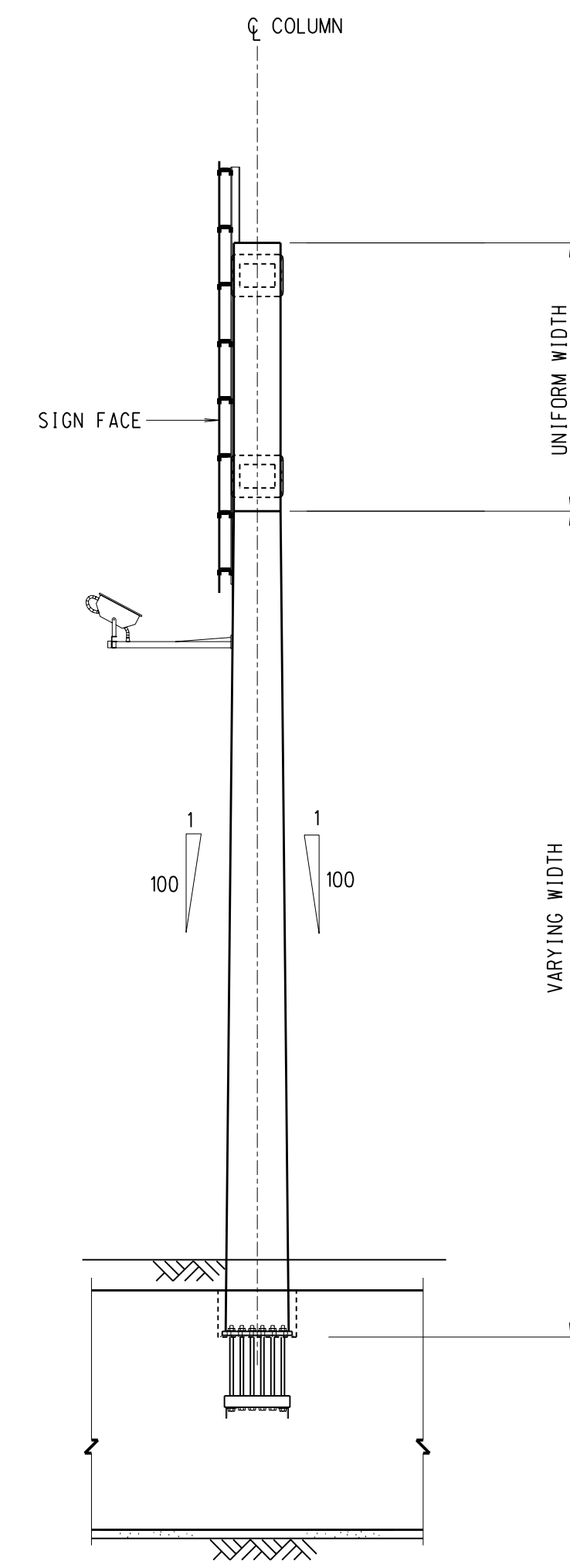


TYPICAL FRONT ELEVATION

MOUNTING FRAME AND POSTS FOR SIGN FACE NOT SHOWN FOR CLARITY
SCALE 1:50



VIEW A

SCALE 1:50

- WHERE MEMBERS ARE TOO LARGE FOR AVAILABLE GALVANIZING BATHS, SUB-ASSEMBLIES SHALL BE PREPARED AS ABOVE AND SUBSEQUENT WELDED JOINTS SHALL BE ZINC SPRAYED IN ACCORDANCE WITH EN 22063 TO A MINIMUM THICKNESS OF 0.2 mm. TWO COATS OF GOOD QUALITY ZINC-RICH PAINT COMPLYING WITH BS 4652 SHALL THEN BE APPLIED ACROSS THE ENTIRE ZINC SPRAYED AREAS INCLUDING AT LEAST 25 mm OF THE PARENT GALVANIZED COATING. ANY DAMAGE TO GALVANIZED COATINGS SHALL BE MADE GOOD IN A SIMILAR WAY TO THE TREATMENT OF WELDED JOINTS. OR, AT THE DISCRETION OF THE ENGINEER, BY THE USE OF LOW MELTING POINT ZINC ALLOY REPAIR RODS MADE SPECIFICALLY FOR THIS PURPOSE RESULTING IN A MINIMUM COATING THICKNESS OF 0.2 mm.
- FASTENERS FOR THE STEELWORK SHALL BE ISO METRIC PRECISION HEXAGONAL BOLTS, STUDS AND NUTS TO BS3692 OR CUP HEAD BOLTS TO BS4933 AS APPROPRIATE WITH COMPATIBLE WASHERS. EACH FASTENER SHALL BE COMPLETE WITH EITHER A LOCKING NUT OR SPRING WASHER. THE STRENGTH GRADE OF THE BOLTS SHALL BE AS FOLLOWS:
M16 OR GREATER 8.8
OTHERS 4.6
- FASTENERS FOR ALUMINIUM COMPONENTS ARE TO BE STAINLESS STEEL BOLTS AND NUTS COMPLYING WITH BS EN ISO 3506-1 AND BS EN ISO 3506-2, GRADE A2-80, WITH COMPATIBLE STAINLESS STEEL WASHERS. FASTENERS, OTHER THAN STAINLESS STEEL MATERIALS, SHALL BE CADMIUM OR ZINC ELECTROPLATED (HOT-DIP GALVANIZED), OR SHERARDIZED TO THE APPROPRIATE BRITISH STANDARDS. A NYLON OR OTHER APPROVED PLASTIC WASHER IS TO BE PROVIDED BETWEEN THE SURFACES OF ANY DIFFERENT METAL SUCH AS ALUMINIUM ALLOY, STAINLESS STEEL AND GALVANIZED STEEL.
- THE DIAMETER OF A BOLT HOLE SHALL BE 2mm LARGER THAN THE NOMINAL DIAMETER OF THE BOLT, UNLESS SHOWN OTHERWISE.
- STAINLESS STEEL BOLTS, NUTS, AND WASHERS SHALL BE INSULATED FROM GALVANIZED MILD STEEL BY NYLON OR OTHER APPROVED NON-METALLIC WASHERS UNLESS INDICATED OTHERWISE.
- MATERIAL AND WORKMANSHIP SHALL COMPLY WITH BS 5400:PART 6.
- THE STEELWORK SHALL BE PAINTED TO PARTICULAR SPECIFICATION CLAUSE 18.62 IN A COLOUR TO BE AGREED BY THE ENGINEER
- THE DIRECTIONAL SIGN FACES SHALL BE PLACED IN THE POSITIONS SUCH THAT THE VERTICAL ARROW MARKS OF THE SIGNS SHALL PROJECT IN LINE WITH THE CENTRE LINE OF THE FINAL TRAFFIC LANE.

- NOTES:
- THE WORKS SHALL COMPLY WITH THE LATEST EDITION OF GENERAL SPECIFICATION FOR CIVIL ENGINEERING WORKS, UNLESS SPECIFIED OTHERWISE.
 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
 - ALL STRUCTURAL STEEL SECTIONS SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING BRITISH STANDARDS:-
BS EN 10210-2 FOR HOLLOW SECTIONS
BS 4-1 & BS EN 10034 FOR I-SECTIONS
BS EN 10056 FOR ANGLES
 - ALL STEELWORK GRADE, UNLESS OTHERWISE STATED, SHALL BE:-
S355J2H TO BS EN 10210 FOR HOLLOW SECTIONS
S355J2G3 TO BS EN 10025 FOR OTHER SECTIONS AND PLATES
 - 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 SHALL COMPLY WITH BS 499.
 - MINIMUM FILLET WELD SHALL BE 6 mm LEG LENGTH UNLESS OTHERWISE SPECIFIED.
 - BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS PRODUCED BY METHODS APPROVED BY THE ENGINEER AFTER DEMONSTRATION AT PROCEDURE TRIALS.
 - WIRE WOOL AND WIRE BRUSHES USED TO CLEAN SURFACES BOTH BEFORE AND AFTER WELDING SHALL BE STAINLESS STEEL. ALL EXPOSED BUTT JOINTS SHALL BE GROUND SMOOTH AND BUFFED. THE DIRECTION OF GRINDING SHALL FOLLOW THE GRAIN PATTERN.
 - AFTER FABRICATION ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH BS EN 10240 TO THE APPROPRIATE COATING WEIGHT. SURFACES SHALL BE PROPERLY PREPARED REMOVING ALL RUST, OIL, PAINT, AND OTHER SURFACE CONTAMINANTS; MILL SCALE AND WELDING SLAG SHALL BE REMOVED BY GRIT BLASTING. CUT FACES AND OUTSIDE ARRISSES SHALL BE GROUND SMOOTH. THE SIZE AND POSITION OF ANY VENT HOLES REQUIRED BY THE GALVANIZER, TOGETHER WITH HIS PROPOSED METHOD OF RE-SEALING, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

SIGN FACE ARRANGEMENT	DESCRIPTIONS
<p>$A_s = W \times H$</p>	<p>SINGLE SIGN FACE</p> <p>SIGN FACE IS PLACED IN SUCH WAY THAT ITS HORIZONTAL CENTRELINE COINCIDES WITH THAT OF THE GANTRY FRAME.</p> <p>NOTE : $K \leq 1300$</p>
<p>$W = W1 + W2$ $H = H1 + H2$ $A_s = W1 \times H1 + W2 \times H2$ $K = K1$</p>	<p>MULTIPLE SIGN FACES (SINGLE LAYER)</p> <p>EACH SEPARATE SIGN FACE IS PLACED IN SUCH WAY THAT ITS HORIZONTAL CENTRELINE COINCIDES WITH THAT OF THE GANTRY FRAME.</p> <p>NOTE : $K1, K2 \leq 1300$</p>
<p>$W = W1$ $H = H1 + H2$ $A_s = W1 \times H1 + W2 \times H2$ $K = K1$</p>	<p>MULTIPLE SIGN FACES (MULTIPLE LAYERS)</p> <p>EACH BOTTOM SIGN FACE IS PLACED IN SUCH WAY THAT ITS HORIZONTAL CENTRELINE COINCIDES WITH THAT OF THE GANTRY FRAME.</p> <p>TOP SIGN FACES ARE PLACED DIRECTLY ABOVE BOTTOM SIGN FACES.</p> <p>NOTE : $K2 \leq 2650$</p>

TABLE II - SIGN PLATE ARRANGEMENT ON GANTRY

GANTRY SPAN 'S' (m)	GANTRY TYPE					
	H ≤ 2.8 m	2.8 m < H ≤ 3.7 m			3.7 m < H ≤ 4.5 m	
		A _s ≤ 20.0m ²	20.0m ² < A _s ≤ 33.5m ²	33.5m ² < A _s ≤ 47.0m ²	A _s ≤ 24.0m ²	24.0m ² < A _s ≤ 40.5m ²
S ≤ 12	A	A	B	D	B	D
12 < S ≤ 14	B	B	C	D	C	D
14 < S ≤ 16	C	C	C	D	C	D
16 < S ≤ 18	D	D	D	D	D	D

TABLE I - GANTRY TYPE SCHEDULE

ABBREVIATIONS

- S IS THE SPAN LENGTH.
 - H IS THE LARGEST PROJECTED HEIGHT OF SIGN FACES.
 - W IS THE TOTAL PROJECTED LENGTH OF SIGN FACES AND SHALL BE LESS THAN (S-2)m.
 - A_s IS THE TOTAL AREA OF SIGN FACES.
 - K IS THE PROJECTION OF SIGN FACES ABOVE OR BELOW GANTRY FRAME.
 - G IS THE DEPTH OF GANTRY FRAME.
- WHERE G = 1900 FOR K > 150
G < 1900 FOR K = 150

no.	date	description	initial
REVISION			
designed	K.K. LEE	SIGNED	NOV 01
drawn	T.M. LEE	SIGNED	NOV 01
checked	senior technical officer	P.S. CHAN	SIGNED SEP 02
	project engineer	K.K. LEE	SIGNED SEP 02
	senior engineer	W.C. CHAN	SIGNED SEP 02

approved
SIGNED
R.K.W. WONG
Chief Highway Engineer
SEP 2002
date

contract no.
file no.
project no.
contract

drawing title
SIGN GANTRY

SHEET 1 OF 4

drawing no. SSD 151(1)
scale AS SHOWN

office
STRUCTURES DIVISION

