GENERAL NOTES:

1. Use concrete with a 28-day compressive strength of 4000 psi. The concrete must not be placed until all the steel is tied securely in place on 3 inch of approved base course material. Use Grade 60 rebar.

2. The walls will be built with expansion and contraction joints. No section of wall will be over 30 foot long between contraction joints and no more than 90 feet between expansion joints. See joint details on pages 3 and 4.

3. Place construction joints anywhere the concrete placement is not continuous. See Construction Joint Notes on page 4.

4. Use #4 rebar @ 12" center to center each way, or 6" x 6" 8/8 WWF in the floor.

5. Lap splices of reinforcing steel must have a minimum lap length of: Marks A, F, K & L-33"; all other #4 bars-25"; #5 bars-31".

6. All rebars must have a minimum concrete cover of 2 inches, except when concrete is placed on or against the earth than the minimum cover must be 3 inches.

7. The 18 inch diameter pipe inlet of the basin drain must have 3 rows of 1 inch x 4 inch vertical slots with a 4 inch space between rows and 3 slots per row spaced at 120 degree intervals around the pipe. Start the bottom row of slots 1 inch from the bottom of the pipe and stagger the slots between rows.

8. The entire pipe inlet of the basin drain may be covered with 2 layers of 1/2 inch metal mesh cloth loosely wrapped to allow for lifting and cleaning.

9. Additional bars may be used in the floor to help stabilize the vertical bars during tying. Maintain 3" cover over steel.

10. PVC pipe must meet the requirements of ASTM D-1785 PVC PLASTIC PIPE SCHEDULE 40 or 80.

11. Dual wall PE pipe must meet the requirements of ASTM F2396, F2648, F405 or F667 and have watertight joints.

12. Corrugated metal pipe (C.M.P.) must be 14 gauge (0.079 in.) or thicker.

13. Approved base course material includes DOT Grad No. CA 7, 8, 11, 12, 13, 14, 15, 16, or FA 1, 2, 4.

14. Connect and weld all stoppage splices and intersections according to manufacturer's instructions.

15. Fill expansion joints with perforated expansion joint filler with a minimum thickness of 1/2 inch. Joint filler must conform to ASTM 0 1752 Type 1, II, or III; 0994; or D1751.
**SECTION 6 DOWEL CENTERLINE**

**FLOOR SLAB CONTRACTION JOINT**

*Scale: 1" = 1'-0"*

- Flexible 6" Non-Metallic Waterstop
- Dowel Sleeve See Note
- 3/4"x14#12 C.C.
- 3" Approved Base Course Material See Note 11

Note: Dowel sleeve for contraction joints may be manufactured plastic sleeve, PVC sleeve, grease, or any other means to prevent a bond between half of the dowel and the concrete. Place a Dowel Sleeve on one end of each Dowel.

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**TOP VIEW WALL CONTRACTION JOINT**

*Scale: 3/4" = 1'-0"*

- 2" Deep X 1" Wide Groove, Both Sides. Form Groove with Blockout Strips Attached to Forms
- Smooth Dowel 3/4"x14#18 C.C.
- Flexible 6" Non-Metallic Waterstop on Inside Face of Concrete Wall
- Dowel Sleeve See Note

- 2" Deep X 1" Wide Groove, Both Sides. Form Groove with Blockout Strips Attached to Forms
- Smooth Dowel 3/4"x14#18 C.C.
- Flexible 6" Non-Metallic Waterstop on Inside Face of Concrete Wall
- Dowel Sleeve See Note

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**DRAINAGE NOTES**

1. Provide perimeter drain to adequate outlet if water table can rise above floor level.
2. Perimeter drain pipe and gravel/geotextile filter is to be routed around 3 sides of the basin and drain freely to a surface water outlet or other subsurface drainage outlet.
3. Perimeter drain pipe and fittings must be perforated corrugated polyethylene (CPT) meeting ASTM specifications listed below:

<table>
<thead>
<tr>
<th>CPT</th>
<th>ASTM F405, F667</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Wall CPT</td>
<td>F2366, F2669, F405, F667</td>
</tr>
</tbody>
</table>

4. Drain fill must consist of sand, gravel or concrete aggregate mixture with a maximum size of 3" and not more than 5% passing a #200 sieve. Qualifying EOT gradations for drain fill include:
   - CA-1, CA-3, CA-5, CA-7, CA-8, CA-11, CA-12, CA-13, CA-14, CA-15, CA-16, CA-18

5. Geotextile (non-woven, needle punched) minimum criteria:
   - Grab tensile strength (lb) ASTM D 4639
   - Elongation at failure (%) ASTM D 4639
   - Trapezoidal tear strength (lb) ASTM D 4533
   - Puncture strength (lb) ASTM D 6241
   - Ultraviolet light (% retained strength) ASTM D 4355
   - Apparent opening size (AOS) ASTM D 4751
   - Permeability see ASTM D 4491

6. Any geotextile splices must overlap a minimum of 18 inches.
7. Geotextile must extend all drain fill.

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**SETTLING BASIN - 2 FT DEEP**

- Drain Fill See Note 4
- Concrete Footing
- 4" Perforated CPT
- 3" Approved Base Course Material
- Geotextile at All Soil-Rock Interfaces See Note 5

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**PERIMETER DRAIN DETAIL**

*Scale: 3/4" = 1'-0"*

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**PLAN**

- Flexible 6" Non-Metallic Waterstop
- Dowel Sleeve See Note
- 3/4"x14#12 C.C.
- Rebar or WWF (See Note 4 Page 1)

**SIDE VIEW**

- Smooth Dowel 3/4"x14#12 C.C.
- Rebar or WWF (See Note 4 Page 1)
- Dowel Sleeve See Note
- Smooth Dowel 3/4"x14#12 C.C.
- Rebar or WWF (See Note 4 Page 1)
**Construction Joint Notes**

1. A construction joint must be prepared when the concrete pour is not continuous, typically between the floor and wall.
2. Prepare all surfaces that will be in contact with new concrete as per note 5.
3. Let concrete cure at least 12 hours prior to steel tying and form construction for the next pour.
4. New concrete must not be placed until the hardened concrete has cured at least 12 hours.
5. Construction joints must be prepared using one of the following two methods:
   - **Method 1** — Water-Air or Sandblasting. Clean the joint surface of all unsatisfactory concrete, laitance, coating, stains, and debris by sandblasting or high-pressure air-water cutting, or both. Sandblasting can be used after the concrete has gained sufficient strength to resist excessive cutting, and high-pressure air-water cutting can be used as soon as the concrete has hardened sufficiently to prevent the jet from displacing the coarse aggregates. The surface of the concrete in place must be cut to expose clean, sound aggregate, but not so deep as to undercut the edges of larger particles of the aggregate. Cut the surface to at least 1/4" depth. Thoroughly wash the surface to remove all material after cutting.
   - **Method 2** — Mechanical. Clean the joint surface of all unsatisfactory concrete, laitance, coatings, stains, and debris by washing and scrubbing with a wire brush, wire broom, or other means approved by the engineer to expose coarse aggregate without displacing it. The surface must be roughened to at least 1/4" depth.
6. All construction joints must be wetted and standing water removed immediately before new concrete is placed.
7. New concrete must be sufficiently vibrated to ensure good contact into the prepared joint.
8. Keyways or steel plates cannot be substituted for the construction joint methods above.

**Legend:**
- WS = 6" Nonmetallic Water Stop
- EJ = Expansion Joint
- CJ = Construction Joint