PEDESTAL POLE CONFIGURATIONS

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GENERAL NOTES
1. ALL PEDESTAL POLE STEEL SHALL BE ASTM A53 GR. B AND SHALL BE HOT DIP GALVANIZED INSIDE AND OUTSIDE ACCORDING TO ASTM A123.
2. MOUNTING HARDWARE FOR EACH TRAFFIC SIGNAL WILL BE FURNISHED BY THE MANUFACTURER, INCLUDING POLE PLATES FOR SIDE POLE MOUNTING.
3. PEDESTAL POLES SHALL HAVE A FRANGIBLE BASE: AKRON FOUNDRY TB2-17 OR APPROVED EQUAL.
4. ALL POLES, PEDESTALS AND CABINETS SHALL BE PLACED A MINIMUM OF 2 FEET OFF THE ROADWAY MEASURED FROM THE EDGE OF SHOULDER OR FACE OF CURB.
5. 12-12-12 TRAFFIC SIGNAL FACES FOR RAMP METERING LOCATIONS SHALL BE ALUMINUM TYPE.
6. TWO-SECTION 12" RED AND GREEN SIGNAL HEADS SHALL BE "ANGLED IN" AND SHALL BE EQUIPPED WITH VISORS THAT MAY BE POSITIONED TO EITHER SIDE OF THE LENS, ALLOWING ONLY THE FIRST MOTORIST BEHIND THE STOP BAR TO SEE THE SIGNAL INDICATION.
7. REGULATORY SIGNING SHALL BE AS SHOWN ON THE PLANS. 24R10-6a FOR LEFT SIDE POLE INSTALLATIONS SHALL CONTAIN A RIGHT-POINTING ARROW. TYPICAL SPECIAL SIGN MESSAGES ARE "1 VEHICLE PER GREEN" FOR SINGLE-LANE METERED RAMPS, AND "1 VEHICLE PER GREEN EACH LANE" FOR TWO-LANE METERED RAMPS.
8. ALL SIGNAL HEADS SHALL BE APPROVED LED TYPE.

POLE AND CAISSON INFORMATION

<table>
<thead>
<tr>
<th>MEMBER</th>
<th>ATTRIBUTES AND LOADS</th>
<th>TRAFFIC SIGNAL POLE</th>
<th>RAMP METERING POLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLE</td>
<td>Service Moment</td>
<td>14.72 k.ft.</td>
<td>4.23 k.ft.</td>
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<tr>
<td></td>
<td>Service Shear</td>
<td>0.97 kip</td>
<td>0.45 kip</td>
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<tr>
<td>CAISSON</td>
<td>ULT. Moment</td>
<td>20.55 k.ft.</td>
<td>5.90 k.ft.</td>
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<tr>
<td></td>
<td>ULT. Shear</td>
<td>1.36 kip</td>
<td>0.63 kip</td>
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PEDESTAL POLE SIGNALS

STANDARD PLAN NO.
S-614-44

Issued By: Traffic & Safety Engineering Branch July 31, 2019
Project Sheet Number: 1 of 2
**FOUNDATION NOTES**

1. CAISSON CONCRETE SHALL BE AIR ENTRAINED CLASS BZ IN ACCORDANCE WITH SECTION 503 OF THE STANDARD SPECIFICATIONS.
2. REINFORCING STEEL SHALL BE GRADE 60 IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.
3. ALL REINFORCING STEEL SHALL BE NON-COATED.
4. CAISSON CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,700 PSI BEFORE INSTALLING THE PEDESTAL POLE; VERIFY CONCRETE STRENGTH WITH MATURITY METER.
5. CAISSONS SHALL BE PLACED AGAINST UNDISTURBED EARTH.

**DESIGN DATA**

**CAISSON CONCRETE:**
- CLASS BZ CONCRETE: $f'_c = 4,000$ psi

**REINFORCING STEEL:**
- $f_y = 60,000$ psi

**DESIGN WIND SPEED** = 90 mph

THE DESIGNS HEREIN ASSUME THAT THE PEDESTAL POLES ARE INSTALLED WITHIN THE ROADWAY PRISM WITH THE FOLLOWING PARAMETERS:

1. **MEDIUM DENSE COHESIONLESS SOIL:**
   - SOIL DENSITY, $\gamma = 110$ pcf
   - SOIL ANGLE = 30°
   - $SF = 1.25$ FDR FLEXURAL RESISTANCE

2. **MEDIUM STIFF COHESIVE SOIL:**
   - SOIL DENSITY, $\gamma = 110$ pcf
   - SOIL COHESION = 750 psf
   - $SF = 1.25$ FDR FLEXURAL RESISTANCE

CONTACT THE ENGINEER IF ANY OF THE FOLLOWING SOIL CONDITIONS ARE ENCOUNTERED DURING DRILLING:

1. SIGNALS WILL NOT BE INSTALLED WITHIN THE ROADWAY PRISM.
2. THE SOIL HAS A HIGH ORGANIC CONTENT OR CONSISTS OF SATURATED SILT AND CLAY.
3. THE SITE WOULDN'T SUPPORT THE WEIGHT OF THE DRILLING RIG.
4. THE FOUNDATION SOILS ARE NOT HDMDGENDUS.
5. FIRM BEDROCK IS ENCOUNTERED.

**UNFACTORED GROUP LOAD COMBINATION LOADS FOR THE DESIGN OF POLES WERE GENERATED WITH THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.**

LOAD FACTORS FOR GENERATING ULTIMATE CAISSON LOADS ARE FOR THE STRENGTH III LOAD COMBINATION AS SPECIFIED IN THE 6TH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.