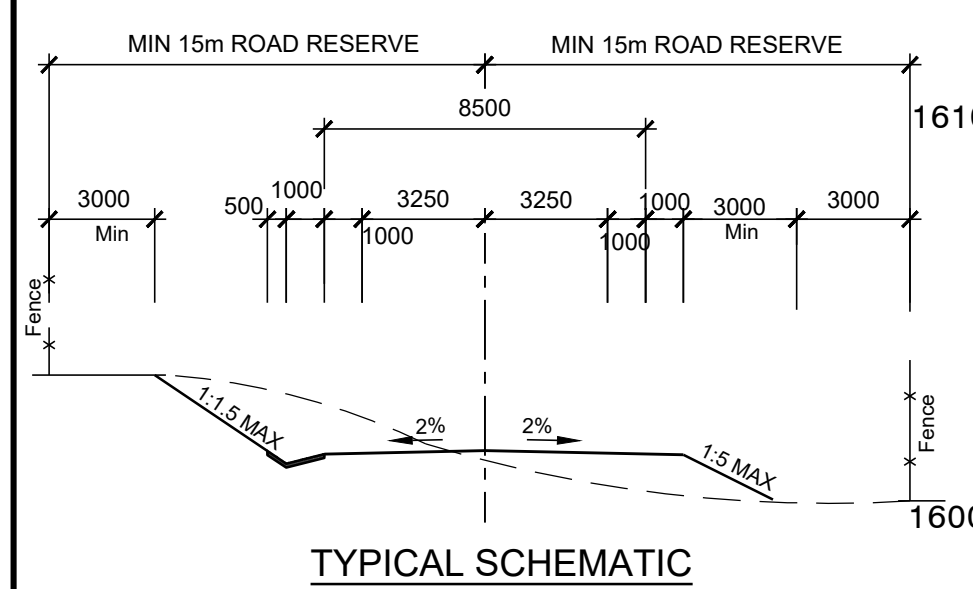


3) REFERENCE DRAWINGS:

PLANS:	C38618 - C38626
CROSS SECTION:	C38632 - C38645
STORMWATER DETAILS:	C38655
TRAFFIC	C38646 - C38654



CONCRETE LINED 1000 V DRAIN
(SEE SD 0601)

GRASSED TOE DRAIN

PIPE CULVERT WITH SIDE INLET
AND HEADWALLS

SUBSOIL DRAIN (SD 0501/2)

NATURAL GROUND LINE

FINISHED ROAD LEVEL

DESIGN GRADE LINE

SINGLE GUARDRAIL

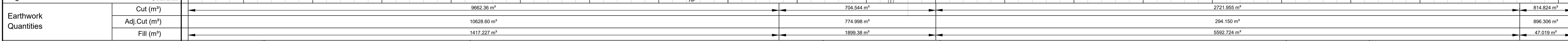
DOUBLE GUARDRAIL

KERB & CHANNEL WITH SIDE INLET
AND CHUTE (DETAIL 8 on PLAN LAYOUTS)

KERB & CHANNEL WITH SIDE INLET
AND CHUTE

GRID INLET AND HEADWALLS

FOR APPROVAL



Vertical Alignment		V-cl K-val	4.25 Metres Left of Centre Line		PIVOT POINT 0.00 Centre Line		4.25 Metres Right of Centre Line	
Grade (%)		41920	700.00 102.23	42033.38	6.348			
Finished Road Levels (Top of Surfacing)		1570.09 1571.16 1572.27 1573.42 1574.61 1575.84 1577.11 1578.48 1579.95 1581.51 1583.18 1584.95 1586.84 1588.84 1590.95 1593.18 1595.55 1598.05 1599.67 1598.31 1596.31 1593.64 1590.24 1586.06 1581.16 1575.55 1569.24 1561.34 1551.64 1540.14 1526.84 1511.64 1495.44 1477.54 1457.94 1436.64 1413.74 1389.24 1363.14 1335.44 1306.14 1275.24 1242.74 1208.64 1172.94 1135.74 1097.04 1056.84 1015.14 971.94 927.24 881.04 833.34 784.04 732.24 678.94 624.14 567.84 509.04 448.24 385.44 320.64 254.84 188.04 120.24 51.44 -17.44 -88.64 -158.84 -268.04 -366.24 -453.44 -529.64 -594.84 -648.04 -689.24 -718.44 -735.64 -740.84 -734.04 -715.24 -684.44 -641.64 -586.84 -520.04 -441.24 -350.44 -248.64 -135.84 -12.04 81.84 173.04 252.24 319.44 374.64 417.84 449.04 468.24 475.44 479.64 471.84 457.04 435.24 406.44 370.64 327.84 278.04 222.24 160.44 96.64 31.84 -32.04 -93.24 -162.44 -239.64 -315.84 -391.04 -465.24 -538.44 -610.64 -681.84 -751.04 -818.24 -883.44 -946.64 -1007.84 -1067.04 -1124.24 -1179.44 -1232.64 -1283.84 -1333.04 -1379.24 -1422.44 -1462.64 -1500.84 -1537.04 -1571.24 -1602.44 -1630.64 -1656.84 -1681.04 -1703.24 -1723.44 -1740.64 -1754.84 -1767.04 -1777.24 -1785.44 -1790.64 -1793.84 -1795.04 -1794.24 -1791.44 -1786.64 -1779.84 -1771.04 -1760.24 -1747.44 -1732.64 -1716.84 -1699.04 -1679.24 -1657.44 -1633.64 -1607.84 -1580.04 -1550.24 -1518.44 -1483.64 -1446.84 -1408.04 -1367.24 -1324.44 -1279.64 -1232.84 -1184.04 -1133.24 -1080.44 -1025.64 -968.84 -909.04 -847.24 -783.44 -717.64 -658.84 -596.04 -530.24 -461.44 -389.64 -314.84 -238.04 -159.24 -77.44 5.44 72.64 148.84 224.04 297.24 367.44 434.64 498.84 560.04 618.24 673.44 725.64 774.84 820.04 861.24 898.44 931.64 960.84 986.04 1007.24 1024.44 1037.64 1046.84 1052.04 1054.24 1053.44 1049.64 1042.84 1033.04 1020.24 1004.44 985.64 960.84 930.04 893.24 849.44 808.64 770.84 736.04 704.24 675.44 649.64 627.84 609.04 593.24 580.44 570.64 563.84 560.04 559.24 562.44 568.64 577.84 589.04 602.24 617.44 634.64 653.84 675.04 698.24 723.44 750.64 779.84 811.04 845.24 882.44 921.64 962.84 1006.04 1052.24 1091.44 1121.64 1153.84 1188.04 1224.24 1261.44 1299.64 1338.84 1379.04 1420.24 1462.44 1505.64 1549.84 1595.04 1641.24 1688.44 1736.64 1785.84 1836.04 1887.24 1939.44 1992.64 2046.84 2102.04 2158.24 2215.44 2273.64 2332.84 2393.04 2454.24 2516.44 2579.64 2643.84 2709.04 2775.24 2842.44 2910.64 2979.84 3050.04 3121.24 3193.44 3266.64 3340.84 3416.04 3492.24 3569.44 3647.64 3726.84 3807.04 3888.24 3969.44 4051.64 4134.84 4219.04 4304.24 4390.44 4477.64 4565.84 4655.04 4745.24 4836.44 4928.64 5021.84 5116.04 5211.24 5307.44 5404.64 5502.84 5602.24 5702.64 5804.04 5906.44 6009.84 6115.24 6222.64 6331.04 6440.44 6550.84 6662.24 6774.64 6888.04 6992.44 7097.84 7204.24 7311.64 7420.04 7529.44 7639.84 7751.24 7863.64 7977.04 8091.44 8206.84 8323.24 8440.64 8559.04 8678.44 8798.84 8920.24 9042.64 9166.04 9290.44 9415.84 9542.24 9669.64 9798.04 9927.44 10057.84 10189.24 10321.64 10454.04 10587.04 10720.64 10854.84 10989.64 11135.04 11280.84 11427.24 11574.24 11721.84 11870.04 12018.84 12169.24 12320.24 12471.84 12624.04 12776.84 12930.24 13084.24 13238.84 13394.04 13549.84 13706.24 13863.24 14020.84 14179.04 14337.84 14497.24 14657.24 14817.84 14979.04 15140.84 15303.24 15466.24 15629.84 15794.04 15958.84 16124.24 16290.24 16456.84 16624.04 16791.84 16960.24 17129.24 17308.84 17489.04 17669.84 17851.24 18033.24 18215.84 18409.04 18602.84 18797.24 18992.24 19187.24 19383.24 19579.24						
Staked Line Ground Levels		1562.76 1570.45 1572.09 1573.08 1573.78 1574.09 1574.61 1575.37 1576.20 1577.28 1578.73 1580.00 1581.18 1582.15 1582.90 1583.42 1583.63 1583.90 1584.00 1584.99 1586.26 1586.65 1587.03 1587.44 1587.86 1588.21 1588.80 1590.07 1591.15 1592.09 1592.92 1593.69 1594.04 1593.79 1593.53 1593.69 1595.31 1596.57 1598.31 1599.72 1599.74 1599.65 1599.87 1598.90 1598.90 1599.74 1599.66 1597.87 1598.00 1598.90 1598.90 1597.42 1598.15 1598.23 1598.15 1597.08 1597.39 1597.42 1598.62 1598.64 1598.72 1598.64 1595.37 1595.13 1595.22 1595.13 1594.62 1594.48 1594.40 1593.82 1593.76 1593.68 1593.94 1592.98 1592.22 1592.30 1592.38 1592.30 1591.36 1591.47 1590.97 1591.07 1591.12 1590.57 1590.31 1590.45 1590.38 1589.73 1589.61 1589.84 1590.06 1589.79 1589.02 1589.24 1588.47 1586.86 1586.88 1586.67 1586.89 1587.49 1588.11 1588.34 1589.60 1590.41 1591.73 1592.80 1593.96 1595.06 1596.35 1597.76 1599.05 1599.94 1601.41 1602.50 1604.11 1605.41 1606.41 1607.25 1604.99 1604.55 1604.71 1606.96 1604.77 1604.93 1605.10 1606.63 1605.08 1605.24 1605.40 1605.31 1605.47 1605.63 1605.14 1605.46 1605.26 1606.42 1605.98 1606.11 1605.01 1605.17 1605.33 1606.64 1604.74 1604.84 1604.95 1605.25 1604.35 1604.43 1604.43 1603.69 1603.86 1603.95 1603.86 1602.90 1603.30 1603.38 1603.20 1601.46 1602.05 1602.73 1602.65 1600.34 1601.17 1602.01 1601.93 1598.80 1600.41 1600.50 1600.41 1596.35 1599.06 1599.74 1599.66 1597.87 1598.00 1598.90 1598.90 1597.42 1598.15 1598.23 1598.15 1597.08 1597.39 1597.42 1598.62 1598.64 1598.72 1598.64 1595.37 1595.13 1595.22 1595.13 1594.62 1594.48 1594.40 1593.82 1593.76 1593.68 1593.94 1592.98 1592.22 1592.30 1592.38 1592.30 1591.36 1591.47 1590.97 1591.07 1591.12 1590.57 1590.31 1590.45 1590.38 1589.73 1589.61 1589.84 1590.06 1589.79 1589.02 1589.24 1588.47 1586.86 1586.88 1586.67 1586.89 1587.49 1588.11 1588.34 1589.60 1590.41 1591.73 1592.80 1593.96 1595.06 1596.35 1597.76 1599.05 1599.94 1601.41 1602.50 1604.11 1605.41 1606.41 1607.25 1604.99 1604.55 1604.71 1606.96 1604.77 1604.93 1605.10 1606.63 1605.08 1605.24 1605.40 1605.31 1605.47 1605.63 1605.14 1605.46 1605.26 1606.42 1605.98 1606.11 1605.01 1605.17 1605.33 1606.64 1604.74 1604.84 1604.95 1605.25 1604.35 1604.43 1604.43 1603.69 1603.86 1603.95 1603.86 1602.90 1603.30 1603.38 1603.20 1601.46 1602.05 1602.73 1602.65 1600.34 1601.17 1602.01 1601.93 1598.80 1600.41 1600.50 1600.41 1596.35 1599.06 1599.74 1599.66 1597.87 1598.00 1598.90 1598.90 1597.42 1598.15 1598.23 1598.15 1597.08 1597.39 1597.42 1598.62 1598.64 1598.72 1598.64 1595.37 1595.13 1595.22 1595.13 1594.62 1594.48 1594.40 1593.82 1593.76 1593.68 1593.94 1592.98 1592.22 1592.30 1592.38 1592.30 1591.36 1591.47 1590.97 1591.07 1591.12 1590.57 1590.31 1590.45 1590.38 1589.73 1589.61 1589.84 1590.06 1589.79 1589.02 1589.24 1588.47 1586.86 1586.88 1586.67 1586.89 1587.49 1588.11 1588.34 1589.60 1590.41 1591.73 1592.80 1593.96 1595.06 1596.35 1597.76 1599.05 1599.94 1601.41 1602.50 1604.11 1605.41 1606.41 1607.25 1604.99 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1605.41 1606.41 1607.25 1604.99 1604.55 1604.71 1606.96 1604.77 1604.93 1605.10 1606.63 1605.08 1605.24 1605.40 1605.31 1605.47 1605.63 1605.14 1605.46 1605.26 1606.42 1605.98 1606.11 1605.01 1605.17 1605.33 1606.64 1604.74 1604.84 1604.95 1605.25 1604.35 1604.43 1604.43 1603.69 1603.86 1603.95 1603.86 1602.90 1603.30 1603.38 1603.20 1601.46 1602.05 1602.73 1602.65 1600.34 1601.17 1602.01 1601.93 1598.80 16						

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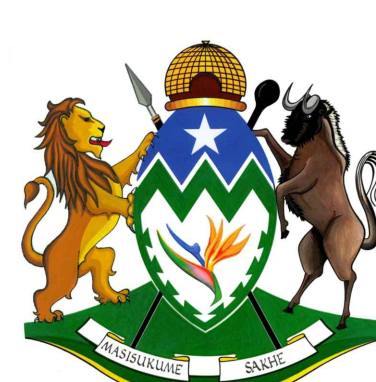
AS BUILT	
_____ SUPERVISING ENGINEER	_____ DATE
_____ SUPERVISING AUTHORITY	

CONTINUED FROM:	C 38628
CONTINUED ON:	C 38630
CROSS SECTION NO:	C 38638 to C 38641
PLAN NO:	C 38622 - C 38623
NAIDU CONSULTING - CONSULTING ENGINEER	
K. GOVENDER (Pr Eng 970276) SIGN	

DESIGNED BY: A. MABOSHEGO
CHECKED BY: S. POPIS
DRAWN BY: A. MABOSHEGO
CHECKED BY: M. NADASEN

NAIDU
CONSULTING

Naidu Consulting no.:- D296/2252



Department:
Transport
Province of KwaZulu-Natal

TRANSPORTATION ENGINEERING : CHIEF ENGINEER

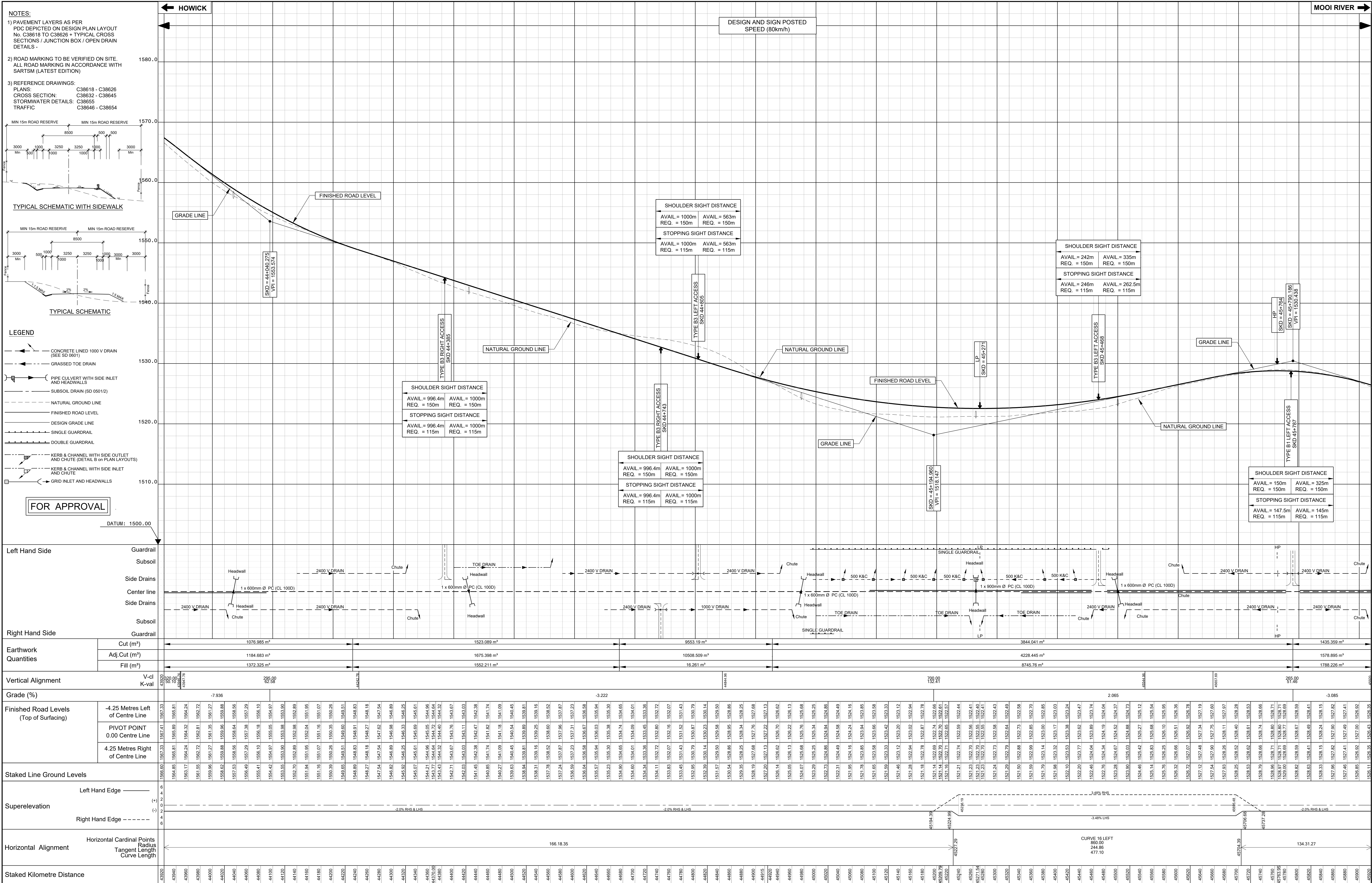
HEAD : TRANSPORT

MAIN ROAD 165 (HOWICK - MOOI RIVER)

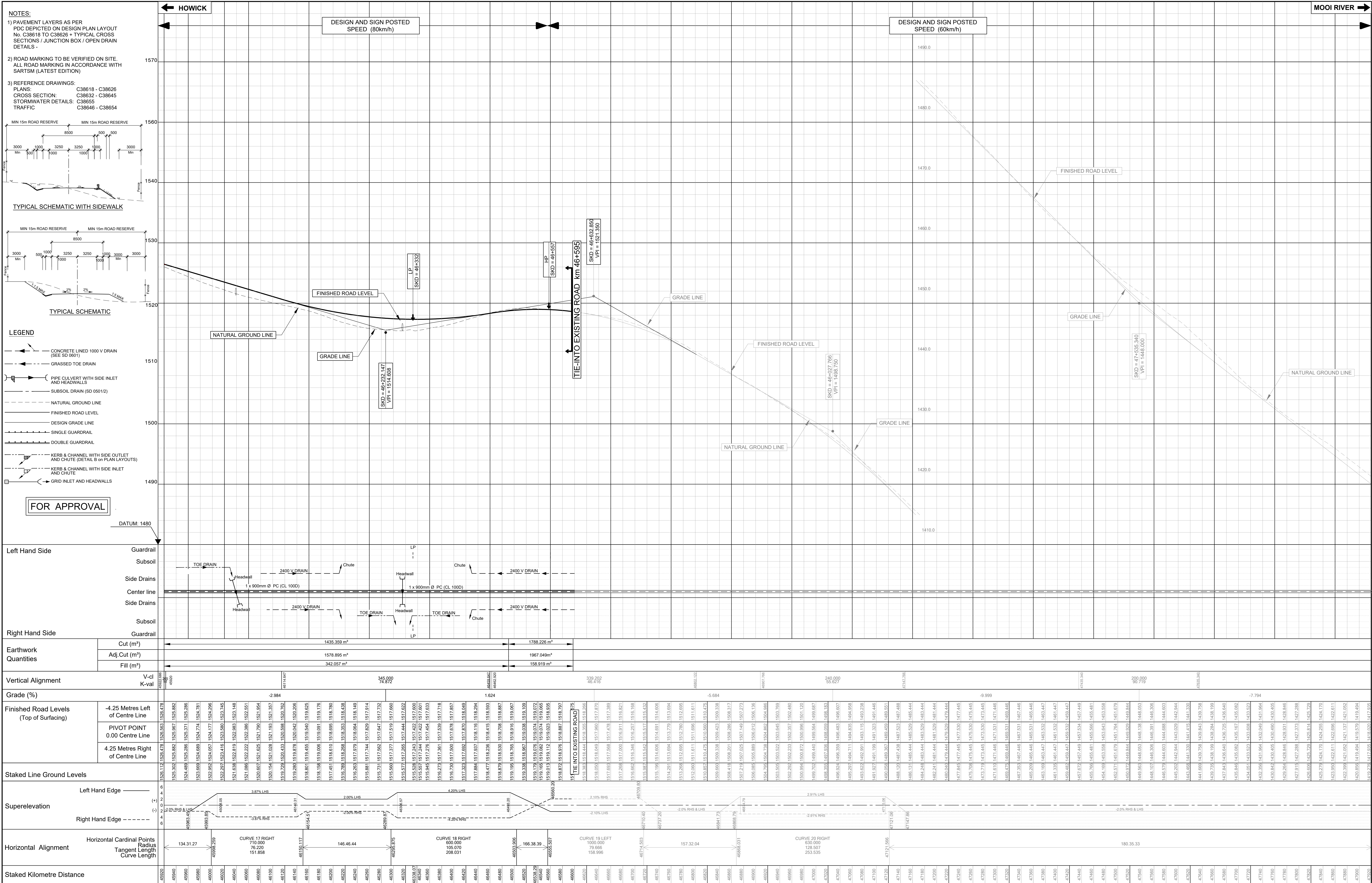
PORTION
UPGRADING OF PORTION OF P165 : KM 38+295 - KM46+595
HOWICK TO MOOI RIVER
LONGITUDINAL SECTION

STAKED KM DISTANCE KM 41+920 - KM 43+920	SHEET 3 OF 5
SCALE HOR 1:2000 VERT 1:200	PLAN No. C 38629

C 38629



AS BUILT				CONTINUED FROM: C 38629				DESIGNED BY: A. MABOSHEGO				Designed by:-				transport				MAIN ROAD 165 (HOWICK - MOOI RIVER)				STAKED KM DISTANCE				SHEET 4 OF 5			
				CONTINUED ON: C 38631				CHECKED BY: S. POPIS												PORTION				SCALE				PLAN No.			
				CROSS SECTION NO: C 38641 to C 38645				DRAWN BY: A. MABOSHEGO												UPGRADING OF PORTION OF P165 : KM 38+295 - KM46+595				HQR 1:2000				C 38630			
				PLAN NO: C 38624 - C 38625				CHECKED BY: M. NADASEN												HOWICK TO MOOI RIVER				VERT 1:200							
AMENDMENTS				NAIDU CONSULTING - CONSULTING ENGINEER K. GOVENDER (Pr Eng 970276)				DATE: .				Naidu Consulting no.-: D296/2253								TRANSPORTATION ENGINEERING: CHIEF ENGINEER											
																				HEAD: TRANSPORT											



AS BUILT				CONTINUED FROM: C 38630		DESIGNED BY: A. MABOSHEGO		Designed by:		transport		MAIN ROAD 165 (HOWICK - MOOI RIVER)		STAKED KM DISTANCE		SHEET 5 OF 5	
SUPERVISING ENGINEER				CONTINUED ON:		CHECKED BY: S. POPIS		NAIDU CONSULTING		Department: Transport		PORTION		SCALE		PLAN No.	
SUPERVISING AUTHORITY				CROSS SECTION NO: C 38645		DRAWN BY: A. MABOSHEGO		K. GOVENDER (Pr Eng 970276)		Province of KwaZulu-Natal		UPGRADING OF PORTION OF P165 : KM 38+295 - KM46+595		HQR 1:2000		C 38631	
SYMBOL				PLAN NO: C 38626		CHECKED BY: M. NADASEN		NAIDU CONSULTING - CONSULTING ENGINEER		TRANSPORTATION ENGINEERING : CHIEF ENGINEER		HOWICK TO MOOI RIVER		VERT 1:200			
AMENDMENTS				NAIDU CONSULTING - CONSULTING ENGINEER		K. GOVENDER (Pr Eng 970276)		Naidu Consulting no.-: D296/2254		HEAD : TRANSPORT		LONGITUDINAL SECTION					

C 38631