GENERAL DESIGN CRITERIA AND STANDARD DRAWINGS FOR OVERHEAD AND CANTILEVER SIGN SUPPORT STRUCTURES

2007
### INSTRUCTIONS FOR DESIGNERS

**A. DESIGN CRITERIA**

All structures shall be designed to meet the loadings specified in the NJDOT Standard Specifications. A single dip galvanizing process is preferred in new construction.

**B. MATERIALS**

- Steel: All structural steel shall be A36 high-strength steel conforming to ASTM A709 Grade 36 or Grade 50. Steel shall be hot dip galvanized in accordance with ASTM A123, Class 2001 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals with Current Interim.

**C. REINFORCEMENT STEEL**

Connectors shall be Grade 60 steel, Grade 70 steel, or Grade 100 steel bolts conforming to ASTM A320, Grade 1000, or Grade 1250, as specified on the drawings.

**D. CONCRETE**

- Concrete: All structural concrete shall be placed and cured according to the NJDOT Standard Specifications. The concrete mix shall be designed to meet the requirements specified in the NJDOT Standard Specifications.

**E. SPECIAL DESIGN**

- Design: All structures shall be designed to meet the loadings specified in the NJDOT Standard Specifications. A single dip galvanizing process is preferred in new construction.

**F. SPECIAL REQUIREMENTS**

- Special requirements shall be met, as specified on the drawings, for the design of the structure.

**G. SPECIAL CONSTRUCTION**

- Special construction shall be provided, as specified on the drawings, for the construction of the structure.

**H. SPECIAL INSPECTION**

- Special inspection shall be performed, as specified on the drawings, for the inspection of the structure.

**I. SPECIAL TESTING**

- Special testing shall be conducted, as specified on the drawings, for the testing of the structure.

**J. SPECIAL MAINTENANCE**

- Special maintenance shall be provided, as specified on the drawings, for the maintenance of the structure.
OVERHEAD SIGN SUPPORT STANDARDS

NEW JERSEY DEPARTMENT OF TRANSPORTATION

THIS PLATE FOR DESIGN INFORMATION ONLY. DO NOT INCLUDE IN CONTRACT PLANS.

SCALE:

OVERHEAD SIGN STRUCTURE DRG. OH-G2

WIDTH OF TRAFFIC LANES

HIGHEST POINT ON CROSS SECTION WITHIN TRAVELLED WAY

FUTURE TRAFFIC LANE

SHOULDER

FUTURE TRAFFIC LANE

SHOULDER

SHOULDER

FACE OF TOWER SHAFT

SPAN LENGTH

SIGN DESIGN LENGTH = WIDTH OF TRAFFIC LANES

PLUS FUTURE USEABLE TRAFFIC LANE WIDTHS NOT EXCEEDING 24'-0"

L TOWER

C

L TRUSS

C

7'-0" 8'-0"

1'-6"

17'-9"

MINIMUM VERTICAL CLEARANCE

17'-9"

MINIMUM VERTICAL CLEARANCE

17'-9"

MINIMUM VERTICAL CLEARANCE

4'-0"

SIGN DESIGN HEIGHT = 15'-0"

NOTES:

1. THE BOTTOM EDGE OF ALL SIGN PANELS SHALL BE LEVEL AND AT THE SAME ELEVATION.

2. THE TOP EDGE OF ALL SIGN PANELS SHALL PROJECT NOT LESS THAN 6" ABOVE THE TOP OF THE TOP CHORD.

3. THE SIGN DESIGN LENGTH = WIDTH OF TRAFFIC LANES PLUS FUTURE USEABLE TRAFFIC LANE WIDTHS NOT EXCEEDING 24'-0"

4. THE TOWER SHALL BE A POLYGON, HEXAGON SHAPE TOWER.

5. UNLESS SPECIFIED OTHERWISE THE LUMINAIRE SUPPORTS SHALL BE PROVIDED CONTINUOUSLY FOR THE ENTIRE SIGN DESIGN LENGTH. THE LUMINAIRE SUPPORTS SHALL BE VERIFIED AS PART OF THE PRELIMINARY SUBMISSION.

6. THE TRUSS SHALL BE A FOUR-CHORD, BOX SHAPED TRUSS.

7. UNLESS OTHERWISE SPECIFIED THE LUMINAIRE SUPPORTS SHALL BE PROVIDED CONTINUOUSLY FOR THE ENTIRE SIGN DESIGN LENGTH. THE LUMINAIRE SUPPORTS SHALL BE VERIFIED AS PART OF THE PRELIMINARY SUBMISSION.

8. THE ELEVATION OF THE BOTTOM OF THE TOWER SHAFT BASE PLATES SHALL BE SET AT (ANCHOR BOLT DIA. + 1") ABOVE TOP OF PEDESTAL OR TOP OF BARRIER PEDESTAL (SEE SIGN STRUCTURE DRG. OH-D8).

9. THE TRUSS SHALL BE DEFINED LOOKING UPSTATION.

10. THE DIMENSION SHALL NOT BE LESS THAN 1'-0" GREATER THAN THE MINIMUM CLEARANCE REQUIRED FOR OVERPASS STRUCTURES.

11. LEFT AND RIGHT TOWERS ARE DEFINED LOOKING UPSTATION.

12. THE MINIMUM VERTICAL UNDERCLEARANCE SHALL BE PROVIDED TO THE BOTTOM OF SIGN LIGHTING SYSTEM, OR TO THE BOTTOM OF SIGN PANEL WHEN LIGHTING SYSTEM IS NOT PROVIDED.

13. THE BOTTOM EDGE OF ALL SIGN PANELS SHALL BE LEVEL AND AT THE SAME ELEVATION.

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<table>
<thead>
<tr>
<th>Bar #</th>
<th>No. &amp; Dia.</th>
<th>O.D. x Thickness (in)</th>
<th>Taper</th>
<th>Flange Width (in)</th>
<th>Vert Diagonals (in)</th>
<th>Diagonals (in)</th>
<th>Taper Leg Length (in)</th>
<th>Vert. Leg Length (in)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12-#25</td>
<td>4.75</td>
<td></td>
<td>12</td>
<td>13</td>
<td>24</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>13-#25</td>
<td>4.00</td>
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<td>13</td>
<td>12</td>
<td>24</td>
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<td>3.75</td>
<td></td>
<td>12</td>
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<td>4</td>
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<td></td>
<td>12</td>
<td>12</td>
<td>24</td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- These tables are intended for use in the design of structural steel members.
- All dimensions are in inches (in).
- These tables are derived from the New Jersey Department of Transportation's Overhead Sign Support Standards Design Tables for structural steel members (span length 85'-0" to 165'-0").
## Overhead Sign Supports - Schedule of Foundations

### Footings

<table>
<thead>
<tr>
<th>Volume</th>
<th>PeDESTALS (see Note 8)</th>
<th>Barrier Pedestals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### Rebar Shapes

<table>
<thead>
<tr>
<th>Rebar Type</th>
<th>Material</th>
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<tbody>
<tr>
<td>Type A</td>
<td>Steel</td>
</tr>
<tr>
<td>Type B</td>
<td>Concrete</td>
</tr>
</tbody>
</table>

### Notes

1. Rebar sizes shall be cast-in-place concrete piles. All piles shall be at least 3 ft in diameter or shall have a minimum pile diameter of 10 inches. The rebar and spaces of piles shall be in accordance with the provisions of the pile.

2. Approved metal spacers shall be attached to the rebar at the designated locations.

3. No rebar shall be placed where piles are to be driven. The rebar shall be placed after all piles have been driven.

4. Temporary rebar shall be placed in accordance with the provisions of the pile. The rebar shall be placed after all piles have been driven.

5. The temporary rebar shall be placed in accordance with the provisions of the pile. The rebar shall be placed after all piles have been driven.

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### Additional Information

- **Concrete Cylinders**
- **Temporary Sheetings**
- **Excavation Details**
### OVERHEAD SIGN SUPPORTS (STEEL TRUSSES AND STEEL TOWERS)

<table>
<thead>
<tr>
<th>SIGN SUPPORTS</th>
<th>ELEVATIONS</th>
<th>SPAN LENGTH (FT)</th>
<th>CHORDS (IN)</th>
<th>GUSSET PLATE (IN)</th>
<th>TRUSS (IN)</th>
<th>CAMBER (IN)</th>
<th>TOWERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**NOTES:**

1. All elevations shall be verified in the field prior to fabrication and construction.
2. Left and right towers are defined looking upstation.
3. The planning of trusses listed in the Schedule of Structures is optional. Alternatives may be submitted to the RE for approval.
4. The planning of each face of the trusses must form continuous trussing between towers. (See typical plan and elevation views on sign structure drg. OH-D1).  

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**SUMMARY OF QUANTITIES**

<table>
<thead>
<tr>
<th>PAY ITEM NO.</th>
<th>ENGINEER ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>CONTRACT QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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**CAMBER DETAIL**

Camber shall be obtained by increasing the top chord length and decreasing the bottom chord length as shown. Chord splice flanges shall be skew to the angle as obtained. Splices due to chord, no force shall be applied in providing camber. An alternate method of obtaining camber may be used as approved by the RE.
NOTES:
1. All reinforcement in pedestals or barrier pedestals shall be corrosion protected.
2. Exposed concrete edges shall be chamfered 1"x1" unless noted otherwise.
3. Bars shall not be spliced except as provided on this drawing or authorized by the RE when splicing is approved. The reinforcement bars shall be lapped for a length of at least 36 diameters and shall be securely wired together.
4. For details of cast-in-place concrete piles, see sign structure DRG ONH.

2" cover to P-2 bars

Foundation Details:
Route: BDC07D-02 - Original Sheet
BDC08D-02 - Pedestal Concrete Cover Adjusted
1. A325 SPLICE BOLTS SHALL BE HEAVY HEXAGON TYPE AND SHALL BE FURNISHED WITH HEAVY HEXAGON NUTS AND WASHERS.
2. THE THREADED PORTION OF THE SPLICE BOLTS SHALL BE EXCLUDED FROM THE SHEAR PLANE OF THE SPLICE.
3. THE PROVISIONS OF THE NJDOT STANDARD SPECIFICATIONS SHALL BE FOLLOWED IN FURNISHING THE REQUIRED CHORD SPLICE ASSEMBLY.
4. REFER TO THE NJDOT STANDARD SPECIFICATIONS FOR SPLICE BOLT TIGHTENING PROCEDURES. WHEN CALIBRATED WRENCHES ARE USED FOR BOLT INSTALLATION, THEY SHALL BE SET TO PROVIDE THE TENSION THAT IS SPECIFIED IN THE TABLE PROVIDED HEREIN.

CHORD SPLICE STIFFENER PLATES ARE TO BE USED FOR CHORD SPLICES LOCATED AT MIDSpan (CENTERLINE) OF TRUSS ONLY (i.e. 2-SEGMENT, 4-SEGMENT AND 6-SEGMENT SPANS). (SEE CHORD SPLICE ASSEMBLY WELD DETAIL FOR MORE INFORMATION).

CHORD SPLICE STIFFENER PLATES ARE SHOWN HORIZONTAL. STIFFENER PLATES MAY BE REPOSITIONED, AS NECESSARY, TO PROVIDE SUFFICIENT CLEARANCE FOR BOLTING OF THE SPLICE, BUT THEY SHALL ALWAYS BE POSITIONED OPPOSITE TO EACH OTHER AS SHOWN.

### TRUSS CHORD SPLICES

<table>
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<tr>
<th>TRUSS CHORDS</th>
<th>SPLICE PLATES</th>
<th>SPLICE BOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.500 x .500</td>
<td>1.500 x .500</td>
<td>1.500 x .500</td>
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<tr>
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1. When sign lighting is required, an approved sign lighting system shall be provided.

2. All bolts to be installed with washers, lockwashers and nuts. All hardware shall be stainless steel conforming to ASTM A320, Grade B8, Class 1.

3. 1” standard pipe nipples shall be compatible with the material to which they are welded.

4. If required, luminaire support channels shall be continuous from hanger to hanger. Refer to the manufacturer's specifications.

5. See electrical plans for location and direction of service panel, rigid conduits, and flexible conduits.

6. Handholes shall not be oriented to the side of the roadway.

7. Nipple size shall not project beyond thickness of chord.

NOTE:
- Handhole and ground stud to be provided in each tower shaft.
- Service panel (see sign lighting assembly detail).
- Provide ground stud (electrical item) and conduit (electrical item).
- Typical electrical details: overhead sign support structures.
After complete fabrication, each steel section shall be hot锌镀锌根据标准规范。

焊接的重量未说明。

根据NJDOT桥梁和结构设计手册，包括所有材料的土木报告均需提供。

用于结构的桥梁支持结构的末端支撑结构应在分配图中完成。忽略步骤16。

设计条件如下：

*制造商建议，在修复材料时将不允许。如果防止铝表面接触，应使用许可等同

钢表面应钝化根据ASTM规范A123。应使用热锌镀完全消除。

7. 表面

所有钢筋应符合ASTM A615，等级60。

所有混凝土均应为“Class B”按NJDOT标准规范定义。

所有受力钢筋应符合A53，类型S或类型E，等级B。*"-参见API规格

Fatigue Loads

Design Wind Velocity ---- 80 MPH; (Above AASHTO Specifications Appendix C)

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NJDOT桥梁和结构设计手册，现行版。

2001 AASHTO Standard Specifications for Structural Supports for Highway Signs, Traffic Signals with Current Interim。

A. 设计条件

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7. 表面

所有钢筋应符合ASTM A615，等级60。

所有混凝土均应为“Class B”按NJDOT标准规范定义。

所有受力钢筋应符合A53，类型S或类型E，等级B。*"-参见API规格

Fatigue Loads

Design Wind Velocity ---- 80 MPH; (Above AASHTO Specifications Appendix C)
CANTILEVER SIGN STRUCTURE

DIVIDED HIGHWAY PEDESTAL MOUNTED

1. THE SIGN DESIGN LENGTH EXTENDS FROM THE END OF THE CANTILEVER TO THE EDGE OF THE USEABLE TRAFFIC LANE.
2. THE BOTTOM EDGE OF ALL SIGN PANELS SHALL BE LEVEL AND AT THE SAME ELEVATION.
3. THE TOP EDGE OF ALL SIGN PANELS SHALL PROJECT NOT LESS THAN 6" ABOVE THE TOP OF THE TOP CHORD. THE SIGN PANEL SIZES AND LOCATIONS SHALL BE VERIFIED AND APPROVED BY THE DESIGNER.
4. TOP OF PEDESTAL SHALL BE SET 4" ABOVE THE FINISHED GROUND LINE.
5. THE ELEVATION OF THE BOTTOM OF THE POST BASE PLATE SHALL BE SET AT (ANCHOR BOLT DIAMETER + 1") ABOVE TOP OF PEDESTAL OR TOP OF BARRIER PEDESTAL (SEE DRG CA-06).
6. THE TRUSS SHALL BE A TWO-CHORD PLANAR TRUSS.
7. IF THE POST FOUNDATION IS WITHIN THE CLEAR ZONE, IT SHALL BE PROTECTED BY GUIDE RAIL, BARRIER OR OTHER SUITABLE MEANS, DEPENDING UPON SITE CONDITIONS.
8. THE 17'-9" MINIMUM VERTICAL UNDERCLEARANCE SHALL BE PROVIDED TO THE BOTTOM OF SIGN LIGHTING SYSTEM, OR TO THE BOTTOM OF SIGN PANEL WHEN LIGHTING SYSTEM IS NOT PROVIDED.

DIVIDED HIGHWAY BARRIER MOUNTED

1. THE SIGN DESIGN LENGTH EXTENDS FROM THE END OF THE CANTILEVER TO THE EDGE OF THE USEABLE TRAFFIC LANE.
2. THE BOTTOM EDGE OF ALL SIGN PANELS SHALL BE LEVEL AND AT THE SAME ELEVATION.
3. THE TOP EDGE OF ALL SIGN PANELS SHALL PROJECT NOT LESS THAN 6" ABOVE THE TOP OF THE TOP CHORD. THE SIGN PANEL SIZES AND LOCATIONS SHALL BE VERIFIED AND APPROVED BY THE DESIGNER.
4. TOP OF PEDESTAL SHALL BE SET 4" ABOVE THE FINISHED GROUND LINE.
5. THE ELEVATION OF THE BOTTOM OF THE POST BASE PLATE SHALL BE SET AT (ANCHOR BOLT DIAMETER + 1") ABOVE TOP OF PEDESTAL OR TOP OF BARRIER PEDESTAL (SEE DRG CA-06).
6. THE TRUSS SHALL BE A TWO-CHORD PLANAR TRUSS.
7. IF THE POST FOUNDATION IS WITHIN THE CLEAR ZONE, IT SHALL BE PROTECTED BY GUIDE RAIL, BARRIER OR OTHER SUITABLE MEANS, DEPENDING UPON SITE CONDITIONS.
8. THE 17'-9" MINIMUM VERTICAL UNDERCLEARANCE SHALL BE PROVIDED TO THE BOTTOM OF SIGN LIGHTING SYSTEM, OR TO THE BOTTOM OF SIGN PANEL WHEN LIGHTING SYSTEM IS NOT PROVIDED.
**Steel Truss Members**

<table>
<thead>
<tr>
<th>STEEL POSTS</th>
<th>PEDESTALS</th>
<th>BARRIER PEDESTALS</th>
<th>FOOTINGS</th>
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<tbody>
<tr>
<td>Height</td>
<td>H = 30 FT</td>
<td>H = 30 FT</td>
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</tbody>
</table>

**Steel Posts**

- Steel post height = \( H \)
- Span length = \( 2' - 0" \)
- Steel post size = \( \text{Post Size (26 vs. 30 INCHES)} \)
- PEDESTALS: \( 4'-6" \) preferred
- BARRIER PEDESTALS: \( 5'-0" \) preferred

**Chords**

- \( O.D. \times \text{Thick} \)
- \( 18.000 \times 0.500 \)
- \( 18.000 \times 0.375 \)
- \( 12.750 \times 0.375 \)
- \( 8.625 \times 0.500 \)

**Rebars**

- \( \text{No.} \times \text{Size} \)
- \( 26-#25 \)
- \( 33-#25 \)
- \( 30-#25 \)
- \( 36-#25 \)

**Sign Structure Details**

- For detailed information, refer to the scale and sheet number provided.
- Due to the availability issue of 26" O.D. steel post sizes, any necessary details shall take 30" O.D. post size into account.

**Notation**: Design tables and steel posts are pending for further consideration.

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**Notes**

1. When further notice from the designer is given, due to the availability issue of 26" O.D. steel post sizes, any necessary details shall take 30" O.D. post size into account.

2. Due to the availability issue of 26" O.D. steel post sizes, any necessary details shall take 30" O.D. post size into account.

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**Sign Structure Details**

- Steel trusses and steel posts are pending for further consideration.

---

**Footer**

- Design tables and steel posts are pending for further consideration.

---

**Sign Structure Details**

- Steel trusses and steel posts are pending for further consideration.

---

**Footer**

- Design tables and steel posts are pending for further consideration.
1. When temporary sheeting is required, H is 2'-0" unless specified on the drawing or authorized by the RE. When splicing is required, temporary sheeting shall be strapped together.
Camber shall be obtained by shortening the top chord stub length and lengthening the bottom chord stub length. Chord splice plates shall be skewed accordingly before welding to chords. No force shall be applied in providing camber. An alternate method of obtaining camber may be used as approved by the RE. For required camber, refer to DRG. CA-G3 and see schedule of structures on DRG. CA-D2.

Alternate cap details may be submitted to the RE for approval.
1. Bearing piles shall be cast-in-place concrete piles. All piles shall be 1'-0" in diameter or equivalent and shall have a minimum bearing capacity of 50 kips. The number and spacing of piles shall be as indicated on sign structure DRG. CA-D6.

2. Approved metal spacers shall be attached to the top and bottom spirals to ensure that the required clear distance to the casing is maintained.

3. No concrete shall be placed in cast-in-place piles until after all pile casings for the footing have been driven.

4. Anchor bolts shall be provided with five heavy hexagonal nuts and two washers as shown on the anchor bolt detail.

5. Anchor bolts shall be fully galvanized after threading.

6. Refer to the N JDOT standard specifications for anchor bolt tightening procedures when calibrated instruments are used for bolt installation. They shall be set to provide the tension that is specified in the table above.

7. Template plate with nuts on both sides shall be used to maintain the spacing and alignment of anchor bolts.
NOTE:
1. WHEN SIGN LIGHTING IS REQUIRED, AN APPROVED SIGN LIGHTING SYSTEM SHALL BE PROVIDED.
2. ALL BOLTS TO BE INSTALLED WITH WASHERS, LOCK WASHERS AND NUTS. ALL HARDWARE SHALL BE STAINLESS STEEL CONFORMING TO ASTM A320, GRADE B8, CLASS 1.
3. 1" STANDARD PIPE MATERIAL AND BE COMPATIBLE WITH THE MATERIAL TO WHICH THEY ARE WELDED.
4. IF REQUIRED, LIGHTING SYSTEM SUPPORT CHANNELS SHALL BE CONTINUOUS FROM HANGER TO HANGER. REFER TO THE MANUFACTURER'S SPECIFICATIONS.
5. SEE ELECTRICAL PLANS FOR LOCATION AND DIRECTION OF SERVICE PANEL, RIGID CONDUITS, AND FLEXIBLE CONDUITS.
6. HANDHOLES SHALL NOT BE ORIENTED TO THE SIDE OF THE ROADWAY.
7. NIPPLE SIZE SHALL NOT PROJECT BEYOND THICKNESS OF CHORD.

NOTE:
1. ELECTRICAL WIRING (ELECTRICAL ITEM) FOR LUMINAIRE SPACING DIMENSIONS "A" & "B" SEE SIGN LIGHTING ASSEMBLY DETAIL.
2. 60° NIPPLE FOR SERVICE INLET WIRING (SEE NOTE 3)
3. SERVICE PANEL AND HANDHOLE (SEE NOTE 5)
4. DRILL AND TAP THROUGH COVER PLATE FOR 8-32X3/4" LONG ROUND PHILLIPS HEAD MACHINE SCREW HOLES IN COVER PLATE.
5. SIDE ELEVATION
6. 4'-8" O.D. POST + 4" (MIN)
7. 3" MIN WT 3X6
8. 1.5" FLEX STAN (NOTE 7)
9. 5'-9" LIGHTING SYSTEM SUPPORT WITH S.S. WASHER AND NUTS 1/4" X 3/4" S.S. BOLT
10. DRILL 9/32" DIA HOLE 1/4"
11. 1" O.D. CONDUIT
12. 1/8" NEOPRENE GASKET CEMENTED TO COVER
13. BAR 2 (NOTE 6)
14. COVER P (NOTE 5)
15. 1.5" CONDUIT TOPPLE AND WASHERS
16. 3/16" DIA HOLE FOR 1/4" DIA. BOLT
17. 1" RIGID METALLIC CONDUIT (FOR SIZE AND DIRECTION SEE ELECTRICAL PLANS).
18. SERVICE PANEL (SEE SIGN LIGHTING ASSEMBLY DETAIL)
19. SERVICE PANEL (ELECTRICAL ITEM)
20. ROUND AND SMOOTH INSIDE EDGE (ELECTRICAL ITEM)
21. 10" WT 3X6
22. 1" O.D. CONDUIT NUTS AND STANDARD WASHERS
23. 1/4" X 3/4" S.S. BOLT
24. 3/16" LOCK NUT AND BUSHINGS IN CHANNEL AND SHAFT 1" O FLEX CONDUIT NUTS AND STANDARD WASHERS
25. 5/16" DIA. HOLE FOR 1/4" DIA. BOLT
26. 1.5" STANDARD PIPE NIPPLE AND BUSHING 3/4X5.4 4X5.4 #8 BARE GROUND WIRE TO CONDUIT GROUNDING HUB L POST C 4X5.4
27. HAND HOLE AND GROUND STUD TO BE PROVIDED IN STEEL POST AT LOCATION OF RIGID METALLIC CONDUIT (SEE ELECTRICAL PLANS FOR LOCATION).
28. HAND HOLE (SEE DETAIL) PROVIDE GROUND STUD OPPOSITE HAND HOLE