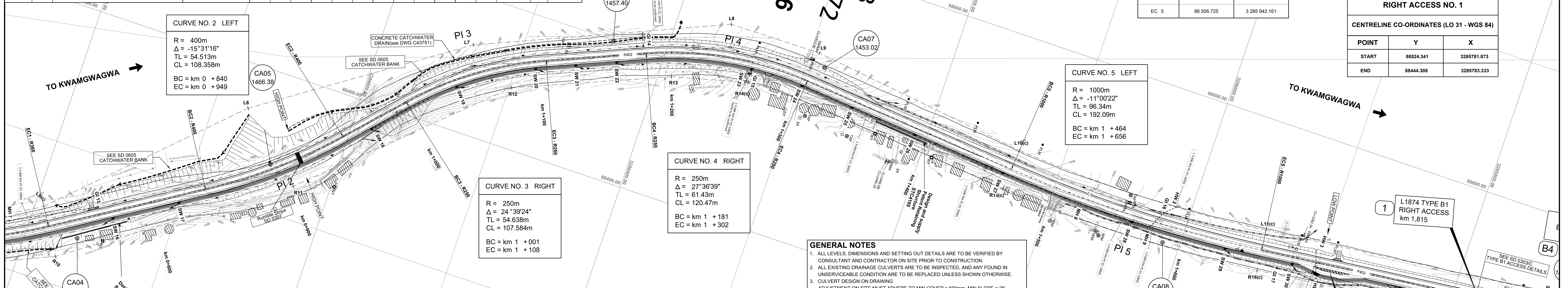


CROSS DRAINAGE DETAILS (WGS)																							SURFACE / SUB SURFACE DRAINAGE DETAILS							GUARDRAIL / BARRIER DETAILS							RETAINING WALL DETAILS							SIDEWALK DETAILS										
S.K.D.	Type	Size (dia)	Class	Bedding Class	Length	Skew	Conc. Chutes	Reference Dwg	Side Inlet	Co-ordinates Y	Co-ordinates X	Grid Inlets	Co-ordinates Y	Co-ordinates X	Head Wall	Co-ordinates Y	Co-ordinates X	LHS / RHS	Grade (%)	Area (ha)	Discharge (m³/s)	Vol (m³/s)	Remarks	Legend	Type	LHS/RHS	Start Km	End Km	Length	Reference	Legend	Type	LHS/RHS	Start Km	End Km	Length	Reference	End Treatment	Legend	Type	LHS/RHS	Start Km	End Km	Length	Cut / Fill	Reference	Legend	LHS/RHS	Start Km	End Km	Length	Reference		
0.761,44	C	-	-	-	-	-	-	SD 0602/B	-	-	-	1	-	-	-	-	-	RHS	-	-	-	-	-	-	1000 V	RHS	0.760	0.913	153m	SD 0601	---	GUARDRAIL	RHS	0.970	1.010	40m	SD 1011/1	-	BULL NOSED	-	Loffelstein	RHS	1.360	1.400	40m	Fill	SD 0901	-	RHS	0,000	7,517	7733m	-	SD 0203/1
0.770	C	-	-	-	-	-	-	SD 0603/A	-	-	-	-	-	-	-	-	-	RHS	-	-	-	-	-	-	1000 V	LHS	0.760	0.913	153m	SD 0601	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



CURVE NO. 2 LEFT

R = 400m
 $\Delta = -15^{\circ}31'16''$
 TL = 54.513m
 CL = 108.358m
 BC = km 0 +840
 EC = km 0 +949

CURVE NO. 3 RIGHT

R = 250m
 $\Delta = 27^{\circ}38'39''$
 TL = 61.43m
 CL = 120.47m
 BC = km 1 +181
 EC = km 1 +302

CURVE NO. 4 RIGHT

R = 250m
 $\Delta = 27^{\circ}38'39''$
 TL = 61.43m
 CL = 120.47m
 BC = km 1 +181
 EC = km 1 +302

CURVE NO. 5 LEFT

R = 1000m
 $\Delta = -11^{\circ}00'22''$
 TL = 96.34m
 CL = 192.09m
 BC = km 1 +464
 EC = km 1 +656

MAIN ROAD 402

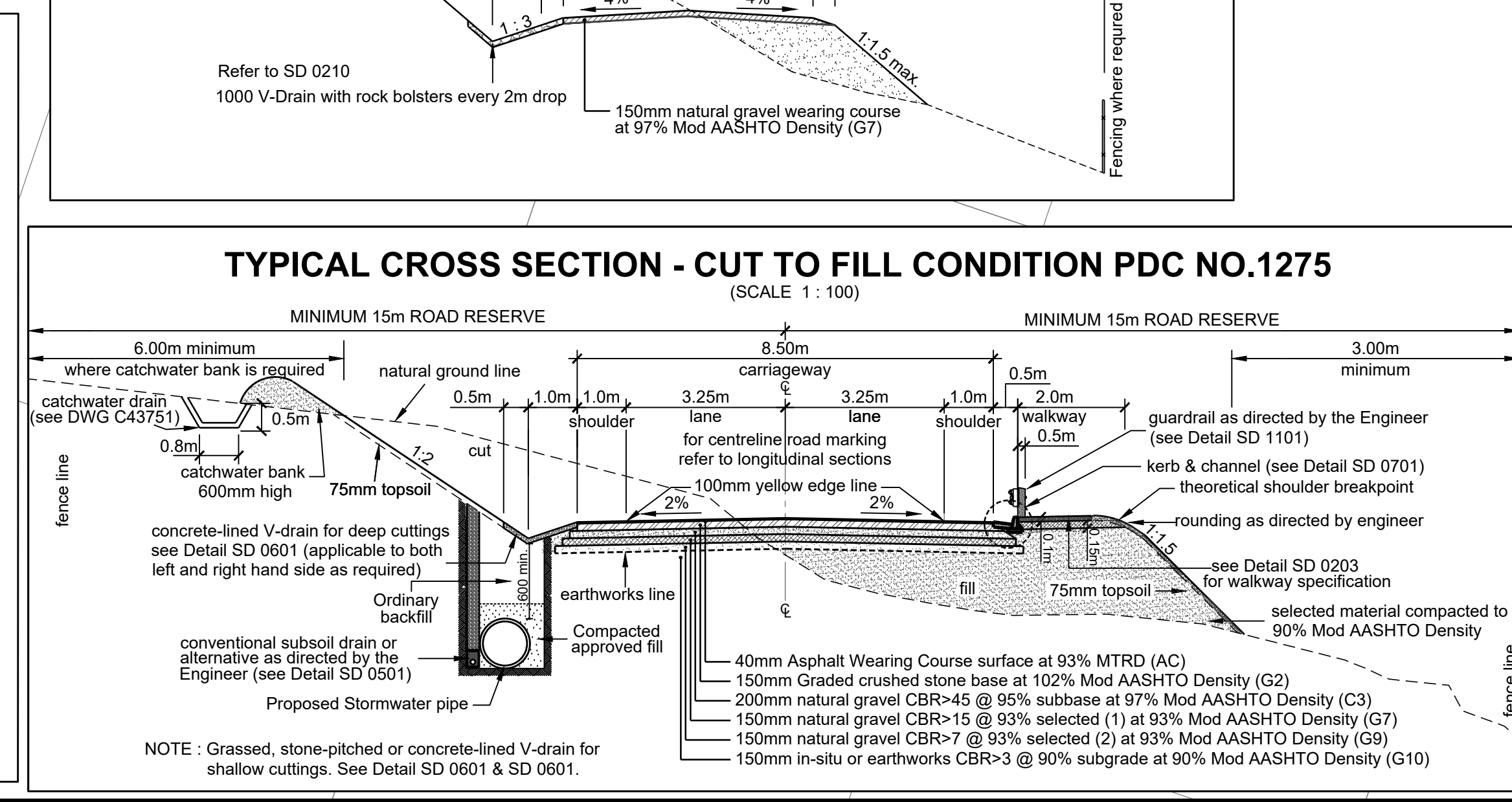
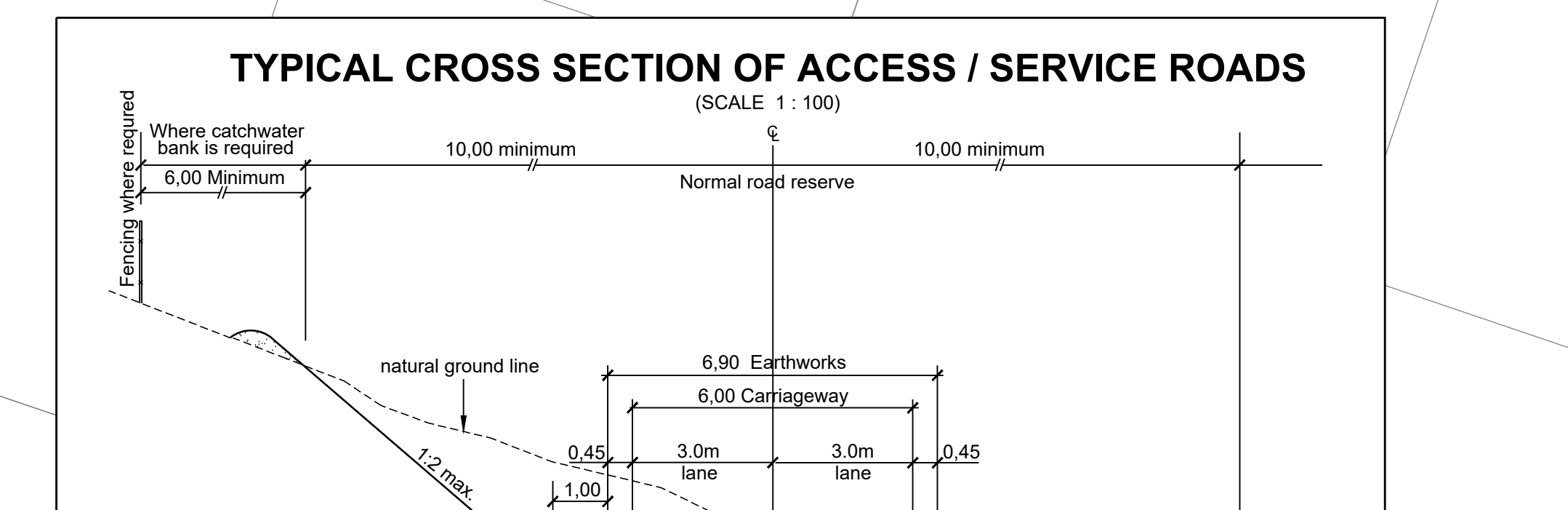
CENTRELINE CO-ORDINATES (LO 31 - WGS 84)

POINT	Y	X
PI 2	88 330.442	3 286 639.653
BC 2	88 301.545	3 286 685.877
EC 2	88 370.655	3 286 602.848
PI 3	88 449.058	3 286 531.088
BC 3	88 408.753	3 286 567.978
EC 3	88 470.299	3 286 480.747
PI 4	88 522.606	3 286 356.777
BC 4	88 498.725	3 286 413.376
EC 4	88 517.536	3 286 295.556
PI 5	88 496.200	3 286 037.927
BC 5	88 504.152	3 286 133.941
EC 5	88 506.725	3 285 942.161

RIGHT ACCESS NO. 1

CENTRELINE CO-ORDINATES (LO 31 - WGS 84)

POINT	Y	X
START	88524.341	3285781.873
END	88444.308	3285783.333



- GENERAL NOTES**
- ALL LEVELS, DIMENSIONS AND SETTING OUT DETAILS ARE TO BE VERIFIED BY CONSULTANT AND CONTRACTOR ON SITE PRIOR TO CONSTRUCTION.
 - ALL EXISTING DRAINAGE CULVERTS ARE TO BE INSPECTED, AND ANY FOUND IN UNSERVICABLE CONDITION ARE TO BE REPLACED UNLESS SHOWN OTHERWISE. CULVERT DESIGN ON DRAWING ADJUSTMENT ON SITE MUST ADHERE TO MIN COVER = 600mm, MIN SLOPE = 2%.
 - PIPE CULVERTS ARE TO BE LAID IN ACCORDANCE WITH SD 0401 WITH HEADWALLS AS PER SD 0406. MIN. DIA. = 450mm FOR MINOR ACCESS ROADS AND ACCESS BELLMOUTHS, AND MIN. DIA. = 600mm FOR MAJOR ROAD CROSS DRAINAGE.
 - FOR EROSION CONTROL GABION MATTRESSES ARE RECOMMENDED AT CULVERT INLETS AND OUTLETS.
 - EARTH BERMS ARE TO BE CONSTRUCTED AT CULVERT INLETS TO DRECT STORMWATER INTO CULVERTS WHERE NECESSARY.
 - SUBSOIL DRAINS AS PER SD 0501 ARE TO BE INSTALLED WITH 750 V-DRAINS, OR WHERE HIGH WATER TABLES ARE ENCOUNTERED.
 - FOR EROSION CONTROL GABION MATTRESSES ARE RECOMMENDED AT CULVERT INLETS AND OUTLETS.
 - DAYLIGHTING REQUIREMENTS ARE TO BE DECIDED BY THE ENGINEER ON SITE. DRIVEWAY ACCESSES MUST BE REALIGNED TO SUIT THE NEW ROAD ALIGNMENT AND ADEQUATELY COMPACTED UP TO THE ROAD RESERVE.
 - FOR DRIVEWAYS THAT INTERSECT THE V-DRAIN, REFER TO DETAIL 5 ON DRAWING C43751 ACCESS CLOSURES ARE TO BE PHYSICALLY BARRICADED WITH GUARDRAILS WHERE ACCESS IS STILL POSSIBLE AFTER COMPLETION OF WORK.
 - GUARDRAILS ARE TO BE INSTALLED IN ACCORDANCE WITH SD 1101, SD 1102 WHERE FILL EMBANKMENTS EXCEED 3m IN HEIGHT OR WHERE HAZARDOUS OBSTRUCTIONS CANNOT BE REMOVED.
 - EXISTING ROAD SIGNS, EXISTENCES AND FENCING AFFECTED BY CONSTRUCTION ARE TO BE REMOVED / RELOCATED WHERE NECESSARY.
 - UNDERGROUND SERVICE CROSSINGS AND MARKERS ARE TO BE IN ACCORDANCE WITH SD 1001 TO SD 1003.
 - ALL NEW ROAD SIGNS AND ROAD MARKING REQUIREMENTS ARE TO CONFORM TO THE SOUTHERN AFRICAN ROAD TRAFFIC SIGNS MANUAL (SARTSM).
 - ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE 'COLTO' SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR STATE ROAD AUTHORITIES 1998 EDITION.
 - ALL EXISTING CULVERT POSITIONS TO BE VERIFIED ON SITE.
 - THE LETTERS L AND R DENOTE THE ROAD RESERVE BOUNDARY TO THE LEFT AND THE RIGHT OF THE ROAD RESPECTIVELY.
 - UNDERGROUND SERVICE CROSSINGS AND MARKERS ARE TO BE IN ACCORDANCE WITH SD 1001 TO SD 1003.
 - ALL STOP SIGNS FOR TYPE B1 ACCESSES ARE TO BE POSITIONED 13m FROM THE CENTRELINE OF P402.
 - ALL STOP SIGNS FOR TYPE B3 ACCESSES ARE TO BE POSITIONED 8m FROM THE CENTRELINE OF P402.
 - FOR SPEED HUMP AND RAISED PEDESTRIAN CROSSINGS REFER TO DRAWING SD0314R.
 - FOR RUMBLE STRIP DETAILS REFER TO DRAWING SD 0307.
 - FOR TAXI PARKING BAY DETAILS REFER TO DRAWING SD 0305. ALL BAYS TO MATCH THE SLOPE OF THE ROAD.
 - DESIGN OF PATENT RETAINING STRUCTURES IS TO BE UNDERTAKEN BY A PROFESSIONALLY REGISTERED ENGINEER. SHALL INCLUDE FOR PROFESSIONAL INDEMNITY ON ALL DESIGN WORKS UNDERTAKEN.
 - EROSION PROTECTION REQUIRED AT THE END OF TOE DRAINS AND MITRE CHUTES.
 - FOR CATCHWATER DRAIN DETAILS, REFER TO DETAIL C43751.
 - ALL DESIGN CALCULATIONS AND DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

NOTE
 FOR ACCESS CROSSINGS REFER TO SD C43751

APPROX. COORDS WGS84 Lo 31

Pt	Y	X
L5(c)	+88 251.85	+3 286 793.67
L6	+88 367.65	+3 286 675.52
L7	+88 464.15	+3 286 634.72
L8	+88 538.80	+3 286 361.41
L9	+88 539.55	+3 286 293.73
L10(c)	+88 519.10	+3 286 132.70
L11(c)	+88 521.64	+3 285 943.80

TAXI / BUS PARKING BAY CO-ORDINATES

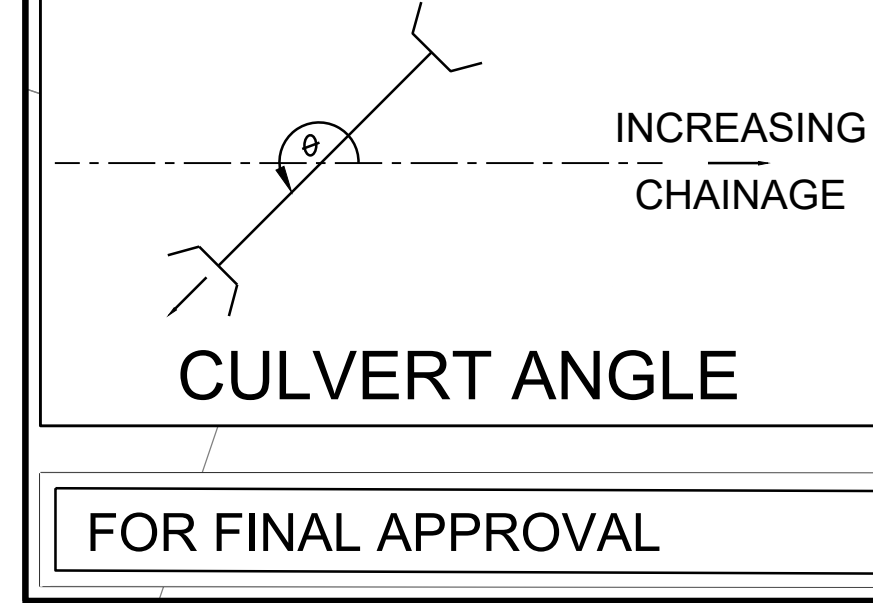
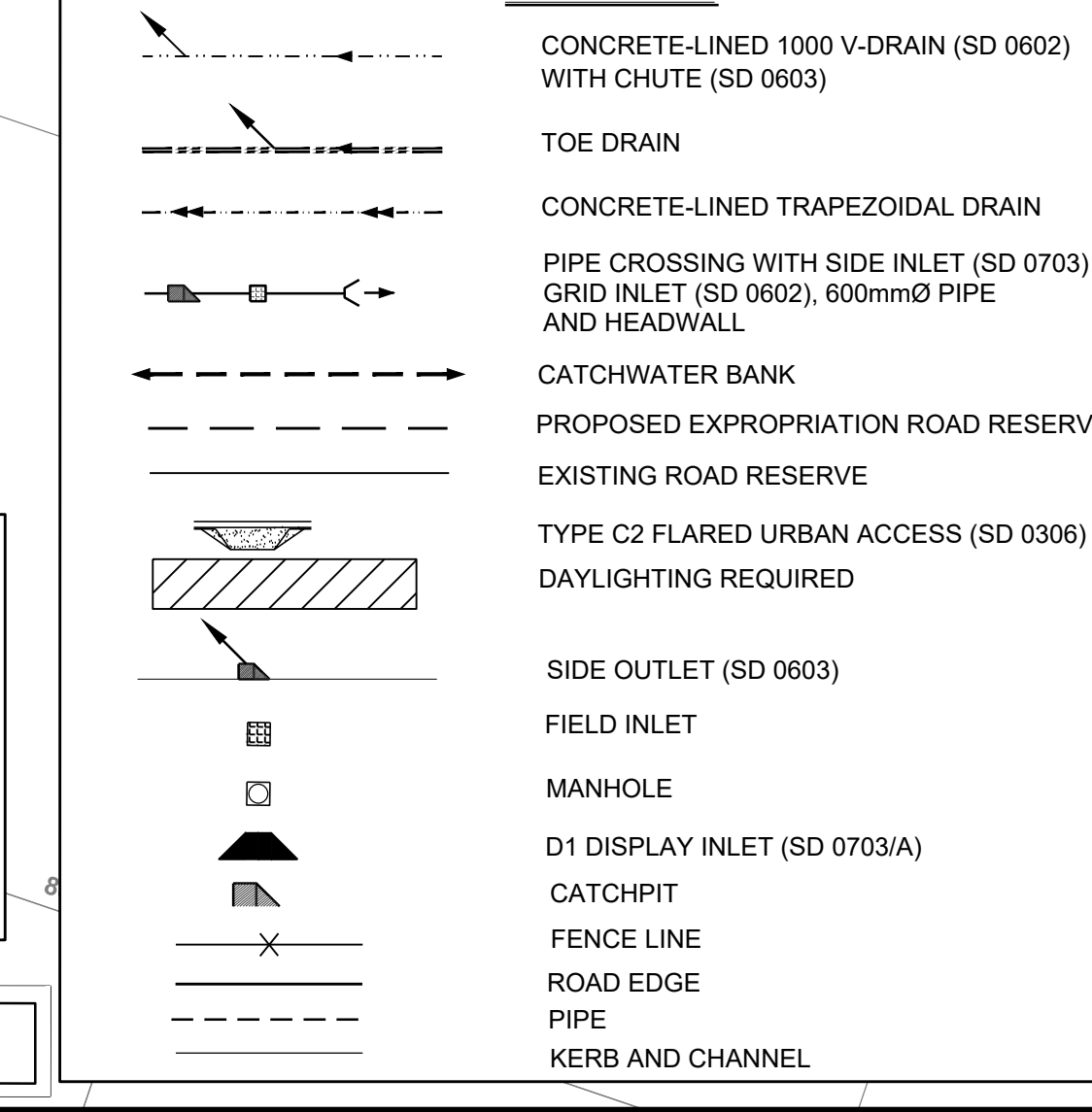
BAY No.	LHS/RHS	POINT	Y	X
B3	LHS SKD 1980	1	88505.771	3285911.936
		2	88503.795	3285895.674
		3	88505.323	3285891.498
		4	88510.870	3285886.543
B4	RHS SKD 1720	1	88508.292	3285886.252
		2	88506.317	3285870.005
		3	88507.853	3285855.761
		4	88513.411	3285839.677

ACCESSES

ACCESS	STAKED KM DISTANCE	LEFT OR RIGHT	DESCRIPTION	REMARKS
1. L 1874	1,817	RHS	TYPE B1 ACCESS	REFER TO SD 0303/C
2. L 1935	3,183	RHS	TYPE B1 ACCESS	REFER TO SD 0303/C
3. D 2206	3,880	LHS	TYPE B1 ACCESS	REFER TO SD 0303/C
4. Minor Access	3,958	RHS	TYPE B3 ACCESS	REFER TO SD 0303/C
5. D 1139	4,235	RHS	TYPE B1 ACCESS	REFER TO SD 0303/C
6. L 761	4,997	RHS	TYPE B1 ACCESS	REFER TO SD 0303/C

NOTATION

BC	BEGINNING OF CIRCULAR CURVE
EC	END OF CIRCULAR CURVE
PI	POINT OF INTERSECTION
R	RADIUS OF CIRCULAR CURVE
Δ	DEFLECTION ANGLE OF CIRCULAR CURVE
L	LENGTH OF CIRCULAR CURVE
TL	LENGTH OF CURVE TANGENT
BT	BEGINNING OF TAPER
ET	END OF TAPER
CL	CURVE LENGTH



SYMBOL	DATE	DESCRIPTION	CHECKED	SIGNED
D	OCT 2019	FOR FINAL APPROVAL	KG	
C	AUG 2018	FOR APPROVAL	KG	
B	AUG 2016	FOR APPROVAL	MM	

AS BUILT

SUPERVISING ENGINEER: DATE: _____

SUPERVISING AUTHORITY

CONTINUED FROM: C41964
 CONTINUED ON: C41966
 CROSS SECTION NO: C41972-C41982
 LONG SECTION NO: C4185-C41988
 NAIDU CONSULTING - CONSULTING ENGINEER
 K GOVENDER SIGN: _____

DESIGNED BY: M SINGH
 CHECKED BY: K GOVENDER
 DRAWN BY: M MARAIS
 CHECKED BY: S RAMATHER

transport
 Department:
 Transport
 Province of KwaZulu-Natal

NAIDU CONSULTING
 Naidu Consulting no.: D267/2008/D

UPGRADING OF MAIN RD P402 (HOLY FAMILY CONVENT - KWAMGWAGWA)

TRANSPORTATION ENGINEERING: CHEF ENGINEER
 HEAD: TRANSPORT