**ALMATERIAL SPECIFICATION**

**REES RDAWNN BY: FE RN LIDD LE**

**NOTES**

1. All material and workmanship shall be in accordance with the current requirements of the Washington State Department of Transportation Standard Specifications for Road, Bridge, Municipal Construction and Amendments.

2. Sign support components have been designed to meet the requirements of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, dated 2015 and interim's, using basic wind speed of 115 mph, and 50 year design life.

3. All non-stainless steel parts shall be galvanized in accordance with AASHTO M111 after fabrication. Bolts and hardware shall be galvanized in accordance with AASHTO M232.

4. Size of fillet weld shall be 1/4" (in) minimum except where noted.

5. For sign bracing details, see Standard Plan G-30.10 or G-50.10.

6. Rotate sign on post to be normal to traffic.

7. No resin bonded anchors shall be nearer than 1' - 6" from a vertical expansion joint and all resin bonded anchors shall clear any embedded electrical conduit.

8. Sign support shall be installed on cast-in-place concrete barriers rigidly connected to bridge or retaining wall.

9. Anchors shall be bolted into reinforced concrete only with a nominal thickness no less than 9" (in). Base plate shall be installed such that full bearing contact is achieved.

10. Drilling through reinforcing steel is not allowed. If steel is hit while drilling, the location shall be moved and the hole abandoned. Fill hole with grout conforming to Section 6.02.3(20).

<table>
<thead>
<tr>
<th>PART</th>
<th>MATERIAL SPECIFICATION</th>
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<tr>
<td>PLATES AND BARS</td>
<td>ASTM A36 OR ASTM 572</td>
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<td>PIPES</td>
<td>ASTM A500 ROUND GRADE B (TYPE III) OR ASTM A53 GRADE B TYPE E OR S, OR EQUIVALENT HSS ASTM A500 ROUND GRADE B</td>
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<tr>
<td>RESIN BONDED ANCHORS</td>
<td>ASTM F1554 GRADE 55 GALV.</td>
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<tr>
<td>NUTS</td>
<td>ASTM A563 GRADE A</td>
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<td>WASHERS</td>
<td>ASTM F436 TYPE 1</td>
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<td>EPSOXY RESIN</td>
<td>STD. SPEC. SECT. 9-26.1 (TYPE V)</td>
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**AREA CALCULATIONS**

\[
X_1 \times Y_1 = 4' \times 4' = 16 \text{ FT}^2 \\
X_2 \times Y_2 = 2.5' \times 2.5' = 6.25 \text{ FT}^2 \\
\Sigma (XYZ) = 20.3' \times 51.6' = 526.8 \text{ FT}^3 \\
254.8 \text{ FT}^3 < 260 \text{ FT}^3 \therefore USE 5" STD. PIPE
\]

**SAMPLE DESIGN CHECK CALCULATIONS**

(OFFER SIGN CONFIGURATIONS OK)
TRAFFIC BARRIER
OUTSIDE FACE OF EXISTING END PLATE DETAIL

PIPE & $\Phi$

1" (TYP.)

1 1/2"

7" (TYP.)

3/4" (IN) DIAMETER DRILLED HOLE FOR RESIN BONDED ANCHOR

OD + 1/8" (IN) DIAMETER OPENING AT CENTER OF $\Phi$

CHIP AWAY EXISTING BARRIER FINISH TO PROVIDE A SMOOTH, FLAT BEARING SURFACE. APPLY EPOXY BONDING AGENT TO SURFACE FOR UNIFORM BEARING

RESIN BONDED ANCHOR DETAIL
INSTALL ANCHOR BOLT NORMAL TO CONCRETE SURFACE

END PLATE DETAIL

OUTSIDE FACE OF EXISTING TRAFFIC BARRIER
FIELD MEASURE ANGLE PRIOR TO FABRICATION

RESIN BONDED ANCHOR
3/4" (IN) DIAMETER

RESIN BONDED ANCHOR DETAIL THIS SHEET

SEE NOTE 9

STANDARD PLAN G-26.10-00
BARrier MOUNTED ELbow SIGN SUPPORT

DRAWN BY: FERN LIDDELL

SEE RESIN BONDED ANCHOR DETAIL – SEE RESIN BONDED ANCHOR DETAIL PRIOR TO FABRICATION

DRAWN BY: FERN LIDDELL

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

APPROVED FOR PUBLICATION

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

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