NOTES FOR PIPE CULVERTS DIAMETER > 1200:

1. PIPE CULVERTS shall be in accordance with "CAST 10093.
2. Precast headwall shall be in accordance with "CAST 10092 and 10097.
3. REQUIREMENTS for cast in place concrete for headwall connections and cut off walls are shown in the table below.

### Cast in Place Headwall Connection

<table>
<thead>
<tr>
<th>Design Class</th>
<th>Minimum concrete strength</th>
<th>Maximum concrete class</th>
<th>Cover to reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 10</td>
<td>3500</td>
<td>600</td>
<td>600 to 1220</td>
</tr>
<tr>
<td>Class 15</td>
<td>5200</td>
<td>730</td>
<td>600 to 1220</td>
</tr>
<tr>
<td>Class 20</td>
<td>7300</td>
<td>930</td>
<td>600 to 1220</td>
</tr>
</tbody>
</table>

### Anchors

- Anchor bolts shall be provided at the connections specified in the table above.
- Anchor bolts shall be placed in a manner to provide lateral support and to maintain the headwall.

### Cast in Place Headwall Erection

- Cast in place headwall shall be erected in accordance with "CAST 10094 and 10095.
- Aprons shall be placed on the outside of the headwall to provide additional support.

### Drainage

- 6" IPS drain shall be provided in accordance with "CAST 10096.
- Pipe size shall be in accordance with "CAST 10097.

### Design Considerations

- Design shall be in accordance with "CAST 10098 and 10099.
- Load combinations shall be in accordance with "CAST 10100.

### References

- "CAST 10090 Standard Drawings and Technical Notes for Design of Precast Culvert and Pipe Headwalls"
- "CAST 10091 Design, Fabrication, and Installation of Precast Concrete Structures"