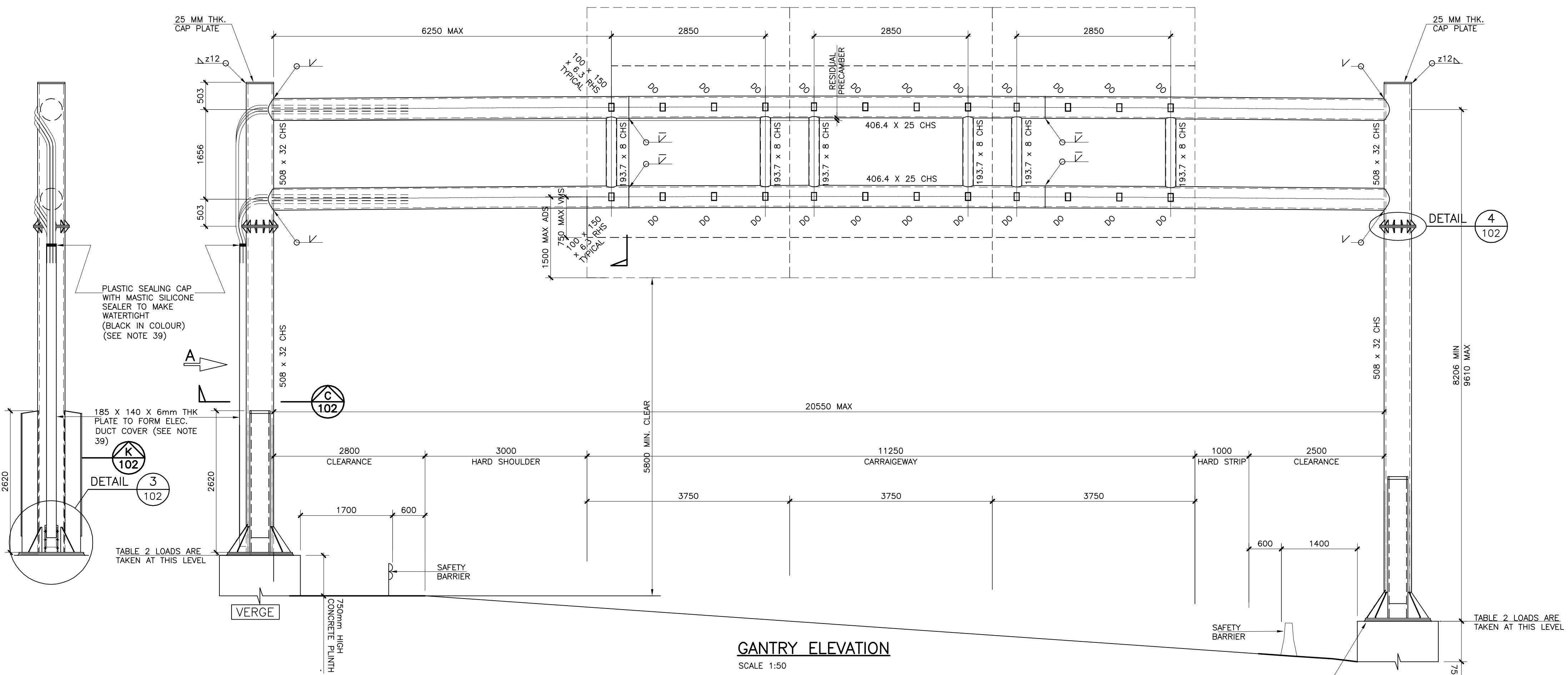


**ELEVATION SIGN SUPPORT STEELWORK**  
SCALE 1:50



**GANTRY ELEVATION**  
SCALE 1:50

- NOTES**
- 1) ALL DIMENSIONS ARE IN MILLIMETRES.
  - 2) THE DESIGNER OF SPECIFIC GANTRIES SHALL PRODUCE GENERAL ARRANGEMENT DRAWINGS FOR THE SPECIFIC GANTRY. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
  - 3) STEEL SHALL BE S355J2G3 TO BS EN 10025 UNLESS OTHERWISE NOTED. HOLLOW SECTIONS TO BE GRADE S355J2H TO ISEN10210 UNLESS NOTED OTHERWISE.
  - 4) THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 12 DEGREES CENTIGRADE.
  - 5) STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH NATIONAL ROADS AUTHORITY (NRA) SPECIFICATION FOR ROADWORKS.
  - 6) PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH NRA SPECIFICATION FOR ROADWORKS OR APPROVED ALTERNATIVE. FINAL COLOUR TO BE APPROVED BY NRA.
  - 7) DIFFERENTIAL SETTLEMENT BETWEEN THE END SUPPORTS IS TAKEN AS 15mm.
  - 8) LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SPECIFICATION.
  - 9) METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
  - 10) ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
  - 11) TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
  - 12) WELD SYMBOLS ARE IN ACCORDANCE WITH BS EN 22553.
  - 13) ALL FILLET WELDS SHALL BE 6 MM LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE.
  - 14) BOLTS SHALL BE AS DESCRIBED ON THE DRAWING.
  - 15) COPE HOLES AND RE-ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50 MM OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
  - 16) STEEL PLATES CALLED UP AS "Z35" ON THE DRAWINGS SHALL HAVE ENHANCED THROUGH THICKNESS PROPERTIES IN ACCORDANCE WITH ISEN 10164 TO CLASS Z35.
  - 17) HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES
  - 18) MAX. WEIGHT OF VMS 70kg/m.<sup>2</sup>  
MAX WEIGHT OF ADS 20kg/m.<sup>2</sup>
  - 19) MAX. DEPTH OF SIGN 400mm.
  - 20) STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNERS OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNERS OF SPECIFIC GANTRIES.
  - 21) VERTICALS 1 AND 4 ARE DESIGNED TO SUPPORT VARIABLE MESSAGE SIGNAGE (VMS). VERTICALS 2 AND 3 ARE OMITTED TO ALLOW ACCESS TO BACK OF VMS. ALL VERTICALS ARE REQUIRED FOR ADVANCED DIRECTIONAL SIGNAGE.
  - 22) TOPOGRAPHY FACTOR Sh' DEFINED IN BD 37/01 CLAUSE 5.3.2.3.3 IS ASSUMED AS 1.1
  - 23) MAXIMUM WIND GUST SPEED (Vd) IS TAKEN AS 51.58 m/sec CALCULATED IN ACCORDANCE WITH BD 37/01.
  - 24) THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE SAMPLE GENERIC RISK ASSESSMENT AND SAMPLE SPECIFICATION APPENDICES THAT BEEN COMPLETED FOR THE GANTRY DESIGN. DESIGNERS OF SPECIFIC SCHEMES SHOULD OBTAIN A COPY FROM THE NRA PRIOR TO COMMENCING GANTRY DESIGNS.
  - 25) ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
  - 26) ALL WELDS ARE IN TENSION UNDER TEMPORARY AND IN-SERVICE CONDITIONS.
  - 27) REINFORCEMENT IN BASE TO BE MECHANICALLY FIXED TO GANTRY LEG HOLDING DOWN BOLTS.
  - 28) MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE CLASS 40.
  - 29) ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
  - 30) GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
  - 31) SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING UNLESS STRUCTURAL ADEQUACY IS VERIFIED.
  - 32) THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY HAS BEEN DESIGNED FOR. THE SIGN LAYOUT AND THE NUMBER OF SECONDARY SIGN STEELWORK VERTICALS SHOULD BE PROVIDED TO SUIT GANTRY SPECIFIC REQUIREMENTS AND NOT EXCEED THOSE SHOWN ON THE DRAWING.
  - 33) THE DEFLECTIONS SHOWN IN TABLE 1 ASSUME A SIMPLY SUPPORTED SPAN OF 21.0M. THE RESIDUAL PRE-CAMBER AFTER DEAD AND SUPERDEAD LOADS FOR SPECIFIC SCHEMES SHALL BE AS SHOWN ON THE TABLE AND BE ACHIEVED AT MID-SPAN WITH A SMOOTH CURVE BETWEEN MID-SPAN AND END SUPPORTS
  - 34) DIMENSIONS IN BRACKETS IF CARRIAGEWAY WIDTH IS 3500.
  - 35) CARRIAGEWAY CROSS SECTIONAL DIMENSIONS ARE INDICATIVE ONLY.
  - 36) THE APPLIED FORCES GIVEN IN TABLE 2 ASSUME A SPAN OF 20.55M. THE DESIGNER SHALL FACTOR AND COMBINE THE FORCES IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY DESIGN MANUAL FOR ROADS AND BRIDGES IN ORDER TO DESIGN THE SUB STRUCTURE.
  - 37) SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
  - 38) DUCTING TO BE PROVIDED BY SPECIALIST SUBCONTRACTORS.
  - 39) PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.

- LEGEND**
- VMS - VARIABLE MESSAGE SIGN
  - ADS - ADVANCED DIRECTIONAL SIGN

**TABLE 1: GANTRY BEAM UNFACTORED MIDSPAN VERTICAL DEFLECTIONS (REFER TO NOTE No. 33)**

LOAD TYPE	MID SPAN DEFLECTION(mm)
DEAD	14.0
MIN. SUPERDEAD	1.0
MAX. SUPERDEAD	6.0
WIND-VERTICAL	6.0
RESIDUAL PRE-CAMBER REQUIRED AT MID SPAN	SPAN/400

**TABLE 2: GANTRY LEGS UNFACTORED LOAD EFFECTS ON BASE AT UNDERSIDE OF STEEL LEG BASE PLATE (REFER TO NOTE No. 36)**

LOAD TYPE	Fz AXIAL FORCE (kN)	Mx BENDING (kN.m)	My BENDING (kN.m)	Mz TORSION (kN.m)	Vx SHEAR (kN)	Vy SHEAR (kN)
DEAD	-112	-10	+35	0	±12	0
MIN. SUPERDEAD	-6	-6	+4	0	+1	0
MAX. SUPERDEAD	-16	-18	+10	+1	+4	0
WIND-TRANSVERSE	0	±667	0	±154	0	±78
WIND-LONGITUDINAL	±7	±1	±22	±1	±6	0
WIND-VERTICAL	±21	±8	±11	0	±4	0
SNOW	-10	-4	+4	0	+2	0
COLLISION *	0	±224	±175	±9	±250	±150
TEMPERATURE	0	0	±102	0	±25	0
DIFF. SETTLEMENT	±2	0	±30	0	±2	0

\* ALL COLLISION LOADS ARE APPLIED CONCURRENTLY

