1. Straight concrete endwalls are intended for use outside the clear zone.

2. Endwalls may be cast-in-place or precast construction. Cast-in-place endwalls shall conform to the details on this index, design specifications AASHTO 1989. Precast construction which adheres to this index, including any additional reinforcement required for handling which shall be determined by the Contractor or supplier, does not require additional approvals. Deviations from this Index, except for precast units, shall require the approval of the State Drainage Engineer prior to construction.

3. Reinforcing steel shall be either Grade 40 or 60.

4. Concrete shall be Class II except ASTM C478 (4000 psi) concrete may be substituted for precast concrete units.

5. Chamfer: All exposed edges and corners to be chamfered 4" unless otherwise shown.

6. That portion of corrugated Metal pipe in direct contact with the concrete slab and extending 12" beyond shall have a continuous bituminous coating of 0.004" minimum thickness applied prior to placing of the concrete.

7. Sodding shall be in accordance with Index No. 281 and paid for under the contract unit price for Performance Turf, SY.

8. Basis of payment for either cast-in-place or precast construction shall be the estimated quantities tabulated on the Index. Concrete and reinforcing steel shall be paid for under the contract unit prices for Class II Concrete (Endwalls), CY and Reinforcing Steel (Roadway), LB.

NOTE: All bar dimensions are out to out (showing bars in footing)
STRAIGHT CONCRETE ENDWALLS
SINGLE AND DOUBLE 66" PIPE

PLAN
(Showing Bars in Footing)

SECTION BB

SECTION AA

HALF ELEVATION
(Showing Bars in Back Face of Wall)

BENDING DIAGRAMS

BILL OF REINFORCING STEEL

<table>
<thead>
<tr>
<th>BAR</th>
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<td>6</td>
<td>Footing</td>
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<tr>
<td>B</td>
<td>71</td>
<td>6</td>
<td>Footing &amp; Wall</td>
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<td>Bend</td>
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<td>Reinforcing Steel</td>
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ESTIMATED QUANTITIES

- Out to out dimensions are:
- 9'-0" = 1'-4"
- 3'-1" = 2'-0"
- 5'-3" = 4'-6"
- 21'-6" = 17'-0"
- 21'-6" = 17'-0"
- 21'-6" = 17'-0"
- 21'-6" = 17'-0"

NOTE: Cut and Field Bend Bars B as shown

NOTE: See Sheet 1 of 2 for General Notes.

OPTIONAL ENTRANCE FOR CONCRETE PIPE

TYPICAL SECTION THRU ENDWALL