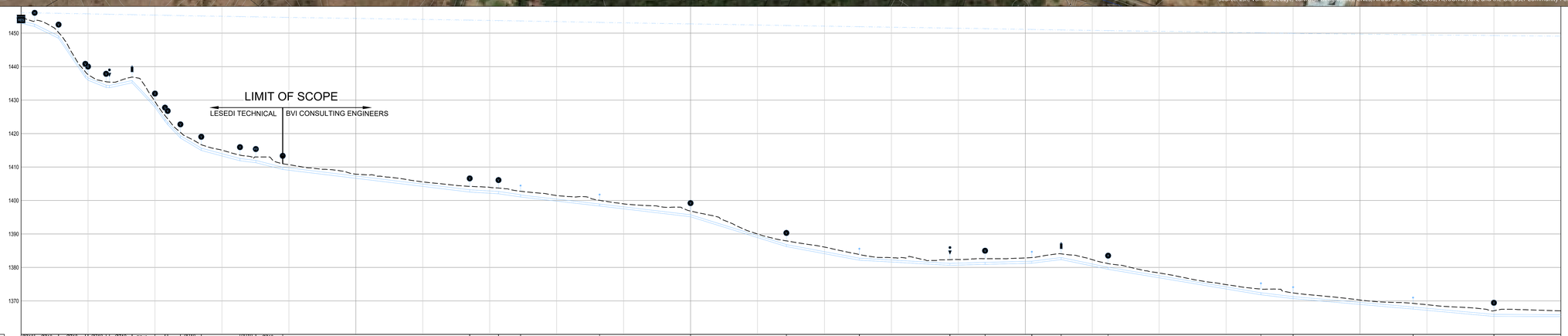

NGL
EGL
HGL

SCALES:
Horizontal 1:2500
Vertical 1:500

DATUM 1360.000

REFERENCE	DISTANCE (m)	GROUND LEVEL	PIPE INVERT LEVEL	DEPTH TO INVERT	SLOPE / LENGTH	CHANGE IN DIRECTION (VERT / HOR / COMBINED)	FITTINGS	HYDRAULICS DESIGN Q(l/s)	HYDRAULICS DESIGN V(m/s)	PRESSURE
NODE-1 Ø710 PN10 PVC-O	0,000	1454,670	1453,070	1,700	4,81% 20,8	0,000 0,000 0,000	22,5°+11,25°	659,57	1,84	3,899
NODE-2 Ø710 PN10 PVC-O	20,255	1453,655	1451,955	1,700	9,83% 1,10,2	2,980 37,486 37,486	11,25°	659,57	1,84	7,293
NODE-3 Ø710 PN10 PVC-O	56,000	1459,180	1457,480	1,700	29,35% 1:3,4	10,741 0,000 10,741	STRAIGHT	659,57	1,84	18,998
NODE-4 Ø710 PN10 PVC-O	96,000	1438,441	1436,741	1,700	8,00% 1:12,5	5,643 0,000 5,643	11,25°	659,57	1,84	19,870
NODE-5 Ø710 PN10 PVC-O	127,000	1435,493	1433,793	1,700	-4,38% -1:22,8	3,981 0,000 3,981	STRAIGHT	659,57	1,84	21,734
NODE-6 Ø710 PN10 PVC-O	157,000	1435,393	1433,693	1,700	21,33% 1:4,7	14,547 0,000 14,547	11,25°	659,57	1,84	20,195
NODE-7 Ø710 PN10 PVC-O	185,788	1436,872	1435,172	1,700	11,11% 1:9,0	9,615 0,000 9,615	STRAIGHT	659,57	1,84	27,375
NODE-8 Ø710 PN10 PVC-O	200,000	1429,575	1427,875	1,700	21,11% 1:4,7	5,129 0,000 5,129	STRAIGHT	659,57	1,84	31,518
NODE-9 Ø710 PN10 PVC-O	215,000	1428,371	1426,671	1,700	11,91% 1:8,4	5,129 0,000 5,129	STRAIGHT	659,57	1,84	34,477
NODE-10 Ø710 PN10 PVC-O	230,000	1423,337	1421,637	1,700	5,35% 1:18,7	3,728 0,000 3,728	STRAIGHT	659,57	1,84	36,411
NODE-11 Ø710 PN10 PVC-O	268,188	1416,662	1414,962	1,700	2,39% 1:41,8	1,695 0,000 1,695	STRAIGHT	659,57	1,84	40,018
NODE-12 Ø710 PN10 PVC-O	300,000	1415,049	1413,312	1,737	5,05% 1:19,8	1,521 15,487 15,530	11,25°	659,57	1,84	42,928
NODE-13 Ø710 PN10 PVC-O	327,000	1413,567	1411,867	1,700	2,95% 1:33,9	1,926 89,030 89,030	90°	659,57	1,84	43,428
NODE-14 Ø710 PN10 PVC-O	350,653	1413,031	1411,301	1,700	0,00%			659,57	1,84	46,301
NODE-15 Ø710 PN10 PVC-O	356,755	1412,974	1411,274	1,700						
NODE-16 Ø710 PN10 PVC-O	360,000	1410,974	1409,274	1,700						
NODE-17 Ø710 PN10 PVC-O	500,000	1407,899	1406,634	1,225	2,42% 1:41,4	0,000 0,000 0,000	STRAIGHT	659,57	1,84	51,225
NODE-18 Ø710 PN10 PVC-O	600,000	1405,572	1404,217	1,355						
NODE-19 Ø710 PN10 PVC-O	670,132	1404,221	1402,521	1,700						
NODE-20 Ø710 PN10 PVC-O	700,000	1403,932	1402,175	1,757	1,16% 1:86,3	0,721 0,000 0,721	STRAIGHT	659,57	1,84	53,580
NODE-21 Ø710 PN10 PVC-O	715,132	1403,723	1402,023	1,700	2,95% 1:33,9	1,024 0,000 1,024	STRAIGHT	659,57	1,84	52,459
NODE-22 Ø710 PN10 PVC-O	746,997	1402,751	1401,051	1,700	2,29% 1:43,7	0,977 0,077 1,054	STRAIGHT	659,57	1,84	54,711
NODE-23 Ø710 PN10 PVC-O	800,000	1401,489	1399,817	1,671						
NODE-24 Ø710 PN10 PVC-O	864,992	1400,050	1398,350	1,700						
NODE-25 Ø630 PN10 PVC-O	900,000	1398,998	1397,503	1,495	2,36% 1:42,4	0,040 0,000 0,040	STRAIGHT	659,57	1,84	57,474
NODE-26 Ø630 PN10 PVC-O	1000,000	1396,844	1395,144	1,700	1,14% 1:87,9	2,211 0,000 2,211	STRAIGHT	499,98	1,78	65,919
NODE-27 Ø630 PN10 PVC-O	1100,000	1395,055	1393,919	1,086	6,23% 1:16,1	1,424 0,000 1,424	STRAIGHT	499,98	1,78	69,630
NODE-28 Ø630 PN10 PVC-O	1143,131	1394,934	1393,234	1,700	3,73% 1:26,8	1,487 0,000 1,487	STRAIGHT	499,98	1,78	70,749
NODE-29 Ø630 PN10 PVC-O	1200,000	1393,098	1392,398	1,700	1,14% 1:87,9	0,974 0,000 0,974	STRAIGHT	486,76	1,73	70,092
NODE-30 Ø630 PN10 PVC-O	1252,120	1392,864	1391,164	1,700	-0,56% -1:177,9	0,044 0,000 0,044	STRAIGHT	486,76	1,73	69,718
NODE-31 Ø630 PN10 PVC-O	1300,000	1392,922	1391,620	1,302	-0,49% -1:205,7	1,152 17,918 17,653	22,5°	486,76	1,73	68,483
NODE-32 Ø630 PN10 PVC-O	1387,468	1392,125	1390,625	1,500	-2,50% -1:40,0	3,922 0,000 3,922	STRAIGHT	474,27	1,68	71,172
NODE-33 Ø630 PN10 PVC-O	1400,000	1392,359	1390,696	1,663	4,14% 1:24,1	0,582 1,956 2,008	STRAIGHT	474,27	1,68	
NODE-34 Ø630 PN10 PVC-O	1439,909	1392,620	1390,920	1,700	3,34% 1:30,0	0,460		474,27	1,68	
NODE-35 Ø630 PN10 PVC-O	1500,000	1392,242	1391,212	1,030						
NODE-36 Ø630 PN10 PVC-O	1506,762	1392,960	1391,260	1,700						
NODE-37 Ø630 PN10 PVC-O	1550,420	1394,055	1392,355	1,700	1,84% 1:54,5	0,545 0,079 0,625	STRAIGHT	474,27	1,68	76,122
NODE-38 Ø630 PN10 PVC-O	1600,000	1392,328	1390,424	1,904						
NODE-39 Ø630 PN10 PVC-O	1623,718	1391,152	1389,452	1,700						
NODE-40 Ø630 PN10 PVC-O	1700,000	1378,345	1376,907	1,438	3,34% 1:30,0	0,550 0,066 0,616	STRAIGHT	456,20	1,62	76,127
NODE-41 Ø630 PN10 PVC-O	1800,000	1374,873	1373,570	1,303						
NODE-42 Ø630 PN10 PVC-O	1851,943	1373,537	1371,837	1,688	2,39% 1:41,9	0,370 0,066 0,375	STRAIGHT	456,20	1,62	
NODE-43 Ø630 PN10 PVC-O	1900,000	1372,891	1370,691	1,700	1,74% 1:57,5			393,40	1,40	
NODE-44 Ø630 PN10 PVC-O	2000,000	1370,279	1368,951	1,328						
NODE-45 Ø630 PN10 PVC-O	2019,204	1369,273	1367,573	1,700	1,82% 1:54,8	0,049 0,000 0,049	STRAIGHT	382,64	1,36	81,873
NODE-46 Ø630 PN10 PVC-O	2100,000	1368,665	1367,070	1,595						
NODE-47 Ø630 PN10 PVC-O	2200,000	1367,070	1365,370	1,700	0,06% 1:1650,2	1,011 0,000 1,011	STRAIGHT	382,64	1,36	83,834
NODE-48 Ø630 PN10 PVC-O	2300,000	1367,005	1365,309	1,727						

LONGSECTION BALANCING RESERVOIR - NORTH
FROM 0,000 TO 2300,000

NOTES / LEGEND

LEGEND

- EXISTING WATER PIPES
- EXISTING SEWER PIPES
- EXISTING FIBRE CABLES
- PROPOSED BULK PIPELINE
- NEW BALANCING RESERVOIR (BY OTHERS)
- HORIZONTAL BEND
- VERTICAL BEND
- HORIZONTAL & VERTICAL BEND
- DEMAND TAKE-OFF
- AIR VALVE
- SCOUR VALVE
- PRESSURE REDUCING VALVE

GENERAL

- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL MATERIALS AND WORKMANSHIP CONFORM WITH THE DETAILS AND SPECIFICATIONS SHOWN ON THIS DRAWING, AND ALL RELEVANT SABS SPECIFICATIONS, IRRESPECTIVE OF WHETHER THE ENGINEER HAS INSPECTED THE WORKS ON SITE OR NOT.
- ALL MATERIAL TYPE, POSITIONS, DIMENSIONS AND LEVELS TO BE CHECKED ON SITE AND CORRELATED WITH THE ENGINEER'S DRAWINGS BEFORE CONSTRUCTION COMMENCES.
- NO SCALING WITH SCALE RULER FROM THE DRAWING IS PERMITTED. THE CONTRACTOR MUST ENSURE THAT HE GETS THE CORRECT DIMENSIONS FROM THE ENGINEER BEFORE CONSTRUCTION COMMENCES.

ISSUE DATE	DRAWING SIZE	REVISION
04/06/2026	A0	D

	PRELIMINARY
X	INFO ONLY
	FOR TENDER
	FOR CONSTRUCTION
	AS-BUILT

APPROVED BY COUNCIL / CLIENT

CITY ENGINEER / CLIENT | REG. NO. | DATE

AMENDMENTS CODE

A,B,C.../ : BEFORE TENDER
T0 / : TENDER DRAWING
0,1,2.../ : AFTER TENDER
Z / : AS BUILT

/A : BY CLIENT
/B : BY ARCHITECT
/C : BY MECHANICAL OR ELECTRICAL
/D : BY BVI
/E : BY OTHER ( )

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DATE.	INITIAL	NO.	DESCRIPTION OF REVISION

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CONSULTING ENGINEERS CENTRAL
Civil, Structural & Electrical Engineers. Environmental & Project Management
Registration No. 1998/08/07

CLIENT

MANGAUNG
AT THE HEART OF IT ALL

PROJECT

MANGAUNG METRO MUNICIPALITY:
NORTHERN BULK DISTRIBUTION PIPELINE

DRAWING TITLE

BULK WATER PIPE LONGITUDINAL SECTION:
BALANCING RESERVOIR TO NORTH
CH0 - 2300m

APPROVED BY BVI

W SMIT | | 04/06/2026
ENGINEER/TECHNOLOGIST | REG. NO. | DATE

SCALE	1:2500	DRAWN	S ZIBAYA
DESIGNED	S ZIBAYA	CHECKED	W SMIT

PLAN NUMBER	REVISION NO.
35253-141-001	D

N:\Bloemfontein\Projects\35338-39999 DELTEK\35253 Northern Bulk Supply Pipeline\MMM\TECHNICAL\CIVIL\3D\1 Data\Civil 3D Models\Northern Bulk Distribution Pipeline - PDR.dwg