

## SECTION 900 MISCELLANEOUS

### 901 TRAFFIC STRUCTURAL SUPPORTS

#### 901.01 GENERAL

Luminaires, traffic signals and sign supports shall be designed using the AASHTO Specifications for Structural Supports except as clarified or modified in this manual.

#### 901.02 WIND SPEED

Major structural supports shall be designed for the wind frequency of 160 kph.

#### 901.03 ALLOWABLE STRESSES

The,  $L/45.7$  limitation on dead load deflection contained in Article 1.9.1(A) need not be satisfied since there is no scientific basis to support this limitation.

For high mast light poles, the maximum deflection shall be limited to 15% of the pole height under wind load. The maximum allowable yield strength for design purposes shall be  $4590 \text{ kg/cm}^2$ .

For all other applications, for steel with a yield strength greater than  $3360 \text{ kg/cm}^2$ , the allowable stresses for design shall be limited to a yield strength of  $3360 \text{ kg/cm}^2$ . This limitation indirectly places a limit on allowable deflections in an attempt to satisfy the criteria of Article 1.9.1. This limitation also reduces the stresses in any high strength welds which are more brittle and subject to cracking due to fatigue from vibrations.

### 902 UTILITIES IN STRUCTURES

#### 902.01 GENERAL

Where utility conflicts exist; water, power, telephone, cable TV and gas lines will be relocated as required for construction of the project. Where it is feasible and reasonable to locate utility lines elsewhere, attachment to

structures will not be permitted. Trenching in the vicinity of existing piers or abutments shall be kept a sufficient distance from footings to prevent undercutting of existing footings or to prevent disturbing foundation soils for future foundations.

Where other locations prove to be extremely difficult and very costly, utility lines except natural gas may be allowed in the structures.

Natural gas encroachments will be evaluated under the following policy:

A. Cases where gas line attachments to structures will not be considered under any condition:

1. Grade separation structures carrying vehicular traffic on or over freeways.
2. Inside closed cell-type box girder bridges.
3. High pressure transmission lines over  $4 \text{ kg/cm}^2$  and/or distribution lines of over 150 millimeters in diameter.
4. Gas lines over minor waterway crossings where burial is feasible.

B. Gas line attachments on structures will be considered under the following cases or conditions:

1. Each case will be judged on its own merit with the utilities providing complete justification as to why alternative locations are not feasible.
2. Economics will not be a significant factor considered in the feasibility issue.
3. Open girder type structures across major rivers.
4. Pedestrian or utility bridges where proper vented casings and other safety systems are used.
5. All lines are protected by casements.

Provision for accommodation of relocated and future utilities on structures should follow the following General Policy.