

**MDOT**  
Michigan Department of Transportation

PREPARED BY  
ANCILLARY  
STRUCTURES

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MICHIGAN DEPARTMENT OF TRANSPORTATION

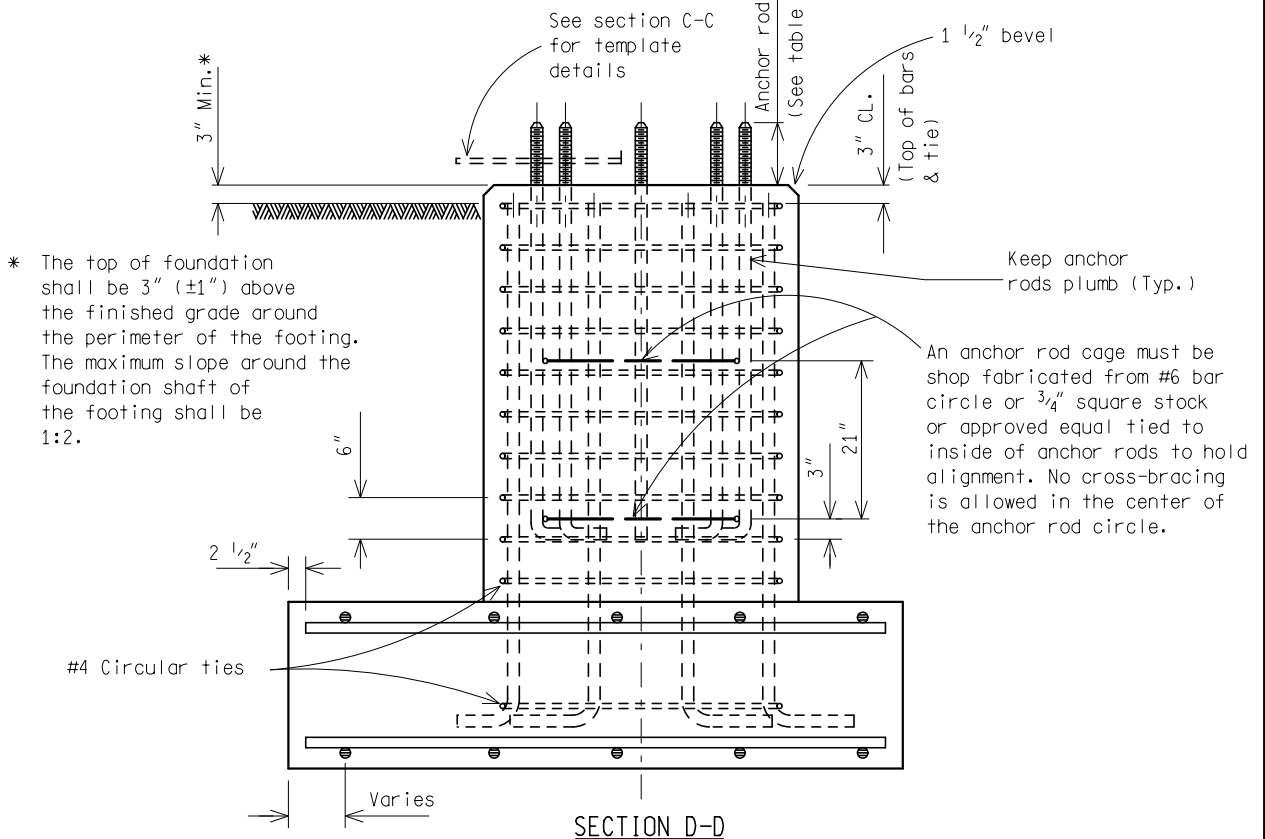
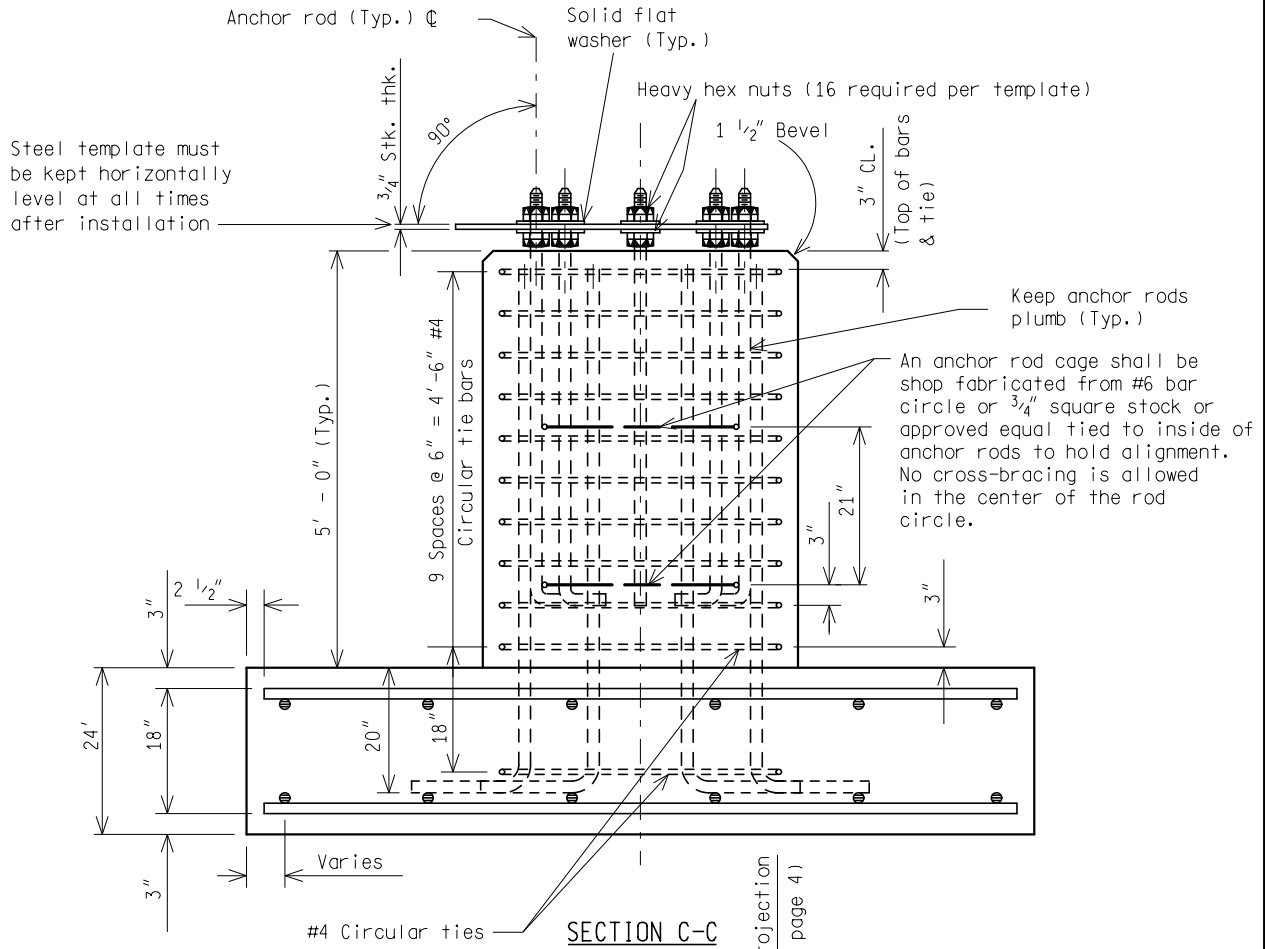
CANTILEVER FOUNDATION  
SPREAD TYPE E

|                               |                       |            |                 |
|-------------------------------|-----------------------|------------|-----------------|
| 10/11/23<br>F.H.W.A. APPROVAL | 08/08/23<br>PLAN DATE | SIGN-330-C | SHEET<br>1 OF 4 |
|-------------------------------|-----------------------|------------|-----------------|

| Cantilever Type | Soil Type | Soil Condition   |               | Footing Length | Anchor Rod (Dia.) | Longitudinal Footing Reinforcement Top & Bottom | Transverse Footing Reinforcement Top & Bottom | Concrete Cu. Yd. (Footing & Pedestal) | Reinforcement Steel Weight (Footing & Pedestal) |
|-----------------|-----------|------------------|---------------|----------------|-------------------|---|---|---------------------------------------|---|
|                 |           | *Su              | **N60         |                |                   |   |   |                                       |   |
| E-1             | Sand      |                  | N60 ≥ 15      | 11'            |                   | 8 SPA @ 1'-1/2" = 8'-4"<br>#5 BARS              | 21 SPA @ 0'-6" = 10'-6"<br>#5 BARS            | 9.2                                   | 992 lbs   |
|                 | Clay      | 2000 ≥ Su        |               |                |                   |   |   |                                       |   |
| E-2             | Sand      |                  | 10 ≤ N60 < 15 | 11'            | 2"                | 11 SPA @ 0'-9" = 8'-3"<br>#4 BARS               | 18 SPA @ 0'-7" = 10'-6"<br>#4 BARS            | 9.2                                   | 787 lbs   |
|                 | Clay      | 1000 ≤ Su < 2000 |               |                |                   |   |   |                                       |   |
| E-3             | Sand      |                  | 5 ≤ N60 < 10  | 15'            |                   | 13 SPA @ 0'-7 3/4" = 8'-4 3/4"<br>#4 BARS       | 35 SPA @ 0'-5" = 14'-7"<br>#6 BARS            | 11.8                                  | 2392 lbs  |
|                 | Clay      | 500 ≤ Su < 1000  |               |                |                   |   |   |                                       |   |

\*Su = Undrained shear strength of cohesive soils. (lbs/ft<sup>2</sup>)  
 \*\*N60 = SPT blow count corrected for hammer efficiency. (blows/ft)  
 (ASTM D1856 testing procedure)

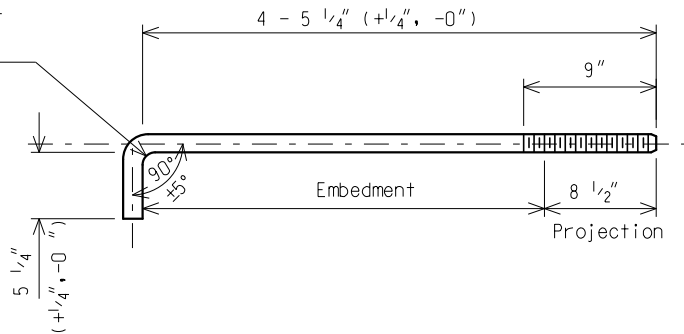
NOT TO SCALE



\* The top of foundation shall be 3" ( $\pm 1"$ ) above the finished grade around the perimeter of the footing. The maximum slope around the foundation shaft of the footing shall be 1:2.

NOT TO SCALE

1" Min., 3" Max. radius (heat before bending) (heat bend @ 1300° f Max., 1100° f Min.)



Anchor rods: 8 per foundation  
 Nuts: 2 per anchor rod  
 Washers: 2 per anchor rod, standard flat galvanized

Anchor rods, nuts, and washers must be per Section 908.14 of the MDOT Standard Specifications for Construction.

### ANCHOR ROD INFORMATION

**NOTES:**

1. Bar reinforcement and spirals, if used for foundation, shall be per Section 905 of the MDOT Standard Specifications for Construction.
2. A template and anchor rod cage shall be shop fabricitated and assembled.
3. Diameter of rod holes in template shall be 1/16" larger than anchor rod diameter.
4. The template and handles shall be well supported, horizontally level and firmly anchored in place a minimum of 24 hours after the concrete placement is completed.
5. Care shall be taken during the concrete placement to avoid displacing the anchor rods.
6. No hammering on the anchor rods or template will be allowed.
7. After template is removed, thread nuts on to the rod flush with the rod end to protect threads until sign support is erected.
8. Anchor Rod template may be fabricated from multiple parts using CJP welds located a minimum of 2" clear of anchor rod holes.
9. Anchor rod cage bar reinforcement shall meet the requirements of ASTM A706.

NOT TO SCALE

|                                       |                               |                       |            |                 |
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