

18. STRENGTH OF REINFORCED CONCRETE PARAPETS:-

ITEM	CRITERION	STRENGTH
1a	MINIMUM ULTIMATE MOMENT OF RESISTANCE AGAINST VERTICAL BENDING AT BASE (REINFORCEMENT AT TRAFFIC FACE-INTERMEDIATE PANEL).	125kNm/m
1b	MINIMUM ULTIMATE MOMENT OF RESISTANCE AGAINST VERTICAL BENDING AT BASE (REINFORCEMENT AT TRAFFIC FACE-END PANEL).	166kNm/m
2	MINIMUM ULTIMATE MOMENT OF RESISTANCE AGAINST HORIZONTAL BENDING (REINFORCEMENT AT OUTER FACE).	62.5kNm/m
3	MINIMUM ULTIMATE HORIZONTAL TRANSVERSE SHEAR RESISTANCE.	220kN/m
4	MINIMUM ULTIMATE TRANSVERSE SHEAR LOAD TO BE TRANSFERRED AT CONNECTED VERTICAL JOINTS BETWEEN LENGTHS OF INSITU PARAPET OR PRECAST PANELS.	165kN

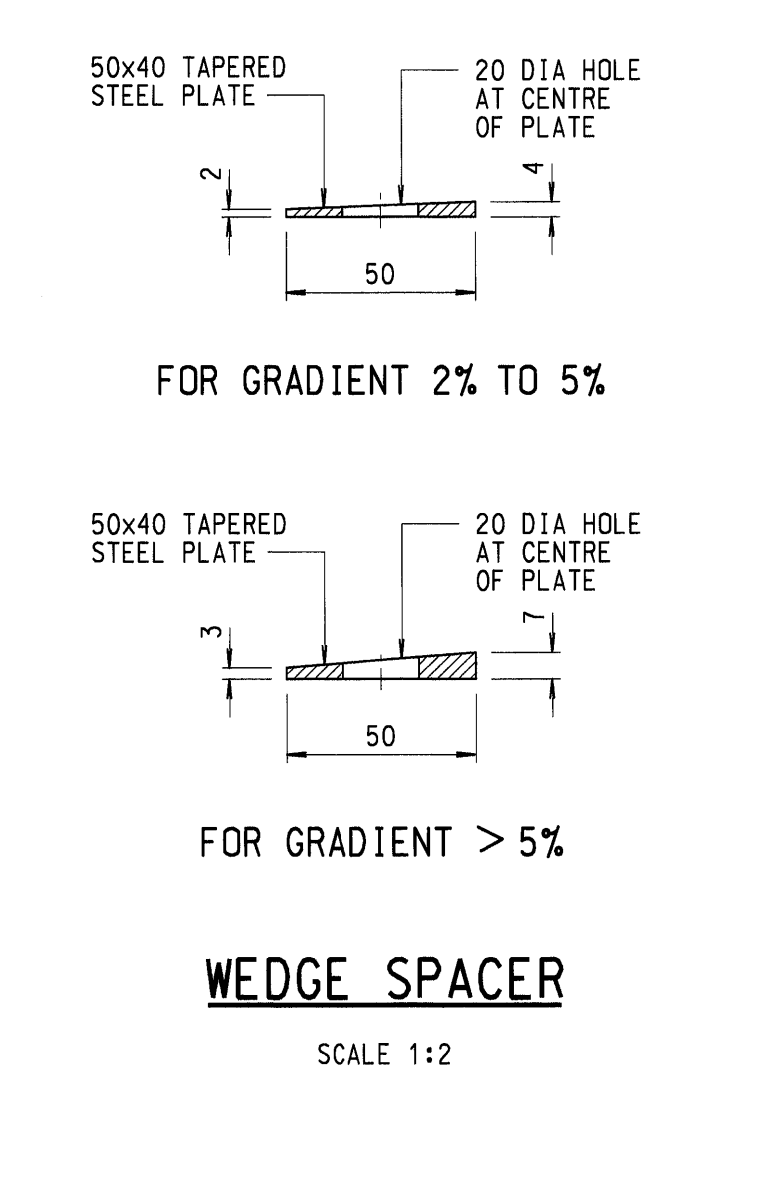
19. VERTICAL CONCRETE JOINTS SHALL BE PROVIDED IN THE CONCRETE PORTION OF THE PARAPET TO PREVENT LONGITUDINAL ACTION IN DECK STIFFENING. JOINT SPACING SHALL BE DETERMINED BY THE ENGINEER BUT SHALL NOT BE LESS THAN 3000 MM.

WELDING SYMBOLS:

220 = THROAT THICKNESS
z = LEG LENGTH
20 = WELD DIMENSION

— = FILLET WELD ON THE ARROW SIDE
— = FILLET WELD ON THE OTHER SIDE
— = SINGLE-BEVEL BUTT WELD ON ARROW SIDE
— = V BUTT WELD ON ARROW SIDE
— = ALL ROUND WELD

- NOTES:
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 - ALL STEELWORK SHALL BE HOT ROLLED / FINISHED SECTIONS COMPLYING WITH BS4, BS EN 10056 OR BS EN 10210-2 AS APPROPRIATE.
 - STEELWORK SHALL BE GRADE S355J0 TO BS EN 10025 OR GRADE S355J0H TO BS EN 10210-1 OR EQUIVALENT.
 - ALL STEELWORK SHALL BE HOT DIP GALVANIZED TO BS EN ISO 1461 OR EQUIVALENT.
 - WELDING OF STEEL SHALL BE IN ACCORDANCE WITH BS EN 1011-1 AND BS EN 1011-2 AND ELECTRODES SHALL BE IN ACCORDANCE WITH BS EN 499.
 - WELDING SYMBOLS ARE IN ACCORDANCE WITH BS499.
 - WELDS ARE 6mm CONTINUOUS FILLET WELDS UNLESS OTHERWISE SPECIFIED.
 - STAINLESS STEEL BOLTS AND NUTS SHALL BE GRADE A4-80 TO BS EN ISO 3506-1 AND BS EN ISO 3506-2 WITH COMPATIBLE STAINLESS STEEL WASHERS.
 - A NYLON OR OTHER APPROVED PLASTIC WASHER SHALL BE PROVIDED AT EVERY INTERFERENCE BETWEEN STAINLESS STEEL AND GALVANIZED STEEL.
 - PARAPET POSTS SHALL BE FIXED VERTICALLY AND BASE PLATES SHALL BE BOLTED DOWN TIGHTLY WITH LEVELS ADJUSTED BY STEEL SHIMS.
 - RAIL EXPANSION JOINTS SHALL BE PROVIDED AT ALL STRUCTURE MOVEMENT JOINTS.
 - PARAPET RAILS SHALL BE CONTINUOUS OVER AT LEAST TWO POSTS. MAXIMUM RAIL LENGTH SHALL BE 12000.
 - BEDDING SHALL BE CEMENT / SAND GROUT WITH MIN. COMPRESSIVE STRENGTH OF 40N/mm².
 - AFTER FABRICATION, ALL STEELWORK SHALL BE PAINTED WITH THE FOLLOWING PAINT SYSTEM:
LIFE TO FIRST MAINTENANCE : 5 - 10 YEARS.
PRETREATMENT : TWO-PACK ETCH PRIMER OR BRITISH RAIL "T-WASH" AS SPECIFIED IN BS5493, SECTION 2 CLAUSE 11.3.2
PRIMER : CHLORINATED RUBBER ZINC PHOSPHATE PRIMER, 70um MINIMUM TOTAL DRY-FILM THICKNESS.
UNDERCOAT : MICACEOUS IRON OXIDE CHLORINATED RUBBER UNDERCOAT, 100um MINIMUM TOTAL DRY-FILM THICKNESS.
FINISH : CHLORINATED RUBBER FINISH COAT THAT IS RESISTANT TO FISH OIL AND OTHER ANIMAL AND VEGETABLE OILS, 60um MINIMUM TOTAL DRY-FILM THICKNESS.
 - THE TRAFFIC FACE OF RAILS SHALL BE SET IN LINE WITH THE TOP EDGE OF PLINTH WITHIN THE FOLLOWING TOLERANCES:
(i) UPPER RAIL ± 15mm
(ii) LOWER RAIL - 15mm
(+VE TOWARDS TRAFFIC; -VE AWAY FROM TRAFFIC)
 - ON SITE WELDING IS NOT PERMITTED UNLESS OTHERWISE AGREED BY THE ENGINEER.



no.	date	description	initial
REVISION			
designed	K. W. MO	<i>[Signature]</i>	06/07
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senior engineer	C. K. CHAN	<i>[Signature]</i>	08/07
approved	<i>[Signature]</i>	9/8/07	date
P. K. LEE Chief Highway Engineer			

