## DIMENSIONS

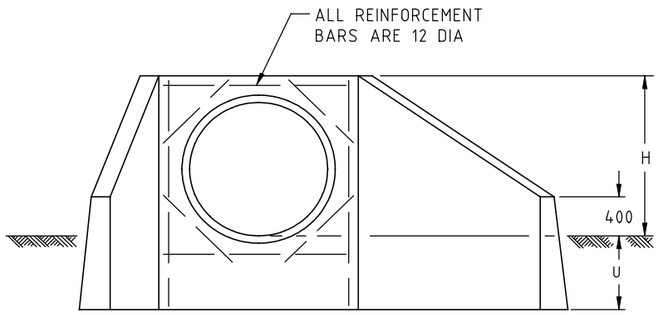
| SKEW ANGLE DEGREE | FLARE ANGLE DEGREE | NOM PIPE DIA | EXTERNAL PIPE DIA# | A | H | K | L | M | N | O | U | TYPE 1 ×SLOPE AT 1.5:1 | | | | | | TYPE 2 ×SLOPE AT 2:1 | | | | | | TYPE 3 ×SLOPE AT 3:1 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | B | B1 | C | D | F | P | B | B1 | C | D | F | P | B | B1 | C | D | F | P |
| 15 | 30 | 1350 | 1524 | 2054 | 1648 | 530 | 129 | 1130 | 830 | 201 | 760 | 1872 | 502 | 4428 | 1872 | 1938 | 2647 | 2496 | 669 | 5219 | 2496 | 2584 | 3530 | 3744 | 1003 | 6801 | 3744 | 3876 | 5295 |
| | | 1500 | 1676 | 2211 | 1800 | 580 | 129 | 1200 | 910 | 202 | 760 | 2100 | 563 | 4874 | 2100 | 2174 | 2970 | 2800 | 750 | 5762 | 2800 | 2899 | 3960 | 4200 | 1125 | 7537 | 4200 | 4348 | 5940 |
| | | 1650 | 1842 | 2383 | 1959 | 630 | 129 | 1260 | 990 | 202 | 760 | 2339 | 627 | 5348 | 2339 | 2421 | 3307 | 3118 | 835 | 6337 | 3118 | 3228 | 4410 | 4677 | 1253 | 8313 | 4677 | 4842 | 6614 |
| | | 1800 | 2006 | 2553 | 2117 | 690 | 130 | 1320 | 1080 | 204 | 760 | 2576 | 690 | 5819 | 2576 | 2666 | 3642 | 3434 | 920 | 6907 | 3434 | 3555 | 4856 | 5151 | 1380 | 9084 | 5151 | 5333 | 7285 |
| | | 1950 | 2198 | 2752 | 2296 | 750 | 131 | 1370 | 1180 | 206 | 760 | 2844 | 762 | 6358 | 2844 | 2944 | 4022 | 3792 | 1016 | 7560 | 3792 | 3926 | 5363 | 5688 | 1524 | 9964 | 5688 | 5889 | 8044 |
| | | 2100 | 2388 | 2948 | 2474 | 810 | 131 | 1420 | 1280 | 207 | 760 | 3111 | 834 | 6893 | 3111 | 3221 | 4400 | 4148 | 1111 | 8208 | 4148 | 4294 | 5866 | 6222 | 1667 | 10838 | 6222 | 6441 | 8799 |
| 30 | 30 | 1350 | 1524 | 2291 | 1648 | 530 | 129 | 1130 | 830 | 201 | 760 | 3242 | 0 | 5533 | 1872 | 1872 | 3744 | 4323 | 0 | 6614 | 2496 | 2496 | 4992 | 6485 | 0 | 8776 | 3744 | 3744 | 7488 |
| | | 1500 | 1676 | 2466 | 1800 | 580 | 129 | 1200 | 910 | 202 | 760 | 3637 | 0 | 6104 | 2100 | 2100 | 4200 | 4850 | 0 | 7316 | 2800 | 2800 | 5600 | 7275 | 0 | 9741 | 4200 | 4200 | 8400 |
| | | 1650 | 1842 | 2658 | 1959 | 630 | 129 | 1260 | 990 | 202 | 760 | 4050 | 0 | 6709 | 2339 | 2339 | 4677 | 5401 | 0 | 8059 | 3118 | 3118 | 6236 | 8101 | 0 | 10759 | 4677 | 4677 | 9354 |
| | | 1800 | 2006 | 2847 | 2117 | 690 | 130 | 1320 | 1080 | 204 | 760 | 4461 | 0 | 7308 | 2576 | 2576 | 5151 | 5948 | 0 | 8795 | 3434 | 3434 | 6868 | 8922 | 0 | 11769 | 5151 | 5151 | 10302 |
| | | 1950 | 2198 | 3069 | 2296 | 750 | 131 | 1370 | 1180 | 206 | 760 | 4926 | 0 | 7995 | 2844 | 2844 | 5688 | 6568 | 0 | 9637 | 3792 | 3792 | 7584 | 9852 | 0 | 12921 | 5688 | 5688 | 11376 |
| | | 2100 | 2388 | 3289 | 2474 | 810 | 131 | 1420 | 1280 | 207 | 760 | 5388 | 0 | 8677 | 3111 | 3111 | 6222 | 7185 | 0 | 10473 | 4148 | 4148 | 8296 | 10777 | 0 | 14065 | 6222 | 6222 | 12444 |
| 45 | 20 | 1350 | 1524 | 2806 | 1648 | 530 | 129 | 1130 | 830 | 201 | 760 | 4015 | -873 | 5947 | 1872 | 2066 | 4430 | 5353 | -1164 | 6995 | 2496 | 2754 | 5906 | 8029 | -1746 | 9089 | 3744 | 4131 | 8859 |
| | | 1500 | 1676 | 3021 | 1800 | 580 | 129 | 1200 | 910 | 202 | 760 | 4503 | -979 | 6545 | 2100 | 2317 | 4969 | 6005 | -1306 | 7720 | 2800 | 3089 | 6625 | 9007 | -1958 | 10069 | 4200 | 4634 | 9938 |
| | | 1650 | 1842 | 3256 | 1959 | 630 | 129 | 1260 | 990 | 202 | 760 | 5015 | -1090 | 7180 | 2339 | 2580 | 5533 | 6687 | -1454 | 8488 | 3118 | 3440 | 7378 | 10030 | -2181 | 11104 | 4677 | 5160 | 11067 |
| | | 1800 | 2006 | 3487 | 2117 | 690 | 130 | 1320 | 1080 | 204 | 760 | 5523 | -1201 | 7810 | 2576 | 2842 | 6094 | 7364 | -1601 | 9250 | 3434 | 3789 | 8126 | 11046 | -2402 | 12132 | 5151 | 5683 | 12188 |
| | | 1950 | 2198 | 3759 | 2296 | 750 | 131 | 1370 | 1180 | 206 | 760 | 6099 | -1326 | 8532 | 2844 | 3138 | 6729 | 8132 | -1768 | 10123 | 3792 | 4184 | 8973 | 12198 | -2652 | 13305 | 5688 | 6276 | 13459 |
| | | 2100 | 2388 | 4028 | 2474 | 810 | 131 | 1420 | 1280 | 207 | 760 | 6672 | -1451 | 9249 | 3111 | 3433 | 7361 | 8895 | -1934 | 10989 | 4148 | 4577 | 9815 | 13343 | -2901 | 14469 | 6222 | 6865 | 14723 |

× THEORETICAL SLOPE OF WINGWALL MEASURED AT RIGHT ANGLES TO THE ROADWAY.

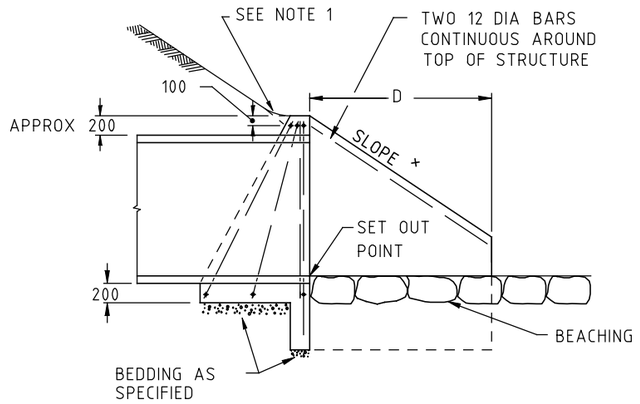
# APPROXIMATE ONLY

NOTES:

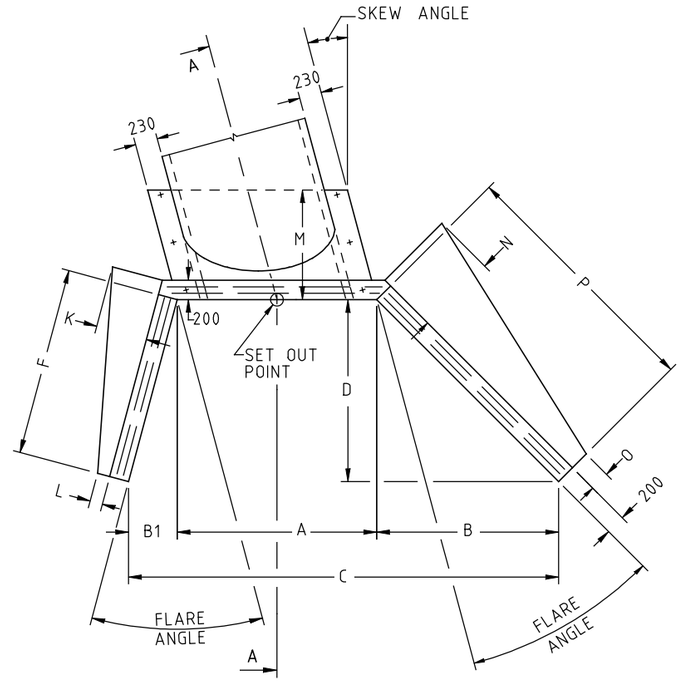
1. BECAUSE THE RELATION OF THE BATTER TO THE TOP OF THE ENDWALL IS ESSENTIAL FOR THE SAFETY OF THE MOTORIST, THE DETAILS AS SHOWN IN SECTION A-A MUST BE ADHERED TO DURING CONSTRUCTION.
2. REINFORCEMENT BARS SHALL COMPLY WITH AS/NZS 4671, GRADE 400Y. LAPS IN REINFORCEMENT BARS SHALL BE 300 MIN, AND CLEAR COVER 50 MIN.
3. EXPOSED EDGES SHALL HAVE 20 x 20 CHAMFERS.
4. COMPACTION PRESSURE BEHIND WALLS NOT TO EXCEED 15 kPa. (1.5 TONNE VIBRATORY ROLLER OR 300 kg VIBRATING PLATE WITHIN 0.5m OF WALL).
5. REFER TO SD 1892 FOR QUANTITIES
6. CONCRETE SHALL BE NORMAL-CLASS N32 STANDARD STRENGTH GRADE OR HIGHER COMPLYING WITH THE REQUIREMENTS OF AS 1379. EXPOSURE CLASSIFICATIONS UP TO AND INCLUDING B1.
7. CONCRETE AGGREGATES SHALL COMPLY WITH TABLE 701.021 OF VICROADS STANDARD SPECIFICATION SECTION 701.
8. ENDWALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF AS 3600.




END ELEVATION




SECTION A-A




PLAN

| ISSUE | APP'D | DATE | AMENDMENT |
|---|---|---|---|
| E | | | |
| D | | | |
| C | J.K. | 1/7/05 | NOTE 2 AMENDED |
| B | J.C. | 1/2/98 | AMENDMENT TO NOTE 6, NOTES 7 & 8 ADDED, CONCRETE STRENGTH GRADES |
| A | J. C. | 1/2/95 | NOTES 2, 5 & 6, GENERAL NOTES 1 & 2 |

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GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. CULVERT INLET AND OUTLET STRUCTURES - SELECTION GUIDE SD 1700

DESIGNED PRINCIPAL ROAD DESIGN ENGINEER

APPROVED 1.2.95

CATALOG PRED
PROJECT sddgnnew
FILENAME sd-1891c.dgn

SCALE OF METRES HOR NOT TO SCALE VER


vicroads design
ENGINEERING & TECHNOLOGY CONSULTANTS
3 PROSPECT HILL ROAD, CAMBERWELL, VICTORIA, 3124
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FAX NO. (03) 9811 8329


STANDARD DRAWING

# MASS CONCRETE WINGWALL TYPES 1, 2 & 3 SKEW PIPE CULVERTS 1350 TO 2100 DIA

| FILE NO. | CONTRACT NO. | SHEET NO. | DRAWING NO. | ISSUE |
|---|---|---|---|---|
| | | | SD 1891 | C |