

28-OCT-09
18:22:36

GEORGIA DEPARTMENT OF TRANSPORTATION
PRECONSTRUCTION DIVISION - OFFICE OF BRIDGE & STRUCTURAL DESIGN
THE ANALYSIS AND DESIGN OF PIERS FOR BRIDGES - V 4.2.07 - AASHTO SPECS 1984 INTERIM
REVISED: JUNE 30, 2008
37' CURB-CURB; 6 BEAMS; 140' SPAN; 50' TALL; BRIDGE 19 ; PIER 6

PROB. NO. 0001

| DESIGN DATA | | | | | | | | | | | | DESIGN DATA | | | | | | | | | | | | | | |
|--------------|-------------------|-------------|---------|---------|---------|---------|---------|-------|--------|----------|---------------|-------------|--------------|--------|-------------|------------|---------------|---------------------|-------------------|-------------|------------|----------------|-------------|---------------|------|------|
| DESIGN NO. | NO. CAN | NO. COL | NO. LLC | SKEW D | ANG M | F'C PSI | FC PSI | N | FY PSI | FS PSI | DESIGN EC KSI | ES KSI | CONC. STRAIN | Z FACT | * MAIN SIZE | * STR SIZE | * CAP MAX TOP | REINFORCING MAX BOT | STEEL MIN SIZE | * MIN NO. | * TOP CL. | * CAP MIN S.SP | * CAP INCR. | * CAP BOT CL. | | |
| D | D | D | L | 2 | 1 | 12 | 0-00-00 | 3500. | 1400. | 8. | 60000. | 24000. | 3409. | 29000. | 0.0030 | 170. | 11 | 5 | 16 | 16 | 11 | 2 | 2.00 | 4.00 | 3.00 | 2.00 |
| COLUMN MIN.P | REINFORCING MAX.P | STEEL CL.SP | R CLEAR | KL MODE | OC COEF | OF | CM | BD1 | BD2 | IMPACT % | SOIL KCF | WT KSF | ALL.S.P. | MIN PL | MAX SP | EDGE DIST | PILE DEPTH | REBAR CLEAR | ALL.PILE CAPACITY | PILE UPLIFT | ALL.PILE I | CL. | INCR. | CL. | | |
| 1.00 | 8.00 | 2.50 | 3.750 | 2 | 2.00 | 0.70 | 0.90 | 1.00 | 1.00 | 0.75 | 18.87 | 0.120 | 0.000 | 3.00 | 9.00 | 1.250 | 1.000 | 3.000 | 235.000 | -9.999 | | | | | | |

CAP DATA

| CN | C | L | A | DE | BC | BE | DH | LH | XB1 | XB2 | XB3 | XB4 | XB5 | XB6 | XB7 | XB8 |
|----|---|----------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-----|-----|-----|-----|-----|
| 11 | L | 20.260 | 4.635 | 4.000 | 6.000 | 6.000 | 4.000 | 15.625 | 16.633 | 6.653 | 5.345 | | | | | |
| 12 | 2 | SAME AS CANTILEVER 1 | | | | | | | | | | | | | | |

COLUMN DATA

| CN | P | I | T | S | HT | A | DT | BT | DB | BB | DL | FLEX | ND | NB | SZ | ND | NB | SZ | ND | NB | SZ | SLOPE | EP | AP | | | |
|----|---|---|---|---|--------|-------|-------|-------|-------|-------|-------|-------|----|----|----|----|----|----|----|----|----|-------|----|----|-------|-------|-------|
| 21 | 1 | C | T | | 50.000 | 0.000 | 9.270 | 6.000 | 9.270 | 6.000 | 6.000 | 0.000 | 9 | 6 | 11 | 9 | 6 | 11 | 26 | 16 | 11 | 26 | 16 | 11 | 0.000 | 0.000 | 0.000 |

FOOTING DATA

| CN | S/P | B | D | T | DEL.B | DEL.D | DEL.T | R.B/D | R.D/B | S.HT. | NP | SYM. | BP | DP | SET. | |
|---------------------------|----------------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------------------|--------------------|-------------------|-------------------|--------|
| 31 | P | 11.270 | 11.270 | 3.000 | 0.500 | 0.500 | 0.250 | 1.000 | 1.000 | 2.500 | 4 | 3 | 0.000 | 0.000 | 0.000 | |
| GROUP II WIND INTENSITIES | | | | | | | | | | | | | | | | |
| WIND FT1 | LONG. WIND FT1 | TRANS. WIND FT1 | WIND FT2 | WIND FT3 | WIND FT4 | WIND FT5 | WIND FT1 | WIND FT2 | WIND FT3 | WIND FT4 | WIND FT5 | * WIND ON PIER APT | * WIND ON PIER APL | * WIND ON PIER PT | * WIND ON PIER PL | |
| 1365. | 2730. | 1 | 50 | 0 | 44 | 6 | 41 | 12 | 33 | 16 | 17 | 19 | 7.375 | 7.375 | 6.475 | 17.337 |

GROUP III WIND INTENSITIES

| STD. WIND FT1 | * WIND ON TRANS. FT1 | WIND ON LONG. FT1 | WIND ON TRANS. FT2 | WIND ON LONG. FT2 | WIND ON TRANS. FT3 | WIND ON LONG. FT3 | WIND ON TRANS. FT4 | WIND ON LONG. FT4 | WIND ON TRANS. FT5 | WIND ON LONG. FT5 | * WIND ON TRANS. APT | * WIND ON LONG. APT | * WIND ON TRANS. APL | * WIND ON LONG. APL | | | | | | | | | | | |
|---------------|----------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|----------------------|---------------------|----------------------|---------------------|----|----|----|----|----|----|----|-------|-------|--------|--------|
| 1 | 50 | 0 | 44 | 6 | 41 | 12 | 33 | 16 | 17 | 19 | 1 | 100 | 0 | 88 | 12 | 82 | 24 | 66 | 32 | 34 | 38 | 140.0 | 280.0 | 15.583 | 15.583 |

MISCELLANEOUS FORCES

| CENTRI. FT | TRACTION FL | FORCE APT | AND ARMS APL | EXPANSION COEFFICIENT | SHRINKAGE COEFFICIENT | STREAM PT | FLOW PL |
|------------|-------------|-----------|--------------|-----------------------|-----------------------|-----------|---------|
| 0.000 | 9.860 | 15.583 | 15.583 | 0.00018000 | 0.00044000 | 0.000 | 0.000 |

DEAD LOAD SUPERSTRUCTURE AND LIVE LOAD CASES

| I.D. | NL | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 |
|------|----|---------|---------|-------|---------|-------|---------|---------|----|----|-----|-----|-----|
| D.L. | 0 | 256.803 | 286.816 | 0.000 | 430.225 | 0.000 | 286.816 | 256.803 | | | | | |
| LL 1 | 1 | 75.480 | 61.931 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | | | | |
| LL 2 | 2 | 75.480 | 96.103 | 0.000 | 103.239 | 0.000 | 0.000 | 0.000 | | | | | |
| LL 3 | 3 | 75.480 | 96.103 | 0.000 | 177.903 | 0.000 | 62.747 | 0.000 | | | | | |
| LL 4 | 1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 61.941 | 75.470 | | | | | |
| LL 5 | 2 | 0.000 | 0.000 | 0.000 | 103.249 | 0.000 | 96.103 | 75.470 | | | | | |
| LL 6 | 3 | 0.000 | 62.767 | 0.000 | 177.893 | 0.000 | 96.103 | 75.470 | | | | | |
| LL 7 | 1 | 0.000 | 30.981 | 0.000 | 106.430 | 0.000 | 0.000 | 0.000 | | | | | |
| LL 8 | 2 | 69.129 | 99.263 | 0.000 | 106.430 | 0.000 | 0.000 | 0.000 | | | | | |
| LL 9 | 3 | 69.129 | 99.263 | 0.000 | 174.712 | 0.000 | 69.129 | 0.000 | | | | | |
| LL10 | 2 | 0.000 | 48.268 | 0.000 | 178.296 | 0.000 | 48.258 | 0.000 | | | | | |
| LL11 | 2 | 75.480 | 61.931 | 0.000 | 0.000 | 0.000 | 61.941 | 75.470 | | | | | |
| LL12 | 3 | 75.480 | 96.103 | 0.000 | 103.239 | 0.000 | 61.941 | 75.470 | | | | | |

COLUMN MOMENTS(KIP-FEET), SHEARS(KIPS), REACTIONS(KIPS)

TRANSVERSE

* LONGITUDINAL

| LOAD | COL | PC | MT | V | MB | RF | ML | MR | MT | V | MB | MF |
|------------------|-----|----------------------|----------|--------|----------|----------|----------|-----------|----------|---------|-----------|-----------|
| UNIT F.AT CL.CAP | 1 | 0.000 | -6.000 | 1.000 | 50.000 | 0.000 | 0.000 | 0.000 | 6.000 | 1.000 | 50.000 | 50.000 |
| DEAD LOAD TOTAL | 1 | 1752.957 2120.049 | 0.000 | 0.000 | 0.000 | 2120.049 | 8188.184 | -8188.184 | 0.000 | 0.000 | 0.000 | 0.000 |
| TRAC. FORCE 1 LN | 1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | -212.808 | -9.860 | -646.648 | -646.648 |
| WIND ON SUBSTR. | 1 | 0.000 | -38.850 | 6.475 | 323.750 | 0.000 | 0.000 | 0.000 | -104.022 | -17.337 | -866.850 | -866.850 |
| GROUP 2 WIND 1 1 | 1 | 0.000 | -951.694 | 74.725 | 4239.594 | 0.000 | 0.000 | 0.000 | -104.022 | -17.337 | -866.850 | -866.850 |
| GROUP 2 WIND 1 2 | 1 | 0.000 | -951.694 | 74.725 | 4239.594 | 0.000 | 0.000 | 0.000 | 104.022 | 17.337 | 866.850 | 866.850 |
| GROUP 2 WIND 2 1 | 1 | 0.000 | -842.152 | 66.535 | 3769.693 | 0.000 | 0.000 | 0.000 | -323.105 | -33.717 | -1806.653 | -1806.653 |
| GROUP 2 WIND 2 2 | 1 | 0.000 | -842.152 | 66.535 | 3769.693 | 0.000 | 0.000 | 0.000 | 323.105 | 33.717 | 1806.653 | 1806.653 |

| PIER-37-6-140-50.OUT | | | | | | | | | | | | | | | | |
|----------------------|--------|---|---|---|---------|-----------|--------|----------|---------|----------|-------|----------|---------|-----------|-----------|-------|
| GROUP | WIND | 3 | 1 | 1 | 0.000 | -787.382 | 62.440 | 3534.742 | 0.000 | 0.000 | 0.000 | -542.187 | -50.097 | -2746.455 | -2746.455 | |
| GROUP 2 | WIND 3 | 2 | 1 | 1 | 0.000 | -787.382 | 62.440 | 3534.742 | 0.000 | 0.000 | 0.000 | 542.187 | 50.097 | 2746.455 | 2746.455 | |
| GROUP 2 | WIND 4 | 1 | 1 | 1 | 0.000 | -641.327 | 51.520 | 2908.207 | 0.000 | 0.000 | 0.000 | -688.242 | -61.017 | -3372.990 | -3372.990 | |
| GROUP 2 | WIND 4 | 2 | 1 | 1 | 0.000 | -641.327 | 51.520 | 2908.207 | 0.000 | 0.000 | 0.000 | 688.242 | 61.017 | 3372.990 | 3372.990 | |
| GROUP 2 | WIND 5 | 1 | 1 | 1 | 0.000 | -349.217 | 29.680 | 1655.137 | 0.000 | 0.000 | 0.000 | -797.783 | -69.207 | -3842.891 | -3842.891 | |
| GROUP 2 | WIND 5 | 2 | 1 | 1 | 0.000 | -349.217 | 29.680 | 1655.137 | 0.000 | 0.000 | 0.000 | 797.783 | 69.207 | 3842.891 | 3842.891 | |
| GROUP 3 | WIND 1 | 1 | 1 | 1 | 0.000 | -587.670 | 36.417 | 2190.040 | 0.000 | 0.000 | 0.000 | -31.207 | -5.201 | -260.055 | -260.055 | |
| GROUP 3 | WIND 1 | 2 | 1 | 1 | 0.000 | -587.670 | 36.417 | 2190.040 | 0.000 | 0.000 | 0.000 | 31.207 | 5.201 | 260.055 | 260.055 | |
| GROUP 3 | WIND 2 | 1 | 1 | 1 | 0.000 | -518.548 | 32.280 | 1938.890 | 0.000 | 0.000 | 0.000 | -169.450 | -13.475 | -762.355 | -762.355 | |
| GROUP 3 | WIND 2 | 2 | 1 | 1 | 0.000 | -518.548 | 32.280 | 1938.890 | 0.000 | 0.000 | 0.000 | 169.450 | 13.475 | 762.355 | 762.355 | |
| GROUP 3 | WIND 3 | 1 | 1 | 1 | 0.000 | -483.987 | 30.212 | 1813.315 | 0.000 | 0.000 | 0.000 | -307.694 | -21.749 | -1264.654 | -1264.654 | |
| GROUP 3 | WIND 3 | 2 | 1 | 1 | 0.000 | -483.987 | 30.212 | 1813.315 | 0.000 | 0.000 | 0.000 | 307.694 | 21.749 | 1264.654 | 1264.654 | |
| GROUP 3 | WIND 4 | 1 | 1 | 1 | 0.000 | -391.825 | 24.696 | 1478.449 | 0.000 | 0.000 | 0.000 | -399.856 | -27.265 | -1599.521 | -1599.521 | |
| GROUP 3 | WIND 4 | 2 | 1 | 1 | 0.000 | -391.825 | 24.696 | 1478.449 | 0.000 | 0.000 | 0.000 | 399.856 | 27.265 | 1599.521 | 1599.521 | |
| GROUP 3 | WIND 5 | 1 | 1 | 1 | 0.000 | -207.500 | 13.664 | 808.716 | 0.000 | 0.000 | 0.000 | -468.978 | -31.402 | -1850.670 | -1850.670 | |
| GROUP 3 | WIND 5 | 2 | 1 | 1 | 0.000 | -207.500 | 13.664 | 808.716 | 0.000 | 0.000 | 0.000 | 468.978 | 31.402 | 1850.670 | 1850.670 | |
| LIVE LOAD | LL 1 | 1 | 1 | 1 | 137.411 | -1873.530 | 0.000 | 1873.530 | 137.411 | 1873.530 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD | LL 2 | 1 | 1 | 1 | 274.822 | -2214.567 | 0.000 | 2214.567 | 274.822 | 2214.567 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

□ COLUMN MOMENTS(KIP-FEET), SHEARS(KIPS), REACTIONS(KIPS)

| LOAD | COL | PC | MT | TRANSVERSE | | | | | | LONGITUDINAL | | | | |
|----------------|-----|---------|-----------|------------|-----------|---------|----------|-----------|-------|--------------|-------|-------|-------|-------|
| | | | | V | MB | RF | ML | MR | MT | V | MB | MF | | |
| LIVE LOAD LL 3 | 1 | 371.010 | -1429.516 | 0.000 | 1429.516 | 371.010 | 1993.110 | -563.594 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL 4 | 1 | 137.411 | 1873.464 | 0.000 | -1873.464 | 137.411 | 0.000 | -1873.464 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL 5 | 1 | 274.822 | 2214.400 | 0.000 | -2214.400 | 274.822 | 0.000 | -2214.400 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL 6 | 1 | 371.010 | 1429.187 | 0.000 | -1429.187 | 371.010 | 563.773 | -1992.960 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL 7 | 1 | 137.411 | -309.190 | 0.000 | 309.190 | 137.411 | 309.190 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL 8 | 1 | 274.822 | -2140.467 | 0.000 | 2140.467 | 274.822 | 2140.467 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL 9 | 1 | 371.010 | -1305.504 | 0.000 | 1305.504 | 371.010 | 1926.421 | -620.917 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL10 | 1 | 274.822 | -0.100 | 0.000 | 0.100 | 274.822 | 481.715 | -481.615 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL11 | 1 | 274.822 | -0.067 | 0.000 | 0.067 | 274.822 | 1873.530 | -1873.464 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| LIVE LOAD LL12 | 1 | 371.010 | -306.993 | 0.000 | 306.993 | 371.010 | 1993.110 | -1686.117 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

□ CAP ANALYSIS AND DESIGN DATA

| POINT | MOMENTS(KIP-FEET) | | | | | | | | SHEARS(KIPS) | | | | | | | |
|-------|-------------------|------------|------------|------------|------------|------------|------------|----------|--------------|----------|----------|-----------|-----------|--|--|--|
| | D.L.TOT. | G1 MAX.+ | G1 MAX.- | G2 MAX.+ | G2 MAX.- | G3 MAX.+ | G3 MAX.- | DL T.LT | DL T.RT | G1 + LT | G1 + RT | G1 - LT | G1 - RT | | | |
| P 1 | -33.165 | -33.165 | -33.165 | -33.165 | -33.165 | -33.165 | -33.165 | -18.944 | -352.788 | -18.944 | -352.788 | -18.944 | -516.655 | | | |
| P 2 | -2522.583 | -2522.583 | -3612.790 | -2522.583 | -2522.583 | -2522.583 | -3175.402 | -397.781 | -770.641 | -397.781 | -770.641 | -561.648 | -1143.148 | | | |
| P 3 | -6760.119 | -6760.119 | -9841.374 | -6760.119 | -6760.119 | -6760.119 | -8605.182 | -816.392 | -816.392 | -816.392 | -816.392 | -1188.899 | -1188.899 | | | |
| C 1L | -10644.639 | -10644.639 | -15452.462 | -10644.639 | -10644.639 | -10644.639 | -13523.574 | -859.776 | | -859.776 | | -1232.282 | | | | |
| C 1R | -10644.639 | -10644.639 | -15452.102 | -10644.639 | -10644.639 | -10644.639 | -13523.358 | | 859.776 | | 1232.261 | | 859.776 | | | |
| P 5 | -6760.119 | -6760.119 | -9841.114 | -6760.119 | -6760.119 | -6760.119 | -8605.026 | 816.392 | 816.392 | 1188.877 | 1188.877 | 816.392 | 816.392 | | | |
| P 6 | -2522.583 | -2522.583 | -3612.646 | -2522.583 | -2522.583 | -2522.583 | -3175.316 | 770.641 | 397.781 | 1143.126 | 561.626 | 770.641 | 397.781 | | | |
| P 7 | -33.165 | -33.165 | -33.165 | -33.165 | -33.165 | -33.165 | -33.165 | 352.788 | 18.944 | 516.634 | 18.944 | 352.788 | 18.944 | | | |

| PT. | UNF. | | TOP REINFORCE. | | BOT. REINFORCE. | | CAP DESIGN DATA | | | | RIGHT STIRRUPS | | D IN. | FC PSI | PS % | FS/FF RATIO | FS/FZ RATIO |
|-----|-----------|------------|----------------|----------|-----------------|----------|-----------------|-------|----------|-------|----------------|----------|-------|--------|------|-------------|-------------|
| | M+ K-FT. | M- K-FT. | AS | NO. SIZE | AS | NO. SIZE | M.SP. | AV/IN | BAR&SPAC | M.SP. | AV/IN | BAR&SPAC | | | | | |
| P 1 | -25.511 | -25.511 | 3.12 | 2 # 11 | 3.12 | 2 # 11 | 0.00 | 0.000 | #5@ 0.00 | 24.00 | 0.060 | #5@10.33 | 59.15 | | 0.08 | 0.000 | 0.099 |
| P 2 | -1940.448 | -2442.617 | 10.74 | 7 # 11 | 3.12 | 2 # 11 | 24.00 | 0.060 | #5@10.33 | 24.00 | 0.152 | #5@ 4.08 | 79.58 | | 0.20 | 0.564 | 1.336 |
| P 3 | -5200.091 | -6619.371 | 24.42 | 16 # 11 | 3.12 | 2 # 11 | 24.00 | 0.110 | #5@ 5.66 | 24.00 | 0.110 | #5@ 5.66 | 96.00 | | 0.40 | 0.577 | 1.008 |
| C 1 | -8188.184 | -10402.750 | 39.41 | 26 # 11 | 3.12 | 2 # 11 | 24.00 | 0.120 | #5@ 5.15 | 24.00 | 0.120 | #5@ 5.15 | 96.00 | | 0.64 | 0.565 | 0.939 |
| P 5 | -5200.091 | -6619.251 | 24.42 | 16 # 11 | 3.12 | 2 # 11 | 24.00 | 0.110 | #5@ 5.66 | 24.00 | 0.110 | #5@ 5.66 | 96.00 | | 0.40 | 0.577 | 1.008 |
| P 6 | -1940.448 | -2442.551 | 10.74 | 7 # 11 | 3.12 | 2 # 11 | 24.00 | 0.152 | #5@ 4.08 | 24.00 | 0.060 | #5@10.33 | 79.58 | | 0.20 | 0.564 | 1.336 |
| P 7 | -25.511 | -25.512 | 3.12 | 2 # 11 | 3.12 | 2 # 11 | 24.00 | 0.060 | #5@10.33 | 0.00 | 0.000 | #5@ 0.00 | 59.15 | | 0.08 | 0.000 | 0.099 |

NOTE: *** FS/FZ RATIO EXCEEDS 1.0! ***

□ COLUMN ANALYSIS AND DESIGN OUTPUT

CRITICAL COLUMN LOADS

PIER-37-6-140-50.OUT

| CN | T | B | GR | LLC | WC | R | E | C | S | PF | MTF | MLF | PM | MTM | MLM | PU | MTU | MLU | PU/PM | B | D |
|----|---|---|----|-----|----|-----|---|---|---|--------|---------|---------|--------|--------|--------|---------|---------|---------|-------|-------|--------|
| 1 | T | | 1 | LL | 2 | 0.0 | | | | 2875.5 | -4807.8 | 0.0 | 2875.5 | 5300.4 | 2173.7 | 10434.5 | 19242.5 | 7891.3 | 3.630 | 72.00 | 111.24 |
| 1 | B | | 3 | LL | 3 | 4.1 | | | | 3238.4 | 3780.4 | -4349.1 | 3238.4 | 4152.1 | 5427.6 | 8323.9 | 10672.6 | 13951.4 | 2.570 | 72.00 | 111.24 |

COLUMN DESIGN DATA

| CN | T | B | FACE 1 | B | FACE 2 | D | FACE 3 | D | FACE 4 | AS | PS | BD12 | BD | SUMPU | SUMPC | DEL.T | DEL.L | CM | R | PHIC |
|----|---|---|---------|---|---------|---|---------|---|---------|-------|-------|------|-------|-------|--------|-------|-------|-------|---|------|
| 1 | T | | 16 # 11 | | 16 # 11 | | 10 # 11 | | 10 # 11 | 81.12 | 1.013 | 1.00 | 0.000 | 3114. | 33508. | 1.102 | 1.260 | 1.000 | 2 | 0.70 |
| 1 | B | | 16 # 11 | | 16 # 11 | | 10 # 11 | | 10 # 11 | 81.12 | 1.013 | 1.00 | 0.000 | 3000. | 33508. | 1.098 | 1.248 | 1.000 | 2 | 0.70 |

FOOTING 1 DESIGN LOADS

| F | G | LLID | WC | ES | C | S | P | MT | VT | ML | VL | P4 | P3 | P2 | P1 | MTF | VBF | VPF | LOAD |
|---|---|------|-----|----|---|---|----------|----------|--------|-----------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| 1 | 3 | LL 3 | 4.1 | | | | 2432.163 | 2681.037 | 24.696 | -3345.471 | -53.887 | 215.064 | 117.262 | 194.783 | 292.584 | 180.961 | 0.152 | 44.879 | MAX.P1 |
| 1 | 3 | LL 2 | 1.1 | | | | 3056.618 | 5268.972 | 47.343 | -2019.357 | -32.397 | 212.313 | 153.299 | 305.460 | 364.474 | 249.939 | 0.276 | 56.481 | MAX.MT |
| 1 | 3 | LL 2 | 3.1 | | | | 3056.618 | 4779.230 | 39.276 | -3325.336 | -53.910 | 238.800 | 141.534 | 278.973 | 376.239 | 243.991 | 0.244 | 56.481 | MAX.VT |
| 1 | 3 | LL 3 | 4.1 | | | | 3161.812 | 3485.348 | 32.105 | -4349.112 | -70.053 | 279.583 | 152.441 | 253.218 | 380.359 | 235.250 | 0.198 | 58.343 | MAX.VP |
| 1 | 3 | LL 3 | 4.1 | | | | 3161.812 | 3485.348 | 32.105 | -4349.112 | -70.053 | 279.583 | 152.441 | 253.218 | 380.359 | 340.201 | 63.193 | 58.343 | MAX.ML |
| 1 | 3 | LL 3 | 4.1 | | | | 3161.812 | 3485.348 | 32.105 | -4349.112 | -70.053 | 279.583 | 152.441 | 253.218 | 380.359 | 340.201 | 63.193 | 58.343 | MAX.VL |
| 1 | 2 | | 3.1 | | | | 2120.049 | 3534.742 | 62.440 | -2746.455 | -50.097 | 169.763 | 88.572 | 195.495 | 276.686 | 174.825 | 0.119 | 39.354 | MAX.P3 |

FOOTING 1 ANALYSIS/DESIGN RESULTS

| FOOTING SIZE | | | | * BAR REINFORCEMENT STEEL * | | | | | SECTION CAPACITIES * | | | |
|--------------|--------|-------|-------|-----------------------------|---------|---------|-----------|---------|----------------------|---------|--------|-------|
| B | D | T | P1/PA | AS | NO.SIZE | SPAC. | PLACEMENT | MT. | VB | VP | DS | FC |
| 19.750 | 19.750 | 5.750 | 0.996 | 1.25 | 25 # 9 | @ 9.375 | TOP TRAN | 291.089 | 62.958 | 125.916 | 52.166 | 0.000 |
| | | | | 1.45 | 23 #10 | @10.250 | BOT.LONG | 346.896 | 64.405 | 128.810 | 53.365 | 0.000 |

NUMBER OF PILES = 14 BP = 2.875 DP = 2.875