TABLE 1 - PRIMARY CONTAINMENT FLOOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Maximum Single axle load</th>
<th>Concrete Thickness (t) in.</th>
<th>Control joints ≤40'-150' Rebars, single layer, both ways</th>
<th>Control joint ≤150'-200' Rebars, single layer, both ways</th>
<th>Min. Sub base, in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20,000</td>
<td>6</td>
<td>#4 @ 0.5&quot;</td>
<td>#4 @ 0.5&quot;</td>
<td>4</td>
</tr>
<tr>
<td>20,000–29,999</td>
<td>8</td>
<td>#4 @ 0.5&quot; or #5 @ 0.5&quot;</td>
<td>#4 @ 0.5&quot; or #5 @ 0.5&quot;</td>
<td>6</td>
</tr>
<tr>
<td>30,000–49,999</td>
<td>10</td>
<td>#4 @ 0.5&quot; or #5 @ 0.5&quot;</td>
<td>#4 @ 0.5&quot; or #5 @ 0.5&quot;</td>
<td>8</td>
</tr>
</tbody>
</table>

TABLE 2 - SECONDARY CONTAINMENT FLOOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Maximum tank height (ft)</th>
<th>Concrete Thickness (t) in.</th>
<th>Reinforcing bars and spacing (both ways)</th>
<th>Area of Steel (ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>8</td>
<td>#4, two layers, 12&quot; o.c.</td>
<td>0.18</td>
</tr>
<tr>
<td>15</td>
<td>10</td>
<td>#5, two layers, 12&quot; o.c.</td>
<td>0.34</td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>#6, two layers, 12&quot; o.c.</td>
<td>0.47</td>
</tr>
<tr>
<td>25</td>
<td>14</td>
<td>#7, two layers, 12&quot; o.c.</td>
<td>0.62</td>
</tr>
<tr>
<td>30</td>
<td>14</td>
<td>#8, two layers, 12&quot; o.c.</td>
<td>0.75</td>
</tr>
</tbody>
</table>

References:

- ACI 360–10 (Table 3–1, Fig. 6.6, Table 5.1)
- ACI 350 (Chapter 7, Appendix H)
- MWPS37 (Table 21 & 24, Fig. 65 & 79)
- NRCS Structural Design Workshop, 2015 (p.26–9), PCA Method
- AEC "The Compendium of AGS and ACHF Details", 2015
- AEC "The Compendium of AGS and ACHF Details", 2015
- AEC "The Compendium of AGS and ACHF Details", 2015

Construction Notes:

1. Concrete shall be 5000 psi, Type II or V cement with part of cement replaced with fly ash or natural pozzolan or silica fume or GBF slag, 3" to 6" slump with maximum water cement ratio of 0.40 and air entrainment. Steel reinforcement 60 ksi.
2. See Construction Specifications PA–309 for additional information.
3. Sub-base ASHTO #57 or as approved by "Engineer of record".
4. Curbs normally set to inside of roof support posts. Wider curbs to accommodate posts need the "Engineer of Record" to address crack control and water tightness.
Precast Sump Option 1:
- Precast box shall meet PA 309 construction specification requirements. Options must be approved by the "Engineer of Record".
- Concrete mix shall meet PA 309 construction specification requirements. Options must be approved by the "Engineer of Record".
- Slope to sump
- Reinforcement as specified in Table 1
- Precast box
- Granular sub base (see table 1)
- No outlet
- Install bentonite strips @ all cold joints
- Min. 3" Thickness of AASHTO #57 Gravel

Polyethylene Sump:
- 14" to 24" Dia. Polyethylene Sump/Basin Floor/bottom bonded to walls. Water tight. Shall be Approved by NRCS prior to use.
- Reinforcement as specified in Table 1 both directions
- Inside Depth of Sump Shall be Approx. 24".
- Double bentonite strip on perimeter of sump (2" min. edge cover)
- Min. 3" Thickness of AASHTO #57 Gravel

Precast Sump Option 2:
- Precast box shall meet PA 309 construction specification requirements. Options must be approved by the "Engineer of Record".
- Concrete mix shall meet PA 309 construction specification requirements. Options must be approved by the "Engineer of Record".
- Slope to sump
- Reinforcement as specified in Table 1
- Precast box
- Granular sub base (see table 1)
- No outlet
- Install colloidal waterstop @ all cold joints
- Min. 3" Thickness of AASHTO #57 Gravel

Cast in Place Sump:
- Reinforcement as specified in Table 1
- 12" overlap
- 18"-24"
- 2"
- Concrete
- Sub base (see table 1)
- Native material or sub-base
- 6" min. concrete thickness
- #4 bars-match floor steel table 1
- Min. 3" Thickness of AASHTO #57 Gravel

NOTE:
1. Side wall slopes can be from vertical to 45° depending on soil condition.
2. If multiple placements are made, sufficient vibration shall be done to eliminate voids between placement.