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| PROJECT REFERENCE NO.<br>R-513 BB   | SHEET NO.<br>34   |
| ROADWAY DESIGN ENGINEER<br>06-03-04 | HYDRAULICS ENGINEER<br>SEAL 16600<br>RICHARD C. HILLINGIER<br>R.C. Hillingier 9-18-04 |
| CONST.REV.                          |   |
| R / W REV.                          |   |

BM \* 16 R/R SPIKE IN BASE 300mm HARDWOOD 101.072m LT OF  
-L- STA 159+71.428 EL 46.154

PI = 159+65.000  
EL = 49.500 m  
K = 151  
VC = 116 m

PI = 162+60.000  
EL = 48.474 m  
K = 148  
VC = 100 m

PIPE HYDRAULIC DATA  
DRAINAGE STRUCTURE NO.8  
DRAINAGE AREA = 32.559HA  
DESIGN FREQUENCY = 50 YRS  
DESIGN DISCHARGE = 1.313 CMS  
DESIGN HW ELEVATION = 46.47 M  
100 YEAR DISCHARGE = 1.589 CMS  
100 YEAR HW ELEVATION = 46.74 M  
OVERTOPPING FREQUENCY = 500+ YRS  
OVERTOPPING DISCHARGE = 2.82 CMS  
OVERTOPPING ELEVATION = 48.23 M

1050mm

+60 +80 160 +20 +40 +60 +80 161 +20 +40 +60 +80 162 +20 +40 +60 +80 163 +20

BM \* 17 R/R SPIKE IN BASE 600mm SWEET GUM 89.521m LT OF  
-L- STA 163+75.090 EL 46.355

PIPE HYDRAULIC DATA  
DRAINAGE STRUCTURE NO.13  
DRAINAGE AREA = 3.670 HA  
DESIGN FREQUENCY = 50 YRS  
DESIGN DISCHARGE = 0.421 CMS  
DESIGN HW ELEVATION = 47.27 M  
100 YEAR DISCHARGE = 0.457 CMS  
100 YEAR HW ELEVATION = 47.28 M  
OVERTOPPING FREQUENCY = 500+ YRS  
OVERTOPPING DISCHARGE = 1.3 CMS  
OVERTOPPING ELEVATION = 48.23 M

750mm

BEG. SPE. LAT.  
V. DITCH RT.  
-L- STA 166+40  
ELV. 47.340

PI = 166+80.000  
EL = 46.640

(-) 1.750% (-) 0.137%

+40 +60 +80 164 +20 +40 +60 +80 165 +20 +40 +60 +80 166 +20 +40 +60 +80 167