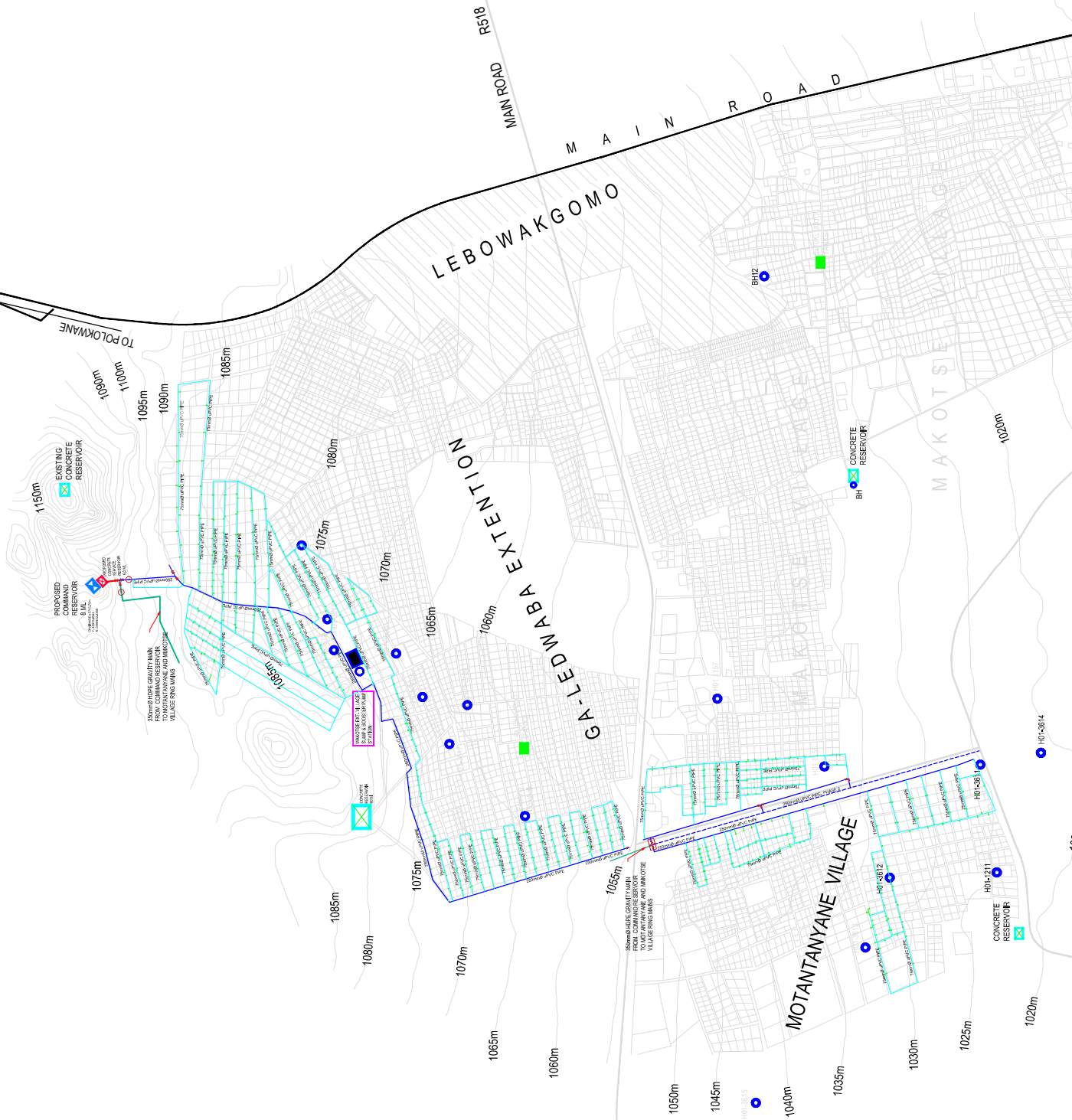
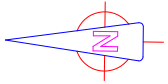




NOTES:
1. Do not scale off this drawing

LEGEND	
	PROPOSED 300mm UPVC- PHASE 2
	PROPOSED 250mm UPVC
	PROPOSED 150mm UPVC
	PROPOSED 75mm UPVC
	PROPOSED COMMAND RESERVOIR
	PROPOSED SERVICE RESERVOIR
	EXISTING RESERVOIR
	BOREHOLE
	H01-222

DESIGNED BY	SOEET 8
CHECKED BY	MM
DRAWN BY	MPM
APPROVED BY	RC-P-Eng

CLIENT

CAPRICORN DISTRICT MUNICIPALITY
PO BOX 400 STREET, POLOKWANE
TEL: 013 294 0000 FAX: 013 294 0001
WWW.CAPRICORN.DM.GOV.ZA

CONSULTANT

SUPERIOR ENGINEERING
PO BOX 400 STREET, POLOKWANE
TEL: 013 294 0000 FAX: 013 294 0001
WWW.SUPERIORENGINEERING.CO.ZA

DRAWING NUMBER
STWNS/18/D01

PROJECT NUMBER

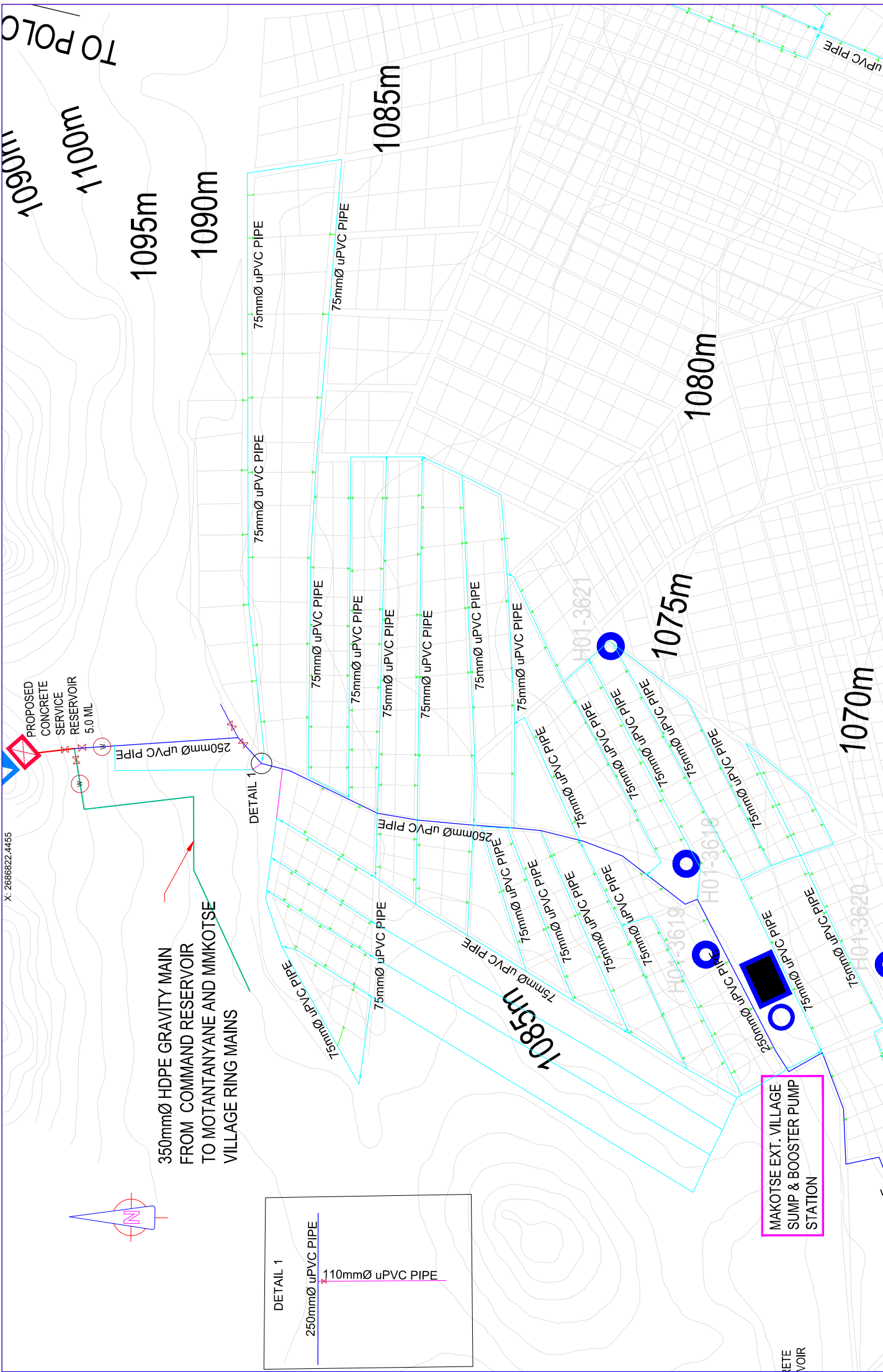
CONTRACT NO.

DRAWING TITLE
CONTRACT D SCOPE OF WORK- CONSTRUCTION OF RETICULATION AT GA-LEDWABA, MKKOTSE AND MOTANTANYANE VILLAGES

PROJECT TITLE
STOCKS REGIONAL WATER SCHEME
CAPRICORN DISTRICT MUNICIPALITY

SHEET No	SHEET 14
SCALE	AS SHOWN

X: 2686822.4455



NOTES	
1. Do not scale off this drawing	
REVISION	

LEGEND	
	PROPOSED 350mm uPVC - PHASE 2
	PROPOSED 250mm uPVC
	PROPOSED 75mm uPVC
	MAKOTSE EXT. VILLAGE SUMP & BOOSTER PUMP STATION
	PROPOSED SERVICE RESERVOIR
	EXISTING RESERVOIR

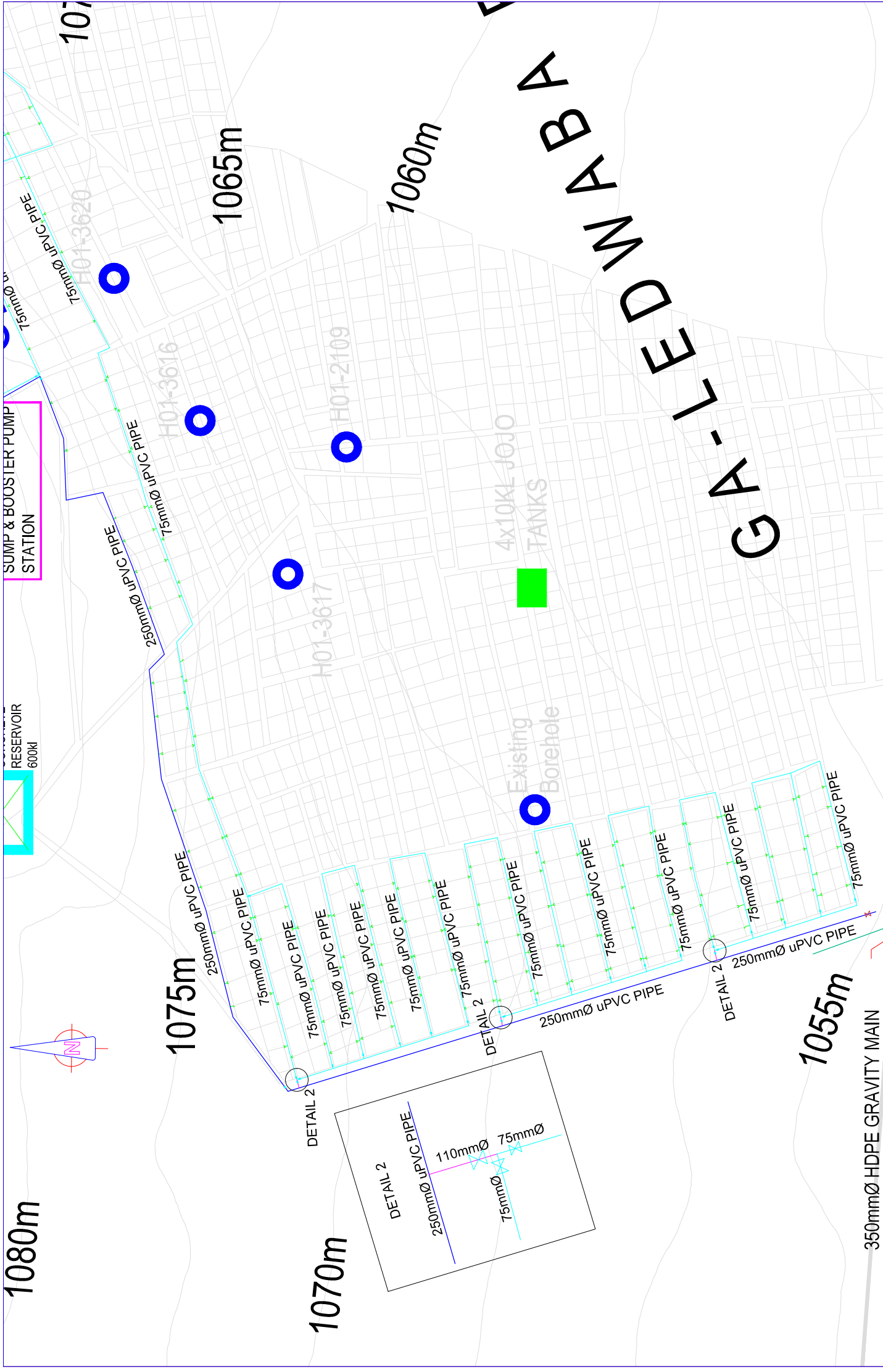
DESIGNED BY	SOEIT 8
CHECKED BY	MM
DRAWN BY	MP/M
APPROVED BY	RIC - Ph Eng

CLIENT	
CAPRICORN DISTRICT MUNICIPALITY	
41 BRIDGES STREET, FLORENCE RD Box 4100, Florenceburg, 5700	
Tel: 031 291 4287 Fax: 031 291 4287	
www.capricorn.gov.za	

CONSULTANT	
SUPERIOR ENGINEERING	
SUPERIOR QUALITY ENGINEERING	
PO Box 4100, Florenceburg, 5700	
Tel: 031 291 4287 Fax: 031 291 4287	
www.superior-engineering.co.za	

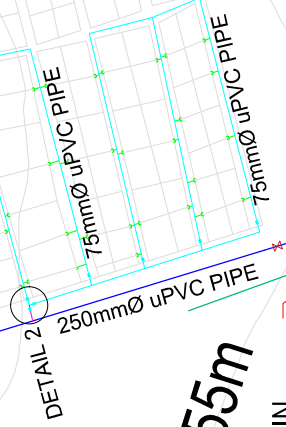
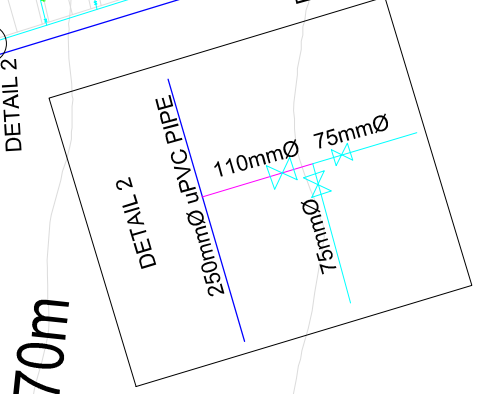
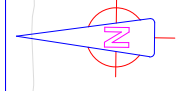
DRAWING TITLE	
CONTRACT D SCOPE OF WORK: CONSTRUCTION OF RETICULATION AT GA-LEDWABA, MMKOTSE AND MOTANTANYANE VILLAGES	
PROJECT TITLE	
STOCKS REGIONAL WATER SCHEME	
CAPRICORN DISTRICT MUNICIPALITY	

DRAWING NUMBER	
STRWS/18/0/1	
PROJECT NUMBER	
CONTRACT No	
SCALE	
AS SHOWN	
SHEET 2A	
SHEET No	



SUMP & BOOSTER PUMP
STATION

RESERVOIR
600kl



NOTES:

1. Do not scale off this drawing

REVISION

LEGEND

PROPOSED 350mm uPVC - GRAVITY MAIN

PROPOSED 250mm uPVC

PROPOSED 110mm uPVC

PROPOSED 75mm uPVC

PROPOSED COMMAND RESERVOIR

PROPOSED SERVICE RESERVOIR

EXISTING RESERVOIR

BOREHOLE

WAVE

DESIGNED BY

CHECKED BY

DRAWN BY

APPROVED BY

SHEET 8

MM

MPTM

PC-P1-Eng

CLIENT

CAPRICORN DISTRICT MUNICIPALITY

41 BUCHANAN STREET, POLYMERHURST, DURBAN, 4001

TEL: 031 254 1000

FAX: 031 250 0257

WWW.CAPRICORNMP.CO.ZA

CONSULTANT

SUPERIOR ENGINEERING

81 BUCHANAN STREET, POLYMERHURST, DURBAN, 4001

TEL: 031 254 1000

FAX: 031 250 0257

WWW.SUPERIORENGINEERING.CO.ZA

PROJECT TITLE

CONTRACT D SCOPE OF WORK: CONSTRUCTION OF RETICULATION AT GA-LEDWABA, MMKOTSE AND MOTANTANYANE VILLAGES

PROJECT NUMBER

CONTRACT No

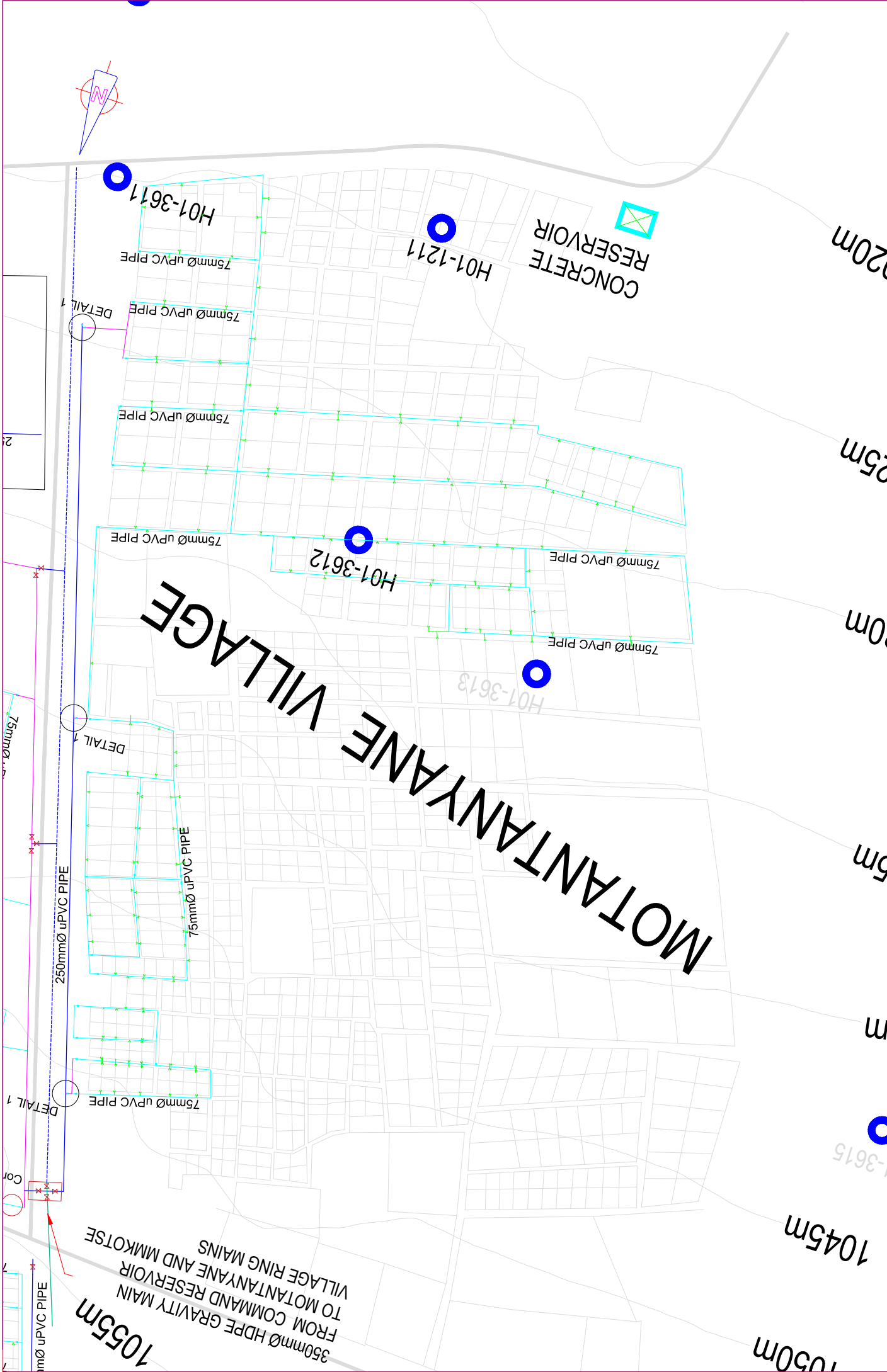
DRAWING NUMBER

STRWS/10/D01

SHEET 3A

SCALE

AS SHOWN



NOTES

1. Do not scale off this drawing

LEGEND

PROPOSED 350mm uPVC - PHASE 2

PROPOSED 250mm uPVC

PROPOSED 75mm uPVC

PROPOSED 75mm uPVC

PROPOSED COMMAND RESERVOIR

PROPOSED SERVICE RESERVOIR

BOREHOLE

EXISTING RESERVOIR

WAVE

H01-3615

DESIGNED BY

SOCKET 8

CHECKED BY

MM

DRAWN BY

MPM

APPROVED BY

RC-Phy Eng

CLIENT



CAPRICORN MUNICIPALITY
41 BECHARD STREET, POLYMERHURST
KZN 3190, SOUTH AFRICA
TEL: 031 264 1000
FAX: 031 261 4297
WWW.CAPRICORN.MUNICIPALITY.GOV.ZA

CONSULTANT



SUPERIOR ENGINEERING
SUPERIOR QUALITY ENGINEERING
PO BOX 1000, 1000
FARM 1, 010 391 4297
WWW.SUPERIORENGINEERING.CO.ZA

DRAWING NUMBER

STRWS/18/D01

PROJECT NUMBER

CONTRACT NO

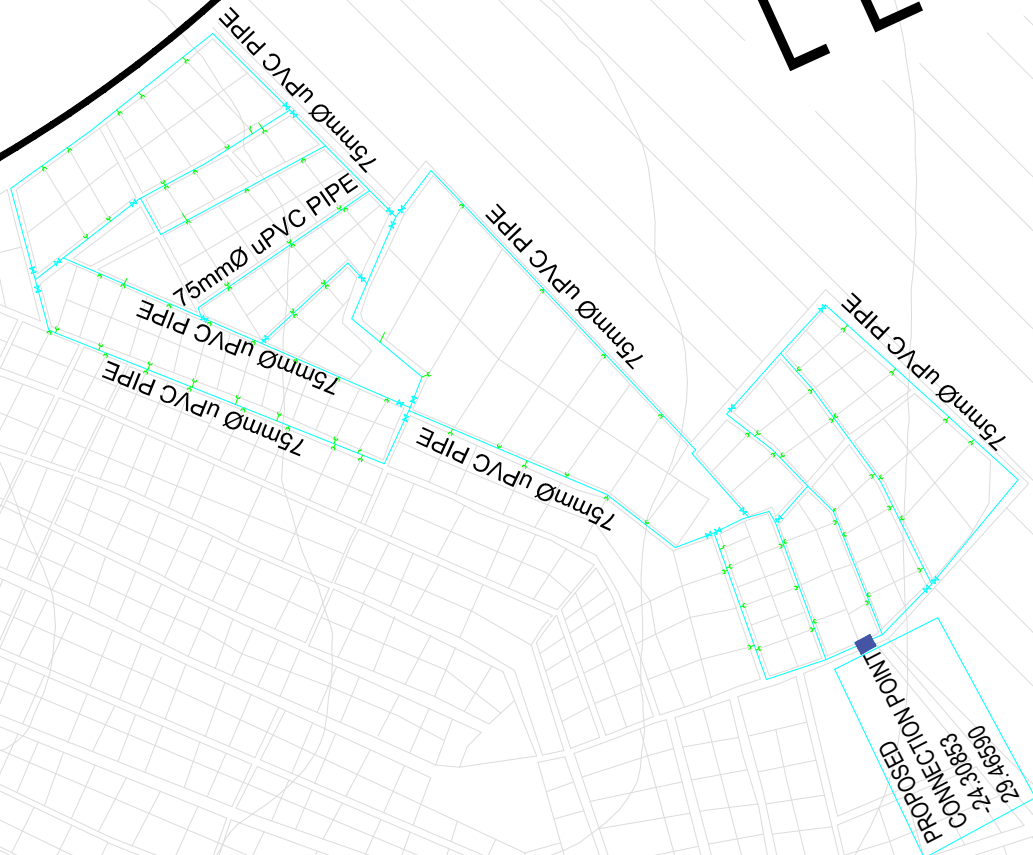
SHEET 14

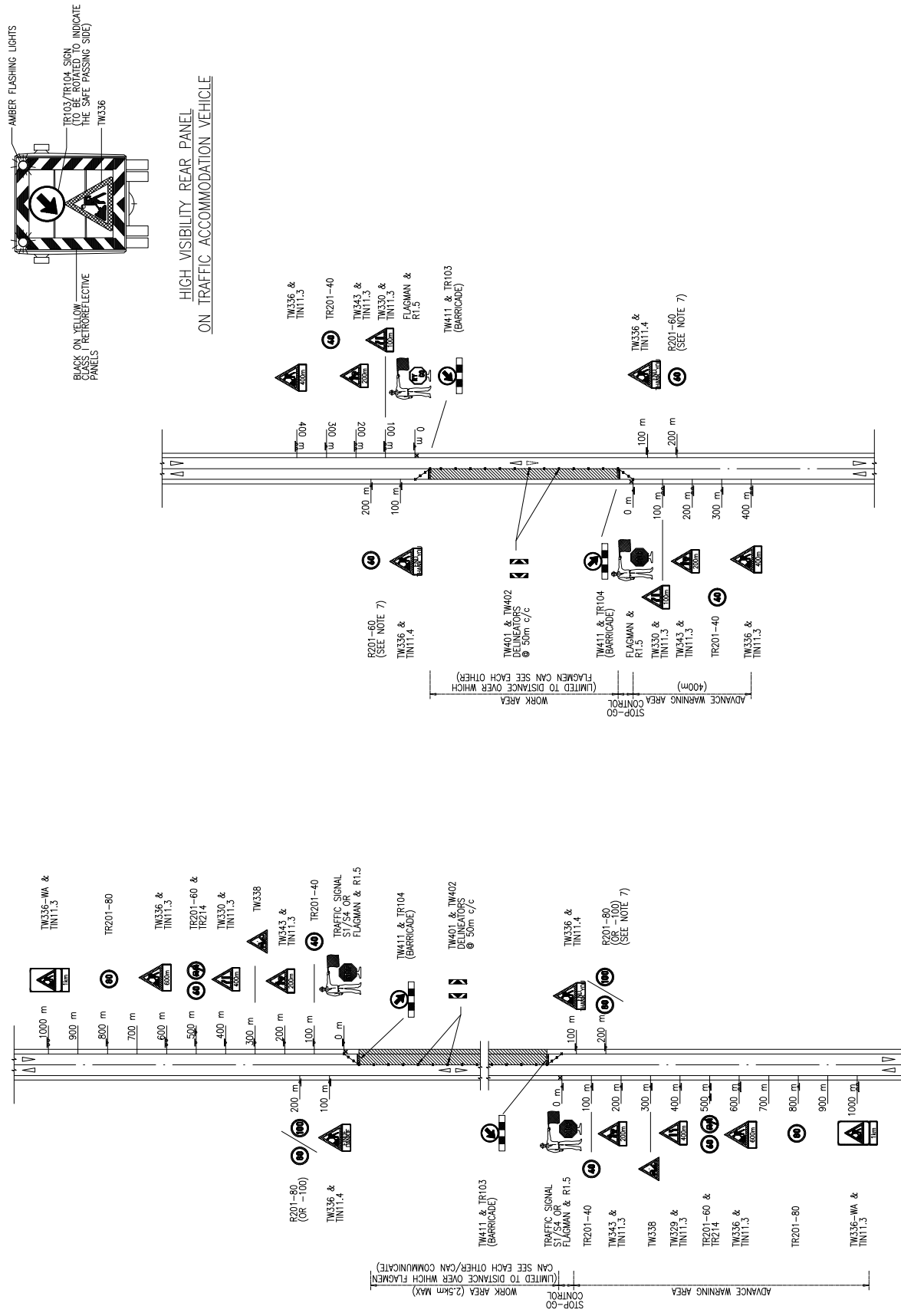
SCALE

AS SHOWN

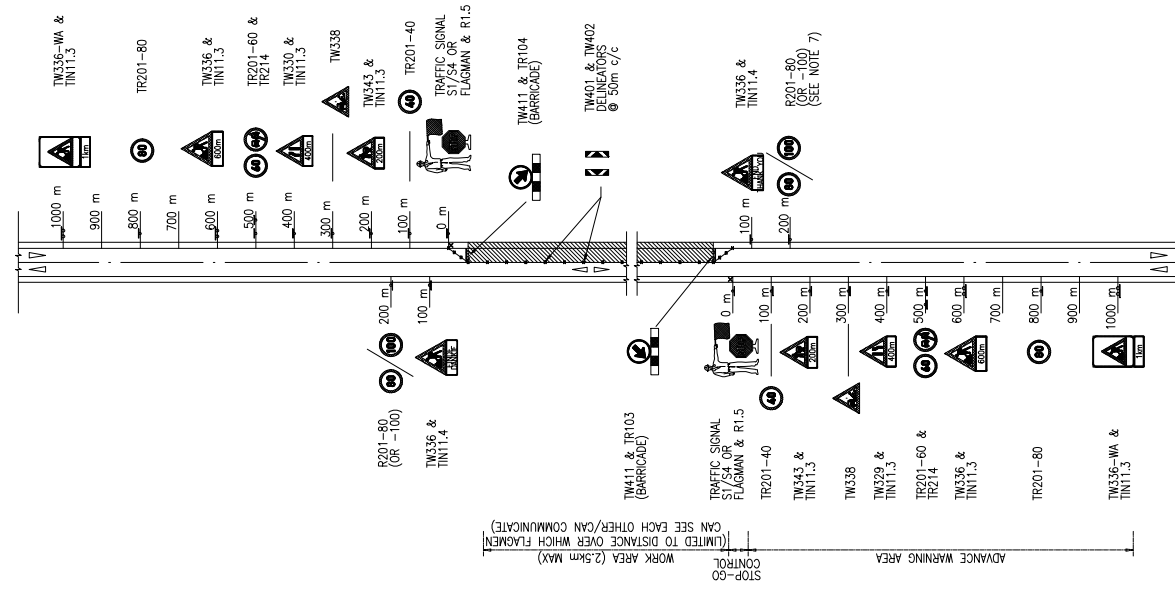
PROJECT TITLE

STOCKS REGIONAL WATER SCHEME
CAPRICORN DISTRICT MUNICIPALITY

[illegible]



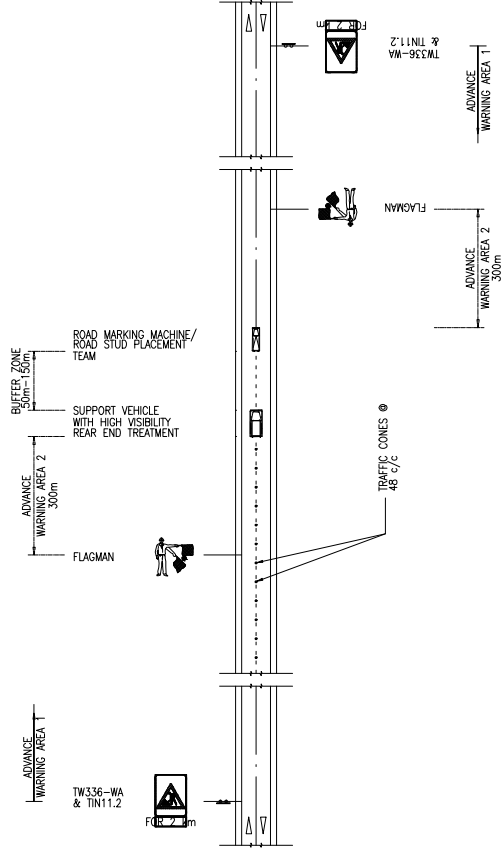
HIGH VISIBILITY REAR PANEL ON TRAFFIC ACCOMMODATION VEHICLE



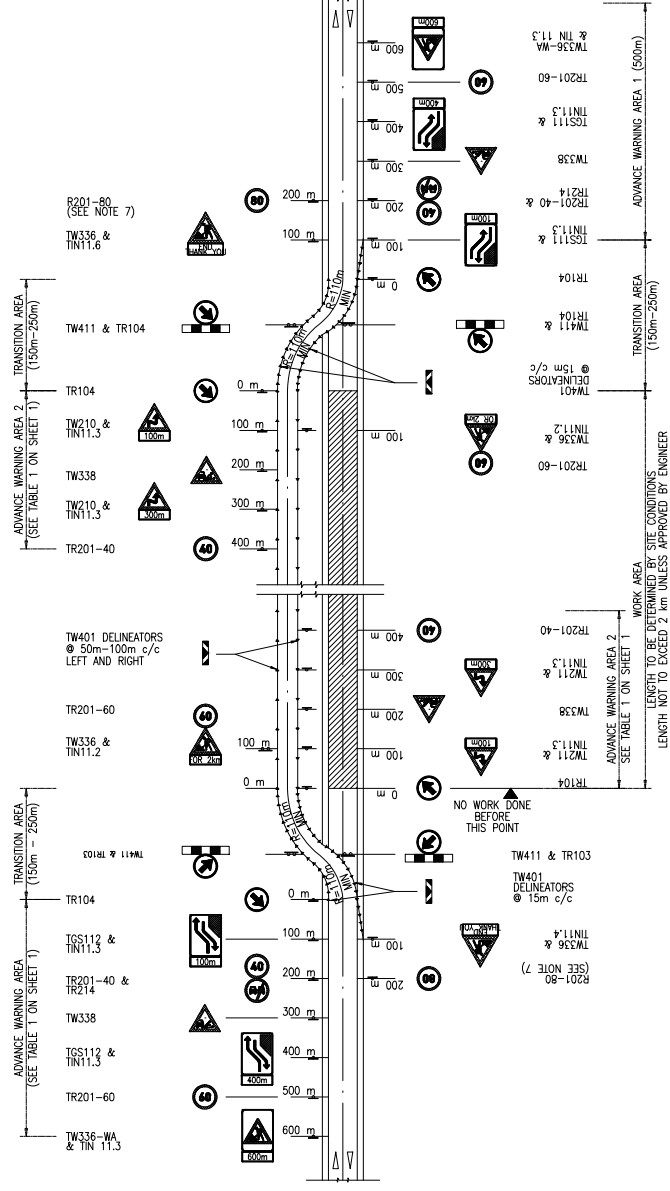
ACCOMMODATION OF TRAFFIC FOR ROAD LANE CLOSURE ON ROADS WITH 80 KM/H TO 100 KM/H TRAVEL SPEEDS

ACCOMMODATION OF TRAFFIC FOR ROAD LANE CLOSURE ON ROADS WITH 60 KM/H TRAVEL SPEEDS

NOTES: 1. Do not scale of this drawing	LEGEND:	DESIGNED BY	SOET 8	 CAPRICORN DISTRICT MUNICIPALITY 41 BROAD STREET, POLYMERHURST VIC 3045, AUSTRALIA, 0160 TEL : 033 284 1000 FAX : 033 281 4327	 SUPERIOR ENGINEERING 800-243-6412 1000 WILSON AVENUE TOLSON, OHIO 44088 FAX : 440-288-4100 E-MAIL : info@superioreng.co.za	CONSULTANT:	PROJECT TITLE: STOCKS REGIONAL WATER SCHEME	SHADING TITLE: ACCOMMODATION OF TRAFFIC TYPICAL DETAIL 1	SHADING NUMBER	SHEET No		
		CHECKED BY	MM						PROJECT NUMBER	STRWSSTD-46	SHEET 1/1	
		DRAWN BY	MP/M						APPROVED BY	RC -Pr/Eng	SCALE:	AS SHOWN
		CONTRACT No										

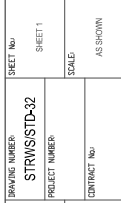


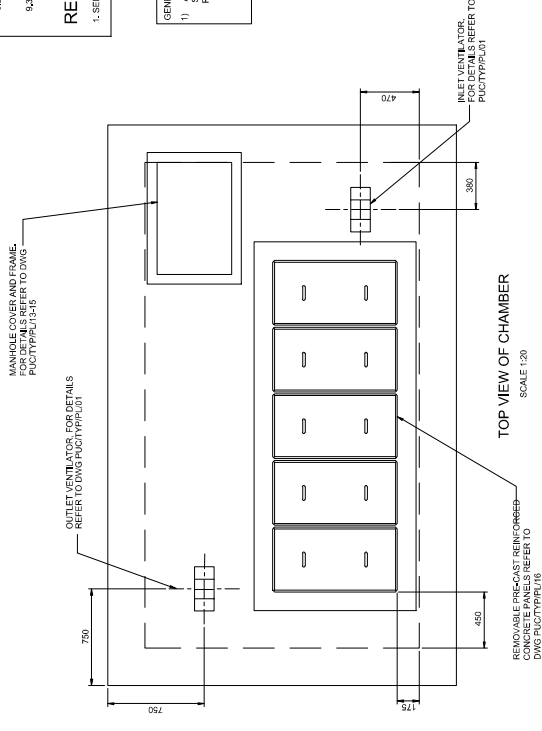
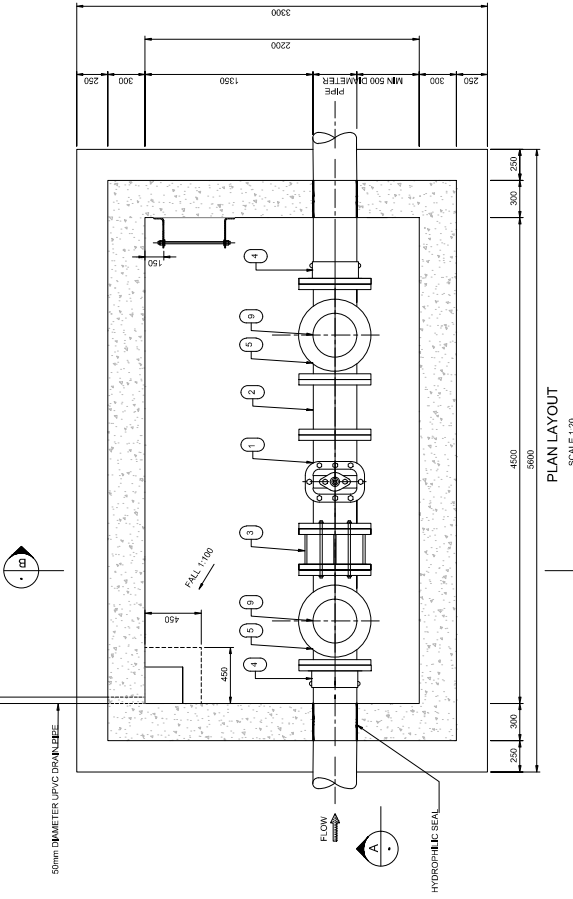
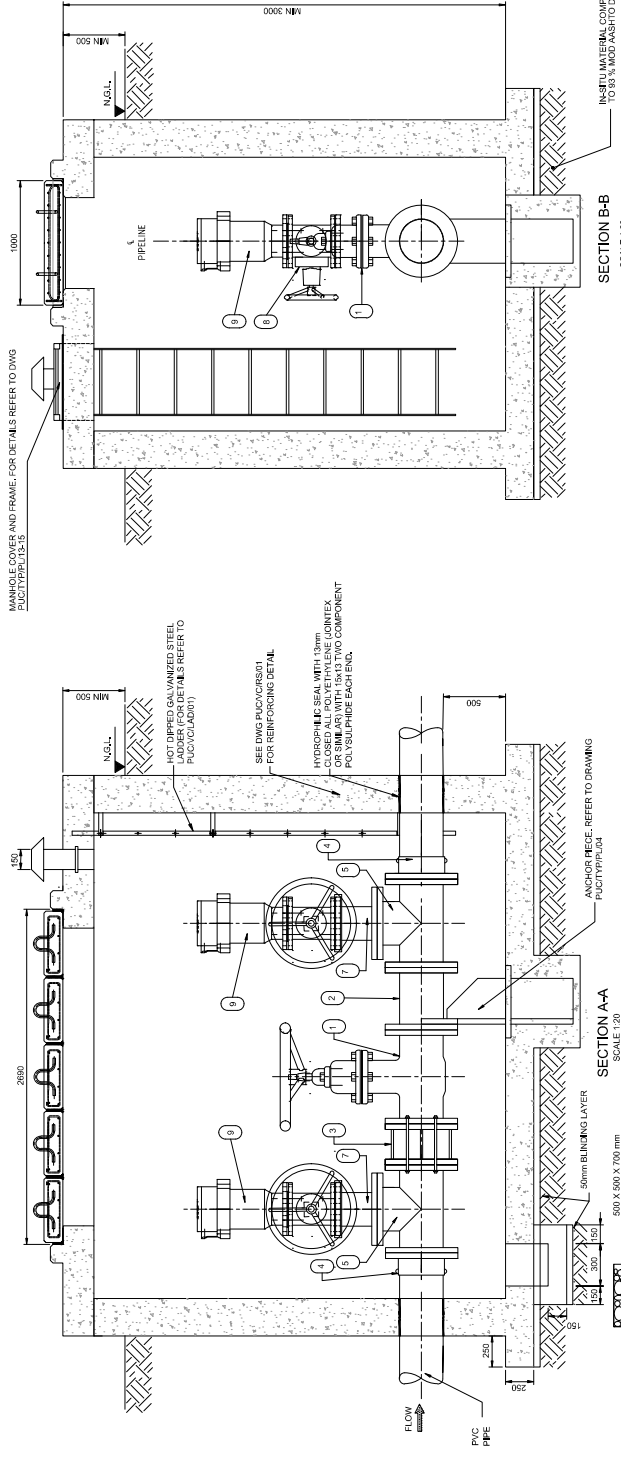
MOBILE WORK ON ROAD CENTRE LINE



LAYOUT AT DEVIATION

NOTES: 1. Do not scale off this drawing	LEGEND:		CAPRICORN  41 BEACON STREET, MULLUMBUMBY 250 BROADVIEW AVENUE, OTTAWA, ONTARIO, CANADA M1S 1B6 TEL : 905 291 1000 FAX : 905 291 1297	CLIENT:	 SUPERIOR QUALITY ENGINEERING 1000 WILSON AVENUE MISSISSAUGA, ONTARIO L4X 1L7 TEL: 905 246 4100 FAX: 905 246 4105 © Superior Quality Engineering Inc. 2006	CONSULTANT	DRAWING TITLE: ACCOMMODATION OF TRAFFIC TYPICAL DETAIL 2		DRAWING NUMBER: STRWSSTD-47	SHEET No: SHEET 11
	DESIGNED BY	SOEIT 8					PROJECT NUMBER:	CONTRACT No.:	SCALE: AS SHOWN	
	CHECKED BY	MM								
	DRAWN BY	MP/MJ								
	APPROVED BY	RC -P-Eng								PROJECT TITLE: STOCKS REGIONAL WATER SCHEME
REVISION										





NOTES
THE FOLLOWING SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS FOR:

1. PUMP AND REINFORCED CONCRETE
2. CONCRETE SCAFFOLD
3. CONCRETE SURFACE BEDS
4. CONCRETE SURFACE BEDS
5. STRUCTURAL STEEL WORK

AS CONTAINED IN THE PRELIMINARIES FOR TRADES OF THE BILL OF MATERIALS, AND SHALL APPLY OVER AND ABOVE THE STANDARD SPECIFICATIONS.

GENERAL
ALL WORK SHALL BE DONE IN CONJUNCTION WITH DWG PUCV/STD-19 AND ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS PERTAINING TO THIS PROJECT. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY.

CONCRETE

1. CONCRETE GRADES (UNLESS SHOWN OTHERWISE ON RELEVANT CONCRETE DRAWINGS)
 - MASS CONCRETE AND BUNDING CLASS 150MPa/30mm
 - FLOOR SLAB AND SUMP CLASS 25MPa/15mm
 - WALLS CLASS 25MPa/15mm
 - ROOF SLABS CLASS 25MPa/15mm
 - PUNTS CLASS 25MPa/15mm
2. A 50mm THICK CONCRETE BUNDING LAYER SHALL BE CAST UNDER ALL FOOTINGS, UNLESS SOIL/CURVE FILLING IS SPECIFIED
3. ALL FOUNDATIONS HAVING MESH REINFORCING CAST IN SHALL HAVE CONCRETE OR OTHER APPROVED SPACER BLOCKS OR STOOLS TO EFFECT A 50mm TOP COVER
4. THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED PIPE FITTINGS AND ANCHORS ARE PROTECTED AND NOT DAMAGED PRIOR TO CASTING OF CONCRETE
5. POURING HEIGHT OF CONCRETE MAY NOT EXCEED 3.5m UNLESS AUTHORIZED BY ENGINEER
6. CONCRETE CURES SHALL BE TAKEN ON SITE OF ALL CLASSES OF CONCRETE POURED ON ANY ONE DAY IN ACCORDANCE WITH AURECON REQUIREMENTS
7. ALL EXPOSED CONCRETE SURFACES SHALL COMPLY WITH THE REQUIREMENTS OF AURECON AND SHALL BE FINISHED TO THE CORNERS TO HAVE 15mm CHAMFER
8. CURING AND PROTECTION OF CONCRETE SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH THE SPECIFICATION REFER TO CLAUSE 6.3.3 OR SANS 1200 G
9. TO PREVENT BUOYANCE UPLIFT OF THE STRUCTURE DURING THE CONSTRUCTION OF VALVE CHAMBERS IN WET AREAS
10. ALL VALVE CHAMBERS SHALL BE CONSTRUCTED TO THE FOLLOWING VERTICAL:
 - 9.1 INLET VALVE SHALL BE 150mm ABOVE THE FLOOR SLAB OF THE CHAMBER
 - 9.2 SLEEVES SHALL NOT BE REMOVED AFTER THE COMPLETION OF CONSTRUCTION AND BACKFILLING AROUND THE STRUCTURE
 - 9.3 ALL APPROVED WELD SHALL BE TO THE EXPOSED SURFACE OF THE VALVE CHAMBER
 - 9.4 CONCRETE INLET AND WORK OFF TO MATCH EXISTING CONCRETE INLET AND WORK OFF TO MATCH EXISTING

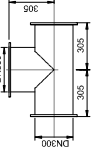
REINFORCING

1. SEE DWG 1702102PUCV/STD-19 FOR REINFORCING DETAIL

GENERAL NOTES

- 1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THE PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

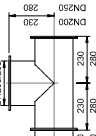
PIPE SCHEDULE FOR IN LINE GATE VALVE CHAMBER ON A DN315 uPVC PIPELINE

ITEM NO. QUANTITY	DESCRIPTION	PROTECTION		MATERIAL	DIMENSION	PRESSURE (BAR)
		LINING	COATING			
1	GATE VALVE: FULLY FLANGED, CLOCKWISE CLOSING, NON RISING SPINDLE GATE VALVE (RSV, 700V, 700V OR SIMILAR APPROVED)	-	-	-	DN300	16/25
2	PIPE SPECIAL: STEEL PIPE WITH BOTH ENDS FLANGED.	HOG	HOG	GRADE C MILD STEEL T=4.5mm		16/25
3	VAG OR SIMILAR RIGID, DOUBLE FLANGED DISMANTLING JOINT: TO SUIT STEEL PIPE	-	-	-	DN300	16/25
4	FLANGE ADAPTOR FOR IRON FLANGE ADAPTOR TO SUIT PVC PIPE (BENSON, FROM THOMAS PIPE PRODUCTS OR SIMILAR APPROVED)	HOG	FBE	-	DN300	16/25
5	FULLY FLANGED EQUAL TEE	HOG	HOG	GRADE C MILD STEEL T=4.5mm		16/25
7	DISTANCE PIECE: STANDARD MILD STEEL BLANK FLANGE WITH HOLE FOR SPINDLE GATE VALVE (RSV) TO SUIT FLANGED END TO SUIT ISOLATING VALVE SIZE	HOG	HOG	GRADE C MILD STEEL		16/25
8	ISOLATING VALVE: FULLY FLANGED, CLOCKWISE CLOSING, NON RISING SPINDLE, RESILIENT SEAL GATE VALVE (RSV) TO SANS 664	-	-	-	TO SUIT AIR VALVE SIZE	16/25
9	AIR VALVE: FLANGED DOUBLE ORifice AIR VALVE WITH ANTI-SHOCK ORifice MECHANISM (A/R) MODEL D-46 OR SIMILAR APPROVED)	-	-	-	REFER TO LONGSECTION FOR AIR VALVE SIZE	16/25

NOTES - PIPEWORK:

1. ALL DIMENSIONS SHOWN ARE NOMINAL MILD STEEL DIAMETERS AND MILLIMETER (UNLESS OTHERWISE SPECIFIED) AND SHALL BE CHECKED BY THE ENGINEER. DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE NOTED. DISCREPANCIES MUST BE REPORTED TO THE ENGINEER. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES AND PUMPS. DIMENSIONS DO NOT REFLECT THE WIDTH OF THE CHAMBER OR THE TYPE OF COATING. DIMENSIONS OF CONCRETE ENCASING ARE TO APPLY TO THE WORK WHICH ARE CONCRETE ENCASED. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES
2. ALL MILD STEEL PIPES, FLANGES AND COUPLINGS WITH BOLTS AND NUTS SHALL BE GALVANIZED OR GALVANIZED STEEL. ALL PIPES SHALL BE WRAPPED IN PUTTY FILLER, CORROSION PROTECTION TAPE AND PVC OUTERWRAP (DENSIO OR STIPEX OR SIMILAR APPROVED) (AS PER SUPPLIERS SPECIFICATIONS) OVER AND ABOVE THE SPECIFIED COATING. THE JOINTS SHALL BE WRAPPED IN PUTTY FILLER AND PVC OUTERWRAP. ENCASED ARE TO APPLY TO THE WORK WHICH ARE CONCRETE ENCASED. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES
3. ALL STEEL DRILLING SHALL COMPLY WITH SANS 1123 TABLE 16/203 OR 2000G FOR A WORKING PRESSURE OF 16 OR 25 BAR RESPECTIVELY, UNLESS OTHERWISE NOTED. REFER TO LONGITUDINAL SECTIONS FOR WORKING PRESSURES.
4. ALL STEEL FITTINGS SHALL COMPLY WITH BS554.
5. ALL STEEL PIPES WITH A NOMINAL BORE OVER 150mm SHALL BE MILD STEEL TO SANS 715 GRADE C WITH A WALL THICKNESS AS SPECIFIED. HEAVY DUTY MILD STEEL TO SANS 667.

PIPE SCHEDULE FOR IN LINE GATE VALVE CHAMBER ON A DN200 uPVC PIPELINE & 250mm uPVC PIPELINE

ITEM NO. QUANTITY	DESCRIPTION	PROTECTION		MATERIAL	DIMENSION	WORKING PRESSURE (BAR)
		LINING	COATING			
1	GATE VALVE: FULLY FLANGED, CLOCKWISE CLOSING, NON RISING SPINDLE GATE VALVE (RSV, 700V, 700V OR SIMILAR APPROVED)	-	-	-	DN200 / DN 250	16/25
2	PIPE SPECIAL: STEEL PIPE WITH BOTH ENDS FLANGED.	HOG	HOG	GRADE C MILD STEEL T=4.5mm		16/25
3	VAG OR SIMILAR RIGID, DOUBLE FLANGED DISMANTLING JOINT: TO SUIT STEEL PIPE	-	-	-	DN200/250	16/25
4	FLANGE ADAPTOR FOR IRON FLANGE ADAPTOR TO SUIT PVC PIPE	BITUMEN BTUMEN	BTUMEN	SG IRON	DN200/250	16/25
5	FULLY FLANGED EQUAL TEE	HOG	HOG	GRADE C MILD STEEL T=4.5mm		16/25
7	DISTANCE PIECE: STANDARD MILD STEEL BLANK FLANGE WITH HOLE FOR SPINDLE GATE VALVE (RSV) TO SUIT FLANGED END TO SUIT ISOLATING VALVE SIZE	HOG	HOG	GRADE C MILD STEEL		16/25
8	ISOLATING VALVE: FULLY FLANGED, CLOCKWISE CLOSING, NON RISING SPINDLE, RESILIENT SEAL GATE VALVE (RSV) TO SANS 664	-	-	-	TO SUIT AIR VALVE SIZE	16/25
9	AIR VALVE: FLANGED DOUBLE ORifice AIR VALVE WITH ANTI-SHOCK ORifice MECHANISM (A/R) MODEL D-46 OR SIMILAR APPROVED)	-	-	-	REFER TO SURGE REPORT FOR AIR VALVE SIZE	16/25

- GENERAL NOTES
- 1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

NOTES:
1. Do not scale off this drawing

LEGEND:

DESIGNED BY	SOEIT 8	CLIENT	CAPRICORN
CHECKED BY	MM		
DRAWN BY	MPH		
APPROVED BY	RC-PT-Eng		

CAPRICORN
DISTRICT MUNICIPALITY
PO Box 41002, Ndabeni, 2026
TEL: 012 294 1000
FAX: 012 294 1000
WWW.CAPRICORN.CO.ZA

CONSULTANT
SUPERIOR QUALITY ENGINEERING
80 MAGNATE STREET
TEL: 082 291 1086
FAX: 082 291 1086
E-MAIL: superior@superioreng.co.za

DRAWING TITLE
IN-LINE GATE VALVE CHAMBER DETAILS FOR
PIPES 200mm to 315mm Detail 2/2
PROJECT NUMBER
STWMSD-19
CONTRACT No
AS SHOWN
SCALE

SHEET No
SHEET 1
SCALE
AS SHOWN

ITEM NO.	QUANTITY	DESCRIPTION	PROTECTION LINING	COATING	MATERIAL	DIMENSION	WORKING PRESSURE (BAR)
①		UPVC PIPE	—	—	UPVC	REFER TO TABLES 1	16/25
②	2	S.G IRON FLANGE ADAPTOR	BITUMEN	BITUMEN	SG IRON	TO SUIT PIPE SIZE	16/25
③	2	FLANGED EQUAL TEE	HGD	HGD	MILD STEEL		16/25
④	2	PIPE SPECIAL BOTH ENDS FLANGED	HGD	HGD	MEDIUM CLASS MILD STEEL		16/25
⑤	1	FLANGED NON-RISE SPINDLE, CLOCKWISE CLOSING WITH HANDWHEEL RESILIENT SEAL GATE VALVE TO SABS 664	HGD	HGD	—		16/25
⑥	2	BLANK FLANGE WITH HOLE DRILLED IN CENTRE OF BLANK FLANGE, DISTANCE PIECE WELDED TO BLANK FLANGE, TOP FLANGE END TO SUIT ISOLATING VALVE	HGD	HGD	MEDIUM CLASS MILD STEEL	 TO SUIT AIR VALVE SIZE	16/25
⑦	2	DOUBLE FLANGED, NON-RISE SPINDLE, CLOCKWISE CLOSING WITH HANDWHEEL RESILIENT SEAL GATE VALVE TO SABS 664	HGD	HGD	—	TO SUIT AIR VALVE	16/25
⑧	2	FLANGED COMBINATION WITH NON-SLAM MECHANISM AIR RELEASE VALVE, API D-16 OR APPROVED EQUIVALENT	—	—	—	REFER TO LONGITUDINAL SECTIONS FOR WORKING PRESSURE (PN RATING)	16/25



1. ALL DIMENSIONS SHOWN ON THE DRAWING MUST BE CHECKED BY THE CONTRACTOR AND ANY INCREASANCES MUST BE REPORTED TO THE ENGINEER.
2. CORROSION PROTECTION OF STEEL PIPES, FITTINGS & COUPLINGS :
 - 2.1. ALL UNDERGROUND STEEL PIPES MUST BE PROTECTED EXTERNALLY WITH A "DENSIO TAPE" SYSTEM.
 - 2.2. ALL UNDERGROUND PROTECTION WITH SABS 1123 TABLE 2500/0.
3. ALL FLANGE DRILLING IS TO BE IN ACCORDANCE WITH SABS 1123 TABLE 2500/0.
4. STEEL PIPES ARE TO BE TO SABS 92.
5. WHERE WATER TABLE IS HIGH, WHOLE CANNISTER IS TO BE PLASTERED AND WATER-PROOFED.
7. ALL STEP IRONS TO BE 255mm LONG GALVANIZED OR APPROVED EQUIVALENT.

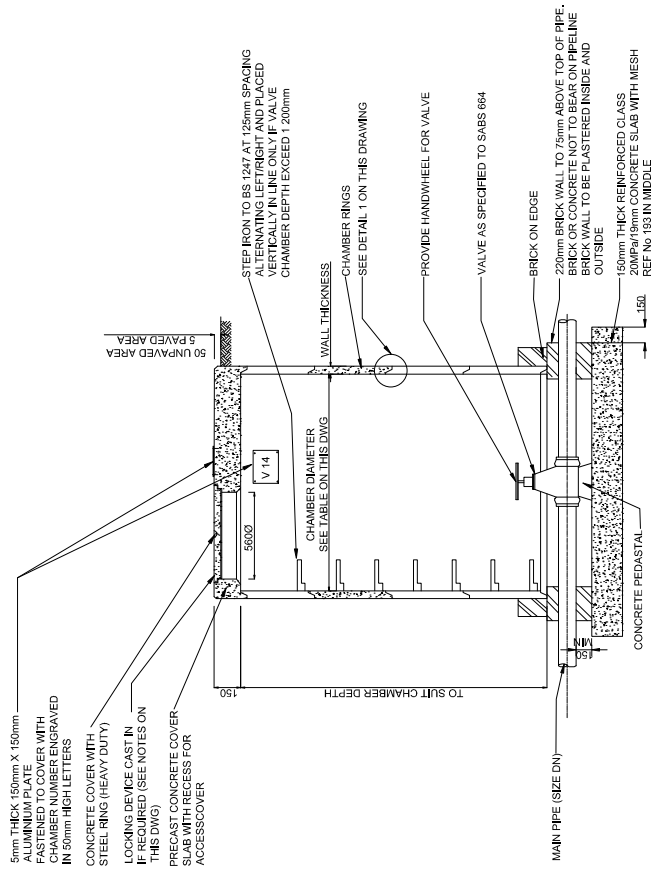
NOTES:

1. Do not scale off this drawing

REVISION

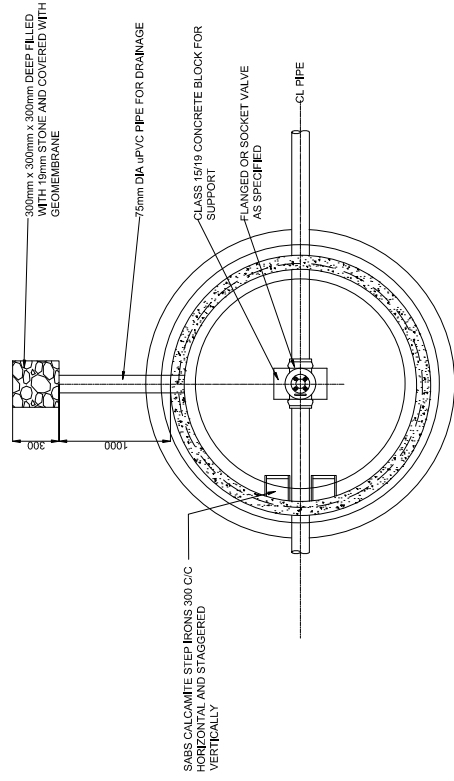
LEGEND:	DESIGNED BY	SOEET B	CAPRICORN  DISTRICT 17 MUNICIPALITY 40 BEAUFORT STREET - FOLDBANE PORT ELIZABETH - 6001 TEL. : 015 294 1000 FAX : 015 291 4297
	CHECKED BY	MM	
	DOWN BY	MPM	
	APPROVED BY	RC-Pr-Eng	

CONCISE UNIT	 SUPERIOR WATERWORKS A DIVISION OF BURNS & MCDONNELL ENGINEERING 10000 101ST AVE TEL: 631-281-1000 FAX: 631-281-1001 E-MAIL: csm@burnsmc.comwww.burnsmc.com	DRAWING TITLE		DRAWING NUMBER	SHEET NO
		IN-LINE GATE VALVE CHAMBER DETAILS FOR PIPES SMALLER THAN 200mm		STRN/STD-20	SHEET 1
		PROJECT TITLE		PROJECT NUMBER	SCALE
		STOCKS REGIONAL WATER SCHEME			AS SHOWN



SECTION OF PRE-CAST RING CHAMBER

NOT TO SCALE



PLAN VIEW VALVE CHAMBER
(WITHOUT COVER SLAB)

NOT TO SCALE

NOTES:

1. Do not scale off this drawing

REVISION

LEGEND:

APPROVED BY	RC-Pr-Eng
ISSUED BY	MPM
CHECKED BY	MM



CONSULTANT:



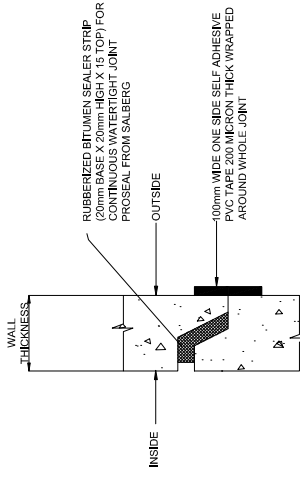
DRAWING TITLE:

IN-LINE ISOLATION VALVE CHAMBER
PIPES SMALLER THAN 350mm DIA.

PROJECT TITLE:

STOCKS REGIONAL WATER SCHEME

DRAWING NUMBER	SHEET No.	
STRWS/STD-21	SHEET 1	
PROJECT NUMBER	SCALE	
CONTRACT No.	AS SHOWN	



DETAIL 1

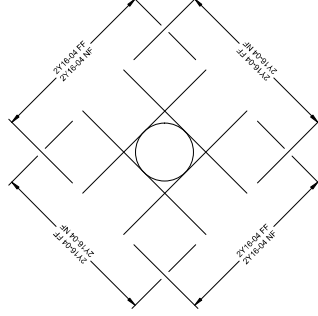
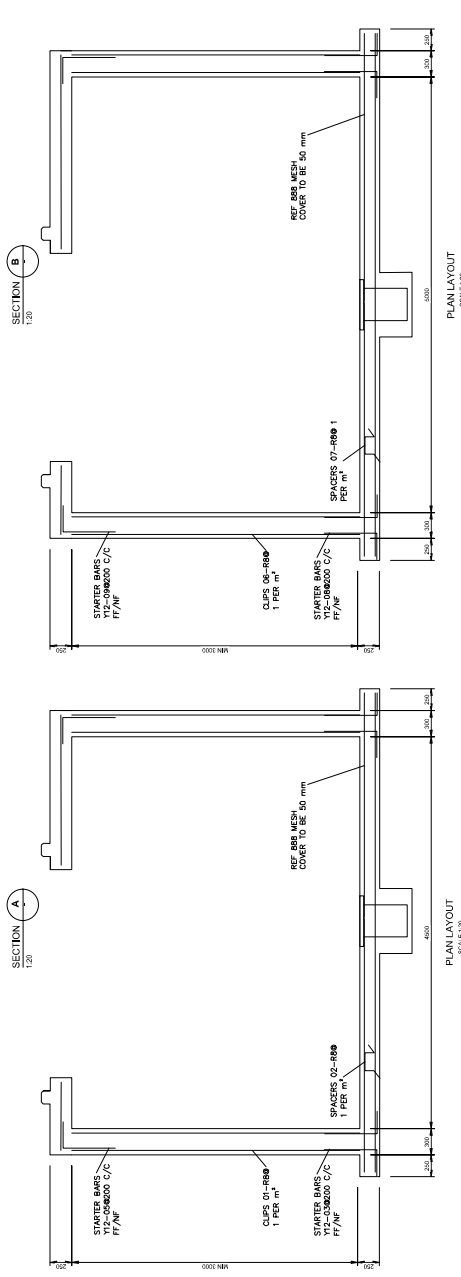
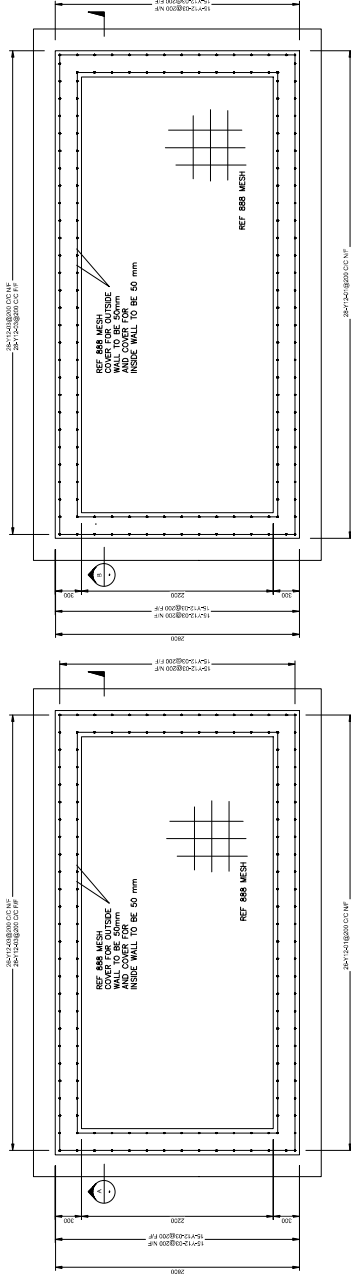
NOT TO SCALE

NOTE:

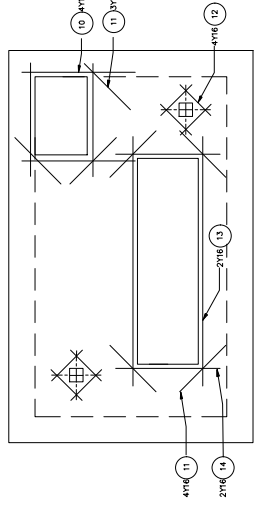
1. COMPONENTS OF PRECAST MANHOLE TO COMPLY WITH SABS 1294
2. USE PRECAST CONCRETE UNITS FROM SALBERG OR SIMILAR APPROVED
3. FOR FLANGED VALVES WITH UPVC PIPE USE CAST IRON FLANGE ADAPTORS
4. LOCKING DEVICE REQUIRED ON CHAMBER FOR VALVES $\geq 250\text{mm}$ (SEE SEPARATE DRAWING)

CHAMBER DIAMETER

DIA MEETER OF	PRE-CAST RINGS
1. 200mm	
2. 250mm	



TYP REINFORCING AROUND
PIPE (BENDING SCHEDULE FOR
ONE PIPE)
SCALE 1:50



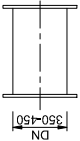
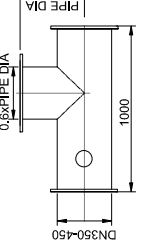
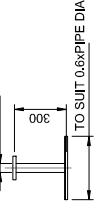
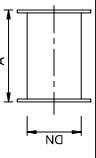
TYP REINFORCING DETAIL FOR
ROOF (BENDING SCHEDULE FOR
ONE ROOF ONLY)
SCALE 1:50

BENDING SCHEDULE										
LOCATION/ NUMBER	NO. IN PAGE	TYPE & SIZE	BAR MARK	TOTAL LENGTH	CUTTING SHAPE	BENDING DIMENSIONS TO SABS 82				
						A	B	C	D	E/F
10	10	R8	01	40	360	33	250			
15	15	R8	02	15	550	83	300	125	200	
32/34	32/34	Y12	03	964	900	34	600			
6	6	Y8	04	8	500	20	500			
32/30	32/30	Y12	05	82	900	34	600			
12	12	R8	06	48	360	33	250			
16	16	R8	07	16	550	83	300	125	200	
34/30	34/30	Y12	08	154	900	34	600			
4	4	Y8	10	4	1000	20	1000			
4/3	4/3	Y8	11	7	750	20	750			
4	4	Y8	12	8	500	20	500			
2	2	Y8	13	2	2860	20	2860			
2	2	Y8	13	2	1000	20	1000			

The diagram shows a bent bar with the following dimensions:

- A: Total length of the bar.
- B: Length of the first straight section.
- C: Length of the second straight section.
- D: Length of the third straight section.
- E: Length of the fourth straight section.
- F: Length of the fifth straight section.

PIPE SCHEDULE FOR IN-LINE VALVE CHAMBER ON A PVC PIPELINE

ITEM NO. QUANTITY	DESCRIPTION	PROTECTION		MATERIAL	DIMENSION	PRESSURE (BAR)
		LINING	COATING			
1	BUTTERFLY VALVE: FULLY FLANGED, CLOCKWISE CLOSING BUTTERFLY VALVE VAG EKN OR SIMILAR APPROVED	-	-	-	DN350-DN450 	16/25
1	PIPE SPECIAL: STEEL PIPE WITH BOTH ENDS FLANGED,	HDG	HDG	GRADE C MILD STEEL T=4.5mm		16/25
2	VAG (OR SIMILAR) RIGID, DOUBLE FLANGED DISMANTLING JOINT: TO SUIT STEEL PIPE	-	-	-	DN350-450 AND TO SUITE BY-PASS SIZE	16/25
2	FLANGE ADAPTER FLANGE ADAPTER TO SUIT PVC PIPE (ENERSEAL FROM THOMAS PIPE PRODUCTS OR SIMILAR APPROVED)	HDG	FBE	-	DN350-450	16/25
2	PIPE SPECIAL: STEEL PIPE WITH TWO STUBS FLANGED AT ALL ENDS, AIR VALVE STUB TO BE 0.6x PIPE DIA WIDTH AND PIPE DIA LONG, BY-PASS STUB TO BE 300mm LONG	HDG	HDG	GRADE C MILD STEEL T=4.5mm	0.6x PIPE DIA 	16/25
2	DISTANCE PIECE: STANDARD MILD STEEL BLANK FLANGE WITH HOLE DRILLED IN CENTRE OF BLANK FLANGE, MILD STEEL DISTANCE PIECE WELDED TO BLANK FLANGE, TOP FLANGED END TO SUIT ISOLATING VALVE SIZE	HDG	HDG	GRADE C MILD STEEL		16/25
3	ISOLATING VALVE: FULLY FLANGED, CLOCKWISE CLOSING, NON RISING SPINDLE, RESILIENT SEAL GATE VALVE (RSV) TO SANS 664	-	-	-	TO SUIT AIR VALVE SIZE OR . BY-PASS SIZE	16/25
2	AIR VALVE: FLANGED DOUBLE ORIFICE AIR VALVE WITH ANTI-SHOCK ORIFICE MECHANISM (A.R.I MODEL D-46 OR SIMILAR APPROVED)	-	-	-	REFER TO LONGSECTION FOR AIR VALVE SIZE	16/25
1	PIPE SPECIAL: STEEL PIPE FLANGED AT ALL ENDS	HDG	HDG	GRADE C MILD STEEL T=4.5mm	A B 	16/25
2	PIPE SPECIAL: FLANGED MEDIUM RADIUS 90° BEND	HDG	HDG			16/25

DIMENSIONS FOR PIPE SPECIALS		
PIPE DIA. (D) (mm)	A (mm)	B (mm)
350	TO BE DETERMINED ON SITE	710
400	TO BE DETERMINED ON SITE	815
450	TO BE DETERMINED ON SITE	915

NOTES - PIPEWORK:

1. ALL DIMENSIONS SHOWN ARE NOMINAL MILD STEEL DIAMETERS AND MILLIMETER (UNLESS OTHERWISE SPECIFIED) AND SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES AND PUMPS. DIMENSIONS DO NOT REFLECT THE WIDTH OF PACKING BETWEEN FLANGES.
2. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES
 - 2.1 ALL MILD STEEL PIPES, FLANGES AND COUPLINGS WITH BOLTS AND NUTS BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY PUTTY FILLER, CORROSION PROTECTION TAPE AND PVC OUTERWRAP (DENSO OR STPAQ OR SIMILAR APPROVED) (AS PER SUPPLIER'S SPECIFICATIONS) OVER AND ABOVE THE SPECIFIED COATING. THE ABOVE DO NOT APPLY TO PIPE WORK WHICH ARE CONCRETE ENCASED.
 - 2.2 HDG STEEL FITTINGS IN CHAMBER TO BE DEGREASED, LIGHTLY ABRASED AND OVERCOATED WITH >90% ZINC RICH PAINT TO MIN DFT 150 MICRON
3. ALL FLANGE DRILLING SHALL COMPLY WITH SANS 1123 TABLE 1600/3 OR 2500/3 FOR A WORKING PRESSURE OF 16 OR 25 BAR RESPECTIVELY, UNLESS OTHERWISE NOTED. REFER TO LONGITUDINAL SECTIONS FOR WORKING PRESSURES.
4. ALL STEEL FITTINGS SHALL COMPLY WITH BSS34.
5. ALL STEEL PIPES WITH A NOMINAL BORE OVER 150mm SHALL BE MILD STEEL TO SANS 719 GRADE C WITH A WALL THICKNESS AS SPECIFIED.
6. ALL STEEL PIPES WITH A NOMINAL BORE UP TO 150mm SHALL BE HEAVY DUTY MILD STEEL TO SANS 62-1.

GENERAL NOTES

- 1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

NOTES:
1. Do not scale off this drawing

REVISION

LEGEND:

DESIGNED BY	SHEET B	CLIENT	CONSULTANT
CHECKED BY	MM		
DRAWN BY	MPM		
APPROVED BY	PC-PI-Eng		

CAPRICORN

100% LOCAL
PRODUCTION

100% LOCAL
PRODUCTION

DISTRICT MUNICIPALITY
PO Box 410, Breda, 1000
TEL : 015 294 1000
FAX : 015 294 4537
WWW.CAPRICORN.CO.ZA

CONSULTANT

100% LOCAL
PRODUCTION

100% LOCAL
PRODUCTION

SUPERIOR
ENGINEERING
8 WILSON STREET
BREDASIDE, 1000
TEL : 015 291 1866
FAX : 015 291 1866
E-MAIL : info@superiorgp.co.za

FRAMING NUMBER

STRANSSTD-18

PROJECT NUMBER

PROJECT TITLE

DETAIL 2/2

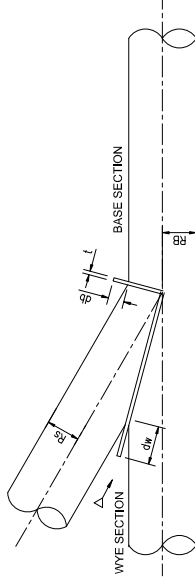
CONTRACT No

AS SHOWN

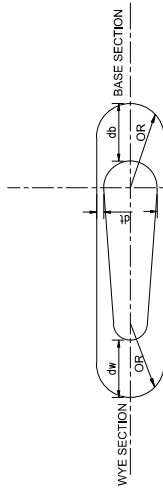
NOTES:
1. BRANCH PIPE STEEL WALL THICKNESS UNLESS SPECIFIED OTHERWISE:
- 350mm DIA AND SMALLER = 4.5mm
- 400mm DIA AND LARGER = 6mm

2. REINFORCEMENT STEEL GRADE C OR X12
3. CROTCH PLATE TO FOLLOW THE LINE OF INTERSECTION BETWEEN THE BRANCH AND THE BARREL AS FAR AS POSSIBLE BY CONTINUOUS BEND OF THE PLATE OR BY PROVIDING KINKS AT SUITABLE DISTANCES
4. DESIGN PRESSURE USED IN REINFORCEMENT PLATE CALCULATIONS IS BASED ON 1.5 x WORKING PRESSURE TO ACCOMMODATE LARGE SURGE PRESSURES

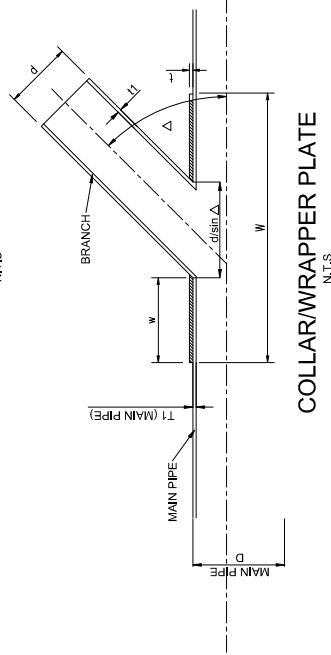
NOTES FOR ON SITE COMPENSATION PLATE MANUFACTURE:
1. THE STEEL AREAS IN BETWEEN THE WRAPPER OR COLLAR PLATE TO BE WIRE BRUSHED AND TREATED WITH 100 MICRON THICK HOLDING PRIMER (FOR THERMAL WRAP-68 DENSOTHERM) OR BITUMEN BASED PRIMER
2. THE WRAPPER OR COLLAR PLATE AND THE CROTCH PLATE SHOULD BE WELDED TO THE OTHER REINFORCEMENT PLATES AT THE TOP AND BOTTOM ONLY.



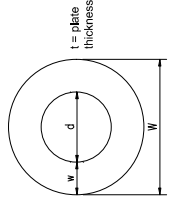
ELEVATION 2-PLATE CROTCH
N.T.S



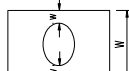
PLAN (FLAT VIEW) 2-PLATE CROTCH
N.T.S



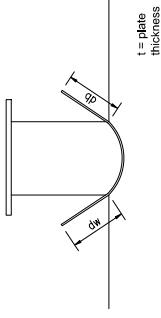
COLLAR/WRAPPER PLATE
N.T.S



COLLAR PLATE
N.T.S



WRAPPER PLATE
N.T.S



CROTCH PLATE
N.T.S

GENERAL NOTES

- 1) ALL AMBIGUITIES ON DRAWING MUST BE REPORTED TO THE DESIGN ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION.
2) THE DESIGN ENGINEER MUST BE ADVISED OF ANY CHANGES TO THE WORK BEING DONE. A SURVEY OF THE EXISTING GROUND WORK TO BE PROVIDED TO THE ENGINEER BY THE CONTRACTOR.
3) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

PIPE FITTING REINFORCEMENT - PN16

D(Ø)	d(Ø)	ANGLE (Δ)	REINFORCEMENT TYPE	w (mm)	W (mm)	t (mm)	dw (mm)	db (mm)	dt (mm)
75	75	90	NONE	-	-	-	-	-	-
90	90	90	NONE	-	-	-	-	-	-
110	110	90	NONE	-	-	-	-	-	-
160	160	90	NONE	-	-	-	-	-	-
200	200	90	NONE	-	-	-	-	-	-
250	250	90	NONE	-	-	-	-	-	-
300	300	90	NONE	-	-	-	-	-	-
350	350	90	WRAPPER	120	550	2.5	-	-	-
400	400	90	CROTCH PLATE	-	-	12	295	295	125
450	450	90	CROTCH PLATE	-	-	15	290	290	125
200	100	90	NONE	-	-	-	-	-	-
250	100	90	NONE	-	-	-	-	-	-
300	100	90	NONE	-	-	-	-	-	-
350	150	90	NONE	-	-	-	-	-	-
400	100	45	NONE	-	-	-	-	-	-
400	150	90	NONE	-	-	-	-	-	-
400	300	90	NONE	-	-	-	-	-	-
400	400	45	CROTCH PLATE	-	-	20	540	280	160
450	150	90	NONE	-	-	-	-	-	-

PIPE FITTING REINFORCEMENT - PN25

D(Ø)	d(Ø)	ANGLE (Δ)	REINFORCEMENT TYPE	w (mm)	W (mm)	t (mm)	dw (mm)	db (mm)	dt (mm)
75	75	90	NONE	-	-	-	-	-	-
90	90	90	NONE	-	-	-	-	-	-
110	110	90	NONE	-	-	-	-	-	-
160	160	90	NONE	-	-	-	-	-	-
200	200	90	NONE	-	-	-	-	-	-
250	250	90	NONE	-	-	-	-	-	-
300	300	90	WRAPPER	60	420	2.5	-	-	-
350	350	90	CROTCH PLATE	-	-	10	240	240	120
400	400	90	CROTCH PLATE	-	-	15	360	360	155
450	450	90	CROTCH PLATE	-	-	15	430	430	185
200	100	90	NONE	-	-	-	-	-	-
250	100	90	COLLAR	35	170	2.5	-	-	-
300	100	90	COLLAR	37	170	2.5	-	-	-
350	150	90	COLLAR	67.5	285	3.0	-	-	-
400	100	45	COLLAR	80	260	2.5	-	-	-
400	150	90	COLLAR	60	270	3.0	-	-	-
400	300	90	WRAPPER	140	580	3.0	-	-	-
400	400	45	CROTCH PLATE	-	-	20	770	370	210
450	150	90	COLLAR	140	320	3.5	-	-	-

PIPE REINFORCEMENT

NOTES:
1. Do not scale off this drawing

LEGEND:

DESIGNED BY	SOEET 6	CLIENT:	CAPRICORN	DISTRICT MUNICIPALITY
CHECKED BY	MM			400 Bona Vista, Potchefstroom, 0700
DRAWN BY	MPM			TEL: 056 244 1100
APPROVED BY	RC-PP-Eng			FAX: 056 244 1101

CONSULTANT:



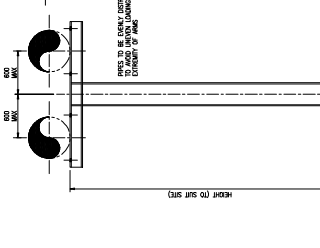
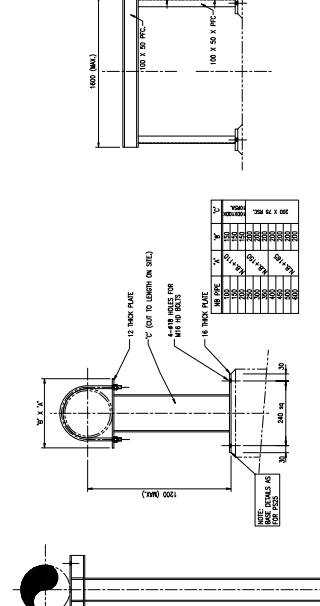
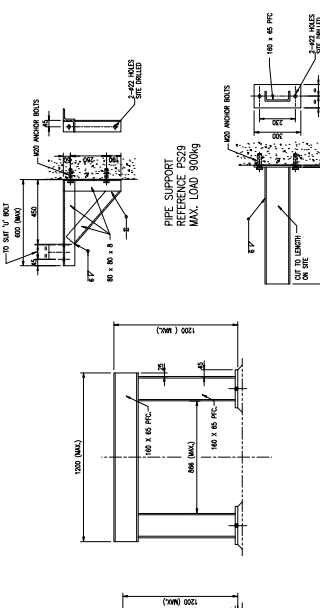
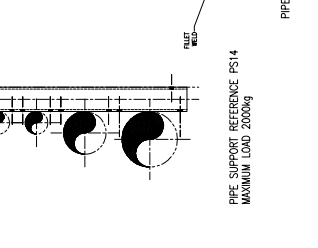
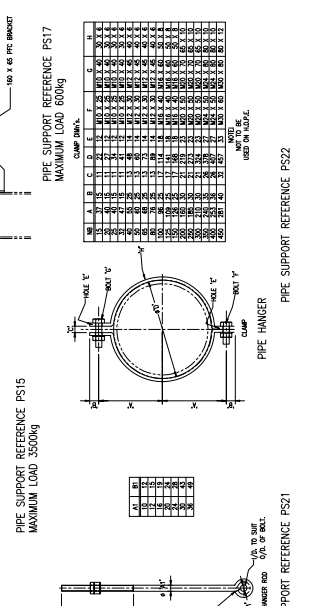
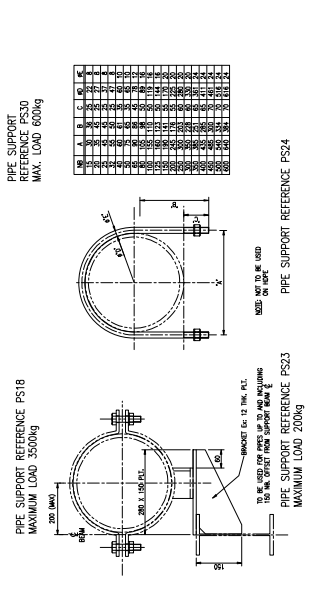
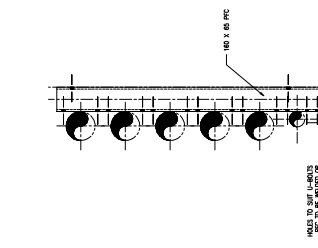
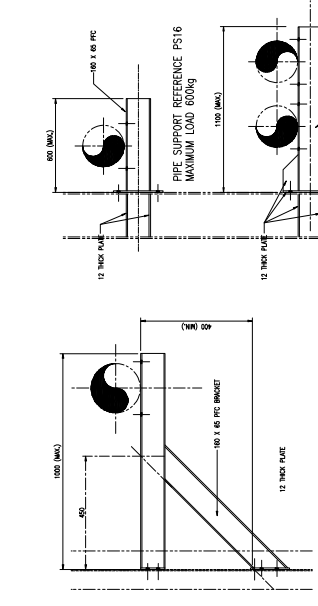
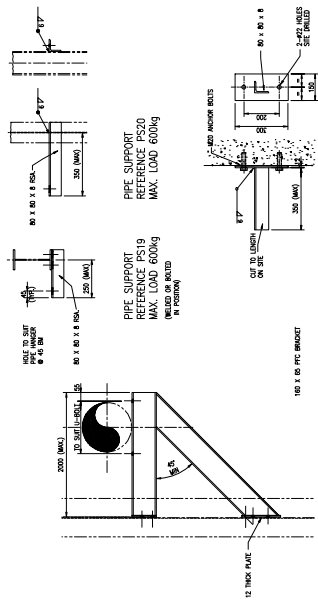
DRAWING TITLE:
PIPE FITTING REINFORCEMENT PLATE DETAIL

DRAWING NUMBER:	PROJECT NUMBER:	CONTRACT No:
STRWSSTD-50		
SHEET 1/1	SCALE:	AS SHOWN

REVISION

STOCKS REGIONAL WATER SCHEME

1. ALL STEEL WORK TO BE IN ACCORDANCE WITH PROJECT SPECIFICATION SANS 2601-CE 2005 AND TO BE GRADE 300A.
2. ALL STEEL TO BE SUPPLIED AS HOT ROLLED OR USED WHEN REQUIRED.
3. CONNECTIONS TO EXISTING SOUTH AFRICAN STEEL CONSTRUCTION HANDBOOK 5TH EDITION.
4. FABRICATOR TO SUPPLY ALL NUTS, BOLTS & WASHERS SUITABLE TO BE GAGED & IDENTIFIED.
5. MINIMUM WELD SHALL BE 5mm FULL MELTING PROCEDURES & PROCEDURES IN ACCORDANCE WITH SANS/BS/EN/BS/EN.
6. ALL WELDS TO BE 100% INSPECTED.
7. ALL CLEATS TO BE 8 THK MINI.
8. ALL COMPONENTS TO BE FREE FROM BURRS & SHARP EDGES ETC.
9. SHOP DETAILERS TO ALLOW SUFFICIENT CLEARANCES FOR ERECTION PURPOSES.
10. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
11. NO DEVIATION FROM MEMBER SIZES, DIMENSIONS OR SETTING OUT POINTS UNLESS PERMISSION HAS BEEN OBTAINED FROM THE DESIGNER IN WRITING.
12. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
13. ALL ITEMS TO BE CANGULAR, HAND STAMPED WITH THEIR RESPECTIVE ITEM #, DRAWING NUMBER (PRIOR TO CANGULARITY), ALL MARKS TO BE HIGHLIGHTED WITH MARKER.
14. ALL STIFFENERS TO BE PROVIDED AT ALL POINTS OF CONCENTRATED LOADS.
15. FABRICATOR TO SUPPLY TEMPORARY BRACING AS REQUIRED FOR SAFE TRANSPORTATION & ERECTION.
16. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
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92. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
93. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
94. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
95. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
96. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
97. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
98. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
99. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.
100. ALL DIMENSIONS TO BE TO FACE UNLESS SPECIFIED OTHERWISE.



MAXIMUM LOAD 3500kg

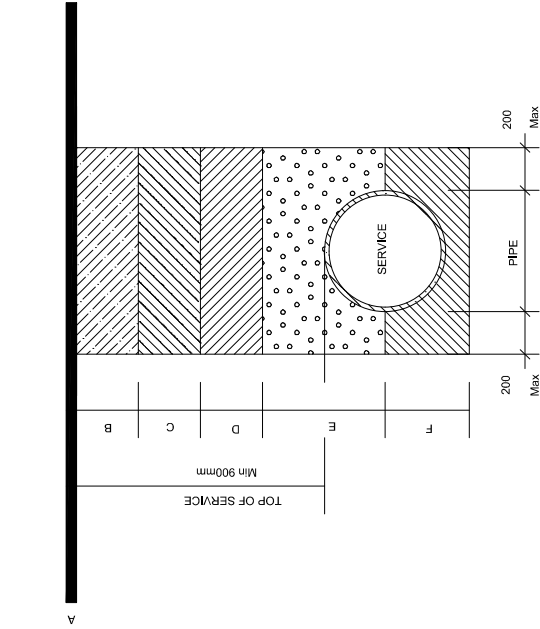
PIPE SUPPORT
REFERENCE PS31 MAX. LOAD 600 Kg

ALL CAST-IN PLATES TO BE GALVANISED

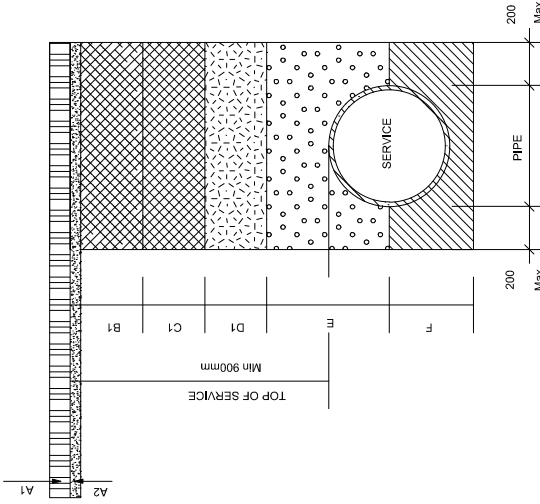
STANDARD PIPE SUPPORT DETAILS

PIPE SUPPORT REFERENCE PS25
MAXIMUM LOAD 2000kg

NOTES 1. Do not scale off this drawing	LEGEND:		 CAPRICORN DISTRICT MUNICIPALITY PO Box 4002, Polokwane, 0702 TEL: 0 15 254 1000 FAX: 0 15 254 1001 E-MAIL: info@capricorn.gov.za	 SUPERIOR ENGINEERING 66 ALMAHIST STREET PO BOX 100 TEL: 015 269 1156 FAX: 015 269 1157 E-MAIL: info@superiorengineers.co.za	CONSOLE TANK	DRAWING TITLE: VALVE CHAMBER - TYPICAL PIPE SUPPORT DETAIL PROJECT TITLE: STOCKS REGIONAL WATER SCHEME	DRAWING NUMBER: STRWSSTD-51 PROJECT NUMBER: CONTRACT No:	SHEET No: SHEET 1/1 SCALE: AS SHOWN
	DESIGNED BY	SJET 8						
	CHECKED BY	MM						
	DRAWN BY	MPM						
	APPROVED BY	RC-PE-Eng						
REVISION								

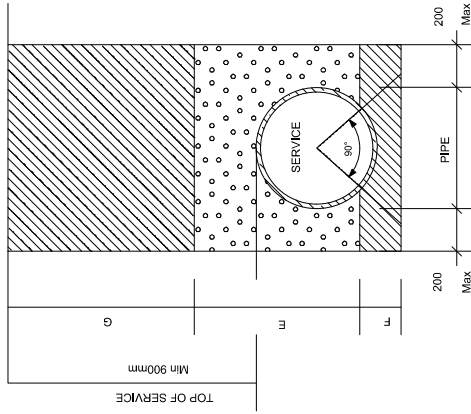


TRENCH BACKFILLING FOR SURFACED ROADS

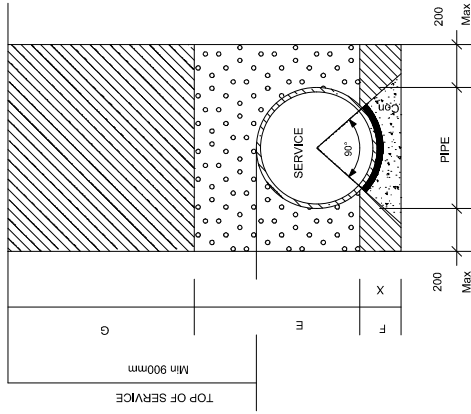


TRENCH BACKFILLING FOR PAVED FOOTWAYS

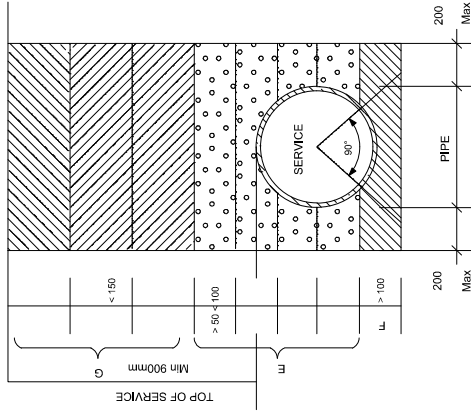
ITEM LEGEND	MATERIAL	COMPACTION
A	MATCH EXISTING SEAL	*
A1	MATCH EXISTING PAVE	*
A2	20mm GRADED RIVER SAND	*
B	90mm CRUSHED STONE BASE TO 86% APP.	
C	125mm SUBBASE	95% Mod AASHTO (C3)
D	125mm SELECTED SUBGRADE 85% Mod AASHTO (C4)	
E	SELECTED BLANKET	90% Mod AASHTO
F	SELECTED BEDDING	90% Mod AASHTO
B1	125 (G5)	95% Mod AASHTO
C1	125 (G7)	93% Mod AASHTO
D1	125 (G9)	90% Mod AASHTO
G	MAN FILL	94% Mod AASHTO
Con	Grade 19	20 MPa Concrete



TRENCH BACKFILLING FOR CLASS C BEDDING
SABS(SANS) 1200 LB



TRENCH BACKFILLING FOR CLASS A BEDDING
SABS (SANS) 1200 LB
X = D14 - SUBJECT TO
X < 75mm AND NOT > 300mm



FLEXIBLE PIPE SUPPORTED ON SELECTED
GRANULAR MATERIAL
SABS (SANS) 1200 LB

NOTES:
1. Do not scale off this drawing

LEGEND:

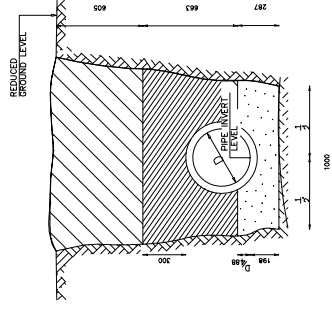
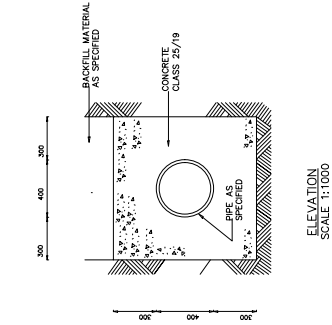
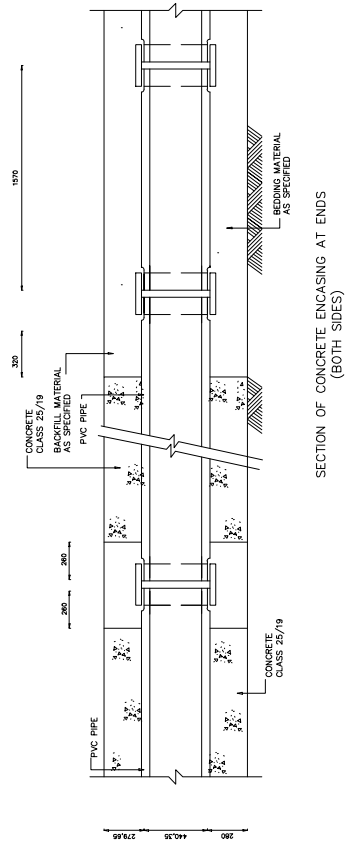
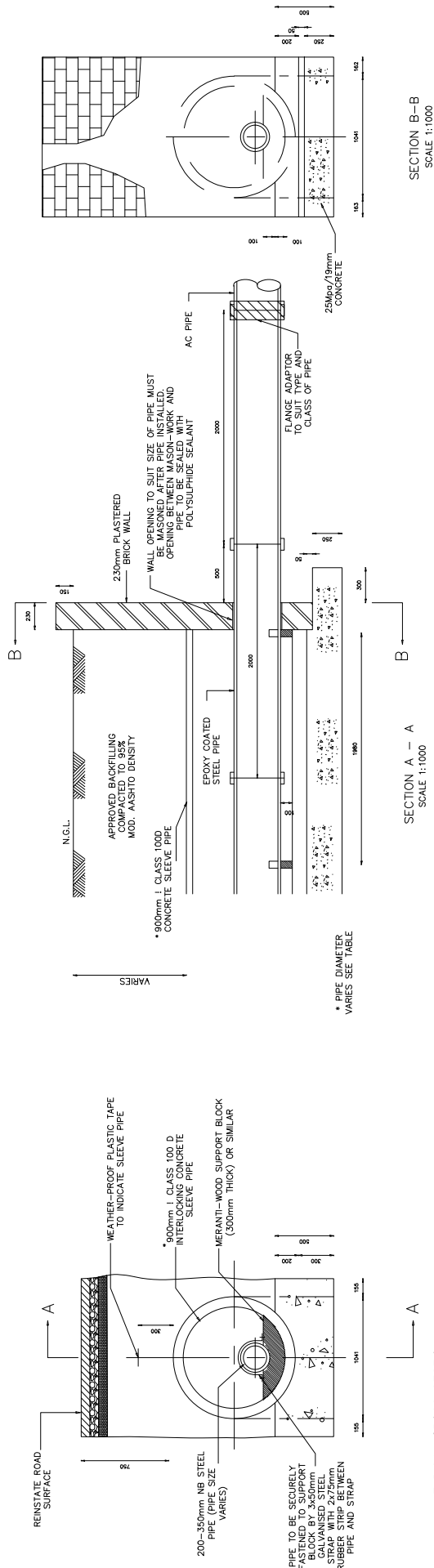
DESIGNED BY	SHEET 6
CHECKED BY	MM
DRAWN BY	MPM
APPROVED BY	RC - Pt Eng

CAPRICORN
DISTRICT MUNICIPALITY
PO Box 4102, Pekaia, 0202
TEL : 015 294 1000
FAX : 015 294 1001
WWW.CAPRICORN.CO.ZA

CONSULTANT:
SUPERIOR QUALITY ENGINEERING
80 MARION STREET
TEL: 082 78 1186
FAX: 082 78 1187
e: info@superiorqa.co.za

DRAWING TITLE:
PIPELINE INSTALLATION DETAIL
PROJECT TITLE:
STOCKS REGIONAL WATER SCHEME

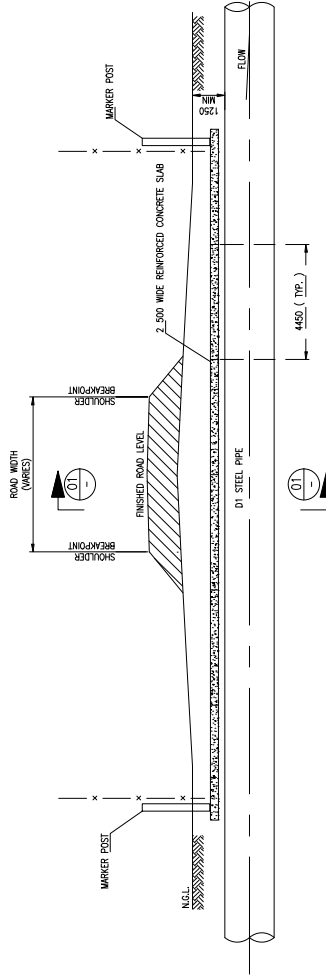
DRAWING NUMBER: STRWS/STD-39	SHEET No: SHEET 1
PROJECT NUMBER:	SCALE:
CONTRACT No:	AS SHOWN



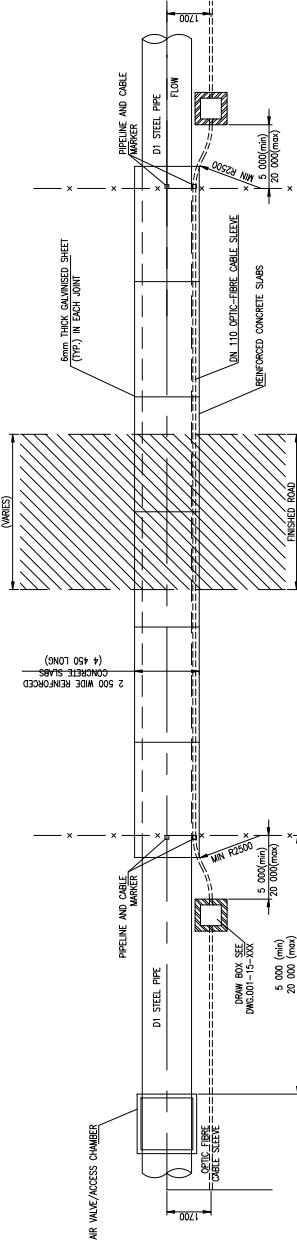
TYPICAL DETAIL FOR CONCRETE ENCASING

TYPICAL DETAIL FOR GRAVEL
ROAD CROSSING

NOTES: 1. Do not scale of this drawing	LEGEND:		DESIGNED BY		SOET 8	CLIENT:  CAPRICORN DISTRICT MUNICIPALITY 41 BROAD STREET, POLYMANNE PORT ELIZABETH, 6050 TEL: 032 234 1000 FAX: 032 231 4297 E-MAIL: 032 234 4100 WWW: www.capricorn.gov.za	CONSULTANTS:  SUPERIOR ENGINEERING 111 BROAD STREET, PORT ELIZABETH 6050 TEL: 032 234 1006 FAX: 032 234 4100 E-MAIL: 032 234 4100 WWW: www.superior-engineers.co.za	DRAWING TITLE: TYPICAL ROAD CROSSING TYPE 1 DETAIL	DRAWING NUMBER: STRVSTD-42	SHEET No: SHEET 11
			CHECKED BY		MM					
			DRAWN BY		MPM					
			APPROVED BY		RC-Pr.Eng					
REVISION						PROJECT TITLE: STOCKS REGIONAL WATER SCHEME		CONTRACT No: AS B/OWN		SCALE: AS B/OWN

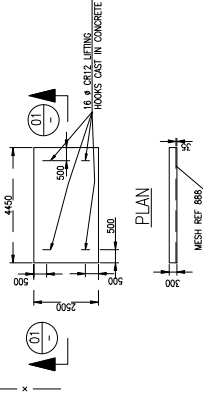


TYPICAL LONG-SECTION OF ROAD CROSSING TYPE 2
SCALE 1:100

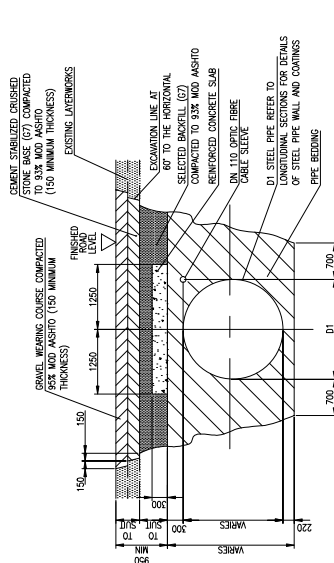


TYPICAL PLAN OF ROAD CROSSING TYPE 2
SCALE 1:100

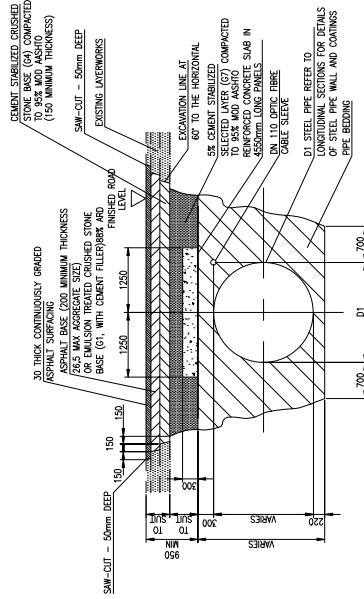
PHASE	D1 STEEL PIPE NOMINAL DIAMETER (mm)
PRUISSEN – WYWI T	1400
WYWI T – WYWI T	1100
WYWI T – MOKHIGH RES T	1100
WYWI T – PIET SE KOP	1100
PHILOA T – BAKENBERG	600
Y-JUNC – SEFAWOLA	350



SECTION 01 -01
REINFORCED CONCRETE DETAIL



TYPICAL SECTION 01-01
(GRAVEL SURFACED ROADS)
Scale 1:50



TYPICAL SECTION 01-01
(ASPHALT SURFACED ROADS)
Scale 1:50

NOTES

- PIPE JOINTS METHOD WILL BE USED TO METAL CONCRETE SLABES PILES UNDER RAILWAY OR AIRPORT RAILROADS OPEN CUT EXCAVATION METHOD WILL BE USED TO METAL CONCRETE SLABES UNDER NON-RAILWAY RAILROADS OR GRAVEL ROADS.
- PRECAST CONCRETE PANELS WILL BE USED WHEN CROSSING ALL OTHER MAJOR ACCESS ROADS INCLUDING PARK, GAME, PRIVATE PROPERTY ACCESS, ETC.
- CONCRETE SLABES PILES WILL BE USED WHEN CROSSING ALL MAJOR AS WELL AS MINOR, TOWNAL AND DISTRICT ROADS.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED ALL LINES ARE IN METRIC UNITS UNLESS STATED.

NOTES:
1. Do not scale off this drawing

LEGEND:

DESIGNED BY
CHECKED BY
DRAWN BY
APPROVED BY

SOEET 8
MM
MPHJ
RC-Ph-Eng

CLIENT:

CAPRICORN
DISTRICT MUNICIPALITY
41 BROAD STREET, POLYURBANE
TELEPHONE: 0300
FAX: 030 234 1000
FAX: 030 231 4337
030 234 0300

CONSULTANT:

SUPERIOR
SUPPORTS OF ALL ENGINEERING
TELEPHONE: 0300
FAX: 030 234 1000
FAX: 030 231 4337
030 234 0300

DRAWING TITLE

TYPICAL ROAD CROSSING TYPE 1 DETAIL

DRAWING NUMBER

STRWSSTD-43

SHEET No

SHEET 11

PROJECT NUMBER

SCALE

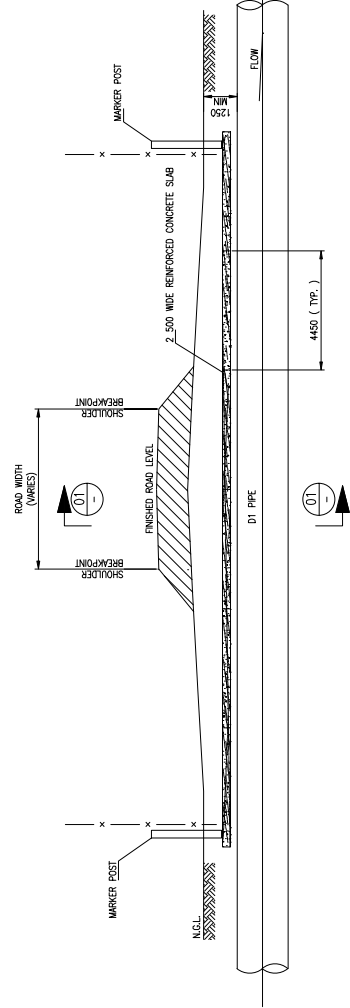
CONTRACT No

AS SHOWN

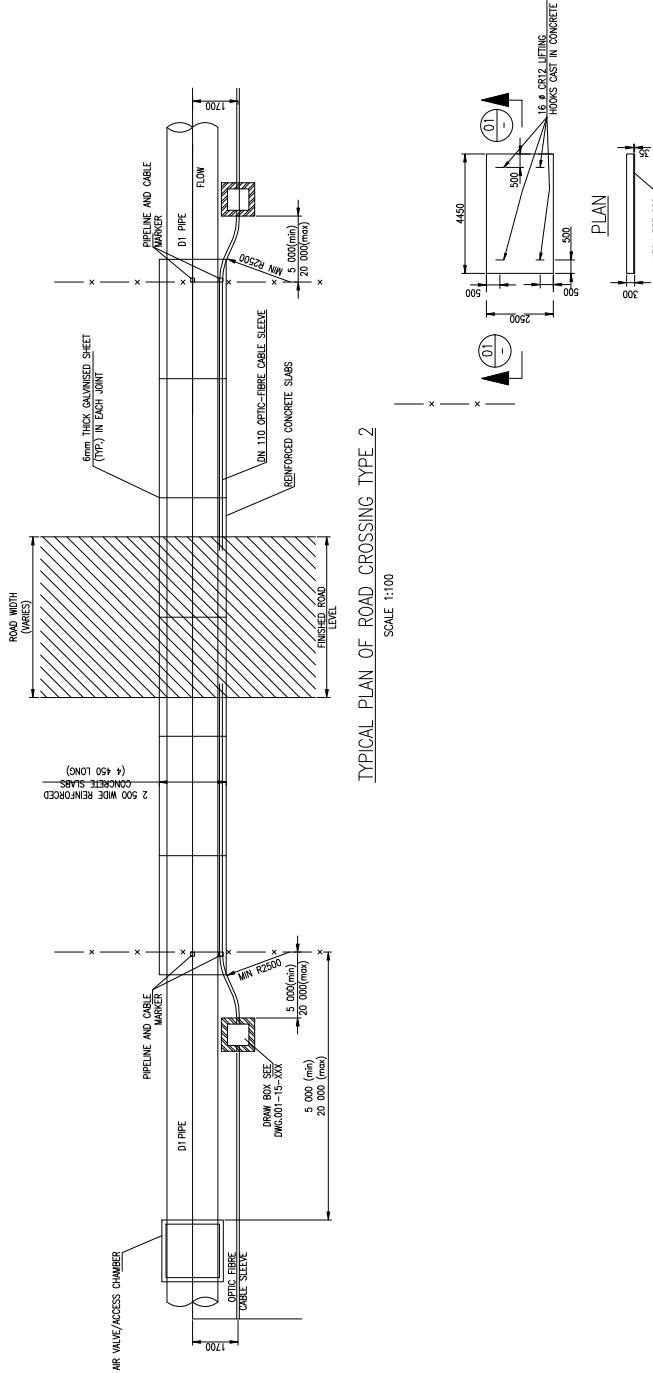
PROJECT TITLE

STOCKS REGIONAL WATER SCHEME

REVISION

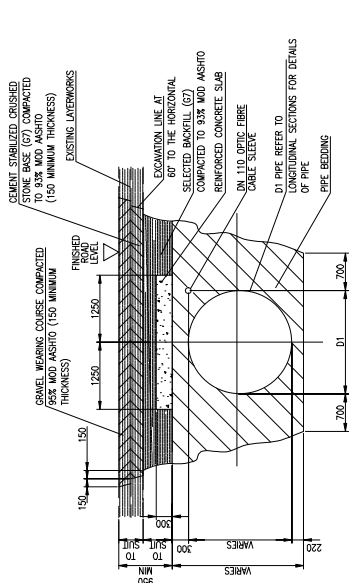


TYPICAL LONG-SECTION OF ROAD CROSSING TYPE 2
Scale 1:100

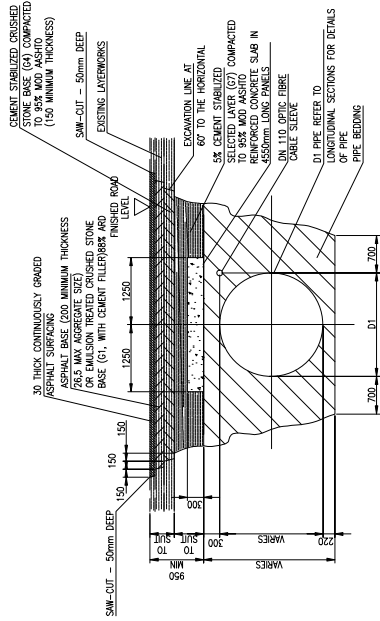


TYPICAL PLAN OF ROAD CROSSING TYPE 2
Scale 1:100

SECTION 01-01
REINFORCED CONCRETE DETAIL



TYPICAL SECTION 01-01
(GRAVEL SURFACED ROADS)
Scale 1:50



TYPICAL SECTION 01-01
(ASPHALT SURFACED ROADS)
Scale 1:50

NOTES

- PIPE JACKING METHOD WILL BE USED TO INSTALL CONCRETE SLEEVE PIPES UNDER BUSY TRAFFIC OR ASPHALT PAVED ROADS. OPEN CUT EXCAVATION METHOD WILL BE USED TO INSTALL CONCRETE SLEEVES UNDER NON-BUSY TRAFFIC OR GRAVEL ROADS.
- PRECAST CONCRETE PANELS WILL BE USED WHEN CROSSING ALL OTHER MAJOR ACCESS ROADS INCLUDING FARM, GAME, PRIVATE PROPERTY ACCESSSES, ETC.
- CONCRETE SLEEVE PIPES WILL BE UTILISED WHEN CROSSING ALL RAILWAYS AS WELL AS NATIONAL, PROVINCIAL AND DISTRICT ROADS.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN ALL LEVELS ARE IN METERS ABOVE SEA LEVEL.

NOTES:
1. Do not scale off this drawing

LEGEND:

DESIGNED BY	SOULET 6
CHECKED BY	MM
DRAWN BY	MPMA
APPROVED BY	RC-PE-Eng

CLIENT:	CAPRICORN
	DISTRICT MUNICIPALITY PO Box 4100, Pekaia, 0100 TEL : 015 234 1000 FAX : 015 234 1001 WWW.CAPRICORN.CO.ZA

CONSULTANT:	SUPERIOR
	SUPERIOR QUALITY ENGINEERING 6000000 STREET TEL : 08 28 1886 FAX : 08 28 1887 WWW.SUPERIORENGINEERS.CO.ZA

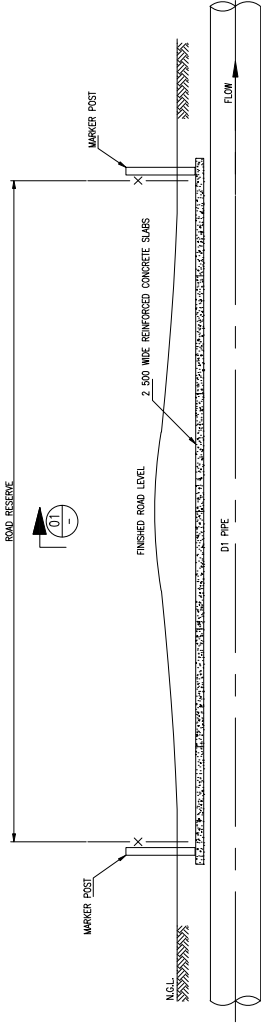
DRAWING TITLE:
TYPICAL ROAD CROSSING TYPE 3 DETAIL

DRAWING NUMBER:	STRWSSTD-44
PROJECT NUMBER:	
CONTRACT NO:	AS SHOWN

SHEET No:	SHEET 1/1
SCALE:	

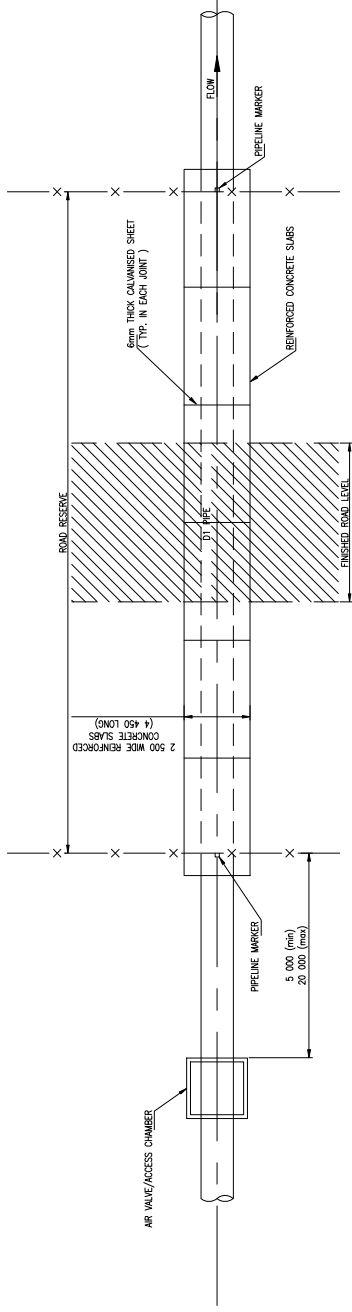
REVISION

STOCKS REGIONAL WATER SCHEME



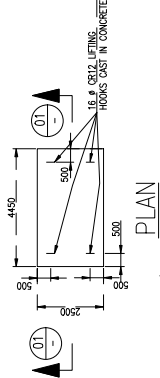
TYPICAL LONG-SECTION OF ROAD CROSSING TYPE 3

SCALE 1:100



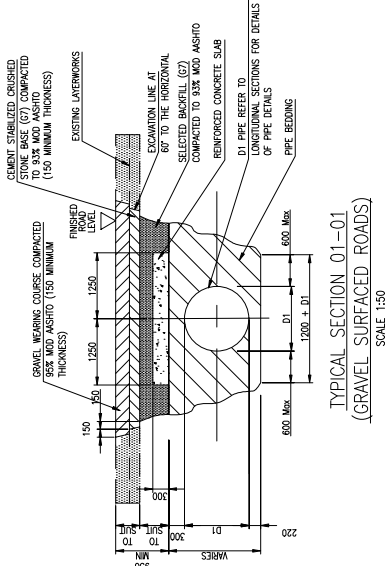
TYPICAL PLAN OF ROAD CROSSING TYPE 3

SCALE 1:100



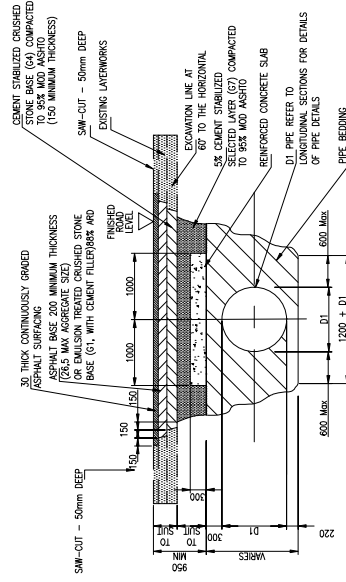
SECTION 01 - 01

REINFORCED CONCRETE DETAIL



TYPICAL SECTION 01-01
(GRAVEL SURFACED ROADS)

SCALE 1:50



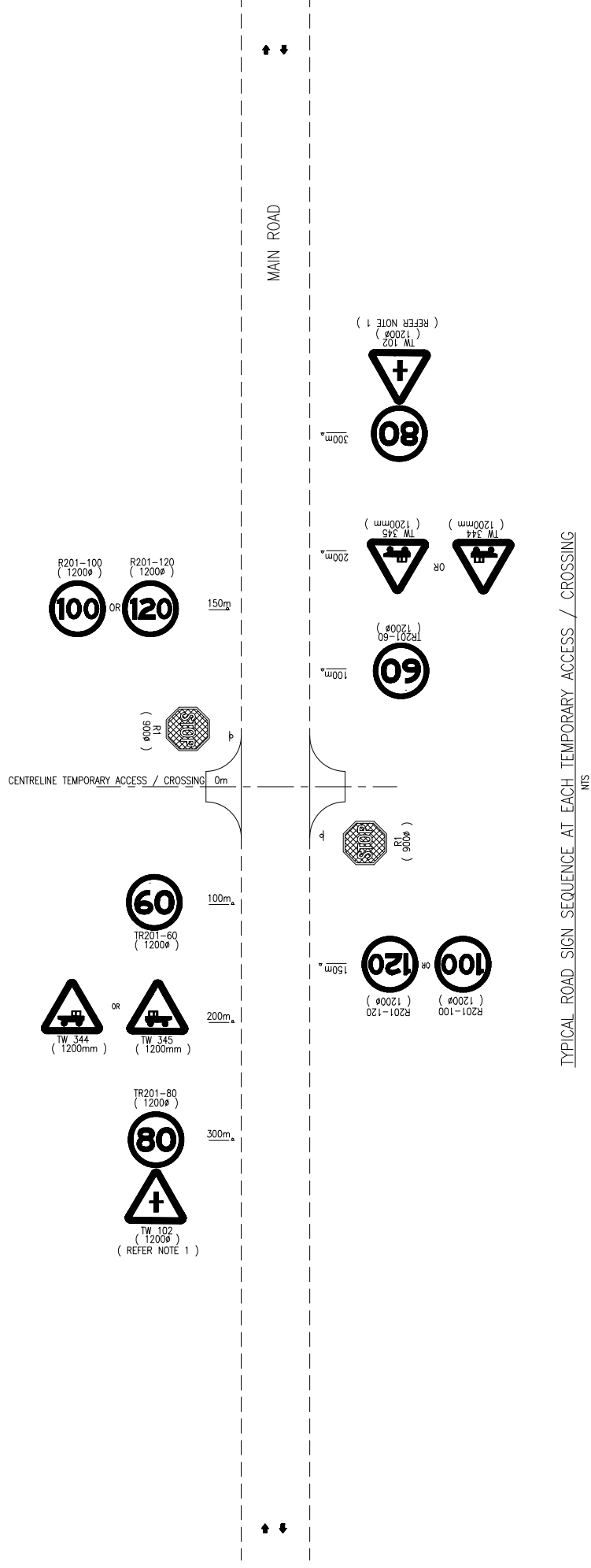
TYPICAL SECTION 01-01
(ASPHALT SURFACED ROADS)

SCALE 1:50

NOTES

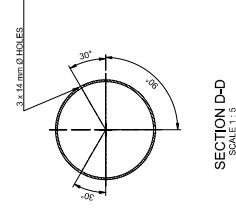
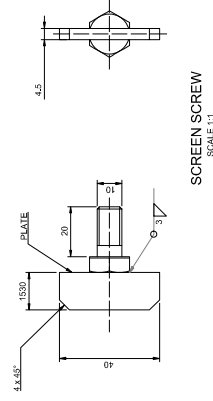
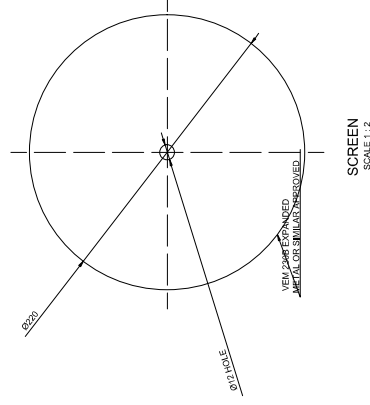
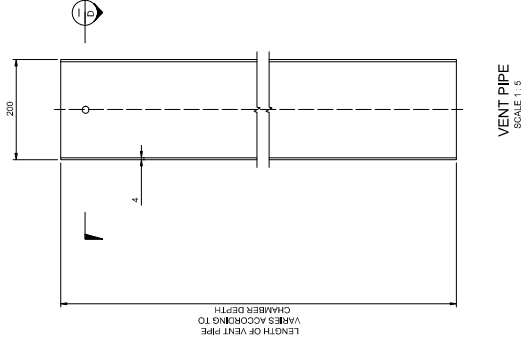
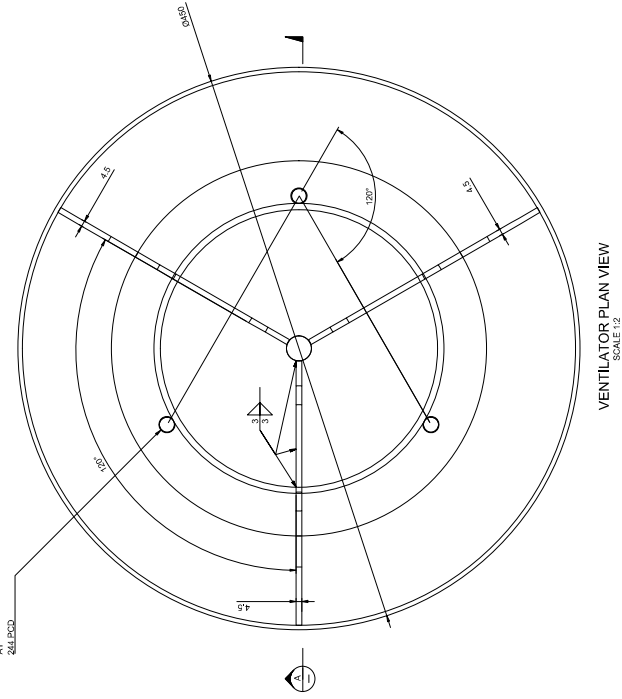
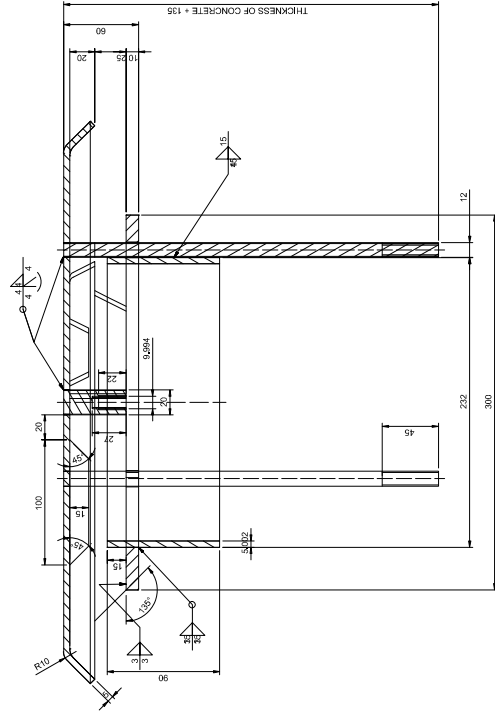
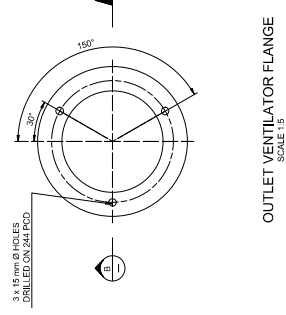
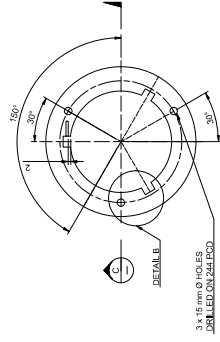
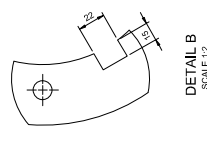
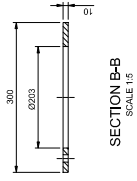
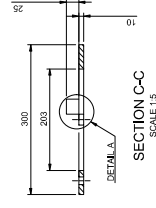
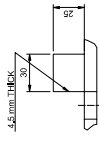
1. PIPE JOINTS MUST BE USED TO INSTALL CONCRETE SLEEVES UNDER BUSY TRAFFIC OR ASPHALT PAVED ROADS OPEN CUT JOINTS MUST BE USED UNDER LIGHT TRAFFIC OR GRAVEL PAVED ROADS.
2. PRECAST CONCRETE PANELS WILL BE USED WHEN CROSSING ALL OTHER UNDER ACCESS ROADS INCLUDING PAVIL, GRASS, PRIVATE PROPERTY ACCESS, ETC.
3. CONCRETE SLEEVES PIPES WILL BE UTILISED WHEN CROSSING ALL MAINWAYS AS WELL AS NATIONAL, PROVINCIAL AND DISTRICT ROADS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN ALL LARGES ARE IN METERS ABOVE SEA LEVEL.

NOTES: 1. Do not scale off this drawing	LEGEND:		DESIGNED BY CHECKED BY DRAWN BY APPROVED BY	CLIENT  CAPRICORN DISTRICT MUNICIPALITY 41 BROAD STREET, POLYMERHILL SHEPHERDSWILL, DURBAN 4013 TEL : 015 234 1000 FAX : 015 231 4257	CONSULTANT:  SUPERIOR ENGINEERING 41 BROAD STREET, POLYMERHILL SHEPHERDSWILL, DURBAN 4013 TEL : 015 234 1000 FAX : 015 231 4257 EMAIL : info@superior-engineering.co.za	DRAWING TITLE TYPICAL ROAD CROSSING TYPE 4 DETAIL	DRAWING NUMBER STRWSSTD-45	SHEET No SHEET 11		
									PROJECT NUMBER	SCALE
									CONTRACT No	AS SHOWN
		PROJECT TITLE STOCKS REGIONAL WATER SCHEME								
REVISION										



NOTES :

DRAWING TITLE: ROADS - TRAFFIC ACCOMMODATION		DRAWING NUMBER: STRWSSTD-49		SHEET No: SHEET 11
		PROJECT NUMBER:		SCALE: AS SHOWN
PROJECT TITLE: STOCKS REGIONAL WATER SCHEME		CONTRACT No:		
CONSULTANT:	 SUPERIOR CONSULTANTS & ENGINEERS 100, BROADWAY STREET, FULFORD MILTON KEYNES, MK14 6JH TEL: 01908 291 1986 FAX: 01908 291 1986 E-MAIL: 0800 401111 or info@superior-engineers.co.uk	CLIENT:	 CAPRICORN DISTRICT MUNICIPALITY 41 BROADWAY STREET, FULFORD MILTON KEYNES, MK14 6JH TEL: 01908 294 1000 FAX: 01908 291 4597	
LEGEND:	DESIGNED BY	SDET 6		
	CHECKED BY	MM		
	DRAWN BY	MP/M		
	APPROVED BY	RC - P. Eng		
NOTES:				
1. Do not scale off this drawing				
REVISION				

25
= 1
24

1. ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE SHOWN.

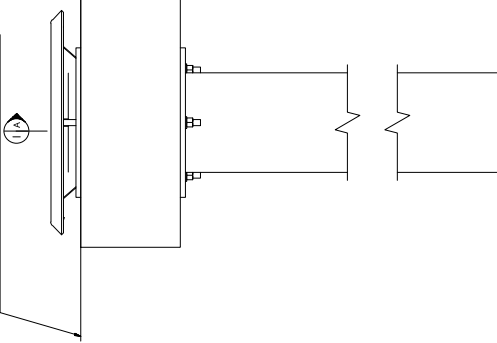
2. CORROSION PROTECTION - PICKLED & PASSIVATED

GENERAL NOTES

1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

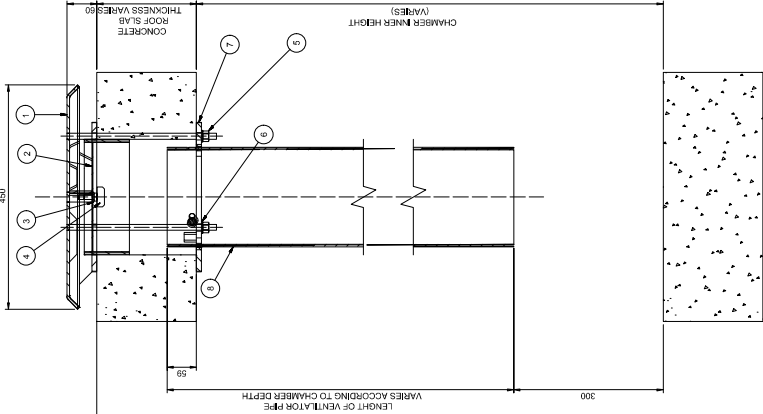
NOTES: 1. Do not scale off this drawing	LEGEND:	DESIGNED BY	SQET 6	CLIENT: CAPRICORN DISTRICT MUNICIPALITY P.O. BOX 100, STREET, FOLLOLOME 4010 BLOEMFONTEIN, 0101, BLOEMFONTEIN, 0100 TEL: 015 294 1000 FAX: 015 294 1001 WWW.CDM2002.CO.ZA	CONSULTANT: SUPERIOR ENGINEERING CONSULTANTS 100 BURGESS STREET SOMERSET STREET 4013 BLOEMFONTEIN, 0101 TEL: 015 291 1366 FAX: 015 291 1367 E-MAIL: info@superiorengineers.co.za	DRAWING NUMBER STRWSSTD-30 SHEET 22 SHEET No:	PROJECT TITLE: STOCKS REGIONAL WATER SCHEME PROJECT TITLE: CONTRACT No:	SCALE: AS SHOWN
		CHECKED BY	MM					
		DRAWN BY	MPM					
		APPROVED BY	RC, Pt. Eng					
REVISION								

SM/AL/EX 1A OR SIMILAR APPROVED TO BE APPLIED TO VENTILATOR FLANGE BEFORE TIGHTENING OF NUTS



INLET VENTILATOR (WITH mPVC PIPE)

SCALE 1:5

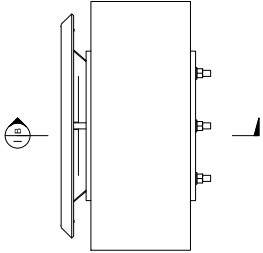


SECTION A-A (INLET VENTILATOR)

SCALE 1:5

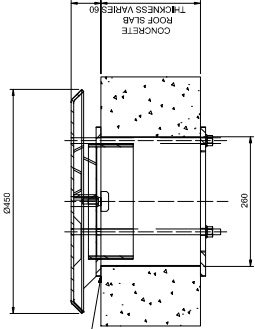
PARTS LIST	
ITEM	QTY DESCRIPTION
1	1 OUTLET VENTILATOR - ST/STL 304L
2	1 SCREEN - VEM 200B OR SIMILAR APPROVED - ST/STL 304L
3	1 LARGE DIAMETER WASHER M10 - ST/STL 304
4	1 SCREEN SCREW - ST/STL 304
5	1 SCREEN SCREW - ST/STL 304
6	3 WASHER M10 - ST/STL 304
7	1 INLET VENTILATOR FLANGE - ST/STL 304L
8	1 200 mm Ø VENT PIPE - mPVC CLASS 6

SM/AL/EX 1A OR SIMILAR APPROVED TO BE APPLIED TO VENTILATOR FLANGE BEFORE TIGHTENING OF NUTS



OUTLET VENTILATOR

SCALE 1:5



SECTION B-B (OUTLET VENTILATOR)

SCALE 1:5

PARTS LIST	
ITEM	QTY DESCRIPTION
1	1 OUTLET VENTILATOR - ST/STL 304L
2	1 SCREEN - VEM 200B OR SIMILAR APPROVED - ST/STL 304L
3	1 LARGE DIAMETER WASHER M10 - ST/STL 304
4	1 SCREEN SCREW - ST/STL 304
5	1 SCREEN SCREW - ST/STL 304
6	3 WASHER M10 - ST/STL 304
7	3 WASHER M10 - ST/STL 304

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SHOWN.

2. CORROSION PROTECTION - PICKLED & PASSIVATED

GENERAL NOTES

ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

NOTES:
1. Do not scale off this drawing

LEGEND:

DESIGNED BY	SQ/ET 8
CHECKED BY	NM
DRAWN BY	MP/M
APPROVED BY	RC - P/ETg

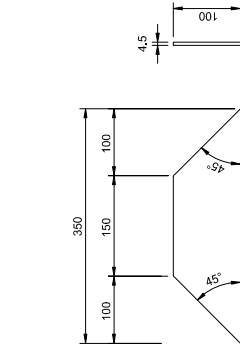
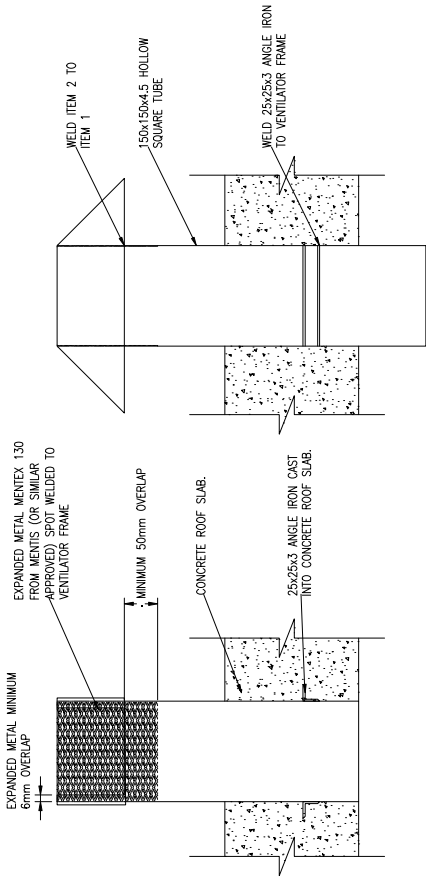
CAPRICORN
DISTRICT MUNICIPALITY
41 BROADWAY STREET, FOLGOMARE
9401
TEL: +27 33 284 1000 / 0765
FAX: +27 33 284 4257
WWW.CAPRICORN.GOV.ZA

CONSULTANT:
SUPERIOR
ENGINEERING
85 MALINDI STREET
9401
TEL: +27 33 281 186
FAX: +27 33 281 187
E-MAIL: info@superioreng.co.za

DRAWING TITLE:
TYPICAL DETAIL OF ROUND AIR VENTILATOR

DRAWING NUMBER: STRVSTD-30	SHEET No: SHEET 1
PROJECT NUMBER:	SCALE: AS SHOWN
CONTRACT No:	

PROJECT TITLE:
STOCKS REGIONAL WATER SCHEME

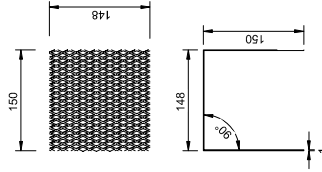
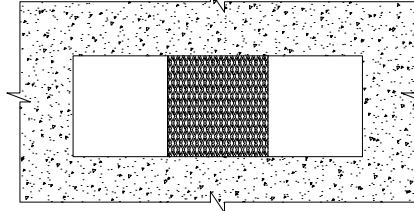


ITEM 2 :
CAP SIDE PLATE
2x OFF PER AIR VENT

ITEM 1 :
150x150x4.5mm SQUARE TUBE WITH SIDE
OPENINGS
1x OFF PER AIR VENT

FRONT VIEW
SCALE 1:5

SIDE VIEW
SCALE 1:5



ITEM 4 :
MENTEX 130 (OR SIMILAR)
1x OFF PER AIR VENT

ITEM 3 :
CAP TOP PLATE
1x OFF PER AIR VENT

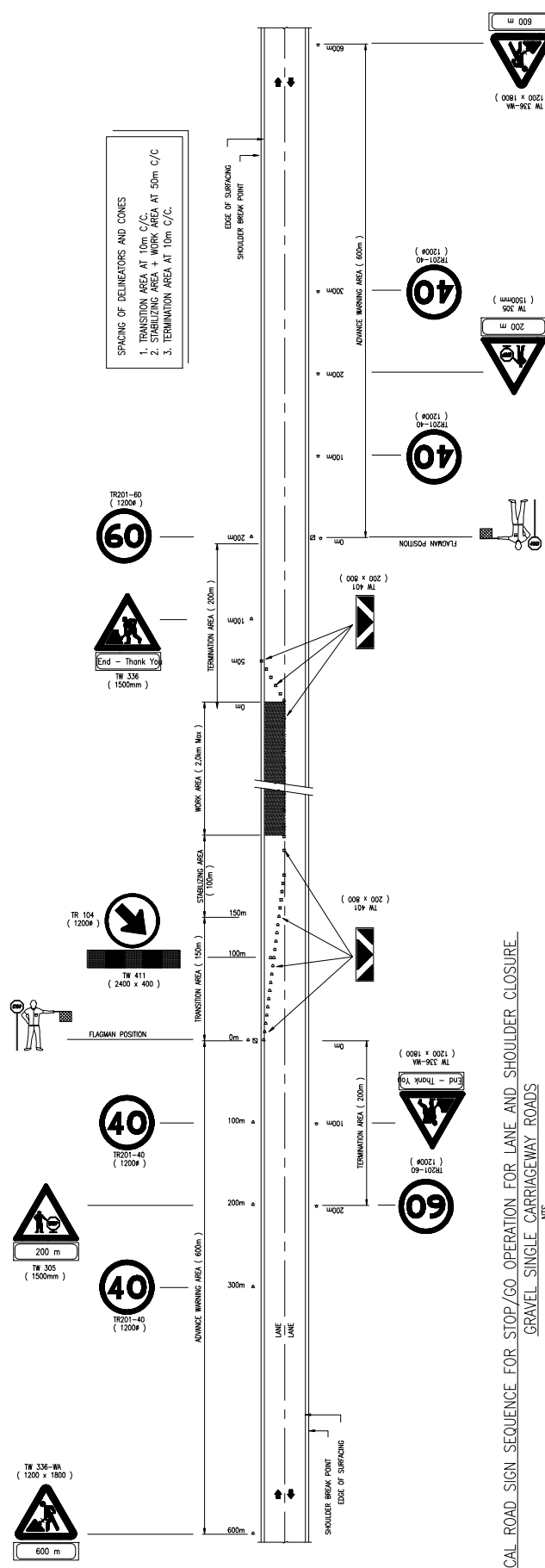
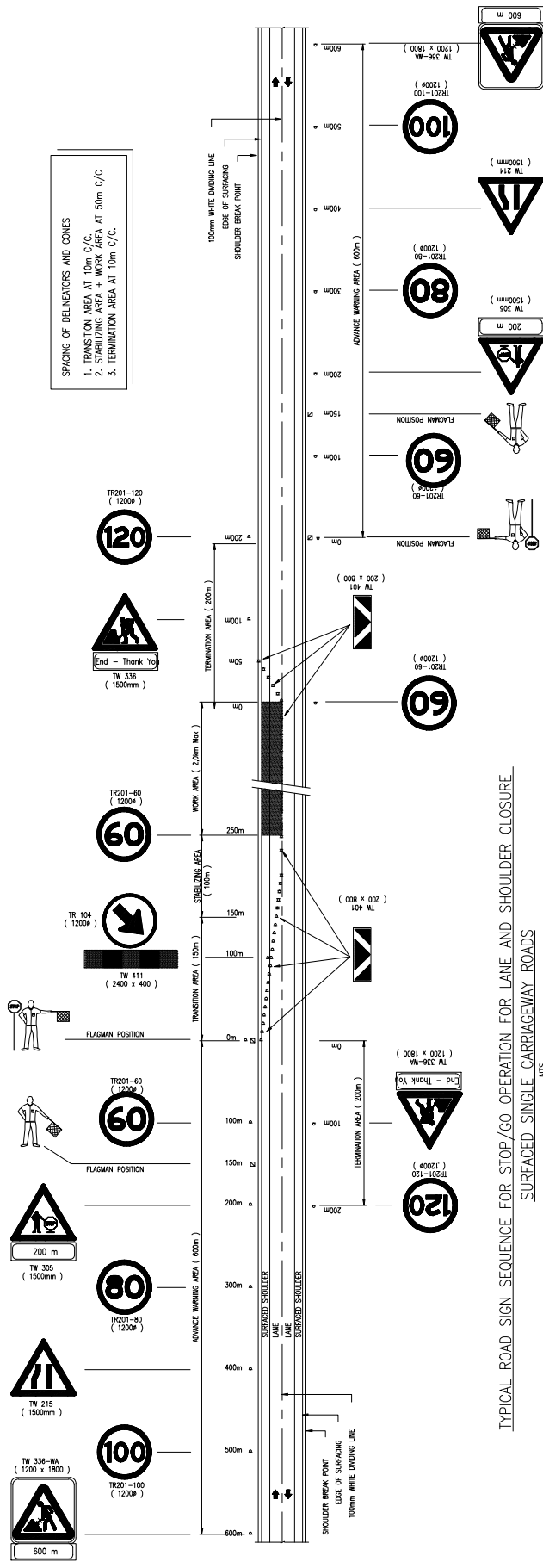
TOP VIEW
SCALE 1:5

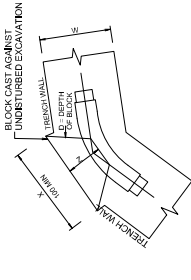
ISOMETRIC

GENERAL NOTES
1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE
STANDARD SANS 1200 SPECIFICATION AND THIS
PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

NOTES:
1) AIR VENTILATORS TO BE HOT DIPPED GALVANIZED AFTER ASSEMBLY
2) OVERCAST AFTER INSTALLATION & CLEANING OFF ALL CONCRETE
3) SURFACE TO BE PAINTED WITH 2 COATS OF EPOXY AND OVERCOAT WITH 750%
ZINC RICH PAINT TO 150 MICRON DFT.

NOTES: 1. Do not scale off this drawing	LEGEND:		DESIGNED BY	SHEET 8	CLIENT	CAPRICORN  DISTRICT MUNICIPALITY 41 BROAD STREET, POLYMER P.O. BOX 1000, POLYMER TEL : 013 294 1000 FAX : 013 291 4297 WWW.CAPRICORN.CO.ZA	CONSULTANT	 SUPERIOR QUALITY ENGINEERING 10 BROAD STREET, JHB TEL : 011 551 1166 FAX : 011 551 1166 E-MAIL : info@superior-engine.co.za	DRAWING TITLE VALVE CHAMBER -TYPICAL DETAIL OF SQUARE AIR VENTILATOR		DRAWING NUMBER STRWSTD-31	SHEET No SHEET 1
PROJECT NUMBER										SCALE		
CONTRACT No										AS SHOWN		
STOCKS REGIONAL WATER SCHEME												

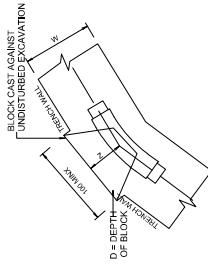
[illegible]



THRUST BLOCK FOR 45° BEND

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK (mm)	MAXIMUM TESTING PRESSURE			
		900 kPa	1350 kPa	1800 kPa	
		X (mm)	A (mm)	X (mm)	A (mm)
300	1200	450	0.49	650	0.74
350	1000	350	0.34	550	0.51
400	800	300	0.22	450	0.33
450	600	250	0.13	350	0.21
500	400	150	0.08	250	0.09
550	300	100	0.03	150	0.05
600	200	100	0.02	100	0.02

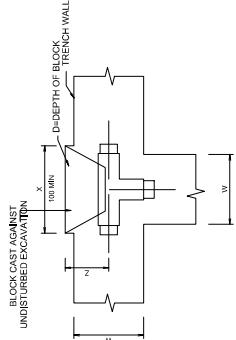
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X-DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X-DIMENSION SHALL BE 25mm MINIMUM
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR 22.5° AND 11.25° BEND (X AND A TO BE HALVED FOR 11.25° BENDS)

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK (mm)	MAXIMUM TESTING PRESSURE			
		900 kPa	1350 kPa	1800 kPa	
		X (mm)	A (mm)	X (mm)	A (mm)
300	1200	250	0.25	350	0.36
350	1000	200	0.18	300	0.26
400	800	150	0.11	250	0.17
450	600	100	0.06	200	0.10
500	400	100	0.04	100	0.06
550	300	100	0.03	100	0.03
600	200	100	0.02	100	0.02

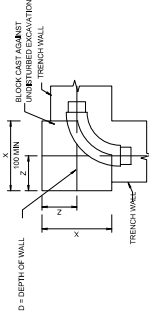
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X-DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR TEE AND END CAP

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK (mm)	MAXIMUM TESTING PRESSURE			
		900 kPa	1350 kPa	1800 kPa	
		X (mm)	A (mm)	X (mm)	A (mm)
300	1200	550	0.64	800	0.96
350	1000	450	0.44	700	0.67
400	800	350	0.29	500	0.43
450	600	300	0.16	400	0.24
500	400	200	0.07	300	0.11
550	300	150	0.04	200	0.06
600	200	100	0.02	150	0.03

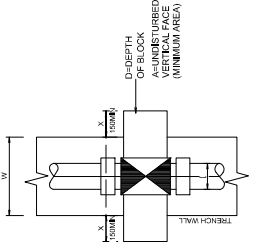
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X-DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X-DIMENSION SHALL BE 25mm MINIMUM
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR 90° BEND

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK (mm)	MAXIMUM TESTING PRESSURE			
		900 kPa	1350 kPa	1800 kPa	
		X (mm)	A (mm)	X (mm)	A (mm)
300	1200	750	0.90	1150	1.35
350	1000	650	0.63	950	1.05
400	800	500	0.40	750	0.60
450	600	400	0.23	600	0.34
500	400	250	0.10	400	0.15
550	300	200	0.06	300	0.09
600	200	150	0.03	200	0.04

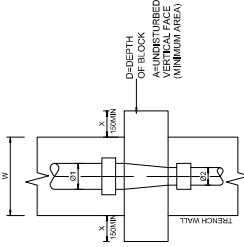
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X-DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. Z SHALL BE THE MINIMUM OF X/2 OR W/2
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR FROM CONCRETE



THRUST BLOCK FOR GATE VALVE

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK (mm)	MAXIMUM TESTING PRESSURE			
		900 kPa	1350 kPa	1800 kPa	
		X (mm)	A (mm)	X (mm)	A (mm)
300	500	500	0.64	850	0.96
350	450	350	0.45	600	0.67
400	400	250	0.29	400	0.43
450	350	150	0.16	200	0.24
500	300	150	0.07	150	0.11
550	250	150	0.04	150	0.06
600	200	150	0.02	150	0.03

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 25mm MINIMUM
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR OF CONCRETE

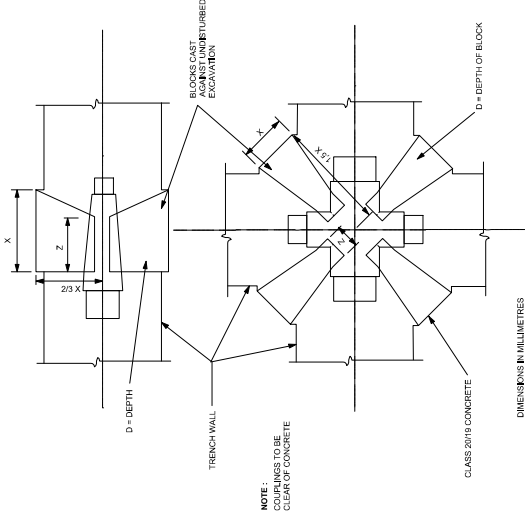


THRUST BLOCK FOR REDUCER

NOMINAL DIAMETER Ø (mm)	DEPTH OF BLOCK (mm)	MAXIMUM TESTING PRESSURE			
		900 kPa	1350 kPa	1800 kPa	
		X (mm)	A (mm)	X (mm)	A (mm)
300	250/200	700	0.35	400	0.53
350	200/150	680	0.29	350	0.43
400	150/100	600	0.20	300	0.32
450	100/75	500	0.12	200	0.18
500	75/50	400	0.06	150	0.08
550	50	300	0.03	100	0.04
600	50	300	0.03	100	0.04

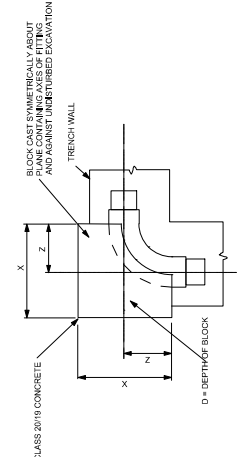
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE
2. X-DIMENSION MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES
3. X-DIMENSION SHALL BE 25mm MINIMUM
4. HALF OF THE DEPTH OF THE BLOCK SHALL BE BELOW THE PIPE AXIS
5. KEEP COUPLINGS AND FLANGES 25mm CLEAR OF CONCRETE

GENERAL NOTES
1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.



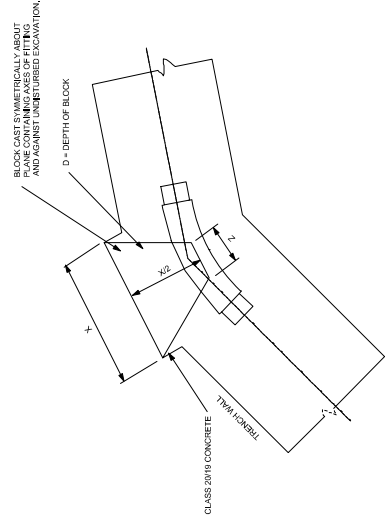
DIMENSIONS IN MILLIMETRES									
PIPE DIAMETER	X	D	Z	COUPLER					
300	600	700	250	500	500	400	400	TO S&T	TO S&T
350	650	750	250	500	500	400	400	TO S&T	TO S&T

THRUST BLOCKS IN PRESSURE PIPELINES FOR REDUCERS AND CROSSES



DIMENSIONS IN MILLIMETRES			
PIPE DIAMETER	X	D	Z
300	600	1200	400
350	650	1300	400

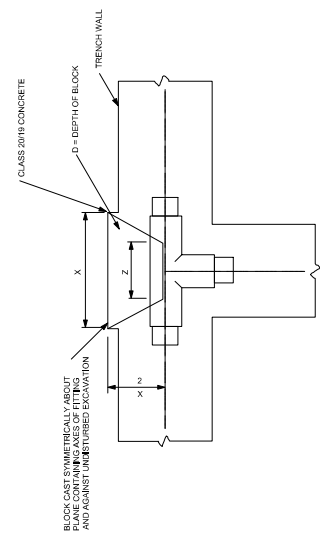
THRUST BLOCK IN PRESSURE PIPELINE



NOTE:
COUPLINGS AND FLANGES SHALL BE LEFT CLEAR OF CONCRETE.

PIPE DIAMETER	X	D	Z
300	225	1125	225
350	250	1250	250

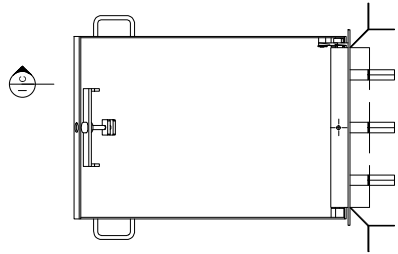
THRUST BLOCKS IN PRESSURE PIPELINES FOR



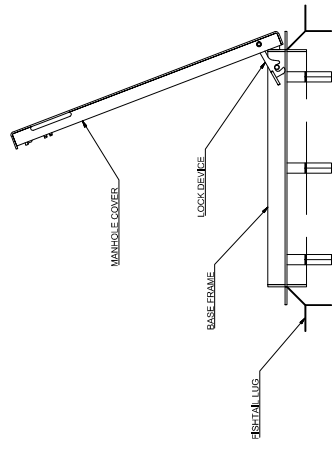
THRUST BLOCK IN PRESSURE PIPELINE FOR TEE

DIMENSIONS IN MILLIMETRES			
PIPE DIAMETER	X	D	Z
300	400	1200	600
350	450	1300	600

ITEM	QTY	PARTS LIST DESCRIPTION
1	1	BASE FRAME
2	1	COVER FOR MANHOLE
3	1	LOCK
4	1	LOCK PIN
5	1	LOCK PIN
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1:3



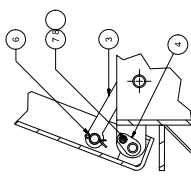
MANHOLE COVER

LOCK MECHANISM

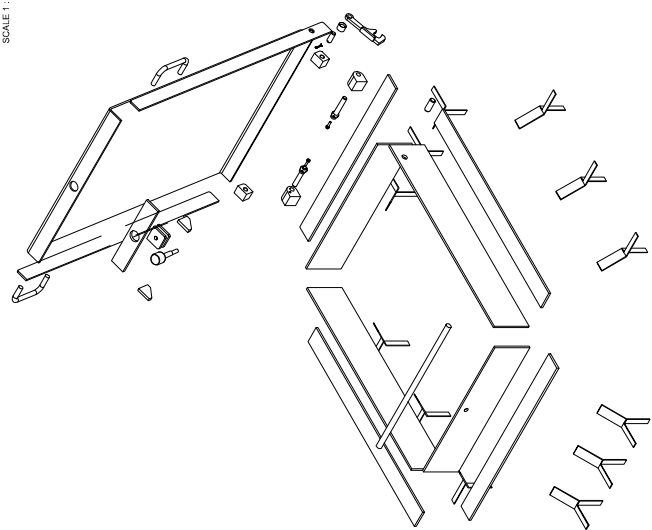
BASE FRAME

VERTICAL LUG

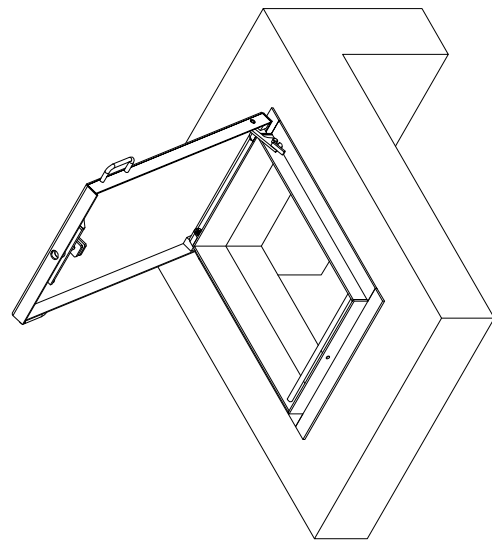
SECTION C-C
SCALE 1:10



DETAIL A
SCALE 1:4



ISOMETRIC VIEW
SCALE 1:10

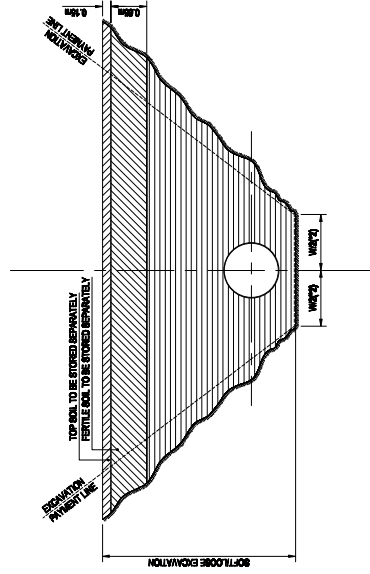


ISOMETRIC VIEW
SCALE 1:10

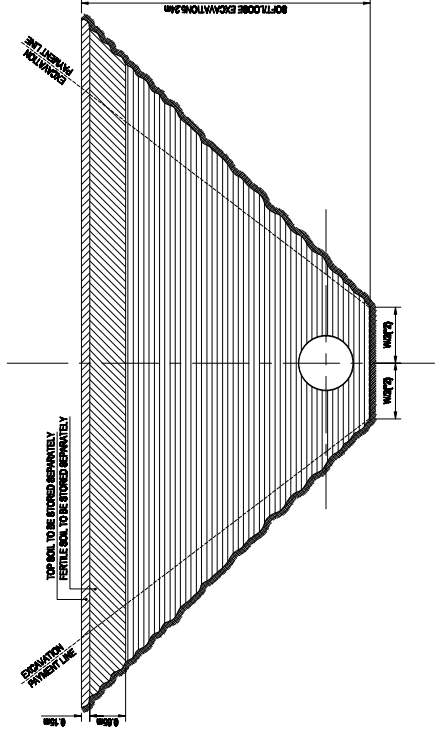
GENERAL NOTES
1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE
SPECIFICATIONS OF THE PROJECT CONTRACT DOCUMENTATION.
PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

NOTE:
UNLESS OTHERWISE STATED:
1) MATERIAL SHALL BE 304 L UNLESS OTHERWISE STATED
2) MATERIAL SHALL BE 304 L UNLESS OTHERWISE STATED
3) REMOVE ALL SHARP EDGES & BURRS

NOTES: 1. Do not scale off this drawing	LEGEND:	DESIGNED BY	SOFT 8	CLIENT	CAPRICORN 41 BEAUCHAMPEL STREET, PORTLAND TASMANIA 7300 TEL: +61 8 9384 1000 FAX: +61 8 9384 1001 E-MAIL: info@capricorn.com.au	CONSULTANT SUPERIOR ENGINEERING 80 HANCOCK STREET PORTLAND TASMANIA 7300 TEL: +61 8 9384 1000 FAX: +61 8 9384 1001 E-MAIL: info@superior.com.au	DRAWING NUMBER	STRWSSTD-41	SHEET No	1/3
		CHECKED BY	MM	PROJECT NUMBER			SCALE	SHEET	1/3	
		DRAWN BY	MPM	CONTRACT No			AS SHOWN			
STOCKS REGIONAL WATER SCHEME										
REVISION										



SEE NOTE 12



SEE NOTE 1A

NOTES:

1. ALL DIMENSIONS IN THIS SPECIFICATION SHALL BE UNLESS OTHERWISE SPECIFIED.
- 1.1. ALL LEVELS IN THIS SPECIFICATION SHALL BE UNLESS OTHERWISE SPECIFIED.
2. THE TRENCH WIDTH FOR THE PIPELINE IS DEFINED IN THE PROJECT SPECIFICATION.
3. REFER TO LONG SECTION DRAWINGS FOR DEPTH OF COVER OVER THE PIPE.
4. THE TOP 16mm OF SOFT EXCAVATION IS REMOVED AS TOPSOIL AND SHALL BE EXCAVATED AND STORED SEPARATELY AND REINSTATED IN THE SAME POSITION UPON BACKFILLING OF THE TRENCH.
5. SOFT EXCAVATION BETWEEN 16mm and 63mm DEPTH IS REGRASSED AS FERTILE TOPSOIL AND REINSTATED IN THE SAME POSITION UPON BACKFILLING OF THE PIPE TRENCH.
6. EXCAVATION DEEPER THAN 63mm IS REGRASSED AS FERTILE TOPSOIL AND REINSTATED IN THE SAME POSITION UPON BACKFILLING OF THE PIPE TRENCH.
7. REFER TO PROJECT SPECIFICATIONS FOR THE CLASSIFICATION OF SOFT AND HARD EXCAVATION.
8. TOPSOIL TO BE REPLIED MAY BE STORED ALONG THE TRENCH INSIDE THE EXCAVATION OR MAY BE STORED SEPARATELY IN A SUITABLE LOCATION TO PROTECT SPECIAL REINFORCEMENT FINISHES.
9. HARD EXCAVATION SHALL BE REMOVED FROM SITE TO DESIGNATED SPILL SPITS OR TO ANOTHER SUITABLE LOCATION AND WILL NOT BE STORED WITHIN THE CONSTRUCTION SITE/ZONE.
10. FOR PAYMENT PURPOSES, THE QUANTITY OF EXCAVATION SHALL BE CALCULATED TO THE SLOPE AS SHOWN IN THE PROJECT SPECIFICATIONS. THE LENGTHS ARE BASED ON THE EXISTED BENT EXCAVATION SLOPE, DETERMINED IN TERMS OF KNOWN GEOTECHNICAL CONDITIONS AND PARAMETERS AT THE TIME OF TENDER.
11. THE TRENCH EXCAVATION SHALL BE EXCAVATED TO THE SAME EXCAVATION SLOPE AS DETERMINED ON AND BASED ON AN ASSESSMENT OF THE KNOWN EXISTING CONDITIONS AND GEOTECHNICAL PARAMETERS.
12. FOR PAYMENT PURPOSES, ANY ADDITIONAL EXCAVATION (WHETHER POSITIVE OR NEGATIVE) BETWEEN THE SLOPES OF 6 AND 9 WILL NOT BE CONSIDERED.
13. WITH REFERENCE TO THE MECHANICAL EXCAVATION OF A TRENCH, A SHALLOW TRENCH IS DEFINED TO BE A TRENCH WITH A MAXIMUM DEPTH OF 3.0m.
14. A DEEP TRENCH IS A TRENCH THAT IS DEEPER THAN A SHALLOW TRENCH.
15. SPECIAL EXCAVATION IS EXCAVATION IN A TRENCH, THAT CAN BE EXCAVATED WITH CONVENTIONAL MEANS, BUT THAT THE CONSTRUCTION OF THE TRENCH REQUIRES COLLAPSE OR ANY OTHER FORM OF GEOTECHNICAL INSTABILITY.
16. THE THICKNESS OF THE TOP SOIL AND FERTILE SOIL ARE USUALLY 1/8" NOTED ON THE TRENCH DRAWING. ALL UNITS ABOVE THE PIPE ARE NOTED ON THE TRENCH DRAWING. ALL UNITS ABOVE THE PIPE ARE

LEGEND:

 (2) NOTE REFERENCE
 ----- EXCAVATION PAYMENT LINE
 ----- SAFE SLOPE EXCAVATION LINE

NOTES:
1. Do not scale off this drawing
REVISION

DESIGNED BY	SOET 8
CHECKED BY	MM
DRAWN BY	MPM
APPROVED BY	RC-Pr.Eng

CAPRICORN



DISTRICT MUNICIPALITY

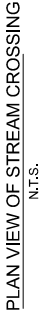
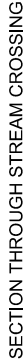
41 BROAD STREET, POLOKWANE
PO Box 4100, Polokwane, 0700
TEL : 015 294 1000
FAX : 015 291 4297

CONSULTANT:

 **SUPERIOR**
QUALITY ENGINEERING

60 MACAZON STREET
POLOKWANE
TEL: 015-291 1366
FAX: 088-586 4110
E-MAIL: info@superiorqualityeng.co.za

DRAWING TITLE	TYPICAL OPEN TRENCH EXCAVATOR DETAIL
PROJECT TITLE	STOCKS REGIONAL WATER SCHEME

GENERAL NOTES

- 1) ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.

7. STEEL PIPES TOGETHER WITH COUPLINGS, WHICH ARE IN CONTACT WITH SOIL, SHALL BE WRAPPED WITH DENSOPOL 80 HT OR AN APPROVED EQUIVALENT.

8. ALL PIPE MATERIAL, TYPE AND SIZE TO BE CONFIRMED WITH THE ENGINEER PRIOR TO THE ORDERING OF ANY MATERIAL.

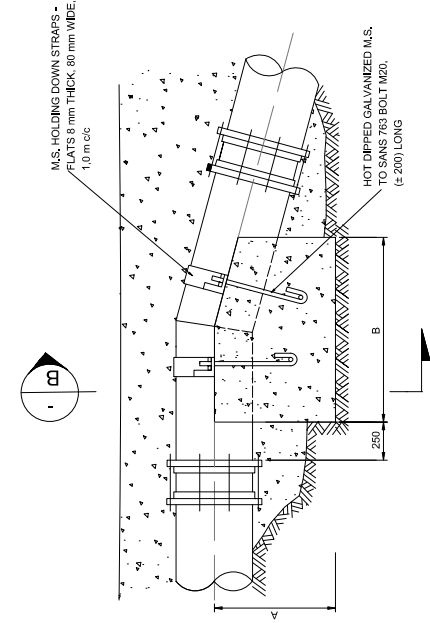
9. CORROSION PROTECTION SYSTEM OF STEEL FITTINGS IN SOIL-VOID FILLING PUTTY WITH CORROSION PROTECTION TAPE AND PVC OUTER WRAP DEMO (PROFILING MASTIC, PETROLATUM TAPE AND CIBACORAD, STORON 14,000, PUTTY, WADDING, DOWS, CELL AND OUTERMED, BULGOL, CEM, ADL, ADPOCUT)

TYPICAL STREAM CROSSING

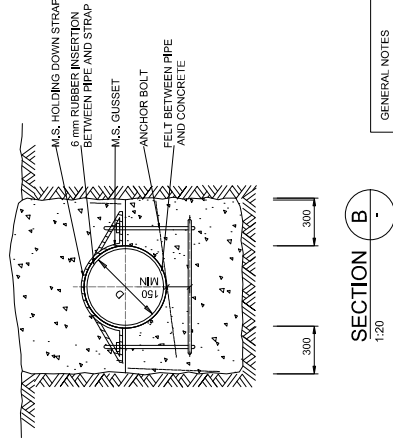
DRAWING NUMBER	SHEET No.
STRWS/STD-34	SHEET 1

REVISION

1. CORROSION PROTECTION OF M.S. ITEMS IN ANCHOR BLOCKS
 - 1.1. AT FACTORY AFTER MANUFACTURING:
 - 1.1.1. SHOT BLAST
 - 1.1.2. PAINT WITH 3 COATS OF BITUMEN PRIMER
 - 1.2. ON SITE AFTER INSTALLATION, COAT WITH HOT APPLIED BITUMEN TO A THICKNESS NOT LESS THEN 3 mm AT ANY POINT.



VIEW
VERTICAL UPTHRUST ANCHOR BLOCK
SCALE 1:20



GENERAL NOTES

	DESIGNED BY	SCZET B	CLIENT	CAPRICORN  SELECTED QUALITY 41 BORDO STREET, POLYCOMME 11000 POLYCOMME, FRANCE, 9302 TEL.: 015 234 1000 FAX.: 015 231 4327	DONGLE MPPI	 SUPERIOR SUDANCAULIET ENGINEERING 11000 POLYCOMME, 11000 TEL.: 096 654 4110 FAX.: 096 654 4110 info@superior.co.th	DRAWING TITLE	VERTICAL THRUST BLOCK DETAILS
	CHECKED BY	MM						
	DRAWN BY	MPM						
	APPROVED BY	RC-P-Eng						
PROJECT TITLE								STOCKS REGIONAL WATER SCHEME

DRAWING NUMBER	SHEET No.	
STRWS/STD-35	SHEET 1	
PROJECT NUMBER	SCALE	
CONTRACT No.	AS SHOWN	