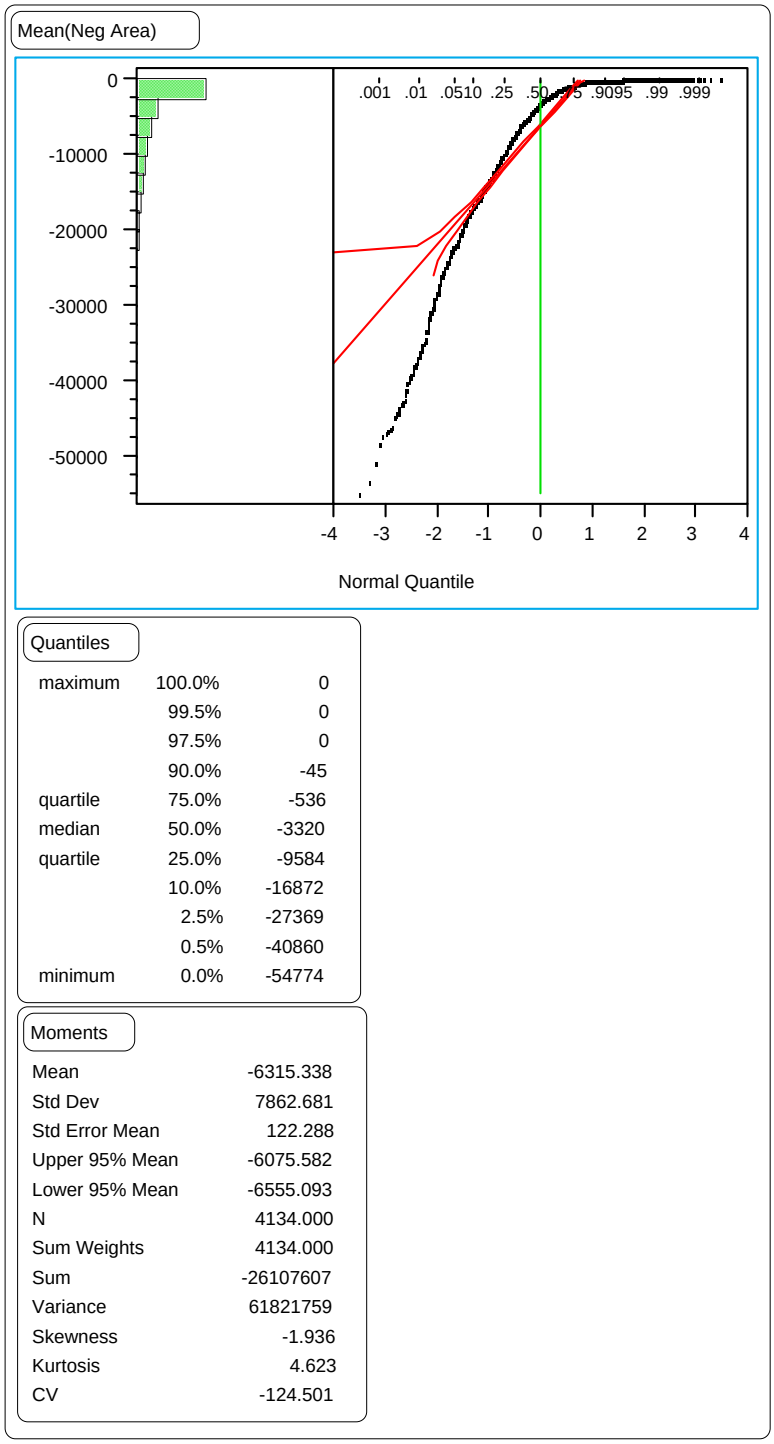



**Figure 50. Distribution of the section means of the negative area index.**

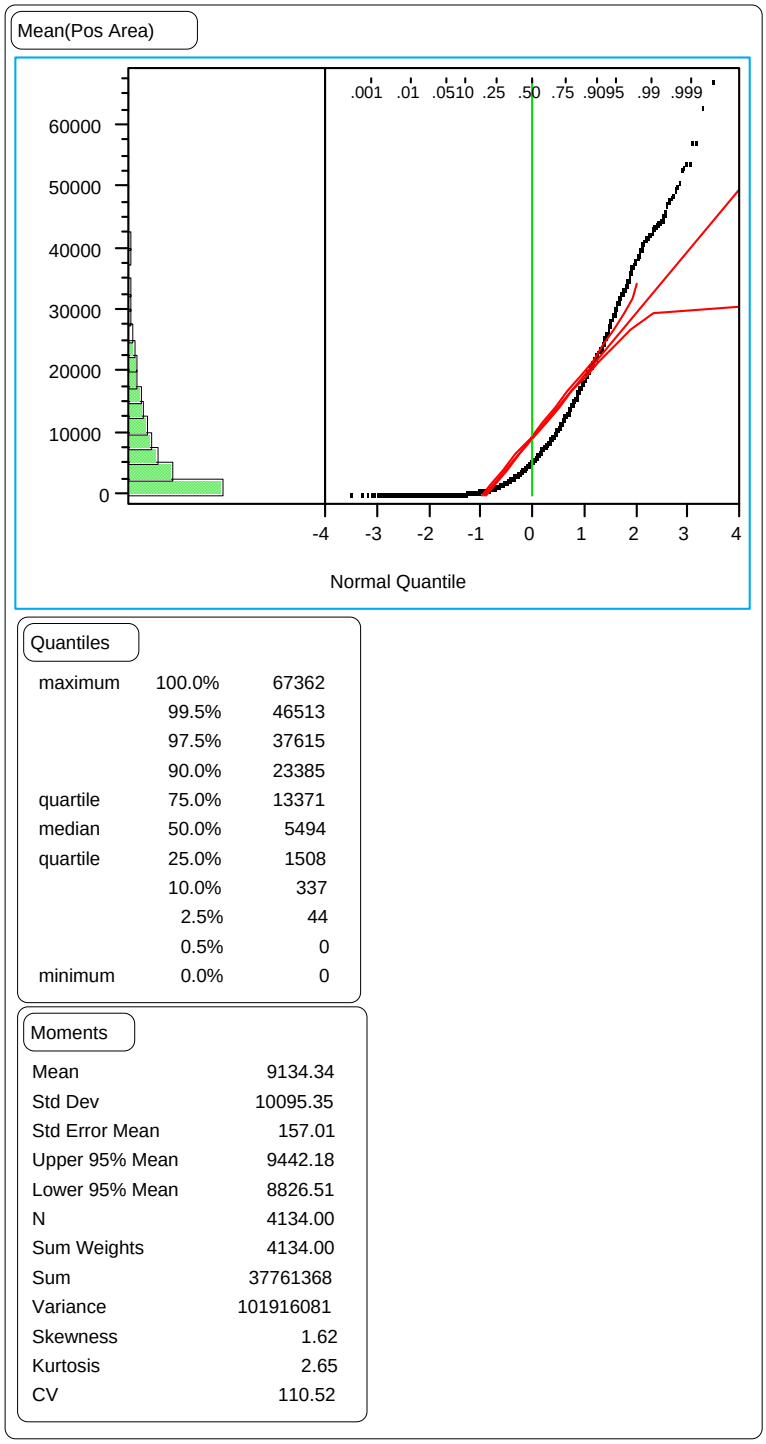



**Figure 51. Distribution of the section means of the positive area index.**

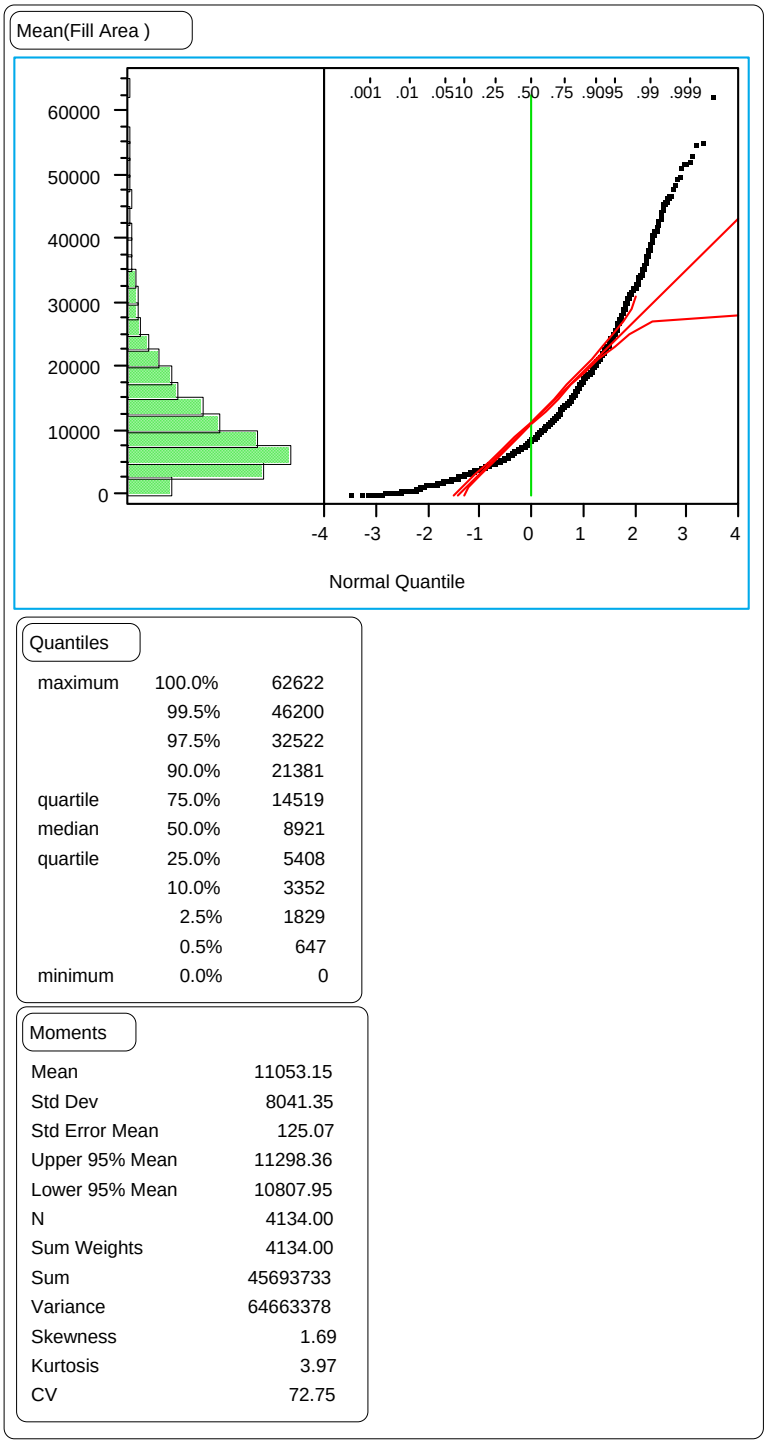



**Figure 52. Distribution of the section means of the fill area index.**

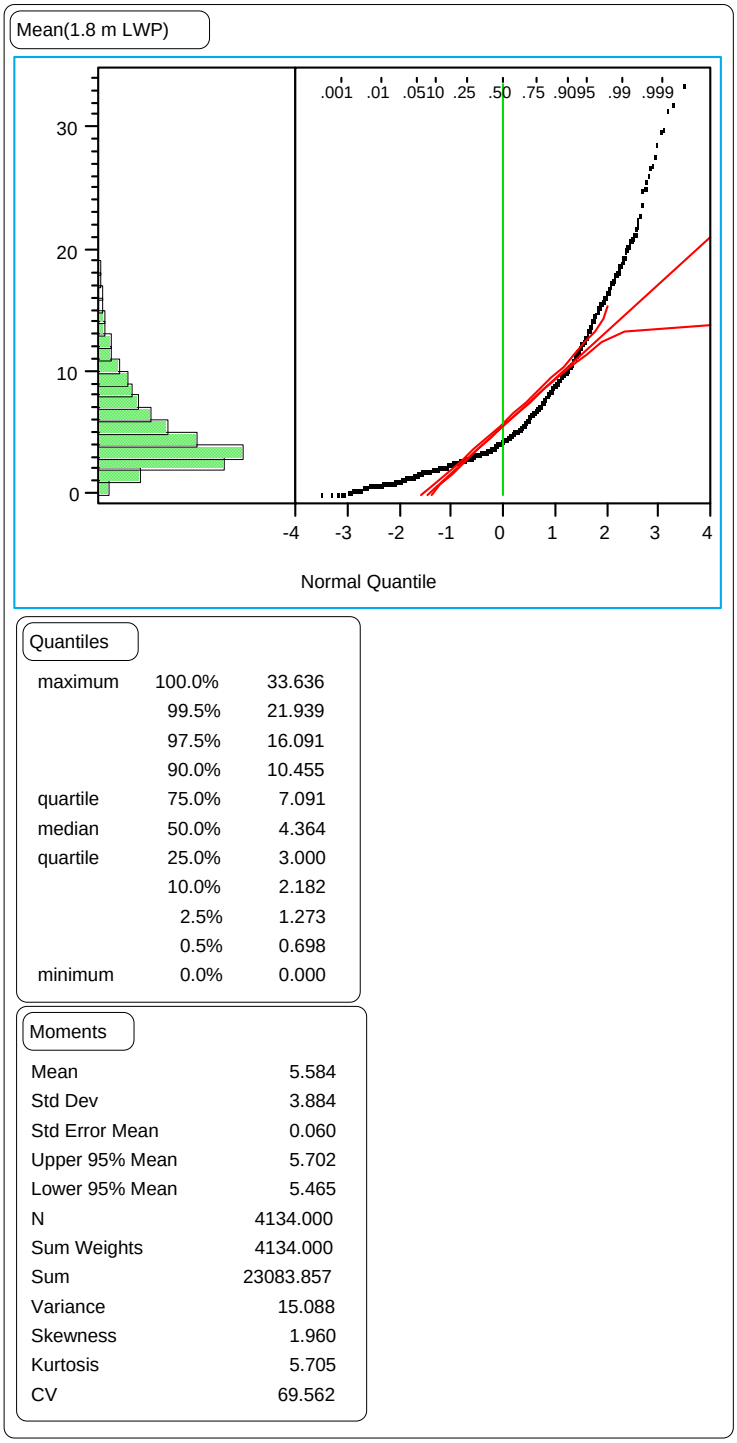



**Figure 53. Distribution of the section means of the LWP 1.8-m rut depths.**

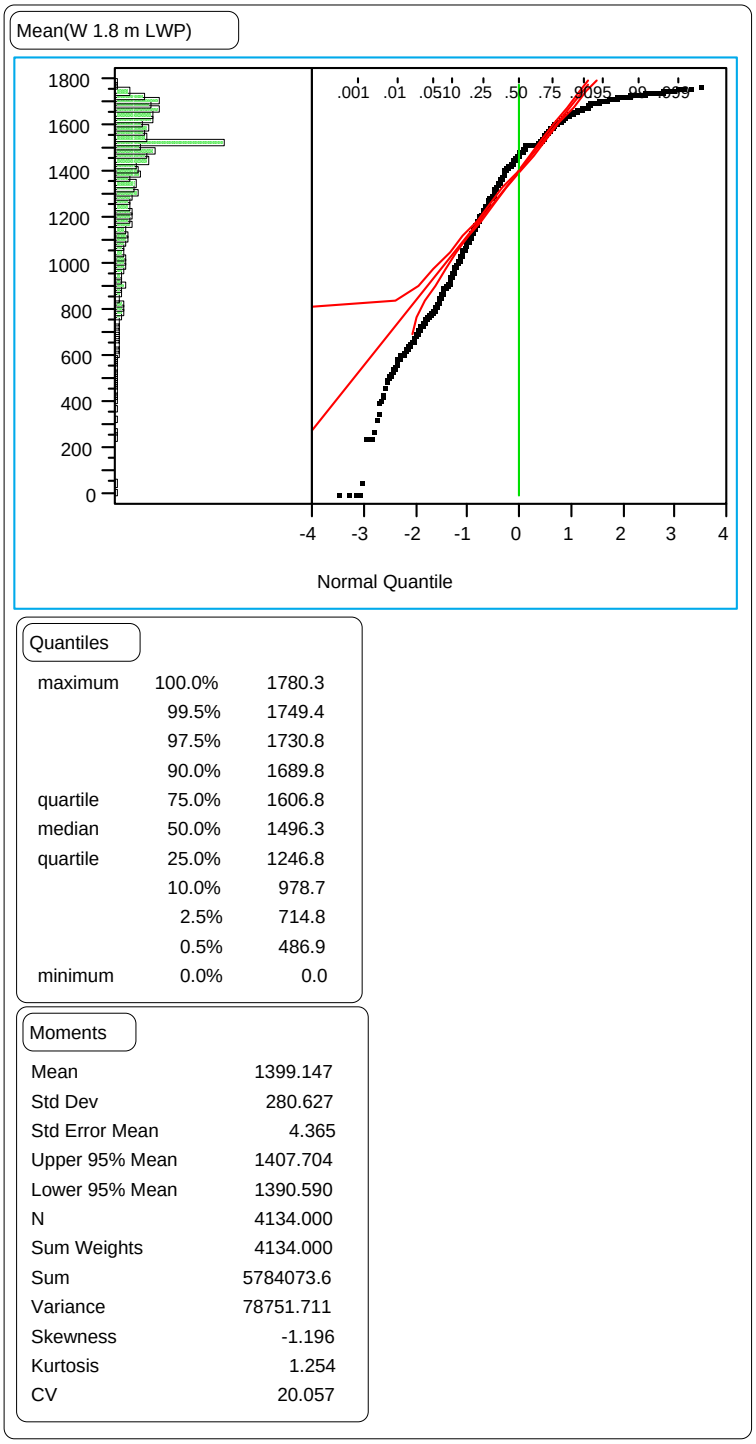



**Figure 54. Distribution of the section means of the LWP 1.8-m rut widths.**

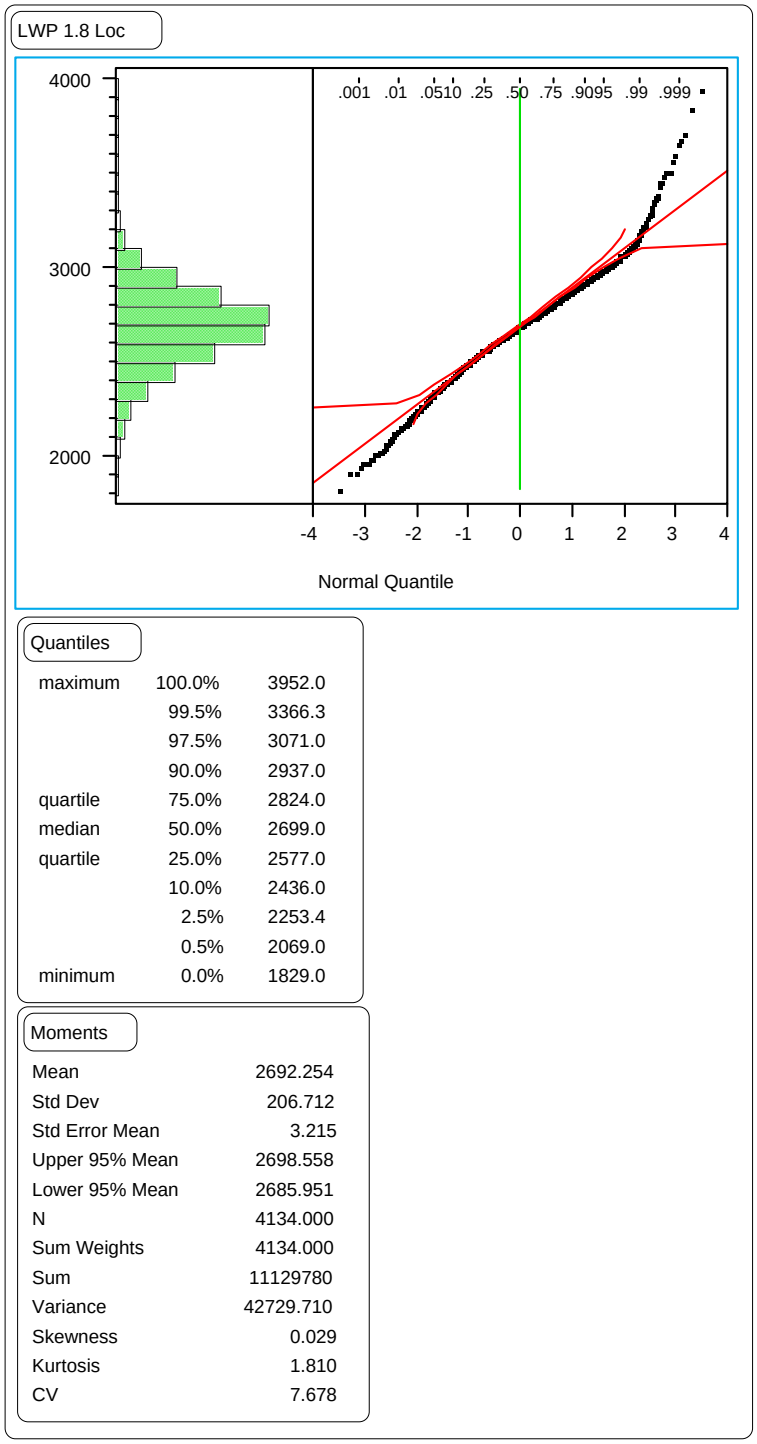



**Figure 55. Distribution of the section means of the LWP 1.8-m rut locations.**

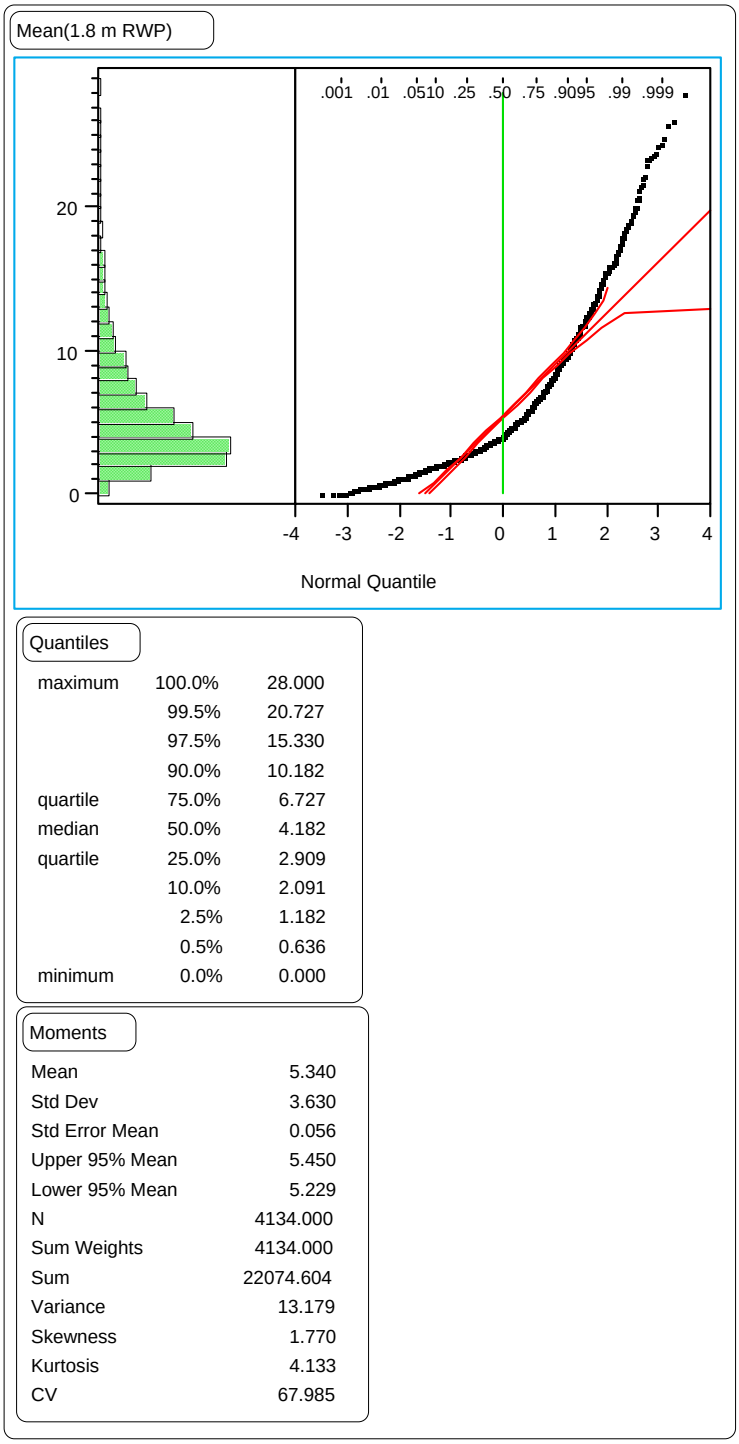



**Figure 56. Distribution of the section means of the RWP 1.8-m rut depths.**

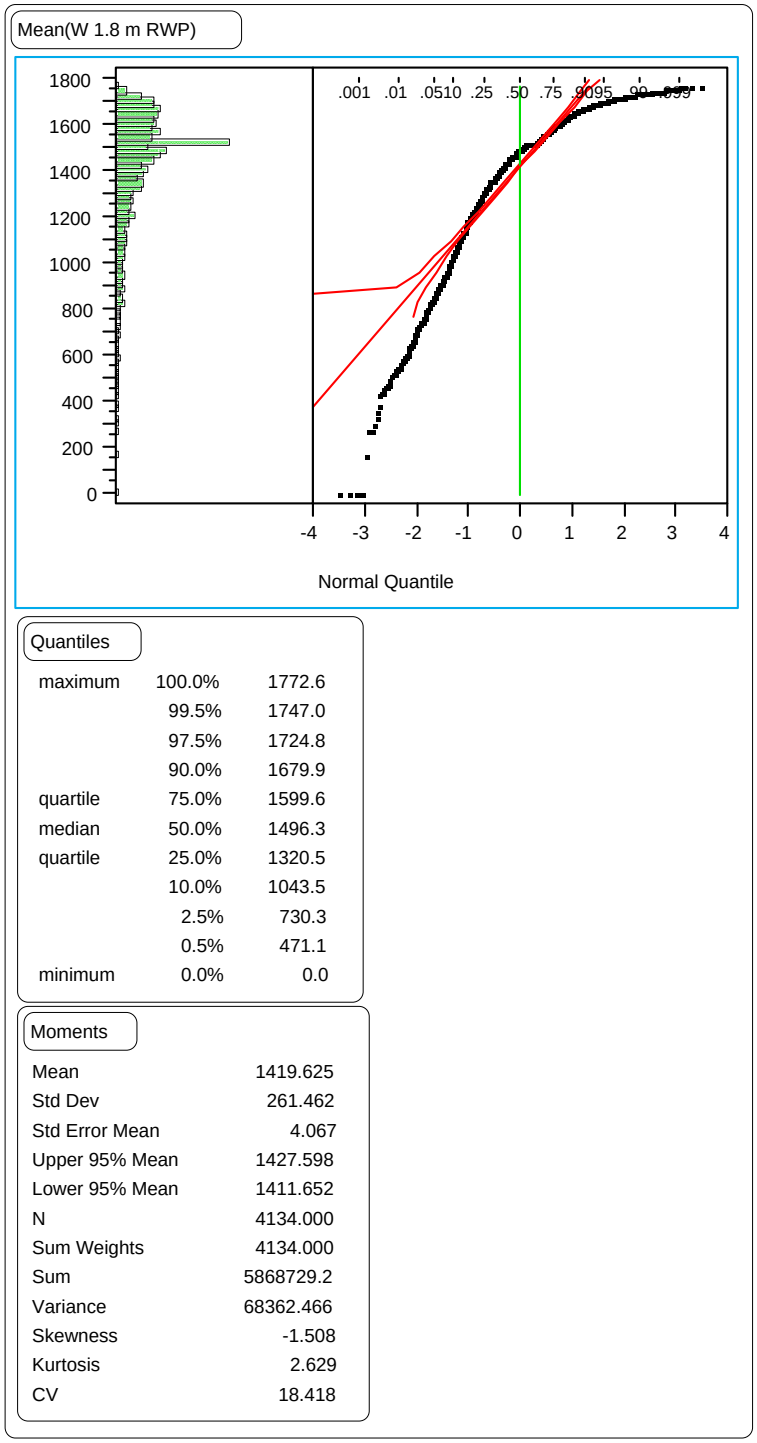



**Figure 57. Distribution of the section means of the RWP 1.8-m rut widths.**

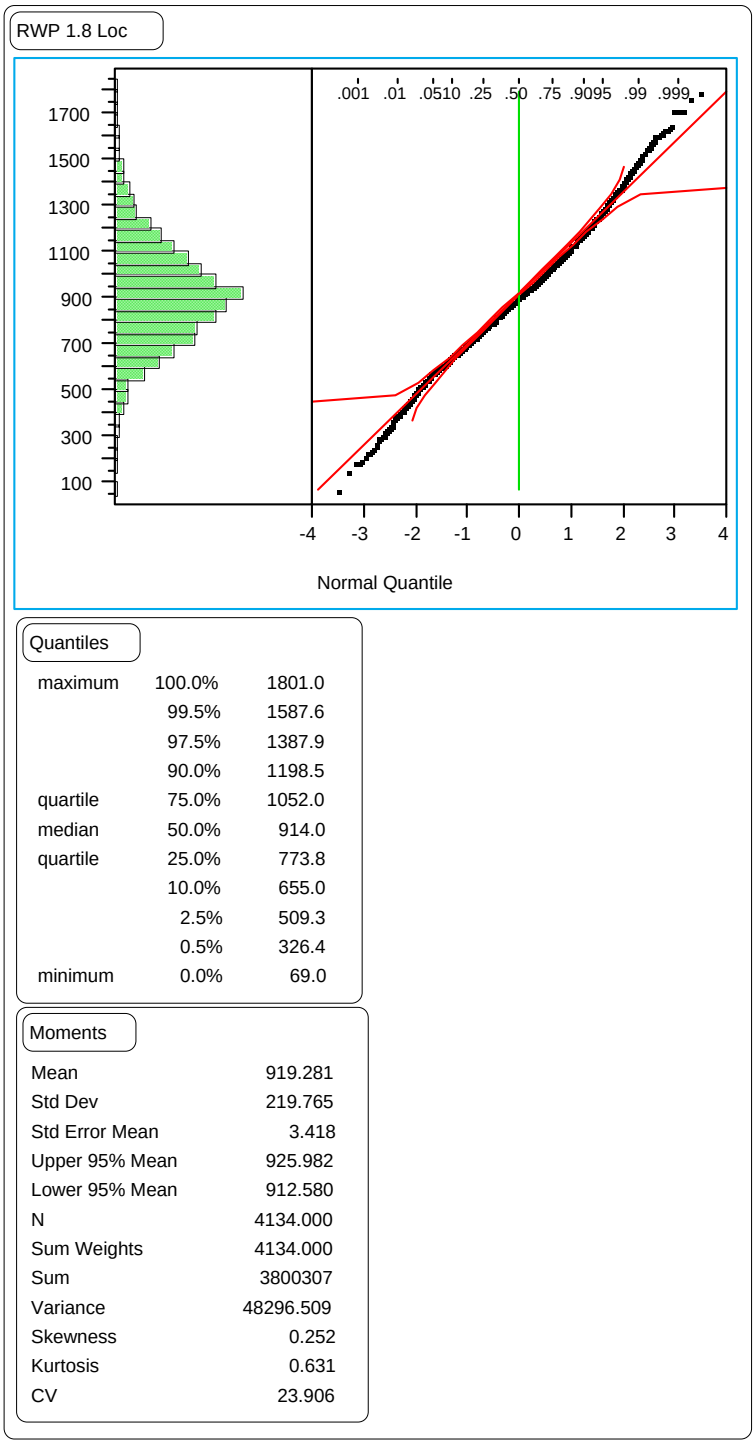



**Figure 58. Distribution of the section means of the RWP 1.8-m rut locations.**

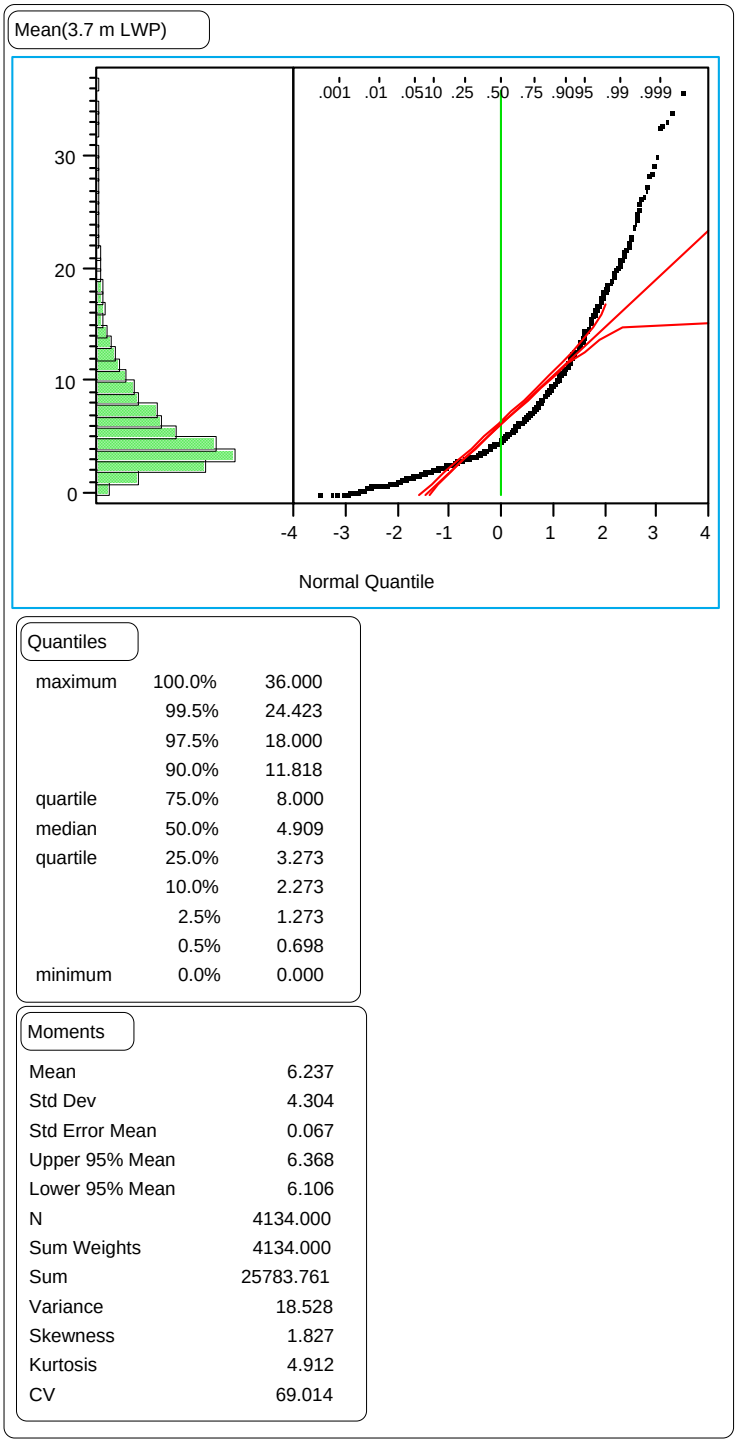



**Figure 59. Distribution of the section means of the LWP wire line rut depths.**

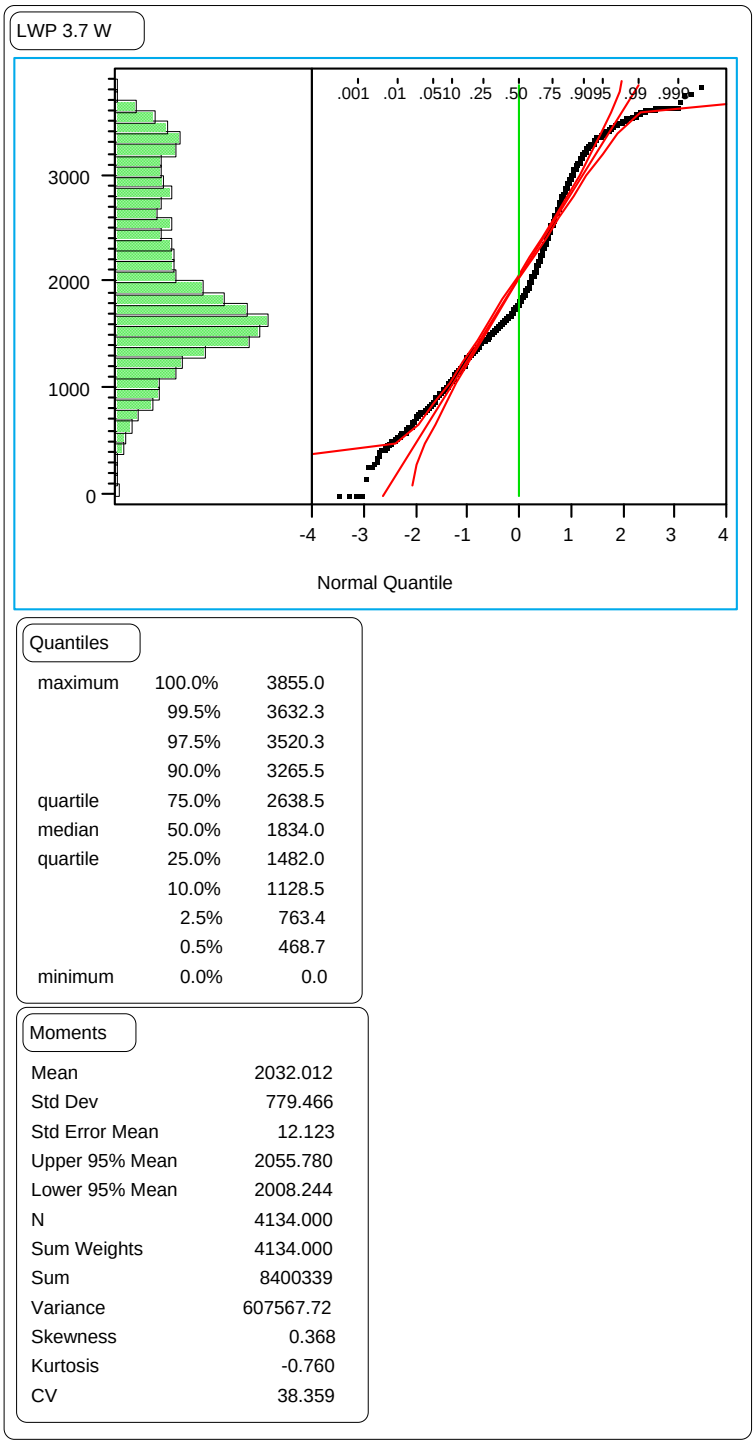



**Figure 60. Distribution of the section means of the LWP wire line rut widths.**

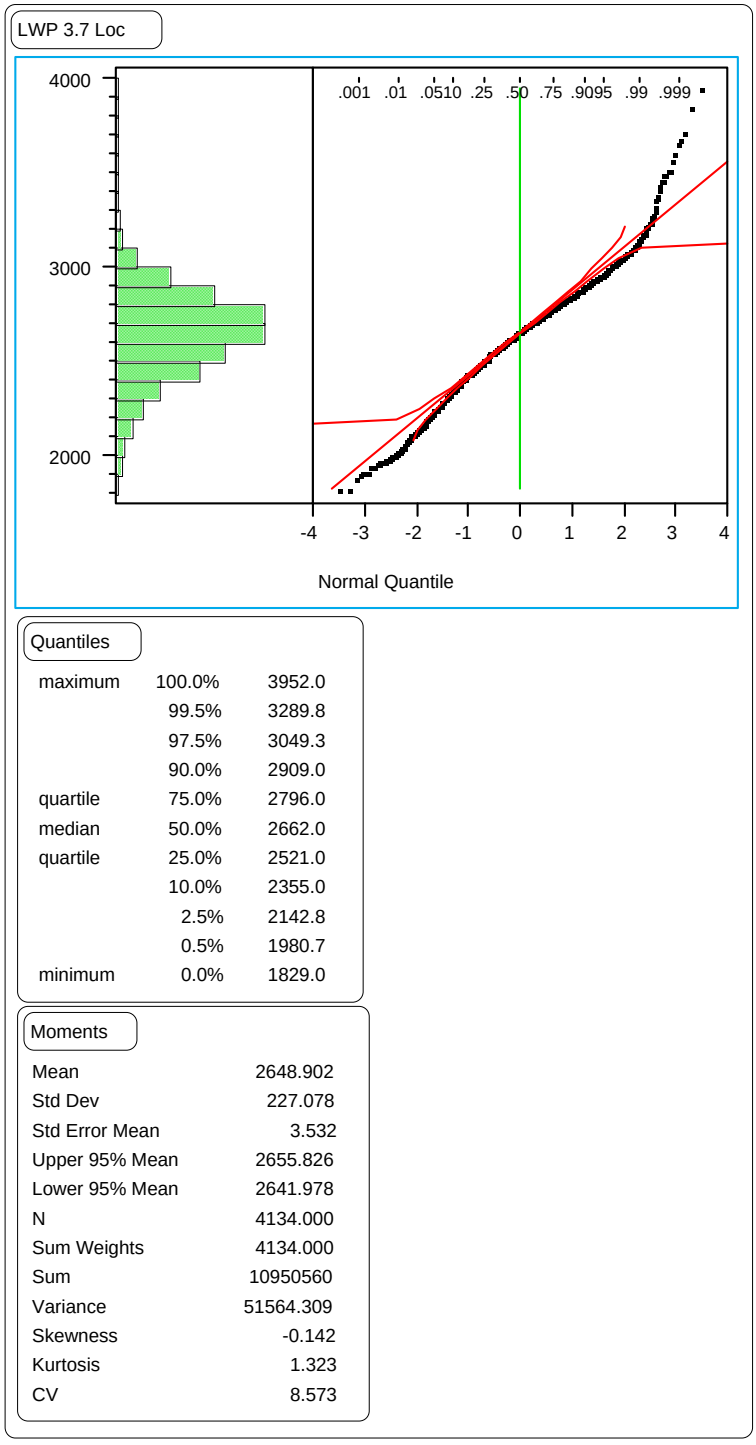



**Figure 61. Distribution of the section means of the LWP wire line rut locations.**

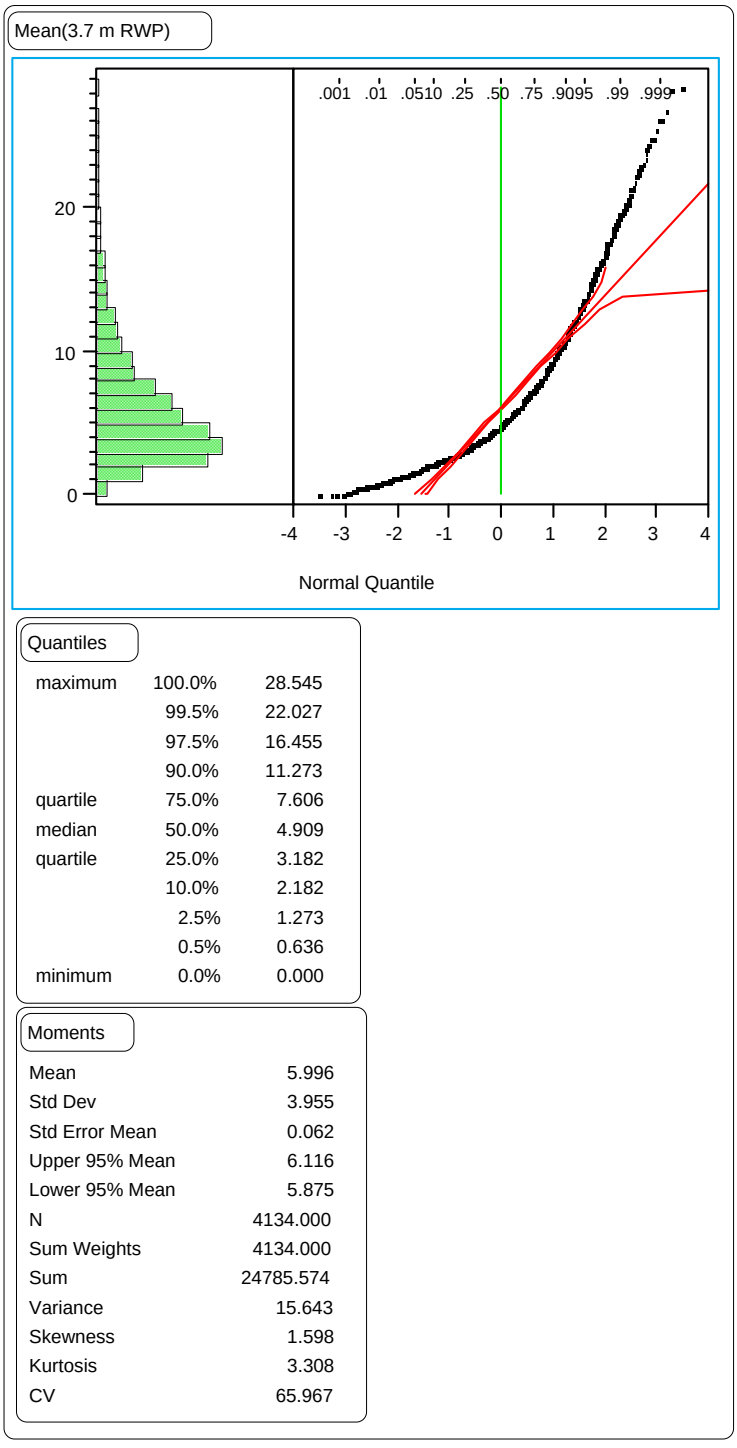



**Figure 62. Distribution of the section means of the RWP wire line rut depths.**

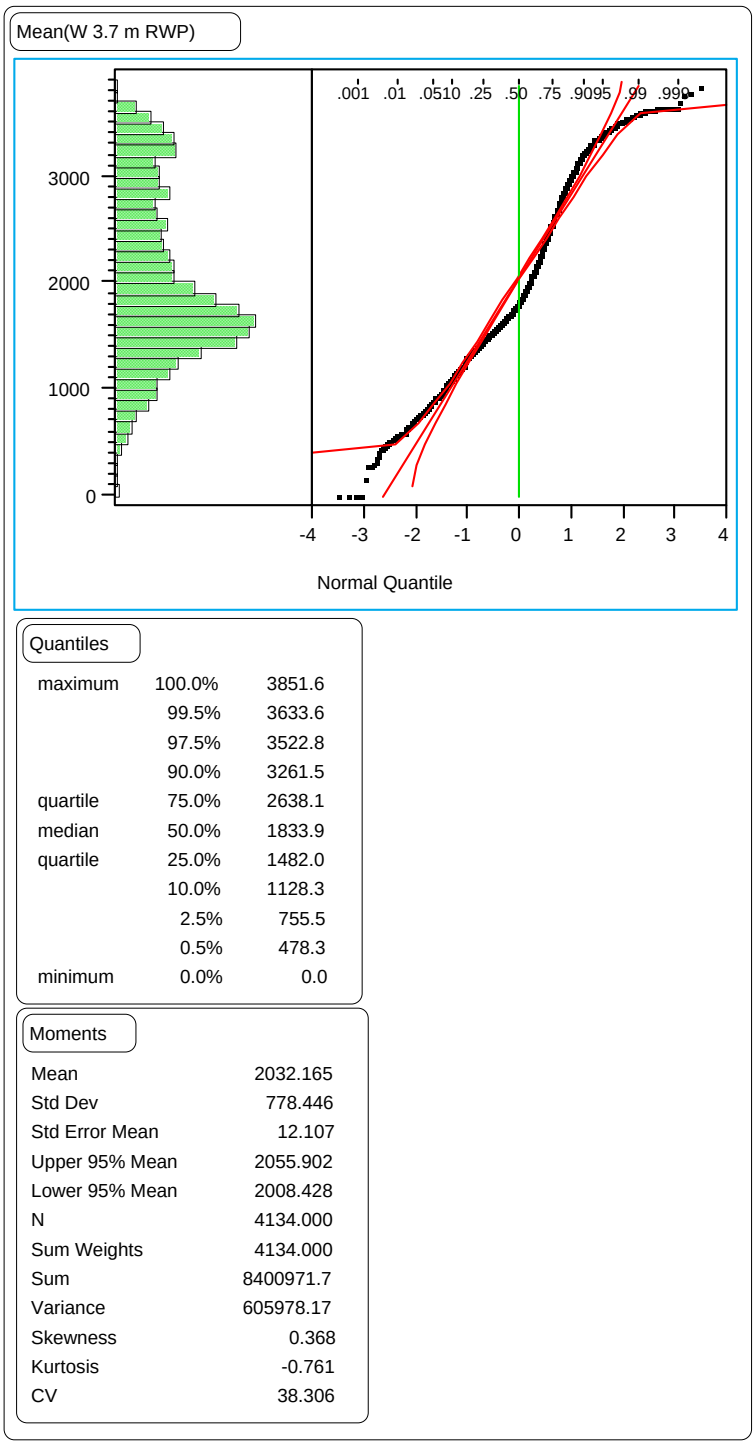



**Figure 63. Distribution of the section means of the RWP wire line rut widths.**

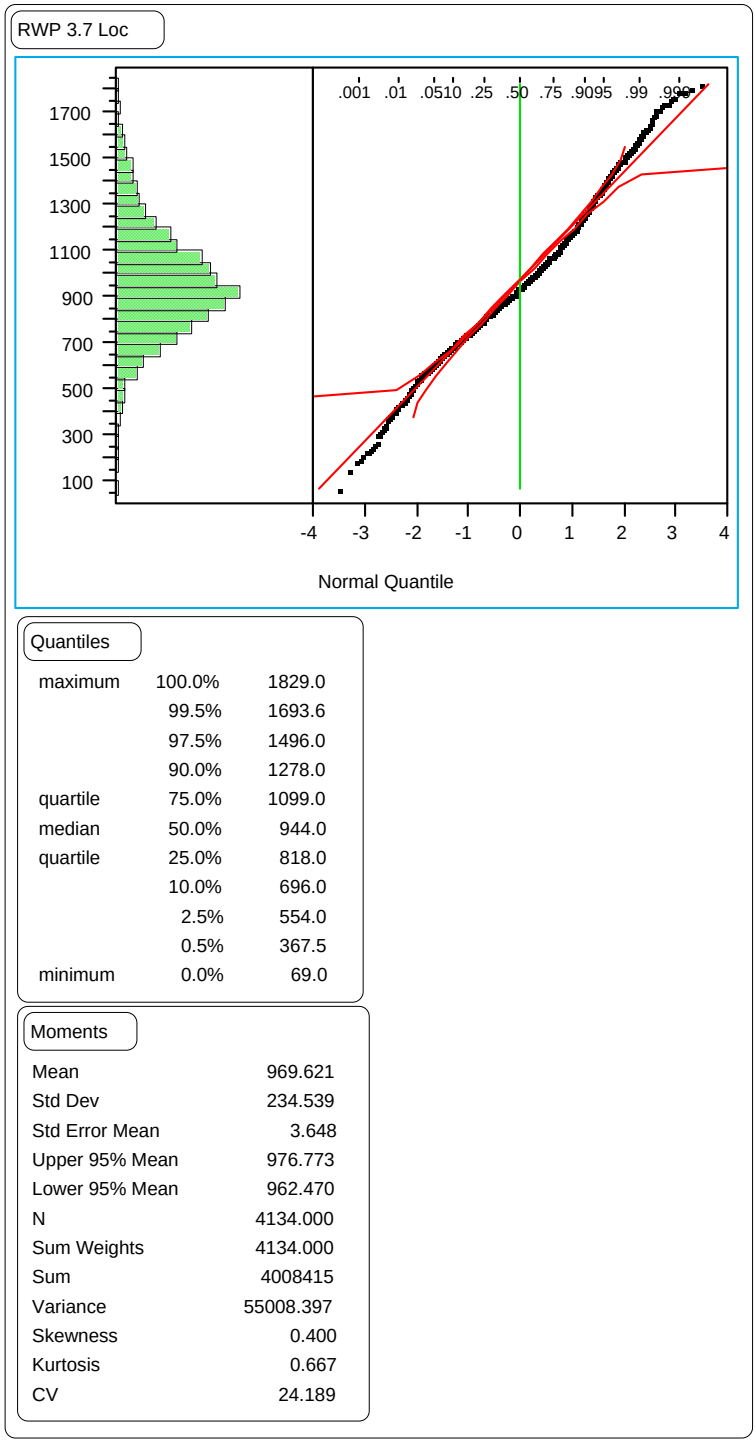



**Figure 64. Distribution of the section means of the RWP wire line rut locations.**

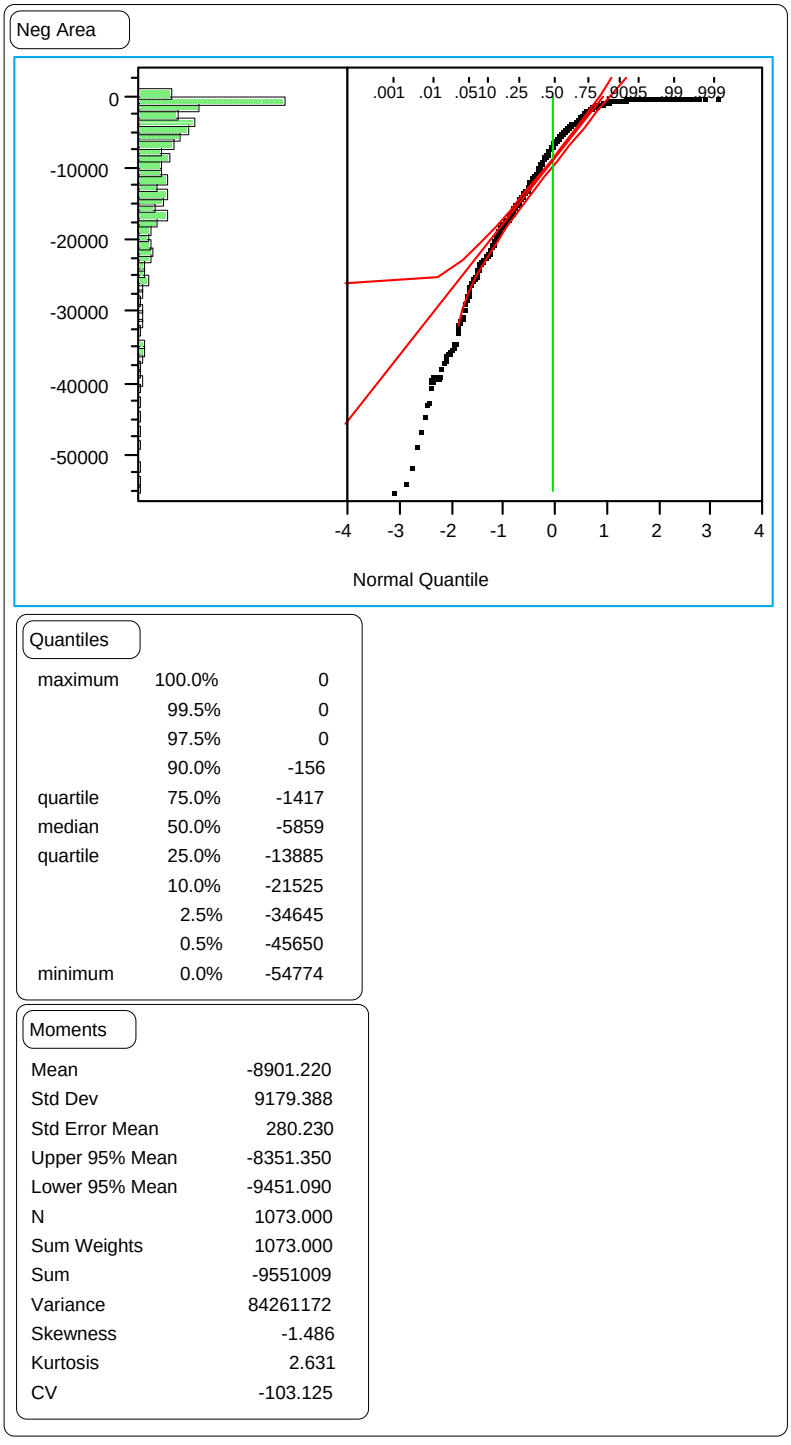



**Figure 65. Distribution of the section means of the negative area index on GPS-1 test sections.**

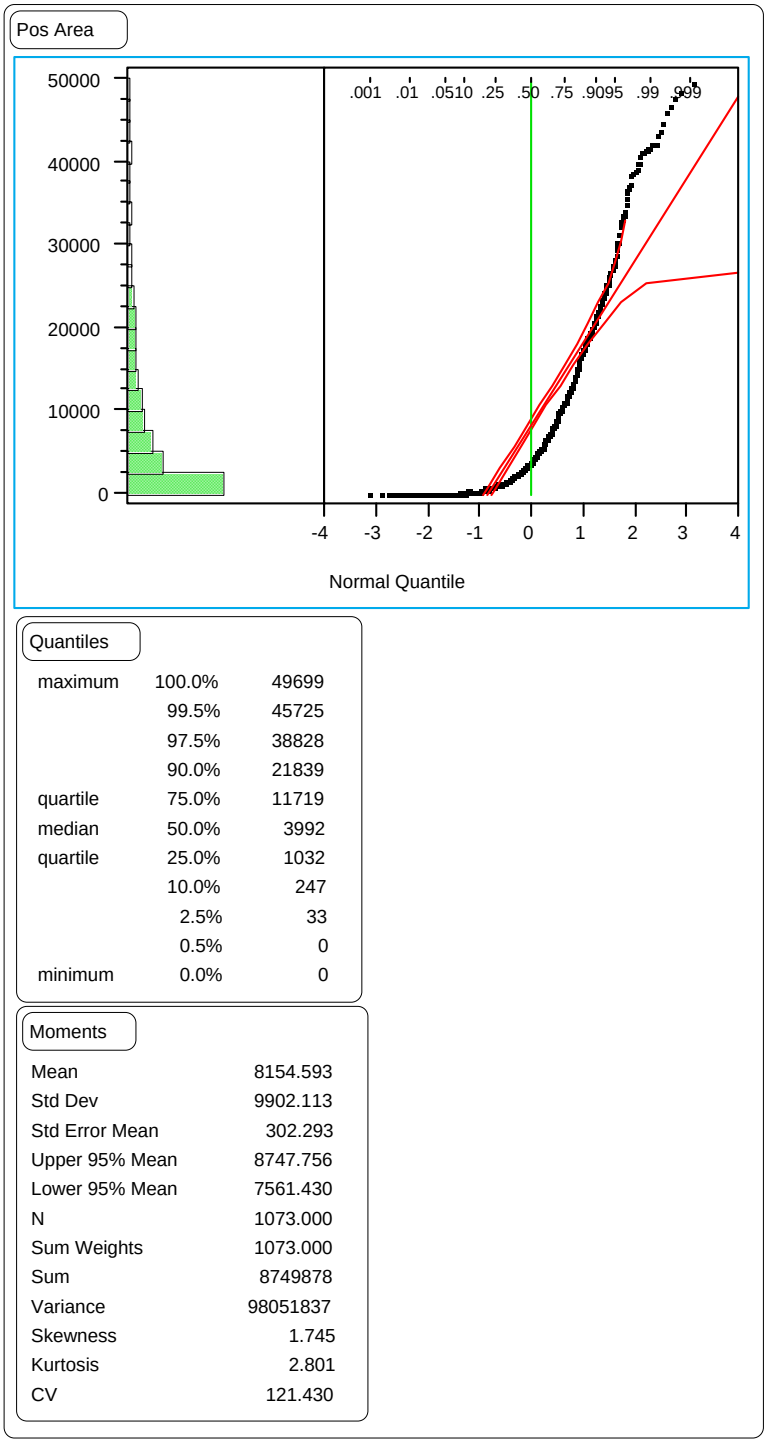



**Figure 66. Distribution of the section means of the positive area index on GPS-1 test sections.**

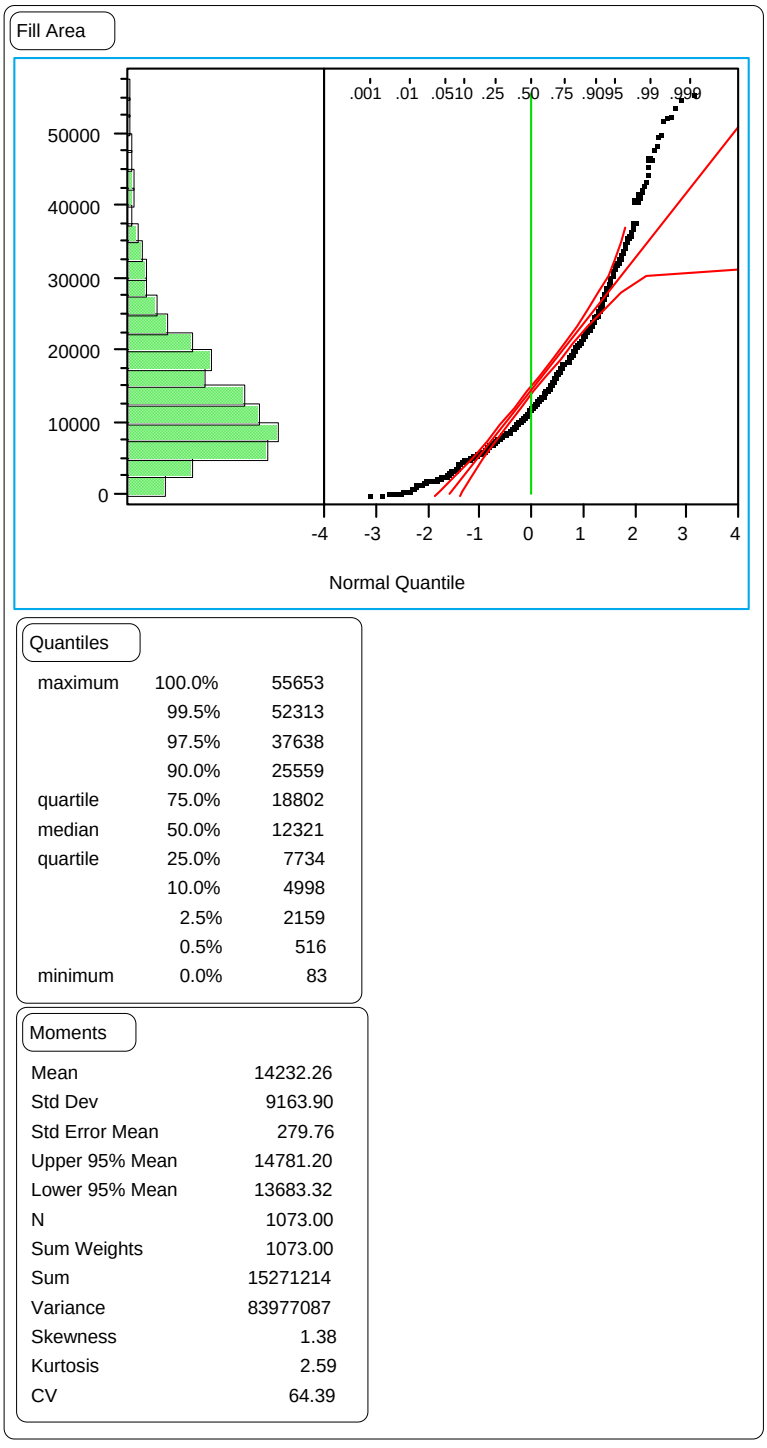



**Figure 67. Distribution of the section means of the fill area index on GPS-1 test sections.**

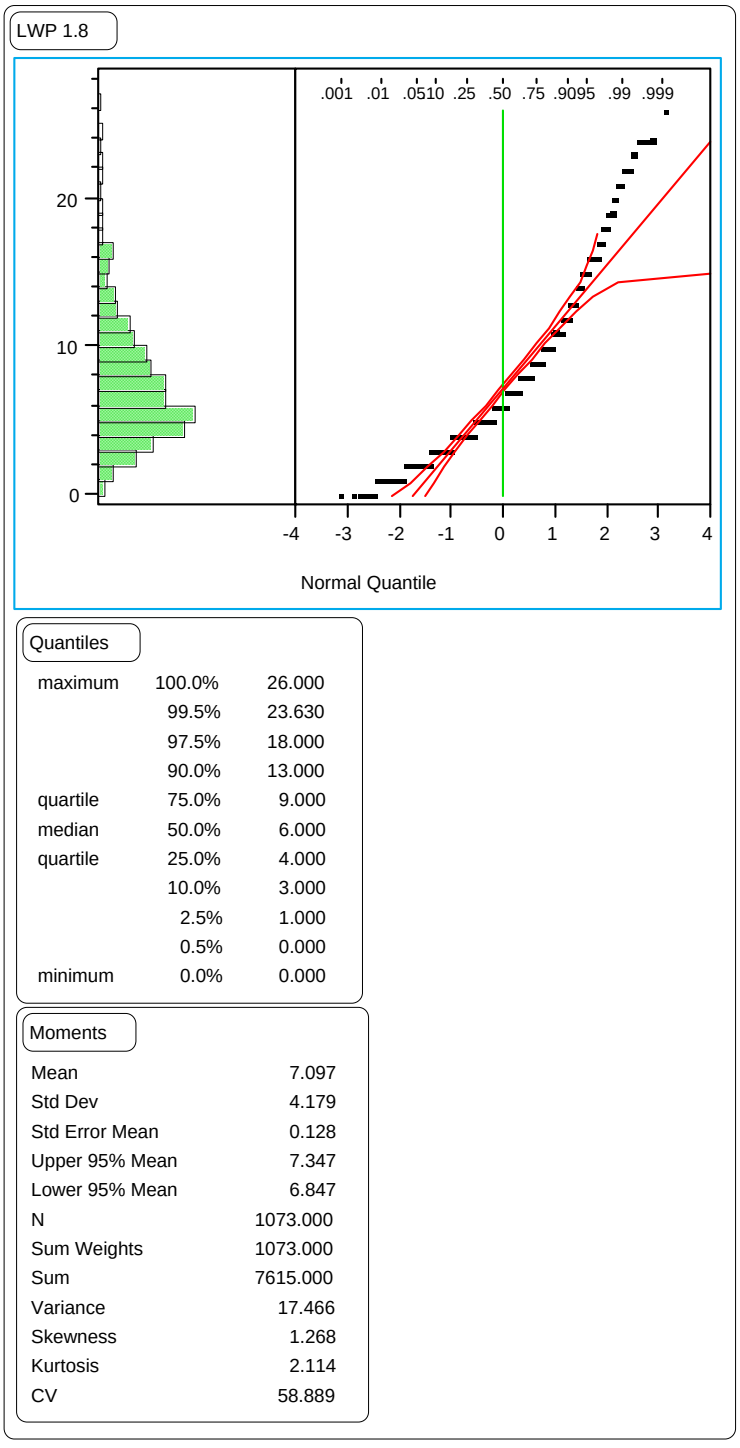



**Figure 68. Distribution of the section means of the LWP 1.8-m rut depths on GPS-1 test sections.**

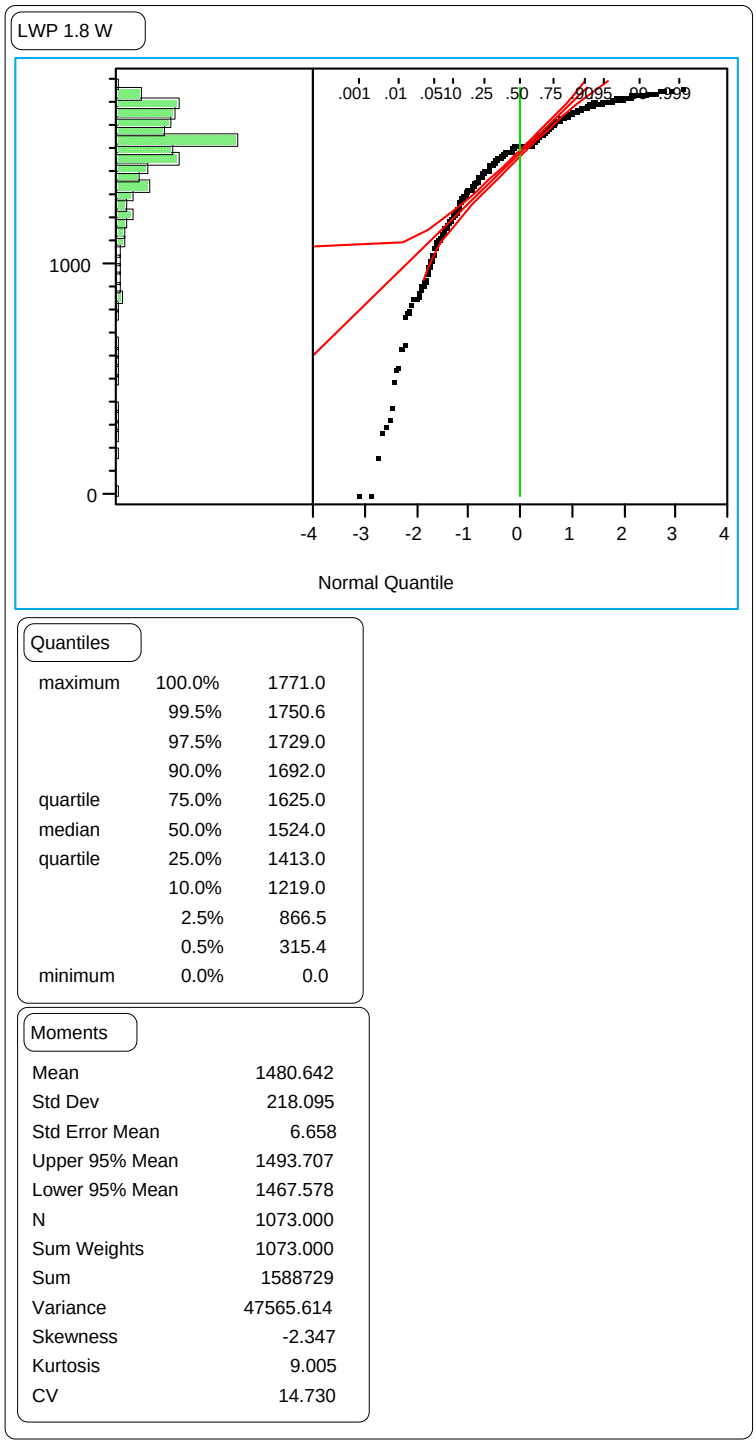



**Figure 69. Distribution of the section means of the LWP 1.8-m rut widths on GPS-1 test sections.**

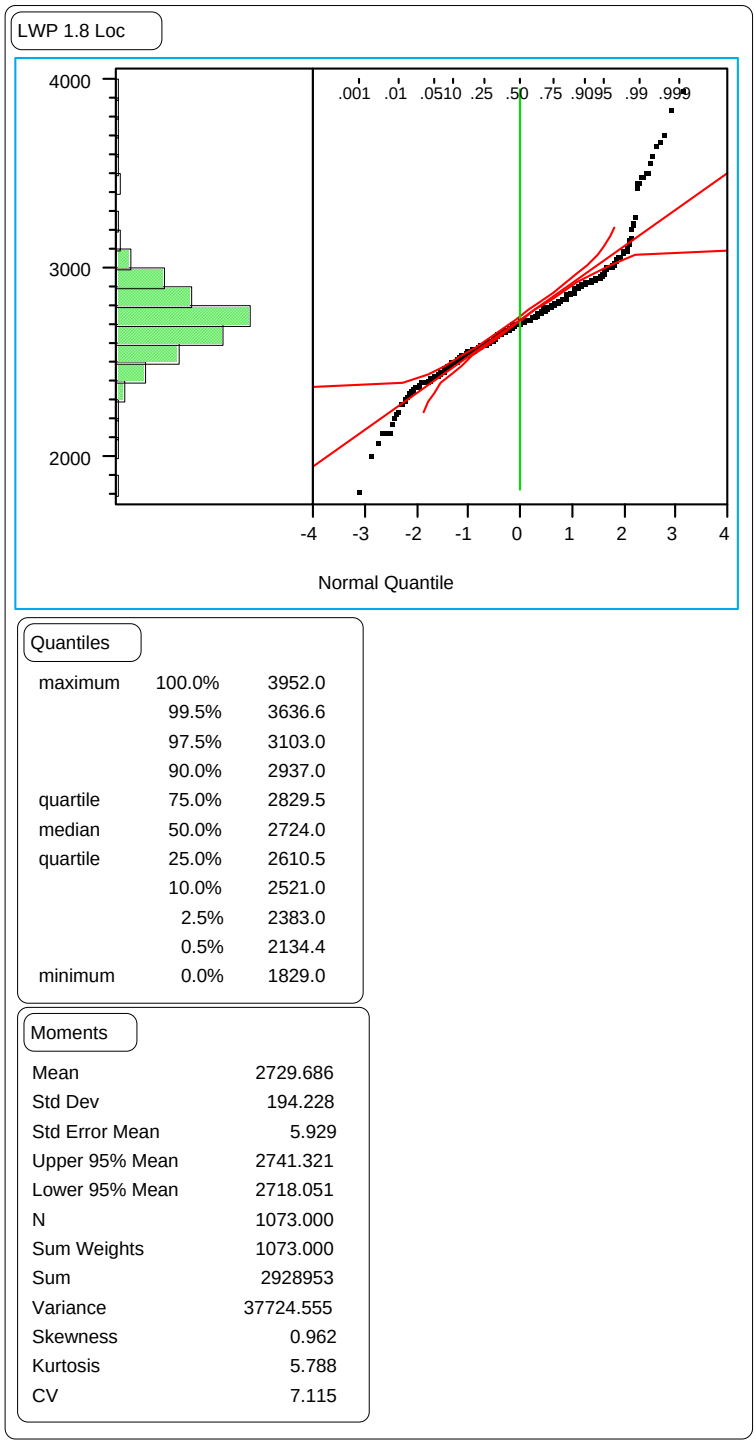



**Figure 70. Distribution of the section means of the LWP 1.8-m rut locations on GPS-1 test sections.**

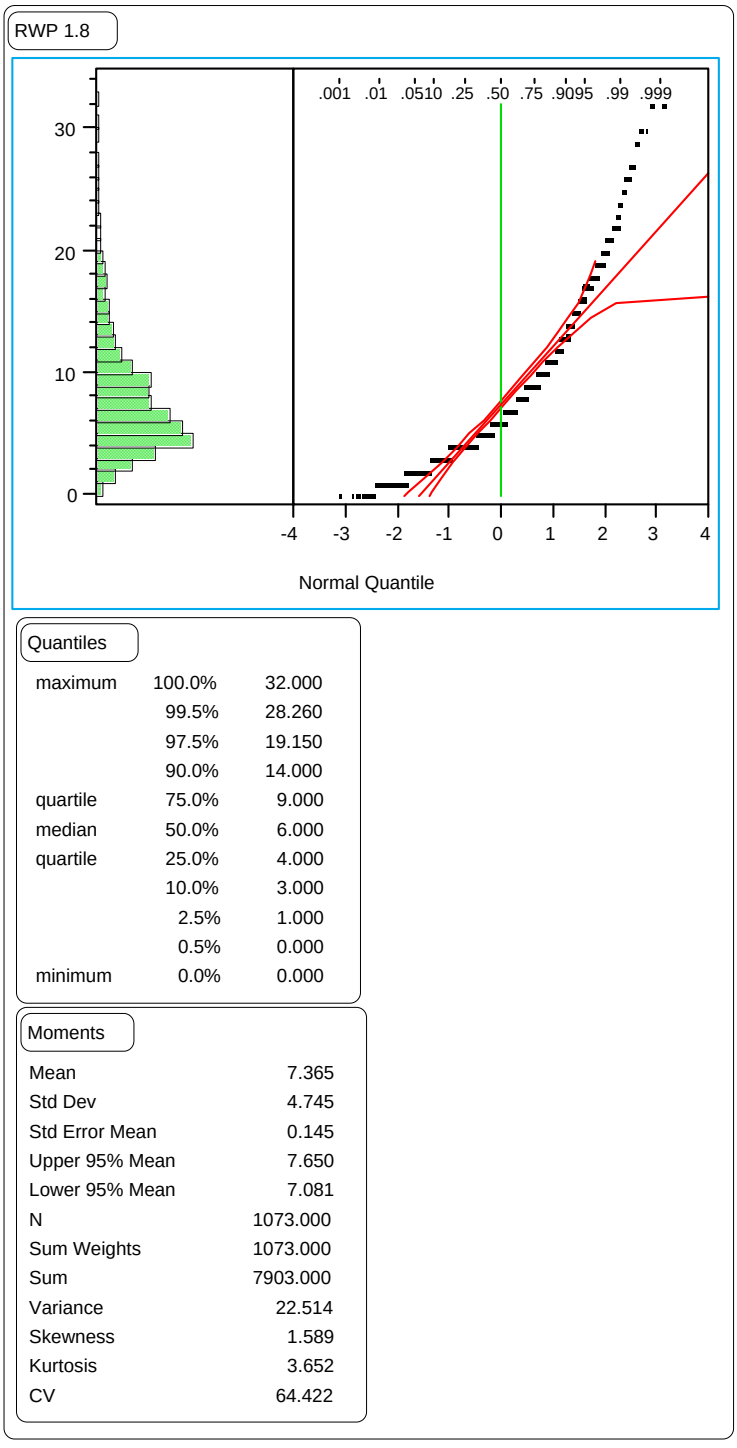



**Figure 71. Distribution of the section means of the RWP 1.8-m rut depths on GPS-1 test sections.**

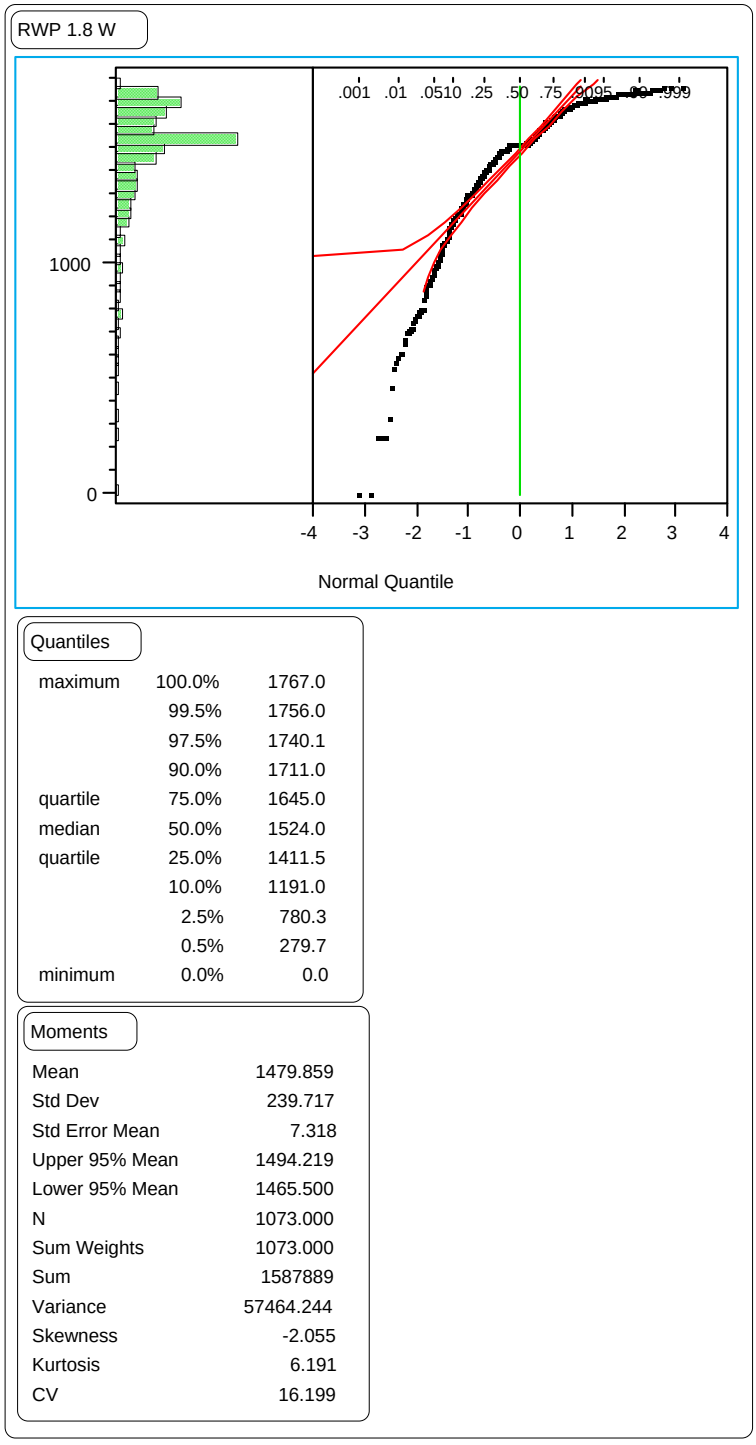



**Figure 72. Distribution of the section means of the RWP 1.8-m rut widths on GPS-1 test sections.**

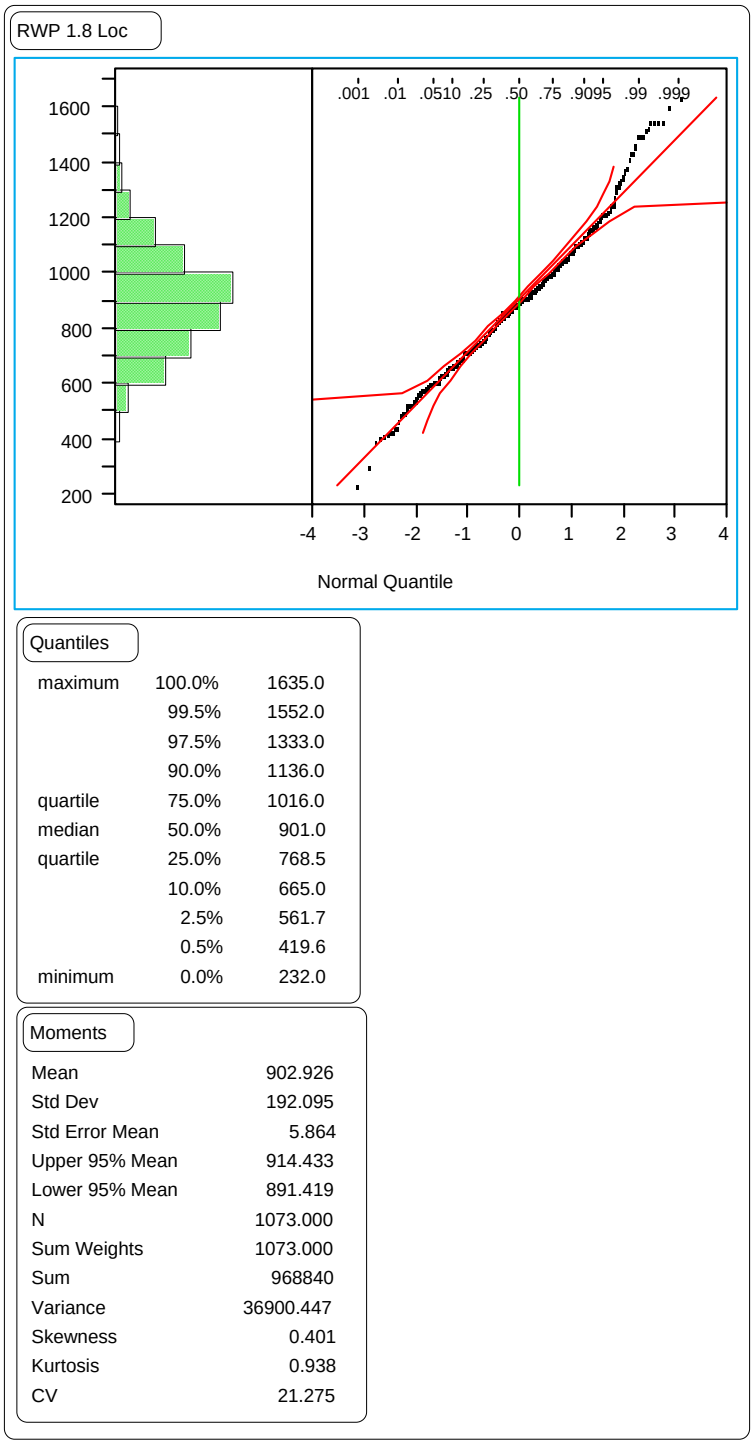



**Figure 73. Distribution of the section means of the RWP 1.8-m rut locations on GPS-1 test sections.**

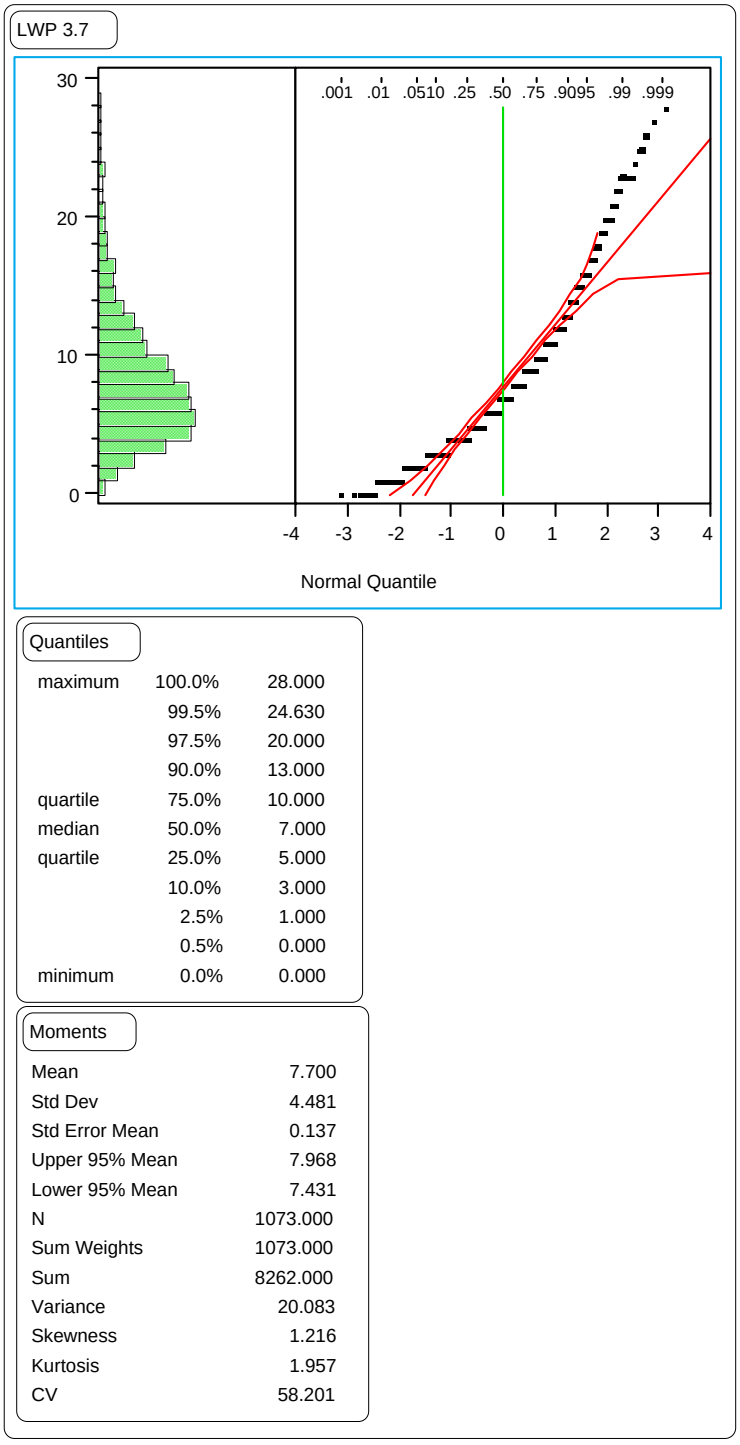



**Figure 74. Distribution of the section means of the LWP wire line rut depths on GPS-1 test sections.**

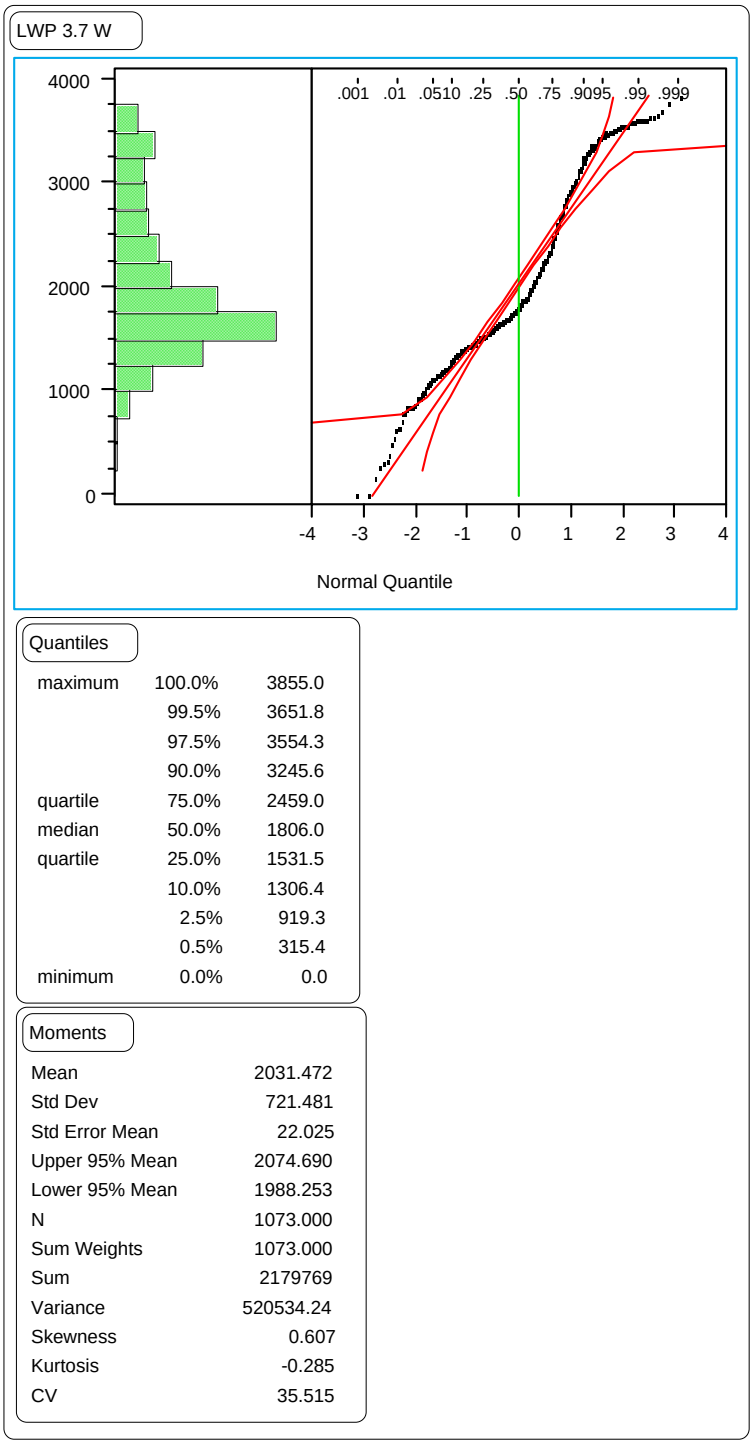



**Figure 75. Distribution of the section means of the LWP wire line rut widths on GPS-1 test sections.**

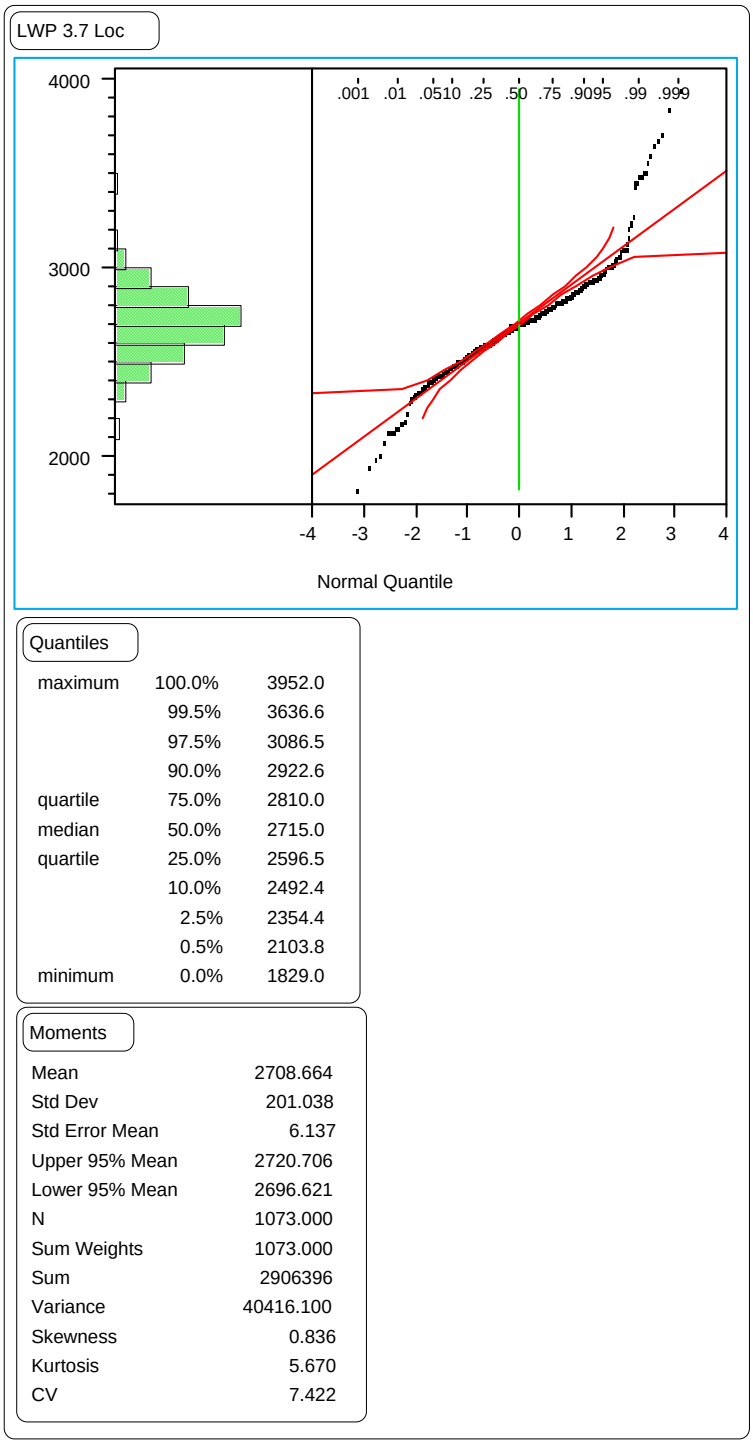



**Figure 76. Distribution of the section means of the LWP wire line rut locations on GPS-1 test sections.**

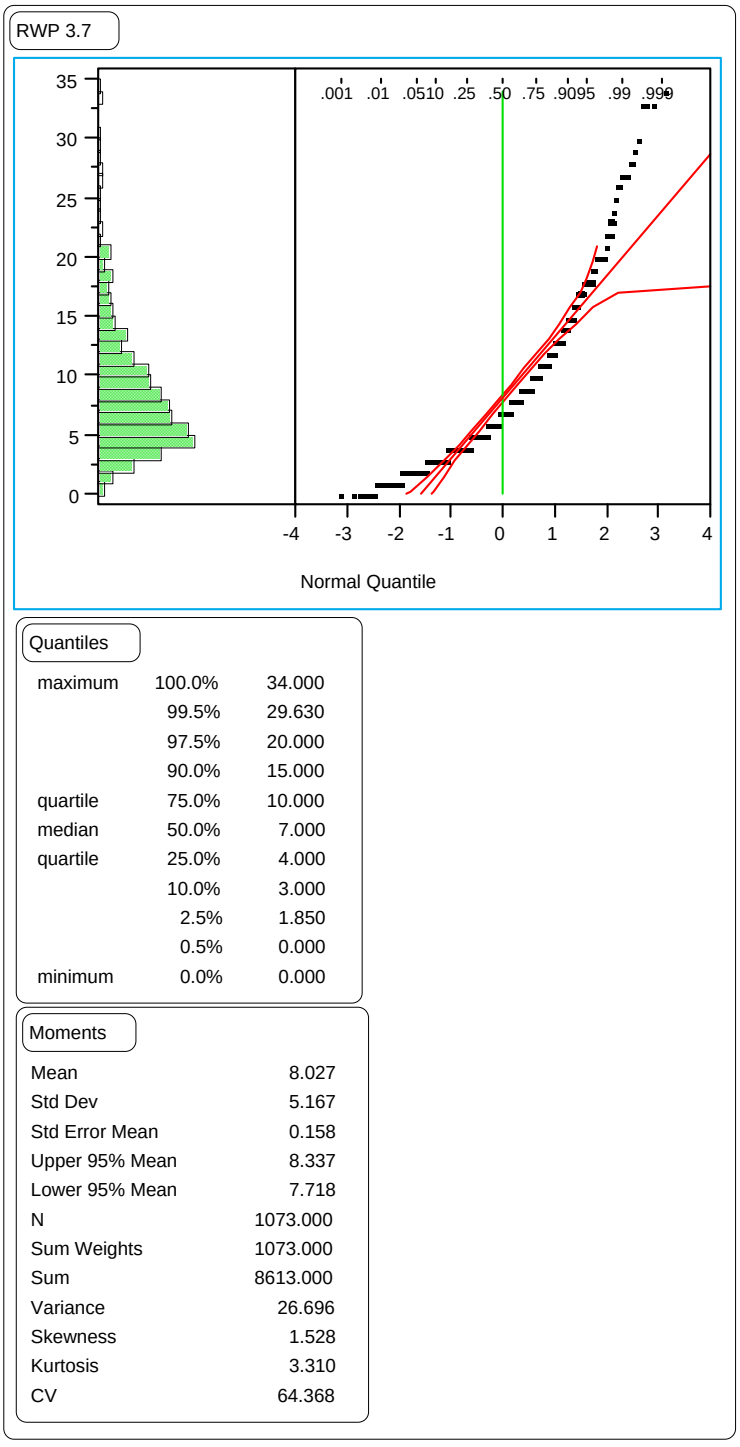



**Figure 77. Distribution of the section means of the RWP wire line rut depths on GPS-1 test sections.**

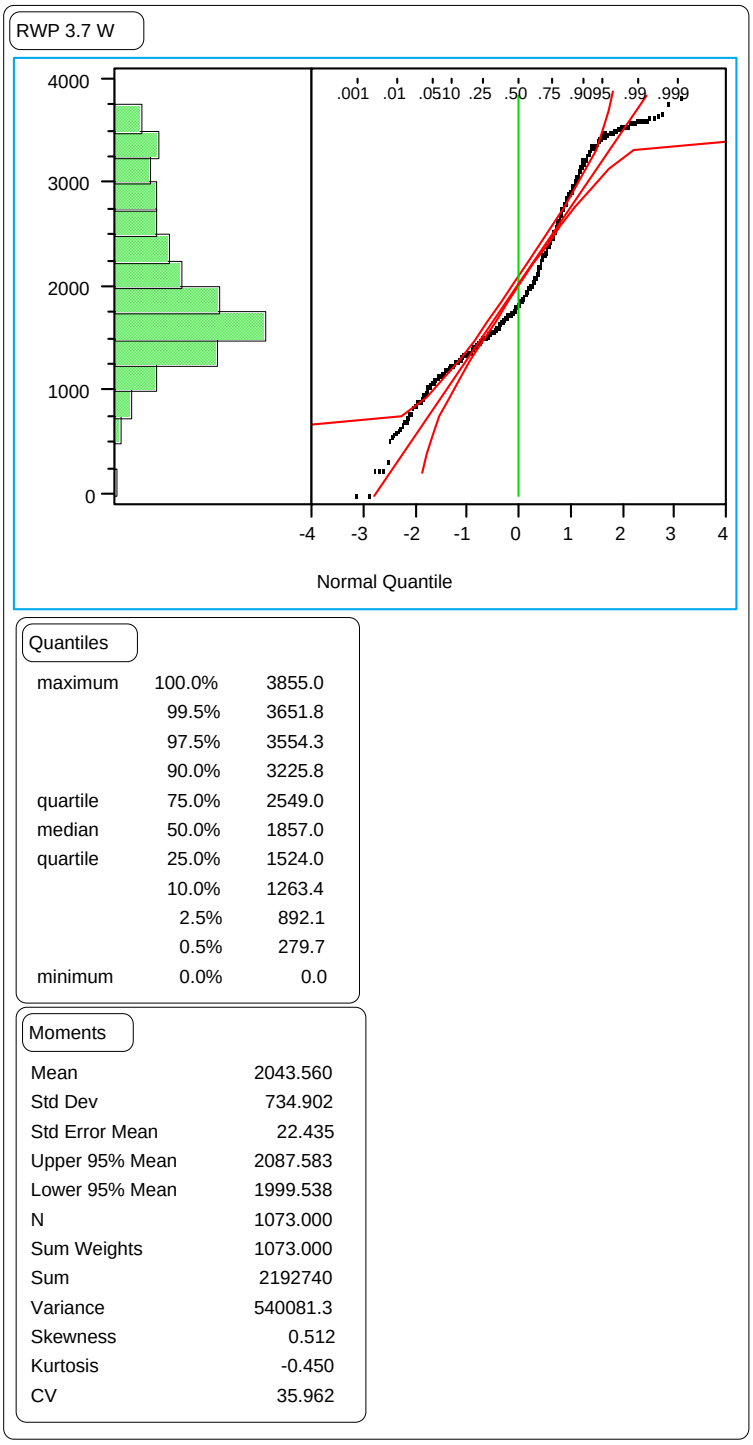



**Figure 78. Distribution of the section means of the RWP wire line rut widths on GPS-1 test sections.**

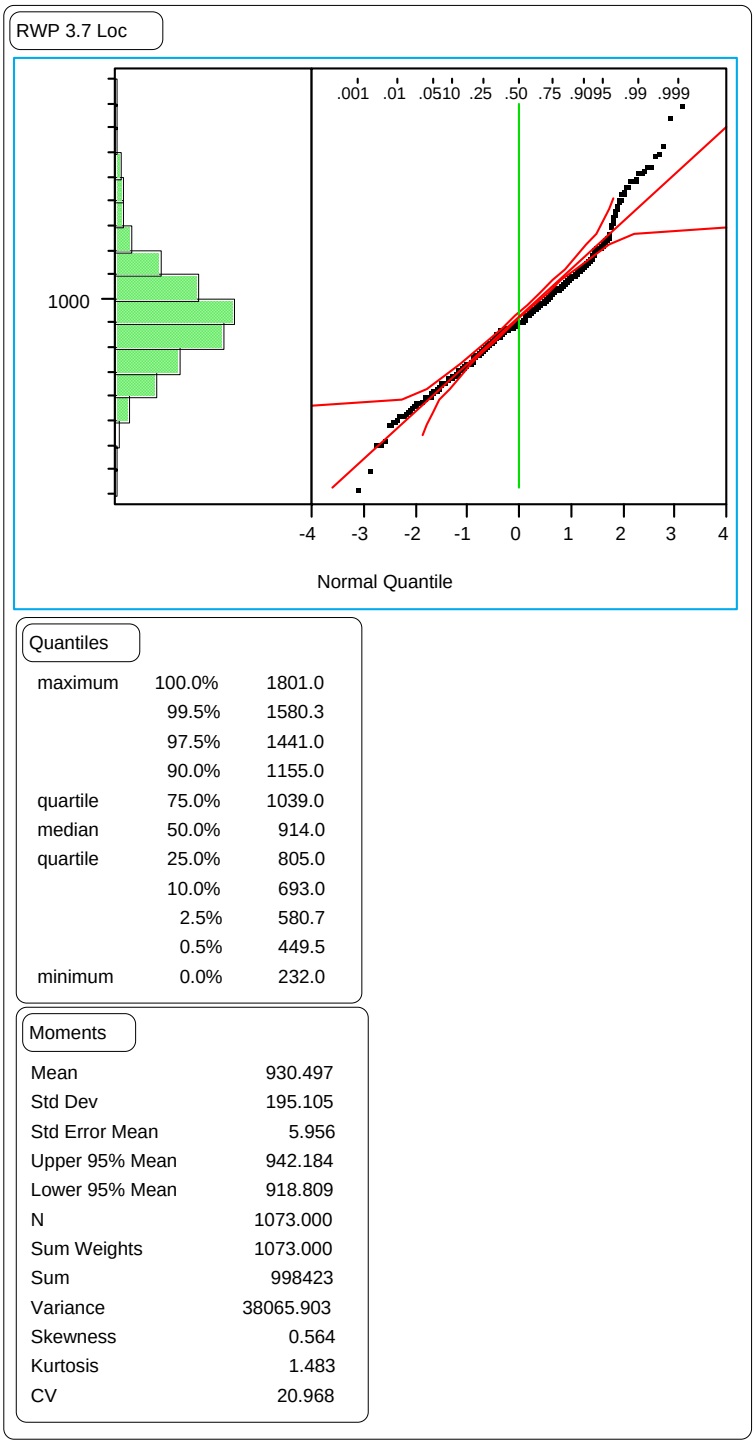



**Figure 79. Distribution of the section means of the RWP wire line rut locations on GPS-1 test sections.**

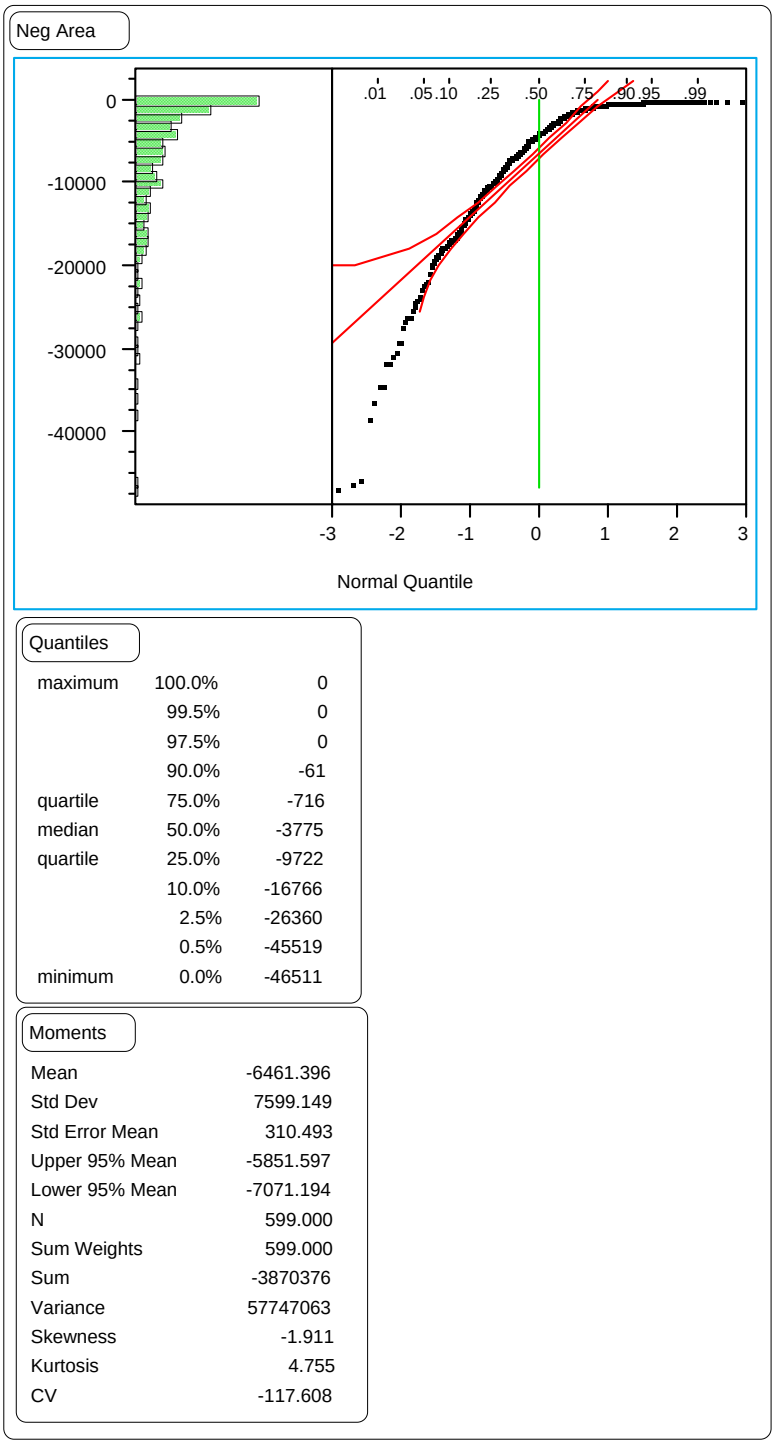



**Figure 80. Distribution of the section means of the negative area index on GPS-2 test sections.**

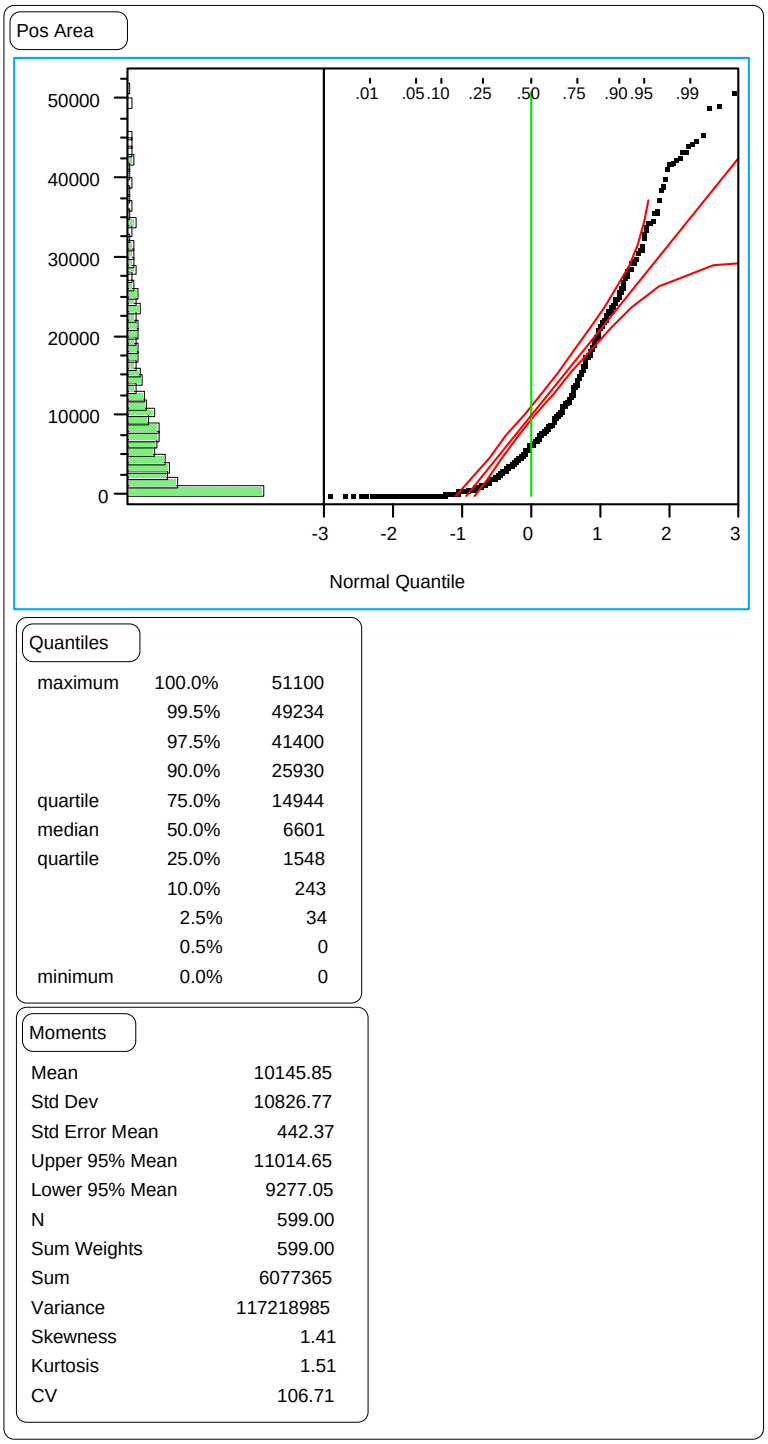



**Figure 81. Distribution of the section means of the positive area index on GPS-2 test sections.**

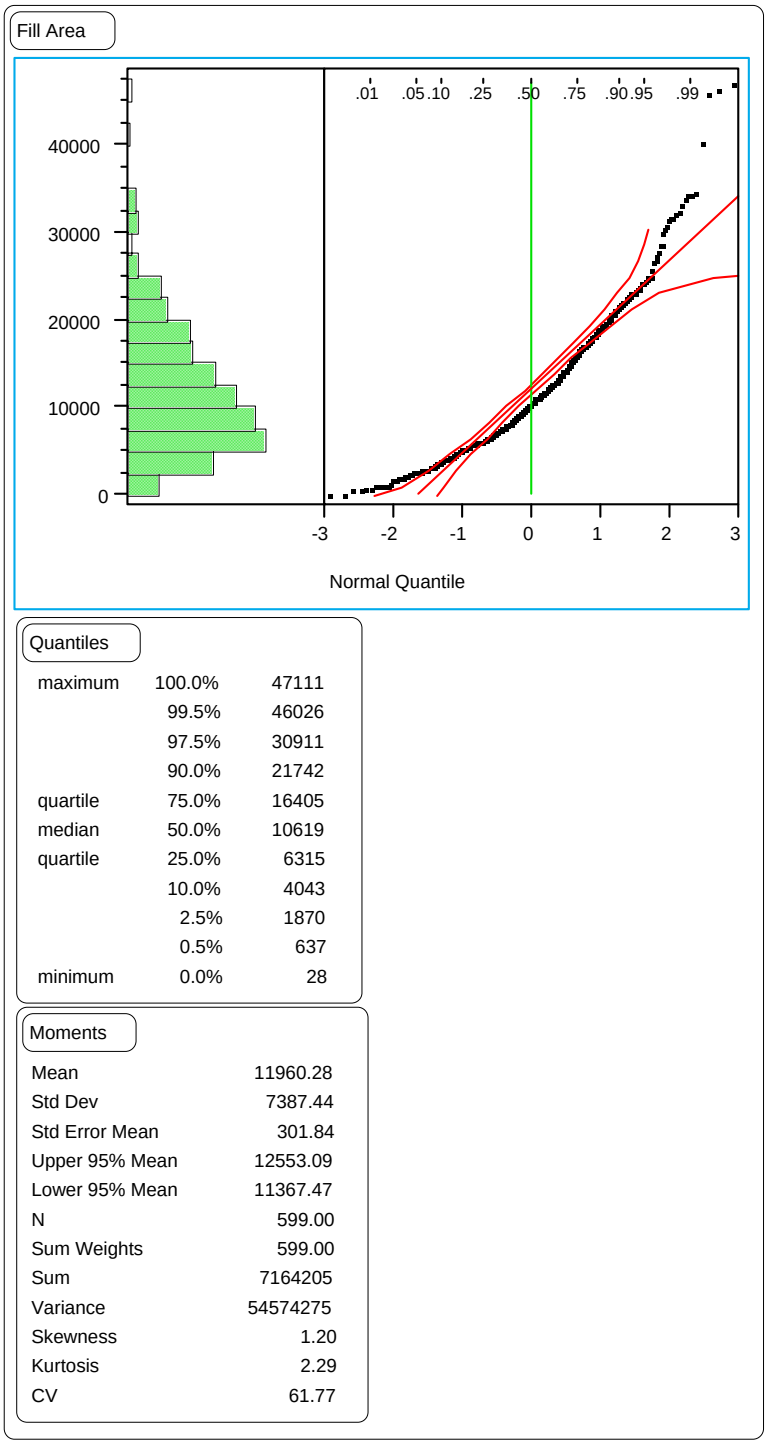
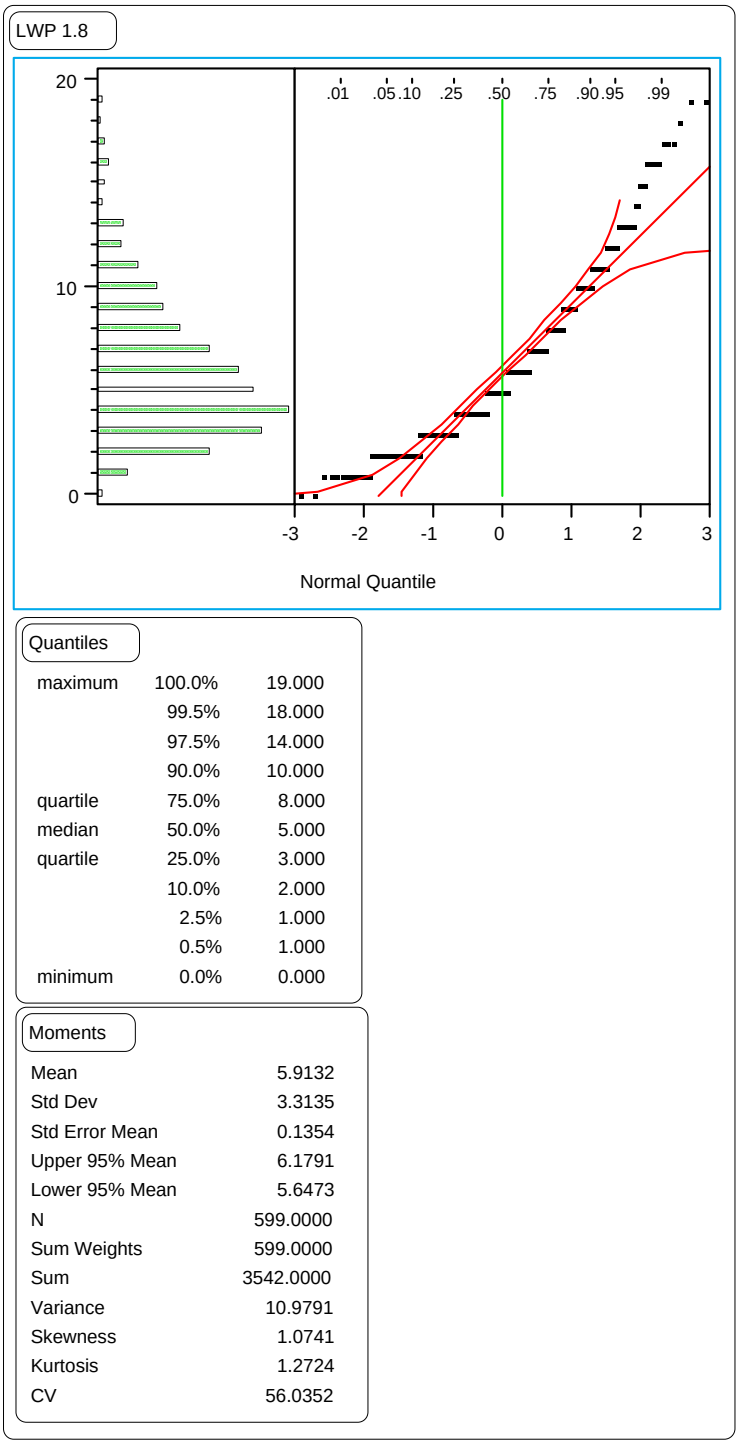



**Figure 82. Distribution of the section means of the fill area index on GPS-2 test sections.**




Quantiles

| | | |
|---|---|---|
| maximum | 100.0% | 19.000 |
| | 99.5% | 18.000 |
| | 97.5% | 14.000 |
| | 90.0% | 10.000 |
| quartile | 75.0% | 8.000 |
| median | 50.0% | 5.000 |
| quartile | 25.0% | 3.000 |
| | 10.0% | 2.000 |
| | 2.5% | 1.000 |
| | 0.5% | 1.000 |
| minimum | 0.0% | 0.000 |

Moments

| | |
|---|---|
| Mean | 5.9132 |
| Std Dev | 3.3135 |
| Std Error Mean | 0.1354 |
| Upper 95% Mean | 6.1791 |
| Lower 95% Mean | 5.6473 |
| N | 599.0000 |
| Sum Weights | 599.0000 |
| Sum | 3542.0000 |
| Variance | 10.9791 |
| Skewness | 1.0741 |
| Kurtosis | 1.2724 |
| CV | 56.0352 |

**Figure 83. Distribution of the section means of the LWP 1.8-m rut depths on GPS-2 test sections.**

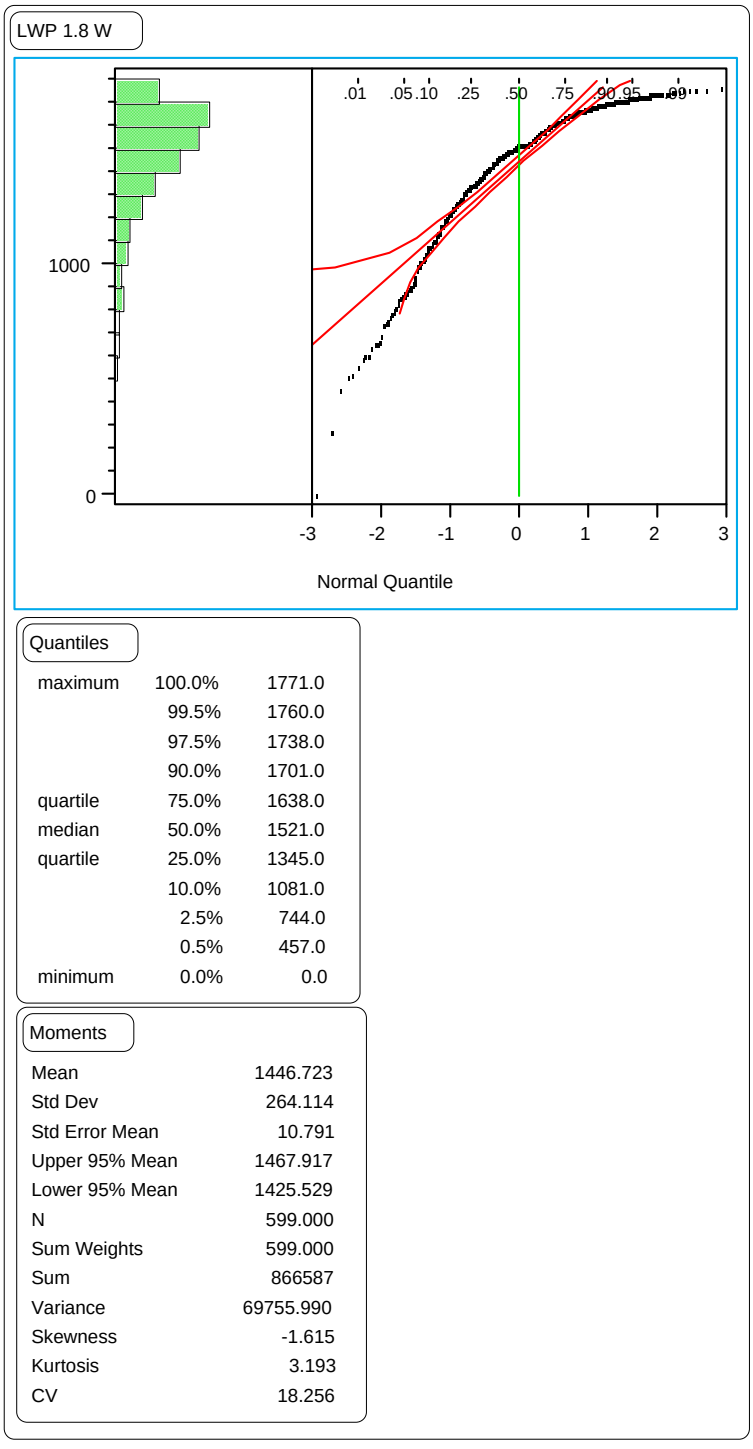



**Figure 84. Distribution of the section means of the LWP 1.8-m rut widths on GPS-2 test sections.**

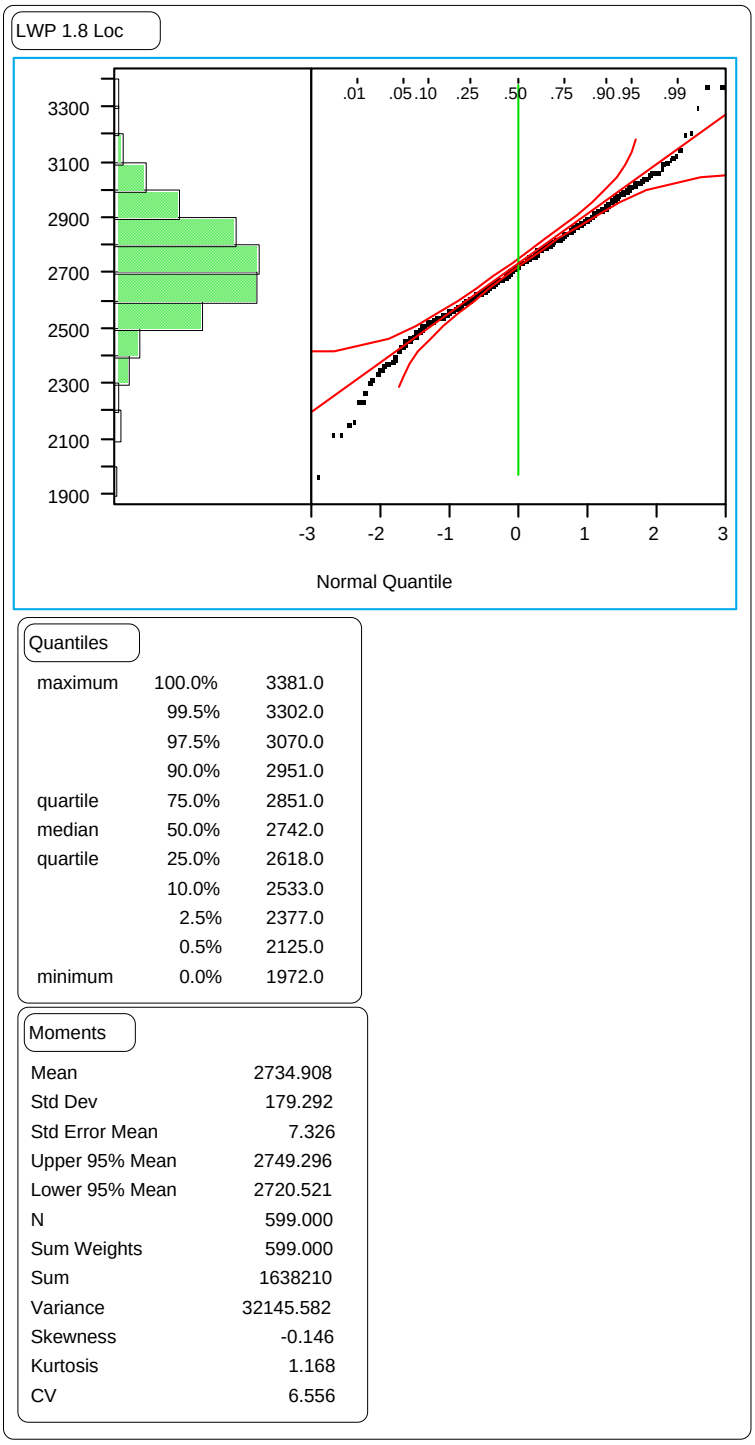



**Figure 85. Distribution of the section means of the LWP 1.8-m rut locations on GPS-2 test sections.**

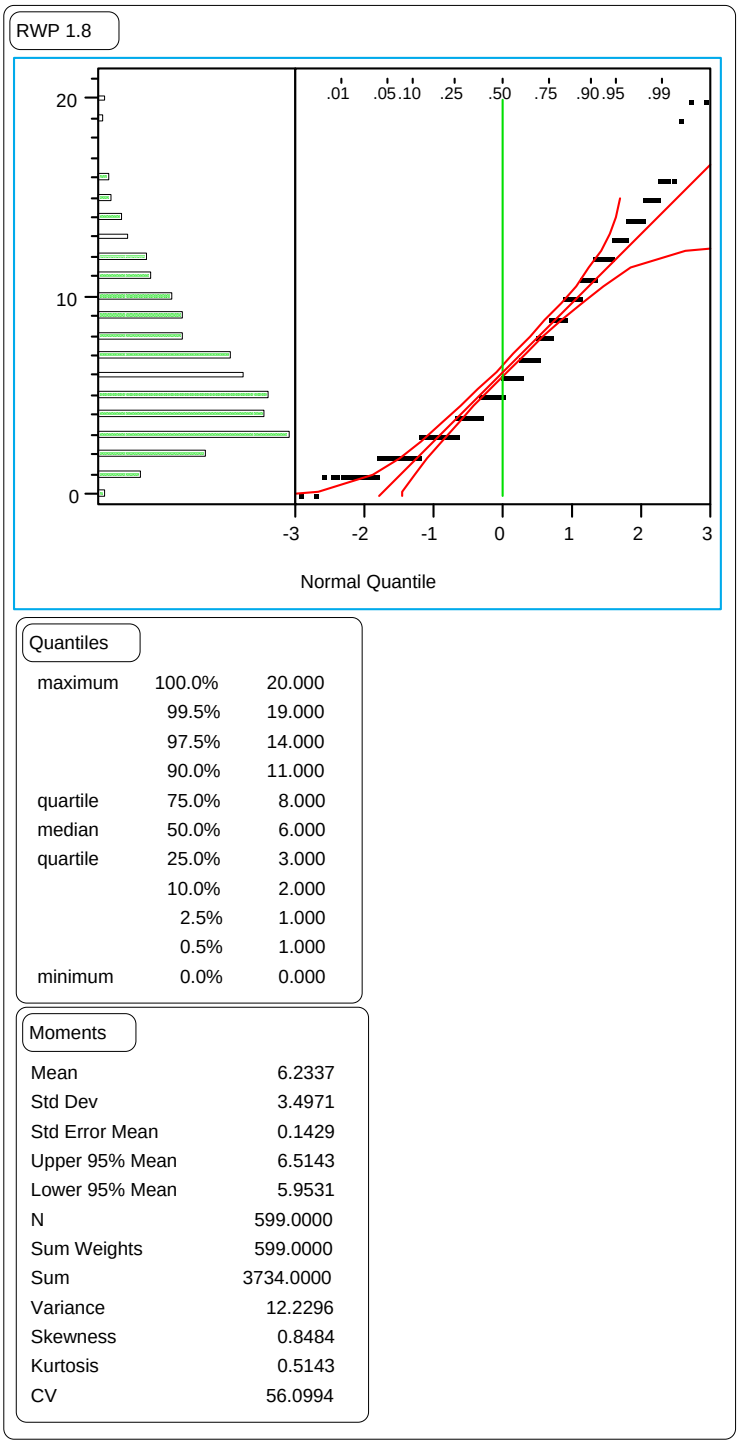



**Figure 86. Distribution of the section means of the RWP 1.8-m rut depths on GPS-2 test sections.**

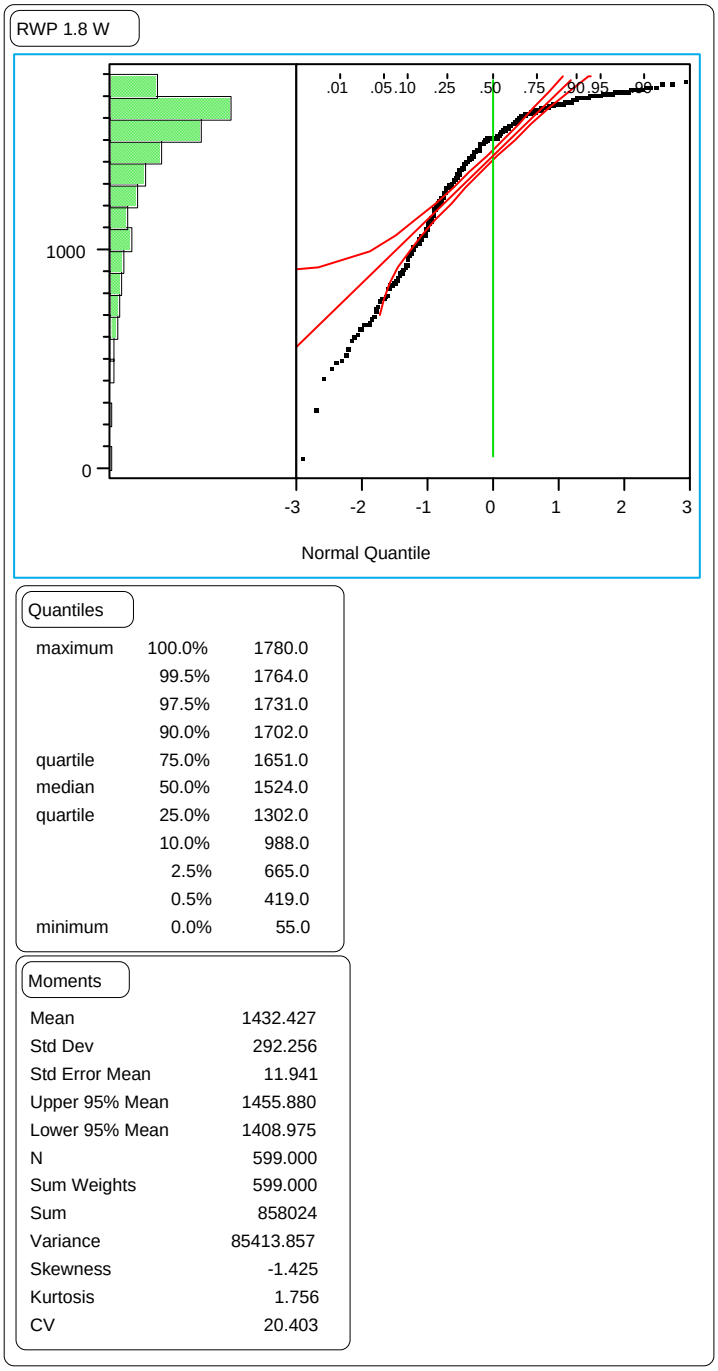



**Figure 87. Distribution of the section means of the RWP 1.8-m rut widths on GPS-2 test sections.**

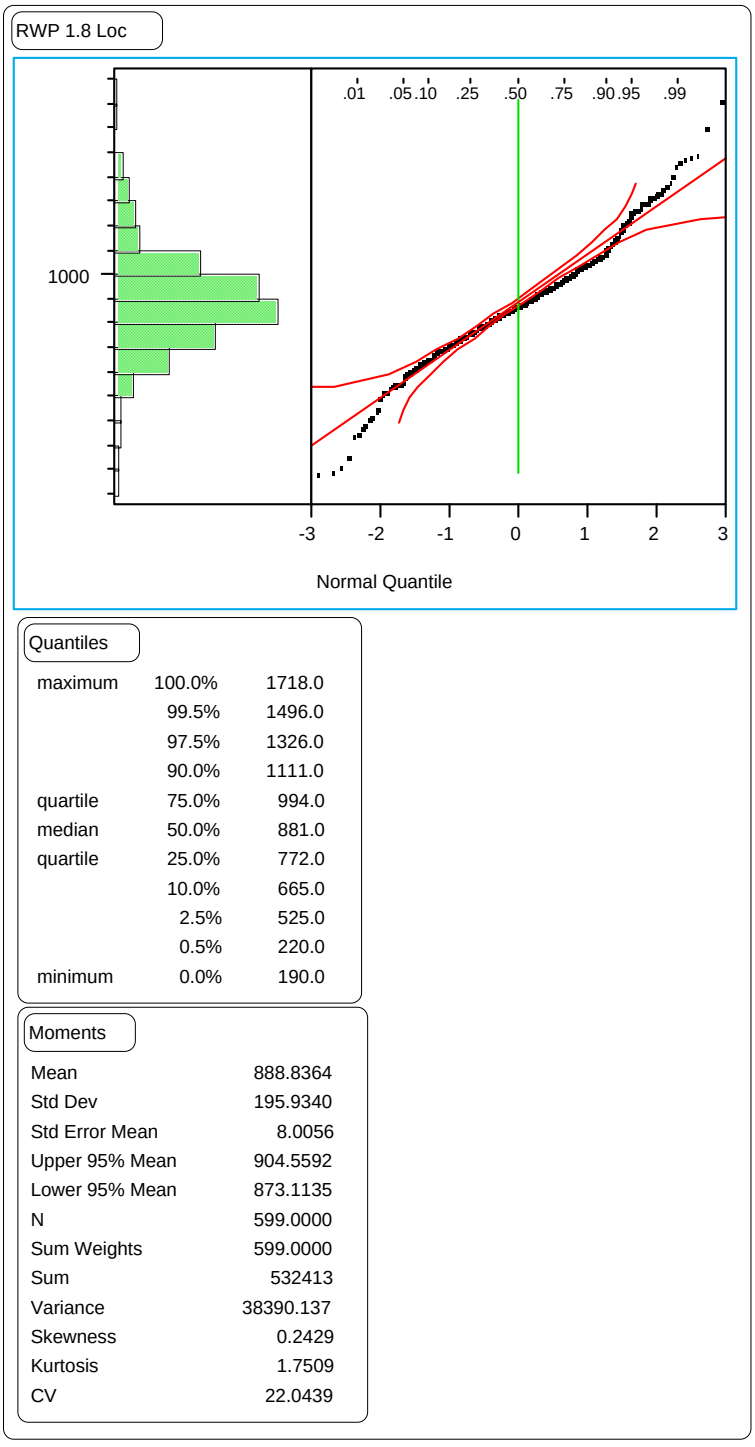



**Figure 88. Distribution of the section means of the RWP 1.8-m rut locations on GPS-2 test sections.**

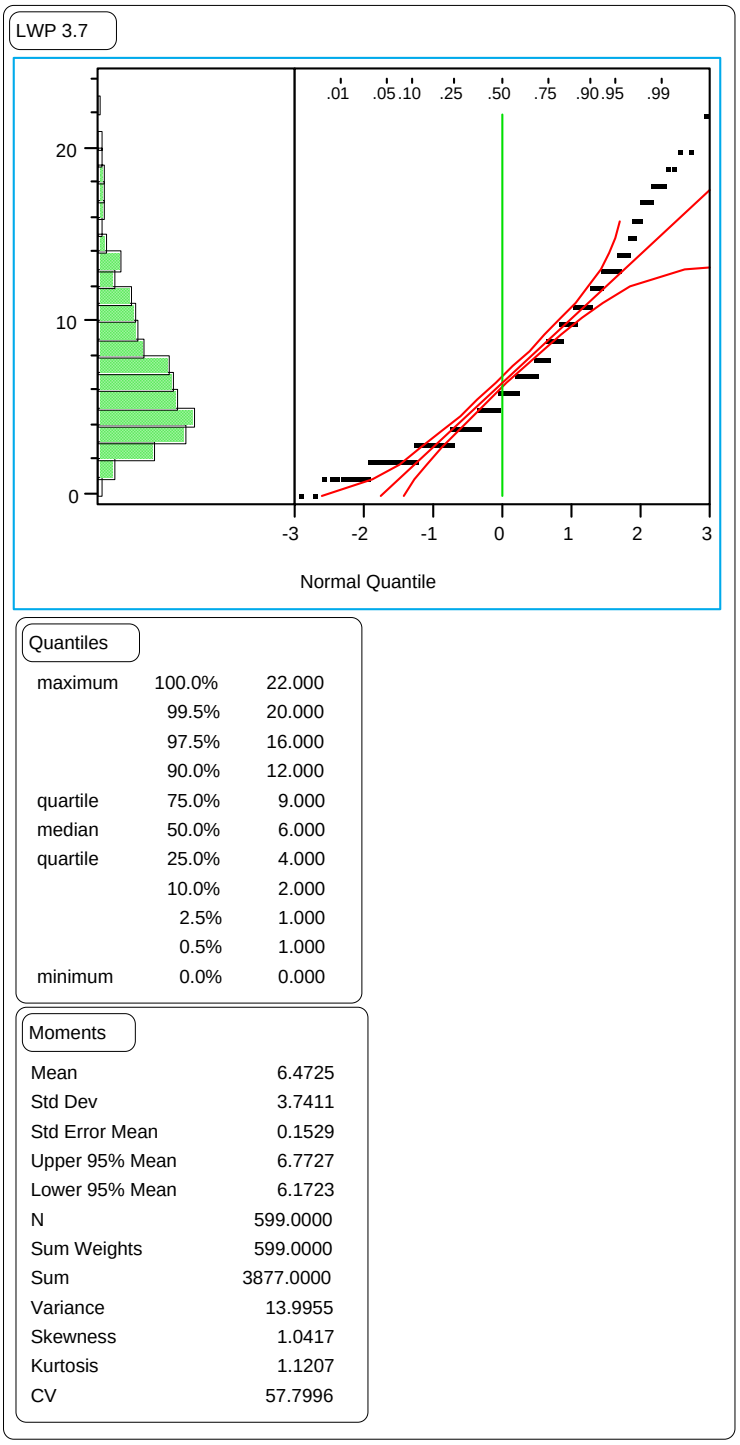



**Figure 89. Distribution of the section means of the LWP wire line rut depths on GPS-2 test sections.**

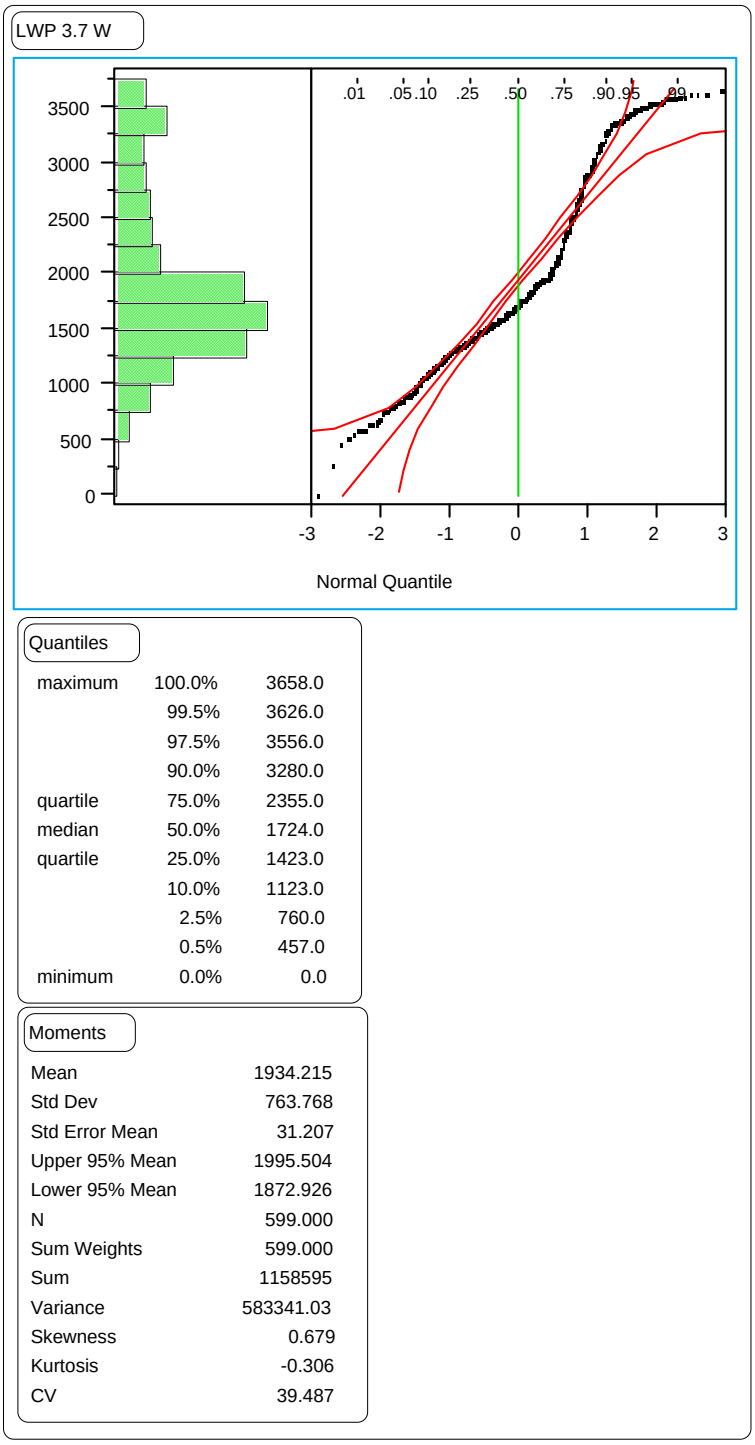



**Figure 90. Distribution of the section means of the LWP wire line rut widths on GPS-2 test sections.**

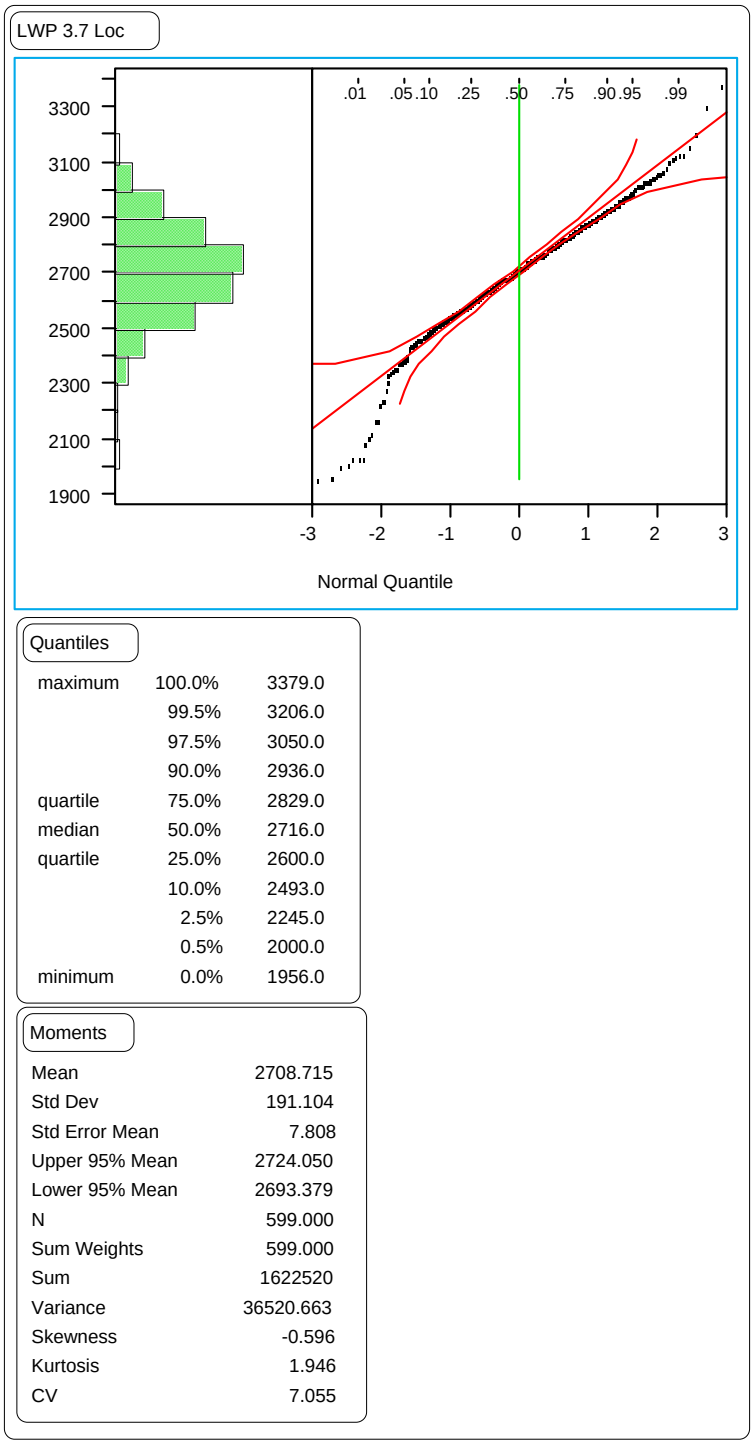



**Figure 91. Distribution of the section means of the LWP wire line rut locations on GPS-2 test sections.**

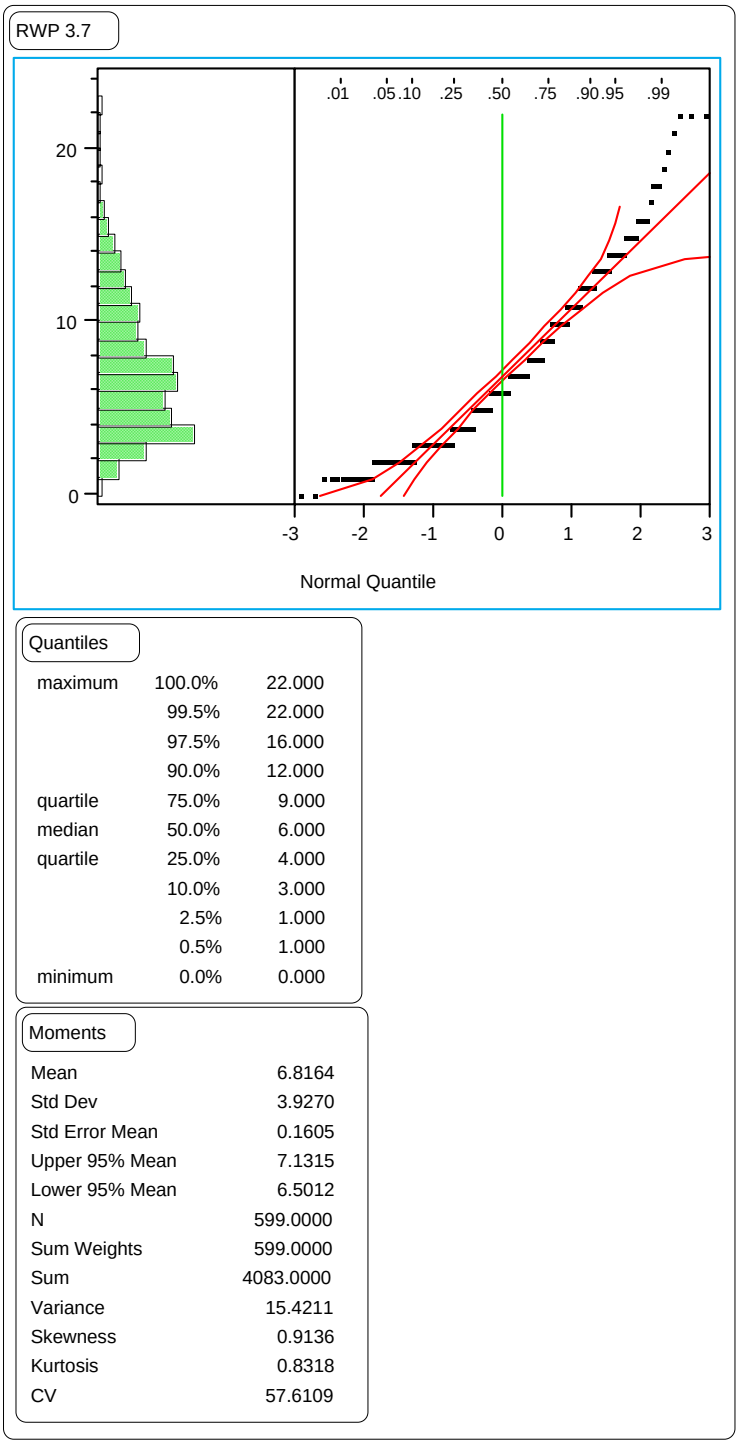



**Figure 92. Distribution of the section means of the RWP wire line rut depths on GPS-2 test sections.**

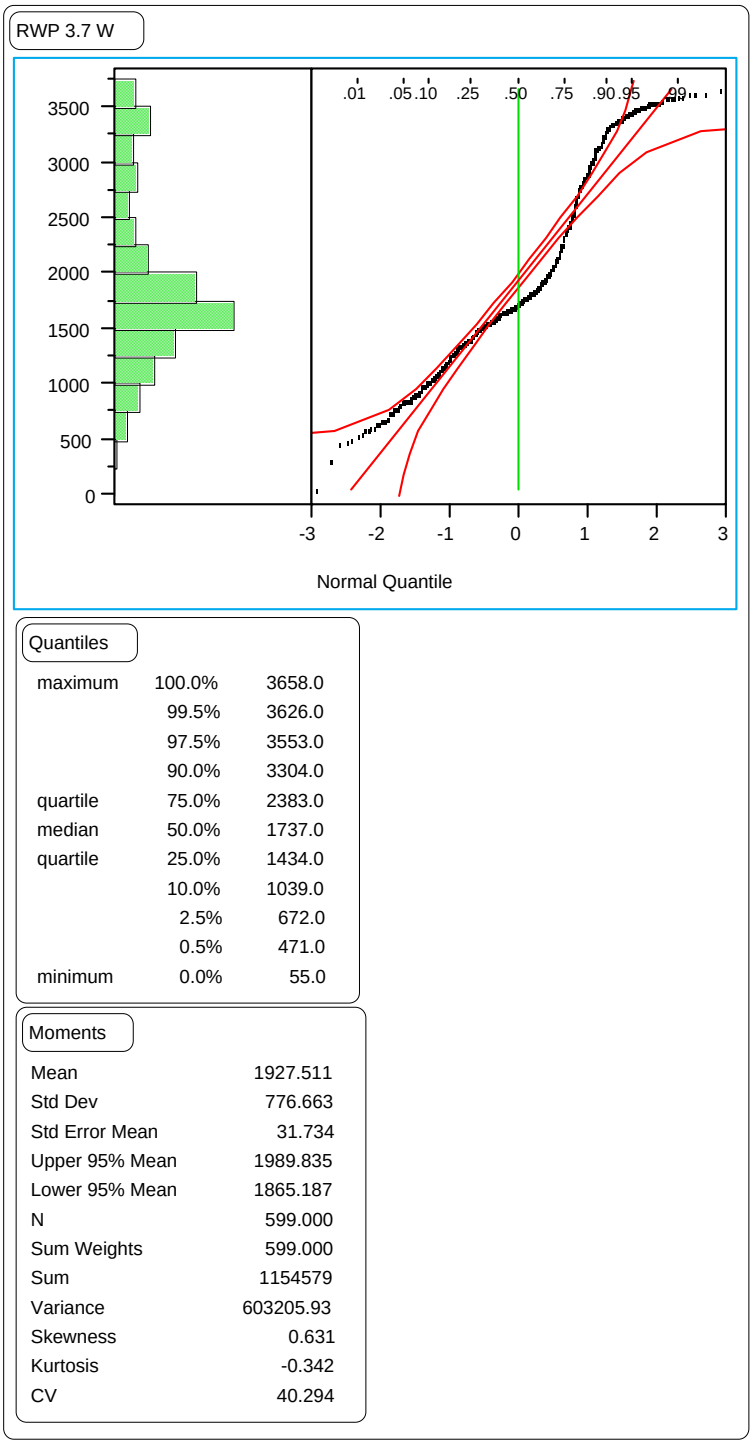



**Figure 93. Distribution of the section means of the RWP wire line rut widths on GPS-2 test sections.**

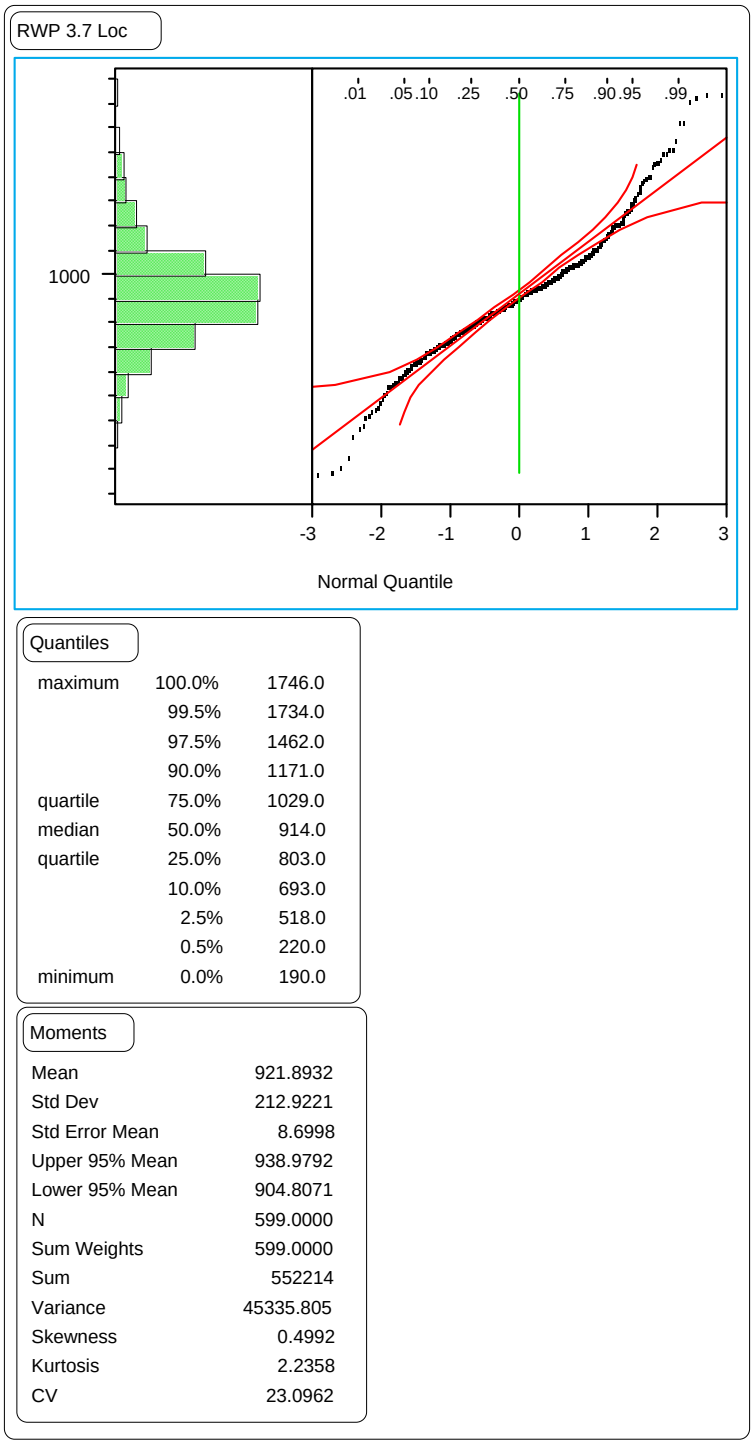



**Figure 94. Distribution of the section means of the RWP wire line rut locations on GPS-2 test sections.**

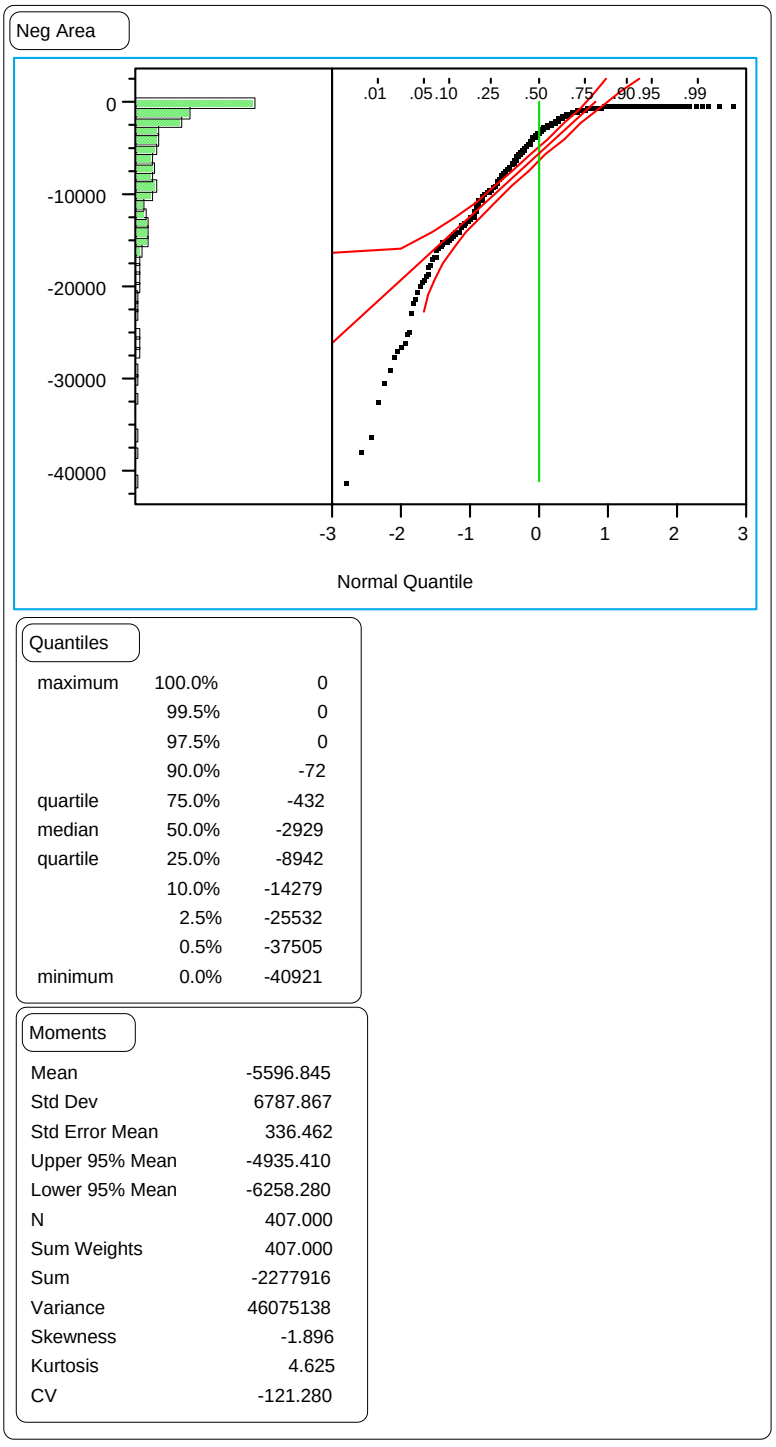



**Figure 95. Distribution of the section means of the negative area index on GPS-6 test sections.**

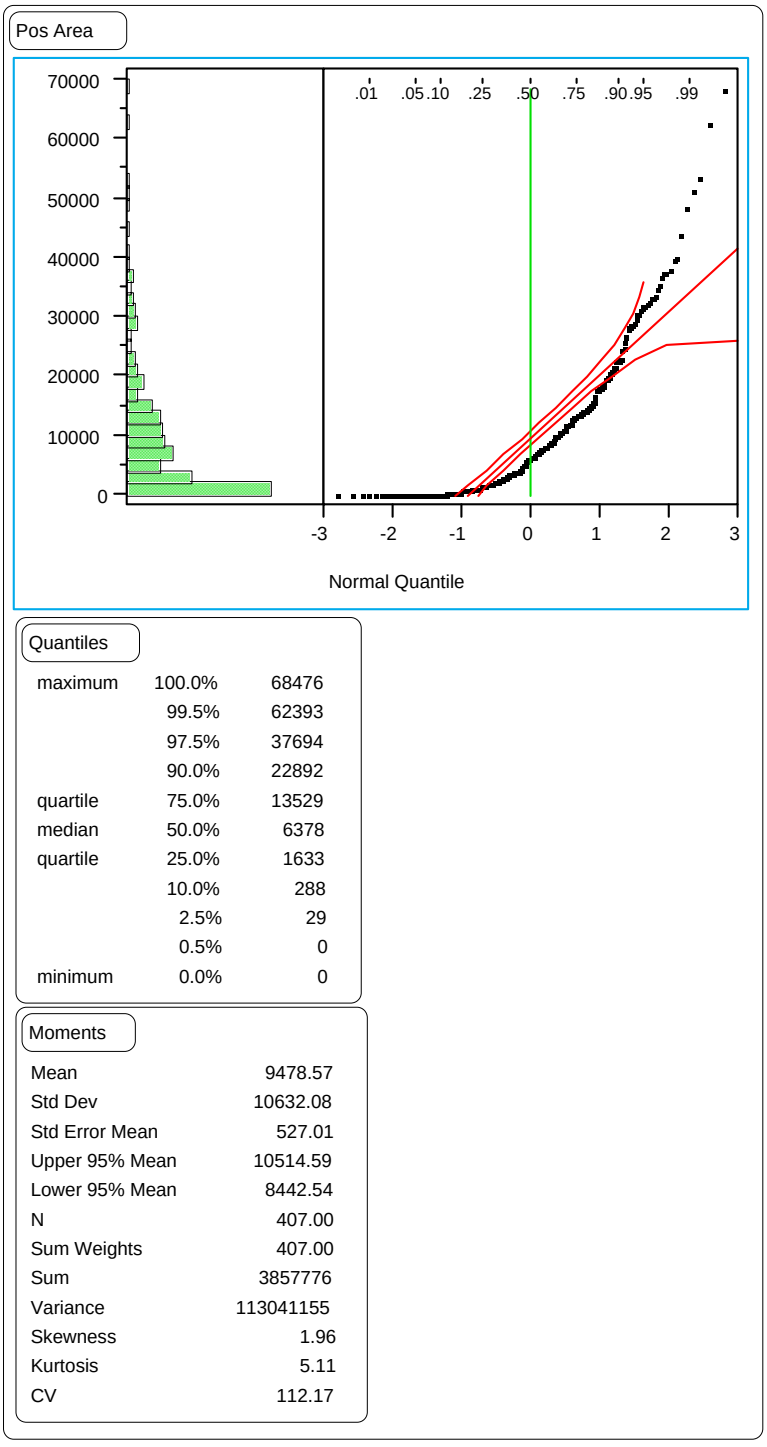



**Figure 96. Distribution of the section means of the positive area index on GPS-6 test sections.**

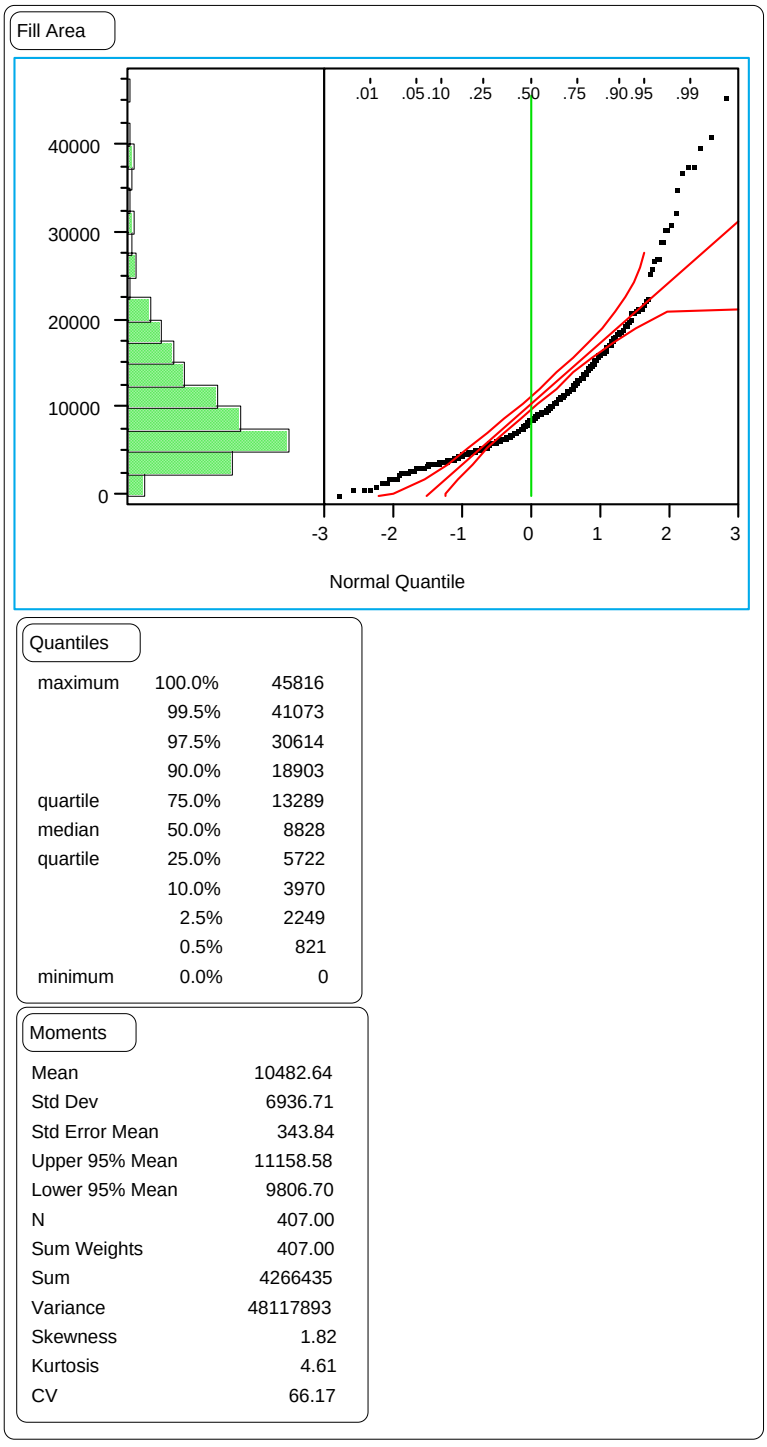



**Figure 97. Distribution of the section means of the fill area index on GPS-6 test sections.**

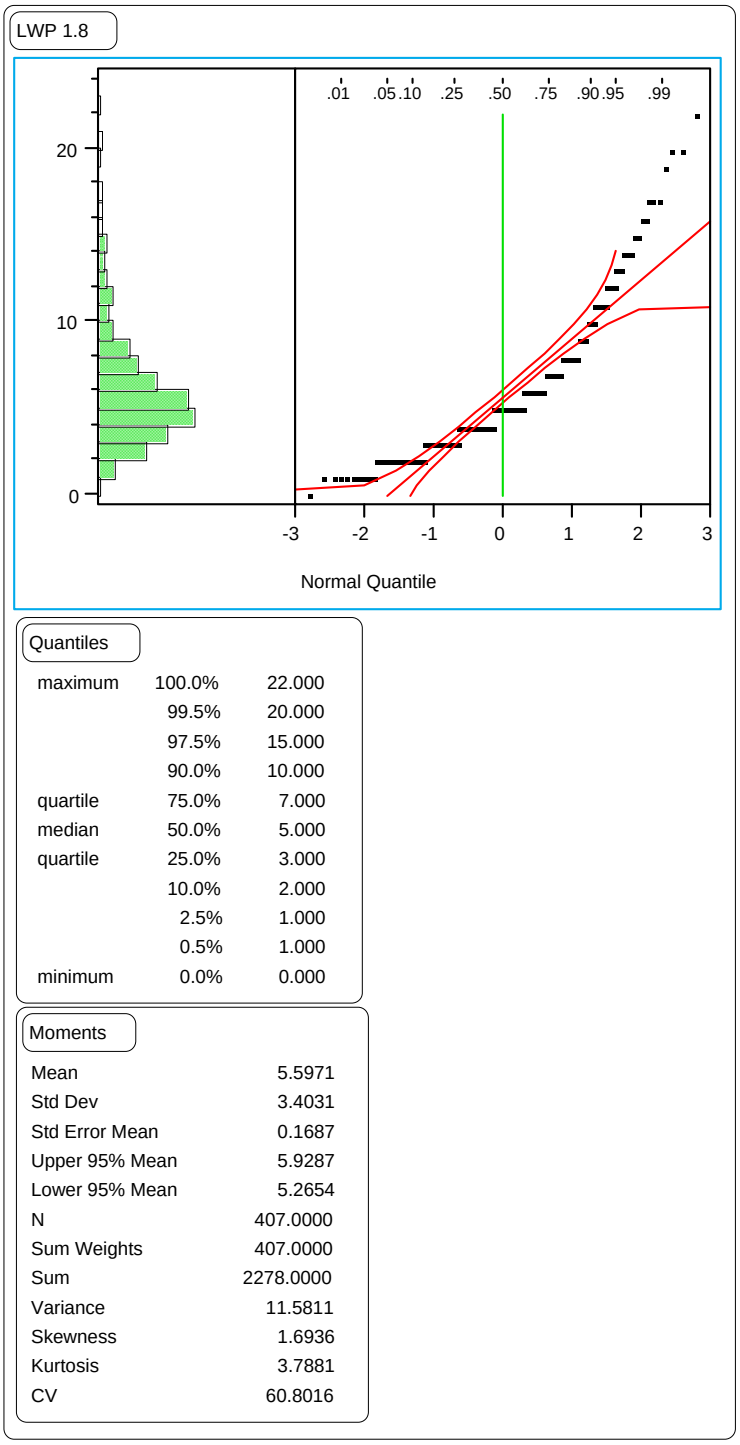



**Figure 98. Distribution of the section means of the LWP 1.8-m rut depths on GPS-6 test sections.**

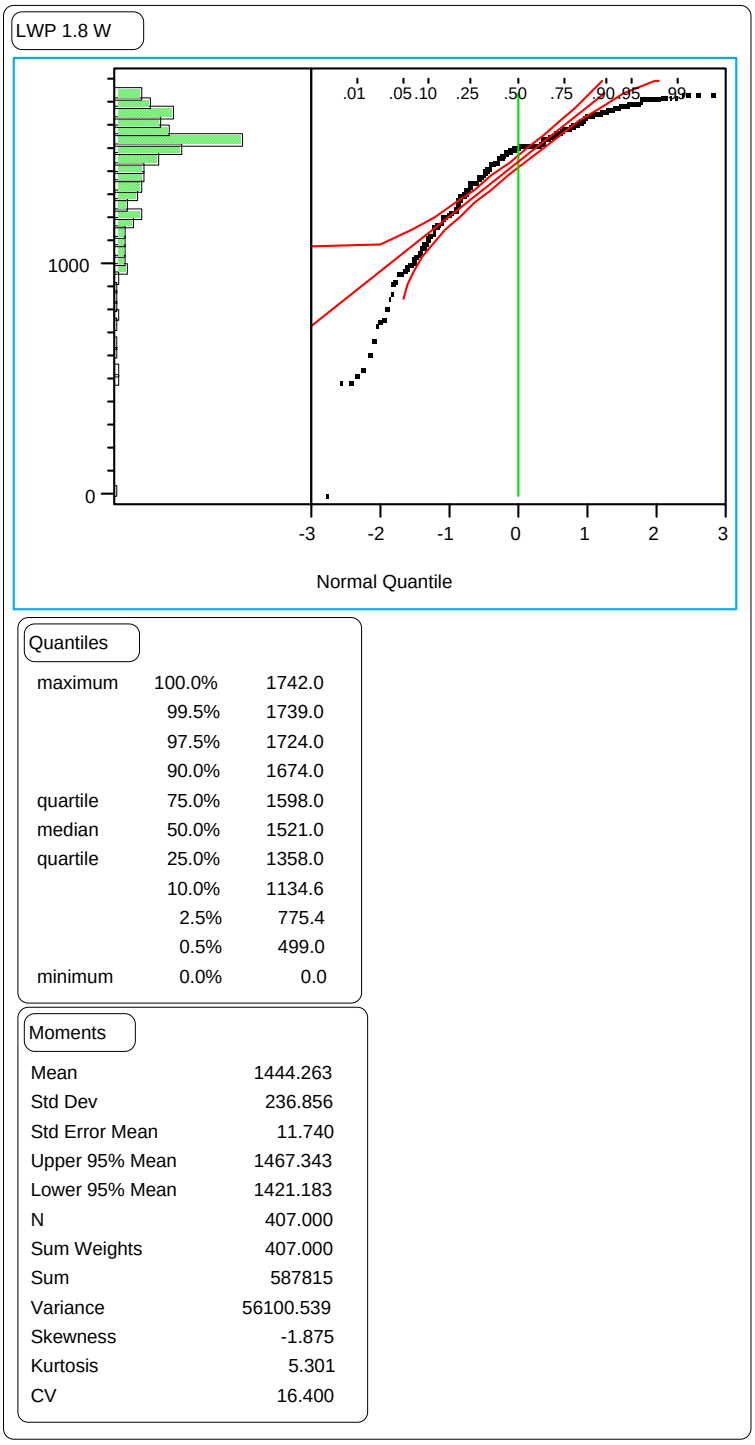



**Figure 99. Distribution of the section means of the LWP 1.8-m rut widths on GPS-6 test sections.**

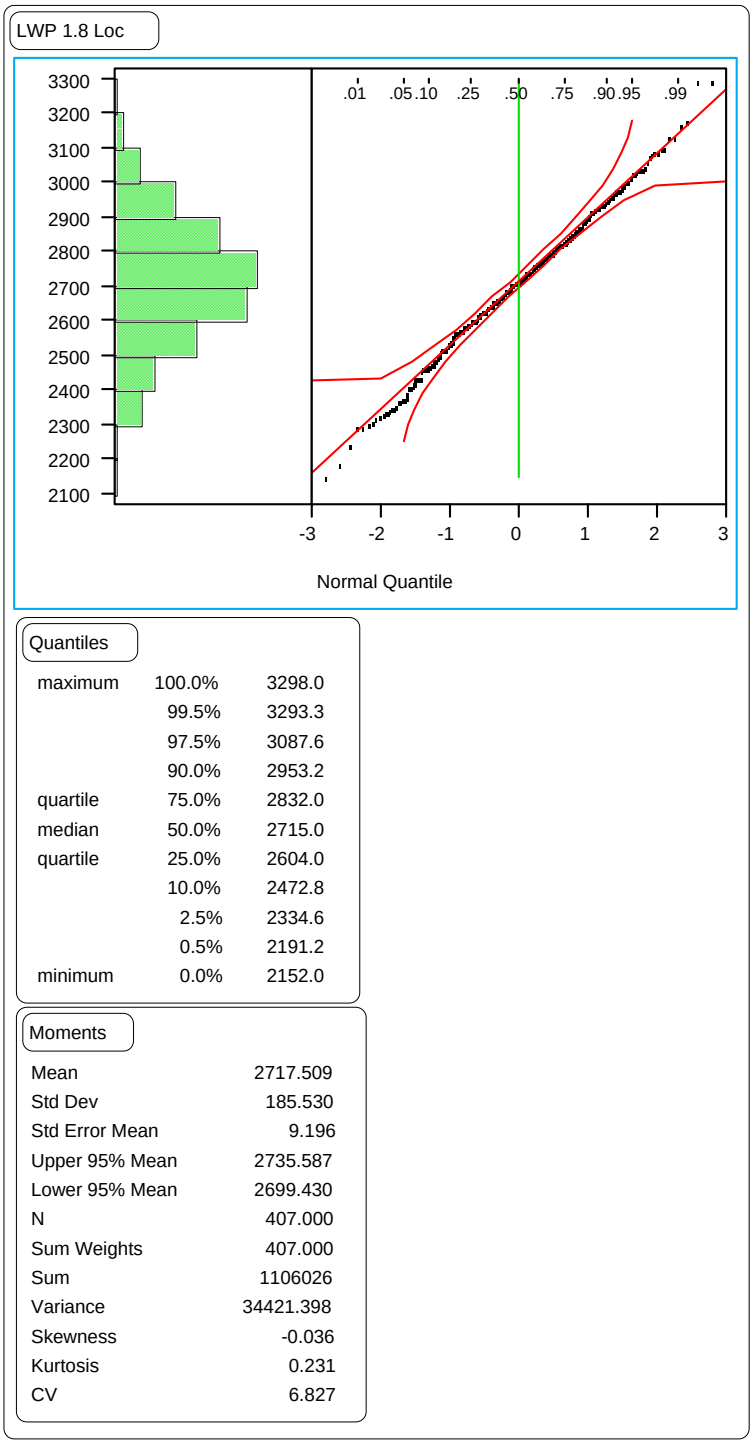



**Figure 100. Distribution of the section means of the LWP 1.8-m rut locations on GPS-6 test sections.**

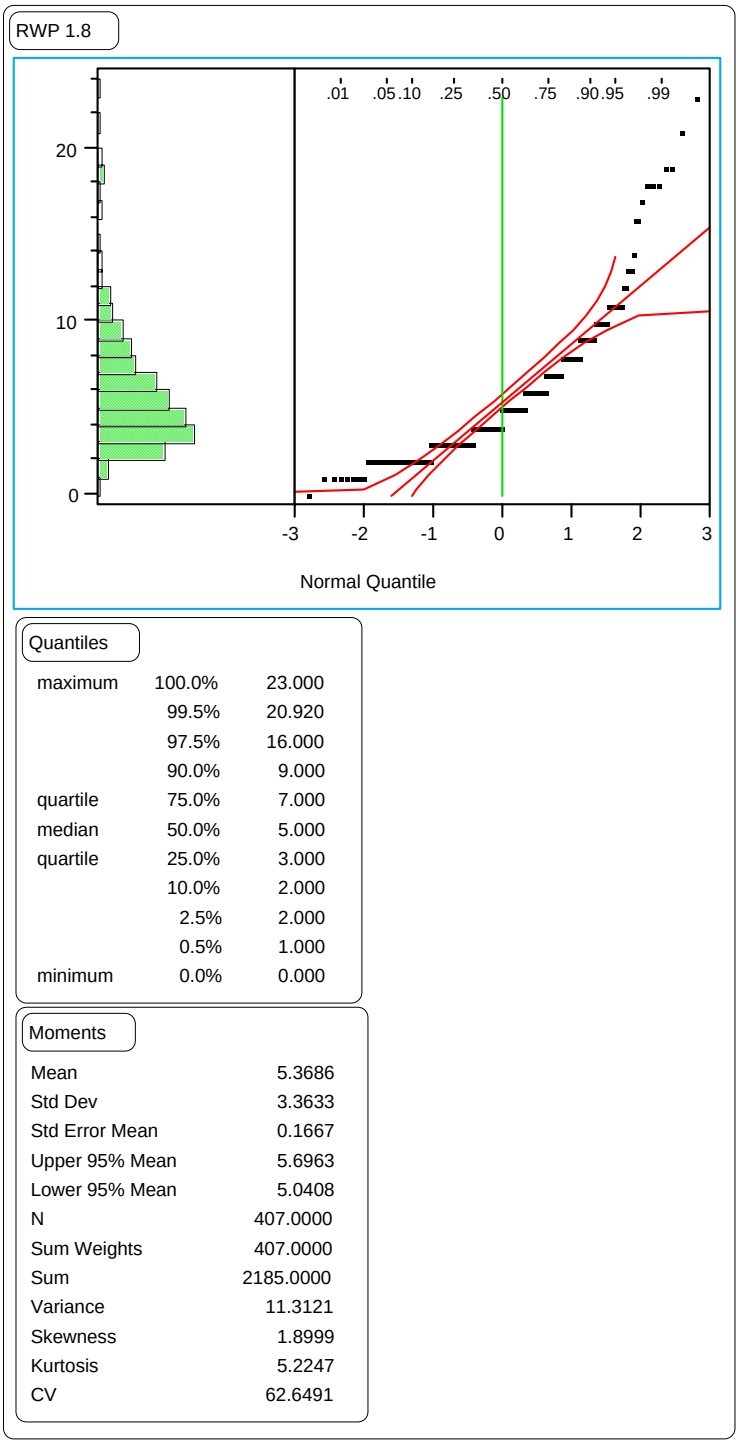



**Figure 101. Distribution of the section means of the RWP 1.8-m rut depths on GPS-6 test sections.**

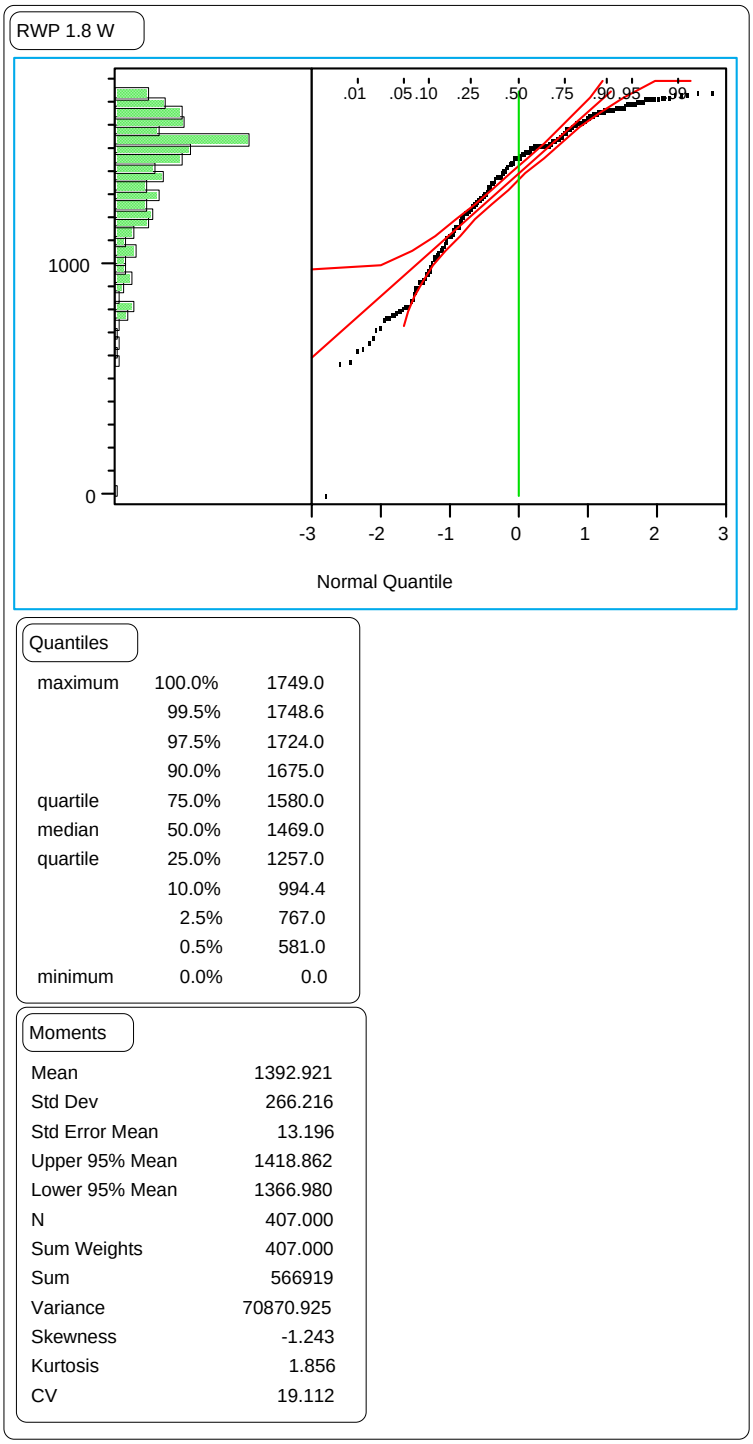



**Figure 102. Distribution of the section means of the RWP 1.8-m rut widths on GPS-6 test sections.**

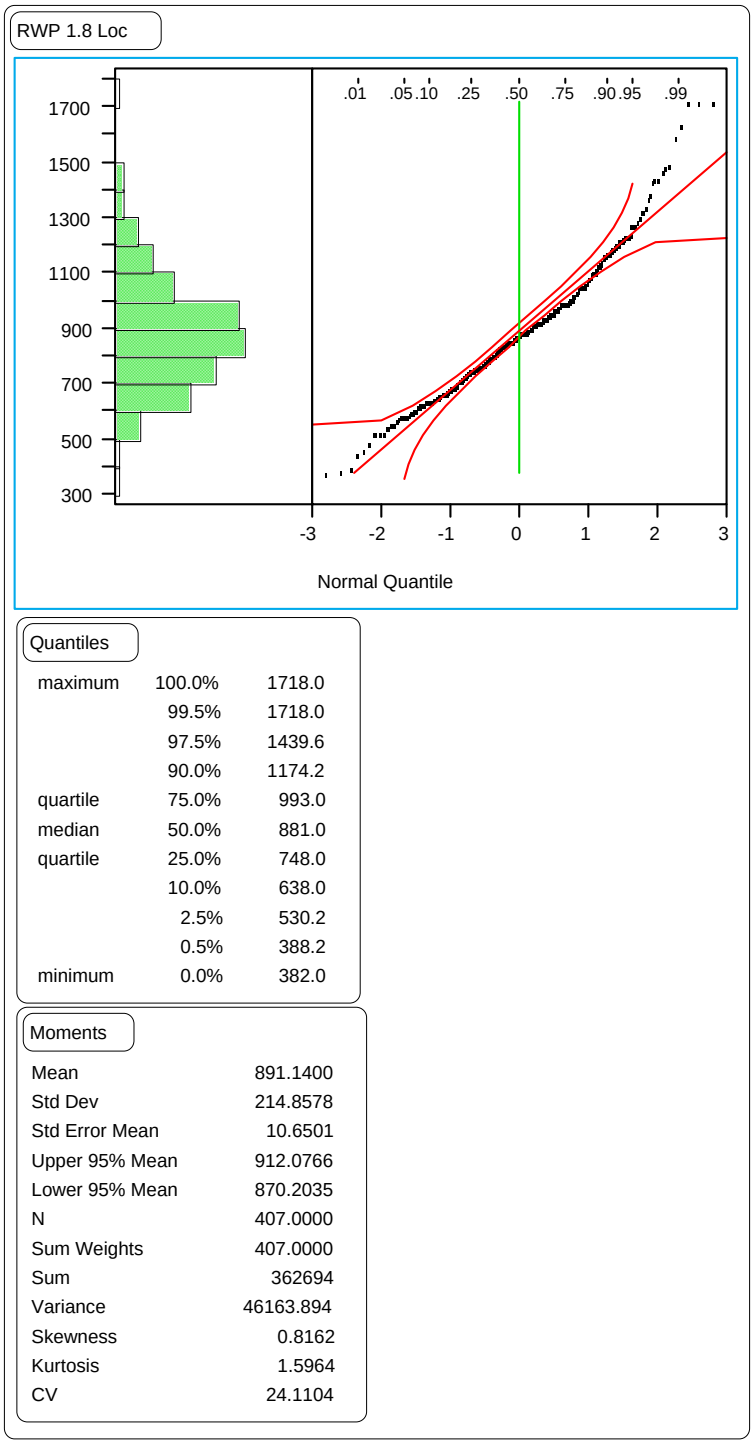



**Figure 103. Distribution of the section means of the RWP 1.8-m rut locations on GPS-6 test sections.**

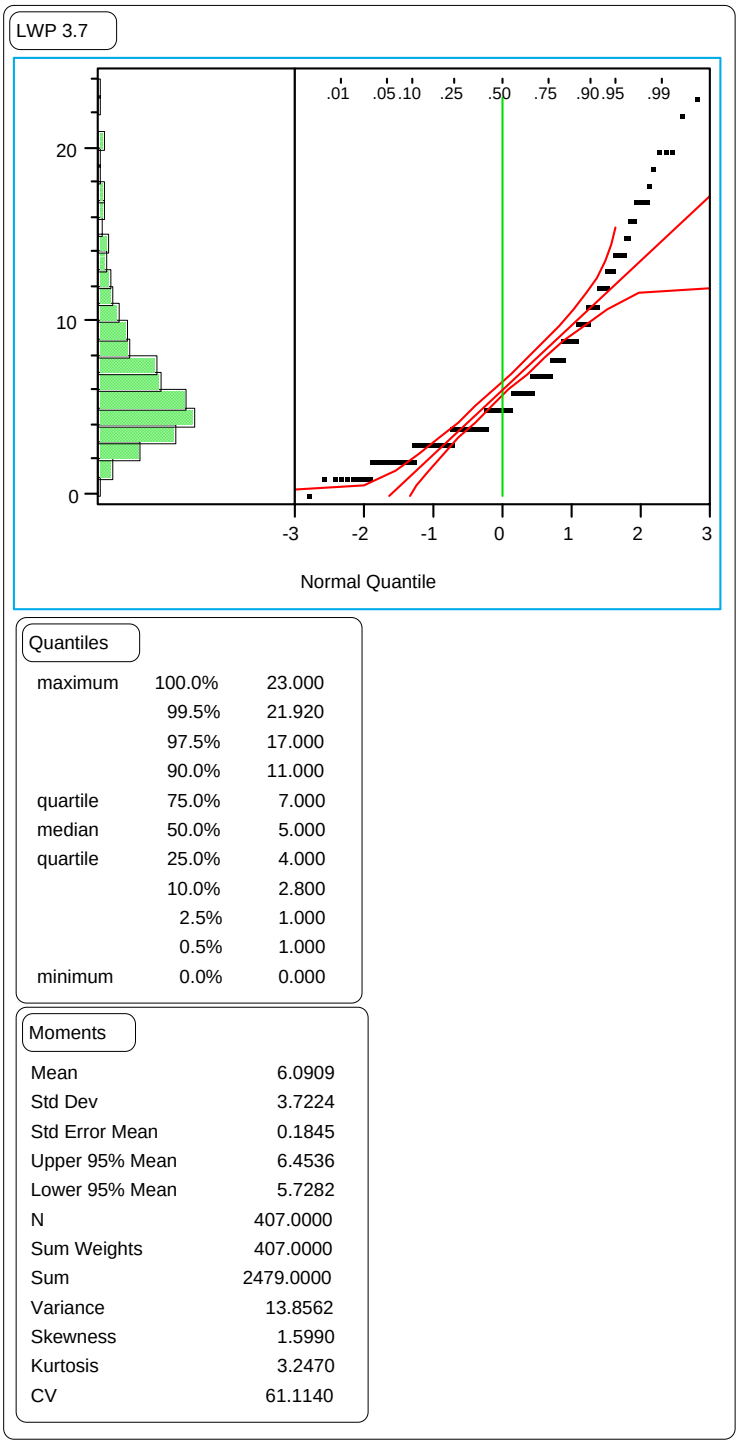



**Figure 104. Distribution of the section means of the LWP wire line rut depths on GPS-6 test sections.**

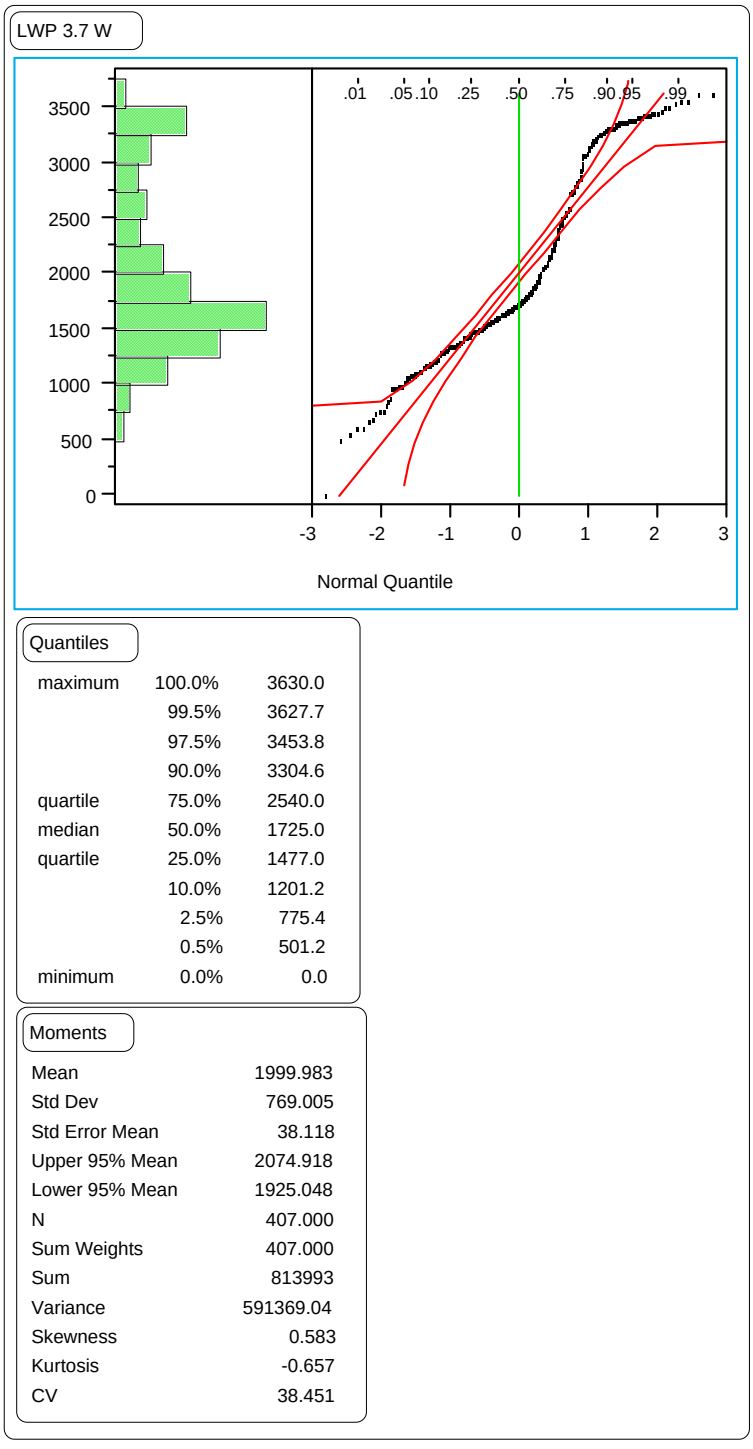



**Figure 105. Distribution of the section means of the LWP wire line rut widths on GPS-6 test sections.**

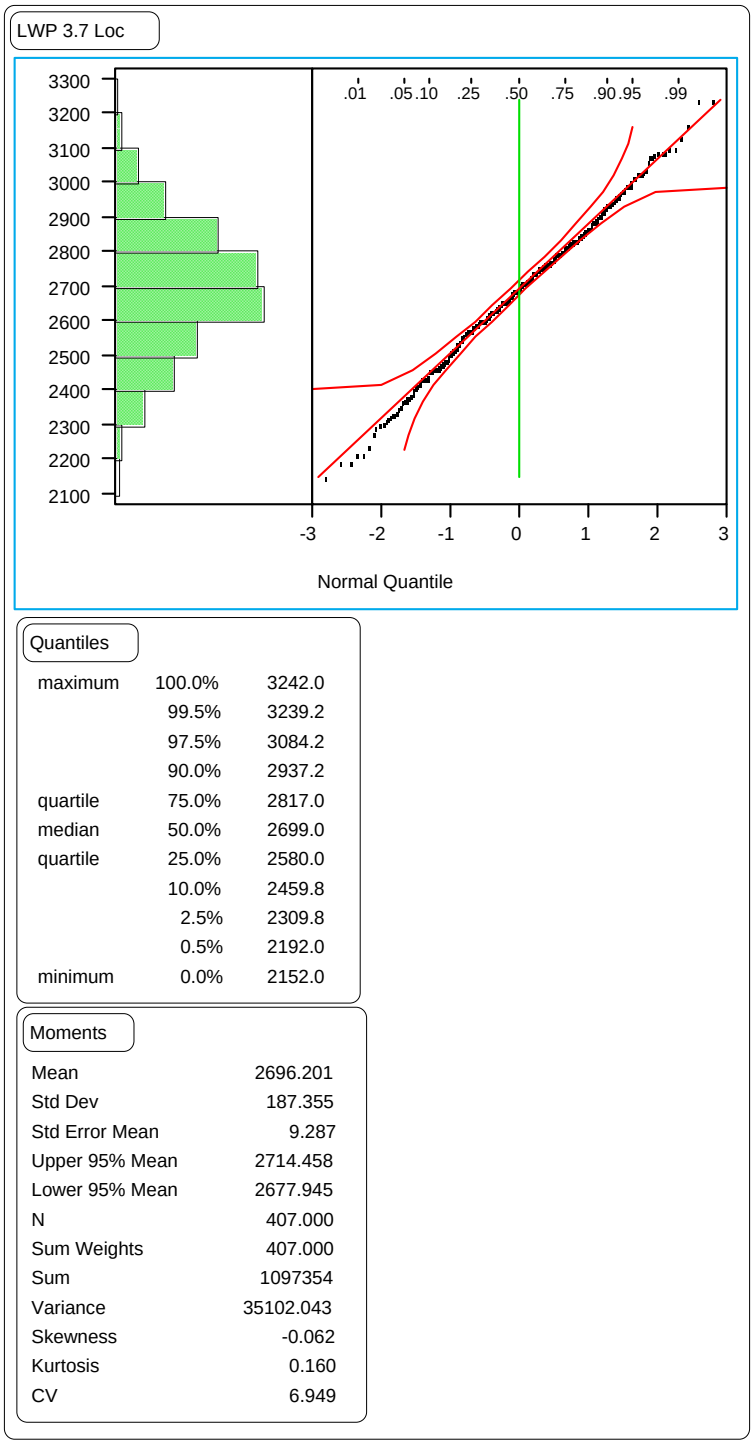



**Figure 106. Distributions of the section means of the LWP wire line rut locations on GPS-6 test sections.**

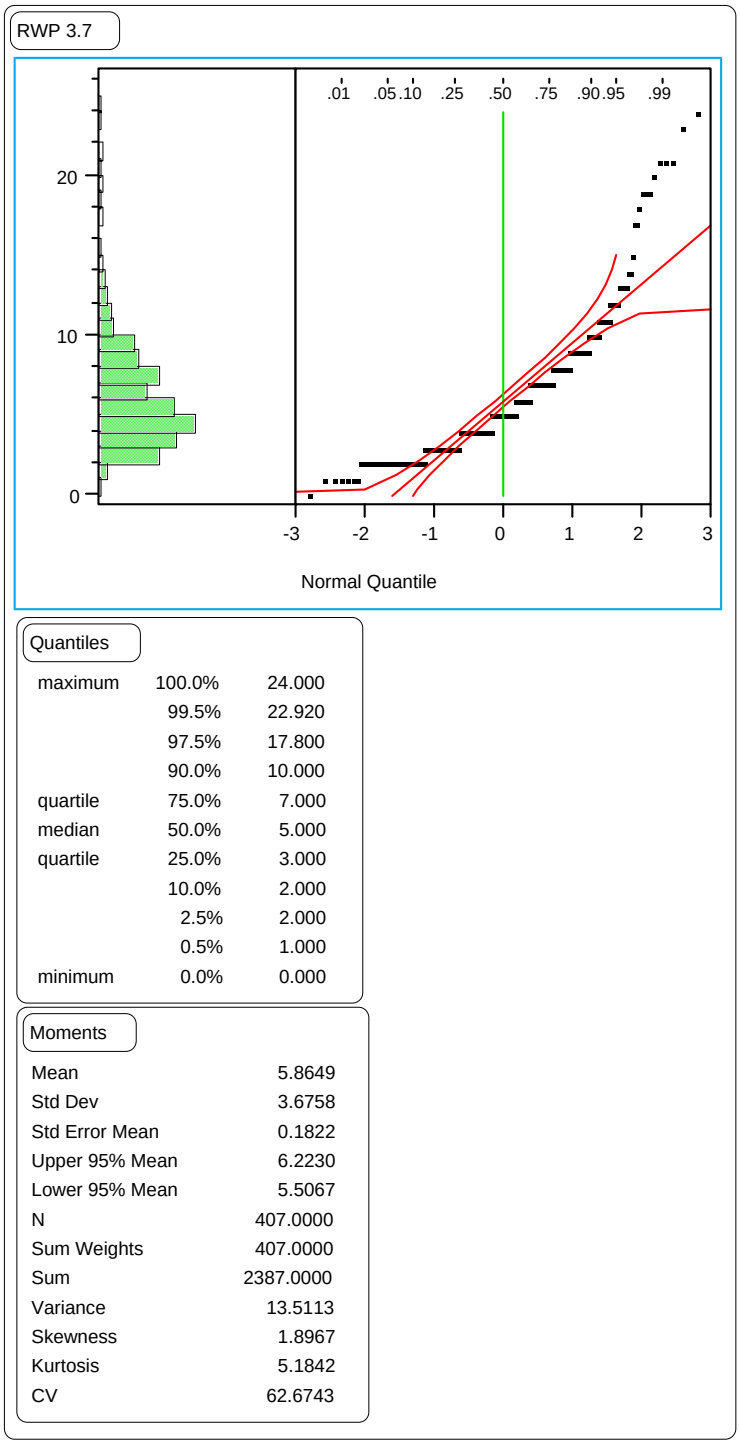



**Figure 107. Distribution of the section means of the RWP wire line rut depths on GPS-6 test sections.**

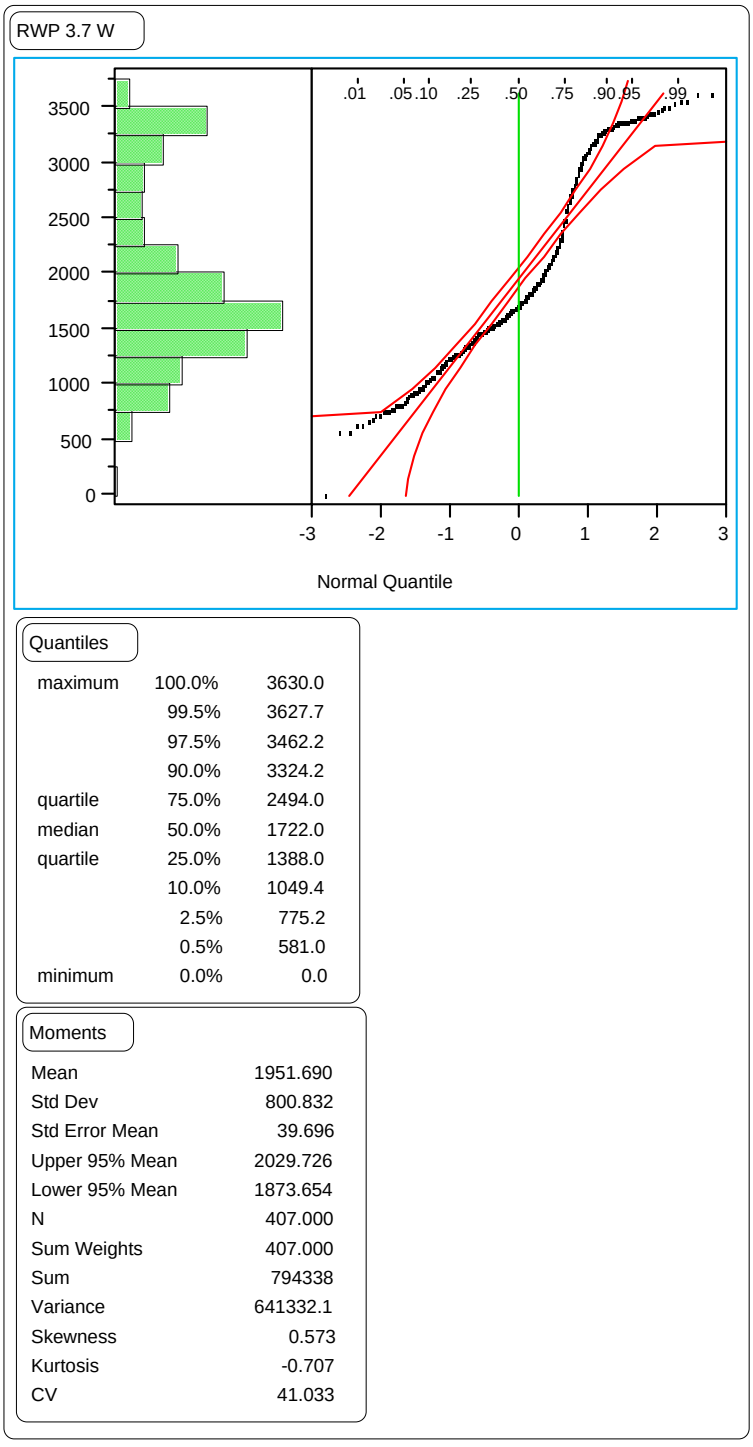



**Figure 108. Distribution of the section means of the RWP wire line rut widths on GPS-6 test sections.**

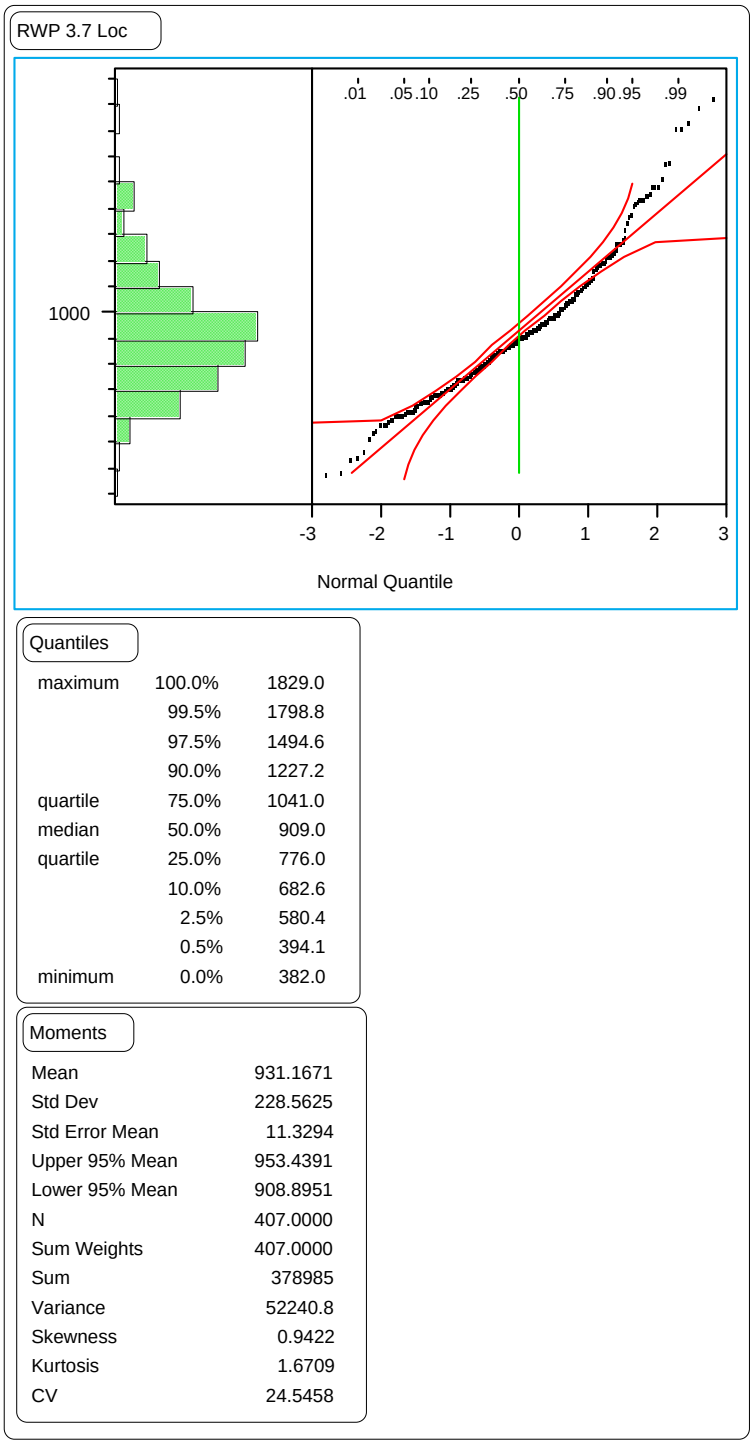



**Figure 109. Distribution of the section means of the RWP wire line rut locations on GPS-6 test sections.**

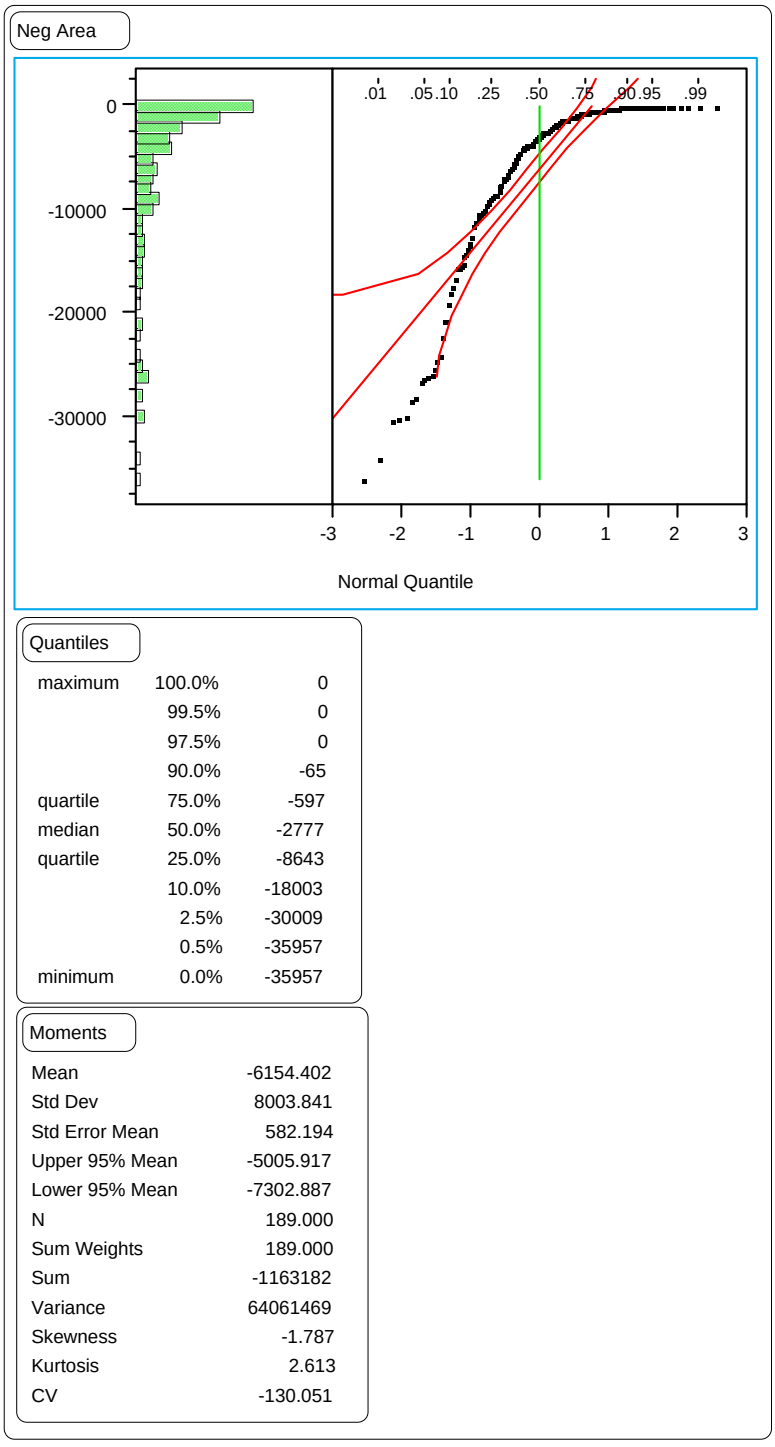



**Figure 110. Distribution of the section means of the negative area index on GPS-7 test sections.**

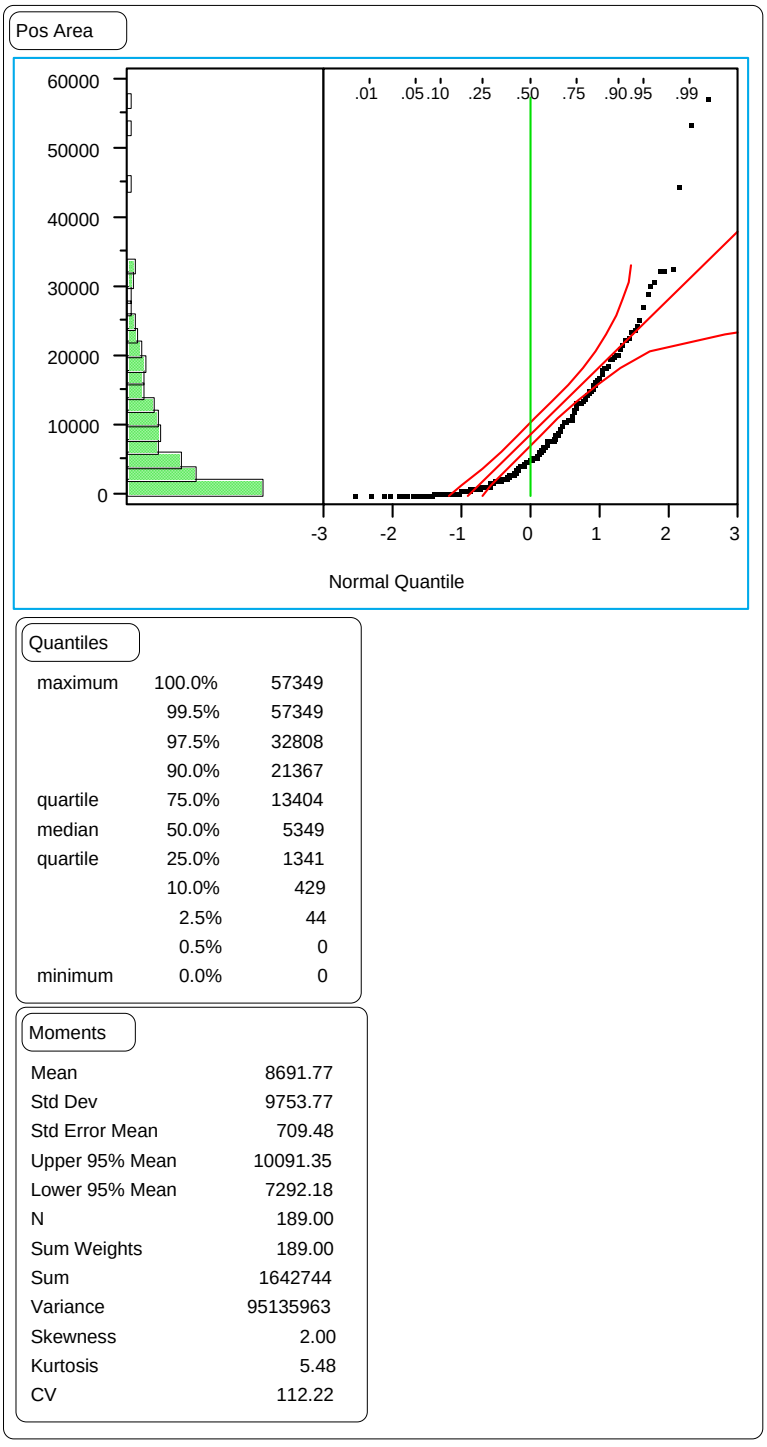



**Figure 111. Distribution of the section means of the positive area index on GPS-7 test sections.**

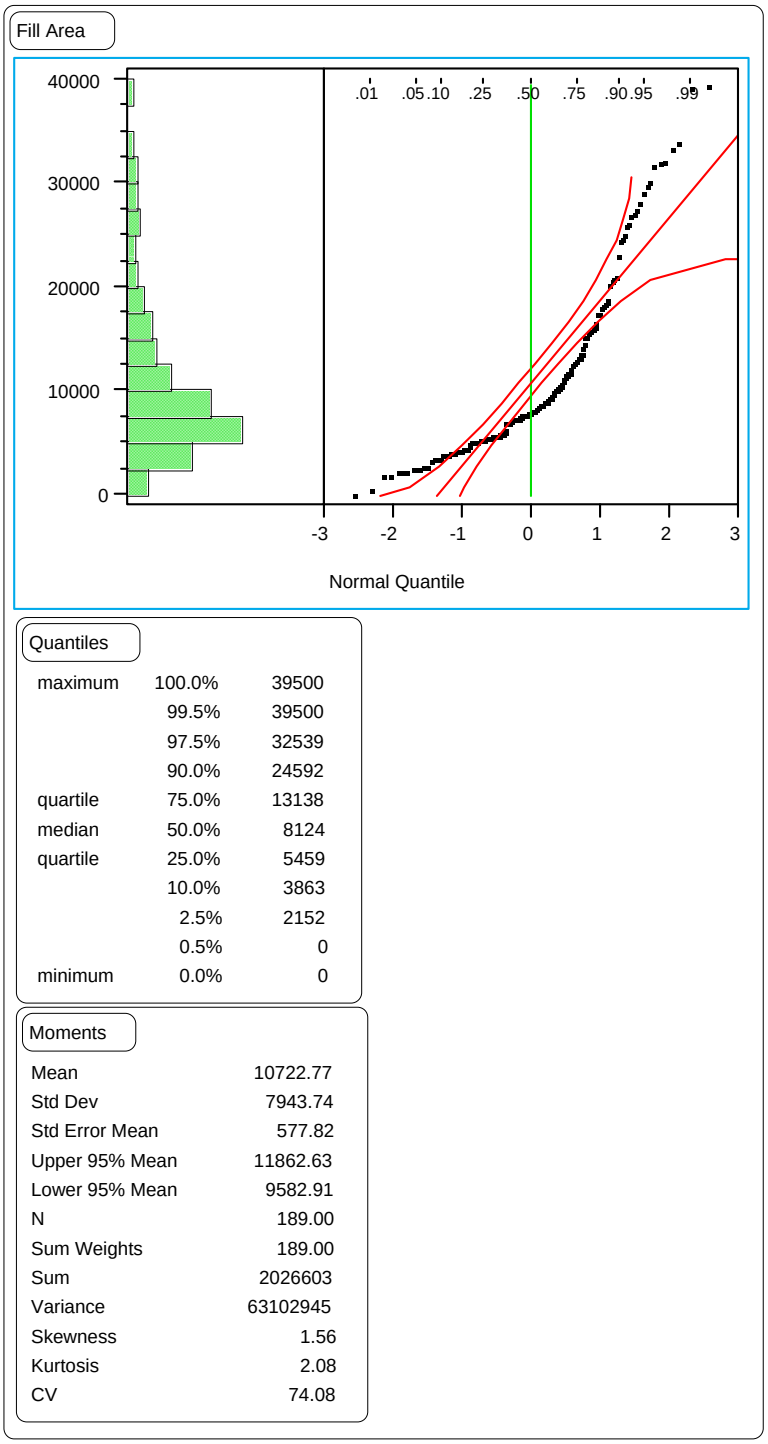



**Figure 112. Distribution of the section means of the fill area index on GPS-7 test sections.**

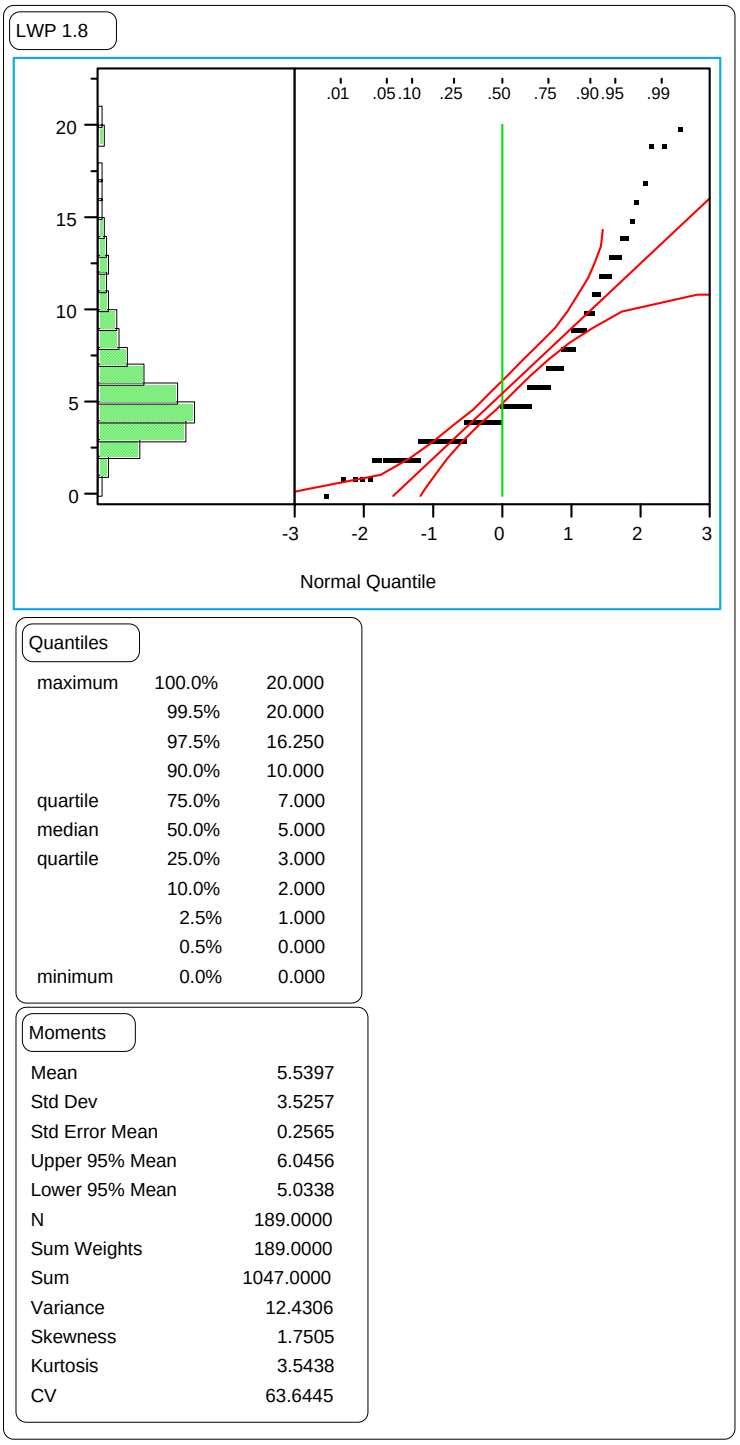



**Figure 113. Distribution of the section means of the LWP 1.8-m rut depths on GPS-7 test sections.**

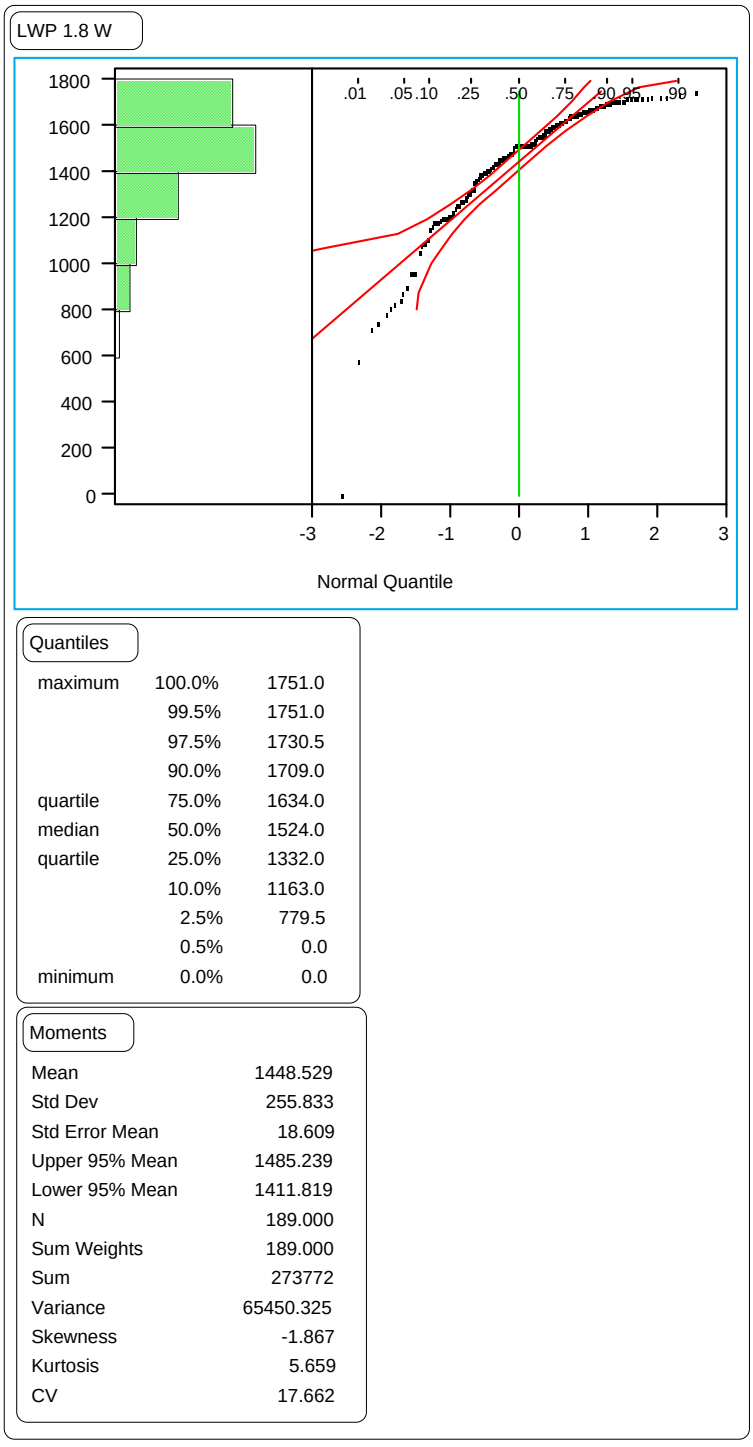



**Figure 114. Distribution of the section means of the LWP 1.8-m rut widths on GPS-7 test sections.**

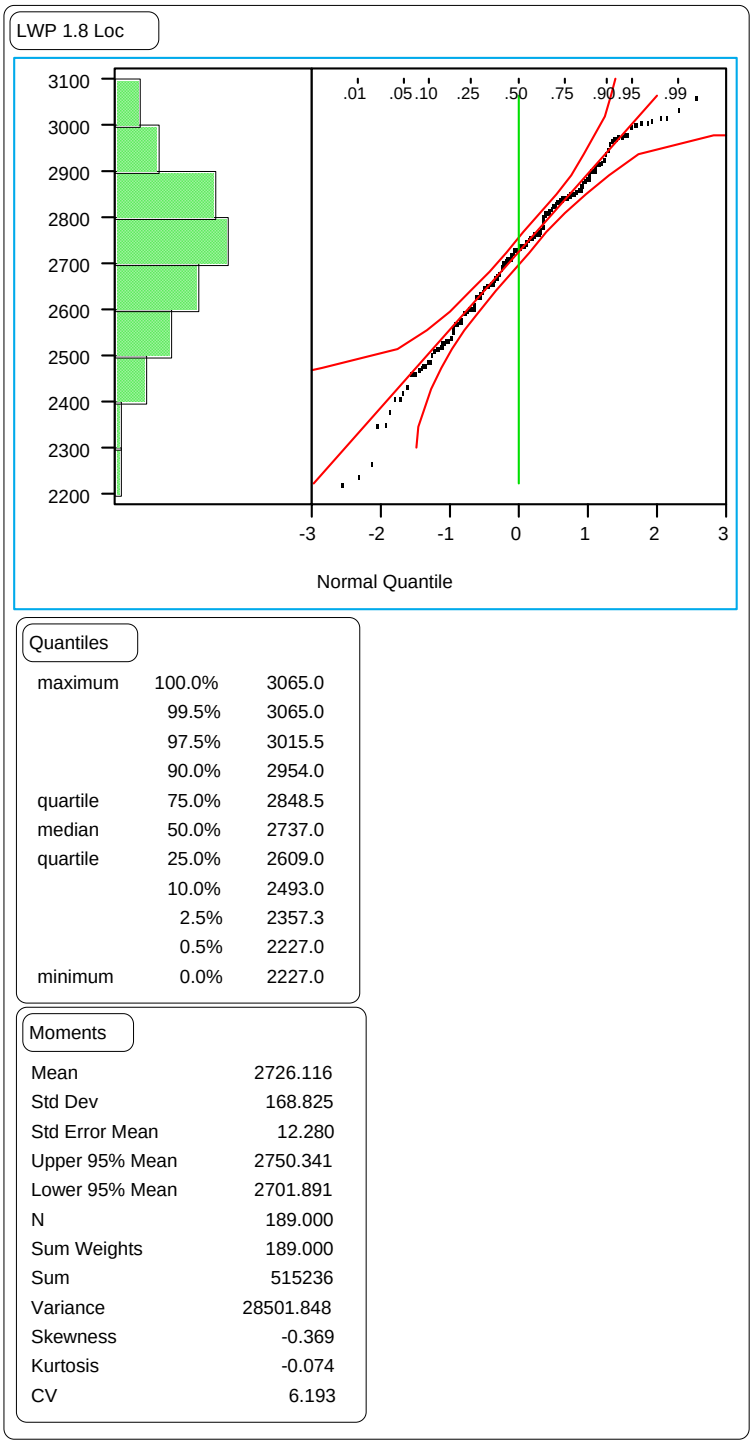



**Figure 115. Distribution of the section means of the LWP 1.8-m rut locations on GPS-7 test sections.**

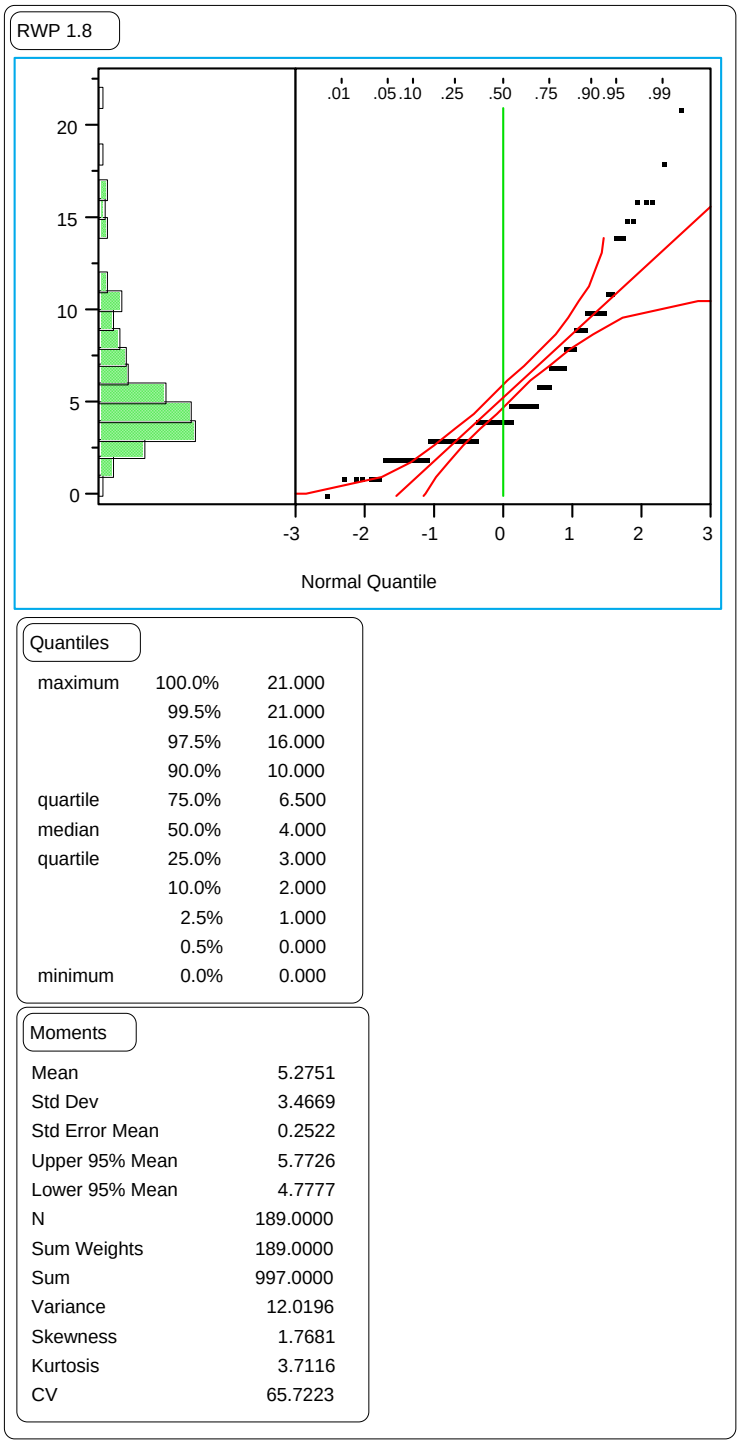



**Figure 116. Distribution of the section means of the RWP 1.8-m rut depths on GPS-7 test sections.**

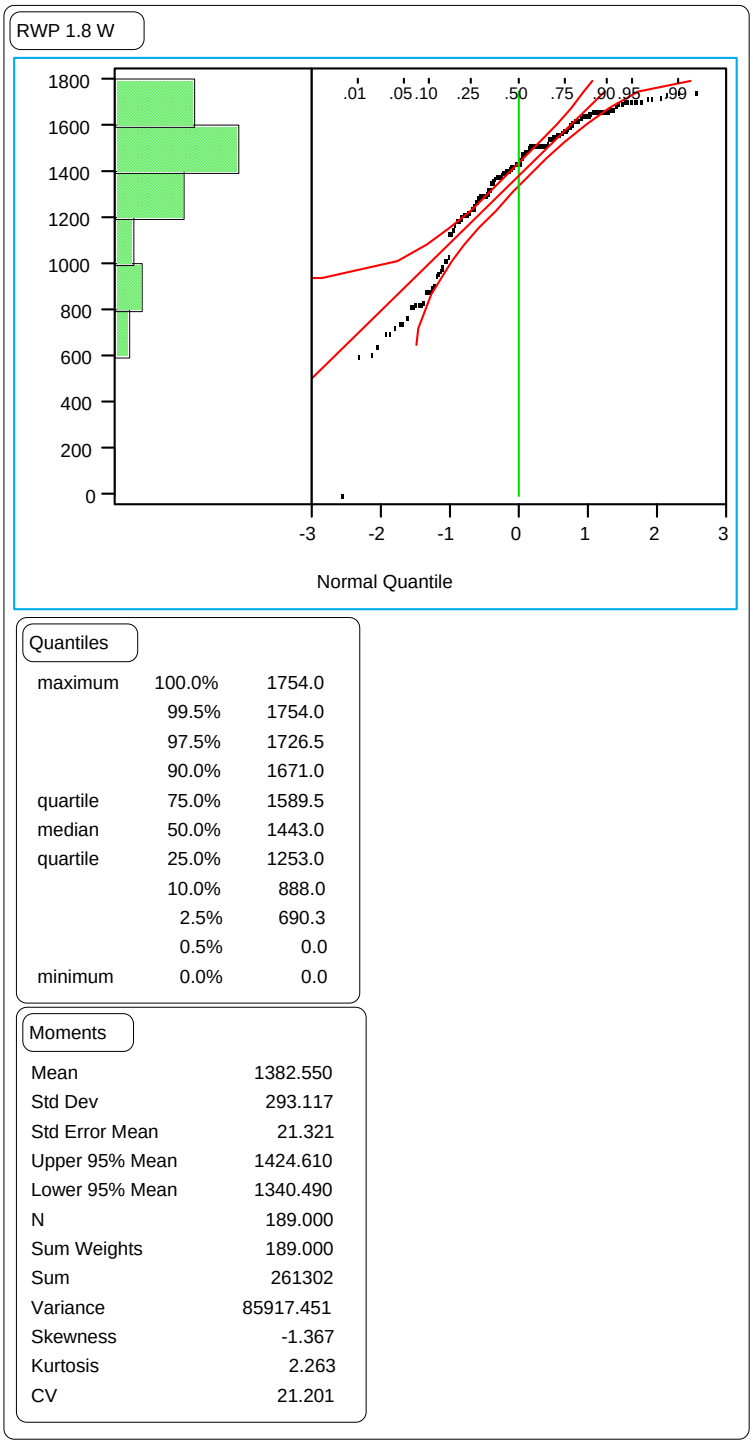



**Figure 117. Distribution of the section means of the RWP 1.8-m rut widths on GPS-7 test sections.**

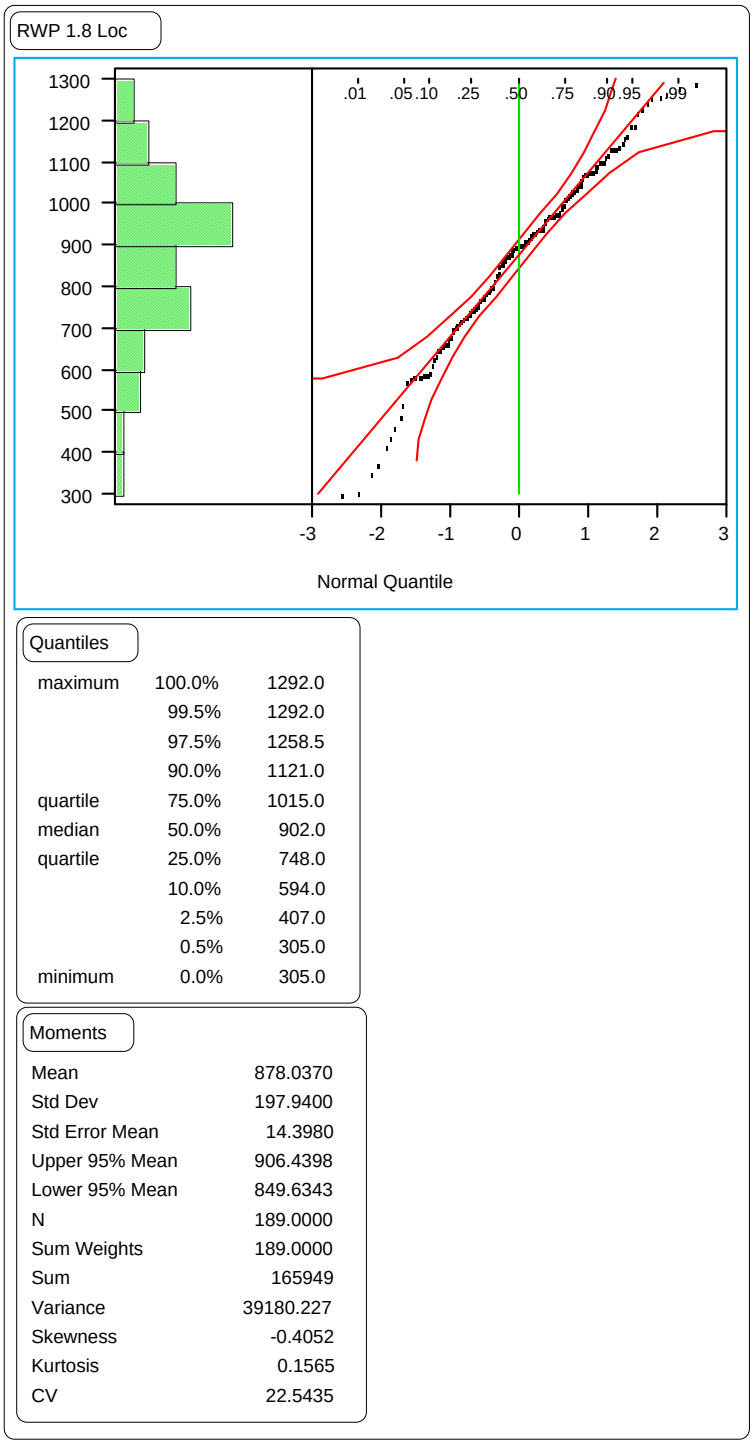
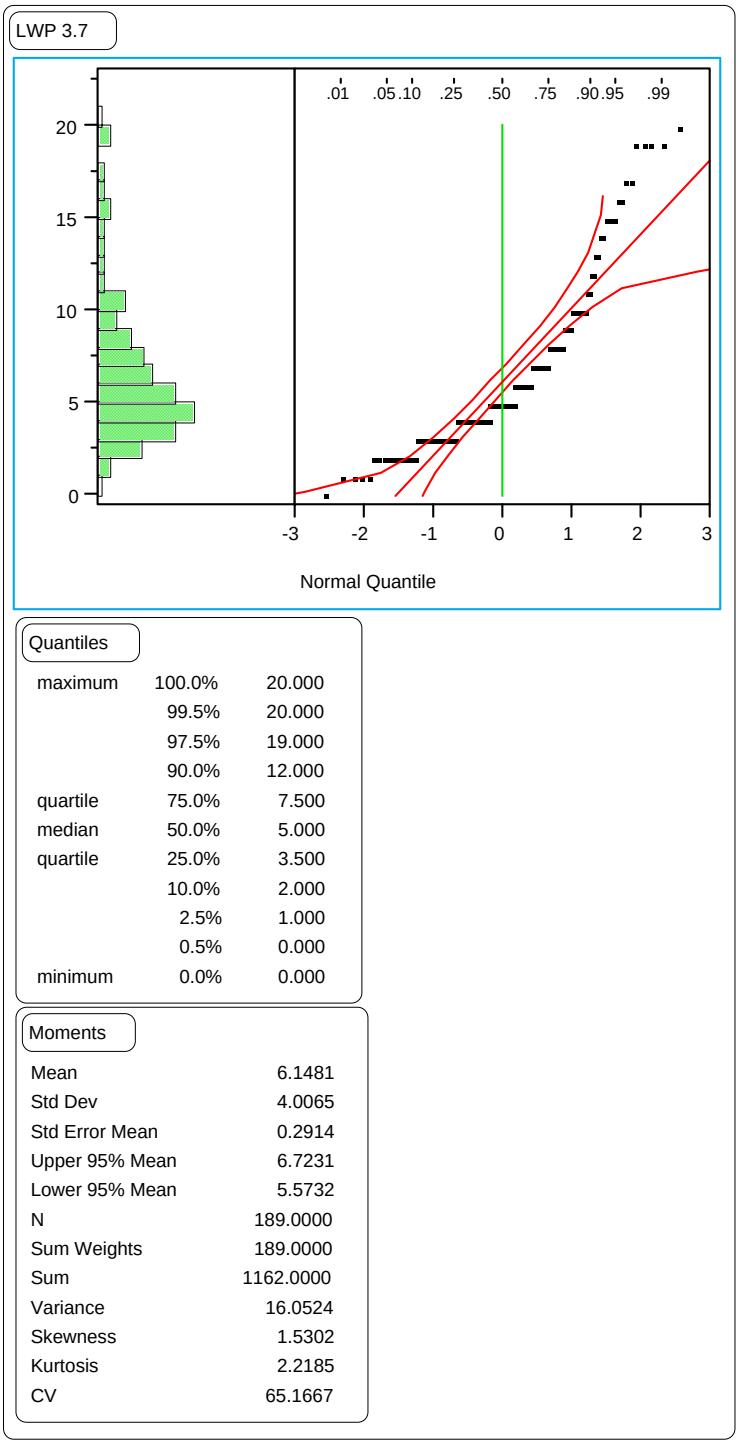



**Figure 118. Distribution of the section means of the RWP 1.8-m rut locations on GPS-7 test sections.**




Quantiles

| | | |
|---|---|---|
| maximum | 100.0% | 20.000 |
| | 99.5% | 20.000 |
| | 97.5% | 19.000 |
| | 90.0% | 12.000 |
| quartile | 75.0% | 7.500 |
| median | 50.0% | 5.000 |
| quartile | 25.0% | 3.500 |
| | 10.0% | 2.000 |
| | 2.5% | 1.000 |
| | 0.5% | 0.000 |
| minimum | 0.0% | 0.000 |

Moments

| | |
|---|---|
| Mean | 6.1481 |
| Std Dev | 4.0065 |
| Std Error Mean | 0.2914 |
| Upper 95% Mean | 6.7231 |
| Lower 95% Mean | 5.5732 |
| N | 189.0000 |
| Sum Weights | 189.0000 |
| Sum | 1162.0000 |
| Variance | 16.0524 |
| Skewness | 1.5302 |
| Kurtosis | 2.2185 |
| CV | 65.1667 |

**Figure 119. Distribution of the section means of the LWP wire line rut depths on GPS-7 test sections.**

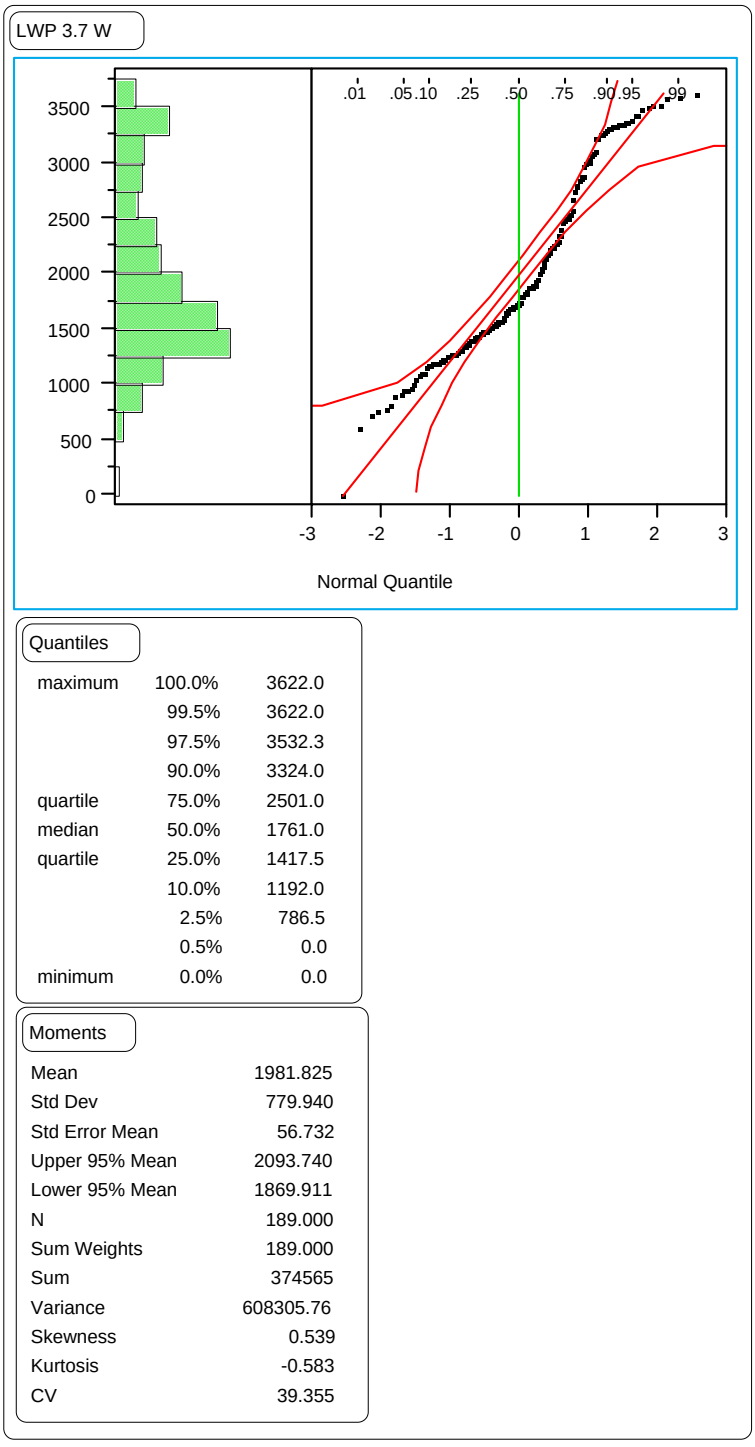



**Figure 120. Distribution of the section means of the LWP wire line rut widths on GPS-7 test sections.**

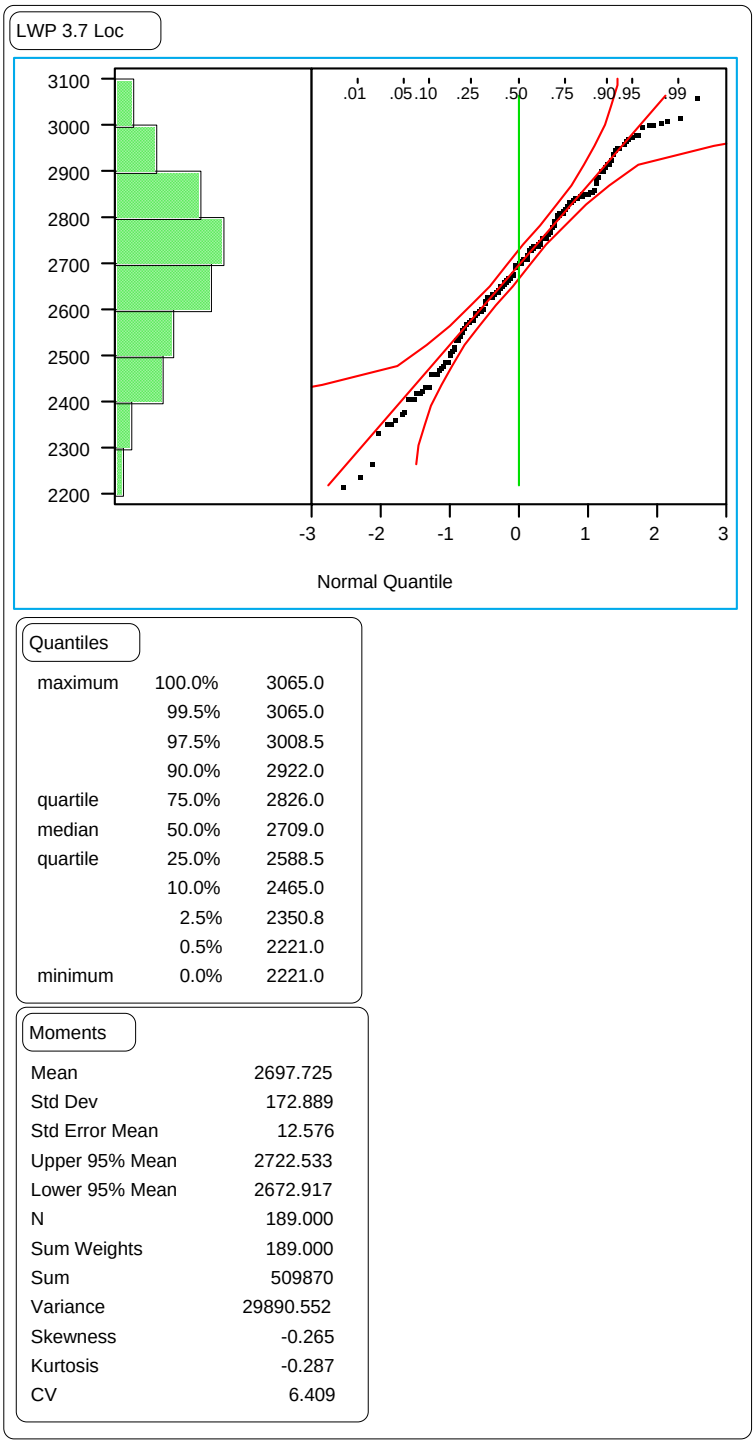



**Figure 121. Distribution of the section means of the LWP wire line rut locations on GPS-7 test sections.**

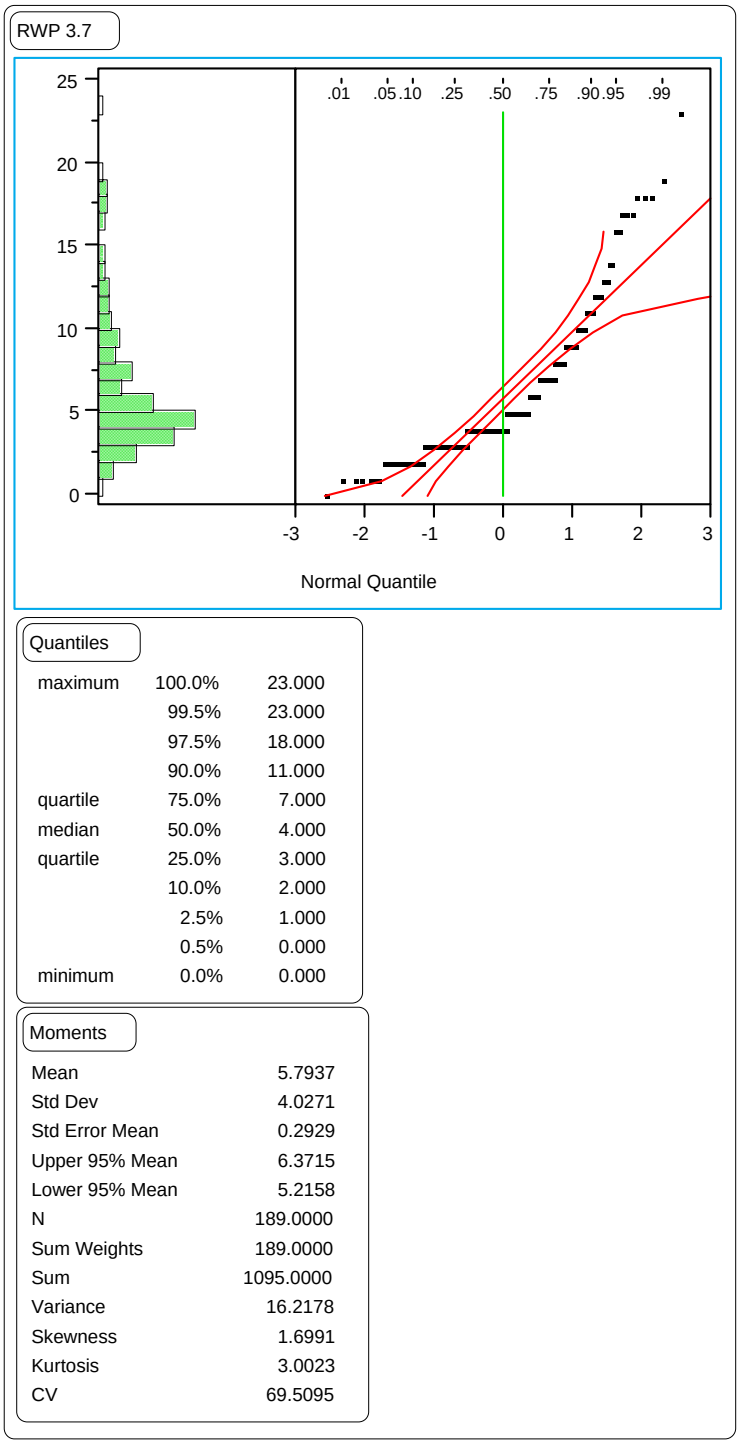



**Figure 122. Distribution of the section means of the RWP wire line rut depths on GPS-7 test sections.**

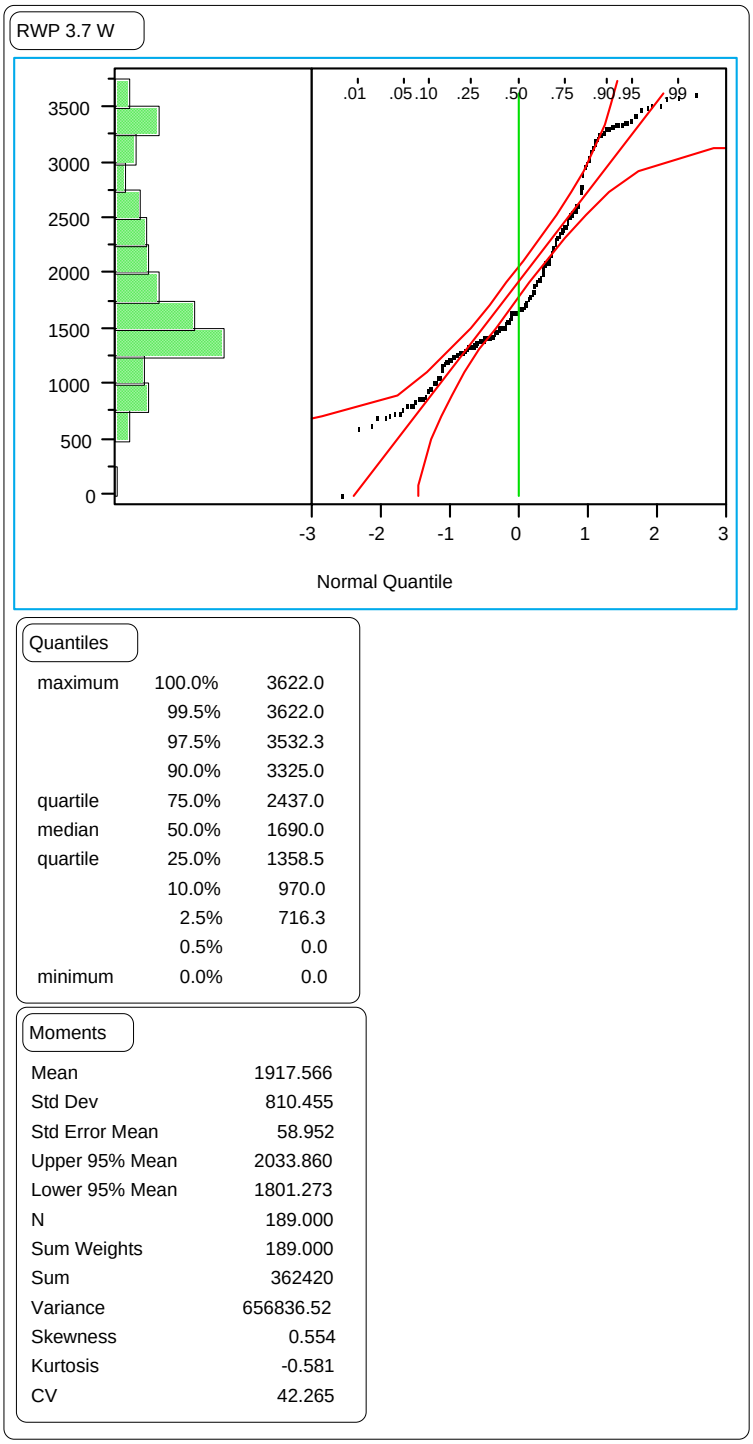



**Figure 123. Distribution of the section means of the RWP wire line rut widths on GPS-7 test sections.**

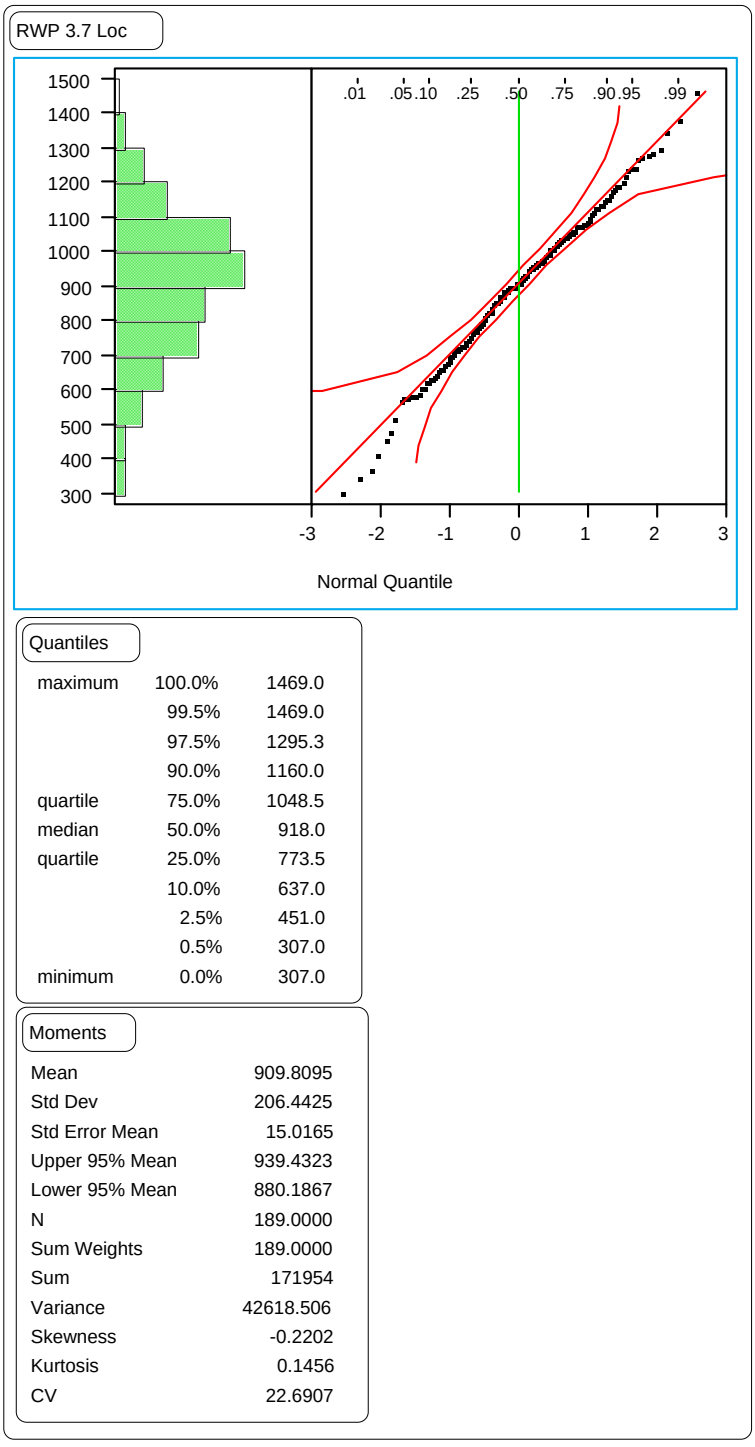



**Figure 124. Distribution of the section means of the RWP wire line rut locations on GPS-7 test sections.**

# APPENDIX C.
# COMPARISONS OF SECTION MEANS TO DETERMINE NUMBER OF TRANSVERSE PROFILES NECESSARY

Comparisons were made to determine the number of profiles necessary to accurately predict the mean. Figures 125 through 146 provide the results from these comparisons. In each of these figures, the axis labeled "All" used all of the available profiles to determine the section mean for a given survey date. The axis labeled "Whole" used data from every 30 m to determine the section mean on a given survey date. Pairwise comparisons were then made between the "All" means and the "Whole" means. Figures 125 through 135 used all of the available data to make these comparisons. Figures 136 through 146 used only the data obtained by Dipstick® for these comparisons. The difference between the "All" value and the "Whole" value was determined for each data pair. The mean of these differences is presented as the mean difference. If the value labeled "Prob>|t|" is less than 0.05, the test is statistically significant, which indicates that the two values from each pair of values are from two different populations with a 95 percent level of confidence.

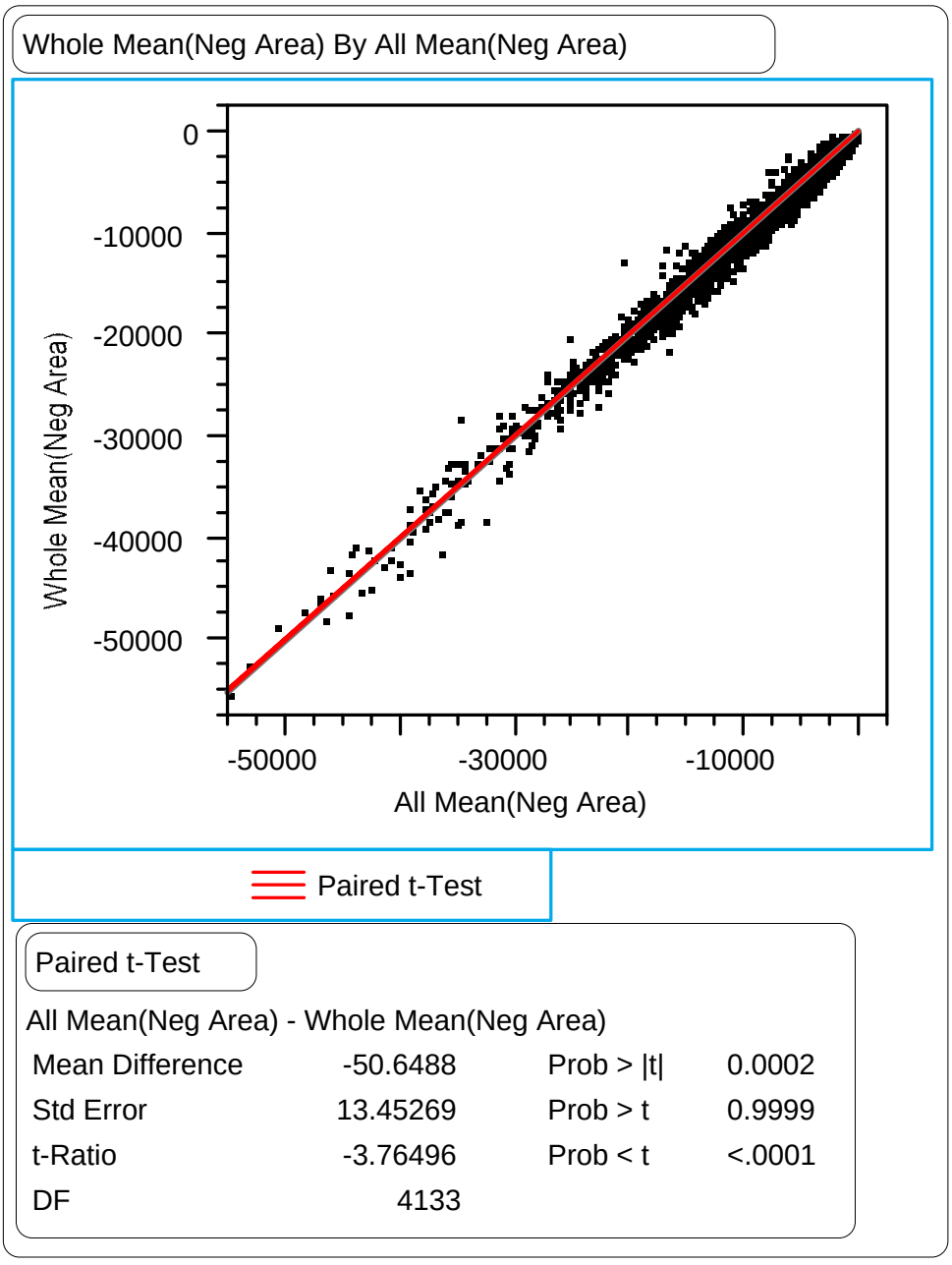



**Figure 125. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the negative area index.**

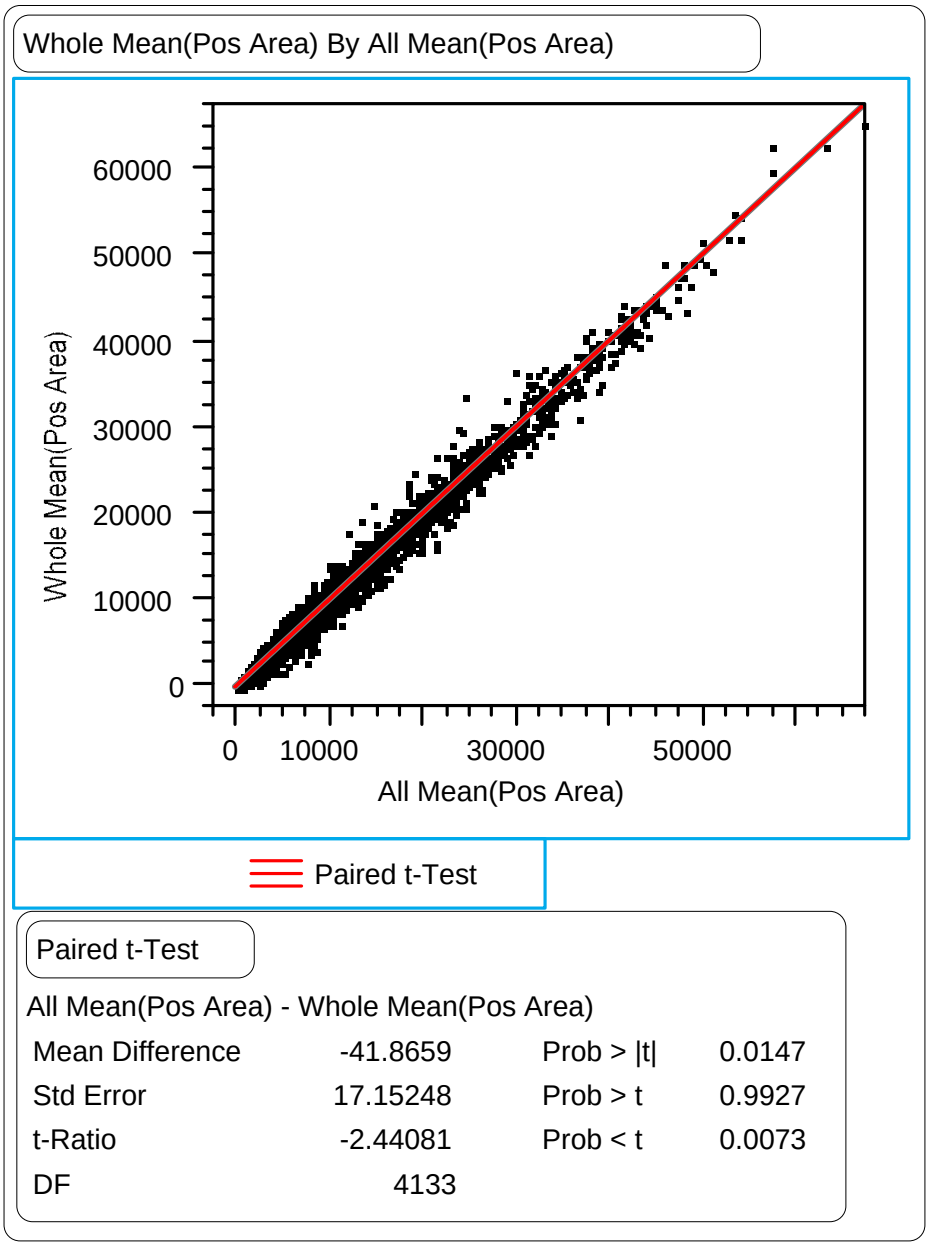



**Figure 126. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the positive area index.**

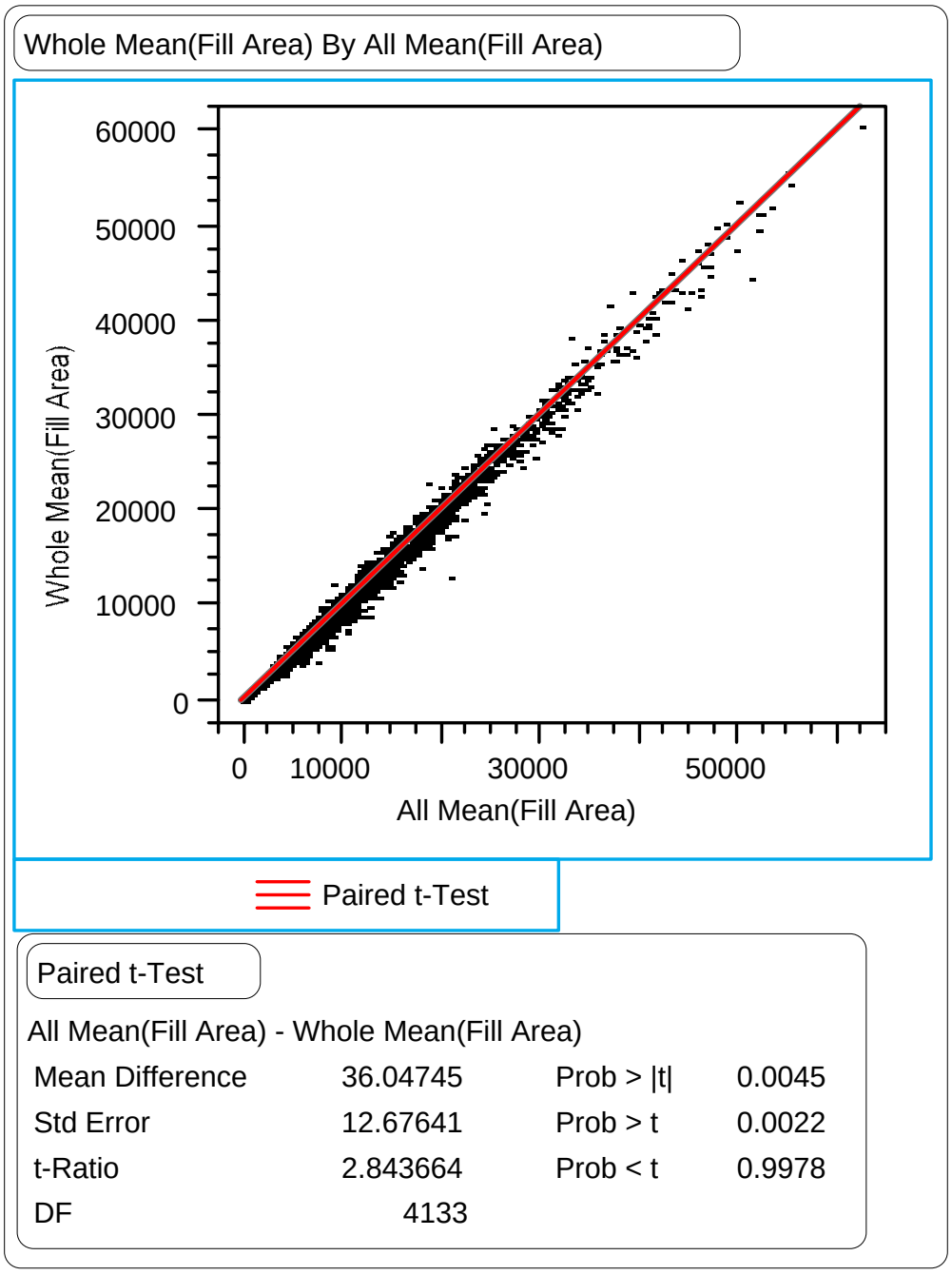



**Figure 127. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the fill area index.**

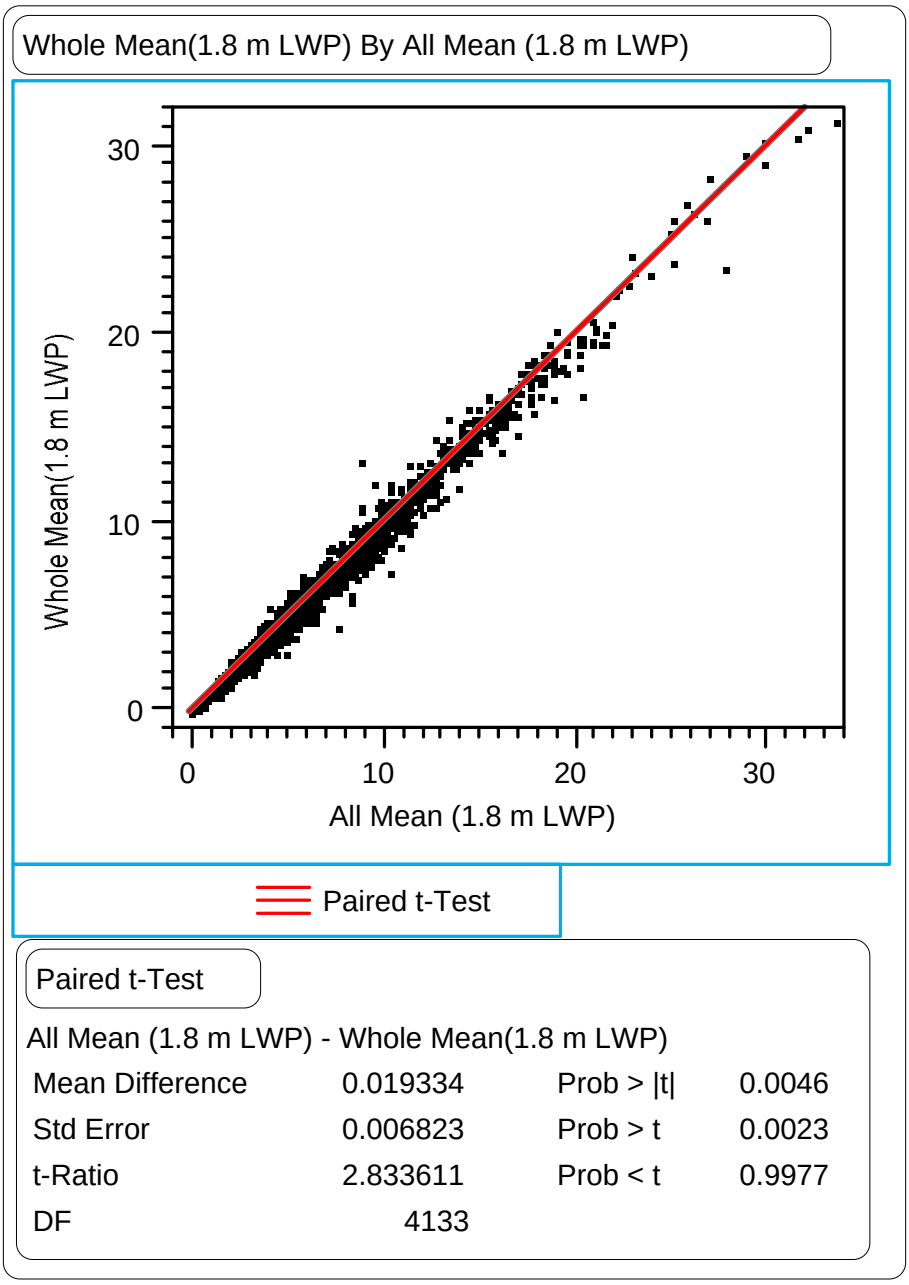



**Figure 128. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the LWP 1.8-m rut depths.**

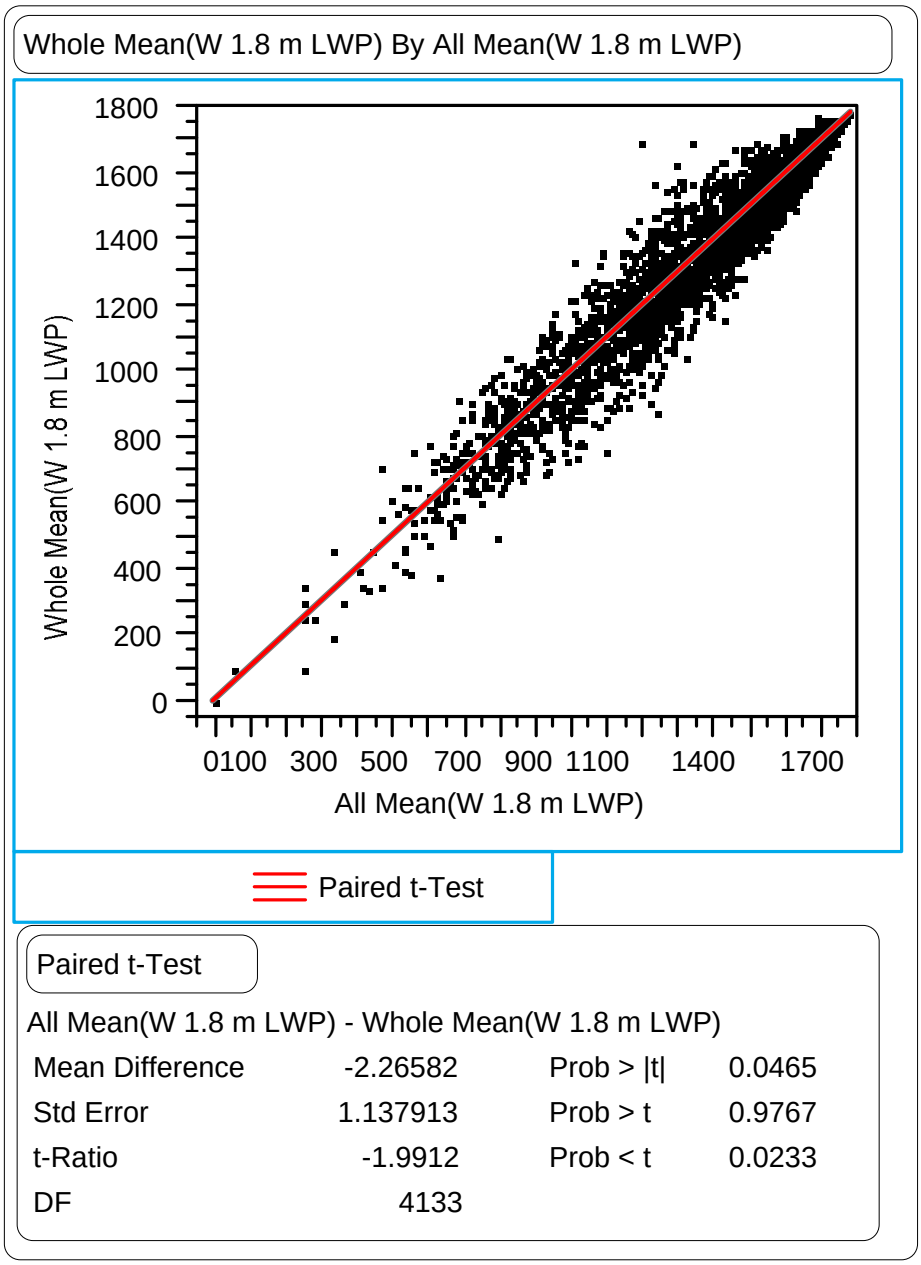



**Figure 129. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the LWP 1.8-m rut widths.**

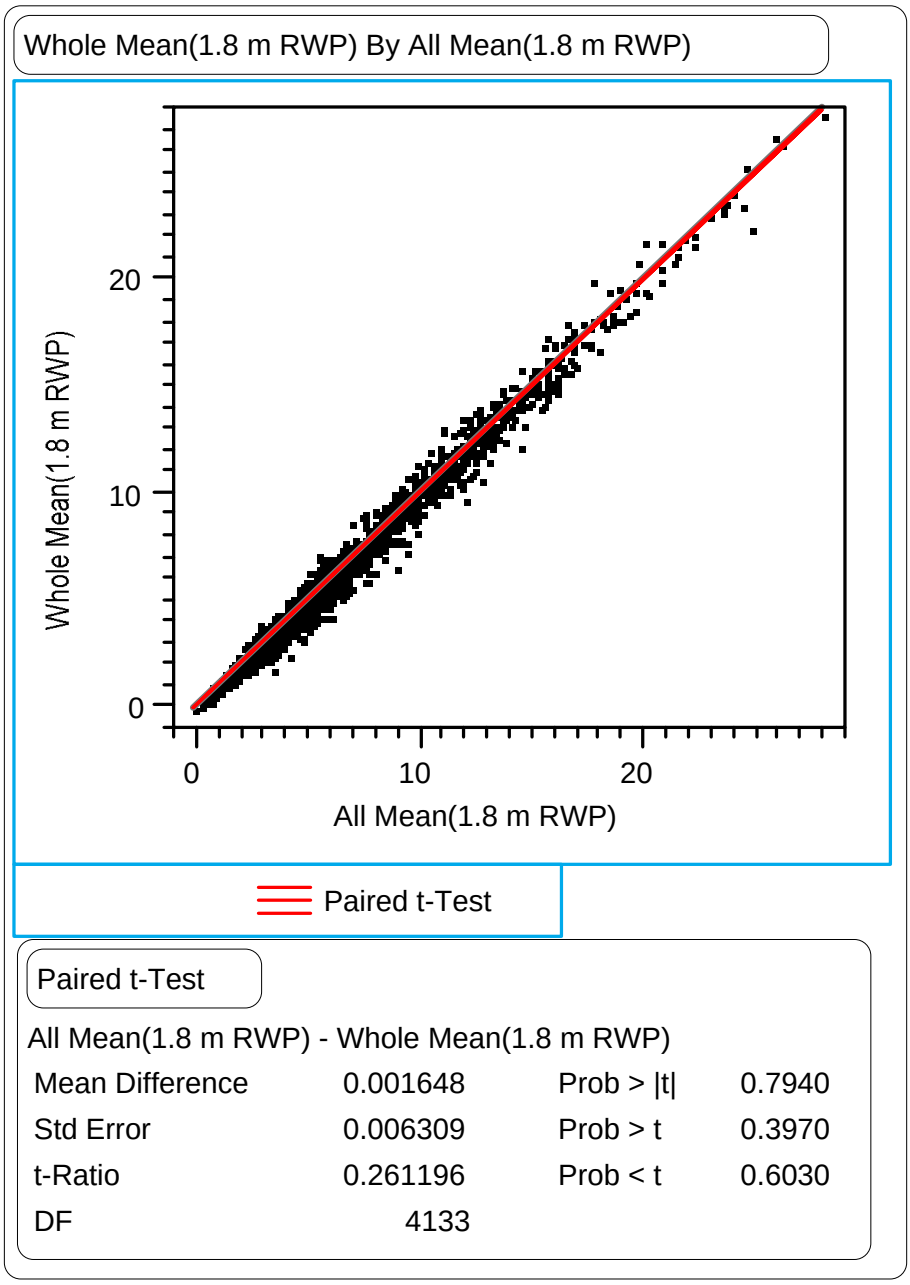



**Figure 130. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the RWP 1.8-m rut depths.**

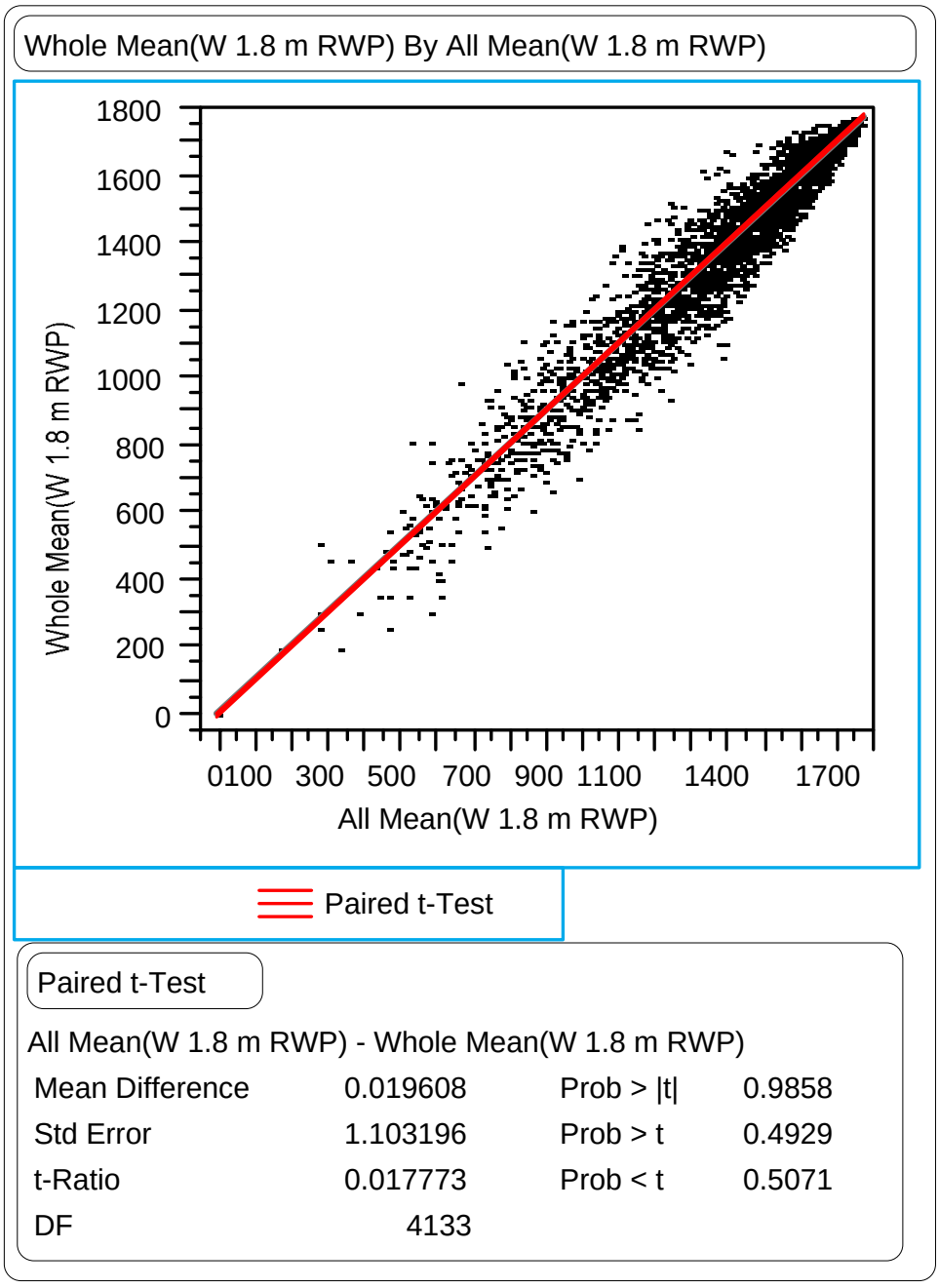



**Figure 131. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the RWP 1.8-m rut widths.**

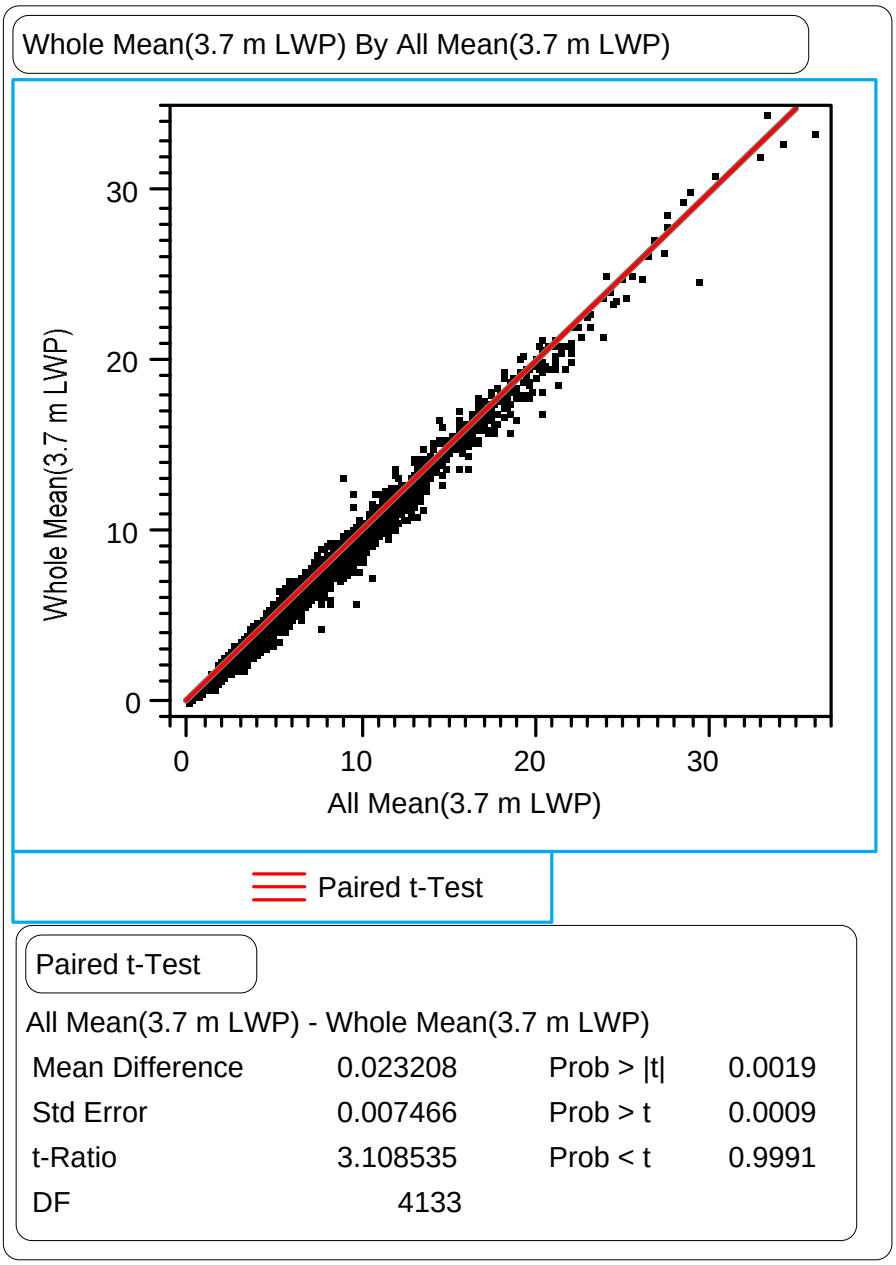



**Figure 132. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the LWP wire line rut depths.**

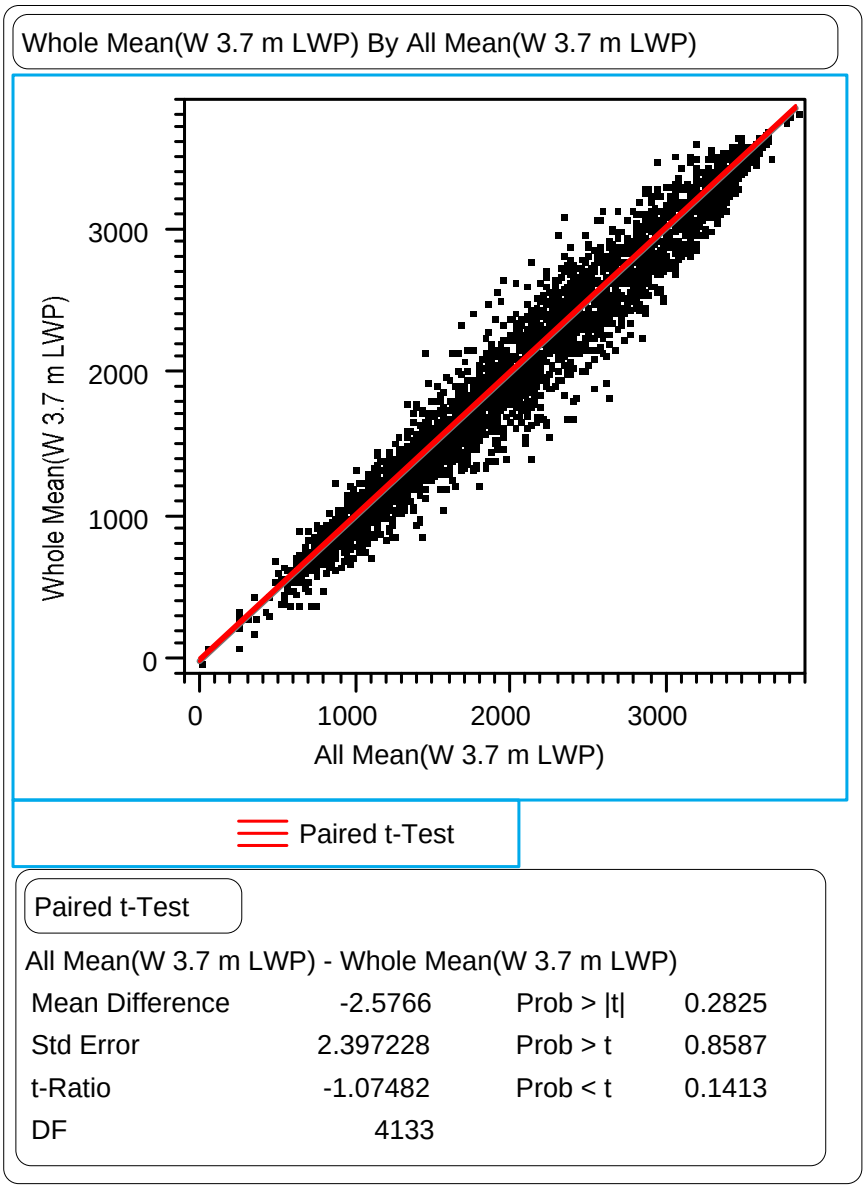



**Figure 133. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the LWP wire line rut widths.**

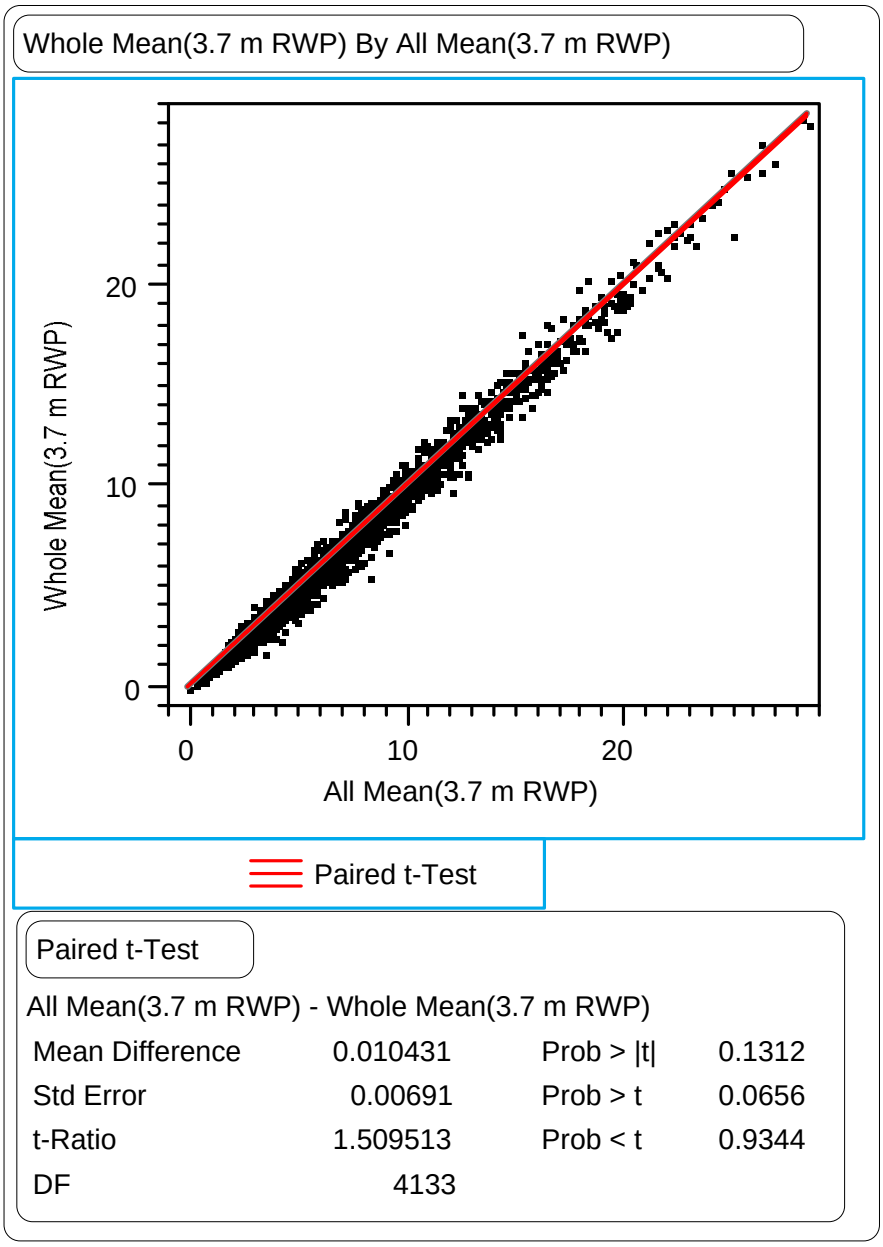



**Figure 134. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the RWP wire line rut depths.**

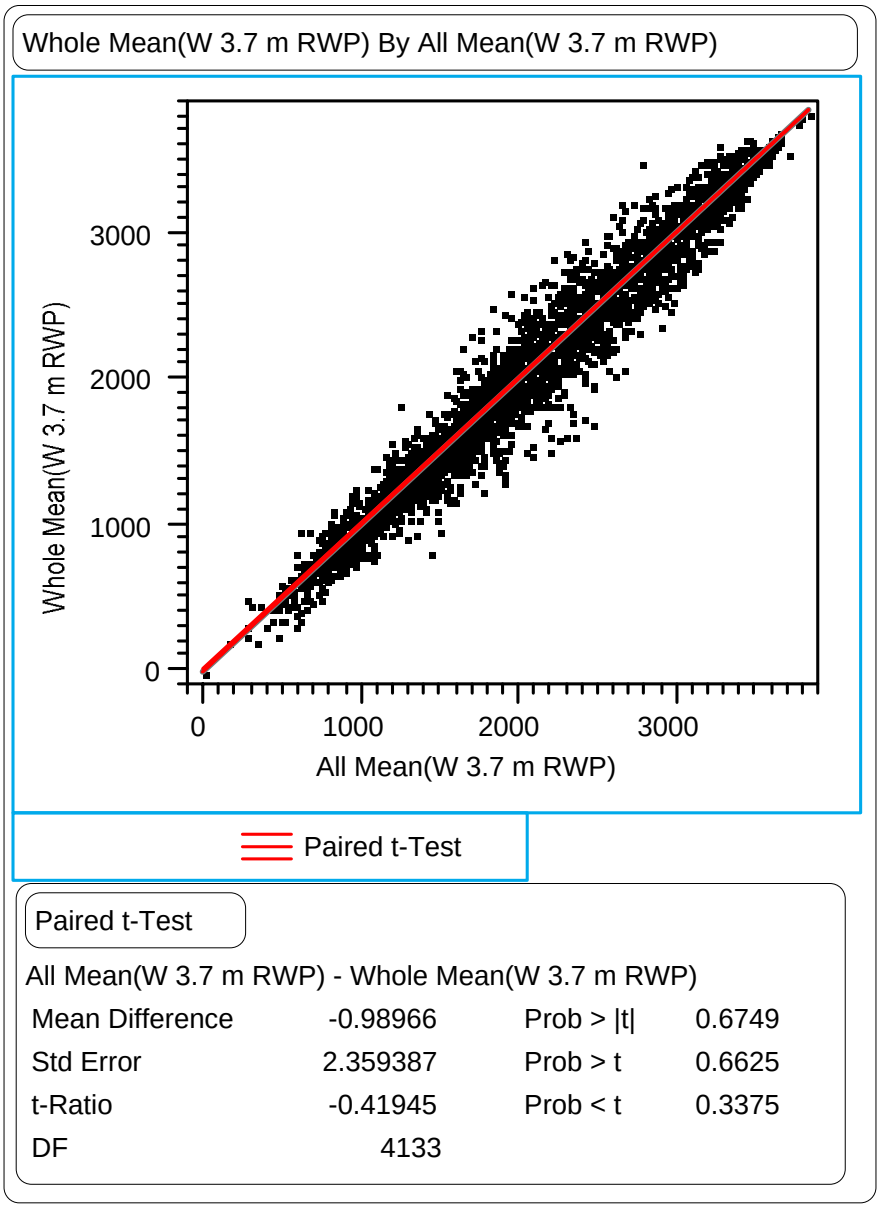



**Figure 135. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for the RWP wire line rut widths.**

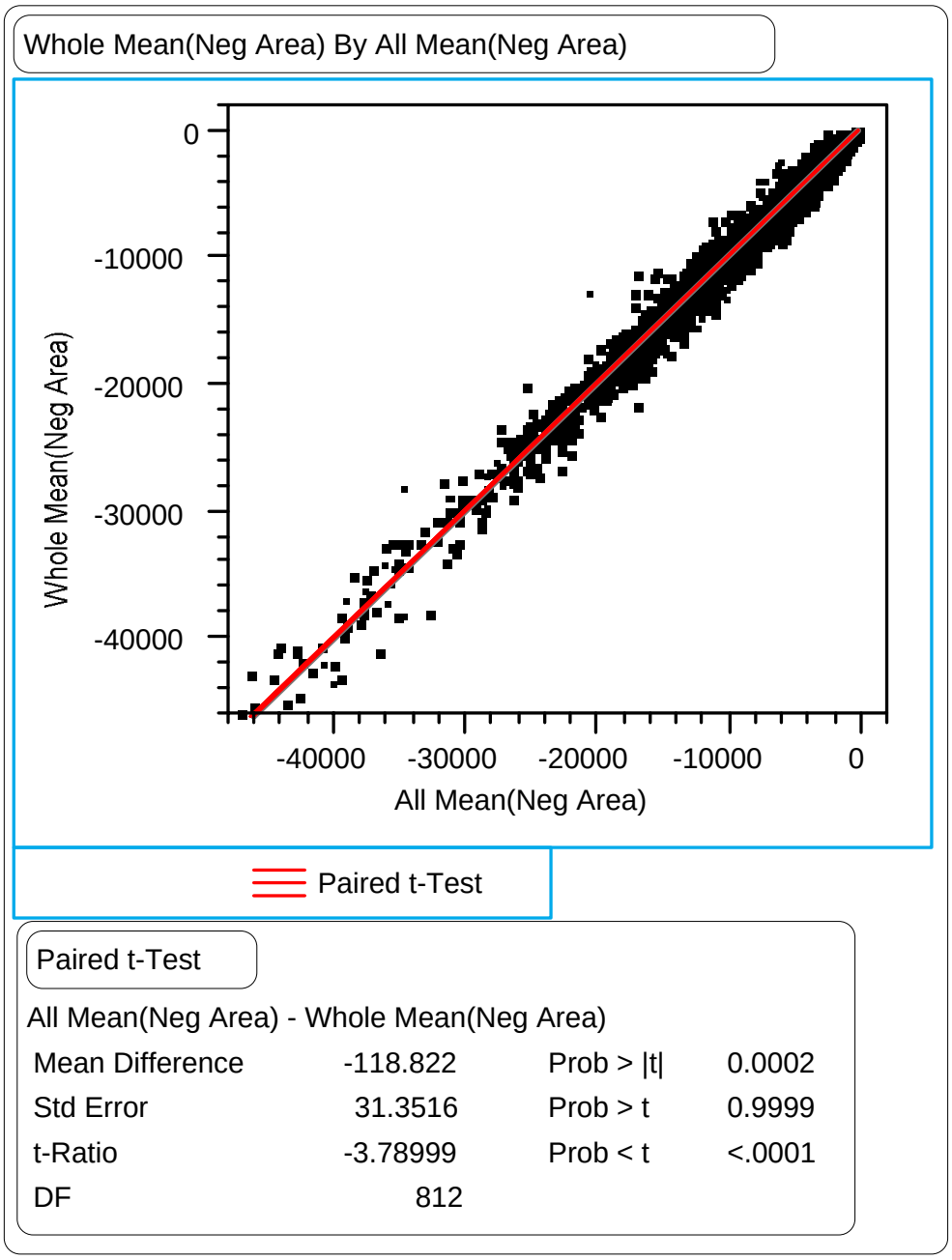



**Figure 136. Paired t-test comparing section means from all of the profiles versus those from profiles taken every 30 m for data collected by Dipstick® for the negative area index.**