

GENERAL NOTES

1. SPECIFIC CATALOGUE DIMENSIONS WITH REGARD TO PUMPING EQUIPMENT, VALVES, ETC. WERE USED IN THE DESIGN LAYOUTS. SHOULD DIMENSIONS OF APPROVED EQUIPMENT NOT COINCIDE WITH THOSE OF THE DESIGN, IT SHALL BE THE **CONTRACTOR'S SOLE RESPONSIBILITY** TO REVISE SUCH DIMENSIONS ACCORDINGLY, TO THE APPROVAL OF THE ENGINEER.

2. **ITEM:**
EACH ITEM IS TO BE CLEARLY MARKED ACCORDING TO THE NUMBERS GIVEN IN THE LIST

3. ALL FLANGES ARE TO BE IN ACCORDANCE WITH SABS 1123, UNLESS STATED DIFFERENTLY.

CLASS	WORKING PRESSURE	TABLE SABS 1123
6	600 kPa	600/3
10	1 000 kPa	1 000/3
16	1 600 kPa	1 600/3
25	2 500 kPa	2 500/3
40	4 000 kPa	4 000/3

* FLAT FACED FLANGES TO BE USED
TESTING PRESSURE - 1.5 x WORKING PRESSURE, FOR ALL FLANGES, COUPLING AS WELL AS PUDDLE FLANGES.

IT IS ESSENTIAL THAT PUDDLE FLANGES ARE NOT DRILLED.
WHERE PUDDLES ARE NON STANDARD SUCH PUDDLE FLANGES NEED NOT BE CIRCULAR, BUT SHALL MEET THE SPECIFIED PRESSURE RATING AND SHALL PROJECT AT LEAST 100mm FROM OUTER WALL OF THE PIPE.

GASKETS FOR PRESSURE RATINGS UP TO AND INCLUDING 2 500 kPa, SHALL BE CUT FROM MATERIAL MANUFACTURED TO THE SPECIFICATION BEP J59, OR EQUIVALENT. GASKETS FOR PRESSURE RATINGS ABOVE 2 500 kPa, UP TO AND INCLUDING 4 000 kPa, SHALL BE CUT FROM MATERIAL MANUFACTURED TO THE SPECIFICATION B.S. 2815 B, OR EQUIVALENT.
GASKETS FOR PRESSURE RATINGS UP TO AND INCLUDING 1 600 kPa SHALL BE 3 mm THICK CAF FULL FACE GASKETS.
GASKETS FOR PRESSURE RATINGS ABOVE 1 600 kPa SHALL BE 3 mm THICK CAF RING GASKETS.

4. PROTECTION CODES:

EP: ALL SURFACES SHALL BE BLAST CLEANED TO SA 2½ AND TO BE COATED WITH 3 LAYERS OF EPOXY RESIN TO GIVE A MIN. DRY FILM THICKNESS OF 250µm. REFER TECHNICAL SPECIFICATION: PUMPS, PIPEWORK AND ANCILLARY EQUIPMENT CLAUSE 1.2.3, 1.2.4 AND 1.2.5
FP: FACTORY PROTECTION

CM: ALL PIPE SPECIALS TO BE SANDBLASTED TO Sa 2½, CLEANED AND TO BE COATED WITH SINTAKOTE EXTERNAL, 10mm THICK CEMENT MORTAR LINED INTERNAL
GM: HOT DIPPED GALVANISED MILD STEEL IN ACCORDANCE WITH THE SPECIFICATION.

5. **MATERIAL:** GRADE 300 WA STEEL AS PRESCRIBED IN SABS 1431 WITH A MINIMUM WALL THICKNESS AS SPECIFIED.
ALL PIPE ITEMS TO BE 4.5mm MINIMUM WALL THICKNESS UNLESS INDICATED DIFFERENTLY. ALSO REFER TECHNICAL SPECIFICATION: PUMPS, PIPEWORK AND ANCILLARY EQUIPMENT CLAUSE 2.3.4 FOR MINIMUM WALL THICKNESS.

6. **VALVES:**
ALL VALVES TO BE FLANGED AND RATED PN10 MINIMUM.
ALL GEARBOX POSITIONS TO BE AS FOR RIGHT HAND VALVE, RIGHT HAND PROJECTION, UNLESS STATED DIFFERENTLY ON DRAWINGS OR ITEM LIST.
RESILIENT SEAL GATE: IN ACCORDANCE TO SABS 964, RIGHT HAND LOCKING. ALL VALVES ARE TO BE EQUIPPED WITH HAND WHEELS, UNLESS OTHERWISE STATED. VALVES TO BE SUPPLIED WITH THE NECESSARY PRESSURE REDUCERS AND / OR GEARS TO ENABLE FUNCTIONING AT THE SPECIFIED UNBALANCED PRESSURE.

7. ABBREVIATIONS:

AC - ASBESTOS CEMENT
CI - CAST IRON
FA - FLANGE ADAPTOR
FC - FLEXIBLE COUPLING
GS - GALVANISED STEEL
MS - MILD STEEL
SS - STAINLESS STEEL

8. BOLTS

BOLT LENGTHS SHALL MAKE ALLOWANCE FOR TWO x 3mm THICK WASHERS AND A 3mm THICK GASKET SHALL BE PROVIDED FOR EACH PIPE ITEM AS LISTED. BOLTS THAT PROTRUDE BEYOND THE NUT BY A MINIMUM OF TWO THREADS, WHEN THE ASSEMBLIES ARE FULLY TIGHTENED, SHALL BE USED.

A WASHER SHALL BE FITTED UNDER ALL BOLT/SCREW HEADS AND NUTS.

ALL BOLTS, NUTS AND WASHERS ON PIPE WORK TO BE HOT DIP GALVANISED MS

EXCEPTIONS SHALL BE
FOR SS TO SS FLANGE CONNECTIONS, OR NON-INSULATED SS TO MS FLANGE CONNECTIONS

CONNECTING MATERIAL FOR SUCH TO BE POWDER COATED 304 SS BOLTS, NUTS AND WASHERS.

9. PROVIDE APPROPRIATE BOLT UNITS (CONSISTING OF A STANDARD LENGTH BOLT, NUT AND TWO WASHERS) AND RING GASKET FOR EACH SET OF FLANGES AND FOR FLANGE ADAPTOR TO FLANGE INSTALLATIONS.

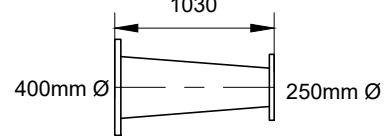
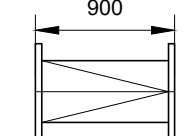
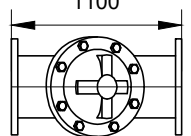
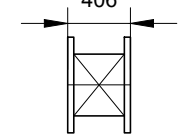
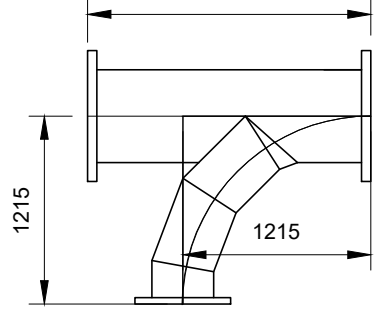
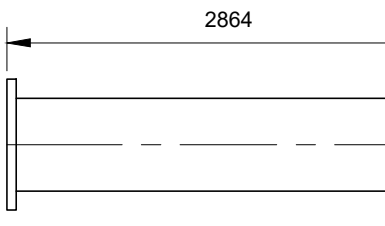
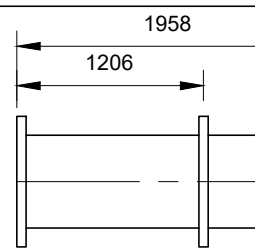
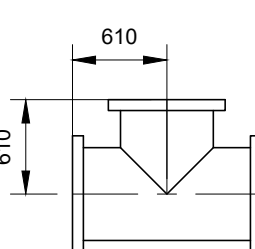
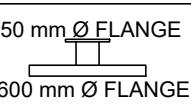
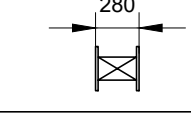
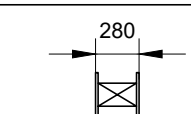
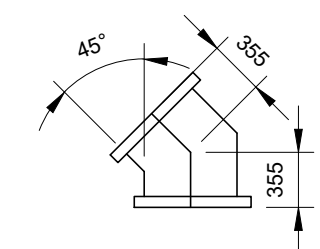
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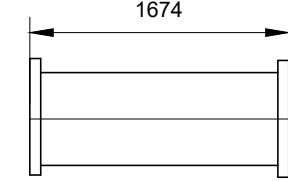
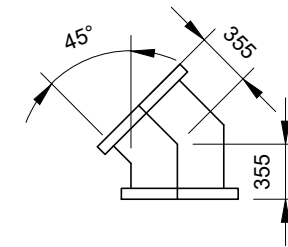
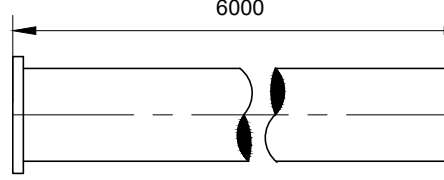
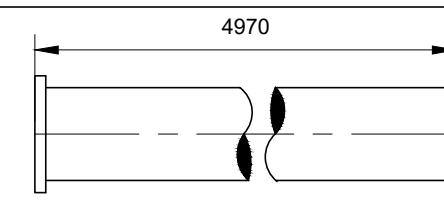
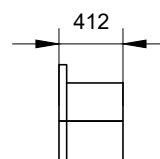
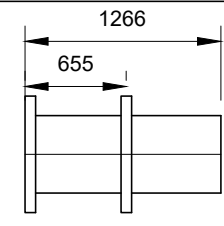
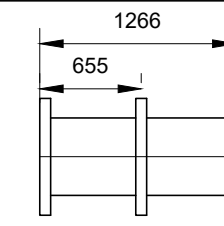
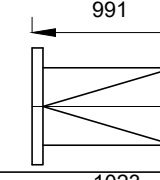
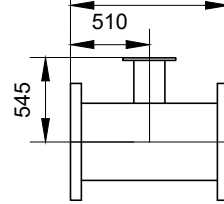
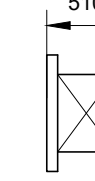
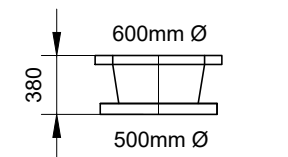
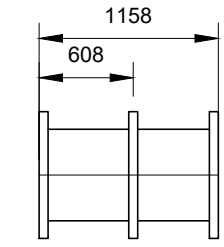
SUPPORTS OR ANCHOR SUPPORTS ARE REQUIRED FOR CERTAIN PIPE ITEMS.
TENDERER TO SUBMIT DETAILS OF PROPOSED SUPPORTS AND ANCHORS AS PART OF WORKSHOP DRAWINGS REQUIRED FOR EACH PIPE ITEM, IF NOT DETAILED. NO SITE WELDING SHALL BE PERMITTED ON SUPPORTS OR ANCHORS, WHICH COULD DAMAGE FACTORY APPLIED CORROSION PROTECTION. ALL ANCHOR BOLTS TO BE 16 mm Ø MINIMUM of 316 STAINLESS STEEL.

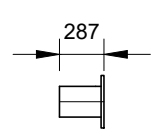
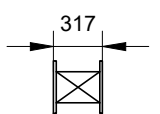


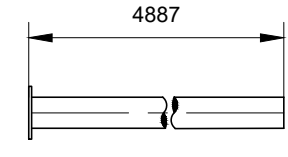
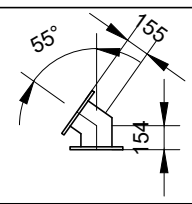
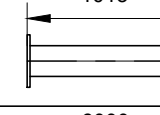
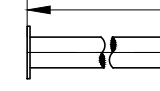
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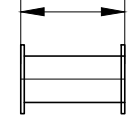
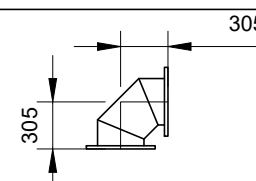
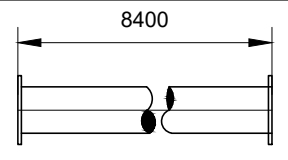
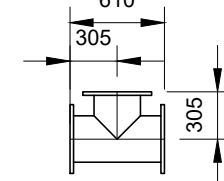
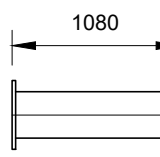
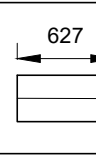
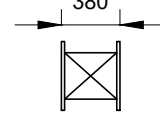
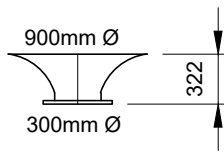
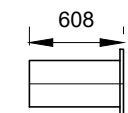
LAYOUTS DETAILED INCLUDE FOR A 3mm THICK GASKET.

12. PIPE ITEM DIMENSIONS ON DRAWINGS NEED TO BE VERIFIED BY THE CONTRACTOR ON SITE PRIOR TO THE MANUFACTURE OF ANY ITEMS.

PIPE LIST						DRG NO. N3110W6301
POSITION : DELIVERY PIPE WORK						3.3
AMEND						
ITEM	AMOUNT	CLASS	PROTECTION	DESCRIPTION	DIMENSIONS	
3.3.1	3	25	EP	400mm Ø TO 250mm Ø FLANGED MS CONCENTRIC REDUCER.		
3.3.2	3	25	FP	400mm Ø FLANGED CHECK VALVE.		
3.3.3	3	25	FP	400mm Ø PUMP CONTROL VALVE.		
3.3.4	3	25	FP	400mm Ø RSV VALVE.		
3.3.5	3	25	EP	600mm Ø x 400mm Ø FLANGED MS SWEEP TEE- PIECE.		
3.3.6	2	25	EP	600mm Ø FLANGED MS PIPE.		
3.3.7	1	25	EP	600mm Ø FLANGED MS PIPE WITH POSITION OF PUDDLE FLANGE AS INDICATED.		
3.3.8	1	25	EP	600Ø x 600Ø FLANGED MS TEE-PIECE.		
3.3.9	1	25	EP	600 mm Ø MS BLANK FLANGE WITH 150 mm Ø FLANGED TEE-STUB		
3.3.10	1	25	FP	150 mm Ø FLANGED GATE VALVE		
3.3.11	1	25	FP	150 mm Ø DOUBLE ACTING SS AIR VALVE	STANDARD	
3.3.10	1	25	FP	150 mm Ø FLANGED GATE VALVE		
3.3.11	1	25	FP	150 mm Ø DOUBLE ACTING SS AIR VALVE	STANDARD	
3.3.12	1	25	EP	600mm Ø FLANGED MS 45° BEND.		

PIPE LIST						DRG NO. N3110W6301
POSITION : DELIVERY PIPE WORK						3.3
AMEND						
ITEM	AMOUNT	CLASS	PROTECTION	DESCRIPTION	DIMENSIONS	
3.3.13	1	25	EP	600mm Ø FLANGED MS PIPE.		
3.3.14	1	25	EP	600mm Ø FLANGED MS 45° BEND.		
3.3.15	1	25	EP	600mm Ø FLANGED MS PIPE.		
3.3.16	1	25	EP	600mm Ø FLANGED MS PIPE.		
3.3.17	1	25	EP	500mm Ø MS PIPE PIECE, FLANGED ONE END & OTHER END SUITABLE FOR FLEXIBLE COUPLING.		
3.3.18	1	25	EP	500mm Ø FLEXIBLE COUPLING.	STANDARD	
3.3.19	1	25	EP	500mm Ø MS PIPE PIECE, FLANGED ONE END & OTHER END SUITABLE FOR FLEXIBLE COUPLING. PUDDLE FLANGE IN POSITION AS INDICATED.		
3.3.20	1	25	EP	500mm Ø MS PIPE PIECE, FLANGED ONE END & OTHER END SUITABLE FOR FLEXIBLE COUPLING. PUDDLE FLANGE IN POSITION AS INDICATED.		
3.3.21	1	25	EP	500mm Ø FLANGE ADAPTOR.BOLTS TO SUIT LENGTH OF RESTRAINING FLANGE.	STANDARD	
3.3.22	1	25	EP	500mm Ø FLANGED NON - RETURN VALVE.		
3.3.23	1	25	EP	500 x 200 mm Ø FLANGED MS TEE-PIECE.		
3.3.24	1	25	FP	500 mm Ø FLANGED GATE VALVE		
3.3.25	2	25	EP	600mm Ø TO 500mm Ø FLANGED MS CONCENTRIC REDUCER.		
3.3.26	1	25	EP	600mm Ø FLANGED MS PIPE PIECE. PUDDLE FLANGE IN POSITION AS INDICATED.		
3.3.27	1	25	FP	600mm Ø FLANGE ADAPTOR.	STANDARD	

PIPE LIST						DRG NO. N3110W6301
POSITION : SURGE PIPE WORK						3.4
AMEND						
ITEM	AMOUNT	CLASS	PROTECTION	DESCRIPTION	DIMENSIONS	
3.4.1	1	40	EP	200mm Ø MS PIPE PIECE, FLANGED ONE END & OTHER END SUITABLE FOR FLANGE ADAPTOR.		
3.4.2	1	40	FP	200mm Ø FLANGE ADAPTOR.	STANDARD	
3.4.3	1	40	FP	200 mm Ø FLANGED RSV VALVE		
3.4.4	1	40	FP	200mm SURGE ANTICIPATING VALVE MODEL 835.		
3.4.5	1	40	EP	200mm Ø MS PIPE PIECE, FLANGED ONE END & OTHER END SUITABLE FOR FLEXIBLE COUPLING. PUDDLE FLANGE IN POSITION AS INDICATED.		
3.4.6	1	40	EP	200mm Ø FLEXIBLE COUPLING	STANDARD	
3.4.7	1	40	EP	200mm Ø MS PIPE PIECE, FLANGED ONE END & OTHER END SUITABLE FOR FLEXIBLE COUPLING.		
3.4.8	1	40	EP	200mm Ø FLANGED MS 45° BEND.		
3.4.9	1	40	EP	200mm Ø FLANGED MS PIPE.		
3.4.10	3	40	EP	200mm Ø FLANGED MS PIPE.		

PIPE LIST						DRG NO. N3110W6301
POSITION : OVERFLOW/SCOUR PIPE WORK						3.5
AMEND						
ITEM	AMOUNT	CLASS	PROTECTION	DESCRIPTION	DIMENSIONS	
3.5.1	1	10	EP	300mm Ø FLANGED MS PIPE.		
3.5.2	3	10	EP	300mm Ø FLANGED MS ELBOW.		
3.5.3	1	10	EP	300mm Ø FLANGED MS PIPE.		
3.5.4	1	10	EP	300Ø x 300Ø FLANGED MS TEE-PIECE.		
3.5.5	1	10	EP	300mm Ø FLANGED MS PIPE.		
3.5.6	1	10	EP	300mm Ø MS PIPE WITH FLANGE ONE END.		
3.5.7	1	10	FP	300mm Ø RSV GATE VALVE.		
3.5.8	1	10	EP	900mm Ø TO 300mm Ø BELL MOUTH WITH FLANGE AS INDICATED.		
3.5.9	1	10	EP	300mm Ø MS PIPE WITH FLANGE ONE END.		

NOTES:

1. ALL PIPE FITTINGS COATED TO BE INSPECTED AND PIPE SPECIALS, WELDING TO BE INSPECTED.

FOR TENDER PURPOSES

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RA	REVISED PROJECT DESCRIPTION	2022/06/09	P.M
Rev.	Description	Date	By
Her.	Beskriving	Datum	Deur

AMENDMENTS/WYSIGING

SERVICE DIENS

MECHANICAL

DESIGNED/ONTWERP	J. LUCKHOFF
DRAWN/GETEKEN	I.NEL
CAD FILE NAME/CAD LÊER NAAM	N3110W6301RA-003RA-M6301RA-003RA.dwg
CHECKED/NAGESIEN	W.J. STRYDOM (jnr)
APPROVED/GOEDGEKEUR	W.J. STRYDOM (jnr)



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CLIENT KLIENT



Nkangala District Municipality

PROJECT PROJ.EK

LOSKOP REGIONAL BULK WATER SUPPLY SCHEME: WORK PACKAGE 2

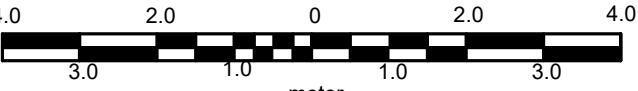
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RAW WATER BOOSTER PUMP STATION : 3 : PIPEWORK 2 OF 2

DATE/DATUM DECEMBER 2021

SCALE/SKAAL AS SHOWN

SCALE REF. SKAAL VERWYS.



meter

CONSULTANT DWG. NO. KONSULTANT TEK. NR.

N/3110/M/6/303/RA

CLIENT DWG. NO. KLIENT TEK. NO.