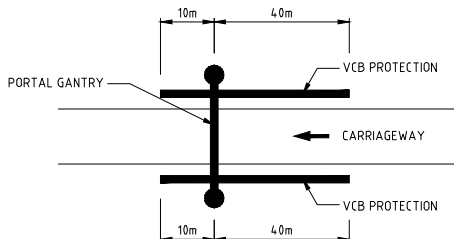


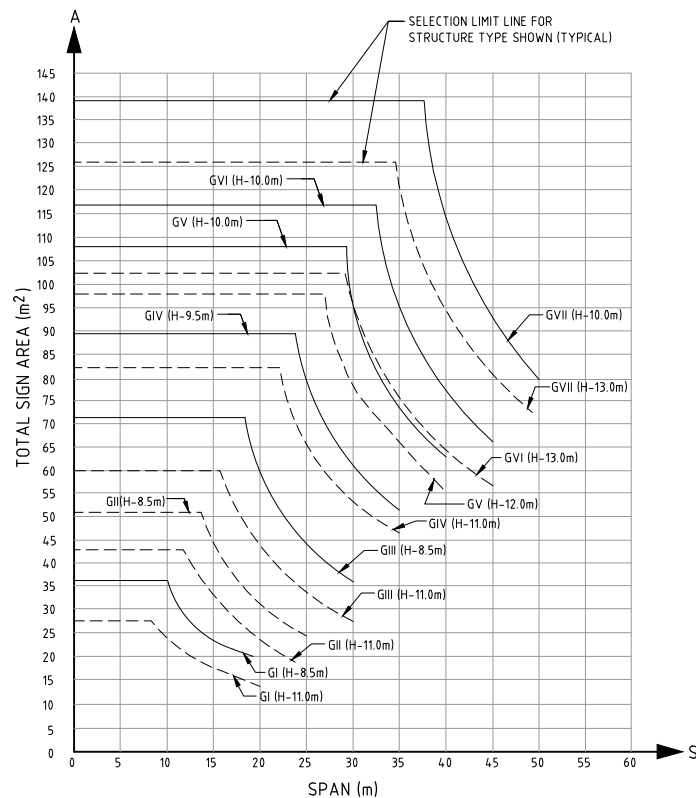
GANTRY STRUCTURE TYPE G



PROTECTION DETAIL

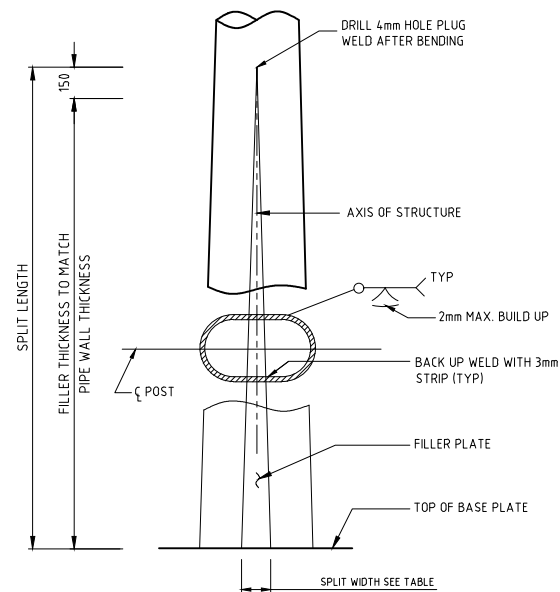
GANTRY STRUCTURE TYPE G SELECTION TABLE AND DESIGN DATA							
STRUCTURE TYPE	MAXIMUM** ALLOWABLE $\Delta$ (m)	PIPE SIZE AND SPLIT $\phi$ mm x mm	POST WALL THICKNESS (mm)	MAST WALL THICKNESS (mm)	RADIUS R (m)	CAMBER TYPE	FOUNDATION TYPE
GI	1.0	273.0 x 150	12.7	10	2.45	A	(A)
GII	1.5	323.9 x 205	12.7	10	2.45	B	(B)
GIII	2.0	406.4 x 205	12.7	10	2.45	B	(C)
GIV	3.0	508.0 x 205	12.7	10	3.05	C	(D)
GV	4.0	609.6 x 205	12.7	10	3.65	D	(E)
GVI	4.0	660.4 x 205	12.7	10	4.25	E	(F)
GVI	4.0	762.2 x 205	12.7	10	4.25	F	(G)

\*\* DIFFERENCE BETWEEN  $H_L$  AND  $H_R$

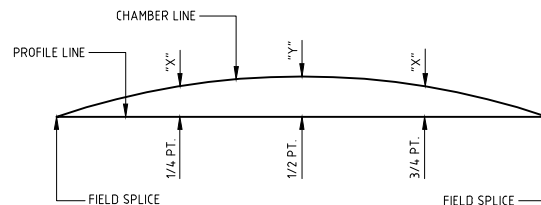


GANTRY STRUCTURE SELECTION DIAGRAM

$H$  used shall be the greater of  $H_R$  and  $H_L$



POST SPLIT DETAIL



CAMBER DIAGRAM FOR GANTRY

(SEE TABLE BELOW)

CAMBER (mm)		
TYPE	"X"	"Y"
A	38	50
B	45	60
C	53	70
D	60	80
E	86	115
F	105	140

## NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT Q.C.S. UNLESS OTHERWISE AGREED WITH THE ENGINEER.
- SIGN STRUCTURES ARE DESIGNED TO ACCOMMODATE A WIND SPEED OF 120 KPH WITH GUSTS UP TO 160 KPH (QCS 2014).
- SIGN GANTRY SHALL BE DESIGNED TO BE PASSIVELY SAFE IN ACCORDANCE WITH BS EN 12767 OR SHALL BE PROTECTED WITH AN APPROVED VEHICLE RESTRAINT SYSTEM.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING SIGN LOCATIONS, FABRICATION, ERECTION DETAILS AND OTHER INFORMATION AS REQUIRED BY THE ENGINEER FOR APPROVAL BY THE ENGINEER.
- THE CONTRACTOR SHALL OBTAIN AND SUBMIT SOIL BORINGS FOR EACH OVERHEAD SIGN LOCATION AS REQUIRED BY THE SPECIFICATIONS.
- DRILLED PIERS ARE DESIGNED FOR ASSUMED SITE CONDITION WITH A SOIL MODULUS OF 14.0 METRIC TONS PER CUBIC METRE FOR THE TOP 2.5 METRES OF SOIL AND 280 METRIC TONS PER CUBIC METRE BELOW A 2.5 METRE DEPTH. THE CONTRACTOR SHALL VERIFY THESE ASSUMPTIONS PRIOR TO FOUNDATION CONSTRUCTION. IN THE CASE OF SOIL CONDITIONS DIFFERENT FROM THE ASSUMED CONDITIONS, THE CONTRACTOR SHALL REDESIGN THE FOUNDATION AND SUBMIT COMPLETE DRAWINGS AND CALCULATIONS TO THE ENGINEER FOR APPROVAL. PASSIVE RESISTANCE TO LATERAL DESIGN FORCES SHALL BE PROVIDED BY UNDISTURBED GROUND ONLY. CONSTRUCTED DEPTH OF CIM FOUNDATIONS SHALL BE ADJUSTED ACCORDINGLY.
- PRIOR TO FABRICATION OF TUBULAR FRAMES ALL DIMENSIONS OF STRUCTURAL FRAME AND PLACEMENT OF FOUNDATIONS AND ANCHOR BOLT LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
- ALL GANTRY STEELWORK SHALL BE MINIMUM GRADE A53 GRADE B OR EQUIVALENT, AND GALVANIZED IN ACCORDANCE WITH QCS. ANCHOR BOLTS AND ALL OTHER STRUCTURAL FIXINGS SHALL BE MIN. GRADE 8.8 OR EQUIVALENT, AND GALVANIZED IN ACCORDANCE WITH QCS.
- WHEN SEVERAL SIGN PANELS ARE TO BE INSTALLED WITH SPACES BETWEEN THE PANELS, THE TOTAL SIGN AREA IS THE SUM OF THE INDIVIDUAL SIGN PANEL AREAS.
- THE MAXIMUM SIGN PANEL OVERLAP ONTO ELBOW SHALL NOT EXCEED 1500mm FROM THE FIELD SPLICE.
- WALKWAY BRACKET MAXIMUM SPACING SHALL BE 1600mm AND MINIMUM CLEAR DISTANCE FROM FIELD SPLICE SHALL BE 300mm.
- WALKWAY SHALL EXTEND THE FULL LENGTH OF SIGNS, BE CONTINUOUS BETWEEN SIGNS AND EXTEND TO THE EDGE OF ROADWAY IF REQUIRED. THE SAFETY RAILING SHALL PROTECT THE ENTIRE WALKWAY AND SHALL BE CONTINUOUS FOR NOT MORE THAN 3200mm IN ONE UNIT.
- ALL WELDING SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED.
- IF THE SIGN FRAMES ARE ERECTED AS ONE UNIT, THEY SHALL BE ADEQUATELY SUPPORTED TO AVOID DISTORTION, DAMAGE OR CHANGE IN SPAN LENGTH.
- BEFORE ANY PORTION OF THE SIGN FRAMES ARE ASSEMBLED IN THEIR FINAL POSITIONS THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER BY PREASSEMBLY OR OTHER APPROVED METHODS THAT THE SPAN LENGTHS OF THE FRAMES IN THE NO LOAD CONDITION MATCH WITHIN 10mm; THE FIELD MEASURED SPAN LENGTHS BETWEEN BASE PLATES.
- AT FINAL POSITION OF POST, ALL TOP AND BOTTOM ANCHOR BOLT NUTS SHALL BE WRENCH TIGHTENED AGAINST BASE PLATE.
- LOCATE HANDHOLE BEHIND SIGN PANEL WITHIN REACH OF WALKWAY. FOR MULTIPLE SIGNS, PROVIDE 2 HANDHOLES, DRILL AND TAP FOR 25mm DIAMETER CONDUIT HUB ADJACENT TO MAST ARM HANDHOLES ONLY.
- 6.5m VERTICAL CLEARANCE MEASURED FROM HIGHTPOINT OF ROADWAY DOWN INTO UNDERSIDE OF SIGN OR FROM LOW POINT OF SIGN PAVEMENT
- FRAMES THAT SUPPORT EQUIPMENT OTHER THAN STANDARD SIGNAGE e.g. VARIABLE MESSAGE SIGNS (VMS) SHALL BE DESIGNED INDEPENDENTLY OF THIS STANDARD DETAIL.
- MAXIMUM DIFFERENCE BETWEEN POST HEIGHTS ON AN INDIVIDUAL FRAME SHALL NOT EXCEED 150mm, OTHERWISE FRAME SHALL BE REDESIGNED INDEPENDENTLY OF THIS STANDARD DETAIL.
- SAFETY BARRIERS TO COMPLY WITH IAN 009, QCS AND QHDM.
- FOR LATERAL AND VERTICAL POSITIONS OF TRAFFIC AND DIRECTIONAL SIGNS REFER TO QATAR TRAFFIC CONTROL MANUAL, VOLUME 1 PART 1-TABLE 1.3.

## LEGEND:

- CIDH CAST IN DRILLED HOLE  
VCB VEHICLE CRASH BARRIER

Rev.	Date	Revision Details	Appd.
2	17MAR19	ISSUED FOR USE	
1	20MAR16	ISSUED FOR USE	
0	15SEP13	ISSUED FOR USE	

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PA  
PROJECTS AFFAIRS

QCS Section:  
Section 6 - Road Works  
Part 13 - Traffic Signs, Markings and Studs

Drawing Title:

OVERHEAD SIGN GANTRY  
TYPE G

Approved:	Sheet No: 1 OF 1
Date: MARCH 2019	Scale: N.T.S.
Drawing Number: SD 6-13-201	Revision: 2