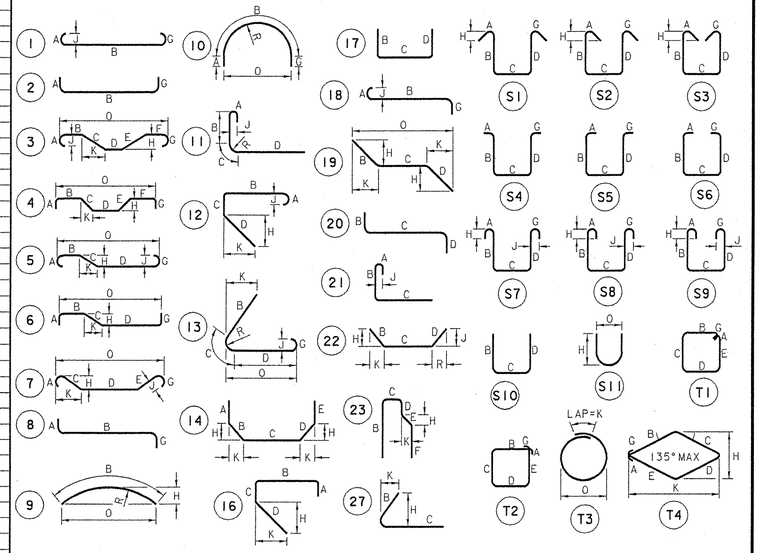
| ITEM | NO. PIECES | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | H | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **DECK** | | | | | | | | | | | | | |
| | 338 | 16 | 11.830 | ES1601 | STR | | | | | | | | | | | | |
| ▲ | 63 | 16 | 11.540 | ES1602 | STR | | | | | | | | | | | | |
| | 17 | 16 | 8.620 | ES1603 | STR | | | | | | | | | | | | |
| ▲ | 306 | 16 | 11.170 | ES1604 | STR | | | | | | | | | | | | |
| ▲ | 4 | 16 | 11.900 | ES1605 | STR | | | | | | | | | | | | |
| | 28 | 16 | 2.785 | ES1606 | 16 | 1.220 | 0.270 | 0.935 | 0.360 | | | | 0.255 | | 0.255 | | |
| ▲ | 3 | 16 | 11.560 | ES1607 | STR | | | | | | | | | | | | |
| | 28 | 16 | 2.015 | ES1608 | 16 | 0.880 | 0.270 | 0.505 | 0.360 | | | | 0.255 | | 0.255 | | |
| * | 151 | 16 | 1.845 | ES1609 | S5 | 0.250 | 0.455 | 0.435 | 0.455 | | | 0.250 | | | | | |
| * | 139 | 16 | 1.835 | ES1610 | S5 | 0.250 | 0.450 | 0.435 | 0.450 | | | 0.250 | | | | | |
| ▲ | 139 | 16 | 1.835 | ES1611 | S5 | 0.250 | 0.450 | 0.435 | 0.450 | | | 0.250 | | | | | |
| * | 306 | 19 | 11.170 | ES1901 | STR | | | | | | | | | | | | |
| * | 2 | 19 | 11.900 | ES1902 | STR | | | | | | | | | | | | |
| | 2 | 19 | 11.560 | ES1903 | STR | | | | | | | | | | | | |
| | | | | **APPROACH SLAB 1** | | | | | | | | | | | | | |
| △ | 42 | 16 | 5.900 | 1EAS1601 | STR | | | | | | | | | | | | |
| △ | 43 | 29 | 6.275 | 1EAS2901 | 1 | 0.375 | 0.375 | | | | | / | | 0.375 | | | |
| | | | | **APPROACH SLAB 2** | | | | | | | | | | | | | |
| △ | 44 | 16 | 5.600 | 2EAS1601 | STR | | | | | | | | | | | | |
| △ | 43 | 29 | 6.325 | 2EAS2901 | 1 | 0.375 | 5.950 | | | | | / | | 0.375 | | | |
| | | | | **ABUTMENT 1** | | | | | | | | | | | | | |
| | 24 | 16 | 5.240 | 1A1601 | STR | | | | | | | | | | | | |
| | 12 | 16 | 4.430 | 1A1602 | 6 | / | 0.610 | 2.570 | 1.250 | / | / | / | 2.494 | | 0.623 | | 2.483 |
| | 12 | 16 | 3.860 | 1A1603 | 20 | | 0.790 | 2.460 | 0.610 | | | | | | | | |
| | 41 | 16 | 3.575 | 1A1604 | 17 | | 1.230 | 2.345 | | | | | | | | | |
| | 4 | 16 | 1.230 | 1A1605 | STR | | | | | | | | | | | | |
| | 24 | 16 | 5.290 | 1A1606 | STR | | | | | | | | | | | | |
| | 12 | 16 | 1.970 | 1A1607 | 6 | | 0.630 | 0.710 | 0.630 | | | | 0.502 | | 0.502 | | 1.762 |
| * | 13 | 16 | 1.720 | 1A1608 | 20 | | 0.610 | 0.500 | 0.610 | | | | | | | | |
| | 58 | 16 | 3.145 | 1A1609 | STR | | | | | | | | | | | | |
| | 32 | 16 | 4.900 | 1A1610 | 17 | | 3.130 | 1.770 | | | | | | | | | |
| | 24 | 16 | 4.340 | 1A1611 | STR | | | | | | | | | | | | |
| | 17 | 16 | 4.530 | 1A1612 | 17 | | 2.760 | 1.770 | | | | | | | | | |
| ▲ | 16 | 16 | 3.520 | 1A1613 | STR | | | | | | | | | | | | |
| | 4 | 16 | 3.320 | 1A1614 | STR | | | | | | | | | | | | |
| | 16 | 16 | 4.620 | 1A1615 | STR | | | | | | | | | | | | |
| | 10 | 16 | 5.390 | 1A1616 | STR | | | | | | | | | | | | |
| | 12 | 16 | 3.090 | 1A1617 | 19 | | 0.610 | 2.480 | | | | | 0.569 | | 0.219 | | |
| | 12 | 16 | 2.310 | 1A1618 | 19 | | 0.610 | 1.700 | | | | | 0.567 | | 0.224 | | |
| | 12 | 16 | 5.240 | 1A1619 | 22 | | 0.610 | 4.020 | 0.610 | | | | 0.334 | 0.342 | 0.510 | | 0.505 |
| ▲ | 16 | 16 | 1.400 | 1A1620 | STR | | | | | | | | | | | | |
| | 8 | 16 | 1.040 | 1A1621 | STR | | | | | | | | | | | | |
| ▲ | 14 | 16 | 9.140 | 1A1622 | STR | | | | | | | | | | | | |
| | 41 | 16 | 2.190 | 1A1623 | 14 | 0.610 | 0.720 | 0.250 | | 0.610 | | | 0.031 | | 0.719 | | |
| | 42 | 16 | 1.220 | 1A1624 | STR | | | | | | | | | | | | |
| | 4 | 16 | 3.490 | 1A1625 | STR | | | | | | | | | | | | |
| | 4 | 16 | 3.020 | 1A1626 | STR | | | | | | | | | | | | |
| ▲ | 40 | 16 | 2.370 | 1A1627 | STR | | | | | | | | | | | | |
| * | 41 | 16 | 1.940 | 1A1628 | STR | | | | | | | | | | | | |
| ▲ | 36 | 16 | 6.540 | 1A1629 | STR | | | | | | | | | | | | |
| | 4 | 16 | 6.760 | 1A1630 | STR | | | | | | | | | | | | |
| | 18 | 16 | 2.150 | 1A1631 | 19 | | 0.610 | 1.540 | | | | | 0.567 | | 0.224 | | |
| | 8 | 16 | 5.600 | 1A1632 | STR | | | | | | | | | | | | |
| | 42 | 16 | 1.770 | 1A1633 | 17 | | 0.800 | 0.170 | 0.800 | | | | | | | | |
| | 2 | 16 | 3.110 | 1A1634 | STR | | | | | | | | | | | | |
| | 36 | 16 | 2.120 | 1A1635 | 16 | 0.610 | 0.475 | 0.365 | 0.670 | | | | 0.474 | | 0.474 | | |
| △ | 17 | 22 | 5.635 | 1A2201 | 2 | 0.375 | 5.260 | | | | | / | | | | | |
| * | 19 | 25 | 3.145 | 1A2501 | STR | | | | | | | | | | | | |
| | 16 | 25 | 5.060 | 1A2502 | 17 | | 3.290 | 1.770 | | | | | | | | | |
| * | 20 | 25 | 1.740 | 1A2503 | 19 | | 0.840 | 0.900 | | | | | 0.688 | | 0.482 | | |
| | | | | **WINGWALL 1** | | | | | | | | | | | | | |
| | 7 | 16 | 3.525 | 1W1601 | 17 | | 1.180 | 2.345 | / | | | | | | | | |
| * | 8 | 16 | 1.730 | 1W1602 | STR | | | | | | | | | | | | |
| | 2 | 16 | 1.280 | 1W1603 | 19 | | 0.610 | 0.670 | / | | | | 0.467 | | 0.393 | | |
| | 4 | 16 | 2.850 | 1W1604 | 6 | / | 0.610 | 0.640 | 1.600 | / | / | / | 0.605 | | 0.209 | | 2.419 |
| * | 10 | 16 | 3.100 | 1W1605 | STR | | | | | | | | | | | | |
| | 1 | 16 | 6.065 | 1W1606 | 17 | | 2.850 | 0.365 | 2.850 | | | | | | | | |
| | 1 | 16 | 5.561 | 1W1607 | 17 | | 2.598 | 0.365 | 2.598 | | | | | | | | |
| | 1 | 16 | 5.057 | 1W1608 | 17 | | 2.346 | 0.365 | 2.346 | | | | | | | | |
| | 1 | 16 | 4.553 | 1W1609 | 17 | | 2.094 | 0.365 | 2.094 | | | | | | | | |
| | 1 | 16 | 4.049 | 1W1610 | 17 | | 1.842 | 0.365 | 1.842 | | | | | | | | |
| | 1 | 16 | 3.545 | 1W1611 | 17 | | 1.590 | 0.365 | 1.590 | | | | | | | | |
| | 14 | 16 | 1.585 | 1W1612 | 17 | | 0.610 | 0.365 | 0.610 | | | | | | | | |
| | 2 | 16 | 3.980 | 1W1613 | 22 | | 1.360 | 2.620 | / | | | | 1.041 | / | 0.878 | / | |
| ▲ | 11 | 16 | 5.290 | 1W1614 | 4 | / | 0.610 | 0.845 | 3.835 | / | / | / | 0.800 | | 0.274 | | |
| ▲ | 11 | 16 | 4.850 | 1W1615 | 4 | / | 0.610 | 0.640 | 3.600 | / | / | / | 0.605 | | 0.209 | | |
| | 6 | 16 | 2.830 | 1W1616 | STR | | | | | | | | | | | | |
| * | 16 | 19 | 3.145 | 1W1901 | STR | | | | | | | | | | | | |
| | 6 | 19 | 3.745 | 1W1902 | 17 | | 2.580 | 1.165 | / | | | | | | | | |
| * | 7 | 19 | 2.620 | 1W1903 | 17 | | 2.320 | 0.300 | / | | | | | | | | |
| ▲ | 2 | 19 | 3.790 | 1W1904 | 17 | | 2.300 | 1.490 | / | | | | | | | | |
| △ | 4 | 25 | 1.220 | 1W2501 | STR | | | | | | | | | | | | |

| ITEM | NO. PIECES | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | H | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **WINGWALL 2** | | | | | | | | | | | | | |
| | 24 | 16 | 8.450 | 2W1601 | STR | ▲ | | | | | | | | | | | |
| | 27 | 16 | 3.730 | 2W1602 | 17 | | 1.230 | 2.500 | / | | | | | | | | |
| | 27 | 16 | 4.020 | 2W1603 | STR | ▲ | | | | | | | | | | | |
| | 44 | 16 | 5.890 | 2W1604 | STR | | | | | | | | | | | | |
| | 48 | 16 | 2.480 | 2W1605 | STR | ▲ | | | | | | | | | | | |
| | 23 | 16 | 2.529 | 2W1606 | 23 | | 1.050 | 0.425 | / | 0.329 | 0.725 | | 0.325 | | 0.050 | | |
| | 1 | 16 | 6.530 | 2W1607 | STR | | | | | | | | | | | | |
| | 1 | 16 | 6.730 | 2W1608 | STR | | | | | | | | | | | | |
| | 127 | 16 | 2.450 | 2W1609 | STR | | | | | | | | | | | | |
| | 34 | 16 | 5.425 | 2W1610 | 17 | | 4.200 | 1.225 | / | | | | | | | | |
| | 58 | 16 | 2.480 | 2W1611 | 2 | 0.250 | 2.230 | | | | | / | | | | | |
| | 60 | 16 | 2.880 | 2W1612 | 17 | | 1.180 | 1.700 | / | | | | | | | | |
| | 18 | 16 | 10.190 | 2W1613 | STR | | | | | | | | | | | | |
| | 9 | 16 | 3.440 | 2W1614 | 19 | | 0.610 | 2.830 | / | | | | 0.431 | | 0.431 | | |
| | 9 | 16 | 4.145 | 2W1615 | 16 | 0.610 | 2.460 | 0.465 | 0.610 | | | | 0.431 | | 0.431 | | |
| | 60 | 16 | 2.849 | 2W1616 | 17 | | 1.210 | 0.425 | / | 0.329 | 0.885 | | 0.325 | | 0.050 | | |
| | 34 | 16 | 3.635 | 2W1617 | STR | | | | | | | | | | | | |
| | 30 | 16 | 10.800 | 2W1618 | STR | ▲ | | | | | | | | | | | |
| | 26 | 16 | 5.155 | 2W1619 | 17 | | 3.930 | 1.225 | / | | | | | | | | |
| | 18 | 16 | 8.300 | 2W1620 | STR | | | | | | | | | | | | |
| | 26 | 16 | 3.340 | 2W1621 | STR | | | | | | | | | | | | |
| | 28 | 16 | 7.480 | 2W1622 | STR | ▲ | | | | | | | | | | | |
| | 12 | 16 | 2.070 | 2W1623 | 23 | | | 0.610 | 0.850 | 0.610 | | | 0.052 | | 0.608 | | |
| | 12 | 16 | 2.274 | 2W1624 | 23 | | | 0.610 | 1.054 | 0.610 | | | 0.052 | | 0.608 | | |
| △ | 26 | 22 | 2.085 | 2W2201 | STR | | | | | | | | | | | | |
| △ | 10 | 25 | 1.220 | 2W2501 | STR | | | | | | | | | | | | |
| | 7 | 25 | 0.915 | 2W2502 | STR | | | | | | | / | | | | | |
| * | 54 | 29 | 3.775 | 2W2901 | 1 | | 3.400 | | | | | | | | | | |
| | 24 | 29 | 4.815 | 2W2902 | 17 | | 3.440 | 1.375 | / | | | | | | | | |
| * | 22 | 29 | 2.825 | 2W2903 | 17 | | 2.350 | 0.475 | / | | | | | | | | |
| | | | | **RETAINING WALL** | | | | | | | | | | | | | |
| | 16 | 16 | 9.130 | R1601 | STR | | | | | | | | | | | | |
| | 60 | 16 | 2.140 | R1602 | STR | | | | | | | | | | | | |
| | 30 | 16 | 4.685 | R1603 | 17 | | 3.820 | 0.865 | / | | | / | | | | | |
| | 29 | 16 | 2.130 | R1604 | 2 | 0.250 | 1.880 | | | | | | | | | | |
| | 30 | 16 | 2.720 | R1605 | 17 | | 1.180 | 1.540 | / | | | | | | | | |
| | 2 | 16 | 2.625 | R1606 | 17 | | 1.180 | 0.265 | 1.180 | | | | | | | | |
| | 34 | 16 | 3.250 | R1607 | STR | | | | | | | | | | | | |
| | 32 | 16 | 1.445 | R1608 | 17 | | 0.590 | 0.265 | 0.590 | | | | | | | | |
| | 26 | 16 | 8.620 | R1609 | STR | ▲ | | | | | | | | | | | |

## NOTES

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFROM TO THE REQUIREMENT OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-SI). ALL BARS SHALL BE GRADE 400, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS ARE TO BE SHOWN ONLY WHEN NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS ARE TO BE SHOWN ONLY WHEN NECCESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.




ASTM STANDARD REINFORCING BARS

| BAR SIZE DESIGNATION | NOMINAL MASS kg/m | NOMINAL DIMENSIONS ROUND SECTION: DIAMETER mm | CROSS SECTIONAL AREA mm² | PERIMETER mm |
|---|---|---|---|---|
| 10 | 0.560 | 9.5 | 71 | 29.84 |
| 13 | 0.994 | 12.7 | 129 | 39.90 |
| 16 | 1.552 | 15.9 | 199 | 49.95 |
| 19 | 2.235 | 19.1 | 284 | 60.00 |
| 22 | 3.042 | 22.2 | 387 | 69.74 |
| 25 | 3.973 | 25.4 | 510 | 79.80 |
| 29 | 5.060 | 28.7 | 645 | 90.16 |
| 32 | 6.404 | 32.3 | 819 | 101.47 |
| 36 | 7.907 | 35.8 | 1006 | 112.47 |
| 43 | 11.380 | 43.0 | 1452 | 135.09 |
| 57 | 20.240 | 57.3 | 2581 | 180.01 |

# STATE OF VERMONT
## AGENCY OF TRANSPORTATION

| | |
|---|---|
| Town Of HARTLAND | Bridge No. 60 |
| | Log Sta. |
| Highway No. U.S. ROUTE 5 | Surv. Sta. |
| U.S. ROUTE 5 OVER LULLS BROOK | |

## REINFORCING BAR SCHEDULE

| | |
|---|---|
| Designed By S. BAKI | Drawn By W. GAYNOR |
| Checked By S. BAKI Date | Bridge Design Supervisor J. MIECZKOWSKI Date |
| PROJECT HARTLAND | PROJECT NO. BRS No. 0113(22) |
| I.G.C. Info. M:\145620I VAOT Hartland\struct\zf204rbs.dgn | |
| Bridge Sheet No. BRI35 | Sheet 70 of 86 |

REVISED: 8-12-04 WJG PLOT SCALE: 100:1 PLOT FILENAME: RBS1.1

12-AUG-2004