

Basic Site Layout Plan

Lephalale Railway Yard

Legend

- Railyard Phase 1
- Administration Building (North)
- Conservancy tanks
- Decanting Point
- Diesel Storage area
- Feature 1
- Feature 2
- Guard House
- Infra Crew Building
- New Tar Access road
- Railyard Phase 2
- Staff Facilities (north)
- Water Reservoir

Section A - North

Section B - South

North Provisional Facilities, offices, staff facilities, Guard House

Area for South Provisional Facilities, service of diesel locomotives, fuel storage and water reservoir

Google Earth

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2 km

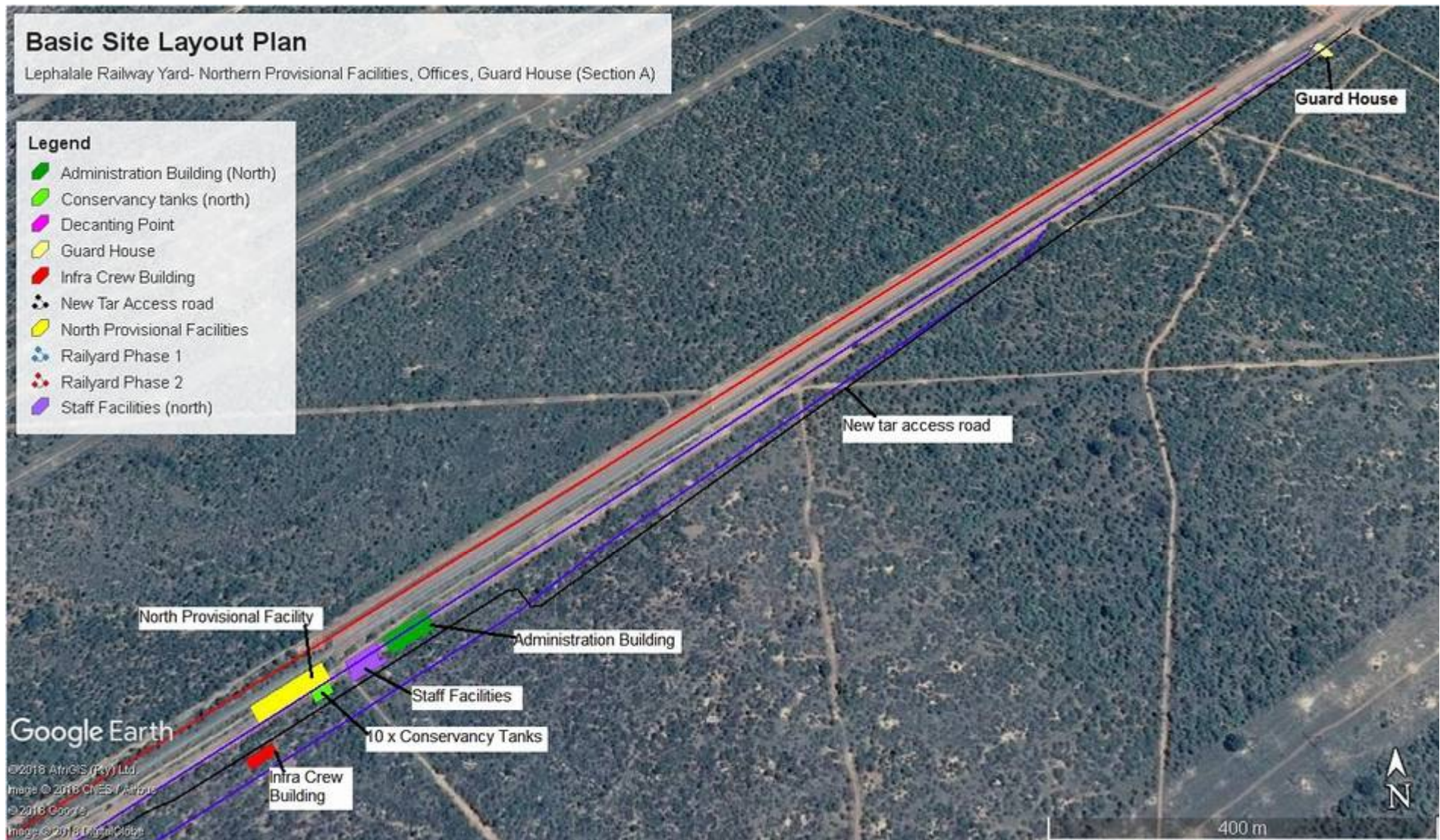


Basic Site Layout Plan

Lephalale Railway Yard- Northern Provisional Facilities, Offices, Guard House (Section A)

Legend

- Administration Building (North)
- Conservancy tanks (north)
- Decanting Point
- Guard House
- Infra Crew Building
- New Tar Access road
- North Provisional Facilities
- Railyard Phase 1
- Railyard Phase 2
- Staff Facilities (north)



Google Earth

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Basic Site Layout Plan

Lephalale Railway Yard-Southern Provisional Area, Decanting point, Diesel Storage and Water Reservoir (Section B)

Legend

- Conservancy tanks
- Decanting Point
- Diesel Storage area
- New Tar Access road
- Railway Yard Phase 1
- Railyard Phase 2
- South Provisional Facility
- Water Reservoir

Diesel Storage

Water Reservoir

Decanting Point

New tar access road

South Provisional Facilities

2 x Conservancy Tanks

Google Earth

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200 m



SEWER PLAN LEGEND

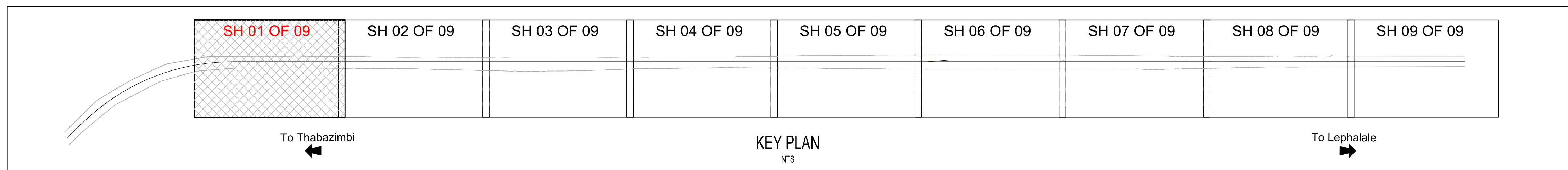
- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CIM
- EXISTING RAIL CENTRE LINE
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING DRAIN/VERT
- EXISTING GRAVEL ROAD
- EXISTING TRANSECT BOUNDARY
- EXISTING TURNOUT
- EXISTING RETAINING WALL
- EXISTING ELECTRICAL SERVICES
- GRADE POST
- BENCH MARK

THESE BENCHMARKS AND VALUES MUST BE USED FOR CONSTRUCTION:

BENCHMARKS - WGS 84 LOC:

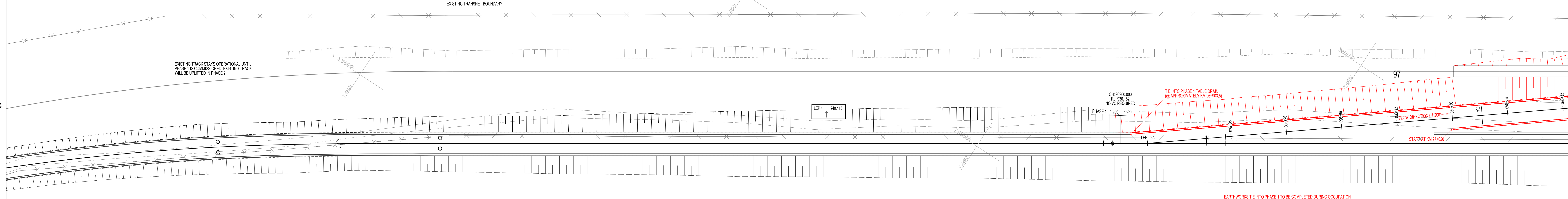
NAME	Y-COORD	X-COORD	ELEVATION	DESCRIPTION
LEP 01	-44 650.074	2 629 670.438	938.740	Y STD IN CONC
LEP 02	-44 133.729	2 630 364.288	934.740	Y STD IN CONC
LEP 03	-44 325.234	2 630 188.245	938.370	Y STD IN CONC
LEP 04	-44 547.787	2 629 918.941	940.415	Y STD IN CONC
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LEP 06	-45 045.983	2 629 689.380	941.463	Y STD IN CONC
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LEP 10	-46 345.985	2 628 751.907	928.407	Y STD IN CONC
LEP 11	-46 599.104	2 628 589.456	927.225	Y STD IN CONC
LEP 12	-46 878.468	2 628 484.421	927.895	Y STD IN CONC
LEP 13	-47 078.217	2 628 271.384	930.418	Y STD IN CONC
LEP 14	-47 383.160	2 628 072.178	932.966	Y STD IN CONC
LEP 15	-47 684.189	2 627 892.789	935.394	Y STD IN CONC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.380



To Thabazimbi

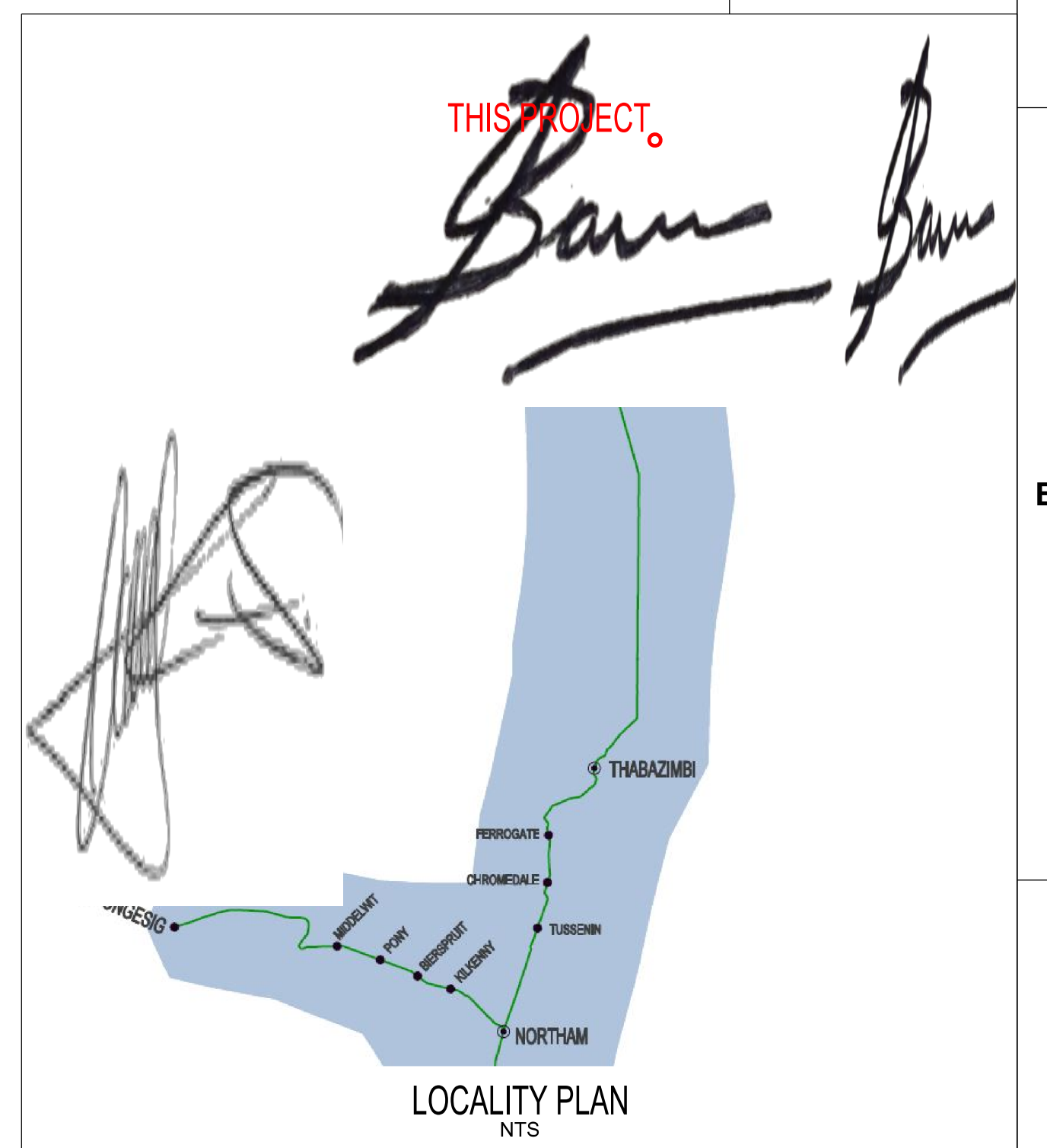
To Lephale



EARTHWORKS TIE INTO PHASE 1 TO BE COMPLETED DURING OCCUPATION

TABLE DRAINS TO BE SET OUT AS PER DIMENSIONS ON THIS LAYOUT
TABLE DRAINS TO BE DEVIATED AROUND HIGH MAST LIGHTS (APPROXIMATELY 30), AS PER WBS 1A1 DETAIL DRAWING.

PLAN LAYOUT
1:500



HORIZONTAL ALIGNMENT - PHASE 2

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP - 2A	R1 112 LH TURNOUT (T)	-44 650.882	+2 629 685.525						

NOTES

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- LOCAL CHANGES GIVEN TO BE USED FOR CONSTRUCTION PURPOSES ONLY
- SURVEY DATUM TO WGS84 AND msl.
- SURVEYOR MUST INSTALL PROFILE PEGS AT 10m INTERVALS ON VERTICAL CURVES AND STAKE TRANSITION CURVES AT 10m INTERVALS AS WELL.
- SURVEYOR MUST STAKE CIRCULAR CURVES SHORTER THAN 25m AT 10m INTERVALS.

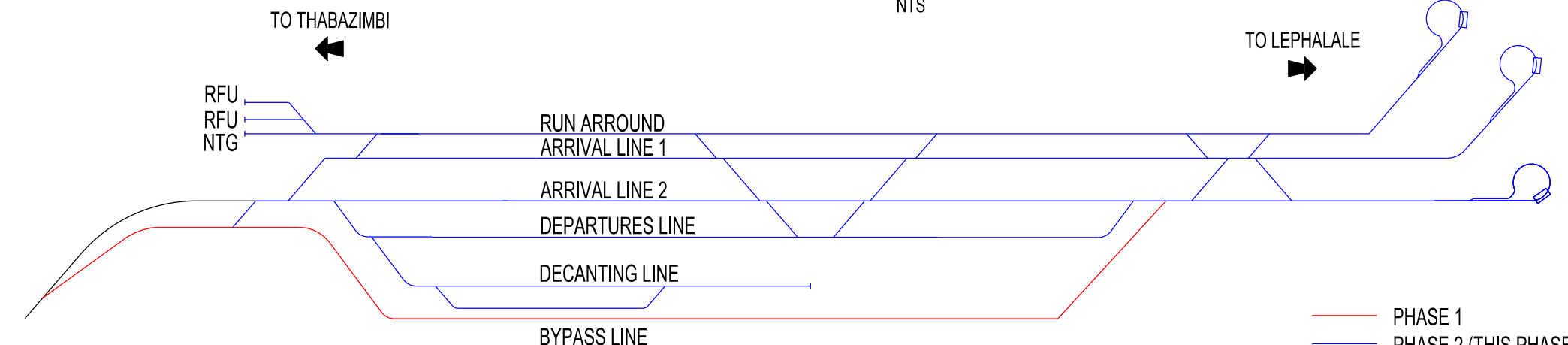
SPECIFICATIONS

- BULK EARTHWORKS & LAYERWORKS TO BE IN ACCORDANCE WITH S410
- ALL CUTTING & EMBANKMENT SLOPES TO BE 1:2
- ALL CUTTING & EMBANKMENT SLOPES TO BE TOPSOILED & HYDRO SEEDING (150mm)
- TABLE DRAINS TO BE SET OUT IN ACCORDANCE WITH THIS LAYOUT

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
3424302-4-1A1-C-LIS-0002-01	PHASE 2 - BULK EARTHWORKS & LAYERWORKS QUANTITIES

DIAGRAMMATIC LAYOUT NTS



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DESIGNED	DJ	[Signature]	29/09/17
CHECKED	JB	[Signature]	29/09/17
DESIGNED	DJ	[Signature]	29/09/17
CHECKED	JB	[Signature]	29/09/17

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH	G. JONKER	[Signature]	27/10/17

Transnet Capital Projects
 TRANSNET
 PYRAMID SOUTH - LEPHALALE
 LEPHALALE NSF YARD
 WATERBERG - STAGE 3
 PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
 KM 96+920 TO KM 97+060

PROJECT NUMBER	DO	FBS	DHS	TYPE	DRAWING NO.	SHEET	REV	ID
AO3	4	2	4	3	0	2	4	1

SEWER PLAN LEGEND

- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CLEARANCE MARKER
- EXISTING RAIL CENTRE LINE
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING DRAIN/VERT
- EXISTING GRAVEL ROAD
- EXISTING TRANSFER BOUNDARY
- EXISTING TURNOUT
- EXISTING RETAINING WALL
- EXISTING ELECTRICAL SERVICES
- GRADE POST
- BENCH MARK

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LEP 02	-44 133.729	2 630 394.236	934.748	Y STD IN CONC
LEP 03	-44 305.234	2 630 138.245	938.370	Y STD IN CONC
LEP 04	-44 547.787	2 629 918.941	940.415	Y STD IN CONC
LEP 05	-44 793.781	2 629 735.538	940.788	Y STD IN CONC
LEP 06	-45 043.983	2 629 619.360	941.463	Y STD IN CONC
LEP 07	-45 298.172	2 629 275.750	938.539	Y STD IN CONC
LEP 08	-45 602.260	2 629 101.238	934.959	Y STD IN CONC
LEP 09	-46 069.074	2 628 625.351	931.645	Y STD IN CONC
LEP 10	-46 345.965	2 628 751.907	928.407	Y STD IN CONC
LEP 11	-46 591.004	2 628 589.496	927.235	Y STD IN CONC
LEP 12	-46 979.492	2 628 484.421	927.795	Y STD IN CONC
LEP 13	-47 078.217	2 628 273.384	930.416	Y STD IN CONC
LEP 14	-47 383.160	2 628 072.178	932.966	Y STD IN CONC
LEP 15	-47 654.189	2 627 892.789	930.394	Y STD IN CONC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.380

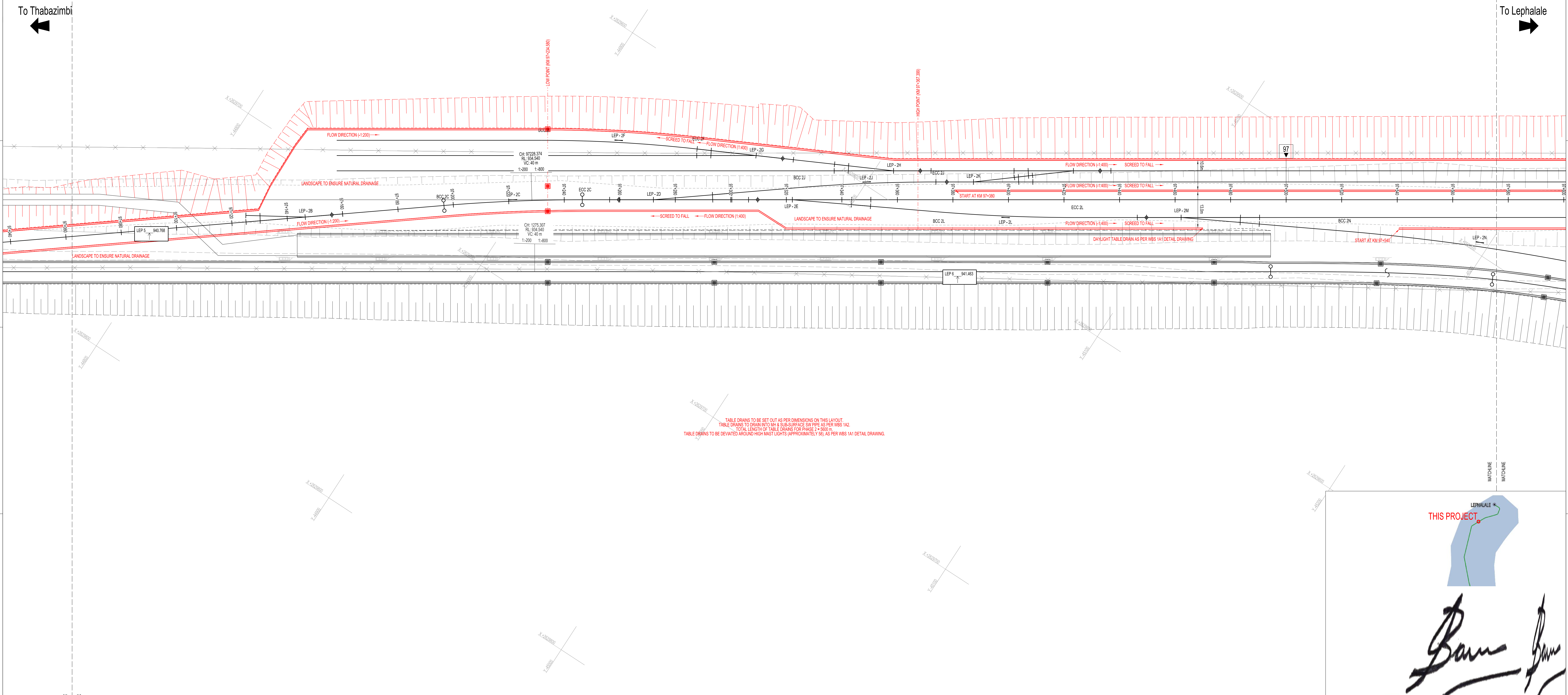
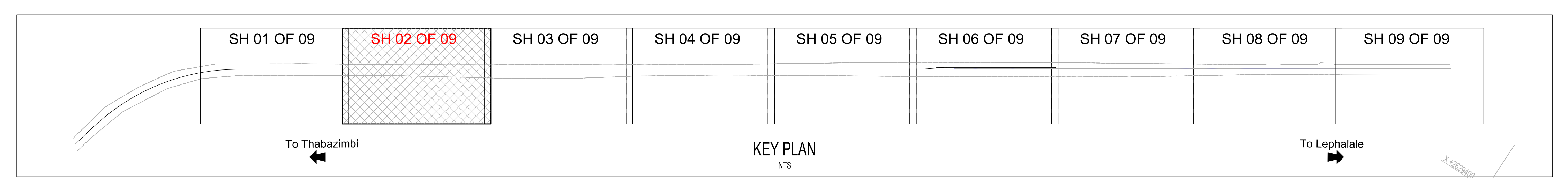


TABLE DRAINS TO BE SET OUT AS PER DIMENSIONS ON THIS LAYOUT.
TABLE DRAINS TO BE DEVIATED AROUND HIGH MAST LIGHTS (APPROXIMATELY 30), AS PER WBS 1A1 (DETAIL DRAWING).

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2B	P1 1.9 RH TURNOUT (T)	-44 837.615	+2 629 720.025	500 m	0 m	0 m	24.958 m	49.884 m	4 45 48.96
LEP-2C	CURVE	-44 896.862	+2 629 672.896						
LEP-2D	P1 1.1 LH TURNOUT (T)	-44 829.193	+2 629 616.224	500 m	0 m	0 m	24.957 m	49.884 m	4 45 48.96
LEP-2E	P1 1.2 RH TURNOUT (T)	-44 961.070	+2 629 618.833	500 m	0 m	0 m	27.893 m	55.328 m	6 20 24.72
LEP-2F	CURVE	-44 917.009	+2 629 615.130						
LEP-2G	P1 1.9 LH TURNOUT (T)	-44 961.455	+2 629 612.696	500 m	0 m	0 m	24.957 m	49.884 m	4 45 48.96

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2H	P1 1.9 RH TURNOUT (T)	-45 005.901	+2 629 590.183	500 m	0 m	0 m	24.957 m	49.884 m	4 45 48.96
LEP-2I	P1 1.9 LH TURNOUT (T)	-45 060.125	+2 629 594.749	500 m	0 m	0 m	24.957 m	49.884 m	4 45 48.96
LEP-2J	CURVE	-45 069.973	+2 629 598.815						
LEP-2K	P1 1.9 LH TURNOUT (T)	-45 032.177	+2 629 577.790	500 m	0 m	0 m	24.957 m	49.884 m	4 45 48.96
LEP-2L	CURVE	-45 048.862	+2 629 582.178						
LEP-2M	P1 1.12 RH TURNOUT (T)	-45 101.782	+2 629 547.597	500 m	0 m	0 m	24.957 m	49.884 m	4 45 48.96

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2N	CURVE	-45 198.756	+2 629 496.245	800 m	0 m	0 m	50.083 m	100.038 m	7 9 32.20

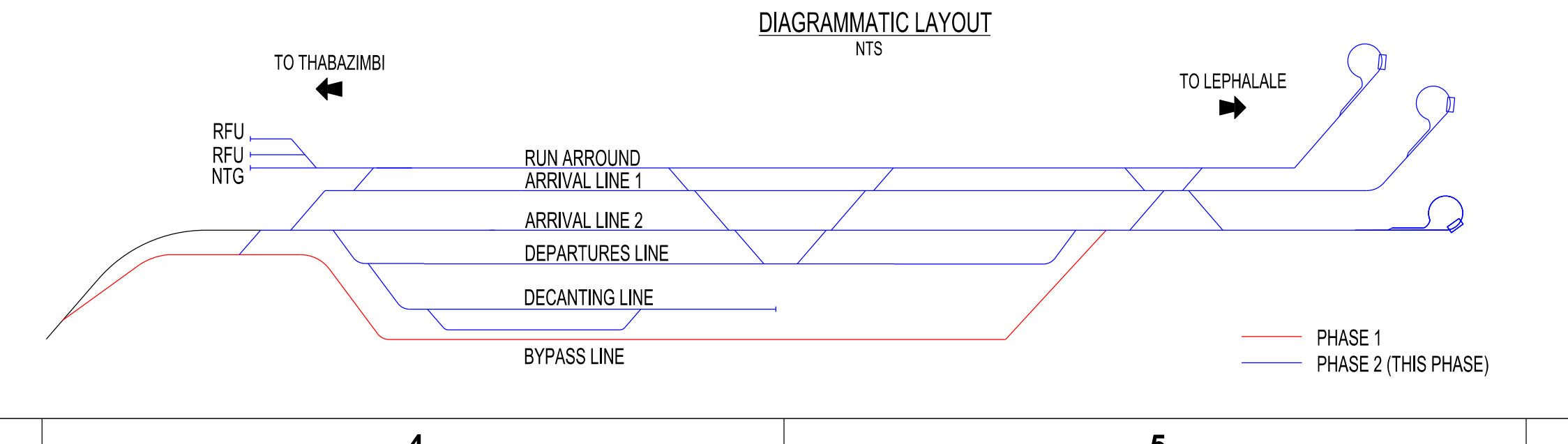
NOTES

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REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
3424302-4-1A1-C-LIS-0002-01	PHASE 2 - BULK EARTHWORKS & LAYERWORKS QUANTITIES

- SPECIFICATIONS**
- BULK EARTHWORKS & LAYERWORKS TO BE IN ACCORDANCE WITH S410
 - ALL CUTTING & EMBANKMENT SLOPES TO BE 1:2
 - ALL CUTTING & EMBANKMENT SLOPES TO BE TOPSOILED & HYDRO SEEDING (150mm)
 - TABLE DRAINS TO BE SET OUT IN ACCORDANCE WITH THIS LAYOUT



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	DJ		29 09 17
CHECKED	JB		29 09 17
DESIGNED	DJ		29 09 17
CHECKED	JB		29 09 17

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH	G. JONKER		27 10 17
REG. NUMBER	501979164		
SCALE	AS SHOWN		



Transnet Capital Projects

TRANSNET CAPITAL PROJECTS (REG. NO. 19900000000)
CANTON CENTRE
150 COMMISSIONER STREET
JOHANNESBURG 2001
TEL: 011 308 3000
FAX: 011 308 2315

PYRAMID SOUTH - LEHALALE

LEPHALALE NSF YARD
WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 97+060 TO KM 97+600

TRANSNET

PROJECT NUMBER: AO3424302-4-1A1-C-LIS-0002-01
SHEET: 02 OF 02
REV: 2

SEWER PLAN LEGEND

- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CLEARANCE MARKER
- EXISTING RAIL CENTRE LINE
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LEP 02	-44 133.729	2 630 394.238	934.748	Y STD IN CONC
LEP 03	-44 305.234	2 630 138.245	938.370	Y STD IN CONC
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LEP 07	-45 298.172	2 629 276.798	938.539	Y STD IN CONC
LEP 08	-45 602.260	2 629 101.288	934.959	Y STD IN CONC
LEP 09	-46 069.074	2 628 929.351	931.649	Y STD IN CONC
LEP 10	-46 345.965	2 628 751.907	928.407	Y STD IN CONC
LEP 11	-46 599.104	2 628 289.496	927.235	Y STD IN CONC
LEP 12	-46 979.489	2 628 484.421	927.795	Y STD IN CONC
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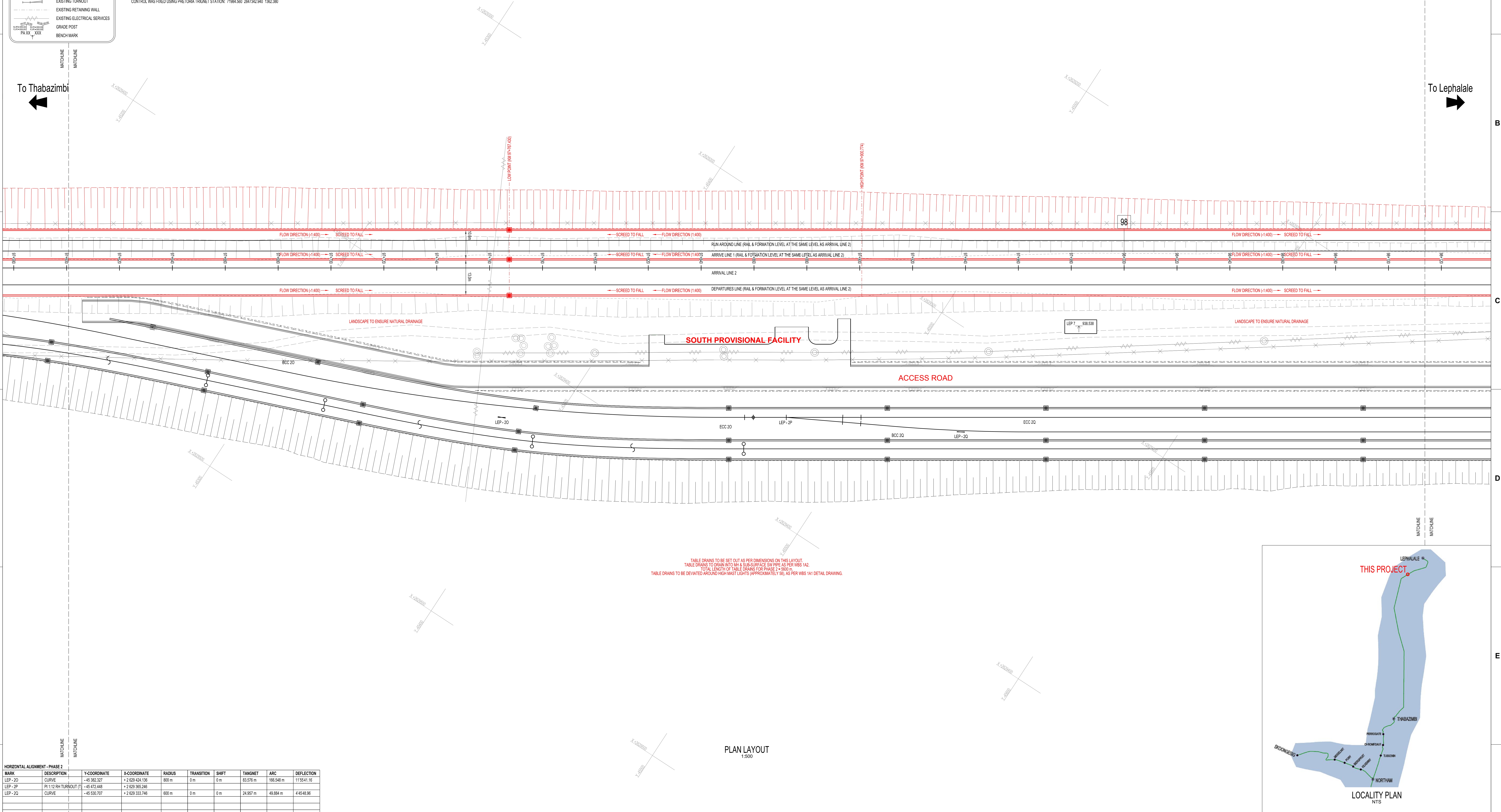
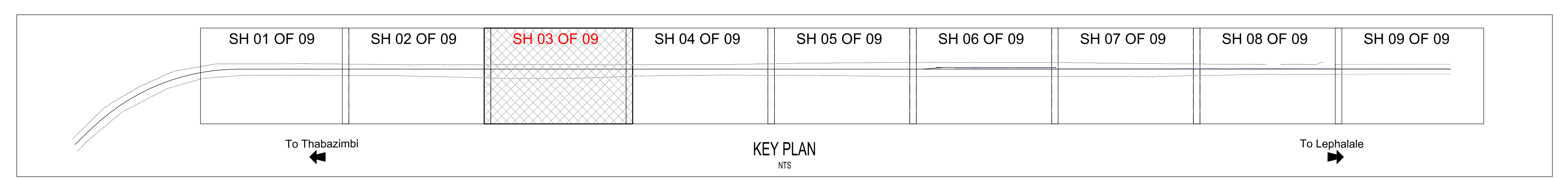
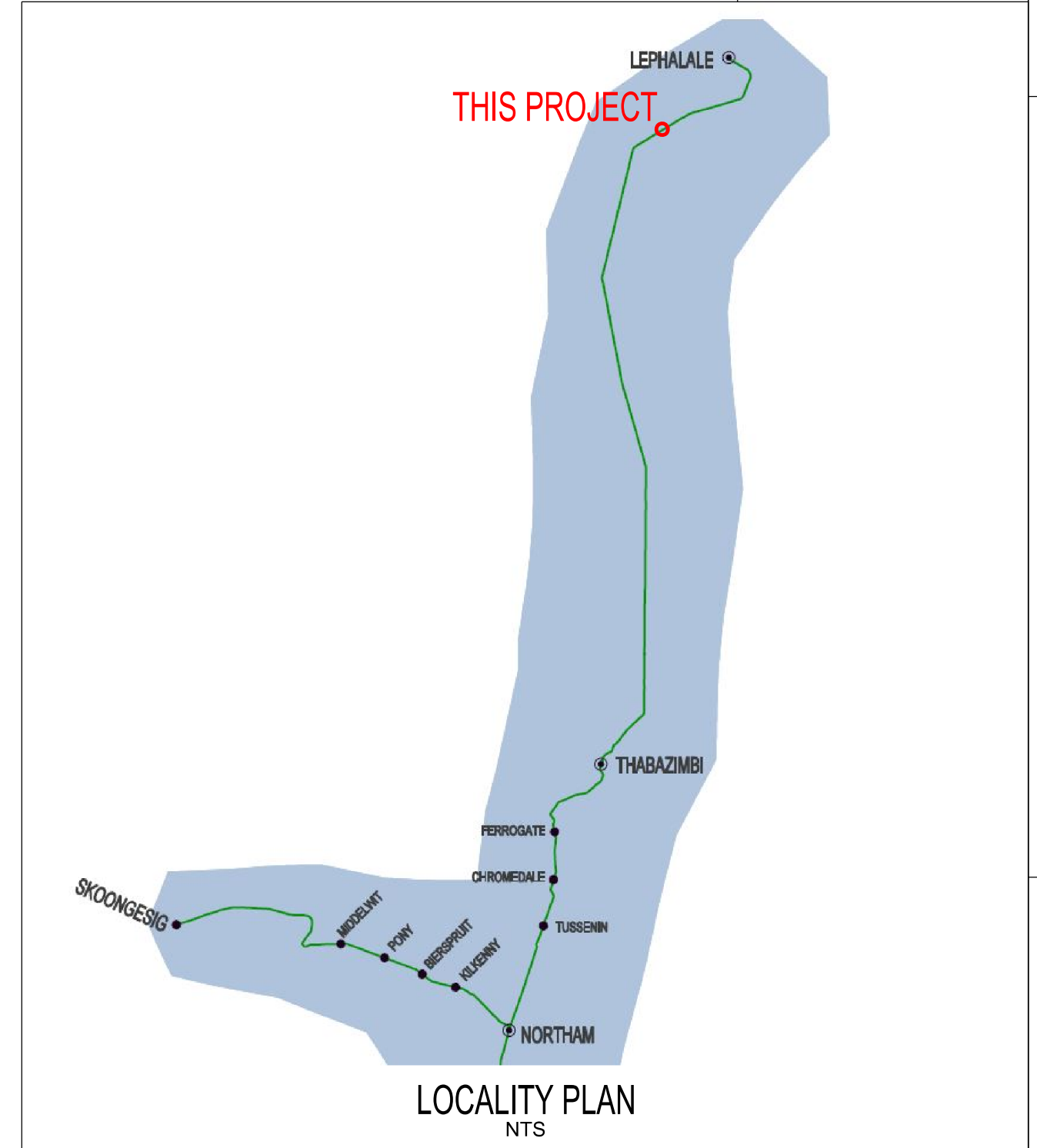


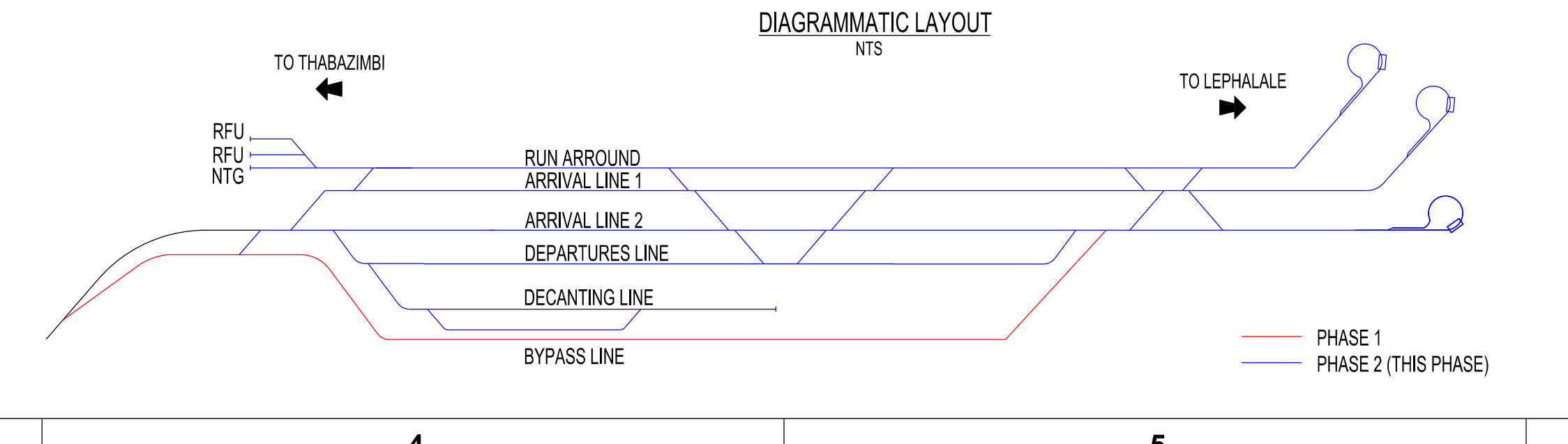
TABLE DRAINS TO BE SET OUT AS PER DIMENSIONS ON THIS LAYOUT
TABLE DRAINS TO DRAIN INTO 100mm Ø SUBSURFACE SW PIPES AS PER WIS 142
TOTAL LENGTH OF TABLE DRAINS FOR PHASE 2 = 600m
TABLE DRAINS TO BE DEVIATED AROUND HIGH MAST LIGHTS (APPROXIMATELY 50m AS PER WIS 141 DETAIL DRAWING)



HORIZONTAL ALIGNMENT - PHASE 2

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP -20	CURVE	+45 382.327	+2 629 424.136	800 m	0 m	0 m	83.578 m	166.548 m	11 5541.16
LEP -2P	PI 1/12 RH TURNOUT (T)	+45 472.448	+2 629 393.245						
LEP -23	CURVE	+45 530.707	+2 629 330.746	800 m	0 m	0 m	24.957 m	49.884 m	4 4549.96

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Transnet Capital Projects

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CANTON CENTRE
150 COMMISSIONER STREET
JOHANNESBURG 2001
TEL: 011 308 3000
FAX: 011 308 2315

PYRAMID SOUTH - LEPHALALE

**LEPHALELE NSF YARD
WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 97+600 TO KM 98+120**

PROJECT NUMBER: AO 3 4 2 4 3 0 2 4 1 A 1 C L A 0 0 2 0 3 1 2 DJ

SEWER PLAN LEGEND

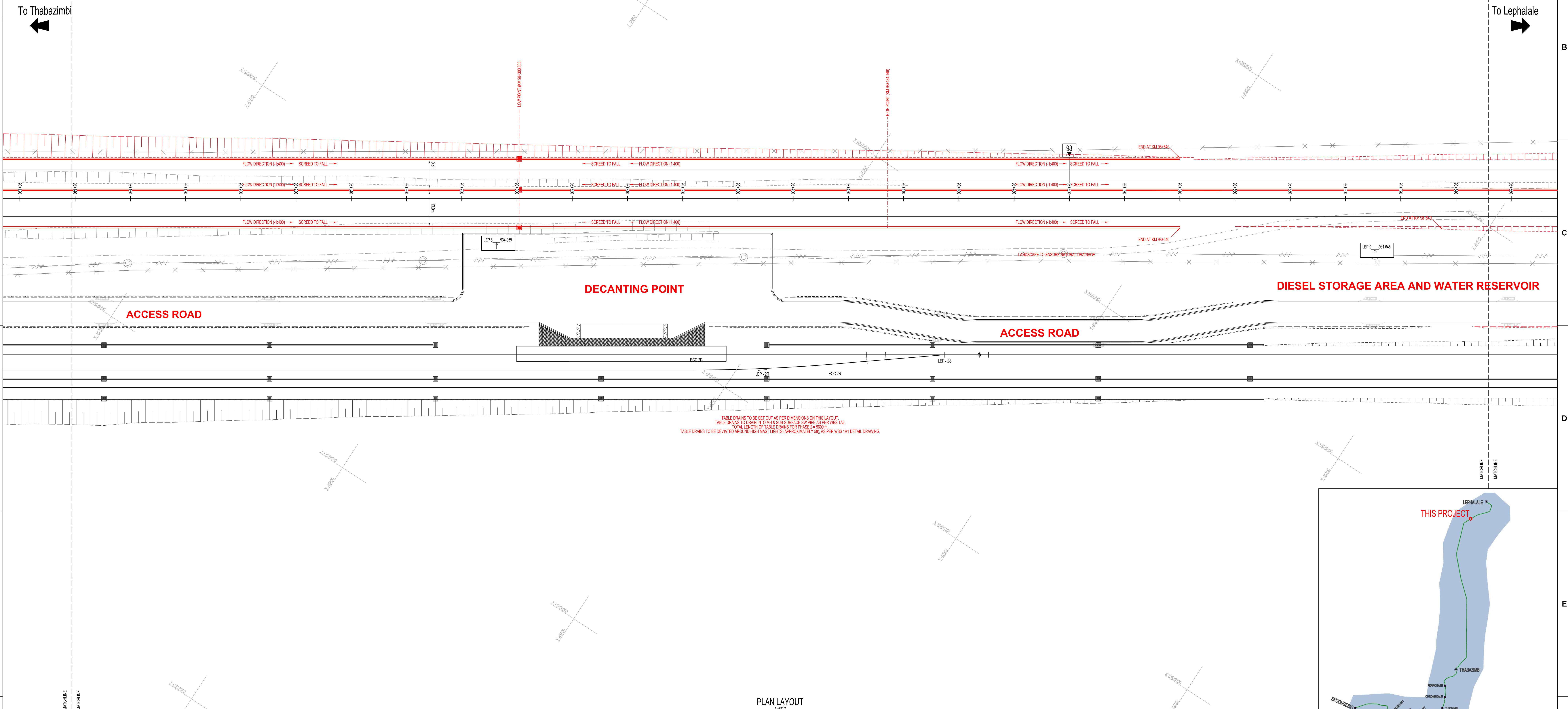
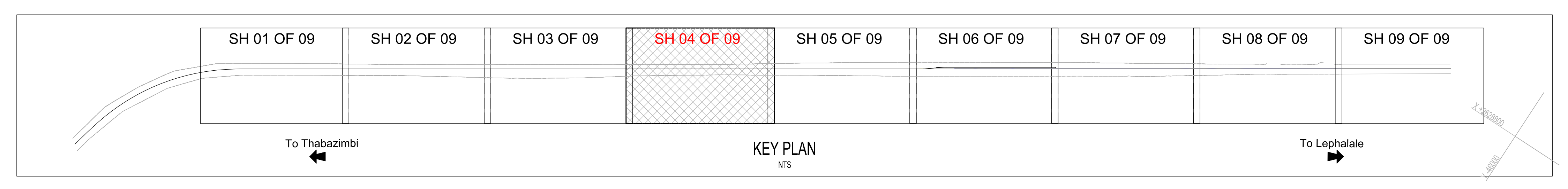
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LEP 15	-47 654.189	2 627 892.793	930.394	Y STD IN CONC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.380



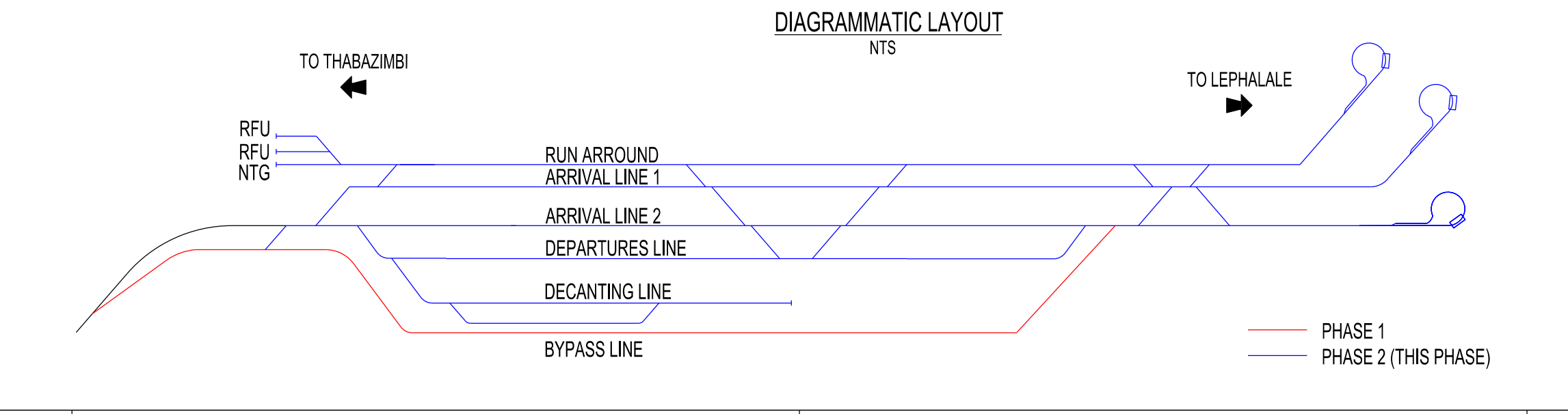
HORIZONTAL ALIGNMENT - PHASE 2

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2R	CURVE	+45 907 970	+2 629 087 218	600 m	0 m	0 m	24 957 m	49 884 m	4 45 48 96
LEP-2S	P1 1:12 LH TURNOUT (T)	+45 960 212	+2 629 046 510						

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
3424302-4-1A1-C-LIS-0002-01	PHASE 2 - BULK EARTHWORKS & LAYERWORKS QUANTITIES

- NOTES**
- DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
 - THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
 - LOCAL CHANGES GIVEN TO BE USED FOR CONSTRUCTION PURPOSES ONLY
 - SURVEY DATUM TO WGS84 AND msl.
 - SURVEYOR MUST INSTALL PROFILE PEGS AT 10m INTERVALS ON VERTICAL CURVES AND STAKE TRANSITION CURVES AT 10m INTERVALS AS WELL.
 - SURVEYOR MUST STAKE CIRCULAR CURVES SHORTER THAN 25m AT 10m INTERVALS.



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	DJ		29 09 17
CHECKED	JB		29 09 17
DESIGNED	DJ		29 09 17
CHECKED	JB		29 09 17

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH			
NAME	G. JONKER		
DATE	27 10 17		
SIGNATURE			
REG. NUMBER	301979164		
SCALE	AS SHOWN		

Transnet Capital Projects

TRANSNET CAPITAL PROJECTS (REG. NO. 1990000000)
CARETAKER CENTRE
150 COMMISSIONER STREET
JOHANNESBURG 2001
TEL: 011 308 3000
FAX: 011 308 2315

PYRAMID SOUTH - LEPHALALE

LEPHALALE NSF YARD WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 98+120 TO KM 98+660

PROJECT NUMBER	DD	FBS	DHS	TYPE	DRAWING NO.	SHEET	REV	ID
A03	4	2	4	3	0	2	4	1
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	4	1	1	1	0	0	2	0
	1	1	1	1	0	0	2	0

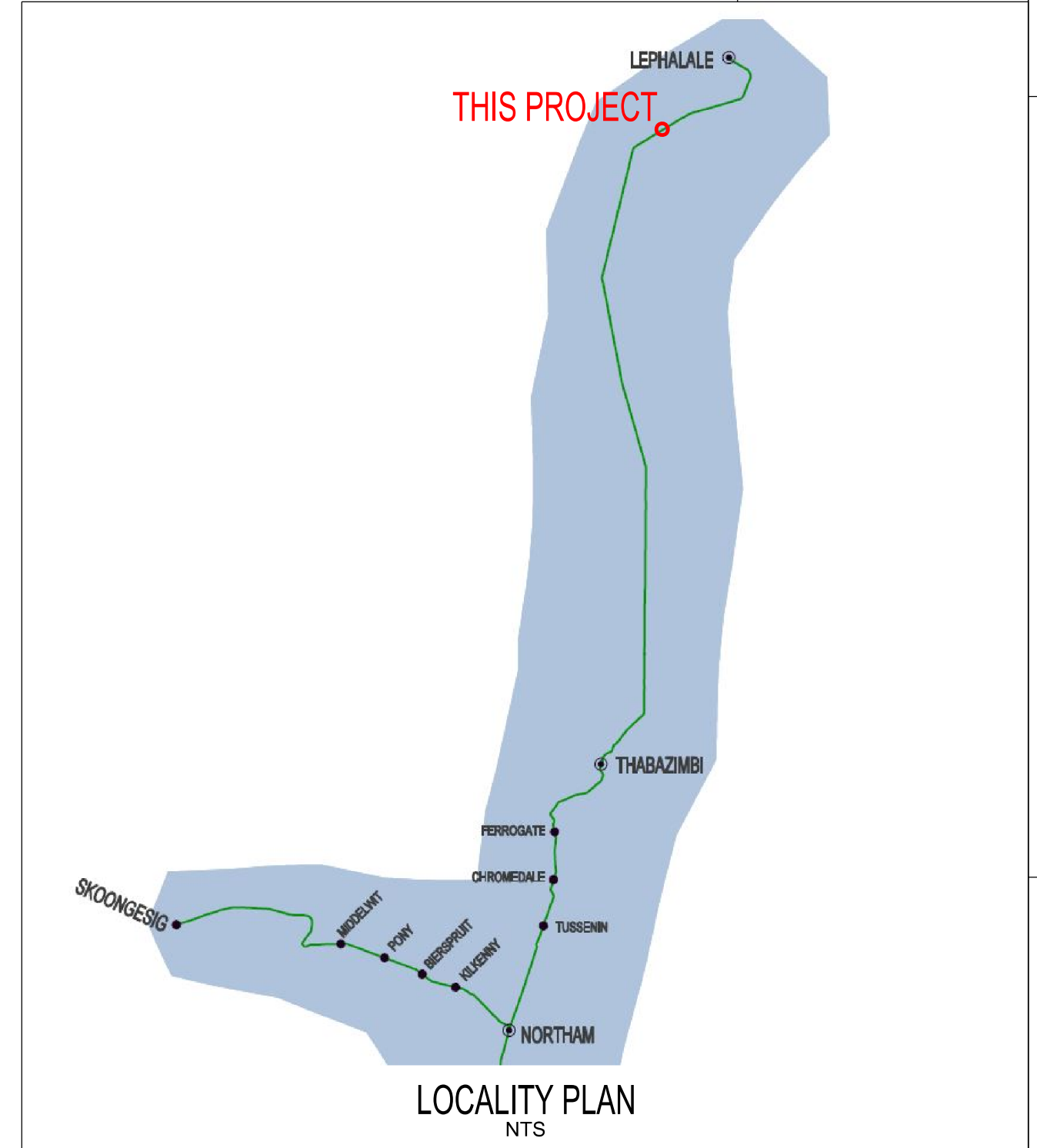


TABLE DRAINS TO BE SET OUT AS PER DIMENSIONS ON THIS LAYOUT.
TABLE DRAINS TO DRAIN INTO 800mm x 800mm SWIPES AS PER NBS 142.
TOTAL LENGTH OF TABLE DRAINS FOR PHASE 2 = 900m.
TABLE DRAINS TO BE DEVIATED AROUND HIGH MAST LIGHTS (APPROXIMATELY 30), AS PER NBS 141 DETAIL DRAWING.

SEWER PLAN LEGEND

- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CLEARANCE MARKER
- EXISTING RAIL CENTRE LINE
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING DRAIN/CULVERT
- EXISTING GRAVEL ROAD
- EXISTING TRANSMIT BOUNDARY
- EXISTING TURNOUT
- EXISTING RETAINING WALL
- EXISTING ELECTRICAL SERVICES
- GRADE POST
- BENCH MARK

THESE BENCHMARKS AND VALUES MUST BE USED FOR CONSTRUCTION:

BENCHMARKS - WGS 84 LOG:

NAME	Y-COORD	X-COORD	ELEVATION	DESCRIPTION
LEP 01	-44 650.074	2 629 670.438	938.740	Y STD IN CONC
LEP 02	-44 133.729	2 630 394.238	934.748	Y STD IN CONC
LEP 03	-44 305.234	2 630 138.245	938.370	Y STD IN CONC
LEP 04	-44 547.787	2 629 918.941	940.415	Y STD IN CONC
LEP 05	-44 793.781	2 629 735.538	940.788	Y STD IN CONC
LEP 06	-45 043.983	2 629 639.390	941.453	Y STD IN CONC
LEP 07	-45 294.172	2 629 525.795	938.539	Y STD IN CONC
LEP 08	-45 544.260	2 629 401.288	934.959	Y STD IN CONC
LEP 09	-45 794.074	2 628 269.351	931.645	Y STD IN CONC
LEP 10	-46 044.985	2 628 131.907	928.407	Y STD IN CONC
LEP 11	-46 295.004	2 628 009.496	927.235	Y STD IN CONC
LEP 12	-46 545.023	2 628 884.427	927.795	Y STD IN CONC
LEP 13	-47 075.217	2 628 271.384	930.418	Y STD IN CONC
LEP 14	-47 325.160	2 628 072.178	932.966	Y STD IN CONC
LEP 15	-47 575.103	2 627 892.793	930.394	Y STD IN CONC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.280

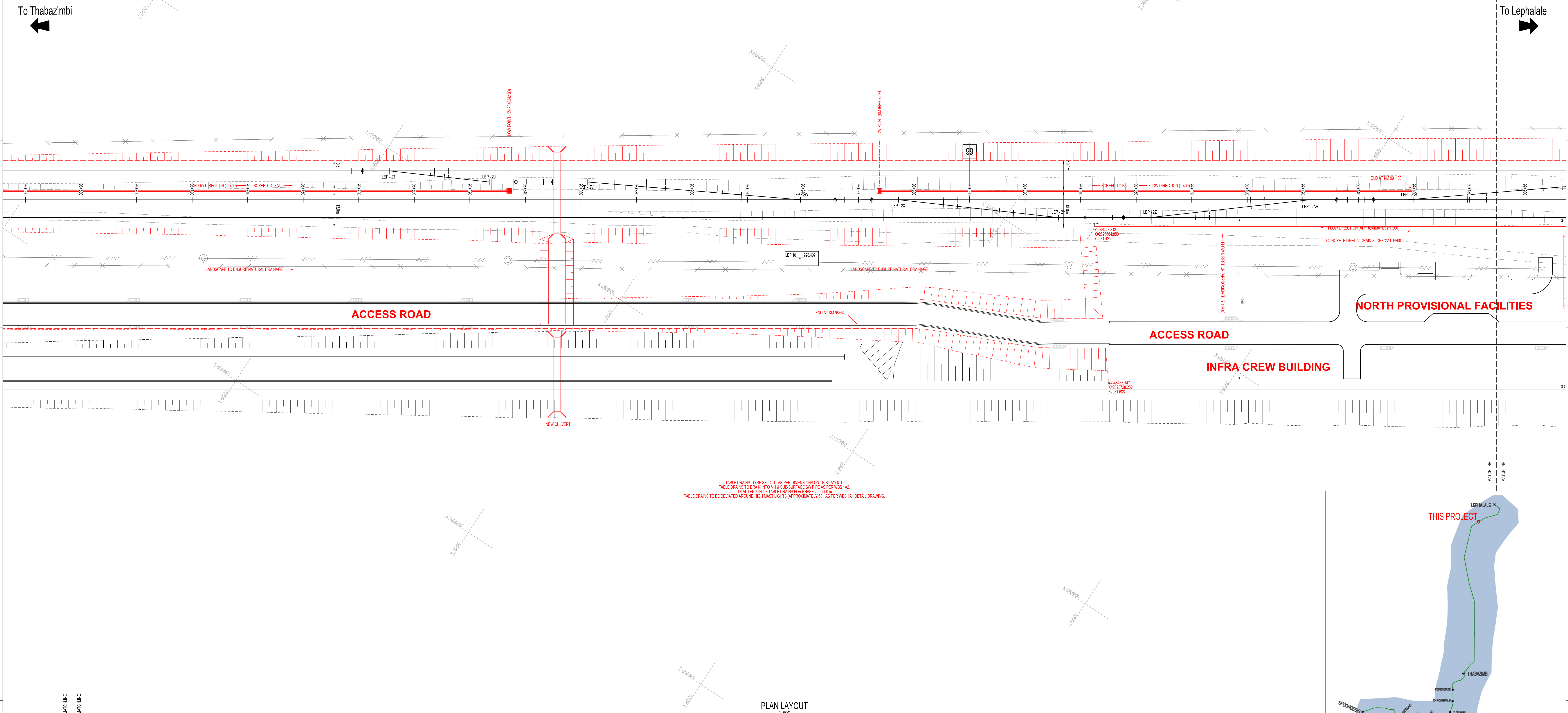
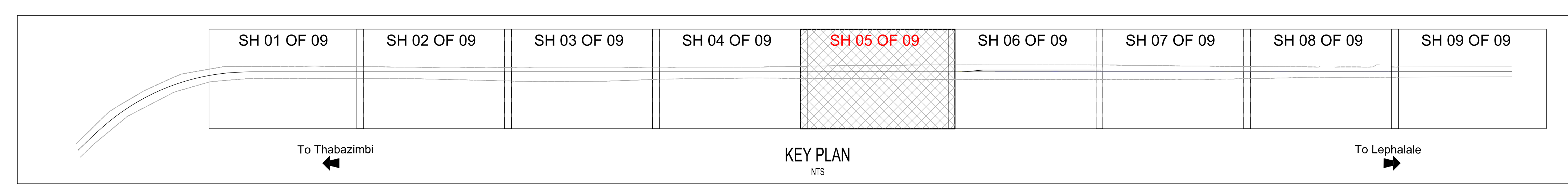


TABLE DRAINS TO BE SET OUT AS PER DIMENSIONS ON THIS LAYOUT.
TABLE DRAINS TO DRAIN INTO 90mm Ø SUB-SURFACE DRAINPIPE AS PER SANS 104.
TOTAL LENGTH OF TABLE DRAINS FOR PHASE 2: 900m.
TABLE DRAINS TO BE DEVIATED AROUND HIGH MAST LIGHTS (APPROXIMATELY 30), AS PER MISS 141 DETAIL DRAWING.

HORIZONTAL ALIGNMENT - PHASE 2

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2T	P1 1/9 RH TURNOUT (T)	-46 204.966	+2 628 668.637						
LEP-2U	P1 1/9 LH TURNOUT (T)	-46 227.291	+2 628 790.292						
LEP-2V	P1 1/12 RH TURNOUT (T)	-46 286.534	+2 628 770.897						
LEP-2W	P1 1/12 LH TURNOUT (T)	-46 334.626	+2 628 734.332						
LEP-2X	P1 1/9 RH TURNOUT (T)	-46 364.170	+2 628 715.026						
LEP-2Y	P1 1/9 LH TURNOUT (T)	-46 415.888	+2 628 688.875						

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2Z	P1 1/9 LH TURNOUT (T)	-46 443.537	+2 628 670.808						
LEP-2AA	P1 1/9 LH TURNOUT (T)	-46 489.294	+2 628 633.942						
LEP-2BB	P1 1/12 LH TURNOUT (T)	-46 517.797	+2 628 614.638						

NOTES

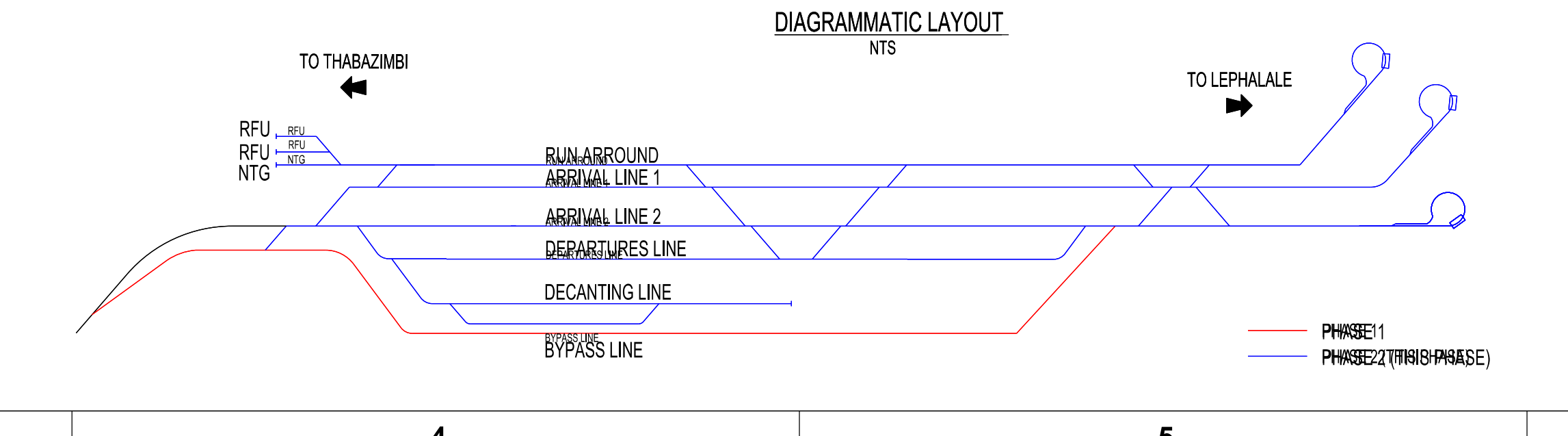
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- SURVEYOR MUST STAKE CIRCULAR CURVES SHORTER THAN 25m AT 10m INTERVALS.

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
3424302-4-1A1-C-LIS-0002-01	PHASE 2 - BULK EARTHWORKS & LAYERWORKS QUANTITIES

SPECIFICATIONS

- BULK EARTHWORKS & LAYERWORKS TO BE IN ACCORDANCE WITH S410.
- ALL CUTTING & EMBANKMENT SLOPES TO BE 1:2.
- ALL CUTTING & EMBANKMENT SLOPES TO BE TOPSOILED & HYDRO SEEDED (150mm).
- TABLE DRAINS TO BE SET OUT IN ACCORDANCE WITH THIS LAYOUT.



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	DJ		29 09 17
CHECKED	JB		29 09 17
DESIGNED	DJ		29 09 17
CHECKED	JB		29 09 17

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE
PR.ENG. / PR.TECH./PR. ARCH			
NAME	G. JONKER		
SIGNATURE			
REG. NUMBER	301979164		
DATE	27 10 17		
SCALE	AS SHOWN		

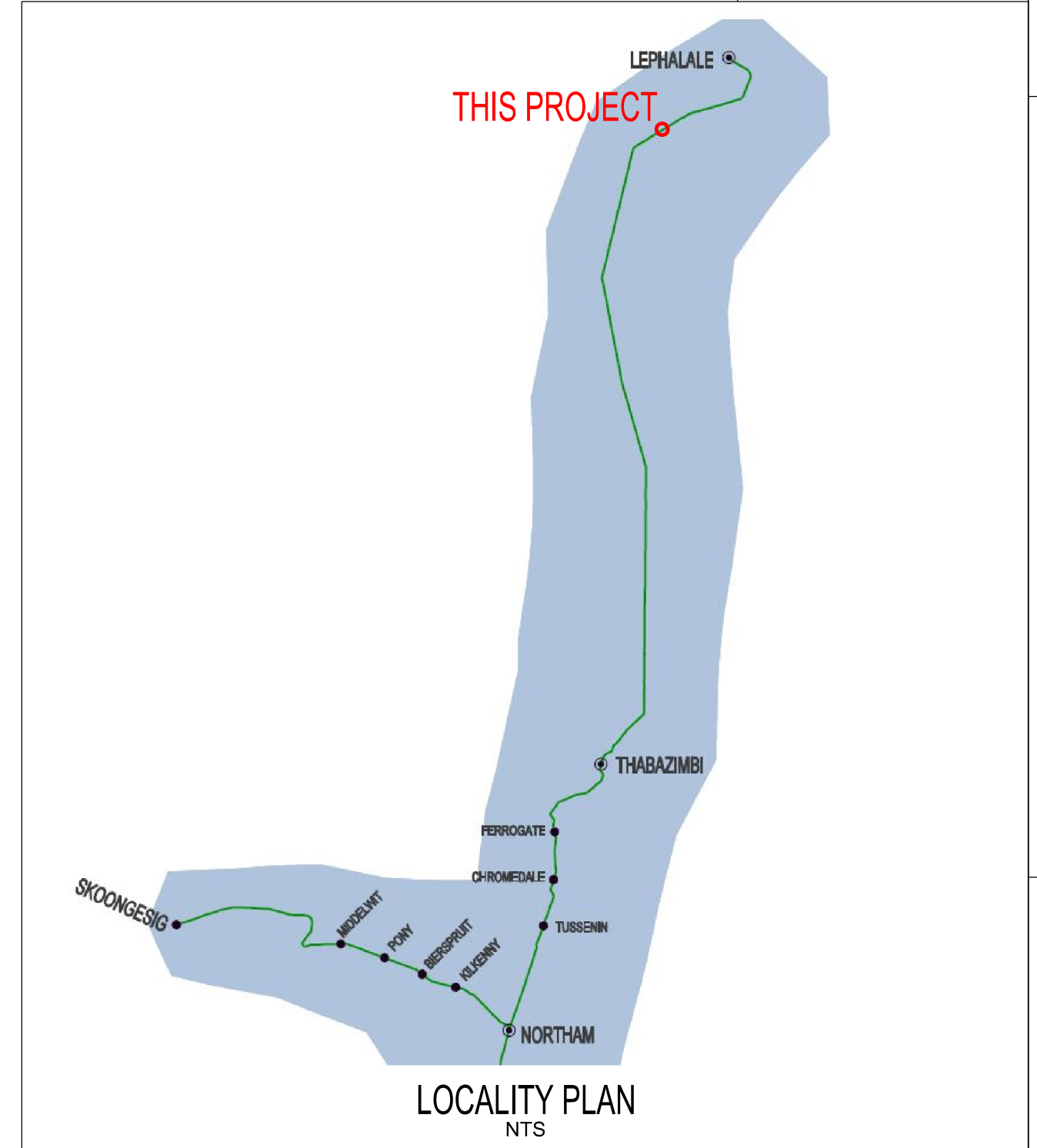
Transnet Capital Projects

TRANSNET CAPITAL PROJECTS (Pty) Ltd. (INCORPORATED AS TRANSNET CAPITAL PROJECTS) REG. NO. 1990000000
CANTON CENTRE
150 COMMISSIONER STREET
JOHANNESBURG 2001
TEL: 011 308 3000
FAX: 011 308 2315

PYRAMID SOUTH - LEPHALALE

LEPHALALE NSF YARD
WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 98+660 TO KM 99+200

PROJECT NUMBER: AO3.4.2.4.3.0.2.4.1.A.1.C.L.A.0.0.2.0.5.1.2.DJ



PERWAY PLAN LEGEND

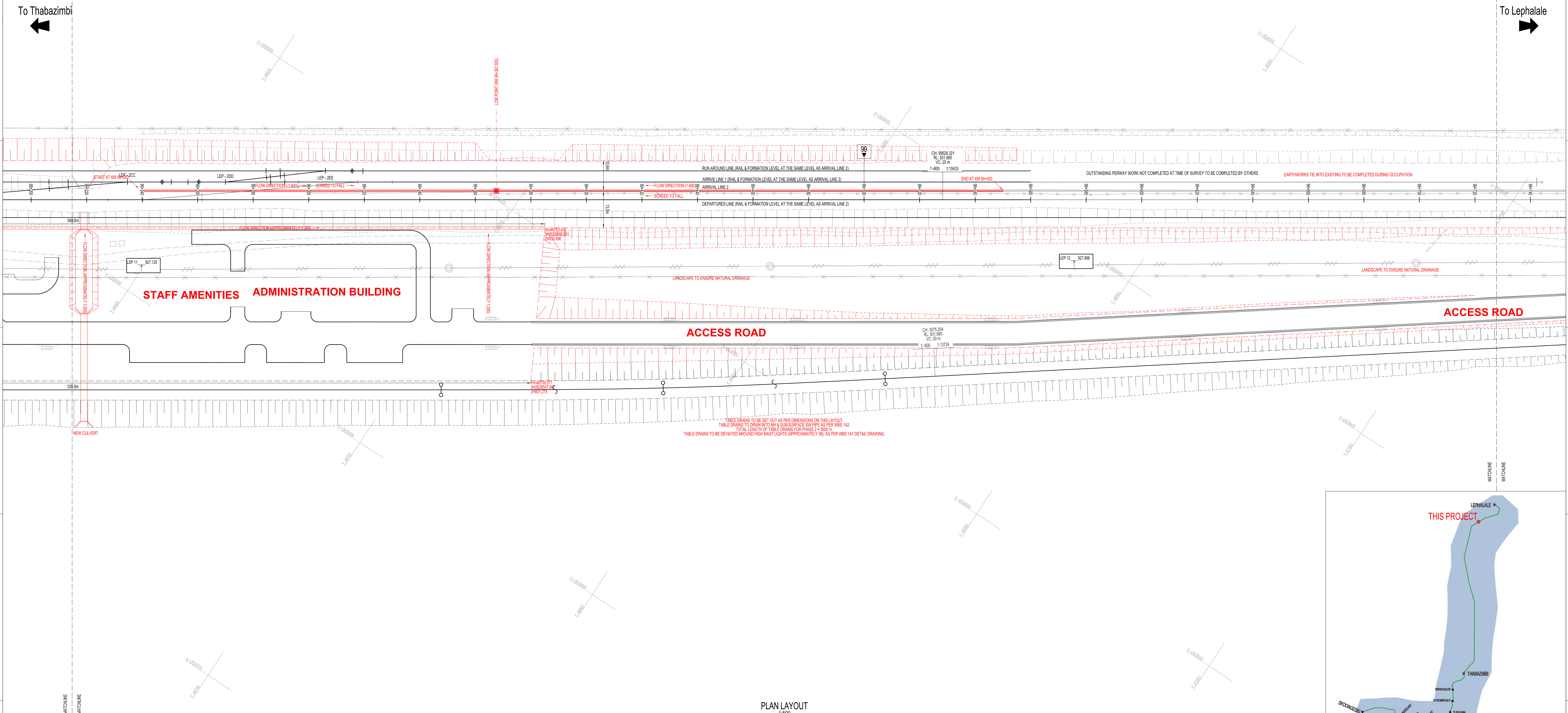
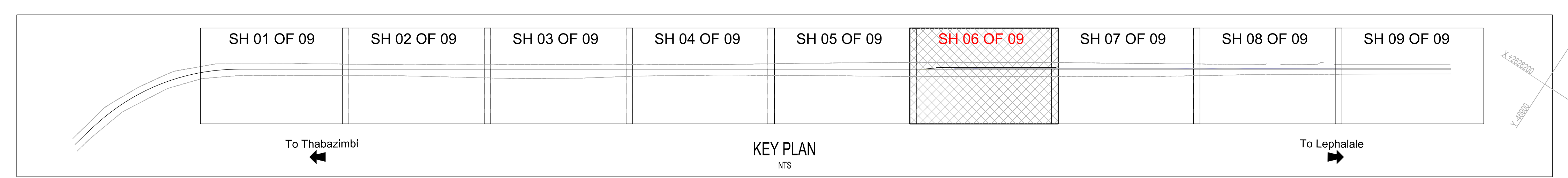
- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CLEARANCE MARKER
- EXISTING RAIL CENTRE LINE
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING DRAIN/CULVERT
- EXISTING GRAVEL ROAD
- EXISTING TRANSFER BOUNDARY
- EXISTING TURNOUT
- EXISTING RETAINING WALL
- EXISTING ELECTRICAL SERVICES
- GRADE POST
- BENCH MARK

THESE BENCHMARKS AND VALUES MUST BE USED FOR CONSTRUCTION:

BENCHMARKS - WGS 84 LOC:

NAME	Y-COORD	X-COORD	ELEVATION	DESCRIPTION
LEP 01	-44 050.074	2 620 670.438	936.740	Y STD IN COC
LEP 02	-44 133.729	2 630 394.238	934.748	Y STD IN COC
LEP 03	-44 305.234	2 630 138.245	938.370	Y STD IN COC
LEP 04	-44 547.787	2 629 918.941	940.415	Y STD IN COC
LEP 05	-44 793.781	2 629 735.535	940.788	Y STD IN COC
LEP 06	-45 045.983	2 629 619.390	941.463	Y STD IN COC
LEP 07	-45 304.172	2 629 275.795	938.539	Y STD IN COC
LEP 08	-45 602.260	2 629 101.288	934.959	Y STD IN COC
LEP 09	-46 069.074	2 628 925.351	931.645	Y STD IN COC
LEP 10	-46 345.985	2 628 751.907	928.407	Y STD IN COC
LEP 11	-46 599.104	2 628 489.495	927.235	Y STD IN COC
LEP 12	-46 879.489	2 628 484.421	927.795	Y STD IN COC
LEP 13	-47 078.217	2 628 271.384	930.416	Y STD IN COC
LEP 14	-47 383.160	2 628 072.178	932.966	Y STD IN COC
LEP 15	-47 654.189	2 627 892.793	930.394	Y STD IN COC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.380



HORIZONTAL ALIGNMENT - PHASE 2

MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP - 200	P1 1:12 LH TURNOUT (T)	-46 578.587	+2 628 567.287						
LEP - 200	P1 1:9 LH TURNOUT (T)	-46 608.131	+2 628 547.961						
LEP - 200	P1 1:9 LH TURNOUT (T)	-46 638.079	+2 628 528.620						

NOTES

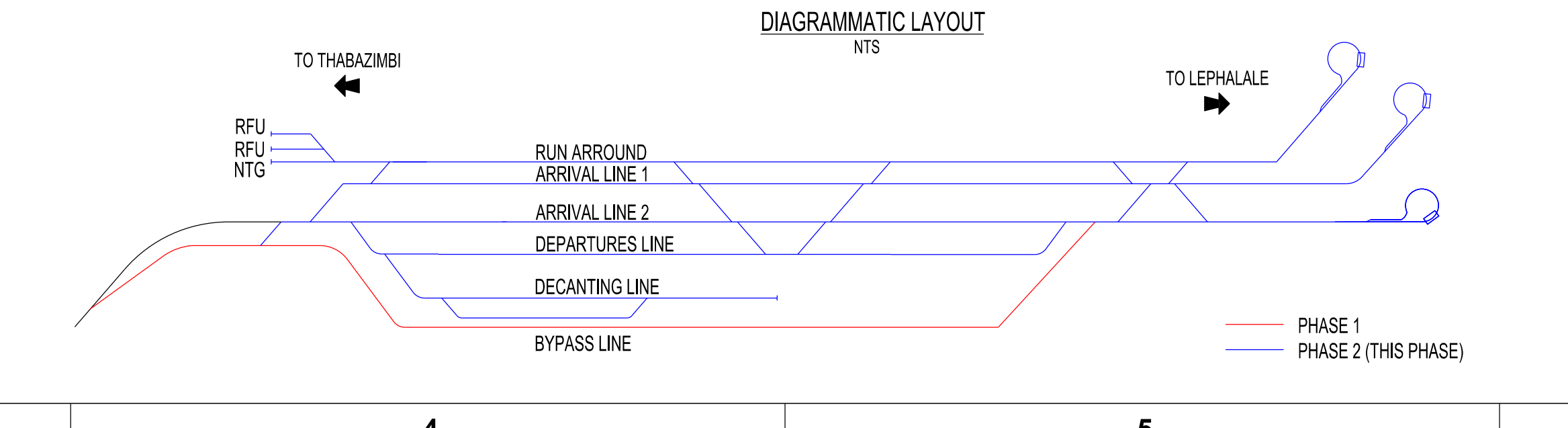
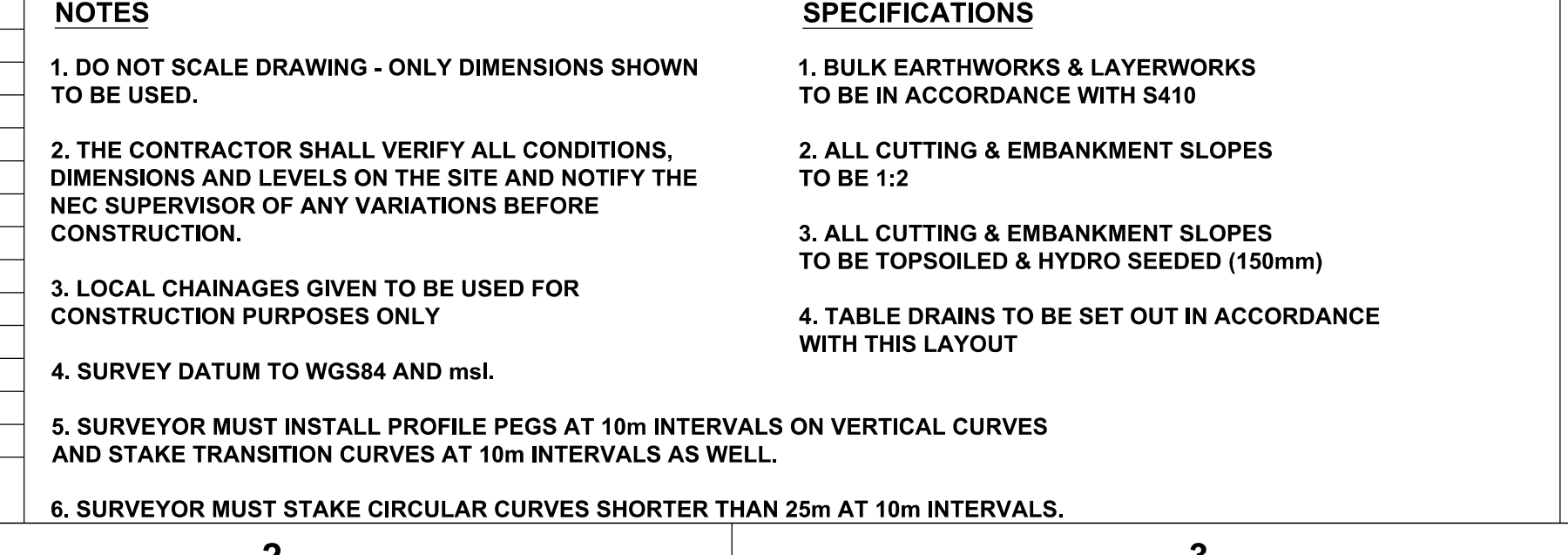
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- SURVEYOR MUST STAKE CIRCULAR CURVES SHORTER THAN 25m AT 10m INTERVALS.

SPECIFICATIONS

- BULK EARTHWORKS & LAYERWORKS TO BE IN ACCORDANCE WITH S410
- ALL CUTTING & EMBANKMENT SLOPES TO BE 1:2
- ALL CUTTING & EMBANKMENT SLOPES TO BE TOPSOILED & HYDRO SEEDED (150mm)
- TABLE DRAINS TO BE SET OUT IN ACCORDANCE WITH THIS LAYOUT

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
3424302-4-1A1-C-LIS-0002-01	PHASE 2 - BULK EARTHWORKS & LAYERWORKS QUANTITIES



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	DJ		29 09 17
CHECKED	JB		29 09 17
DESIGNED	DJ		29 09 17
CHECKED	JB		29 09 17

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE
PR.ENG. / PR.TECH./PR. ARCH			
NAME	G.JONKER		
DATE	27 10 17		
SIGNATURE			
REG. NUMBER	301979164		
SCALE	AS SHOWN		

Transnet Capital Projects

TRANSNET CAPITAL PROJECTS
150 COMMISSIONER STREET
JOHANNESBURG 2001

PYRAMID SOUTH - LEPHALALE

LEPHALALE NSF YARD WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 99+200 TO KM 99+740

PROJECT NUMBER	DD	FBS	DHS	TYPE	DRAWING NO.	SHEET	REV	ID
AO3	4	2	4	3	0	2	4	1
	1	1	1	1	0	0	2	0
	6	1	2	0	6	1	2	0

PERWAY PLAN LEGEND

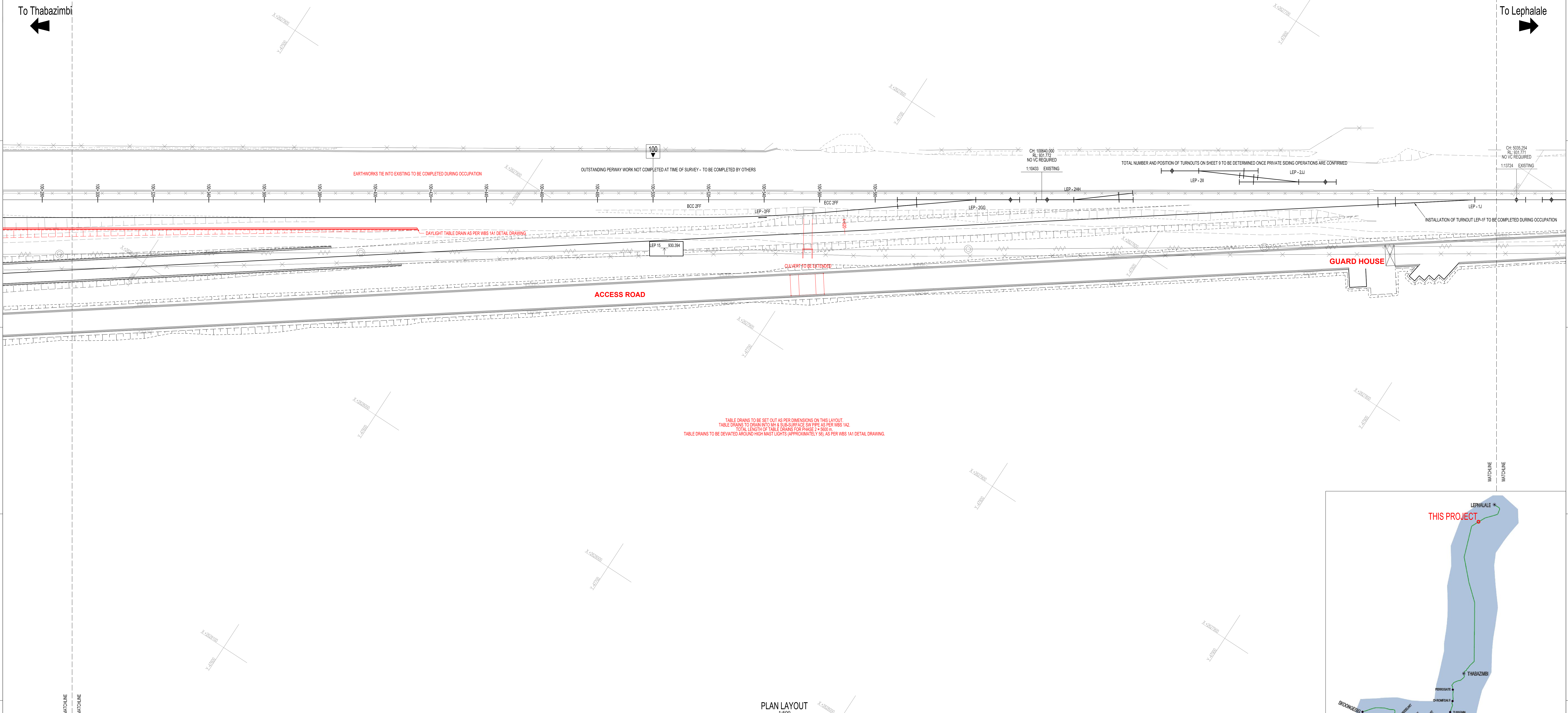
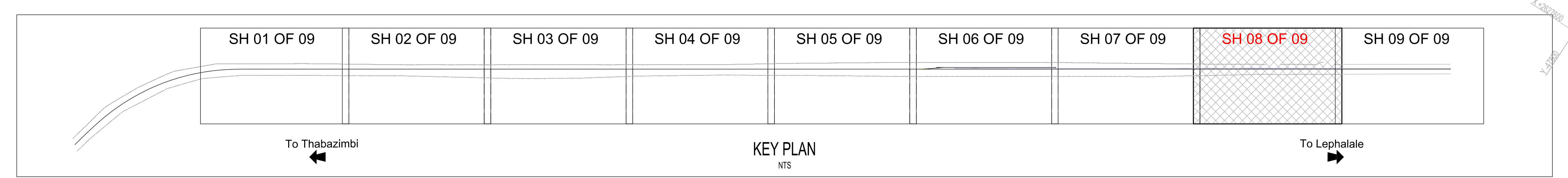
- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CLEARANCE MARKER
- EXISTING RAIL CENTRE LINE
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING DRAIN/CULVERT
- EXISTING GRAVEL ROAD
- EXISTING TRANSNET BOUNDARY
- EXISTING TURNOUT
- EXISTING RETAINING WALL
- EXISTING ELECTRICAL SERVICES
- GRADE POST
- BENCH MARK

THESE BENCHMARKS AND VALUES MUST BE USED FOR CONSTRUCTION.

BENCHMARKS - WGS 84 LOG:

NAME	Y-COORD	X-COORD	ELEVATION	DESCRIPTION
LEP 01	-44 050.074	2 629 670.438	938.740	Y STD IN CONC
LEP 02	-44 133.729	2 630 394.236	934.748	Y STD IN CONC
LEP 03	-44 305.234	2 630 138.245	938.370	Y STD IN CONC
LEP 04	-44 547.787	2 629 918.941	940.415	Y STD IN CONC
LEP 05	-44 793.781	2 629 735.533	940.788	Y STD IN CONC
LEP 06	-45 045.983	2 629 619.390	941.463	Y STD IN CONC
LEP 07	-45 304.172	2 629 275.750	938.539	Y STD IN CONC
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LEP 11	-46 599.004	2 628 589.499	927.235	Y STD IN CONC
LEP 12	-46 979.489	2 628 484.421	927.795	Y STD IN CONC
LEP 13	-47 078.217	2 628 271.384	930.416	Y STD IN CONC
LEP 14	-47 383.160	2 628 072.178	932.966	Y STD IN CONC
LEP 15	-47 654.189	2 627 892.793	930.394	Y STD IN CONC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION.
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.380



HORIZONTAL ALIGNMENT - PHASE 2

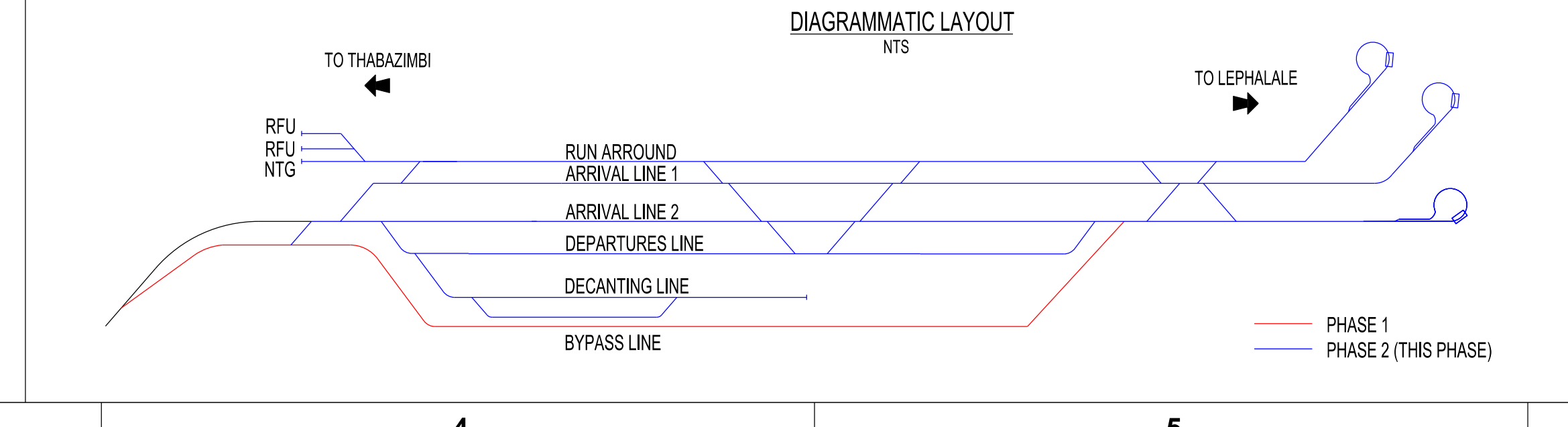
MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-2FF	CURVE	-47 677.854	+2 627 864.250	600 m	0 m	0 m	24.957 m	49.884 m	4 45 48.95
LEP-2SG	PI 1:12 LH TURNOUT (T)	-47 738.593	+2 627 916.891						
LEP-2RH	PI 1:9 RH TURNOUT (T)	-47 768.136	+2 627 797.585						
LEP-2B	PI 1:9 RH TURNOUT (T)	-47 800.117	+2 627 764.263						
LEP-2JJ	PI 1:9 RH TURNOUT (T)	-47 832.441	+2 627 747.919						

NOTES

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- SURVEYOR MUST INSTALL PROFILE PEGS AT 10m INTERVALS ON VERTICAL CURVES AND STAKE TRANSITION CURVES AT 10m INTERVALS AS WELL.
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SPECIFICATIONS

- BULK EARTHWORKS & LAYERWORKS TO BE IN ACCORDANCE WITH S410.
- ALL CUTTING & EMBANKMENT SLOPES TO BE 1:2.
- ALL CUTTING & EMBANKMENT SLOPES TO BE TOPSOILED & HYDRO SEEDED (150mm).
- TABLE DRAINS TO BE SET OUT IN ACCORDANCE WITH THIS LAYOUT.



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SGN	DATE
DRAWN	DJ		29 09 17
CHECKED	JB		29 09 17
DESIGNED	DJ		29 09 17
CHECKED	JB		29 09 17

OPERATING DIVISIONS

TITLE	NAME	SGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH			
SIGNATURE			27 10 17
REG. NUMBER	301070164		
SCALE	AS SHOWN		

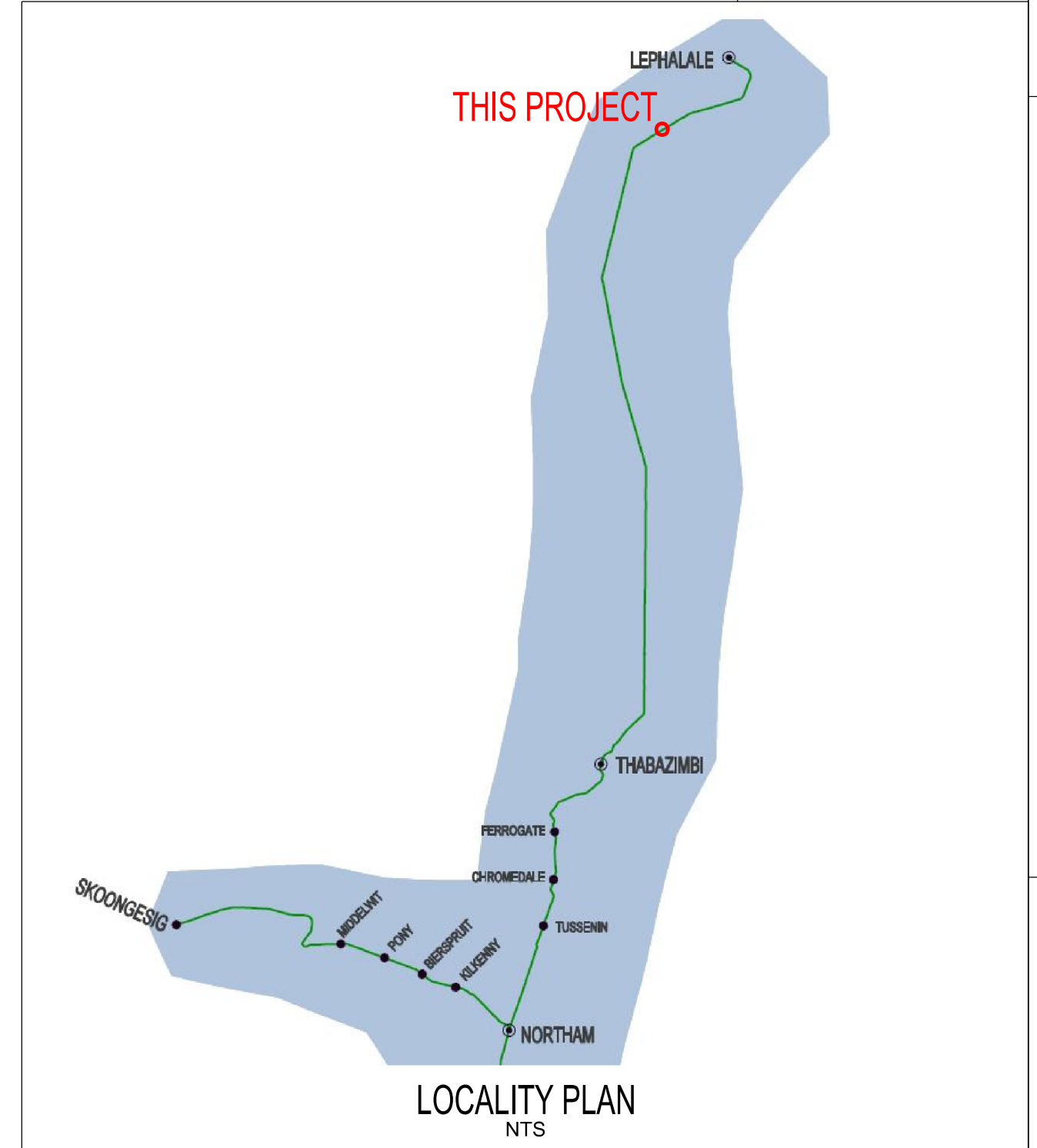
Transnet Capital Projects

TRANSNET CAPITAL PROJECTS (REG. NO. 1990000000)
CARLTON CENTRE
150 COMMISSIONER STREET
JOHANNESBURG 2001
TEL: 011 308 3000
FAX: 011 308 2315

PYRAMID SOUTH - LEPHALALE

**LEPHALALE NSF YARD
WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 100+280 TO KM 100+580**

PROJECT NUMBER: AO3424302241A1C
DWS: 0
FBS: 0
DHS: 0
TYPE: CL
DRAWING NO.: 002
SHEET: 08
REV: 1
ID: 2



PERWAY PLAN LEGEND

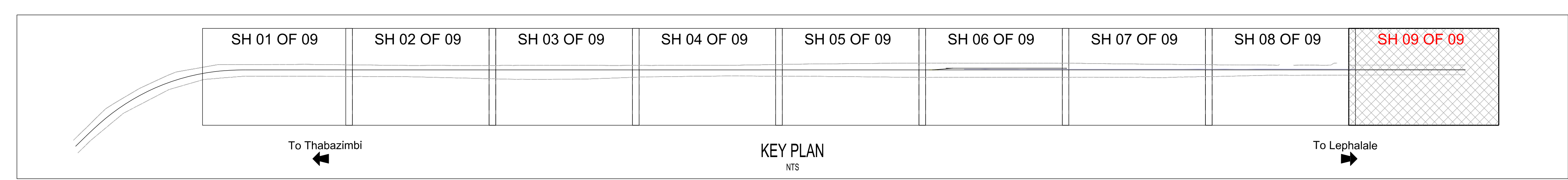
- NEW RAIL CENTRE LINE
- NEW TOP OF BANK
- NEW BOTTOM OF BANK
- NEW TABLE DRAIN
- NEW SW MANHOLE
- NEW TURNOUT
- CURVE / TRANSITION POSITION
- CLEARANCE MARKER
- EXISTING RAIL CENTRE LINE
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- EXISTING DRAIN/CULVERT
- EXISTING GRAVEL ROAD
- EXISTING TRANSNET BOUNDARY
- EXISTING TURNOUT
- EXISTING RETAINING WALL
- EXISTING ELECTRICAL SERVICES
- GRADE POST
- BENCH MARK

THESE BENCHMARKS AND VALUES MUST BE USED FOR CONSTRUCTION:

BENCHMARKS - WGS 84 LOC:

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LEP 03	-44 325.234	2 630 138.245	938.370	Y STD IN CONC
LEP 04	-44 547.787	2 629 918.941	940.415	Y STD IN CONC
LEP 05	-44 793.781	2 629 735.533	940.788	Y STD IN CONC
LEP 06	-45 045.983	2 629 619.390	941.463	Y STD IN CONC
LEP 07	-45 308.172	2 629 275.750	938.539	Y STD IN CONC
LEP 08	-45 602.260	2 629 101.238	934.959	Y STD IN CONC
LEP 09	-46 069.074	2 628 929.351	931.645	Y STD IN CONC
LEP 10	-46 345.965	2 628 751.907	928.407	Y STD IN CONC
LEP 11	-46 599.104	2 628 569.456	927.235	Y STD IN CONC
LEP 12	-46 879.649	2 628 484.421	927.795	Y STD IN CONC
LEP 13	-47 078.217	2 628 271.394	930.416	Y STD IN CONC
LEP 14	-47 383.160	2 628 072.178	932.966	Y STD IN CONC
LEP 15	-47 654.189	2 627 892.793	930.394	Y STD IN CONC

ALL BENCHMARKS TO BE CHECKED PRIOR TO CONSTRUCTION
CONTROL WAS FIXED USING PRETORIA TRIGNET STATION: 11984.500 2847342.940 1362.380



To Thabazimbi

To Lephale

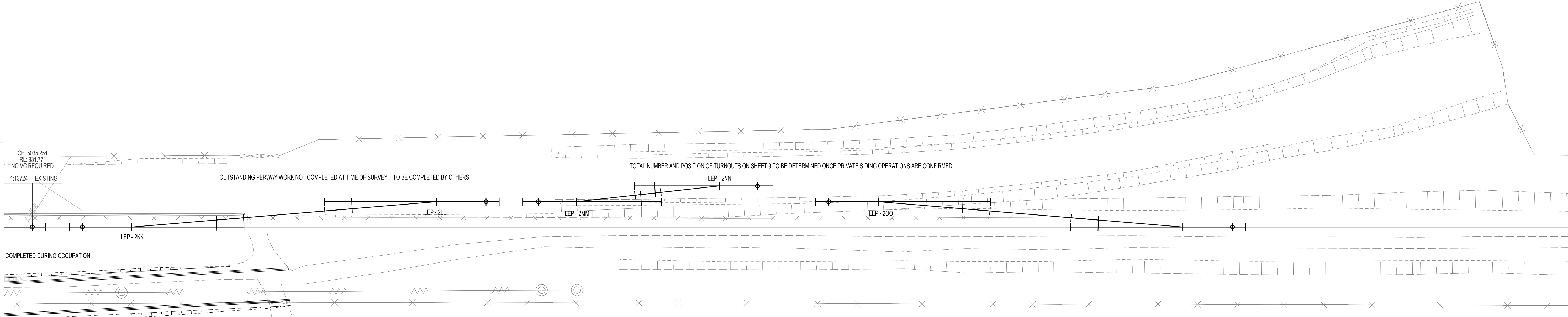


TABLE DRAINS TO BE SET OUT AS PER DIMENSIONS ON THIS LAYOUT.
TABLE DRAINS TO BE DEVIATED AROUND HIGH MAST LIGHTS (APPROXIMATELY 30), AS PER WBS 141 DETAIL DRAWING.

HORIZONTAL ALIGNMENT - PHASE 2

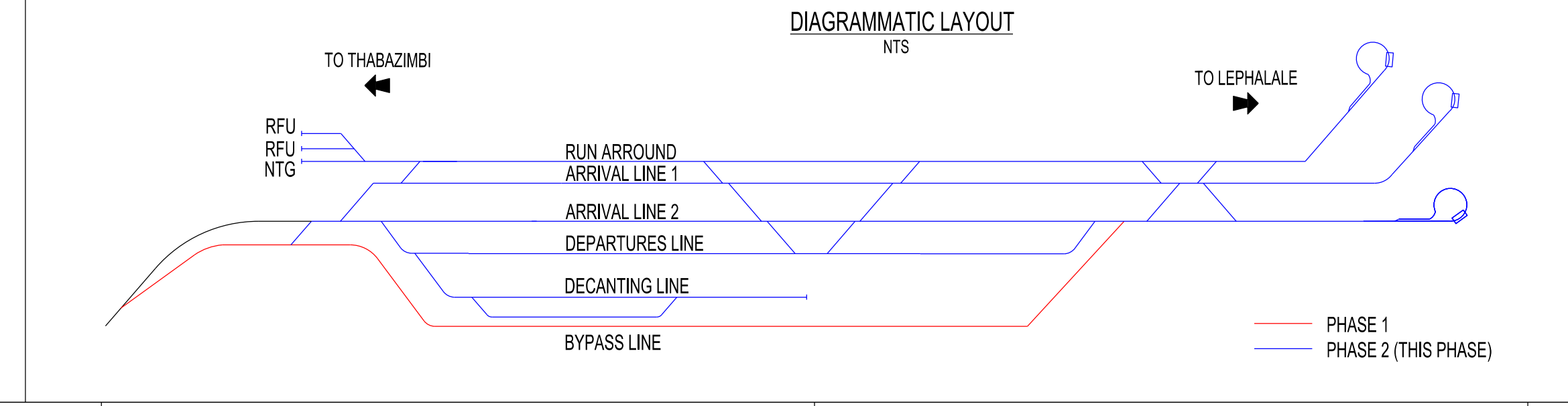
MARK	DESCRIPTION	Y-COORDINATE	X-COORDINATE	RADIUS	TRANSITION	SHIFT	TANGENT	ARC	DEFLECTION
LEP-20K	P1 1:12 LH TURNOUT (T)	-47 922.581	+2 627 696.654						
LEP-2LL	P1 1:12 LH TURNOUT (T)	-47 983.381	+2 627 649.285						
LEP-2NM	P1 1:12 LH TURNOUT (T)	-48 012.525	+2 627 636.979						
LEP-2NM	P1 1:12 LH TURNOUT (T)	-48 040.873	+2 627 696.638						
LEP-200	P1 1:12 RH TURNOUT (T)	-48 078.577	+2 627 588.394						
LEP-2PP	P1 1:12 RH TURNOUT (T)	-48 144.369	+2 627 551.730						

NOTES

- DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
- LOCAL CHANGES GIVEN TO BE USED FOR CONSTRUCTION PURPOSES ONLY
- SURVEY DATUM TO WGS84 AND msl.
- SURVEYOR MUST INSTALL PROFILE PEGS AT 10m INTERVALS ON VERTICAL CURVES AND STAKE TRANSITION CURVES AT 10m INTERVALS AS WELL.
- SURVEYOR MUST STAKE CIRCULAR CURVES SHORTER THAN 25m AT 10m INTERVALS.

SPECIFICATIONS

- BULK EARTHWORKS & LAYERWORKS TO BE IN ACCORDANCE WITH S410
- ALL CUTTING & EMBANKMENT SLOPES TO BE 1:2
- ALL CUTTING & EMBANKMENT SLOPES TO BE TOPSOILED & HYDRO SEEDING (150mm)
- TABLE DRAINS TO BE SET OUT IN ACCORDANCE WITH THIS LAYOUT



REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
2	ISSUED FOR CLIENT REVIEW	DJ	JB	OJ	27-10-2017
1	ISSUED FOR SQUAD CHECK	DJ	JB	OJ	29-09-2017

CONTRACTOR / CONSULTANT

TITLE	NAME	SGN	DATE
DRAWN	DJ		29 09 17
CHECKED	JB		29 09 17
DESIGNED	DJ		29 09 17
CHECKED	JB		29 09 17

OPERATING DIVISIONS

TITLE	NAME	SGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH			
SIGNATURE			27 10 17
REG. NUMBER	301979164		
SCALE	AS SHOWN		

Transnet Capital Projects

TRANSNET
150 COMMISSIONER STREET
JOHANNESBURG 2001

PYRAMID SOUTH - LEHALALE

LEPHALE NSF YARD WATERBERG - STAGE 3
PLAN LAYOUT - BULK EARTHWORKS - PHASE 2
KM 100+580 TO END

PROJECT NUMBER	DD	FBS	DHS	TYPE	DRAWING NO.	SHEET	REV	ID
AO3	4	2	4	3	0	2	4	1
	1	1	1	1	1	0	0	2
	0	0	2	0	9	1	2	

