



**PLAN - SIGN STRUCTURE**  
N.T.S.

**ELEVATION - SIGN STRUCTURE**  
N.T.S.

**SIDE ELEVATION D-D**  
N.T.S.

**GENERAL NOTES:**

1. DESIGN SPECIFICATIONS:  
2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 5TH EDITION WITH ALL CURRENT INTERIMS.
2. CONSTRUCTION SPECIFICATIONS:  
2004 NJTA STANDARD SPECIFICATIONS, 6TH EDITION, AS MODIFIED BY THE SUPPLEMENTAL SPECIFICATIONS AND THESE STANDARD DRAWINGS.
3. DESIGN CRITERIA:  
DESIGN WIND SPEED 110 MPH  
DESIGN ICE LOAD 3 PSF
4. STRUCTURAL STEEL:  
(A) STRUCTURAL STEEL HSS SECTIONS SHALL BE ASTM A847 GR. 50 WITH PROPERTIES OF ASTM DESIGNATION A709 GR. 50W. TS SECTIONS OF EQUIVALENT STRENGTH CAN BE USED AS AN ALTERNATIVE TO THE HSS SECTIONS. AS AN ALTERNATE, TUBING PRODUCED BY FORMING AND LONGITUDINALLY SEAM WELDING STEEL PLATE CONFORMING TO ASTM A709, GRADE 50W OR ASTM A242 MAY BE USED. FOR OPTIONAL FABRICATION DETAILS, SEE STANDARD DRAWING SI-33.

- (B) STRUCTURAL STEEL SHAPES AND PLATES SHALL BE: ASTM A709, GR. 50W.
- (C) WELDING SHALL CONFORM TO THE ANSI/AASHTO/AWS STRUCTURAL WELDING CODE D1.1 WITH NJTA AMENDMENTS. WELDING AND NONDESTRUCTIVE TESTING SYMBOLS SHALL CONFORM TO STANDARD SYMBOLS FOR WELDING AND BRAZING AND NONDESTRUCTIVE EXAMINATIONS PER AWS A2.4.
5. BOLTS:  
(A) ALL BOLTS SHALL BE ASTM A449 HOT-DIP GALVANIZED OR ASTM A325 (TYPE 3) HIGH STRENGTH BOLTS, AS NOTED. NUTS SHALL CONFORM TO ASTM A563 AND PLATE WASHERS SHALL CONFORM TO ASTM F436. BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.  
(B) ANCHORS RODS SHALL BE ASTM F1554, GRADE 55 HOT-DIP GALVANIZED WITH MINIMUM Fy = 55 KSI AND MINIMUM Fu = 75 KSI. NUTS SHALL CONFORM TO ASTM A563 AND PLATE WASHERS SHALL CONFORM TO ASTM A709, GRADE 50. BOLTS, NUTS AND PLATE WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.  
(C) STAINLESS STEEL BOLTS SHALL BE ASTM A276, TYPE 304.
6. ALUMINUM:  
ALUMINUM ALLOY SHAPES ROLLED OR EXTRUDED SHALL BE ASTM B221 ALLOY 6061-T6.

**NOTES:**

1. ALL MEMBERS MARKED (TM) ARE MAIN LOAD CARRYING MEMBERS SUBJECT TO TENSILE STRESS AND SHALL MEET SUPPLEMENTARY REQUIREMENTS FOR TOUGHNESS.
2. BOTTOM OF BASE PLATE (ELEVATION "A") SHALL BE A MINIMUM OF 4'-0" ABOVE THE HIGH POINT OF THE ROADWAY CROSS SECTION.
3. THE CONTRACTOR MAY REVISE THE NUMBER OF SPLICES AT HIS OPTION SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. FOR SECTIONS A-A, B-B AND C-C, SEE STANDARD DRAWING SI-32.
5. FOR REINFORCED CONCRETE PEDESTAL AND DRILLED SHAFT DETAILS, SEE STANDARD DRAWING SI-40.
6. IF CONSTRUCTION OF A MEDIAN COLUMN IS NOT PRACTICAL, ORIENT L5x5x1/2 ON THE TOP AND BOTTOM CHORDS TO FACE DIRECTION OF TRAFFIC.
7. FOR SIGN ATTACHMENT SECTIONS AND DETAILS, SEE STANDARD DRAWING SI-42.
8. FOR HANDHOLE AND PIPE NIPPLE DETAILS, SEE STANDARD DRAWING SI-33.

**ABBREVIATIONS:**

- DIA. = DIAMETER
- EO. = EQUAL
- GALV. = GALVANIZED
- GR. = GRADE
- H.S. = HIGH STRENGTH
- HSS = HOLLOW STRUCTURAL SECTIONS
- HORIZ. = HORIZONTAL
- L = SPAN LENGTH
- TM = MAIN LOAD CARRYING MEMBERS
- TS = TUBULAR SECTION
- S.S. = STAINLESS STEEL
- STIFF. = STIFFENER
- TYP. = TYPICAL
- UT = ULTRASONIC TESTING



APP.	NO.	DATE	REVISION
	1	09/12	ADDED ELECTRICAL PROVISIONS
	0	10/10	ORIGINAL DRAWING

NEW JERSEY TURNPIKE AUTHORITY  
**GARDEN STATE PARKWAY**  
VIERENDEEL SPAN TYPE SIGN STRUCTURE  
(SPANS FROM 91 TO 156 FEET)  
PLAN, ELEVATIONS AND GENERAL NOTES

2010 STANDARD  
**DRAWING SI-31**

OFFICE OF THE CHIEF ENGINEER  
NEW JERSEY TURNPIKE AUTHORITY  
WOODBRIDGE NEW JERSEY

FILE NAME: SP1E1.S