PLAN
SHOWING STEEL REINFORCEMENT

ELEVATION
SHOWING STEEL REINFORCEMENT

C BARS 50 SPACES AT 6" = 25'-0" IN BARRIER WALL FOR SIGN SUPPORT D
C BARS 44 SPACES AT 6" = 22'-0" IN BARRIER WALL FOR SIGN SUPPORT C
A2 BARS 44 SPACES AT 6" = 22'-0" IN FOOTING FOR SIGN SUPPORT C
A2 BARS 50 SPACES AT 6" = 25'-0" IN FOOTING FOR SIGN SUPPORT D
SECTION A-A
(TYPE B BARRIER)

SECTION B-B
(TYPE A BARRIER)

NOTE:
MAINTAIN CONSTANT BARRIER SLOPE ON BOTH SIDES
OF THE BARRIER THROUGHOUT THE ENTIRE LENGTH OF
THE TRANSITION SECTION.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIGN SUPPORT FOUNDATION
(CONCRETE BARRIER, DOUBLE FACE)

3-29-2018 F.H.W.A. APPROVAL 4-21-2017 R-51-E SHEET 4 OF 6
SECTION C-C

1½" DIAMETER ANCHOR BOLT
HEAVY HEX NUT (TYP)
WASHER (TYP)

1½" DIAMETER ANCHOR BOLT

#6 BAR CIRCLE OR APPROVED EQUAL WELDED
TO ANCHOR BOLTS TO HOLD ALIGNMENT. A
2½" PLYWOOD TEMPLATE OR APPROVED EQUAL
MUST BE SECURED IN PLACE.

ANCHOR BOLT DETAIL

ANCHOR BOLT ALIGNMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIGN SUPPORT FOUNDATION
(CONCRETE BARRIER, DOUBLE FACE)

ANCHOR BOLT DETAIL
### Steel Reinforcement (Epoxy Coated)

<table>
<thead>
<tr>
<th>BAR</th>
<th>BAR SIZE</th>
<th>LENGTH</th>
<th>NUMBER REQUIRED</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>#5</td>
<td>22'-2&quot;</td>
<td>22</td>
<td>509</td>
</tr>
<tr>
<td>A2</td>
<td>#5</td>
<td>9'-2&quot;</td>
<td>90</td>
<td>861</td>
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<tr>
<td>C</td>
<td>#4</td>
<td>5'-6½&quot;</td>
<td>90</td>
<td>334</td>
</tr>
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</table>

TOTAL WEIGHT OF STEEL = 1,704 LBS

### Concrete Quantities

<table>
<thead>
<tr>
<th>SIGN SUPPORT TYPE</th>
<th>SIGN SUPPORT WIDTH (TYPE A)</th>
<th>SIGN SUPPORT WIDTH (TYPE B)</th>
<th>TRANSITION SECTIONS (TYPE A)</th>
<th>TRANSITION SECTIONS (TYPE B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>10.0 CYD</td>
<td>12.3 CYD</td>
<td>13.7 CYD</td>
<td>14.5 CYD</td>
</tr>
<tr>
<td>D</td>
<td>11.3 CYD</td>
<td>13.9 CYD</td>
<td>13.7 CYD</td>
<td>14.5 CYD</td>
</tr>
</tbody>
</table>

### Notes:

- The side configuration specified on this plan conforms to the "single slope" shape.
- All exposed edges on the barrier shall have a 45° bevel or 1" radius.
- Anchor bolts, nuts, and washers shall be according to the current standard specifications.
- Anchor bolts shall be carefully set and held vertical at the correct location and at the proper elevation with ½" plywood (or approved equal) template until concrete is set. Each set of four bolts shall be tied together by welding into a basket with #5 bar circles (or approved equal) along with securing a ¼" plywood (or approved equal) template in place prior to being approved for shipping (see anchor bolt detail).
- Sign support foundation includes the transition section on both ends with the 1" expansion joints used to gap for structures being placed as specified on this plan.
- Modifications to the concrete valley gutter and location of the concrete glare screen used in conjunction with the sign support foundation shall be constructed as detailed on this plan, and included in their respective items and paid for at the contract unit price per linear feet, which includes payment in full for all work and materials.
- Work this standard with standard plan R-49-series and when applicable R-33-series and R-76-series.

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Michigan Department of Transportation
Bureau of Development Standard Plan for

**Sign Support Foundation (Concrete Barrier, Double Face)**

3-29-2018
F.H.W.A. Approval

4-21-2017
Plan Date

R-51-E
Sheet
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