## APPENDIX–E PRELIMINARY EVALUATION RESULTS AND ASSIGNMENT RESULTS OF CONCEIVABLE REHABILITATION PLAN FROM FUNCTIONAL VIEW POINT

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | TYPE OF BRIDGE | CARRIAGE WAY WIDTH | SIDE WALK WIDTH | L or R | NO'S OF PEDESTRIAN | TRAFFIC VIEW POINT | | | | | RIVER VIEW POINT | CONCEIVABLE REHABILITATION PLANS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | TRAFFIC CAPACITY | PRESENT DEMAND | GROWTH RATE | V/C | CAPACITY YEAR | BRIDGE OPENING | |
| 125 | 00901420 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.70 | | | | 1514 | 250 | 4.6 | 0.17 | 2147 | | |
| 126 | 00901700 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.74 | 0.59 | L&R | | 1514 | 250 | 4.6 | 0.17 | 2147 | | |
| 127 | 00901960 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.80 | 0.50 | L&R | | 1514 | 250 | 4.6 | 0.17 | 2147 | | |
| 128 | 00902270 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.74 | 0.50 | L&R | | 1497 | 250 | 4.6 | 0.17 | 2147 | | |
| 129 | 00902360 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.85 | 0.50 | L&R | | 1497 | 250 | 4.6 | 0.17 | 2147 | | |
| 130 | 00902430 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.80 | 0.50 | L&R | | 1497 | 250 | 4.6 | 0.17 | 2147 | | |
| 131 | 00902440 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 6.90 | 0.50 | L&R | | 1497 | 250 | 4.6 | 0.17 | 2147 | | |
| 132 | 00904330 | NS | K. PILAH | 1950 | 2 | SSAL | SBB | 5.90 | | | | 1512 | 250 | 4.6 | 0.17 | 2147 | | |
| 133 | 00906190 | NS | JEMPUL | 1950 | 2 | SSAL | SBB | 6.19 | | | | 1560 | 541 | 5.1 | 0.35 | 2127 | | |
| 134 | 00907010 | NS | JELEBU | 1930 | 2 | SSAL | SBB | 6.18 | | | | 1711 | 307 | 6.8 | 0.18 | 2098 | | |
| 135 | 00908400 | NS | JELEBU | 1935 | 3 | P/A | RCB | 6.10 | | | | 1711 | 307 | 6.8 | 0.18 | 2098 | | |
| 136 | 00911990 | PAHANG | BENTONG | 1951 | 2 | SSAL | SBB | 6.10 | | | | 1624 | 307 | 6.2 | 0.19 | 2107 | | |
| 137 | 01105770 | NS | JEMPUL | 1970 | 3 | STAL | PRB | 5.56 | 0.39 | L&R | | 1643 | 459 | 31.6 | 0.29 | 2014 | | |
| 138 | 01800060 | PERAK | MANJUNG | 1960 | 3 | STAL | RCS | 6.50 | | | Much | 1854 | 2008 | 6.0 | 1.08 | 1990 | | ADDING & WIDENING |
| 139 | 01800670 | PERAK | MANJUNG | 1950 | 3 | STAL | SBC | 6.75 | | | | 1730 | 1992 | 6.0 | 1.15 | 1990 | | WIDENING |
| 140 | 02305040 | JOHOR | SEGAMAT | 1950 | 3 | STAL | SBB | 5.55 | | | | 1577 | 259 | 1.6 | 0.16 | 2441 | | |
| 141 | 02305970 | JOHOR | SEGAMAT | 1950 | 4 | STAL | RCS | 6.75 | | | | 1793 | 259 | 1.6 | 0.14 | 2450 | INADEQUATE | RAISING GRADE |
| 142 | 05001070 | JOHOR | BATU PAHAT | 1919 | 2 | SSAL | SBB | 8.40 | 4.00 | L&R | | 2205 | 2067 | 4.0 | 0.94 | 2114 | | |
| 143 | 05001890 | JOHOR | BATU PAHAT | 1950 | 3 | SSAL | SBB | 6.08 | 3.73 | L&R | | 1591 | 1171 | 4.0 | 0.69 | 2147 | | |
| 144 | 05002590 | JOHOR | BATU PAHAT | 1940 | 2 | SSAL | SBB | 5.90 | | | | 1605 | 1171 | 6.7 | 0.73 | 2082 | | |
| 145 | 05100840 | NS | SEREMBAN | 1950 | 3 | SSAL | SBB | 6.30 | | | | 1531 | 522 | −6.5 | 0.34 | N/A | | |
| 146 | 05101360 | NS | SEREMBAN | 1940 | 3 | SSAL | SBB | 13.70 | 2.50 | L | | 1762 | 522 | −6.5 | 0.30 | N/A | | |
| 147 | 05101460 | NS | SEREMBAN | 1950 | 2 | SSAL | SBB | 12.60 | 1.70 | R | | 1762 | 522 | −6.5 | 0.30 | N/A | | |
| 148 | 05102060 | NS | K. PILAH | 1950 | 3 | SSAL | SBB | 7.55 | | | | 1623 | 522 | 1.6 | 0.32 | 2429 | | |
| 149 | 05102280 | NS | K. PILAH | 1960 | 3 | SSAL | SBB | 5.84 | | | | 1531 | 522 | 1.6 | 0.34 | 2424 | | |
| 150 | 05102380 | NS | K. PILAH | 1960 | 3 | STAL | PRB | 5.70 | | | | 1538 | 522 | 1.6 | 0.34 | 2424 | | |
| 151 | 05102670 | NS | K. PILAH | 1960 | 3 | STAL | SBB | 7.32 | | | | 1762 | 522 | 1.6 | 0.30 | 2437 | | |
| 152 | 05103030 | NS | K. PILAH | 1950 | 3 | SSAL | SBB | 6.76 | 0.35 | L&R | | 1531 | 522 | 1.6 | 0.34 | 2424 | | |
| 153 | 05103300 | NS | K. PILAH | 1958 | 3 | SSAL | SBB | 6.74 | 0.35 | L&R | | 1578 | 522 | 1.6 | 0.33 | 2427 | | |
| 154 | 05200280 | NS | SEREMBAN | 1932 | 3 | STAL | SBB | 9.76 | | | | 2439 | 625 | 3.6 | 0.26 | 2189 | | |
| 155 | 05202450 | SELANGOR | U.LANGAT | 1955 | 3 | STAL | RCB | 6.92 | | | | 2087 | 576 | 4.7 | 0.28 | 2147 | | |
| 156 | 05203510 | SELANGOR | U.LANGAT | 1950 | 3 | STAL | BOX | 8.40 | 1.12 | R | | 2580 | 721 | 5.4 | 0.28 | 2131 | | |
| 157 | 05204870 | SELANGOR | U.LANGAT | 1964 | 3 | STAL | SBC | 7.38 | 0.8 | L&R | | 2580 | 721 | 5.4 | 0.28 | 2131 | | |
| 158 | 05300470 | NS | PD | 1950 | 3 | SSAL | SBB | 8.90 | | | | 2051 | 653 | 2.2 | 0.32 | 2321 | | |
| 159 | 05300960 | NS | PD | 1950 | 3 | SSAL | SBB | 6.55 | | | | 2051 | 653 | 2.2 | 0.32 | 2321 | INADEQUATE | RAISING GRADE |
| 160 | 05301190 | NS | PD | 1950 | 3 | SSAL | SBB | 6.45 | | | | 1940 | 653 | 2.2 | 0.34 | 2317 | | |
| 161 | 05302050 | NS | SEREMBAN | 1950 | 3 | SSAL | SBB | 6.78 | 0.58 | L&R | | 1940 | 653 | 2.2 | 0.34 | 2317 | | |
| 162 | 05302160 | NS | SEREMBAN | 1950 | 3 | SSAL | SBB | 6.90 | | | | 1994 | 653 | 2.2 | 0.33 | 2319 | | |
| 163 | 05302340 | NS | SEREMBAN | 1940 | 3 | SSAL | SBB | 8.10 | 0.55 | L&R | | 1994 | 653 | 2.2 | 0.33 | 2319 | | |
| 164 | 05403460 | SELANGOR | PETALING | 1950 | 3 | STAL | RCS | 9.24 | | | | 1962 | 1000 | 11.3 | 0.51 | 2052 | | |
| 165 | 05403570 | SELANGOR | PETALING | 1960 | 3 | STAL | BOX | 6.90 | 4.00 | L&R | | 1731 | 1000 | 11.3 | 0.58 | 2050 | | |
| 166 | 05801510 | PERAK | HLR PERAK | 1950 | | SSAL | SBB | 6.80 | | | | 1291 | 417 | 1.0 | 0.32 | 2569 | | |
| 167 | 05801620 | PERAK | HLR PERAK | 1950 | 2 | SSAL | SBB | 6.90 | | | | 1291 | 417 | 1.0 | 0.32 | 2569 | | |
| 168 | 05803340 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBB | 6.70 | | | | 1578 | 361 | 3.5 | 0.23 | 2195 | | |
| 169 | 05901000 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.70 | 0.56 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 170 | 05901070 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.70 | 0.56 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 171 | 05901480 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 7.20 | 0.56 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 172 | 05901560 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.75 | 0.54 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 173 | 05901690 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.74 | 0.54 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 174 | 05902030 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.60 | 0.64 | L&R | | 1649 | 544 | 19.4 | 0.33 | 2028 | | |
| 175 | 05902230 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.65 | 0.54 | L&R | | 1649 | 544 | 19.4 | 0.33 | 2028 | | |
| 176 | 05902690 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 7.20 | 0.54 | R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 177 | 05902920 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.75 | 0.55 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 178 | 05903120 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBC | 6.70 | 0.54 | L&R | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 179 | 05905010 | PAHANG | LIPIS | 1961 | 3 | STAL | PCB | 6.60 | 0.92 | L&R | | 1649 | 544 | 19.4 | 0.33 | 2028 | | |
| 180 | 05905290 | PAHANG | LIPIS | 1930 | 3 | STAL | SBB | 6.90 | | | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 181 | 05906010 | PAHANG | LIPIS | 1930 | 3 | STAL | SBB | 6.95 | | | | 1749 | 544 | 19.4 | 0.31 | 2028 | | |
| 182 | 06000970 | PERAK | MANJUNG | 1930 | 3 | P/A | SBE | 4.60 | 0.40 | R | | 1488 | 352 | 5.7 | 0.24 | 2115 | | |
| 183 | 06001330 | PERAK | MANJUNG | 1960 | 3 | STAL | RCB | 5.40 | | | | 1578 | 352 | 5.7 | 0.22 | 2116 | | |
| 184 | 06005070 | PERAK | L&M&SELAMA | 1950 | 3 | STAL | SBC | 6.70 | | | | 1439 | 346 | 3.0 | 0.24 | 2225 | | |
| 185 | 06005220 | PERAK | L&M&SELAMA | 1960 | 3 | STAL | RCB | 6.70 | 0.3 | L&R | | 1439 | 346 | 3.0 | 0.24 | 2225 | | |
| 186 | 06005740 | PERAK | L&M&SELAMA | 1960 | 3 | STAL | RCB | 6.90 | | | | 1578 | 346 | 5.7 | 0.22 | 2116 | | |

## APPENDIX－E PRELIMINARY EVALUATION RESULTS AND ASSIGNMENT RESULTS OF CONCEIVABLE REHABILITATION PLAN FROM FUNCTIONAL VIEW POINT

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | TYPE OF BRIDGE | CARRIAGE WAY WIDTH | SIDE WALK WIDTH | L or R | NO'S OF PEDESTRIAN | TRAFFIC VIEW POINT | | | | | RIVER VIEW POINT | CONCEIVABLE REHABILITATION PLANS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | TRAFFIC CAPACITY | PRESENT DEMAND | GROWTH RATE | V/C | CAPACITY YEAR | BRIDGE OPENING | |
| 187 | 06006050 | PERAK | L&M&SELAMA | 1950 | | SSAL | SBB | 5.64 | | | | 1405 | 345 | 5.7 | 0.25 | 2114 | | |
| 188 | 06403300 | PAHANG | JERANTUT | 1930 | 3 | SSAL | SBB | 6.30 | | | | 1405 | 169 | 5.4 | 0.12 | 2123 | | |
| 189 | 06403900 | PAHANG | JERANTUT | 1930 | 3 | SSAL | SBB | 6.15 | | | | 1405 | 169 | 5.4 | 0.12 | 2123 | | |
| 190 | 06404270 | PAHANG | JERANTUT | 1930 | 3 | STAL | SBB | 5.60 | | | | 1405 | 169 | 5.4 | 0.12 | 2123 | | |
| 191 | 06404940 | PAHANG | JERANTUT | 1930 | 3 | STAL | SBB | 5.70 | | | | 1405 | 169 | 5.4 | 0.12 | 2123 | | |
| 192 | 06405650 | PAHANG | JERANTUT | 1930 | 3 | P/A | SBB | 6.65 | | | | 1490 | 169 | 5.4 | 0.11 | 2125 | | |
| 193 | 06406260 | PAHANG | JERANTUT | 1930 | 3 | P/A | SBB | 5.60 | | | | 1405 | 169 | 5.4 | 0.12 | 2123 | | |
| 194 | 06701200 | KEDAH | K.MUDA,SIK | 1930 | 3 | P/A | RCB | 6.80 | | | | 1822 | 578 | 4.4 | 0.32 | 2153 | | |
| 195 | 06701230 | KEDAH | K.MUDA,SIK | 1940 | 3 | P/A | RCB | 6.80 | | | | 1822 | 578 | 4.4 | 0.32 | 2153 | | |
| 196 | 06701690 | KEDAH | K.MUDA,SIK | 1968 | 3 | STAL | PCB | 7.30 | 0.90 | L&R | | 1822 | 578 | 4.4 | 0.32 | 2153 | | |
| 197 | 06702060 | KEDAH | BALING | 1950 | 3 | STAL | SBB | 6.90 | | | | 1822 | 578 | 4.4 | 0.32 | 2153 | | |
| 198 | 07000230 | PERAK | HLR PERAK | 1950 | 3 | STAL | SBB | 7.02 | | | | 1551 | 417 | −3.3 | 0.27 | N/A | | |
| 199 | 07001790 | PERAK | HLR PERAK | 1970 | 3 | STAL | IT | 7.34 | 1.08 | L&R | | 1551 | 417 | −3.3 | 0.27 | N/A | | |
| 200 | 07002480 | PERAK | BTG PADANG | 1950 | 3 | STAL | SBB | 5.60 | | | | 1463 | 417 | −3.3 | 0.29 | N/A | | |
| 201 | 07602330 | PERAK | K. KANGSAR | 1950 | 2 | SSAL | SBB | 5.70 | | | | 1431 | 258 | 5.0 | 0.18 | 2133 | | |
| 202 | 07602480 | PERAK | K. KANGSAR | 1950 | 4 | STAL | SBB | 5.80 | 1.06 | R | | 1550 | 258 | 5.5 | 0.17 | 2122 | | |
| 203 | 07604020 | PERAK | HULU PERAK | 1950 | 3 | SSAL | SBB | 5.60 | | | | 1550 | 258 | 5.5 | 0.17 | 2122 | | |
| 204 | 07604160 | PERAK | HULU PERAK | 1950 | 3 | SSAL | SBB | 5.60 | | | | 1550 | 258 | 5.5 | 0.17 | 2122 | | |
| 205 | 07604750 | PERAK | HULU PERAK | 1950 | 3 | STAL | SBB | 7.00 | | | | 1530 | 258 | 6.0 | 0.17 | 2081 | | |
| 206 | 07606390 | PERAK | HULU PERAK | 1950 | 3 | STAL | SBB | 5.70 | | | | 1443 | 258 | 6.0 | 0.18 | 2080 | | |
| 207 | 08601000 | NS | SEREMBAN | 1950 | 3 | STAL | SBB | 6.95 | | | | 1104 | 353 | 6.6 | 0.32 | 2089 | | |
| 208 | 08601190 | NS | SEREMBAN | 1950 | 2 | SSAL | SBB | 5.00 | | | | 1104 | 353 | 6.6 | 0.32 | 2089 | | |
| 209 | 08601410 | NS | SEREMBAN | 1950 | 3 | SSAL | SBB | 5.06 | | | | 1104 | 353 | 6.6 | 0.32 | 2089 | | |
| 210 | 08601830 | NS | SEREMBAN | 1950 | 3 | SSAL | SBB | 6.92 | | | | 1622 | 353 | 7.4 | 0.22 | 2088 | | |
| 211 | 08602150 | NS | SEREMBAN | 1950 | 3 | SSAL | SBB | 6.34 | | | | 1530 | 353 | 7.4 | 0.23 | 2087 | | |
| 212 | 08602600 | NS | JELEBU | 1950 | 3 | SSAL | SBB | 8.20 | 4.85 | L&R | | 1715 | 277 | 7.4 | 0.16 | 2090 | | |
| 213 | 08602840 | NS | JELEBU | 1960 | 3 | STAL | RCB | 6.29 | | | | 1530 | 277 | 7.4 | 0.18 | 2088 | | |
| 214 | 08603735 | NS | JELEBU | 1950 | 3 | SSAL | SBB | 4.40 | | | | 1530 | 415 | 8.1 | 0.27 | 2078 | | |
| 215 | 08603990 | NS | JELEBU | 1930 | 3 | P/A | SBB | 4.61 | | | | 1530 | 415 | 8.1 | 0.27 | 2078 | | |
| 216 | 08604640 | NS | JELEBU | 1950 | 3 | SSAL | SBB | 6.21 | | | | 1530 | 418 | 8.1 | 0.27 | 2078 | | |
| | 216 | Bridges | | | | | | | | | | | | | | | | |
| | << SPECIAL Bridges >> | | | | | | | | | | | | | | | | | |
| 1 | 00178210 | P.PINANG | SBG PRAI U | 1954 | 2 | STAL | CAR | | | | | | | | | | | |
| 2 | 00223500 | PAHANG | TERMELOH | 1974 | 2 | MTAL | SBG | | | | | | | | | | | |
| 3 | 00371000 | KELANTAN | K.BHARU | Yahya Petra | | | RCB | | | | | | | | | | | |
| 4 | 00512940 | JOHOR | BATU PAHAT | 1965 | 2 | STAL | PCB | | | | | | | | | | | |
| 5 | 01212140 | PAHANG | PEKAN | 1976 | 2 | MTAL | PBX | | | | | | | | | | | |
| | 5 | Bridges | | | | | | | | | | | | | | | | |

# *APPENDIX – F*

## *SELECTION OF 100 BRIDGES FOR VISUAL INSPECTION*

APPENDIX–F SELECTION OF 100 BRIDGES FOR VISUAL INSPECTION

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | STRUCTURAL CONDITION ABUT. | PIER | BEAM | DECK | SCOU–RING | AVERAGE | CONCEIVABLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | CONCEIVABLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| << TYPE OF BRIDGE BOX --- R.C. box >> | | | | | | | | | | | | | | | | | | | | |
| ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00108990 | JOHOR | KLUANG | 1937 | 3 | MTAL | 2.18 | 1 | 2.18 | BOX | 4 | | 3 | 3 | | 3.3 | ARF | | SELECTED | SA |
| Total no's of bridges = 1 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 1 | | |
| ***** 1945 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00148800 | PERAK | BTG PADANG | 1962 | 3 | MTAL | 2.40 | 1 | 2.40 | BOX | 2 | | | 2 | | 2.0 | NON | | | SA |
| 2 | 00116580 | JOHOR | SEGAMAT | 1947 | 3 | STAL | 2.44 | 2 | 4.88 | BOX | 3 | 2 | | 2 | | 2.3 | ARF | | | SA |
| 3 | 00555290 | PERAK | H. PERAK | 1960 | 3 | STAL | 2.46 | 2 | 4.92 | BOX | 2 | 3 | | 2 | | 2.3 | PRF | | | CB |
| 4 | 05203510 | SELANGOR | U.LANGAT | 1950 | 3 | STAL | 1.60 | 2 | 3.20 | BOX | 3 | 3 | | 1 | | 2.3 | ARF,APPR | | | SA |
| 5 | 05403570 | SELANGOR | PETALING | 1960 | 3 | STAL | 3.05 | 1 | 3.05 | BOX | 3 | | | 2 | | 2.5 | ARF | | | EA |
| 6 | 00102590 | JOHOR | J. BAHRU | 1955 | 3 | STAL | 1.60 | 1 | 1.60 | BOX | 3 | 3 | | 2 | | 2.7 | ARF | | | SA |
| 7 | 00121260 | JOHOR | SEGAMAT | 1955 | 3 | STAL | 2.42 | 1 | 2.42 | BOX | 4 | | | 2 | | 3.0 | ARF | | | SA |
| 8 | 00121280 | JOHOR | SEGAMAT | 1950 | 3 | STAL | 2.83 | 1 | 2.83 | BOX | 4 | | | 2 | | 3.0 | ARF | | | SA |
| 9 | 00155590 | PERAK | KINTA | 1970 | 3 | STAL | 1.81 | 2 | 3.62 | BOX | 2 | 3 | | 4 | 4 | 3.0 | ARF,PRF | | | |
| 10 | 00524990 | MELAKA | ALOR GAJAH | 1960 | 3 | MTAL | 1.65 | 1 | 1.65 | BOX | 2 | | | 4 | | 3.0 | DCRF | | | |
| 11 | 00228970 | PAHANG | MARAN | 1965 | 3 | STAL | 3.03 | 1 | 3.03 | BOX | 4 | | | 3 | | 3.5 | ARF,DCRF | | SELECTED | SA |
| 12 | 00538970 | SELANGOR | K. LANGAT | 1950 | 4 | SSAL | 2.30 | 1 | 2.30 | BOX | 3 | | | 4 | | 3.5 | DCRF | | | CA |
| Total no's of bridges = 12 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 1 | | |
| << TYPE OF BRIDGE IT ---Inverted tee beam >> | | | | | | | | | | | | | | | | | | | | |
| ***** 1946 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00146800 | SELANGOR | ULU S'GOR | 1965 | 3 | STAL | 12.19 | 3 | 25.91 | IT | 1 | 2 | 1 | 1 | 3 | 1.3 | PRF,SRRP | | | SA |
| 2 | 00149820 | PERAK | BTG PADANG | 1963 | 3 | STAL | 12.08 | 3 | 36.24 | IT | 3 | 1 | 1 | | 3 | 1.7 | APPR,SFRS | | | |
| 3 | 00506670 | JOHOR | PONTIAN | 1971 | 3 | STAL | 15.09 | 3 | 36.17 | IT | 2 | 2 | 1 | | | 1.7 | PPR,EJRP,SRPR | | | CA |
| 4 | 00514300 | JOHOR | BATU PAHAT | 1960 | 3 | STAL | 10.45 | 3 | 22.07 | IT | 2 | 3 | 1 | | | 2.0 | PPR,SFRF,EJRP | | | CA |
| 5 | 00563880 | PERAK | MANJUNG | 1972 | 3 | STAL | 14.07 | 3 | 41.59 | IT | 2 | 3 | 1 | | 3 | 2.0 | PPR,EJRP | ADDING SIDE WALK | SELECTED | CA |
| 6 | 00507810 | JOHOR | PONTIAN | 1968 | 3 | STAL | 12.09 | 5 | 47.83 | IT | 2 | 3 | 2 | | | 2.3 | CBRF,PPR,EJRP | | SELECTED | CA |
| 7 | 00306390 | JOHOR | K. TINGGI | 1974 | 3 | STAL | 16.57 | 5 | 54.57 | IT | 3 | 2 | 3 | 2 | | 2.5 | EJRP,CBRF,SFRF | | SELECTED | |
| 8 | 00306710 | JOHOR | K. TINGGI | 1969 | 3 | STAL | 16.90 | 7 | 51.96 | IT | 1 | 3 | 2 | 4 | 3 | 2.5 | EJRP,PPR,CBPR | | SELECTED | |
| 9 | 07001790 | PERAK | HLR PERAK | 1970 | 3 | STAL | 14.80 | 9 | 44.36 | IT | 3 | 3 | 2 | 2 | | 2.5 | EJRP,SFRS | | | |
| Total no's of bridges = 9 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 4 | | |
| << TYPE OF BRIDGE PCB --- P.C. beam, R.C. slab >> | | | | | | | | | | | | | | | | | | | | |
| ***** 1946 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00338580 | TRENGGANU | KEMAMAN | 1965 | 3 | STAL | 28.03 | 16 | 219.13 | PCB | 1 | 3 | 1 | 1 | | 1.5 | SPRF,SFRF | | SELECTED | |
| 2 | 00507230 | JOHOR | PONTIAN | 1966 | 3 | STAL | 11.77 | 3 | 35.21 | PCB | 3 | 3 | 1 | 1 | 4 | 2.0 | APR,PPR,EJRP,BSPR | | SELECTED | CA |
| 3 | 00700660 | KEDAH | KOTA SETAR | 1964 | 3 | STAL | 18.40 | 1 | 18.40 | PCB | 2 | | 2 | | | 2.0 | DCPR,BRP | ADDING SIDE WALK | | |
| 4 | 00703390 | PERLIS | PERLIS | 1963 | 3 | STAL | 24.80 | 1 | 24.80 | PCB | 2 | | 2 | 2 | | 2.0 | BRP | | | |
| 5 | 00346740 | TRENGGANU | DUNGUN | 1973 | 3 | STAL | 30.50 | 9 | 152.26 | PCB | 2 | 2 | 2 | 4 | | 2.5 | CBRF,SFRF | ADDING & RAISING | SELECTED | |
| 6 | 00701810 | KEDAH | KBG. PASU | 1970 | 3 | STAL | 30.52 | 3 | 46.60 | PCB | 3 | 3 | 2 | 2 | | 2.5 | BRP,PRF,APPR,SFRF | ADDING SIDE WALK | SELECTED | SA |
| 7 | 05905010 | PAHANG | LIPIS | 1961 | 3 | STAL | 30.74 | 4 | 122.96 | PCB | 3 | 3 | 2 | 2 | | 2.5 | EJRP,BPR | | SELECTED | |
| 8 | 05701690 | KEDAH | K.MUDA/SIK | 1968 | 3 | STAL | 30.64 | 3 | 91.52 | PCB | 2 | 3 | 2 | 3 | 3 | 2.5 | DCRF,PPR,SFRS,EJRP | | SELECTED | |
| 9 | 00317000 | PAHANG | ROMPIN | 1974 | 3 | MTAL | 45.78 | 9 | 397.32 | PCB | 2 | 3 | 4 | 3 | | 3.0 | CBRF,EJRP,DCRF,PRF | | SELECTED | CA |
| 10 | 00339210 | TRENGGANU | KEMAMAN | 1963 | 3 | STAL | 15.22 | 10 | 152.20 | PCB | 4 | 4 | 4 | 2 | 2 | 3.5 | ARF,EJRP,SFRS | | SELECTED | |
| 11 | 00319110 | PAHANG | ROMPIN | 1962 | 3 | SSAL | 30.46 | 7 | 121.96 | PCB | 3 | 4 | 4 | 4 | | 3.8 | CBPR,EJRP,APR,PRF | | SELECTED | CA |
| Total no's of bridges = 11 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 9 | | |
| ***** 1975 < YEAR BUILT ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00818060 | PAHANG | K. LIPIS | 1980 | 3 | MTAL | 30.49 | 1 | 30.49 | PCB | 2 | | 1 | 1 | 3 | 1.3 | BRP,SRPR | | | |
| 2 | 00822340 | KELANTAN | GUA MUSANG | 1982 | 3 | MTAL | 30.39 | 3 | 90.91 | PCB | 2 | 1 | 1 | 1 | 2 | 1.3 | EJRP | | | |
| Total no's of bridges = 2 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 0 | | |

## APPENDIX-F SELECTION OF 100 BRIDGES FOR VISUAL INSPECTION

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | STRUCTURAL CONDITION | | | | | | CONCEIVABLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | CONCEIVABLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | ABUT. | PIER | BEAM | DECK | SCOU-RING | AVERAGE | | | | |
| << TYPE OF BRIDGE PRB --- Precast R.C. beam >> | | | | | | | | | | | | | | | | | | | | |
| ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00519550 | MELAKA | JASIN | 1940 | 3 | P/A | 4.95 | 1 | 4.95 | PRB | 4 | | 2 | 2 | | 2.7 | PRF | | SELECTED | CA |
| Total no's of bridges = 1 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 1 | | |
| ***** 1946 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00230850 | PAHANG | KUANTAN | 1967 | 3 | STAL | 6.40 | 1 | 6.40 | PRB | 4 | | 1 | 1 | | 2.0 | APPR,APR,EJRP | | | |
| 2 | 00354190 | TRENGGANU | K.T. | 1960 | 2 | SSAL | 5.59 | 2 | 11.18 | PRB | 2 | 3 | 2 | 1 | | 2.0 | PRF,SPRF | | | |
| 3 | 00354830 | TRENGGANU | K.T. | 1963 | 3 | STAL | 5.95 | 3 | 17.85 | PRB | 2 | 1 | 4 | 1 | 1 | 2.0 | CBRF,SPRF,EJRP | | | |
| 4 | 00357200 | TRENGGANU | K.T. | 1959 | 3 | STAL | 5.94 | 3 | 17.82 | PRB | 2 | 2 | 3 | 1 | 2 | 2.0 | CBRF,SPRF | | | |
| 5 | 01105770 | NS | JEMPUL | 1970 | 3 | STAL | 6.18 | 3 | 18.32 | PRB | 4 | 1 | 1 | | 4 | 2.0 | ARF,BSPR | | SELECTED | |
| 6 | 00356790 | TRENGGANU | K.T. | 1959 | 3 | STAL | 5.90 | 9 | 53.10 | PRB | 4 | 2 | 2 | 1 | 2 | 2.3 | APR,EJRP | | SELECTED | |
| 7 | 00357270 | TRENGGANU | K.T. | 1957 | 3 | STAL | 5.89 | 2 | 11.78 | PRB | 2 | 2 | 4 | 1 | 2 | 2.3 | CBRF,CPPR | | | |
| 8 | 00232880 | PAHANG | KUANTAN | 1963 | 3 | STAL | 11.08 | 1 | 11.08 | PRB | 4 | | 2 | 1 | | 2.3 | APPR,APR,EJRP | ADDING SIDE WALK | | |
| 9 | 00361490 | TRENGGANU | BESUT | 1960 | 3 | STAL | 6.01 | 3 | 18.03 | PRB | 3 | 2 | 2 | | | 2.3 | APR,PPR | ADDING SIDE WALK | SELECTED | |
| 10 | 00520130 | MELAKA | JASIN | 1960 | 3 | STAL | 6.46 | 1 | 6.46 | PRB | 3 | | 2 | 2 | | 2.3 | APR | | | CA |
| 11 | 00567840 | PERAK | KINTA | 1960 | 3 | STAL | 6.06 | 2 | 12.12 | PRB | 3 | 2 | 2 | | | 2.3 | APR | ADDING & WIDENING | SELECTED | CB |
| 12 | 00319690 | PAHANG | ROMPIN | 1960 | 3 | STAL | 5.67 | 2 | 11.34 | PRB | 2 | 2 | 4 | 2 | 2 | 2.5 | CBPR,EJRP,BSPR | | | |
| 13 | 00363690 | TRENGGANU | BESUT | 1965 | 3 | STAL | 5.84 | 1 | 5.84 | PRB | 3 | | 2 | | | 2.5 | APR,APPR | | | |
| 14 | 00519700 | MELAKA | JASIN | 1961 | 3 | STAL | 4.88 | 1 | 4.88 | PRB | 3 | | 2 | | | 2.5 | ARF | | | SA |
| 15 | 00813470 | PAHANG | K. LIPIS | 1960 | 3 | STAL | 11.67 | 1 | 11.67 | PRB | 3 | | 2 | | 4 | 2.5 | APR,BSPR | | | |
| 16 | 00326020 | PAHANG | PEKAN | 1965 | 3 | STAL | 5.73 | 1 | 5.73 | PRB | 4 | | 2 | 2 | 2 | 2.7 | ARF,EJRP | | | SA |
| 17 | 00523620 | MELAKA | MELAKA TGH | 1960 | 3 | STAL | 7.11 | 2 | 14.22 | PRB | 2 | 3 | 3 | 3 | | 2.8 | PPR,EJRP,BSPR | | SELECTED | CA |
| 18 | 00314180 | JOHOR | MERSING | 1964 | 3 | STAL | 5.50 | 2 | 11.00 | PRB | 4 | 4 | 2 | 2 | 5 | 3.0 | APR,PPR,SPRF,EJRP | | SELECTED | |
| 19 | 00326950 | PAHANG | PEKAN | 1965 | 3 | STAL | 5.88 | 4 | 23.52 | PRB | 4 | 4 | 2 | 2 | | 3.0 | APR,PPR,SPRF,EJRP | | SELECTED | CA |
| 20 | 00366860 | KELANTAN | P.PUTEH | 1952 | 3 | STAL | 5.41 | 6 | 32.46 | PRB | 3 | 4 | 4 | | 3 | 3.7 | CBRF,APR,APPR,SPRS,EJRP | ADDING & RAISING | SELECTED | |
| Total no's of bridges = 20 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 8 | | |
| << TYPE OF BRIDGE RCB --- R.C. beam & slab >> | | | | | | | | | | | | | | | | | | | | |
| ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00908400 | NS | JELEBU | 1935 | 3 | P/A | 10.70 | 5 | 36.70 | RCB | | 2 | 3 | 2 | 3 | 2.3 | DCRF | | | |
| 2 | 06701200 | KEDAH | K.MUDA/SIK | 1930 | 3 | P/A | 6.05 | 1 | 6.05 | RCB | 2 | | 2 | 3 | | 2.3 | DCRF | | | |
| 3 | 06701230 | KEDAH | K.MUDA/SIK | 1940 | 3 | P/A | 6.13 | 2 | 12.26 | RCB | 2 | 2 | 3 | 3 | | 2.5 | DCRF,CBRF | | SELECTED | SA |
| 4 | 00125250 | NS | TAMPIN | 1940 | 3 | P/A | 6.70 | 1 | 6.70 | RCB | 3 | | 3 | 3 | | 3.0 | ARF,CBPR | | | SA |
| 5 | 00546560 | SELANGOR | K.SELANGOR | 1939 | 3 | P/A | 6.30 | 1 | 6.30 | RCB | 3 | | 4 | 4 | | 3.7 | CBRF,DCRF | RAISING GRADE | SELECTED | CB |
| Total no's of bridges = 5 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 2 | | |
| ***** 1946 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00231790 | PAHANG | KUANTAN | 1960 | 1 | SSAL | 7.75 | 1 | 7.75 | RCB | 1 | | | 1 | | 1.0 | NON | | | |
| 2 | 00702650 | KEDAH | KBG. PASU | 1960 | 3 | STAL | 9.54 | 1 | 9.54 | RCB | 2 | | 1 | 1 | | 1.3 | BRP,ARF | | | |
| 3 | 00336910 | PAHANG | KUANTAN | 1958 | 3 | STAL | 12.00 | 3 | 36.00 | RCB | 2 | 3 | 1 | 1 | | 1.8 | BPR,ARF,PRF,SRPR | ADDING SIDE WALK | | |
| 4 | 00510560 | JOHOR | BATU PAHAT | 1960 | 3 | STAL | 10.42 | 3 | 31.24 | RCB | 2 | 3 | 1 | 1 | | 1.8 | BPR,APR,PPR,SPRF,EJRP | | SELECTED | |
| 5 | 00184400 | KEDAH | KOTA SETAR | 1950 | - | SSAL | 6.10 | 2 | 12.20 | RCB | 2 | 2 | 2 | | | 2.0 | CAN'T INSPECT | | | |
| 6 | 00512960 | JOHOR | BATU PAHAT | 1965 | 3 | STAL | 11.30 | 3 | 30.22 | RCB | 4 | 3 | 1 | 1 | | 2.3 | APR,PPR | | | CA |
| 7 | 00518890 | JOHOR | MUAR | 1966 | 3 | STAL | 6.03 | 3 | 17.82 | RCB | 2 | 3 | 2 | 2 | | 2.3 | PPR,EJRP | | SELECTED | CA |
| 8 | 00335650 | SELANGOR | SEPANG | 1960 | 3 | STAL | 14.70 | 5 | 61.34 | RCB | 2 | 3 | 2 | 2 | | 2.3 | BPR,PPR,EJRP | | | CA |
| 9 | 06005220 | PERAK | L&M&SELAMA | 1960 | 3 | STAL | 7.01 | 1 | 7.01 | RCB | 2 | | 3 | 2 | | 2.3 | CBPR,SPRS | | | |
| 10 | 00151360 | PERAK | BTG PADANG | 1960 | 3 | STAL | 9.08 | 7 | 63.56 | RCB | 2 | 2 | 2 | 4 | | 2.5 | DCRF | | SELECTED | |
| 11 | 00532850 | NS | PD | 1970 | 3 | STAL | 11.02 | 5 | 53.24 | RCB | 3 | 3 | 2 | 2 | | 2.5 | APR,PRF | | | CA,SA |
| 12 | 00534450 | NS | PD | 1965 | 3 | STAL | 8.83 | 4 | 35.32 | RCB | 2 | 3 | 2 | 3 | | 2.5 | PPR | | | CA |
| 13 | 06005740 | PERAK | L&M&SELAMA | 1960 | 3 | STAL | 5.80 | 3 | 21.95 | RCB | 3 | 2 | 2 | 3 | | 2.5 | CBRF,DCRF | ADDING SIDE WALK | | |
| 14 | 00514370 | JOHOR | BATU PAHAT | 1950 | 3 | STAL | 6.31 | 1 | 6.31 | RCB | 2 | | 4 | 2 | | 2.7 | CBRF | | | CA |
| 15 | 02602840 | NS | JELEBU | 1960 | 3 | STAL | 3.08 | 1 | 3.08 | RCB | 2 | | 5 | 1 | | 2.7 | CBPR | | | |
| 16 | 00113780 | JOHOR | SEGAMAT | 1955 | 3 | STAL | 6.83 | 3 | 20.34 | RCB | 2 | 2 | 3 | 4 | | 2.8 | DCRF,APPR,PRF,SPRF,CPPR | ADDING SIDE WALK | SELECTED | SA |
| 17 | 00114920 | JOHOR | SEGAMAT | 1955 | 3 | STAL | 6.43 | 2 | 12.86 | RCB | 2 | 4 | 3 | 2 | | 2.8 | CBRF,PRF,CPPR | | SELECTED | |
| 18 | 00540780 | SELANGOR | K. LANGAT | 1960 | 3 | STAL | 7.30 | 3 | 11.94 | RCB | 2 | 2 | 3 | 4 | | 2.8 | CBRF,DCRF | | SELECTED | CB |
| 19 | 00836900 | KELANTAN | MACHANG | 1960 | 3 | STAL | 6.01 | 2 | 12.02 | RCB | 2 | 3 | 3 | 3 | 3 | 2.8 | DCPR,CBPR | | | SA |
| 20 | 00106100 | JOHOR | KLUANG | 1954 | 3 | STAL | 15.90 | 3 | 27.40 | RCB | 3 | 3 | 4 | 2 | | 3.0 | CBPR,APR,PRF | | SELECTED | SA |
| 21 | 00323070 | PAHANG | PEKAN | 1965 | 3 | STAL | 10.42 | 3 | 31.26 | RCB | 4 | 4 | 2 | 2 | 2 | 3.0 | APR,APPR,PRF,SPRF,EJRP | | SELECTED | CA |
| 22 | 00341800 | TRENGGANU | KEMAMAN | 1955 | 3 | STAL | 12.10 | 3 | 36.14 | RCB | 4 | 4 | 3 | 1 | 3 | 3.0 | APPR,ARF,PRF,SPRF | ADDING SIDE WALK | SELECTED | |
| 23 | 00521710 | MELAKA | MELAKA TGH | 1960 | 3 | STAL | 10.72 | 1 | 10.72 | RCB | 4 | | 3 | 2 | | 3.0 | CBRF,ARF,PPR | ADDING SIDE WALK | SELECTED | CA |

## APPENDIX–F SELECTION OF 100 BRIDGES FOR VISUAL INSPECTION

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | STRUCTURAL CONDITION ABUT. | PIER | BEAM | DECK | SCOUR | AVERAGE | CONCEIVABLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | CONCEIVABLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 00521950 | MELAKA | MELAKA TGH | 1960 | 3 | STAL | 7.13 | 2 | 14.26 | RCS | 3 | 3 | 4 | 2 | | 3.0 | ARF,PRF,CBRF | | SELECTED | CA,SA |
| 25 | 06001330 | PERAK | MANJUNG | 1960 | 3 | STAL | 5.02 | 1 | 5.02 | RCS | 2 | | 4 | 3 | | 3.0 | CBRF,DCRF,SFPR | | | |
| 26 | 05202450 | SELANGOR | U.LANGAT | 1955 | 3 | STAL | 12.11 | 1 | 12.11 | RCS | 3 | | 3 | 4 | 2 | 3.3 | DCPR,AFPR,SFRF | | | |
| 27 | 00514650 | JOHOR | MUAR | 1955 | 3 | STAL | 5.97 | 9 | 46.03 | RCS | 4 | 4 | 4 | 2 | | 3.5 | CBRF,ARF | | SELECTED | CA,SA |
| 28 | 00534570 | SELANGOR | SEPANG | 1960 | 3 | STAL | 6.95 | 6 | 32.54 | RCS | 4 | 4 | 3 | 3 | | 3.5 | DCRF,APR,PPR | | SELECTED | CA |
| 29 | 00521300 | MELAKA | MELAKA TGH | 1950 | 3 | STAL | 6.90 | 1 | 6.90 | RCS | 3 | | 4 | 4 | | 3.7 | ARF,CBPR,DCRF | ADDING SIDE WALK | SELECTED | CA,SA |
| | Total no's of bridges = 29 | | | | | | | | | | | | | | | | | Total no's of bridges selected = 14 | | |
| | << TYPE OF BRIDGE RCS ---- R.C. slab >> | | | | | | | | | | | | | | | | | | | |
| | ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | |
| 1 | 00838100 | KELANTAN | MACHANG | 1941 | 3 | P/A | 4.86 | 2 | 9.72 | RCS | 2 | 3 | | 3 | | 2.7 | DCRF | WIDENING & RAISING | SELECTED | CB |
| 2 | 00303890 | JOHOR | K.TINGGI | 1940 | 3 | P/A | 4.58 | 2 | 9.16 | RCS | 4 | 3 | | 2 | | 3.0 | ARF | ADDING SIDE WALK | SELECTED | SA |
| | Total no's of bridges = 2 | | | | | | | | | | | | | | | | | Total no's of bridges selected = 2 | | |
| | ***** 1945 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | |
| 1 | 00834950 | KELANTAN | KUALA KRAI | 1960 | 3 | STAL | 3.34 | 1 | 3.34 | RCS | 1 | | | | | 1.0 | NON | | | |
| 2 | 00366890 | KELANTAN | P.PUTEH | 1951 | 3 | STAL | 4.79 | 2 | 9.58 | RCS | 2 | 2 | | 2 | | 2.0 | DCRF,SFRF | | | |
| 3 | 00700750 | KEDAH | KOTA SETAR | 1970 | 3 | STAL | 15.36 | 1 | 15.36 | RCS | 2 | | | 2 | | 2.0 | BRP,ARF | | | |
| 4 | 00368300 | KELANTAN | P.PUTEH | 1955 | 3 | STAL | 4.84 | 2 | 9.68 | RCS | 3 | 3 | | 1 | | 2.3 | ARF,PRF | RAISING GRADE | | SA |
| 5 | 00112690 | JOHOR | BATU PAHAT | 1960 | 3 | STAL | 6.27 | 1 | 6.27 | RCS | 2 | | | 3 | | 2.5 | DCRF,ARF,AFPR,SFRF | | | SA |
| 6 | 00184900 | KEDAH | KOTA SETAR | 1950 | 3 | STAL | 5.20 | 1 | 5.20 | RCS | 3 | | | 2 | | 2.5 | SRPP,DCPR,APR | | | |
| 7 | 00184980 | KEDAH | KOTA SETAR | 1950 | 3 | STAL | 4.64 | 1 | 4.64 | RCS | 3 | | | 2 | | 2.5 | SRPP | | | |
| 8 | 00304060 | JOHOR | K.TINGGI | 1963 | 3 | STAL | 36.65 | 5 | 92.25 | RCS | 2 | 2 | 3 | 3 | 2 | 2.5 | DCPR,EJRP,SFRF,CBPR | | SELECTED | |
| 9 | 00556900 | PERAK | H. PERAK | 1958 | 3 | STAL | 7.33 | 1 | 7.33 | RCS | 3 | | | 2 | | 2.5 | APR,PRF | | | |
| 10 | 00505380 | JOHOR | PONTIAN | 1965 | 3 | STAL | 11.88 | 4 | 47.52 | RCS | 2 | 4 | | 2 | 3 | 2.7 | SPPR,PRF | | | |
| 11 | 00834850 | KELANTAN | KUALA KRAI | 1960 | 3 | STAL | 4.63 | 3 | 13.71 | RCS | 2 | 2 | | 4 | 4 | 2.7 | DCRF,APR | | SELECTED | |
| 12 | 02305970 | JOHOR | SEGAMAT | 1950 | 4 | SSAL | 5.66 | 2 | 7.50 | RCS | 5 | 2 | | 1 | | 2.7 | ARF | RAISING GRADE | SELECTED | |
| 13 | 00519360 | MELAKA | JASIN | 1955 | 3 | STAL | 6.22 | 7 | 42.70 | RCS | 3 | 4 | 2 | | | 3.0 | DCRF,,PRF | ADDING SIDE WALK | SELECTED | CA,SA |
| 14 | 00901360 | NS | K.PILAH | 1960 | 3 | STAL | 5.74 | 1 | 5.74 | RCS | 2 | | | 4 | | 3.0 | DCPR | | | |
| 15 | 01800060 | PERAK | MANJUNG | 1960 | 3 | STAL | 3.68 | 1 | 3.68 | RCS | 2 | | 4 | 3 | | 3.0 | DCRF | ADDING & WIDENING | SELECTED | CB |
| 16 | 05403460 | SELANGOR | PETALING | 1950 | 3 | STAL | 6.56 | 1 | 6.56 | RCS | 3 | | | 3 | 4 | 3.0 | DCPR,ARF,SRPP,BSPR | | SELECTED | |
| 17 | 00316745 | JOHOR | MERSING | 1965 | 3 | STAL | 3.67 | 1 | 3.67 | RCS | 3 | | | 4 | | 3.5 | DCRF,AFPR,SFRF | | | |
| 18 | 00337240 | PAHANG | KUANTAN | 1957 | 3 | STAL | 6.58 | 1 | 6.58 | RCS | 5 | | | 2 | | 3.5 | ARF,SFRF | | SELECTED | |
| 19 | 00524420 | MELAKA | MELAKA TGH | 1950 | 3 | STAL | 3.60 | 1 | 3.60 | RCS | 4 | | | 3 | | 3.5 | PPR | | | |
| 20 | 00546980 | SELANGOR | K.SELANGOR | 1960 | 3 | STAL | 10.64 | 3 | 30.94 | RCS | 4 | 4 | 3 | 3 | | 3.5 | DCRF,APR,PPR,BSPR | | SELECTED | CA |
| 21 | 00313520 | JOHOR | MERSING | 1960 | 3 | STAL | 1.80 | 2 | 3.60 | RCS | 4 | 4 | | 3 | | 3.7 | DCRF,APR,PPR,SFRF | ADDING SIDE WALK | SELECTED | |
| | Total no's of bridges = 21 | | | | | | | | | | | | | | | | | Total no's of bridges selected = 9 | | |
| | << TYPE OF BRIDGE SBB ---- Steel beam, buckle plate >> | | | | | | | | | | | | | | | | | | | |
| | ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | |
| 1 | 00166220 | PERAK | LRT MATANG | 1945 | 2 | SSAL | 5.67 | 1 | 5.67 | SBB | 2 | | 2 | | | 2.0 | SBPR | | | |
| 2 | 05001070 | JOHOR | BATU PAHAT | 1919 | 2 | SSAL | 4.77 | 1 | 4.77 | SBB | 2 | | 2 | 2 | | 2.0 | DSPR | WIDENING | SELECTED | |
| 3 | 06406260 | PAHANG | JERANTUT | 1930 | 3 | P/A | 4.80 | 1 | 4.80 | SBB | 3 | | 2 | 2 | | 2.0 | SBPR,SRPP,DSPR | | | |
| 4 | 08603990 | NS | JELEBU | 1930 | 3 | P/A | 9.62 | 1 | 9.62 | SBB | 2 | | 2 | 2 | | 2.0 | SBPR,DSPR | | | |
| 5 | 05905290 | PAHANG | LIPIS | 1930 | 3 | STAL | 6.05 | 1 | 6.05 | SBB | 2 | | 3 | 2 | | 2.3 | SBPR,DSPR,SRPP | | | |
| 6 | 05906010 | PAHANG | LIPIS | 1930 | 3 | STAL | 6.35 | 1 | 6.35 | SBB | 2 | | 3 | 2 | | 2.3 | SBPR | | | |
| 7 | 06405650 | PAHANG | JERANTUT | 1930 | 3 | P/A | 6.31 | 1 | 6.31 | SBB | 2 | | 3 | 2 | | 2.3 | SBPR,SRPR | | | |
| 8 | 00186210 | KEDAH | KOTA SETAR | 1940 | 3 | SSAL | 3.23 | 1 | 3.23 | SBB | 3 | | 3 | 2 | | 2.7 | SBPR,APR | | SELECTED | |
| 9 | 00907010 | NS | JELEBU | 1930 | 2 | SSAL | 6.36 | 1 | 6.36 | SBB | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR | | | |
| 10 | 05101360 | NS | SEREMBAN | 1940 | 3 | SSAL | 3.31 | 1 | 3.31 | SBB | 2 | | 3 | 3 | | 2.7 | SBPR,CBRF | | | CB |
| 11 | 06403300 | PAHANG | JERANTUT | 1930 | 3 | SSAL | 12.31 | 1 | 12.31 | SBB | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR | | | |
| 12 | 06403900 | PAHANG | JERANTUT | 1930 | 3 | SSAL | 11.91 | 1 | 11.91 | SBB | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR,APR | | SELECTED | |
| 13 | 06404940 | PAHANG | JERANTUT | 1930 | 3 | STAL | 6.21 | 1 | 6.21 | SBB | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR,ARF | | SELECTED | |
| 14 | 05002590 | JOHOR | BATU PAHAT | 1940 | 2 | SSAL | 4.75 | 1 | 4.75 | SBB | 3 | | 3 | 3 | | 3.0 | DSRP,SFRF | | SELECTED | |
| 15 | 05302340 | NS | SEREMBAN | 1940 | 3 | SSAL | 6.70 | 1 | 6.70 | SBB | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR | | SELECTED | |
| 16 | 06404270 | PAHANG | JERANTUT | 1930 | 3 | STAL | 10.91 | 1 | 10.91 | SBB | 2 | | 4 | 3 | | 3.0 | SBRP,DSPR,SFRF,SRRP | | SELECTED | |
| 17 | 05200280 | NS | SEREMBAN | 1932 | 3 | STAL | 4.66 | 1 | 4.66 | SBB | 3 | | 5 | 2 | 3 | 3.3 | CBRF,SBPR | | SELECTED | |
| | Total no's of bridges = 17 | | | | | | | | | | | | | | | | | Total no's of bridges selected = 8 | | |
| | ***** 1945 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | |
| 1 | 00228540 | PAHANG | MARAN | 1955 | 2 | SSAL | 6.26 | 1 | 6.26 | SBB | 2 | | 2 | 2 | | 2.0 | SBPR,DSPR | | | |
| 2 | 00901960 | NS | K.PILAH | 1950 | 2 | SSAL | 9.07 | 2 | 18.14 | SBB | 2 | 2 | 2 | 2 | | 2.0 | SBPR,DCRF | | | |

## APPENDIX-F SELECTION OF 100 BRIDGES FOR VISUAL INSPECTION

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | STRUCTURAL CONDITION ABUT. | PIER | BEAM | DECK | SCOU-RING | AVERAGE | CONCEIVABLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | CONCEIVABLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 00902360 | NS | K.PILAH | 1950 | 2 | SSAL | 3.11 | 1 | 3.11 | SBS | 2 | | 2 | 2 | | 2.0 | SBPR | | | |
| 4 | 00902430 | NS | K.PILAH | 1950 | 2 | SSAL | 3.10 | 1 | 3.10 | SBS | 2 | | 2 | 2 | | 2.0 | SBPR | | | |
| 5 | 05101460 | NS | SEREMBAN | 1950 | 2 | SSAL | 3.26 | 1 | 3.26 | SBS | 2 | | 2 | 2 | | 2.0 | SBPR | | | |
| 6 | 05102280 | NS | K.PILAH | 1960 | 3 | SSAL | 4.81 | 1 | 4.81 | SBS | 1 | | 3 | 2 | | 2.0 | SBPR,DSPR | | | |
| 7 | 05103300 | NS | K.PILAH | 1958 | 3 | SSAL | 9.62 | 2 | 16.08 | SBS | 2 | 2 | 2 | 2 | | 2.0 | SBPR,DCRF | | | |
| 8 | 08601190 | NS | SEREMBAN | 1950 | 2 | SSAL | 4.64 | 1 | 4.64 | SBS | 2 | | 2 | 2 | | 2.0 | CRRP | | | |
| 9 | 08601830 | NS | SEREMBAN | 1950 | 3 | SSAL | 3.75 | 1 | 3.75 | SBS | 2 | | 2 | 2 | | 2.0 | NON | | | |
| 10 | 08602160 | NS | SEREMBAN | 1950 | 3 | SSAL | 3.70 | 1 | 3.70 | SBS | 2 | | 2 | 2 | | 2.0 | SBPR | | | |
| 11 | 00902270 | NS | K.PILAH | 1950 | 2 | SSAL | 3.11 | 1 | 3.11 | SBS | 2 | | 3 | 2 | | 2.3 | SBPR | | | |
| 12 | 00902440 | NS | K.PILAH | 1950 | 2 | SSAL | 3.10 | 1 | 3.10 | SBS | 2 | | 3 | 2 | | 2.3 | SBPR | | | |
| 13 | 00904330 | NS | K.PILAH | 1950 | 2 | SSAL | 7.77 | 1 | 7.77 | SBS | 2 | | 2 | 3 | | 2.3 | SBPR,DSPR,SRPP | | | |
| 14 | 00906190 | NS | JEMPUL | 1950 | 2 | SSAL | 9.54 | 1 | 9.54 | SBS | 3 | | 2 | 2 | | 2.3 | SBPR,SFRS | | | |
| 15 | 05103030 | NS | K.PILAH | 1950 | 3 | SSAL | 3.79 | 1 | 3.79 | SBS | 2 | | 3 | 2 | | 2.3 | SBPR | | | |
| 16 | 05302050 | NS | SEREMBAN | 1950 | 3 | SSAL | 6.45 | 1 | 6.45 | SBS | 2 | | 3 | 2 | | 2.3 | SBPR | | | |
| 17 | 05801510 | PERAK | HLR PERAK | 1950 | – | SSAL | 5.60 | 1 | 5.60 | SBS | 2 | | 3 | 2 | | 2.3 | SBPR,SRPR | | | |
| 18 | 00161140 | PERAK | KINTA | 1950 | 3 | STAL | 9.77 | 2 | 19.11 | SBS | 2 | 2 | 3 | 3 | | 2.5 | DSPR,SBRP | ADDING SIDE WALK | SELECTED | |
| 19 | 00911990 | PAHANG | BENTONG | 1951 | 2 | SSAL | 10.77 | 4 | 32.96 | SBS | 2 | 2 | 3 | 3 | | 2.5 | SBPR,DSPR | | | |
| 20 | 07604160 | PERAK | HULU PERAK | 1950 | 3 | SSAL | 3.23 | 1 | 3.23 | SBS | 2 | | 3 | | | 2.5 | NON | | | |
| 21 | 08600735 | NS | JELEBU | 1950 | 3 | SSAL | 4.86 | 2 | 9.72 | SBS | 2 | 2 | 3 | 3 | | 2.5 | SBPR,DSPR | | | |
| 22 | 00706230 | PERLIS | PERLIS | 1950 | 2 | SSAL | 6.63 | 1 | 6.63 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR | | SELECTED | |
| 23 | 00901420 | NS | K.PILAH | 1950 | 2 | SSAL | 3.24 | 1 | 3.24 | SBS | 2 | | 4 | 2 | | 2.7 | SBPR | | | |
| 24 | 00901700 | NS | K.PILAH | 1950 | 2 | SSAL | 3.63 | 1 | 3.63 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR | | | |
| 25 | 05001890 | JOHOR | BATU PAHAT | 1950 | 3 | SSAL | 5.05 | 1 | 5.05 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR | | SELECTED | |
| 26 | 05102060 | NS | K.PILAH | 1950 | 3 | SSAL | 4.74 | 1 | 4.74 | SBS | 2 | | 3 | 3 | | 2.7 | DSPR | | | |
| 27 | 05102670 | NS | K.PILAH | 1960 | 3 | STAL | 3.21 | 1 | 3.21 | SBS | 3 | | 3 | 2 | | 2.7 | SBPR | | | |
| 28 | 05300470 | NS | PD | 1950 | 3 | SSAL | 9.35 | 1 | 9.35 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR | | | |
| 29 | 05302160 | NS | SEREMBAN | 1950 | 3 | SSAL | 6.31 | 1 | 6.31 | SBS | 3 | | 3 | 2 | | 2.7 | SBPR,APR,AFRF | | SELECTED | |
| 30 | 08601000 | NS | SEREMBAN | 1950 | 3 | STAL | 9.62 | 1 | 9.62 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR | | | |
| 31 | 08601410 | NS | SEREMBAN | 1950 | 3 | SSAL | 3.68 | 1 | 3.68 | SBS | 2 | | 3 | 3 | | 2.7 | DSPR,SBRP | | | |
| 32 | 08602600 | NS | JELEBU | 1950 | 3 | SSAL | 3.00 | 1 | 3.00 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR,ARF,APPR | | | |
| 33 | 08604640 | NS | JELEBU | 1950 | 3 | SSAL | 9.51 | 1 | 9.51 | SBS | 2 | | 3 | 3 | | 2.7 | SBPR,DSPR | | | |
| 34 | 00159100 | PERAK | KINTA | 1948 | 3 | SSAL | 11.50 | 3 | 31.30 | SBS | 2 | 2 | 4 | 3 | | 2.8 | SBPR,SRPP | ADDING SIDE WALK | SELECTED | |
| 35 | 00161290 | PERAK | KINTA | 1955 | 3 | STAL | 8.09 | 2 | 16.18 | SBS | 2 | 2 | 4 | 3 | | 2.8 | SBPR | ADDING SIDE WALK | | |
| 36 | 00569630 | PERAK | KINTA | 1950 | 3 | SSAL | 2.83 | 1 | 2.83 | SBS | 2 | 1 | 4 | 4 | | 2.8 | SBPR,DSPR | | | |
| 37 | 00529600 | NS | PD | 1950 | 2 | SSAL | 3.05 | 1 | 3.05 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR | | | |
| 38 | 00540910 | SELANGOR | K. LANGAT | 1950 | 2 | SSAL | 6.29 | 1 | 6.29 | SBS | 3 | | 3 | | | 3.0 | SBPR,ARF,AFRF,SRPP | | SELECTED | SA |
| 39 | 00800350 | PAHANG | BENTONG | 1950 | 3 | SSAL | 3.47 | 1 | 3.47 | SBS | 2 | | 4 | 3 | | 3.0 | SBPR,SRPR | | SELECTED | |
| 40 | 00803900 | PAHANG | RAUB | 1952 | 2 | SSAL | 5.47 | 2 | 10.94 | SBS | 3 | 3 | 3 | 3 | | 3.0 | SBPR,DSPR,APR | | | |
| 41 | 05100840 | NS | SEREMBAN | 1950 | 3 | SSAL | 9.41 | 1 | 9.41 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,APR,DSRP | | SELECTED | |
| 42 | 05102380 | NS | K.PILAH | 1960 | 3 | STAL | 3.21 | 1 | 3.21 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR | | | |
| 43 | 05300960 | NS | PD | 1950 | 3 | SSAL | 6.27 | 1 | 6.27 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR,APR | RAISING GRADE | SELECTED | |
| 44 | 05301190 | NS | PD | 1950 | 3 | SSAL | 4.84 | 1 | 4.84 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR,APR | | SELECTED | |
| 45 | 05801520 | PERAK | HLR PERAK | 1950 | 2 | SSAL | 3.67 | 1 | 3.67 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR,ARF,SRPR | | SELECTED | SA |
| 46 | 05803940 | PERAK | BTG PADANG | 1950 | 3 | STAL | 4.97 | 1 | 4.97 | SBS | 2 | | 4 | 3 | | 3.0 | SBPR,DSPR,ARF,SRPR | | SELECTED | SA |
| 47 | 07000230 | PERAK | HLR PERAK | 1950 | 3 | STAL | 5.88 | 1 | 5.88 | SBS | 3 | | 3 | 3 | | 3.0 | SBPR,DSPR,ARF | | SELECTED | SA |
| 48 | 07602330 | PERAK | K. KANGSAR | 1950 | 2 | SSAL | 6.35 | 1 | 6.35 | SBS | 2 | | 4 | 3 | | 3.0 | SBPR,APR,SFRS | | SELECTED | |
| 49 | 07604020 | PERAK | HULU PERAK | 1950 | 3 | SSAL | 6.35 | 1 | 6.35 | SBS | 2 | | 4 | 3 | | 3.0 | SBPR,DSPR,ARF | | SELECTED | SA |
| 50 | 07604750 | PERAK | HULU PERAK | 1950 | 3 | STAL | 9.34 | 1 | 9.34 | SBS | 2 | | 4 | 3 | | 3.0 | SBPR,DSPR | | SELECTED | |
| 51 | 02305040 | JOHOR | SEGAMAT | 1950 | 3 | STAL | 6.29 | 2 | 12.28 | SBS | 3 | 3 | 3 | 4 | | 3.3 | SBPR,DSRP,SFRS | | SELECTED | |
| 52 | 06006050 | PERAK | L&M&SELAMA | 1950 | – | SSAL | 5.08 | 1 | 5.08 | SBS | 2 | | 5 | 3 | | 3.3 | SBRP,DSPR,SRPR | | SELECTED | |
| 53 | 07002480 | PERAK | BTG PADANG | 1950 | 3 | STAL | 9.88 | 1 | 9.88 | SBS | 4 | | 3 | 3 | | 3.3 | SBRP,DSPR,ARF | | SELECTED | SA |
| 54 | 07602480 | PERAK | K. KANGSAR | 1950 | 4 | SSAL | 5.34 | 1 | 5.34 | SBS | 3 | | 4 | 3 | | 3.3 | SBRP,DSPR,APPR | | SELECTED | |
| 55 | 07506390 | PERAK | HULU PERAK | 1950 | 3 | STAL | 3.07 | 1 | 3.07 | SBS | 3 | | 4 | 3 | | 3.3 | SBPR,DSPR,APPR | | SELECTED | |
| 56 | 00541000 | SELANGOR | K. LANGAT | 1950 | 3 | STAL | 3.24 | 1 | 3.24 | SBS | 4 | | 3 | | | 3.5 | APR,SBPR,DSPR | | SELECTED | |
| 57 | 00541210 | SELANGOR | K. LANGAT | 1950 | 2 | SSAL | 4.73 | 1 | 4.73 | SBS | 3 | | 4 | | | 3.5 | SBPR,DSPR | | SELECTED | |
| 58 | 00810120 | PAHANG | K. LIPIS | 1950 | 4 | SSAL | 6.90 | 1 | 6.90 | SBS | 4 | | 4 | 3 | | 3.7 | SBRP,DSPR,DCPR,APR,AFRF | | | |
| 59 | 00803050 | PAHANG | RAUB | 1950 | 4 | SSAL | 9.04 | 2 | 18.08 | SBS | 4 | 4 | 4 | 4 | | 4.0 | SBRP,DSPR,APPR,PPPR,SFRS | | SELECTED | |
| Total no's of bridges = 59 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 24 | | |
| << TYPE OF BRIDGE SBC --- Steel beam, R.C. slab >> | | | | | | | | | | | | | | | | | | | | |
| ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00128254 | NS | REMBAU | 1930 | 2 | SSAL | 9.58 | 1 | 9.58 | SBC | 2 | | 4 | 2 | | 2.7 | SBPR,ARF | | | |
| 2 | 00303430 | JOHOR | K. TINGGI | 1940 | 3 | STAL | 4.90 | 1 | 4.90 | SBC | 3 | | 2 | 4 | | 3.0 | ARF,DCRF,SBPR | | | AA |
| 3 | 00304390 | JOHOR | K. TINGGI | 1928 | 3 | STAL | 3.35 | 1 | 3.35 | SBC | 3 | | 4 | 4 | | 3.7 | SBPR,EJRP,DCPR | RAISING GRADE | SELECTED | |

APPENDIX--F SELECTION OF 100 BRIDGES FOR VISUAL INSPECTION

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | STRUCTURAL CONDITION | | | | | | CONCEIVABLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | CONCEIVABLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | ABUT. | PIER | BEAM | DECK | SCOU-RING | AVERAGE | | | | |
| Total no's of bridges = 3 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 1 | | |
| ***** 1946 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 05204870 | SELANGOR | U.LANGAT | 1964 | 3 | STAL | 18.24 | 3 | 54.50 | SBC | 2 | 2 | 2 | 2 | 2 | 2.0 | SBPR,DCRF,AFRF,SFRF,EJRP | | SELECTED | |
| 2 | 00237200 | PAHANG | KUANTAN | 1960 | 3 | STAL | 6.90 | 3 | 26.70 | SBC | 2 | 4 | 2 | 1 | 4 | 2.3 | PRF,AFPR,EJRP,SBPR | | SELECTED | CA |
| 3 | 06005070 | PERAK | L&M&SELAMA | 1950 | 3 | STAL | 7.20 | 4 | 27.14 | SBC | 2 | 2 | 3 | 2 | | 2.3 | DCRF,SBPR,SFRS,PRF | | SELECTED | SA |
| 4 | 05901000 | PERAK | BTG PADANG | 1950 | 3 | STAL | 4.40 | 1 | 4.40 | SBC | 3 | | 2 | 3 | | 2.7 | SBPR,DCRF,AFPR,SFRS | | | |
| 5 | 05901580 | PERAK | BTG PADANG | 1950 | 3 | STAL | 7.63 | 1 | 7.69 | SBC | 2 | | 3 | 3 | | 2.7 | SBPR | | | |
| 6 | 05902230 | PERAK | BTG PADANG | 1950 | 3 | STAL | 8.21 | 1 | 8.21 | SBC | 2 | | 4 | 2 | | 2.7 | SBPR,CBRF | | | |
| 7 | 05902680 | PERAK | BTG PADANG | 1950 | 3 | STAL | 6.80 | 1 | 6.80 | SBC | 3 | | 3 | 2 | | 2.7 | SBPR,EJRP | | | |
| 8 | 05901480 | PERAK | BTG PADANG | 1950 | 3 | STAL | 1.95 | 2 | 3.90 | SBC | 3 | 2 | 3 | 3 | | 2.8 | SBPR,DCRF,AFPR,PRF | | | |
| 9 | 01800670 | PERAK | MANJUNG | 1950 | 3 | STAL | 4.78 | 1 | 4.78 | SBC | 2 | | | 4 | | 3.0 | DCRF,SBPR,APR | WIDENING | SELECTED | CA,CB |
| 10 | 05901070 | PERAK | BTG PADANG | 1950 | 3 | STAL | 4.50 | 1 | 4.50 | SBC | 2 | | 3 | 4 | | 3.0 | SBPR,CBRF,DCRF | | | |
| 11 | 05901690 | PERAK | BTG PADANG | 1950 | 3 | STAL | 9.00 | 1 | 9.00 | SBC | 2 | | 3 | 4 | | 3.0 | SBPR,DCRF | | | |
| 12 | 05902030 | PERAK | BTG PADANG | 1950 | 3 | STAL | 3.56 | 1 | 3.56 | SBC | 2 | | 4 | 3 | | 3.0 | SBPR,DCRF | | | |
| 13 | 00549550 | SELANGOR | K.SELANGOR | 1965 | 3 | STAL | 12.61 | 6 | 63.58 | SBC | 3 | 4 | 3 | 3 | | 3.3 | SBPR,BPR,PRF,SFRF | | SELECTED | CA |
| 14 | 05902920 | PERAK | BTG PADANG | 1950 | 3 | STAL | 8.77 | 1 | 8.77 | SBC | 3 | | 4 | 3 | | 3.3 | DCRF,SBPR,EJRP | | | |
| 15 | 05903120 | PERAK | BTG PADANG | 1950 | 3 | STAL | 10.68 | 3 | 23.18 | SBC | 3 | 3 | 4 | 4 | | 3.5 | DCRF,SBPR | | SELECTED | |
| Total no's of bridges = 15 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 6 | | |
| << TYPE OF BRIDGE SBE --- Encased Steel beam, R.C. slab >> | | | | | | | | | | | | | | | | | | | | |
| ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00145100 | SELANGOR | ULU S'GOR | 1935 | 3 | MTAL | 1.85 | 1 | 1.85 | SBE | 3 | | | 3 | | 3.0 | DCRF | | | |
| 2 | 00303220 | JOHOR | K. TINGGI | 1940 | 3 | P/A | 4.84 | 1 | 4.84 | SBE | 3 | | 4 | 4 | | 3.7 | CBRF,DCPR,EJRP | | SELECTED | SA |
| 3 | 00522760 | MELAKA | MPM | 1930 | 3 | P/A | 7.47 | 1 | 7.47 | SBE | 3 | | 4 | 4 | | 3.7 | CBRF,DCRF | | | CA |
| 4 | 06000970 | PERAK | MANJUNG | 1930 | 3 | P/A | 3.14 | 1 | 3.14 | SBE | 4 | | 4 | 3 | | 3.7 | SBPR,CBRF,DCRF,ARF,SFRF | | SELECTED | EA |
| Total no's of bridges = 4 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 2 | | |
| ***** 1946 < YEAR BUILT < 1974 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00313150 | JOHOR | MERSING | 1950 | 3 | STAL | 4.40 | 1 | 4.40 | SBE | 3 | | 3 | 3 | | 3.0 | APR,EJRP,SFRF,CBPR | ADDING SIDE WALK | SELECTED | |
| 2 | 00520850 | MELAKA | JASIN | 1950 | 3 | STAL | 4.27 | 1 | 4.27 | SBE | 3 | | 3 | 3 | | 3.0 | CBRF,DCRF,ARF | | SELECTED | SA |
| 3 | 06702060 | KEDAH | BALING | 1950 | 3 | STAL | 7.16 | 1 | 7.16 | SBE | 3 | | 3 | 3 | | 3.0 | APR | | | |
| 4 | 00523900 | MELAKA | MELAKA TGH | 1950 | 3 | STAL | 9.33 | 1 | 9.33 | SBE | 3 | | 4 | 3 | | 3.3 | DCRF,CBRF | | | CA |
| Total no's of bridges = 4 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 2 | | |
| << TYPE OF BRIDGE SBG --- Steel box girder >> | | | | | | | | | | | | | | | | | | | | |
| ***** YEAR BUILT < 1945 ***** | | | | | | | | | | | | | | | | | | | | |
| 1 | 00166510 | PERAK | LRT MATANG | 1935 | 3 | STAL | 10.72 | 1 | 10.72 | SBG | 3 | | 3 | 2 | | 2.7 | SBPR,DCPR,APR | | SELECTED | |
| Total no's of bridges = 1 | | | | | | | | | | | | | | | | | | Total no's of bridges selected = 1 | | |
| Grand Total 216 Bridges | | | | | | | | | | | | | | | | | | Grand Total 95 Bridges | | |
| << SPECIAL Bridges >> | | | | | | | | | | | | | | | | | | | | |
| 1 | 00178210 | P. PINANG | SBG PRAIU | 1954 | 2 | STAL | 57.32 | 12 | 271.61 | CAR | | | | | | | | | | |
| 2 | 00223500 | PAHANG | TERMELOH | 1974 | 2 | MTAL | 151.50 | 19 | 515.21 | SBG | | | | | | | | | | |
| 3 | 00371000 | KELANTAN | K.BHARU | Yahya Petra | | | | | | RCB | | | | | | | | | | |
| 4 | 00512940 | JOHOR | BATU PAHAT | 1965 | 2 | STAL | 52.02 | 5 | 196.18 | PCB | | | | | | | | | | |
| 5 | 01212140 | PAHANG | PEKAN | 1976 | 2 | MTAL | 58.20 | 7 | 402.30 | PBX | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | Total 5 Bridges selected by GOM | | |

# *APPENDIX – G*

## *VISUAL INSPECTION RESULTS FOR FIVE SPECIAL BRIDGES*

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# APPENDIX-G VISUAL INSPECTION RESULTS FOR 5 SPECIAL BRIDGES

## A. SULTAN YAHYA PETRA BRIDGE

### 1. Bridge Data

| | | |
|---|---|---|
| Key | : | 00371000 |
| Name of River | : | Sg. Kelantan |
| State | : | Kelantan |
| District | : | Kota Bharu |
| Year Built | : | 1962 |
| No. of Span | : | 29 spans |
| Bridge Length | : | 840m |
| Type of Superstructure | : | RC beam and slab built monolithically to the piers |
| Type of Substructure | : | Pile bankseat (abutment) and rectangular RC columns (piers) |

### 2. General

The bridge links the town of Kota Bharu and Pasir Mas. It was built by the State Government without any consultation with JKR Engineers, as a result JKR has no drawings records with regard to its construction. The bridge was designed by Raymond Wong and Associate and constructed by Kien Huat Construction Company. After construction of the bridge was completed, JKR was directed to maintain it. It has been reported that defects on the bridge starts showing up as early as 1967.

### 3. Observed Defects

Visual inspection was made by the Study Team in October 1990 and it was observed that all soffit of slab has been repaired by gunite, thus all defects have been covered up. However, the gunite surfaces have cracked at a few location (See Photo A-1), which indicates that repair carried out is not effective. It was reported by JKR Engineers in Kota Bharu that the soffit of deck slab was repaired in 1988 because almost all soffits of deck slab have cracked

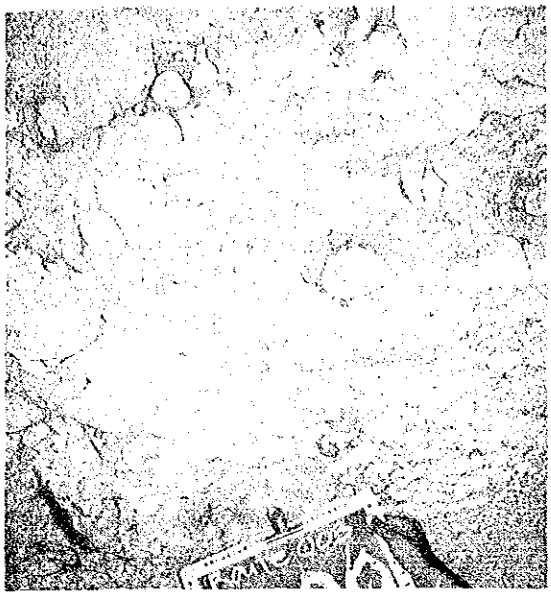
with concrete spalling at quite an extensive area.

All RC beams have been in distress with vertical crack appearing at regular intervals. The cracks start from soffit of deck slab and propagate vertically down at side of beam to about 200mm from its soffit (See Photo A-2). Some of the RC beams have also cracked horizontally at its side which occurred at about 200mm from soffit of slab.

It has also been reported that most of the expansion joint have failed as early as 1967. The expansion joint has been reported to have cracked and the gap at the half joint has widened with its steel cover plate missing. Expansion joint was subsequently repaired in 1980. During site inspection made by the Study Team, it was observed that the expansion joint could have failed again as crack was observed on premix surfaces (See Photo A-3), especially at the abutment where excessive noise was detected whenever heavy vehicles passed through it.

## 4. Recommended Rehabilitation and Maintenance Work

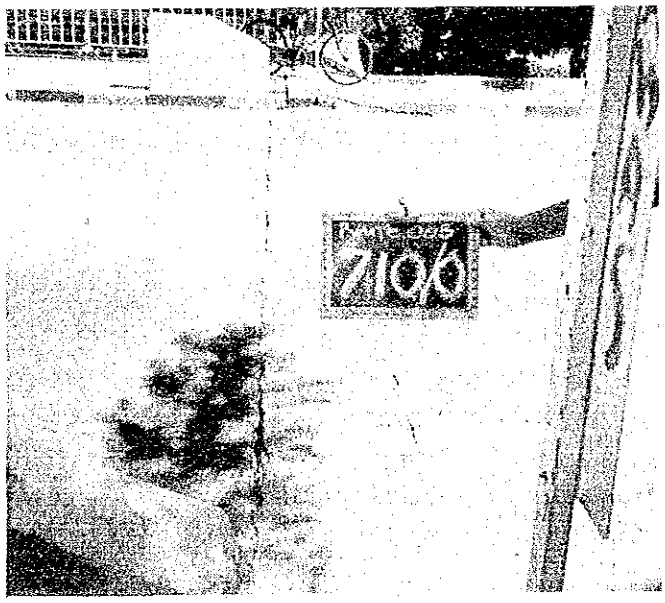
It is recommended that further detailed investigation and analysis should be conducted for this bridge which will be carried out in Phase II(A) of the Study.



A-1 Photo A-1 :Crack at gunited surfaces of the soffit of deck slab (The crack does not show up very well in this photo)

A-2 Photo A-2 :Vertical and horizontal crack at side of all RC beams (shown here by the white marking)

A-3 Photo A-3 :Crack and wide gap formed on premix surfaces due to failure of expansion joint



## B. MERDEKA BRIDGE

### 1. Bridge Data

| | | |
|---|---|---|
| Key | : | 00178210 |
| Name of River | : | Sg. Muda |
| State | : | Pulau Pinang |
| District | : | Seberang Prai |
| Year Built | : | 1954 |
| No. of Span | : | 13 |
| Bridge Length | : | 271.61 m |
| Type of Superstructure | : | RC beam and concrete slab at approach spans and 3 centre spans are of RC bow string arch type of construction |
| Type of Substructure | : | RC wall piers and abutment at approach spans and Masonry wall pier at 3 centre spans |

### 2. General

The bridge is located at the border between the State of Penang and Kedah. The approach span on Penang side consisted of 6 span RC beam and slab bridge while there are only 4 span on Kedah side of the approach. The main span consisted of 3 spans RC bow string arch superstructure with maximum centre span length of 57.32m. Piers and abutments at both approaches are founded on 20m long piles while piers supporting the RC arch is founded on 16m long caisson.

Very limited information is available with regards to its design or construction except for the drawing which was collected by NALS.

### 3. Observed Defects

All RC bow arch girder has cracked at its side along the arch line (See Photo B-1), but no rust staining free lime has been observed, thus indicating that the crack could not possibly caused by corrosive expansion of steel. In the opinion of the Study Team the cause of the problem could be

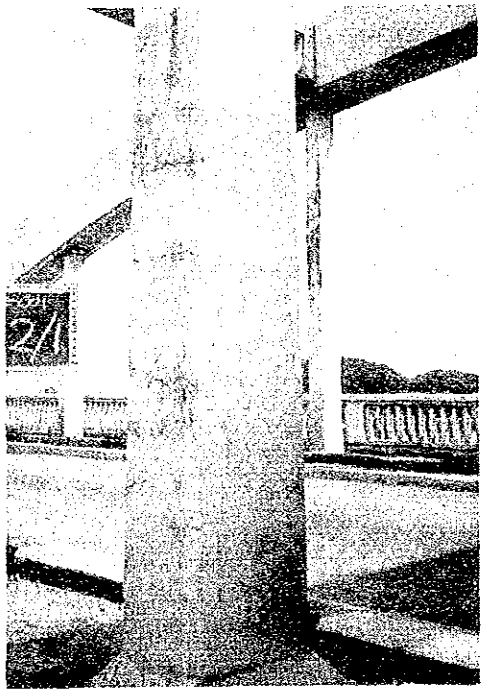
due to the fact that the concrete arch is subjected to compressive force, in which the concrete is known to be strong, but at the time the concrete in the arch is also subjected to tensile busting force acting perpendicular to the compressive forces. If inadequate stirrup is provided the concrete will not be able to hold this force especially during the early age of the conrete and thus resulting in cracking of the member.

All rectangular RC hangers has cracked due to the concrete member being subjected to tensile forces (See Photo B-2). Premix surfaces on the carriageway has cracked transversely at regular interval on mid point between the hangers (See Photo B-e). The crack on premix surfaces could have been caused by the crack which appears at the construction joint in the slab. The construction joint in the slab was constructed at midspan between the transverse girders which is supported by the hangers.

## 4. Recommended Rehabilitation and Maintenance Work

Transverse crack on deck slab could easily be repaired by injecting polymer modified cementitious mortar and painting of the defective members with water proof coating.

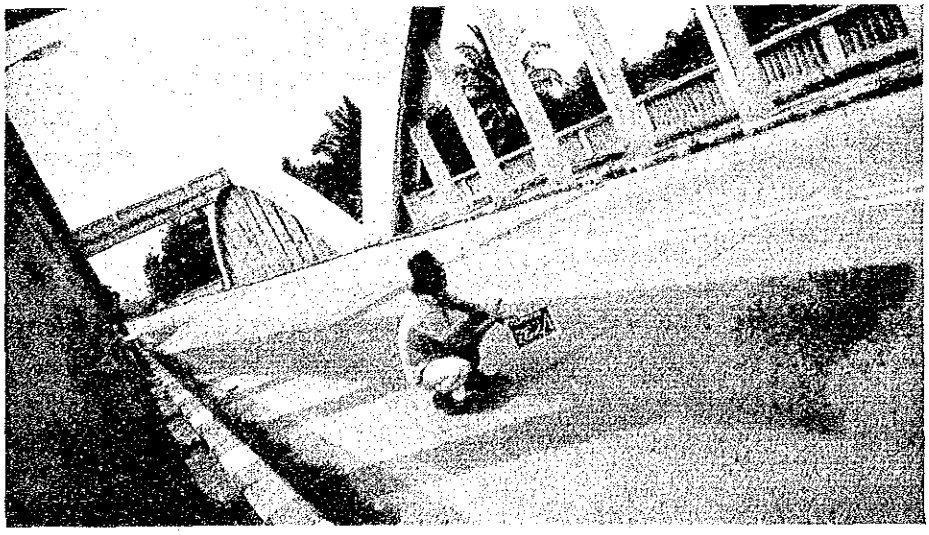
Cracks at RC arch rib and hangers are very small with no free lime and rust staining on its surfaces, thus the crack could have occurred at the early age after completion of the bridge. The immediate step is to monitor the crack width whether the crack is active or not. If the crack is inactive then repair is by painting the concrete surface to protect rusting of reinforcement bar is required. If the crack width widen at a faster rate, then repair by injection of polymer modified cementitious mortar will be required. In the opinion of the Study Team, the observed defect on the bridge is not critical, thus no further detailed study with regard to maintenance and rehabilitation work is required for this bridge.



B-1 Photo B-1 :Crack at the side of the RC bow string arch girder

B-2 Photo B-2 :Horizontal tension crack on rectangular RC hangers

B-3 Photo B-3 :Transverse crack on premix road surface at regular interval midway between RC hangers



## C BATU PAHAT BRIDGE

### 1. Bridge Data

| | | |
|---|---|---|
| Key | : | 00512940 |
| Name of River | : | Sg. Batu Pahat |
| State | : | Johor |
| District | : | Batu Pahat |
| Year Built | : | 1965 |
| No. of Span | : | 5 |
| Bridge Length | : | 196.18m |
| Type of Superstructure | : | Precast prestressed I-Beam |
| Type of Substructure | : | Steel tubular column (pile) and concrete cross head |

### 2. General

The bridge is located not very far from the estuary of Batu Pahat river and thus it is within the tidal range. It replaces the ferry service which link the town of Batu Pahat and Muar. The end span consisted of 31.30m simply supported beams while the penultimate spans consisted of 31.3m simply supported beam supported on pier on one end and on half joint of a 10.3m cantilever span on the other,. The centre span is 52m long consisted of 31.4m simply supported span and 10.3m cantilever spans at each pier. Both piers at end span and abutments are founded on rectangular RC piles while pier at the centre span is supported on 1.2m diameter tubular steel piles.

### 3. Observed Defects

Expansion joint is not provided at both abutments and piers. The premix material has dropped from the road surface through the gap formed (See Photo C-1) and collected at the bearing shelf. Plant (jejawi tree) is growing at the side and soffit of deck especially at half joint.

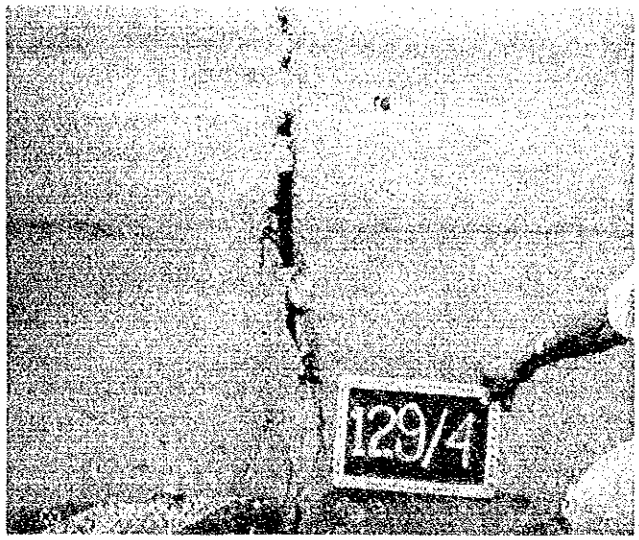
Excessive settlement of the approach embankment has cause pothole with depth greater than 30cm to be formed (See Photo C-2). Road surface at the approach is very bumpy with excessive rutting of the pavement.

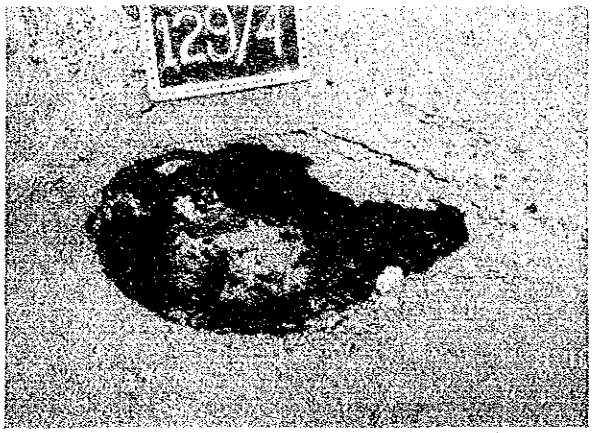
All tubular steel pile at the pier on the centre span has corroded at the splash zone (See Photo C-3). Some of the piles has laminated with rusted steel thickness varies from 5mm to 10mm.

## 4. Recommended Rehabilitation & Maintenance Work

Bumpy road surface together with non-existence or failure of expansion joint will lead to an excessive impact load on the bridge, thus urgent repair is required. New expansion joint should be installed, debris and plant growing at bearing shelf should be removed. Approach embankment should be repaired, settlement could be reduced by installation of embankment piles at both approaches. Rip rap protection should be provided at the front of abutment to prevent embankment material from being washed out.

Concrete jacket should be constructed to prevent tubular steel cylindrical pile from corroding further. Before concrete jacket is installed all rust should be removed and the steel pile should be blast cleaned.

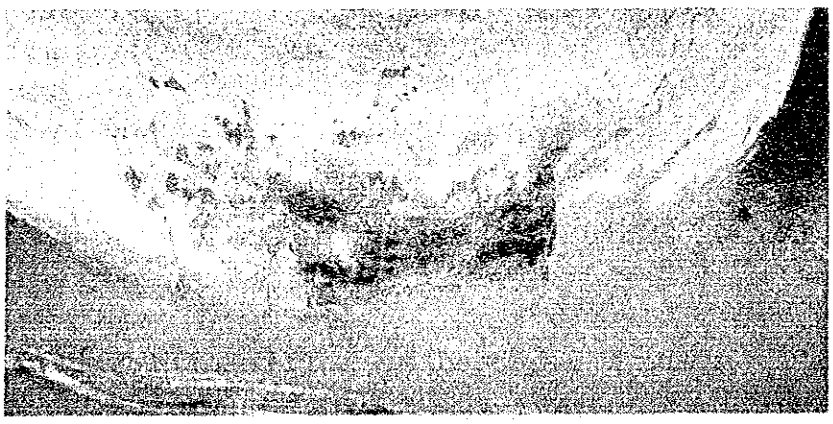



C-1 Photo C-1 :Expansion joint missing at abutment

C-2 Photo C-2 :Pot hole formed at approach embankment

C-3 Photo C-3 :Corrosion of the tubular steel pile



## D. TEMERLOH BRIDGE

### 1. Bridge Data

| | | |
|---|---|---|
| Key | : | 00223500 |
| Name of River | : | Sg. Pahang |
| State | : | Pahang |
| District | : | Temerloh |
| Year Built | : | 1974 |
| No. of Span | : | 17 span |
| Bridge Length | : | 515.21m |
| Type of Superstructure | : | Steel box girder on the main span and Inverted T on the approach spans. |
| Type of Substructure | : | RC wall abutment and V-shaped Rectangular span and RC wall pier at main span. |

### 2. General

The bridge was built at much higher elevation than the old bridge wbich was severely damaged by flood. It is located on Route 2 which formed a major road link between Kuala Lumpur and Kuantan town. The Kuala Lumpur approach is made of 8 spans inverted T-beam bridge while the Kuantan approach is made up of 7 spans Inverted T-Beam bridge. The centre main span is made of 2 spans continuous steel box girder bridge. All abutments and piers are supported on pile foundation. This bridge is relatively new thus quite a number of drawings is available and collected by the NALS.

### 3. Observed Defects

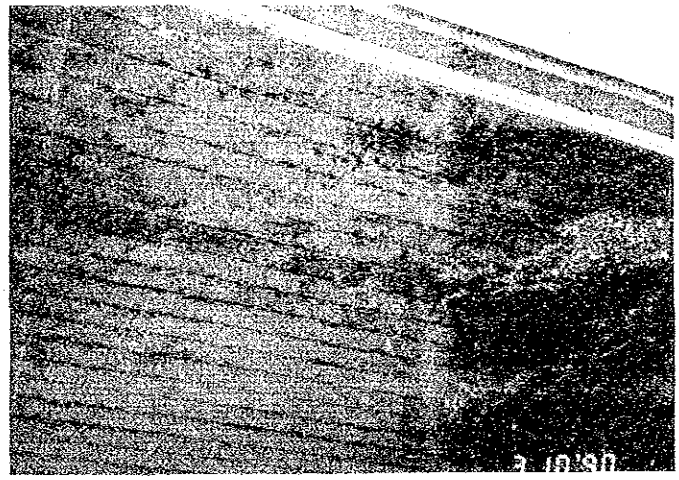
Free lime was detected at soffit of inverted T-Beam on a few of the approach spans (See photo D-1). The defect could be caused by porosity of the bridge deck.

Expansion joint on the bridge deck directly above the pier supporting the box girder at Kuala Lumpur side has been in distress. Its epoxy nosing has failed and anchor has loosened (See photo D-2).

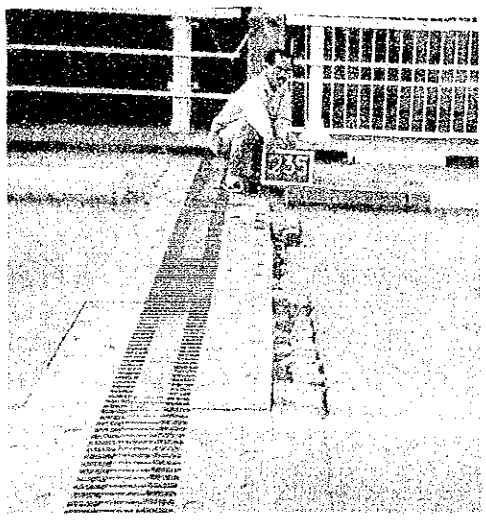
## 4. Recommended Rehabilitation Maintenance Work

Porosity of bridge deck on approach span could be repaired by providing water proof membrane on the RC deck. However, since the porosity is only at a localised areas and to minimise cost of repair, the defect should be repaired by injecting the defected areas of RC slab with polymer modified cementitious grout.

All loose anchor bolts at the defective expansion joint should be tightened and its epoxy nosing repaired by polymer modified cementitious mortar.



D-1 Photo D-1:Free lime at soffit of Inverted T-beam bridge on the approach span



D-2 Photo D-2:Damaged nosing at the expansion joint

## E. KUALA LEPAR BRIDGE

### 1. Bridge Data

| | | |
|---|---|---|
| Key | : | 01212140 |
| Name of River | : | Sg. Pahang |
| State | : | Pahang |
| District | : | Pekan |
| Year Built | : | 1976 |
| No. of Span | : | 7 spans |
| Bridge Length | : | 402.3m |
| Type of Superstructure | : | Precast Prestressed segmental continuous box girder |
| Type of Substructure | : | RC hollow wall/box abutment and pier |

### 2. General

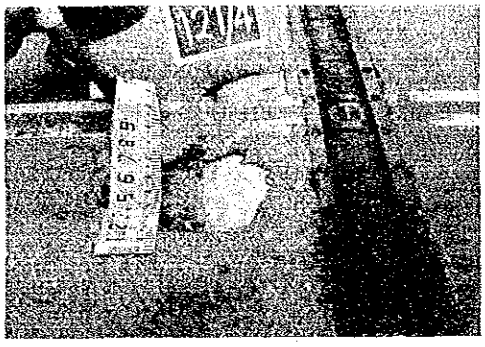
The bridge is located on the road linking the town of Kuantan on the East Coast to Segamat town on the South Western side of Peninsula Malaysia and it crosses the longest river in Peninsula Malaysia. The bridge is founded on pile foundation.

### 3. Observed Defects

The bridge is relatively new, thus no structural defect was observed except for potholes formed on approach road surface adjacent to expansion joint at both abutments (See Photo E-1).

## 4. Recommended Rehabilitation and Maintenance Work

Since NALS report has highlighted this same problem (i.e. potholes) at this bridge, the Study Team concludes that the defect is caused by failure of the road pavement. Therefore, road pavement adjacent to the bridge has to be properly design and reconstructed.



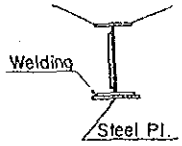
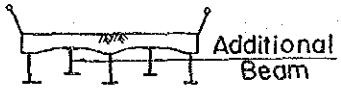
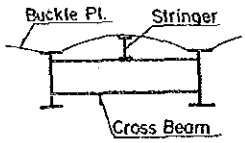
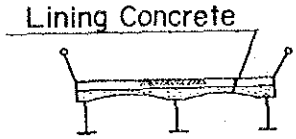
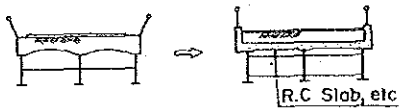
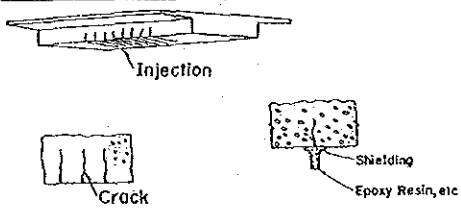
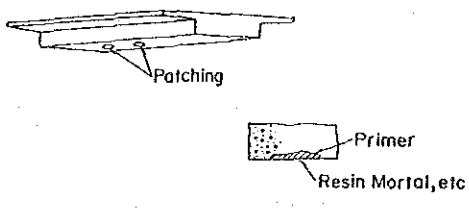
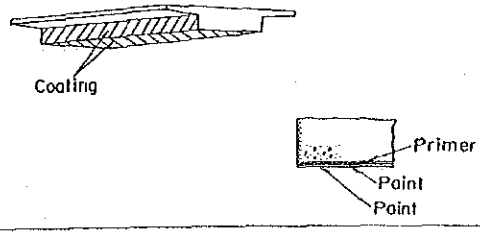
E-1

Photo E-1 : Pot holes formed on approach road surface adjacent to expansion joint at the abutment

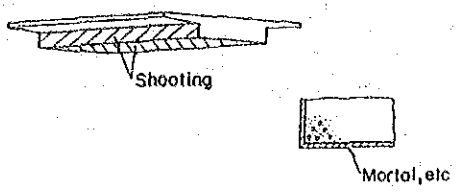
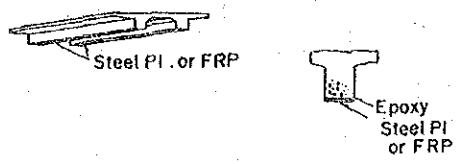
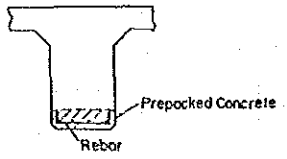
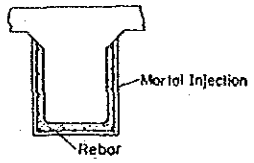
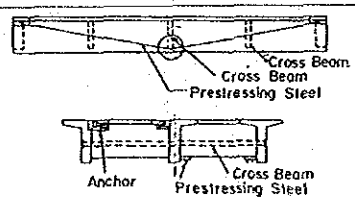
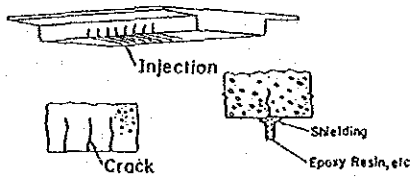
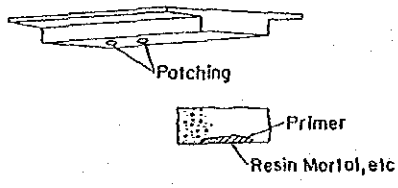
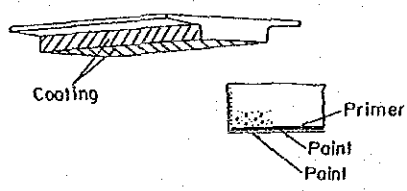
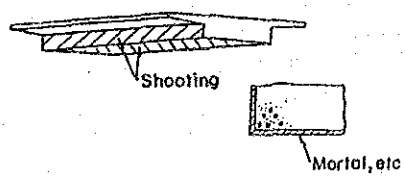
# *APPENDIX – H*

## *POSSIBLE REHABILITATION PLANS FROM STRUCTURAL AND FUNCTIONAL VIEW POINTS*

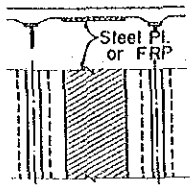
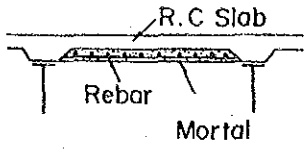
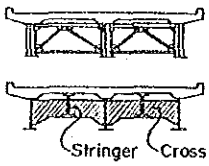
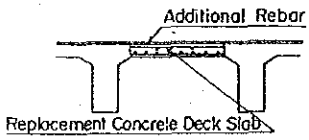
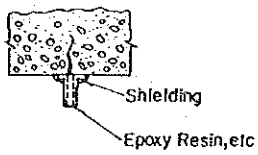
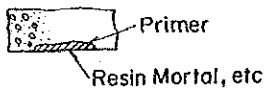
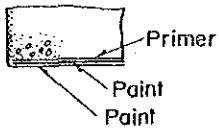
## APPENDIX–H POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT

| Main Bridge Component | Conceivable Rehabilitation Plan | Input Code | Possible Rehabilitation Method | Sketch | Input Code |
|---|---|---|---|---|---|
| Steel Beam | Protection/ Restoration | SBPR | – Repainting<br>– Reshaping | | SBPR |
| | Reinforcement | SBRF | – Welding additional steel plate |  | SBRF |
| | | | – Adding additional beam |  | |
| | Replacement | SBRP | – Partial Replacement<br>– Total Replacement | | SBRP |
| Steel Buckle Plate | Protection/ Restoration | DSPR | – Repainting<br>– Minor repair (Providing Weephole) | | DSPR |
| | Reinforcement | DSRF | – Adding stringer |  | DSRF |
| | | | – Lining by concrete |  | |
| | Replacement | DSRP | – Total replacement<br>– by R.C Slab<br>– by I.B Slab<br>– by Composite Slab<br>– by Steel Deck Slab |  | DSRP |
| Concrete Beam | Protection/ Restoration | CBPR | – Injection |  | CBPR |
| | | | – Patching |  | |
| | | | – Coating |  | |

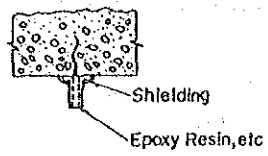
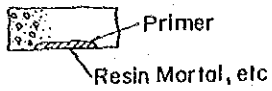
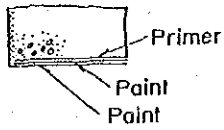
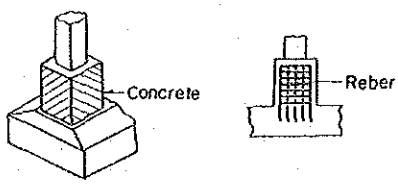
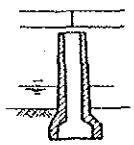
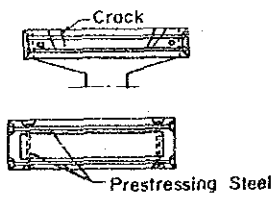
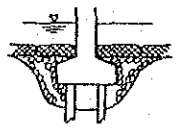
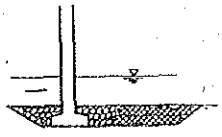
## APPENDIX–H POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT

| Main Bridge Component | Conceivable Rehabilitation Plan | Input Code | Possible Rehabilitation Method | Sketch | Input Code |
|---|---|---|---|---|---|
| | Protection / Restoration | CBPR | – Shooting |  | CBPR |
| | Reinforcement | CBRF | – Bonding steel plate, or FRP |  | CBRF |
| | | | – Lining |  | |
| | | | – Jacketing |  | |
| | | | – Prestressing |  | |
| | Replacement | CBRP | – Partial replacement<br>– Total replacement | | CBRP |
| Concrete Deck Slab | Protection/ Restoration | DCPR | – Injection |  | DCPR |
| | | | – Patching |  | |
| | | | – Coating |  | |
| | | | – Shooting |  | |

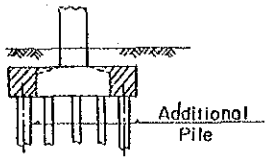
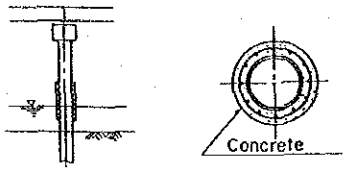
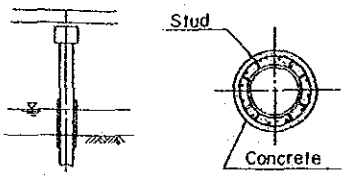
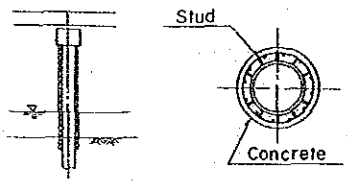
## APPENDIX-H POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT

| Main Bridge Component | Conceivable Rehabilitation Plan | Input Code | Possible Rehabilitation Plan | Sketch | Input Code |
|---|---|---|---|---|---|
| | Reinforcement | DCRF | - Bonding steel plate or FRP |  | DCRF |
| | | | - Shooting w/rebar |  | |
| | | | - Adding stringer |  | |
| | Replacement | DCRP | - Partial replacement<br>- Total replacement |  | DCRP |
| Bearing | Protection/ Restoration | BPR | - Repainting<br>- Resetting | | BPR |
| | Replacement | BRP | Total Replacement<br>by Rubber bearing<br>by Steel bearing | | BRP |
| Concrete Abutment<br><br>(body) | Protection | APR | - Injection |  | APR |
| | | | - Patching |  | |
| | | | - Coating |  | |

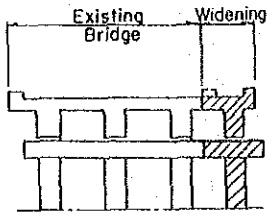
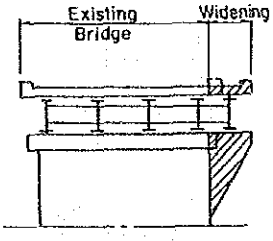
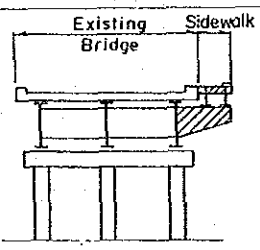
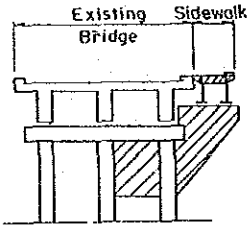
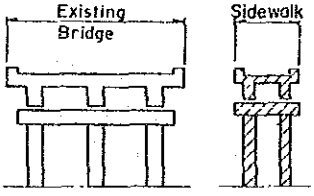
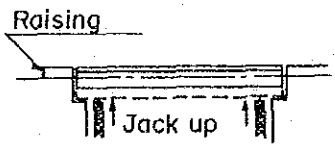
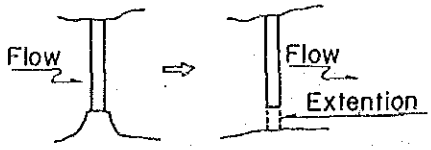
## APPENDIX-H POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT

| Main Bridge Component | Conceivable Rehabilitation Plan | Input Code | Possible Rehabilitation Method | Sketch | Input Code |
|---|---|---|---|---|---|
| Pier (body) | Protection | PPR | – Injection |   | PPR |
| | | | – Patching |   | |
| | | | – Coating |   | |
| | | | – Shooting |   | |
| | Reinforcement | PRF | – Surface Lining |   | PRF |
| | | | – Total Lining |  | |
| | | | – Prestressing |   | |
| (Foundation) | Protection | PFPR | – Scouring Protection |  | PFPR |
| | | | – River bed Protection |  | |

## APPENDIX-H POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT

| Main Bridge Component | Conceivable Rehabilitation Plan | Input Code | Possible Rehabilitation Method | Sketch | Input Code |
|---|---|---|---|---|---|
| | Reinforcement | PFRF | – Under pinning |  | PFRF |
| Steel Pier (body) | Protection | SPPR | – Partial Lining |  | SPPR |
| | | | – Repainting | | |
| | Reinforcemsnt | SPRF | – Surface Lining |  | SPRF |
| | | | – Total Lining |  | |

## APPENDIX-H Possible Rehabilitation Plans From Functional View Point

| Conceivable Rehabilitation Plan | Input Code | Possible Rehabilitation Plan | Sketch | Input Code |
|---|---|---|---|---|
| Widening | WIDENING | Widening of super & substructure |  | WIDENING |
| | | Widening of superstruc-ture w/cantilever support of substructure |  | |
| Adding sidewalk | ADDING | Connection of sidewalk with the existing super-structure by cantilever |  | ADDING |
| | | Adding sidewalk with cantilever support attached to substructure |  | |
| | | Individual structure. |  | |
| Raising of grade | RAISING | Raising supperstructure |  | RAISING |
| | | Extension of bridge |  | |

# *APPENDIX – I*

## *SELECTION OF 20 BRIDGES FOR DETAILED SURVEY*

## APPENDIX-I SELECTION OF 20 BRIDGES FOR DETAILED SURVEY

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | RATING OF PARTS | | | | | POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | POSSIBLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | ABUT | PIER | BEARING | BEAM | DECK | | | | |
| << Before 1945 >> | | | | | | | | | | | | | | | | | | | |
| --- R.C. BRIDGE --- | | | | | | | | | | | | | | | | | | | |
| ** BOX...R.C.Box Culvert | | | | | | | | | | | | | | | | | | | |
| 1 | 00108990 | JOHOR | KLUANG | 1937 | 3 | MTAL | 2.16 | 1 | 2.16 | BOX | 3 | – | – | – | 1 | APR | | | SA(6.28) |
| ** PRB...Precast R.C.Beam | | | | | | | | | | | | | | | | | | | |
| 2 | 00519550 | MELAKA | JASIN | 1940 | 3 | P/A | 4.95 | 1 | 4.95 | PRB | 4 | – | – | 1 | – | ARF | | | CA |
| ** RCB...R.C.Beam | | | | | | | | | | | | | | | | | | | |
| 3 | 00546580 | SELANGOR | K.SELANGOR | 1939 | 3 | P/A | 6.30 | 1 | 6.30 | RCB | 1 | – | – | 4 | 3 | CBRF,DCPR | RAISING GRADE | Selected | CB |
| 4 | 00701230 | KEDAH | K.MUDA/SIK | 1940 | 3 | P/A | 6.13 | 2 | 12.26 | RCB | 1 | 1 | – | 4 | 4 | CBRF,DCRF | | | SA |
| ** RCS...R.C.Slab | | | | | | | | | | | | | | | | | | | |
| 5 | 00303890 | JOHOR | K. TINGGI | 1940 | 3 | P/A | 4.58 | 2 | 9.16 | RCS | 4 | 1 | – | – | 1 | ARF | ADDING SIDE WALK | | SA(5.74) |
| 6 | 00838100 | KELANTAN | MACHANG | 1941 | 3 | P/A | 4.86 | 2 | 9.72 | RCS | 1 | 3 | – | – | 4 | DCRF,PPR | WIDENING & RAISING (REPLACEMENT) | | CB |
| No's of total bridges =6 | | | | | | | | | | | | | | | | | No's of bridges selected = 1 | | |
| --- STEEL BRIDGE --- | | | | | | | | | | | | | | | | | | | |
| ** SSB...Steel Beam Buckle Plate | | | | | | | | | | | | | | | | | | | |
| 7 | 05001070 | JOHOR | BATU PAHAT | 1919 | 2 | SSAL | 4.77 | 1 | 4.77 | SSB | 3 | – | – | 4 | 1 | SBPR,APR | | Selected | |
| 8 | 06404940 | PAHANG | JERANTUT | 1930 | 3 | STAL | 6.21 | 1 | 6.21 | SSB | 2 | – | – | 3 | 3 | SBPR,DSPR | | | |
| 9 | 06403900 | PAHANG | JERANTUT | 1930 | 3 | SSAL | 11.91 | 1 | 11.91 | SSB | 4 | – | – | 4 | 1 | SBRF,APR | | | |
| 10 | 06404270 | PAHANG | JERANTUT | 1930 | 3 | STAL | 10.91 | 1 | 10.91 | SSB | 4 | – | – | 4 | 3 | SBRF,DSPR,APR | | | |
| 11 | 05200280 | NS | SEREMBAN | 1932 | 3 | STAL | 4.66 | 1 | 4.66 | SSB | 1 | – | – | 3 | 1 | CBPR | | | |
| 12 | 05302340 | NS | SEREMBAN | 1940 | 3 | SSAL | 6.70 | 1 | 6.70 | SSB | 3 | – | – | 4 | 1 | SBPR,APR | | | |
| 13 | 05002590 | JOHOR | BATU PAHAT | 1940 | 2 | SSAL | 4.75 | 1 | 4.75 | SSB | 3 | – | – | 4 | 3 | SBPR,DSPR,APR | | | |
| 14 | 00186210 | KEDAH | KOTA SETAR | 1940 | 3 | SSAL | 3.23 | 1 | 3.23 | SSB | 1 | – | – | 4 | 3 | SBRF,DSPR | | | |
| ** SBC...Steel Beam R.C.Slab | | | | | | | | | | | | | | | | | | | |
| 15 | 00304390 | JOHOR | K. TINGGI | 1928 | 3 | STAL | 3.35 | 1 | 3.35 | SBC | 3 | – | – | 4 | 1 | SBRF,APR,SFPR | RAISING GRADE | | |
| ** SBE...Encased Steel Beam | | | | | | | | | | | | | | | | | | | |
| 16 | 06000970 | PERAK | MANJUNG | 1930 | 3 | P/A | 3.14 | 1 | 3.14 | SBE | 4 | – | – | 4 | – | CBRF,ARF | | | EA |
| 17 | 00303220 | JOHOR | K. TINGGI | 1940 | 3 | P/A | 4.84 | 1 | 4.84 | SBE | 3 | – | – | 4 | 1 | CBRF,APR | | | SA(7.27) |
| ** SBG...Steel Box Girder | | | | | | | | | | | | | | | | | | | |
| 18 | 00186510 | PERAK | LRT MATANG | 1935 | 3 | STAL | 10.72 | 1 | 10.72 | SBG | 3 | – | – | 4 | 4 | SBRF,DCRF,CBRF,APR | | Selected JKR | |
| No's of total bridges =12 | | | | | | | | | | | | | | | | | No's of bridges selected = 2 | | |
| << 1946 TO 1974 >> | | | | | | | | | | | | | | | | | | | |
| --- P.C. BRIDGE --- | | | | | | | | | | | | | | | | | | | |
| ** IT...Inverted Tee Beam | | | | | | | | | | | | | | | | | | | |
| 19 | 00507810 | JOHOR | PONTIAN | 1968 | 3 | STAL | 12.09 | 5 | 47.83 | IT | 1 | 4 | – | 3 | – | PRF,CBPR | | | CA |
| 20 | 00306710 | JOHOR | K. TINGGI | 1969 | 3 | STAL | 18.90 | 7 | 51.96 | IT | 1 | 1 | 1 | 3 | 1 | CBPR | | | |
| 21 | 00563850 | PERAK | MANJUNG | 1972 | 3 | STAL | 14.07 | 3 | 41.59 | IT | 2 | 4 | – | 1 | – | PRF | | Selected | CA |
| 22 | 00306390 | JOHOR | K. TINGGI | 1974 | 3 | STAL | 16.57 | 5 | 64.57 | IT | 1 | 1 | – | 4 | 1 | CBPR | | | |

## APPENDIX–I SELECTION OF 20 BRIDGES FOR DETAILED SURVEY

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | RATING OF PARTS ABUT | PIER | BEARING | BEAM | DECK | POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | POSSIBLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ** PCB...P.C.Beam | | | | | | | | | | | | | | | | | | | |
| 23 | 05905010 | PAHANG | LIPIS | 1961 | 3 | STAL | 30.74 | 4 | 122.36 | PCB | 1 | 1 | 3 | 3 | 1 | CBPR,BPR | | | |
| 24 | 00319110 | PAHANG | ROMPIN | 1962 | 3 | SSAL | 30.46 | 7 | 121.96 | PCB | 4 | 4 | 1 | 4 | 1 | APR,PPR,CBPR | | Selected JKR | CA,AR |
| 25 | 00339210 | TRENGGANU | KEMAMAN | 1963 | 3 | STAL | 15.22 | 10 | 152.20 | PCB | 4 | 4 | – | 4 | 1 | CBRF,APPR,ARF,PRF | | JKR | |
| 26 | 00338580 | TRENGGANU | KEMAMAN | 1965 | 3 | STAL | 25.00 | 16 | 219.13 | PCB | 5 | 5 | 5 | 1 | 1 | BPR,AFRF,PPR | | | |
| 27 | 00507230 | JOHOR | PONTIAN | 1966 | 3 | STAL | 11.77 | 3 | 35.21 | PCB | 4 | 4 | 4 | 1 | 1 | BPR,PRF,ARF | | | CA |
| 28 | 06701690 | KEDAH | K.MUDA/SIK | 1966 | 3 | STAL | 30.64 | 3 | 91.52 | PCB | 3 | 1 | 4 | 1 | 4 | DCPR,BSPR | | | |
| 29 | 00701810 | KEDAH | KBG. PASU | 1970 | 3 | STAL | 30.52 | 3 | 46.60 | PCB | 4 | 3 | 4 | 1 | 1 | BRP,APR,PPR | | JKR | SA |
| 30 | 00346740 | TRENGGANU | DUNGUN | 1973 | 3 | STAL | 30.50 | 9 | 152.26 | PCB | 3 | 1 | 1 | 4 | 1 | CBRF,APR | RAISING | Selected | |
| 31 | 00317000 | PAHANG | ROMPIN | 1974 | 3 | MTAL | 45.78 | 9 | 397.32 | PCB | 1 | 1 | – | 4 | 4 | CBRF,DCRF | | Selected JKR | CA |
| No's of total bridges =13 | | | | | | | | | | | | | | | | | No's of bridges selected = 4 | | |
| --- R.C. BRIDGE --- | | | | | | | | | | | | | | | | | | | |
| ** BOX...R.C.Box Culvert | | | | | | | | | | | | | | | | | | | |
| 32 | 00228970 | PAHANG | MARAN | 1965 | 3 | STAL | 3.03 | 1 | 3.03 | BOX | 3 | – | – | – | 3 | DCPR,APR | | | SA(6.0) |
| ** PRB...Precast R.C.Beam | | | | | | | | | | | | | | | | | | | |
| 33 | 00356560 | KELANTAN | P.PUTEH | 1952 | 3 | STAL | 5.41 | 6 | 32.46 | PRB | 4 | 4 | – | 4 | – | CBRF,PRF,PPPR,AFPR | ADDING & RAISING (REPLACEMENT) | | |
| 34 | 00356790 | TRENGGANU | K.T. | 1959 | 3 | STAL | 5.90 | 9 | 53.10 | PRB | 2 | 1 | – | 4 | – | CBPR | | | |
| 35 | 00567840 | PERAK | KINTA | 1960 | 3 | STAL | 6.06 | 2 | 12.12 | PRB | 3 | 1 | – | 4 | – | CBPR,APR | WIDENING | Selected | CB |
| 36 | 00361490 | TRENGGANU | BESUT | 1960 | 3 | STAL | 6.01 | 3 | 18.03 | PRB | 1 | 4 | – | 1 | – | PRF | ADDING SIDE WALK | | |
| 37 | 00523620 | MELAKA | MELAKA TGH | 1960 | 3 | STAL | 7.11 | 2 | 14.22 | PRB | 1 | 4 | – | 4 | – | CBPR,PPR | | | CA |
| 38 | 00314180 | JOHOR | MERSING | 1964 | 3 | STAL | 5.50 | 2 | 11.00 | PRB | 3 | 1 | – | 1 | 1 | APPR | | | |
| 39 | 00326950 | PAHANG | PEKAN | 1965 | 3 | STAL | 5.88 | 4 | 23.52 | PRB | 4 | 4 | – | 4 | 1 | CBPR,PRF,ARF | | | CA |
| 40 | 01105770 | NS | JEMPUL | 1970 | 3 | STAL | 6.16 | 3 | 18.32 | PRB | 4 | 1 | – | 4 | – | CBPR,APR,BSPR | | JKR | |
| ** RCB...R.C.Beam | | | | | | | | | | | | | | | | | | | |
| 41 | 00521300 | MELAKA | MELAKA TGH | 1950 | 3 | STAL | 6.90 | 1 | 6.90 | RCB | 3 | – | – | 4 | 4 | CBPR,DCRF,APR | ADDING SIDE WALK | | CA,SA |
| 42 | 00105100 | JOHOR | KLUANG | 1954 | 3 | STAL | 15.90 | 3 | 27.40 | RCB | 4 | 4 | 1 | 4 | 1 | CBPR,PPPR | | | SA(7.04) |
| 43 | 00113760 | JOHOR | SEGAMAT | 1955 | 3 | STAL | 6.83 | 3 | 20.34 | RCB | 1 | 1 | – | 3 | 3 | CBPR,DCPR | | | SA(6.7) |
| 44 | 00114920 | JOHOR | SEGAMAT | 1955 | 3 | STAL | 6.43 | 2 | 12.86 | RCB | 1 | 3 | – | 3 | 1 | PPR,CBPR | | Selected JKR | |
| 45 | 00341800 | TRENGGANU | KEMAMAN | 1955 | 3 | STAL | 12.10 | 3 | 36.14 | RCB | 4 | 4 | 4 | 4 | 1 | CBRF,BPR,ARF,PRF | | Selected | |
| 46 | 00514860 | JOHOR | MUAR | 1955 | 3 | STAL | 5.97 | 9 | 46.03 | RCB | 1 | 4 | – | 4 | 1 | CBRF,PRF | | | CA,SA |
| 47 | 00524570 | SELANGOR | SEPANG | 1960 | 3 | STAL | 5.95 | 6 | 32.54 | RCB | 4 | 4 | – | 1 | 1 | ARF,PPR | | JKR | CA |
| 48 | 00540730 | SELANGOR | K. LANGAT | 1960 | 3 | STAL | 7.30 | 3 | 11.94 | RCB | – | – | – | – | – | this bridge has been repaired | | | CB |
| 49 | 00151360 | PERAK | BTG PADANG | 1960 | 3 | STAL | 9.08 | 7 | 63.56 | RCB | 1 | 1 | 1 | 3 | 1 | CBPR | | | |
| 50 | 00510560 | JOHOR | BATU PAHAT | 1960 | 3 | STAL | 10.42 | 3 | 31.24 | RCB | 3 | 4 | 4 | 1 | 1 | BPR,PPR,APR | | | |
| 51 | 00521710 | MELAKA | MELAKA TGH | 1960 | 3 | STAL | 10.72 | 1 | 10.72 | RCB | 4 | – | – | 4 | 1 | CBRF,ARF,PRF | ADDING SIDE WALK | | CA |
| 52 | 00521960 | MELAKA | MELAKA TGH | 1960 | 3 | STAL | 7.13 | 2 | 14.26 | RCB | 3 | 4 | – | 4 | 1 | CBRF,APR,PRF | | | CA,SA |
| 53 | 00329070 | PAHANG | PEKAN | 1965 | 3 | STAL | 10.42 | 3 | 31.26 | RCB | 4 | 4 | 1 | 1 | 1 | APR,AFPR,PRF | | | CA |
| 54 | 00516890 | JOHOR | MUAR | 1966 | 3 | STAL | 6.03 | 3 | 17.82 | RCB | 1 | 4 | 4 | 4 | 1 | CBPR,BPR,PPR | | JKR | CA |
| ** RCS...R.C.Slab | | | | | | | | | | | | | | | | | | | |
| 55 | 05403460 | SELANGOR | PETALING | 1950 | 3 | STAL | 6.56 | 1 | 6.56 | RCS | 3 | – | – | – | 1 | APR | | JKR | |
| 56 | 02305970 | JOHOR | SEGAMAT | 1950 | 4 | SSAL | 5.68 | 2 | 7.60 | RCS | 4 | 1 | – | – | 3 | ARF,DCPR | RAISING GRADE | | |
| 57 | 00519360 | MELAKA | JASIN | 1955 | 3 | STAL | 6.22 | 7 | 42.70 | RCS | 1 | 4 | – | – | 2 | PRF | | JKR | CA,SA |
| 58 | 00337240 | PAHANG | KUANTAN | 1957 | 3 | STAL | 6.58 | 1 | 6.58 | RCS | 4 | – | – | – | 1 | ARF | | | |
| 59 | 00334850 | KELANTAN | KUALA KRAI | 1960 | 3 | STAL | 4.63 | 3 | 13.71 | RCS | 1 | 4 | – | – | 4 | DCRF,PPR | | Selected JKR | |
| 60 | 00313520 | JOHOR | MERSING | 1960 | 3 | STAL | 1.80 | 2 | 3.60 | RCS | 3 | 3 | – | – | 4 | DCRF,APR,PPR | ADDING SIDE WALK | | |
| 61 | 01500060 | PERAK | MANJUNG | 1960 | 3 | STAL | 3.68 | 1 | 3.68 | RCS | 1 | – | – | – | 4 | DCRF | ADDING & WIDENING | | CB |
| 62 | 00304060 | JOHOR | K. TINGGI | 1963 | 3 | STAL | 38.65 | 5 | 92.25 | RCS | 1 | 1 | – | – | 3 | DCPR | | JKR | |
| 63 | 00548980 | SELANGOR | K.SELANGOR | 1969 | 3 | STAL | 10.64 | 3 | 30.94 | RCS | 4 | 4 | – | – | 4 | DCRF,ARF,AFRF,PPR | | Selected JKR | CA |
| No's of total bridges =32 | | | | | | | | | | | | | | | | | No's of bridges selected = 5 | | |

## APPENDIX–I SELECTION OF 20 BRIDGES FOR DETAILED SURVEY

| NO. | KEY | STATE | DISTRICT | YEAR BUILT | STUDY CATEGORY | CAPACITY | MAX. SPAN (M) | NO. OF SPAN | BRIDGE LENGTH (M) | TYPE OF BRIDGE | RATING OF PARTS | | | | | POSSIBLE REHABILITATION PLANS FROM STRUCTURAL VIEW POINT | POSSIBLE REHABILITATION PLANS FROM FUNCTIONAL VIEW POINT | FINAL SELECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | ABUT | PIER | BEARING | BEAM | DECK | | | | |
| --- STEEL BRIDGE --- | | | | | | | | | | | | | | | | | | | |
| ** SBB...Steel Beam Buckle Plate | | | | | | | | | | | | | | | | | | | |
| 64 | 00159100 | PERAK | KINTA | 1948 | 3 | SSAL | 11.50 | 3 | 31.30 | SBB | 4 | 3 | – | 4 | 4 | SBRF,DSRF,APR,PPR | ADDING SIDE WALK | | |
| 65 | 07000230 | PERAK | HLR PERAK | 1950 | 3 | STAL | 5.88 | 1 | 5.88 | SBB | 3 | – | – | 4 | 1 | SBRF,APR | | | SA |
| 66 | 00800350 | PAHANG | BENTONG | 1950 | 3 | SSAL | 3.47 | 1 | 3.47 | SBB | 1 | – | – | 4 | 4 | SBPR,DSPR | | | |
| 67 | 00706230 | PERLIS | PERLIS | 1950 | 2 | SSAL | 6.53 | 1 | 6.63 | SBB | 1 | – | – | 2 | 2 | NON | | | |
| 68 | 06006050 | PERAK | L&M&SELAMA | 1950 | – | SSAL | 5.08 | 1 | 5.08 | SBB | 1 | – | – | 4 | 4 | SBRF,DSRF | | | |
| 69 | 02305040 | JOHOR | SEGAMAT | 1950 | 3 | STAL | 6.29 | 2 | 12.28 | SBB | 1 | 1 | – | 4 | 4 | SBRF,DSPR | | | |
| 70 | 05301190 | NS | PD | 1950 | 3 | SSAL | 4.84 | 1 | 4.84 | SBB | 4 | – | – | 4 | 4 | SBPR,DSPR,APR | | | |
| 71 | 05001890 | JOHOR | BATU PAHAT | 1950 | 3 | SSAL | 5.05 | 1 | 5.05 | SBB | 1 | – | – | 3 | 1 | SBPR | | | |
| 72 | 00541210 | SELANGOR | K. LANGAT | 1950 | 2 | SSAL | 4.73 | 1 | 4.73 | SBB | 4 | – | – | 4 | 3 | SBPR,DSPR,APR | | | |
| 73 | 07604750 | PERAK | HULU PERAK | 1950 | 3 | STAL | 9.34 | 1 | 9.34 | SBB | 4 | – | – | 4 | 3 | SBPR,DSPR,AFPR | | | |
| 74 | 00540910 | SELANGOR | K. LANGAT | 1950 | 2 | SSAL | 6.29 | 1 | 6.29 | SBB | 3 | – | – | 1 | 1 | APR | | | SA |
| 75 | 00803050 | PAHANG | RAUB | 1950 | 4 | SSAL | 9.04 | 2 | 18.08 | SBB | 4 | 4 | – | 4 | 3 | SBRF,DSPR,AFPR,PFPR | | | |
| 76 | 07602480 | PERAK | K. KANGSAR | 1950 | 4 | SSAL | 5.34 | 1 | 5.34 | SBB | 4 | – | – | 4 | 4 | SBRF,DSPR,AFPR | | | |
| 77 | 05801620 | PERAK | HLR PERAK | 1950 | 2 | SSAL | 3.67 | 1 | 3.67 | SBB | 2 | – | – | 3 | 1 | SBPR,APR | | | SA |
| 78 | 05100840 | NS | SEREMBAN | 1950 | 3 | SSAL | 9.41 | 1 | 9.41 | SBB | 3 | – | – | 1 | 1 | APR | | | |
| 79 | 05803340 | PERAK | BTG PADANG | 1950 | 3 | STAL | 4.97 | 1 | 4.97 | SBB | 1 | – | – | 4 | 4 | SBRF,DSRF | | Selected JKR | SA |
| 80 | 07604020 | PERAK | HULU PERAK | 1950 | 3 | SSAL | 6.35 | 1 | 6.35 | SBB | 3 | – | – | 4 | 3 | SBRF,DSPR,APR | | | SA |
| 81 | 07606390 | PERAK | HULU PERAK | 1950 | 3 | STAL | 3.07 | 1 | 3.07 | SBB | 4 | – | – | 4 | 3 | SBRF,DSPR,AFRF | | | |
| 82 | 07602330 | PERAK | K. KANGSAR | 1950 | 2 | SSAL | 6.35 | 1 | 6.35 | SBB | 1 | – | – | 4 | 3 | SBRF,DSPR | | | |
| 83 | 05300960 | NS | PD | 1950 | 3 | SSAL | 6.27 | 1 | 6.27 | SBB | 4 | – | – | 3 | 3 | SBPR,DSPR,DCPR,APR | RAISING GRADE | | |
| 84 | 00161140 | PERAK | KINTA | 1950 | 3 | STAL | 9.77 | 2 | 19.11 | SBB | 4 | 3 | – | 4 | 3 | SBRF,DSPR,AFPR,PPR | ADDING SIDE WALK | Selected JKR | |
| 85 | 07002480 | PERAK | BTG PADANG | 1950 | 3 | SSAL | 3.88 | 1 | 3.88 | SBB | 4 | – | – | 4 | 4 | SBRF,DSRF,ARF | | | SA |
| 86 | 00541000 | SELANGOR | K. LANGAT | 1950 | 3 | STAL | 3.24 | 1 | 3.24 | SBB | 4 | – | – | 3 | 3 | SBPR,DSPR,APR | | | |
| 87 | 05302160 | NS | SEREMBAN | 1950 | 3 | SSAL | 6.31 | 1 | 6.31 | SBB | 3 | – | – | 3 | 1 | SBPR,APR | | | |
| ** SBC...Steel Beam R.C.Slab | | | | | | | | | | | | | | | | | | | |
| 88 | 05903120 | PERAK | BTG PADANG | 1960 | 3 | STAL | 10.88 | 3 | 23.18 | SBC | 4 | 1 | – | 4 | 4 | SBPR,DCRF,APR | | Selected JKR | |
| 89 | 06005070 | PERAK | L&M&SELAMA | 1950 | 3 | STAL | 7.20 | 4 | 27.14 | SBC | 4 | 1 | – | 4 | 4 | SBRF,DCRF,APR | | | SA |
| 90 | 01800670 | PERAK | MANJUNG | 1960 | 3 | STAL | 4.78 | 1 | 4.78 | SBC | 1 | – | – | 4 | 4 | SBRF,DCRF | WIDENING | | CA,C8 |
| 91 | 00237200 | PAHANG | KUANTAN | 1960 | 3 | STAL | 8.90 | 3 | 26.70 | SBC | 4 | 4 | – | 4 | 1 | SBPR,AFPR,PRF | | Selected | CA |
| 92 | 05204870 | SELANGOR | U.LANGAT | 1984 | 3 | STAL | 18.24 | 3 | 54.50 | SBC | 1 | 1 | 4 | 3 | 1 | SBPR,BPR | | | |
| 93 | 00549550 | SELANGOR | K.SELANGOR | 1965 | 3 | STAL | 12.61 | 6 | 63.56 | SBC | 1 | 4 | 4 | 1 | 1 | BPR,PPR | | JKR | CA |
| ** SBE...Encased Steel Beam | | | | | | | | | | | | | | | | | | | |
| 94 | 00313150 | JOHOR | MERSING | 1950 | 3 | STAL | 4.40 | 1 | 4.40 | SBE | 3 | – | – | 1 | 1 | APR | ADDING SIDE WALK | | |
| 95 | 00520650 | MELAKA | JASIN | 1950 | 3 | STAL | 4.27 | 1 | 4.27 | SBE | 4 | – | – | 4 | 4 | CBRF,DCRF,ARF | | Selected | SA |
| No's of total bridges =32 | | | | | | | | | | | | | | | | | No's of bridges selected = 5 | | |
| Grand Total 95 Bridges | | | | | | | | | | | | | | | | | Grand Total 17 Bridges | | |

# *APPENDIX – J*

## *BACKUP DATA OF SUBSOIL INVESTIGATION*

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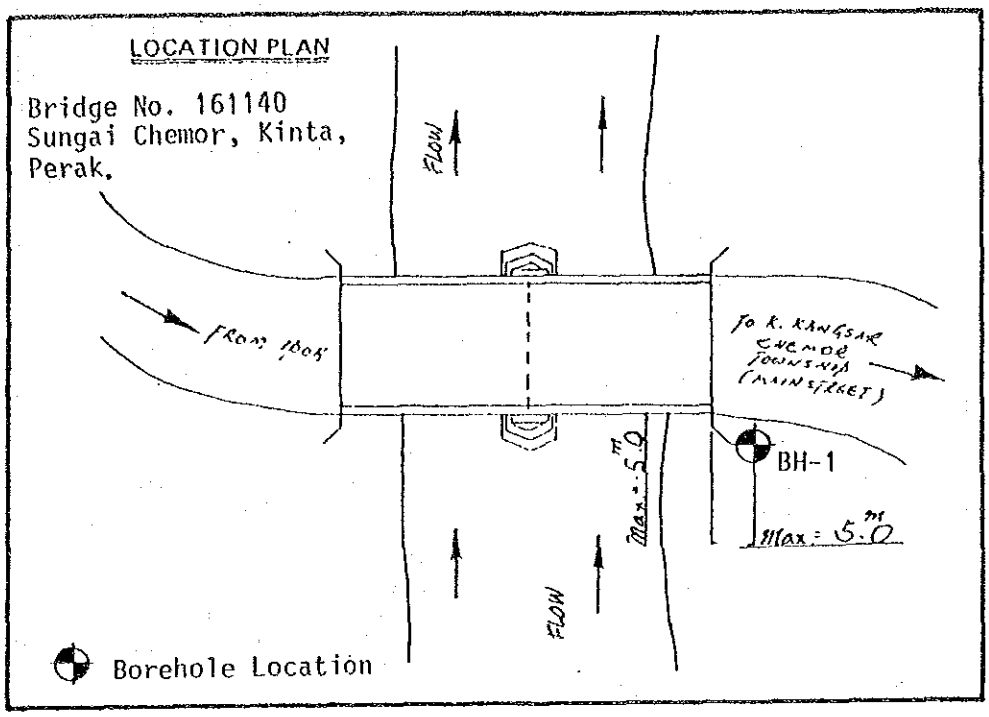
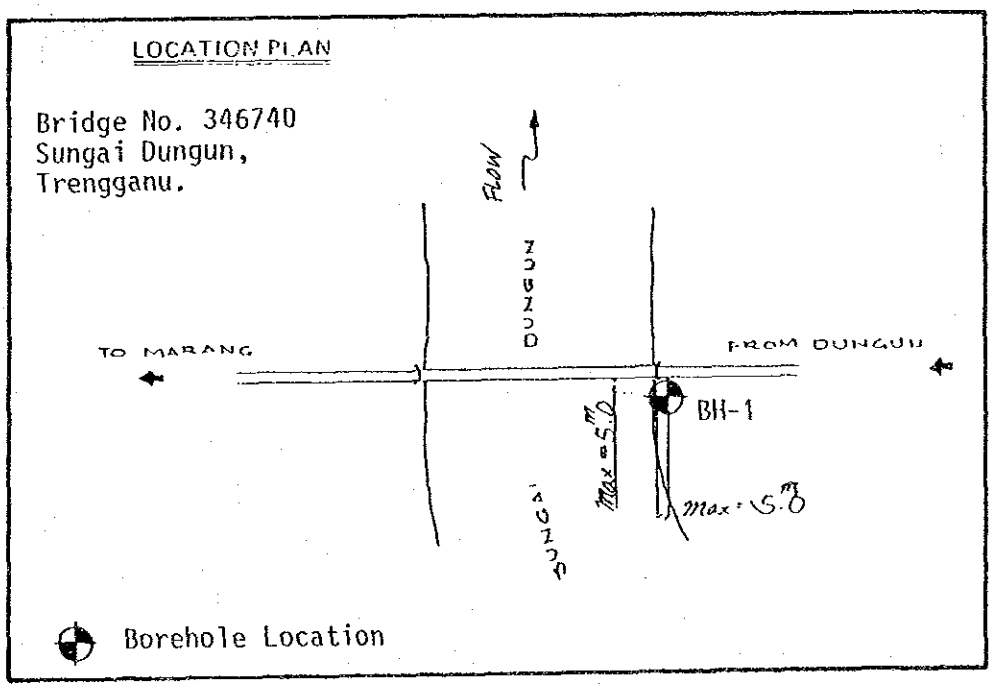
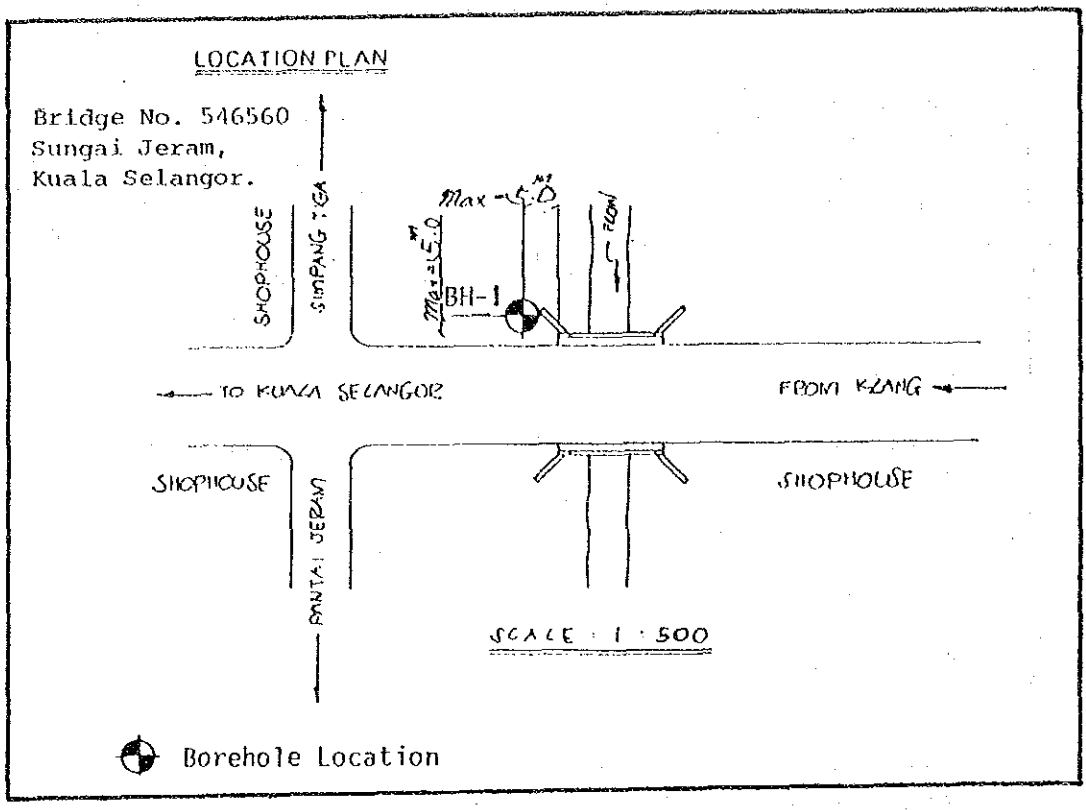


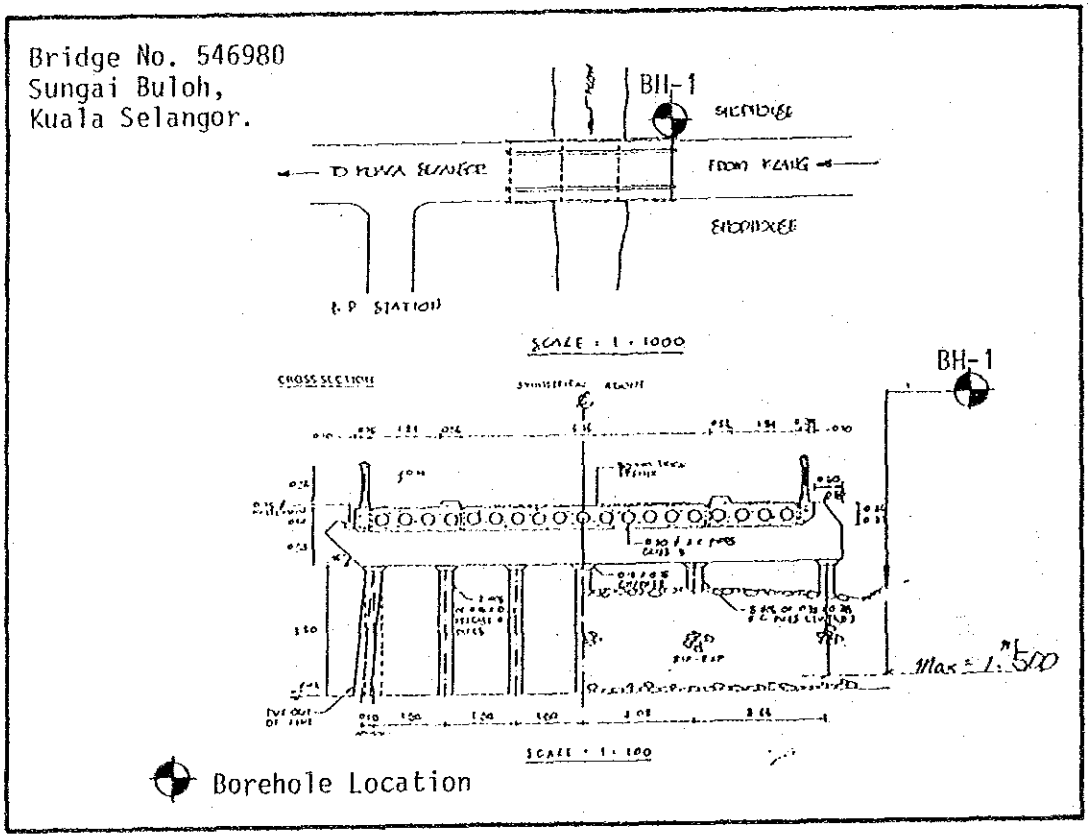

**Borehole location at Bridge No. 00161140, Perak.**




**Borehole location at Bridge No. 00346740, Terengganu.**




**Borehole location at Bridge No. 00546560, Selangor**

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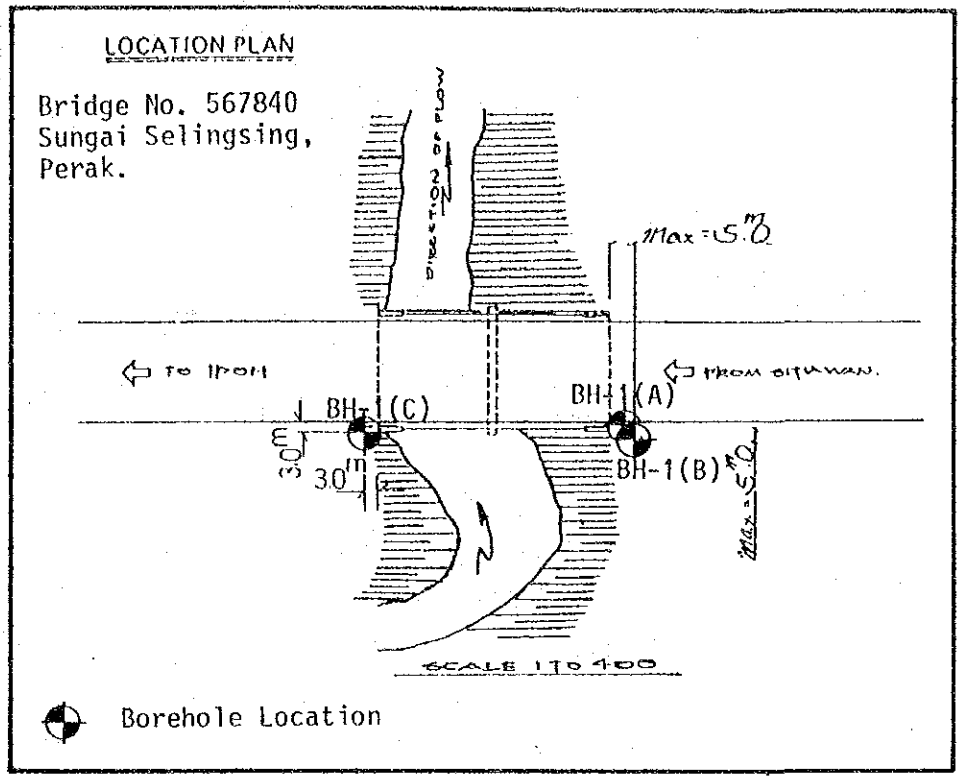
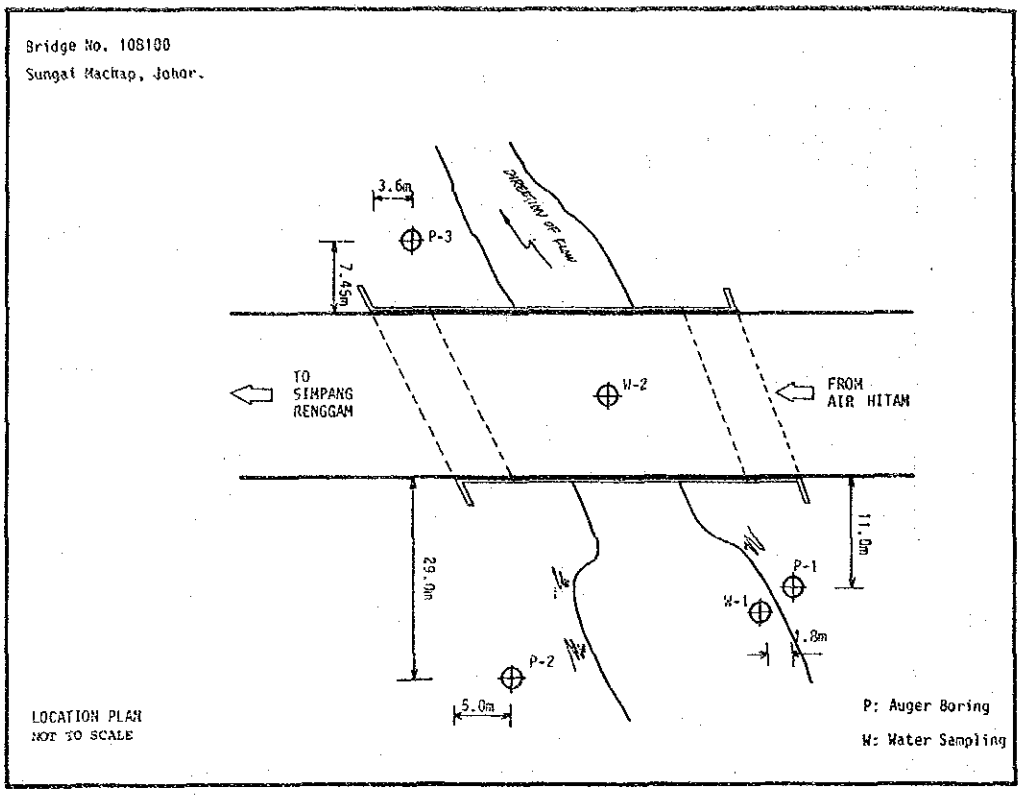
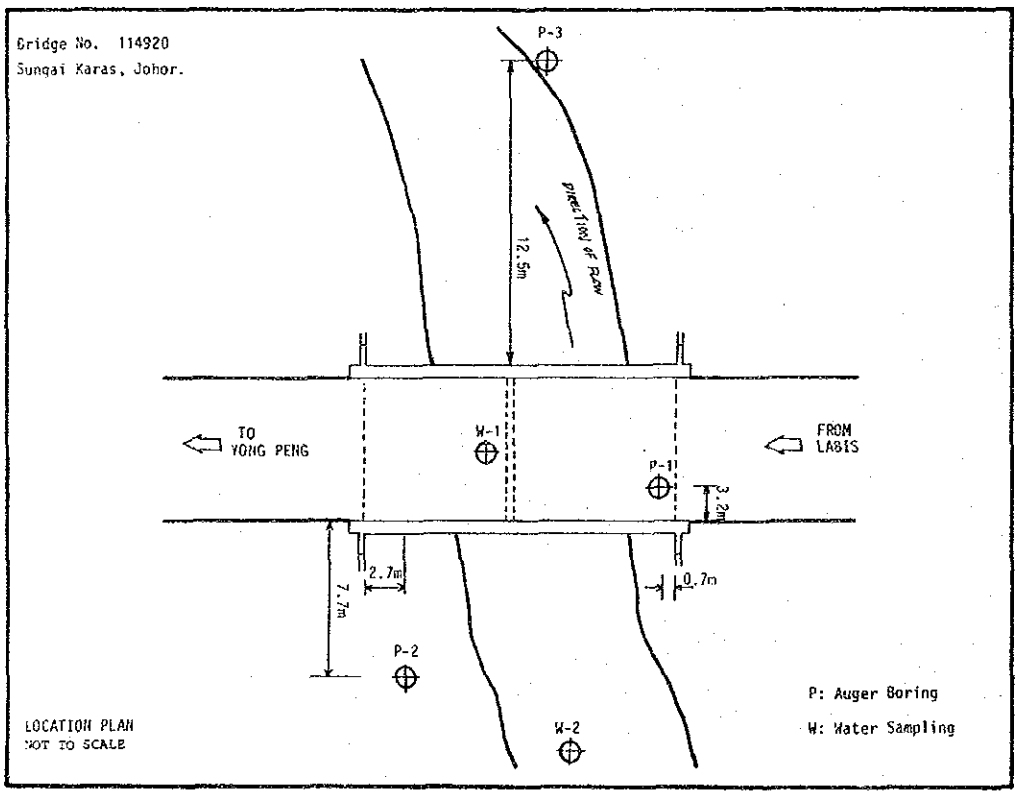


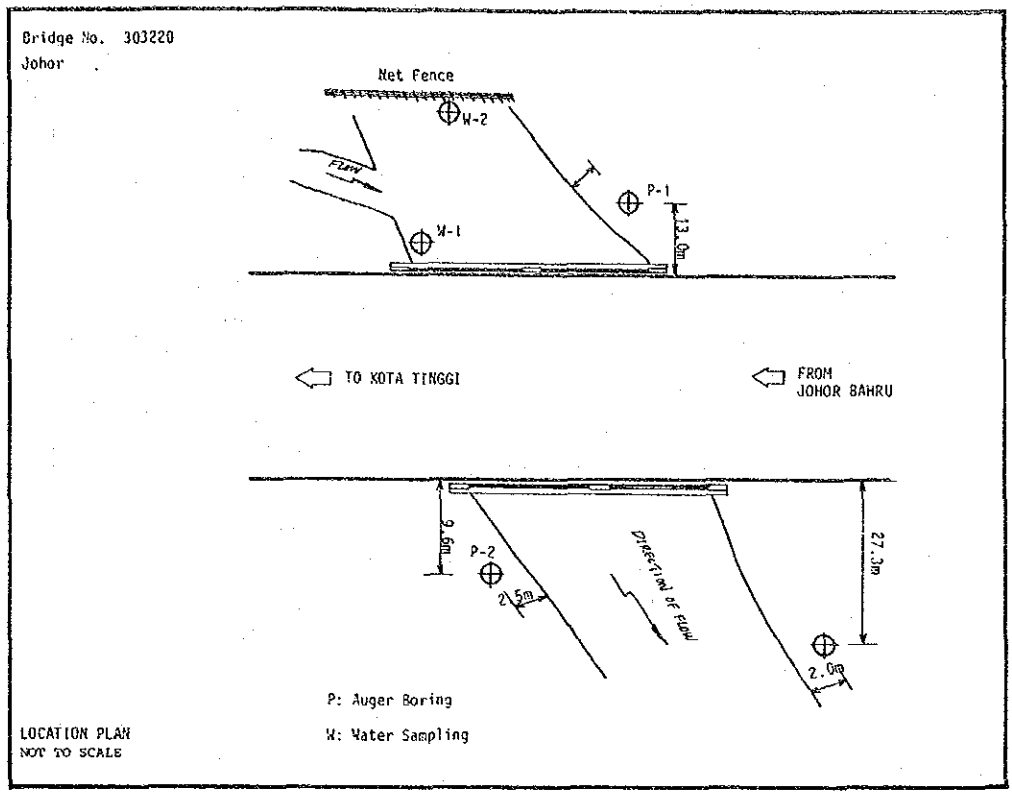

**Borehole location at Bridge No. 00567840, Perak**



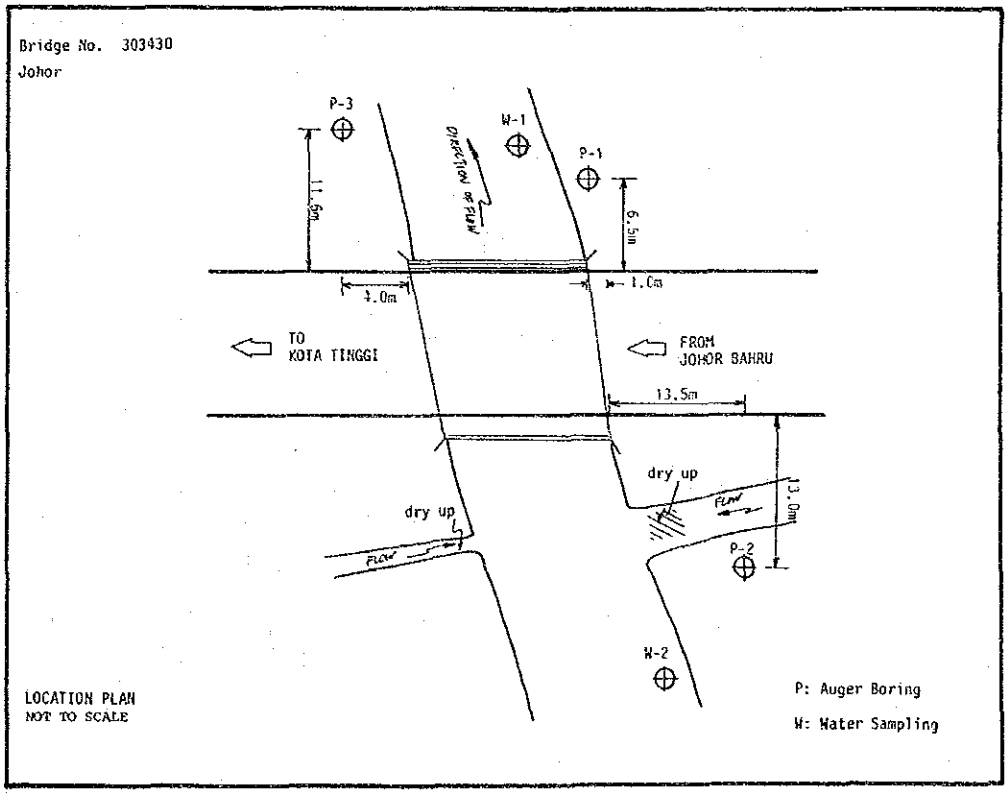

**Locations of Hand Augers and collected river water samples at Bridge No. 00108100, Johor**



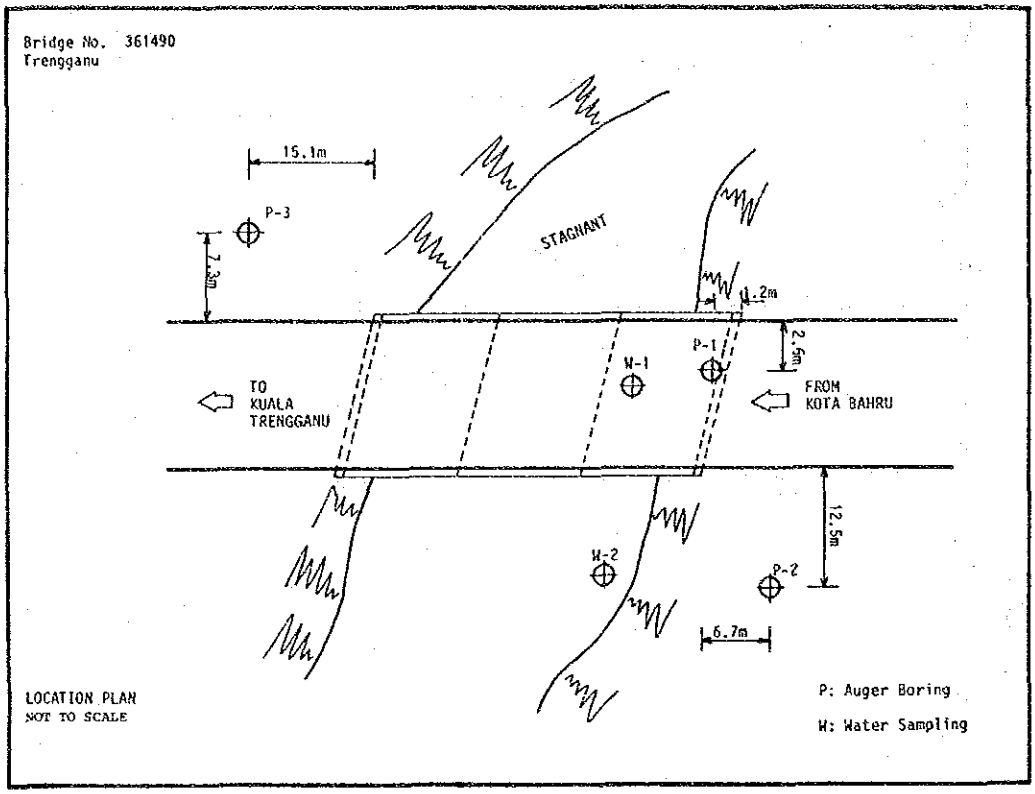

**Locations of Hand Augers and collected river water samples at Bridge No. 00114920, Johor**



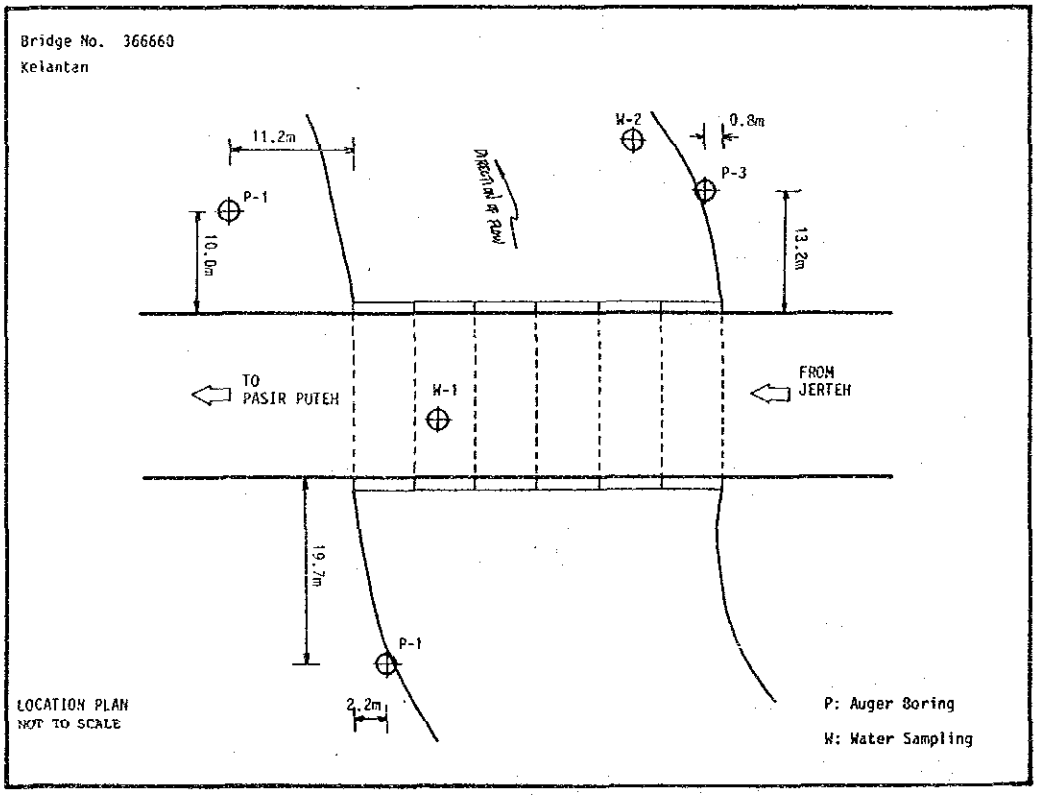

**Locations of Hand Augers and collected river water samples at Bridge No. 00303220, Johor**



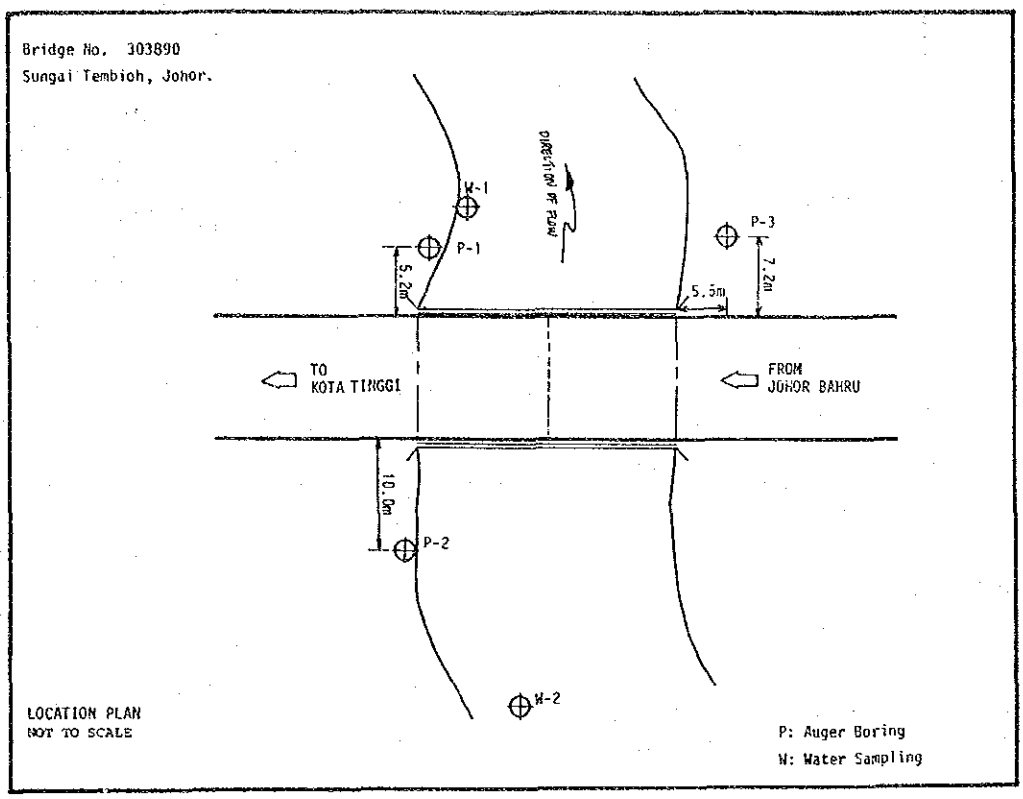

**Locations of Hand Augers and collected river water samples at Bridge No. 00303430, Johor**



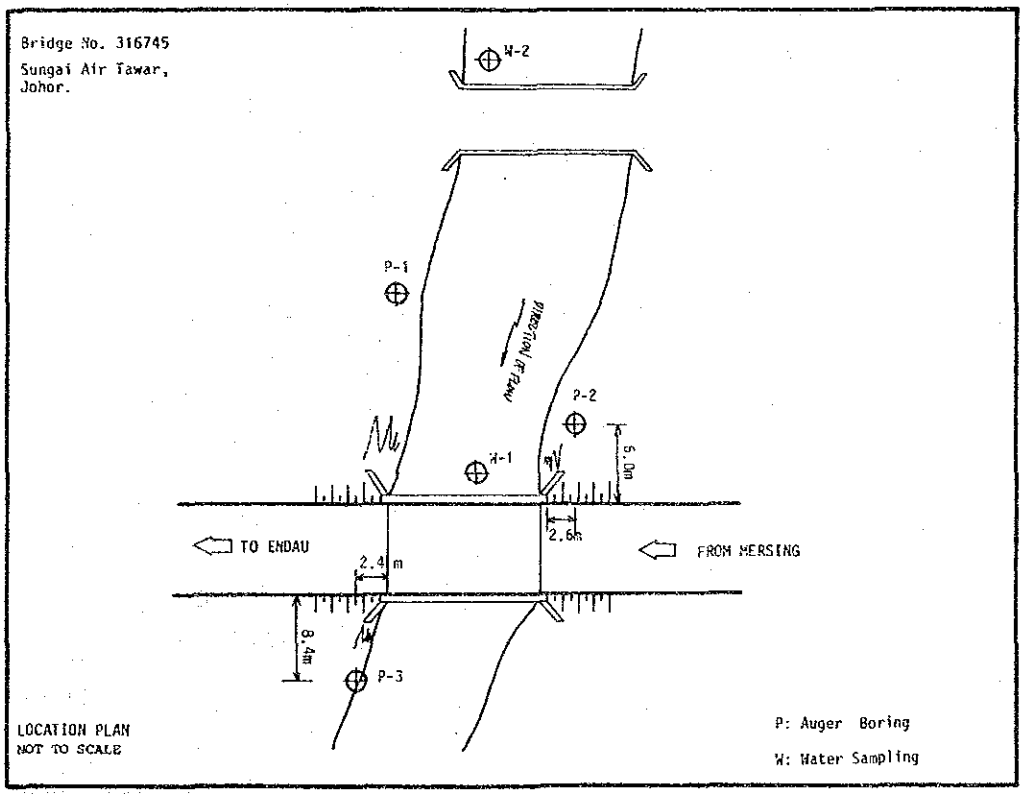

**Locations of Hand Augers and collected river water samples at Bridge No. 00361490, Terengganu**



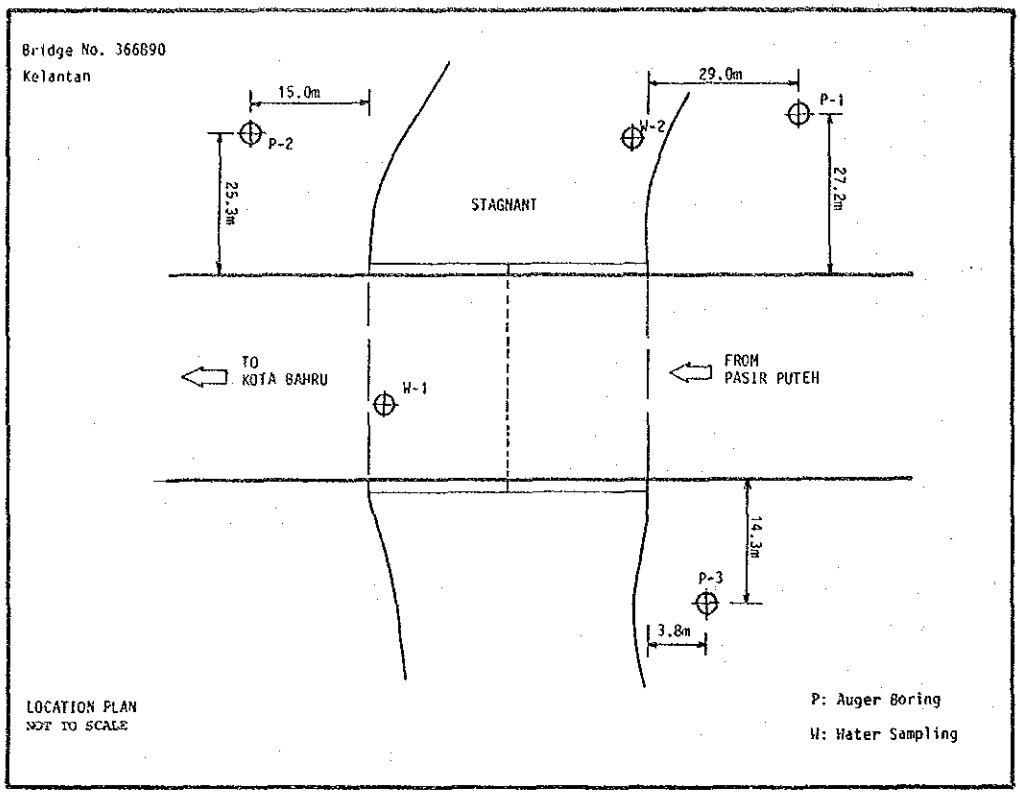

**Locations of Hand Augers and collected river water samples at Bridge No. 00366660, Kelantan**



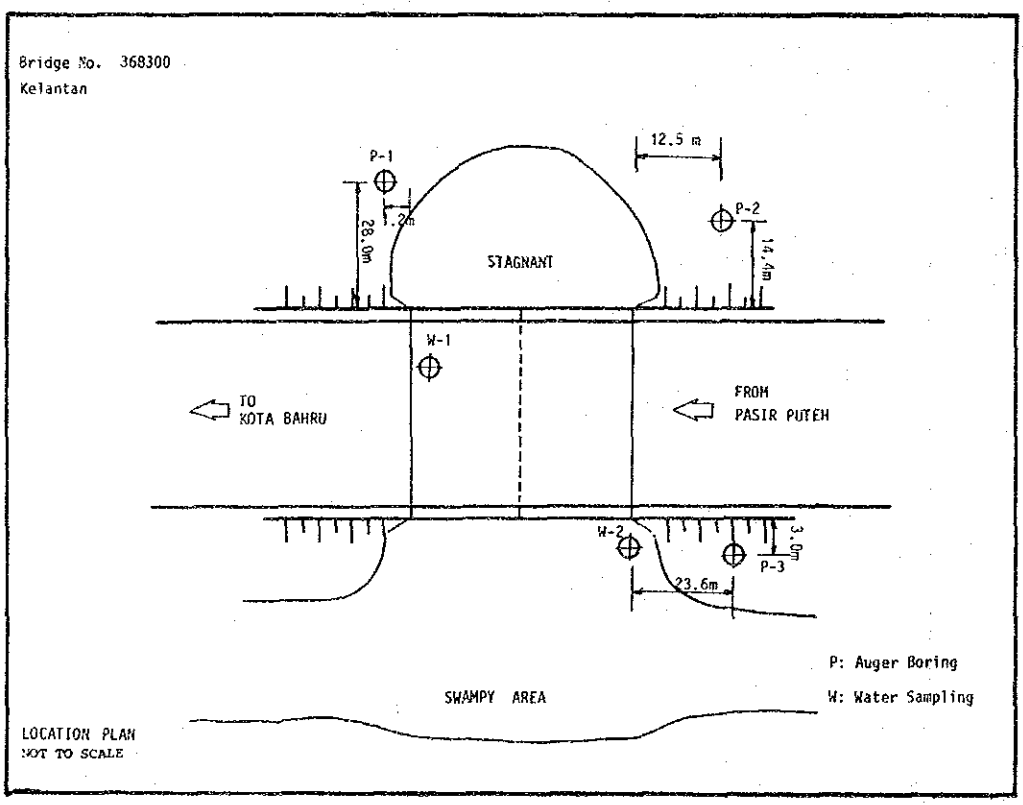

**Locations of Hand Augers and collected river water samples at Bridge No. 00303890, Johor**




**Locations of Hand Augers and collected river water samples at Bridge No. 00316745, Johor**




**Locations of Hand Augers and collected river water samples at Bridge No. 00366890, Kelantan**




**Locations of Hand Augers and collected river water samples at Bridge No. 00368300, Kelantan**

# FIG DRILLING LOG

Project No. K03-16 Project BRIDGE REHABILITATION PROJECT AT SG.CHENOR, PERAK Type of Drilling ROTARY

Hole Number BH-1 Elevation RL +70.90m m. Date 25th September 1991

Water Table GL-0.65 m. Bridge No. 161140 Driller Ho (Zulkefli)

Remarks
P : Standard Penetration Test
C : Coring

| Scale in m | Elevation in m | Depth in m | Thickness in m | Legend | Type of Soil | Colour | Relative Density or Consistency | General Remarks | Sampling Depth in m | Sampling Sample No. | Standard Penetration Test & Core Recovery (CR) N-Value Blows/45cm | Blows Per Each 7.6cm 15 cm | 15 cm | 15 cm | N - Value 10 20 30 40 50 / RQD CR 20 40 60 80 100% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 70.90 | 0.00 | | | | | | | | | | | | | |
| 1 | 69.40 | 1.50 | 1.50 | | Silty SAND | Light Brown | Loose | Fill. Sand is fine to medium grained. With some fine gravel. With roots at top. | 1.50 | P-1 | 50/10 | | | | 50BLOWS/10CM |
| 2 | | | | | LIMESTONE | Light Grey | Moderately Strong to Strong | Fresh. Fine to medium grained. | 1.60 | C-1 | | | | | RQD 80 CR 100 |
| 3 | | | | | | | | | 3.10 | | | | | | |
| 4 | | | | | | | | | | C-2 | | | | | RQD 83 CR 100 |
| 5 | 66.30 | 4.60 | 3.10 | | | -END OF DRILLING- | | | 4.60 | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
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**Drilling Log - Bridge No. 00161140, Perak**

# FIG DRILLING LOG

Project No. K03-16 Project REHABILITATION OF BRIDGE AT SG DUNGUN, TERENGGANU Type of Drilling ROTARY

Hole Number BH-1 Elevation RL +5.60m m. Date 23rd September to 25th September 1991

Water Table GL-1.35 m. Bridge No. 346740 Driller Lim (Leong)

**Remarks**
P : Standard Penetration Test
-

| Scale in m | Elevation in m | Depth in m | Thickness in m | Legend | Type of Soil | Colour | Relative Density or Consistency | General Remarks | Sampling Depth in m. | Sample No. | Standard Penetration Test N-Value Blows/45cm | Blows Per Each 7.5cm 15 cm | 15 cm | 15 cm | N – Value 10 20 30 40 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5.60 | 0.00 | | | | | | | | | | | | | |
| 1 | 4.30 | 1.30 | 1.30 | | Clayey SILT | Whitish Grey with Reddish and Yellowish | - | (Fill). Traces of fine sand and gravel. | | | | | | | |
| 2 | | | | | SAND | Yellowish Brown | Loose to Very loose | Fine to coarse sand. Silty up to 1.8m. Fine sand predominates up to 4m. With some fine gravel below 4m. | 1.65 1.95 | P-1 | 5 | 1 1 | 1 | 1 2 | |
| 3 | | | | | | | | | 3.15 3.45 | P-2 | 4 | 1 2 | 1 | 1 1 | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | 4.65 4.95 | P-3 | 3 | 0 1 | 0 1 | 1 1 | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | 6.15 6.45 | P-4 | 3 | 0 0 | 1 0 | 1 1 | |
| 8 | -1.95 -2.50 | 7.55 8.10 | 6.25 0.55 | | Silty CLAY | Dark grey | Soft | With organic matter and fine sand. Traces of mica fragment. | 7.65 7.95 | P-5 | 2 | 0 0 | 0 | 1 1 | |
| 9 | | | | | | | | | 9.15 9.45 | P-6 | 3 | 0 0 | 1 0 | 1 1 | |
| 10 | | | | | SAND | Light brown to Light Grey to Grey | Very loose to Medium | Fine to coarse sand with fine to medium sand. Slightly clayey at bottom. With fine gravel below 10m Max.dia.8mm. Trace of silt below 10m. Sandy clay lense with shell fragments at bottom | | | | | | | |
| 11 | | | | | | | | | 10.65 10.95 | P-7 | 15 | 3 4 | 4 | 3 4 | |
| 12 | -6.60 | 12.20 | 4.10 | | | | | | 12.15 12.30 | P-8 | 50/15 | 7 4 | 3 47 | | 50BLOWS/15CM |
| 13 | | | | | SILT with rock fragments | Red to Grey Mottled Yellow and Brown | | Completely Weathered sedimentary rock Friable to silt with hard rock fragments. | 13.50 13.65 | P-9 | 50/15 | 18 32 | | | 50BLOWS/15CM |
| 14 | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | 15.15 15.38 | P-10 | 50/22.5 | 20 25 | 15 10 | 25 | 50BLOWS/22.5CM |
| 16 | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | 16.50 16.55 | P-11 | 50/5 | 50 | | | 50BLOWS/5CM |
| 18 | -12.46 | 18.06 | 5.86 | | | -END OF DRILLING- | | | 18.00 18.06 | P-12 | 50/6 | 50 | | | 50BLOWS/6CM |
| 19 | | | | | | | | | | | | | | | |
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**Drilling Log - Bridge No. 00346740, Terengganu**