**Pipe Culvert Headwall**

**Energy Dissipator (Impact Type)**

**For 48" Concrete Pipe**

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**Design Unit Stresses**

- **CLASS B CONCRETE**
- **REINFORCING STEEL (GRADE 60)**
  - $f_e = 3,000$ psi
  - $f_y = 60,000$ psi

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**Dimensions**

- Drawings are not to scale. Follow dimensions.

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**Complete Bill of Reinforcing Steel**

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<th>DIA.</th>
<th>GTW.</th>
<th>LENGTH</th>
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**General Notes**

- **NOTE:** Bend or cut A1 and J1 bars in field to clear pipe.
- **NOTE:** BEND OR CUT A1 AND J1 BARS IN FIELD TO CLEAR PIPE.

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**Missouri Highways and Transportation Commission**

105 West Capitol
Jefferson City, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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**DATE EFFECTIVE:** 03/28/2001

**DATE PREPARED:** 03/28/2009

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**Pipe Culvert Headwall Energy Dissipator (Impact Type) for 48" Concrete Pipe**

**Sheet No. 604-15E 1 OF 1**