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DATE: ________
FILENAME: mc916ste-20.dgn
uffering bar reinforcement (ASME A576). The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4'-0" and 18'-0" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar sizes, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR. Required WWR = (0.306 sq. in. per ft.) / (0.755 sq. in. per ft.) x 12 in. per ft. = 4.86". WWR spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same as the required spacing = (0.306 sq. in. per ft.) / (0.755 sq. in. per ft.) x 12 in. per ft.) = 4.86". 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, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

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Provide bar laps, where required, as follows:
- Uncut bars: 4" Min
- Uncut bars: 2'-7" Min
- Uncut rebar: 4" Min
- Uncut rebar: 2'-7" 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.
- Use this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, option is taken, Bars K may be cut off or raised, Bars C and D may be reversed, and Bars F2 and G may be reversed.

CONSTRUCTION NOTES:
- Do not use permanent forms.
- Finish the bottom edge of the top slab 3" at the entrance.
- Optionally, pour construction joints shown at the flow line by a maximum of 90°. This option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars F2 and G may be reversed.

MATERIAL NOTES:
- Provide Coated deformed reinforcing steel.
- Provisional reinforcing steel if required elsewhere in the plans.
- Provide rebar laps, where required, as follows:
  - Uncut or galvanized: 4" Min
  - Uncut or galvanized: 2'-7" Min

TABLE OF BAR DIMENSIONS

<table>
<thead>
<tr>
<th>Length (ft)</th>
<th>Diameter (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'-0&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>1&quot;</td>
</tr>
</tbody>
</table>

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.

Provide galvanized reinforcing steel if required elsewhere in the plans.

Provide Grade 60 reinforcing steel.

MATERIAL NOTES:
- Provide galvanized reinforcing steel.
- Bars K (#44) (Spa = 2'-7" Max).
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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 4 – #4</th>
<th>Bars K</th>
</tr>
</thead>
<tbody>
<tr>
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<td>N</td>
<td>U</td>
<td>No. 3</td>
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<td>No. 5</td>
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**BILL OF REINFORCING STEEL (For Box Length = 40 feet)**

- **Bars B**
  - Size 108
  - Spacing 2.720
  - Length 183.8
  - Wt 32,587

- **Bars C & D**
  - Size 108
  - Spacing 2.226
  - Length 154.2
  - Wt 24,720

- **Bars E**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

- **Bars F1 – #4**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

- **Bars F2 – #4**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

- **Bars M – #4**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

- **Bars Y & Z – #4**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

- **Bars H 4 – #4**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

- **Bars K**
  - Size 108
  - Spacing 2.9
  - Length 123
  - Wt 156

**Quantities**

- Bars B: 108
- Bars C & D: 108
- Bars E: 108
- Bars F1 – #4: 108
- Bars F2 – #4: 108
- Bars M – #4: 108
- Bars Y & Z – #4: 108
- Bars H 4 – #4: 108
- Bars K: 108

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