The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi.

Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size. Round up to the nearest required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86". If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.735 sq. in. per ft.) x (12 in. per ft.) = 4.38". The minimum lap length required for uncoated #4 bars, as listed under MATERIAL NOTES, is 2'-6" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 3', refer to the Extended Curb (ECD) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

For vehicle safety, the following requirements must be met:

- For structures without bridge rail, construct curbs no more than 3' above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

For curbs less than 3'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3'-0" high, Bars K may be omitted.

1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

CONSTRUCTION NOTES:

Do not use permanent forms.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.

Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curbs.

Provide for lane, where required, as follows:

- Uncoated or galvanized ~ #5 = 2'-1" Min

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.

See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are center-to-center.
<table>
<thead>
<tr>
<th>BILLS OF REINFORCING STEEL (For Box Length = 40 feet)</th>
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**SECTION DIMENSIONS**

<table>
<thead>
<tr>
<th>Bars B</th>
<th>Bars C &amp; D</th>
<th>Bars E</th>
<th>Bars F1 - #4</th>
<th>Bars F2 - #4</th>
<th>Bars M - #4</th>
<th>Bars Y &amp; Z - #4</th>
<th>Bars H &amp; I - #4</th>
<th>Bars K</th>
<th>Per Foot of Barrel</th>
<th>Curbs Total</th>
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**QUANTITIES**

- **Number of Bars**
- **Length**
- **Size**
- **Spacing**
- **Length**
- **Weight**
- **Notes**
- **Count**
- **Distance**
- **Total**

**Barrel of Cylinders**

- **Dimensions**
- **Weight**
- **Notes**

**MC-723**

**Multiple Box Culverts**

**Cast-In-Place**

- **7'-0" Span**
- **2'-0" Fill**

**Bridge Design Standard**

**Multipurpose Use**

**Width**

**Height**

**Length**

**Thickness**

**Material**

**End Detail**

**Piping Details**

**Foundation**

**Excavation**

**Alignment**

**Support**

**Connections**

**Details**

**Notes**

**Figure 1: Multiple Box Culvert**

**Figure 2: Cast-In-Place**

**Figure 3: MC-723**

**Figure 4: Bridge Design Standard**

**Figure 5: Multipurpose Use**

**Figure 6: Width**

**Figure 7: Height**

**Figure 8: Length**

**Figure 9: Thickness**

**Figure 10: Material**

**Figure 11: End Detail**

**Figure 12: Piping Details**

**Figure 13: Foundation**

**Figure 14: Excavation**

**Figure 15: Alignment**

**Figure 16: Support**

**Figure 17: Connections**

**Figure 18: Details**

**Figure 19: Notes**