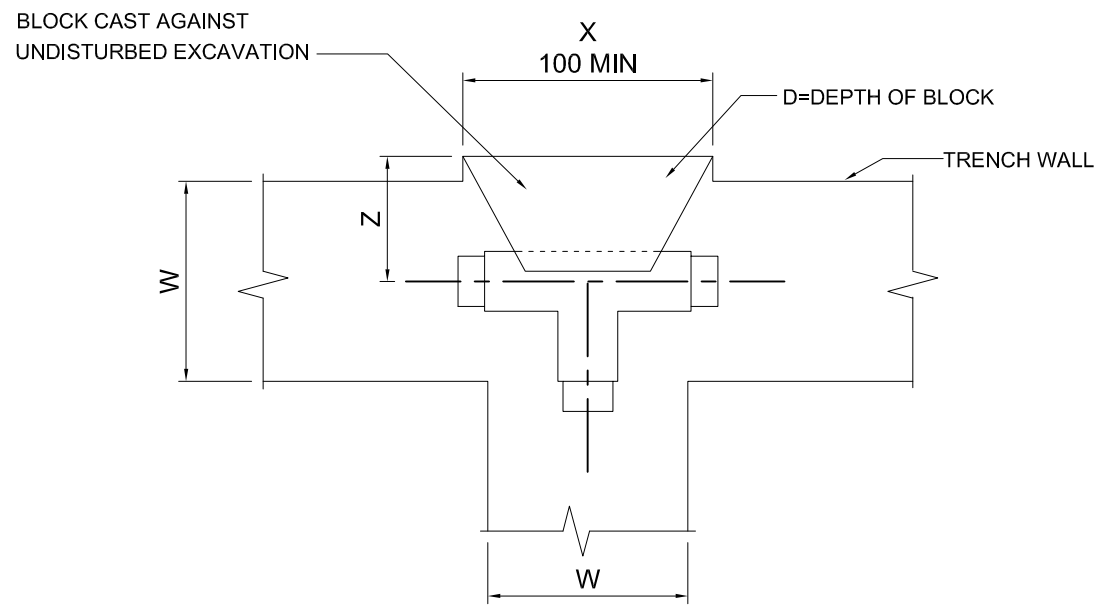
TD	09/2021	ISSUED FOR TENDER
REVISION No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION CENTURION HIGH SCHOOL		
SERVICE UPGRADES AND ADDITIONS		
CONTRACT - SECTION		
DISCIPLINE	PROJECT STAGE	
CIVIL	4	
WORK DESCRIPTION - SUB DIVISION UNDERGROUND SERVICES		
DRAWING DESCRIPTION PRV VALVE CHAMBER DETAILS		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	S. DUBE	DRAWN
SCALE	AS SHOWN	CHECKED
RESPONSIBLE PROFESSIONAL		
DATE	NAME	SIGNATURE
09/2021	J. SIBANDA	
PR NUMBER 201370155		
DRAWING CO-ORDINATED		
CONSULTANT:		
		
PROJECT'S STRATEGY CONSULTANTS		
BLUE PRINT: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391, 393, 395, 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 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2177, 2179, 2181, 2183, 2185, 2187, 2189, 2191, 2193, 2195, 2197, 2199, 2201, 2203, 2205, 2207, 2209, 2211, 2213, 2215, 2217, 2219, 2221, 2223, 2225, 2227, 2229, 2231, 2233, 2235, 2237, 2239, 2241, 2243, 2245, 2247, 2249, 2251, 2253, 2255, 2257, 2259, 2261, 2263, 2265, 2267, 2269, 2271, 2273, 2275, 2277, 2279, 2281, 2283, 2285, 2287, 2289, 2291, 2293, 2295, 2297, 2299, 2301, 2303, 2305, 2307, 2309, 2311, 2313, 2315, 2317, 2319, 2321, 2323, 2325, 2327, 2329, 2331, 2333, 2335, 2337, 2339, 2341, 2343, 2345, 2347, 2349, 2351, 2353, 2355, 2357, 2359, 2361, 2363, 2365, 2367, 2369, 2371, 2373, 2375, 2377, 2379, 2381, 2383, 2385, 2387, 2389, 2391, 2393, 2395, 2397, 2399, 2401, 2403, 2405, 2407, 2409, 2411, 2413, 2415, 2417, 2419, 2421, 2423, 2425, 2427, 2429, 2431, 2433, 2435, 2437, 2439, 2441, 2443, 2445, 2447, 2449, 2451, 2453, 2455, 2457, 2459, 2461, 2463, 2465, 2467, 2469, 2471, 2473, 2475, 2477, 2479, 2481, 2483, 2485, 2487, 2489, 2491, 2493, 2495, 2497, 2499, 2501, 2503, 2505, 2507, 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3173, 3175, 3177, 3179, 3181, 3183, 3185, 3187, 3189, 3191, 3193, 3195, 3197, 3199, 3201, 3203, 3205, 3207, 3209, 3211, 3213, 3215, 3217, 3219, 3221, 3223, 3225, 3227, 3229, 3231, 3233, 3235, 3237, 3239, 3241, 3243, 3245, 3247, 3249, 3251, 3253, 3255, 3257, 3259, 3261, 3263, 3265, 3267, 3269, 3271, 3273, 3275, 3277, 3279, 3281, 3283, 3285, 3287, 3289, 3291, 3293, 3295, 3297, 3299, 3		



THRUST BLOCK FOR 45° BEND

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A ₁ (m ²)	X (mm)	A ₂ (m ²)	X (mm)	A ₃ (m ²)
200	800	300	0,22	450	0,33	550	0,44
150	350	150	0,16	200	0,24	350	0,32
100	400	150	0,06	250	0,09	300	0,11

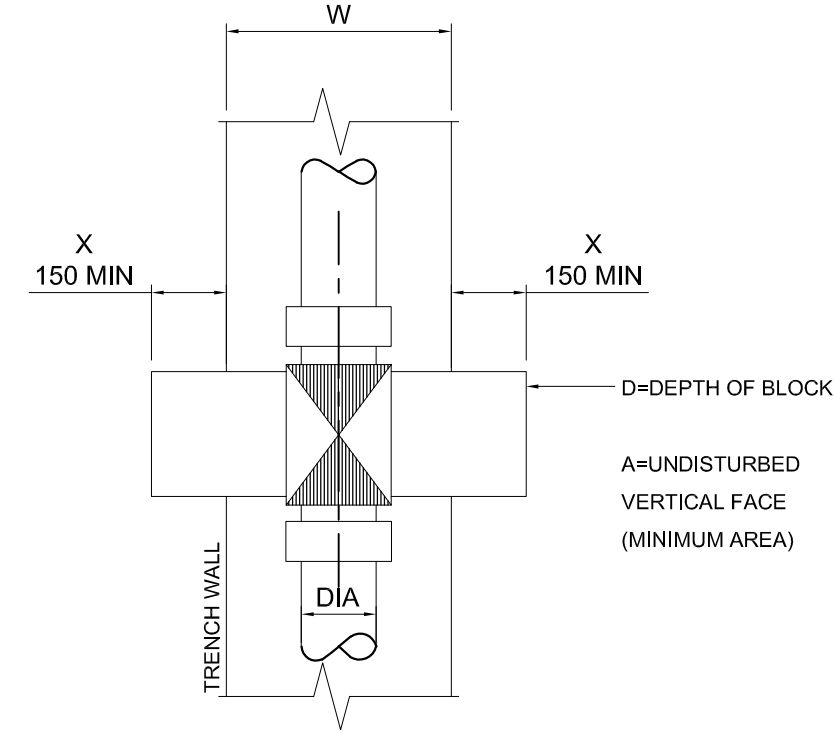
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR TEE

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A ₁ (m ²)	X (mm)	A ₂ (m ²)	X (mm)	A ₃ (m ²)
200	800	350	0,29	550	0,43	700	0,57
150	350	150	0,16	200	0,24	350	0,32
100	400	150	0,06	250	0,09	300	0,11

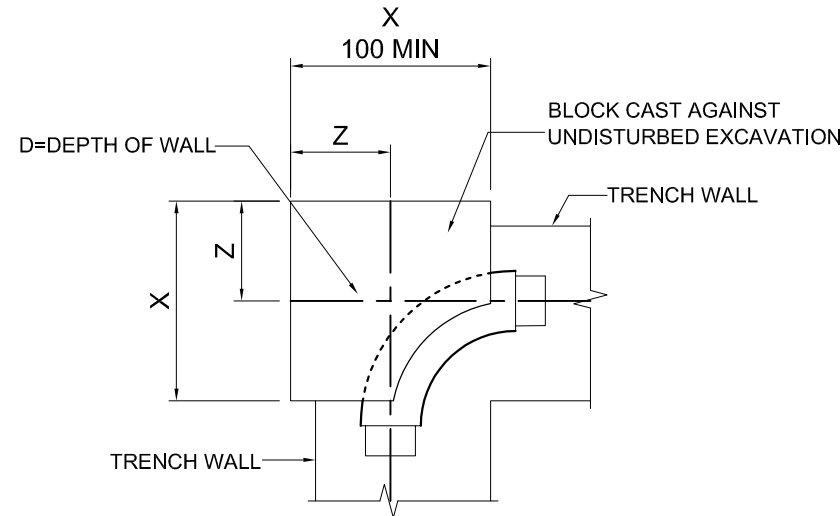
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR GATE VALVE

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A ₁ (m ²)	X (mm)	A ₂ (m ²)	X (mm)	A ₃ (m ²)
200	400	250	0,29	400	0,43	600	0,57
150	350	150	0,16	200	0,24	350	0,32
100	400	150	0,06	250	0,09	300	0,11

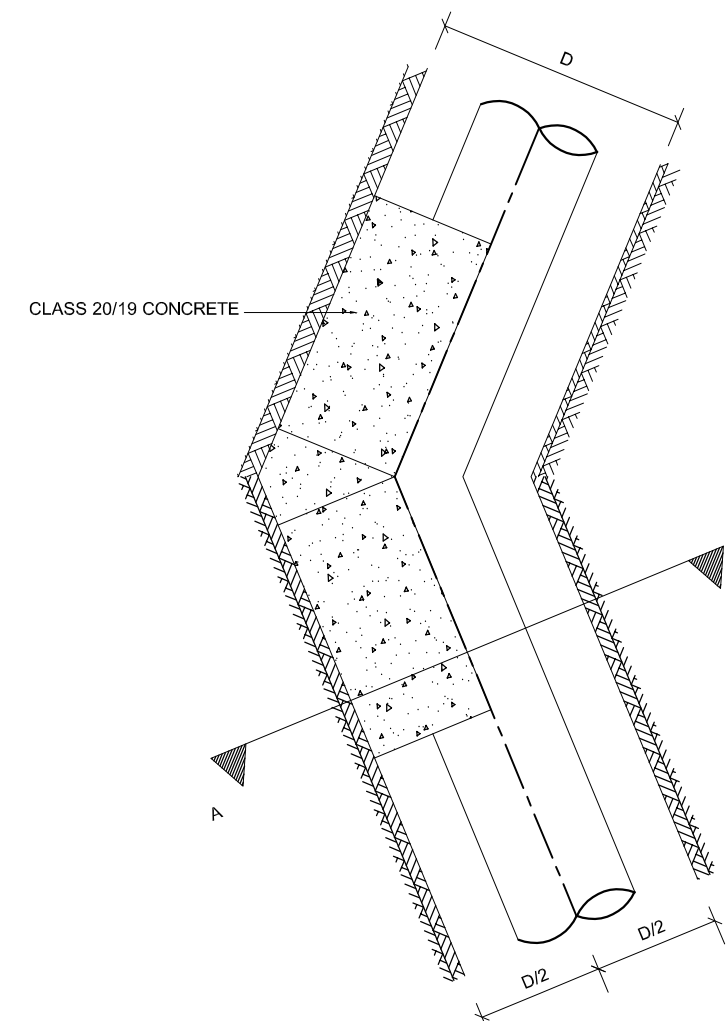
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X - DIMENSION SHALL BE 150mm MINIMUM
4. THE BLOCK DEPTH SHALL BE MEASURED FROM THE PIPE AXIS DOWNWARDS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR OF CONCRETE



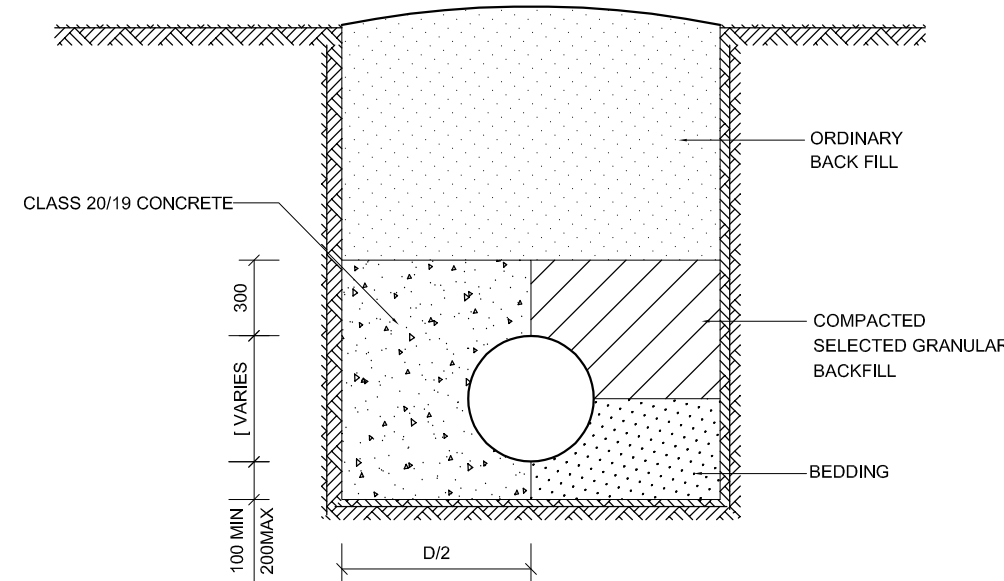
THRUST BLOCK FOR 90° BEND

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK D (mm)	MAXIMUM TESTING PRESSURE					
		900 kPa		1350 kPa		1800 kPa	
		X (mm)	A ₁ (m ²)	X (mm)	A ₂ (m ²)	X (mm)	A ₃ (m ²)
200	800	150	0,11	250	0,17	300	0,22
150	350	150	0,16	200	0,24	350	0,32
100	400	250	0,10	400	0,15	500	0,20

1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X- DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE

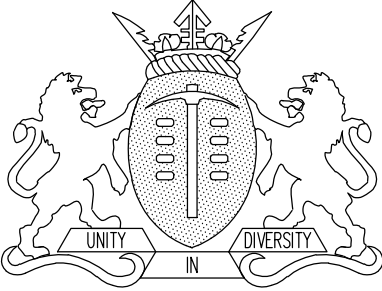
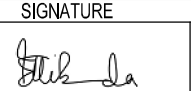


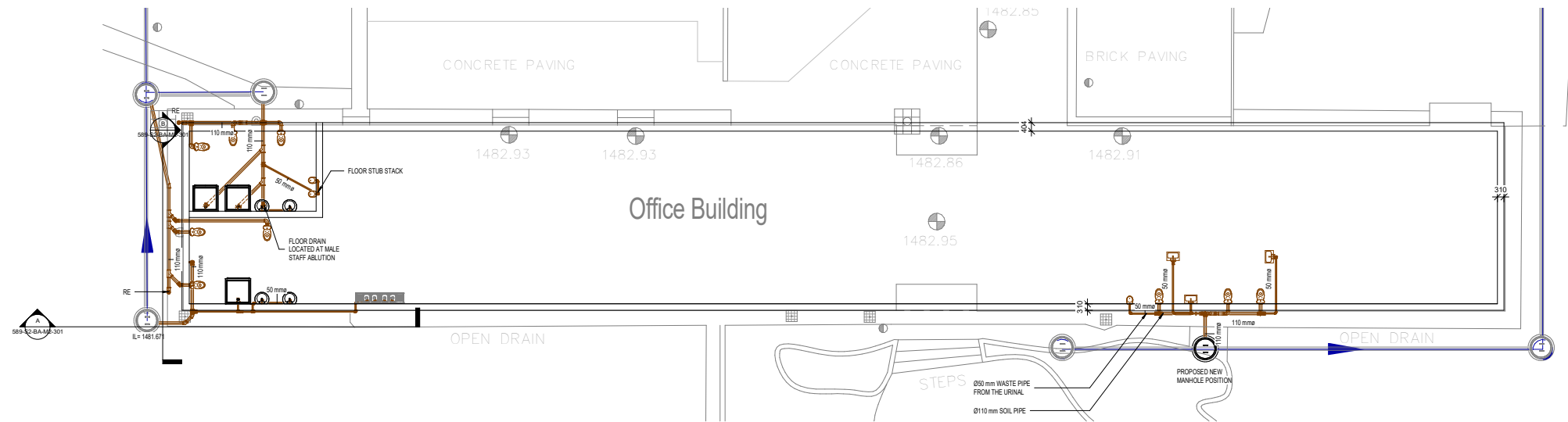
PLAN



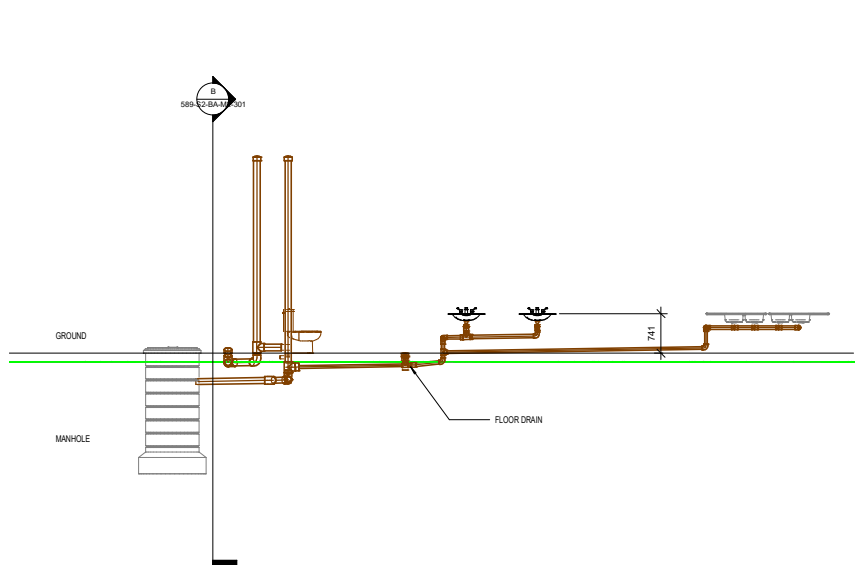
SECTION A-A

CONCRETE THRUST BLOCKS AT ALL BENDS > 11.25 °
FOR PIPES > 300mm DIAMETER

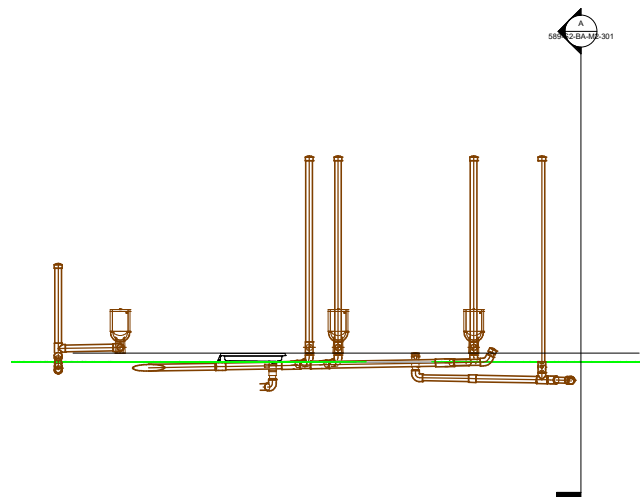
TD	09/2021	ISSUED FOR TENDER
REVISION No	DATE :	DESCRIPTION:
REVISIONS		
SIZE ON ORIGINAL DRAWING 100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOL CENTURION PHASE B		
SERVICE		
UPGRADES AND ADDITIONS		
CONTRACT - SECTION		
DISCIPLINE		
CIVIL		
PROJECT STAGE		
4		
WORK DESCRIPTION - SUB DIVISION		
UNDERGROUND SERVICES		
DRAWING DESCRIPTION		
THRUST BLOCK DETAILS		
FILE No.	J. SIBANDA	ITEM No.
DESIGN	J. SIBANDA	DRAWN
SCALE	N.T.S	CHECKED
DATE	09/2021	PR NUMBER
NAME	J. SIBANDA	201370155
SIGNATURE		
DRAWING CO-ORDINATED		
CONSULTANT :		
		
PROJECTS STRATEGY CONSULTANTS		
BUILDING 1, 5 BAUBURIA STREET CAMBRIDGE OFFICE PARK CAPE TOWN		
P.O. BOX 6070 MIDRAND, 1685 Tel: +27 11 655 1100 Fax: +27 11 655 0906 E-Mail: info@pmplus.co.za		
CONTRACTOR :		
CADD SYSTEM	AUTOCAD	FILE NAME
SIZE	DRAWING NUMBER	REV
A1	589-S2-ST-C-213	TD



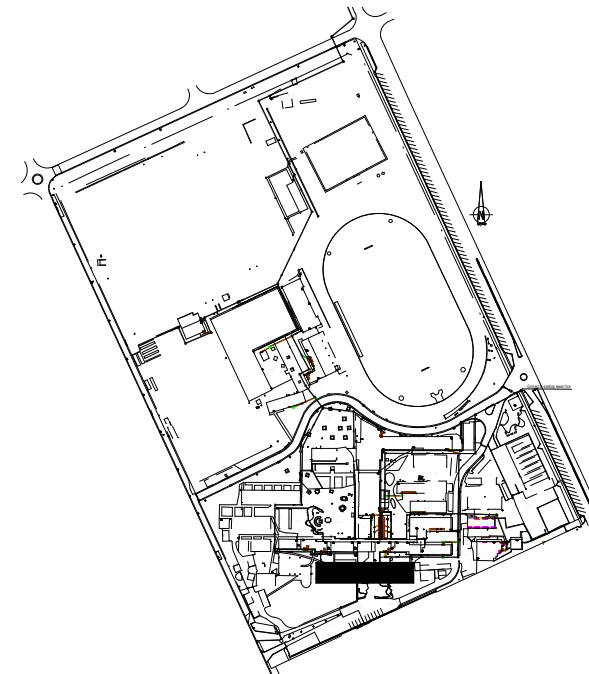
1 ADMINISTRATION BLOCK
1 : 100



A Section A
1 : 50



B Section B
1 : 50



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:80 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
6. ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO BE DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252.2 AND SANS 10400

NOTE:

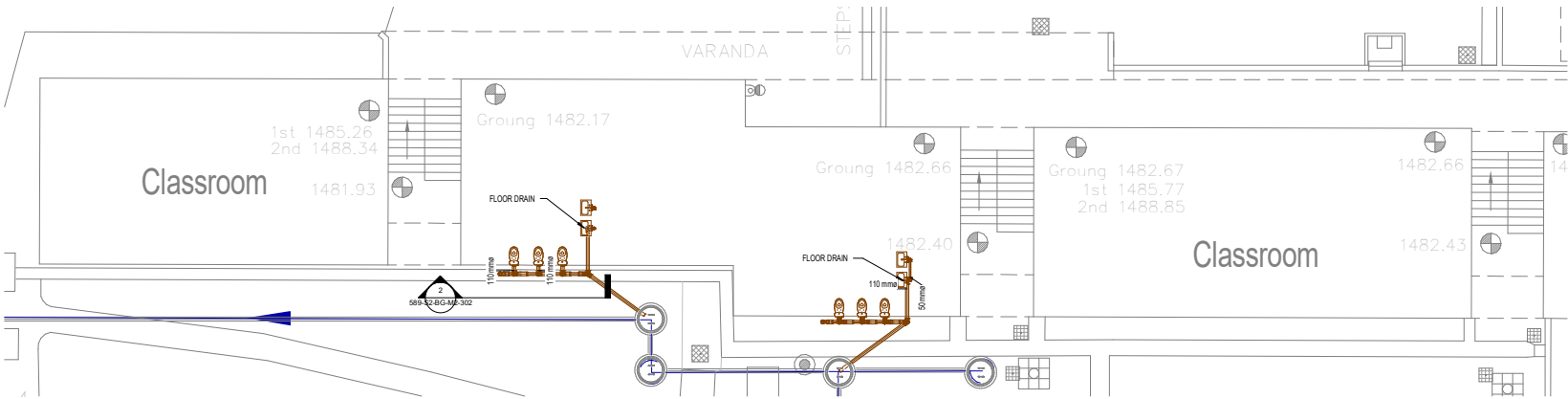
THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOF EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

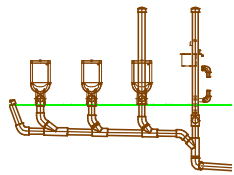
PIPE LEGEND

- Ø110mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER
- Ø110mm STACK PIPE TO BELOW WITH FFM ABOVE

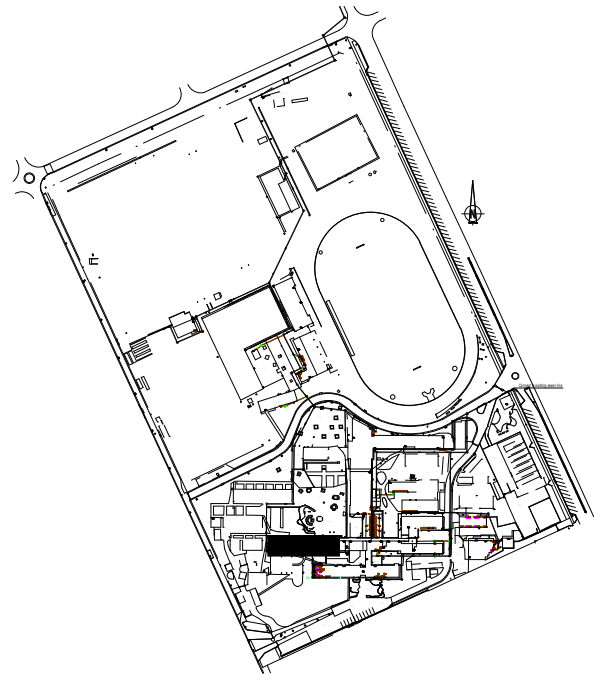
TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
HOERSKOOI CENTURION PHASE B		
UPGRADES AND ADDITIONS		
MECHANICAL		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 101 210208	FORM No
DESIGN	MD	DRAWN
SCALE	As Shown	CHECKED
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	NO. YEARS
REGISTERED	18/09/2021	31/08/2021
REGISTERED ELECTRICAL ENGINEER		
PMPUS		
CONTRACTOR		
CAD	REV 2021	DRAINAGE LAYOUT
SHEET SIZE	DRAINAGE LAYOUT	FILE NAME
A0	589-S2-BA-M2-301	TD



1 CLASSROOM 1
1 : 100



2 Section 10
1 : 50



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:80 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE COMPROMISED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES UNLESS OTHERWISE SPECIFIED
6. ALL WC VENT PIPES TO HAVE ONE WAY VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10253-2 AND SANS 10400

NOTE

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
---	PIPE DROP / RISE
VS	VENT STACK
---	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

- Ø100mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER

- Ø100mm STACK PIPE TO BELOW WITH FRI ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100 (mm)		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT - SECTION		
PROGRAMME		
MECHANICAL		
PROJECT DESCRIPTION: SUB-DIVISION		
WET SERVICES - DRAINAGE		
PROJECT DESCRIPTION		
DRAINAGE LAYOUT		
FILE No	ENR 101-210208	ITEM No
DESIGN	MD	DRAWN
SCALE	As Indicated	75%
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	DATE
REGISTERED	18/09/2021	18/09/2021
REGISTERED PROFESSIONAL		
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REV 2021	DRAINAGE LAYOUT
PROJECT	589-S2-BG-M2-302	FILE NAME
SHEET SIZE	A0	REV

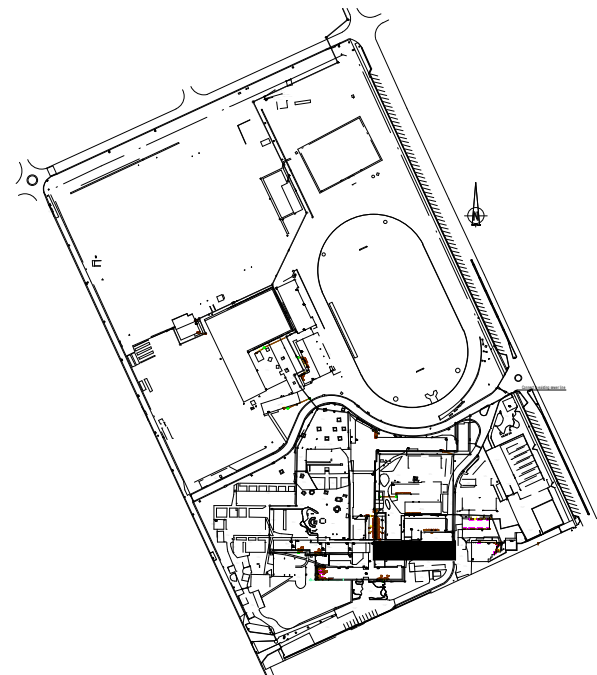
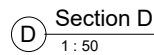
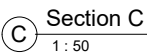
ALL SOIL AND WASTE PIPES TO BE HOPE
ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF
1:60 UNLESS OR OTHERWISE SPECIFIED
ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE
SYSTEM WORKS TO BE DONE ON SITE
ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES
UNLESS OR OTHERWISE SPECIFIED
ALL WASTE PIPES TO DIA 50 UNLESS OR OTHERWISE
SPECIFIED
ALL SOIL PIPES TO BE DIA 110 UNLESS OR OTHERWISE
SPECIFIED
DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2
AND SANS 10400

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	RODDING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
— — — — —	PIPE AT LOW LEVEL
— — — — —	PIPES RUNNING BELOW SLAB
	PIPE DROP / RISE
VS	VENT STACK
	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

Ø100mm SEWER PIPE
Ø54mm WASTE PIPE
DRAIN BY CIVIL ENGINEER

Ø100mm STACK PIPE TO BELOW
WITH FRM ABOVE



KEY PLAN

TO	08 SEPTEMBER 2021	ISSUED FOR TENDER
REVNO	DATE	DESCRIPTION

REVISIONS

REVISIONS

ON ORIGINAL DRAWING 100 mm



DEPARTMENT OF
INFRASTRUCTURE DEVELOPMENT

INSTITUTION

HOERSKOOL CENTURION PHASE B

UPGRADES AND ADDITIONS

ABSTRACT - SECTION

DISCIPLINE

OPTION, SUB-DIVISION

WET SERVICES - DRAINAGE

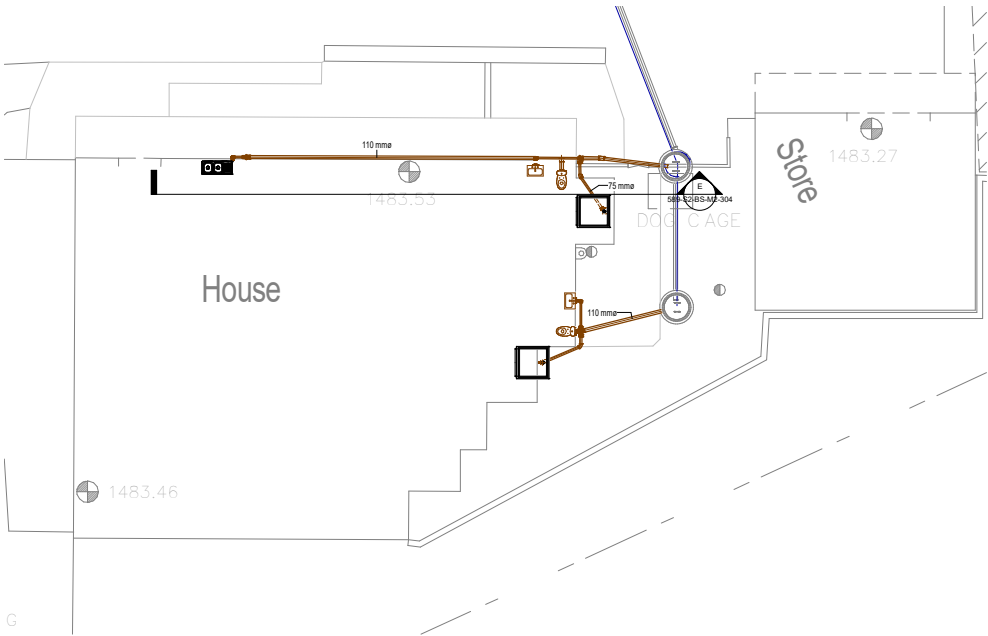
RAINAGE LAYOUT

FILE No.	EMD 18 / 210229		ITEM No.
DESIGN	AD	AD	DRAWN
SCALE	As indicated	TW	CHECKED
RESPONSIBLE PROFESSIONAL			
DATE	NAME & SURNAME	SIGNATURE	FILE NUMBER
08/02/2021	THABO MOYO		20120466
DRAWING CO-ORDINATED			

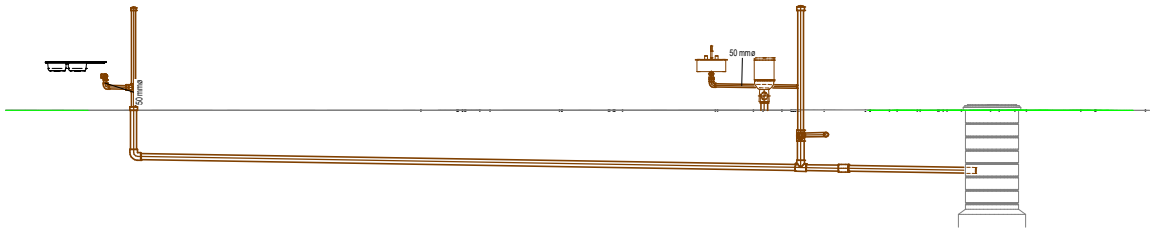
CONSULTANT:
PMPLUS

CONTRACTOR:

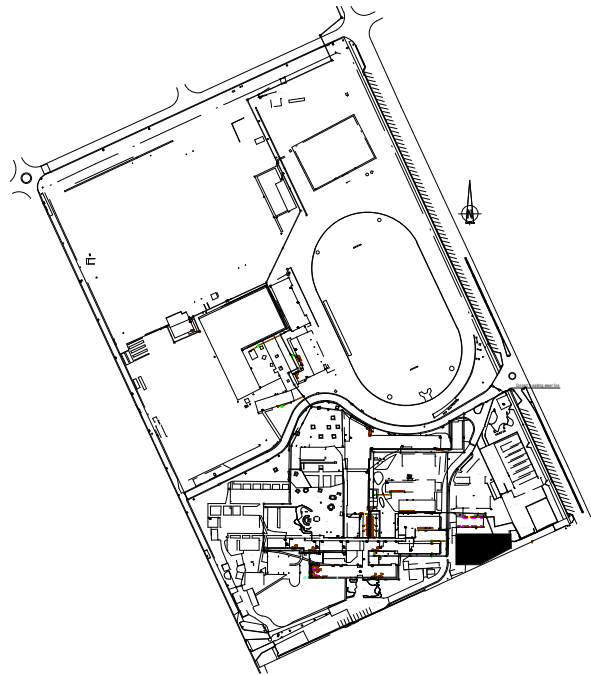
CAD SYSTEM	REVIT 2021	DRAINAGE LAYOUT	FILE NAME
SHEET SIZE	DRAWING NUMBER		REV
A0	589-S2-BG-M2-303		TD



1 HOUSE
1 : 100



E Section E
1 : 50



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
6. ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10400

NOTE:

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
➔	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

Ø100mm SEWER PIPE

Ø50mm WASTE PIPE

DRAIN BY CIVIL ENGINEER

Ø100mm STACK PIPE TO BELOW WITH FPM ABOVE

TO : 18 SEPTEMBER 2021 ISSUED FOR TENDER

REV No DATE DESCRIPTION

REVISIONS

SIZE ON ORIGINAL DRAWING 1:50 mm



DEPARTMENT OF
INFRASTRUCTURE DEVELOPMENT

INSTITUTION

HOERSKOOI CENTURION PHASE B

OFFICE

UPGRADES AND ADDITIONS

CONTRACT SECTION

PROGRAMME

MECHANICAL

4

PROJECT DESCRIPTION: SUB-DIVISION

WET SERVICES - DRAINAGE

PROJECT DESCRIPTION

DRAINAGE LAYOUT

FILE No: EMB-W-210208 DRAW No: 001 DRAWN By: TD

SCALE: As Shown CHECKED By: TD

DATE: 18 SEP 2021

REVISION: 1

REVISION: 2

REVISION: 3

REVISION: 4

REVISION: 5

REVISION: 6

REVISION: 7

REVISION: 8

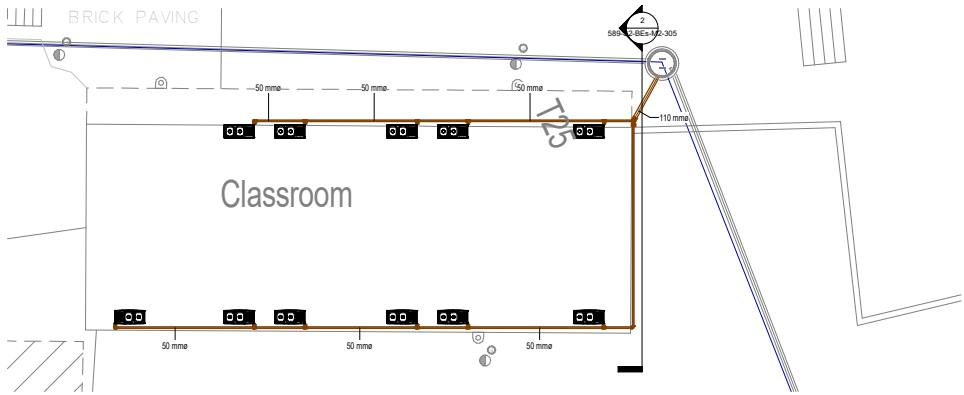
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REVISION: 10

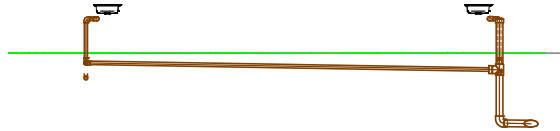
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REVISION: 12

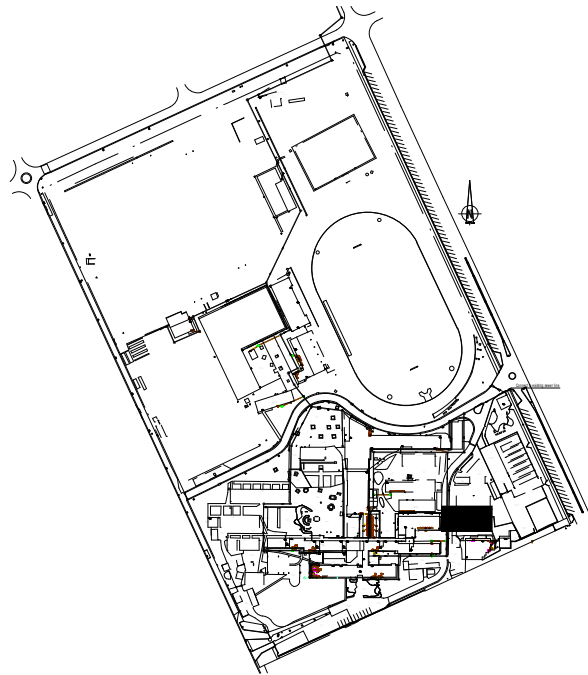
REVISION: 13



1 COOKING CLASSROOM1
1 : 100



2 Section 14
1 : 50



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
6. ALL W/C VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO DA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10480

NOTE:

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	RODING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND:

- Ø100mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER
- Ø100mm STACK PIPE TO BELOW WITH FRM ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT DESCRIPTION: S.B. DIVISION		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 161 210208	FORM No
DESIGN	MD	DRAWN
SCALE	As indicated	75
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	NO. 10000000
REGISTERED	19/09/2021	19/09/2021
REGISTERED PROFESSIONAL		
PMPUS		
CONTRACTOR		
CAD	REVIT 2021	DRAINAGE LAYOUT
SHEET SIZE	589-S2-8Es-M2-305	FILE NAME
A0	589-S2-8Es-M2-305	TD

GENERAL NOTES:

- ALL SOIL AND WASTE PIPES TO BE HDPE
- ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
- ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
- ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
- ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES UNLESS OTHERWISE SPECIFIED
- ALL WASTE PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
- ALL WASTE PIPES TO DA 50 UNLESS OTHERWISE SPECIFIED
- ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
- DRAINAGE INSTALLATION MUST COMPLY TO SANS 10262-2 AND SANS 10400

NOTE:

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

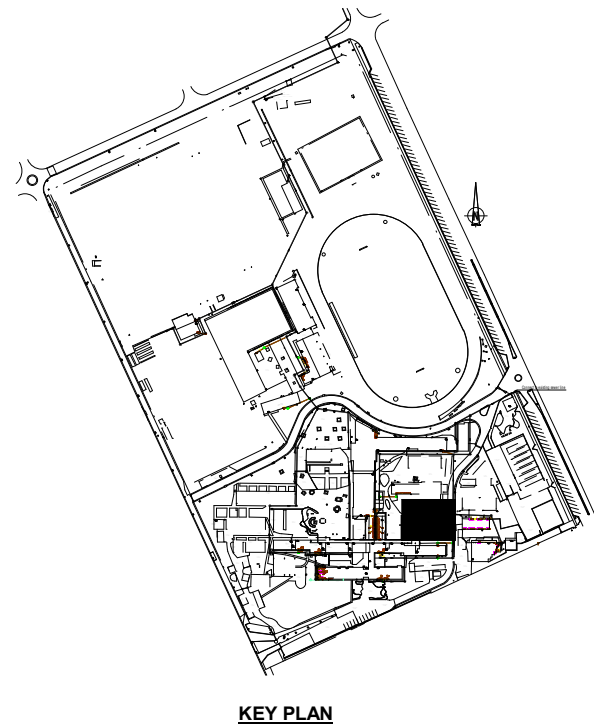
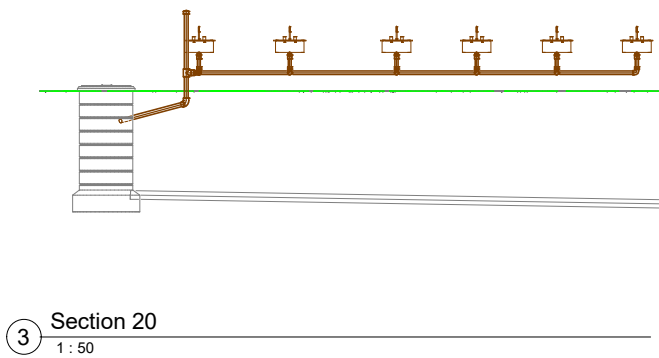
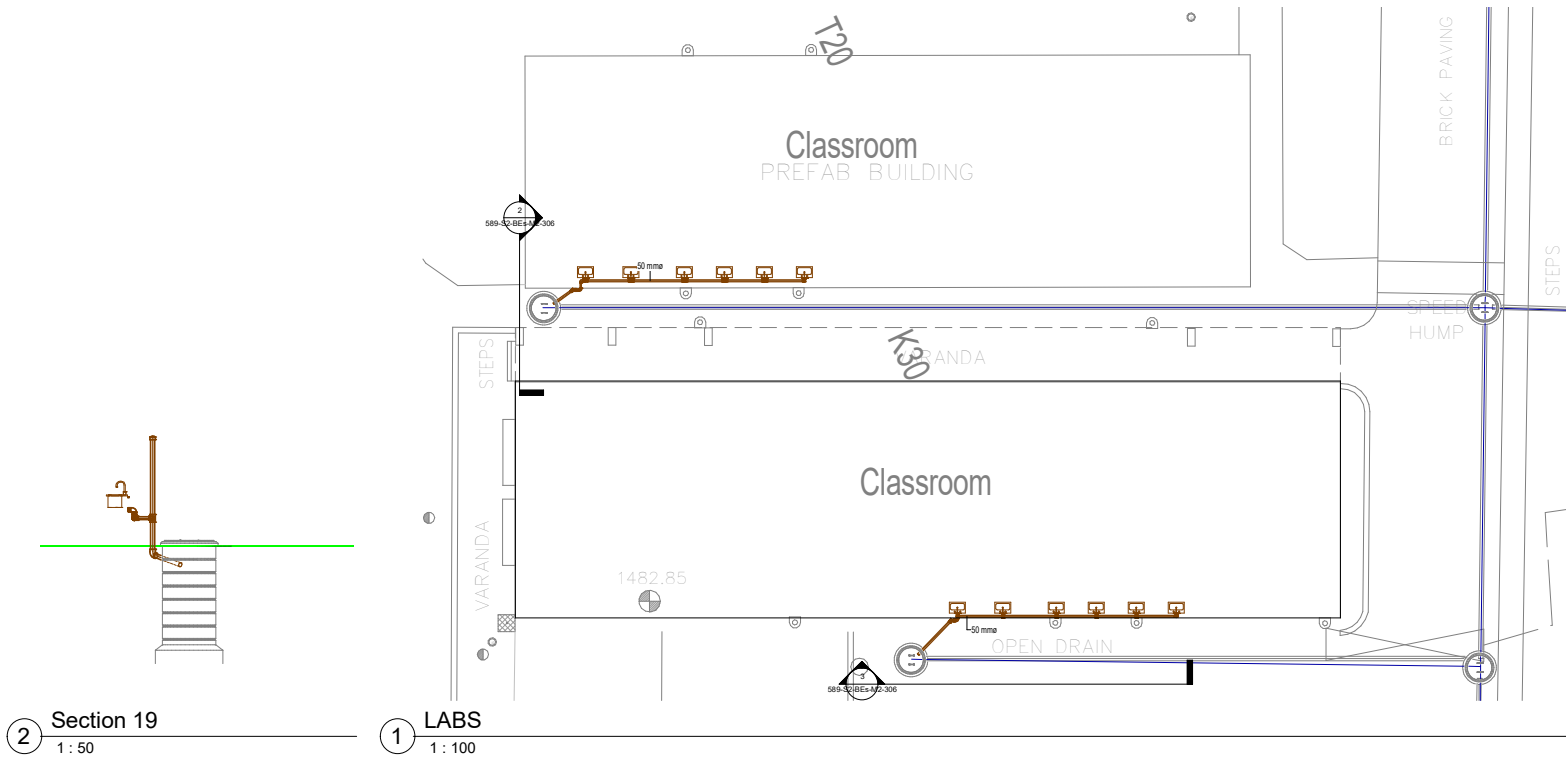
LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

- Ø100mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER

- Ø100mm STACK PIPE TO BELOW WITH FRM ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:50 (mm)		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT DESCRIPTION: S.B. DIVISION		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 101 210209	ITEM No
DESIGN	AD	DRAWN
SCALE	As Shown	75
DATE	18 SEP 2021	CHECKED
DESIGNER	NAME & SIGNATURE	DATE
REVISIONS	NAME & SIGNATURE	DATE
DRAWING DISSEMINATION		
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REV 2021	DRAINAGE LAYOUT
FILE No	DATE	DESCRIPTION
REV	DATE	DESCRIPTION
A0	18 SEP 2021	589-S2-8Es-M2-306
TD		



GENERAL NOTES:

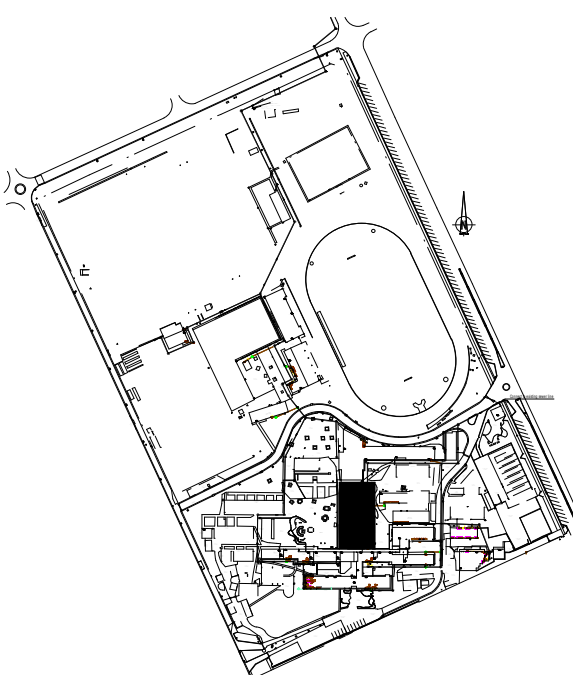
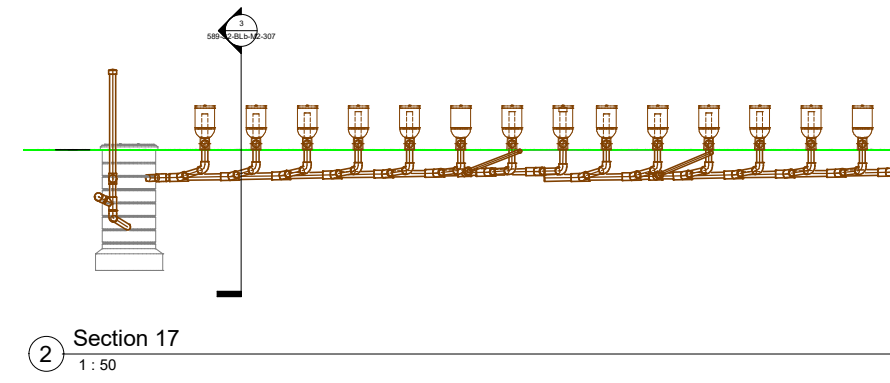
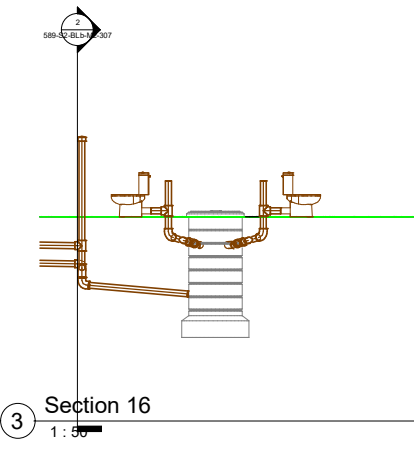
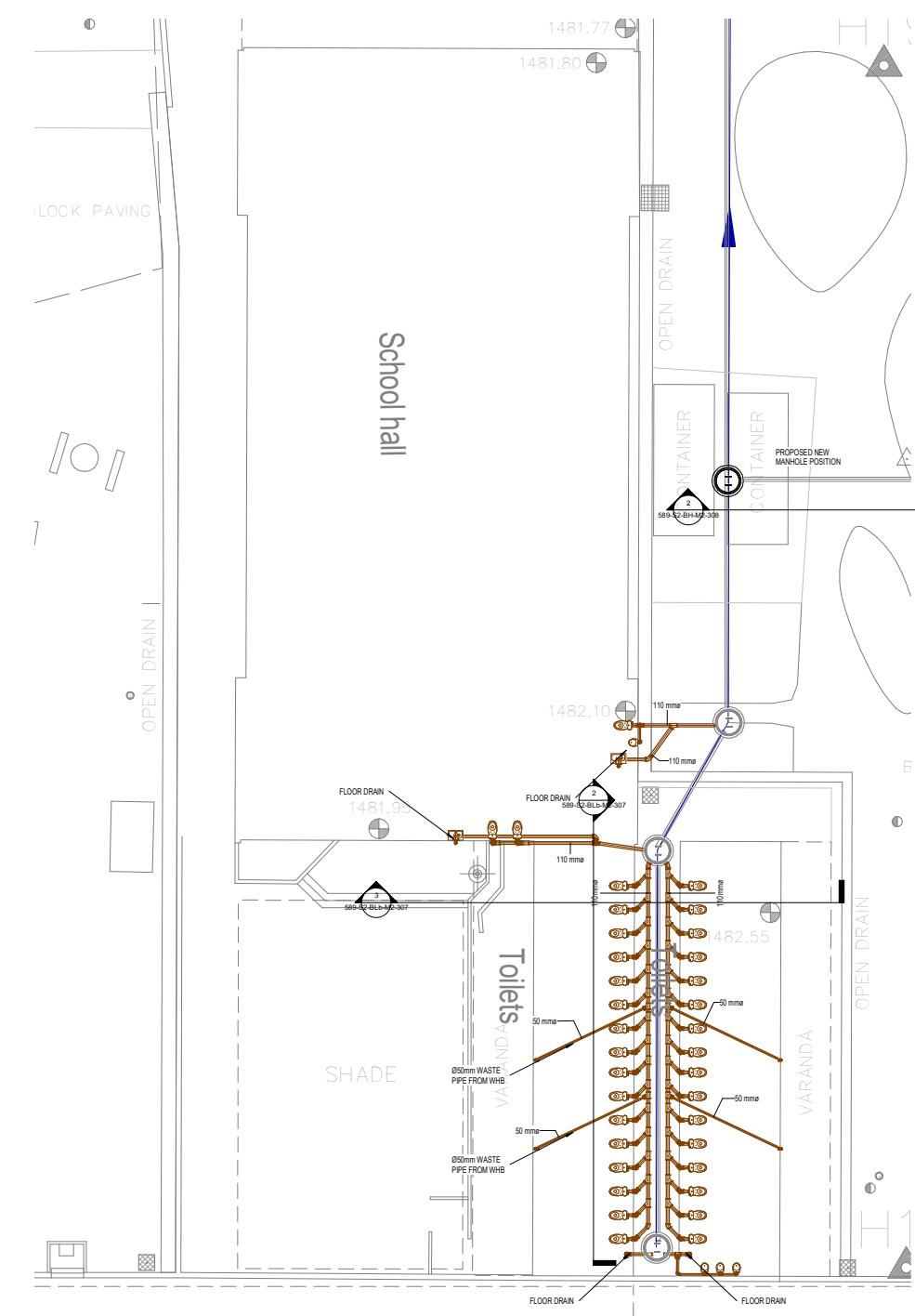
- ALL SOIL AND WASTE PIPES TO BE HDPE
- ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:80 UNLESS OTHERWISE SPECIFIED
- ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
- ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
- ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
- ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
- ALL WASTE PIPES TO DIA 50 UNLESS OTHERWISE SPECIFIED
- ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
- DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252.2 AND SANS 10400

NOTE:
THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
---	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND	
—	Ø100mm SEWER PIPE
—	Ø54mm WASTE PIPE
—	DRAIN BY CIVIL ENGINEER
○	Ø100mm STACK PIPE TO BELOW WITH FRI ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:50 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT NUMBER		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 101 210208	ITEM No
DESIGN	MD	DRAWN
SCALE	As Shown	75
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	NO. OF SHEETS
589-S2-8Lb-M2-307	18/09/2021	1/1
DRAWING APPROVED BY		
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REVIT 2021	DRAINAGE LAYOUT
FILE No	589-S2-8Lb-M2-307	TD



KEY PLAN

1 MALE, FEMALE TOILETS & HALL TOILETS
1:100

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
6. ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO BE DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10400

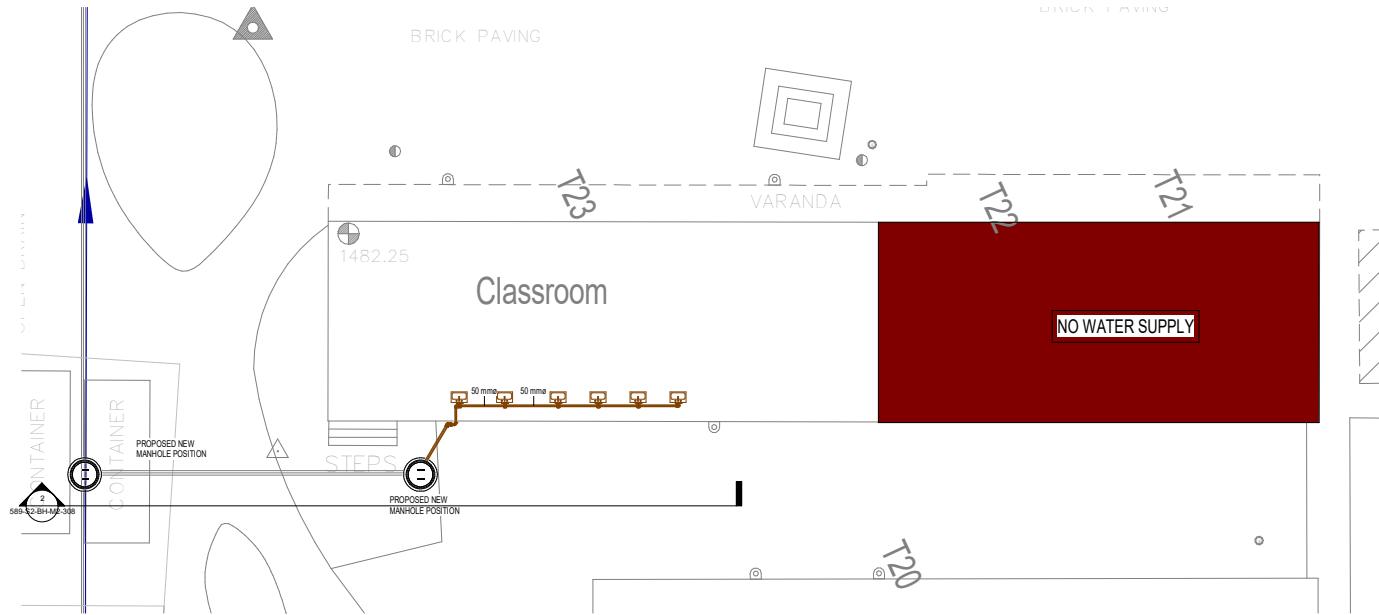
NOTE:

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

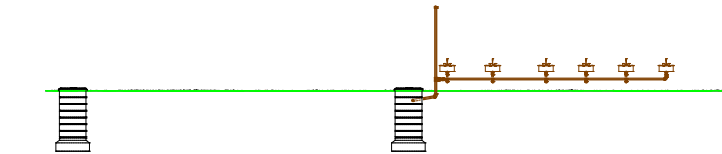
LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
----	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

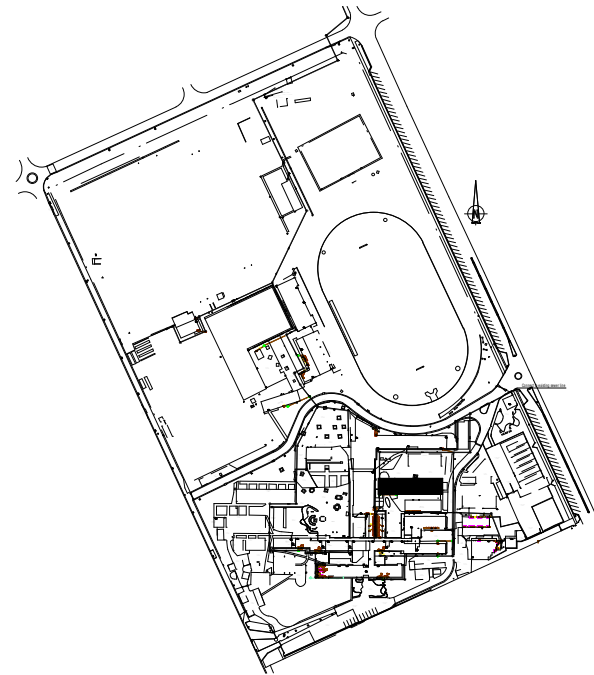
- Ø100mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER
- Ø100mm STACK PIPE TO BELOW WITH FLOW ABOVE



1 CLASSROOM 3
1 : 100

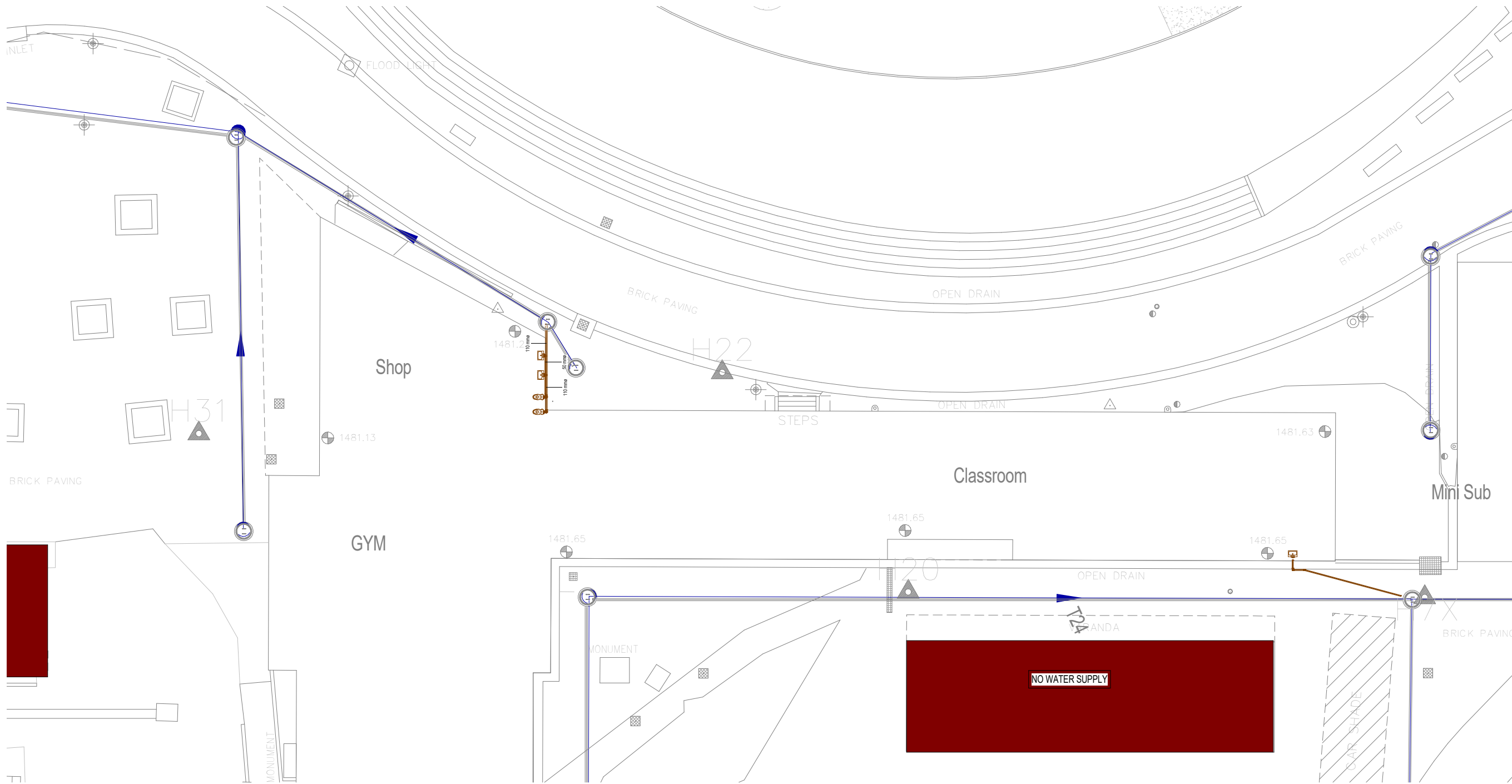


2 Section 18
1 : 100

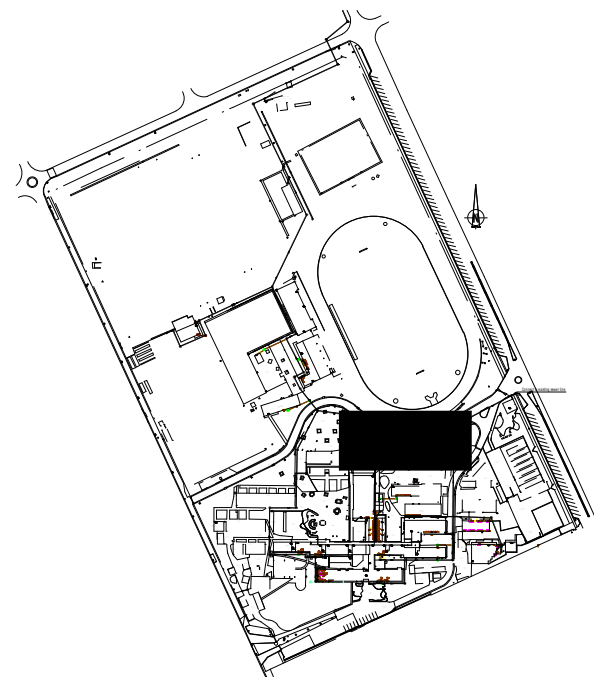


KEY PLAN

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:50 (mm)		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT STAGE		
4		
PROJECT DESCRIPTION: SUB-DIVISION		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 161 210208	ITEM No
DESIGN	AD	DRAWN
SCALE	As indicated	TH
DATE	18 SEP 2021	CHECKED
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	NO. 10000000
REGISTERED	18 SEP 2021	10000000
REGISTERED PROFESSIONAL		
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REV 2021	DRAINAGE LAYOUT
PROJECT	DATE	FILE NAME
SHEET SIZE	588-S2-BH-M2-308	REV
A0	588-S2-BH-M2-308	TD



1 CLASSROOM 5
1 : 100



KEY PLAN

GENERAL NOTES:

1. ALL SOL AND WASTE PIPES TO BE HOPE
2. ALL SOL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADAPTANCE VALVES
6. ALL W/IC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10400

NOTE:

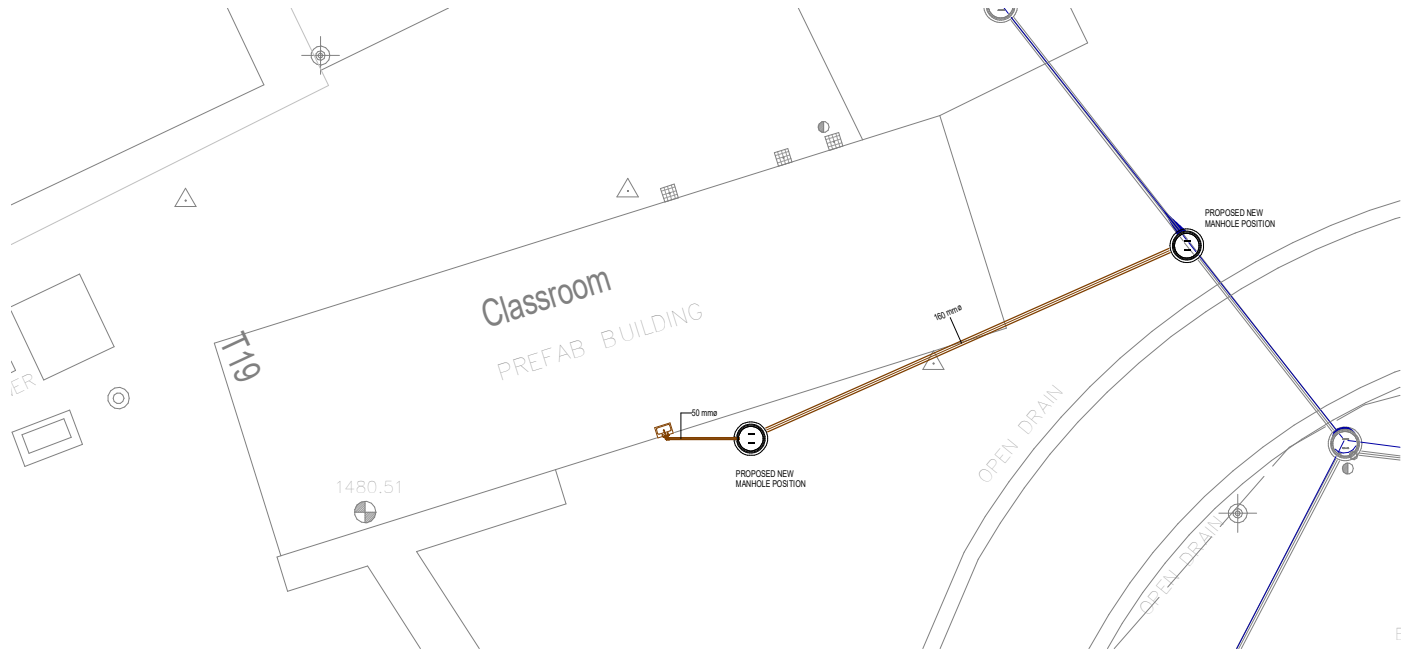
THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
---	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

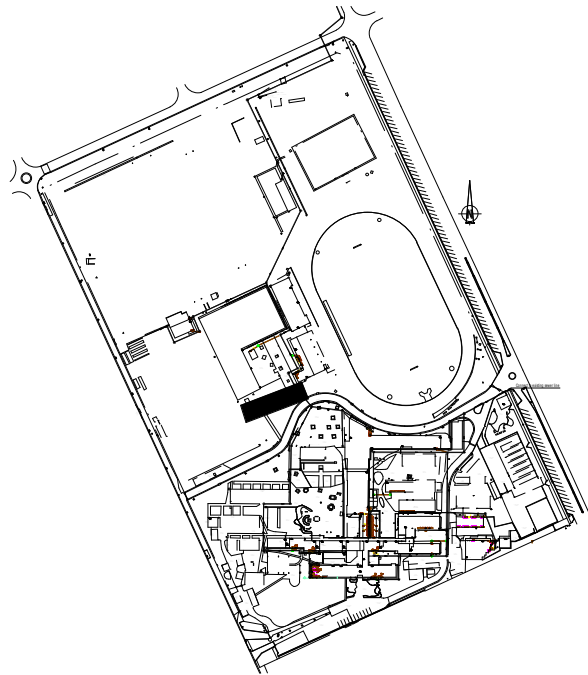
PIPE LEGEND

- Ø100mm SEWER PIPE
- Ø50mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER
- Ø100mm STACK PIPE TO BELOW WITH FIRM ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT STAGE		
4		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 101 21020	ITEM No
DESIGN	AD	DRAWN
SCALE	AS SHOWN	CHECKED
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	NO. OF SHEETS
1	18/09/2021	1
DRAWING DISSEMINATION		
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD SYSTEM	REVIT 2021	DRAWING NUMBER
SHEET SIZE	A0	FILE NAME
588-S2-BH-M2-309		
REV		
TD		



1 CLASSROOM 4
1 : 100



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HOPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:80 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
6. ALL W.C. VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO BE DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252.2 AND SANS 10400

NOTE:

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RIE	RIDDING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
---	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

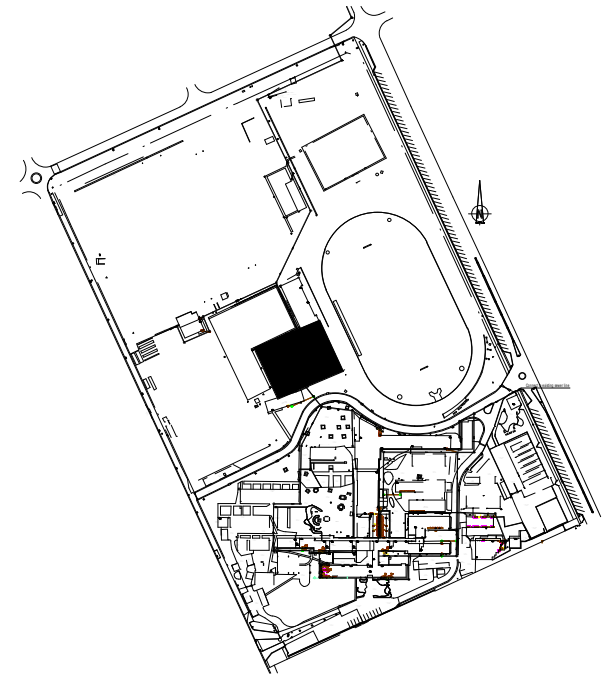
- Ø100mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER

- Ø100mm STACK PIPE TO BELOW WITH FRI ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT DESCRIPTION: SUB-DIVISION		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 161 210209	FORM No
DESIGN	AD	DRAWN
SCALE	As indicated	TH
DATE	18 SEP 2021	CHECKED
DESIGNER	NAME & SIGNATURE	DATE
DESIGNER	NAME & SIGNATURE	DATE
DESIGNER	NAME & SIGNATURE	DATE
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REV 2021	DRAINAGE LAYOUT
PROJECT	588-S2-BH-M2-310	FILE NAME
SHEET SIZE	A0	REV



1 PAVILION
1 : 100



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HOPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AN ADJUSTANCE VALVES
6. ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO BE DIA 90 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10400

NOTE:

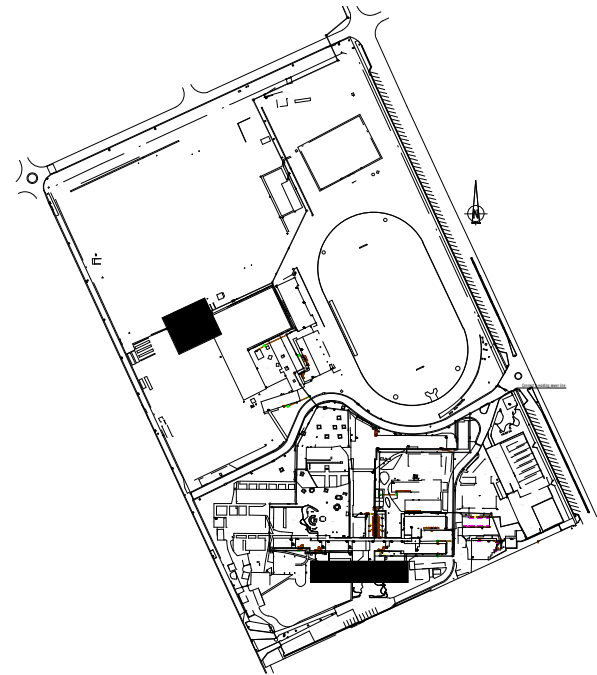
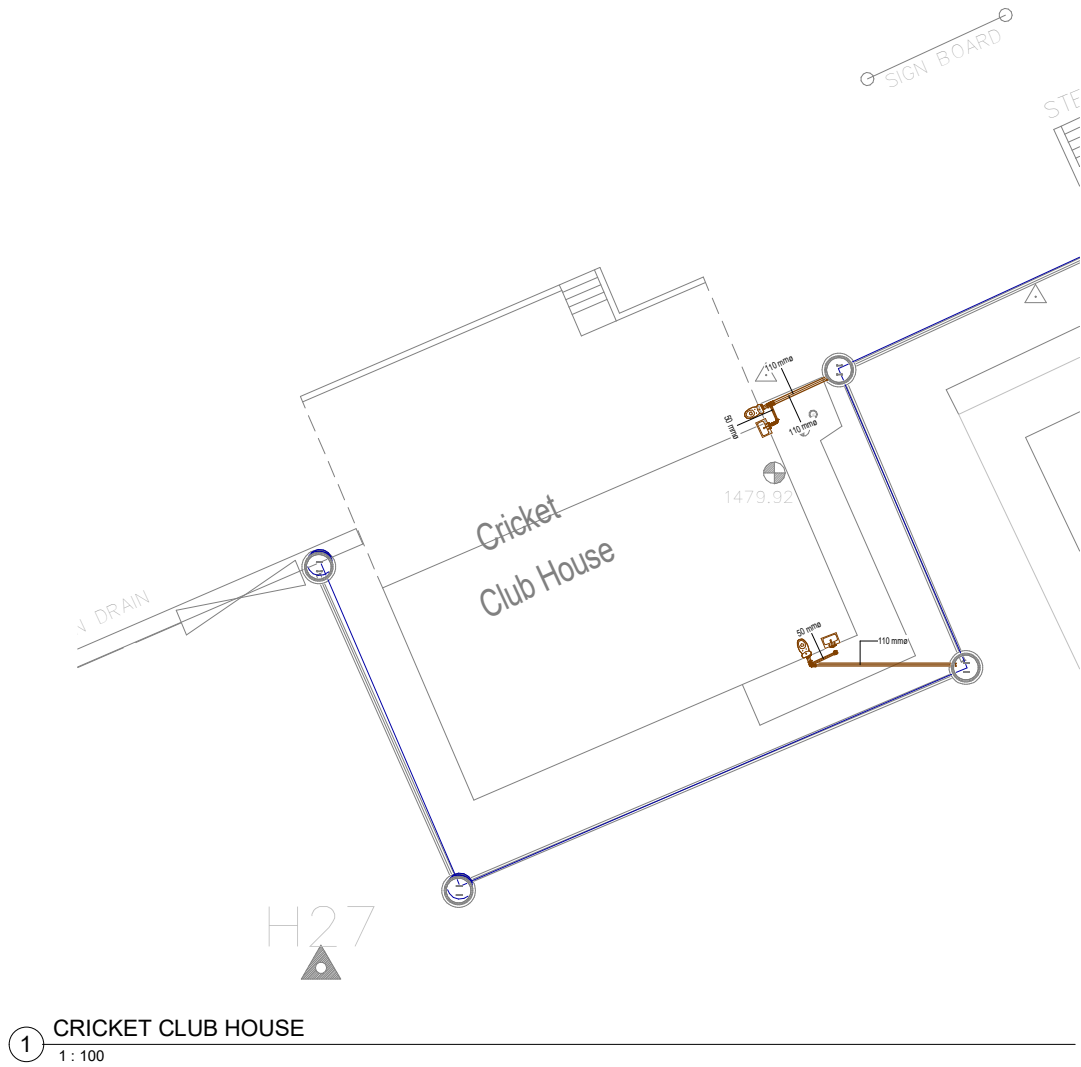
THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	RIDDING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
----	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND:

- Ø100mm SEWER PIPE
- Ø50mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER
- Ø100mm STACK PIPE TO BELOW WITH FRM ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100 mm		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT DESCRIPTION: SUB-DIVISION		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 101 210208	ITEM No
DESIGN	AD	DRAWN
SCALE	As indicated	CHECKED
RESPONSIBLE PROFESSIONAL		
NAME & SIGNATURE	DATE	NO. 10000000
REGISTERED	PROFESSIONAL ENGINEER	10000000
REGISTERED ELECTRICAL ENGINEER		
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REVIT 2021	DRAINAGE LAYOUT
SHEET SIZE	589-S2-B1-M2-311	FILE NAME
A0		REV
		TD



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:80 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES
6. ALL WC VENT PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO BE DIA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DIA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10400

NOTE

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
----	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

0100mm SEWER PIPE

050mm WASTE PIPE

DRAIN BY CIVIL ENGINEER

0100mm STACK PIPE TO BELOW WITH FRM ABOVE

TO 18 SEPTEMBER 2021 ISSUED FOR TENDER

REV No DATE DESCRIPTION

REVISIONS

SIZE ON ORIGINAL DRAWING 1:100



INSTITUTION

HOERSKOOI CENTURION PHASE B

UPGRADES AND ADDITIONS

CONTRACT SECTION

PROGRAMME PROJECT STAGE

MECHANICAL 4

WET SERVICES - DRAINAGE

WET SERVICES - DRAINAGE

FILE No. 589-S2-B1-M2-312

DATE 18 SEP 2021

SCALE 1:100

DESIGNER

DATE 18 SEP 2021

DESIGNED BY

DATE 18 SEP 2021

DESIGNED BY

DATE 18 SEP 2021

DESIGNED BY

DATE 18 SEP 2021

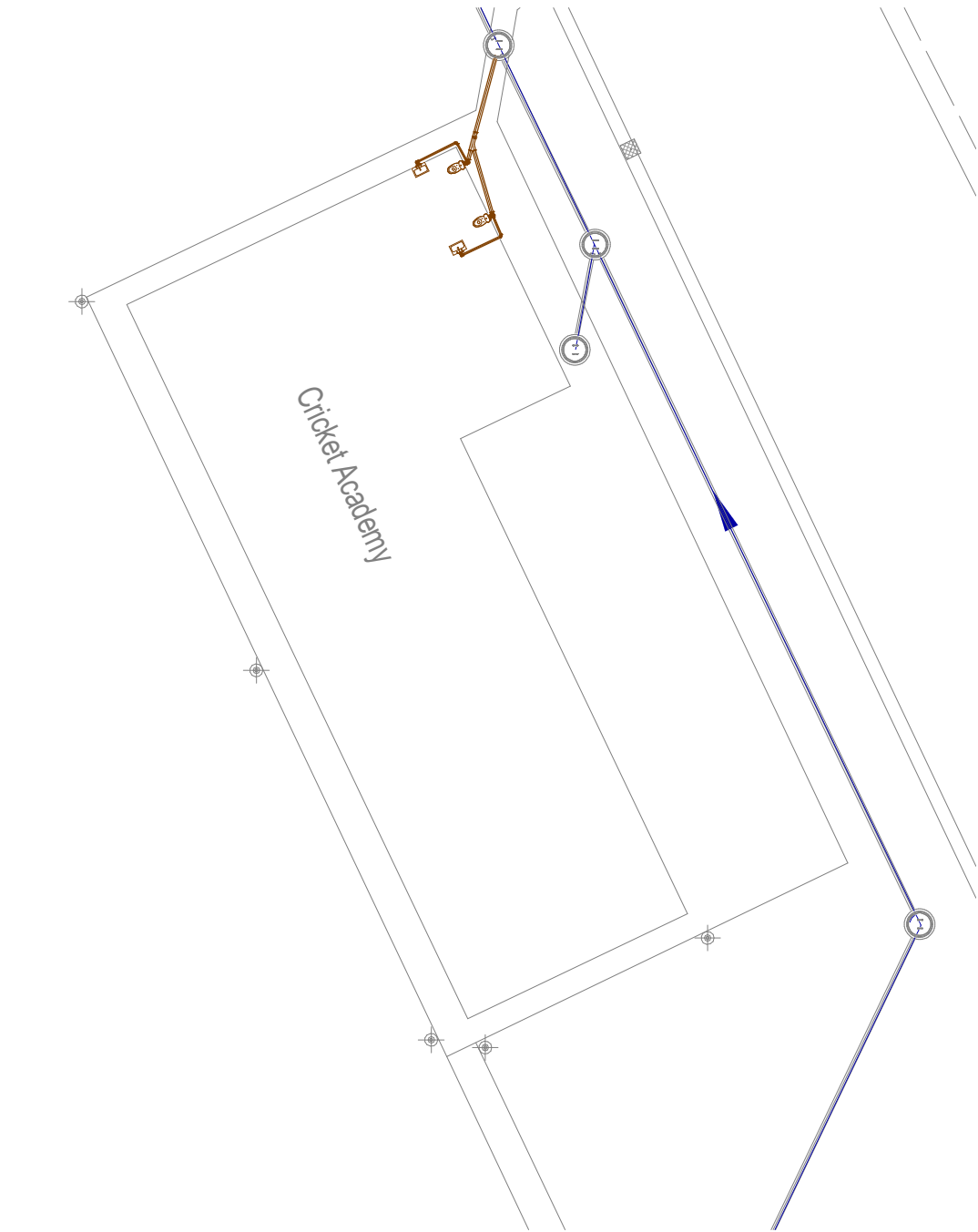
DESIGNED BY

DATE 18 SEP 2021

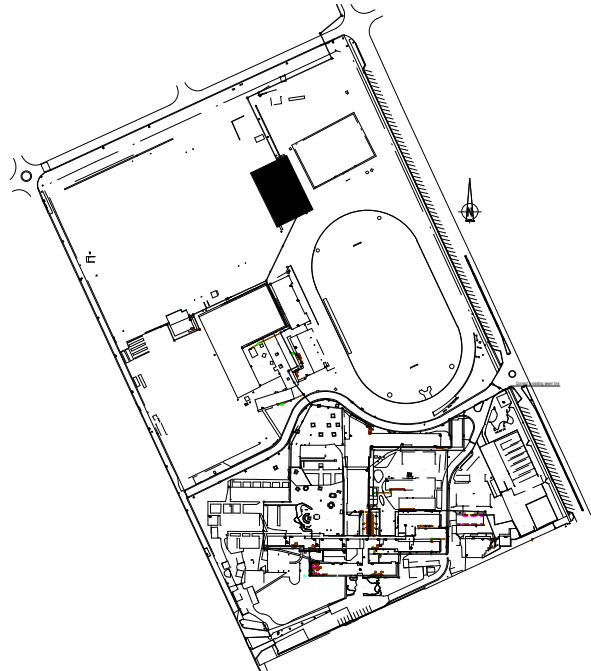
DESIGNED BY

DATE 18 SEP 2021

DESIGNED BY



1 CRICKET ACADEMY
1 : 100



KEY PLAN

GENERAL NOTES:

1. ALL SOIL AND WASTE PIPES TO BE HDPE
2. ALL SOIL AND WASTE PIPES TO HAVE A MINIMUM FALL OF 1:60 UNLESS OTHERWISE SPECIFIED
3. ALL PIPE INVERT LEVELS TO BE CONFIRMED ON SITE
4. ALL NECESSARY ADJUSTMENTS TO ENSURE THAT THE SYSTEM WORKS TO BE DONE ON SITE
5. ALL BOTTLE TRAPS TO HAVE AIR ADMITTANCE VALVES UNLESS OTHERWISE SPECIFIED
6. ALL WASTE PIPES TO HAVE ONE WAY VENT VALVES UNLESS OTHERWISE SPECIFIED
7. ALL WASTE PIPES TO DA 50 UNLESS OTHERWISE SPECIFIED
8. ALL SOIL PIPES TO BE DA 110 UNLESS OTHERWISE SPECIFIED
9. DRAINAGE INSTALLATION MUST COMPLY TO SANS 10252-2 AND SANS 10400

NOTE:

THE INTERNAL DRAINAGE DOES NOT FORM PART OF THE SCOPE OF WORKS AND HAS BEEN INCLUDED FOR INFORMATION PURPOSES ONLY.

LEGEND	
SYMBOL	DESCRIPTION
IE	INSPECTION EYE
FD	FLOOR DRAIN
RE	ROOFING EYE
TA	TO ABOVE
TB	TO BELOW
SVP	SOIL VENT PIPE
---	PIPE AT LOW LEVEL
----	PIPES RUNNING BELOW SLAB
●	PIPE DROP / RISE
VS	VENT STACK
→	DIRECTION OF FLOW
FA	FROM ABOVE
MH	MANHOLE

PIPE LEGEND

- Ø100mm SEWER PIPE
- Ø54mm WASTE PIPE
- DRAIN BY CIVIL ENGINEER
- Ø100mm STACK PIPE TO BELOW WITH FRM ABOVE

TO	18 SEPTEMBER 2021	ISSUED FOR TENDER
REV No	DATE	DESCRIPTION
REVISIONS		
SIZE ON ORIGINAL DRAWING 1:100 (mm)		
		
DEPARTMENT OF INFRASTRUCTURE DEVELOPMENT		
INSTITUTION		
HOERSKOOI CENTURION PHASE B		
OFFICE		
UPGRADES AND ADDITIONS		
CONTRACT SECTION		
PROGRAMME		
MECHANICAL		
PROJECT NUMBER		
WET SERVICES - DRAINAGE		
DRAINAGE LAYOUT		
FILE No	ENR 101 210201	ITEM No
DESIGN	AD	DRAWN
SCALE	As Shown	7M
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DATE	18 SEP 2021	18 SEP 2021
DESIGNED	RESPONSIBLE PROFESSIONAL	DATE
DATE	18 SEP 2021	18 SEP 2021
CONTRACTOR		
PMPUS		
CONTRACTOR		
CAD	REV 2021	DRAINAGE LAYOUT
FILE No	589-S2-B1-M2-313	TD