GENERAL NOTES:

1. Use aluminum materials that meet the requirements of Aluminum Association Alloy 6061-T6 (ASTM B209, B221, B308 or B429), except as noted in the Plans.

2. Install sign panel, wind beam and columns in accordance with Index 11860 and Specifications 700.

3. Install sign column so that the height and offset are in accordance with Index 17302.

4. When aluminum column post are installed with a frangible transformer bases, engage all threads on the transformer base and post unless the aluminum post is fully seated into base.

5. Meet the requirements of Specifications 646 for aluminum poles and transformer bases.

6. Install a concrete slab around all flashing beacon assemblies on slopes 6:1 or greater. The minimum slab dimension is 4'-0" by 5'-0".

7. Install a concrete slab around all pull boxes. The minimum slab dimension is 4'-0" by 4'-0". In urban areas where space is limited slab dimensions may be adjusted as shown in the Plans.

8. For beacon assemblies connected to conventional power, provide single pole non-fused watertight breakaway electrical connectors in the frangible transformer base.

9. Install the connection of controller cabinet and solar panel to the column in accordance with manufacturer's recommendations.

10. When wire entry holes are drilled in the sign column, use a bushing or rubber grommet to protect conductors.

11. Orient solar panel to face South for optimal exposure to sunlight.
CONVENTIONAL POWERED WARNING SIGN DETAILS

ROADSIDE FLASHING BEACON ASSEMBLY

Nominal 4" (Sch. 40) Aluminum
Transformer Base

#6 TW Green Ground Wire

Breakaway Electrical Connectors

Relative Relief Fitting

Ground Wire

#6 TW Green Ground Wire

Anchor Bolts

Concrete Apron (Typ.)

To Power Service Point

Circuit Conductors In Schedule 40 PVC, Conduit And conduit Size As Shown In Plans. (Typical)

O.D. Approved Ground Rod
5/8" Diameter 20' Long Copper
Clad with approved ground connection (At all pull boxes)

Transformer Base And Foundation (See POLE WIRING AND FOOTING DETAIL)

Pull Box

12" Yellow Flashing Beacon

Beacon Controller

12" Yellow Flashing Beacon

Beacon Controller

See Index 17302

(See POLE WIRING AND FOOTING DETAIL)

CONVENTIONAL POWERED WARNING SIGN DETAILS

ROADSIDE FLASHING BEACON ASSEMBLY

Nominal 4" (Sch. 40) Aluminum
Transformer Base

#6 TW Green Ground Wire

Breakaway Electrical Connectors

Relative Relief Fitting

Ground Wire

#6 TW Green Ground Wire

Anchor Bolts

Concrete Apron (Typ.)

To Power Service Point

Circuit Conductors In Schedule 40 PVC, Conduit And conduit Size As Shown In Plans. (Typical)

O.D. Approved Ground Rod
5/8" Diameter 20' Long Copper
Clad with approved ground connection (At all pull boxes)

Transformer Base And Foundation (See POLE WIRING AND FOOTING DETAIL)

Pull Box

12" Yellow Flashing Beacon

Beacon Controller

12" Yellow Flashing Beacon

Beacon Controller

See Index 17302

(See POLE WIRING AND FOOTING DETAIL)
TABLE 1

<table>
<thead>
<tr>
<th>Wind Speed</th>
<th>Sign Height</th>
<th>Column Size</th>
<th>Footing Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>7'</td>
<td>4&quot;</td>
<td>4'</td>
</tr>
<tr>
<td>130</td>
<td>7'</td>
<td>4.5&quot;</td>
<td>4'</td>
</tr>
<tr>
<td>150</td>
<td>7'</td>
<td>5&quot;</td>
<td>4.5'</td>
</tr>
<tr>
<td>110</td>
<td>8.5'</td>
<td>4.5&quot;</td>
<td>4'</td>
</tr>
<tr>
<td>130</td>
<td>8.5'</td>
<td>5&quot;</td>
<td>4.5'</td>
</tr>
<tr>
<td>150</td>
<td>8.5'</td>
<td>6&quot;</td>
<td>5'</td>
</tr>
</tbody>
</table>

NOTES:
1. Install the sign column slip base in accordance with Index 11860.
2. Use beacon and beacon controllers that are listed on the Approved Products List (APL).
3. Details show a typical warning sign with two flashing beacon heads. When only one beacon is required, install upper beacon.

SOLAR POWERED WARNING SIGN DETAILS

ROADSIDE FLASHING BEACON ASSEMBLY
NOTES:

1. Install a separate pole for mounting the solar panel, controller and batteries for all flashing beacon assemblies with solar panels, controllers and batteries weighing more than 170 lbs.

2. Install the auxiliary pole as close to the right-of-way as possible.

3. Install the auxiliary pole so that the height is the same as the column for the beacon assembly.

4. Payment for the separate pole, foundation, conduit and wiring are included in the cost of the electronic warning sign with flashing beacon.

ROADSIDE FLASHING BEACON ASSEMBLY

SOLAR POWERED BEACON WITH AUXILIARY POLE AND CONCRETE SLAB DETAIL
NOTES:

1. A transformer base is required for both conventional powered and solar powered applications. (Conventional Power Shown)

2. Use Rectangular Rapid Flashing Beacon (RRFB) equipment and hardware that are listed on the Approved Products List (APL).

3. Install the RRFB in pairs, one on either side of approach traffic.

4. Install controller on the backside of post from approach traffic.

5. Install a 30" x 30" W11-2 sign on single lane facilities and a 36" x 36" W11-2 sign for multi-lane facilities.

6. Install push button and R10-25 sign in accordance with Index 17784.
NOTES:
1. A transformer base is required for both conventional powered and solar powered applications. (Conventional Power Shown)
2. Use beacons and beacon controllers that are on the Approved Products List (APL).
3. Details show a typical school zone sign with two flashing beacon heads. When only one beacon is required, install upper beacon.

12” Fellow Flashing Beacon
Solar Panel (Optional)
Nominal 4” (Sch. 40) Aluminum
Solar Battery Compartment (Optional)
Solar Battery Compartment (Optional)
Beacon Controller
12’-0” (24” x 48”) Sign
S5-1 (24” x 48”) Sign
12” Fellow Flashing Beacon
Transformer Base And Foundation
(See Sheet 2 For Details)
NOTES:

1. A transformer base is required for both conventional powered and solar powered applications. (Conventional Power Shown)

2. Use speed feedback display, beacons, beacon controllers and installation hardware that are on the Approved Products List (APL).

3. For posted speeds less than 45 mph, install a speed feedback display with numeral heights of 15" and for posted speeds 45 mph or greater, install a speed feedback display with numeral heights of 18".

4. Only speed display units weighing 62 lbs. or less may be mounted with a 5'-0" clearance. Mount speed display units that weigh more than 62 lbs. with a 7'-0" clearance.

5. The beacon controller and solar batteries may be in the same compartment.

Limit Speed School Flashing When Speed Your Speed Display

Transformer Base And Foundation
(See Sheet 2 For Details)

SCHOOL SPEED LIMIT 20 WHEN FLASHING
YOUR SPEED

5'-0" (Option)
Compartment
Solar Battery
12" Yellow Flashing Beacon
Solar Panel (Optional)
Solar Battery Compartment (Optional)

SS-1 (24" x 48") Sign
Four Speed Display With Controller
Nominal 4" (Sch. 40) Aluminum

Beacon Controller (See Note #5)
NOTES:

1. A transformer base is required for both conventional powered and solar powered applications. (Conventional Power Shown)

2. Use speed feedback display, beacon, beacon controllers and installation hardware that are on the Approved Products List (APL).

3. For posted speeds less than 45 mph, install a speed feedback display with numeral heights of 15" and for posted speeds 45 mph or greater, install a speed feedback display with numeral heights of 18".

4. Only speed display units weighing 62 lbs. or less may be mounted with a 5'-0" clearance. Mount speed display units that weigh more than 62 lbs. with a 7'-0" clearance.

5. The beacon controller and solar batteries may be in the same compartment.