

APPENDIX C

FACILITY ILLUSTRATIONS

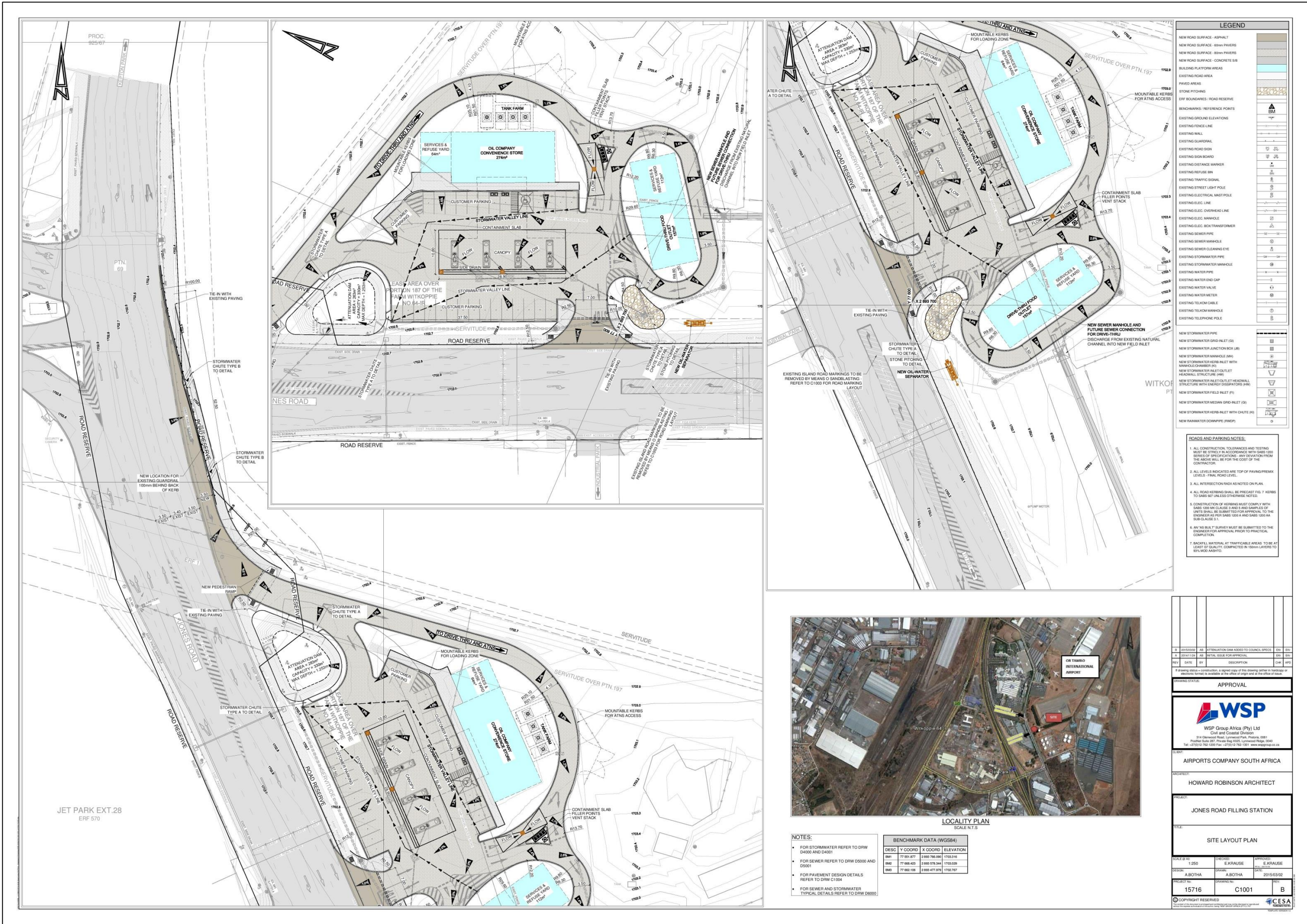
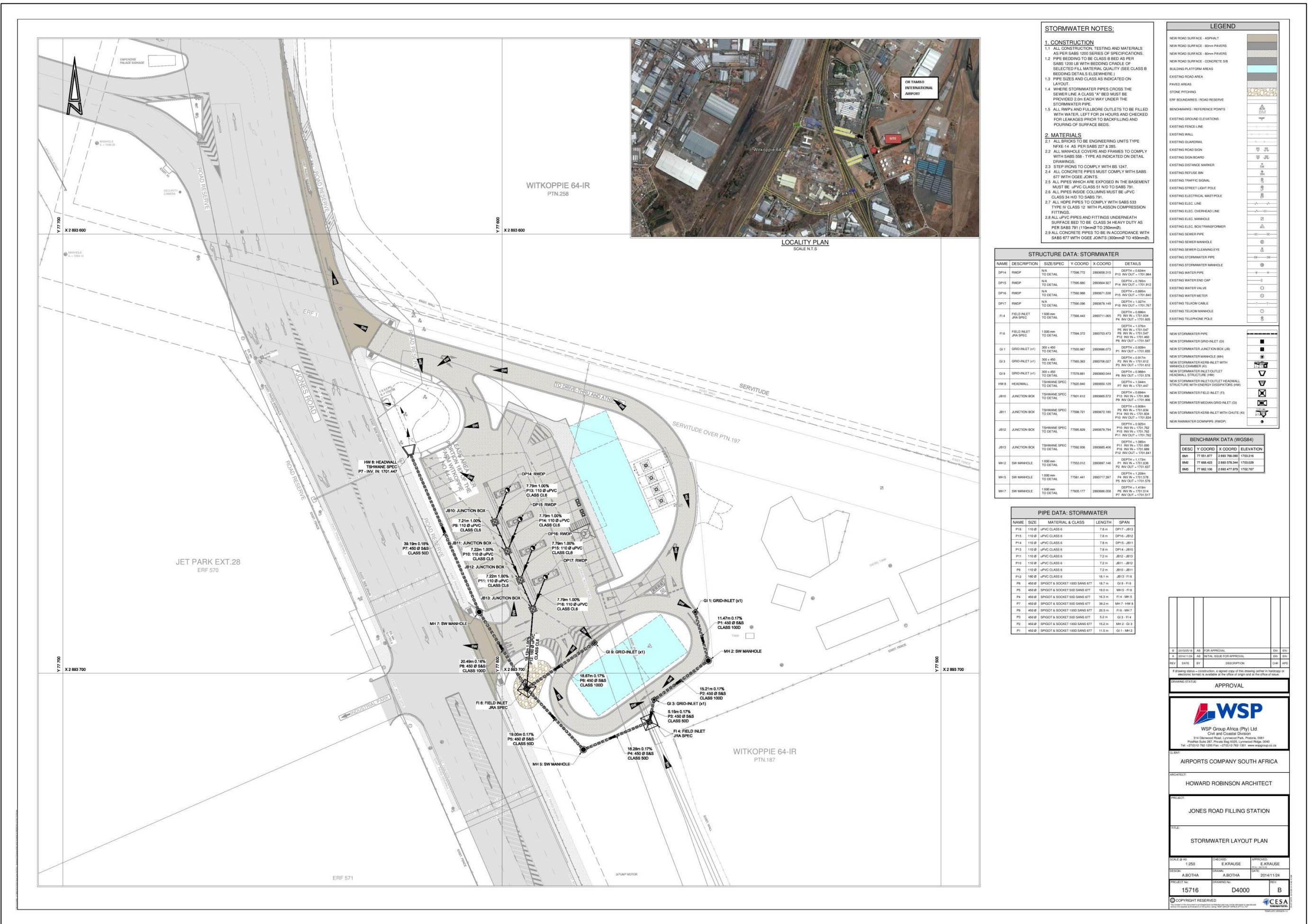


Figure C1: Site Layout Plan.



STORMWATER NOTES:

- CONSTRUCTION**
 - 1.1 ALL CONSTRUCTION, TESTING AND MATERIALS AS PER SABS 1000 SERIES OF SPECIFICATIONS.
 - 1.2 PIPE BEDDING TO BE CLASS B BED AS PER SABS 1200 LB WITH BEDDING CRADLE OF SELECTED FILL MATERIAL QUALITY (SEE CLASS B BEDDING DETAILS ELSEWHERE.)
 - 1.3 PIPE SIZES AND CLASS AS INDICATED ON LAYOUT.
 - 1.4 WHERE STORMWATER PIPES CROSS THE SEWER LINE A CLASS 'A' BED MUST BE PROVIDED 2m EACH WAY UNDER THE STORMWATER PIPE.
 - 1.5 ALL TRIMPS AND FULLBORE OUTLETS TO BE FILLED WITH WATER, LEFT FOR 24 HOURS AND CHECKED FOR LEAKAGES PRIOR TO BACKFILLING AND POURING OF SURFACE BEDS.
- MATERIALS**
 - 2.1 ALL BRICKS TO BE ENGINEERING UNITS TYPE NFKE-14 AS PER SABS 227 & 285.
 - 2.2 ALL MANHOLE COVERS AND FRAMES TO COMPLY WITH SABS 558 - TYPE AS INDICATED ON DETAIL DRAWINGS.
 - 2.3 STEP PIPES TO COMPLY WITH SABS 677 WITH OGEE JOINTS.
 - 2.4 ALL CONCRETE PIPES MUST COMPLY WITH SABS 677 WITH OGEE JOINTS.
 - 2.5 ALL PIPES WHICH ARE EXPOSED IN THE BASEMENT MUST BE UPVC CLASS 51 N/D TO SABS 791.
 - 2.6 ALL PIPES INSIDE COLUMNS MUST BE UPVC CLASS 54 N/D TO SABS 791.
 - 2.7 ALL HDPE PIPES TO COMPLY WITH SABS 533 TYPE 'N' CLASS 12 WITH PLASSON COMPRESSION FITTINGS.
 - 2.8 ALL UPVC PIPES AND FITTINGS UNDERNEATH SURFACE BED TO BE CLASS 34 HEAVY DUTY AS PER SABS 791 (110mm Ø TO 200mm Ø).
 - 2.9 ALL CONCRETE PIPES TO BE IN ACCORDANCE WITH SABS 677 WITH OGEE JOINTS (300mm Ø TO 450mm Ø).

LEGEND

- NEW ROAD SURFACE - ASPHALT
- NEW ROAD SURFACE - 80mm FAYERS
- NEW ROAD SURFACE - 80mm FAYERS
- NEW ROAD SURFACE - CONCRETE DB
- BUILDING FOOTPRINT
- EXISTING ROAD AREA
- PAVED AREAS
- STONE PITCHING
- ERF BOUNDARIES / ROAD RESERVE
- BINDING MARKS / REFERENCE POINTS
- EXISTING GROUND ELEVATIONS
- EXISTING FENCE LINE
- EXISTING WALL
- EXISTING GUARDRAIL
- EXISTING ROAD SIGN
- EXISTING SIGNBOARD
- EXISTING DISTANCE MARKER
- EXISTING REFUGES BN
- EXISTING TRAFFIC SIGNAL
- EXISTING STREET LIGHT POLE
- EXISTING ELECTRICAL MASTPOLE
- EXISTING ELEC. LINE
- EXISTING ELEC. OVERHEAD LINE
- EXISTING ELEC. MANHOLE
- EXISTING ELEC. BOX/TRANSFORMER
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEANING EYE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER MANHOLE
- EXISTING WATER PIPE
- EXISTING WATER INLET CAP
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING TELECOM CABLE
- EXISTING TELECOM POLE
- EXISTING TELEPHONE HOLE
- NEW STORMWATER PIPE
- NEW STORMWATER JUNCTION BOX (JB)
- NEW STORMWATER JUNCTION BOX (DB)
- NEW STORMWATER MANHOLE (MH)
- NEW STORMWATER KERB INLET WITH MANHOLE CHAMBER (KI)
- NEW STORMWATER KERB INLET WITH CHUTE (KI)
- NEW STORMWATER INLET/OUTLET HEADWALL STRUCTURE (HW)
- NEW STORMWATER INLET/OUTLET HEADWALL STRUCTURE WITH ENERGY DISSIPATORS (HW)
- NEW STORMWATER FIELD INLET (FI)
- NEW STORMWATER MEDIAN GRID INLET (GI)
- NEW STORMWATER KERB INLET WITH CHUTE (KI)
- NEW STORMWATER DOWNPIPE (RWD)

STRUCTURE DATA: STORMWATER

NAME	DESCRIPTION	SIZE/SPEC	Y-COORD	X-COORD	DETAILS
DP14	RWD	100mm	7706.772	28006.319	DEPTH = 0.50m P13 INV IN = 1701.884 P14 INV OUT = 1701.812
DP15	RWD	100mm	7706.880	28006.807	DEPTH = 0.50m P13 INV IN = 1701.812 P14 INV OUT = 1701.812
DP16	RWD	100mm	7706.988	28007.538	DEPTH = 0.50m P13 INV IN = 1701.812 P14 INV OUT = 1701.812
DP17	RWD	100mm	7706.096	28007.149	DEPTH = 0.50m P13 INV IN = 1701.767 P14 INV OUT = 1701.767
FI 4	FIELD INLET JRA SPEC	100mm	7706.443	28071.065	DEPTH = 0.50m P5 INV IN = 1701.824 P4 INV OUT = 1701.888
FI 6	FIELD INLET JRA SPEC	100mm	7704.373	28070.473	DEPTH = 0.50m P5 INV IN = 1701.547 P4 INV OUT = 1701.547 P6 INV IN = 1701.547 P5 INV OUT = 1701.547
GI 1	GRID-INLET (x1)	300 x 450	7706.987	28006.073	DEPTH = 0.50m P1 INV IN = 1701.655
GI 3	GRID-INLET (x1)	300 x 450	7706.363	28070.027	DEPTH = 0.50m P2 INV IN = 1701.612 P1 INV OUT = 1701.612
GI 9	GRID-INLET (x1)	300 x 450	7707.891	28000.044	DEPTH = 0.50m P6 INV IN = 1701.678
HW 8	HEADWALL TSHWANE SPEC TO DETAIL	100mm	7702.840	28000.139	DEPTH = 1.04m P7 INV IN = 1701.647
JB 10	JUNCTION BOX TSHWANE SPEC TO DETAIL	100mm	7701.612	28006.572	DEPTH = 0.50m P13 INV IN = 1701.826 P9 INV IN = 1701.826 P14 INV OUT = 1701.824
JB 11	JUNCTION BOX TSHWANE SPEC TO DETAIL	100mm	7706.731	28052.180	DEPTH = 0.50m P9 INV IN = 1701.824 P14 INV IN = 1701.824 P13 INV OUT = 1701.824
JB 12	JUNCTION BOX TSHWANE SPEC TO DETAIL	100mm	7706.638	28007.794	DEPTH = 0.50m P13 INV IN = 1701.782 P14 INV IN = 1701.782 P11 INV OUT = 1701.782
JB 13	JUNCTION BOX TSHWANE SPEC TO DETAIL	100mm	7702.836	28006.406	DEPTH = 1.02m P11 INV IN = 1701.895 P16 INV IN = 1701.895 P12 INV OUT = 1701.841
MH 1	SW MANHOLE	100mm	7706.012	28007.146	DEPTH = 1.20m P4 INV IN = 1701.638 P5 INV OUT = 1701.637
MH 5	SW MANHOLE	100mm	7706.441	28071.287	DEPTH = 1.20m P4 INV IN = 1701.678 P5 INV OUT = 1701.677
MH 7	SW MANHOLE	100mm	7706.177	28006.056	DEPTH = 1.41m P6 INV IN = 1701.674 P7 INV OUT = 1701.617

PIPE DATA: STORMWATER

NAME	SIZE	MATERIAL & CLASS	LENGTH	SPAN
P16	110 Ø	UPVC CLASS 6	7.8m	DP17 - JB13
P15	110 Ø	UPVC CLASS 6	7.8m	DP16 - JB12
P14	110 Ø	UPVC CLASS 6	7.8m	DP15 - JB11
P13	110 Ø	UPVC CLASS 6	7.8m	DP14 - JB10
P11	110 Ø	UPVC CLASS 6	7.2m	JB12 - JB13
P10	110 Ø	UPVC CLASS 6	7.2m	JB11 - JB12
P9	110 Ø	UPVC CLASS 6	7.2m	JB10 - JB11
P12	100 Ø	UPVC CLASS 6	18.1m	JB13 - FI 5
P8	450 Ø	SPDOT & SOCKET 1000 SANS 677	18.7m	GI 9 - FI 6
P4	450 Ø	SPDOT & SOCKET 500 SANS 677	16.0m	MH 5 - FI 4
P5	450 Ø	SPDOT & SOCKET 500 SANS 677	16.3m	FI 4 - MH 1
P7	450 Ø	SPDOT & SOCKET 500 SANS 677	38.2m	MH 7 - MH 8
P6	450 Ø	SPDOT & SOCKET 1000 SANS 677	28.5m	FI 6 - MH 7
P3	450 Ø	SPDOT & SOCKET 500 SANS 677	5.2m	GI 3 - FI 4
P2	450 Ø	SPDOT & SOCKET 1000 SANS 677	18.2m	MH 2 - GI 3
P1	450 Ø	SPDOT & SOCKET 1000 SANS 677	11.5m	GI 1 - MH 2

BENCHMARK DATA (WGS84)

DESC	Y COORD	X COORD	ELEVATION
BM1	77 501 877	2 885 76 280	1703.316
BM2	77 685 425	2 885 576 344	1703.269
BM3	77 685 138	2 885 477 979	1702.747

REV	DATE	BY	DESCRIPTION	CHK	APP
1	2014/11/28	AB	FOR APPROVAL	EB	EB
2	2014/11/28	AB	DRAWING FOR APPROVAL	EB	EB
3	2014/11/28	AB	DRAWING FOR APPROVAL	EB	EB

APPROVAL

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AIRPORTS COMPANY SOUTH AFRICA

PROJECT: **HOWARD ROBINSON ARCHITECT**

CLIENT: **JONES ROAD FILLING STATION**

TITLE: **STORMWATER LAYOUT PLAN**

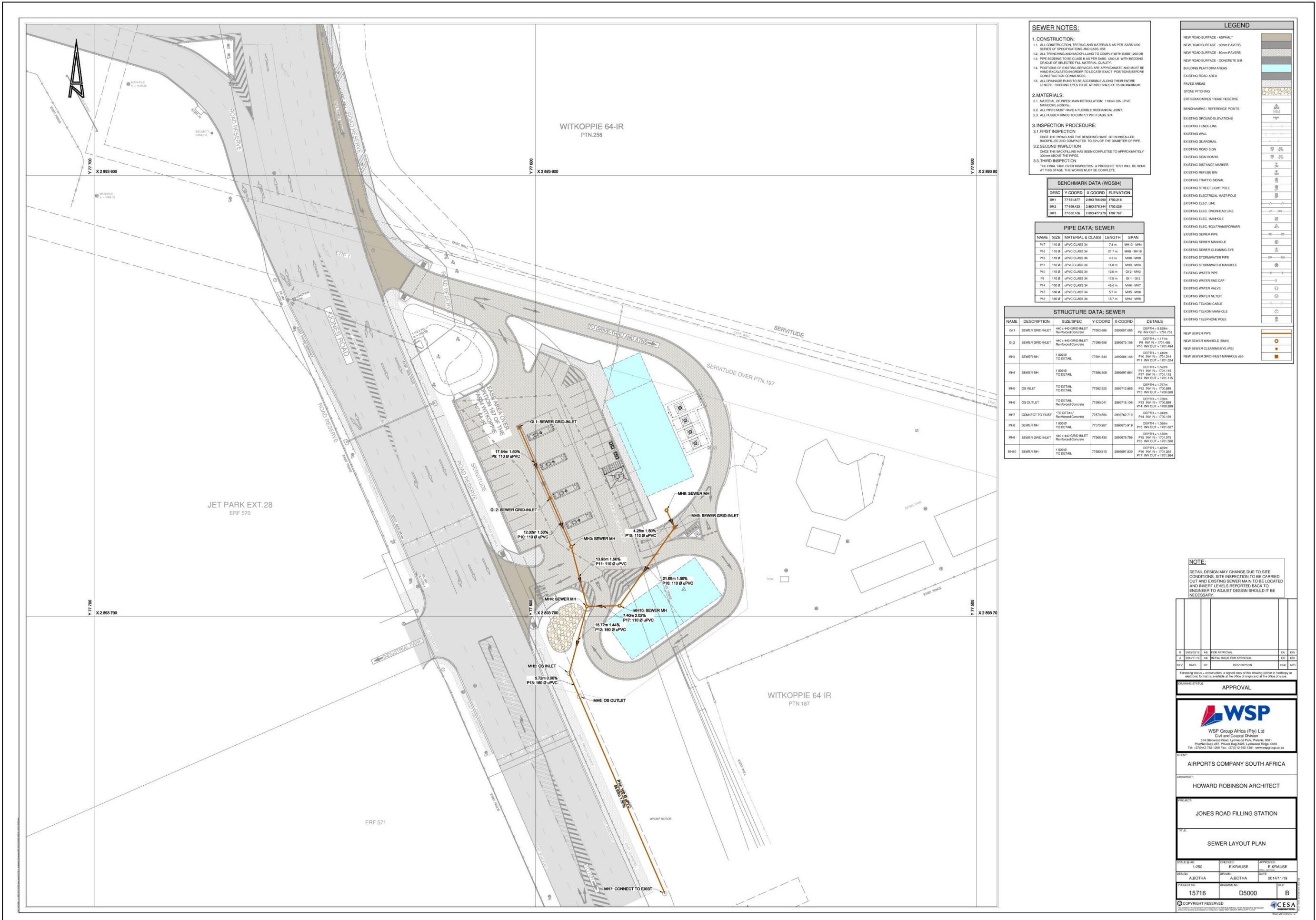
SCALE: 1:250

DESIGN: A. BOTHA
CHECKED: E. KRAUSE
DATE: 2014/11/28

PROJECT NO: 15716
DRAWING NO: D4000
REVISION: B

CSA

Figure C2: Stormwater Layout Plan.



- SEWER NOTES:**
- CONSTRUCTION:**
 - ALL CONSTRUCTION TESTING AND MATERIALS AS PER SABS 1200 SERIES OF SPECIFICATIONS AND SABS 105.
 - ALL TRENCHING AND BACKFILLING TO COMPLY WITH SABS 1200 OR 1201.
 - PIPE RECORD TO BE CLASS B AS PER SABS 1201.8 WITH RECORDING CIRCLE OF SELECTED FILL MATERIAL QUALITY.
 - POSITIONS OF EXISTING SERVICES ARE APPROXIMATE AND MUST BE HAND EXCAVATED IN ORDER TO LOCATE EXACT POSITIONS BEFORE CONSTRUCTION COMMENCES.
 - ALL DRAINAGE RUNS TO BE ACCESSIBLE ALONG THEIR ENTIRE LENGTH. HOODING EYES TO BE AT INTERVALS OF 25m MAXIMUM.
 - MATERIALS:**
 - MATERIAL OF PIPES MANUFACTURED: 110mm DIA UPVC MANHOLE (MHO).
 - ALL PIPES MUST HAVE A FLEXIBLE MECHANICAL JOINT.
 - ALL MANHOLE RINGS TO COMPLY WITH SABS 105.
 - INSPECTION PROCEDURE:**
 - FIRST INSPECTION:** ONCE THE PIPING AND THE BENCHMARKS HAVE BEEN INSTALLED, BACKFILLS ARE COMPACTED TO 90% OF THE DIAMETER OF PIPE.
 - SECOND INSPECTION:** ONCE THE BACKFILLING HAS BEEN COMPLETED TO APPROXIMATELY 300mm ABOVE THE PIPES.
 - THIRD INSPECTION:** THE FINAL TAKE OVER INSPECTION. A REINSURE TEST WILL BE DONE AT THIS STAGE. THE WORKS MUST BE COMPLETE.

BENCHMARK DATA (WGS84)

DESC	Y COORD	X COORD	ELEVATION
BM1	77551.877	2 883 768.991	1703.216
BM2	77682.422	2 883 576.344	1703.029
BM3	77682.106	2 883 477.975	1702.787

PIPE DATA: SEWER

NAME	SIZE	MATERIAL & CLASS	LENGTH	SPAN
P17	150 Ø	UPVC CLASS 34	7.4 m	MH9 - MH4
P16	150 Ø	UPVC CLASS 34	21.7 m	MH9 - MH10
P15	150 Ø	UPVC CLASS 34	4.3 m	MH9 - MH8
P11	150 Ø	UPVC CLASS 34	14.0 m	MH9 - MH4
P10	150 Ø	UPVC CLASS 34	12.0 m	OS1 - MH9
P9	150 Ø	UPVC CLASS 34	13.3 m	OS1 - OS2
P14	160 Ø	UPVC CLASS 34	48.8 m	MH6 - MH7
P13	160 Ø	UPVC CLASS 34	5.7 m	MH5 - MH6
P12	160 Ø	UPVC CLASS 34	15.7 m	MH4 - MH5

STRUCTURE DATA: SEWER

NAME	DESCRIPTION	SIZE/SPEC	Y COORD	X COORD	DETAILS
OS1	SEWER GRID-INLET	400 x 400 GRID-INLET Reinforced Concrete	77603.886	289567.265	DEPTH = 0.50m P9 INV IN = 1701.751 P10 INV IN = 1701.488 P11 INV IN = 1701.484
OS2	SEWER GRID-INLET	400 x 400 GRID-INLET Reinforced Concrete	77584.656	289573.156	DEPTH = 0.50m P12 INV IN = 1701.254 P13 INV IN = 1701.254
MH9	SEWER MH	1000 Ø TO DETAIL	77581.840	289584.106	DEPTH = 1.60m P10 INV IN = 1701.115 P11 INV IN = 1701.115 P12 INV IN = 1701.115
MH4	SEWER MH	1000 Ø TO DETAIL	77586.338	289587.664	DEPTH = 1.50m P11 INV IN = 1701.115 P12 INV IN = 1701.115 P13 INV IN = 1701.115
MH5	OS INLET	TO DETAIL	77582.322	289572.865	DEPTH = 1.50m P12 INV IN = 1701.889 P13 INV IN = 1701.889
MH6	OS OUTLET	TO DETAIL	77580.041	289578.106	DEPTH = 1.75m P14 INV IN = 1701.889 P15 INV IN = 1701.889
MH7	CONNECT TO EXIST	TO DETAIL	77570.664	289570.710	DEPTH = 1.60m P16 INV IN = 1701.169
MH8	SEWER MH	1000 Ø TO DETAIL	77570.267	289575.919	DEPTH = 1.36m P15 INV IN = 1701.637
MH9	SEWER GRID-INLET	400 x 400 GRID-INLET Reinforced Concrete	77586.430	289579.788	DEPTH = 1.50m P12 INV IN = 1701.873 P13 INV IN = 1701.889
MH10	SEWER MH	1000 Ø TO DETAIL	77580.913	289587.320	DEPTH = 1.48m P16 INV IN = 1701.254 P17 INV IN = 1701.254

LEGEND

- NEW ROAD SURFACE - ASPHALT
- NEW ROAD SURFACE - 60mm PAVERS
- NEW ROAD SURFACE - 80mm PAVERS
- NEW ROAD SURFACE - CONCRETE 50
- BUILDING PLATFORM AREAS
- EXISTING ROAD AREA
- PAVED AREAS
- STONE PITCHING
- EFF BOUNDARIES / ROAD RESERVE
- BENCHMARKS / REFERENCE POINTS
- EXISTING GROUND ELEVATIONS
- EXISTING FENCE-LINE
- EXISTING WALL
- EXISTING CLAUSTRAL
- EXISTING ROAD SIGN
- EXISTING SIGN BOARD
- EXISTING DISTANCE MARKER
- EXISTING REFUSE BIN
- EXISTING TRAFFIC SIGNAL
- EXISTING STREET LIGHT POLE
- EXISTING ELECTRICAL WASTEPOLE
- EXISTING ELEC. LINE
- EXISTING ELEC. OVERHEAD LINE
- EXISTING ELEC. MANHOLE
- EXISTING ELEC. BOX/TRANSFORMER
- EXISTING SEWER PIPE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEANING EYE
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER MANHOLE
- EXISTING WATER PIPE
- EXISTING WATER END CAP
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING TELECOM CABLE
- EXISTING TELECOM MANHOLE
- EXISTING TELEPHONE POLE

NOTE:
 DETAIL DESIGN MAY CHANGE DUE TO SITE CONDITIONS. SITE INSPECTION TO BE CARRIED OUT AND EXISTING SEWER MAIN TO BE LOCATED AND INVERT LEVELS REPORTED BACK TO ENGINEER TO ADJUST DESIGN SHOULD IT BE NECESSARY.

REV	DATE	BY	DESCRIPTION	CHK	APP
E	2014/11/18	AB	FOR APPROVAL	ED	ED
A	2014/11/18	AB	DETAIL DESIGN FOR APPROVAL	ED	ED

APPROVAL

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AIRPORTS COMPANY SOUTH AFRICA

HOWARD ROBINSON ARCHITECT

JONES ROAD FILLING STATION

SEWER LAYOUT PLAN

SCALE: 1:250
 DESIGNED: A.BOTHA
 DRAWN: A.BOTHA
 PROJECT NO: 15716
 DRAWING NO: D5000
 DATE: 2014/11/18
 SHEET: B

CSA
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Figure C3: Sewer Layout Plan.