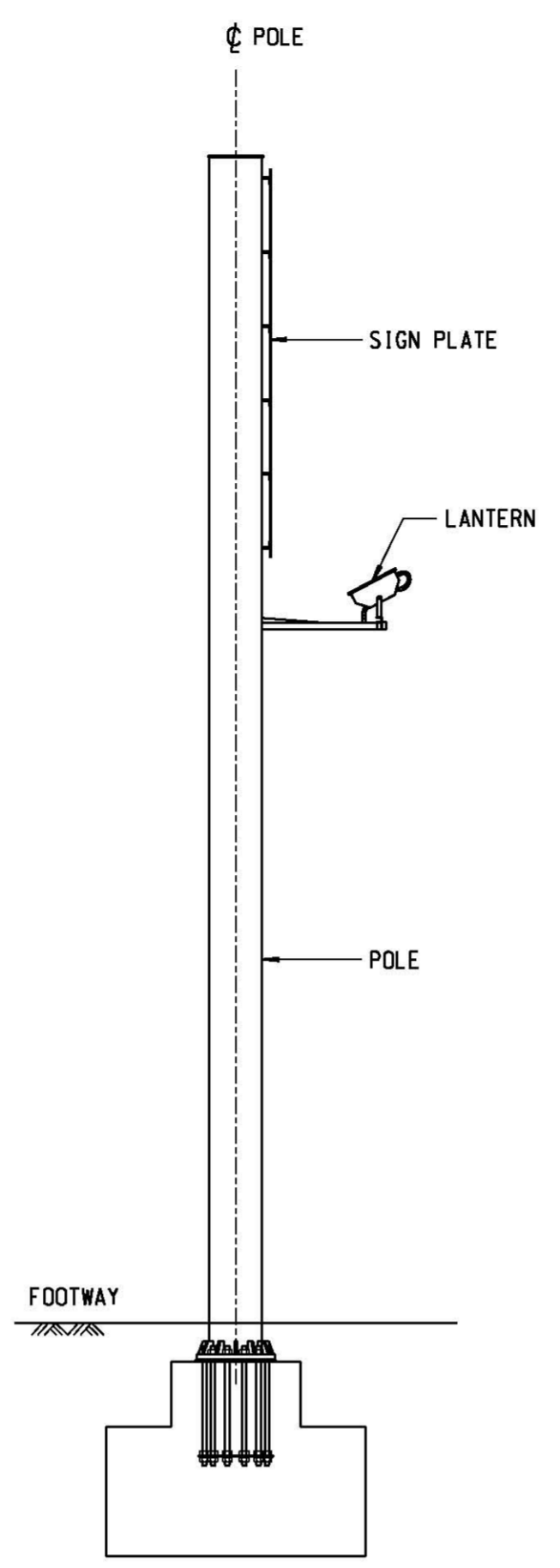
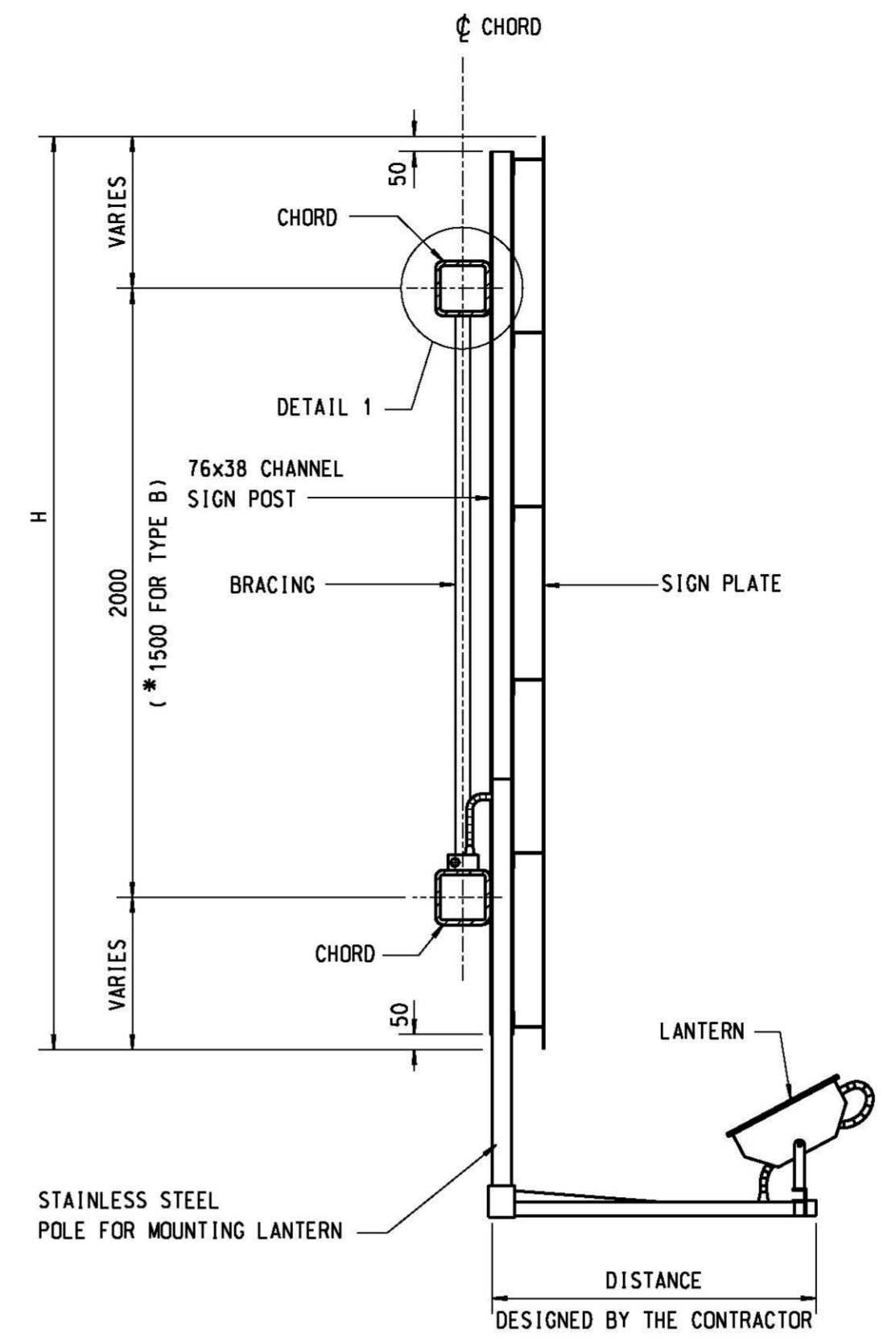


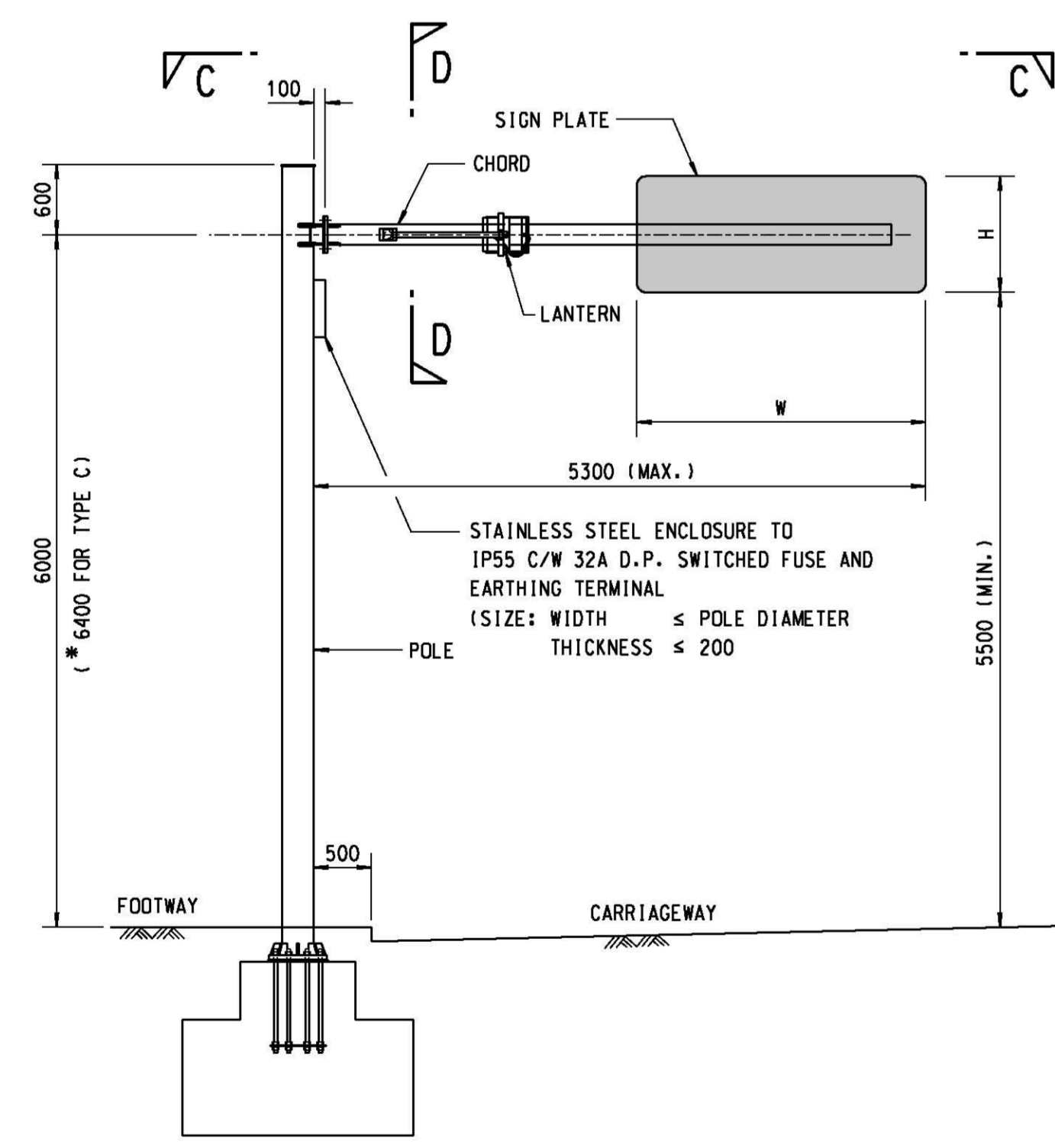
TYPICAL FRONT ELEVATION FOR TYPE A AND TYPE B
SCALE 1:50
(NOTE : SIGN POSTS AND SIGN PLATE SUPPORTING FRAME NOT SHOWN FOR CLARITY)



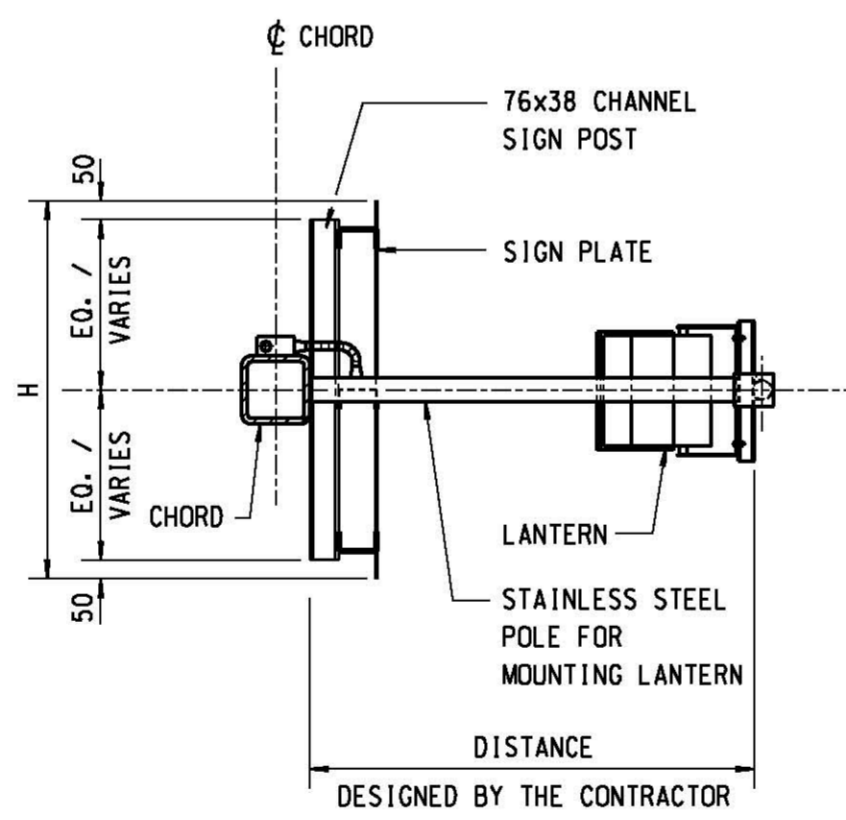
ELEVATION A-A
SCALE 1:50



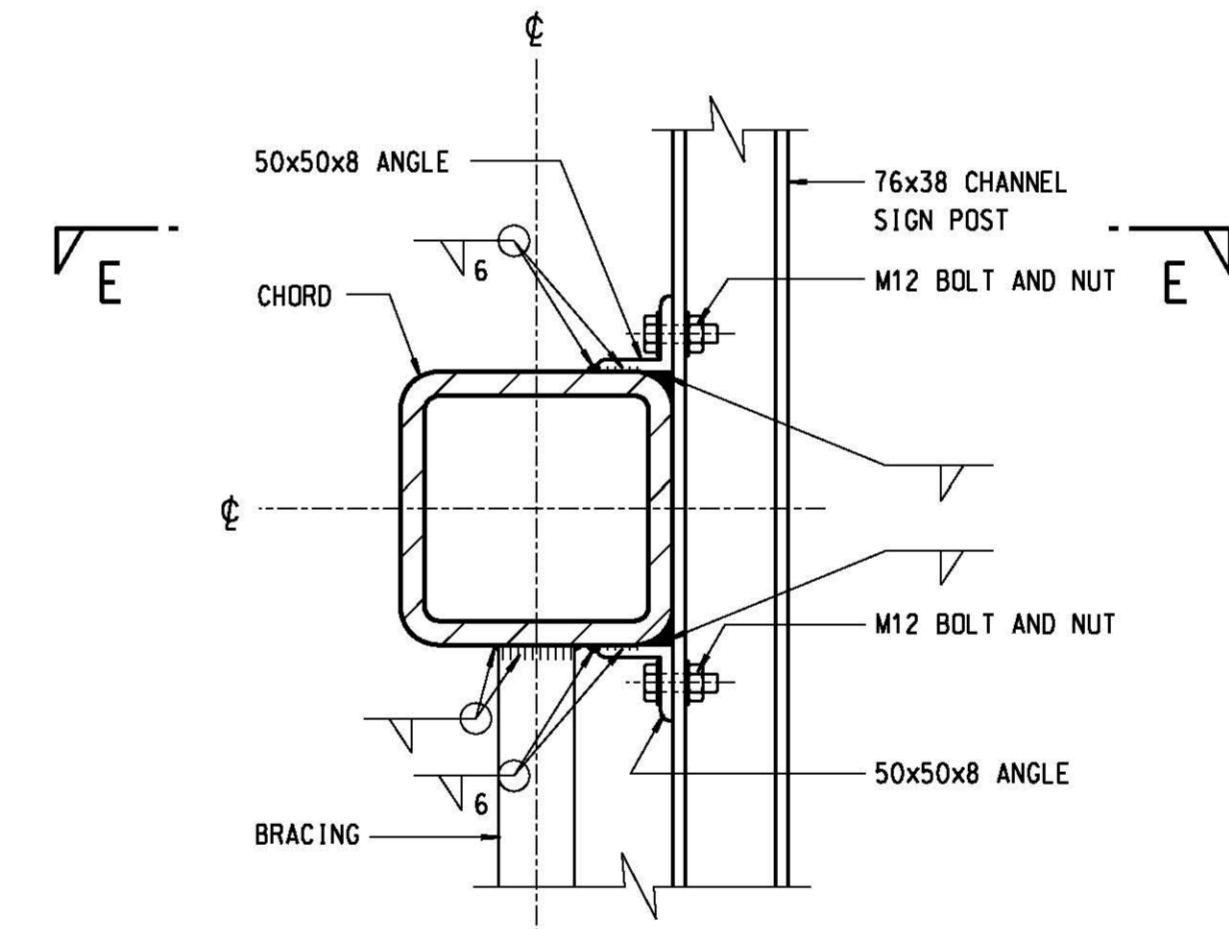
SECTION B-B
SCALE 1:20



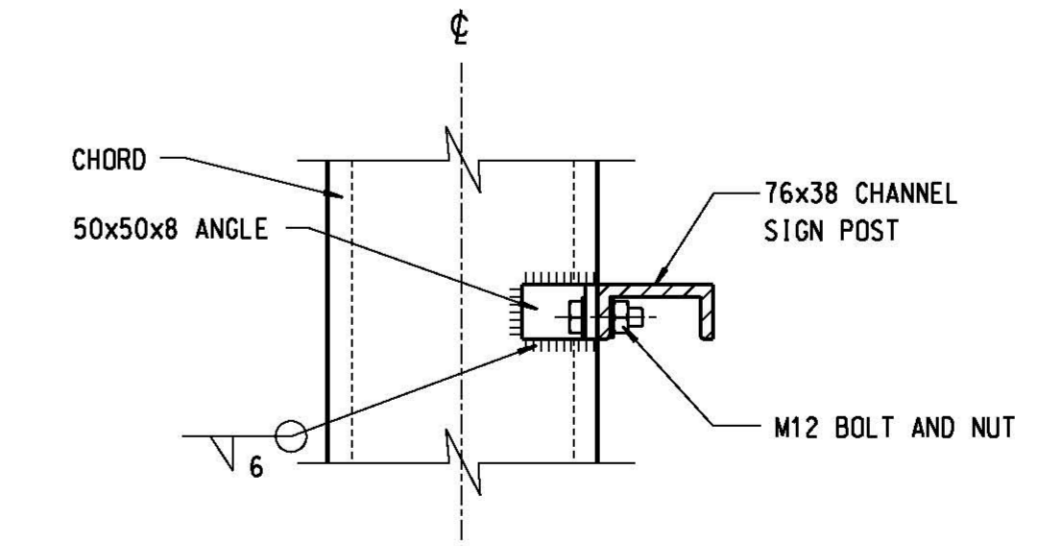
TYPICAL FRONT ELEVATION FOR TYPE C AND TYPE D
SCALE 1:50
(NOTE : SIGN POSTS AND SIGN PLATE SUPPORTING FRAME NOT SHOWN FOR CLARITY)



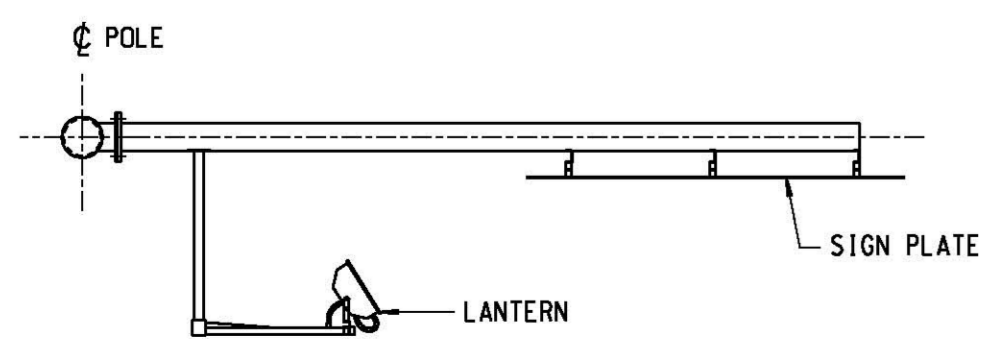
SECTION D-D
SCALE 1:20



DETAIL 1
(TYPICAL CONNECTION OF SIGN POST TO CHORD)
SCALE 1:5



SECTION E-E
SCALE 1:5



ELEVATION C-C
SCALE 1:50

PROPERTIES OF CANTILEVER DIRECTIONAL SIGNS

TYPE	SIGN PLATE DIMENSION			POLE	BASE PLATE	HOLDING DOWN BOLTS			CHORD MEMBER	BRACING MEMBER	SPLICE FIXING BOLTS			SPLICE CONNECTION PLATE		
	HEIGHT (H)	WIDTH (W)	AREA			SIZE	No.	Z			SIZE	X (mm)	Y (mm)	B (mm)	D (mm)	T (mm)
A	H ≤ 3.5 m	W ≤ 4.6 m	≤ 16 m ²	406.4 DIA. x 16 THK. CHS	600 DIA. x 40 THK.	M36	12	50	180x180x16 SHS	50x50x5 SHS	M24	35	125	320	320	20
B	H ≤ 3.0 m	W ≤ 4.6 m	≤ 12 m ²	323.9 DIA. x 16 THK. CHS	550 DIA. x 40 THK.	M36	12	50	180x180x16 SHS	50x50x5 SHS	M24	35	125	320	320	20
C	H ≤ 2.0 m	W ≤ 4.6 m	≤ 6 m ²	273.0 DIA. x 16 THK. CHS	500 DIA. x 40 THK.	M30	8	40	180x180x16 SHS	50x50x5 SHS	M24	35	125	320	320	20
D	H ≤ 2.0 m	-	≤ 2 m ²	244.5 DIA. x 16 THK. CHS	450 DIA. x 40 THK.	M30	8	40	150x150x16 SHS	50x50x5 SHS	M20	30	105	270	270	20

10. 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 COATING 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.
11. 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:
- | | |
|----------------|-----|
| M12 OR GREATER | 8.8 |
| OTHERS | 4.6 |
12. 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.
13. THE DIAMETER OF A BOLT HOLE SHALL BE 2mm LARGER THAN THE NOMINAL DIAMETER OF THE BOLT, UNLESS SHOWN OTHERWISE.
14. STAINLESS STEEL BOLTS, NUTS, AND WASHERS SHALL BE INSULATED FROM GALVANIZED MILD STEEL BY WELDN OR OTHER APPROVED NON-METALLIC WASHERS UNLESS INDICATED OTHERWISE.
15. MATERIAL AND WORKMANSHIP SHALL COMPLY WITH BS 5400:PART 6.
16. GAPS IN SIGN PLATE SHALL BE SEALED WITH A POLYSULPHIDE, POLYURETHANE OR SILICONE SEALANT WHICH MUST BE RECOMMENDED BY THE SEALANT MANUFACTURER AS SUITABLE FOR THE INTENDED APPLICATION AND APPROVED BY THE ENGINEER.
17. THE STEELWORK SHALL BE PAINTED TO PARTICULAR SPECIFICATION CLAUSE 18.62 IN A COLOUR TO BE AGREED BY THE ENGINEER
18. THE CONTRACTOR SHALL DETERMINE THE PRE-CAMBER NECESSARY FOR OFFSETTING THE SAGGING DEFLECTION RESULTING FROM THE WEIGHT OF THE STEELWORK AS REQUIRED IN COMPLIANCE WITH GENERAL SPECIFICATION CLAUSE 19.01(2). SUCH PRE-CAMBER SHALL BE FORMED BY CONNECTING STRAIGHT SECTIONS OF THE CANTILEVER DIRECTIONAL SIGN CHORD WITH A CHANGE OF SLOPE AT SPLICE BY COMPLETE PENETRATION BUTT WELDS.
19. THE DIRECTION SIGN PLATES 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 CHANNELS
BS EN 10056 FOR ANGLES
 - ALL STEELWORK GRADE, UNLESS OTHERWISE STATED, SHALL BE:-
S355J2H TO BS EN 10210 FOR HOLLOW SECTIONS
S355J2G4 TO BS EN 10025 FOR OTHER SECTIONS AND PLATES
 - WELDING AND WELDING SYMBOLS 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 22553:1994.
 - MINIMUM FILLET WELD TO BE 6 mm LEG LENGTH UNLESS OTHERWISE SPECIFIED.
 - BUTT WELDS TO 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 IS TO 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 NOTIFIED TO THE ENGINEER FOR HIS APPROVAL.

no.	date	description	initial
REVISION			
designed	T. CHUNG	SIGNED	APR 02
drawn	K.K. LAW	SIGNED	APR 02
senior technical officer	H.T. TANG	SIGNED	MAY 02
project engineer	T. CHUNG	SIGNED	MAY 02
senior engineer	W.C. LAU	SIGNED	MAY 02

approved
 SIGNED P.C. WONG
 Chief Highway Engineer
 MAY 02 date

contract no.
 file no.
 project no.
 contract

drawing title
CANTILEVER DIRECTIONAL SIGN
 (SHEET 1 OF 5)

drawing no. **SSD153 (1)**
 scale **AS SHOWN**

office **STRUCTURES DIVISION**
 結構部
HIGHWAYS DEPARTMENT
 路政署
 HONG KONG