GENERAL NOTES:
1. Construct Perimeter Walls in accordance with Specification Section 534.
2. Choice of either Precast Option or Masonry Option is at the discretion of the Contractor.
3. Store CMU's on elevated platforms in a dry location or under cover.
4. Mortar: Type S meeting requirements of ASTM C1329.
5. Joint Reinforcement: Use W 1.7 (9mm) galvanized ladder reinforcing spaced at 16" vertically. Provide special accessories for corners, intersections, etc. Joint reinforcing shall be continuous except it shall not pass through vertical masonry control joints. Lap joint reinforcing a minimum of 6".
6. Construct expansion joints in the foundation at 90 foot maximum intervals, and directly below a wall control joint.
7. Dowel Load Transfer Devices will be ASTM A36 smooth round bars hot-dip galvanized in accordance with Specification Section 962. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
9. Warping: 1/8" per foot distance to nearest corner.
10. Out of Square: 1/16" per 6 ft., but not more than 1/8" total along any side.
11. Thickness: +/- 1/8".
12. Overall Height & Width: +/- 1/8".
13. Materials:
   A. Concrete Masonry Units (CMU): Provide normal weight blocks.
   B. Cast-In-Place Concrete: Class IV (f'c = 3400 psi)
   C. Mortar: Type S meeting requirements of ASTM C1329
   D. Grout: Type S; coarse grout.
   E. Aggregate for Grout: Meet the requirements of ASTM C490 or Specification Section 903 Size 8 or 89.
14. Storage of Materials:
   A. Store CMU's on elevated platforms in a dry location or under cover. If units become wet, do not install until they are dry.
   B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp or exceeded the manufacturer's shelf life.
   C. Store masonry accessories and reinforcing to prevent corrosion and accumulation of dirt and oil.
   D. Fully Grout all cells with horizontal or vertical reinforcing bars.
   E. Use reinforcing bar positioners to maintain vertical and horizontal bar placement.
   F. Fully grout three courses of the wall.
   G. Joint Reinforcement: Use W 1.2 (9mm) galvanized ladder reinforcing spaced at 16" vertically. Provide special accessories for corners, intersections, etc. Joint reinforcing shall be continuous except it shall not pass through vertical masonry control joints. Lap joint reinforcing a minimum of 6".
   H. Construct expansion joints in the foundation at 90 foot maximum intervals, and directly below a wall control joint.
   I. Dowel Load Transfer Devices will be ASTM A36 smooth round bars hot-dip galvanized in accordance with Specification Section 962. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
   J. For spread footings, use a walk-behind compactor of at least 600 lbs. in weight. Obtain a minimum density of 95% of the maximum dry density as determined by FM T-1780. Perform soil density tests at 100 foot intervals.
   K. Protect walls during construction from soil, grout or mortar stains. Clean wall as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
   L. Use soap and potable water to clean walls. If stain removal is necessary, use a cleaning method indicated in NCMA TEK 8-2A applicable to the type of stain on the exposed surface.
   M. During construction, cover tops of walls, with waterproof sheeting at the end of each day's work, or when construction is not in progress. Extend sheeting a minimum of 2 feet down each side and secure in place.
   N. Comply with Hot Weather Requirements in ACI 530.1.

PRECAST OPTION NOTES:
6. WALL NOTES:
   A. Walls may consist of either a single height panel or two stacked panels. Minimum panel height is 4'-0".
   B. Only when reduced overhead clearance between posts prohibits installation of panels from the top, side-installed panels are allowed. After panel is centered between posts, grout between panel ends and posts.

7. CONCRETE AND GROUT:
   A. Cast-in-Place and Precast Concrete: Class IV (f'c = 3400 psi)
   B. Grout for Auger Cast Piling: Minimum 28 Day Strength = 5500 psi
   C. Minimum Compressive Strength for Form Removal and Handling of Posts, Panels and Precast Spread Footings:
      i. 2,500 psi for horizontally cast panel post, panel and precast spread footings.
      ii. 2,000 psi for vertically cast panel or when tilt-up form tables are used for horizontally cast panels.

8. REINFORCING STEEL:
   A. Concrete Cover: 1/8" unless otherwise noted.
   B. In addition to the requirements of Specification Section 415, tie post and pile stirrups at the following locations as a minimum:
      i. Post Stirrups - Tie in all four corner bars and at every third interior bar intersection.
      ii. Pile Stirrups - Tie to the main vertical reinforcing at alternate intersections.

9. BEARING PADS:
   A. Pads for Collar or Pedestal Bearing Points and between stacked panels may be either plain or fiber reinforced pads, in accordance with Specification Section 932 for ancillary structures.

10. CASTING TOLERANCES:
    A. Overall Height & Width: +/- 1/8"
    B. Thickness: +/- 1/8"
    C. Plane of side mold: +/- 1/16"
    D. Openings: +/- 1/8"
    E. Out of Square: 1/2" per 6 ft., but not more than 3/8" total along any side
    F. Warping: 1/8" per foot distance to nearest corner
    G. Bowing: 1/240 panel dimension

11. PILING:
    A. Construct Auger Cast Piling in accordance with the Plans and Specification Section 455.

MASTORY OPTION NOTES (CONT.):
D. Fully Grout all cells with horizontal or vertical reinforcing bars.
E. Use reinforcing bar positioners to maintain vertical and horizontal bar placement.
F. Fully grout three courses of the wall.
G. Joint Reinforcement: Use W 1.2 (9mm) galvanized ladder reinforcing spaced at 16" vertically. Provide special accessories for corners, intersections, etc. Joint reinforcing shall be continuous except it shall not pass through vertical masonry control joints. Lap joint reinforcing a minimum of 6".
H. Construct expansion joints in the foundation at 90 foot maximum intervals, and directly below a wall control joint.
I. Dowel Load Transfer Devices will be ASTM A36 smooth round bars hot-dip galvanized in accordance with Specification Section 962. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
J. For spread footings, use a walk-behind compactor of at least 600 lbs. in weight. Obtain a minimum density of 95% of the maximum dry density as determined by FM T-1780. Perform soil density tests at 100 foot intervals.
K. Protect walls during construction from soil, grout or mortar stains. Clean wall as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
L. Use soap and potable water to clean walls. If stain removal is necessary, use a cleaning method indicated in NCMA TEK 8-2A applicable to the type of stain on the exposed surface.
M. During construction, cover tops of walls, with waterproof sheeting at the end of each day's work, or when construction is not in progress. Extend sheeting a minimum of 2 feet down each side and secure in place.
N. Comply with Hot Weather Requirements in ACI 530.1.

13. MATERIALS:
   A. Concrete Masonry Units (CMU): Provide normal weight blocks.
   B. Cast-In-Place Concrete: Class II (f'c = 3400 psi)
   C. Mortar: Type S meeting requirements of ASTM C1329
   D. Grout: Type S; coarse grout.
   E. Aggregate for Grout: Meet the requirements of ASTM C490 or Section 903 Size 8 or 89.

14. STORAGE OF MATERIALS:
   A. Store CMU's on elevated platforms in a dry location or under cover.
   B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp or exceeded the manufacturer's shelf life.
   C. Store masonry accessories and reinforcing to prevent corrosion and accumulation of dirt and oil.

INDEX
SHEET
NO.
1 of 10
DRainage Holes Types A, B, C & D

* Hole Types A, B, C, & D refer to distance from bottom of panel/wall to center of the pipe.

NOTES:
1. Drainage holes may be formed with 4" NPS PVC pipe that may remain in place.
2. See Wall Control drawings for number, Type and location/spacing of drainage holes.
TYPICAL ELEVATION
(Front Face Shown, Textured Finish not Shown for Clarity)

PIVOTING JOINT DETAILS
NOTE: Shop Drawings shall include specific pivoting point details of panel ends at locations where the deflection angle (2°) between panels exceeds 20°.
**TYPICAL PANEL ELEVATION**

* In lieu of utilizing the standard pick up points below, panels may be cast vertically or cast horizontally then lifted upright using lift-cables prior to lifting from forms. In this case, pick points must be placed in the top of panels only and transported maintaining the vertical orientation. If these criteria are met, the vertical steel may be reduced to #4 Bars @ 1'-3" (As=0.16 in.²/ft.).

- **Panel Height (H)**
  - 0.207 H
  - 0.586 H
  - 0.207 H

- **Panel Length (L)**
  - 0.207 L
  - 0.586 L
  - 0.207 L

**STANDARD PICK UP POINTS FOR PANELS**

(Panels shall be rotated about long axis only)

- Pick up points

**NOTE:**

At the Contractors Option, Smooth or Deformed Welded Wire Reinforcement may be used (equal area).

- Vertical Steel – #4 Bars @ 10" (As=0.24 in.²/ft.) (Typ.)
- Horizontal Steel – #4 Bars @ 7/16" (As=0.32 in.²/ft.) (Typ.)

**SECTION F-F**

- Texture
- Front Face

**SECTION G-G**

* Reinforcing Mat

**DETAIL "B" - TOP-INSTALLED**

(Typ. Both Ends)

- #4 Chamfer (Typ.)
- 1/2" Chamfer (Typ.)

**DETAIL "B" - SIDE-INSTALLED**

(Typ. Both Ends)
LOW CLEARANCE OPTION

NOTES:
1. See Shop Drawing for Post Lengths.

Perimeter Walls

Design Standards

FY 2017-18

Precast Option - Standard Post Details

Bar Bending Details

Table 1

<table>
<thead>
<tr>
<th>Wind Speed (MPH)</th>
<th>Pile Length</th>
<th>Bars A</th>
<th>Bars P1 thru P6</th>
<th>Bars S1</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>11'-6&quot;</td>
<td>#3</td>
<td>#3</td>
<td>#4</td>
</tr>
<tr>
<td>120</td>
<td>11'-6&quot;</td>
<td>#3</td>
<td>#3</td>
<td>#4</td>
</tr>
<tr>
<td>140</td>
<td>13'-6&quot;</td>
<td>#3</td>
<td>#3</td>
<td>#4</td>
</tr>
<tr>
<td>150</td>
<td>15'-0&quot;</td>
<td>#3</td>
<td>#3</td>
<td>#4</td>
</tr>
<tr>
<td>170</td>
<td>15'-0&quot;</td>
<td>#3</td>
<td>#3</td>
<td>#4</td>
</tr>
</tbody>
</table>

Bar Length = 2'-30"  Bar Length = 5'-0"

All bar dimensions in bending diagrams are out-to-out.
All bars not shown in the bending diagrams are straight.
STANDARD POST PLACEMENT IN AUGER CAST PILE
(Standard Post Shown, 45° and 90° Corner Posts Similar)

TYPICAL POST

LOW CLEARANCE OPTION

Precast Post

Precast Post

Top of Wall per Plan

Top of Wall per Plan

Finished Grade

Finished Grade

Top of Precast Collar, Elev. A

Top of Precast Collar, Elev. A

Top of Auger Cast Pile

Top of Auger Cast Pile

Exposed Precast Post Reinforcement (Typ.)

Exposed Precast Post Reinforcement (Typ.)

30" Ø Auger Cast Pile

30" Ø Auger Cast Pile

6 ~ #8 Bars (Typ.)

6 ~ #8 Bars (Typ.)

Bars S1 (Typ.)

Bars S1 (Typ.)

Projected location of 4" x 1" x 1/2" neoprene Bearing Pad (Typ.)

Projected location of 4" x 1" x 1/2" neoprene Bearing Pad (Typ.)

30" Ø Auger Cast Pile

30" Ø Auger Cast Pile

30" Ø Auger Cast Pile

30" Ø Auger Cast Pile

SECTION H-H
(Reinforcing not Shown for Clarity)

SECTION I-I
(Typical Post Option)

SECTION J-J
(Typical Post Option)

SECTION J-J
(Low Clearance Option)

SECTION I-I
(Low Clearance Option)

Notes:
1. For Reinforcing Steel Sizes and Pile Lengths, see Table 1, Sheet 6.
2. For Corner Posts, see Sheet 8.
3. For Typical Post Section Dimensions, see Sheet 6.
NOTES:
1. For Reinforcing Steel Sizes, and Foundation Dimensions, see Table 1 Sheet 6.
2. For location of Section H-H and I-I, see Sheet 6.
3. The Bearing area beneath Neoprene Pads is formed by top of Auger Cast Pile Grout.
Table 2

<table>
<thead>
<tr>
<th>Wind Speed Category</th>
<th>Masonry Walls (8x8x16)</th>
<th>Foundations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bars V1</td>
<td>Sy Spacing</td>
</tr>
<tr>
<td>130</td>
<td>#5</td>
<td>2-3</td>
</tr>
<tr>
<td>150</td>
<td>#5</td>
<td>4-0</td>
</tr>
</tbody>
</table>

Notes:
1. End vertical reinforcing bars 1½" from top of bond beam blocks and horizontal bars 1½" from edge of control joints.
2. Do not continue horizontal #4 bond beam reinforcing through control joint.
3. Use stainless steel joint stabilizing anchors spaced at 16" vertically at all control joints. Install per manufacturer's instructions.
4. Seal Control Joints with backer rod and Type "A" silicone sealant (top and both sides).
5. See Sheet 10 for Bar placement details.
6. For Pilaster Cap Details, see Sheet 2.

MASONRY OPTION

Table 2

<table>
<thead>
<tr>
<th>Wind Speed Category</th>
<th>Masonry Walls (8x8x16)</th>
<th>Foundations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bars V1</td>
<td>Sy Spacing</td>
</tr>
<tr>
<td>130</td>
<td>#5</td>
<td>2-3</td>
</tr>
<tr>
<td>150</td>
<td>#5</td>
<td>4-0</td>
</tr>
</tbody>
</table>

Notes:
1. End vertical reinforcing bars 1½" from top of bond beam blocks and horizontal bars 1½" from edge of control joints.
2. Do not continue horizontal #4 bond beam reinforcing through control joint.
3. Use stainless steel joint stabilizing anchors spaced at 16" vertically at all control joints. Install per manufacturer's instructions.
4. Seal Control Joints with backer rod and Type "A" silicone sealant (top and both sides).
5. See Sheet 10 for Bar placement details.
6. For Pilaster Cap Details, see Sheet 2.

MASONRY OPTION

Table 2

<table>
<thead>
<tr>
<th>Wind Speed Category</th>
<th>Masonry Walls (8x8x16)</th>
<th>Foundations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bars V1</td>
<td>Sy Spacing</td>
</tr>
<tr>
<td>130</td>
<td>#5</td>
<td>2-3</td>
</tr>
<tr>
<td>150</td>
<td>#5</td>
<td>4-0</td>
</tr>
</tbody>
</table>

Notes:
1. End vertical reinforcing bars 1½" from top of bond beam blocks and horizontal bars 1½" from edge of control joints.
2. Do not continue horizontal #4 bond beam reinforcing through control joint.
3. Use stainless steel joint stabilizing anchors spaced at 16" vertically at all control joints. Install per manufacturer's instructions.
4. Seal Control Joints with backer rod and Type "A" silicone sealant (top and both sides).
5. See Sheet 10 for Bar placement details.
6. For Pilaster Cap Details, see Sheet 2.
1. For location of Sections K-K and L-L see Sheet 9.
2. Provide and install ½" Preformed Expansion Joints with 2 – 1" Ø Dowel Load Transfer Devices at 90' Max. as shown. See Sections L-L for placement details.
3. For Reinforcing sizes and spacings, see Table 2, Sheet 9.
4. Pairs F1, V1 are required in the wall cells on both sides of pilasters, plus a pair in each pilaster cell. Space wall reinforcing per Table 2, Sheet 9.